REPORT FOR THE AREAS CONVERTED TO MINING LEASES EL23862

Tiwi Islands
Northern Territory

April 2006
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1. SUMMARY

This report covers those areas of EL23862 that have been converted to Mining Leases ML24510 and ML24511.

EL23862 is located on Melville Island forming part of the Tiwi Islands in the Northern Territory (see Figure 1).

This report describes on-ground exploration carried out on the area now comprising ML24510 (Andranangoo Creek West) and ML24511 (Lethbridge Bay West).

2. INTRODUCTION

Matilda Minerals Ltd (“Matilda”) was admitted to the Australian Stock Exchange on 15 September 2004. Matilda’s objective is to explore and mine small to medium sized heavy mineral deposits which are rich in zircon and rutile, have low clay content, little or no overburden, a small environmental footprint and require low capital expenditure to develop. The potential deposits on the Tiwi Islands offer these criteria.

The Tiwi Islands are wholly within the Tiwi Island Aboriginal Land Trust administered by the Tiwi Land Council (“TLC”). Matilda signed an agreement with the TLC on 19 December 2003 which set conditions for the exploration and mining development activity.

This report covers two areas where economic reserves of mineral sands have been located, viz Andranangoo Creek West and Lethbridge Bay West.

EL23862 was granted on 1 April 2004. The areas converted to Mining Leases ML24510 and ML24511 were granted on 7 September 2005 and 5 December 2005 respectively.

Annual technical reports for EL23862 have been submitted for the years ending 31 March 2005 (Hobbs, 2005) and 31 March 2006 (Milner, 2006).

3. BACKGROUND INFORMATION – TIWI ISLANDS

The Tiwi Islands lie 60km north of Darwin off the Northern Territory coast, and immediately east of Cobourg Peninsula. The islands comprise Bathurst and Melville Islands, which are separated by the Apsley Strait, collectively representing Australia’s second largest island after Tasmania. The islands cover an area of 8,320km² with a coastline approximately 550km in length.

Nguiu (formerly Bathurst Island Mission) is the administrative capital, located adjacent to Apsley Strait at the south-eastern extremity of Bathurst Island.
Other communities, which broadly reflect the ethic groupings, include Wurankuwu (also known as Ranku) on Bathurst Island, while Melville Island includes the settlements of Milikapiti (formerly Snake Bay), Pirlangimpi (formerly Garden Point and also known as Pularumpi), Paru and Pickertaramoor.

Well maintained sealed or formed gravel airstrips are variously located at Nguiu, Milikapiti, Ranku and Pirlangimpi and regular air services and charters link the islands with Darwin.

Each of the settlements is linked by well-maintained formed gravel roads, which are passable for the majority of the year, and a car ferry service operates across Apsley Strait between Nguiu and Paru. Road access is reasonable over the majority of Bathurst Island and the adjacent western portion of Melville Island, however road access is limited or non-existent within the remoter north-eastern portion of Melville Island. The entire coastline is reasonably accessible by small boat outside of the monsoonal ‘wet season’. Diesel generated power is available at each of the communities, along with reticulated water from local bores.

The population of the Tiwi Islands is approximately 2100.

Bathurst and Melville Islands were proclaimed an Aboriginal Reserve on the 4th of December 1912. Establishment of the Tiwi Land Council followed representation by the Tiwi for recognition of their distinct geographic and cultural identity. These representations were a consequence of the Aboriginal Land Rights (Northern Territory) Act 1976 which came into operation on 26 January 1977. A special gathering on Bathurst Island attended by the then Minister for Aboriginal Affairs, the Honourable Ian Viner instituted the Tiwi Land Council on 7 September 1978 following Gazettal of the Land Council in Special Gazette No S 162 of 18 August 1978.

Local government services are co-ordinated under the auspices of the Tiwi Islands Local Government which was established on 12 July 2001, when the previous community government councils in the three main communities of Nguiu (Bathurst Island), Pirlangimpi and Milikapiti (Melville Island) and Wurankuwu Aboriginal Corporation were amalgamated to begin a new era of united and coordinated local government.

The indigenous peoples of the Tiwi Islands live a semi-traditional lifestyle. The ethnic boundaries are well defined, skin groups are generally respected, and the older generations sponsor the preservation of traditional customs. A predominantly western diet is regularly supplemented by 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, while barramundi farming has been more recently introduced. Increasing international demand for traditional Tiwi art and craft has created a flourishing industry, while other employment is dominated by the
provision of infrastructure and services, with incomes supplemented by government welfare.

