# EXPLORATION AND METALLURGY UPDATE

**TUC Resources Ltd (ASX:TUC) is pleased to provide its Exploration and Metallurgy Report for February 2012.**

## Highlights

### Stromberg Heavy Rare (HREE) Prospect — HREE in Clay

- New metallurgical test results have identified that part of the heavy rare earth content at Stromberg is associated with clay material. Geological similarities to other rare earth (REE) clay deposits have been noted. Clay deposits can be major low cost producers of rare earths. Metallurgical work is ongoing to assess mineral processing flow sheet options.
- The geological processes leading to the formation of such clay deposits tend to be widespread and this significantly increases the district exploration potential for this style of HREE mineralisation around Stromberg.
- Other test results have continued to identify the presence of Xenotime (highly sought after and easily processed heavy rare earth mineral) in all samples.

### REE Industry Strategic Partner Strategy

- TUC's Stromberg Prospect continues to attract industry attention due to its HREE metal mix (85% HREE), potentially simple flow sheet options and exploration upside. We are in discussions with various industry players in relation to a possible strategic partnership. Our strong desire is for a cornerstone investor that can support us financially, technically and in product marketing.

## Significant Events

### Land Access - Tenements surrounding Stromberg

- A planning meeting has been held with the Northern Land Council with respect to Traditional Aboriginal Landowner engagement in HREE prospective tenements surrounding Stromberg. A strategy for engagement was laid out for the 2012 and 2013 calendar years. Successful land access negotiations could provide access to a number of additional HREE exploration targets in the district.

### Drill Planning - Stromberg HREEs

- Planning work is underway for metallurgical and resource definition drilling at the Stromberg HREE Prospect. Progress has been made this month with the scheduling of a detailed airborne laser based topographic survey. This is considered an essential component of a successful drilling program in 2012.

### Quantum Rare Earth Prospect Update

- Geological modelling work has progressed at Quantum. Modelling is showing potential for a large amount of REE material and highlighting additional exploration targets. TUC are awaiting a final metallurgical report and will consider this information in conjunction with an assessment of exploration up-side. Further work will be considered on completion of this review.

TUC RESOURCES

**ASX Code: TUC**

**ASX Announcement**

**27 February 2012**

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## Stromberg Heavy Rare Earth Prospect

Daly Project, EL25222

### Recent Metallurgical and Mineralogical Test Results

Recent metallurgical work on samples representative of the whole of the Stromberg Prospect at a variety of grades has included the screening of four bulk samples at fractions between 45µm and 2mm. Screening was followed by heavy liquid separation by centrifuge of the finer fractions to review mineralogy.

Analysis of the screened fractions indicates that significant levels of HREE are associated with kaolin (very fine clay mineral) and goethite (iron hydroxide). More than 70% of the rare earths are associated with the less than 45µm fraction (most likely clay material).

Mineralogical analysis has identified some xenotime (HREE or yttrium phosphate) in all samples and size fractions examined (see Photos 1 and 2).

Metallurgical test work is ongoing to assess whether the Stromberg mineralised material is amenable to a simple chemical leach process either as a step or entire treatment towards a concentrate product. In conjunction with this leach test work, nanometre scale scanning electronic microscopy is also being undertaken to visually determine the nature of the HREE mineralisation associated with the clays.

The above work, coupled with geological understanding is showing mineralogical and physical similarities to some clay REE deposits. Clay REE deposits are known to be major low cost producers of rare earths. They are also known for their simple leach or ion exchange processing options which can extract up to 90% of the rare earths and produce higher grade concentrates.

