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*under:* the Resource Management Act 1991

*in the matter of:* Proposed Plan Change 5 to the Canterbury Land and Water Regional Plan

*and:* **Barrhill Chertsey Irrigation Limited**

*Submitter* C16C/30978

*Further submitter* C16C/71901

Statement of evidence of **Suzanne Duncan** (on behalf of Suzanne and Ross Duncan)

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Dated: 22 July 2016

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REFERENCE: BG Williams (ben.williams@chapmantripp.com)  
ADW Brent (allan.brent@chapmantripp.com)

**Chapman Tripp**  
T: +64 3 353 4130  
F: +64 3 365 4587

245 Blenheim Road  
PO Box 2510, Christchurch 8140  
New Zealand

www.chapmantripp.com  
Auckland, Wellington,  
Christchurch



## **STATEMENT OF EVIDENCE OF ROSS AND SUE DUNCAN**

- 1 My name is Suzanne Cheri Duncan. I am presenting this evidence on behalf of myself and Ross Hamish Duncan.
- 2 We have been farming for 36 years and own three properties in the Ashburton District. Pendarves Farm is a 290 ha arable, lamb trading and dairy wintering property on Rules Road, Pendarves. Pinefields Limited is a 185 ha dairy farm on Mitcham Road, Winchmore which includes a young stock grazing block. Our third property is Willowfields Limited, a 200 ha dairy unit on Stanley Road, Seafield.
- 3 All three properties are irrigated. Pendarves is irrigated by Acton Farmers Irrigation Co-Operative (*AFIC*) water and groundwater, Pinefields is irrigated by Ashburton Lyndhurst Irrigation Scheme (*ALIS*) water and groundwater, and Willowfields is solely irrigated with groundwater.
- 4 As both *AFIC* and *ALIS* shareholders, we have participated in both schemes' Audited Self-Management programmes (*ASMs*) since they were launched in 2015. This has included completing online Farm Environment Plans (*FEPs*), completing *OVERSEER* nutrient budgets and Pendarves Farm being audited.
- 5 We have also completed a 2009-2013 Baseline nutrient budget for Pendarves farm, with that same work ongoing for the other two farms.
- 6 My evidence is provided to support the submission made by Barrhill-Chertsey Irrigation Limited (*BCIL*) on Plan Change 5 to the Canterbury Land and Water Regional Plan (*PC 5*), particularly increasing the scope of Schedule 7 to include a "base" land use description to minimise the number of *OVERSEER* nutrient budgets required and to focus on the *FEP* Audit.

## **SCOPE OF EVIDENCE**

- 7 In my evidence I provide:
  - 7.1 A description of our experience with implementing the nutrient management rules under the *LWRP* including:
    - (a) Experience with using *OVERSEER* for both arable and dairy farm systems;
    - (b) Preparing and implementing *FEPs*;
    - (c) The *FEP* Audit process;

7.2 Our experience with managing nutrients as an individual compared to participation in an irrigation scheme programme; and

7.3 Our views on BCIL's proposed relief.

### **PREPARATION OF OVERSEER NUTRIENT BUDGETS**

- 8 Completing an annual nutrient budget for Pendarves Farm, our arable property, was extremely arduous. It was time consuming due to the amount of information required and to communicate the data to Ravensdown, who prepared the budget. As a result, the nutrient budget was very costly as we need to pay Ravensdown by the hour to complete the budget.
- 9 We also have little confidence in the budget prepared for Pendarves Farm, because OVERSEER does not allow for what practically happens on an arable farm. For instance, we need to manipulate stock numbers or crop yields as OVERSEER does not recognise our grazing practices as providing sufficient food to feed our animals on farm.
- 10 A particular example was the 'grass seed' input. At Pendarves, the crop is grazed by stock before it is locked up. It is then grown and harvested, and the resultant straw is burnt or baled then either sold or kept. The crop is then grown again and grazed. We understand that OVERSEER struggles to model this activity effectively and we need to tell it either that stock didn't graze the crop or our yields were vastly different
- 11 For our 2014-15 year end nutrient budget, the Ravensdown nutrient budget made numerous assumptions and, even then, was not able to overcome these errors. In the end, the budget was unable to provide a number at all. Even if a number could have been produced, we did not feel the end result could have reflected our actual farm system due to the number of assumptions and manipulations made.
- 12 In 2014, Ravensdown also prepared 2009-2013 Baseline nutrient budgets for Pendarves Farm. We cannot honestly say that those budgets are accurate. This is because the information on our 2009-2013 land use was collected retrospectively and we were not keeping all the data during the baseline period (such as when and how much we irrigated, stock numbers in particular paddocks, and the like). So again in the baseline budget process there were a lot of assumptions that needed to be made.

