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Taharoa Ironsands Limited
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Taharoa Ironsands Limited – Central and Southern Blocks Mining Project: response to invited party comments

This letter has been provided in response to invited party comments on Taharoa Ironsands Limited's substantive application for all necessary approvals for the Central and Southern Blocks Mining Project under the Fast-track Approvals Act 2024.

Two of the invited parties, Te Nehenehenui and the co submission of Natasha Willison-Reardon / Mirumiru Pā ki Marokopa – Marokopa Marae, have made comments in relation to marine mammals.

I was the author of the assessment of environmental effects on marine mammals submitted as Appendix GG to Taharoa Ironsands Limited's Central and Southern Blocks Fast-track substantive application (Marine Mammals Assessment).

In providing this letter, I have read the Expert Witness Code of Conduct set out in the Environment Court Practice Note 2023. I have complied with the Code of Conduct in preparing this letter. The content of the letter is within my area of expertise, and I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed in this letter. I have included a summary of my qualifications and experience in Appendix 1.

I acknowledge that marine mammals, particularly Māui dolphin, have a great importance to tangata whenua, and that my assessment and this letter are limited to my area of knowledge and technical expertise on Māui dolphin and Aotearoa New Zealand's other marine mammals.

Te Nehenehenui submission

At Section 14 of Attachment A to Te Nehenehenui's comments, Te Nehenehenui discuss their relationship with ahaoho (Māui dolphin) as a taonga species and note that Port Taharoa sits within the West Coast North Island Marine Mammal Sanctuary, which was established to protect this species.

The comments made by Te Nehenehenui cite directly from the Marine Mammals Assessment¹ in regard to details about the sanctuary (Section 3.3) and the status of Māui dolphin (Appendix 2).

At Section 14, Te Nehenehenui comments about the lack of existing monitoring data on underwater noise for the various activities described by the application, in particular the noise generated by bulk carriers and pipelines transporting the mining slurry. In addition, the comments reference the uncertainty around the effects of increasing ship-loading events.

Te Nehenehenui request that several conditions are included in the consent, including:

- a marine mammal sighting recording programme and annual reporting of sightings to the Department of Conservation
- mandatory marine mammal observers
- vessel strike incident reporting
- a marine mammal monitoring programme
- underwater noise monitoring.

All of the above issues are considered and discussed in more detail in Table 3 of the Marine Mammals Assessment, which is reproduced below as Table 1. As these are common issues often considered with marine activities that generate underwater noise, Table 1 refers to best management practices for regulating and minimising the final noise levels produced on marine mammals and recording marine mammal interactions.

These measures have also been incorporated into Chapter 13 – Marine Mammals in the Draft Environmental Management Plan (Draft EMP) (Appendix T) in 13.3 Control Measures and Table 13-2, which require:

- Adopting best practices for working in environments with marine mammals, including minimising the potential of injury to marine wildlife by minimising underwater noise effects
- Monitoring marine mammal interactions (including establishing and maintaining a watch for marine mammals), with annual reporting to DOC
- Recording vessel strike incidents, or near incidents, with any fatal incident to be reported to DOC
- Undertaking an underwater noise survey within 6 months of the consent commencing, and measuring underwater noise levels when any substantially different equipment is used for ship-loading activities
- Recording any entanglement incidents and reporting annually to DOC.

Based on the Marine Mammals Assessment, that the overall risk of any adverse effects for marine mammals, including Māui dolphin, arising from the activities are nil to less than minor, the underwater

¹ The submission by Te Nehenehenui references my original assessment of effects report as appendix GG in the application. This refers to: Clement D. 2025. Assessment of environmental effects on marine mammals: Taharoa Ironsands Limited Central and Southern Blocks Fast-track application. Nelson: Cawthron Institute. Cawthron Report 4175. Prepared for Taharoa Ironsands Limited.

noise survey requirements in Conditions 7 and 8, as well as the best management practices contained with the Draft EMP, are sufficient to address Te Nehenehenui's concerns.

Natasha Willison-Reardon / Mirumiru Pā ki Marokopa – Marokopa Marae submission

In the 'Te Māui dolphin' section of the combined table, the joint commenters refer to Māui dolphin as Te tohorā iti o te Hauāuru – the little dolphin of the West Coast – and reflect on its significance to them. The joint commenters raised concerns regarding the effects of increasing ship-loading events and the underwater noise from submarine pipeline operations over the life of the consent (i.e. 35 years) on Māui dolphins.

Both issues are discussed in length in my assessment, where I determined the resulting effects on marine mammals as having a low likelihood of occurrence (see Section 4 of the Marine Mammals Assessment). To further minimise these effects over the life of the consent, I have recommended several best management practice actions (see Table 1). As set out above, these are reflected both in the Draft EMP and in Conditions 7 and 8 to AUTH142035.12.01.