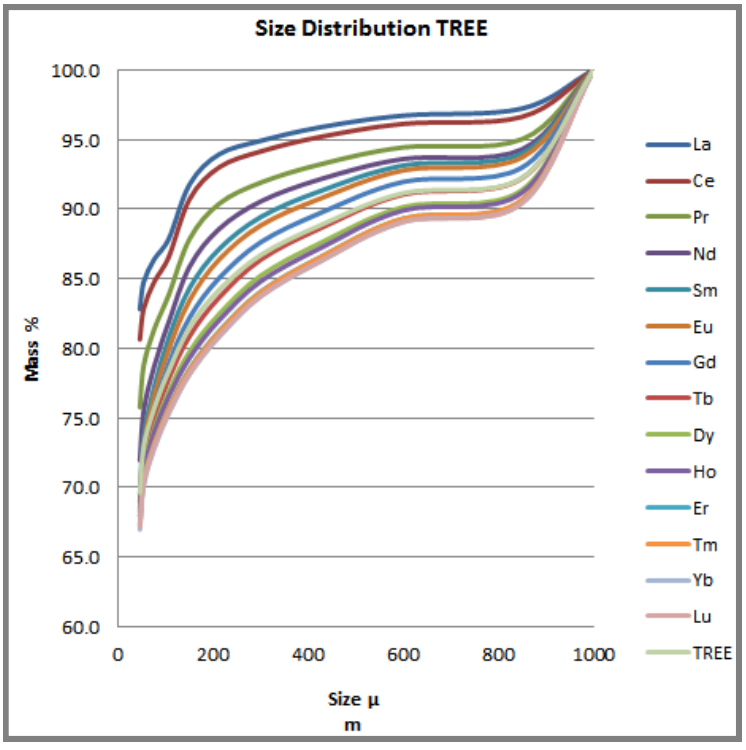
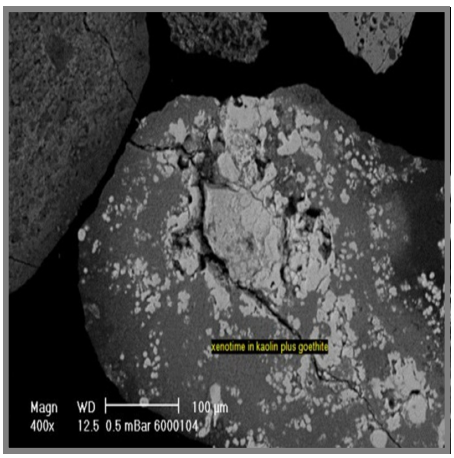
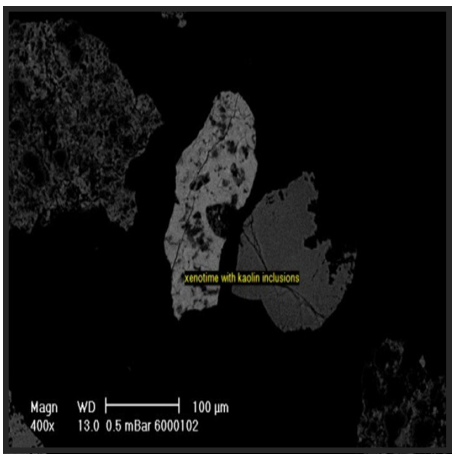



*Figure 1; Screening results sample 6000102, Stromberg Prospect. Note that 95% of the contained HREE is within a particle size of approximately 200µm.*




*Photos 1 - 2; Scanning Electron Microscope images of HREE mineral interaction with clay and iron hydroxide (left) and discrete Xenotime (right).*

## Evolution of Geological and Metallurgical Model

The geological processes leading to the formation of clay REE deposits tend to be due to widespread chemical weathering of rare earth source rocks. This process, illustrated in Figure 2, is highly evident in geological logging at Stromberg.

