

Trans-Tasman Resources Limited 2016 application to extract and process iron sand within the South Taranaki Bight

Submission from Climate Justice Taranaki Inc. to the Environmental Protection Authority, 13 October 2016

Introduction

Climate Justice Taranaki (CJT) is a community group made up of residents and concerned citizens from in and around Taranaki who are concerned about climate change, its root causes and the social injustice associated with it. Our core members have background in environmental science and marine ecology. We have been an incorporated society since 2015.

Decision Sought

Climate Justice Taranaki Inc. (CJT) request that the application from Trans-Tasman Resources Limited (TTRLL) 2016 be **Declined**.

Rationale

The proposed activity is culturally unacceptable, environmentally destructive and economically flawed. The review process is unfair and ethically compromised.

Cultural reasons

1. The South Taranaki Bight is of deep cultural significance to local iwi Ngati Ruanui who strongly oppose the application. Their opposition is supported by all Taranaki iwi¹ as well as Nga Rauru, Ngati Hine, Ngati Ruai and Ngati Waikarapu further south.

Environmental reasons

2. The information on benthic communities in the area provided by TTRL is misleading. The proposed mining area is not a “*barren wasteland of sand*” as TTRL claimed openly in the media², nor are the nearby areas. The NIWA report by Beaumont et al. (2013/15)³ commissioned by TTRL has identified ‘wormfields’ within the proposed mining area, harbouring high densities of the tubeworm *Euchone* sp (at 30-50 m depth), as well as burying scallops, hermit crabs, gastropods and an orange bryozoan. Even “*visually barren*” ‘rippled sands’ support a variety of lifeforms including the endemic opal fish *Hemerocoetes monopterygius*⁴. In deeper areas beyond the proposed mining area, live dog cockle *Tucetona laticostata* and bryozoa are common. Below 60 m, ‘bryozoan rubble’ provides home for an “*array of other sessile suspension-feeding invertebrates*” which in turn provide “*structural refuge for a diverse array of motile species...*”
3. The Cawthron report by Johnston (2016)⁵ on sensitive habitats indicated the presence of 5 threatened invertebrate species within the EEZ off Taranaki and their likely presence in Taranaki’s coastal marine area. There were also 7 indicator species for sensitive habitats (Figure 1) within the coastal marine area and 4 in the EEZ including the threatened coral *Madrepora oculata* which is not mentioned in the NIWA report by Beaumont et al. (2013/15).
4. Given the diverse benthos in the vicinity, it is highly unlikely that the removal of 50 million tonnes of sediment each year and return of 90% of that back into the sea would cause negligible impacts on the benthic and pelagic ecosystems in and beyond the mining area. The NIWA report by Pinkerton and Gall (2015)⁶ predicted that the mining activity would reduce the amount of light available on the

seabed by 16 and 23% at the two sites examined. Impacts will occur outside the mining area predominately to the east, resulting in reduction in area with enough light for benthic microalgae to grow by up to 260 km². The report noted that such *“optical effects of mining are likely to cease very quickly after mining stops”*, without stating that TTRL has a 20-year mining license and is seeking a 35-year marine consent for its mining operations. Hence those impacts would be present for decades.

5. The Taranaki Regional Council has identified 66 sensitive sites along the coast, including the North and South Traps (Taranaki Regional Council, 2016⁷). Many of these and other sensitive or potentially sensitive habitats, such as the Patea Shoals / Rolling Ground area and Graham Bank, and various bryozoan rubble and bivalve beds, occur to the east and southeast of the proposed mining area (Johnston, 2015⁸). The NIWA plume modelling report by Hadfield and Macdonald (2015)⁹, with three tables redacted, stated that there will be *“a rather mobile plume that clearly responds to wind-driven fluctuations in the currents. In its most common configuration the plume extends east-southeast from the source location”*. This plume is directly over some of the sensitive and potentially sensitive habitats, the latter require detailed assessment (Figures 2a, b, c). The report also noted that *“the sediment model does not reproduce the wide range of variation in susceptibility to sand resuspension between different locations on Patea Shoals”*, hence significant uncertainty as to impacts outside the mining area remain.
6. The Wallingford (2014)¹⁰ report claimed that *“the mass of fine sediment that will be dispersed within the middle and upper parts of the water column upon release by mining will reduce by a factor of 3-5...”* but the bulk of this report on laboratory testing of sediments has been redacted (p.5-57) and is unavailable to submitters without a confidentiality agreement (Figure 3). Also redacted were the key parts of the Wallingford (2015)¹¹ report on source terms and sediment properties, and much of the memo from NIWA to HRW (4 Sep 2015)¹². Such secrecy leaves no room for confidence in the validity of the testing but raises concerns over the potential toxicity of the tailings, the likely use of flocculation chemicals¹³ and their potential impacts on marine life and food safety.
7. TTRL argue that the amount of sediment in the plume is insignificant compared with the background suspended sediment concentrations in the area. But this statement is irrelevant if the plume contains toxic elements, some of which can be harmful to the environment and to people at extremely low concentrations. Notably, Johnston (2015) on offshore petroleum drilling concluded that the buffer zone distances required to protect sensitive habitats depend strongly on the type of drilling fluid used (and discharged), with the maximum zone of effects in the range of 6 to 20 km or even further. Without knowing what’s in the plume, it is impossible to assess the extent of impacts on the marine environment.