4. PHYSIOGRAPHY

The climate of the Tiwi Islands is tropical monsoonal, with warm dry winters and hot wet summers. The annual average rainfall is 1200mm – 1400mm in the eastern part of Melville Island to 1800mm – 2000mm in the north-west of Melville Island and north of Bathurst Island. The majority of the rain falls between December and April under the influence of the northwest monsoons. Temperatures range from a mean of 35ºC to 21ºC in summer, and 26ºC to 18ºC in winter.

The topography of the islands is characterised by relatively low relief, dominated by partially dissected plateaux rising to 100m 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.

The vegetation is consistent with a tropical savannah regime, dominated by dense eucalypt and acacia woodland in the hinterland and more prominent coastal fringe, while melaleuca (paperbark) forests predominate along the watercourses. Mangroves proliferate around tidal flats, while casuarina trees and pandanus palms fringe the coastline.

5. TENURE

This report covers two areas of the following Exploration Licence and associated Mining Leases:

<table>
<thead>
<tr>
<th>Tenement number</th>
<th>Date granted</th>
<th>Date expiry</th>
</tr>
</thead>
<tbody>
<tr>
<td>EL23862</td>
<td>01/04/2004</td>
<td>31/03/2010</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mining Lease</th>
<th>Name</th>
<th>Date granted</th>
<th>Date expiry</th>
<th>Area (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ML24510</td>
<td>Andranangoo</td>
<td>07/09/2005</td>
<td>06/09/2030</td>
<td>821.70</td>
</tr>
<tr>
<td>ML24511</td>
<td>Lethbridge West</td>
<td>05/12/2005</td>
<td>04/12/2030</td>
<td>909.40</td>
</tr>
</tbody>
</table>

The locations of EL23862 and MLs24510 and 24511 are shown on figures 1 and 2 below.
Figure 1

Tiwi Islands Project Tenements and Prospect Locations
Tiwi Islands Project, Melville Island North East Tenements and Prospect Locations

Figure 2
6. GEOLOGY and GEOMORPHOLOGY

6.1 Geology

The oldest rocks exposed on Bathurst and Melville Islands are represented by the Upper Cretaceous Moonkina Member. This formation consists of fine to very fine sub-labile sandstone, along with interbedded grey carbonaceous mudstone and siltstone, of shallow marine to deltaic derivation. The Moonkina Member is exposed at the base of coastal cliffs, particularly along the southern coastline of Bathurst and Melville Islands, and in lower lying portions of the hinterland.

The Moonkina Member is unconformably overlain by the Tertiary Van Diemen Sandstone, which dominates the geology of the Tiwi Islands. 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 gently to the north, becoming thicker in the process, with the unit exposed over a 60m vertical interval at Cape Van Diemen at the extreme north-western tip of Melville Island.

Both the Moonkina Member and Van Diemen Sandstone are disconformably to unconformably overlain by unconsolidated Quaternary fluvial, paralic, deltaic and littoral deposits. 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 coastline, variously abutting or transgressing the Cretaceous, Tertiary and Pleistocene deposits.

6.2 Geomorphology

The Van Diemen Sandstone dominates the geomorphology of both Bathurst and Melville Island, forming low partially dissected and lateritised plateaux, which are frequently capped by ferruginous to bauxitic pisolitic laterite accumulations. Low red cliffs, nick-points and platforms of Van Diemen Sandstone are developed along or adjacent to the more exposed portions of the coastline.

In many instances the Tertiary sea cliffs are preserved from further erosion by accumulations of Pleistocene and/or Holocene littoral deposits (Figure 3). The Pleistocene sands are distinguishable from their Holocene counterparts by a mild orange, pink or red discoloration, and are invariably developed as one or more low amplitude, but strike persistent strandlines, with a wavelength characteristically in tens, rather than hundreds, of metres.

The Holocene deposits generally appear to be cleaner and marginally finer grained than their Pleistocene equivalents, incorporating a more significant proportion of coquina and coralline debris. Along the north coast of the islands the present day beaches appear to have accumulated as strandlines directly against the Tertiary
escarpment or as a composite strand plain successively comprising both the Holocene and Pleistocene deposits. Holocene dune deposits transgress the older strandlines on several beaches that are more exposed to the prevailing north-westerly monsoonal winds.

Heavy mineral (“HM”) sand accumulations are present within both the Pleistocene and Holocene strands. The immediate provenance of the HM is the Van Diemen Sandstone itself, which contains thin laminae of HM identical in composition to the mineral sands. The Pleistocene and Holocene deposits have therefore been subjected to two cycles of erosion and deposition, being originally derived from the Lower Proterozoic igneous and metamorphic complexes of the Pine Creek Geosyncline on the mainland to the south.

