

BEFORE THE INDEPENDENT COMMISSIONERS

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of the Proposed Waikato Regional Plan Change 1 - Waikato and Waipa River Catchments, and Variation 1 to proposed Plan Change 1

AND

IN THE MATTER of submissions under clause 6 First Schedule

ON BEHALF OF **BEEF + LAMB NEW ZEALAND**
Submitter

EXECUTIVE SUMMARY OF GERARDUS HENRICUS ANTHONIUS KESSELS
26 MARCH 2019

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INTRODUCTION

1. My full name is Gerardus (Gerry) Henricus Anthonius Kessels.
2. I am an independent contracting consultant, retained as Principal Ecologist for Tonkin and Taylor Ltd.
3. I have been engaged by Beef + Lamb New Zealand to provide evidence on ecology and environmental planning with a particular focus on water management groups at sub catchment levels and analysis of more site-appropriate range of riparian and edge of field mitigation tools, for the hearing on Proposed Plan Change 1 for the Waikato and Waipa Rivers, and Variation 1 to this plan change (PC1).
4. I provided a Statement of Evidence in Chief on behalf of Beef + Lamb New Zealand dated 15 February 2019
5. I confirm the qualifications and experience set out in my Statement of Evidence in Chief (EIC).
6. As set out in my EIC, I have read the Code of Conduct for Expert Witnesses in the Environment Court's 2014 Practice Note and I have complied and continue to comply with it. I confirm that the opinions I have expressed represent my true and complete professional opinions. The matters addressed by my evidence are within my field of professional expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

EXECUTIVE SUMMARY

7. My evidence in chief covers five broad concerns I have with PC1:
 - Council has not undertaken sufficient analysis to take into account the full range of mitigations and benefits that could be achieved through locally based, incentivised water management groups at a sub catchment level, both in the modelling it has undertaken or through the section 32 analysis process.
 - By focussing on a limited suite of water quality parameters, PC1 may not provide sufficient policy to ensure overall ecosystem health is safeguarded and biodiversity is enhanced, as the plan is required to do by the NPS-FM, WRPS and the Vision and Strategy.

- As opposed to blanket fencing rules with slope being the only determiner, for hill country agricultural land, targeted critical source and high ecological value area identification and management, is likely to enable landowners to create more effective, timely and innovative approaches to address contaminant run-off.

Ecosystem health of freshwater and freshwater biodiversity

8. The focus of PC1 is on a limited suite of catchment-wide water quality parameters, combined with implementation methods that are largely inflexible and non-incentivising through individual Farm Environment Plans (FEPs), and blanket fencing requirements based on slope as the sole performance standard.
9. PC1 is not sufficient to ensure that the overall ecosystem health of freshwater is safeguarded, and freshwater biodiversity diversity and resilience protected and enhanced, as required by the NPS-FM, WRPS and Vision and Strategy.
10. Moreover, PC1 does not fully provide for an integrated, holistic and coordinated approach to the management of the Waikato and Waipā river catchment as required by the Vision and Strategy or the WRPS.

Best practice approaches to abating contaminant run-off from hill country farms

11. PC1 requires individual FEPs to be implemented (Rules 3.11.5.2, 3.11.5.3 and 3.11.5.4) as prescribed in Schedule 1. I support the use of FEPs as a tool to achieve the policy directives of PC1. However, the effectiveness of FEPs will be curtailed by these same rules, which also require mandatory stock exclusion provisions by fencing in relation to slope for certain lands regardless of alternative methods developed through the FEP process.
12. In effect, the fencing regulations could override a mix of potentially more effective on-farm management or edge-of-field mitigation alternatives identified during the development of individual FEPs, especially for those farming systems on more diverse geologies and slopes above 15 degrees. The reason being is that farmers will have to prioritise resources towards erecting and maintaining fences for stock exclusion of waterways on slopes greater than 15 degrees (and less than 25 degrees), thereby reducing

opportunities and resources to use other management and mitigation options available to achieve similar or more effective solutions.

13. The effectiveness of fencing off stock as a strategy to mitigate contaminant loads is site and contaminant specific, ranging from highly effective in flat areas and where contaminants are particulate associated, to less effective in steeper areas and where contaminants are mobile. In addition, while some research has indicated the efficacy of riparian zones for nitrate removal, there is a well-established concern that these areas could act as a source of nitrogen if vegetation is not regularly cut and removed.
14. The identification and management of critical source areas at the sub catchment and farm level is the most effective approach to mitigate the environment risk associated with sheep and beef farming, because the risks associated with sheep and/or beef farming on rolling hill country is primarily by overland flow paths and through critical source areas of contaminants.
15. Consequently, edge-of-field management approaches should initially focus on identifying these overland flow pathways and critical source areas, with mitigation tailored to reduce or avoid the overland flow of contaminants. These critical source areas are often remnant seep wetlands, small low-order streams and springs, surrounded by indigenous vegetation, which will also generally benefit from targeted environmental mitigation, thus enhancing the overall biodiversity values as an additional benefit.

