



NEW ZEALAND FERTILISER MANUFACTURERS'
RESEARCH ASSOCIATION INCORPORATED

**To : Chief Executive Officer
West Coast Regional Council
PO Box 66
Greymouth, 8470**

Submission on Proposed Regional Land and Water Plan

West Coast Regional Council

**notified on
17 September 2010**

Submitter Details :

**New Zealand Fertiliser Manufacturers' Research Association Inc.
(Fert Research)**

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**Contact Name : Greg Sneath, Technical Manager, NZFMRA
Date : 15th October 2010**

Hearings :

**The Association wishes to be heard in support of the submission.
If others make a similar submission, the association would consider presenting a joint case at any hearing.**

Introduction

The New Zealand Fertiliser Manufacturers' Research Association Inc is a trade organisation representing the New Zealand manufacturers of superphosphate fertiliser. The Association also operates under the name Fert Research. The Association has two member companies – Ballance Agri-Nutrients Ltd and Ravensdown Fertiliser Co-operative Ltd. Both these companies are farmer co-operatives with some 45,000 farmer shareholders. Between them these companies supply over 95% of all fertiliser used in New Zealand.

The companies each employ about 60 field representatives whose function is to provide fertiliser advice and recommendations to farmer shareholders. Field staff are tertiary qualified and use a range of tools to assist them in making fertiliser recommendations and addressing production and environmental issues including ;

- Nutrient Budget models (e.g. OVERSEER®),
- The Code of Practice for Nutrient Management
- The Code of Practice for the Placement of Fertiliser in New Zealand.

In addition to making fertiliser recommendations, trained field representatives use OVERSEER® to prepare nutrient budgets and nutrient management plans.

Training, support and mentoring are provided to field representatives by highly qualified and experienced senior staff of the member companies. All fertiliser field staff are obliged to undertake and successfully complete a nutrient management training program which includes attending and passing the intermediate and the advanced Sustainable Nutrient Management Courses at Massey University which, in recognition of the critical importance of meeting the correct balance between environmental and agricultural production goals, were initiated and funded by the fertiliser industry. These courses have become an industry standard also attended by a wide range of private consultants, agricultural industry representatives and regional council staff.

The fertiliser industry is proactively engaged in a number of industry and government initiatives to maintain and improve freshwater resources. The New Zealand Fertiliser Manufacturers' Research Association Inc is a partner in Primary Sector Water Partnership (PSWP).

The goals of the PSWP are:

- Maintain and/or enhance water quality from primary production land, with demonstrable and accelerated progress on the resolution of water quality issues from agricultural land within five years; and
- Demonstrate improvements in water use efficiency by the primary sector within five years.

The partnership approach aims to achieve sustainability goals and to maintain dynamism and flexibility in the primary sector by:

- Developing Sustainable Water Management Strategies for each partner.
- Engaging land managers in environmental outcomes and self management of their impacts, with an initial focus on identifying priority catchments.
- Working in partnership with central and regional government.

Industry agreed targets within the PSWP include a comprehensive range of commitments for action on nutrient management, industry 'good practice' bench marks of water use, and sediment and microbial management.

The PSWP engages industry partners, regional and central government and other stakeholders and specific industry commitments are dedicated to achieving targets which will ensure freshwater resources are used and managed sustainably. These non-regulatory programs have been adopted to achieve many of the objectives of the Proposed National Freshwater Policy.

The fertiliser industry has specifically developed the Code of Practice for Nutrient Use to promote and endorse the responsible and efficient use of all nutrients introduced to the farm system in order to maintain and improve economic performance and at the same time provide safeguards to protect the environment.

This submission has been developed with full consultation with our member companies, Ballance Agri-nutrients Ltd and Ravensdown Fertiliser Co-operative Ltd, and represents a joint fertiliser industry submission.

Specific submission points in relation to the Land and Water Plan.

1. Chapter 3 Land Management

Policy 3.3.9 **To promote land management being undertaken in accordance with industry best practice, so that leaching of faecal material and nutrients, and loss of sediment to water is avoided, remedied or mitigated.**

Comment: The principles of this policy, that is, to promote land management in accordance with industry best practice is supported.

Comment : Under the Explanation for this policy, reference to the current Code of Practice for Nutrient Management requires updating .

