

**Before the Hearings Panel
At Kapiti Coast District Council**

**Statement of evidence of Charles Edward McDermott on behalf Kāpiti Coast
District Council (Geotechnical Engineering)**

Date: 03 August 2026

INTRODUCTION

- 1 My full name is Charles Edward McDermott. I am employed as Technical Director of Geotechnical Engineering at Miyamoto New Zealand Limited.
- 2 I have prepared this statement of evidence on behalf of the Kāpiti Coast District Council (**Council**) in respect of technical related matters arising from the submissions and further submissions on the Private Plan Change 5 (PPC5) to the Kāpiti Coast District Plan (District Plan).
- 3 Specifically, this statement of evidence relates to the following matters:
 - 3.1 Geotechnical engineering as related to the proposed (Private) Plan Change 5 - 100 and 110 Te Moana Road, Waikanae.
- 4 I am authorised to provide this evidence on behalf of the Council.

QUALIFICATIONS AND EXPERIENCE

- 5 I hold the qualifications of BEng(Hons) CMEngNZ CPEng IntPE(NZ).
- 6 I have worked for Miyamoto New Zealand Limited since 2017.
- 7 I am a chartered member of Engineering New Zealand.
- 8 I have eighteen years of experience in geotechnical engineering consultancy, working on both large-scale project and site-based work. My experience includes geotechnical engineering associated with large scale land development projects around New Zealand including on the Kāpiti Coast, and including those with challenging ground conditions. I have previously been engaged by the Kāpiti Coast District Council in a reviewer and expert witness capacity.

CODE OF CONDUCT

- 9 I have read the Code of Conduct for Expert Witnesses set out in the Environment Court's Practice Note 2023¹. I have complied with the Code of Conduct in preparing my evidence and will continue to comply with it while giving oral evidence before the Environment Court. My qualifications as an expert are set out above. Except where I state I rely on the evidence of another person, I confirm that the issues addressed in this statement of evidence are within my area of expertise, and I have not omitted to consider material facts known to me that might alter or detract from my expressed opinions.

SUMMARY & BASIS OF REVIEW

- 10 My name is Charles Edward McDermott.
- 11 I have been asked by the Council to provide geotechnical engineering evidence in relation to the proposed (Private) Plan Change 5 - 100 and 110 Te Moana Road, Waikanae.
- 12 My statement of evidence addresses Geotechnical Engineering matters only and has been formed based on review of the following documentation:
- 12.1 Tonkin & Taylor Limited (T+T) (31 January 2025). Geotechnical Compliance Review - 100 and 110 Te Moana Road, Waikanae.
- 12.2 Cameron Gibson & Wells Limited (CGW) (02 May 2025). Geotechnical Assessment Report for Plan Change - 100 – 110 Te Moana Road, Waikanae (Ref. 240461-RPT-G-002-A).

¹ <https://environmentcourt.govt.nz/assets/Practice-Note-2023-.pdf>

- 12.3 Tonkin & Taylor Limited (T+T) (04 June 2025). Geotechnical Compliance Review - 100 and 110 Te Moana Road, Waikanae.
- 12.4 Cameron Gibson & Wells Limited (CGW) (10 July 2025). RE: 240461 - 110 Te Moana Road, Waikanae - Response to Geotechnical Requests For Information - Private Plan Change (Ref. 240461-LET-001-A).
- 12.5 Tonkin & Taylor Limited (T+T) (02 September 2025). Geotechnical Compliance Review - 100 and 110 Te Moana Road, Waikanae - Update to include response to RFI 01
- 12.6 Kāpiti Coast District Council (KCDC) (20 February 2026). Proposed (Private) Plan Change 5 - 100 and 110 Te Moana Road, Waikanae - Summary of Decisions Requested by Submissions.
- 13 During my review I have conferred with David Pickett (Ecology) and James Oakley (Stormwater/Flooding) on interrelated matters.

INVOLVEMENT WITH THE PRIVATE PLAN CHANGE 5

- 14 I have been involved in PPC5 since June 2026. I was not involved in preparation of earlier reviews referred to above, but I have reviewed them as part of my engagement commencing June 2026.

SCOPE OF EVIDENCE & DISCUSSION

- 15 My statement of evidence addresses the following matters (as requested and set out by KCDC):

15.1 Site Suitability and Geotechnical Constraints

- 15.1.1 The site is subject to multiple geological and geotechnical hazards (which is not uncommon of parts of the Kāpiti Coast) as discussed in the following sections herein.