Incentivising water management groups at sub catchment levels

16. PC-1 requires rapid and widespread adoption of abatement actions across the entire catchment to achieve its desired policy objectives. Doole et al (2016)¹ states that overall, the proposed policy mix of PC1 constitutes: “*..an attractive value proposition in terms of economic and water quality outcomes that it achieves. However, these [model] results are conditional on achieving rapid and significant levels of adoption of mitigation actions across the catchment*” (page 46 – my emphasis).

¹ Doole, G.; Quinn, J.M. Wilcock, B.J. Hudson, N. 2016. Simulation of the proposed policy mix for the Healthy Rivers Wai Ora process. Prepared for the Technical Leaders Group of the Healthy Rivers/Wai Ora Project. Report No. HR/TLG/2016-2017/4.5

17. While PC1 does not discourage water management groups to be formed at a sub catchment level, it does not sufficiently encourage or incentivise local community based water management groups. This is despite widespread international and national literature showing that this can be effective and successful approach.
18. An extract from the 2018 Ministry for the Environment preliminary guidelines for creation of water management groups is particularly pertinent: *“One approach to managing these diffuse effects is to allocate limits for individual pollutants to individual properties. This is usually based on models that may not accurately reflect physical processes and cumulative effects, leaving environmental outcomes in doubt and land users questioning the models (Duncan 2014). Another approach is to require land users to adopt specific ‘good management practices’. This provides some certainty of actions and costs but delivers uncertain environmental outcomes and, without other controls, may allow further intensification. Hence, both approaches have limitations and may not deliver what the community expects. Collective management offers a way to focus more on achievement of desired outcomes, especially where multiple stressors are involved. By assigning environmental responsibilities to a water management group rather than an individual land owner, land users have more flexibility to identify place-specific mitigations. Members are accountable to each other as well as to the wider community, creating peer pressure to improve performance.”*²
19. PC1 should be actively incentivising water management groups, as long as they have sound administrative and management structures, robust performance standards, and can demonstrate measurable improvements they may make to abating non-point source contaminant runoff, as well as showing freshwater ecosystem health and biodiversity gains at sub catchment levels.
20. The key elements which regional plans should consider to actively support and empower a water management group at a sub catchment scale, can be summarised as:

² Sinner, J; Newton M. 2018. Water Management Groups: Preliminary Guidance. Prepared for Ministry for the Environment. Cawthron Report No. 3199. 15 p

- (a) Ensuring the water management group structure is at a sub catchment scale and representative of all stakeholders within that sub catchment, and that ideally the group has legal status;
- (b) Specification of more than one outcome, e.g. a range of water quality and habitat standards, for every water management group confluence point;
- (c) Policies and methods which provide clear criteria or conditions for a group to be recognised and what its environment plan must contain;
- (d) A regional plan should specify that a water management group's environment plan must be approved by the regional council prior to implementation; and
- (e) The environment plans need to contain several key elements including – goals, mapping of land use and effects of each land use practice, mitigation actions, monitoring and reporting strategies, review and auditing processes, an adaptive management approach to account for the complex and non-static ecosystem management dynamics at play, and consequences for non-achievement.

Conclusion

- 21. Alternative parameters and freshwater objectives should encompass attributes of overall ecological health, such as oxygen levels or biota which indicates that an ecosystem can sustain diverse life.
- 22. On hill country farms, a targeted approach to a range of on farm management and mitigation measures, involving critical source and high ecological value area identification and management, is likely to be more a more effective and more quickly adopted approach to attenuating contaminants as opposed to regulation for 'blanket' fencing.
- 23. The gains accrued from FEPs can be increased if a collaborative, water management group approach is taken to identify and implement the most efficient and effective mix of possible measures to reduce contaminant losses and restoring ecosystem health within sub catchments.
- 24. This approach will also create more widespread, targeted opportunities to monitor the effectiveness of these local measures. Sub catchment monitoring will allow for greater accuracy in identification of non-

performance and hence application of in situ adaptive-management responses which are collectively 'owned' by the affected water management group.

25. Including a regulatory platform in PC1 which incentivises appropriately structured water management groups in sub catchments is therefore recommended.
26. Increased and more measurable positive outcomes, particularly for hill country lands, as well as a more rapid and enduring uptake by the community will be the likely result of this approach.

DATED this 26 day of March 2019

GHA (Gerry) Kessels