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## High-Grade Heavy Rare Earth Oxide Mineralisation Intersected at Machinga Rare Earth Project, Malawi

### Highlights

- Multiple zones of high-grade heavy rare earth oxide (HREO) mineralisation intersected in first trench at Machinga
- Three separate zones ranging in width from 5-7m each were intersected, with best results of:
  - 7m @ 1.3% TREO (total rare earth oxides)
  - inc. 2m @ 1.5% TREO
- High ratio of HREO:TREO compared to existing REO mines and deposits
- HREO prices continue to rise; individual HREOs are up to 100x the prices for light rare earth oxides (LREO)
- Drilling program planned for May 2010
- Chinese dominance of REO supply continues to concern end-users

### Summary

Globe Metals & Mining is pleased to report the first laboratory chemical results for the initial trenching program, comprising 8 trenches in total, at the Machinga Rare Earth Project in southern Malawi.

The Company recently entered into a joint venture agreement to acquire an 80% interest in the Machinga Rare Earth Project from Resource Star Limited (ASX: RSL), an Australian company.

Results show high grades of heavy rare earth elements such as dysprosium, thulium and ytterbium, which are priced orders of magnitude higher than the more common light rare earths such as cerium and lanthanum. Multiple intercepts, each ranging in width from 5-7m over a broader anomalous zone of 39m, were encountered in the first trench.

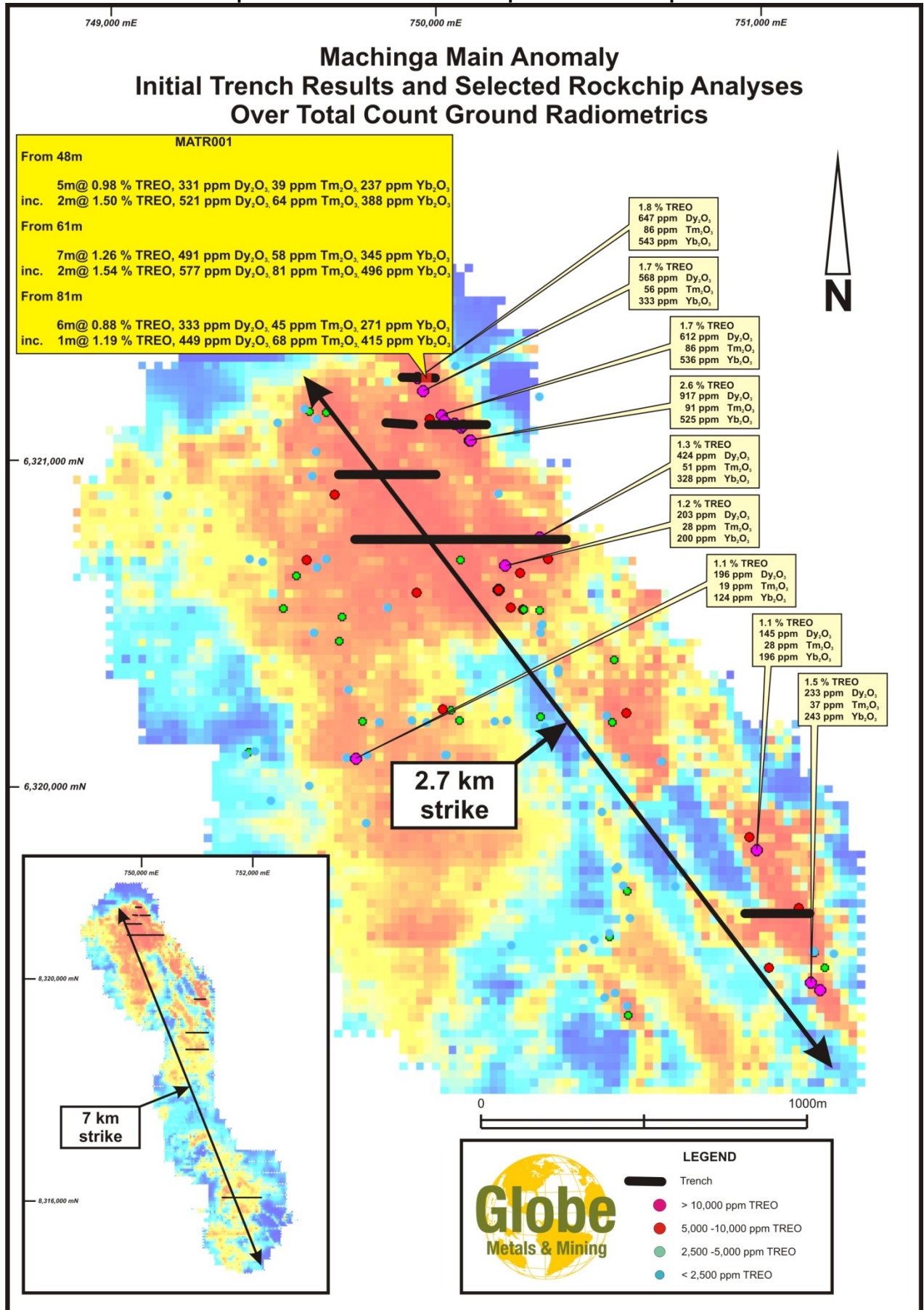
In addition, significant grades of niobium, tantalum and zirconium accompany the rare earth mineralisation, which all add to the value of the project.