15.1.2 Although revised / further assessment will be required (as discussed herein), in my opinion the geological and geotechnical hazards can be mitigated and / or accommodated to facilitate residential development.

15.1.3 As such, in principle (and subject to the requirements discussed herein), it is my opinion that the identified geological and geotechnical hazards do not render the site unsuitable for residential zoning.

15.2 **Understanding of Key Geotechnical Risks**

15.2.1 The CGW documents, when considered alongside local experience and knowledge, provide adequate information to understand the geological and geotechnical related risks at the site at an appropriate level for the stage of the project (i.e. high-level understanding as part of assessment for a plan change). These include:

(a) Groundwater levels: There remains uncertainty around the groundwater levels and fluctuation of such with time, and groundwater monitoring will be required at resource consent stage. However, acknowledgement that the groundwater table is very shallow over large areas of the site is considered adequate understanding at this stage (plan change).

(b) Liquefaction induced settlement and lateral spreading: The CGW assessment will require revisiting at the resource consent stage including (but not limited to), consideration of groundwater monitoring data, reassessment of the 'technical category' zoning and assessment of the effects of liquefaction on the stability of the sloping ground

(sand dune). However, acknowledgement that liquefaction induced ground deformation poses a significant risk and that the risk can be mitigated / accommodated, is considered adequate understanding at this stage (plan change).

(c) Soft and / or organic soils: The extent of soft / organic soils requires further investigation and the effects of such require further assessment at the resource consent stage. Although CGW do not acknowledge soft soils were encountered during their investigation, they do acknowledge their likely existence at the site and opine that feasible mitigation measures exist should they be required, with which I am in agreement. Acknowledgement that soft / organic soils exist at the site and that the risk can be mitigated / accommodated, is considered adequate understanding at this stage (plan change).

(d) Bearing capacity: The CGW assessment of bearing capacity requires revisiting at resource consent stage. However, the available shallow bearing capacity, be it adequate or not, does not preclude residential development.

(e) Slope instability: CGW consider the risk of slope instability to be low, however, subject to further assessment at resource consent stage. Although little justification is provided behind their assessment, and it appears that they may not have considered seismic and / or post liquefaction instability, it is considered that a full assessment (in conjunction with a revised liquefaction assessment) can be undertaken at resource consent stage on

the basis that the potential risks can be mitigated / accommodated.

15.3 Land Performance and Ground Classification

15.3.1 CGW have adopted the technical category (TC) classification system developed for use in Canterbury following the Canterbury Earthquake Sequence (CES), as detailed in MBIE (2012)². Although technically not directly applicable for use outside of Canterbury, the document, and the guidance and technical categorisation therein provide a means to evaluate the seismic performance of the land and provide 'recommendations' for suitable foundation types and / or required performance criteria. The CGW zoning will require revisiting on the basis of the revised analyses (as required herein), and it should be noted that technical category zoning should not be the only criteria adopted to categorise the land, however, this assessment may take place at resource consent stage.

15.4 Feasibility of Mitigation and Earthworks

15.4.1 It is understood that filling areas of the site to raise the grade to meet finished floor level requirements is currently proposed. It is common for land development projects to require raising the site levels and it is common to achieve this through filling. It is not uncommon for this to be required in areas of unfavourable ground conditions (e.g. soft or organic soils with shallow groundwater) where treatment / improvement of the ground is required.

² Ministry of Business, Innovation & Employment (MBIE) (2012). Repairing and rebuilding houses affected by the Canterbury earthquakes

15.4.2 Filling the site presents issues that require consideration including:

- (a) Most significantly, the effects of filling on other disciplines including but not limited to environmental and ecology, flooding, and stormwater, which have been considered by the relevant disciplines.
- (b) From a geotechnical perspective, the effects of filling (loading) on the underlying ground (including the identified soft layer(s)) and potential for ground settlement, however, mitigation measures exist and this can be assessed at the resource consent stage.

15.4.3 Given the ecological significance of the site and wetlands therein (further discussed in the evidence of Mr David Pickett), and proximity to neighbouring properties, widespread dewatering to facilitate removal of soft soils is unlikely feasible, however, if progressed as an option by the Applicant or future developer of the site, this will require careful design in collaboration with other disciplines and strict monitoring during construction.

15.5 **Environmental and Interdisciplinary Effects**

15.5.1 Considerations regarding filling the site, including those related to other disciplines, are discussed in *Para. 13.4*.

