

Before the Board of Inquiry
Waterview Connection Project

in the matter of: the Resource Management Act 1991

and

in the matter of: a Board of Inquiry appointed under s 149J of the Resource Management Act 1991 to decide notices of requirement and resource consent applications by the NZ Transport Agency for the Waterview Connection Project

Rebuttal evidence of **Graeme Ridley (Erosion and Sediment Control)**
on behalf of the **NZ Transport Agency**

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REBUTTAL EVIDENCE OF GRAEME RIDLEY ON BEHALF OF THE NZ TRANSPORT AGENCY

INTRODUCTION

- 1 My full name is Graeme John Ridley. I refer the Board of Inquiry to the statement of my qualifications and experience set out in my evidence in chief (*EIC*) (dated 9 November 2010).
- 2 I repeat the confirmation given in that statement that I have read and agree to comply with the Code of Conduct for Expert Witnesses in the Environment Court.

PURPOSE OF EVIDENCE

- 3 The purpose of this rebuttal evidence is to respond to certain aspects of the evidence lodged by submitters. Specifically, my rebuttal evidence will respond to the evidence of Mr Dominic McCarthy on behalf of the Auckland Council (Submitter No. 111-5), which focuses on certain areas of potential impact of the proposed works on the Coastal Marine Area (*CMA*).
- 4 I note that no other expert has raised any specific issues related to erosion and sediment control which require addressing within my rebuttal evidence.
- 5 Finally, I will also respond to relevant key matters raised in the Section 42A Reports prepared by Environmental Management Services Ltd (*EMS*). This includes both the initial final report (dated 7 December 2010) (*Section 42A Report*) and the later Section 42A Addendum Report (dated 20 December 2010) (*Addendum Report*).

DOMINIC MCCARTHY (FOR AUCKLAND COUNCIL)

- 6 In paragraph 34 of his evidence, Mr McCarthy refers to the concern raised in the ARC's submission which he considers has yet to be addressed, as follows:

... there appears to be no proposed process to check the acceptability for discharge to the CMA of water quality within the coffer dam sumps, prior to such discharges actually taking place.
- 7 Mr McCarthy comments that in the absence of a simple monitoring and checking process, water collected behind the coffer dams may appear clean, but in reality may be highly alkaline and toxic to marine life.
- 8 He references the Erosion and Sediment Control Plan (*ESCP*) and, in particular, the proposed monitoring programme which details the monitoring of suspended solids and pH within the coastal marine

area. Mr McCarthy correctly acknowledges at paragraph 35 of his evidence that:

... this monitoring is aimed at providing confirmation that the net effect on the coastal receiving environment of operations, including operations with the temporary coffer dams is not causing unacceptable changes in sea water quality outside of the works area.

- 9 He expresses concern however that the ECSP does not provide monitoring of sump water quality prior to discharge to the CMA (at paragraph 35).
- 10 As a result, Mr McCarthy proposes a further monitoring condition (at paragraphs 37-39) that requires water quality testing of any water contained within the coffer dams within this coastal environment for both turbidity and pH prior to any decision to discharge to the coastal receiving environment. Mr McCarthy considers a pH of 8.5 and an agreed trigger for turbidity be utilised in this regard.
- 11 Section 5.3.1 of the ESCP sets out the process for coastal marine monitoring. I agree with Mr McCarthy that this process does not include any specific monitoring of the water collected behind the coffer dams prior to discharge. This is an area which I agree needs to be addressed through the provision of specific monitoring of this collected water prior to discharge occurring. If appropriate discharge standards are not achieved, the water collected will be disposed of via treatment devices and/or via sucker trucks, as required. Suitably calibrated field pH and turbidity meters may be used in this manner.
- 12 Mr McCarthy proposes a new Coastal condition C.17 (in paragraph 39 of his evidence) as follows:

Monitoring of sump water within temporary coffer dams prior to discharge to the CMA

Prior to any decision to discharge waters that have collected in coffer dam sumps to the coastal marine area (CMA) the following procedures shall be followed;

- (i) Sump waters shall be tested with calibrated hand held field pH and turbidity meters, and
- (ii) Discharge to the CMA shall only be permitted where the measured;
 - a. pH does not exceed a threshold of pH 8.5 and;
 - b. turbidity or suspended solids concentrations do not exceed a threshold, to be agreed between the consent

holder and the Manager Major Consents, Auckland Council prior to use of temporary coffer dams.

In the event that measured pH and/or turbidity exceeds these thresholds the sump waters shall be collected by tanker truck for appropriate treatment and/or disposal outside of the CMA.

