

Tabled at Hearing Monday 2 May 2016

BEFORE THE

Canterbury Regional Council

IN THE MATTER OF

the Environment Canterbury
(Temporary Commissioners
and Improved Water
Management) Act 2010

AND

IN THE MATTER OF

Submission and Further
Submission on Proposed Plan
Change 3 to the Proposed
Canterbury Land and Water
Regional Plan

**STATEMENT ON BEHALF OF THE SOUTH CANTERBURY PROVINCE OF FEDERATED
FARMERS OF NEW ZEALAND**

Dated 2 May 2016

Qualifications and experience

1. My name is Lionel Hume. I hold B.Ag.Sc and M.Sc. (First Class Hons) degrees from Massey University and a Ph.D. (Plant Science) from Lincoln University. I am currently employed as a Senior Policy Advisor, by Federated Farmers, based in Ashburton. I am also a board member of Irrigation New Zealand.
2. I previously worked as a scientist for the Department of Scientific and Industrial Research (New Zealand Soil Bureau/DSIR Land Resources) in the areas of plant nutrition and soil fertility. Specific areas of scientific research experience include:
 - a. nutrient uptake and use by plants – particular emphasis on nitrogen and phosphorus;
 - b. nutrient availability from soils;
 - c. effects of soil acidity (particularly aluminium toxicity) on nutrient uptake and symbiotic nitrogen fixation;
 - d. nutrient, water and management factors affecting the growth and competitiveness of major weed species;
 - e. effects of soil physical properties on plant growth; and
 - f. experimental design and data analysis.
3. I am a member of the NZ Institute of Agricultural and Horticultural Science, the NZ Society of Soil Science and the Agronomy Society of NZ.
4. Currently I am a member of Federated Farmers' Regional Policy team and have ten years experience of working with regional land and water limit-setting and planning processes, as well as involvement with water policy development at a national level.
5. With me is Colin Hurst. Colin is Chair of Waimate Federated Farmers and Vice Chair of the Arable Industry Group of Federated Farmers of New Zealand, and is on the steering group of the Waihao-Wainono Community Catchment Group. He also chaired the Nitrogen Allocation Reference Group (NARG) which made recommendations to the Lower Waitaki – South Coastal Canterbury Zone Committee, as part of the Plan Change 3 collaborative process.
6. Colin farms 684 ha of land at Makikihi in South Canterbury as part of a family partnership. It is a mixed cropping operation with 440 ha of seed and grain crops plus dairy support. 220 ha is irrigated.

Scope of statement

7. Federated Farmers' statement will cover the following issues:
 - Discrepancies between the ECan Officers' Reply Recommendations and the options put forward in the caucusing statements.
 - The use of prohibited activity status.
 - The ability to update plan thresholds/limits in line with OVERSEER version changes and how the updates are accommodated in the plan structure.

Collaborative process

8. The development of Proposed Plan Change 3 (PC3) to the Canterbury Land and Water Regional Plan (LWRP) involved extensive consultative and collaborative processes. These included the Zone Committee process, culminating in the Zone Implementation Programme (ZIP) Addendum and the Nitrogen Allocation Reference Group (NARG), whose purpose was: *To work with ECan to assess and describe the consequences of different options for allocating N load in the South Canterbury Coastal Streams (SCCS) area.*
9. The NARG subsequently spent five months considering, with intensive collaborative effort, a range of N allocation options, eventually reaching an agreed position on a preferred option in July 2014. The final NARG agreement and the N allocation framework was adopted by the Zone Committee and published in its ZIP Addendum.
10. The formal RMA process then commenced with the notification of PC3. Federated Farmers expressed concerns about how PC3 incorporated the NARG allocation Framework and delivered on the intention of the NARG, as follows:
 - A failure to take into account updated soil information which substantially affects the appropriateness/achievability of the numbers in PC3, particularly the maximum caps. Further issues are identified as to how N discharge has been modelled for some soils, compared with how it will be estimated on farm using OVERSEER.
 - A lack of ability to accommodate new information, including new versions of OVERSEER and updates to good management practice.
 - The combined effect of soil mapping errors, modelling issues and a lack of ability to adjust to new versions of OVERSEER mean that the maximum caps specified

may be unachievable and the flexibility caps may not allow effective flexibility for low N dischargers.

11. Consequently, Federated Farmers, and other submitters, sought decisions to address these concerns. In response, the hearing panel directed caucusing of expert witnesses in relation to the nutrient management rule framework, to address both technical and planning issues.
12. Federated Farmers is concerned that, in spite the intensive collaborative effort, involving considerable expertise from both stakeholders and Council, ECan recommendations to the hearing panel do not reflect the views held by the majority of participants in the caucusing processes on certain key issues. The two most prominent examples of these are the use of prohibited activity status in the rule structure and the way in which OVERSEER version changes are accommodated in the plan structure.

