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| Before the Independent Commissioners |  |
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| Under | the Resource Management Act 1991 |
| In the matter of | a hearing on submissions on the proposed Te Tai o Poutini Plan Hearing Topics 1 and 2: Introduction / Whole Plan and Strategic ObjectivesSubmitter: **Rocky Mining Limited (S474)**Submitter: **Papahaua Resources (S500)** |

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| Statement of Evidence of Thomas William Ritchie |
| 2 October 2023 |
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**Introduction**

1. My full name is Thomas William Ritchie. I am the General Manager of Hardie Pacific Limited (**Hardie Pacific**).
2. I have been asked to appear on behalf of Rocky Mining Limited (**RML**) and Papahaua Resources Limited (**PRL**) (the **Submitters**) in support of their submissions in respect of the proposed Te Tai o Poutini Plan (**TTPP**). These companies are subsidiaries of Hardie Pacific.
3. RML is an alluvial gold mining company targeting large-volume alluvial gold resources in the Rimu and Seddon Terrace areas south of Hokitika. PRL is an aggregate exploration company targeting high quality, high demand and strategically important aggregate (diorite and granite), originating from within the Britannia pluton. A further company Grey Gravels Limited, also a subsidiary of Hardie Pacific, is targeting high quality alluvial aggregate for potential bulk export to the New Zealand domestic market, notably the North Island.
4. I have a Bachelor of Science Hons (2013) and Master of Science (MSc) (2017) in geology from the University of Otago. I have been working in mineral exploration as a geologist since 2014, and on the West Coast for the last eight years. I am responsible for project management, technical assessment of projects, supervising field geologists, overseeing consultants, test work programmes, and environmental management.
5. I have exploration experience in multiple commodities across New Zealand and the Pacific, including orogenic gold and tungsten, heavy mineral sands, copper, alluvial gold, coal, potash, nickel, Platinum Group Elements (**PGEs**) and Rare Earth Elements (**REE**).
6. In early 2017, I completed a MSc dissertation thesis titled “Placer Garnet of the West Coast, New Zealand” at the University of Otago. This research evaluated the mineralogy, morphology, and source of heavy minerals from all prominent beaches between Haast and Westport. The study also looked at the relationships between the modern beach and their proximal inland deposits and differences and similarities between deposits along the length of the West Coast. I published the findings of this study in the peer reviewed international journal, Economic Geology, (Ritchie, et al (2019), *Garnet Compositions Track Longshore Migration of Beach Placers in Western New Zealand*). I have presented this research at multiple national and international geology conferences.
7. It is important to recognise that the West Coast is well endowed with natural mineral resources, relative to the rest of the New Zealand. This evidence addresses the alluvial gold and aggregate resources targeted by the Submitters. These sectors provide a breadth of well-paid employment opportunities for the region, which are in sync with the capabilities and proud history of extractive industries in the region. Enabling and continuation of mining on the Coast is important to provide diversity and consequent resilience to the job market, and ensure the benefits associated with these fixed in location resources and activities can be gained by the West Coast.

*Alluvial Gold Resources*

1. RML is an alluvial gold mining company targeting large-volume alluvial gold resources in the Rimu and Seddon Terrace areas south of Hokitika. Exploration (drilling and test pitting) is underway covering three exploration permits in Wombat Creek, Rimu Channel and Rocky Creek North. To explain it very simply, alluvial gold mining is where rocks containing gold have been worn down into sand and gravel by natural processes, and that gold is then gathered from riverbeds (or from areas where rivers used to be).
2. Large scale alluvial gold mining is already underway in the Rimu and Seddon Terrace areas, subject to mining permits adjacent to RML's exploration permits. Alluvial gold mining has been undertaken in this area since the late 1800’s and has revealed a regionally extensive zone of gold bearing gravels at depths between 10-25m below the surface. This zone is the target of RML's exploration activities.
3. Traditionally gold has been used to make jewellery and coins, but more recently it is used for dentistry, medicine, aerospace (to lubricate mechanic parts, in circuitry to conduct electricity, on windscreens to reflect infra-red radiation), technology (including cellphones) and renewable energy (such as in solar panels to improve efficiency and performance of solar cells).

*Aggregates*

1. The demand for West Coast aggregates and minerals is huge. PRL is an aggregate exploration company targeting high quality, high demand and strategically important aggregate (diorite and granite), originating from within the Britannia pluton.
2. PRL holds a 459 Ha exploration permit 20 km north of Westport. This area and the surrounds have a long association and history with mining, and are surrounded by the Buller Coalfield and alluvial/hard rock gold prospects. PRL is currently carrying out detailed and systematic exploration for the potential to mine granitic pegmatites hosting Lithium and Rare Earth Elements (**REE**).
3. Diorite and granite can be used in highvalue seawalls, flood protection, lower carbon concrete and other specialty applications essential to address the effects of and drivers of climate change. REEs are small scale, extremely high value, and strategically important globally. They are used in renewable energy initiatives such as wind turbines and electric vehicle batteries.
4. In addition to hard rock aggregate targeted within the Papahaua Resources licence, Grey Gravels is targeting high quality alluvial aggregate for potential bulk export the New Zealand domestic market notably the North Island.
5. The lower Grey Valley area contains numerous existing quarries and river gravel takes. Gravels associated with the modern and paleo Grey River are of high quality and can be used for a wide variety of applications, including chip seal, concrete aggregate and railway ballast. Quarries and alluvial gold mines in the surrounding area can also produce large quantities of armour rock suitable for coastal and river protection works. The demand for high-quality armor rock is steadily increasing in New Zealand, while supply is struggling to keep up, resulting in a growing supply deficit across the country.
6. Grey Gravels limited has purchased 160.7Ha farm within the mineral application area consisting of 26 separate titles. This property is only 3.5km from the Greymouth Port. The proposed redevelopment of the Greymouth Port, bulk handling facility, and operation of barge by West Coast Bulk Logistics will allow the efficient and cost-effective export of aggregate products to markets outside of the West Coast. The option for the direct transport of large volumes of aggregate from source to point of use may act to lower the carbon footprint and dependency on road transport for large infrastructure projects.
7. Recent announcements on the redevelopment of the Buller Port and return of coastal shipping to the West Coast, provides PRL a huge opportunity to export cost competitive high quality aggregate around New Zealand.

**Conclusion**

1. The submitters support the enabling of mining activities in the TTPP. The West Coast is well endowed with natural mineral resources, relative to the rest of the New Zealand, and is an important industry to the West Coast, and New Zealand both now and in the future.

**Thomas William Ritchie
2 October 2023**