- 13 Only once these were completed and we had some idea of the extensive input requirements did we then started recording more information to use. We are much more confident with the data we provide for the year-end nutrient budgets since then. But if we are required to work towards baseline, then the difficulties with that baseline budget must present a fundamental issue.
- 14 A comparison between the time that we and our sharemilkers have spent collating the data, and therefore cost of preparing nutrient budgets between our properties, is in **Table 1** below. **Table 1** shows that the arable nutrient budgets take approximately twice as much time and cost to prepare than the dairy farms, and we are far less confident the end result is reliable.
- 15 For our Willowfields dairy farm, we have completed year-end OVERSEER nutrient budgets since the 2013-14 season through both Ravensdown and Fonterra. We have made no significant changes to our farm system at all during this time, but our "number" has varied from 38 kg N/ha/year to 164 kg N/ha/year and everything in between.
- 16 Similarly, for our Pinefields dairy farm, our number has varied between 50 kg N/ha/year and 163 kg N/ha/year, again with no significant changes in our systems.
- 17 As we discussed above, no number could be calculated for our Pendarves arable farm due to the bugs in the OVERSEER model.
- 18 Changes in our nutrient budgets over a period when our land use has not changed give us the impression of a model that cannot handle the task it has been designed for. The model outputs do not have any appearance of validity, certainly not enough validity for us to justify changing our farming practice, and still less investing to make those changes, based solely on those model outputs.
- 19 Until there is some sort of consistency, in our view Good Management Practices (*GMPs*), as defined in the Industry Agreed GMP Booklet of September 2015 (*GMP Booklet*), are a far better measure of whether or not we are meeting Good Management Practice.

**Table 1: Comparison of Time and Costs of Preparing Nutrient Budgets between Arable and Dairy land uses**

	Arable 2009-13 Baseline	Arable Year-End Nutrient Budget	Dairy Farm Year-End Nutrient Budget
<b># of hours staff spend recording data on farm</b>		1 1/2 hours per week = 78 hours per year	1 hour per week = 52 hours per year
<b># of hours I spent preparing data</b>	32 hours	12 hours	Sharemilkers – 3 Hours, Owner – 1 Hour
<b>#hours with consultant</b>	2 interviews – 7 hours	2 hours	1 Hour
<b>Cost to complete budget</b>	Ravensdown (Charlotte Glass in Feb 2014) \$1520.00 + GST	Ravensdown – estimated \$1200 - \$1500	Fonterra – no charge (Previously Ravensdown)
<b>Total Cost (incl staff time and fees)</b>	\$2,700	\$3,900/year	\$2,000/year

### **PREPARATION AND IMPLEMENTATION OF FARM ENVIRONMENT PLANS**

- 20 With support from Irrigo Centre Limited (*Irrigo*) staff we have prepared LWRP Schedule 7-compliant FEPs for both scheme-irrigated properties (Pendarves and Pinefields). We have also prepared a Farm Management Plan for Willowfields, using a template provided by ECan.
- 21 We found preparation of all FEPs to be straightforward, though the time taken to complete all three plans was initially considerable, we found writing the plans became easier as I became more familiar with them. It was very useful to use the same template for the irrigation schemes and to have the support of the Irrigo staff.
- 22 For farmers to buy into these processes they need to see that there are practical steps they can take to improve what they are doing.
- 23 The GMPs as defined in the GMP Booklet seem to reflect good practice for all farming systems, although of course some systems/farms will find them more easily achievable than others. We do not understand why PC 5 rules would hold us as not operating at GMP if we were implementing all of the GMPs in the GMP Booklet on-farm. It is hard to buy into a system like that.

## FEP AUDITS

- 24 Pendarves farm (our AFIC-Irrigated arable property) was audited in June 2016 by the Irrigo Centre Limited FEP Auditor, Megan Hands. Our other properties have not yet been audited. We were graded an "A" and thought the process was very useful. Pinefields Ltd has not yet required an audit. Willowfields Ltd has two compliance checks annually by ECan, one for our irrigation consent and one for our effluent consent. We are fully compliant.
- 25 We found the FEP Audit reinforced that what we are doing to both to ourselves and our staff is good management practise – ie representative of the Industry-agreed GMPs. Megan advised us about a recycling option that we did not know about before and advised us where we were meeting GMP.
- 26 The improvements that we have made on Pendarves Farm to our actual on-farm management practises have been the result of completing the FEP and implementing some of the GMPs. We have also applied the GMPs we learnt from the scheme-irrigated properties to Willowfields (which is solely irrigated by groundwater). One example of that was Bucket Testing. We had previously never considered bucket testing our irrigators, but did so as a result of completing our FEP on both Pendarves Farm. We found that all four of our irrigators on Pendarves Farm had some issues, such as one was nozzled for the wrong flow rate, and on another, we identified the end gun moved around too far, overlapping where the machine was watering. By fixing these issues, we improved both our irrigation efficiency and our productivity.
- 27 We have also installed soil moisture probes at Pendarves Farm and Willowfields as a result of going through the FEP process at Pendarves Farm. We have found the results very interesting and have been using this data to improve our irrigation scheduling.
- 28 We believe the one-on-one contact discussing our property through the FEP, Audit and with our farm consultants have been the most effective way to learn about GMPs. We feel that ECan needs to focus on supporting these processes. Upskilling those in advisory roles and allowing them to be advisors, rather than taking them up with modelling, will result in better environmental outcomes.
- 29 Our understanding through the whole process has been that if we implemented the industry agreed GMPs, we would do our part to improve groundwater quality in our area. While we are short of perfect, our "A" FEP audit grades indicate that our performance is strong.