Cumulative and Cascading Effects, the Last Straw and Thin Edge of the Wedge

8. If the marine consent is granted, New Zealand’s ability to deliver its international obligations, notably the UN Convention of Biological Diversity, will likely be compromised. The proposed activity will add to the existing, mounting environmental stresses on our endangered marine species, notably Hector’s dolphin¹⁴ (including the critically endangered sub-species Maui’s dolphin¹⁵), southern right whale (during the winter calving season) and killer whales. These stresses include fishing pressure, vessel strike and noise from maritime traffic and seismic surveys for petroleum, marine pollution¹⁶, habitat loss¹⁷, changes in the availability of food sources in part due to climate change and ocean acidification, and declining breeding successes due to dwindling populations. Every added stress from any new human-induced activity within or in the vicinity of the distribution range of an endangered species has the potential to drive that species to extinction - ‘death by a thousand cuts’ or ‘the last straw that broke the camel’s back’.

9. The International Whaling Commission Sub-Committee on Small Cetaceans¹⁸ emphasized that *“the critically endangered status of Maui’s dolphin and the inherent and irresolvable uncertainty surrounding information on small populations, require the implementation of precautionary measures”*. The committee called for *“full protection of Maui’s dolphins in all areas throughout their habitat, together with an ample buffer zone”*, thus comprising the area from Maunganui Bluff to Whanganui, offshore to 20 nautical miles and including harbours.
10. The NIWA report by Torres et al (2013/2015)¹⁹ commissioned by TTRL concluded that the proposed mining area *“appears to be of low suitability for all three species of threatened cetaceans”* although *“areas of increased habitat suitability for Hector’s dolphins and southern right whales lie close inshore and may be increasingly used...”* while *“An area of increased habitat suitability for killer whales begins approximately 8 km seaward of the proposed project area.”* While this report did not examine the situation of blue whales in the area, Torres (2013)²⁰ revealed that the South Taranaki Bight is one of very few known foraging ground for the globally endangered blue whales (IUCN, 2016)²¹, and identified the need for a greater understanding of their habitat use patterns to effectively manage anthropogenic activities such as shipping and mining activities. Torres (2013) also advised that *“despite apparent low-level impacts from individual sources, we must be cognisant of cumulative effects and manage these threats with a coordinated approach.”*
11. The EEZ-CS Act section 39 requires that impact assessments *“identify the effects of the activity on the environment and existing interests (including cumulative effects...)”*. EEZ-CS Act section 6(1) defines effect to include (b) any temporary, permanent; (c) past, present, or future effect; (d) *“any cumulative effects that arises over time or in combination with other effects”*; as well as any potential effect of (e) high probability; and (f) low probability that has a high potential impact. The impact assessment²² provided by TTRL fails to address all of the above, especially the cumulative effects on threatened marine species. The inadequate information provided and the associated uncertainty warrant caution and environmental protection (EEZ-CS Act, section 34).
12. The EEZ-CS Act section 59(2) requires the EPA to take into account (a) any effects on the environment or existing interests of allowing the activity, including (i) cumulative effects; as well as (b) the effects of other activities undertaken in the area covered by the application or in its vicinity, including (i) the effects of activities that are not regulated under this Act; and (ii) effects that may occur in New Zealand or in the waters above or beyond the continental shelf beyond the outer limits of the EEZ.
13. Neither TTRL nor EPA has provided comprehensive assessments on the cumulative effects, with the addition of the proposed activity, on the marine species that are present in the area. The NIWA report by MacDiarmid et al. (2015)²³ concluded that there should be negligible effects from the proposed mining *“because the scale of the mined area and the areas of elevated suspended sediment concentrations (SSC) are small compared to the area used by the populations of these species. Consequently they are likely to be displaced from, or experience a decrease in prey abundance or availability over a very small part of their distribution.”* This way of assessing the effects of an activity in isolation is flawed and misleading. Just where are these species going to be ‘displaced’ to, when the ocean is increasingly being carved up for mineral and petroleum exploration and mining, not to mention fishing and marine traffic (Figure 4).
14. CJT therefore request that EPA and the Decision Making Committee consider all the effects from past, current and planned activities (e.g. petroleum exploration and mining) in the proposed mining area and its vicinity offshore and onshore (e.g. runoffs from farms and landfarms where petroleum wastes have been spread), and the cumulative effects on marine species and ecosystems, especially threatened marine species.