Use of prohibited activity status

13. The recommended Rule 15.5.5 specifies prohibited activity status for exceeding an updated flexibility cap (if greater than stated in rules 15.5.2, 15.5.2A, 15.5.2b and 15.5.2c) or an updated maximum cap for new farming activities.
14. Prohibited activity status is also used for farming enterprises, for exceedance of updated maximum caps or cumulative N baselines.
15. As previously stated in our original submission, given the somewhat arbitrary nature of the caps, the error associated with N discharge estimates and the fact that OVERSEER doesn't work for some farm systems, we consider that prohibited activity status is not appropriate, with the possible exception of new farming activities which exceed the maximum cap.
16. In addition, N discharge will fluctuate from year to year under constant land use (farming activity)¹. Fluctuations result from:
 - Climatic variation, especially rainfall:
 - Variation in drainage and consequent N loss (e.g. resulting from heavy rainfall events). This will be more pronounced on soils with relatively less plant available water.

¹ Evidence in chief of Lionel Hume on behalf of the South Canterbury Province of Federated Farmers of New Zealand.

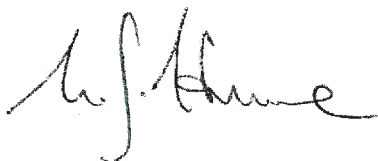
- Surface flow events where incoming rainfall exceeds the infiltration capacity of the soil. This may result in loss of sediment and P, as well as dissolved N.
 - Variation in plant growth (crop yield), plant N uptake and urine deposition (in the case of livestock farming) as influenced by varying conditions for plant growth, availability of animal feed etc.
 - Cyclical variation in farming operations, including:
 - Crop rotations.
 - Livestock changes in response to market signals.
17. In order to be workable, any regulatory regime to manage N loss, such as the nutrient management rules in Proposed Plan Change 3, must recognise the seasonal fluctuations which occur as part of biophysical systems and in response to market signals.
18. The authors of the *Officers Reply For The Council Reply Hearing* (the ECan Officers) state that the use of prohibited activity is justified. Federated Farmers considers that the reasons given in paragraph 8.157 of the Officers' reply are not particularly relevant to the context of nutrient management in this plan. For example, it is stated that prohibited activity status *would allow proper consideration of the likely effects of the activity at a future time during the currency of the plan when a particular proposal makes it necessary to consider the matter, but that can be done in the light of the information then available*. This is not really relevant to the situation where a flexibility cap might be breached under Rule 15.5.5, which may be both unexpected and immediate, with no alternative pathway (such as a consent application process).
19. Therefore, non-complying activity status would be more appropriate, so that at least a discussion can be had with council, through a consent application process, in circumstances where the caps are exceeded.

Overseer updates

20. A methodology for updating plan thresholds and limits (flexibility and maximum caps, and N loads) in line with OVERSEER version changes was developed as part of the caucusing process. In the draft rule framework written during the caucusing process, flexibility and maximum caps were referred to in narrative form. The methodologies for calculating updated numbers, and the numbers themselves, were to be contained in schedules to the plan. Updated thresholds would not result in changes in activity status,

regardless of whether the numbers increased or decreased as a result of OVERSEER version changes. In the event that a new version of OVERSEER required a new input parameter in order for the model to run, provision was made for an expert panel who would determine the necessary amendments to OVERSEER input files.

21. In contrast, the ECan Officers have recommended the inclusion of specific numbers in the plan, and also a mechanism for calculating updates in line with OVERSEER version changes. In the situation where the calculated thresholds increased, farmers would be able to increase their N discharge above the threshold specified in the rules, up to the new calculated threshold, as a controlled activity.
22. The ECan Officers expressed the view that the permitted activity rule and associated methodology schedules (as set out in the caucus report dated 5 February 2016) does not meet the all of the legal principles that apply to permitted activity rules. In particular, they stated that the permitted activity rules must *Be comprehensible to a reasonably informed, but not necessarily expert, person* and that the proposed methodology schedules are of a technical nature and would require someone with technical expertise to undertake the assessment. This is correct but it is not necessary to understand the methodology schedules in order to determine permitted activity status. All that is required is to read the updated N loss numbers from Tables 29.2 (for flexibility caps) or 30.2 (for maximum caps). In addition, under the rules recommended by the ECan Officers, expert assistance would also be required to determine whether or not the permitted activity threshold is reached, namely to determine an OVERSEER N loss estimate.
23. Careful thought is needed before deciding which path to take: the approach developed as a result of the caucusing process or the recommendation of the ECan Officers. Either could work but the ECan Officers' approach will potentially result in a large number of consent applications, with associated cost, any time the flexibility caps are recalculated upwards as a result of an OVERSEER version change.



Dr Lionel Hume
2 May 2016