BEFORE THE CANTERBURY REGIONAL COUNCIL

IN THE MATTER OF	The Resource Management Act 1991
AND	
IN THE MATTER OF	applications by **D W McAughtrie** filed under **CRC011940** to take and use surface-water at Wairepo Creek for irrigation of 85 hectares at Willowburn Station; and **CRC011939** to discharge irrigation bywash water to Willowburn Swamp.

REPORT AND DECISION OF HEARING COMMISSIONERS PAUL ROGERS,

MICHAEL BOWDEN, DR JAMES COOKE AND EDWARD ELLISON

PART B - SITE SPECIFIC DECISION

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1 INTRODUCTION

1.1 This is a decision on two applications by **DW McAughtrie** (the applicant). It is one of many decisions we have made on 104 applications by various applicants for water permits and associated consents in the Upper Waitaki Catchment.

1.2 The decision should be read in combination with our Part A decision, which sets out our findings and approach to various catchment wide issues that are common to multiple applications. References to our Part A decision are made throughout this decision as appropriate.

2 THE PROPOSAL

2.1 The applicant is seeking replacement consents to take water from an existing water race which flows from Wairepo Creek through the Sutherland's property (Benmore Station). Water will be taken at a maximum rate of 50 litres per second, with a volume not exceeding 421,388 cubic metres per year between map references NZMS 260 H39:701-430 and H39:696-396. This is a change from the volumes originally applied for, as discussed further below.

2.2 The water will be used to irrigate an area of 85 hectares of crops and pasture within the "Top Block" of Willowburn Station, an area that is currently irrigated by k-line irrigation. The locations of the proposed irrigation area, race systems, and the take and discharge points are illustrated in Figure 1 below.

Figure 1: Indicative location plan

2.3 The damming and diversion of water into the race currently occurs under the Sutherland's existing consents CRC940233A and CRC940233B. Water is diverted at a rate of 90 litres per second into the race for the purposes of irrigation. Any unused water continues down the race into Willowburn Station. A condition on consent CRC940233B requires that a minimum of 30 litres per second shall continue through the race at the boundary between Willowburn and Benmore Stations. Therefore, the applicant will have access to a minimum of 30 litres per second and a maximum of 90 litres per second for irrigation and stockwater purposes. There is no

minimum flow on Wairepo Creek for the Sutherland's consent so they can potentially divert the entire creek flow at this point.

2.4 Water will be conveyed from the take point through an existing race system for Willowburn Station. Water will be used for irrigation via a k-line spray system from the top end of the race. Any unused water will be discharged via the race system into Willowburn Swamp at or about map reference NZMS 260 H39:690-346. The maximum rate of discharge will be 85 litres per second. However, this discharge does not occur for much of the year as most of the water is taken and used.

The applications

2.5 There are two separate applications which make up the proposal as follows:

(a) CRC011940 – a water permit to take and use surface water from the water race pursuant to section 14 of the RMA; and

(b) CRC011939 – a discharge permit to discharge surplus irrigation water to Willowburn Swamp pursuant to section 15 of the RMA.

2.6 Consent is required for these activities under the WCWARP and NRRP respectively, as discussed further below.

2.7 Both applications were lodged with the Canterbury Regional Council (the Council) on 28 March 2001. The applications were publicly notified and there were a number of submissions that are referred to later in this decision. The application requested a consent duration of 35 years.

Modifications after notification

2.8 The applicant originally applied to take water at a maximum rate of 85 litres per second and a maximum annual volume of 527,640 cubic metres per year. This volume and rate was subsequently reduced by the applicant to the volumes described above in accordance with the recommendations of the reporting officer.

2.9 The general principle for modifications after notification is that amendments are allowed provided they do not increase the scale or intensity of the activity or significantly alter the character or effects of the proposal. The key consideration is prejudice to other parties by allowing the change. In this case, we are satisfied that the change does not significantly alter the intensity or effects of the proposal and that no party would be adversely affected by allowing the change.

2.10 In addition to taking water for irrigation, the original application also sought to take for stock water supply. However, subsequent to notification the applicants advised that they were no longer seeking consent for stock water and were instead relying on their rights under section 14(3) of the RMA. This was confirmed in the final set of conditions we received from the applicant, which contains no reference to stock water.

2.11 On this basis, we have not considered the issue of stock water in this decision. Any discussion of appropriate take volumes relates to the water required for irrigation purposes only. As discussed in our Part A decision, the applicants retain the ability to take water for stock and domestic use without the need for resource consent, subject to the limits in section 14(3) of the RMA

Related consents and applications

2.12 These applications replace three consents held by the applicant (WTK691631A, WTK691631B and WTK691631C) that expired on 1 October 2001. These consents authorised the diversion, take and use of water from Wairepo Creek (up to 85 litres per second and 51,000 cubic metres per week) for stock and irrigation water and the discharge of surplus water (up to the same limits) into a tributary of Willow Burn. As the applications were lodged 6 months prior to the expiry of the above consents, the applicant is currently operating under s124 of the RMA.

2.13 Willowburn Station has two separate blocks of land – "Top Block" and "Homestead Block". "Top Block" is subject to irrigation under this proposal. However the applicant is also seeking consent (in combination with Ellis-Lea Farms 2000 Ltd and Greenfield Rural Opportunities Ltd) for irrigation of "the Homestead Block" (applications CRC991473, CRC991474, and CRC991475). Our decision on these applications is provided separately.

2.14 In addition to the Sutherland's consent upstream of this application, there are no other consented users of water from the existing race system. However, The Glens property utilise the race for stockwater purposes. The Glens also hold consent CRC012389.2 to abstract water from a man-made race. However, it is a different race system to the one that is the subject of this application.

3 DESCRIPTION OF THE ENVIRONMENT

3.1 Willowburn Station is located adjacent to SH79, between Twizel and Omarama. The farm produces fat lambs, beef cattle, store weaner deer/velvet and grazes dairy dry stock.

3.2 The farm is effectively split into two blocks, "Top Block" and "Homestead Block", both bisected by the Wairepo water race and Willowburn Stream. "Top Block" is subject to irrigation under this application, while the "Homestead Block" is located to the south on the other side of The Glens property.

3.3 The water race passing through the property has no natural inflows other than the diversion from the Wairepo Creek. Native fish and small trout have on occasions been observed in the race, however the erratic flow patterns do not provide good aquatic habitat for fish.

3.4 Willowburn Swamp is approximately 260 hectares in extent. This Carex wetland has slow moving streams and an extensive willow area. Black stilt have been recorded in the area and it is a banded dotterel and marsh crake breeding site.

3.5 Willowburn Station soils are light to medium silt, with water holding capacity of 40 mm to 75 mm. Willowburn Station is 80% rolling flats to very steep, with the Willowburn Swamp in the SE corner. Annual rainfall ranges from 583 mm at the Top Block to 550 mm at the Bottom Block. Summers are very dry. Snow occurs most winters of depths between 100 mm and 500 mm.

3.6 We detailed our site visits in Part A and we do not repeat this information here other than to say we did not go onto the property but were able to view the general command area from State Highway 8.

4 PRELIMINARY MATTERS

Ahuriri Water Conservation Order

4.1 Section 217 of the RMA states that where an operative conservation order exists, a consenting authority cannot grant a water right if the exercise of this permit would be contrary to any restriction or prohibition or any other provision of the order.

4.2 The Ahuriri National Water Conservation Order (AWCO) sets out various restrictions designed to protect the outstanding characteristics and features of the Ahuriri River and its tributaries. Clause 3 of the AWCO requires a catchment management approach and declares that "the Ahuriri River and its tributaries include and provide for outstanding wildlife habitat, outstanding fisheries, and outstanding angling features."

4.3 Given that the water body from which the take will occur eventually flows into the Ahuriri River, this proposal is subject to the requirements of the AWCO. This includes ensuring that the minimum flow levels of the Ahuriri River are maintained and that the "protected waters" are not adversely affected by the discharge of contaminants. For the reasons discussed in the balance of the decision, we are satisfied that the application could be granted without breaching any of the provisions of the AWCO.

5 PLANNING INSTRUMENTS

5.1 As discussed in our Part A decision, there is a wide range of planning instruments that are relevant under the RMA. This includes national and regional policy documents, along with regional and district plans. The key planning instruments relevant to these applications are as follows:

(a) Waitaki Catchment Water Allocation Plan (WCWARP);

(b) Natural Resources Regional Plan (NRRP);

(c) Proposed and Operative Canterbury Regional Policy Statement (CRPS); and

(d) Waitaki District Plan (WDP)

5.2 The provisions of these planning instruments critically inform our overall assessment of the applications under s104(1)(b) of the RMA, as discussed in Section 14 of this decision. In addition, the rules within the relevant planning instruments determine the status of the activities, as set out below.

Status of the activity

5.3 In our Part A decision we provide a detailed discussion of our approach to determining the status of activities. We now apply that approach to the current applications.

CRC011940 – Take and use water (s14)

5.4 This application is listed in Schedule 2 of the Resource Management (Waitaki Catchment) Amendment Act 2004. Section 88A therefore does not apply and the relevant plan for this activity is the operative WCWARP.

5.5 The following rules from the WCWARP are applicable to this application:

(a) Rule 2, clause (1) – This rule is not applicable to this application as the take is from a man-made water race that is supplied with water under an existing consent which has been included in the allocation limits (CRC940233B).

(b) Rule 6 – The activity is within the allocation limit of 275 million cubic metres for agricultural activities upstream of Waitaki Dam. While the instantaneous abstraction rate is not included within the Rule 2 allocation limits as discussed above, the annual volume still needs to be included in the Rule 6 allocations as there is no control on the use of water proposed under this application under the consent to divert water (CRC940233B).

(c) Rule 19 - Classifying rule – discretionary activity

5.6 Overall, the proposed water permit is a **discretionary** activity under Rule 19 of the WCWARP (and TRP) and resource consent is required in accordance with section 14 of the RMA.

CRC011939 – Discharge water (s15)

5.7 This application is listed in Schedule 2 of the Resource Management (Waitaki Catchment) Amendment Act 2004. Section 88A of the RMA therefore does not apply and the relevant plan for determining the status of this activity is the operative NRRP.

5.8 The relevant provisions of the NRRP are as follows:

(a) Rule WQL1 – permits the discharge of water into a river, subject to compliance with a range of conditions

(b) Rule WQL48 – provides for the status of a discharge to water where it fails to comply with any of the conditions in WQL1. Will be classified as either a discretionary or non complying activity, depending on whether it complies with the listed conditions.

5.9 The activity is unlikely to meet Conditions 1 and 3 of Rule WQL1. Therefore the activity falls to be assessed under Rule WQL48. The activity is likely to comply with conditions of Rule WQL48. Therefore, it is classified as a discretionary activity.

