

**COMBINED**

**ANNUAL TECHNICAL REPORT FOR**

**MLN 658, 661 to 671**

**MARANBOY**

**FROM 1/1/2016 to 31/12/2016.**

**GR – 029/09**

<b>Title holder</b>	<b>OUTBACK METALS PTY LTD</b>
<b>Operator (if different from above)</b>	<b>OUTBACK METALS PTY LTD</b>
<b>Titles/Tenement</b>	<b>MLN 658, 661 to 671</b>
<b>Mine/Project Name</b>	<b>MARANBOY</b>
<b>Report Title including type of report and reporting period including date</b>	<b>Combined Annual Technical Report MLN 658, 661 to 671 from 1/1/16 to 31/12/2016.</b>
<b>Corporate Authors</b>	<b>OUTBACK METALS PTY LTD</b>
<b>Company Reference No:</b>	<b>MARANBOY ATR, 2016</b>
<b>Target Commodity or Commodities</b>	<b>TIN , TUNGSTEN + GOLD, SILVER</b>
<b>Date of Report</b>	<b>24<sup>th</sup> February, 2017</b>
<b>Datum/Zone</b>	<b>Zone 53</b>
<b>250 000K mapsheet</b>	<b>Maranboy</b>
<b>100 000K mapsheet</b>	<b>Katherine</b>
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## EXECUTIVE SUMMARY:

Outback Metals worked unsuccessfully to revoke the heritage declaration over the Maranboy Mineral Leases to allow field work and other related studies to resume. 672, 679 & 680 re relinquished on 5<sup>th</sup> February, 2016.

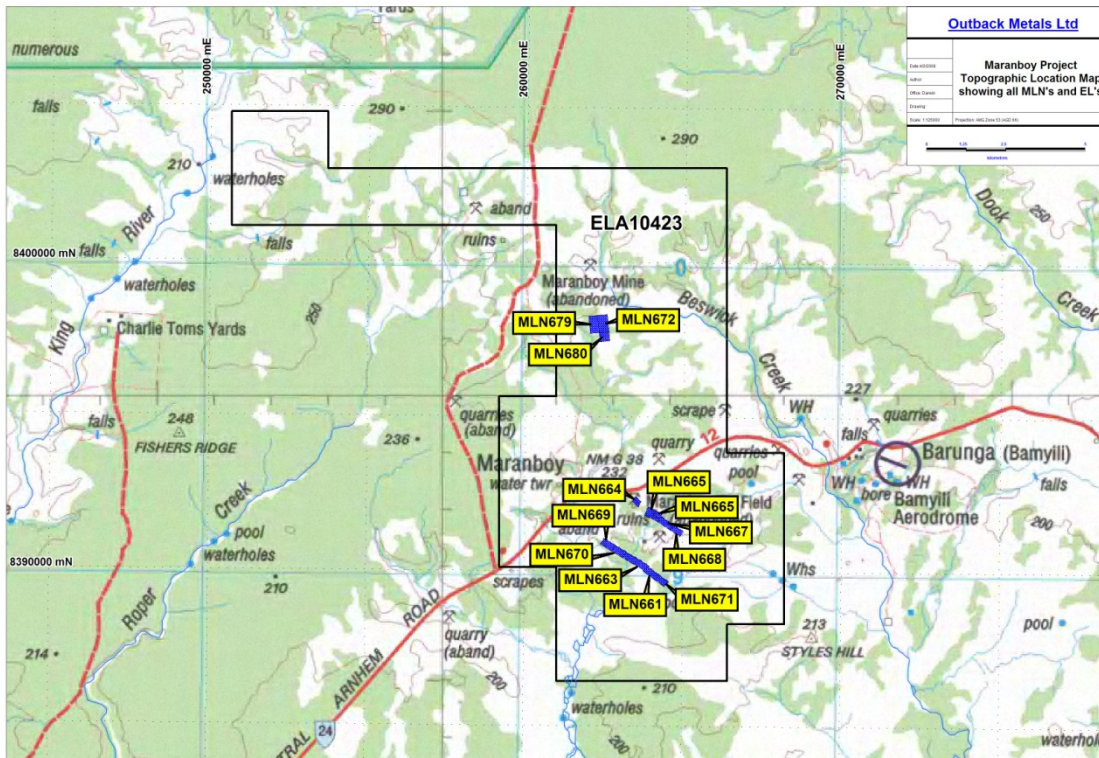
## LOCATION AND TENURE SUMMARY:

MLN'S 658, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 679 & 680 are located approximately 60 kilometres south east of the township of Katherine, on the edge of the Daly River Basin in the Northern Territory.