Decision sought : This policy should be retained, however, the final paragraph of this explanation should be amended as follows;

*"Application of fertiliser or agricultural effluent can, if poorly managed, result in ~~large~~ **detrimental** quantities of nutrients leaching into ground water or washing directly into surface water bodies. The current Code of Practice for Fertiliser Use **Nutrient Management (with emphasis on fertiliser use)** provides advice and guidelines that can reduce adverse effects on water bodies.
Nutrient budgeting tools are also available."*

2. Chapter 9 **Special Management Area : Lake Brunner / Kotuku- Whakaohao Catchment**

Policy 9.3.3 To reduce the amount of phosphorus discharged in the Lake Brunner catchment.

Comment: The fertiliser industry does not support Proposed Policy 9.3.3 as currently drafted.

The Proposed RWLP has described special management requirements for the Lake Brunner catchment, with concerns that phosphorus loss to the waterways will impact on lake water quality.

However the Proposed RWLP has not established the critical water body phosphorus concentrations which will give rise to significant adverse effects, and have not determined the relationship between land practices and critical waterbody phosphorus concentrations at which significant adverse effects occur, or will assist in meeting Objective 9.2.1.

If management practices are to be effective, these relationships need to be established and waterbody phosphorus concentration targets known.

The fertiliser industry wishes to note that the principle of reducing direct and indirect phosphorus losses to the waterbodies (and to Lake Brunner specifically) is supported, however the current proposed wording applies specifically to inputs, rather than outputs (losses).

We note that the RMA requires management of effects.

We recommend the approach should be to determine what level of P loss from the catchment to the lake causes unacceptable water quality problems. A limit can then be set on the acceptable loss, so as to avoid adverse effects.

Farmers will need to work to this limit and ensure it is not exceeded. Farmers then have the flexibility to adopt and implement whichever practices meet their particular situation for limiting P loss from their property.

We consider that such an approach is consistent with the recommendations contained in the recent Land and Water Forum Report.

The report of the Land and Water Forum has indicated that Ministry for Environment and Environmental Protection Authority have a role in providing technical and financial support (including extension expertise and training) to regional councils. This will help under-

resourced Regional Councils to achieve these output based aims which are consistent with a national approach to managing effects.

Decision sought : This policy should be amended as follows;
"To reduce the amount of phosphorus discharged entering a waterbody in the Lake Brunner catchment ."

Further, we recommend the addition of a new and consecutive policy as follows:

Recommended Proposed Policy 9.3.3(a)
"Phosphorus concentration targets will be determined for Lake Brunner that cause no significant adverse effect. A reduction in phosphorus loss to acceptable target levels for the protection of water quality in Lake Brunner, which can be achieved by 2020"

- 3. Policy 9.3.6** **To reduce the loss of phosphorus to Lake Brunner associated with the intensification of land, by managing phosphate fertiliser use in the catchment so that no net increases in annual use occurs per property.**

Comment: The intent of this policy is fully addressed by Policy 9.3.3. The details in the explanation of this policy show that it is more consistent with Methods to achieve water quality outcomes rather than Policy.

Decision sought : This policy should be deleted

- 4. Method 9.4.1** **To encourage the development and implementation of codes of practice and environmental management systems.**

"The Council will encourage and assist community, recreational and industry groups in the Lake Brunner catchment to prepare codes of practice and environmental management systems for land and water use activities, in order to avoid, remedy or mitigate adverse effects on water. This may involve identifying how land use activities can be carried out in ways which minimise non-point source contamination."

Comment: The principle of this method is supported

Decision sought : This method should be retained

5. Method 9.4.3 To promote and encourage the use of practices that maintain and /or enhance water quality.

"Land use significantly influences the water quality in the catchment, and hence the catchment needs to be managed in an integrated way. This includes management of land use through the Grey District Plan. "

Comment: The principle of this method is supported, however the reference to the Grey District Plan is superfluous given that under the RMA; Section 74 requires that when preparing or changing a district plan, a territorial authority shall have regard to—

(a) any—

- (i) proposed regional policy statement; or
- (ii) proposed regional plan of its region in regard to any matter of regional significance or for which the regional council has primary responsibility

Decision sought : This method should be retained, but amended as follows ;

To promote and encourage the use of practices that maintain and /or enhance water quality.

"Land use significantly influences the water quality in the catchment, and hence the catchment needs to be managed in an integrated way. ~~This includes management of land use through the Grey District Plan.~~"

6. Method 9.4.5 To review all existing farm dairy effluent discharge consents in the Lake Brunner catchment by July 2013, to ensure the best practicable option is adopted to reduce or remove any adverse effects on the lake environment, by minimising phosphates discharged.

Comment: The fertiliser industry does not support this method as currently drafted.