5.10 In summary, the proposed discharged is a **discretionary** activity under Rule WQL48 and requires consent pursuant to Section 15 RMA.

Overall status of the proposal

5.11 Based on the above, we have assessed the entire proposal as a **discretionary activity**.

6 NOTIFICATION AND SUBMISSIONS

6.1 Application CRC011940 was publicly notified in the December 2003 "ministerial call-in" and August 2007 with 200 other applications for similar activities in the Waitaki catchment. Application CRC011939 was publicly notified in August 2007 only.

6.2 In the 2007 public notification, a total of 16 submissions were received on CRC011939 with 1 in support, 13 in opposition and 2 neither support nor oppose. A total of 19 submissions were received on CRC011940 with 1 in support, 16 in opposition and 2 neither support nor oppose. 14. In the 2003 "ministerial call-in", a total of 314 submissions were received on application CRC011940.

6.3 Table 1 is based on the relevant s42A reports and summarises those submissions that directly referenced the application. In addition to those listed, there were other submitters that presented evidence at the hearing that was relevant to this application. The relevant evidence from submitters is discussed in more detail later in this decision. Please note that all submissions hold equal importance, even if not specifically listed below.

Table 1. *Summary of submissions on applications CRC011939 and CRC011940*

Submitter	Reasons	Position
A & W Sutherland[2]	Wairepo Creek cannot sustain another 85 L/s take. Submitter holds consent to take 85 L/s already.	Oppose
Fish & Game NZ[1, 2]	Important to consider Ahuriri catchment flows and importance for habitat for Lake Benmore trout.	Oppose
Meridian Energy Ltd[1, 2]	Concerned about water quality, metering and reasonable use	Oppose
Department of Conservation[1, 2]	High proportion of flow in creek to be taken, potential effects on instream ecosystems, fish screens, water quality.	Oppose
Canterbury Aoraki Conservation Board[1,2]	Consent duration, runoff control in terms of water quality, potential effects on instream ecosystems, natural character of water bodies, and landscape.	Oppose
B Hutton[2]	Need to protect smaller streams from irrigation extraction, should be from canals and larger water bodies	Support
S A Ross[2]	Consents should be granted	Support
J J Ryan[2]	Long-standing water right should be continued to allow for pastoral development	Support

[1] August 2007 [2] Call-in 2003

6.4 Overall, the key effects of concern to submitters include effects on: ecosystems, water quality, allocations, minimum flows, natural character and landscape, efficiency and cultural values.

7 THE SECTION 42A REPORTS

7.1 A section 42A report on the application and submissions was prepared by the Council's Consent Investigating Officer, Ms Clare Penman.

7.2 The primary report was supported by a number of specialist s42A reports prepared by Messrs Heller, Hanson, Glasson, McNae and Stewart, and Drs Schallenberg, Clothier, Meredith and Freeman. The key issues addressed by these reports were cumulative water quality effects, landscape effects, and environmental flow and level regimes.

7.3 All reports were pre-circulated in advance of the hearing. We have read and considered the content of the reports and refer to them as relevant throughout this decision. Specific points noted from the s42A report are summarised below.

7.4 Mr Christopher Glasson, the Council consent investigating officer, who dealt with landscape issues, placed this application site within his Landscape Unit 4 – Quailburn and Landscape Unit 6 – Omarama. The bulk of the application site was however in Landscape Unit 4 – Quailburn.

7.5 He provided us with a description of Landscape Unit 4 – Quailburn, noting it is characterised by the highly legible geomorphic processes that have shaped its formation. He told us that rolling moraine, tarns, wetlands, streams, and areas of red- and hard-tussock and matagouri are common elements in this landscape.

7.6 He did note the significance of this landscape is that it is a foreground to the panoramic views of the Neumann and Ben Ohau Ranges, though which many tourists and recreationists pass on route to the Ruataniwha Conservation Area and the Ohau ski-field in Central Otago.

7.7 He did note that modifications to this Unit 4 include those associated with farming operations, such as shelter belts, fences, farm dwellings, and irrigated areas adjacent to State Highway 8.

7.8 Mr Glasson noted the Landscape Unit (4) is moderately visible from Quailburn and Lake Ohau Roads, and the easterly part of the Unit is highly visible from State Highway 8. It was his opinion that the Unit given it has high to moderate visibility and high naturalness is very sensitive to change, with low absorption capacity. He noted this was especially true for the hill slopes, wetlands, and rolling downlands where potential irrigation sites could have significant adverse landscape and visual impacts.

7.9 In terms of this landscape unit he noted that the original application had been amended so as to reduce some landscape and visual effects. However, he still held concerns caused by the close proximity of the site to the Quailburn Road, making the site clearly visible. He also held concerns about the proposed area being located in an OLA in terms of the Waitaki District Plan and on lower hill slopes that are highly visible from State Highway 8. If this were to be the case Mr Glasson concluded that adverse effects were significant. He noted that no mitigation measures had been proposed.

7.10 It was Mr Glasson's opinion that if irrigation was removed from the lower hill slopes and the OLA and if there was a 300 m buffer free of irrigated land along the Quailburn Road, then the effects would be of moderate level.

7.11 It appeared to us that while Mr Glasson in his main report (Report #5) referred to application number CRC011940, he was in fact considering not only the McAughtrie application but also considering the McAughtrie Ellis-Lea Farms and Greenfield Rural Opportunities Limited's application, which are farms immediately adjacent to the irrigation site that is the subject-matter of this proposal. We will return to this point later.

7.12 For the water permit application (CRC011940), Ms Penman was not satisfied that the actual and potential effects of the proposed activity were acceptable. In particular there were a number of outstanding matters that would need to be addressed at the hearing. They were:

(a) Water quality – There was no impact assessment or measures to address the water quality impacts that could arise from irrigation at this site. Given the conclusion of the Councils water quality experts regarding the potential cumulative adverse effects on water quality, she was of the opinion that it was premature to make any recommendation to grant or refuse this application as it related to cumulative water quality;

(b) Efficient & reasonable use – Ms Penman considered that there was a lack of conclusive information to support the annual volume requested in accordance with the direction provided by Policies 15-20 of the WCWARP;

(c) Cultural values – The applicant had not provided any assessment on cultural values and there were outstanding submissions from runanga in opposition to this proposal.

7.13 Ms Penman recommended conditions to address (b) above. However she was not satisfied that the actual and potential effects of the proposed activity were acceptable due to concerns regarding effects on water quality and cultural values, or that the proposal was consistent with the relevant plan provisions.

7.14 For the discharge permit application (CRC011939), Ms Penman was satisfied that there were no outstanding adverse effects of the proposed activity that have not been addressed through appropriate mitigation measures. She was satisfied that the actual and potential effects of the proposed activity are acceptable and the application could be granted.

8 THE APPLICANT'S CASE

8.1 Legal counsel for the applicant, Ewan Chapman, presented opening submissions and called the following witnesses:

(a) Ms Keri Johnston - Chartered Engineer

(b) Mr Andrew Craig – Landscape architect

(c) Mr Robert Batty – Planner

(d) Mr Andrew McFarlane – Farm Management Consultant

Opening legal submissions

8.2 The applicant is part of the Upper Waitaki Applicant Group (UWAG), as described in our Part A decision. Mr Ewan Chapman presented comprehensive opening legal submissions on behalf of all UWAG applicants. He said that said that there may be matters of a specific legal nature relating to certain applications and those issues will be raised when the specifics of the applications were discussed in closing.

8.3 Mr Chapman told us that UWAG represents some 72% of all applicants for water takes. This equates to 31% of the total water volume applied for (excluding stock water and non-consumptive diverts) and 29% of the total irrigable area.

8.4 He also told us renewal consents applied for by the UWAG members represent some 88% of all renewal applications. For these renewal applications, Mr Chapman emphasised that they need not rely on modelled scenarios undertaken in the WQS. He contended their effects were known and form part of the existing environment. Thus he said we would need to evaluate these applications in a different scientific context than new irrigation development.

8.5 Mr Chapman emphasised that despite the collective approach adopted for these hearings, each application needs to be considered in isolation from others (allowing for priorities). However Mr Chapman noted that UWAG is not producing any other evidence to support its own assessments of cumulative effects and adopts the MWRL evidence to the extent that it defines nodal thresholds.

8.6 While raising some challenge to the outcomes of the mitigation measures proposed by MWRL resulting from the WQS study, Mr Chapman told us that the UWAG members were not presenting their case to say that they cannot or will not meet an area-based NDA threshold. To the contrary, he said that we would be shown that they have taken the model and applied it to all properties and will, with mitigation, meet the thresholds.

8.7 Mr Chapman then addressed us on the issue of allocation of assimilative capacity. Relevantly, for this application in terms of the Ahuriri, he told us the assimilative capacity is exceeded. He contended the approach taken by MWRL that essentially resulted in some farming units mitigating for the nutrient loss of other farming units, was inappropriate. He submitted a more appropriate method of allocation is on the basis of productive use of land. The productive use of the land he said represents the level of nutrient discharge of each farming unit and that should be used; and that the method of allocation based on dividing allocation on a per hectare basis should not be utilised.

8.8 He submitted that by assessing allocation of assimilative capacity on the basis of productive land use to reflect the NDA for each unit, these methods would be more representative and realistic of the nutrient discharge of each farming unit.

8.9 In terms of conditions concerning the nodal approach, he told us the essential issue lies with pinpointing who is exceeding their NDA if exceedances are detected at the nodal point. He told us the UWAG applicants' preference is for on-farm management of total nutrient discharge and annual auditing of individual FEMPs. He then referred us to a draft condition from the Rakaia Selwyn groundwater zone hearing, noting it was a very much site-specific condition.

8.10 He submitted that on-farm monitoring should be favoured over monitoring at nodal points. He said this did bring in the practicalities of the purpose of employing the FEMP with the result that if a breach of the FEMP occurs, the consent authority would have control to enforce the conditions of the consent against the individual applicant. It also reflects the reality that each farm will be different depending on the type of activity that is undertaken on that farm with their individual tailored farming management practices.

8.11 Mr Chapman also said that UWAG had not tabled a final set of conditions or final farm management plans. These matters would be worked through and provided to all parties as the hearing progressed. UWAG was of the view that one suite of conditions was inappropriate. There were variables between sub-catchments, take points, and the "type" of consent applied for which would mean that individual conditions would need to be worked through.

8.12 In a supplementary submission (21 October 2009) Mr Chapman addressed us on the subject of renewals, and more particularly "Are there further effects to be assessed on renewal?" Clearly, he said, that is a matter of fact and degree. He did note that we were under no obligation to automatically consent to a renewal and that we were fully entitled to assess the effects of the take on the surrounding environment, and that we were required to assess the efficiency levels of a renewal application.

Ms Johnston

8.13 Ms Johnston described the proposal covering many of the matters we have outlined above. We do not repeat those matters here.