15. The current application represents the ‘thin edge of the wedge’, a 65.76 km² of proposed mining area (PMP 55581) amidst an almost ten-fold large 635 km² of exploratory permit area (PEP 54068) and an even larger 815 km² of continental shelf licence area (50753) for prospecting, all owned by TTRL²⁴ (Figure 5). There is a risk of major future expansion of the proposed mining area, with associated impacts. Furthermore, almost the entire South Taranaki coast, spanning over 402 km², is a mineral prospecting permit owned by PAN NZ Resources Ltd. Off New Plymouth in the North Taranaki Bight, Ironsands Offshore Mining Ltd. is awaiting approval of its exploration permit (55709.01) covering over 223 km².
16. Together, these permits enable the search for dozens of metals and non-metals, from aluminium to antimony, coal (lignite), copper, diamond, gold, iron, nickel, silver, molybdenum, phosphate, platinum, rare earth elements and titanium, etc., all with the potential to severely impact on the coastal and marine environments. If this TTR application is approved, it could open the ‘flood gate’ to decades of seabed and coastal mining, resulting in irreversible environmental damage and extinctions of threatened species. Impacts, including increased sedimentation and potential toxicity, that affect primary producers can cascade through food webs, usually with unforeseen consequences on higher trophic levels. Such trophic cascades are now well documented in the science literature and should be considered in association with cumulative effects.

Economic reasons

17. The economic analyses provided by TTRL are confusing, misleading and shrouded with secrecy. While the original analysis (Jenkins, 2015)²⁵ stated that the project would provide 299 jobs (including indirect, induced and 173 direct jobs) in South Taranaki/Whanganui, Jenkins’ response²⁶ to EPA’s information request stated only 61 direct employments in South Taranaki/Whanganui. The original analysis stated that at project initiation, only 10% of all TTR employed persons would be from South Taranaki/Whanganui, although “*it is TTR’s aspiration*” that this percentage would increase after five years. In the response to EPA, information on employment multipliers and expenditure by category were deemed ‘sensitive’ and thus redacted and made unavailable to submitters without a confidentiality agreement. Surely the public interest in making information of such direct relevance to the people of Taranaki/Whanganui must outweigh the need to avoid disclosure of so-called trade secret or prejudice to the company.
18. Jenkins’ analysis stated that the price of iron ore is unlikely to affect the economic impact analysis, because the bulk of the economic impacts arise from the expenses associated with the project which are more predictable. CJT are not convinced by this argument. Our experience in Taranaki is that oil and gas companies along with their contracting service firms were quick to cut expenses by shedding jobs as oil prices fell. Similarly, dairy and related companies also shed jobs when the milk price was low. As a result, at least 240 jobs were lost in the Taranaki engineering industry²⁷ alone in 2014. NZEC²⁸, ITL²⁹, Energyworks and Normandy DTS³⁰ have all made staff redundant to achieve cost savings in recent years.
19. Jenkins’ analysis also argued that the project would add to the “*diversification of economic activity in the Taranaki/Whanganui region, which is heavily reliant on the oil and gas and dairy sectors*” and “*improve the resilience of businesses in the region, where the key sectors are prone to global commodity prices and cycles*”. CJT argue the opposite, because the project would further the region’s dependence on extraction of non-renewable resources that are equally at the mercy of global commodity markets. In 2015, Taranaki scored a record high unemployment (7.3%) in June and the lowest level of economic activity for two quarters, a result of “*the joint economic misfortunes of the oil and dairy industries*”³¹. Real and worthwhile diversification would take us away from

extractive mining to sustainable industries such as community-owned renewable energy investments and innovation, or diversified agriculture that are sustainable and far less reliant on fossil fuels.

