

**IN THE MATTER**

of the Resource Management Act  
1991 ("**the Act**")

**AND**

**IN THE MATTER**

of the Resource Management Act  
1991 and the Environment  
Canterbury (Temporary  
Commissioners and Improved Water  
Management) Act 2010

**AND**

**IN THE MATTER**

of the hearing of submissions on the  
Proposed Land and Water Regional  
Plan

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**STATEMENT OF EVIDENCE BY LYNETTE PEARL WHARFE FOR  
HORTICULTURE NEW ZEALAND  
2 April 2013**

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## **QUALIFICATIONS AND EXPERIENCE**

1. My full name is Lynette Pearl Wharfe. I hold the qualifications and experience set out in my statement of evidence for the Group 1 Hearings.
2. I have been provided with a copy of the Code of Conduct for Expert Witnesses contained in the Environment Court's Consolidated Practice Note dated 1 November 2011. I have read and agree to comply with that Code. This evidence is within my area of expertise, except where I state that I am relying upon the specified evidence of another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

## **OVERVIEW OF AND CONTEXT FOR THE MATTERS THAT THIS EVIDENCE RELATES TO**

3. This evidence addresses matters raised in the s42A Report by Canterbury Regional Council that are relevant to the planning matters and issues raised in the submission of Horticulture New Zealand on the proposed Land and Water Plan (**pLWRP**).
4. The focus of this evidence is on provisions as they relate to horticultural operations, particularly relating to nutrient management. The Section 42A Report recommends substantive changes to the nutrient management provisions and this evidence responds to recommended changes.
5. I reference and rely on the technical evidence presented by Mr Matt Dolan Mr Duncan McLeod and Mr Roger Lasham for Horticulture NZ and Dr Ants Roberts on behalf of the Fertiliser Association of NZ.
6. This evidence is based on and is additional to the Evidence I provided in Hearing Group 1, which I do not repeat here.

## **SCOPE OF THIS EVIDENCE**

7. This evidence will generally follow the order of the Council's Section 42A Report except that Schedule 7 Farm Environment Plans will be addressed before the nutrient policies and rules. The following matters are addressed:
- (a) Pest control;
  - (b) Fertiliser use;
  - (c) Nutrient management – general;
  - (d) Nutrient definitions;
  - (e) Schedule 7 – Farm Environment Plans;
  - (f) Nutrient management policies;
  - (g) Nutrient management rules.

## **PEST CONTROL**

8. Horticulture New Zealand made both submissions and further submissions on rules relating to pest control.

### **Rule 5.23**

9. The Horticulture NZ submission on Rule 5.23 sought that AIRCARE™ accreditation be added as a condition in Rule 5.23. I support the inclusion of the AIRCARE accreditation as it provides audited evidence of best practice employed by the aerial operator.
10. The s42A Report (pg 9) recommends that the submission be accepted but it is not included in the recommended amendments to Rule 5.23.

### **Rule 5.25**

11. Rule 5.25 relates to agrichemical applications into or onto land where a contaminant may enter water. The Horticulture NZ submission on Rule 5.25 sought changes to

the provisions, including the addition of training requirements for applicators.

12. The s42A Report includes a submission by NZAAA seeking training requirements but does not refer to the Horticulture NZ submission. Nga Runanga also sought a condition that the discharge is carried out by a person who is certified for the application. There is no discussion on the merits of requiring training and the recommended changes do not include a training requirement, apart from retaining the requirements for aerial operators, so it is not clear why the submissions have been rejected.
13. The submission by Horticulture NZ set out a tiered approach to training and qualifications commensurate with the nature of the task to be undertaken based on the GROWSAFE training courses which are adopted by most regional councils.
14. I support the inclusion of GROWSAFE training requirements for agrichemical applicators as such training is based on best practice, and includes the matters in NZS8409:2004 Management of Agrichemicals that are listed in Clause 2 of Rule 5.25, the mixing of agrichemicals and cleaning of containers and also the requirements of the relevant regional council rules. Requiring appropriate training will ensure that applicators are aware of and able to meet the requirements of the rules in the pLWRP.
15. The Horticulture NZ submission also sought that clause 1 be amended by deleting 'and application technique or method'.
16. The HSNO Act assesses hazardous substances and may place controls on various stages of their life cycle (e.g. transport, storage, disposal) not just for their use. Those controls determine how the substance is able to be managed and used. Under HSNO such assessment does not specify an application technique or method. Nor is such an assessment an 'approval for use'.

