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**
AND
THE HILL COUNTRY GROUP

EXECUTIVE SUMMARY OF RICHMOND BEETHAM
27th MARCH 2019

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INTRODUCTION

1. My full name is Richmond Beaumont Evan Beetham

2. I am an Agri-Business consultant for BakerAG LTD, specialising in sheep & beef farm consultancy.

3. I have been engaged by Beef + Lamb New Zealand and The Hill Country Group to provide evidence on:

   (a) Contaminant losses to water from sheep and beef farming

   (b) Nitrate (N) leaching on sheep and beef farms compared with other pastoral land use

   (c) Stocking rates on sheep and beef farms in the Waikato

   (d) Nitrogen use on sheep and beef farms in the Waikato

   (e) Key findings and summary of the BakerAg report (see appendix 1 of my evidence) – *"Implications of the proposed Waikato Regional Plan Change 1" - This will be* referred to as the "**PC1 Report**" from this point.

   Particular focus will be on:

   (i) The inequities of a grandparenting approach to nitrogen and why a Nitrogen Reference Point (**NRP**) is not an appropriate or fair regulatory tool; and

   (ii) the economic impacts of stock exclusion from waterbodies on sheep and beef hill country under the proposed Waikato Regional Plan Change 1.

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.

6. As set out in my Evidence in Chief, 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

Sheep & Beef farms

7. Sheep and beef farm systems are complex and diverse with a huge variation in topography, soil type, climate, stocking rates and livestock policies. No two sub-catchments are the same and often no two farms are the same. Sheep & beef farms may also have deer, cropping, forestry and indigenous vegetation. These sheep & beef farms are predominantly extensive pasture-based systems with low inputs with stock policies that are closely matched to the grass growth curve (i.e. farmers stock the land according to the pasture growth curve).

Contaminant losses to water from sheep and beef farming

8. Sheep and beef farms are minor contributors to Nitrogen (N) loss compared with other pastoral land uses, the main issues are in relation to contaminates which flow over the land (P, sediment, faecal bacteria).

Nitrate leaching on sheep and beef farms compared with other pastoral land use in the Waikato.

9. Typically, sheep and beef farms have lower stocking rates, have lower input systems, use less N fertiliser, and have lower N leaching than most other pastoral land uses, especially dairy, this is demonstrated in Table 1. This is because they are generally farming to the grass curve rather than relying on imported feed and supplements. This also means they have very few levers to pull in relation to reducing N leaching further.

10. An analysis of catchment loads for specific land uses and stock types by McDowell and Wilcock[1] found that "*significantly more N was lost from dairy catchments than catchments with other land uses*".

[1] McDowell, R.W.; Wilcock, R.J. 2008. Water quality and the effects of different pastoral animals. New Zealand Veterinary Journal 56(6): 296.

11. The PC1 report found that across the five case study sheep & beef farms in Waikato the average N loss was 13kg/N/ha/yr and the range was 7 to 17kg/N/ha/yr. These results are in line with typical industry parameters and line up with recent OVERSEER modelling on 38 sheep and beef farms in the Waikato carried out by Dr Chrystal which found the average N loss was 17kg/N/ha/yr.

12. In summary, sheep and beef farms are minor contributors to N loss compared with other pastoral land use.

Nitrogen use on sheep and beef farms in the Waikato

13. On average, N use on sheep and beef farms in the Waikato is minimal compared to other industries. Average N input on farms in the B+LNZ Sheep and Beef Farm Survey in Waikato-BOP was around 9.2 kg N/ha/yr from 1990-91 to 2015-16. Recent modelling work on 38 sheep and beef farms in Waikato by Dr Chrystal showed that an average of 20 kg N/ha/yr was applied as fertiliser. In comparison to these figures table 2 shows the average N use on owner operated dairy farms in the Waikato for the 2014-15, 2015-16, 2016-17 and 2017-18 seasons.