20. Jenkins' analysis claimed that the proposed mining "*is utilising a resource that currently has no economic value*". This illustrates an overly simplistic view of our marine ecosystems and a total disregard to the ecosystem services they provide, albeit difficult to quantify in monetary terms.
21. CJT argue that there is a real possibility that the proposed activity could threaten the basis of our marine food chain, with the potential to jeopardise coastal processes, and the integrity of our marine ecosystems and the fisheries they support. The full potential ecological and economic impacts of the proposed activity have not been assessed.
22. There is also a real possibility of unplanned oil spill events, causing devastating ecological and economic impacts. Analysis of an 11-year trajectory database conducted by MetOcean (2014)³² showed that some 92.4-97.8% of oil spill events are predicted to result in a beaching outcome. The region most likely to be affected by an oil spill is in the vicinity of the Rangitikei River Mouth in Manawatu/Whanganui where two Department of Conservation coastal reserves³³ lie. The worst-case outcome of an accidental release of 100 mT of 380 Heavy Fuel Oil would result in oil concentrations of 4.79 m³ per kilometre of coastline in the South Taranaki Bight near Whanganui (Figure 6).
23. It is worth noting that the relatively small oil spill from Rena running aground on Astrolabe Reef in October 2011 costed some \$130 million³⁴, of which the New Zealand government paid \$46.9 million³⁵. These figures did not include any economic losses in terms of tourism and fisheries.
24. Notably the proposed mining area borders the 'Safety Zone' of the existing Kupe gas platform, largely owned and operated by Origin (Figure 7). The 'Safety Zone' extends merely 500 metres from each point of the outer edge of the wellheads platform³⁶. For comparison, TTRL's 'Integrated Mining Vessel' is 345 metre long.
25. The MetOcean analysis did not take into consideration the risk, extent and impact of oil spill, explosion or gas release resulting from the potential collision of any of the six TTRL vessels or crawlers with the Origin Kupe gas platform, pipeline and associated vessels. Joint venture partner NZ Oil and Gas reported recently that technical work has been completed on the potential second phase of development at the Kupe gas and condensate field³⁷. If the development involves major infrastructure expansion or drilling of new wells, the risks of major accidents in the area and vicinity will be heightened.
26. All these have not yet taken into account potential accidents associated with the numerous other companies operating or planning to operate in the area, conducting seismic surveys, drilling, maintenance, transport and supply functions for the petroleum industry (Figure 4).
27. Between October 2011 and August 2015, 363 spill-related incidents³⁸ were recorded across New Zealand, involving a large number of fishing crafts, but also 66 incidents³⁹ from Taranaki's offshore oil facilities. The latter included three spills⁴⁰ from Raroa, the floating production, storage and offloading vessel operating at the OMV Maari oil field. In 2011, a drill ship⁴¹ working for Shell Todd Oil Services was damaged in a severe storm and in April this year, a 92 m vessel⁴² involved in the upgrade of Raroa was damaged in another storm.
28. Compounding with escalating extreme weather events resulting from climate change, the approval of the TTR application would only increase the risks of environmentally and economically costly events. For this, CJT advocate caution and support a nationwide moratorium⁴³ on seabed mining as well as any further petroleum exploration and drilling offshore.

Natural justice, public institution corporatisation and moral rights

29. CJT believe that natural justice has been compromised throughout the submission and review process of the TTRL application. The 20 business day for submitters to prepare submissions in response to the thousands of pages of documents filed under the application is grossly inadequate. It is unreasonable and unfair to expect iwi and other organisations such as Kiwis Against Seabed Mining, to be able to pull together enough resources (time, money and experts) to review the documents and prepare comprehensive submissions and evidence.
30. The application is supported by over 46 technical documents, 19 of which were NIWA reports commissioned by TTRL. Two of the five documents that were deemed to contain 'sensitive' information and therefore redacted, are NIWA reports. CJT are gravely concerned that NIWA, a public, national institution, has been so involved in supporting a commercial applicant, and the research findings produced are being kept away from the public. This level of corporatisation of public institution is extremely worrying.
31. In order to access the 'sensitive', redacted information, submitters and witnesses must sign a confidentiality agreement⁴⁴ with TTRL. Under the 11-page agreement, recipients of the information must "*keep strictly confidential and secret all the Confidential Information...*" and irrevocably sign away their 'Moral Rights', at least in respect of any intellectual property rights. It is CJT's understanding that EPA, the Department of Conservation, Taranaki Regional Council and Iwi Fisheries Forum, Origin Energy Resources (Kupe) Ltd, as well as some expert witnesses have all signed the confidentiality agreement. CJT believe that this level of secrecy is undemocratic and erodes away public trust and participation. The process sacrifices public interest for corporate profits.