17. The level of controls reflects the degree of hazard that a substance presents. Attached as Appendix A is a table of controls that HSNO may place on substances.
18. Therefore agrichemicals need to be managed and used in accordance with the controls placed on that substance under HSNO.
19. A condition in a regional plan that requires compliance with HSNO is a duplication of regulation. It needs to be clear why such a condition is required in a regional plan. be that the agrichemical is managed and used in accordance with the HSNO controls for that substance.

**Rule 5.27**

20. Rule 5.27 controls the discharge of agrichemicals to surface water bodies. The pLWRP limited the use to diquat or glyphosate.
21. The Horticulture NZ submission opposed submissions which sought to amend the provisions, in particular to delete glyphosate.
22. A list of substances in a rule limits the use to only those substances. It would be more appropriate that the use was linked to the HSNO approvals for substances to be used for aquatic use.
23. There are agrichemicals where some formulations are able to be used in water, while other formulations are not. Including a list in a rule can preclude legitimate use of approved and fit for purpose substances.
24. My view is that aquatic applications should be managed in accordance with the HSNO controls for that substance.
25. The s42A Report states that advice from Dr Adrian Meredith is that thinking on glyphosate is slowly changing and that it would be a precautionary approach to delete it.
26. The advice is not attached to the s42A Report so has not been available for review. However, if the EPA reviews

glyphosate and if no longer is approved for aquatic use then a condition linked to HSNO approvals is more appropriate than a list of specific substances.

27. It is recommended that Rule 5.27 be reworded to provide for the discharge of agrichemicals for aquatic use where the substance has been approved by EPA for aquatic use and used in accordance with the controls placed on it.
28. Such an approach would mean that any new substances approved for aquatic use would be able to be used in the Canterbury Region.
29. Likewise, if an existing substance listed in the pLWRP is reviewed by EPA and the aquatic use is deleted the plan provisions do not need to be amended by way of Plan Change.

#### **FERTILISER USE**

30. Horticulture NZ made submissions and further submissions on the rules providing for fertiliser use – Rules 5.52, 5.53 and 5.54.
31. The particular issue raised in the submission was the setback distances and the use of the SPREADMARK certification.
32. The s42A Report states that the current rule framework is strongly based on the rule framework in the NRRP which was determined after considerable debate and that the setbacks have been simplified.
33. However the inclusion of provisions using SPREADMARK in the NRRP was not supported by Horticulture NZ. Attached as Appendix 2 is an excerpt of technical evidence presented to the NRRP hearings from John Maber that addressed the Horticulture NZ concerns regarding the use of SPREADMARK.
34. The approach in the pLWRP is that if equipment is SPREADMARK certified then it can spread within 5 metres of a specified waterbody. If it is not certified then the setback distance must be 10 metres.

35. As there is no current provision for a growers or farmers to have equipment certified under SPREADMARK this approach penalises this group of users.
36. Horticulture NZ sought that, rather than establish a setback distance based on whether the equipment was certified or not, there should be a condition that there be no direct discharge of fertiliser to surface water bodies.
37. I support such a condition as it makes clear the outcome that the Council seeks. How an operator achieves that outcome is dependent on a range of factors, including the equipment, terrain, nature and quality of the product to be applied, and wind direction at the time of application.
38. For instance an application from a truck that is SPREADMARK certified and operating to the 5 metre setback could still have the effect of fertiliser into a water body if the wind direction is not taken into account.
39. Therefore, in my opinion, an outcome based condition that requires the operator to undertake an assessment of the risks and factors associated with the application to ensure that there is no direct discharge to water bodies is more appropriate.

#### **NUTRIENT MANAGEMENT - GENERAL**

40. The Section 42A Report has an introduction on nutrient management that addresses a range of concepts that underpin the specific discussion or the policy and rule framework. Key aspects addressed include:
  - (a) Audited self management or other voluntary mechanisms;
  - (b) The use of Overseer; and
  - (c) The complexity or inability to manage some farming types.

### **Audited self-management programmes**

41. The s42A Report considers that while audited self-management programmes can make a significant contribution toward managing nutrients there needs to be a regulatory framework within which these are able to be accommodated.
42. As a result of submissions the s42A report is recommending a much stronger farm environment plan and independent auditing framework. The specifics of the recommended changes are addressed elsewhere in this evidence and in the evidence of Mr Dolan who describes the horticulture NZGAP programme and how it may complement and be used within the regulatory framework.
43. I concur with the view expressed in the s42A Report and supported by Mr Dolan's evidence that audited self-management programmes are an important tool to achieve the environmental outcomes in the pLWRP. I also concur with the view that they need an underpinning regulatory framework.