MLNs 658, 664, 665, 666, 667 and 668 cover the historically known area of Eureka and Eureka West lode. MLNs 661, 662, 663, 669, 670 and 671 are located on the Stannum King lode to the south and follow a NW to SE trend that occurs at the crossing of the Maranboy Creek and is just south of the historical Red Cross lode. MLNs 672, 679 and 680 are located to the north of the Central Arnhem Road near the Beswick Creek.

**Table 1: Tenement Details**

MLN	Hectares	Grant Date	Expiry Date	
658	4.05	28 Mar 1949	31 Dec 2021	
661	8.09	24 Apr 1964	31 Dec 2024	
662	8.09	24 Apr 1964	31 Dec 2024	
663	8.09	24 Apr 1964	31 Dec 2024	
664	4.45	01 Jul 1964	31 Dec 2024	
665	8.90	01 Jul 1964	31 Dec 2024	
666	4.45	01 Jul 1964	31 Dec 2024	
667	8.09	01 Jul 1964	31 Dec 2024	
668	8.09	01 Jul 1964	31 Dec 2024	
669	8.09	01 Jul 1964	31 Dec 2024	
670	8.09	01 Jul 1964	31 Dec 2024	
671	8.09	01 Jul 1964	31 Dec 2024	
672	16.18	31 Aug 1970	5 FEB 2016	Relinquished
679	16.18	12 Apr 1972	5 FEB 2016	Relinquished
680	7.93	12 Apr 1972	5 FEB 2016	Relinquished



**Figure 1: Maranboy Tenements.**

**ACCESSABILITY.**

Maranboy is located about 64 kilometres southeast of Katherine. Access is via the Stuart highway 420km from Darwin. A track also connects the Maranboy tin fields to the Yeuralba mineral field, which is situated about 48 kilometres to the North.

The area is accessed via the Central Arnhem Road, which turns off from the Stuart Highway. Various unsealed 4WD tracks can be used to access the mining leases.

A government battery was dismantled and sold off in 1964 and although some equipment still remains, all is in disrepair.