Comment: As above, while the principle to reduce direct and indirect phosphorus losses to the water ways (and to Lake Brunner specifically) is supported, the current proposed wording may be construed to apply to inputs (discharged to land), rather than outputs (losses to waterways). The RMA requires that it is the effects which are managed, and the effects are managed by reducing the outputs of phosphorus within the catchment. Farmers should be afforded the flexibility to adopt efficient and innovative practices which allow them to optimise production while minimising adverse effects. This is achieved by limiting outputs (losses), not by limiting inputs.

Decision sought : This method should be amended as follows;
" ***To review all existing farm dairy effluent discharge consents in the Lake Brunner catchment by July 2013, to ensure the best practicable option is adopted to reduce or remove any adverse effects on the lake environment, by minimising phosphates-~~phosphorus~~discharged losses to waterbodies.***

*"Section 128 of the RMA sets out the process for the review of resource consents. Policy 9.3.3 requires a reduction in the amount of phosphorus discharged **lost to waterbodies** in the Lake Brunner catchment, in order to improve water quality in the lake over time. Direct discharges of phosphorus occur through discharges of dairy effluent. Policy 9.3.4 requires discharges of dairy effluent in the Lake Brunner catchment be to land, rather than directly to water. Existing discharge to water consents will be reviewed by 1 July 2013 with strong reference given to discharges to land as opposed to water, given the need to reduce the level of phosphorus entering the lake. Low application rate systems and appropriate effluent storage will be required. "*

7. Method 9.4.6 Encourage the implementation of Farm Plans to address best practice on individual farms to reduce effects on Lake Brunner.

Comment: The fertiliser industry supports this method, with an amendment.

Comment: Use of 'Farm Plans' and 'Nutrient Management Plans' and employing 'Best Management Practices' in order to maximise farm production and minimise adverse effects of nutrient in the environment is supported. This method should be adopted consistently. That is, rules should address outputs and should be consistent with this method.

Decision sought : Retain reference to Farm Plans and introduce Nutrient Management Plans, as part of a Farm Plan, to provide evidence of implementing Best Management Practices, as follows ;

"Encourage the implementation of **Nutrient Management Plans and Farm Plans** to address best practice on individual farms to reduce effects on Lake Brunner"

(Note: Farm Plans, Nutrient Management Plans and Environmental Plans are terms which can have different meaning, but are sometimes used interchangeably, giving rise to confusion. e.g. A farm plan or environmental plan will address issues such as stock crossings, offal pit (hot spot) nutrient sources and sediment losses which are not included in the nutrient management plan. A nutrient budget is used to develop a nutrient management plan. A nutrient management plan becomes part of a farm plan or environmental plan)

8. Rule 14: Humping and hollowing, flipping, v-blading, or contouring in the Lake Brunner catchment

Any humping and hollowing, flipping, v-blading, or contouring in the Lake Brunner catchment is a discretionary activity.

Comment: The fertiliser industry neither supports nor opposes Proposed Rule 14.

9. Rule 72 Application of fertiliser

*“The discharge of fertiliser, into or onto land is a **permitted activity** provided that all of the following conditions are met :*

- a) The is no discernable contamination of water; and*
- b) Any drift derived from discharge is not noxious, dangerous, offensive or objectionable beyond the target area to such an extent that it has or is likely to have an adverse effect on the environment.”*

And

In the lake Brunner catchment:

- c) Phosphorus fertiliser shall not be discharged to land that is developed under Rule 14 after 1 July 2010 unless it has a water solubility of less than 10 %*

Comment: The fertiliser industry does not support Proposed Rule 72 as currently drafted.

Application of fertiliser as a permitted activity is supported.

Condition C, for the Lake Brunner catchment should be based on limiting outputs (losses) rather than limiting inputs

Farmers should be afforded flexibility in how to reduce phosphorus losses to waterways. This could include one or more combinations of farm practices resulting in improved efficiency pathways for phosphorus use, for example:

- Change the timing of and manner of application
- Avoiding critical source areas on farms
- Reducing phosphorus applications
- Change the type of fertiliser used
- Implement mitigation practices and tools (e.g. sediment traps, interventions which intercept or strip soluble phosphorus from water before it enters waterways)

Implementation methods should be consistent with Methods 9.4.1, 9.4.3 and 9.4.6

Overall the context and reasons for the special conditions applying to phosphorus fertiliser discharges to land developed under Rule 14, after 1st July 2010 should be clearly and explicitly explained.