### **Use of OVERSEER**

44. Many issues have been raised regarding the use of OVERSEER as a tool to calculate nutrient losses, including disparity between versions and the extent to which it can be applied to all growing systems. This is particularly relevant to the horticulture sector.
45. The evidence of Duncan McLeod and Roger Lasham are relevant in this respect.
46. The Horticulture NZ submission sought recognition of other models such as APSIM to address the concerns relating to OVERSEER.
47. The s42A Report is recommending that in this 'transitional phase' that there is an opportunity to step back from OVERSEER to enable it to be developed more fully and gain the required confidence.



48. I agree with the recommendations to base thresholds in recommended rules and definitions on measures other than modelled outputs from OVERSEER.

**Complexity or inability to manage some farming types**

49. The s42A Report recognises that the horticultural sector, in particular with movement around different properties leased seasonally, will be difficult to manage and no obvious solution to this problem is foreseen.
50. In my view a solution needs to be found through the pLWRP so that horticultural activities, particularly commercial vegetable production, is not prejudiced by the framework, either through excessive transaction costs or an inability to respond to rotational changes.
51. The use of NZGAP provides a practical mechanism with sufficient flexibility to address the complexities inherent in the nature of the operations.
52. I recommend that the Commissioners explore the possibilities of using NZGAP to address these issues rather than leaving one sector unable to be adequately provided for through the pLWRP.
53. I am aware that Horticulture NZ is currently undertaking work to underpin the development of Schedule 8 good management practices for horticulture. Obtaining adequate information and data is imperative to the development of Schedule 8.
54. In the context of such work it would be appropriate that it is also incorporated into NZGAP so that the programme can be used as a mechanism to achieve the pLWRP objectives, including the training of auditors.
55. In the interim a transitional farm plan for horticulture could be developed based on the good management practices described in the evidence of Mr Lasham and Mr McLeod.

## NUTRIENT DEFINITIONS

### Changed

56. The definition of “changed” is critical to how the policies and rule relating to nutrient management take effect and the s42A Report is recommending amendments to the definition.
57. The Horticulture NZ submission sought that there be specific provision for arable and horticultural operations.
58. The s42A Report is recommending the addition of the following clause 4 to provide for horticultural and arable operations:  
  
*Greater than a 20% increase in the annual horticultural or arable yield, compared with the annual horticultural or arable yield averaged over the period 1 July 2010 to 30 June 2013.*
59. The s42A Report (Pg 82) notes that it is important that the definition is certain and I concur with that statement.
60. I support a provision in the definition of “changed” for horticultural operations but consider that the recommended definition is not sufficiently clear and certain or practical to reflect the requirements of horticultural and arable operations.
61. It is appropriate that the clause is not linked to ‘property’ as the definition of ‘property’ is subject to discussion and decision and the recommended definition is not appropriate for horticultural operations.
62. However it is not clear how the 20% increase in yield in the recommended clause 4 would be ascertained. The clause provides for an average yield over 3 years but it is not specified what the average yield is based on. For instance it could be taken as a 20% increase over an area, or 20% over the operation. Nor is it clear how an increase in land area over the 3 years would be factored in.

63. Horticultural operations are based on rotations which vary from between 2-12 years according to the nature of the operation. The recommended clause 4 is based on a specific 3 year period which may only provide a limited average yield over the rotation of the whole operation.
64. In my opinion linking the clause to the 'operation' would provide a benchmark against which the 20% yield could be assessed. A change is also sought to better reflect the rotational nature of horticultural operations.
65. I recommend that the Commissioners amend clause 4 of the s42A Report definition of changed as follows:

*Greater than a 20% increase in the annual horticultural or arable yield for the operation, compared with the annual horticultural or arable yield for the operation averaged over the length of the rotation based on records to verify the length of rotation and average yield. ~~period 1 July 2010 to 30 June 2013.~~*

#### **Definition of property / site**

66. Submissions relating to a definition for property and site were addressed in the Hearing 1 s42A Report and my evidence to that hearing.
67. The Hearing 2 s42A Report (Pg 76) refers to the Hearing 1 discussion where the recommended definition would require land holdings to be contiguous.
68. The s42A Report also notes that the recommended "definition will not satisfy all parties, particularly those in the horticultural and arable sectors, who often lease a range of properties."
69. In my evidence to Hearing 1 I recommended that the Commissioners accept the new definition of property on Pg 220 of the s42A Report but delete the word contiguous from the recommended definition as I considered that the key issue is that the operation is a single unit, rather than the land being contiguous.

