# CHATHAM ROCK PHOSPHATE LIMITED ("CRP")

# **MANAGEMENT'S DISCUSSION & ANALYSIS**

## FOR THE THREE & SIX MONTH PERIODS ENDED SEPTEMBER 30, 2022

(All amounts stated in Canadian dollars, unless otherwise indicated)

#### Attention is called to a caution in respect of Forward-Looking Statements - included at page 30

CRP is Stock Exchange listed in Canada, New Zealand and Germany.

As a result, Chatham is positioned on the world stage to more effectively raise funds from international investors. These funds are required to reapply for the Marine Consent required to give effect to our granted mining permit on the Chatham Rise and to build an international phosphate and rare earths mining and trading house with a particular focus on low cadmium, organic phosphate.

The TSX.V listing in Canada was achieved by means of a merger with dual listed Antipodes Gold Limited ("Antipodes Gold"), which, having sold its Coromandel based gold assets to Newmont New Zealand was a cashed-up shell. Antipodes Gold consolidated its shares 1 for 10 and then made a one Antipodes share for 65.59 Chatham shares offer. That process was complex, highly regulated and took over a year to complete.

In parallel with that CRP undertook multiple investor roadshows in Europe and Canada and continued to steadily raise working capital from investors there, as well as in New Zealand and Asia. CRP has now raised more than \$10 million since the Marine Consent was declined in February 2015. During this period, the market capitalisation has recovered from \$2.4 million to a peak of \$32 million and is presently around \$11.5 million on the TSX.V and \$15.3 million on the NZX.

The cornerstone investors are based in Australia, Singapore, Germany and Switzerland and together with the CRP management team hold, directly and indirectly, approximately 23.8% of the company. The rest of the shares are held by more than 3,000 shareholders in nine countries.

CRP is expecting to raise the funds required to complete the Marine Consent reapplication and to cover the costs of the Environmental Protection Authority hearing, either from further share subscriptions or operating cash flows from the Korella or Avenir Makatea projects

Once the required level of funding has been raised, it is then expected to take 15 months to complete the work required to submit the re-application with a possible submission date in Q4, 2025. This would lead to an expected grant date of Q3, 2026 and eventual production in late 2027.

As part of our strategy to build an international diversified phosphate business, on April 28, 2021 CRP announced that it had entered into a formal agreement with the shareholders of Avenir Makatea Pty Limited ("Avenir"), an Australian incorporated company to purchase all of the issued and outstanding shares of Avenir (the "Acquisition"). Avenir, through its wholly-owned French Polynesian subsidiary, SAS Avenir Makatea, holds an exploration research permit to explore for phosphate on the French Polynesian island of Makatea. The Makatea project covers an area of 1,035 ha (10.36 km2). The island is a well-known source of phosphate and was previously mined until 1966. Avenir has filed an application for a mining concession over the project area which remains in progress. The acquisition transaction was completed on June 30, 2021.

Subsequently there have been a number of other rare earths developments, outlined most recently in an announcement in October 2022.

Chatham recently applied for an exploration area in western Queensland identified as having significant accumulations of selenium.

On the Chatham Rise the Company's 820 km2 granted Mining Permit contains significant quantities of rare earth elements (REE) and other strategically valuable minerals. As reported in 2018 we established a separate corporate entity (Pacific Rare Earths Limited – PRE) to develop the extraction technology to monetise these valuable resources.

All Chatham REE activities in New Zealand and Australia are now taking place under through PRE, including the scoping study for concentration of Total Rare Earth Oxides (TREO) from our Queensland Korella phosphate areas.

Three Rare Earth Oxides, yttrium, neodymium, and dysprosium, described as critical minerals and Heavy Rare Earth Elements, are found in abundance at Korella as well as Chatham Rise.

The Australia based rare earths and selenium projects are truly nation-building initiatives where Chatham intends to play a leading part.

## <u> Our REE Resources – Australia</u>

- According to an independent report filed with the ASX in 2009, Korella Mine has an inferred yttrium JORC resource of 4.2 million tonnes at 746 g Y/tonne (i.e., 0.96 kg Y2O3/t)
- Neodymium and dysprosium were also identified at that time in both overlying sediments and the phosphate.
- Recent portable XRF analyses has shown the pervasiveness of both yttrium and neodymium in the Korella phosphate.
- Analysis of Korella phosphate samples has confirmed the presence of dysprosium and anomalous concentrations of gadolinium and samarium.
- Korella phosphate is the major host of the HREE.

We will be progressively expanding the current sampling and testing program for Korella and Korella South to quantify resources, including the overlying duricrust and regolith.

#### Our REE Resources – New Zealand

#### Rare Earths in phosphate

A study of marine phosphate nodules by the United States Geological Survey reveals significant quantities of REE within the phosphate nodules on the Chatham Rise. Of the 17 recognised rare earths, 15 are present in Chatham Rise rock phosphate nodules, as well as other valuable minerals including nickel, cobalt, chromium, vanadium, zirconium, fluorine and strontium. Collectively these minerals, if they can be efficiently extracted, represent an immensely strategic asset for New Zealand and could significantly improve the already attractive forecast project economics based on sale of phosphate.

The contained value may be released onshore (if extraction proves feasible and economically viable) without any change to the proposed mining system, and any additional environmental impacts in the Project area.

### **Rare Earths in Seafloor Muds**

We have also previously confirmed significant rare earths and other valuable minerals 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, and therefore will be separate from the existing CRP rock phosphate nodules project.

## Further Independent Research

The information CRP already holds about REEs and other valuable minerals in its permit areas was generated by independent organisations, with some of this work undertaken a decade ago.

The current knowledge confirms that REEs occur over a wide area and estimates of the size of the potential deposits while conceptual, are potentially significant.

As a result of the extremely favourable preliminary research, CRP continues to develop a deeper understanding of the extraction and recovery potential of the minerals.

## **Biomining of Rare Earth Elements**

Earlier this month CRP advised research progress regarding extraction of rare earth elements from phosphate minerals by Pacific Rare Earths.

Chatham's Australian company, Avenir Makatea Pty Ltd commissioned the CSIRO work program.

Following encouraging results from stage 1 of culturing microbes potentially suitable for biomining, CSIRO will do more testing as part of an overall program to evaluate bioleaching to extract rare earth elements.

The first step was the enrichment of natural microbes in three geologic horizons within Korella, Korella North and Korella South sites in NW Queensland.

Under controlled lab conditions, the native microbes were cultured and have demonstrated three orders of magnitude cell growth (i.e., from 106-107 to 109-1010 cells per mL) over four days.

Additional subculturing of the cultures further enriched native microbes.

Subject to continued success for the balance of the preparatory phase, CRP will commit to longer duration bioleaching tests.

#### **REE Processing and Enrichment Technology Advance**

PRE recently engaged a third party to undertake sensor-based ore sorting of Korella phosphate testing to most effectively aid in REE enrichment.

Initial testing of a 75kg sample of overlying silicious sediments and phosphate showed sensorbased (density criteria) ore sorting was highly effective in separating phosphate from waste.

A one tonne sample of phosphate sent for pilot plant testing has shown particularly positive results.

Chatham engaged TOMRA Sorting to establish if their sensor-based sorting systems were capable of sorting Korella phosphate ore from waste material to improve the already relatively high-grade direct shipping ore.

The test work demonstrated Korella phosphate could be upgraded from a nominal feed of 30%  $P_2O_5$  to a product in the range of 35% to 38%  $P_2O_5$  at acceptable recovery rates.

Korella's low cadmium phosphate in the range of 35% to 38%  $P_2O_5$  is higher grade than most internationally traded rock phosphate (which is presently quoted at \$US 320/t ex Casablanca) and is particularly suitable for use by European fertilizer producers which previously depended on Russian supplies of high-quality phosphate.

In addition, work is now underway to characterise the high silica waste rock from the ore sorting to establish its suitability as a source of plant available silica and as a feed stock to produce yellow phosphorus.

## Marketing

The PRE target markets involve the sale of TREO with 50% heavy rare earths content to emerging Australian processors and potentially to Japan, South Korea, USA, Europe and/or Scandinavia.

## Progress Report on our Rock Phosphate Projects

As previous detailed in numerous announcements since December 2020, Chatham has transformed from a single project company facing an uncertain and expensive permitting hurdle to a rapidly expanding group of projects much closer to generating operating cash flows with prospects further boosted by phosphate prices at 10-year highs.

The acquisition of Avenir Makatea was the first step in the Company's strategy to build an international phosphate mining and trading house with a focus on low cadmium, organic phosphate.

The Makatea Project in French Polynesia is planned to produce 250,000 tpa with an expected start date of 2024.

The second step was the proposed acquisition of the fully permitted Korella phosphate mine in Queensland, Australia with its ability to generate immediate positive cash flows.

The third step was the application for an exploration permit over a substantial area adjacent to the Korella phosphate mine to potentially increase phosphate reserves and associated rare earths. The 196 sq km area to the south of the Korella mine is called Korella South.