Heavy mineral accumulations, be they Pleistocene or Holocene, appear to be best developed immediately adjacent to the Tertiary Van Diemen Sandstone escarpment from whence they are derived, with successive strandlines being considerably and progressively more depleted in HM away from the scarp. This preferential accumulation of HM immediately adjacent to the Van Diemen Sandstone can be readily witnessed in the present day environment near Cape Fourcroy, located at the extreme south-western tip of Bathurst Island. Here, although limited in extent, HM species represent the only sand preserved on a wave-cut platform at the base of an extensive cliff of Van Diemen Sandstone.

7. **EXPLORATION**

**Summary**

Exploration activities covered by this report on both Andranangoo Creek West and Lethbridge Bay West comprise:

- Ground magnetics
- Air core drilling
- Modal analyses of heavy mineral concentrates
- XRF analyses of heavy mineral concentrates
- Bulk sampling and metallurgical testwork
- Feasibility Study
- Ore Reserve/Resource estimation
- Surveying

7.1 **Ground magnetics**

The use of wide-spaced ground magnetic traverses to locate magnetic HM strands has been going on for around 50 years. The Directors of Matilda Minerals had previous experience with a high resolution magnetic mapping technique that could readily outline HM deposits if there was sufficient magnetic contrast with the surrounding sediments. These conditions were expected on the Tiwi Islands based
largely on RGC reports of significant magnetite in both Puwanapi and Lethbridge deposits. The basement sediments contain no magnetic beds and were expected to be magnetically quiet. This method was attractive to all parties as it offered a quick and environmentally low impact method of exploring for potentially economic heavy mineral strands. It was proven to detect HM strands at 50 metres depth in the Perth coastal plain and expected to readily outline the much shallower Tiwi deposits. Matilda tested the method by traversing the known mineralisation and determining the response.

The survey was carried out on foot by contractors Fugro Geophysics using a Proton Precession Magnetometer with continuous reading and DGPS survey control. The system used was as follows:

<table>
<thead>
<tr>
<th>Instrument</th>
<th>System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roving Magnetometer</td>
<td>Geometrics G858 Cesium Vapour Magnetometer, Sensitivity 0.05nT, Sample Rate 10Hz (which is approx 0.1m at walking speed)</td>
</tr>
<tr>
<td>Base Magnetometer</td>
<td>Geometrics G856 AX Proton Magnetometer, Sensitivity 0.1nT, Sample rate 10 seconds</td>
</tr>
<tr>
<td>DGPS</td>
<td>Trimble AG132 de-gaussed DGPS receiver with Omnistar corrections for sub-metre accuracy</td>
</tr>
</tbody>
</table>

Results were mixed as outlined below:

The objectives of using the ground magnetic mapping technique were to see if there was sufficient response from the postulated buried mineralized strands to be detected beneath dunes. It was reasoned that while the valuable heavy mineral ("VHM") was unlikely to be magnetic because it was largely zircon and rutile, the total HM suite was likely to be magnetic because of the detrital iron content. If this was the case then the strands should provide sufficient magnetic susceptibility contrast to be detected against the magnetic background provided by the underlying sediments.

At Andranangoo the magnetic mapping did not extend inland enough to cover the strand later discovered because of small channels inhabited by crocodiles. The anomalies generated were away from the inner margin and not related to HM deposits. A very strong linear anomaly parallel with the coast was drill tested but not related to a mineralized strand. The change in strategy to drilling geomorphologic targets, ("drilling along the scarp"), proved to be immediately successful and showed the deposits to be surface related and amenable to surface discovery. Therefore while there was some success from magnetic mapping, it was easier to apply surface sampling to locate drill targets.
At Lethbridge the response was very good over the main portion of the inner strand with a well shaped anomaly of 5nT directly over the well mineralized RGC drill section from 1994. This is despite the extremely high portions of non magnetic zircon and rutile in the HM suite. Other magnetic anomalies on the coastal plain away from the inner margin deposit proved spurious.

All data are appended (Appendix I).