70. In my opinion it is better to use a definition that provides for all sectors and activities.
71. Given the scale of horticultural and arable land uses in Canterbury I consider it important that the definition of property can cater for these users, even though the activity is within one operation spread over a number of land areas that are not necessarily adjacent. I do concur that the property must all be within the same water management zone.
72. I understand Horticulture NZ will be presenting grower case studies at Hearing 2 to explain property arrangements that will expand on the nature of leasehold and shared land and how the various land blocks are managed within an operation.

#### **Farm Environment Plan Auditor**

73. The pLWRP had a definition for "Farm Environment Plan Auditor" that provided a number of ways that a person could meet requirements to be an auditor.
74. Horticulture NZ opposed in part a submission by the Fertiliser Association that sought to limit Farm Environment Plan Auditors to those with industry certification as this narrowed the scope of who could undertake the tasks.
75. The s42A Report does not recommend that the Fertiliser Association submission be accepted.
76. However the s42A Report recommends significant changes to the auditor requirements which may impact on the ability of the horticulture sector to have access to appropriate auditors.
77. The notified definition had the requirement for five years' experience as one of the three options. The recommended definition now has five years' experience as a pre-requisite regardless of the qualifications held. This will place considerable challenges in terms of capacity for auditors. The s42A Report does not address the issue of capacity in terms of the recommended changes.

78. The evidence of Mr Dolan describes the auditing process for the NZGAP programme and the objective that there should only be one auditor through the gate. It is desirable that the NZGAP auditors be trained to be able to undertake audits of Farm Environment Plans for the pLWRP. However the recommended definition may preclude such auditors being able to Farm Environment Plan audits.
79. In my view there should be flexibility in requirements for auditors, such as provided in the notified definition.
80. Utilising the discretion to the Chief Executive of the Regional Council is a useful addition.
81. If the Hearing Commissioners seek to retain a requirement for a mandatory five years experience then there should be a provision for auditors with less than five years experience to operate under supervision to someone who meets that requirement.

#### **Nutrient discharges**

82. The Horticulture NZ submission sought a change to the definition of "nutrient discharges" so it was not limited to modelled discharges of nutrients using OVERSEER.
83. The s42A Report is recommending changes to the definition of nutrient discharges so that it is not based on OVERSEER.
84. The recommended definition means:  
  
*... the nutrient loss from the property by surface runoff or by leaching below the root zone.*
85. I support the recommended change to the definition in so far as it is not limited to OVERSEER. However the inclusion and implications of 'property' is dependent on the definition determined by the Hearing Panel.
86. An operation needs to be able to establish the nutrient loss across all land managed within the whole operation, not just specific properties. For instance an area in fallow or cover crop should be able to be included within the equation of

nutrient loss for the operation, regardless of whether the land area is contiguous or not, as long as the properties are all in the same water management zone.

87. Where an operator is undertaking activity on a number of parcels of land it would be reasonable for the Council to be provided with details on the location, character and activity being undertaken by the operator.
88. I recommend that the Commissioners adopt the definition recommended in the s42A Report with the deletion of the word 'from the property' so that the assessment of the nutrient discharge is not limited by the definition of property.

### **Advanced mitigation measures**

89. The s42A Report recommends that a new definition for "advanced mitigation measures" be included in the pLWRP which is linked to the rules in the orange and red zones to provide for higher levels of mitigation demonstrated through the Farm Environment Plan.
90. The proposed list of measures does not currently provide for the use of measures outside of the list to be recognised. The focus of the listed measures is on pastoral systems so the options available to horticultural operations is limited.
91. Appendix 1A to the evidence of Mr McLeod includes a bell curve diagram that describes good management practices and best management practices. The 'best management practices' can be equated to 'advanced mitigation measures' that could be undertaken by growers.
92. The techniques listed by Mr McLeod include:
  - (a) Soil testing on each hectare every 3-5 years based on soil mapping, EM zoning or other such method;
  - (b) Petiole testing;
  - (c) Variable rate nutrient applications;
  - (d) Proof of placement;

- (e) Irrigation on-site soil moisture monitoring;
  - (f) Variable irrigation application;
  - (g) Irrigation efficiency greater than 80%.
93. While such techniques could be added to the definition it highlights the inherent challenges in limiting a definition to a specified list of activities.
94. The definition also uses the term 'multiple techniques'. It is not clear what may be considered to be appropriate 'multiple techniques'. The focus would be better to be on the outcomes achieved from the techniques used to reduce nutrient losses rather than the number of techniques used *per se*.
95. I consider that the definition should be amended to provide for the list of techniques to be inclusive so that other appropriate techniques could also be used.