8.14 Ms Johnston said that the part of the property that this application related to was currently irrigated using k-line irrigation from a water race fed from the Wairepo Stream. A mobile pump system was used to vary the point of take from the water race within the area irrigated by this consent. However, of late, the applicant had made use of a holding pond immediately downstream from where water enters the property, to enable water to be collected and then used from there. The pond was entirely below ground.

8.15 In October 2006, an annual volume of 935,000 cubic metres per year for irrigation purposes was proposed but as a result of discussions with Meridian Energy Ltd regarding derogation approval, this was amended to 516,800 cubic metres per year. At a later date the rate of take was further reduced from 85 L/s to 50 L/s, and the irrigation annual volume from 516,800 cubic metres per year to 421,388 cubic metres per year.

8.16 At a site visit to the property in December 2008 Ms Johnston and Ms Penman concluded that a minimum flow was not needed. The diversion of water into the race is controlled by the Sutherland's consent and the water race is purely a conveyance channel to get water from Wairepo Stream to the applicant's property. However the applicant proposed to accept the minimum flow for the Wairepo Stream as defined in Table 3 of the WCWARP.

Water Source

8.17 The water race has no natural inflows other than the diversion from the Wairepo Creek. It was Ms Johnston's opinion that the flow patterns of the race do not provide good aquatic habitat for fish.

8.18 Ms Johnston said that the Willowburn Swamp was a Carex wetland of approximately 40ha. It consisted of slow moving streams and an extensive willow area.

Effects on other water users

8.19 Ms Johnston said that this was the renewal of an existing water right and a reduction on the rate and volume previously authorised was being sought. This take does not affect any Table 3 WCWARP allocation limits. The 90 L/s which Sutherlands were able to divert into the race from Wairepo Stream was already included in the Table 3 allocation for the Wairepo Stream. This application was not a separate allocation.

8.20 Mitigation was proposed by restricting the rate of take and volume per week. Ms Johnston also said that the applicant needed to ensure continual flow for their own stock water use downstream as well. Given this, effects on other users were considered by Ms Johnston to be minor.

Effects on ecosystems

8.21 Ms Johnston said that the diversion of water from the Wairepo Stream was controlled by the Sutherlands, who were required to cease diversion when the flow at the boundary of the two properties was at or below 30 L/s. The applicant's available water was completely controlled by the amount diverted and then taken by Sutherlands. If no water was being diverted, none could be taken by the applicant.

8.22 Ms Johnston believed the race supported little or no in-stream values as its flows were highly variable depending on the amount of water being diverted into the race system, and at times, can be dry.

8.23 She also said that the applicant uses a mobile pump system and the suction pipe was already screened to prevent fish from entering the irrigation system, and in her opinion this was sufficient because of the limited ecosystem values or potential of the race.

8.24 Ms Johnston considered the effects on in-stream values to be minor.

Effects of inefficient water use

8.25 Ms Johnston said that the proposed irrigation annual volume 412,388 m^3/year had been determined using Schedule WQN9v2 of the NRRP, based on a land use of mixed (cropping, and pasture for fattening sheep and beef cattle) for 85 ha within a command area of 170 ha. The proposed application depth of 20 mm per return period was less than 50% of the water holding capacities expected.

8.26 Ms Johnston also stated that the proposed stock water annual volume 10,840 m^3/year had been determined using Schedule WQN11 of the NRRP.

8.27 Ms Johnston said that in accordance with Policy 16(c) of the WCWARP, no more than 50% of the water holding capacities of the soils would be applied.

8.28 Regarding Policy 19 of the WCWARP which encouraged the piping and/or sealing of distribution systems Ms Johnston said that the race had been in place for over 40 years, and was now well sealed, and race losses had been assumed to be zero.

8.29 Policy 21 of the WCWARP required all water takes to be metered. To ensure that this application was consistent with this policy, Ms Johnston said the applicant proposed to meter their take.

8.30 It was Ms Johnston’s opinion that effects of inefficient water use would be minor.

Water Quality

8.31 Ms Johnston said that the calculated nutrient mitigation requirement of the receiving environments determined in the MWRL Study has identified an N and P threshold for each property.

8.32 OVERSEER® has been run by a qualified person to model the N and P outputs from the proposed farming system. The results of the model have been incorporated in to the table below. Ms Johnston said that the following table shows that the applicant can meet the property thresholds proposed by the MWRL study.

	Nitrogen Threshold (kg/farm)	Phosphorous Threshold (kg/farm)
MWRL Water Quality Study Property Thresholds	6,584	156
OVERSEER® outputs	6,452	77

8.33 Ms Johnston told us that the applicant is committed to implementing the "Mandatory Good Agricultural Practices" set out within the FEMP. Implementing these practices will ensure that the OVERSEER® results are validated. This along with ensuring that the property thresholds of the

WQS (set out in the table above) are not exceeded would ensure that the cumulative effects of the use of water for irrigation on water quality are no more than minor.

8.34 Whilst the applicant is within their property thresholds, the MWRL Study identified that the applicant still had to consider specific on farm effects and the impacts these activities could have on the local receiving environment. This requires a specifically developed Farm Environmental Management Plan (FEMP) to identify and implement appropriate mitigation measures.

8.35 At a workshop held in Twizel in August 2009, the applicants met with Ms Melissa Robson of GHD Limited. A "desk top" on farm risk assessment was undertaken. This is considered to be the "starting point" of the FEMP.

8.36 The workshop identified potential on farm risks specific to each farm along with possible mitigation measures. The on farm risks identified during the desktop risk assessment need to be verified by an appropriately qualified person who has carried out a site visit. It is anticipated that this will occur should the applications be granted. For this property, the following potential risks were identified:

(a) Evidence of erosion

(b) Runoff from winter feed crops

(c) Laybacks from waterways from fertiliser application

(d) Track runoff - check

(e) Willowburn Stream and Swamp

(f) Fencing off water ways

8.37 The applicant committed to carrying out a full on farm risk assessment, proposing mitigation, monitoring and auditing will occur within 12 months of the commencement of the consents (as these applications seek renewal of existing activities), and this has been proposed as conditions of consent. All risks will be addressed in a FEMP.

8.38 We note that that the full farm environmental risk assessment (FERA) was subsequently carried out and incorporated within the final FEMP tabled on 1 April 2010. We have audited the FEMP in our evaluation of effects (section 12).

8.39 Ms Johnston concluded that given that the N and P thresholds from the MWRL Study can be met, and the applicant's commitment to addressing on farm risks with the implementation of the FEMP, she considered that the effects of the use of water on water quality for both the local receiving environment and cumulative effects would be minor.

Effects on people, communities and recreational value

8.40 The activities all occur in a rural setting, where the dominant land use is pastoral farming. Given that the proposed activities all occur on private farmland; Ms Johnston considered that the use of water is unlikely to adversely affect amenity values.

8.41 Ms Johnston told us that the WCWARP sets an annual allocation "cap" for agricultural and horticultural activities within defined areas (Table 5). The applicant has proposed an annual allocation limit for their own resource consents for the use of water, as well as implementing Farm Management Plans, which require existing irrigation systems to be audited and improved where possible, and new systems to be designed and installed by accredited personnel, and implementing initiatives to ensure that water is used wisely.

8.42 Ms Johnston said that the primary objective of an annual allocation is to ensure that the water is used efficiently and effectively for the land use, soil type and climatic conditions. The applicant has proposed an annual volume that is considered to reflect reasonable and actual use and this is within the allocation limit defined by Table 5. Ms Johnston also noted that the allocation limits set in Table 3 of the WCWARP do not apply to this application as water has already been diverted by another consent holder prior to it being able to be used by the applicant.

8.43 Therefore, given the applicant's commitment to ensuring efficient use of water on their property, and that the take is within allocation limits, Ms Johnston considered that effects on people and communities will be minor.

8.44 On the issue of landscape, Mr Johnston referred to and relied on the evidence of Mr Andrew Craig, which is discussed further below.

Effects on Tangata Whenua Values

8.45 Ms Johnston noted that Te Runanga O Ngai Tahu submitted on all applications in the catchment, seeking that all applications be declined. The primary reasons for this in her view were that the applications were considered to be inconsistent with the policies and objectives of the WCWARP, and also at odds with the cultural objectives of the RMA.

8.46 Ms Johnston said that this application is entirely within the limits defined by the WCWARP. However, she acknowledged that Te Runanga O Ngai Tahu have a significant relationship with the Waitaki Catchment, and as such, appropriate minimum flow conditions, and management of water quality effects, is proposed by the applicant to ensure that the potential effects on the environment, including tangata whenua values are minor.

Comments on Submissions

8.47 Ms Johnston noted that derogation approval has been obtained from Meridian Energy Ltd. The applicant will install a flow meter, and has provided mitigation to ensure that effects on water quality are minor.

8.48 In relation to the submissions of Fish and Game and the Department of Conservation, Ms Johnston commented that these relate to the Wairepo Stream, and not the water race from which the applicant abstracts.

Effects of discharge

8.49 Ms Johnston said that Willowburn Swamp is a marshy area and was well established, making it less subject to erosion. She also noted that the discharge has been occurring since the early 1950's without any adverse erosion to Willowburn Swamp, and the discharge would continue to operate in the same way as it had historically, with no increased frequency.

8.50 Ms Johnston considered the flood carrying capacity and erosion effects of the discharge would be minor.

8.51 The water that was discharged into Willowburn Swamp was excess water that was diverted. It was un-used (i.e. it has not been used for irrigation prior to the discharge occurring) and therefore, it was of the same quality as that being diverted, and therefore, the quality of water in Willowburn Swamp is unaltered.

8.52 Ms Johnston considered the, effects on water quality and ecosystems were minor.

8.53 Ms Johnston said that the discharge had been occurring for a number of years without any complaint from other users.

8.54 Ms Johnston said that as the quality of the water being discharged into Willowburn Swamp is unaltered from the quality of water being diverted from the Wairepo Creek, there was no effect on other users, or amenity values.

Landscape Evidence

8.55 Mr Andrew Craig a Landscape Architect said that the application site was not located in an area identified as a high natural character water body in the WCWARP. And nor was it subject to any other overlay that had the potential to affect landscape outcomes.

8.56 Mr Craig said that Mr Glasson observed that the application site was already modified through irrigation activity, but was nonetheless highly visible from SH8 which runs alongside it. Despite this, he concluded that the landscape had low sensitivity due to existing irrigation activity. The backdrop hills were identified as being outstanding natural landscape in the Waitaki District Plan, and were therefore sensitive to change. Mr Craig said Mr Glasson also noted that the shape of the application site along its north and west boundary is incongruous with the hill country, with

low capability to absorb effects in such terrain. He concluded that hill country irrigation would generate significant adverse effects and because of this recommended that irrigation was confined to the flats.

