

**IN THE MATTER**

of the Resource Management Act 1991

**AND**

**IN THE MATTER**

Lake Rotorua Nutrient Management –  
**PROPOSED PLAN CHANGE 10** to the Bay of  
Plenty Regional Water and Land Plan

**BETWEEN**

DairyNZ Limited

**AND**

Bay of Plenty Regional Council

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**SUMMARY OF EVIDENCE OF JUSTINE YOUNG  
FOR DAIRYNZ LIMITED AND FONTERRA**

**3 April 2017**

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Cnr Ruakura Road & SH 26  
Newstead  
Hamilton 3286

## **Introduction**

1. My qualifications and experience are as stated in my primary evidence. I agree I am an expert witness for the purposes of the PC10 hearings, therefore I add a reference in this summary, about my compliance with the Environment Court's Practice Note 2014.

## **Code of Conduct**

2. I have read the Environment Court's Code of Conduct for Expert Witnesses contained in the Environment Court's Practice Note 2014, and I agree to comply with it. In that regard, I confirm that this evidence is within my area of expertise except where I state that I am relying on the evidence of another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed in this evidence.

## **Summary of key points of evidence**

3. My evidence was an overview of evidence presented by DairyNZ and Fonterra staff Dr Tom Stephens, Ms Carla Muller and Mr Richard Allen, to support the Joint DairyNZ and Fonterra Submission on the Proposed Plan Change 10 to the Bay of Plenty Land and Water Regional Plan (referred to throughout as the DairyNZ /Fonterra Submission).

4. Overall, we support policies, methods and rules that will achieve the community-desired water quality in Lake Rotorua, with lake load targets set through robust and independently peer reviewed science, are part of the council's ongoing programme of National Policy Statement for Freshwater Management plan reviews. Most importantly, achieving the goals of PC10 relies heavily on landowners who will be making the necessary changes. To do this, they need the provisions to be practical and flexible enough for farm-level decisions. In my experience, the success of implementing a nitrogen limit on a farm, comes down to both the council and the farmers being prepared to adjust how they work.

5. Attachment 1 to this summary of evidence is a table setting out the DairyNZ/Fonterra submission points that I understand have been dealt with, now that we have had the benefit of hearing the Council evidence and rebuttal and clarification through questions. The table sets out:

- the points DairyNZ/Fonterra agree on, and
- those that we wish to raise in our evidence for the Panel's consideration.

6. Attachment 2 relates to my paragraph 25 below. It is an excerpt from Waikato Regional Plan Chapter 3.11 (Lake Taupo Catchment) It sets out a precis of the main rule that applies to farmers in that catchment (Rule 3.11.5.3).

## **Agreed Matters within the scope of DairyNZ/Fonterra Submission**

7. The DairyNZ/Fonterra submission requested that LR Method 2 addresses scientific and policy aspects. We support the recommendations for minor changes to this method in the section 42A report. We support both nitrogen and phosphorus being managed, and regular reviews of the science.
8. My assumption has been that following the science review, a First Schedule process that includes the Lake Rotorua Catchment, will commence in approximately 2020/21 as part of the council's programme of implementation under the National Policy Statement for Freshwater Management 2014 (Table 2, page 203 of material provided to PC10 by council on NPS-FM Implementation, dated 15 March 2017). This will ensure community confidence that the desired long term water quality in the Lake will be achieved.
9. The DairyNZ/Fonterra evidence supports management of both nutrients. We acknowledge the difficulty of managing phosphorus loads downwards because of the high proportion of natural phosphorus, and community concerns about alum dosing as the key tool used to date. From Mr Bruere's rebuttal evidence and his responses to questions from the panel, and my involvement in the phosphorus meeting on 30<sup>th</sup> April, I have learnt more about the council effort being put into assessing the different options for phosphorus, including the non-regulatory public funded land-based and in-stream or in-lake mitigations.
10. The DairyNZ/Fonterra submission did not request changes to nitrogen targets in LR Policy 1 that links the 2032 sustainable nitrogen load in the Regional Policy Statement with rules and schedules in PC10. Instead, our submission and evidence noted that PC10 nitrogen rules impose significant costs to dairy farmers. Ms Muller was involved in assessment of costs for a limited set of three farms out of 26 dairy farms in the catchment. There are losses in operating profit that get progressively higher as the nitrogen reductions are increased in three time steps toward each farms required NDA in 2032. In my opinion, while there are some differences in the range of losses from the economic modelling done by Ms Muller and others at DairyNZ and Mr Matheson at PerrinAg, these do not alter the conclusions about adverse effect on dairy farmers.