### 7.2 Aircore Drilling

The following table summarises the air-core drilling carried out since April 2004:

<table>
<thead>
<tr>
<th>Prospect</th>
<th>Hole ID start</th>
<th>Hole ID end</th>
<th>Number of holes</th>
<th>Metres drilled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andranangoo Creek West *</td>
<td>AC001</td>
<td>AC2083</td>
<td>2088</td>
<td>6524</td>
</tr>
<tr>
<td>Lethbridge Bay West</td>
<td>LB001</td>
<td>LB270</td>
<td>270</td>
<td>1203</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td></td>
<td></td>
<td><strong>2358</strong></td>
<td><strong>7727</strong></td>
</tr>
</tbody>
</table>

* includes holes AC094A; AC224A; AC225A; AC245A; AC714A; AC1478A; AC1479A; excludes holes AC1530 and AC1531 (auger holes)

**Table 1: Air core drilling – Tiwi Islands Project**

The drilling and sampling methodology is as follows:

#### Equipment and Personnel

The 2004 and 2005 drilling programs were carried out using a Mantis 75 reverse circulation aircore rig operated by Wallis Drilling of Midvale, WA. The rig is mounted on a modified Toyota 4WD Landcruiser and operated by a 2-man crew comprising a driller and a drill offsider.

The drilling operation is supported by a Toyota Landcruiser 4WD logging truck and a 3-man Matilda crew comprising sample collector, sample panner and geologist/logger. The Matilda crew is responsible for sample collection, panning and sample description.

#### Hole Spacing, Access and Positioning

Holes were drilled along lines spaced 100m to 400m apart, perpendicular to the trend of the target strands, and holes were spaced 5m to 20m apart along each drill line. Both line spacing and drill hole spacing are dependant
on the HM grade estimated by panning.

Access for drill lines was achieved by pushing over light bush with a 4WD Toyota or blade-up clearing with a loader in areas of thicker vegetation. Care was taken to leave all large to medium trees intact with minimal impact on the environment.

Holes were located by GPS and pegged prior to drilling.

Drillholes were surveyed by GHD Pty Ltd (See Section 7.8 Surveying).

Drilling Procedure

Holes were drilled to depths ranging from 3m to 11m with an average depth over the entire program of 5-6m. The recovered sand material was passed through a cyclone prior to sampling.

Sampling Procedure

Samples were collected at one-metre intervals down each hole. At the bottom of each 1m interval the driller held the bit stationary until all sample material had exited the cyclone. Holes were terminated either at basement, usually clay, or at a pre-determined depth.

Samples were collected by the sample snatcher, by holding a 6”x12” calico sample bag under the cyclone until the flow of material ceased. Drill samples averaged 1-2 kg in weight. The remainder of the sample material was collected in large polywoven sacks for later bulk sampling if required.

Logging and Panning Procedure

From each drill sample a small, approximately representative sub-sample was collected by the panner and washed in a panning dish to visually determine the percentage of HM. The percentages of clay and rock were also estimated. Any sample that contained 0.5%HM or more (visually estimated) was sent for analysis. Comparison of estimated and assay HM% shows that the visual estimates were highly reliable as an indicator of grade.

Each drill sample was then examined and described by the geologist/logger. Relevant geological, metallurgical and engineering data, along with the GPS hole coordinates and estimated HM%, were recorded on an A4 logging sheet. Approximately 40 individual bits of information were recorded for each sample.

The completed drill log sheets were faxed to Matilda’s Perth office on a
regular basis, usually daily. Each evening the logger prepared drill sections showing hole depth, strand thickness, basement depth, water table depth and estimated HM%. The drill sections were also faxed to Perth.

**Assaying Procedure**

The drill samples retained for assaying were consigned to Darwin by barge and from there were road freighted to Perth for analysis.

Assaying was carried out by Western Geolabs Pty Ltd of Perth, WA, using the following procedure (**Mineral Sands Method: MS6**):

- Split off approx 100-120g of dry drill sample (weight/record).
- Attrition and deslime via 63um screen.
- Dry and reweigh (+63um)
- Screen off oversize at 1.00mm (weight + discard)
- (Optional) Screen off trash product >500um (discard)
- Static separation with TBE (2.96sg)
- HM Sinks (wash + weigh)
- Bagged for clients
- Report contains: % O.S. (+1mm); % Slimes (-63um); % H.M. in sample

The following is a brief discussion on the air-core drilling:

### 7.2.1 Andranangoo Creek West

A total of 2088 aircore drillholes has defined three economic heavy mineral strands at Andranangoo Creek West. The three strands are known as Southern, Central, and Northern.

Southern zone extends for 5km in an arc west to east along the base of the Tertiary “scarp” from 697500mE to 702500mE. The deposit comprises multiple strands, especially in the western portion, and varies in combined width from 50m width up to 140m.

Central zone lies 200m to 300m north of Southern and extends for approximately 2.4km from 700700mE to 703100mE. It is yet to be closed off to the west. It also comprises multiple bifurcating strands, in places reaching over 200m in total width, of which economic strands total up to 140m on section.