The fourth step, announced in January 2022, was the decision to take another value-adding step to its phosphate production with planned manufacturing of Monocalcium Phosphate (MCP). The MCP plant is planned to produce 30,000 tpa of MCP starting in 2025.

The fifth step, announced in May 2022 was the announcement concerning the commencement of a scoping study into a stand-alone 5Mtpa phosphate/fertilizer export facility in the Port of

Townsville (Korella Terminal) with a complementary 2Mtpa phosphate export mine at Korella South.

The sixth phosphate-related new project concerned Korella North, announced last month when the application for phosphate exploration area designated EPMA 28589 (Korella North) was accepted by the Queensland Department of Resources (QDR). Korella North (EPMA 28589) covers an area of 6 square kilometres that contains a near surface phosphate deposit.

The area was exhaustively explored in 2007 and 2008 with soil sampling, trenching and drilling to prove the presence of outcropping phosphate of the Beetle Creek Formation along a strike length of approximately 1.5 kilometres. The formation is highly suitable for simple open cut mining.

Limited additional drilling and analysis within EPMA 28589 will enable a JORC-compliant resource estimate for phosphate and rare earth elements (REE) to be reported and transition to a Mining Lease to take place within a short time frame.

In summary, Chatham now has seven phosphate related initiatives underway and further additions are envisaged.

The existing phosphate projects are:

- 1. Chatham Rise marine project in New Zealand, planned production rate 1.5 Mtpa from 2028
- 2. Avenir Makatea onshore phosphate mine/rehabilitation project, planned production rate 250,000 tpa
- 3. Korella Mine production rate 250,000 tpa if the acquisition proceeds
- 4. Korella South 2 Mtpa export focussed mine
- 5. Korella North 250,000 tpa production rate aimed at the domestic phosphate market
- 6. Korella Terminals 5Mtpa phosphate export facility to be established at the Port of Townsville. 2Mtpa rail loading facility located adjacent Korella North.
- 7. Korella MCP- Cloncurry based monocalcium phosphate manufacturing plant expected to produce 30,000 tpa of MCP starting in 2025.

These projects already had attractive operating margins well before the recent surge in phosphate prices. Further, all the phosphate deposits concerned are ultra-low in cadmium, a food safety attribute already essential in Europe and likely to become a universal requirement. Ultra-low cadmium rock phosphate is relatively rare and will over time become an increasingly valuable and strategic resource.

Summary of the Queensland based permits:

Permit Number	Minerals of Interest	Location	
EPM 28187	Phosphate	Phosphate Hill	
	Rare Earths	Queensland	
EPM28589	Phosphate	Phosphate Hill	
	Rare Earths	Queensland	
EPM28606	Selenium	Tambo	
		Queensland	

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## INTRODUCTION

This discussion and analysis of the operating results and financial condition of Chatham Rock Phosphate Limited ("Chatham Rock", or the "Company") for the three & six month periods ended September 30, 2022, as prepared on November 29, 2022 should be read in conjunction with the audited consolidated financial statements and related notes for the same period and is intended to provide the reader with a review of the factors that affected the Company's performance during that year and the factors reasonably expected to impact future operations and results.

The unaudited consolidated financial statements and related notes of Chatham Rock have been prepared in accordance with accounting principles that comply with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board. The financial statements and all amounts in this report are expressed in Canadian dollars, except where otherwise indicated.

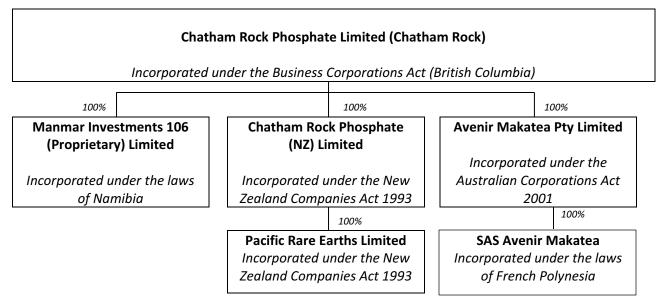
## CORPORATE HISTORY AND NATURE OF THE BUSINESS

Chatham Rock is incorporated under the *Business Corporations Act* (British Columbia) and listed on the Toronto Stock Exchange's Venture Exchange ("**TSX-V**"). The Company is also registered under the New Zealand Companies Act 1993 and listed on the New Zealand Stock Exchange ("**NZX**").

A name change from Antipodes Gold Limited to Chatham Rock, in February 2017, was undertaken at the same time as a reverse takeover arrangement for the Company to acquire its main subsidiary, Chatham Rock Phosphate (NZ) Limited ("**Chatham (NZ)**") (which was incorporated in New Zealand under the Companies Act 1993 on April 27, 2004).

Chatham (NZ)'s registered office and principal place of business is located at Level 1, 93 The Terrace, Wellington 6011, New Zealand.

In June 2021 Chatham acquired Avenir, which through its wholly-owned French Polynesian subsidiary, SAS Avenir Makatea, holds an exploration research permit to explore for phosphate on the French Polynesian island of Makatea. The Makatea project covers an area of 1,035 ha (10.36 km2). The island is a well-known source of phosphate and was previously mined until 1966. Avenir has filed an application for a mining concession over the project area which remains in progress.



Significant Intercorporate Relationships

Chatham (NZ) is a junior mineral development company, focused on the development of a marine phosphorite deposit off the coast of New Zealand as part of its strategy to build an international phosphate mining and trading house with a focus on low cadmium, organic phosphate. It has not commenced mining operations or generated operating revenues to date.

Chatham (NZ) holds a Mining Permit over an area off the coast of New Zealand with significant seabed deposits of rock phosphate, rare earths and other potentially valuable minerals.

In **2007**, Chatham (NZ) and an associate applied for a prospecting license over an area covering a portion of a phosphorite deposit on the Chatham Rise, being historically an intensively investigated area of the Chatham Rise for potentially economic concentrations of rock phosphate.

In **2010**, Chatham (NZ) (as to 90%) and its associate (as to 10%) were jointly granted a prospecting licence, pursuant to the Crown Minerals Act 1991 of New Zealand, covering 4,726  $km^2$  of the Chatham Rise. Following the prospecting licence being granted, Chatham (NZ) carried out significant background work as part of the licence requirements to further characterize the phosphorite resource and assess the potential environmental impacts of a possible mining operation in a marine environment.

Since acquiring the original prospecting licence in 2010, Chatham (NZ) has commissioned six cruises in two programs. The key objects of the cruises were to corroborate the previous work conducted on the Chatham Rise and to collect further geological, geotechnical, geophysical and environmental data. For phosphorite grade corroboration purposes, the M.V. Tranquil Image cruise collected 55 samples using a Van Veen grab. The R.V. Dorado Discovery conducted four cruises out to the project area and collected 181 box core and grab samples as well as environmental data.

The data collected by Chatham (NZ) allowed better delineation of the deposit. The more recent work by Chatham (NZ) on investigating this resource confirmed the general tenor of the phosphorite grades and location of phosphorite in the area, advanced work aimed at investigating the feasibility of mining the resource and has provided valuable information to assess the environmental effects of the proposed mining operations.

In early **2011**, Chatham (NZ) commissioned independent studies for the design of a system to recover phosphorite from the Chatham Rise seabed from three of the largest dredging companies in the world. Boskalis Offshore Subsea Contracting B.V ("Boskalis") was one of the participants and was selected by Chatham (NZ) as its preferred technical partner for the Chatham Rise Project.

Chatham (NZ) divested some oil and gas related investments to its associate in exchange for it transferring its 10% interest in the prospecting license to Chatham (NZ), resulting in the project becoming wholly owned by Chatham (NZ).

In September **2012**, Chatham (NZ) applied for a Mining Permit in respect of a part of the area covered by the Continental Shelf Licence. As part of that application process and in anticipation of applying for the Marine Consent, Chatham (NZ) consulted with a range of stakeholders. This has included the local (Maori) lwi, the Chatham Islands community, the Government, fishing groups and a range of environmental groups. The purpose of this consultation was to establish a relationship with these parties and to identify and resolve issues associated with the mining proposal. As a result, the Directors believe that the project is now well understood by a wide range of stakeholders and in turn Chatham (NZ) has a better understanding of the views and possible concerns of all parties whose interests are potentially affected by the project.

The Mining Permit was granted on December 6, 2013.

In May **2014**, Chatham (NZ) submitted to the (New Zealand) Environmental Protection Authority ("**EPA**") a formal application for Marine Consents. The application was declined on February 11, 2015.

Chatham (NZ) aims to pursue a re-submission of its Marine Consent application and has been raising equity capital in preparation for this task.

- Chris Castle President and CEO (New Zealand based);
- Linda Sanders Non-executive Chairman (New Zealand based);
- Colin Randall Executive director (Australian based) from June 30, 2021
- Robert Goodden Independent non-executive director (England based);
- Jill Hatchwell Non-executive director (New Zealand based); and
- Ryan Wong Non-executive director (Malaysia based)

## **CAPITAL TRANSACTIONS AND SIGNIFICANT EVENTS**

#### **Capital Transactions**

Chatham (NZ) has continued to raise additional equity capital totalling \$2.5m in the twenty-four months to September 30, 2022. These funds are being applied to cover corporate overheads, the cash costs relating to the Avenir Makatea acquisition and to limited preparatory work in reapplying for the marine consent for the Chatham Rise project.