### **Matters discussed during presentation of Council evidence**

#### **PC10 reference to Nitrogen and Phosphorus**

11. PC10 sets nitrogen targets at a catchment and property-level. There are no equivalent phosphorus targets. Phosphorus management is referred to in LR Policy 2, LR Method 2 and LR Schedule Six clause b). DairyNZ/Fonterra submission did not request phosphorus targets.
12. I was involved in a discussion with council staff and some other submitters on how phosphorus should be referred to in PC10 (meeting 30 March 2017). In summary, I believe

that it is not necessary or desirable to make far reaching changes on phosphorus management to PC10 at present. Instead, minor clarifications to the changes recommended in the Section 42A would be beneficial. These would be at a background information and method level and have the effect of highlighting to plan users the council intent to continue to promote and support work on mitigating all sources of phosphorus. I agree with the summary of key outcomes a. – i. discussed at this meeting, received by email on 31 March from Ms Burton. With one amendment, I support the suggested changes made to LR Policy 2 and LR Method 5 and LR Schedule Six (5)b), that were attached to the email to meeting attendees.

13. One matter that was not discussed at the meeting was that LR policy 2 focuses on managing phosphorus from farming activities. To ensure an even handed and more complete description of the course of action PC10 should contain policy guidance referring to all sources of phosphorus, and that all parties will contribute to its management. To that effect, I have suggestion below, for a further clarification of LR Policy 2 (my additions to Ms Burton’s 31 March text, are underlined and bold):

*LR Policy 2*

Manage (70-9) **diffuse and point sources of** phosphorus loss through:

- a) **regional plan discharge rules, and**
- b) **non regulatory programmes, and**
- c) the implementation of **industry agreed** good (43-24, FS15-17) management practices **particularly within critical source areas as part of an approved** ~~that will be detailed in through the use of~~ Nutrient Nitrogen (43-24, FS15-7, 70-17, FS15-33) Management Plans prepared for individual properties/farming enterprises.

14. When it was notified, PC10 referred to phosphorus management in LR policy 2. It was a limited and narrow reference, because it did not refer to urban land or point sources of phosphorus. I understand that management of phosphorus for these sources is wrapped up in the general discharge rules of the Land and Water Regional Plan. Reductions of phosphorus discharge from landowners or existing point source dischargers was not spelt out in PC10. Because of this, I believe that the approach should not be radically changed at this late stage.
15. The current approach in PC10 to phosphorus management on-farm is sufficient. I support the inclusion of a reference to ‘Industry-agreed Good Management Practice’ in LR Policy 2. I agree that the development of the Nutrient Management Plan is an appropriate time for the landowner and the expert advisor to do an assessment of where on the property there is risk of phosphorus entering waterbodies. What is less clear, is what that landowner will be required to do as part of their resource consent.
16. The concept of good management practice means different things to different people. There is a national working group on the topic, and I understand this may result in more guidance

to councils. In the interim, before GMP is more comprehensively discussed and agreed in New Zealand, PC10 would benefit from the definition of GMP according to the industry-agreed GMP's, published by Canterbury Regional Council and dated 9 April 2015, entitled "Industry-agreed Good Management Practices relating to water quality: Canterbury Matrix of Good Management Project." A related document that takes the Canterbury work as a starting point, is the 2016 DairyNZ publication entitled "Good Management Practices: A guide to good environmental management on dairy farms." I understand that council land management team uses the 2015 Industry-agreed Good Management Practices overview document as a basis for advice on GMP when they work with landowners. I have provided the hearings secretary with copies of both the Canterbury and the DairyNZ-published documents.