The joint commenters also state that my assessment on marine mammals does not include species-specific monitoring or independent verification. They are correct that my assessment was based on a literature review of all the available marine mammal data to date in the wider proposal area (including all available Māui dolphin research) and does not include any additional field monitoring. Their criticism is that a species with low abundance cannot be assessed using such an approach.

I note that because of the low abundance of Māui dolphin, short-term, localised monitoring of this subspecies is considered risky in terms of gathering any data / results. This is because there may be only a few or no sightings of the dolphins over the course of a year / season, and with such a small sampling size it is impossible to determine whether such results are normal or unusual, or whether you simply missed sightings from one year to the next. This is a well-known problem when trying to monitor small, widespread populations, and hence why the University of Auckland has been conducting 2-year back-to-back genetic abundance surveys on this subspecies at 5-year intervals since 2010, with additional Māui dolphin genetic samples dating back to 2001. This programme relies on the university's larger genetic dataset to track individual Māui dolphins and monitor the wider population trends taking place within this subspecies across its range.

However, I do not believe this means that no monitoring should be undertaken; it simply means it must be targeted and aimed at achieving an intended outcome. Table 1 contains several monitoring actions (as well as their suggested reporting outputs) directly tied to the three different management goals, which aim to: (1) minimise the potential for injury to marine wildlife caused by marine-based activities, (2) reduce the risk of vessel collision to zero injury / mortality, and (3) reduce the risk of entanglement to zero mortality.

The joint commenters have requested that the increase in shipping events not be allowed without a proposed Māui dolphin-specific monitoring and adaptive management plan (developed with the DOC and mana whenua) in place and that includes the following suggested amendments:

- passive acoustic monitoring of the ship-loading area and submarine pipeline

- mandatory vessel speed restrictions in identified habitat
- automatic suspension of ship loading on confirmed Māui dolphin presence within a defined buffer.

I agree that a Māui dolphin-specific management plan could help clarify all the management actions being taken to minimise any risk to the subspecies and ensure its continued protection. However, such protection should be in place for all marine mammals in the area – hence why an overarching Marine Mammal EMP was developed:

- The best management practice actions to address the first two amendments sought by the joint commenters are included in Chapter 13 of the Draft EMP, including 'Adopt best boating guidelines for marine mammals, including speed limits' (13.3 Control Measures) and 'measuring underwater noise levels from existing operation and any new / different equipment or activities' (13.4 Monitoring and Reporting).
- The third amendment sought by the joint commenters is analogous to a noise shut-down zone. Because of the low level of overall risk to marine mammals, it is appropriate that this risk can be addressed by monitoring and reporting following best management practices, as provided for in Sections 13.3 and 13.4 of the Draft EMP.

Finally, it is not within my area of expertise to comment on whether the request that 'Wildlife Act authorisation must accompany any consent' is required.

Table 1. Proposed mitigation goals and practices to mitigate or minimise the risk of any adverse effects of ironsand mining activities on marine mammals at Port Taharoa.

Management goal	Best management practice	Recommended reporting
1. Minimise the potential of injury to marine wildlife caused by marine-based mining activities	1a. Use best practical option to minimise underwater noise effects	• Measure underwater noise levels from existing operation and any new equipment or activities, following commencement of works
	1b. Regular maintenance and proper upkeep of all equipment and vessels (e.g. lubrication and repair of pumps, generators)	• Nothing required; self-checking as part of regular maintenance procedures. Consideration given to noise outputs from all aspects of the operation
	1c. Record any marine mammal interactions, noting the operational cycle (e.g. dewatering, moored), conditions and animal's behaviour. This is especially important for any Māui dolphin sightings	• Record and report in a standardised format the type and frequency of marine mammal interaction with vessels or pipeline within Port Taharoa. Annual records provided to DOC and made publicly available (e.g. web) • Encourage the collection of additional information on species' behavioural responses during normal operations
	1d. Ensure only minimum amount of vessel lighting is used, minimise light 'spill' overboard to reduce attraction of prey fish	• Nothing required; self-checking as part of normal deck duties
2. Minimise the risk of vessel collisions with any marine mammal and aim for zero injury / mortality	2a. Formal adoption of best boating guidelines for marine mammals, including speed limits, to reduce any chances of mortality from vessel strikes	• Record all vessel strike incidents or near incidents regardless of outcome (e.g. injury or mortality) in a standardised format
	2b. Formally establish and maintain a watch for marine mammals while transiting towards and within Port Taharoa	• In case of a fatal marine mammal incident, carcass(es) recovered (if possible) and given to DOC, and further steps taken in consultation with DOC to reduce the risk of future incidences. This is not required as a Resource Management Act 1991 condition because this is a legal obligation under other legislation
	2c. Record marine mammal sightings to build a baseline occurrence in waters near Port Taharoa	• Record and report the type and frequency of marine mammal sightings within and around Port Taharoa in a standardised format. Annual records provided to DOC
3. Aim to minimise entanglement with a goal of zero mortality	3a. Avoid loose rope and / or rubbish around or off vessels. All deck lines should be tied up when not in use or be under some degree of tension	• Nothing required; self-checking as part of normal deck duties
	3b. Minimise potential for loss of rubbish and debris from vessels and recover lost material	• Nothing required; self-checking as part of normal deck duties
	3c. Record all entanglement incidents regardless of outcome (e.g. injury or mortality)	• Records available to DOC. In case of a fatal incident, carcass(es) recovered and given to DOC, and steps taken in consultation with DOC to reduce the risk of future incidences