#### **Avenir Makatea Acquisition**

On June 30, 2021, the Company completed the acquisition of Avenir Makatea Pty Limited ("Avenir"). Pursuant to the terms of the Share Purchase Agreement dated April 28, 2021 between the Company and Avenir's shareholders, the Company issued a total of 17,857,738 common shares to the former Avenir shareholders (the "Consideration Shares").

A total of 10,722,858 of the Consideration Shares were issued to Mr. Colin Randall, the Executive Chairman of Avenir, and a trust in which members of Mr. Randall's family hold an interest. In addition, pursuant to the terms of the Share Purchase Agreement, Mr. Randall has been appointed to the Company's Board of Directors. Upon gaining control over these common shares, Mr. Randall and his family trust now hold approximately 16.6% of the Company's issued and outstanding common shares.

Avenir, through its wholly-owned French Polynesian subsidiary, SAS Avenir Makatea, holds an exploration research permit to explore for phosphate on the French Polynesian island of Makatea. The Makatea project covers an area of 1,035 ha (10.36 km2). The island is a well-known source of phosphate and was previously mined until 1966. Avenir has filed an application for a mining concession over the project area which remains in progress.

## **Significant Events**

Apart from progress in preparing for the marine consent reapplication, the Company completed its reverse takeover merger with Antipodes Gold Limited on 24 February 2017.

This resulted in Chatham Rock gaining a listing on the Toronto Venture Exchange (TSX.V Code "NZP"). Chatham Rock is now also quoted on the Frankfurt Exchange.

On September 5, 2018 Chatham Rock announced that it had recently formed a 100% owned subsidiary Pacific Rare Earths Limited.

This company has been formed to project-manage a work programme aimed at quantifying the extent, value and recoverability of Rare Earths Elements (REE) and other potentially strategic or valuable minerals contained in the rock phosphate nodules on the Chatham Rise.

In addition, the company will be investigating the existence and recovery potential of rare earths and other valuable minerals in seafloor muds on the Rise.

#### Rare Earths in Chatham Rise phosphate

A recent study of marine phosphate nodules by the United States Geological Survey reveals that there are significant quantities of REE contained within the phosphate nodules on the Chatham Rise. Of the 17 recognised rare earths, 15 are present in Chatham Rise rock phosphate nodules, as well as varying concentrations of other valuable minerals including nickel, cobalt, chromium, vanadium, zirconium, fluorine and strontium. Collectively these minerals, if they can be efficiently extracted as by-products, represent not only an immensely strategic asset for New Zealand but could significantly improve the already attractive forecast project economics.

The presence of these minerals within the phosphate rock is highly significant because the contained value may be released onshore (if extraction proves feasible and economically viable) without any change to the proposed mining system, and without any additional environmental impacts in the Project area.

#### Rare Earths in Chatham Rise seafloor muds

Shareholders will recall that we established and announced some time ago that there were significant quantities of rare earths and other valuable minerals in the seafloor muds in our permit area. These include cerium, lanthanum, neodymium, praseodymium, yttrium, cobalt, rubidium, cesium, germanium, gallium, strontium, thallium and tungsten.

The primary challenge associated with the production of rare earths from the muds is the extraction process, and the advancement of processing technology that will be required in order to demonstrate the feasible and economically viable separation of any of these minerals. In addition, recovery of rare earths from muds will involve the development of a new marine mining system, and therefore will be considered for development separately from the existing CRP rock phosphate nodules project.

#### **Further Independent Research**

The information CRP already holds about REEs and other valuable minerals in its permit areas was generated by independent organisations, with some of this work undertaken up to a decade ago. The current knowledge confirms that REEs occur over a wide area and estimates of the average grades and therefore the size of the potential deposits have been made at a conceptual level. The current conceptual information, when assessed against current price data, confirms the significance of potential value.

As a result of the extremely favourable preliminary research, CRP is continuing a dialogue with appropriated skilled and funded external parties, based both in New Zealand and internationally, in order to further develop better upstanding of the extraction and recovery potential of the minerals.

CRP is excited to be engaging in the investigation of REE recovery, which is a strategic priority of the New Zealand Government in relation to the mineral sector, as stated by the Honourable Dr Megan Woods, Minister of Energy and Resources.

The Chatham Rise rock phosphate and rare earths deposit has the potential to contribute to the understanding of REE potential in New Zealand, given that it is likely that there is more information already

available about the REE minerals in the Chatham Rise deposit than any other rare earths deposit in New Zealand.

# CHATHAM ROCK PROJECT AND EXPLORATION

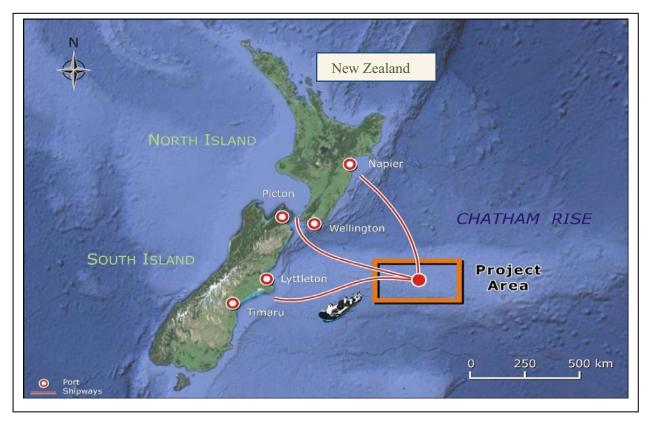
## CHATHAM RISE TECHNICAL REPORT

The summary below concerning Chatham's Chatham Rise Phosphorite Project (the "**Chatham Rise Project**" or the "**Project**") is taken from the Chatham Rise Technical Report dated April 24, 2015 and prepared by René Sterk, MSc MAIG MAusIMM CP (Geo). For further detailed information concerning the Chatham Rise Project, the reader is directed to read the full Chatham Rise Technical Report.

The Chatham Rise Technical Report has been compiled by RSC Consulting Ltd ("**RSC**") in compliance with Canadian National Instrument 43-101 Standards of Disclosure for Mineral Projects ("**NI 43-101**") and Form 43-101F1. The Report constitutes the supporting documentation for the estimate of a phosphorite resource for the Chatham Rise Project. This resource estimate has previously been the subject of a technical report compiled by RSC on behalf of Chatham (NZ) (RSC, 2014), which was prepared in compliance with the 2012 edition of the Joint Ore Reserves Committee (**JORC**). While the resource estimate disclosed in the present Report has not changed and has an effective date of March 3, 2014, this Report presents the estimate in compliance with NI 43-101, and also includes updated information on the Chatham Rise Project in light of environmental permitting developments that have taken place since the previous report (RSC, 2014) was published. The effective date of the Report is July 6, 2015.

#### Property Description and Ownership

The Project covers an area of seabed phosphorite nodules that is situated about 450 km offshore of the east coast of New Zealand at approximately 350 to 450 m water depth.



Location of the Chatham Rise Project

Chatham holds Mining Permit Number 55549 which was granted to Chatham (NZ) in December 2013 ("**Mining Permit**"). The Mining Permit is not due to expire until 2033 and, subject to the granting of a Marine Consent from the Environmental Protection Authority ("**EPA**"), will allow Chatham (NZ) to conduct mining operations.

Chatham previously held a Prospecting Licence (MPL 50270) which originally expired on February 25, 2014. An application for an extension of a term for a further four years was submitted to New Zealand Petroleum and Minerals ("NZPAM") in December 2013 and the licence was successfully renewed in August 2016, for a further 6 years from February 2014 to February 2020. At that time the licence area was reduced from 3,905 square kilometres to 2,876 square kilometres. On 29 August 2019 this prospecting permit was relinquished six months prior to the end of its term. This has no impact on the mining permit and the proposed mining programme.

A summary of these licence holdings and applications in shown at the table below.

#### **Chatham NZ based Licence Holding**

Asset	Holder	Interest (%)	Status	Licence Expiry	Area (km²)
MP 55549 Mining Permit	Chatham (NZ)	100	Exploration	Dec. 5, 2033	820

#### **Geology and Mineralization**

The phosphorite deposit occurs as a thin surficial seafloor layer of phosphorite-bearing glauconitic sand with thicknesses typically ranging from 0 to 1 m, at depths of 350 to 450 m below sea level. The sand layer consists of mainly silt and sand-sized sediments, with phosphatised chalk nodules up to 15 cm in diameter.

## Exploration

Phosphorite nodules were first discovered on the Chatham Rise in the 1950s by a New Zealand Government survey. During the 1960s to 1980s several private and government sponsored cruises explored the Chatham Rise and surrounding seafloor area. The most extensive surveys were conducted by an agreement between the New Zealand Department of Scientific and Industrial Research and the West German Government on cruises by the German research vessels R.V. Valdivia in 1978 and R.V. Sonne in 1981.