Northern lies approximately 200 to 250m north of Central and extends 1.7km from 701400mE to 703100mE. It also comprises bifurcating strands, and has an average width of 50m.
Resources and Reserves at Andranangoo Creek West are discussed in Section 7.7.

Further scope remains to discover additional small tonnages on strands that still remain “open” along strike. These will be tested in the 2006/2007 year.

Andranangoo Creek West (“ACW”) air core drilling location plans and cross-sections are located in Appendix II. Drill logs and sample results are located in Appendix III.

7.2.2 Lethbridge Bay West

The drilling completed in 2004 defined the Lethbridge Bay West deposit with 172 holes. The 2005 drilling program comprised a further were to further 98 holes and defined the deposit to the west of the 2004 drilling and infill drilled selected parts of the high grade zones to 50m line spacing.

Resources and Reserves at Lethbridge Bay West are discussed in Section 7.7.

Lethbridge Bay West (“LBW”) air core drilling location plan and sections are located in Appendix IV. Drill logs and sample results are located in Appendix V.

7.3 Modal Analyses

Resulting from air core drilling carried out in 2004 the following modal analyses were completed on composite samples:

- **Andranangoo Creek West (Southern zone)**
  - AND699800E
  - AND700200E
  - AND700400E
  - AND700800E
  - AND701400E
  - AND701800E
  - AND702200E

- **Lethbridge Bay West**
  - LB717930E
  - LB718200E
  - LB718400E
  - LB718500E
  - LB718600E
A further 18 modal analyses were completed on composite samples from the 2005 drilling at Andranangoo Creek West as follows:

- **Andranangoo Creek West**
  - ACS1 – Southern zone 701100E
  - ACS2 – Southern zone 702400E
  - ACC3 – Central zone 701100E
  - ACC4 – Central zone 701500E
  - ACC5 – Central zone 701900E
  - ACC6 – Central zone 702200E
  - ACC7 – Central zone 702600E
  - ACN8 – Northern zone 701600E
  - ACN9 – Northern zone 701900E
  - ACN10 – Northern zone 702200E
  - ACN11 – Northern zone 702900E
  - ACW12 – Western zone 697900E-697500E
  - ACW13 – Western zone 698800E
  - ACW14 – Western zone 699200E
  - ACS15 – Southern zone 700250E
  - ACS16 – Southern zone 700350E
  - ACS17 – Southern zone 700400E
  - ACS18 – Southern zone 700450E

No modal analyses were carried out on the 2005 Lethbridge Bay West drill samples.

Samples sent for modal analyses were prepared in the following manner:

- Samples from individual drill sections were selected by Matilda Minerals’ staff.
- Western GeoLabs composited the TBE sinks for those samples.
- The resulting composite sample was split with one sample being sent to Diamantina Laboratories in Perth or modal analyses and the other sample sent to Ultra Trace Laboratories in Perth for XRF analyses.

Full details of the modal analyses are located in Appendix VI.

Details of the composite samples are located in Appendix VI.

### 7.4 XRF analyses

XRF analyses have been carried out on composite samples by Ultra Trace Laboratories, Perth as follows:
Sample Preparation
The samples have been sorted and dried. The whole sample has been
pulverised in a vibrating pulveriser equipped with a Tungsten Carbide bowl. A
barren flush has been inserted between each sample.

Analytical Methods
The samples have been cast using a 12:22 flux to form a glass bead which
has been analysed by XRF.

TiO$_2$, Fe$_2$O$_3$, Cr$_2$O$_3$, ZrO$_2$, ZrO$_2$+HfO$_2$, U, and Th have been determined by
X-Ray Fluorescence Spectrometry.

The XRF analysis determines ZrO$_2$. To convert ZrO$_2$ to zircon a conversion
factor of 1.488 is used. E.g. ZrO$_2$ = 34.4%; Zircon = 34.4 x 1.488 = 51.18%.

Details of XRF results are attached in Appendix VII.

7.5 Feasibility Study - 2005

In early March 2005, Matilda released the results of a Feasibility Study on the
mining and processing of all its resources on the Tiwi islands. Key features
relating to the deposits within EL 23862 are described below:

The Tiwi Islands Minerals Sands project will produce premium grade mineral
sands products with a high percentage of zircon.

Production will be sold as a mixed concentrate to Astron Ltd thereby reducing
capital substantially.

Based on current Reserves and product prices the Project will initially generate
free cash flow of at least $21M over a minimum of three years.

The Project is viable in respect to mineral inventory, production volumes, mineral
recovery, product quality, marketability of products plus operating and capital
costs.

