

Before Hearing Panel – Proposed Natural Resources Plan for the Wellington Region

Under The Resource Management Act 1991 (the Act)

In the matter of Proposed Natural Resources Plan for the Wellington Region: Hearing Five – Beds of Lakes and Rivers, Wetlands and Biodiversity, & Discharges to Land

Between Greater Wellington Regional Council

Local Authority

And Masterton / South Wairarapa District Council

Submitter S367 and Further Submitter FS30

Statement of David Robert Hopman

Dated 19 September 2018

Qualifications and Experience

- 1 My full name is David Robert Hopman.
- 2 For my qualifications and experience and other introductory comments, please refer to paragraphs 1 to 3 of my statement of evidence for Hearing Stream Four, dated 4 May 2017.
- 3 My statement is given in support of Masterton District Council's ("**MDC**") submission on the Proposed Natural Resources Plan for the Wellington Region ("**PNRP**"), specific to the issue of Water Quality (Hearing Four) and the Memo discussed in Minute #57.

Context

- 4 I have been asked to provide some perspective and comments on the implications of having a QMCI standard incorporated into resource consent conditions, and the difficulties that have arisen from that.
- 5 Currently, the Masterton District Council holds a Resource Consent (WAR090066) to discharge treated wastewater from the Homebush Wastewater Treatment Plant (WWTP) to the Ruamahanga River. The consent allows for the treated water to be discharged when the river is flowing at higher flows, subject to meeting a range of dilution and duration requirements.
- 6 This consent was granted by Consent Order in 2009 and will expire in 2034.
- 7 A significant number of conditions have been appended to the Consent, which requires Council to carry out a range of monitoring work on a near-constant basis. Included within these conditions is a requirement to carry out QMCI surveys of the Ruamahanga River upstream and downstream of the discharge point twice a year; once in spring and again in summer.
- 8 The surveys began in 2013, following the commissioning of the upgraded diffuser and, to date, 10 have been completed. Surveys are required to be carried out at three locations; one upstream of the diffuser, one 300m

downstream of the diffuser and one at Wardells Bridge, 1,200m downstream.

- 9 Council added a fourth site, between the upstream site and the diffuser, in 2015. This was to try and better understand the reasons for the range of the results being obtained.
- 10 The work is carried out by a qualified biologist specialising in macroinvertebrates and reported through to GWRC.
- 11 These surveys tend to have variable results. Additionally, river conditions make the sampling problematic, and for this reason the spring 2016 sampling was not able to be carried out.
- 12 While the overall trend of the QMCI result has been improving, and recent results have been compliant with the Consent condition, there is still a considerable amount of variability in the samples. The reason for this is not at all clear.
- 13 A summary of the results is replicated in Table 1, below.

QMCI					Decrease relative to RU1		Decrease relative to RU2	
Date	RU1	RU2	RD1	RD2	RD1	RD2	RD1	RD2
4/03/2013	4.15		3.8	2.07	0.35	2.08		
24/11/2013	5.82		3.11	3.78	2.71	2.04		
12/03/2014	5.49		4.03	2.99	1.46	2.5		
5/01/2015	6.21		3.47	3.72	2.74	2.49		
3/03/2015	5.66		3.91	3.87	1.75	1.79		
20/12/2015	6.85	6.04	4.59	5.92	2.26	0.93	1.45	0.12
9/03/2016	2.42	2.05	1.76	1.86	0.66	0.56	0.29	0.19
6/03/2017	6.7	5.9	5.13	5.6	1.57	1.1	0.77	0.3
10/11/2017	7.4	7.1	7.6	7.3	-0.2	0.1	-0.5	-0.2
26/03/2018	7.78	7.3	7.6	7	0.18	0.78	-0.3	0.3
Median	5.82	5.97	3.91	3.78	1.57	1.79	0.53	0.155

Note: RU1 and RU2 are upstream sites. RD1 and RD2 are downstream at 300m and 1200m respectively.

- 14 The compliance standard requires that the downstream QMCI is not decreased by more than 1-point relative to the upstream QMCI (compliant results shown in green on the table).

- 15 Given the Council's experience with monitoring QMCI, I am concerned that it is not appropriate to use QMCI as a compliance measure for a number of reasons. These include, but are not limited to, the following;
- 15.1 The results appear to be inherently variable, with significant changes between the two upstream sites before the River reaches the diffuser. There is no apparent reason for this, although it may relate to changes in the river substrate or flows. Additionally, there is considerable variability at each site from year to year. RU1, for instance, varies from 2.42 to 7.78 with a median value of 5.82. The natural variability of the QMCI at any site can therefore be greater than the consent compliance limit.
- 15.2 The QMCI Consent Condition does not allow for the sensitivity of the receiving environment. It merely assumes that a greater than "1" point difference means a significant effect even if this is within the natural variability of a site.
- 15.3 It is not clear what aspects of the discharge (if any) are causing the decrease in the QMCI score. It is difficult therefore to understand the reasons for the decrease and to adopt any treatment management changes, should they be necessary. The changes may be totally or predominantly unrelated to the discharge, possibly caused, at least in part, from other sources or effects.
- 16 The information in Table 1 does demonstrate that the trend for the discharge is improving and we appear to be moving to comply with the Consent condition. However, I am unable to point to any particular aspect of the WWTP or the discharge that has changed to affect this improvement. The assumption is that, over time, the impact on the river of the decommissioned treatment ponds has lessened. However, the environmental sampling has not shown any significant changes over this period, so it is not clear that this assumption is correct. It is also not clear that this trend will continue as we are not certain why it is happening.
- 17 This has meant that for a number of years, the Council has been issued a 'non-compliance' rating for its Resource Consent, due to the QMCI result, despite the discharge complying with all effluent quality conditions. This

non-compliance rating has been used to suggest that the Homebush WWTP is 'failing'. This is not the case, as the plant is operating well, and other consent breaches have generally been minor or technical in nature.

- 18 In summary, I believe that the **use of the QMCI as a compliance standard is inappropriate**, because of the problems identified above, **and it is more appropriately used to gauge long term trends in river health.**
- 19 I support the concerns that SWDC have raised in their submission as it relates to the use of QMCI.
- 20 I appreciate the opportunity to give evidence about MDC's concerns around the PNRP as notified, and in particular the recommendation through the Right-of-Reply to reintroduce QMCI to wastewater discharges through a new Policy P71A and associated provisions.

David Hopman

19 September 2018