17. LR Schedule Six clause b), contained some suggested additions (see Section 42A strikethrough). I accept the intent of the inclusions was to clarify the existing sentence, not require more of farmers. I am not an expert in phosphorus management, so I can't comment on i)-v). In any case, I think the important point is that any further intervention in a plan change should come out of a public process. PC10 is already supported by the existing efforts in the catchment by council, the co-funded phosphorus mitigations group and landowners. Other regional plans which seek to manage diffuse phosphorus (for instance TukiTuki Plan Change 6 and Waikato and Waipa River Catchments Plan Change 1) have had the benefit of developing and discussing detailed property-level phosphorus management with landowners and the rest of the community. Therefore, the sentence in Section 42A strikethrough LR Schedule Six clause b), that starts "This shall include the identification of.." would be better placed in the implementation plan referred to in LR Method 5.
18. In summary, if the council continues to proactively work with landowners on phosphorus management, this will benefit the Lake. The science review and the NPS-FM implementation in the next five years, can build on this.

#### **Matter not agreed or to be pursued further**

#### **Alternative rule framework**

19. The Fonterra/DairyNZ submission proposed an alternative rule framework that encompasses an interim permitted activity rule up till 2022, and thereafter a controlled activity rule. I briefly referred to the alternative rule framework in Section 4.4 of my evidence. After considering the complexity of the stepped reductions and the inclusion of phosphorus mitigations to achieve Good Management Practice, my opinion is that a controlled activity and a long consent term, is the best way to achieve the challenging nitrogen reductions on-farm.

## **Matters not agreed**

### **Implementing LR Rule 9 and the Nutrient Management Plan**

20. Both my evidence and Mr Allen's evidence supported the Council working with farmers on detailed rule implementation that allows flexibility and focuses on the outcome. We agree with council staff on this matter. Where we still appear to have a difference, is how the council will implement LR Rule 9. The topic is 'Use of Nitrogen Management Plans' in the staff recommendations in the Section 42A Summary by topic, page 43-45. The panel discussed this matter with three council witnesses, Mr Lamb, Mr Park, and Mr MacCormick.
21. We note that the farm management actions in the Nutrient Management Plan will be an important tool for Council to have up to date. We would like this to be easily changed, and be used as a way of checking that the outcome on each farm is being met. I note that Mr McCormack's rebuttal to the late evidence (Appendix 18 paragraph 12 page 153) notes that "It will be important for Council to develop nimble processes to amend NMPs quickly and at least cost. This is a matter to be addressed in the Rules Implementation Plan". I agree with this statement.
22. I suspect that we may have been talking past each other on the topic of 'input versus output control' and whether the point of compliance is the NMP or an Overseer-derived nitrogen leaching per year. It may simply be the language that we are using. Mr MacCormick provides some useful clarification about input control rules (See Appendix 18 paragraphs 10-11 in his rebuttal to the late evidence). I agree that an example of an input control rule would be to set a stocking rate limit. However, Mr Allen is using the term 'Overseer input' to refer to farming practices, such as the number of stock of different classes and ages. It is these 'inputs' to the model, plus rainfall, soil and other factors, that determine nitrogen leaching rate for each block of land. What DairyNZ/Fonterra is questioning, is the apparent inflexibility of making changes to these Overseer inputs. We have not had the benefit of discussing a first draft of an implementation plan with council staff. Ideally this would include input from a consents expert who is very familiar with PC10.