Flora, fauna, Aboriginal and European Heritage and Hydrogeological surveys have
been recently completed with positive outcomes.
The Project yields remarkable return on exploration activity and expenditure.

Subject to the necessary approvals production is planned to commence in mid 2005.

The Project Feasibility Study ("FS") has adopted conventional minerals sands mining and operational strategies with conservative estimates of recoveries and ore densities. The development will utilise a front end loader operating in a dry environment loading a feeder to a conventional wet spiral concentrator, then trucking concentrate to the constructed Port Melville deep water port for shipment direct to China. Matilda has an offtake Agreement with Astron Limited to take all production from the Project.

Based on this strategy, the FS demonstrates that the Project has the capacity to support a mining and primary concentration operation producing 35,000 tonnes per annum of heavy mineral concentrate ("HMC") for at least 3 years. On average this will produce 13,000 t zircon, 9,000 t rutile/leucoxene and 11,000 t ilmenite per annum. The first year of operations will produce 14,000 t zircon, 8,000 t rutile/leucoxene and 2,000 t ilmenite.

The Reserves are all surface or near surface deposits with little or no overburden and are above the water table. The mineralisation is coarse, low in slime (clay) and is free flowing sand.

The financial prospects are outstanding with low risk operations and robust returns.

Recovered mineral value at current product prices is in excess of $37M.

Operational cashflow (EBIT) is strong at $21M with $6.7M the first year.

Capital cost estimate for startup is based on utilising available used equipment and amounts to$2.5M.

Mine life 3 years
Ore Reserve 2,046,000 tonnes
Ore Grade 6.0%
Cut-off grade 2.0%
Cost/t ore $7.34
Cost/t HMC $129
Margin/t HMC $194

Results of bulk pilot plant testwork were very encouraging in respect of product grade and recovery.

Premium quality zircon, rutile and leucoxene products were produced with good recoveries from HMC. Ilmenite quality was reasonable.
All products had low U and Th with expected low radiation and were coarse grained.

The project mining and processing is undertaken in remote areas of the Tiwi Islands and a haul road will be constructed for part of the way to the shipping terminal. However, a substantial distance to be hauled will be over an already constructed haul road and shipping will be undertaken from a deep water port which was recently upgraded to service the developing plantation industry on the central parts of the Tiwi Islands.

Resources and Reserves

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<tr>
<th>Deposit</th>
<th>Category</th>
<th>Cut-off</th>
<th>Tonnes</th>
<th>% HM</th>
<th>% VHM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andranangoo</td>
<td>Measured</td>
<td>2%</td>
<td>773,000</td>
<td>4.39%</td>
<td>83.80%</td>
</tr>
<tr>
<td>Andranangoo</td>
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<td>2%</td>
<td>300,000</td>
<td>3%</td>
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<tr>
<td>Lethbridge</td>
<td>Measured</td>
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<td>256,000</td>
<td>7.28%</td>
<td>78.20%</td>
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<td>Inferred</td>
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<td>30,000</td>
<td>4%</td>
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<tr>
<td>Total</td>
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<td>2%</td>
<td>1,029,000</td>
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<td>Total</td>
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Reserves

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<th>% HM</th>
<th>% VHM</th>
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<td>Lethbridge</td>
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<td>7.28%</td>
<td>78.20%</td>
</tr>
<tr>
<td>Total</td>
<td>Proven</td>
<td>2%</td>
<td>1,029,000</td>
<td>5.10%</td>
<td>82.20%</td>
</tr>
</tbody>
</table>

Contained VHM in Reserves

<table>
<thead>
<tr>
<th>Deposit</th>
<th>Zircon</th>
<th>Rutile</th>
<th>Leucoxene</th>
<th>Ilmenite</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andranangoo</td>
<td>17,407</td>
<td>5,804</td>
<td>4,292</td>
<td>2,433</td>
<td>29,937</td>
</tr>
<tr>
<td>Lethbridge</td>
<td>8,649</td>
<td>4,571</td>
<td>2,777</td>
<td>709</td>
<td>16,706</td>
</tr>
<tr>
<td>Total</td>
<td>26,056</td>
<td>10,375</td>
<td>7,069</td>
<td>3,142</td>
<td>46,643</td>
</tr>
</tbody>
</table>

7.6 Bulk Sampling and Metallurgical Testwork

As part of the Feasibility Study a 1000kg bulk sample was collected from the Lethbridge deposit and dispatched to Ammtec in Perth for metallurgical testing. This sample was collected upon completion of drilling and before the wet season started. No laboratory data were available at the time and access to the site was difficult. Approximately 1000 kilograms was collected from four sites. These locations were selected from the drilling estimates of HM%. Most samples were from the top metre and had considerable higher HM than the average % HM for the deposit. The sample comprised four sub-samples collected from four drilled sections as per the following table.
As 1000 kg was required for metallurgical testing, the samples were combined to form composite sample BSL001-4.