Decision sought : 1. Proposed Rule 72 should be amended as follows;

Rule 72: Application of Fertiliser

*“The discharge of fertiliser, into or onto land is a **permitted activity** provided that all of the following conditions are met:*

- a) There is no discernable contamination of water; and*
- b) Any drift derived from discharge is not noxious, dangerous, offensive or objectionable beyond the target area to such an extent that it has or is likely to have an adverse effect on the environment.”*

And

In the Lake Brunner catchment for land developed under Rule 14:

- ~~c) Phosphorus fertiliser shall not be discharged to land that is developed under Rule 14 after 1 July 2010 unless it has a water solubility of less than 10 %~~*
- c) Soil testing for Olsen P shall be undertaken annually, after 1 January 2011 in accordance with the soil testing protocol in Schedule 12, and the results supplied to Council on request.*
- d) Documentation of a Nutrient Management Plan and Farm Plan which demonstrates that phosphorus losses to waterways can meet the limits determined by (amended) Policy 9.3.3*

2. A clear and explicit explanation for Rule 72 should be included. For example ;

“Explanation

In making the application of fertilisers a permitted activity, the Council recognises that the adverse effects associated with the activity are generally minor and can be controlled through the conditions imposed.

Land that is developed under Rule 14, is traditionally expected to require very high levels of phosphorus fertiliser application during the initial development phase. Specifically within the Lake Brunner catchment, high rainfall typical of West Coast conditions, introduces an increased risk of phosphorus loss to Lake Brunner when new land is being developed under Rule 14.

This rule is intended to ensure phosphorus losses associated with fertiliser use in the Lake Brunner catchment on land being developed under Rule 14, are addressed by; monitoring Olsen P, documenting farming practices, and demonstrating phosphorus losses can be limited to below levels that will cause adverse effects in waterbodies.

10. Rule 83

Application of phosphorus fertiliser associated with Rule 14 in the Lake Brunner catchment.

*The discharge of phosphorus fertiliser into or onto land in the Lake Brunner Catchment associated with land development under Rule 14 after July 2010 is a **controlled activity** provided that all of the following standards are met:*

- i) Soil testing for Olsen P shall be undertaken at least annually after 1 January 2011 in accordance with the soil testing protocol in Schedule 12, and the results supplied to the Council by March of every year; and*
- ii) The amount of phosphorus fertiliser applied per property per year is to be no more than the annual average applied between 2005-10; and,*
- iii) Any drift derived from the fertiliser discharge is not noxious, dangerous, offensive, or objectionable beyond the target area to such an extent that it has or is likely to have an adverse effect on the environment.*

A resource consent is required and must be granted, however the Council reserves control over:

- a) the extent to which the proposed fertiliser application methods prevents the loss of phosphorus to Lake Brunner;*
- b) the area of land that phosphorus will be applied to;*
- c) monitoring requirements;*
- d) the duration of the consent; and*
- e) review conditions of the consent.*

Comment:

The fertiliser industry is opposed to Proposed Rule 83.

Rule 83 addresses inputs rather than outputs and is not consistent with “effects based” management as required by the RMA. See further comment on Rule 83 Bullet Point ii), given below.

The outcomes intended from this rule are readily achieved using conditions of permitted activity, as per example in the recommendation for an amended Rule 72.

Rule 83 is not consistent with Methods 9.4.1, 9.4.3 and 9.4.6., while the approach recommended with the amended Rule 72 is consistent with these methods and also consistent with the RMA.

Specific to Rule 83 : Bullet point ii)

- i) This rule incorrectly assumes phosphorus loss is directly proportional to phosphorus use, and improved efficiencies are not and never will be possible.
- ii) The fertiliser input limits based on previous inputs, is not consistent with “effects based” management as required by the RMA.
- iii) Limits on phosphorus application based on previous use, introduces an equity issue where farmers with excessive past use are rewarded, and farmers using phosphorus efficiently, applying moderate or under use of fertiliser are penalised.
- iv) Farmers should be afforded the flexibility to apply and use phosphorus with improved efficiency, such that productivity is optimised while phosphorus losses to the lake do not increase or are reduced.
- v) An assessment of the phosphorus loading in waterbodies which will give rise to the adverse effects (i.e. lake clarity readings), is required, and land management practices can then be implemented to satisfactorily meet those requirements. These targets for phosphorus loss to the waterways from land being developed under Rule 14, have not been provided.
- vi) The plan does not provide any information on how it is determined that limiting phosphorus inputs to the annual average applied between 2005-2010, for properties developed under Rule 14, will provide the desired improvements in water quality. This cap on farm phosphorus application appears to be an arbitrary cap, without any scientific justification linking these limitations on inputs (and production) to the desired water quality outcomes.
- vii) The other measures (amended Rule 72) proposed for land within the Lake Brunner catchment and being developed under Rule 14, after 1 July 2010, are likely to address most of the requirements for reducing phosphate losses to the waterways.