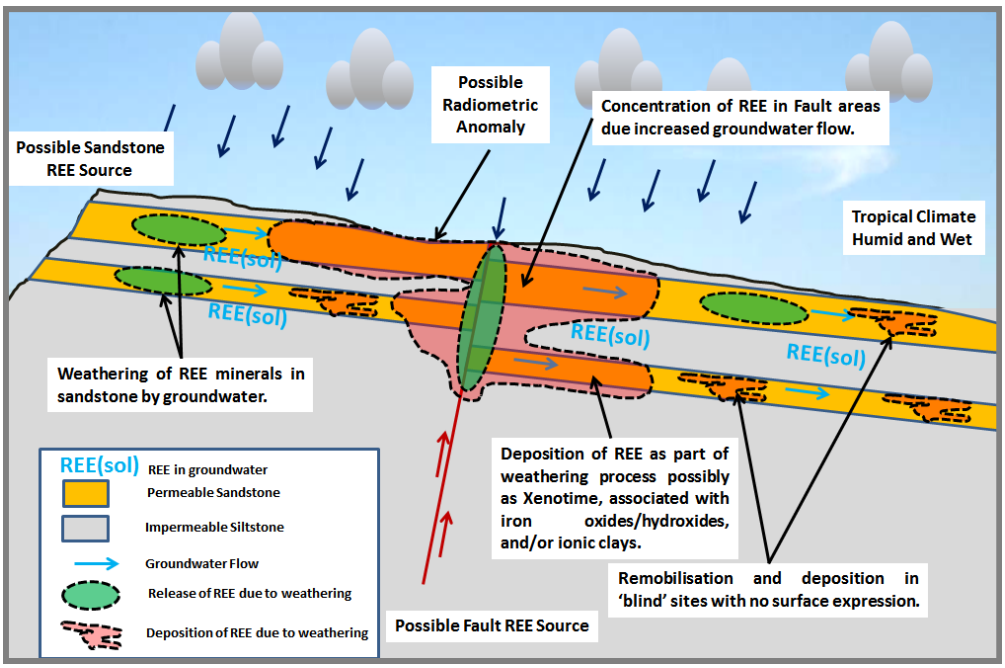



*Figure 2; Schematic cross section through Stromberg Prospect to show possible weathering process leading to TREE mineralisation. Shown on the figure are; basic geology; possible sources of HREE to be weathered (e.g. immature sediments derived from granites or tuffs, or fault fluids; release, movement and deposition of HREE through weathering and groundwater; and formation of 'blind' deposits - no scale.*

At a broader scale, TUC have interpreted a number of repetitions of host rocks with substantial strike length across the Stromberg area. As the entire area has been subjected to the process of chemical weathering this interpretation makes the size of any HREE clay or other potential very serious. Figure 3 shows this district potential.

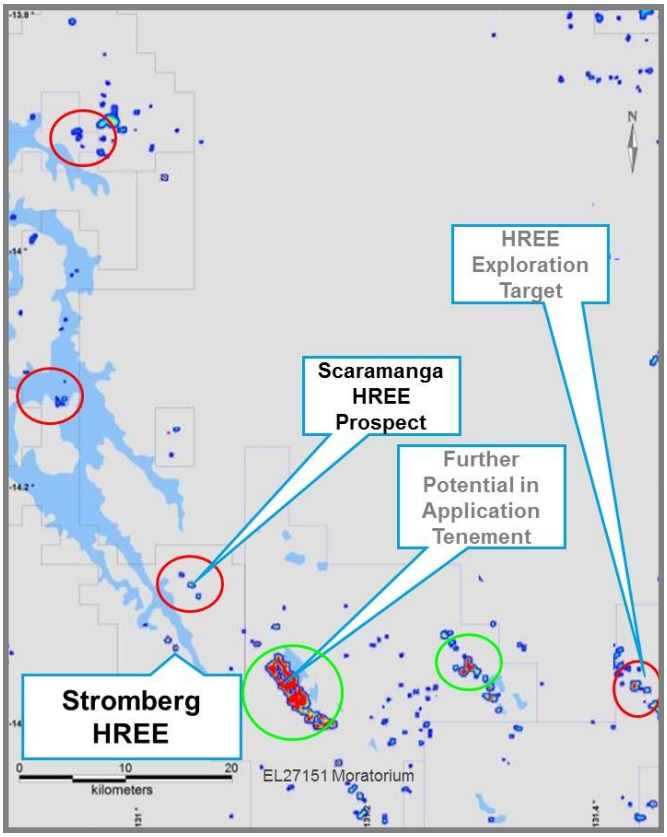



*Figure 3; District exploration potential outlined by radiometric signatures and simplified geology*

### Stromberg 3D Interpretation and Other Activity

Geological modelling of the Stromberg Prospect is currently underway. The work is being used to plan the next rounds of drilling which are likely to include RC and diamond drilling for metallurgical, resource and geotechnical purposes.

To better design drill programs, and for mapping, planning and calculation purposes a highly accurate light detection and ranging (LiDAR) survey is being planned for Stromberg and it's surroundings.

TUC plans to drill the Stromberg Prospect towards resource in 2012.

## Quantum Rare Earth Prospect

**Pine Creek Project, EL25229**

### Ongoing 3D Interpretation and Other Activity

Geological modelling continues on the Quantum Prospect (Figure 4). Work is providing a 3D geological model of mineralisation to aid in an initial assessment of size and grade potential and to help guide exploration targeting work.

TUC are awaiting a final metallurgical report and will consider this information in conjunction with an assessment of exploration potential. Further work will be considered on completion of this review.