Globe's Executive Chairman, Mr Mark Sumich, said "These results demonstrate the significant heavy rare earth potential of the Machinga Rare Earth Project. Significantly, very high grades of dysprosium have been encountered. Japanese motor vehicle manufacturers such as Toyota and Mitsubishi, among others, are currently actively seeking long term, secure primary supplies of this particular element, and we are well positioned to potentially fulfil a portion of this demand."



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Figure 1: Northern Machinga Main Anomaly showing trench MATR001 results, other completed trenches and selected previous rock-chip results



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## Trenching Program and Initial Results

The Company's initial trenching program of 8 trenches is currently well advanced, with 7 of the 8 being completed. The trenches were planned to test REE-Nb-Ta-Zr targets identified by previous mapping, radiometric surveys, rock-chip and soil sampling programs.

The first five trenches, MATR001-005, were designed to test the Machinga North Anomaly, where previously the highest grade rock-chip samples were encountered. These areas are dominated by pegmatite-hosted REE-Nb-Ta-Zr mineralisation. Trenches MATR006-008 were designed to test the anomalous margin of the Malosa Pluton, with trench 6 having intersected broad, but lower tenor radiometric anomalism hosted in the alkaline granitoid pluton, with subordinate pegmatite dykes.

Laboratory geochemical results for trench MATR001, which targeted high-grade REE-Nb-Ta-Zr mineralisation hosted in pegmatite at the northern tip of the Machinga North anomaly, have been received and are listed in Table 1 below. A full list of results from MATR001 is provided in the Appendix.

It is currently unknown whether there is any surficial enrichment or depletion of REE-Nb-Ta-Zr in the trenches at these shallow depths.

**Table 1: Significant REO-Nb-Ta-Zr results from MATR001**

Trench ID	From (m)	To (m)	Width (m)*	TREO (ppm)	HREO (ppm)	Dy <sub>2</sub> O <sub>3</sub> (ppm)	Tm <sub>2</sub> O <sub>3</sub> (ppm)	Yb <sub>2</sub> O <sub>3</sub> (ppm)	Nb <sub>2</sub> O <sub>5</sub> (ppm)	Ta <sub>2</sub> O <sub>5</sub> (ppm)	ZrO <sub>2</sub> (ppm)
MACH001	48	53	5	9,797	3,216	331	39	237	6,042	217	13,029
Incl.	48	50	2	15,038	5,090	521	64	388	9,124	441	18,511
MACH001	61	68	7	12,630	4,645	491	58	345	6,310	354	18,103
Incl.	61	63	2	15,417	5,784	577	81	496	9,351	538	25,029
MACH001	81	87	6	8,845	3,412	333	45	271	4,456	250	16,782
Incl.	81	82	1	11,911	4,763	449	68	415	5,972	347	26,804

\*Estimated true widths are 60-70% of intercept widths. Dysprosium, thulium and ytterbium are heavy rare earth elements and therefore included also in the TREO and HREO totals in the above table, whilst HREO are also included in the TREO total.

TREO = Total Rare Earth Oxides (La through Lu + Y); HREO = more valuable Heavy Rare Earth Oxides (Eu through Lu + Y). The reader is cautioned that these are trench results all from approximately 2m depth. The "From" and "To" columns indicate lateral distances at surface, not depths.

### Comments – Prices, Values and Markets

- High Total Metal Content** – The reader is reminded that niobium and tantalum are not rare earth elements (but are rare metals) and therefore do not contribute to the total rare earth oxide (TREO) content, but are separate and additional valuable elements. Trench MATR001 also shows significant grades of niobium, tantalum and zircon.

For comparison, the average Nb<sub>2</sub>O<sub>5</sub> grade at Globe's Kanyika Niobium Project is 3,000ppm.