Conclusion

32. In June 2014, the Decision Making Committee refused TTRL's original application because of the "*uncertainties in the scope and significance of the potential adverse environmental effects and those on existing interest...*" The DMC also considered that there was a "*lack of clarity about the extent of economic benefit to New Zealand outside of royalties and taxes and the economic value of the adverse effects*" (DMC decision, June 2014)⁴⁵. These reasons and considerations apply equally to the current application.
33. CJT urge that the current TTRL application be declined in full.
34. CJT call for a law change⁴⁶ to enable a nationwide ban on all seabed mineral prospecting, exploration and mining.
35. CJT support the submissions from Kiwis Against Seabed Mining (KASM), Climate Justice Taranaki and all iwi who are opposed to the application, and ask that they be considered thoroughly.

¹ All eight Taranaki iwi united against 'misleading' mining company, 29 Sept 2016. <http://www.stuff.co.nz/business/84664185/all-eight-taranaki-iwi-united-against-misleading-mining-company>

² Mining company runs 'myth-busting' advertisement about South Taranaki proposal, 3 Oct 2016. <http://www.stuff.co.nz/business/industries/84907797/mining-company-runs-mythbusting-advertisement-about-south-taranaki-proposal>

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- ⁴⁵ Decision on the TTR marine consent application, 2014. http://www.epa.govt.nz/EEZ/previous-activities/notified-consents/trans_tasman/decision/Pages/default.aspx Accessed on 13 October 2016.
- ⁴⁶ Close Up: The threat of seabed mining, 24 November 2005. <http://tvnz.co.nz/content/631880/2591764.xhtml> Accessed on 13 October 2016.

Figure 1. The Taranaki coastal marine area, in relation to records of possible sensitive marine habitat indicators (as described in Wildlife Act 1953; EEZ 2012; Taranaki Regional Council, 2012) within the wider regional area. Source: Johnston, Olivia, 2016. Sensitive habitats and threatened species in the Taranaki Coastal Marine Area (TCMA) – database investigation. Prepared for Taranaki Regional Council. Cawthron Institute, Report no. 2877.

