

**BEFORE THE INDEPENDENT HEARINGS PANELS APPOINTED TO HEAR AND MAKE
RECOMMENDATIONS ON SUBMISSIONS AND FURTHER SUBMISSIONS ON PROPOSED PLAN
CHANGE 1 TO THE NATURAL RESOURCES PLAN FOR THE WELLINGTON REGION**

UNDER the Resource Management Act 1991 (the
Act)

AND

IN THE MATTER of Hearing of Submissions and Further
Submissions on Proposed Plan Change 1 to
the Natural Resources Plan for the
Wellington Region under Schedule 1 of the
Act

**STATEMENT OF REBUTTAL EVIDENCE OF DR PETER STANLEY
WILSON**

ON BEHALF OF GREATER WELLINGTON REGIONAL COUNCIL

HEARING STREAM 2 – OBJECTIVES

28 MARCH 2025

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INTRODUCTION

1 My full name is Peter Stanley Wilson. I am a Principal Marine and Water Quality Scientist at SLR Consulting, where I have worked since February 2019. Prior to this role, I held the position of Coastal Water Quality Scientist at the Waikato Regional Council for four years. In these roles, my responsibilities have focused on marine science, research, and resource management with a focus on sediment and water quality.

2 I have read the evidence and statements raising concerns or issues relevant to coastal human contact including:

2.1 Vanessa Alison Rodgers on behalf of Porirua City Council

2.2 Paula Hunter on behalf of Wellington Water Limited

2.3 Stephen John Hutchison on behalf of Wellington Water Limited

2.4 Aimee Rei-Bishop on behalf of Te Rūnanga o Toa Rangatira

3 There was no evidence that required a response in regard to marine ecotoxicology.

QUALIFICATIONS, EXPERIENCE AND CODE OF CONDUCT

4 My qualifications and experience are set out in paragraphs 4–6 of my Statement of Primary Evidence, dated 28 February 2025. I repeat the confirmation given in that report that I have read and agree to comply with the Code of Conduct for Expert Witnesses.

RESPONSES TO SUBMITTER EVIDENCE

5 My evidence addresses:

5.1 The management of health and safety to the public in Porirua Harbour;

5.2 The availability of baseline states;

5.3 The effect of wastewater overflows in coastal waters; and

5.4 An explanation of enterococci targets.

MANAGEMENT OF HEALTH AND SAFETY TO THE PUBLIC IN PORIRUA HARBOUR

6 In paragraph 7.37 of Vanessa Alison Rodgers Statement of Evidence (on behalf of Porirua City Council), she suggests that based on paragraphs 27 and 28 of my Statement of Primary

Evidence¹, “that in terms of health and safety to the public, the Waka Ama site can be managed through signage to inform the public of health risks at this location, until such time further improvements can be realised”. I do not consider that to be an entirely accurate interpretation of my evidence.

7 I understand that the Waka Ama site is a popular recreation location. The 95th percentile enterococci concentration over the past five years is 2,680 enterococci/100 mL, placing it in the lowest state (D) and indicating that the site is unlikely to be suitable for swimming (i.e., a high risk of illness or infection). An 81% reduction from the current state would be required for the Waka Ama site to meet a target of 500 enterococci/100 mL, which may be considered suitable for swimming.

8 In paragraph 28 of my Statement of Primary Evidence, I consider that an “*objective of ≤500 enterococci per 100 mL is appropriate* [at a popular recreation site such as Waka Ama] *following the MfE/MoH (2003) guidance*” and acknowledge that this is likely to be difficult to achieve by 2040. Where a site exceeds 500 enterococci/100 mL, signage may be required to inform the public of health risks. The use of signage will inform the public of the potential risk to their health but may not be sufficient to manage human health at a site that is likely to still be used, such as the Waka Ama site, which is the location of the Ngāti Toa Waka Shelter and boat ramp.

AVAILABILITY OF BASELINE STATES

9 In paragraph 7.1 of Paula Hunter’s Statement of Evidence (on behalf of Wellington Water Limited), she raises concern about the lack of information relating to baseline states. I note that baseline states have been provided for all coastal recreation sites (see Tables 3 and 4 of my Primary Statement of Evidence).

EFFECT OF WASTEWATER OVERFLOWS IN COASTAL WATERS

10 In paragraph 11.13 of Stephen Hutchison’s Statement of Evidence (on behalf of Wellington Water Limited), he comments on the effect of wastewater overflows on the 95th percentile of *E. coli* levels. I respond here from a marine perspective and the potential effect of wastewater overflows the on 95th percentile of enterococci levels.