- 13 While I agree with the concept of this condition, in my opinion the wording needs to be amended slightly to provide flexibility, in the event that alternative testing technologies are available, and also in the event that treatment can be provided at source so that no sucker truck removal is necessary.
- 14 My suggested amendments to Mr McCarthy's proposed condition are as follows (additional text shown as underlined, deleted text shown as ~~strikethrough~~):

Prior to any decision to discharge waters that have collected in coffer dam sumps to the coastal marine area (CMA), the following procedures shall be followed;

- (i) Sump waters shall be tested ~~with calibrated hand held field pH and turbidity meters,~~ for pH and turbidity, and
- (ii) Discharge to the CMA shall only be permitted where ~~the~~ measured;
 - (a) pH does not exceed a threshold of pH 8.5; and
 - (b) turbidity or suspended solids concentrations do not exceed a threshold, to be agreed between ~~the consent holder~~ NZTA and the Manager Major Consents, Auckland Council prior to use of temporary coffer dams.

In the event that measured pH and/or turbidity exceeds these thresholds, the sump waters shall be ~~collected by tanker truck for appropriate treatment and/or disposal outside of the CMA.~~ treated to the appropriate standard prior to discharge to the CMA or shall be disposed of to an approved location outside of the CMA. The proposed treatment methodology shall be included within the CESCP and shall be submitted to the Auckland Council for its approval at least 20 working days prior to implementation.

- 15 While the pH is set at a specific threshold, in my opinion the appropriate standard for turbidity should follow the same process as outlined in proposed Earthworks condition E.9. This condition sets the initial turbidity at 50 NTU, with ongoing monitoring and changes to the turbidity standard to be implemented with the approval of the Auckland Council.

- 16 I suggest that Mr McCarthy's new condition (as amended above) is best located within the Earthworks conditions as new condition E.9A, which construction activities will be required to comply with (rather than with the Coastal conditions).
- 17 I discussed this new condition wording with Mr McCarthy on 26 January 2011, and he agreed with the new Earthworks condition E.9A, as set out in paragraph 14 above.

OTHER ISSUES RAISED IN SUBMITTERS' EVIDENCE

- 18 I note that within a number of other submitter's statements of evidence, there are comments and references to erosion and sediment control methodologies, and also streamworks methodologies that form part of the construction activity process.¹ These comments however provide no specificity of concern with respect to erosion and sediment control within the application, and I confirm that I remain supportive of the ESCP and my EIC in this regard.

COMMENTS ON SECTION 42A REPORTS

- 19 The Section 42A Report provides general support for the erosion and sediment control methodologies and processes.²
- 20 Paragraph 9.9.2 of the Section 42A Report quotes the following paragraph from the Auckland Regional Council Section 149G Report as follows:
- The relevant objectives and policies of the ARP:SC have been taken into account in developing a comprehensive erosion and sediment control methodology for construction of the Waterview Connection (refer to applicant's AEE G.22).
- 21 It also notes that "the management approaches adopted are understood to reflect best practice" (paragraph 9.9.3).
- 22 Section 14.7.2 of the Section 42A Report notes that condition related matters within the Auckland Regional Council's submission (now the submission of Auckland Council) include, among other things, improved clarity to the conditions concerning stormwater, streamworks and sediment management, and groundwater contamination and settlement. Within the Section 42A Report, however, I find very little comment (if any) on the need for further clarity around sediment management for the Project and associated conditions.

¹ For example, see paragraph 5.27 of Shona Myers' evidence (on behalf of Living Communities and Friends of Oakley Creek, Submitter Nos. 167 and 179-2) and paragraph 20 of Dr Mark Bellingham's evidence (on behalf of Royal Forest & Bird Protection Society of NZ Inc, Submitter No. 217-1).

² See Sections 9.9 and 9.10 of Section 42A Report.

- 23 The Section 42A Report Appendix A (Review of the Assessment of Marine Ecological Effects and Submissions with Relevance to Marine Ecology) and Appendix B (Freshwater Ecology Review), both prepared by Ryder Consulting Limited, make reference to sediment management during construction activities.³ However, I note there are no specific issues raised in these technical reviews that require addressing with respect to erosion and sediment control during either the construction or associated monitoring processes.
- 24 There are no specific issues raised within the Addendum Report that require further consideration within respect to erosion and sediment control.
- 25 Consequently, I confirm that there is nothing in the Section 42A Report, Addendum Report, and Auckland Regional Council Section 149G Report that alter the conclusions reached in my EIC, including the proposed Earthworks conditions, or that require any changes to the content of the ESCP.



Graeme Ridley
February 2011

³ Sections 4.45, 4.49 – 4.56., 7.6 and 9.3 of Appendix A to the Section 42A Report (prepared by Brian Stewart); and Sections 6.13–6.24 of Appendix B of the Section 42A Report (prepared by Dr Ryder).