

BEFORE THE ENVIRONMENTAL PROTECTION AUTHORITY

IN THE MATTER of the Exclusive Economic Zone and Continental Shelf
(Environmental Effects) Act 2012 (the Act)

AND

IN THE MATTER of an Application under Section 38 of the Act for Marine Consent
by Trans-Tasman Resources Limited (TTRL) in relation to the iron
sand extraction and processing application (the Application)

**JOINT STATEMENT OF EXPERTS IN THE FIELD OF EFFECTS ON FISHING
(COMMERCIAL, RECREATIONAL AND CUSTOMARY FISHING)**

Dated 15th February 2017

INTRODUCTION

1. Expert conferencing of the Effects on fishing (commercial, recreational and customary fishing) took place in person and by video conference on 14th February 2017.
2. The conference was attended by:
 - a) Dr Don Robertson
 - b) Dr Alison MacDiarmid
 - c) Mr Steve Halley
 - d) Dr Jeremy Helson
 - e) Dr Greg Barbara.

CODE OF CONDUCT

3. We confirm that we have read the Environment Court's Code of Conduct 2014 and agree to comply with it. We confirm that the issues addressed in this Joint Statement are within our area of expertise.

SCOPE OF STATEMENT

4. In our conference we discussed the issues relevant to the Application which arise within our field of expertise. Dr Helson noted that his area of expertise was primarily in commercial fishing. The discussion of the experts was confined to that aspect of fisheries and did not extend to customary or recreational fishing. Prior to attending the conference we each read the relevant parts of the Application, the evidence and independent reports prepared by the other expert(s) and circulated.
5. The issues discussed were the list of questions relating to effects on fisheries as specified on pages 13 and 14 of Minute 21 issued by the EPA. These questions and responses are copied into Table 1.
6. In relation to each of these questions, we discussed points of agreement and disagreement and included these in Table 1.
7. In this Joint Statement we report the outcome of our discussions in relation to each issue by reference to points of agreement and disagreement relating to facts, assumptions, uncertainties and expert opinions / conclusions. We have

noted where each of us is relying on the opinion or advice of other experts. Where we are not agreed in relation to any issue, we have set out the nature and basis of that disagreement.

8. We did not consider the draft marine consent conditions proposed by the Applicant and have not considered whether they are appropriate having regard to our opinions, should the Environmental Protection Authority grant the consents sought by the Applicant.

LIST OF ISSUES

9. The list of questions relating to effects on fisheries as specified on pages 13 and 14 of Minute 21 issued by the EPA have been copied into Table 1, where points of view of the experts are reported and areas of agreement and disagreement are identified.

Facts

10. The attached Table 1 sets out the facts that were agreed.
11. The attached Table 1 sets out the facts that were not agreed.

Assumptions

12. The attached Table1 sets out the agreed assumptions in relation to issues.
13. The attached Table1 sets out the instances where no agreement was reached on assumptions in relation to issues.

Importance

14. In our opinion this issue is of importance to the application are specified in the attached Table 1.

UNCERTAINTIES

15. We agree that where material uncertainties arise these have been recorded in attached Table 1.

16. Where matters relating to uncertainty are not agreed these are set out in attached Table 1.
17. Where addressing matters would assist in improving the certainty and knowledge gaps these are set out in attached Table 1.

MATTERS FOR THE DMC'S CONSIDERATION

Environmental triggers and monitoring locations (if applicable)

18. These were not considered.

CONDITIONS

19. We agree that the following conditions within our area of expertise would likely be both practicable and cost effective:

Conditions were not discussed.

20. We do not agree that the following or conditions within our area of expertise would likely be both practicable and cost effective:

Conditions were not discussed.

References

21. We referred to the following documents in our discussions:
 - a. NIWA (2015) Report 17 Assessment of the scale of marine ecological effects of seabed mining in the South Taranaki Bight: Zooplankton, fish, kai moana, sea birds, and marine mammals. NIWA Client Report No: WLG2015-13;
 - b. NIWA (2016) Report 18 South Taranaki Bight Commercial Fisheries 1 October 2006 – 30 September 2015. NIWA Client Report No: 2016-28;
 - c. Fathom (2015) Report 25 South Taranaki Bight iron sand mining proposal Assessment of potential impacts on commercial fishing. 5 July 2013 and reconsidered 18 November 2015;

Signatures of the experts

a) Dr Don Robertson



b) Dr Alison MacDiarmid



c) Mr Steve Halley



d) Dr Jeremy Helson



e) Dr Greg Barbara



Dated 15 February 2017

Table 1. Questions, responses, and areas of agreement and disagreement.

