

BEFORE THE CANTERBURY REGIONAL COUNCIL

UNDER THE

Resource Management Act 1991

AND

IN THE MATTER

of application CRC190445 by the Christchurch City Council for a comprehensive resource consent to discharge stormwater from within the Christchurch City area and Banks Peninsula settlements on or into land, into water and into coastal environments

**REBUTTAL EVIDENCE OF
ERIC ROLAND VAN NIEUWKERK FOR CHRISTCHURCH CITY COUNCIL**

Dated 30 October 2018

CHRISTCHURCH CITY COUNCIL
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INTRODUCTION

1. My full name is Eric Roland Van Nieuwkerk. I here provide rebuttal evidence for the Christchurch City Council (**Council**) in relation to the evidence of other experts on the Council's application for a comprehensive stormwater network discharge consent (**Application**).
2. My qualifications and experience are as stated in my evidence in chief dated 15 October 2018.
3. I again confirm that I have read and agree to comply with the Code of Conduct for expert witnesses contained in the Environment Court Practice Note (dated 1 December 2014). I confirm that the issues addressed in the statement of evidence are within my area of expertise. I have not knowingly omitted to consider facts or information that might alter or detract from the opinions expressed. The Council as my employer has agreed to me giving this evidence on its behalf.

MARCUS CAMERON FOR NZ STEEL LTD

4. I here respond to expert witness evidence from Mr Marcus Cameron on behalf of NZ Steel Ltd, related to the stormwater contaminant load modelling presented in my evidence.
5. Mr Cameron raises concerns in paragraph 6.1 of his evidence regarding the accuracy of the Contaminant Load Model (**CLM**) used to predict current and future contaminant loads and the associated reliance on the ability of the model to measure progress against specific load reduction targets.
6. The C-CLM presented in my evidence is based on the contaminant load model developed by Auckland Regional Council as described in paragraph 29 to 32 of my evidence in chief. Mr Cameron does not specify the basis of his concerns regarding the accuracy of the C-CLM. I acknowledge there are opportunities to improve the accuracy of the C-CLM as outlined in paragraph 57 of my evidence. However, I consider the C-CLM is fit for the intended purpose, which

is to predict relative changes in long term average improvement in stormwater quality due to land-use changes, source control and employment of stormwater treatment systems, as outlined in paragraphs 30, 54 and 55 in my evidence in chief.

7. I note Mr Cameron refers to Dr Brett Ogilvie's evidence in relation to New Zealand Steel's submissions on Topic 049 – Discharges, Stormwater and Wastewater for the Proposed Auckland Unitary Plan. Dr Ogilvie relies on the same CLM model approach as has been used in the C-CLM presented in my evidence. I therefore do not consider that Mr Cameron's concerns regarding the C-CLM's accuracy are based on any relevant factual evidence.
8. In paragraph 8.1 of his evidence, Mr Cameron infers that there does not appear to be a clear link between the relative proportions of different sources of contaminants and the management response proposed by the Council, which could include restrictions on the use of certain building products.
9. Mr Cameron has particular concerns about the focus on certain sources of zinc over other sources, as inferred in paragraph 6.4 of his evidence. According to Mr Cameron, as inferred in paragraph 10.1 of his evidence, there are many sources of zinc in the environment, and many existing sources of zinc (e.g. existing buildings, external structures such as stairwells and fences, and direct sources such as the dissolution of sacrificial zinc anodes on boats) are not proposed for control or management in the Comprehensive Stormwater Network Discharge Consent (**CSNDC**) application. I agree with this but consider these to be minor potential sources of zinc input to the stormwater system compared to the large area of corroded and poorly painted iron roofs in Christchurch.
10. In paragraph 88 of my evidence in chief I note that the Council proposes to increase the area in which stormwater is treated from approximately 15 % currently to 38 % over a period of 35 years. This would assist in reducing the impact of a range of potential sources of contaminants in urban catchments. In paragraph 101 of my evidence I demonstrate that source control measures, such as replacement or repainting of poorly-painted or unpainted iron roofs could lead to a reduction in zinc load of up to 24%. In addition to the source

control and treatment measures assessed with the C-CLM, I consider that restrictions on the use of leachable building materials that are likely to be exposed to the elements (e.g. roofs), could provide for a further reduction in the stormwater contaminant load entering urban streams.

11. I note that the purpose of the C-CLM is to assess contaminant contribution of urban functions (such as buildings and roads) and not of other potential sources as discussed by Mr Cameron in his paragraph 10.1. Nonetheless, I consider the total area of roofs and roads exposed to the elements in Christchurch exceeds the total area of other exposed external structures (such as stairwells and fences) that may contribute to the total zinc load in stormwater that runs off to Christchurch's urban streams, and these are addressed in the C-CLM assessments. Mr Cameron's assertion in paragraph 9.1 of his evidence that there appears to be no clear link between the relative proportions of different sources of contaminants and the management response proposed in the CSNDC application, is therefore incorrect in my opinion.
12. In paragraph 10.2 and 10.3 of his evidence, Mr Cameron references Dr Ogilvie's evidence, in which a generally decreasing load of zinc to urban waterways as a result of replacement of older painted and unpainted galvanised steel roofs is outlined. This change is being driven by market forces rather than any restriction on building materials according to Mr Cameron and Dr Ogilvie.
13. I agree with Dr Ogilvie that routine replacement of older poorly-painted or unpainted roofs would lead to a reduction in the total zinc load to urban waterways. However, routine roof replacement is relatively slow and it takes many decades for the benefits gained from this to materialise, as discussed in paragraph 98 of my evidence in chief.
14. In paragraph 101 of my evidence in chief, I show that active source control measures, including incentives to replace or repaint poorly-painted or unpainted roofs, could readily expedite the reduction of the total zinc load. I consider source control options to be effective measures in reducing the stormwater contaminant load. I consider that the purpose of any stormwater treatment and source control efforts are defeated if building materials continue to be allowed

to leach considerable amounts of contaminants over time. This is especially relevant for building materials such as roofing that are used on a large scale in urban areas. In my opinion, market forces are typically not driven by environmental gains, and I disagree with the suggestion that these are better placed to deliver an improvement of stormwater quality than restrictions of building materials.

ERIC ROLAND VAN NIEUWKERK

30 October 2018