8.57 Mr Craig said that he generally agreed with Mr Glasson's observations and conclusions. Concerning the extent of irrigation, Mr Craig said that he had been advised by Mr McAughtrie that the area to be irrigated subject to this particular consent application was located on flat land parallel to SH 8 along a relatively narrow strip. Therefore no hill country would be irrigated and thus no adverse effects generated.

Mr Robert Batty, planner

8.58 Mr Batty addressed us in relation to planning issues. He set out his broad view as being:

(a) whether or not granting any of the applications before us, including this application, would undermine the operational integrity of the WCWARP, regional plans and district plans;

(b) whether cumulative effects would arise from a grant;

(c) whether grants would promote reasonable efficiencies and sustainable management of the natural and physical resources concerned; and

(d) whether the grant of consent would derogate from any other consent.

8.59 He was critical of the section 42A officers' collective approach and suggested each application needs to be considered on its own merits. A move away from the generic approach of the reporting officers was required, he said, to enable a proper analysis of each application to occur.

8.60 He supported Mr Kyle's planning analysis on behalf of MWRL and he set out for us relevant policies and objectives in the district and regional plans. In conclusion, he was of the view that granting this consent and all other UWAG consents was appropriate.

Mr Andrew Macfarlane, farm management consultant

8.61 Mr Macfarlane is a farm management consultant with 29 years experience. He provided us evidence on behalf of all of the UWAG applicants.

8.62 He assessed the viability of the farm management plans and practicality and robustness of the mitigation measures and the ability to monitor progress.

8.63 He discussed a range of mitigation measures that had been examined and/or adopted by the UWAG farmers to deal with discharges from their properties consequent upon irrigation.

8.64 Mr Macfarlane also discussed with us the costing of various typical irrigation developments.

8.65 He considered on-farm monitoring, noting that on-farm monitoring had lifted in its intensity and in detail over the last 10 years, being driven by economic returns and a need to prove environmentally sustainable methods were being utilised. Overall, he held a high degree of confidence in progress concerning the ability to monitor and interpret interfaces between environmental science and management.

8.66 He raised with us the advantages of reliable availability of water and pointed out for us the benefits of irrigation, noting that while generally irrigation typically only represents a small part of the total farm area, but it does result in high productivity increases with a resultant favourable impact on economic viability of farming operations. He concluded with the correct planning, management and monitoring any negative environmental impact of intensification of a small area would lead to positive environmental outcomes on the balance of the property. It was his view a net positive balance was certainly possible.

9 SUBMITTERS

9.1 Set out below is the summary of the issues raised by submitters who appeared before us. We emphasise that we have read and considered all submissions made, both in support and in opposition to the application, as well as reviewing and carefully considering evidence advanced

before us. The majority of submissions on water quality were made with respect to catchment-wide issues and are reported in Part A.

Fish & Game

9.2 Mr Scarf (on behalf of Fish & Game) said that much of his misunderstanding about the Wairepo surrounds the status of the Benmore Station Diversion whereby water had historically been diverted from the Wairepo upstream from the homestead, around behind the homestead and into the headwaters of the Willowburn catchment. With the introduction of the Benmore Irrigation Scheme which takes 4 m^3/s from the Ohau for irrigation of some 4000 ha (including land to be irrigated under applications CRC011940 and CRC991473), any requirement to continue diverting water from the Wairepo into the head waters of the Willowburn for irrigation purposes would, he would had thought, been rendered redundant.

9.3 Mr Scarf then said that if the Benmore Scheme does not or cannot service the areas concerned then that scheme's consent (CRC981619.1) needed to be varied to reflect that change in either allocation or application area. He did not support multiple source takes or what is typically referred to as 'double dipping'.

9.4 He also noted that Ms Penman exempted application CRC011940 from any compliance with the Wairepo Stream minimum flows on the basis that the take was from an existing race for which W H and A J Sutherland hold the necessary consents to take. If that was the case, he questioned the need for this application. Was it to extend the authority of the Sutherland consent and if so then he would have thought a variation to that consent would be more appropriate.

Tangata Whenua

9.5 Mr Horgan told us that Ngai Tahu had taken a balanced approach when assessing the applications and resisted the temptation to simply oppose all applications in their entirety. More particularly, Ngāi Tahu has generally placed its emphasis upon the new (rather than replacement) consent applications and those that will result in large scale land use intensification, rather than the taking of water so as to provide security of supply for existing farming operations.

9.6 Mr Horgan told us that Ngai Tahu had adopted two focal points against which they assessed the applications; the Ahuriri Delta was one of these as it would be one of the most acute receiving environments for the discharge of nutrients from the irrigation proposals. He told us it was also an area where Ngai Tahu proposes to undertake mahinga kai habitat restoration.

9.7 Mr Horgan told us that provided the smaller applicants carry out appropriate riparian planting and fencing and undertake not to significantly increase the intensity of their farming operations, then Ngāi Tahu were not opposed to the granting of consent.

Meridian Energy Limited

9.8 Mr Richard Turner provided us with a brief of evidence in relation to individual applications on behalf of Meridian.

9.9 In short, Meridian held concerns in respect of cumulative water quality effects that could eventuate in a range of areas, which he identified for us. This application was one of the applications of concern to Meridian on the basis of cumulative water quality effects. We discuss water quality effects in detail subsequently.

9.10 Mr Turner in his brief of evidence also set out for us views around MIC applicants in terms of the MIC agreement and identified for us those applicants that were not complying with derogation approval at the time he presented his brief of evidence to us. This applicant insofar as derogation approval was relevant to it was not mentioned within his list.

9.11 Mr Turner addressed us on consent duration for replacement applications. He told us that Meridian is seeking through agreed consent conditions with MIC, that MIC applicants are not granted consent for a term longer than the expiry date for the resource consents for the Waitaki power scheme. He did note that Meridian had not made comment through its submissions or evidence to date on the appropriate maximum term of consent for any "pure" replacement applications.

9.12 He did however rely upon Mr Gimblett's evidence in respect of an appropriate duration of consent for replacement applications.

9.13 He also asked us to note that we should give particular consideration to the potential cumulative water quality effects associated with the current application and the need to re-evaluate the water quality effects in the future to determine whether or not the prediction of effects were or are, in fact, accurate.

9.14 A further point Mr Turner addressed us on was the issue of compliance with subcatchment nutrient thresholds. Meridian supported the approach that if monitoring at the subcatchment nodes exceeded 75% or if 100% of the threshold for the subcatchment was established that all consent holders take appropriate action to deal with cumulative effects if they occur in the river and lake subcatchments.

9.15 He disagreed with Mr Chapman and Mr Batty (for UWAG) when they suggested that monitoring at the subcatchment nodes should occur but that those nodes should not be used to assess compliance. He noted Meridian did not support the UWAG approach because if the threshold limits were exceeded at the subcatchment nodes it would seem that cumulative effects could occur at the subcatchment nodes but none of the applicants could be or would be held accountable to remedy the situation. In Mr Turner's view it was imperative that consent holders are required to comply with their on-farm nutrient discharge allowances and the threshold limits at the subcatchment nodes.

Mackenzie Guardians – Ms Di Lucas

9.16 Ms Di Lucas on behalf of Mackenzie Gardens provided us with a broad ranging brief if evidence, much of which we have already commented upon in Part A.

9.17 In terms of this particular "take" application, she identified it as being within her Ahuriri System. Within her written evidence the application did not receive any attention. In her graphic materials she identified the site as Site 30.

9.18 Quite possibly because it is categorised in her evidence as an existing activity, she did not give it any great attention. Nevertheless, we adopted the standpoint that Mackenzie Guardians were opposed to this grant.

9.19 We note when Ms Lucas undertook the analysis contained within her attachments, the site did "register" as a geo-preservation site. We think this is because of the existence of the wetland on the site. In terms of her Attachment 14, the site did not "register as having significant viewing values". In terms of her Attachment 15 where she assessed natural landscape rating with 1 being the highest and 5 the least, as we understood her Attachment 15, Site #30 was a mix of 1 through to a composite category 2-5. Her Attachment 16 detailed significant portions of Site 30 as being developed. In terms of her Attachment 17, Site 30 was visible particularly from State Highway 8. Her Attachment 32, being an aerial photomap, did set out the level of irrigation development on Site 30 and also immediately opposite Site 30 bordering State Highway 8. A number of centre pivot irrigator "circles" were evident from her Attachment 32.

9.20 Her Attachment 32A detailed the geo-preservation land. This submitted that the geo-preservation land on her Site 30 was separate and distinct from the irrigation area.

9.21 Her schedules attached to her evidence detailed Site 30 within the Ahuriri System. She noted the activity was existing and in terms of her natural landscape rating, she provided it a rating of 3. Her recommendation was to remove irrigation off slopes and that the applicant should provide a landscape plan.

Mackenzie Guardians – Dr Susan Walker

9.22 We note that Dr Walker gave comprehensive evidence on the cumulative effects of irrigation on vegetation on the Mackenzie Basin. This evidence is discussed in Part A. Her evidence being Basin-wide included that a more in-depth investigation of the individual sites was required. However, she did loosely provide us with Attachment 15, which container her more particularised reviews in respect of each site.

9.23 In terms of her assessment as per Attachment 15, Dr Walker assessed McAughtrie CRC00939, by which we take to mean CRC011940, as being 66% converted of the entire site. She considered that the potential effects of irrigation on terrestrial biodiversity were least. She noted that the

site was partly developed but she considered there was little information on terrestrial values. We assume that she took into account the entire land area of the site when she reached her estimate of percentage converted. It would seem to us the 66% she arrived at would equal the available area of flatland on the proposal site.

10 UPDATES TO THE SECTION 42A REPORTS

10.1 Ms Penman under 'additional matters or amendments identified throughout the hearing, reported that Mrs Johnston had noted that there is an existing fish screen of 5 mm mesh on the pump intake, but has not provided any further details of this screen. Ms Penman recommended an amended fish screen condition requiring a 5 mm mesh be retained.

10.2 Ms Penman in her addendum summary said that the applicant had provided more information on the impacts on ecosystems and efficient and reasonable use, and it appeared to her that these impacts may be adequately mitigated by the implementation of appropriate conditions. She also said that there were outstanding matters regarding water quality that had not been resolved.

10.3 Ms Penman agreed with Mrs Johnston that there was no merit in metering the discharge.

10.4 Mr Glasson in his addendum report after considering the assessment undertaken by Mr Andrew Craig disagreed with Mr Craig that no mitigation measure is required. Mr Glasson remained concerned that the site was located very close to State Highway 8 and there should also be a 300m buffer along Quailburn Road so as to protect the landscape and visual values. Mr Glasson noted the site layout had been amended so that the hill country and OLA was no longer included in the development with irrigation being restricted to the flat land on the subject site.

11 APPLICANT'S RIGHT OF REPLY

11.1 As for his opening, Mr Chapman's right of reply was presented on behalf of all UWAG members. However he also provided some specific comment on individual proposals.