Question	Alison MacDiarmid’s comment	Areas of agreement or disagreement
<p>AM9: What is the basis for not investigating (point 38 of your Expert Evidence) ‘the extent and location of recreational fisheries?’</p>	<ul style="list-style-type: none"> • NIWA was not commissioned by TTR investigate the extent and location of recreational fisheries. This question is better directed to TTR staff. 	<ul style="list-style-type: none"> • There was no discussion of recreational fishing or the effects on recreational fishing.
<p>AM35: Based on the maps provided in Figure 3.6 of the Impact Assessment the worm fields identified during NIWA’s surveys within and surrounding the PPA do not appear to occur elsewhere within the STB. These areas also appear to align with where some of the greater catch returns for fisheries arose [Figure 11.1 of the South Taranaki Bight Factual Baseline Environmental Report].</p> <p>Why was there no analysis or comparison of catch return with benthic habitat type?</p> <p>Could a figure be produced to show how catch return and the predicted impact area of the plume align?</p> <p>Can you confirm whether these worm fields exist in the southern extents of South Taranaki Bight?</p>	<p>This was not considered achievable or necessary.</p> <ul style="list-style-type: none"> • The smallest scale of reporting allowable for catch and effort returns is much greater than the scale over which seafloor habitats vary. This mismatch prevents any sensible comparison. • Detailed marine habitat information is available for only a proportion of the STB so any comparison with effort or catch data could only be done for a part of the STB in any case. • Even if you knew the relationship between catch return and habitat type this would still not get to the key issue of fish being displaced from an area where fisheries took place. This is what the NIWA assessment achieves. • The same species of undescribed worm is known to occur inside the mining area, at sites up to 10 km north and northwest, and in the vicinity of the Kupe pipeline. It is likely to occur elsewhere on the WCNI – a region of low sampling effort. To-date worm fields have not been described from the 	<ul style="list-style-type: none"> • All agreed on the points raised by Dr MacDiarmid. • All agreed that the worms occur over a wider area than the mining sites.

<p>AM36: Why is your assessment limited to potential biological impacts? Why did you not undertake an assessment of the other potential effects on fisheries?</p>	<p>southern STB.</p> <ul style="list-style-type: none"> • Biological impacts were the first and obvious effects to examine as they potentially affect the distribution of fish on which fisheries depend. If biological effects are low then economic effects do not need to be considered. 	<ul style="list-style-type: none"> • All agreed that a fishery is combination of a biological resource to exploit, economic investment, fishing technology and knowledge, and rules and regulations to administer the fishery. • All agreed that NIWA was commissioned by TTR to explore only the biological effects on fished species. Identifying those people or groups with an interest in fisheries or potential effects on them was not asked for by TTR and not produced by NIWA. • There was disagreement whether only assessing the potential effects on fish was sufficient to determine the impact of the proposed mining operations on fisheries in the STB. • Dr MacDiarmid argued that because biological effects on exploited fish species were minimal, evaluation of economic and social effects was not warranted. She stated that any study into these effects would likely be unable to detect any impact given that the distribution of commercial fish species is inherently variable over space and time. • Dr Robertson agreed with Dr MacDiarmid's evaluation • Dr Helson disagreed, concluding that
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		<p>an evaluation of fisheries effects must start with the effects on fish, but go further to assess how those effects would manifest in the fisheries in question. Such an analysis requires identifying those potentially affected and assessing the nature of the effect on their fishing operations. As noted above, this analysis was not conducted.</p> <ul style="list-style-type: none"> • Dr Barbara also disagreed with Drs MacDiarmid and Robertson, noting fisheries impacts need to consider economic, social and legislative influences along with the biological distribution of fish populations.
<p>AM37: To the extent that any analysis on fisheries was conducted in Report 18, do you accept that species in different QMAs must be regarded as separate fish stocks (e.g. ACE from one QMA cannot be used in another QMA)?</p>	<ul style="list-style-type: none"> • Yes, but note that for some STB stocks the QMA combines FMA7, 8 and sometimes 9 or 2 	<ul style="list-style-type: none"> • All agreed that the boundaries between QMAs have legal standing. As such, any fisheries resource that straddles a QMA boundary must be considered a different fishery from a fisheries management perspective. • All experts agreed that the FMA 7/8 boundary is purely administrative, and in many cases the relevant QMA boundaries may not align with the biological distribution of stocks. • Dr Robertson noted that of all the FMA boundaries, the FMA7/8 boundary has the least biological relevance. • All experts agreed that although there are provisions in Fisheries Act to allow the merging of QMAs, this is difficult in