### **Matters related to NMPs and Overseer that were discussed during the Council presentation of evidence**

23. The critical aspect that has not yet been clarified for me in the Section 42A or the council evidence, is how the rules will be monitored and whether the NMP is a condition of consent. The DairyNZ/Fonterra submission and mine and Mr Allen's evidence focuses on making PC10 rules more workable. From a farmers point of view, it is important to have the flexibility to change farming practices. If the NMP is a condition of consent, I imagine that the consent will not only set out a total allowable nitrogen discharge, but also include the NMP itself. I understand that the NMP is likely to look like a detailed list of the 'nitrogen-relevant' aspects on the farm (or per block). As noted earlier, sometimes these are called Overseer inputs. These are activities that are likely to result in nitrogen being lost below the root zone such as grazing animals, bought in feed and fertiliser. The farming activities listed will be the ones

that have been modelled as achieving the 2032 nitrogen limit and the stepped reductions toward it. Mr Allen's evidence noted that the detail of farm activities put forward in 2017 to meet the 2032 nitrogen limit, will inevitably be changed. I have listened to the discussion between the panel and the council experts, and I am not still not sure what they mean when they say that the NMP is the point of compliance. One possibility is that the NMP is a condition of the resource consent. If this is the case, the approach is relatively inflexible for the council and farmers.

24. The alternative approach is that a condition of consent is drafted along the lines of: "*the consent holder shall undertake farming activities in accordance with the NMP at all times*". If this occurs, then the NMP has the flexibility to change without formality. It is simply a record of what is currently occurring on the farm. In that case, monitoring of LR Rule 9 could be seen as using the NMP in the first instance, with Overseer as a back-up. It is used, in conjunction with the NMP, to show the environmental outcome is met. Therefore, instead of talking about *either* NMP *or* Overseer, I believe both are important when council monitors LR Rule 9. Actions in the NMP are a record of the most nitrogen-relevant activities on farm. Taken altogether, these actions must not exceed the farm-level nitrogen limit. PC10 defines this limit as the Nitrogen Discharge Allocation to be achieved by 2032, with steps toward this at 2022 and 2027.
25. In my previous role with Waikato Regional Council, I had the benefit of working with extension, regulatory and compliance staff who were implementing farming rules in the Lake Taupo Catchment. While there are certainly differences in the policy framework, some lessons can be drawn from that council's experience in monitoring of farm-level nitrogen limits on diffuse discharges of nitrogen.
26. As noted by the panel during discussion of the council evidence, farming in Lake Taupo Catchment is managed using nitrogen-limit rules in Chapter 3.10 of the operative Waikato Regional Plan. Rules rely on Overseer and an up to date Nitrogen Management Plan (Rule 3.10.5.3). This NMP is the first place the Council will go to assure themselves the farmer is doing what was agreed. The first monitoring step is to request information about the actual activities carried out (generally available by November each year after records are verified by accountants and Inland Revenue). Council staff compare this information with the agreed nitrogen-relevant farm activities in the NMP. The important aspect to farmers is that they have the flexibility to change practices and supply the council with an updated and signed NMP with no further formality. It is farmers responsibility to keep their NMP up to date and not to make a change on their farm that will mean they go above their limit. The important aspect for the council is that the activities carried out on the farm, are the same as those set out in the up to date NMP. This check is done by staff and is generally the end of the monitoring process. If there is a discrepancy, and further checking by the council is needed, a second monitoring step involves Overseer. I understand from council witnesses Mr Park and Mr MacCormick, that this is generally what they imagine will occur when monitoring LR rule 9. The difference seems to be whether there is enough confidence that farming activities in an NMP can change outside a formal process which has to be approved by Council.