- High Heavy Rare Earth Oxide (HREO) Content** – Trench MATR001 intersected multiple zones of high-grade REE-Nb-Ta mineralisation. The mineralisation can be termed high grade because it contains high amounts of dysprosium (Dy<sub>2</sub>O<sub>3</sub>), thulium (Tm<sub>2</sub>O<sub>3</sub>) and ytterbium (Yb<sub>2</sub>O<sub>3</sub>), all of which are HREOs.
- High HREO:TREO Ratio** – The REO mineralisation intersected in trench MATR001 at Machinga has higher heavy rare earth ratio (HREO/TREO) at 32-38% than most of the major operating mines and deposits worldwide. For example, Avalon Rare Metals' Nechalacho Deposit (Canada) has a HREO ratio of 20%, Kvanefjeld (Greenland) has 14%, Mt Weld (Australia) has 3% and Bayan Obo (China) 2%.

Notably, Machinga also has a very high ratio of the high value element dysprosium (Dy), at 3.3-3.7% Dy<sub>2</sub>O<sub>3</sub>:TREO. Most major REE deposits worldwide, with the exception of Nechalacho (average ~2% Dy<sub>2</sub>O<sub>3</sub>:TREO), have much lower dysprosium oxide ratios between 0.1 and 0.5%.

4. **REO Prices** – the significance of the HREO mineralisation at Machinga is made evident by the price differentials between the HREO and LREO prices, set out below in Table 2. The dysprosium oxide spot price has seen significant appreciation in the last 6 months, rising in the order of 50%.

**Table 2: Summary of +99% Purity Individual REO Prices**

Rare Earth Oxide		US\$/kg*
<sup>1</sup> Lanthanum Oxide – La <sub>2</sub> O <sub>3</sub>	light	6.30
<sup>3</sup> Cerium Oxide – CeO <sub>2</sub>	light	5.85
<sup>1</sup> Praseodymium Oxide – Pr <sub>2</sub> O <sub>3</sub>	light	28.60
<sup>1</sup> Neodymium Oxide – Nd <sub>2</sub> O <sub>3</sub>	light	26.70
<sup>1</sup> Samarium Oxide – Sm <sub>2</sub> O <sub>3</sub>	light	3.40
<sup>3</sup> Europium Oxide – Eu <sub>2</sub> O <sub>3</sub>	heavy	524.00
<sup>2</sup> Gadolinium Oxide – Gd <sub>2</sub> O <sub>3</sub>	heavy	7.86
<sup>1</sup> Terbium Oxide – Tb <sub>2</sub> O <sub>3</sub>	heavy	490.00
<b><sup>3</sup>Dysprosium Oxide - Dy<sub>2</sub>O<sub>3</sub></b>	heavy	<b>197.50</b>
<sup>2</sup> Holmium Oxide – Ho <sub>2</sub> O <sub>3</sub>	heavy	25.38
<sup>2</sup> Erbium Oxide – Er <sub>2</sub> O <sub>3</sub>	heavy	25.50
<b><sup>2</sup>Thulium Oxide - Tm<sub>2</sub>O<sub>3</sub></b>	heavy	<b>790.00</b>
<b><sup>2</sup>Ytterbium Oxide – Yb<sub>2</sub>O<sub>3</sub></b>	heavy	<b>155.30</b>
<sup>2</sup> Lutetium Oxide – Lu <sub>2</sub> O <sub>3</sub>	heavy	238.00
<sup>2</sup> Yttrium Oxide – Y <sub>2</sub> O <sub>3</sub>	heavy	10.01

<sup>1</sup>Sourced from Lynas Corporation, February 2010; <sup>2</sup>Sourced from Stans Energy Corporation, December 2009; <sup>3</sup>Sourced from [www.asianmetal.com](http://www.asianmetal.com) – spot prices, April 2010