11.2 In relation to this particular application, Mr Chapman said that conditions regarding specifying 5 mm mesh size on the fish screens were accepted.

11.3 Mr Chapman also explained that this take had not been included in Table 3 allocation as it was water that was diverted by the Sutherland consent on Benmore Station at a rate not exceeding 90 L/s. McAughtrie's take was from the residual flows required to be left as part of that consent. However, it was still included in Table 5. McAughtrie had no ability to control the rate of take or volume taken and that counting both McAughtrie and the Sutherlands' take under Table 5 would effectively be double counting.

11.4 Turning to more general comments, Mr Chapman challenged Dr Freeman's Table 5, contained within his first addendum report dated 12 January 2010. Mr Chapman contended the list was flawed because applications are placed in the red category solely by virtue of their location within the Ahuriri Catchment. Mr Chapman considered the correct approach for the ranking of the applications was to determine where they sit in relation to the existing environment.

11.5 He noted there had been much emphasis on nutrient management but he contended we should also be considering sustainability of the erosion-prone fragile soils within the catchment. He also submitted we should take note that district plans encourage farming, including irrigation, within these environments; and the tenure review undertaken by the Crown encourages intensification of land use retained in freeholding ownership in order to release more vulnerable pastures to be set aside under Crown ownership.

11.6 He also contended we should consider economic implications on the survival of these farms given their investment in infrastructure as a factor. He also noted we should take into account managing the land in light of weed and pest problems and how irrigation assists in that regard.

11.7 Mr Chapman addressed us on the MWRL proposition in terms of the Ahuriri River, namely a needs plus a buffer approach. Mr Chapman made it clear that the UWAG applicants in the Ahuriri, which includes this application, at the time of reply had only just received information relating to each individual farm's NDA, but noted this approach was of critical concern.

11.8 In terms of staging of implementation, Mr Chapman told us that undoubtedly those UWAG applicants, this applicant among them, may choose to stage the introduction of a new system of irrigation.

11.9 We did subsequently receive from Mr Chapman generic conditions and revised FEMPs applicable to all the UWAG applicants.

Mr Andrew Craig

11.10 We received additional evidence from Mr Andrew Craig assessing this particular application site. Attached to that evidence were photographs.

11.11 What we found confusing was that Mr Craig in his further evidence referred to pivot irrigation being prevalent within the receiving environment.

11.12 He noted in particular that the current irrigation activity, including the presence of pivots, is apparent on the application site and he provided photographs of the same.

11.13 This differed from the other evidence received from the applicant, which was to the effect that k-line irrigation was the method or form of irrigation that was to occur on the site.

11.14 The approach we took to our landscape assessment was to accept the evidence of the applicant's consultant when she described the form of irrigation being k-line. We have carried this approach through to conditions where we have stipulated that the method of irrigation will be way of k-line as opposed to pivots.

11.15 It could simply be that Mr Craig has the matter confused as there are other applications related to the application now being considered. In addition, there are pivot irrigators immediately on the opposite of State Highway 8.

11.16 In reaching our conclusions on landscape and amenity effects we have relied upon the applicant's consultant's evidence that irrigation would occur by way of k-lines and not pivots.

12 STATUTORY CONTEXT

12.1 The relevant statutory context for a **discretionary** activity is set out in detail in our Part A decision. In accordance with those requirements, we have structured this evaluation section of our report as follows:

(a) Evaluation of effects

(b) Evaluation of relevant planning instruments

(c) Evaluation of other relevant s104 matters

(d) Part 2 RMA

(e) Overall evaluation

13 EVALUATION OF EFFECTS

13.1 Drawing on our review of the application documents, the submissions, the Officers' Reports, the evidence presented at the hearing and our site inspection, we have concluded that the effects we should have regard to are:

(a) Visual and landscape effects;

(b) Water quality;

(c) Effects of discharge;

(d) Inefficient water use;

(e) Effects on ecosystems; and

(f) Tangata whenua.

Visual and landscape effects

13.2 In listening to and considering on a number of occasions Mr Glasson's written materials and having close regard to his photographic supplement it appears to us that the assessment her undertook was an assessment not only of this particular proposal but also the proposal relating to D W McAughtrie, Ellerslie Farms and Greenfield Rural Properties for which we have issued a decision under CRC991473-74-75.

13.3 We reached this conclusion because Mr Glasson in his evidence in relation to this application considers there should be a 300m buffer along Quailburn Road. This proposal does not abut Quailburn Road but does run alongside State Highway 8.

13.4 The other critical point in the evaluation of landscape effects is that the applicant here is seeking to renew an existing consent. The activity therefore has been occurring on site for some significant period of time.

13.5 In his right of reply Mr Chapman did take issue with Mr Glasson's approach when Mr Glasson told us that his mitigation measures principally including buffering was seen by him as a form of trade-off or set-off for the right to continue irrigating activities.

13.6 Mr Chapman contended this did not pay proper regard to the existing environment nor did it pay proper regard to the relevant provisions of the district plan which provided for agricultural farming activities including irrigation.

13.7 We do note that this particular proposal is immediately alongside State Highway 8. On the opposite side to the application site there is already irrigation in place. This is evidenced in our Figure 1.

13.8 We do appreciate that notwithstanding this proposal is a replacement consent we do have the ability to decline consent.

13.9 Mr Glasson does not seek a decline but he seeks a mitigation measure namely a buffer along the State Highway,

13.10 We in our assessment have concluded that a separation distance would not be overly useful in terms of any mitigating value. We say this because in this instance the form of irrigation will be via a K line spray system from the top end of the race. This is in contrast to the activity occurring on the opposite side of State Highway 8 which appears to us to be by way of pivot irrigator.

13.11 The K line method of irrigation is we consider very unobtrusive in terms of impacting upon views. Also we consider the site is relatively small so the time at which a view can be taken as a motorist drives past on State Highway 8 will be minimal. For these reasons we prefer the approach recommended by both Mr Craig and Mr Chapman.

13.12 We conclude then in terms of our evaluation of visual and landscape effects that given the small area of irrigation and given the method of irrigation, namely K line, we are satisfied that if consent is granted with conditions that the impact of the proposed irrigation in terms of visual and landscape effects will be no more than minor.

13.13 We refer again to the comments we have made earlier in terms of Mr Craig's addendum reference where he refers to pivots. We make the point our assessment is based on K-line and not pivots being utilised for spray irrigation.

Water Quality

13.14 The applicant has been involved with the study by MWRL on cumulative effects within the catchment. Within Part A of this decision we have reviewed the MWRL study and our findings have been taken into account in our consideration of this application.

13.15 In Part A we rejected the MWRL proposition that all consents sought in this hearing could be granted (with conditions) and without causing cumulative water quality effects. It is incumbent upon us, therefore, to consider (as far as is possible) whether granting this application, in combination with other water permits we grant, will lead to unacceptable water quality effects. In

this case it means considering the potential effects of granting this application (in combination with others we grant) on:

(a) The Ahuriri Arm of Lake Benmore

(b) Groundwater chemistry and in particular the proposed threshold of 1 mg/L NO_3-N; and,

(c) Periphyton and other ecological effects in the Willowburn and Quailburn Streams

13.16 The applicant has proposed mitigation measures to lessen the risk of their activities contributing to cumulative water quality effects. We need to consider whether the proposed mitigations, are in our view, sufficient to avoid significant water quality effects occurring, and/or whether refinements to the measures proposed are required.

13.17 A starting position for the consideration of effects on points (a)-(c) above is the FEMP. Final FEMPs were provided to ECan on 1 April 2010. Evidence on the draft FEMP was given by Mrs Johnston, but for consistency with other decisions we have undertaken an independent audit. Key points arising from our audit in relation to this application and additional to Mrs Johnston's is summarised below:

13.18 The farm is effectively split into two blocks both bisected by the Wairepo water race and Willowburn Stream. 82 hectares is used to grow crops and/or small seeds. 168 hectares is irrigated using a centre pivot with water supplied from the Benmore Irrigation Scheme and this is situated on the top block adjacent to SH8, 35 hectares is currently irrigated out of the Wairepo system using k-line irrigation to grow pasture. No changes to the farm system are proposed.

13.19 The FEMP recognises the Ahuriri Arm of Lake Benmore as requiring the most severe nutrient mitigations for Willowburn Station, i.e., an additional 10.7 kg N/ha/y are required to be prevented from leaching (or otherwise lost from the system) and 1.1 kg P/ha/y compared with that achieved using good agricultural practice. The modelled OVERSEER outputs were 5663 kg N/y and 77 kg P/y.

13.20 The WQS thresholds set for Willowburn Station, using the most stringent nutrient mitigation requirement, are 6584 kg N/year and 156 kg P/year.

13.21 The soils on Willowburn are described as light to medium silt, with water holding capacity of 40 mm to 75 mm. Photographs of soils indicated little organic matter accumulation and profile development. were very similar to those for The Glens.

13.22 The mitigation measures proposed in addition to those assumed in OVERSEER are:

(a) No winter application of fertiliser on the irrigation area;

(b) N fertiliser applications split to under 50 kg N/application;

(c) No P fertiliser within three weeks of irrigation;

(d) Olsen P of below 30 maintained.

(e) The use of nitrification inhibitors, and,

(f) The upkeep of Willowburn Swamp (40 ha)

13.23 We also note that the applicant has agreed to a significant reduction in both the total volume and rate of take from what was originally proposed, which should further reduce the quanta of nutrient lost from the irrigation area.

13.24 Mitigation measures proposed to ameliorate site specific environmental risks are:

(a) Fence off the wettest area of the Willowburn swamp to stop stock access;

(b) Restrict stock access to the Willowburn during the winter months of June, July and August

(c) Place culverts at selected areas along the Willowburn Stream for stock movement

(d) Fence off the areas that have already been pugged up and eroded badly along the Willowburn

(e) 20 metre layback from any water way when applying fertiliser by land based application e.g. bulk spreader

(f) Create a sufficient track in the areas around the Willowburn Stream to allow for the shifting of stock without them accessing the stream readily.

(g) Either plant a riparian margin, a filtration zone, or look at putting in a stilling basin in location described in below map

(h) Fence off the streams that run through the deer block, but keep drinking bays

(i) Maintain a 20 metre buffer zone from waterways while irrigating

13.25 We note that the mitigation measures proposed appear quite specific and well thought out. We note in particular the proposal to use nitrification inhibitors. We refer to Dr Ryan's evidence (see Part A) who told us that nitrification inhibitors were one of two (the other being reducing stock numbers) options available to sheep and beef farmers requiring significant reduction in nitrogen leaching losses.

13.26 The critical issues for us for are:

(a) Is the predicted nutrient load realistic?

(b) What effect will the predicted nutrient load (alone and in combination with other applications before us) have on surface waters making reasonable assumptions about flow paths?