#### **High nutrient risk farming activity**

96. The s42A Report is recommending a new definition for "high nutrient risk farming" (Pg 87).
97. The term is introduced into the rule framework and also the Farm Environment Plan framework.
98. The s42A Report states that the activities included are those that are recognised as having higher risk of significant nutrient discharges.
99. Arable farming or horticulture (excluding grapes) is one of the listed activities. Horticulture is not defined in the pLWRP, but is generally taken to include fruit, berry and vegetable crops.
100. The evidence of Dr Ants Roberts has identified (Para 96-99) that fruit crops have very little fertiliser nutrients applied relative to other land uses and have pasture between the row crops which is mown or mulched and few animals ever run through orchards.

101. From the evidence of Dr Roberts including fruit and berry crops as having a higher risk of significant nutrient discharge cannot be justified.
102. Retaining horticulture in the definition would mean that fruit and berry growers would need to comply with a range of requirements which are not commensurate to the nature of the nutrient risks associated with their operations.
103. I recommend to the Commissioners that the definition of high nutrient risk farming activity be amended by deleting horticulture and replacing it with commercial vegetable production.

#### **SCHEDULE 7 – FARM ENVIRONMENT PLANS**

104. The Horticulture New Zealand submission sought changes to Schedule 7 to better reflect the requirements of the horticulture sector, in particular recognition of rotational systems, and the ability to incorporate NZGAP into the framework.
105. The s42A Report is recommending substantive changes to the Schedule linked to a greater importance of farm environment plans within the policy and rule framework.
106. Farm Environment Plans are a useful means to achieve the plans objectives but they must be practical and workable to enable them to be an integrated within the production system. They also need to be cost effective and not add significant transaction costs to the business.

#### **Part A – Farm Environment Plans**

107. The recommended changes to Schedule 7 provide the ability to use industry developed farm environment plan regimes (Part A). I support this change.
108. Development of an industry prepared Farm Environment Plan template would need to be approved by the Chief Executive of the Council as meeting the specified criteria and provide for audit as set out in Part C.



109. For such a plan to be produced there needs to be an adequate time provision before the farm environment plan is mandatory. I understand that Horticulture NZ would seek to develop such a template within the NZGAP programme and it would need time to;
- (a) Develop the template, probably with Council;
  - (b) Trial the Plan with growers;
  - (c) Obtaining the approval of the CE;
  - (d) Train auditors on the FEP;
  - (e) Incorporate the plan into NZGAP.
110. This process could be aligned to the development of Schedule 8: Good management practices (GMP's). I understand that Horticulture NZ is already working with ECAN and the CRI's on developing these to a standard acceptable to the Council.
111. In the interim I suggest there should be a transitional farm plan which provides basic information for Council as a basis for a permitted activity. For horticulture this information could be based on the industry defined GMP's described in Appendix 1A of Mr McLeod which include:
- (a) Nutrients are applied according to standards available (such as those provided in RB209: Management of Fertiliser (8<sup>th</sup> Edition, June 2010 published by DEFRA) or informed by fertiliser recommendations based on soil tests;
  - (b) There is a monitoring and reporting framework to validate operator practice (proof of placement);
  - (c) Soil testing is conducted on each paddock every 3-5 years using a "W" shaped collection pattern consisting of between 12 – 18 subsamples;
  - (d) Nutrient level is managed according to:
    - (i) rainfall,

- (ii) is informed by deep N testing; and
  - (iii) will match likely yield and quality goals.
- (e) Equipment is calibrated;
  - (f) Irrigation applied allows achievement of the yield target for fertiliser applied;
  - (g) Irrigation equipment is calibrated and achieves standards;
  - (h) Water is applied to maintain soil moisture between the wilting point and field capacity.
112. The key will be the ability to provide for an appropriate transition. This will be the most important factor in achieving the overall plan objectives.