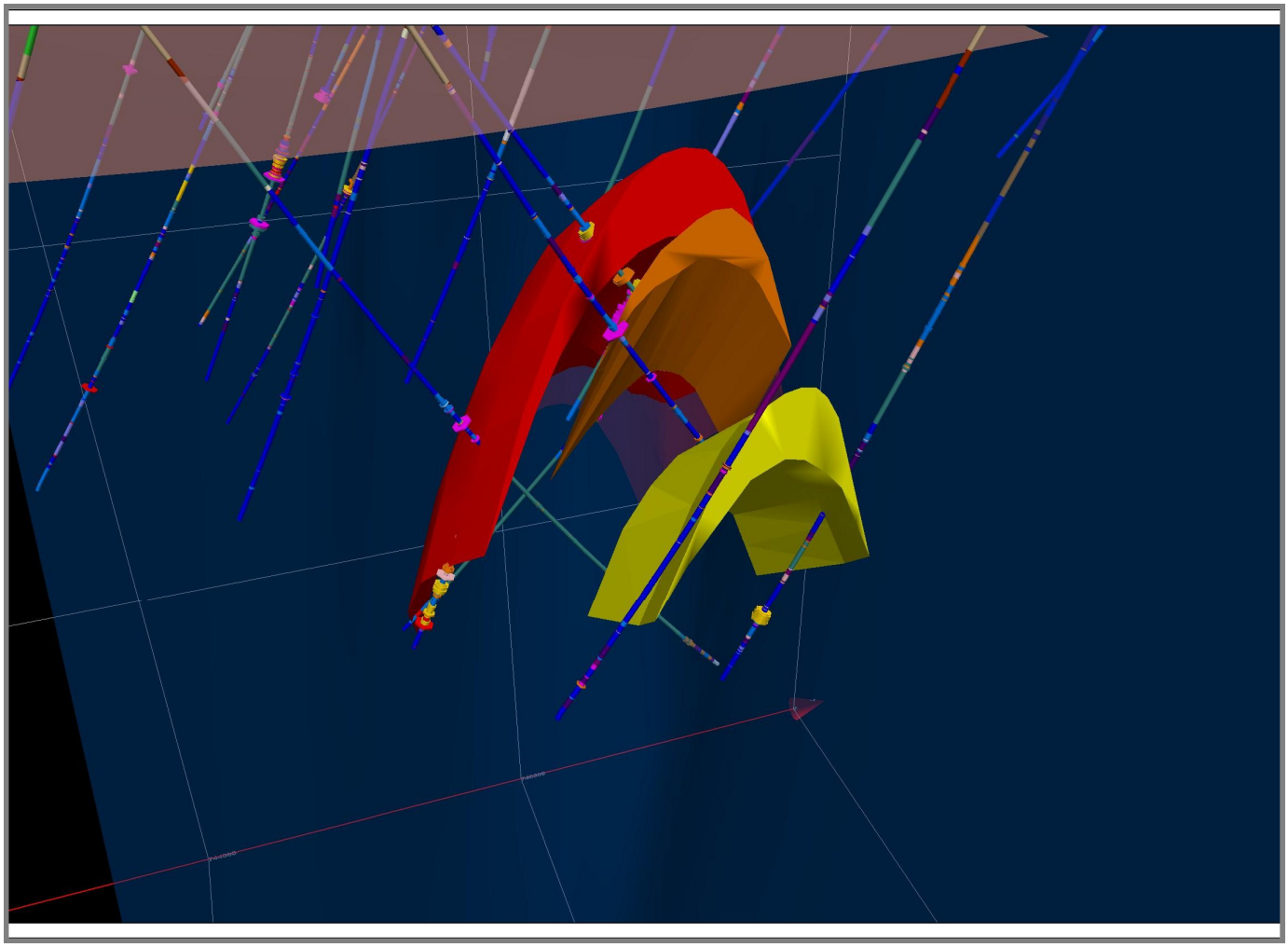


*Figure 4; Quantum 3D modelling - Interim view of prospect showing mineralised bodies, different colours represent mineralisation considered to be geologically contiguous between sections.*

*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. Rare Earth Oxide (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 $REE_2O_3$, with the exception of Ce, Pr and Tb; which are calculated as $CeO_2$, $Pr_6O_{11}$, and $Tb_4O_7$ respectively, in accordance with geochemical conventions.

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

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TUC Resources Ltd holds approximately 16,800$km^2$ of prospective land package across 42 (32 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 the 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.