Lethbridge Bulk Sample – BSL001-4 - testwork Results.

The Lethbridge bulk sample was packed in four bags. Each bag was weighed and sampled upon arrival at Ammtec. Each sample was sent for %oversize, % slime, % HM and modal analysis determination. The table below details the % oversize, % slime, % HM and weight of each sample.

<table>
<thead>
<tr>
<th>Label</th>
<th>Gross Wt Rec'd Kg</th>
<th>+2mm Rejects Kg</th>
<th>% Oversize</th>
<th>% Slime -63µm</th>
<th>%HM +63µm</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSL 001</td>
<td>224</td>
<td>1.62</td>
<td>0.72</td>
<td>0.75</td>
<td>6.79</td>
</tr>
<tr>
<td>BSL 002</td>
<td>315</td>
<td>1.22</td>
<td>0.39</td>
<td>0.59</td>
<td>19.01</td>
</tr>
<tr>
<td>BSL 003</td>
<td>193</td>
<td>1.11</td>
<td>0.58</td>
<td>0.86</td>
<td>42.21</td>
</tr>
<tr>
<td>BSL 004</td>
<td>248</td>
<td>1.55</td>
<td>0.63</td>
<td>0.65</td>
<td>45.91</td>
</tr>
<tr>
<td>Total Wt</td>
<td>980</td>
<td>5.5</td>
<td>0.56</td>
<td>0.69</td>
<td>27.59</td>
</tr>
</tbody>
</table>

NB: Most of the oversize was vegetable matter.

Andranangoo bulk sample - 2005

The aims of the testwork were to:

- Determine the mineralogy of the bulk samples;
- Determine the heavy mineral – HM – grade of the bulk samples;
- Test the wet gravity concentration performance of the bulk samples;
- Produce heavy mineral concentrate – HMC – for market assessment;
- Test the dry mill performance of the HMC produced;
- Determine the typical grades and recoveries of the rutile and zircon produced;
**ANDRANANGOO BULK SAMPLE - APRIL 2005**

<table>
<thead>
<tr>
<th>Hole ID</th>
<th>Easting</th>
<th>Northing</th>
<th>Depth</th>
<th>% HM (TBE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC114</td>
<td>699800</td>
<td>8743060</td>
<td>0-1</td>
<td>11.68</td>
</tr>
<tr>
<td>AC118</td>
<td>699800</td>
<td>8743100</td>
<td>0-1</td>
<td>2.7</td>
</tr>
<tr>
<td>AC085</td>
<td>700200</td>
<td>8743140</td>
<td>0-1</td>
<td>4.88</td>
</tr>
<tr>
<td>AC060</td>
<td>700800</td>
<td>8743270</td>
<td>0-1</td>
<td>4.03</td>
</tr>
<tr>
<td>AC021</td>
<td>701400</td>
<td>8743260</td>
<td>0-1</td>
<td>5.44</td>
</tr>
<tr>
<td>AC027</td>
<td>701580</td>
<td>8743200</td>
<td>0-1</td>
<td>3.85</td>
</tr>
<tr>
<td>AC041</td>
<td>701800</td>
<td>8743160</td>
<td>0-1</td>
<td>13.38</td>
</tr>
<tr>
<td>AC043</td>
<td>701800</td>
<td>8743120</td>
<td>0-1</td>
<td>3.43</td>
</tr>
<tr>
<td>AC145</td>
<td>702200</td>
<td>8743010</td>
<td>0-1</td>
<td>4.27</td>
</tr>
<tr>
<td>AC144</td>
<td>702200</td>
<td>8743020</td>
<td>0-1</td>
<td>13.69</td>
</tr>
<tr>
<td>AC148</td>
<td>702185</td>
<td>8742970</td>
<td>0-1</td>
<td>2.28</td>
</tr>
<tr>
<td>AC155</td>
<td>701970</td>
<td>8743100</td>
<td>0-1</td>
<td>2.43</td>
</tr>
<tr>
<td>AC138</td>
<td>701800</td>
<td>8743110</td>
<td>0-1</td>
<td>2.87</td>
</tr>
</tbody>
</table>

Average: **5.76**

---

**Sample preparation and wet gravity concentration flowsheet**

1. 1000kg
2. Combine to Form Working Sample
3. Screen 2mm
4. Spiral Plant
5. CONC. ~55kg
6. Sample & TBE Sep. Modal analysis on HM
7. ph on feed
8. Screen o/s Reject
9. u/s
10. Sample & TBE Sep. ph on tail
11. Dry & Weigh Sample & TBE Sep. Modal analysis on HM
TRICAL M&M SERVICES

LABORATORY DRY MILL FLOWSHEET

Mineral Characterization Flowsheet
7.7 Ore Reserve/Resource estimation

In October 2005 a revised Resource and Reserve estimate was completed for the Andranangoo Creek West, and Lethbridge Bay West deposits.