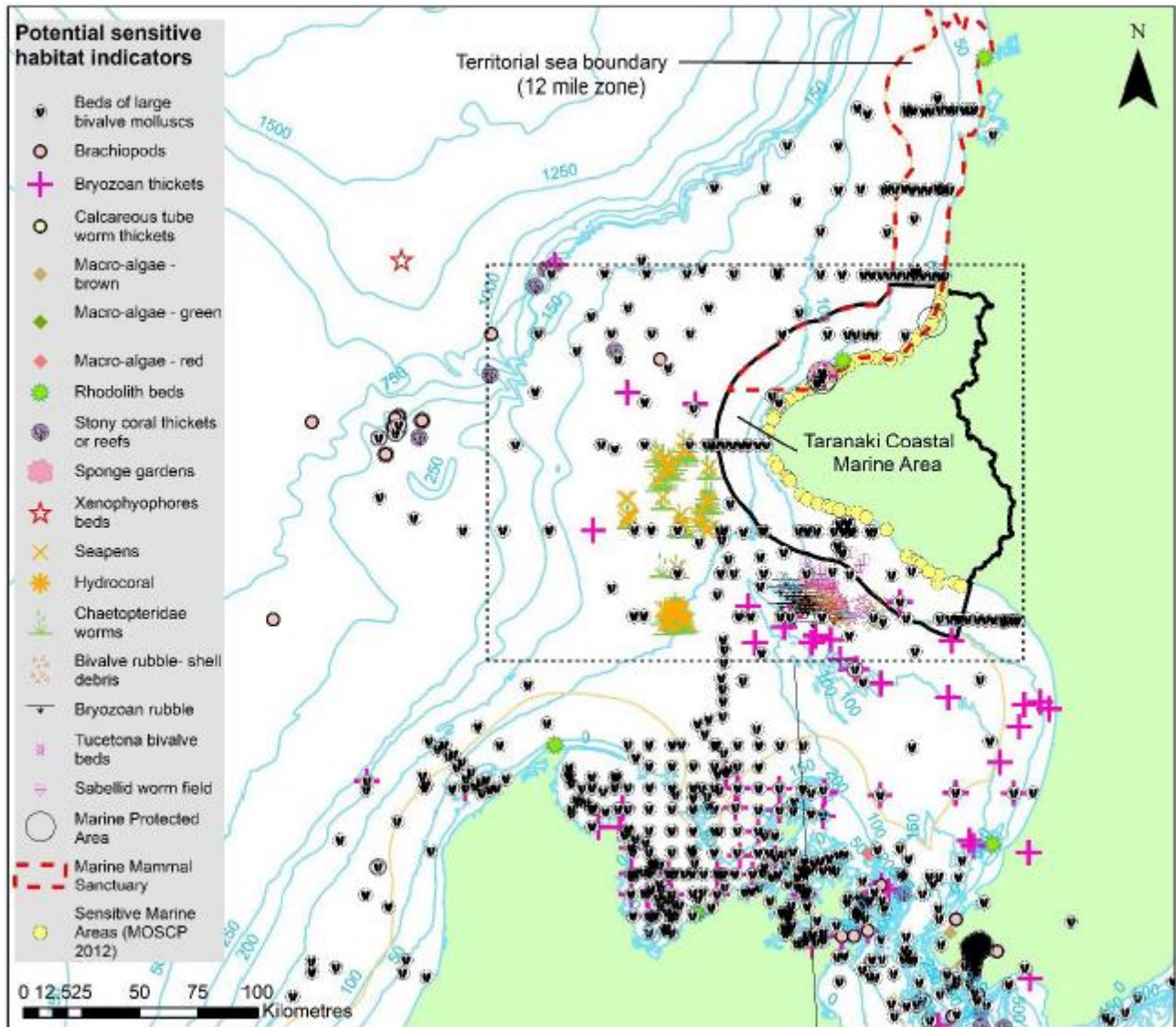


Figure 2a. South Taranaki Bight sensitive and potentially sensitive marine and coastal habitats. Source: Johnston Olivia, 2015. Petroleum drilling activities: Buffer distances from outstanding areas and substrate types requiring protection. Cawthron Institute.

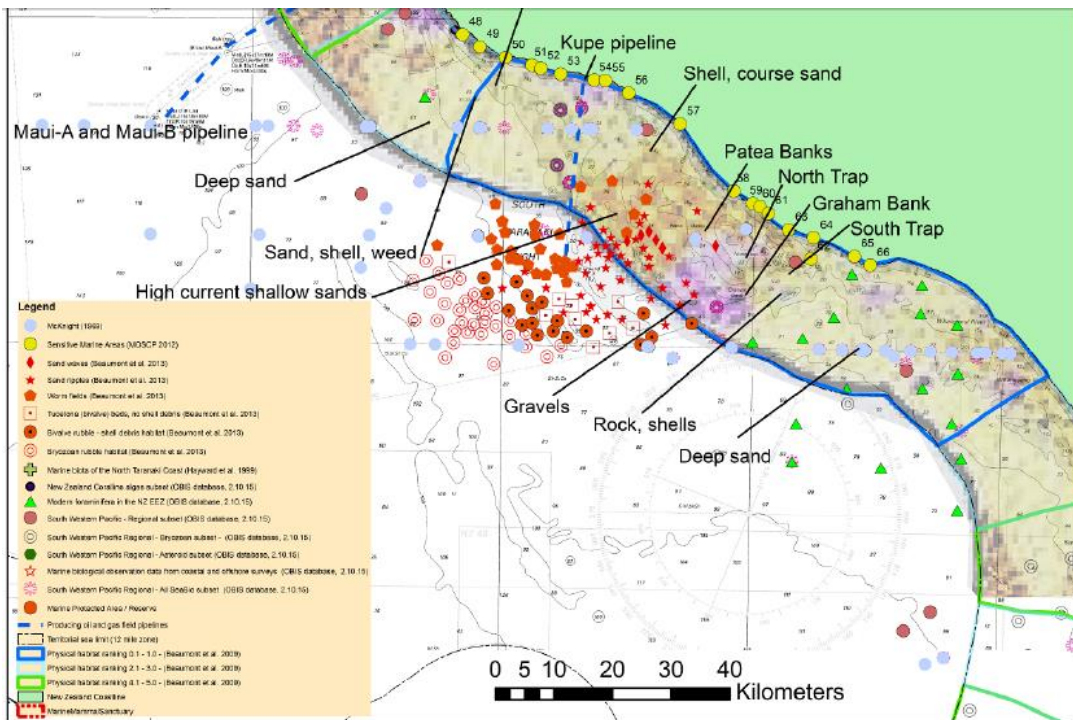


Figure 2b. Plume model with 99th percentile near-bottom concentration of mining-derived suspended sediment at source location A (east end of mining area). Source: Hadfield, M. and H. Macdonald, 2015. Sediment Plume Modelling. Prepared for Trans-Tasman Resources Ltd. NIWA Client Report No: WLG2015-22. Redacted version. Figure 5-11b.