27. As noted earlier, a set of draft consent conditions would have been beneficial for this topic. I understand that in early 2016 a 'strawman' consent was discussed between council staff and some farmers and other organisation staff. I also understand that this led to the belief that the council will list the actual farm activities as consent conditions. On the other hand, council staff have responded to questions from the panel in a way that implies they will take a pragmatic approach to monitoring the nitrogen limits on farm. My reservation is that when I look at LR Rule 9, it is not clear whether the council might impose a condition on the consent that holds farmers to the practices. In making this statement, I have assumed that the list of 'matters council reserves control over' in LR Rule 9 will become the basis for consent conditions. One of these matters council reserves control over in LR Rule 9 is "(vi) Implementation of the Nitrogen Management Plan, **including the mitigations** and methodology to be used to meet the Managed Reduction Targets and Nitrogen Discharge Allowance." (emphasis added). I may be reading too much into this phrase and would be happy to have this clarified.
28. In summary, we agree with the council experts that the council is trying to tell the farmers how to farm. Instead, the NMP will contain practices that the farmers themselves put forward (see Mr McCormack's further rebuttal statement Appendix 18 paragraph 10). My request to the panel is to ensure that PC10 makes it clear that farming activities have to be undertaken in accordance with what is listed in the NMP, but that the updating of the NMP is able to be done without having to review the consent. The critical aspect is that the time and cost for Council to approve farm management changes does not place an unnecessary cost burden on farmers, or discourage innovation in how nitrogen is mitigated. Both farmers and Council staff will need to develop ways of working together that achieve the outcomes sought in PC10.



## Attachment 1 : Summary of matters agreed and not agreed by DairyNZ/Fonterra as of 3 April 2017

Topic	Plan Change provisions and Submission point reference	Submission points not accepted and where DairyNZ/Fonterra will focus in evidence	Submission points accepted - Support for s42A staff recommendation	Matters discussed during the presentation of the Council evidence 13-17 March
<b>Policies</b>  <b>Phosphorus</b>	LR Policy 2		DairyNZ/Fonterra supports the changes to the Section 42A staff recommendations made as a result of the 30 March phosphorus meeting (with one exception).	DairyNZ/Fonterra does not have a submission point on changes to PC10 related to phosphorus. After attending the phosphorus meeting on 30 March and reviewing the additional changes from Ms Burton and received by email on 31 March, I generally agree (with one additional change in my paragraph 13) to LR Policy 2, Method 5 and and Schedule Six 2 (b). DairyNZ/Fonterra do not support further farm-level phosphorus reductions in LR Rules. These should be assessed and decided through a RMA First Schedule process.
<b>Methods</b>  <b>Science Review</b>	LR Method 2 Section 42A Appendix 3 page 166 Submission point 64-1		DairyNZ supports the s42A staff recommendation.	Dr Stephens evidence makes additional suggestions about LR Method 2 in support of the s42A staff recommendation. His comments relate to phosphorus matters discussed by the panel during their consideration of the council evidence. Because DairyNZ/Fonterra support the s42A changes, we do not believe it is essential to have discussion between council scientists and Dr Stephens. Instead, in his evidence summary he provides clarification of his primary evidence in response to some points from Dr Hamilton's rebuttal.
<b>Rules</b>	LR Rule 9	Mr Allen's evidence states		Mr MacCormick, Mr Park and Mr Lamb's evidence

<p><b>Use of Nitrogen Management Plans</b></p>	<p>Section 42A Summary page 43-45</p> <p>Submission points 64-10, 64-21, 64-23</p>	<p>that the nitrogen output is the measure of the farm meeting the environmental outcome sought, and farmers should have flexibility to change practices if they do not exceed the limit.</p>		<p>emphasise that the council is not telling farmers how to farm. However, there is still some misunderstanding about how informally a farmer will be able to change the nitrogen-relevant aspects in their NMP, and how the council will monitor the rules.</p> <p>We have not had the benefit of discussing this topic with council experts in an informal caucus meeting.</p>
<p><b>Schedules</b></p> <p><b>Overseer reference files</b></p>	<p>LR Schedule Five Submission points not identified DairyNZ/Fonterra submission Section 4.3 pages 9-10.</p>	<p>Mr Allen’s evidence notes that the reference file approach intends to streamline processes and address changing versions of Overseer, but he suggests the alternative approach is feasible. That is, run an Overseer version control method whereby the data entered in to the version that was used to create the original Nitrogen Discharge Allowance for each farm, is automatically rerun in each subsequent version so as to recalibrate the N loss number farm by farm.</p>		<p>We have not had the benefit of discussing this topic with council experts in an informal caucus meeting.</p>

