

NEWS RELEASE 23- 1

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### **CHATHAM KICKS OFF RARE EARTHS EXTRACTION PROJECT WITH VICTORIA UNIVERSITY**

WELLINGTON New Zealand – Chatham Rock Phosphate Limited (TSXV: “NZP” and NZX: “Chatham” or the “Company”) has this week commissioned a study to be carried out under the leadership and principal supervision of Professor Jim Johnston, in the School of Chemical and Physical Sciences at Victoria University of Wellington. Jim is a founding Principal Investigator in the New Zealand Product Accelerator which is a network of scientists, engineers and designers who work closely with industry.

The purpose of the study is to determine if it is scientifically and economically possible to extract strategically important rare earth elements (REE) from the marine sediments associated with the Chatham Rise phosphate deposit.

The work will be carried out on behalf of our 100% owned subsidiary, Pacific Rare Earths Limited, (PRE) which is managing all Chatham REE activities in New Zealand and Australia including the scoping study for concentration of Total Rare Earth Oxides (TREO) from our Queensland Korella phosphate areas.

On the Chatham Rise the Company’s 820 km<sup>2</sup> granted Mining Permit contains significant quantities of rare earth elements and other strategically valuable minerals. As reported in 2018 we established PRE to develop the extraction technology to monetise these valuable resources.

We have previously confirmed significant rare earths and other valuable minerals occur in the seafloor muds in our permit area, including cerium, lanthanum, neodymium, praseodymium, yttrium, cobalt, rubidium, cesium, germanium, gallium, strontium, thallium and tungsten.

The primary challenge is the extraction process, and the processing technology required to viably separate these minerals. In addition, recovering rare earths from muds will involve a new marine mining system which recovers both the seafloor muds and the phosphorite nodules.

The value of these minerals, if they can be extracted, has been independently determined (Kenex, 2013) to significantly exceed the value of the contained phosphorite nodules. More importantly, this will provide New Zealand and our strategic international partners with a local source of Critical Minerals.

The research programme is expected to be completed within calendar 2023.

#### **The Importance of Critical Minerals**

In October 2022, Chatham applauded the critical minerals related initiative then announced by New Zealand Petroleum & Minerals (NZPaM) a division of the Ministry for Business, Innovation and Employment.

It was then envisaged that a NZPaM discussion document, that would form the first stage of developing a New Zealand critical minerals list essential for most modern technology, would be released for public consultation before December 31, 2022.

The purpose of the consultation is to create a better understanding of the benefits of a critical minerals list for New Zealand, creating a consensus on, if a mineral is critical, scoping the minerals to be considered.

## **Related International Developments**

This local initiative mirrors similar developments in Australia where rare earths are now classified as Critical Minerals and critical minerals agreements have been executed with other nations; e.g. Japan, South Korea, India and EU.

The USA has legislated to use non-China REE in defence material while Japanese interests are signing an agreement for exploration and joint development in Queensland.

The Queensland Government's Resources Industry Development Plan's New Economy Minerals, (NEM) includes selenium and consequently Chatham has applied for two selenium related exploration permits, one of which (Tambo) has already been granted.

## **About Rare Earth Elements**

Neodymium, praseodymium and dysprosium are the three main critical minerals described as Heavy Rare Earth Elements. Yttrium is the other main critical mineral described as Light Rare Earth Element.

They are integral to technology including magnets, computer hard drives, wind turbines, electric vehicles, lasers, TV and computer screens, exotic light sources and superconductors.

Recent market prices of these rare earth elements are (Source: Institut fur Seltene und Metalle AG-previous 6 months)

- o Neodymium oxide 101.41 EUR per kilo.
- o Praseodymium oxide 93.01 EUR per kilo.
- o Dysprosium oxide 323.26 EUR per kilo.
- o Yttrium oxide 7.79 EUR per kilo.
- o Gadolinium oxide 62.50 EUR per kilo.
- o Samarium oxide 2.57 EUR per kilo.

## **Victoria University of Wellington and the New Zealand Product Accelerator**

The New Zealand Product Accelerator is a network of leading scientists, engineers and industrial designers from the universities and GNS, who engage extensively with and provide research capabilities to assist companies with new product development, problem-solving, and embedding technology innovation. It is supported by government science and technology baseline funding and has been in operation for some 12 years.

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