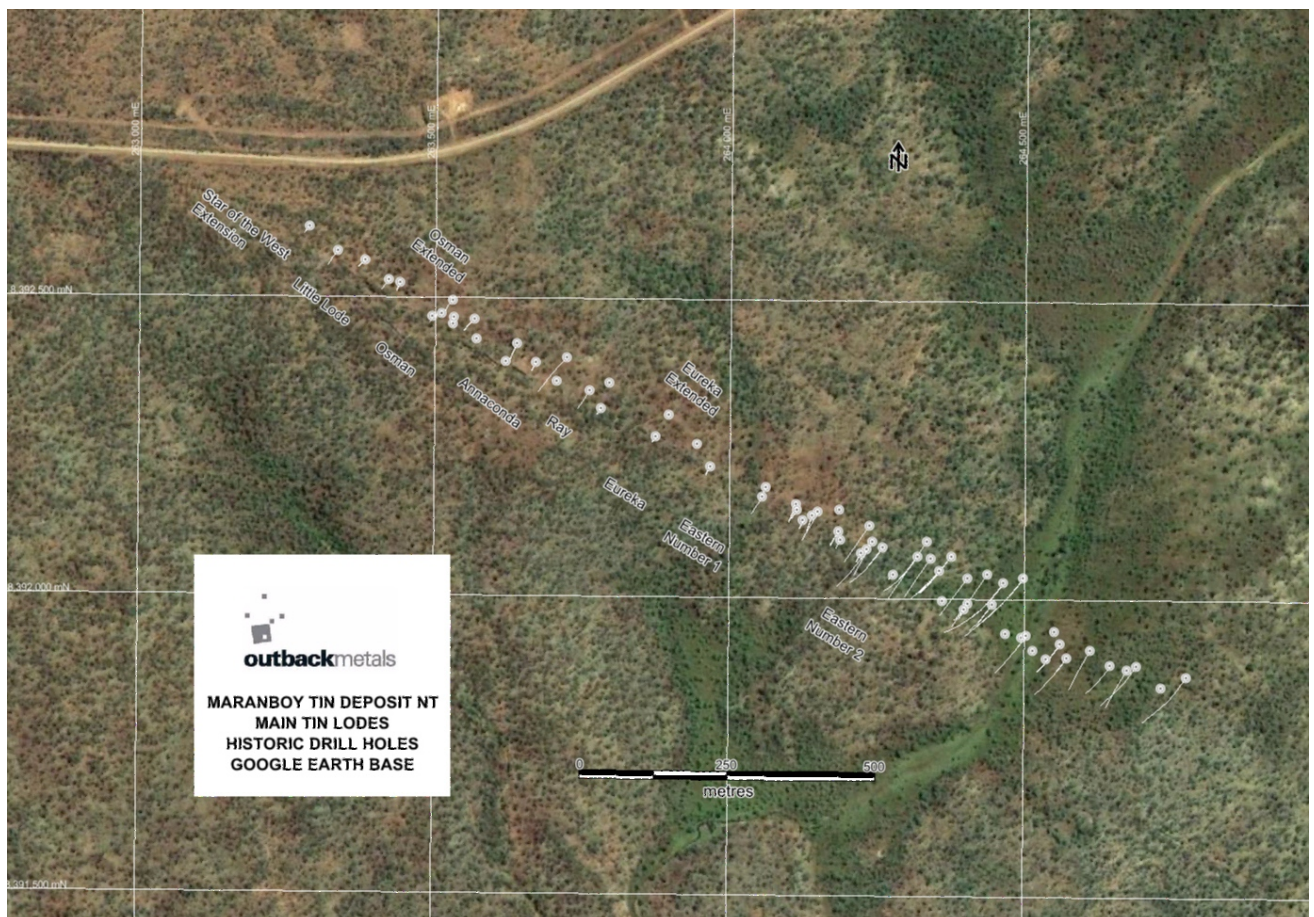
**HISTORY**

The project is considered to have potential to contain both alluvial and hard rock deposits of tin. Discovered in 1901, mining from the Maranboy tin field commenced in 1913.

The local battery commenced crushing in 1916 and was situated in the centre of the field, but closed in 1952. No mining activities have been reported from the area since that time.

Between 1915 and 1952 it is estimated that 49,314 tonnes of ore were mined from these tin fields for an estimated 800.57 tonnes of tin providing an average mined grade of 1.66% (Walpole, 1958).

The Maranboy tin field and the project area are located on an inlier of lower proterozoic sediments surrounded by unmineralised Cambrian and cretaceous sediments (Walpole, 1958) at the margin of the Daly River basin. This inlier has a strike length of about 11.5 kilometres and a width of 3.2 kilometres. The earliest tectonic phase in the area was development of the Pine Creek Orogen, situated about 30 kilometres to the north, during the Lower Proterozoic. Some of these sediments are exposed in the Maranboy area. Granitic intrusion occurred toward the end of the orogenic disturbance. Tin mineralisation is believed to be associated with the late stages of the granite activity. Granitic rocks in the area include adamellite, quartz porphyry and adamellite porphyry. These rocks have been extensively altered mainly to quartz-mica greisen, tourmalite and topazite. The lodes occur as cassiterite (SnO<sub>2</sub>), within quartz-tourmaline fissures which trend southeast.



**Figure 2: Maranboy historic drill hole locations.**

## **PREVIOUS EXPLORATION BY SOFTWOOD PLANTATIONS:**

Work on the Maranboy tenements comprised of site visits with various geologists, including the Managing Director of Malaysian Smelting Corporation and his chief geologist.

Base plans were marked up with reference to the exploration results, showing the location of miscellaneous surface sampling.

A prefeasibility model was set up and several prefeasibility models were run over several years. During this time period the price of tin fell from \$2.4426 USD / Lb to \$1.6783 USD/Lb.

These models were adjusted to compensate for the fluctuating tin price and discussions that were held with various mining contractors. These discussions reviewed the various costs and mining options involved with developing a surface or open cut mine, and the relevant costs of processing and mining.