The estimate used the latest exploration data as at the end of September 2005 and a cut-off of 1% HM. This was reduced from 2% in the previous estimate and is due to the increase in commodity prices over the past year and an improved mining method being adopted.

The results of the study are as follows:

<table>
<thead>
<tr>
<th>Deposit</th>
<th>Category</th>
<th>Cut-off</th>
<th>M tonnes</th>
<th>% HM</th>
<th>% VHM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andranangoo</td>
<td>Proven</td>
<td>1%</td>
<td>2.68</td>
<td>3.6</td>
<td>92.8</td>
</tr>
<tr>
<td>Lethbridge</td>
<td>Proven</td>
<td>1%</td>
<td>0.41</td>
<td>5.1</td>
<td>89.6</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td></td>
<td>3.09</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Deposit</th>
<th>Zircon</th>
<th>Rutile</th>
<th>Leucoxene</th>
<th>Ilmenite</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andranangoo</td>
<td>43,000</td>
<td>25,000</td>
<td>14,000</td>
<td>6,000</td>
<td>88,000</td>
</tr>
<tr>
<td>Lethbridge</td>
<td>9,000</td>
<td>6,000</td>
<td>3,000</td>
<td>1,000</td>
<td>19,000</td>
</tr>
<tr>
<td>Totals</td>
<td>52,000</td>
<td>31,000</td>
<td>17,000</td>
<td>7,000</td>
<td>107,000</td>
</tr>
</tbody>
</table>

This information was compiled by Mr Peter Schwann of Peter Schwann & Associates.

Recovered mineral value at current product prices is projected to be in excess of $82million.

7.8 Surveying

All air core drillholes completed at Andranangoo Creek West and at Lethbridge Bay West were surveyed by GHD Pty Ltd.

Criteria for Andranangoo air core drillholes:

- MGA94 Eastings and northings are MGA94 zone 52
- Point levels are with respect to a geoid height (5.19m) derived for control station AC02 using AUSPOS
- Coordination was carried out with RTK GPS with an expected accuracy of +/-2m for E & N
• Levels were surveyed using an automatic level with an expected accuracy of +/- 0.01m for height.

Criteria for Lethbridge air core drillholes:

• MGA94 Eastings and northings are MGA94 zone 52
• Point levels are with respect to a geoid height (3.358m) derived for control station LB01 using AUSPOS
• Coordination was carried out with RTK GPS with an expected accuracy of +/-2m for E & N
• Levels were surveyed using an automatic level with an expected accuracy of +/- 0.01m for height.

8. ENVIRONMENTAL IMPACT STATEMENT

In September 2005, Matilda Minerals was formally advised by the Northern Territory’s Minister for Natural Resources, Environment and Heritage to complete an Environmental Impact Statement (“EIS”) for the Tiwi Islands Mineral Sands Project.

The following is a brief description of the project. Mining is proposed to take place from surface level to an average depth of 2.5m. No pre-stripping is required. Mining will be set back inland for at least 200 metres from the coastal dunes to minimise the impact on the marine environment. Infrastructure is set back 800 metres from the coastal dunes and has low visual impact and is away from storm surges.

Mining will be generally above the water table and requires no dewatering which would impact on surface or groundwater.

The processing plant will use gravity separation techniques. It will not use chemicals or additives and will make use of a high rate of recycled water. The Resource is very low in clay and requires no thickeners or evaporation ponds.

The operation provides significant socio-economic benefits for the Tiwi Islanders including long-term fixed assets, employment and training opportunities and community income.

All studies have been undertaken to fulfil the requirements under the Guidelines for Preparation of an EIS.

URS Australia Pty Ltd prepared the EIS which was lodged in January 2006.
9. REFERENCES


S. Milner 2006 Annual Report for ELs23862, 24328, 24329, 24330, 24331, 24332, 24333, 24334, 24335, and 24336, Tiwi Islands, Northern Territory.