

BEFORE

Independent Commissioners appointed by
Tasman District Council

IN THE MATTER

of the Resource Management Act 1991

AND

IN THE MATTER

of an application by CJ Industries Ltd for land use consent RM200488 for gravel extraction and associated site rehabilitation and amenity planting and for land use consent RM200489 to establish and use vehicle access on an unformed legal road and erect associated signage



received by email
Fri 17 Mar 2023 @ 3:28 pm

**SUPPLEMENTARY EVIDENCE OF DR CALUM MACNEIL ON BEHALF
OF CJ INDUSTRIES LIMITED
(SURFACE WATER QUALITY AND ECOLOGY)**

16 March 2023

1. INTRODUCTION

- 1.1 My full name is Dr. Calum MacNeil. I am a freshwater ecologist and I am employed by the Cawthron Institute in this capacity.
- 1.2 The applicant has applied for resource consents authorising the extraction of gravel, stockpiling of topsoil, and reinstatement of quarried land, with associated amenity planting, signage and access formation at 134 Peach Island Road, Motueka:
 - a. RM200488 land use consent for gravel extraction and associated site rehabilitation and amenity planting and
 - b. RM200489 land use consent to establish and use vehicle access on an unformed legal road and erect associated signage
- 1.3 My evidence addresses the surface water quality and ecology assessment of the activities for which consent is sought.

- 1.4 I previously prepared a statement of evidence dated 15 July 2022 in relation to the applications. This evidence responds to the direction in Minute 7 dated 13 March 2023.

Qualifications and Experience

- 1.5 My qualifications and experience are set out in my evidence dated 15 July 2022.

Code of Conduct

- 1.6 I have read the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2023 and I agree to comply with it. My evidence is within my area of expertise, however where I make statements on issues that are not in my area of expertise, I will state whose evidence I have relied upon. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed in my evidence.

2. EVIDENCE

- 2.3 In my first statement of evidence, I said that:
- a. The measures put forward by the applicant are proportionate and fit for purpose in protecting instream ecological values in the Motueka River.
 - b. The presence of stop banks and minimum distance of 20 m of excavations from stop banks and no working on the Motueka River side of stop banks are all crucial in protecting the Motueka River. The additional measures I recommended (which have been incorporated into consent conditions), would provide further safeguards to prevent sediment inputs.
 - c. I also believe there will be less than minor effects on an unnamed stream in the Peach Island overflow channel from both excavation activities on site and use of the haul road.
 - d. During extreme flood events, in my opinion there would be no discernible effects on river values in the Motueka River, directly attributable to the works detailed in the proposal.

- 2.4 Minute 7 directs me to review the Joint Witness Statement relating to Pit Erosion dated 6 March 2023 (JWS-Pit Erosion) and the supplementary evidence of Mr. Simon Aiken of Tonkin and Taylor dated 19 December 2022 (which is referenced in the JWS-Pit Erosion).
- 2.5 I have reviewed the JWS-Pit Erosion and Mr Aiken's supplementary evidence. Mr Aiken's evidence describes the potential for sediment to be generated from erosion of material placed in an excavated pit, prior to a vegetated cover establishing over the reinstated pit. The JWS-Pit Erosion sets out the opinions of Mr Aiken, Dr Harvey and Mr Griffith on that topic.
- 2.6 I have also reviewed additional draft consent conditions that the Applicant will propose in response to the JWS. The conditions contain additional measures to reduce the potential for sediment loss, as a result of flooding of active pits, from Stage 1. They require that Stage 1 is quarried in 3 tranches, with a maximum of one third of the Stage 1 area to be actively quarried or being remediated at any time. Subsequent tranches within Stage 1 are only to commence when the previous tranche has been rehabilitated to the point that a vegetated cover is established. In addition, Stage 1 quarrying and placement of clean fill, subsoil and soil is only to take place during the months of October to March, in order to ensure a vegetated cover is established before winter.
- 2.7 Limiting stage 1 quarrying to spring/summer months is an additional measure which would, in my opinion, reduce the potential for sediment run-off to the Motueka River and/or Peach Island overflow channel. Limiting quarrying and placement of cleanfill and soil to October to March inclusive, would reduce the risk of autumn/winter flood events increasing erosion risk and therefore sediment discharges to recipient water bodies.
- 2.8 Having said that, I do acknowledge Dr Harvey's comments in section 2 of the JWS, that flood events can happen any time of year in this area and cyclonic driven flood events can happen in summer. I also acknowledge Dr Harvey's comments in section 2 of the JWS, about the non-binary nature of magnitude and frequency of flood events, and Dr Harvey's comments and opinion that suspended sediments may be discharged during smaller, more frequent flood events (as opposed to just much larger, rarer flood events) to the Motueka River