Several trips were made to Malaysia and China and various meetings held with financiers regarding the provision of development finance for the mine. At the end of 2006 the price of tin had risen to \$5.3978 / Lb and a program to re-establish the possible resources and develop the resource was undertaken.

Attempts were also made to source used plant equipment for the mine and new technologies investigated.

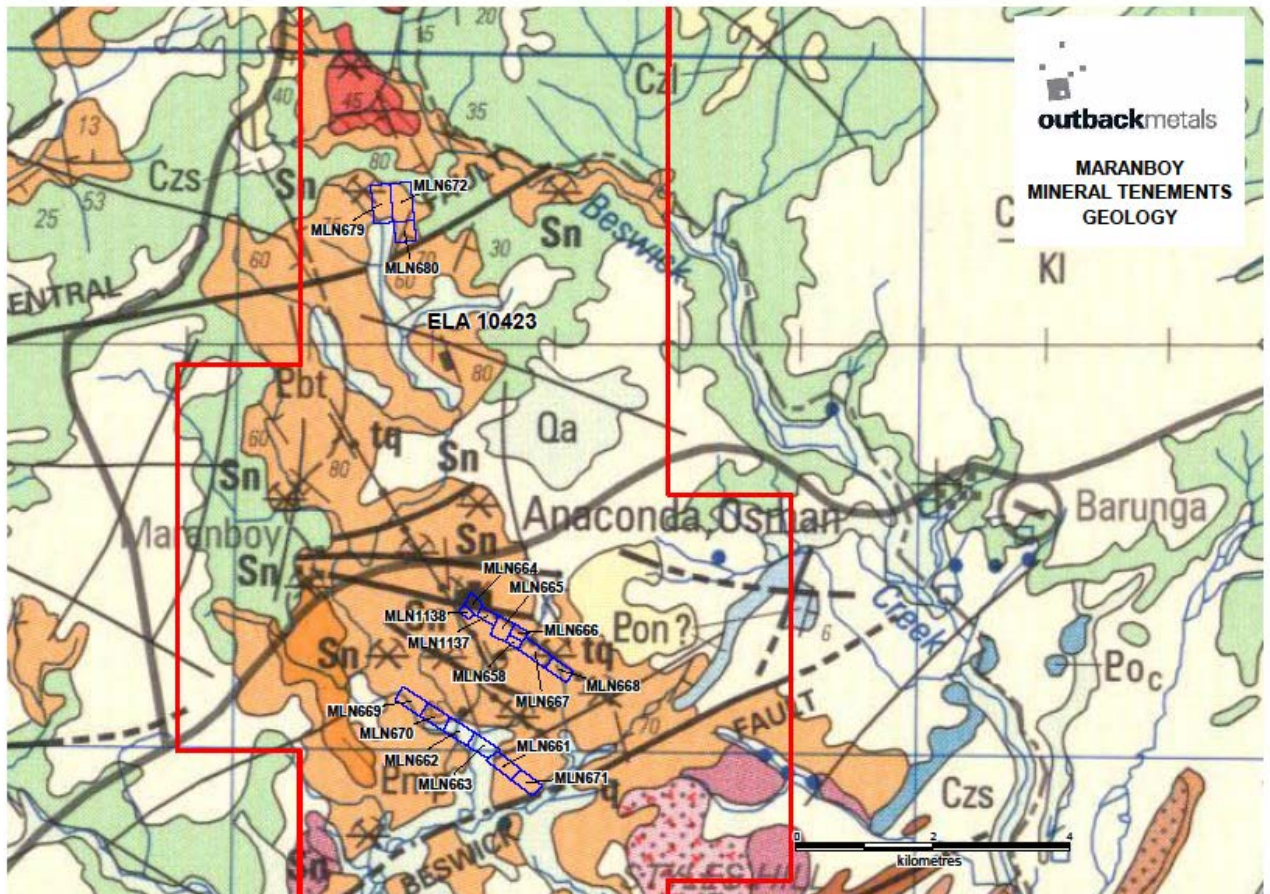
Mapping, sampling and drilling had been previously carried out to establish a possible resource of 172 000 tonnes at 2.18% tin, and additional 550 000 tonnes at 2% tin was also estimated.

