SIGNIFICANTLY IMPROVED HEAVY RARE EARTH RECOVERY FROM STROMBERG PROSPECT

TUC Resources is very pleased to report recoveries of up to 85% from the latest leach tests on Heavy Rare Earth (HREE\*\*) rich clays from the Stromberg Prospect. This is a 10% improvement on initial test work.

#### **Highlights**

Positive results have again been gained from metallurgical and mineralogical test work on material from TUC's Stromberg HREE Prospect:-

- ✓ Excitingly, the latest results from metallurgical test work have increased Total Rare Earth (TREE) recoveries to 85% using a multi-stage reagent process. This is a 10% improvement from an initial TREE recovery figure of 77% reported in TUC's ASX Announcement dated 5 March 2012.
- ✓ Promisingly, work indicates that recovery from lower grade material is comparable to higher grade recoveries, with a 0.2% to 0.4% Total Rare Earth Oxide (TREO\*) composite giving a 77% recovery of TREE.
- Leaching of the HREE's into solution potentially results in a more direct processing route to a REE intermediate/carbonate material, which will allow TUC to generate more competitively valued product, when compared to other concentration methods.
- ✓ Xenotime is the dominant rare earth mineral at Stromberg. It is known for its excellent recovery characteristics and is in demand from the global rare earth processing industry. A simple processing method may assist the Stromberg HREE Project in more rapidly producing a saleable product/ concentrate when compared to other REE projects.



Figure 1 - Scanning Electron Microscope (SEM) image of HREE bearing Xenotime agglomeration associated with clay (kaolin and halloysite). The photo illustrates how the xenotime is not within the clay mineral. This free physical state and the fine nature should make the material more amenable to leaching.

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# ASX Code: TUC

## ASX Announcement

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To: Manager Announcements Companies Announcements Office Australian Stock Exchange Limited 10th Floor, 20 Bond Street SYDNEY NSW 2000

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#### TUC Resources Ltd Significantly Improved Heavy Rare Earth Recovery From Stromberg Prospect

### Metallurgical Information

Two composite samples have been tested using a multi-stage leach process involving initial caustic wash followed by acid leach at a range of concentrations. Up to 85% TREE recovery was achieved using leaching by sulphuric acid (one part acid to two parts water) after an initial caustic wash using sodium hydroxide. Promisingly, work indicates that recovery from lower grade material is comparable to higher grade, with a 0.2% to 0.4% Total Rare Earth (TREO\*) composite giving an 77% recovery of TREE. It appears from work that the caustic wash improves the amenability of the mineralised material to the leach process.

Leaching of the HREE directly into solution can result in a more direct processing route to an HREE intermediate/ carbonate material, which would allow TUC to generate more competitively valued product, when compared to other concentration methods.

The leach tests also extracted up to 93% of uranium mineralisation, possibly creating a secondary revenue stream for the project, whilst simultaneously serving to boost marketability and exportability of any future HREE product. Furthermore, all of the deleterious element Thorium was left behind in the residues, significantly upgrading the guality/marketability of any final product.

It should be noted, that although these results are impressive, test work is still at an early stage. To date 70% recovery of yttrium has been achieved with a respectable acid consumption of 371kg/t. Efforts are now being made to improve the efficiency of the process including; reducing reagent consumption by testing variation in leach times, acid to mineralised material mixes, and leach temperature.

\*Total Rare Earth Oxides (TREO's) have been calculated by addition of common oxide values for Ce, Dy, Er, Eu, Gd, Ho, La, Lu, Nd, Pr, Sm, Tb, Tm, Yb, Y. REO values have been calculated from rare earth element (REE) ppm grades after analysis by lithium-metaborate fusion and ICPMS, where possible, or by HF/multi acid digest and ICPMS. The total REO is calculated as the sum of all REE as REE<sub>2</sub>O<sub>3</sub>, with the exception of Ce, Pr and Tb; which are calculated as CeO<sub>2</sub>, Pr<sub>6</sub>O<sub>11</sub>, and Tb<sub>4</sub>O<sub>7</sub> respectively, in accordance with geochemical conventions.

\*\*Heavy Rare Earth Elements HREE's = Dy, Er, Ho, Lu, Tb, Tm, Yb, Y; Medium Rare Earth Elements MREE's = Gd, Eu, Sm; Light Rare Earths LREE's Ce, La, Pr, Nd.

#### For further information please contact:

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TUC Resources Ltd holds approximately 18,000km<sup>2</sup> of prospective land package across 44 (33 under application) tenements making it one of the biggest ground holders in the Northern Territory of Australia. The business holds eight consolidated project areas across several key geological and metallogenic terrains, affording it some opportunity to diversify exploration into many commodities.

The information in this report relates to exploration results compiled by Ian Bamborough, who is a Member of The Australian Institute of Geoscientists. Ian Bamborough is a fulltime employee of TUC Resources Ltd. Ian Bamborough has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking 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'. Ian Bamborough consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