#### **Part B Farm Environment Plan Default content**

113. Part B addresses the content of the Farm Environment Plan.
114. It is recommended that the Farm Environment Plan apply to either an individual property or for an individual property that is part of a collective of properties including an irrigation scheme or industry certification scheme or catchment club.
115. A plan should also be able to be operation based to take into account a range of 'properties' that may comprise the operation. Growers should not have to do individual farm plans for each 'property' (dependent on the definition) that they grow on. That would add significant transactions costs and compartmentalise the operation unnecessarily.
116. Part B (7) requires a nutrient budget prepared by a suitably qualified person using a nutrient budget model (such as Overseer) for each of the identified land management units and the overall farm.
117. I support the ability to have flexibility in the model to be used but consider that there also need to be recognition of the rotational crop requirements.

118. I also support the removal of a stipulation as to who must prepare the farm environment plan. The plan needs to meet certain requirements and the farmer or grower are able to determine what assistance is required to prepare such a plan.

### **Part C Farm Environment Plan Audit requirements**

119. Part C provides for Farm Environment Plan Audit requirements.
120. The definition of Farm Environment Plan Auditor is addressed above and is critical to the implementation of Part C.
121. While Part A provides for industry developed programmes, Part C does not provide for incorporation of the industry audit programme.
122. There should be provision in Part C for an audit procedure aligned to industry programmes used in Part A, subject to the approval of the Chief Executive of the Canterbury Regional Council.

### **Part D Farming Information**

123. Part D sets out Farming Information that is to be provided to the Council if required by specific rule provisions.
124. This information is in addition to the Farm Environment Plan requirements.
125. I consider that it needs to be clear why this information is required and how it will be used. For instance provision of fertiliser application rates without an understanding of the crops grown and nutrient requirements could lead to misinterpretation of the data unless the full context is understood.
126. Provision of the information adds significantly to the compliance costs and needs to be justified by a clear s32 analysis.

## **NUTRIENT MANAGEMENT POLICIES**

127. Horticulture NZ made submissions seeking significant changes to the policies relating to nutrient management.
128. The s42A Report is recommending significant changes to the policies which generally provide for a number of the matters raised by Horticulture NZ.
129. The policy suite provides a clearer framework by establishing base parameters for managing nutrients.
130. The recognition of industry initiatives in new Policy 4.30 and I support this.
131. The recommended policy framework is dependent on the definition of key terms used in the policies:
- (a) Farm environment plans
  - (b) High nutrient risk activities
  - (c) Advanced mitigation farming practices
  - (d) Property.
132. I have recommended changes to each of the relevant definitions and Schedule 7.
133. The linking of the policies to the recommended definition of property will particularly problematic for horticulture. I recommend that after each use of the term 'property' the words 'or operation', are added - so that there is adequate provision for operations that are not property bound.
134. Policies 4.31 and 4.32 also incorporate 'no net increase in nutrients discharged.' This approach essentially provides a cap to the current level of discharge. I consider this appropriate in the interim where the purpose is to maintain, as far as practicable the status quo until the sub-regional plans are developed to incorporate limits as defined by the NPS FM. However I do not consider it appropriate that a sub-

regional plan be permanently constrained by that policy direction.

135. Therefore I recommend that Policies 4.31 and 4.32 be amended by adding “prior to limits being set at the sub regional level’ before ‘no net increase’.
136. The Addendum to the s42A Report introduces new recommended Policy 4.27A.
137. Policy 4.27A provides a framework for the approach to nutrient management including incorporation of material into Schedule 8. This provides for a transition. However the recommended policy does not specifically provide a framework for how the transition will be managed.
138. I consider that it would assist if there was clarity as to how the transition is managed by adding an additional clause as follows:

*In the interim before plan changes incorporating material into Schedule 8 are promulgated farming activities are managed as permitted activities based on good management practices.*

#### **NUTRIENT MANAGEMENT RULES**

139. Horticulture NZ made submissions seeking significant changes to the rules relating to nutrient management.
140. The s42A Report is recommending significant changes to the rules which generally provide for a number of the matters raised by Horticulture NZ. I note it is mentioned in the section 42A report that Horticulture NZ sought horticulture or arable operations be excluded from the rule framework. However it is not noted until the general submissions section (9.7) that the exclusion was in order to “tailor” the rules by inserting new ones that recognised industry good practice frameworks.

141. The recommended rule framework is dependent on the definition of key terms used in the rules (as covered above), namely:
- (a) Changed
  - (b) High nutrient risk activities
  - (c) Advanced mitigation farming practices
  - (d) Property.
142. I have recommended changes to each of the relevant definitions and Schedule 7. The changes are sought to ensure that activities can be appropriately managed within the rule framework. Should the changes to the definitions be accepted I generally accept the rule framework as being appropriate and practical.

