

BEFORE THE ENVIRONMENTAL PROTECTION AUTHORITY

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

AND

IN THE MATTER of an Application under Section 38 of the
Act for Marine Consents by Trans-Tasman
Resources Limited

**JOINT STATEMENT OF EXPERTS IN THE FIELD OF EFFECTS ON BATHYMETRY
AND OCEANOGRAPHIC PROCESSES**

Dated 20 March 2014

INTRODUCTION

1. Expert conferencing by experts in the field of the effects on bathymetry and oceanographic processes took place by videoconference on 20 March 2014.
2. The conference was attended by:
 - a. Dr Michael Huber (EPA),
 - b. Mr Miles Yeates (EPA),
 - c. Dr Malcolm Green (TTR),
 - d. Dr Iain MacDonald (TTR).

CODE OF CONDUCT

3. We confirm that we have read the Environment Court's Code of Conduct 2011 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. 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 are:
 - a. Fate of pits and mounds created in/on the seabed by sand extraction operations;
 - b. Oceanographic measurements and shoreline monitoring.
6. In relation to each issue we discussed points of agreement and disagreement in relation to:
 - a. Facts;
 - b. Assumptions;
 - c. Areas of uncertainty or lack of information; and
 - d. Expert opinions / conclusions.
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 have also considered the draft marine consent conditions proposed by the Applicant and have considered whether they are appropriate having regard to our opinions, should the Environmental Protection Authority grant the consents sought by the Applicant. We have also considered whether other conditions could be developed that would address our concerns should consent be granted.

LIST OF ISSUES

9. The fate of pits and mounds.
10. Oceanographic measurements and shoreline monitoring.

Expert opinions / conclusions – the fate of pits and mounds

11. We agree that the methods used to assess the fate of pits and mounds presented by Dr Green in his Evidence-in-Chief, in particular the predictions of pit infilling times and mound deflation times presented in Tables 1 and 2, respectively, are consistent with international practice and suitable for the purposes of impact assessment.
12. We agree that the way the pits have been formulated in Dr Green's model, that is, with vertical sides with no allowance for side slumping, is a reasonable assumption that will not significantly change the predictions of pit infilling. We agree that, if anything, the formulation will most likely result in the worst-case estimate of infilling time.
13. We discussed Dr Green's assessment of potential pit migration rate and direction, which is not presented in his Evidence-in-Chief, but which will be read to the Panel on the day of the hearing. This issue was raised in Karen Pratt's submission. We agree with Dr Green's approach to estimating the net pit migration rate of 10 m/y to the southeast.
14. We identified no areas of disagreement. Estimates of the nature conducted by Dr Green are always subject to some level of uncertainty. It was agreed that the uncertainty was relatively low, and that the

estimates are conservative (i.e., are based on the worst-case scenario for pit depth, mound size and the general configuration of pits and mounds).

Expert opinions / conclusions – oceanographic measurements and shoreline monitoring

15. We agree that the oceanographic measurements are fit for purpose and to international standard.
16. We identified no areas of disagreement. We identified no areas of uncertainty beyond the normal measurement error and natural variation implicit in any field measurements.

Conditions

17. We agree that if multi-beam surveys are to be done as part of any consent conditions or for operational purposes then the data should be used to test the pit and mound predictions and provided to the EPA. We agree that it is not necessary to conduct multi-beam surveys purely for the purpose of monitoring the fate of pits and mounds.



Dr Michael Huber



Mr Miles Yeates



Dr Malcolm Green



Dr Iain MacDonald