Yours sincerely

Scientist(s)



Dr Deanna Clement
Marine Mammal Ecologist
Cawthron Institute

Appendices

Appendix 1. Qualifications and experience

My full name is Deanna Marie Clement. I am a marine ecologist specialising in marine mammal ecology. I hold a PhD in Zoology and Marine Science from the University of Otago, which I obtained in 2006. I also hold a MSc in Marine Ecology from the Florida Institute of Technology, obtained in 1998, and a BA in Biology, obtained from the University of Nebraska – Lincoln in 1993.

I have worked as a marine mammal scientist for almost 25 years in Aotearoa New Zealand and the United States. I currently work as a marine mammal ecologist at Cawthron Institute (Cawthron) in Nelson. I have held this position for 18 years. Prior to this, I worked in the University of Otago's Zoology Department as a teaching fellow while continuing to undertake marine mammal research. I have authored (and co-authored) numerous publications and articles for both academia and the public and private sectors. I am also affiliated with the Society for Marine Mammalogy and the New Zealand Marine Sciences Society.

For the last 20 years, my research has focused mainly on Hector's and Māui dolphins and their distribution and densities. I was the lead scientist and co-author for the recent 3-year aerial survey of Hector's dolphin commissioned by the Ministry for Primary Industries and Department of Conservation to update information of the species' population abundance and distribution around the South Island. The survey was the most intensive marine aerial surveys ever conducted in Aotearoa New Zealand. The final results of this work received a landmark endorsement from the International Whaling Commission (IWC) at its annual meeting in June 2016.

More recently, I have been using remote technologies, such as underwater acoustics recorders and non-invasive digital suction cup tags, to study marine mammals in locations that are hard to access or in association with anthropogenic developments around Aotearoa New Zealand, such as port infrastructure projects, coastal developments and aquaculture. Of note, I authored the 2021 national guidelines for open ocean aquaculture led by Fisheries New Zealand (FNZ) and titled *Best practices and technologies available to minimise and mitigate the interactions between finfish open ocean aquaculture and marine mammals*,² and prior to that, the 2013 national review of effects of aquaculture on marine

² Clement D, Milardi M, Cumming S. 2021. Best practices and technologies available to minimise and mitigate the interactions between finfish open ocean aquaculture and marine mammals. Wellington: Fisheries New Zealand. New Zealand Aquatic Environment and Biodiversity Report No. 273. <https://www.mpi.govt.nz/dmsdocument/48004-AEBR-272-Best-practices-and-technologies-available-to-minimise-and-mitigate-the-interactions-between-finfish-open-ocean-aquaculture-and-seabirds>

mammals in Aotearoa New Zealand with the Ministry of Primary Industries.³ More recently, I authored the chapter on underwater noise / ocean sound for the Ministry for the Environment's 2024 environmental attributes stocktake.⁴

³ Clement D. 2013. Chapter 4: Effects on marine mammals. In: Literature review of ecological effects of aquaculture. Wellington: Ministry for Primary Industries. p. 4.1–4.19. <https://www.mpi.govt.nz/dmsdocument/3752-Literature-Review-of-Ecological-Effects-of-Aquaculture-Chapter-4-Effects-on-Marine-Mammals>

⁴ Clement D. 2024. Underwater noise / ocean sound. In: Lohrer D, et al. Information stocktakes of fifty-five environmental attributes across Air, Soil, Terrestrial, Freshwater, Estuaries and Coastal Waters domains. NIWA, Manaaki Whenua | Landcare Research, Cawthron Institute, Environet Limited. NIWA Client Report No. 2024216HN. Prepared for the Ministry for the Environment. <https://environment.govt.nz/publications/information-stocktakes-of-fifty-five-environmental-attributes>