The 1978 R.V. Valdivia cruise was the first intensive sampling and research campaign to be conducted over the Chatham Rise; a total of 655 samples from 689 attempts were collected over a 300 km<sup>2</sup> area in the west of the Project area. The majority of the samples were collected using a large Van Veen-style grab of 0.12 m<sup>3</sup> volume, weighing approximately 400 kg.

The 1981 R.V. Sonne cruise was the most comprehensive exploration effort to assess the Chatham Rise phosphorite deposit. In addition to oceanographic, meteorological and geophysical data, the cruise collected 19 hours of video recordings of the sea floor as well as 519 sediment samples taken by a pneumatic grab-sampler. The seafloor sediment samples collected during this cruise are the most representative sample data collected on the Chatham Rise and are considered to be of a high enough quality to include in a resource estimation.

Since acquiring the licence in 2010, Chatham (NZ) has conducted six cruises in two programs in the Project area. The key task of the cruises was to validate the previous work conducted on the Chatham Rise and collect further geological, geotechnical, geophysical and environmental data. For phosphorite grade estimation purposes the M.V. Tranquil Image cruise collected 55 samples using a Van Veen grab. The R.V. Dorado Discovery conducted four cruises to the Project area and collected 206 box core and grab samples.

Sample quality and QA/QC measures varied considerably between the cruises and within each cruise. A critical part of the assessment of the data collected in the Project area was to determine what quality thresholds to use to allow or disallow data to enter into the estimation process. As part of the data verification process, the relative and absolute quality of the data was assessed in as much detail as practically possible. In general, the best samples were those that were collected using the pneumatic grab, sampled the full sand horizon, had a small survey error and had no other apparent data ambiguities. Samples collected from the R.V. Sonne are considered to represent the better-quality samples collected in the licence area, followed by some of the R.V. Valdivia samples and then the box core samples from the Dorado Discovery. Samples not included in the resource estimate are samples that failed due to technical failure, samples collected but which have no data recorded, samples with no location coordinates, non-validated data and samples documented as washed or otherwise biased.

#### **Mineral Resources**

Definition of the domains used for modelling was based on seismic facies delineated during the R.V. Sonne cruise. A 2D block model was constructed based on 1 km by 1 km blocks that covers the main sampled area based on the average data spacing in the main sample areas. A maximum search radius of 3,000 m was used based on variogram modelling.

Estimation was performed in each domain using ordinary kriging using the accumulation method on the parameters Ph kg/ m<sup>2</sup> (phosphorite grade), Depth and Sample Quality Ranking ("SQR"). The grade (Ph kg/

 $m^2$ ) was then calculated by dividing Ph kg/  $m^2$  by the estimated Depth for each block.

A total of 80 million m<sup>2</sup> at an average grade of 290 kg/ m<sup>2</sup> is classified as a global Inferred Mineral Resource at a cut-off grade of 100 kg/ m<sup>2</sup> (table below). There are no resources classified in indicated or measured categories. As the Chatham Rise phosphorite resource is classified entirely as an Inferred Mineral Resource it does not constitute a mineral reserve and so does not have demonstrated economic viability. The specification *of the phosphorite* (i.e. the phosphate content) has been studied by various operators including Chatham (NZ), and, even though a representative average grade cannot be determined for the Mineral Resource, the tenor of the specification (in the order of 18-19% P2O5 of screened material) is suitable to allow classification into the Inferred Mineral Resource category.

The average thickness of the resource is 0.20 m.

Statement of Mineral Resources (phosphorite) for Mining Permit 55549, Chatham Rise. Estimates are rounded to reflect the level of confidence in these resources at the present time.

Classification	Volume (m <sup>3</sup> )	Thickness (cm)	Ph kg/m <sup>3</sup>	
Inferred	80,000,000	20	290	
Mineral				
Resource				

Notes:

- 1. The Mineral Resource is reported in accordance with CIM NI 43-101, 2011 edition
- 2. The Mineral Resource is contained within MP 55549
- 3. All resources have been rounded to the nearest 0.1 million tonnes
- 4. Ph kg/m<sup>3</sup> is the weight of phosphorite per cubic metre
- 5. Even though a representative average grade for the specification (phosphate grade) cannot be determined for the Mineral Resource, the tenor of the specification (in the order of 18-19%  $P_2O_5$  of screened material) is suitable to allow classification into the Inferred Mineral Resource category
- 6. The Mineral Resource is reported at 100 kg/m<sup>3</sup> phosphorite cut-off grade
- 7. The Mineral Resource is classified entirely as an Inferred Mineral Resource. It does not constitute a mineral reserve and so does not have demonstrated economic viability.

RSC's analysis to date indicates that a potentially economically extractable Mineral Resource exists in the Project area. Several high-profile sampling cruises, most independent from each other, have all identified grades of economic interest within the same area. These cruises have been well documented and specific knowledge on sampling systems has been retained and included in this Report.

#### Recommendations

In addition to the Inferred Mineral Resource described above, in RSC's opinion, there is significant exploration potential to extend the Mineral Resource within the Mining Permit. Based on existing sampling data (that was not included in the resource because of lower density of sampling or lower SQR numbers), the exploration target would be in the order of 30,000,000 to 50,000,000 m<sup>3</sup> at grades between 200 and 300 kg/m<sup>3</sup>. The potential quantity and grade of this global exploration target is conceptual in nature. There has been insufficient exploration to define a Mineral Resource and it is uncertain if further exploration will result in the target being delineated as a Mineral Resource.

RSC recommends that further seafloor sampling is undertaken to both increase the confidence in the established Mineral Resource as well as to extend the boundaries of the resource, predominantly towards the west where currently low-quality Valdivia data indicate an exploration target of at least 5 Mt

phosphorite. Increasing the confidence in the current Mineral Resource by additional sampling will give Chatham (NZ) the grade and geological confidence in the phosphorite deposit to allow them to further develop mining plans and economic studies.

#### Outlook

Chatham (NZ) continues to progress the Chatham Rise Project towards mining whilst also examining other high quality phosphate projects featuring strong grades, meaningful size, mining-friendly locales near significant markets.

Chatham (NZ) remains confident that its phosphate deposit places it in a strong position globally to deliver an essential ingredient to the agriculture industry, where the demand for food remains a growth market in turbulent economic times. Despite challenging market conditions, Chatham (NZ) considers that the ongoing volatility in the major phosphate producing regions (Middle East and North Africa) supports its conviction in the importance of executing well-planned, efficient exploration and development program designed to advance this high-quality phosphate project; and to pursue other high –quality projects within our area of expertise.

The Chatham Rise phosphate has valuable attributes:

- It is a reactive phosphate, of grades between 21-22% P205 that may be directly applied to existing pastures, without the necessity of beneficiation or upgrading.
- It is low in deleterious metals (cadmium) and has other significant environmental benefits over conventional imported phosphate products.
- It is a key ingredient of New Zealand's major agriculture industry.
- The project shows strong economic advantages over imported products where production and delivery to market costs of the Chatham Rise product are equivalent to transport costs to NZ of similar products.
- There is significant upside exploration potential, with grab tests of adjacent ground showing individual samples of economic grade, and much of the highly prospective Chatham Rise is untested.

Chatham (NZ) is in the process of reapplying for a marine consent to mine phosphate nodules on the Chatham Rise seabed. Mitigation of the effects of mining on the corals by excluding known coral areas, adaptive management, articulation of the clear economic benefits, and a better understanding of modelling and risk management should ameliorate EPA concerns. Chatham (NZ) remains confident that marine resource consents will be granted.

#### **Current Work Program**

- Working closely with the various government organizations, significant work is aimed at preparing re-application documents for the Marine Consent.
- Additional field trials are being scoped to establish the suitability of the Chatham phosphate for direct application in a range of New Zealand geographic agricultural conditions.
- Optimization of the current resources is being undertaken to establish better mine plans that amongst a range of outcomes addresses the exclusion of known coral thickets.

# AVENIR MAKATEA PHOSPHATE PROJECT

Chatham is taking advantage of the work already undertaken by Avenir to expand and deepen its overall ambitions to build an international phosphate mining and trading house focusing on the rapidly expanding organic phosphate marketplace.

## Mining application

SAS Avenir Makatea (wholly-owned subsidiary of Avenir) was granted an exploration permit on 28 January 2014 and in September 2016 Avenir applied for a mining concession to mine/rehabilitate an area of 600 ha of previously mined land. The Project, if it proceeds, is expected to have a 30-year life.

The application is now being processed under the terms of a new Mining Code for French Polynesia that was promulgated in January 2020. The existing Environmental Code was recently successfully harmonised with the new Mining Code.

The Project is subject to a Public Enquiry process that leads to recommendations to the Council of Ministers for the grant of the Mining Concession. The Public Enquiry, which will be based on the presentation of an updated Environmental Impact Assessment and an Economic Benefit Analysis, is expected to in late 2022.

Nominated consultants in French Polynesia, in association with the staff of SAS Avenir Makatea, will prepare the two reports and present these to the public in advance of /and during the one-month public enquiry period.