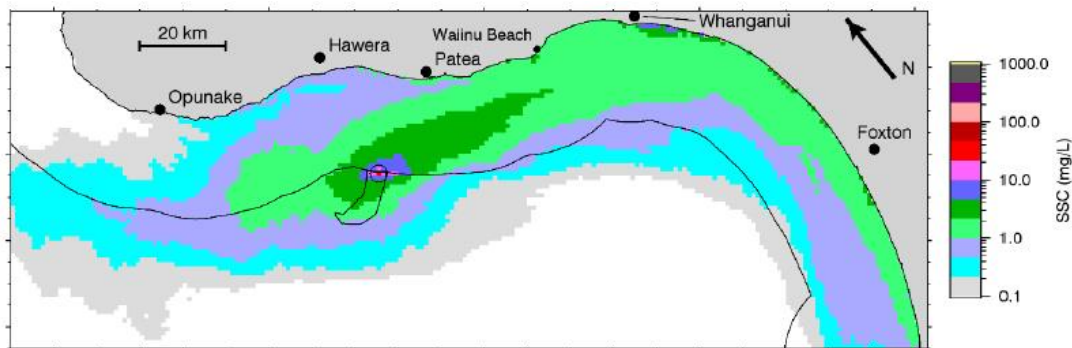


Figure 2c. Sensitive and potentially sensitive habitats affected by mining plume, based on superimposition of figures 2a and 2b.

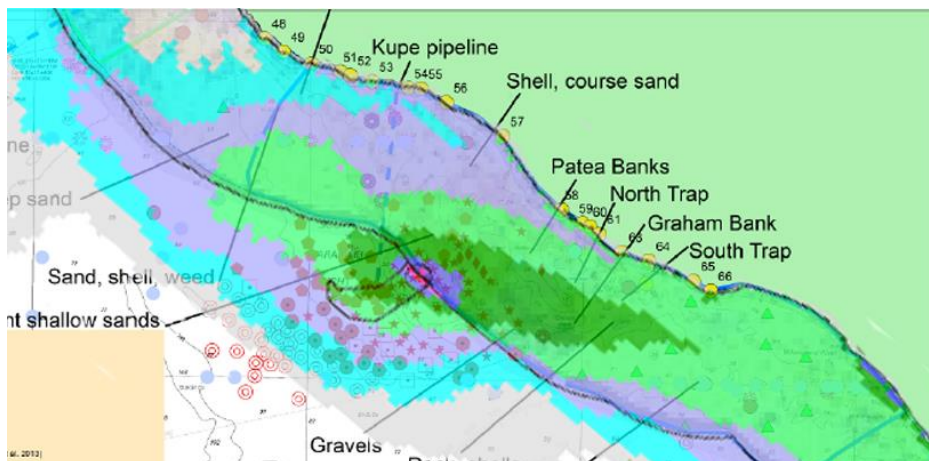


Figure 3. A table of content showing the extent of redacted portions in some of the documents in support of the TTRL application. Source: Wallingford, H.R. 2014. Support to Trans-Tasman Resources – Laboratory testing of sediments. DDM7316-RT002-R01-00.

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Figure 4. Maps showing the extent of the petroleum (left) and minerals (right) permit and license areas in New Zealand. Source: NZ Petroleum and Minerals website, accessed on 9 Oct 2016.