Decision sought : Rule 83 should be deleted and its intent be addressed with changes to Rule 72 for the application of phosphorus fertiliser to land being developed under Rule 14 after 1st July 2010. Specific conditions for permitted activity provide confidence that phosphorus losses are limited to below levels that will cause adverse effects in waterbodies.

11. Schedule 12 **Soil Testing Protocol for the Lake Brunner Catchment**

Comment: This proposed soil testing protocol is based on discussions and questions posed to fertiliser industry, however there may be opportunities to improve its presentation, with suggestions provided below with deletions crossed through, and new insertions in red and underlined.

Schedule 12 Soil Testing Protocol for the Lake Brunner Catchment

The fertiliser industry soil sampling protocol for pasture was primarily designed to monitor soil Olsen P levels and determine if the fertiliser programme was maintaining them in a desirable range. Typically this consisted of 4 to 6 composite samples, from 4 to 6 representative paddocks, (or blocks of paddocks). Each composite sample consisting of 15 grouped soil cores is taken along a transect across a paddock (or block of paddocks). However, as the Lake Brunner catchment is so sensitive in regard to outflow of P, it is suggested that the protocol is made more robust by increasing the number of monitor paddocks (or monitor blocks) to 10 per farm.

For the Lake Brunner catchment the soil sampling protocol will consist of:

- 10 composite soil samples, from 10 representative paddocks per farm. (Existing monitor paddocks and associated sampling points are to be retained in the expanded program.)*
- Each soil sample is a composite of 15 soil cores, collected to a depth of 75 mm, along a transect ~~from~~ within each representative paddock (or blocks of paddocks).*
- Transects and sample sites should be recorded with GPS, or an accurate farm map with field markers. When selecting sample sites, avoid gateways, fences, tree lines, hedges, water troughs, obvious dung and urine patches and any unrepresentative sites.*
- Sampling will be conducted annually, at the same time of year, for the first five years to establish a reliable baseline dataset and to establish trends. Sampling will be scaled back to biennial after five years.*
- Representative paddocks selected for soil sampling will be proportional to land management blocks on the farm. ~~used for sampling will The same number of management blocks will be maintained, with sampling effort scaled up proportional to the sample number increase (four, five, or six up to ten). For example a~~*

farm with 70% of its area receiving no effluent and 30% receiving effluent would have 7 paddocks sampled from the non-effluent block and 3 paddocks sampled from the effluent block.

Management blocks

*There is never going to be scientific and statistically based allocation of management blocks to match all soil types. It **Land management blocks** will be based on what is practical to the farm operation (where parts of the farm might have distinctly different management practices due to soil and topography etc **they are treated as different management blocks**). The effluent irrigation area is a clear example of **a** distinctly different **land** management unit (**block**). Where effluent application is in the proportion of 70:30 by area, the farm would have the 10 representative paddocks allocated to two management blocks on a 70:30 basis, i.e. 7 reference paddocks allocated to the non-effluent area and 3 allocated the effluent area.*

*Reference paddocks should still be representative of each block (**land** management area).*

***For example**, if, within that 70% **a** non-effluent area, there are still two very different management zones (blocks) receiving different fertiliser recommendations, **then** allocation of those 7 **the representative** non-effluent sampling paddocks would be in proportion to the areas of the two blocks involved, e.g. **i.e. A farm with 70 % non-effluent area**, The 70:30 could be sampled with represented by 4 **representative** hill paddocks (non-effluent), 3 **representative** river flat paddocks (non-effluent), and 3 **representative** effluent paddocks.*

For Lake Brunner farms, there are most likely two blocks per farm for those that irrigate effluent to land (effluent and non-effluent block).

Outliers

It is important that soil results are representative of the paddock. Data from a sample is discarded when trends indicate the sample is probably not representative. An outlier is defined as a result different by more than 5 Olsen P units from the trend average for a paddock, block or farm. The outlier refers to the result of one sample (made up of 15 cores). The 15 cores do not guarantee that spatial and temporal variation will be completely overcome. There could be at least one outlier per sampling.

If one Management Unit, such as an effluent block, has Olsen P levels above 30, then this should be managed downwards by no application of P fertiliser, or spreading the effluent over a greater area of the farm.

Comment: (this final [deleted] paragraph, is not part of a sampling protocol.)



Greg Sneath
Technical Manager

For and on behalf of ;
Fert Research
New Zealand Fertiliser Manufacturers' Research Association Inc.