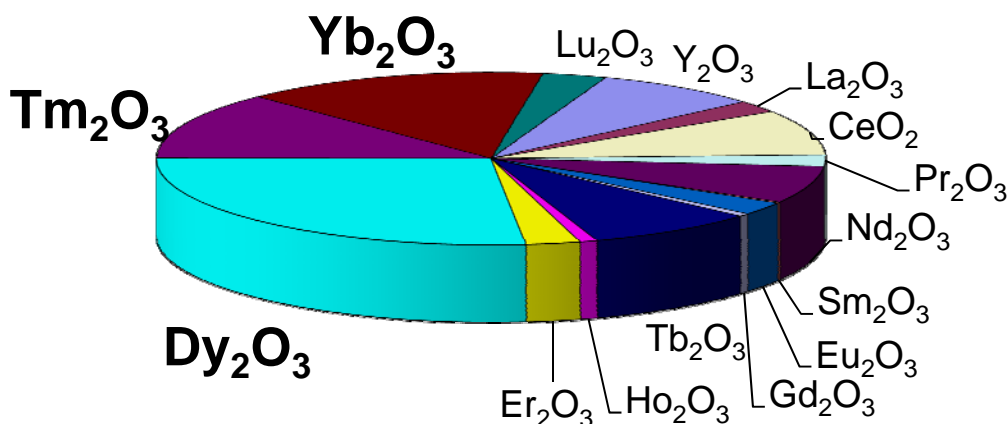
\*Note: Prices quoted are, for comparative reasons, +99% pure, single rare earth oxides. However, it is unlikely the project would produce +99% single REOs, but rather some lower value intermediate concentrate such as REE carbonate or HREO and LREO carbonate concentrates. Primary rare earth operations typically have recoveries in the range of 50% to 75%

5. **Dysprosium Market Size** – The global dysprosium oxide market is projected to be 1,600 tonnes in 2010. This is comparable to the global tantalum oxide market in terms of volume (2,400 tonnes, sold in both concentrate and oxide form) and value (approximately equal).
6. **End-User Demand** – JOGMEC (Japan Oil, Gas and Metals National Corporation) recently reconfirmed, for example, at a rare earth conference in Perth, Australia that securing rare earths deposits is a major priority for the Japanese government, and that diversifying supply of rare earths is an “urgent matter”, away from Chinese suppliers.

China controls around 95% of rare earth oxide production, and talk last year that the economic giant was considering restricting exports sparked concern in other manufacturing economies, as rare earth metals are vital to the production of many high-tech products – including hybrid vehicles, mobile phones, computers, television and even smart missiles.

JOGMEC has four exploration projects currently underway, and has advised that similar deals are likely to continue, as Japanese authorities continue to seek security of supply for rare earths. JOGMEC is primarily exploration focused, and would likely hand over projects to commercial partners for further development as they approach the feasibility stage.

Figure 2: Trench MATR001: 7m Intercept – % Value by Individual REO as a ratio of TREO



### About Resource Star Limited

Resource Star Ltd is a publicly-listed Australian company (ASX: RSL) that has a portfolio of interests in uranium and uranium-associated exploration assets in the Northern Territory, Western Australia, Tasmania and Malawi.

The Company's main projects are the 100%-owned Edith River Uranium Project in the Northern Territory, and joint ventures with Globe Metals & Mining on the Machinga Rare Earths Project, and the Livingstonia Uranium Project, subject to due diligence, both in Malawi.

Resource Star recently issued a Prospectus and completed a Public Share Offer in conjunction with Allegra Capital, to allow the Company to comply with Chapters 1 and 2 of the ASX Listing Rules, and the Company relisted in February 2010.

### About Globe Metals & Mining Limited

Globe Metals & Mining is an African-focused resource company. Its main focus is the multi-commodity (niobium, uranium, tantalum and zircon) Kanyika Niobium Project in central Malawi. A Bankable Feasibility Study was commissioned in August 2009 and production is planned to commence in 2013 at a rate of 3,000tpa niobium metal, principally in the form of ferro-niobium. Mine life will be in excess of 20 years.

In August 2009 Globe announced that Thuthuka Group Limited (Thuthuka), a South African company, entered into a formal joint venture agreement to invest US\$10.6 million into the Kanyika Niobium Project to earn a 25% interest in the Project (as opposed to equity in the ASX-listed parent company). The US\$10.6 million investment by Thuthuka will fund ~85% of the estimated cost of the bankable feasibility study into the Project.

Globe is earning up to 80% interest in the Machinga Rare Earth Project in southern Malawi from Resource Star Limited (ASX: RSL). The Company has also commenced exploration work on the Mount Muambe Fluorite Project in Mozambique, in which it can earn up to a 90% interest from Mozambican company Bala Ussokoti. Globe manages its projects from its regional exploration office in Lilongwe, the capital of Malawi. The Company has been listed on the ASX since December 2005 (ASX: GBE), and has its corporate head office in Perth, Australia.

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**Competent Person:** *The contents of this report relating to geology and exploration results are based on information compiled by Dr. Julian Stephens, Member of the Australian Institute of Geoscientists and Executive Director - Exploration for Globe Metals & Mining. Dr Stephens has sufficient experience related to the activity being undertaken to qualify as a "Competent Person", as defined in the 2004 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves and consents to the inclusion in this report of the matters compiled by him in the form and context in which they appear.*

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