(c) Can the effects be avoided, remedied or mitigated?

Predicted load realistic

13.27 The inputs to OVERSEER were audited by Mr McNae. In his final addendum report he reported as a 'live' issue that the applicants preferred to stay with the developed setting in OVERSEER following advice from Mr McFarlane that a highly developed status would never occur. We accept Mr McFarlane's point on this point, but our interpretation of Dr Snow's evidence (Part A) was that she advocated use of the highly developed setting on shallow soils, not because they were likely to reach that status, but rather as a pragmatic response to reflect that OVERSEER would significantly underestimate nitrogen losses on shallow soils. We have paid particular attention to the soil types on each proposed irrigation area and for those that we consider 'shallow' we considered the developed setting on OVERSEER was likely to underestimate actual loads. For this farm we do not have the information of soil type distribution and therefore we have erred on the side of caution and assumed the soils are shallow.

13.28 However any underestimate of nutrient load due to shallow soils needs to be offset by the area being irrigated, its effects on total farm production, and hence on increase on nutrient load brought about by the irrigation.

Effects on waterbodies

Ahuriri Arm of Lake Benmore

13.29 In part A we determined that the Ahuriri Arm of Lake Benmore was already close to the oligotrophic-mesotrophic boundary. MWRL agreed with this assessment, but submitted that through improvements to replacement consents and significant nutrient mitigation of new consents, all consents could be granted without causing the oligotrophic-mesotrophic boundary to be breached. We disagreed with the MWRL submission for the reasons given in Part A. Therefore we need to assess each application on its own merits, but taking into account other applications before us together with priority issues.

13.30 Dr Freeman's addendum (on behalf of the Regional Council) recommended that this application be declined because of its adverse effects on the Willowburn Stream and also because it was in the Ahuriri Catchment.

13.31 Dr Freeman also a useful summary of estimated total property nitrogen loads to the Ahuriri Arm associated with irrigation development proposals, together with their priority as determined by Professor Skelton on the basis of the date the application was deemed to be notifiable. Dr Freemans (Table 7 - based on modelling using the developed setting only) gave the total predicted nitrogen load lost from Willowburn as 6452 kg/y and placed it as 7th in priority within the catchment.

13.32 For new applications we have estimated the actual new load in excess of the permitted activity (i.e. dryland farming). However as this a replacement consent then this estimate is unnecessary because it is a lawfully permitted activity that has been contributing to the current trophic state of the Ahuriri Arm. As the applicant's proposed changes in their irrigation system will not increase the area irrigated, and they propose a comprehensive mitigation package including the use of nitrification inhibitors, our view is that the contribution to the nutrient load on the Ahuriri Arm from this activity should decrease.

Groundwater

13.33 We agree with Dr Bright that effects on groundwater in this case are manifest by interaction with surface waters and that groundwater is largely a matter for policy considerations. We note that no evidence on groundwater specific to this application was given by any party to this hearing.

Periphyton Growths in Willowburn and Quailburn Streams and the Ahuriri River

13.34 Dr Coffey's evidence (MWRL, Part A) included information on periphyton surveys in Ahuriri River. He reported periphyton biomass below levels of concern at all the sites he visited (upper, SH8 Bridge, and node). He also reported that the quality of macroinvertebrates declined from good to fair with distance down the river. We note that bed of the Ahuriri River is hard and dominated by cobbles, which would be susceptible to nuisance periphyton growths should nitrogen and/or phosphorus concentrations in the river be above that limiting periphyton growth (under stable flow conditions).

13.35 Dr Coffey also reported on periphyton surveys in the Quailburn. He stated there was no existing irrigation in the Quailburn sub-catchment but reduced physical habitat quality at the Quailburn Node site relative to Quailburn Upper. This was reflected in reduced riparian cover and increased periphyton cover at the downstream sampling site. He also noted that both cover and biomass of periphyton would constitute a "nuisance" condition at the downstream site. The Quailburn Node site supported good instream habitat quality on the basis of macroinvertebrate community structure. Dr Coffey concluded therefore, that nuisance growths of periphyton at the downstream sampling site were a reasonably recent development.

13.36 Dr Coffey also sampled the Willowburn Stream at two sites –Willowburn and Willowburn node. He noted that both sampling sites were soft-bottomed sites and there was extensive existing irrigation in the Willowburn subcatchment that extended into the headwaters of the sub-catchment. Dr Coffey also sampled macroinvertebrates and noted that macroinvertebrate community structure indicated poor instream habitat quality at both sampling sites.

13.37 In Part A we rejected the MWRL proposal that the threshold for periphyton growth should be a 25% increase in maximum annual biomass calculated from modelled 'current' nutrient concentrations. We found instead, that MfE periphyton guidelines are applicable and should be used to protect streams from nuisance periphyton growths.

13.38 There are three important elements that will determine whether the MfE guidelines are likely to be breached:

(a) The flow path of drainage water/groundwater to the Willowburn and Quailburn Streams;

(b) Whether the stream environment is suitable for growth of periphyton, and,

(c) The amount of dilution as the drainage water mixes with these waterbodies, and the Ahuriri River, particularly under summer low-flow conditions.

13.39 Superimposed on both of these elements is the groundwater travel time. However, for our purposes, that only affects the timing of any effect, rather than the effect itself. In any case considering the topography and location of the proposed irrigation areas in relation to the above water bodies it is likely that travel time will be short and that any effects will be manifest relatively quickly.

13.40 From Dr Coffey's limited measurements above we conclude that the Willowburn Stream is unlikely to be affected by benthic periphyton because of habitat limitations. Because it is soft-bottomed there is nowhere for benthic periphyton to attach, and while sessile periphyton could still attach to plant surfaces this does not have the same implications for aquatic biodiversity. The Quailburn remains hard-bottomed at least down to Quailburn node site. The Quailburn will certainly be impacted downstream of the confluence with the Willowburn. Dr Coffey's evidence suggests that current irrigation is not causing nuisance periphyton growths in the Ahuriri River and as irrigation related to this application is occurring currently, and the load of nutrients will be decreasing in the future through mitigations, any contribution to nuisance periphyton growths from this application should also decrease. .

13.41 We provide further comment on the appropriate trigger levels for periphyton monitoring in our discussion of the relevant planning instruments below.

Avoided, remedied or mitigated

13.42 We acknowledge that the applicants have proposed mitigation measures in the FEMP to minimise the effects of their activities. It is difficult to assess the effectiveness of these mitigation measures as so much depends on how they are implemented. However in our view the key measures in this application is the reduction in water usage and the use of nitrification inhibitors, which should result in a reduction in nitrogen exported to the lake.

13.43 In his closing legal submissions, Mr Chapman stated that while some of his applicants may choose to participate in the lock-step approach, many of his clients could not. In any case, we have considered the lock-step approach and found it to be inappropriate to grant applications to take and use water on this basis. The lock-step approach is an extension of adaptive management, about which we gave our views in Part A. In summary, we are of the view that adaptive management (and the lock-step approach) should not be a substitute for a robust AEE and evidence in which the state of the existing environment is adequately described and reasonable efforts are made to address reasonably foreseeable environmental effects. As discussed in Part A, we are of the view that the MWRL WQS falls short of the standard expected for a proposal (the total consents for irrigation before us) of this magnitude.

Summary on water quality effects

13.44 Because this is a replacement consent in which there is a commitment on the part of the applicant to introduce significant mitigation measures we conclude that effects of the activity on water quality will be minor.

Inefficient water use

13.45 The applicant amended the application to the volume derived using the method outlined in Schedule WQN9v2 of the PNRRP as a suitable volume for irrigation of this property. We are therefore satisfied that the volume of water proposed is reasonable and efficient

Effects on ecosystems

13.46 The race from which water is abstracted supports little or no in-stream values as the flows are highly variable depending on the amount of water being diverted into the race system. Also the applicant has proposed upgrade the intake to include a screen to the mobile pump system. We are satisfied the effects on ecosystems will be minor.

Tangata Whenua

13.47 The proposal sits within the ambit of an existing small scale spray irrigation activity that will not result in any significant intensification of farm activity. Ngai Tahu (Mr Horgan) advised us that such applications would not pose a risk to cultural values. There were no property specific issues raised in the evidence of Ngai Tahu witnesses relating to this particular application.

13.48 This activity will draw water from an existing water race that receives water through the diversion of Wairepo Creek. The diverted water is used in the Ahuriri sub-catchment as opposed to it following its natural course of flow to the Wairepo / Haldon Arm sub-catchment. This is technically a cross mixing of waters that Ngai Tahu in their original submission had raised as potentially a cultural issue, but in their evidence did not raise as a concern in respect of this application.

13.49 We consider that any effects of the cross mixing are less than minor due to it being an established activity and any impacts will be established or of an existing nature, and the waters rejoin at Lake Benmore. The diversion is not the subject of this application.

13.50 It remains for us to consider the cumulative impact that this application may have on downstream cultural values including mahinga kai habitat and restoration proposals for the Ahuriri Delta. The effects of this existing activity are an established part of the environment, while the proposed mitigation and conditions will ensure the effects on tangata whenua values will be less than minor.

Effects of discharge

13.51 Both Mrs Johnston and the reporting officer agree that adverse effects from this discharge are minor. As the quality of the discharge water is the same as that abstracted from the Wairepo stream we concur with that opinion.

Key conclusions on effects

13.52 In relation to the actual and potential effects of the proposal, our key conclusions are as follows.

13.53 We conclude for the reasons already advanced that the actual and potential effects of this proposal in terms of visual and landscape effects that will be no more than minor even without the mitigation measures recommended by Mr Glasson. This is particularly so given the use of k-line irrigation is the method of irrigation to be used on the irrigation site.

13.54 In respect of water quality, as this is a replacement consent in which there is a commitment on the part of the applicant to introduce significant mitigation measures we conclude that effects of the activity on water quality will be minor.

13.55 We are satisfied that any potential effects relating to inefficient use, ecosystems, tangata whenua and the proposed discharge are acceptable.

14 EVALUATION OF RELEVANT PLANNING INSTRUMENTS

14.1 Under s 104(1)(b) of the Act, we are required to have regard to the relevant provisions of a range of different planning instruments. Our Part A decision provides a broad assessment of those planning instruments and sets out the approach we have applied to identification and consideration of the relevant provisions. The following part of our decision should be read in combination with that Part A discussion.

14.2 In relation to the current applications, we consider that the most relevant and helpful provisions are found in the regional plans, including in particular the WCWARP and the NRRP. The following sections of this decision provide our evaluation of the key objectives and policies from these planning instruments. We have organised our discussion in accordance with the key issues arising for this application.

Water quality

14.3 In relation to water quality, the key documents we have considered are the WCWARP (incorporating the objectives of the PNRRP and the operative NRRP provisions).