## **OUTBACK METALS EXPLORATION ACTIVITIES**

During May of 2007 a proposal was made by 'Outback Metals Ltd' to acquire 'Softwood Plantations Pty Ltd'. In anticipation of this transaction being completed a decision was made to suspend all activities until the transaction was finalised.

A review of the tenements held by Softwood Plantations was also carried out by Hetherington Exploration and Mining Title services. These consultations included an audit of the current resource statements that have been made in recent years.

During 2009/2010, 8 out of the 14 Mineral leases were declared Heritage Areas by the Northern Territory Heritage Branch.



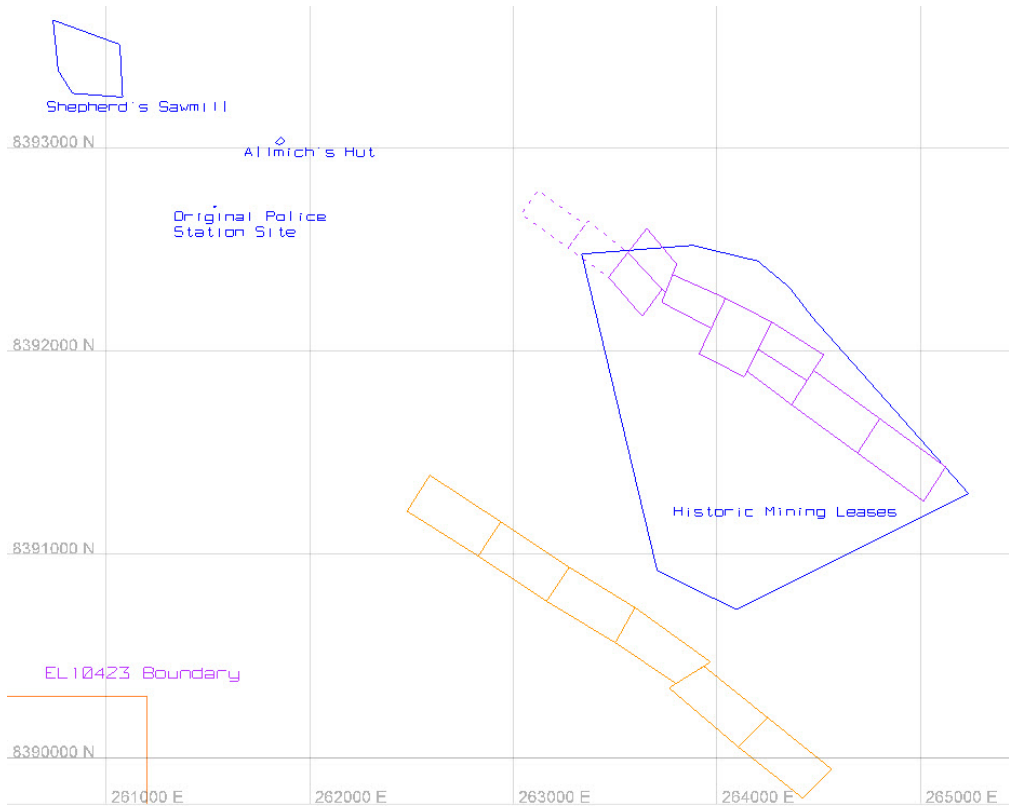
**Figure 3: Maranboy Mineral Leases and surrounding ELA with underlying geology.**

In 2011/2013 OUM obtained Entry Permits from the Northern Land Council (NLC) to pass through Aboriginal Freehold lands and enter on the granted Mining Leases. The field work comprised GPS surveys of drill hole collars and lease pegs, check sampling of the lodes and hanging walls and also representative sampling of unlabelled drill core remaining on site. Three anomalous silver assay results ranging up to 2.32ppm Ag were obtained from core runs chloritised sandstones in old core trays. In addition reconnaissance mapping between the Main and Stannum King Lodes identified several sub-parallel quartz-tourmaline veins reporting geo-chemically anomalous tin values.

During the reporting period a number of field trips were made to the tenement area.

Outback Metals worked unsuccessfully to revoke the heritage declaration over the Maranboy Mineral Leases to warrant field work and other related studies resuming.

Although not all Leases are covered by the Heritage Areas, the project is not economically feasible unless potential exists to mine all tenements.



### Heritage Site Locations vs Existing Leases.