**L P Wharfe**

**2 April 2013**

## Appendix 1 - HSNO Controls that may be applied to substances

HSNO Control	Explanation
Approved handler (AH)	Depending on the degree of hazard users may need to show that they are competent to handle and use the substance, by being an approved handler as described by the HSNO Personnel Qualifications Regulations.
Disposal	Disposing of unwanted substances poses a risk to the environment. The HSNO Disposal Regulations require that the substance must either be treated so that it is no longer hazardous or discharged within set environmental concentration limits.
Documentation (information about the substance)	The HSNO Identification Regulations set out the information that must be available for any hazardous substance. The information ranges from a description of the substance and the types of hazard it has, to steps that can be taken to prevent harm.
Emergency Management	HSNO Emergency Management Regulations have three levels of emergency management depending on the amount of substance and the hazard classifications of each substance.
Emergency Response Plans	If the quantity stored triggers Emergency Response Level 3 then an Emergency Response Plan must be developed. This plan sets out what actions need to be taken in an emergency, who is responsible for actions needed, and what information and equipment these people will need.
Equipment to use	The HSNO Personnel Qualification Regulations describe the qualifications relating to being an approved handler. An approved handler must know about the operating equipment used to apply the hazardous substance. This includes personal protective equipment.
Location Test Certificate	If the substance has a hazard classification of 2, 3, 4 or 5 and the amount stored is greater than the quantity given in the HSNO (Controls 1-5) Regulations then the site will need a Location Test Certificate (LTC) which can be obtained through a Test Certifier who is able to issue LTC's. A site visit will be necessary.
Priority identifier	A priority identifier is part of the HSNO Identification Regulations. For any hazardous substance there must be some words or pictures (pictograms) on the label that tells what the main hazard is for that substance. This is a priority identifier and the information must be able to be located within 2 seconds.
Record keeping (Documentation after use)	A record of an application must be kept if specified in the HSNO Classes (6, 8 and 9) Control Regulations. This will depend on the hazard classification of the substance, if it is applied in a place where the public may be present, or if it may move off the application site through the air or water. This is not the same as tracking (see below).

HSNO Control	Explanation
Secondary identifier	The secondary identifier is information that must be available to any person handling the substance within ten seconds, and primarily consists of an indication of the degree of hazard and other risks associated with the substance, together with information on how to prevent and manage those risks. Normally it is in the form of hazard, warning or precautionary statements, and/or risk phrases.
Signage in the workplace	Where the amount of hazardous substance held exceeds set trigger levels then there must be signage that says what the substance is, what the hazard is and what action is needed in an emergency.
Secondary containment	Secondary containment is needed when the amounts stored exceed certain thresholds. A concrete or other impervious bunding around the edge of the storage area is a common method to provide secondary containment.
Tracking	The more highly hazardous substances are required to be tracked. Under the HSNO Tracking Regulations the location and movement of tracked substances must be <b>recorded through every stage of its lifecycle</b> (transport, storage, use, and disposal). Tracked substances require an approved handler.



## **APPENDIX 2 – Evidence regarding SPREADMARK**

**IN THE MATTER** of the Resource Management Act  
1991

**AND**

**IN THE MATTER** of hearings on the Proposed  
Natural Resources Regional Plan  
(NRRP) Variation 1: Officer Report  
No 23 Chapter 4 WQL 7 - Water  
Quality Agricultural land uses

**To:** Environment Canterbury

**Date:** 18 September 2008

### **Evidence in support of Horticulture New Zealand's evidence**

**John Maber**

#### **1. Introduction**

- 1.1 My name is John Maber, and I am the principal of John Maber and Associates Ltd, a company dealing in agrichemical and fertiliser use and sustainable land management. Prior to that, I was employed for 27 years as a scientist, engineer and consultant by Lincoln Ventures Ltd., and the organisation that preceded it. Lincoln Ventures Ltd is a company owned by Lincoln University and carries out research, technology development and consultancy in a wide range of subjects.
- 1.2 While at Lincoln Ventures Ltd, I specialised in agrichemical application technology. This included development of spray application systems, carrying out spray deposition trials, which included spray drift assessments and the measurement of spray deposition and airborne spray concentrations downwind of spray application events.
- 1.3 I hold the qualifications of B. Agr. Sc. from Massey University and Dip. Agr. Eng. (Hons) from Lincoln College, Canterbury University.
- 1.4 I am the Technical Consultant to the NZ Agrichemical Education Trust (NZAET) and the Joint Primary Industry Working Group that preceded the Trust. I co-authored the original Agrichemicals Code of Practice (1991) and was contributing editor of NZS8409:1995, the first edition of the Code as a New Zealand Standard. I carried out the revision of that Standard and the preparation of NZS8409:1999 Code of Practice for the Management of Agrichemicals. I wrote the material that appears in Part 5 of both editions,

including the relevant Appendices, as well as Parts 1 and 2, and contributed to other parts of the Standard.