WCARP

14.4 In relation to the WCWARP, we consider that Objective 1 is the critical objective. In particular, Objective 1(b) seeks to safeguard life-supporting capacity of rivers, lakes, and Objective 1(d) seeks to safeguard the integrity, form, functioning and resilience of a braided river system.

14.5 We have determined that granting these consents with conditions (incorporating mitigations set out in the FEMP) will help to minimise nutrient loss from the irrigated area. This gives us confidence that the off-site nutrient losses will be minimised and the health of streams flowing through the properties will be enhanced. We are also satisfied that the applicant's proposed changes in the irrigation system will not increase the area being irrigated and, given they propose a comprehensive mitigation package, our view is that its contribution to the nutrient load on Lake Benmore/Ahuriri Arm will decrease.

14.6 In terms of potential periphyton growths in Willowburn Stream, we received little information on the current state of the stream, but it appears that it is soft-bottomed and therefore not suitable habitat for periphyton growth. There is some evidence of nuisance periphyton growths in the lower Quailburn stream and any consent to grant would need appropriate monitoring conditions. However, given that this is a replacement consent for existing activities, we consider that the proposed mitigation measures will decrease the incidence of nuisance periphyton growths from this source.

14.7 Overall, we can conclude that the mitigation measures proposed will reduce the current nutrient load on the Ahuriri River and Lake Benmore. Thus we are able to conclude that a grant of consent would be consistent with Objective 1(b) and 1(d) WCWARP.

14.8 Objective 1(c) requires us to manage waterbodies in a way that maintains natural landscape and amenity characteristics and qualities that people appreciate and enjoy. Given our findings in terms of effects on water quality and periphyton growths combined with a condition in terms of periphyton annual biomass not exceeding MfE guidelines during summer low-flow conditions, then our view is that granting consent would be consistent with Objective 1(c).

14.9 We note that Objectives 2, 3, 4, and 5 are "in the round" deal with and provide for the allocation of water. The critical qualification is that water can be allocated provided that to do so is consistent with Objective 1. Given the findings we have made about Objective 1 we conclude that allocating water in terms of the balance objectives would be consistent with the overall scheme of the WCWARP. We reach this view taking into account the national and local costs and benefits (environmental, social, cultural and economic) of the proposal, as required by Objective 3.

14.10 Policy 13 links the WCWARP to the PNRRP (as it existed at the time) by requiring us to have regard to how the exercise of the consent could result in water quality objectives of the PNRRP not being achieved. As we explained in our Part A decision, we have considered the objectives of the PNRRP and the now operative NRRP in relation to the current proposal. However we have generally given greater weight to the NNRP provisions on the basis that they represent the current approach for achieving the common goal of protecting water quality.

NRRP

14.11 Under the NRRP, Lake Benmore (including the Ahuriri Arm) is classified as an "Artificial On-River Lake" under the NRRP. Objective WQL1.2 of the NRRP seeks to ensure that the water quality of the lake is managed to at least achieve the outcomes specified in Table 6, including a maximum Trophic Level Index ("TLI") of 3 (i.e. oligotrophic-mesotrophic boundary). For the reasons discussed above, we consider that granting consent to the proposal would be consistent with this objective and would not (in combination with others we grant) caused the TLI maximum to be breached.

14.12 The Willow Burn is categorised (via the NRRP Planning Map Volume) as 'Spring-fed upland'. Objective WQL1.1 of the NRRP seeks to ensure that the water quality of such rivers is managed to at least achieve the outcomes specified in Table 5. A key indicator for these applications is that maximum periphyton biomass in Alpine upland streams should be less than 50 mg /m^2 chlorophyll *a*. This water quality management unit also has water quality standards for DRP and DIN that apply via Schedule WQL1 and associated rules of 0.007 and 0.10 mg/l respectively

14.13 We understand that the applicant and reporting officer agreed on periphyton water quality conditions that included 120 mg/m^2 Chlorophyll *a* standard (and an early warning trigger of 90 mg/m^2 Chlorophyll *a*) for the Willow Burn. We appreciate that when those parties reached that agreement the NRRP was not operative, and issues relating to water quality objectives and standards had not reached the status that we have today.

14.14 We must have regard to the current provisions of the NRRP and therefore we have given considerable thought to the situation that applies to the Willow Burn. We note the following:

(a) The reported mean concentrations (in the MWRL Rivers and Lakes Report) of DRP and DIN were 0.35 and 0.01 mg/l respectively, and are significantly higher than the Schedule WQL1 'standards'.

(b) The Willow Burn catchment is characterised by a relatively high level of established and authorised irrigation development.

(c) The likelihood that the DIN and DRP concentrations in the Willow Burn result in part from the existing authorised irrigation development in the catchment.

(d) Many of the tributary stream that feed into the Willow Burn are categorised as 'Hill-fed – lower" with an Objective WQL1 specified maximum periphyton outcome of 200 mg/m^2 chlorophyll *a* and Schedule WQL nutrient 'standards' for DRP and DIN of 0.006 and 0.47 respectively. We highlight the apparent inconsistency of having a majority of tributary streams with a lower periphyton outcome.

(e) The soft bottom substrate of the lower Willow Burn is not an ideal substrate for periphyton development. However, we also note that the Willow Burn does eventually discharge into the Ahuriri River.

(f) The New Zealand Periphyton Guidelines, that we were provided with at the hearing and heard were a critical source for the NRRP specified outcome, provide for 50 mg/m^2 chlorophyll *a* as a guideline for oligotrophic streams with diverse "clean-water" benthic invertebrate communities. That does not appear to describe the Willow Burn.

(g) The MWRL evidence indicated that the Willow Burn macro invertebrate communities were general fair to poor (using MCI or QMCI).

14.15 After considering all the above factors we agree that the proposed periphyton and associated water quality standards are appropriate for the Willow Burn and will achieve the intent of the NRRP classification.

Conclusions on water quality provisions

14.16 Overall then having regard to the scheme of the WCWARP and the NRRP we reach a conclusion that granting consent in this case to the proposal as a whole would be consistent with the key objectives and policies of both of these plans relating to water quality.

Efficient use

14.17 Objective (4) of the WCWARP seeks to promote "*the achievement of a high level of efficiency in the use of allocated water*". Policies 15-20 deal with efficient and effective use of water and are applicable to this application. In particular, Policy 16 requires us to consider whether the exercise of these consents would meet a reasonable use test in relation to both the instantaneous rate of abstraction and the annual volume for take, use, dam or divert.

14.18 As discussed in the assessment of effects section of this decision, we are satisfied that the annual volume is reasonable for the intended use and that the applications are consistent with these objectives and policies.

14.19 Policy 28 provides guidance as to matters which must be considered when deciding whether to grant or refuse an application for replacement of existing consents. These include consideration of attempts to meet the efficiency expectations of the plan, recognition of the value of the investment by the consent holder and maintenance of the consent in any allocation limits and priority bands if granted.

14.20 We consider that the applicant has made attempts to show that they are meeting the efficiency expectations of the plan and conclude that the proposal is consistent with this policy.

Environmental flows and levels

14.21 Policies 3 and 4 of the WCWARP refer to the setting of environmental flow and level regimes to achieve the objectives of the WCWARP. In addition, Policy 12 seeks to establish an allocation for each relevant activity within the catchment and requires consideration of the effects on other users. This is reflected in the rules of the PNRRP which specifies minimum flows and levels for water bodies and allocation limits for specific activities.

14.22 As the environmental flow and level regime in the plan is not applicable to this activity, and as it is within the allocation for agricultural and horticultural activities identified in Rule 6, Table 5, the proposal is considered to be consistent with this policy.

Landscape

14.23 We discussed the relevant objectives and policies for landscape in our Part A Decision. In summary these are primarily found in the Proposed and Operative CRPS and the NRRP. In broad terms these provisions seek the protection of outstanding natural landscapes from inappropriate use and development.

14.24 In considering these provisions we are informed by the provisions of the Waitaki District Plan which identifies the applicant's property as Rural Scenic zone. The relevant objectives and policies for that zone are supportive of farming and agricultural activity including irrigation.

14.25 For the reasons already advanced we think that the landscape effects for this proposal are no more than minor and consent to this proposal will be consistent with the relevant objectives and policies within both district and regional plans in relation to landscape.

Tangata whenua

14.26 The proposed activity will potentially impact on the matters outlined in Objective 1. In particular, (a) relating to the spiritual and cultural values of Tangata Whenua. This is an existing small scale spray irrigation activity. The proposed mitigation measures will ensure that this activity is consistent with the objective.

14.27 The references to tangata whenua values in the objectives and policies of the Water Quality Chapter 4 of the NRRP (notified July 2011) included reference to (a) cross mixing of waters. This application uses water from the Wairepo sub-catchment for irrigation activity in the Ahuriri sub-catchment, technically a cross mixing within the Mackenzie Basin. This is an existing small scale activity, the effects of which are an established part of the environment and the waters rejoin further down the catchment at Lake Benmore.

14.28 Objective WQN1 from Chapter 5 of the NRRP seeks to enable present and future generations to access the regions surface water and groundwater resources to gain cultural, social, recreational, economic and other benefits, while (c) safeguarding their value and providing mahinga kai for Ngai Tahu. The Ngai Tahu aspiration to undertake restoration of mahinga kai in the Ahuriri Delta will be unaffected by this activity.

14.29 Objective WTL1(a)&(d) from Chapter 7 of the NRRP includes provisions that seek to achieve no overall reduction in the contribution of wetlands and waterways to the relationship of Ngai Tahu and their culture and traditions with their ancestral lands, water, mahinga kai sites, waahi tapu and waahi taonga. The Ngai Tahu objective of restoring mahinga kai habitat in the Ahuriri Delta is reliant on retaining existing water quality and ecosystem health in the tributaries which include the Quailburn Creek and Willowburn Swamp.

14.30 We find that the proposed activity with the application of the FEMP and consent conditions will be consistent with the above Objectives

Discharge

14.31 In relation to the discharge application (CRC011939), the key provisions of relevance can be found in the water quality chapter of the NRRP (Chapter 4). This includes Objective WQL1.1 discussed above, along with Policy WQL1 which relates specifically to point source discharges that may enter surface water.

14.32 As discussed in our evaluation of effects, in the main, the water discharged is unused race water and has discharged into the swamp for many years without problems. On this basis we consider that the discharge is consistent with the relevant objectives and policies.

Key conclusions on planning instruments

14.33 For all of the above reasons we consider that, with the imposition of appropriate conditions granting consent would be consistent with the objectives and policies of the relevant plans. We have reached this conclusion taking into account the relevant planning provisions in respect of water quality, efficiency, environmental flows, landscape, tangata whenua values and discharges.

15 EVALUATION OF OTHER RELEVANT S104 MATTERS

15.1 Under s104(1)(c), we are required to have regard to any other matter that we consider to be relevant and reasonably necessary to determine the application.