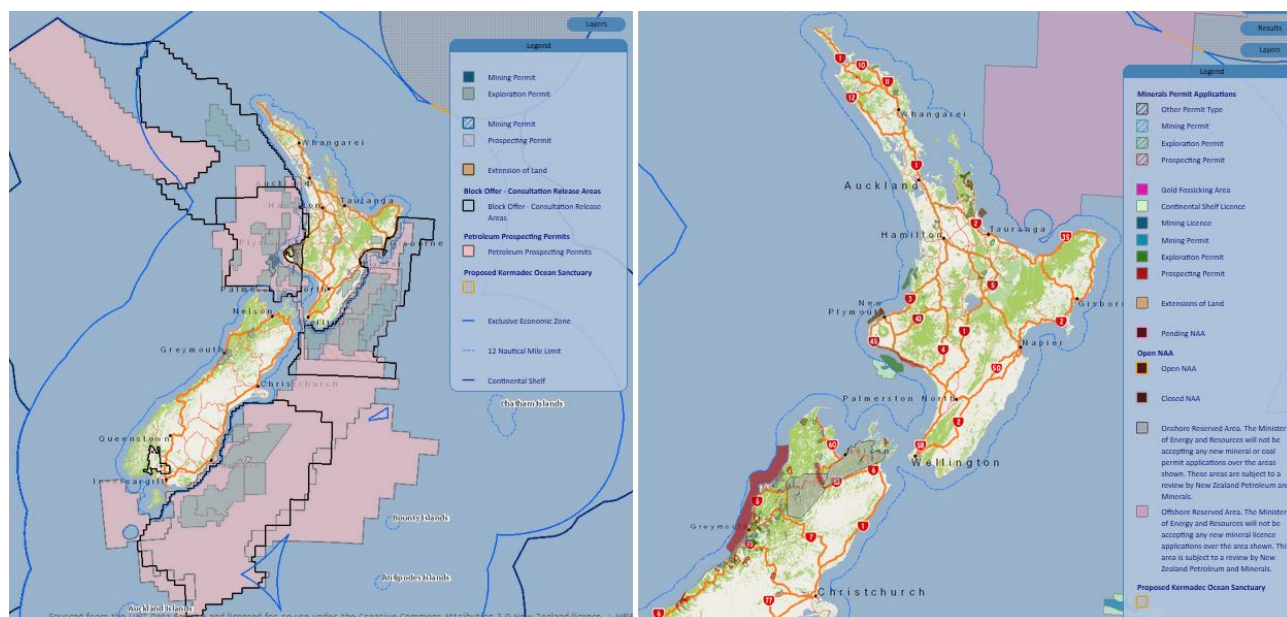


Figure 5. Mineral permit 55581 amidst other mineral permit/license areas on and off the Taranaki coast. Source: NZ Petroleum and Minerals website, accessed on 8 Oct 2016.



Figure 6. Predicted beached percentages from a 2-hour accidental release of 100 mT of Heavy Fuel Oil from the mining barge, representing the worst coastal outcome within the 11-year trajectory database. Source: MetOcean Solutions Limited, 2014. Oil spill trajectory modelling. TTR mining barge, New Zealand. Prepared for TTR.

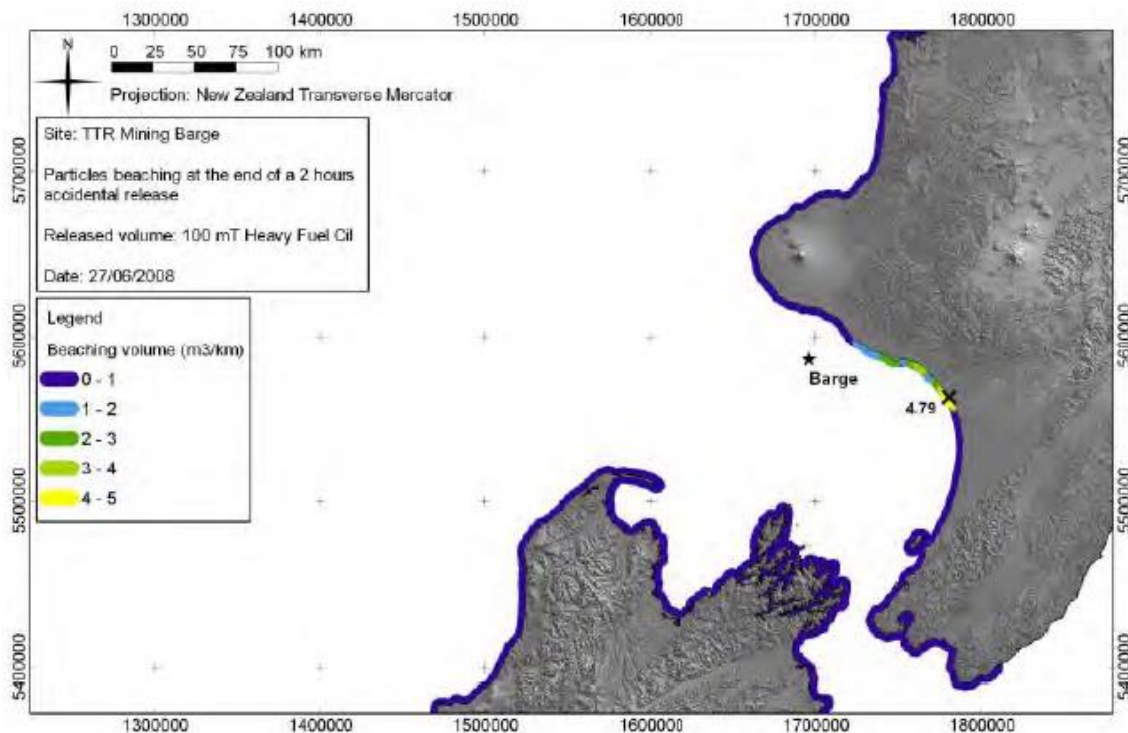


Figure 7. Kupe Gas Project schematic drawing (left) and TTRL proposed mining site bordering Kupe Safety Zone, as identified under the Continental Shelf Act 1964. Source: Hydrocarbons-Technology.com (left) and Trans-Tasman Resources, 2016. South Taranaki Offshore Iron Sand Extraction and Processing Project Impact Assessment (right).