		<p>practice and has not been undertaken for many years, if at all to the Experts' knowledge.</p>
<p>AM38: By using the distribution of catch and effort in your study area that includes two QMAs for many species (Figure 2.1 of Report 18), do you agree that your analysis of the proportion of total catches summarised at paragraph [79] is invalid from a fisheries management perspective?</p>	<ul style="list-style-type: none"> • Agree for the species where there is a legal division between stocks in QMA7 and QMA8 that the catch and effort data in cannot not be combined for the purposes of evaluating effects in QMA8. This is applicable to several species but notably not to barracoota, jack mackerel, leather jacket, trevally, and blue moki where the QMAs include FMAs 7 and 8. • Note that the totals used in the NIWA report did not incorporate catch and effort data from elsewhere in FMA8 or other relevant FMAs. Exclusion of the FMA7 data for relevant species and inclusion of the whole of the FMA8 data would result in little change to the tables as presented. 	<ul style="list-style-type: none"> • All agreed for the species where there is a legal division between stocks in QMA 7 and QMA 8 that the catch and effort data in cannot not be combined for the purposes of evaluating effects in QMA8 as was done in NIWA Report #18. • Experts discussed the point made by Dr MacDiarmid about the potential to include data from the northern end of QMA8 in the analysis. While all agreed that this is the same fishstock from a legal point of view, one could not necessarily assume catch from that area to be part of the fisheries in the STB. • Dr Helson illustrated that point with reference to the snapper 8 stock. Although legally snapper in STB are the same as the fish further north off Kaipara Harbour, the two fisheries are very different and used by very different entities. This example was provided to illustrate the difference between biological effects and fisheries effects. • There was agreement that the NIWA analysis was a good evaluation of the potential biological impacts on

		<p>commercial fisheries. However, there was disagreement whether this was sufficient to determine the impact of the proposed mining operations on fisheries in the STB.</p> <ul style="list-style-type: none"> • Dr MacDiarmid argued that because biological effects on fish were minimal, evaluation of economic and social effects was not warranted. She stated that any study into these effects would likely be unable to detect any impact given that the distribution of commercial fish species is inherently variable over space and time. • Dr Robertson agreed with Dr MacDiarmid's evaluation • Dr Helson disagreed, concluding that an evaluation of fisheries must start with the effects on fish, but go further to assess how those effects would manifest in the fisheries in question. Such an analysis requires identifying those potentially affected and assessing the nature of the effect on their fishing operations. As noted above, this analysis was not conducted. • Dr Barbara also disagreed, noting that again that fisheries are more than the biological resource or economics, there are social and legislative factors that also need to be considered. • Dr Robertson disagreed stating that
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		<p>the scale of potential impacts on commercial fish is likely to be so small & variable as to make economic analysis impractical.</p> <ul style="list-style-type: none"> • Dr Helson responded that as affected persons were not identified and the analysis was not conducted we cannot confirm or disprove Dr Robertson's assertion. • All experts agreed that a fishery is combination of a biological resource to exploit, economic investment, fishing technology and knowledge, and rules and regulations to administer the fishery.
<p>AM39 (a): Would you agree that a significant proportion of the catch and effort data you present in Figures 3.1 – 3.8 in Report 18 is included in FMA 7?</p>	<ul style="list-style-type: none"> • A proportion, insignificant in some fisheries. More significant in others. 	<ul style="list-style-type: none"> • The experts agreed that the importance of boundary between QMAs 7 and 8 varies among species.
<p>AM39 (b): This being the case, do you agree that using data from FMA 7 as the denominator in an assessment of effects makes little sense from a fisheries management perspective?</p>	<ul style="list-style-type: none"> • It makes sense with regard to an examination of fisheries in the STB. See above for other points. 	<ul style="list-style-type: none"> • All agreed for the species where there is a legal division between stocks in QMA7 and QMA8 that the catch and effort data in QMA7 cannot be combined for the purposes of evaluating effects in QMA8 as was done in NIWA Report #18.
<p>AM40: Has any work been undertaken to overlay fisheries catch and effort maps with the different plume scenarios set out in the NIWA (and other experts) plume modelling?</p>	<ul style="list-style-type: none"> • Yes this has been done. See maps in report. 	<ul style="list-style-type: none"> • All agreed maps have been provided for aggregated species for each method over the 9 years of summarised data. Such maps for individual species or for individual years were not requested by TTR and not provided by NIWA.

<p>AM41: Have you considered the effect of increased algal and sediment loads on water quality and the possible effects on health standards for the surf clam fishery?</p>	<ul style="list-style-type: none"> • Not relevant. There is no evidence to suggest these populations are at risk. Sensitivity of a variety of species to suspended sediments are covered in paragraph 69 in my First Statement of Evidence. The sediment model shows no deposition in shallow areas inhabited by surf clams. In deeper areas offshore of the surf clam area deposition is estimated to be a maximum of 0.1 mm per year. 	<ul style="list-style-type: none"> • All experts agreed with Dr MacDiarmid's conclusions.
<p>AM42: Has TTR given adequate consideration to the long term viability of fish stocks, and the maintenance of the biological diversity of the STB?</p>	<ul style="list-style-type: none"> • Yes 	<ul style="list-style-type: none"> • All experts agreed that that this question is too broad for this group to address and is a key question for the DMC to ask of other witnesses.