¹ Evidence of Peter Stanley Wilson on Behalf of Greater Wellington Regional Council (Coastal Human Contact; dated 28 February 2025)

- 11 The fate of wet weather overflows of wastewater into a marine environment is complex due to the effects of waves and tides (hydrodynamics). Water within an estuary can take hours or days to flush; this is referred to as the residence time. This is in contrast to rivers, where wet weather overflows are primarily transported downstream (and, therefore, unlikely to affect the *E. coli* 95th percentile). After wastewater is discharged into an estuary, for example, it may be transported to another part of the estuary and return on the reversed tide. This means the time over which there might be a risk to human health following the cessation of a wet weather overflow is typically greater in estuaries than in rivers (at a fixed location). The consequence of this is that a wet weather overflow into an estuary is also more likely to affect the enterococci 95th percentile.
- 12 From my experience, I agree with Mr Hutchison's statement that water quality returns to background levels within 2-3 days of a wet weather overflow.² During rainfall events, faecal contamination in waterbodies is typically elevated from a number of sources in the catchment. The introduction of a wastewater overflow typically further increases the concentration of faecal bacteria (i.e., *E. coli* or enterococci) but does not extend the period that water quality is degraded. To provide a comparison, this was what I found when I analysed and reported on the effects of wet weather overflows on water quality for the consenting of wastewater overflows for Gisborne District Council.
- 13 Recreational water quality monitoring is conducted by Council weekly during the summer months. Typically, sampling is conducted on the same day each week, unless the weather would make it unsafe to do so. As such, this monitoring programme has the potential to be influenced by wet weather overflows if they occur within 2-3 days prior to sampling being conducted. Sampling up to three days following a wet weather overflow event is likely to result in a higher 95th percentile for enterococci than if it did not occur.
- 14 Consequently, where achieving the coastal enterococci objectives is a higher priority than achieving the freshwater *E. coli* TAs³, I consider the greatest human health benefits will result from reducing faecal indicator bacteria loads from both dry-weather leaks and wet-weather overflows.

² Mr Hutchison's submission, at paragraph 11.12

³ See section 42A Hearing report paragraph 292.

EXPLANATION OF ENTEROCOCCI TARGETS

- 15 In paragraph 3(f) (page 5) of Aimee Rei-Bishop’s Statement (on behalf of Te Rūnaga o Toa Rangatira), she notes that it would be helpful for the plan to include a ‘plain-English’ explanation of the enterococci targets and how they are calculated.
- 16 As set out in my Primary Statement of Evidence, the enterococci targets of ≤ 200 and ≤ 500 enterococci per 100 mL are from the Ministry for the Environment and Ministry of Health Microbiological water quality guidelines for marine and freshwater recreational areas, typically referred to as the ‘Recreational Water Quality Guidelines’.⁴ Enterococci is group of bacteria that live in the intestines of warm-blooded animals and humans. They are measured to indicate when water may contain human or animal faecal contamination (e.g., untreated wastewater or animal faeces). Enterococci themselves don’t typically make humans sick, but they are easily measured and are typically accompanied by a range of other organisms that can (e.g., viruses and bacteria).
- 17 I present the human health information from the guidelines that relates to each of the targets in paragraph 12 and Table 1 of my Statement of Primary Evidence. These relate to the levels of enterococci and the occurrence of gastrointestinal issues (e.g., vomiting and diarrhoea) and respiratory illness (e.g., lung or sinus infection, potentially cold and flu-like symptoms). A recreation site that meets a target of 200 enterococci per 100 mL is likely to result in fewer gastrointestinal or respiratory illnesses than a site that exceeds this but meets a target of 500 enterococci per 100 mL.
- 18 The following sites have enterococci targets recommended by Ms O’Callahan of greater than 500 per 100 mL:⁵
- 18.1 Wellington City Waterfront at Shed 6
 - 18.2 Wellington Harbour at Taranaki St Dive Platform
 - 18.3 Waka Ama in Te Awarua-o-Porirua Harbour
 - 18.4 Rowing Club in Te Awarua-o-Porirua Harbour
 - 18.5 Water Ski Club in Te Awarua-o-Porirua Harbour

⁴ MfE/MoH (2003) Microbiological water quality guidelines for marine and freshwater recreational areas. Available at <https://environment.govt.nz/publications/microbiological-water-quality-guidelines-for-marine-and-freshwater-recreational-areas/>

⁵ Section 42A Hearing Report - Objectives, at paragraph 213.

19 I understand that these thresholds have been proposed as the work required to meet a target of 500 enterococci per 100 mL at these sites is unlikely to be achievable by 2040. Instead, a “50% improvement” from the site’s current state has been proposed in the section 42A Hearing Report and considered preferable to changing the timeframe over which the target of 500 enterococci per 100 mL should be achieved.⁶ The “50% improvement” targets set are not directly linked to human health outcomes (i.e., the recreational water quality does not define these values and the potential risk to human health).

DATE: 28 MARCH 2025



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**ON BEHALF OF GREATER WELLINGTON
REGIONAL COUNCIL.**

⁶ Section 42A Hearing Report, at paragraph 213.