- 30 We therefore feel our GMP Loss Rates, calculated by OVERSEER and through the Farm Portal, should generally reflect our current practices: there is not much more we can do to reduce our N losses, implying that we *are* at GMP.
- 31 To us, and we understand, to PC 5, GMP is not a number but a set of on farm practices. Where there a difference between the numbers and the practices, then so long as the practice is genuinely GMP, the issue must be with the modelling going to the number. In our opinion this view is strongly reinforced by all the changes in our nutrient budget numbers in the past four years despite a consistent farming practice.
- 32 In these circumstances we did not feel our nutrient budgets have provided any benefit to assist us with implementing GMPs, particularly on our Pendarves Farm arable property.

#### **BENEFITS OF IRRIGATION SCHEME**

- 33 We joined the AFIC Irrigation Scheme when it started to ensure a consistent supply of water. Being a shareholder of both ALIS and AFIC irrigation schemes has ended up being extremely helpful with making improvements to our environmental management. The deadlines and prompts for ensuring we completed our farm plans and nutrient budgets, as well as the regular workshops and updates help us make things get completed and understand what GMP actually looks like on-farm. The time we take in meeting scheme requirements is a huge constraint but reasonable deadlines make processes achievable and less daunting. Also wherever we there are areas that we do not understand fully, we find it easy to phone Irrigo and get assistance.
- 34 Improvements in farm practices on our off-scheme Willowfields property have been due to the support and information provided through the irrigation schemes. It is unlikely we would have made these improvements without being a shareholder on our other properties.

#### **IMPACT OF BCIL'S PROPOSED RELIEF**

- 35 The time taken to implement GMPs and record the information needed to complete "good" nutrient budgets on our properties is considerable.

- 36 In the current economic climate, we are reconsidering our staffing levels, which might compromise our ability to maintain the kinds of nutrient budgeting records we will be required to by PC 5. In our view, health and safety, animal health and well-being and other practical jobs on farm must take priority, and there are only so many hours in a day.
- 37 We feel BCIL's proposal to include a "base" land use description is a simple and practical alternative to updating and preparing nutrient budgets and baseline files annually, particularly for the arable property as our business is simultaneously dynamic and complex, while remaining unchanged. We frequently make changes to our crop rotations to meet market need and trading stock move fluidly on and off our property, however these variations do not result in any overall long-term "intensification" of our land use.
- 38 It seems like a waste of time and money to update our baseline nutrient budget files when our farming activity is pretty much the same as what it has always been. Recording the "base" land use data will allow our auditor to make an informed judgement on whether we may have intensified without the need to use OVERSEER. At the very least, we see this situation continuing until OVERSEER can actually model our farming systems and the Farm Portal 'number' matches up with on-farm GMPs consistently.
- 39 Our focus can, should, and will remain on implementing GMPs on our properties. We would rather be judged on what we are doing on-farm than on a number which we do not believe accurately reflects our farm systems.
- 40 In our view, if the costs in time and money of preparing and updating OVERSEER budgets were reduced, we could invest more on implementing GMPs, such as:
- 40.1 Attending courses relating to GMPs, such as reducing N losses or improving irrigation practices, for ourselves and staff to attend;
  - 40.2 Improving our fertiliser calibration equipment;
  - 40.3 Completing the irrigation bucket testing regularly; and
  - 40.4 Educating ourselves on what GMPs are for our farms and how we can best implement them.
- 41 We also feel that the one on one support we have received through the irrigation companies have allowed us to focus on what we can do on-farm, and so make the changes needed to achieve Good Management Practice.



## **CONCLUSION**

- 42 From our experience, we feel the most effective way to improve on-farm practices is to reduce the reliance on OVERSEER, particularly for arable properties, and focus instead on ensuring the information needed to be audited is included in the Farm Environment Plan, to ensure GMPs are implemented through the FEP Audit and to support the formation of collectives to be able to effectively support farmers through the whole process.

Dated: 22 July 2016

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Suzanne Duncan