Following the enquiry, the process for determining the application is set out by the Mining Code including presentations to the nominated Mining Committee. The Committee makes its recommendations to the Council of Ministers. Following the past four years of intensive consultation with landowners of Makatea and the continuing consultation with Government since 2011, Avenir looks forward to the granting of the Mining Concession in early 2023.

#### Marketing of Makatea organic phosphate into USA and Canada

Following earlier studies by Avenir into the organic farming market in the USA and Canada, Makatea phosphate was certified by OMRI as an organic phosphate to facilitate marketing. Recent discussions with US based companies with current marketing to the organic farming market, are progressing with the aim of establishing long term offtake agreements for sales into the expanding organic market in USA and Canada.

## FINANCIAL COMMENTARY

The Company prepares and files its financial statements and related notes in accordance with accounting principles that comply with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board.

#### **Selected Annual Information**

	Year ended March 31				
	2022	2021	2020		
\$000s except for per share					
Total revenue	-	-	-		
Net profit/(loss)	(1,033)	(573)	(640)		
Profit/(Loss) per share – basic and diluted (cents)	(0.0163)	(0.0166)	(0.0249)		
Total assets	8,126	5,222	4,541		
Total long-term liabilities	-	-	-		
Distribution or cash dividend declared per share	-	-	-		

## **Summary of Quarterly Results**

\$000s	2023		2022			2021		
	Q2	Q1	Q4	Q3	Q2	Q1	Q4	Q3
Cash	1,474	1,930	1,367	672	708	333	379	49
Working capital	1,971	2,076	391	688	1,045	244	432	68
Total assets	8,038	8,554	8,126	7,108	7,717	6,475	5,222	5,098
Profit/(Loss) for period	(393)	(409)	(272)	(415)	(184)	(162)	(223)	(104)
Profit/(Loss) per share (cents)	(0.0046)	(0.0054)	(0.0012)	(0.0058)	(0.0056)	(0.0037)	(0.0056)	(0.0031)
Mineral Project expenditures *	(27)	(13)	(1)	(1)	(69)	(1)	(17)	(22)
Cash flow from financing (net)	1,027	1,014	878	251	806	74	492	94
Weighted average shares (millions)	85	75	63	72	33	44	35	33

Quarterly results for the past eight quarters ending June 30, 2022 are as follows:

\*In recent years, mineral project expenditures have been focussed on the marine consent application and reapplication.

The Company records losses each quarter/year arising from the expensing of its general and administration expenses. Periodic (at least annual) reviews of capitalized exploration expenditures are undertaken and write-offs and provisions are expensed to the Consolidated Statement of Comprehensive Income.

## Significant Expenses of a Corporate Nature

For the three months ended September 30, 2022 the Group recorded a net loss before income taxes of \$393,000 (2021: net loss of \$184,000).

Significant expense categories (apart from accumulated exploration write-offs and provisions) for the three month period are discussed below:

Expenditure	2023	Note	2022
General and administration	200	1	57
Depreciation	1		-
Employee Wages & benefits	70		-
Directors Fees	3		-
Audit fees	-		-
Legal fees	25		39
Consulting fees	53		17
Registry, Filing and Listing	23		14
Marketing	1		52
Share-based payment	-		-
Travel and accommodation	24		6
Total	400		185

Note:

1. General and Administration costs includes management fees \$16,000 (2021: \$59,000), accounting services \$28,000 (2021: \$11,000), insurance \$10,000 (2021: \$6,000) and other New Zealand and Australian office costs.

## **Liquidity and Capital Resources**

The Company's cash position as at September 30, 2022 was \$1,474,000. Trade and other payables total \$161,000.

The Company's existing share, option and warrant capital structure is set out at the end of this report under the heading of "Supplemental to the Financial Statements".

## **Related Party Transactions**

Related party transactions are in the normal course of business and are measured at the exchange amount, which is the value as agreed between management and the related parties.

Related party consultancy and management fees totalled \$62,000 for the period (2021: \$27,000) and are set out in detail in the financial statements at Note 15.

Depending on the nature of the services and costs, certain amounts have been capitalised to intangible assets as they are directly attributable to the Chatham Rise Project.

#### SUBSEQUENT EVENTS

There were no other material subsequent events up to the date of this report.

# **Use of Financial Instruments**

For the period ended September 30, 2022 Chatham did not enter into any specialized financial agreements to minimize its investment risk, currency risk or commodity risk. The principal financial instruments affecting the Company's financial condition and results of operations are currently its cash, amounts receivable and prepayments, and accounts payable and accrued liabilities.

## **Contractual Obligations and Commitments**

- a) At September 30, 2022 the Group had no capital commitments (2021: Nil).
- b) The Company has no commitments under the terms of non-cancellable operating leases (2021: Nil).
- c) The Company has future multi-year work program obligations in order to maintain tenure of its mineral permits. These obligations include: permit rentals, mapping, sampling, data compilation and modelling. These are set out in detail in the financial statements at Note 16.

## **Off-Balance Sheet Arrangements and Contingent Liabilities**

The Company has no off-balance sheet arrangements.

## **Critical Accounting Policies and Estimates**

Preparing financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of any contingent assets and liabilities as at the date of the financial statements, as well as the reported amounts of revenues earned, and expenses incurred during the period. These estimates are based on historical experience and other assumptions that are believed to be reasonable under the circumstances.

The Company's significant accounting policies are those that affect its financial statements and are summarized in Note 2(e) of the audited financial statements for the year ended March 31, 2022.

Critical accounting policies and estimates in the year included capitalization of the costs relating to the acquisition, exploration and development of non-producing resource properties and the recognition of impairment of those assets, the allocation of proceeds on the purchase or sale of assets, the valuation of stock-based compensation and tax accounts, and contingent liabilities.

Actual results could differ from these estimates.

## **Mineral Properties**

The decision to capitalize exploration expenditures, and the timing of the recognition that capitalized exploration is unlikely to have future economic benefits, can materially affect the reported earnings of the Company. In line with accepted industry practice for exploration companies, the Company has adopted the policy of deferring property specific acquisition, exploration and development costs. Deferred costs relating to properties that are relinquished, or where continued exploration is deemed inappropriate, are written off in the year such assessment is made. If the Company adopted a policy of expensing all exploration costs, the Company's asset base, shareholders' equity, and loss from operations would be materially different. These deferred costs will be amortized on the unit-of-production basis over the estimated useful lives of the properties following the commencement of production. The cost of mineral

properties includes any cash consideration paid, and the fair market value of shares issued on the acquisition of property interests, if any. The recorded amounts represent actual expenditures incurred and are not intended to reflect present or future values.

The Company reviews capitalized costs on its property interests on a periodic, or at least annual, basis and will recognize an impairment in value based upon current exploration results and upon management's assessment of the future probability of profitable revenues from the property or from the sale of the property. Management's assessment of the property's estimated current fair market value may also be based upon a review of other property transactions that have occurred in the same geographic area as that of the property under review.

# OUTLOOK

The Company aims either to raise sufficient equity finance to commence the re-application process for the Marine Consent or to utilise cash flows generated by the Korella or Avenir Makatea projects.

Once the required level of funding has been raised, one way or another, it is then expected to take 15 months to complete the work required to submit the re-application with a likely submission date in Q3, 2025. This would lead to an expected grant date of Q3, 20265 and eventual production in late 2027.

In June 2021 Chatham acquired Avenir, which through its wholly-owned French Polynesian subsidiary, SAS Avenir Makatea, holds an exploration research permit to explore for phosphate on the French Polynesian island of Makatea. The Makatea project covers an area of 1,035 ha (10.36 km2). The island is a well-known source of phosphate and was previously mined until 1966. Avenir has filed an application for a mining concession over the project area which remains in progress.

For additional information, please refer to the Company's website at <u>www.rockphosphate.co.nz</u> and for regulatory filings, including news releases, please refer to <u>www.SEDAR.com</u>.

## **RISKS, UNCERTAINTIES AND OTHER ISSUES**

## **Risk Factors**

Chatham (NZ)'s business of exploring and developing for mineral resources involves a variety of operational, financial and regulatory risks that are typical in the natural resource industry. A number of risks described below also generally apply to the recently acquired SAS Avenir Makatea project in French Polynesia as it's a very similar project in many respects. Chatham (NZ) attempts to mitigate these risks and minimize their effect on its financial performance, but there is no guarantee that Chatham (NZ) will be profitable in the future. The Company's common shares should be considered speculative. Investors should carefully consider the following risk factors:

a. Marine Consent

Chatham (NZ) cannot commence mining operations without the Marine Consent. Chatham (NZ) filed for the Marine Consent on May 14, 2014 but was declined on February 11, 2015. While Chatham (NZ) considers that it has a good case to receive the Marine Consent on re- application, there is no guarantee that the Marine Consent will be granted. If Marine Consent is not granted or is granted subject to economically unfeasible conditions, Chatham (NZ) will not be able to proceed with mining operations in respect of the Mining Permit, which could have a material adverse effect on the financial condition, operations, and prospects of Chatham (NZ).