via a route involving the back channel and the Shaggery River (presumably the backchannel referred to in the JWS is what I have termed the overflow channel in my evidence of 15 July 2022). However, I also note that during my 22 February 2022 site visit, the small stream which runs through the Peach Island overflow channel and connects via the Shaggery River to the Motueka river, had large sections that were completely dry with established terrestrial vegetation growing in these sections, indicating they had been dry for some time.¹ Given the intermittent nature of the modified stream in the overflow channel, with many dry longitudinal sections, I would expect many sediment inputs into this stream may become trapped in localised areas of the stream before reaching the Shaggery River and thence the Motueka River, except during prolonged high intensity rainfall / flood events.

2.9 As previously stated in my evidence of 15 July 2022, during more extreme flood events, in my opinion it would necessarily be expected that the entire overflow channel would flood and it would not be possible to detect or attribute any discernible effects from the site on Motueka River water quality and ecological values, relative to all other potential simultaneous inputs from the surrounding landscape during such an event.

2.10 Mr Aiken's evidence has reached a similar conclusion in his 19 December evidence where he states that:

Based on our simple assessment, including the previously detailed assumptions and existing information/literature values we estimate the maximum material that can be eroded is between approximately 4,246m³ and 5, 314m³ should all the material be exposed to erosive flows. In my opinion this is unlikely to occur. If such an event was to occur (noting that there is a 10-15% probability this could occur during the 12–15-month operational period of the Stage One area) it would represent between 1.85% to 2.31% of the long-term annual average suspended sediment load.

2.11 In respect of keeping two thirds of stage 1 covered with vegetation and limiting quarrying / remediation to one third at a time, I would expect areas with established vegetation cover to be less subject to erosion than unvegetated

¹ Evidence of Dr Calum MacNeil, 15 July 2022, sections 3.2, 3.12 and Fig. 4 photo

areas. Therefore I would expect this would reduce erosion risk and any consequent risk of sediment load discharge to recipient water bodies.

- 2.12 In summary, having considered the JWS-Pit Erosion and the supplementary evidence of Mr. Aiken I remain of the view that the proposal will protect instream ecological values in the Motueka River and that there will be less than minor effects on an unnamed stream in the Peach Island overflow channel from both excavation activities on site and use of the haul road.
- 2.13 In my opinion the additional conditions proposed for Stage 1 would provide further safeguards to prevent sediment inputs to the Motueka River system and any potential adverse effects on river values.

Calum MacNeil

17 March 2023

APPENDIX 1

Photographs taken on site visit 22/02/2022



Fig. 1 Cawthron vehicle parked in proposed Stockpile and service area. Stop bank (with Motueka River located behind it) is visible in far distance (indicated by red arrow).



Fig. 2 Peach Island overflow channel immediately upstream of bridge.



Fig. 3 Bridge over Peach Island overflow channel.



Fig. 4 Peach Island overflow channel immediately downstream of bridge. Dry sections of channel evident.



Fig. 5 Peach Island overflow channel several hundred metres downstream of bridge. Channel wet width is approximately 2m, depth is approximately 5-10cm.