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Rainbow Rare Earths Limited
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Rainbow Rare Earths Limited
("**Rainbow**" or "**the Company**")
LSE: RBW

Positive Initial Leaching and Mineralogy Results at Uberaba in Brazil

- **Uberaba phosphogypsum material demonstrates good monazite liberation results, giving indications of an economic process route to follow**
- **Due to the scale of the opportunity at Uberaba, an eventual rare earths processing operation could be larger volume than that envisaged at Phalaborwa**

NEWS RELEASE

Rainbow Rare Earths is pleased to announce the results of the mineralogy and hydrometallurgical test work recently carried out on phosphogypsum material from The Mosaic Company's ("Mosaic") Uberaba site in Brazil that is the subject of a memorandum of understanding ("MOU") between Rainbow and Mosaic.

As announced on 7 September 2023, Rainbow had assayed gypsum samples from different areas of the Mosaic stack, which were sent to SGS Laboratories in Lakefield, Canada for testing. The assays found to have the highest grade were those taken from the most recently deposited phosphogypsum material, which is the by-product of ongoing phosphoric acid production by Mosaic at the Uberaba site. This material demonstrated a grade of between 4,520 to 7,912ppm total rare earth oxides ("TREO"), with neodymium and praseodymium (together "NdPr") being 24.7% of the rare earths basket. The TREO grade thus being ca. 80% higher (based on current phosphogypsum material from the phosphoric acid plant at Uberaba) and the NdPr grade being ca. 50% higher than those at Phalaborwa.

The Uberaba phosphogypsum stack has similar characteristics to Phalaborwa given that both stacks are based upon a hard rock carbonatite phosphate deposit. As such, the Uberaba material is amenable to direct acid leaching, which the testwork demonstrated can recover between 31% to 65% of the TREO.

Mineralogical evaluation of the leach residue carried out at SGS Laboratories in Lakefield, Canada, has revealed that 50% to 71% of the rare earth oxides are contained in monazite.

Due to mineralogy, a complementary route is being studied via hydrometallurgical and monazite concentration test work at Mosaic's lab in Brazil that will allow for increasing overall TREO recovery.

The phosphoric acid plant at Uberaba receives its phosphate rock feed from long life phosphate mines which offers the opportunity to recover rare earths from the current arisings of phosphogypsum from the phosphoric acid plant. The stack still represents a significant rare earths resource that can be addressed at a later date should the current arisings become the focus of the initial study.

George Bennett, CEO of Rainbow, commented: *"These initial mineralogy results are very positive because they demonstrate that the Uberaba material shows good liberation results that bode well for a potentially economic operation to recover the rare earth elements. As anticipated, the Uberaba material has similar characteristics to Phalaborwa and we continue to expect that a significant portion of the process flowsheet and intellectual property developed for Phalaborwa can be applied to rare earth extraction at Uberaba. However, given the scale of the Uberaba project, we could expect a rare earths processing operation there to be significantly larger than that at Phalaborwa."*

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Notes to Editors:

About Rainbow:

Rainbow Rare Earths aims to be a forerunner in the establishment of an independent and ethical supply chain of the rare earth elements that are driving the green energy transition. It is doing this successfully via the identification and development of secondary rare earth deposits that can be brought into production quicker and at a lower cost than traditional hard rock mining projects, with a focus on the permanent magnet rare earth elements neodymium and praseodymium, dysprosium and terbium.

The Company is focused on the development of the Phalaborwa Rare Earths Project in South Africa and the earlier stage Uberaba Project in Brazil. Both projects entail the recovery of rare earths from phosphogypsum stacks that occur as the by-product of phosphoric acid production, with the original source rock for both deposits being a hardrock carbonatite. Rainbow intends to use a proprietary separation technique developed by and in conjunction with its partner K-Technologies, Inc., which simplifies the process of producing separated rare earth oxides (versus traditional solvent extraction), leading to cost and environmental benefits.

The Phalaborwa Preliminary Economic Assessment has confirmed strong base line economics for the project, which has a base case NPV_{10} of US$627 million[1], an average EBITDA operating margin of 75% and a payback period of < two years. Pilot plant operations commenced in 2023, with the project expected to reach commercial production in 2026, just five years after work began on the project by Rainbow.

More information is available at www.rainbowrareearths.com.

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[1] Net present value using a 10% forward discount rate

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