Recent revisions to the Exclusive Economic Zone ("EEZ") ACT mean that the Marine Consent

decision-making process will typically be completed within a nine-month period, however, there is provision for timeframes to be extended in certain circumstances. Any delay in the Marine Consent decision-making process could delay the entering into of a mining contract and the commencement of mining operations and production, which could have a material adverse effect on the financial condition, operations, and prospects of Chatham (NZ).

b. Uncertainty Relating to Mineral Resources

Resource estimates are a product of the skill, experience and judgements of the person carrying out the resource estimation and no assurances can be given that the estimated grade and tonnes will be realized or that Chatham (NZ) will receive the prices assumed in determining its resources. Valid estimates made at a given time may significantly change when new information becomes available. While Chatham (NZ) believes that the resource estimates included in this Document are reasonable, resource estimates by their nature are imprecise and depend on the quality of the sampling data and to a certain extent, upon statistical inferences that may ultimately prove unreliable.

All of Chatham (NZ)'s resources are reported as Inferred Mineral Resources. Inferred Mineral Resources have a great deal of uncertainty associated with them as to their existence (both quantity and ultimately recovered grade). Generally, Inferred Mineral Resources cannot form the basis of a feasibility study or bankable feasibility study. Owing to the nature of Chatham (NZ)'s phosphate deposit, and its accessibility, it is not guaranteed that the deposit will ever be converted to the measured and indicated resource categories. As such, there can be no assurance that third parties will find Chatham (NZ)'s resource categorization acceptable for future funding purposes or capital investment decisions, which could have a material adverse effect on the financial condition, operations, and prospects of Chatham (NZ).

c. Mining Contract and Mining Process Risk

The technical ability of Chatham (NZ) to extract phosphorite from the seabed is unproven and will require the development of a novel mining technique in order to accommodate the depth of the sea in the Chatham Rise area. Therefore, there are no assurances that the proposed mining method will perform at the necessary water depths as intended or at all.

d. Requirement for Future Funding

Chatham (NZ) is likely to require access to further funding in the future and prior to commencement of production for a variety of reasons, including working capital, expansion of the business, new developments relating to existing operations or new acquisitions. General market conditions, volatile phosphorite markets, the lack of any necessary permit or contract to mine, a claim against Chatham (NZ) or other factors may make it difficult to secure funding. There is no assurance that Chatham (NZ) will be successful in obtaining required funding as and when needed on commercially acceptable terms.

e. Work Program Commitments

The Mining Permit issued by the New Zealand Petroleum and Minerals ("**NZPAM**") department, originally required that mining operations commence on or before December 6, 2017 at a mining rate of not less than 800,000 tonnes of phosphorite per annum. Chatham (NZ) has sought and already been granted changes to the terms of the Mining Permit to reflect that mining operations cannot commence before 2020. On November 7, 2019 the Company was granted a change of

conditions in the permit to defer the minimum work programme commitments for a further 24 months.

Further changes to the conditions of the mining permit have subsequently been applied for to reflect ongoing delays in the environmental permitting process that Chatham (NZ) must undertake. Chatham (NZ) believes that the specified mining rate can be achieved with the currently contemplated mining processes, but many of the steps needed to reach commencement of mining are beyond the control of Chatham (NZ) and as such there can be no guarantee that Chatham (NZ) will be able to meet this target production within the required deadline or at all. There can be no guarantee that Chatham (NZ) will receive Marine Consent and such other permits as may be required for mining operations, nor that it will enter into a mining contract should Marine Consent be granted or that a suitable mining vessel will be available in the timescale required to allow Chatham (NZ) to satisfy the Mining Permit requirements.

The failure of Chatham (NZ) to commence mining at a rate of not less than 800,000 tonnes of phosphorite per annum could result in a breach of the Mining Permit and give rise to the power of the appropriate Minister, as defined in the Crown Minerals Act 1991 of New Zealand, to revoke the Mining Permit. Whilst Chatham (NZ) believes that the appropriate Minister would likely amend the terms of the Mining Permit in such circumstances, provided he or she was satisfied that Chatham (NZ) was making good progress to commence mining operations as soon as practicable, there can be no assurance that such discretion would be exercised and any such failing could have a material adverse effect on the financial condition, operations, and prospects of Chatham (NZ).

The Mining Permit imposed other conditions upon Chatham (NZ) as well, including the requirement to complete a study within 24 months of the permit being granted (i.e. by 6 December 2017) in support of a final investment decision. This deadline has been altered and is expected to be extended again. However, no assurance can be given that NZPAM will accept Chatham (NZ)'s revised timing in satisfaction of this condition, when completed and presented. Any such failing could result in the termination or modification of the Mining Permit, which could have a material adverse effect on the financial condition, operations, and prospects of Chatham (NZ).

Chatham (NZ) was also expected to complete appropriate sampling, geophysical and geotechnical surveys required to define mining blocks within 48 months of the permit being granted (i.e. by 6 December 2017) and spend a minimum of NZD2 million per annum (C\$1.9m) in carrying out its activities. This deadline has also been altered twice and is expected to be altered again. However, failure to comply with this condition could result in the termination or modification of the Mining Permit, which could have a material adverse effect on the financial condition, operations, and prospects of Chatham (NZ).

#### f. Market Risk

Whilst Chatham (NZ) has engaged in market research and identified a number of potential buyers and markets in relation to the product to be mined from Chatham Rise, Chatham (NZ) has not yet entered into any marketing, sales or offtake agreements that are in markets considered material to Chatham (NZ). In addition, Chatham (NZ) cannot be assured of the quality of product that it intends to produce given the nature of Chatham (NZ)'s resource, which could affect anticipated demand. Further, the market may develop and change prior to the commencement of mining operations and impact negatively on anticipated demand, whether as a result in a change in technology, a new source of phosphate production or otherwise. There can be no assurance, therefore, that Chatham (NZ) will be in a position to sell all of its mining output, if any, at profitable prices, nor at all.

#### g. Mining Contract and Mining Process Risk

The technical ability of Chatham (NZ) to extract phosphorite from the seabed is unproven and will require the development of a novel mining technique in order to accommodate the depth of the sea in the Chatham Rise area. Chatham (NZ) intends to use a vessel that is specially modified and equipped with a trailing suction unit. Whilst this solution relies on existing, proven technology, the compilation of those techniques is novel and the use of the process in its proposed form and at the depths of the Chatham Rise area is untried and may require further work. Therefore, there are no assurances that the proposed mining method will perform at the necessary water depths as intended or at all.

Modification of a vessel for such purpose will only take place if Chatham (NZ) is granted the Marine Consent and enters into a mining contract. There can be no assurance that Chatham (NZ) will be able to enter into such a contract on acceptable terms, nor at all, and the failure to do so could delay the development of Chatham (NZ)'s project, alter Chatham (NZ)'s mining cost assumptions and impair the ability of Chatham (NZ) to carry out future fund raises. Whilst the Directors believe that there is competition for the award of the mining contract on competitive terms, there is no certainty that any alternative contractors to Boskalis would be able to use the design work completed by Boskalis, nor that any alternative contractor would be able to provide an independently engineered processing solution on a timely basis and at a similar anticipated cost.

Work on funding strategies for vessel modification or charter is currently being considered by Chatham (NZ). The present idea (in conjunction with project leader Boskalis) is to establish a special purpose vehicle to own the vessel and to fund the modifications by way of a combination of debt and equity. A consortium of investors would be sought by Boskalis to contribute equity. There is a risk that the required funding may not be secured at all or on terms unfavourable to Chatham (NZ), the special purpose vehicle, or the mining operator. Subject to finalization of the financing strategy, Chatham Rock may need to contribute equity into the special purpose vehicle which may require that Chatham Rock secures further funds. It is not Chatham Rock's intention to make a significant equity contribution. It is also possible, however, that the vessel could be owned by a third party marine investor and chartered.

h. Intellectual Property Risk

In addition to the above, while the proposed mining system comprises a compilation of existing technology, freedom-to-operate searches have not been undertaken. There is a remote possibility that some intellectual property rights associated with the mining system design could be proprietary to other parties. This could require licensing arrangements to be negotiated with such parties or alternative designs to be developed (where any such proprietary rights exist). There can be no assurance that such licensing arrangements will be negotiated on terms favourable or acceptable to Chatham (NZ) or at all.

i. Production Risks

The future development of any mineral deposit involves significant risks that even a combination of careful evaluation, experience and knowledge may not eliminate. This is particularly the case in an offshore deposit such as that at Chatham Rise, which is subject to additional risks related to its marine location. For example, production will be affected by weather patterns and sustained periods of bad weather could adversely impact mining activity and reduce tonnages of the rock phosphate mined. No assurance can be given that Chatham (NZ) will meet its annual target production rates of 1.5Mt per annum once production starts.

In recent years, a New Zealand company called Rocket Lab has commenced launching satellites from the Mahia Peninsula, about 500 km west of the project area. There is a risk that jettisoned rocket components could damage the dredging vessel and/or impede the phosphate recovery operations.