- 1.5 I was a member of the Standards NZ Technical Committee that reviewed NZS8409, largely to incorporate the new legislative requirements of the Hazardous Substances and New Organisms Regulations 2001. The Technical Committee was drawn from 21 separate organisations ranging from producer organisations (e.g. Federated Farmers) to government agencies (Department of Labour and the Environmental Risk Management Authority).
- 1.6 In my capacity as Technical Consultant to NZAET I am responsible for training the Accredited Trainers that deliver GROWSAFE® courses.
- 1.7 I was a member of the Agrichemical Trespass Ministerial Advisory Committee (ATMAC 2002) that reviewed and reported on the issue of spray drift and the appropriate management practices.
- 1.8 In addition, I am the Executive Officer for the NZ Agricultural Aviation Association and as such am responsible for their Accreditation programme, which includes the application of fertilisers and agrichemicals.
- 1.9 I drafted the first edition of the Fertiliser Users Code of Practice (now the Code of Practice for Nutrient Management) and wrote the Aerial Spreadmark Code of Practice. I have been involved with spread pattern testing and bulk solid flow properties for over 30 years, and developed the Spreadmark sieve box which is used to characterise the flow properties of fertiliser (Size guide number and Uniformity index).

## 2. **Scope of evidence**

I intend to cover the following topics:

- Fertmark
- Spreadmark
- Aerial applications Windspeed

### 3. **Fertmark** (not included)

### 4. **Spreadmark**

#### 4.1 What does Spreadmark set out to achieve?

Spreadmark is a voluntary quality assurance programme which validates performance of fertiliser application equipment. There are comprehensive Codes of Practice for both groundspread and aerial fertiliser application equipment. The programme was initially developed by the NZ Groundspread Fertilisers Association, which represents groundspread contractors. The Groundspread Spreadmark programme states that the scheme accredits fertiliser spreading companies (Pg 1).

I understand that Horticulture NZ accept the requirements for Spreadmark as it applies to aerial application so this evidence will focus only on groundspread equipment.

To attain Groundspread Spreadmark Certification:

- the company must be registered with the Fertiliser Quality Council;
- have a Spreadmark pattern test;
- satisfy an independent audit covering quality systems and records, spread test certification; and
- operators must have completed specified training.

#### 4.2 What are the reasons for Council wanting to use Spreadmark?

The Council want confidence that equipment being used for groundbased broadcast fertiliser applications is fit for purpose.

#### 4.3 Is Groundspread Spreadmark an appropriate tool as recommended in Rule WQL 17?

As presently recommended Groundspread Spreadmark certification would be required regardless of whether the application was undertaken by a fertiliser spreading company or an individual farmer or grower. Because Groundspread Spreadmark is designed specifically for groundspread companies the applicability of the programme is not currently appropriate for individual growers or farmers. For instance the training programme that is a requirement for certification is based on training operators in using trucks for fertiliser application, not the type of equipment that a farmer or grower may use behind a tractor. In addition the requirements for certification are based around a company whose sole business is fertiliser applications, and to meet the requirements of farmer or grower clients.

While it is recognised that there is value in fertiliser application equipment being calibrated to ensure that it is operating effectively it is, in my view, inappropriate to require Groundspread Spreadmark across all situations at this point in time. I consider that Council should work with industry to develop a more appropriate tool for individual farmers and growers, with a supporting and relevant training programme. I consider that the setback distances in Table WQL 17 should be amended to reflect that individual growers and farmers would not be able to meet the certification requirements set out in the recommended changes to the Plan.

In my view, given that only a small proportion of groundspread fertiliser application is undertaken by individual farmers and growers and the range of other conditions recommended in Rule WQL 17 to minimise the potential for surface run off of fertiliser a requirement for certification of all equipment may not have a significant impact on the adverse effects of fertiliser runoff

to surface water.

However requiring groundspread contractors to be Spreadmark certified would be appropriate.