15.5.2 Other interdisciplinary considerations from a geotechnical perspective include:

- (a) Soakage to ground:

- i. Widespread densification of soil over the areas proposed for soakage to ground should be avoided. Localised densification beneath buildings and roadways will likely be suitable, however, this will require consideration as part of the overall stormwater and soakage design for the site.
 - ii. The effects of soakage to ground and the locations of such require consideration as part of the updated / revisited geotechnical assessments at the resource consent stage.
- (b) Stormwater storage / flood mitigation:
 - i. Measures implemented to address flooding and stormwater management (e.g. stormwater attenuation / storage basins, ditches / channels, overland flow paths etc.) and the effects of such require consideration as part of the updated / revisited geotechnical assessments at the resource consent stage.

15.6 Appropriate Stage for Further Investigation

- 15.6.1 On the basis that the geological and geotechnical risks are / can be understood at a high but adequate level, further investigation may be deferred to the resource consent stage which will form the basis of more robust assessment of the site and the geological and geotechnical hazards.

15.7 Submissions

- 15.7.1 I have reviewed and considered Submission 1 from Jill Bond on behalf of Fairway Oaks Drive Residents' Partnership.

15.7.2 The geotechnical related aspects within the submission primarily relate to groundwater conditions and the suitability of the site for residential development. In my opinion these matters have been appropriately considered through the geotechnical investigations and subsequent reporting completed to date, and through the additional matters discussed in this evidence. For the reasons set out herein, I do not consider those matters to represent a barrier to residential zoning of the site.

CONCLUSION AND RECOMMENDATIONS

- 16 The site is subject to multiple geological and geotechnical hazards.
- 17 Although revised / further assessment will be required (as discussed in herein), in my opinion the geological and geotechnical hazards can be mitigated and / or accommodated to facilitate residential development.
- 18 As such, in principle (and subject to the requirements discussed herein), it is my opinion that the identified geological and geotechnical hazards do not render the site unsuitable for residential zoning.
- 19 Further matters / requirements which in my opinion may be addressed at resource consent stage are as follows:
- 19.1 Groundwater monitoring alongside revised assessment to consider expected short- and long-term range in groundwater levels across the site.
- 19.2 Assessment of the effects of other proposed works, including:
- 19.2.1 Soakage to ground.

- 19.2.2 Measures implemented to address flooding and stormwater management (e.g. stormwater attenuation / storage basins, ditches / channels, overland flow paths etc.).
- 19.3 Further investigation of the extent of soft and / or organic soils and assessment of the effects of such considering the proposed development works (e.g. earthworks, building construction, infrastructure, other disciplines etc.).
- 19.4 Revised liquefaction assessment including (but not limited to), consideration of groundwater monitoring data, reassessment of the extent of lateral spread and 'technical category' zoning, and assessment of the effects of liquefaction on the stability of the sloping ground (sand dune). Consideration of the effects of such considering the proposed development works (e.g. earthworks, building construction, infrastructure, other disciplines etc.).
- 19.5 Slope stability assessment (in conjunction with revised liquefaction assessment) considering the proposed development works (e.g. earthworks, building construction, infrastructure, other disciplines etc.).
- 19.6 Revised bearing capacity assessment considering the identified ground conditions, including loose sand and soft and / or organic soils.
- 19.7 Where required, provision of suitable and feasible mitigation measures to address the reassessed risks / hazards posed to the site, including liquefaction induced settlement and lateral spread, soft and / or organic soils, slope instability and insufficient bearing capacity.
- 19.8 Mitigation measures comprising modification to the underlying soil and / or landform shall be approved by other disciplines

including environmental and ecology, flooding, stormwater and others as appropriate. For example:

19.8.1 If densification of soils is proposed to improve the bearing capacity of loose sand, this may have an effect on the stormwater soakage design and will require approval / accommodation by the stormwater designer.

19.8.2 If excavation and replacement of soft / organic soil is proposed and dewatering is deemed necessary, although unlikely feasible, if progressed as an option will require careful design in collaboration with other disciplines including environmental and ecology, flooding, and stormwater, and strict monitoring during construction.

19.9 Similarly, if filling the site is proposed, this will require assessment by other disciplines including ecology, flooding, and stormwater and others as appropriate.

20 The above is not an exhaustive list, but rather commentary on the assessment presented to date. My expectation would be that further geotechnical assessment will be undertaken (including all usual requirements such as a detailed assessment of natural hazards as per the Resource Management Act 1991 (RMA), inclusive of the 2017 amendments, and the National Policy Statement for Natural Hazards 2025), and a more comprehensive geotechnical report will be prepared in support of resource consent.

Date: 03 August 2026



Charles McDermott