Chatham (NZ) has no operating history upon which to base estimates of future cash flow. Chatham (NZ)'s estimates of resources and cash operating costs are, to a large extent, based upon geological, engineering and market analyses. Estimates of capital and operating costs are necessarily preliminary at this stage of Chatham (NZ)'s development. It is possible that actual costs and economic returns may differ materially from Chatham (NZ)'s best estimates. It is not unusual in the mining industry for new mining operations to experience unexpected problems during the pre-production phase, take much longer than originally anticipated to bring into a producing phase, and to require more capital than anticipated.

j. Changes in Law and Policy

The laws, regulations, and authorities governing Chatham (NZ) and its operations may change and may result in additional material expenditures or time delays. Exploration and mining permits may be susceptible to revision or cancellation by new laws or changes in direction by the government of the day. In addition, the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012 has in recent years been subject to varying and conflicting interpretation by the Courts which is expected to be resolved by a recent application by another marine mining project. Until then there will continue to be uncertainty as to its interpretation or application.

Whilst the Directors believe that the Government and population of New Zealand generally support the development of natural resources in the manner contemplated by Chatham (NZ), there is no assurance that future political and economic conditions will not result in the adoption of different policies or attitudes affecting ownership of assets, land tenure and mineral concessions, taxation, royalties, environmental protection, labour relations and return of capital. This may affect Chatham (NZ)'s ability to undertake exploration, development and mining activities on its projects.

k. Regulatory Compliance Risks

Chatham (NZ)'s future expected mining operations and exploration activities, as well as the transportation and handling of any products mined, are or will be subject to extensive regulations and laws. Such regulations relate to production, development, exploration, exports, imports, taxes and royalties, labour standards, occupational health, waste disposal, protection and remediation of the environment, decommissioning and reclamation, toxic substances, transportation safety and emergency response, and other matters. Compliance with such regulations and laws increases the costs of Chatham (NZ)'s operations.

It is possible that, in the future, the costs, delays and other effects associated with such laws and regulations may impact Chatham (NZ)'s decision as to whether to operate existing projects, or, with respect to exploration and development properties, whether to proceed with exploration or development, or that such laws and regulations may result in Chatham (NZ) incurring significant costs to remediate or decommission properties that do not comply with applicable environmental standards at such time.

Chatham (NZ) expends significant financial and managerial resources to comply with such laws and

regulations and anticipates the need for even greater resources if production is commenced. Because legal requirements are subject to change and to interpretation, Chatham (NZ) is unable to predict the ultimate cost of compliance with these requirements or their effect on operations. Furthermore, future changes in governments, regulations and policies, such as those affecting Chatham (NZ)'s mining operations and phosphorite transport, could materially and adversely affect Chatham (NZ)'s results of operations and financial condition in a particular period or its longterm business prospects.

Failure to comply with applicable laws, regulations and permitting requirements may result in enforcement actions. These actions may result in orders issued by regulatory or judicial authorities causing operations to cease or be curtailed, and may include corrective measures requiring capital expenditures, installation of additional equipment or remedial actions. Chatham (NZ) may be required to compensate others who suffer loss or damage by reason of its activities and may have civil or criminal fines or penalties imposed for violations of applicable laws or regulations.

I. Reliance on Key Equipment

The ability of Chatham (NZ) to extract the phosphorite from the seabed will be dependent on unique mining equipment, including a specialized vessel and trailing suction unit. Should this unique equipment become unavailable once commissioned, Chatham (NZ) will likely have no alternative access to its Mineral Resource. The equipment may become temporarily or permanently unavailable to Chatham (NZ) due to factors beyond Chatham (NZ)'s control, including adverse weather conditions, labour stoppages, rocket strike, technical failures, government regulations, failure to secure any necessary intellectual property licenses or decisions of the equipment operator. The unavailability of such equipment could have a material adverse effect on the financial condition, operations, and prospects of Chatham (NZ).

m. Phosphate Demand and Pricing

The profitability of Chatham Rock's group operations, and its ordinary Share price, will be highly dependent upon the market price of phosphate rock. Chatham (NZ)'s net earnings and operating cash flow will be closely related and sensitive to fluctuations in the long- and short-term market price of phosphorite. Commodity prices fluctuate widely and are affected by numerous factors beyond the control of Chatham (NZ). The world supply of and demand for fertilizers and the stability of exchange rates can all cause significant fluctuations in prices. These factors cannot be accurately predicted. The price of fertilizers has fluctuated widely in recent years and future price declines could cause commercial production to be impracticable, which could have a material adverse effect on the financial condition, operations, and prospects of Chatham (NZ).

n. Reliance on Key Personnel

Chatham (NZ)'s success will largely depend on the efforts and abilities of certain senior officers and key personnel. Chatham (NZ) is committed to providing attractive working conditions to assist in retaining its key senior management personnel. However, there can be no assurance Chatham (NZ) will be able to retain these key personnel. Furthermore, the number of individuals with relevant mining and operational experience in this industry is small. The loss of key personnel or the inability to recruit and retain high-calibre staff could have a material adverse effect on Chatham (NZ). The addition of new personnel or employees and the departure of existing contractors, particularly in key positions, can be disruptive and may have a material adverse effect on the financial condition, operations, and prospects of Chatham (NZ).

Personnel requirements of Chatham (NZ) will also change. At present, Chatham (NZ) has a

particular need for scientific and communications expertise as it pursues the Marine Consent. If granted, those needs will reduce and there will be increased need for engineering and sales and marketing capabilities. There can be no assurance that additional personnel with such capabilities, fit for Chatham (NZ)'s purpose, will be secured.

o. Property Title Risk

The Mining Permit covers an offshore area in the EEZ of New Zealand. The Mining Permit and Marine Consent (if issued) can be considered utilization rights to that offshore area. These rights may be subject to defects or challenges. If such defects or challenges cover a material portion of Chatham (NZ)'s offshore area, they could materially and adversely affect Chatham (NZ)'s reported Mineral Resources or its long-term business prospects. As well, any prolonged challenge to Chatham (NZ)'s rights could result in substantial delays in its development timetable, which could have a material adverse effect on the financial condition, operations, and prospects of Chatham (NZ). Ambiguity can arise in the interpretation of mining legislation regulations, permits and policy, including whether or not conditions have or have not been satisfied (either at the time of satisfaction or subsequent thereto). For example, the precise form of study that is required to be delivered in support of a decision to mine and in satisfaction of Mining Permit is not subject to any further detailed guidance or definition. Interpretations, whether at the relevant time or subsequent thereto, could result in claims or losses that have a material adverse impact on the business, operations, assets or prospects of Chatham (NZ).

Maori customary rights, as well as requirements to consult with Maori under applicable New Zealand law, are relevant to Chatham (NZ)'s rights. Managing relations with local Maori communities is a matter of paramount importance to Chatham (NZ). Notwithstanding that Maori interests do not carry with them a form of "veto" or similar right in relation to the Mining Permit or the potential grant of the Marine Consent, there can be no assurance that customary rights claims, as well as related consultation issues, will not arise on or with respect to Chatham (NZ)'s rights and impact on Chatham (NZ)'s exploration, development and mining activities, which could have a material adverse effect on the financial condition, operations, and prospects of Chatham (NZ).

p. Environmental Risk

Chatham (NZ)'s New Zealand projects are subject to New Zealand environmental laws. These laws include laws generally applying to the protection of the environment, as well as specific regulation relating to areas in which Chatham operates. Exploration and mining projects can cause a variety of environmental impacts and Chatham (NZ) is conscious of a number of potential impacts in respect of its proposed mining operations, including:

- impact on fish stocks on the Chatham Rise;
- pollution risks from the vessel (e.g. oil spills);
- impact on benthic communities; and
- effects of plume (where silt and seabed materials are separated from the rock phosphate and returned to the ocean floor, but do not settle on the seabed immediately and then go into the lower levels of the water column).

Chatham (NZ) has collected and analyzed extensive data on these potential effects to develop and mitigation strategies, as well as contracted scientific organizations in New Zealand and The Netherlands (including NIWA and Deltares) to assess the environmental impacts of its operations. This information comprises a significant part of the Marine Consent application.

Chatham (NZ) intends to carry out its operations in compliance with all applicable environmental laws and in compliance with any conditions imposed upon it, as well as in a responsible manner. In the event that Chatham (NZ) does not operate in compliance with all applicable laws and conditions there is a risk that the Mining Permit and/or Marine Consent, if granted, could be forfeited or other adverse consequences could arise.

#### q. NGO Risk

Mining companies are often the target of actions by non-governmental organizations and environmental groups in the countries in which they operate. Such organizations and groups may take actions that are illegal, unauthorized or dangerous, without the support of government, to disrupt commercial operations. There can be no guarantee that any future action will not be taken by any non-governmental organization or environmental group to disrupt Chatham (NZ)'s mining operations. They may also apply pressure to local, regional and national government officials, or local iwi groups, to take actions that are adverse to Chatham (NZ)'s operations. Such actions could have an adverse effect on Chatham (NZ)'s ability to produce and sell its products, which could have a material adverse effect on the financial condition, operations, and prospects of Chatham (NZ).