Stocking rates on sheep and beef farms compared with stocking rates for dairy farms in the Waikato

14. Beef + Lamb New Zealand's (B+LNZ) Sheep and Beef Farm Survey shows the stocking rate in Waikato-BoP decreased from 12.0 to 9.2 stock units per hectare (SU/ha) in the period 1990-91 to 2016-17.When considering a dairy equivalent stocking rate on Waikato-BoP Sheep and Beef Farms, B+LNZs figures arrive at around 1.1 dairy cows per hectare for sheep and beef farms, compared to 2.9 dairy cows per hectare for the dairy industry in Waikato, which has the highest density of dairy cattle in New Zealand[2]

15. Calculations show Waikato Dairy farms run higher stocking rates with more Liveweight/ha (LW/ha) (1334kg LW/ha vs 742kg LW/ha) carried and therefore have more N leaching on average than sheep and beef farms.

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[2] New Zealand Dairy Statistics. (2016). DairyNZ. Data available from https://www.dairynz.co.nz/media/5416078/nz-dairy-statistics-2015- 16.pdf (accessed November 2017).

Typically, the higher the stocking rate the more urine patches per unit area and the more N leaching.

Key findings from the BakerAg PC1 report

16. In November 2016 I visited five sheep & beef farms in sub-catchment priority 1 in the Waikato river catchments. The key aim of the farm inspections was to determine the financial implications of the proposed Waikato plan change 1.

17. Implementing the Nitrogen Reference Point (NRP) or "Grandparenting" N as proposed in PC1 will impact the ongoing viability of many sheep and beef farms in the Waikato. In my opinion, sheep and beef farms with a low NRP will not be able to reach their sustainable potential through responsible development particularly through subdivision and lifting soil fertility.

18. The biggest impact and most inequitable outcome of implementing the NRP will be the yearly opportunity cost or loss of potential future income. This yearly opportunity cost on the farms I inspected ranged from $75,698 ($164/ha) to $256,800 ($285/ha) per farm. Essentially on the farms with a low NRP their income is frozen and they cannot optimise the natural capital of the land.

19. Under the NRP system farms with the higher loss and consequent NRP stand to sustain a higher level of productivity, have more flexibility, and will be valued more highly. Farms with a low NRP and potentially better environmental footprint are effectively capped with a ceiling on stock numbers, production, land value and future income earning potential. Grandparenting will especially disadvantage many land owners who have farmed conservatively and thus have a low NRP as effectively their stock numbers will be frozen, in turn severely limiting the potential growth of production and income.

20. Image 1 (provided in Power Point) demonstrates the inequities with a grandparenting approach to nitrogen. Although very similar in many respects, the properties differ in fertiliser history and subdivision. Soil fertility on farm C is well below optimum. Due to the current maturity of the business farm C is running at about 46% of potential carrying capacity. In contrast, farm E on the right has had regular fertiliser inputs, has good

fertility and thus a higher stocking rate. Farm E has realised its sustainable potential. With a very low NRP of 7 Kg/N/Ha, farm C will have limited ability to realise remaining unrealised, sustainable potential in this farm. It is highly inequitable that as of the 22nd of October 2016, Farm E now has more flexibility than Farm C, and greater income earning potential. Image 1 is just an example of the inequities between two neighbouring sheep & beef farms. Image 2 shows the potential inequities between a dairy farm and a neighbouring sheep & beef farm.

21. Table 3 (Power Point) is a very important table as it shows the five case study farms calculated NRP. Different farm systems were modelled on some of the farms to see the impact this would have on their NRP. Red in the cells equals the property exceeding its nitrogen reference point based on the alternative policy scenario. This table highlights that under the NRP farms will lose the option to change farming practices and lift stocking rate to meet market changes or farm to their natural grass curve. The flexibility to change land use options for example growing maize on parts of a property will also be difficult under the NRP as this will more than likely lift the NRP.

22. There is good evidence in other regions that nutrient limits have impacted land values see page 22 of the PC1 report. Under a grandparenting approach to nitrogen management, the effect on sheep & beef properties, under-developed land or properties with a more conservative stocking policy looks to be the greatest.

23. In my opinion, some of the farms I visited will see a decline in land values if the NRP is implemented. The PC1 report found on one farm with a very low NRP of 7kgN/ha the potential drop in value could be between 21-44%. A 44% reduction in land value represents a potential drop in value of $4,400/ha or $3,960,000 on this property. Any drop in land value will create issues with security and the “bankability” of some business. Within the same bank, a customer who has a higher risk profile is often charged a higher interest rate margin than one that has a lower risk profile. Banks look at the quality and saleability of the farm. For example, if a property has a low NRP and is seen to have less general market appeal because it can’t be developed then risk pricing may be higher. The ANZ Agri Focus report summed up the potential impact on land values “All up it seems

likely dry-stock land prices could bear the initial brunt of policy changes in their current form".