## Attachment 2 Excerpt of Waikato Regional Plan - Rule 3.10.5.3

### Waikato Regional Plan Lake Taupo Catchment

#### Lake Taupo Rule 3.10.5.3 Controlled Activity Rule – Nitrogen Leaching Farming Activities

The use of land in the Lake Taupo catchment for any farming activity existing as at the date of notification of this Rule (9 July 2005) that does not meet the conditions for permitted activities under Rule 3.10.5.1 and which may result in nitrogen leaching from the land and entering water is a **permitted activity until 1 July 2007, after which it will be a controlled activity**, subject to the following conditions, standards and terms:

*...benchmarking to establish each farm's nitrogen cap (called a Nitrogen Discharge Allowance)*

...

Waikato Regional Council reserves control over the following matters:

- i. The specification of the Nitrogen Discharge Allowance in kgN/ha/year and total kgN/year for the land to which the controlled activity consent applies as determined under standard and term a);
- ii. The requirement for a Nitrogen Management Plan (NMP) for the land to which the controlled activity consent applies if the farm management practices represented by the benchmarking data referred to in standard and term a) are altered. The Overseer™ Model Version 5.4.3 shall be used to calculate the nitrogen leached from the land to which the controlled activity consent applies inclusive of the altered farm management practices and this shall form the basis of the NMP. The NMP shall demonstrate that the nitrogen leached from the proposed farming activities complies with the benchmarked Nitrogen Discharge Allowance. The NMP shall be provided to the Waikato Regional Council within 10 working days of the farm management practices being altered;
- iii. The self monitoring, record keeping, information provision and site access requirements for the holders of resource consents required to demonstrate ongoing compliance with the Nitrogen Management Plan;
- iv. The circumstances and timeframes under which the resource consent conditions may be reviewed, provided that any review of a consent condition specifying the Nitrogen Discharge Allowance shall only occur when regional plan provisions have been made operative which specify a new target for the amount of nitrogen entering Lake Taupo and which requires that target to be achieved by the reduction of the Nitrogen Discharge Allowance specified in any resource consent;
- v. The duration of the resource consent;
- vi. The circumstances under which resource consents granted under this Rule can be surrendered either in whole or part pursuant to s138 of the RMA.

...

*Info about what farm level info is required to establish the NDA*

...

## Advisory notes

### Nitrogen Management Plan

- The benchmark data for the selected best year comprises the initial Nitrogen Management Plan. A separate Nitrogen Management Plan is not required unless the benchmarked farming practices are to be altered. In that case a separate Nitrogen Management Plan must be prepared showing that the proposed farming activities will comply with the farm's benchmarked Nitrogen Discharge Allowance, by using the Version 5.4.3 of the Overseer™ Model and relevant parameters listed in Table 3.10.5.3. A farm's Nitrogen Management Plan thereafter remains valid until such time as the consent holder again proposes a change to farming practices, such that the new farming practices are no longer consistent with the existing Nitrogen Management Plan. At that point a revised Nitrogen Management Plan is required, using Version 5.4.3 of the Overseer™ Model, to again demonstrate that the changed farming practices will not result in the breach of the Nitrogen Discharge Allowance for the farm.

### Monitoring and Compliance

- Farm management practices will be monitored to ensure that the Nitrogen Discharge Allowance for the land to which the controlled activity consent applies, has not been exceeded