#### r. Profitability and Operating History

Chatham (NZ) has no history or earning revenue or profits and no assurance can be given by Chatham (NZ) that it will have future revenues or profits, since these are dependent on the future development and success of any mining operation. Chatham (NZ) has no history of mining operations and is in a pre-revenue stage of development. As such, Chatham (NZ) is subject to many risks common to such enterprises, including under-capitalization, cash shortages, limitations with respect to personnel, financial and other resources and the lack of revenue. There is no assurance that Chatham (NZ) will be successful in achieving a return on Shareholders' investment.

#### s. Competition and Customer Strength

The fertilizer and mining industries are intensely competitive in all phases of exploration, development and production. Competition in the mining industry is primarily for properties that can be developed and produced economically; technical and commercial expertise; and capital. Many competitors not only explore for and mine phosphate rock but conduct beneficiation and marketing operations on a global basis. Such competition may result in embedded relationships with customers that make it difficult for Chatham (NZ) to negotiate offtake or other supply arrangements. As well, many potential phosphate customers are better capitalized than Chatham (NZ) and may engage in tactical order delays and other behaviour that could cause Chatham (NZ) to suffer cash flow difficulties and induce it to execute transactions that do not reflect market conditions, which could have a material adverse effect on the financial condition, operations, and prospects of Chatham (NZ).

t. Conflicts of Interest

Certain of Chatham (NZ)'s directors, officers and significant shareholders are or may become shareholders, directors and/or officers of other natural resource companies, and, to the extent that such other companies may participate in ventures with Chatham (NZ), these individuals may have a conflict of interest in negotiating and concluding terms respecting the extent of such participation.

In the event that such a conflict of interest arises at a meeting of the directors, a director who has

such a conflict will abstain from voting for or against the approval of such participation or of its terms. In appropriate cases Chatham (NZ) will establish a special committee of independent directors to review a matter in which one or more directors or officers may have a conflict.

From time to time, Chatham (NZ), together with other companies, may be involved in a joint venture opportunity where several companies participate in the acquisition, exploration and development of natural resource properties, thereby permitting Chatham (NZ) to be involved in a greater number of larger projects with an associated reduction of financial exposure in any given project. Chatham (NZ) may also assign all or a portion of its interest in a particular project to any of these companies due to the financial position of the other Company or companies.

In accordance with the laws of the province of British Columbia, the directors are required to act honestly and in good faith with a view to furthering the best interest of Chatham (NZ). In determining whether or not Chatham (NZ) will participate in a particular program or transaction and the terms of such participation, the directors will primarily consider the potential benefits to Chatham (NZ), the degree of risk to which Chatham (NZ) may be exposed and its financial position at that time. Other than as indicated, Chatham (NZ) has no procedures or mechanisms to deal with conflicts of interest.

u. Dependence on General Economic Conditions

The operating and financial performance of Chatham (NZ) is influenced by a variety of general economic and business conditions, including levels of consumer spending, inflation, interest rates and exchange rates, access to debt and capital markets, and government fiscal, monetary and regulatory policies. Prolonged deterioration in general economic conditions, including an increase in interest rates or a decrease in consumer and business demand, could have a material adverse effect on Chatham (NZ)'s business and financial condition.

v. Exchange Rates

Chatham (NZ) is exposed to movements in exchange rates. Chatham (NZ)'s historical (New Zealand) financial statements are expressed and maintained in New Zealand dollars. Exchange rate movements between New Zealand and other countries may impact the profit and loss account or assets and liabilities of Chatham (NZ), to the extent the foreign exchange rate risk is not hedged or not appropriately hedged.

w. Insurance Risk

Although Chatham (NZ) may obtain insurance to cover some of these risks and hazards in amounts it believes to be reasonable, such insurance may not provide adequate coverage in the event of certain circumstances. No assurance can be given that such insurance will continue to be available or that it will be available at economically feasible premiums or that it will provide sufficient coverage for losses related to these or other risks and hazards. Furthermore, there are risks that Chatham (NZ) cannot insure against, or may elect not to insure against, any such risks and hazards and Chatham (NZ) may be subject to liability or sustain loss in such circumstances, which could have a material adverse effect on the financial condition, operations, and prospects of Chatham (NZ).

x. Dividends

There can be no assurance as to the level of future dividends. The declaration, payment and

amount of any future dividends of Chatham (NZ) are subject to the discretion of the Shareholders or, in the case of interim dividends to the discretion of the directors, and will depend upon, amongst other things, Chatham (NZ)'s earnings, financial position, cash requirements, availability of profits, as well as provisions for relevant laws or generally accepted accounting principles from time to time.

Under New Zealand law the board of directors may declare dividends from time to time from distributable profits provided that the board of directors first resolves and certifies that following the dividend being paid, Chatham (NZ) will satisfy the solvency test under the Companies Act 1993. This solvency test requires that the board of directors believes on reasonable grounds that Chatham (NZ) will be able to meet its debts as they fall due and that its assets exceed liabilities, including contingent liabilities.

y. Taxation

The tax rules, including stamp duty provisions and their interpretation, relating to an investment in Chatham (NZ) may change during the life of Chatham Rise project. The levels of, and reliefs from, taxation may also change and vary in respect of a given investor's circumstances.

z. Dual Regulation

Chatham Rock's New Zealand subsidiary, Chatham Rock Phosphate (NZ) Limited is primarily regulated by the Companies Act 1993. As a company listed on the NZX, Chatham Rock has the Toronto Venture Exchange as its home exchange, with a copy of each document filed in Canada, to also be filed with the NZX.

## SUPPLEMENTAL TO THE FINANCIAL STATEMENTS

## **Outstanding Share and Option Data**

Chatham Rock's shares trade on the TSX Venture Exchange (ticker code **NZP**), the New Zealand Exchange (ticker code **CRP**) and the Frankfurt Stock Exchange (ticker code **3GRE**). The Company is authorized to issue an unlimited number of common shares without par value.

On April 8, 2022, the Company closed a non-brokered private placement of 12,927,960 units at a price of CAD \$0.17 per Unit (NZ\$0.195) for gross proceeds of CAD\$2,197,753 (NZ\$2,520,952). Each Unit consists of one common share in the capital of the Company and one transferable share purchase warrant. Each Warrant will entitle the holder thereof to acquire one common share at a price of CAD\$0.45 per share at any time prior to the date that is three (3) years from the date of issuance.

In the event that the common shares of the Company trade on the TSX Venture Exchange at a closing price of greater than CAD\$0.60 (NZ\$0.69) per common share for a period of 20 consecutive trading days at any time after four months and one day after the closing date of the private placement, the Company may accelerate the expiry date of the Warrants by giving notice to the holders thereof by way of a news release and in such case the Warrants will expire on the 30th day after the date of dissemination of the news release. All securities issued pursuant to the private placement are subject to a hold period and may not be traded until August 9, 2022.

On May 30, 2022, 320,000 options at \$0.13 cents each were exercised and on June 14, 2022, 150,000 options at \$0.13 cents each were exercised.

As at September 30, 2022, 85,329,287 shares were issued and outstanding.

## FORWARD-LOOKING STATEMENTS

These audited consolidated financial statements and this Management's Discussion and Analysis, contains certain "Forward-Looking Statements" that are prospective and reflect management's expectations regarding Chatham Rock Phosphate Limited's ("Chatham Rock" or "Company") future growth, results of operations, performance and business prospects and opportunities. Forward-looking information can often be identified by forward-looking words such as "anticipate", "believe", "expect", "goal", "plan", "intend", "estimate", "may" and "will" or similar words suggesting future outcomes, or other expectations, beliefs, plans, objectives, assumptions, intentions or statements about future events or performance.

All statements, other than statements of historical fact, included herein, including without limitation, statements regarding potential mineralization and reserves, estimates of future production, unit costs, costs of capital projects and timing of commencement of operations, exploration results and future plans and objectives of the Company are forward-looking statements that involve various risks and uncertainties. There can be no assurance that such statements will prove to be accurate, and actual results and future events could differ materially from those anticipated in such statements.

Important factors that could cause actual results to differ materially from Company's expectations are disclosed in its documents filed from time to time with the TSX Venture Exchange and other regulatory authorities and include, but are not limited to, failure to establish estimated resources and reserves, the grade and recovery of ore to be mined varying from estimates, capital and operating costs varying significantly from estimates, delays in obtaining or failure to obtain required governmental, environmental or other project approvals, inflation, changes in exchange rates, fluctuations in commodity prices, delays in the development of projects and other factors.

Shareholders and prospective investors should be aware that these statements are subject to known and unknown risks, uncertainties and other factors that could cause actual results to differ materially from those suggested by the forward-looking statements. Readers are cautioned not to place undue reliance on forward-looking information. By its nature, forward-looking information involves numerous assumptions, inherent risks and uncertainties, both general and specific, that contribute to the possibility that the predictions, forecasts, projections and various future events will not occur.

Chatham Rock undertakes no obligation to update publicly or otherwise revise any forward-looking information whether as a result of new information, future events or other such factors which affect this information, except as required by law.