24. To conclude this section. Grandparenting nitrogen and implementing a NRP favours businesses that already have a high environmental impact. This is a perverse and unfair outcome when the objective is to reduce N leaching. Farmers who have the most flexibility and potentially more valuable land after the PC1 will be the ones with the highest nitrogen leaching in the two years the NRP was set. This runs counter to a "polluter pays" principle, because those farms with the lowest environmental footprint are bearing a much larger burden under the proposed PC1 rules. This blunt "one size fits all" mechanism reinforces existing inefficiencies and rewards high intensity farms with high N losses.

25. PC1 requires farmers to exclude all cattle, deer, horses and pigs, from all permanently flowing waterways including drains no later than 1 July 2026. For areas with a slope exceeding 25^0 and where stream fencing is impracticable, there needs to be provision of alternate mitigation measures.

26. To calculate the financial costs of stock exclusion I mapped all the water bodies from which cattle, horses, deer and pigs must be excluded (Compliance with schedule C and schedule 1). See Image 3. Excluding stock from these permanently flowing waterways using fences was then costed. The provision of stock crossing structures was also costed see images 4,5,6 & 7. Areas with a slope exceeding 25° and where stream fencing was impracticable were identified and alternate mitigation measures such as pole planting and water reticulation were investigated and costed.

27. The up-front capital costs to comply with the plan change including compliance with schedule C and schedule 1 ranged from $26,139 ($294/ha) to $541,437 ($1676/ha) per farm. The largest costs were fencing, water reticulation, and livestock crossing structures. See example of farm B costings (Power Point). The ongoing annual costs associated with compliance ranged from $5,905 ($66/ha) to $70,859 ($219/ha) per farm. See example of farm B costings. The range in the percentage increase in farm working expenses was 6% to 33% across the farms.

Farming businesses would find it very difficult to stay in business with a 33% increase in annual costs with no additional revenue generated.

28. It must be noted that the WRC has set more stringent stock exclusion and crossing requirements under the PC1 than those drafted by the previous government. In my view these stringent stock exclusion rules are financially unsustainable on hill country farms.

Summary

29. Given the large variation across sheep and beef farms in the Waikato a prescriptive or “one size fits all” regulatory approach to managing contaminant losses is not a cost effective or fair approach.

30. Mitigation of contaminant losses from sheep and beef farms needs to occur at the individual farm scale using tailored Farm Environment Plans (FEP).

31. The management of critical source areas (CSAs) is one of the best ways to mitigate environmental risks associated with sheep and beef farming.

32. The NRP is a blunt “one size fits all” mechanism that reinforces existing inefficiencies and rewards high intensity farms with high N losses. Any allocation of N needs to provide flexibility for individual farms allowing them to farm to their grass curve and utilise the natural capital of their property. Extensive farming systems need flexibility to adjust up to a threshold which reflects the pasture growth curve.

33. PC1 should be amended to reflect the same stock exclusion and stock crossing requirements as drafted in the Clean Water Consultation document dated February 2017. The Government at that time, was proposing to exclude stock on flat and rolling land (less than 15° slope), but due to the practicalities of fencing on steep hill country and the high costs relative to the environmental benefits, along with the recognition that fencing is not an effective mitigation for hill country, the government had excluded hill country from the proposed mandatory fencing requirements.

34. Finally, on sheep & beef farms in the Waikato the PC1 will limit the earning potential of the land and reduce the flexibility in enterprise selection that sheep & beef farmers currently have. This in turn will alter what the market is prepared to pay for land, impacting land values and the equity of some

businesses. The impact on land values and income-earning potential will be largest on undeveloped sheep and beef properties and conservatively stocked properties that would be given a low NRP. The scale of these impacts are not commensurate with the environmental benefits that would be achieved through application of PC1.

DATED this 26 day of March 2019

NAME: Richmond Beaumont Evan Beetham