15.2 After hearing all the relevant evidence, we consider that we should have regard to the investment of the existing consent holder pursuant to s104(2)A RMA. We note that pursuant to that section when considering an application affected by s124 we must have regard to the value of the investment of the existing consent holder. As we understand this activity has been on foot for some considerable period of time. There is a level of investment by the existing consent holder in the infrastructure that provides for distribution of the irrigation water. The K line system utilised for this particular proposal represents that investment. The existing race system for Willowburn Station has we understand been in place for some time and we imagine that over that time the applicant has taken the benefit of that investment. We conclude on this particular point that to not grant consent would fail to recognise the value of investment of the existing consent holder in this instance.

16 PART 2 RMA

16.1 Section 104(1) states that the matters which we have discussed above are subject to Part 2, which covers section 5 through section 8 inclusive. These sections are set out in full in our Part A decision and are discussed below in the context of the current applications.

Section 6 – Matters of National Importance

16.2 Section 6 identifies matters of national importance that we must "recognise and provide for" when making our decision, including in particular preserving the natural character of lakes and rivers (s6(a)), protecting outstanding natural features and landscapes (s6(b)) and the relationship of Maori with the environment (s6(e)).

16.3 In respect of s6(a) we recognise that preservation of the natural character of lakes and rivers is the imperative. We think that because of our finding in terms of the water quality issues, which takes into account mitigation measures, the grant of consent recognises and provides for the preservation of the natural character of lakes and rivers.

16.4 In terms of s6(b), we have evaluated the natural features and landscape, primarily by reference to the relevant planning instruments. We reach the view that the grant of consent in this case is not inappropriate because it will not, in our view, diminish the natural features and landscapes such as they are in any significant way.

16.5 In terms of section 6(c), it is our view, taking into account the evidence received, that there are not areas of significant indigenous vegetation and significant habitats of indigenous fauna that are at risk thus requiring protection as a consequence of the grant of consent.

16.6 Regarding Section 6(e), we are cognisant of the relationship that Ngai Tahu hold with the natural resources of this catchment. While no specific sites or values were specified by Ngai Tahu in relation to this application, we believe that the mitigation measures and conditions provide for the cultural relationship of Ngai Tahu.

16.7 For the above reasons, we consider that granting consent to the proposal would recognise and provide for s6 maters, as we are required to do under the RMA.

Section 7 – Other Matters

16.8 Section 7 lists "*other*" matters that we shall "*have particular regard to*". We make the following observations in relation to each of those matters as they are relevant to this application, referring to the sub paragraph numbers of s7:

16.9 Sub-section (a) refers to kaitiakitanga. We have taken particular regard of the views of Ngai Tahu in determining this decision. We consider that the proposed activity with mitigation measures and conditions will be consistent with the function of kaitiakitanga. Sub-sections (b), (c), and (f) are specifically relevant to this application. Sub-section (b) relates to the efficient use and development of natural and physical resources. Relevantly in this case is water. We have determined that the volumes of water we are prepared to grant and the methodology of its conveyance and distribution, results in the efficient use and development of the water resource.

16.10 Sub-section (c) refers to the maintenance and enhancement of amenity values. Maintenance and enhancement of amenity values will be achieved in this instance through utilising mitigation measures such as those provided in the FEMP. These steps will ensure the maintenance and enhancement of amenity values.

16.11 In terms of sub-section (d), because of the assessments we have made in relation to ecosystems, we have had particular regard to the intrinsic values of ecosystems and we consider that through the grant of consent with the conditions imposed such values will be safeguarded.

16.12 Sub-section (f) refers to the maintenance and enhancement of the quality of the environment. The applicant has proposed mitigation measures to ensure that this objective is achieved.

16.13 Having particular regard to the above matters in the context of section 7, we conclude that the grant of consent could be supported

Section 8 – Treaty of Waitangi

16.14 Finally section 8 requires that we shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).

16.15 The cultural values of tangata whenua are appropriately recognised in the relevant planning documents applicable to the Mackenzie Basin sufficient to alert applicants to the need to address such values. We are satisfied that the notification of the appropriate Runanga and tribal authority has been followed and that the applicant was a contributor to the general assessment of the impact of irrigation activities on cultural values.

16.16 We are satisfied that the consultation procedures provided Ngai Tahu the opportunity to understand and respond to the proposed activity, albeit in conjunction with a large number of applications in the Mackenzie Basin.

Section 5 – Purpose of the RMA

16.17 Turning now to the overall purpose of the RMA, that is, "*to promote the sustainable management of natural and physical resources*". We make the following further comments:

(a) We consider the development and use of land and water is consistent with the purpose of sustainable management.

(b) The irrigation will make a contribution to the overall regional Waitaki wellbeing; and

(c) The natural and physical resources including water of the Basin will be sustained.

16.18 This leaves s5(2)(c) RMA and the obligation to avoid remedy or mitigate any adverse effects on the environment. This will occur through conditions, which will address impacts particularly upon water quality. We are also satisfied that the applicant in amending the application in terms of volume of water to be taken is taking a volume of water which is both reasonable and efficient.

17 OVERALL EVALUATION

17.1 Under s104B of the RMA, we have a discretion as to whether or not to grant consent. This requires an overall judgment to achieve the purpose of the Act and is arrived at by:

(a) Taking into account all the relevant matters identified under s 104;

(b) Avoiding consideration of any irrelevant matters;

(c) Giving different weight to the matters identified under s 104 — depending on our opinion as to how they are affected by the application of s 5(2)(a), (b), and (c) and ss 6-8 — to the particular facts of the case; and then in light of the above; and

(d) Allowing for comparison of conflicting considerations, the scale or degree of conflict, and their relative significance or proportion in the final outcome.

17.2 For the water permit application, the key issue relates to water quality. The applicant through the mitigation measures proposed does address the site specific environmental risks arising from

the application of water to the site. The mitigation measures we have already concluded are quite site specific and well thought out. We have concluded that because of the applicant's proposed changes in the irrigation system which will not increase the area irrigated and because of the comprehensive mitigation measures proposed including the use of nitrogen inhibitors our view that the contribution to the nutrient load on the Ahuriri Arm from this activity should decrease. In addition the applicant has amended the application to the volume derived using the method outlined in Schedule WQN9(vii) of the PNRRP and that is a suitable and reasonable and efficient volume for the proposed activity. Thus we conclude the grant of consent for the water permit is appropriate.

17.3 For the discharge permit application we are satisfied that there are no outstanding adverse effects of the proposed activity that have not been addressed through appropriate mitigation measures. When considering the matters outlined in section 104(1) of the RMA, we are satisfied that the actual and potential effects of the proposed activity are acceptable

17.4 Having reviewed the application documents, all the submissions, taking into account the evidence to the hearing and taking into account all relevant provisions of the RMA and other relevant statutory instruments we have concluded that the outcome which best achieves the purpose of the Act is to grant consent to both applications.

18 CONDITIONS

18.1 Given our decision to grant consent, we have given careful consideration to the conditions that are necessary to avoid, remedy and mitigate the potential adverse effects of the proposal. The starting point we have used for this exercise is the final condition set provided by the applicant. This was the result of a collaborative process that occurred after the conclusion of the hearing, as described in our Part A decision.

18.2 The condition set provided to us includes comments on discrete issues from Council officers and several submitters. Where any such comments have been made, we have taken this into account when arriving at the final condition set. We are proceeding on the basis that the condition set provided to us incorporates all relevant conditions required by Meridian Energy as part of its derogation approval, which has been confirmed by legal counsel for Meridian.

18.3 We have made some modifications and additions to the condition set provided to us. However all modifications respect the conditions attaching to derogation approvals provided by Meridian. Several of these changes relate to matters discussed in the preceding sections of this decision to ensure that any concerns we have about potential effects are adequately addressed.

18.4 In addition, we make the following comments on conditions relating to nutrients and thresholds. These comments are written in a general style that applies to all applications before us. However they are directly relevant to this application. We have incorporated the intent of these comments into the conditions attached to this decision.

Nutrients and thresholds

18.5 In Part A we rejected the MWRL proposition that we could grant all the applications before us with conditions.

18.6 Much of the evidence on conditions presented by all parties to this hearing centred on the issue of determining whether grantees in a particular subcatchment had breached the nutrient allowance at a particular node, and if they had, how ECan could determine either which consent holder had caused the breach and whether one or all consent holders needed to take corrective action.

18.7 In rejecting the MWRL case, which relied upon existing irrigators lessening their nutrient load so that there would be assimilative capacity for new irrigators, we need to record our approach to ensuring that consents we grant do not cumulatively result in the trophic level index (TLI) of the Ahuriri Arm of Lake Benmore exceeding 2.75, or the TLI of the Wairepo Arm of Lake Ruataniwha exceeding 4.00. As we recorded in Part A our view if that the difference between current nutrient load, and the load resulting in unacceptable increases in the TLI of these waterbodies is so small that it would be risky to try and allocate that new load.

18.8 For those applications that we are inclined to grant, we have assessed their 'cumulative effects' in priority order, taking careful note of the complete package of mitigation measures they

propose on their property. These mitigation measures may be in relation to a separate application before us but on the same property and therefore 'captured' in the FEMP.

18.9 We have kept a check on new irrigation resulting in additional nitrogen and phosphorus loads proposed by applicants in relation to those mitigation measures and not granted consents that would, in our view, lead to a significant net increase.

18.10 This approach will, in our view, ensure that the TLI of the critical lake ecosystems does not rise as a result of our granting these applications, and may even decline. This approach is, we believe, consistent with the NRRP, which has as an objective and maintenance or improvement of water quality. It also has the advantage, in our view, of taking the pressure off cumulative effects monitoring with all the ensuing uncertainties and difficulties discussed in Part A.

18.11 Recognising that streams and rivers in the catchment are nutrient limited by nitrogen and/or phosphorus, and that the NZ (MfE) Periphyton Guidelines provide appropriate thresholds for managing nuisance periphyton growths does, we believe, provide another monitoring tool for not only ensuring that streams and rivers are suitable for recreation and provide suitable habitat for invertebrates and fish, but also provide another defence to downstream lake ecosystems. The reporting of breaches in periphyton guidelines together with correction mitigation actions, provide a tool to prevent excess nutrients reaching the lakes.

18.12 We recognise that that where leachate enters groundwater that does not discharge to streams or rivers prior to entering Lake Benmore, periphyton monitoring is not appropriate. However for the majority of the applications before us, there is a stream or river downstream that provides a logical focus for offsite monitoring efforts. In cases where this is not the case we have imposed other monitoring requirements such as lysimeter or piezometer networks, and/or contributing to lake monitoring.

18.13 The advantage of stream water quality and periphyton monitoring is that it puts more emphasis on local monitoring and less emphasis on uncertain (given our findings on the WQS) modelling. We are of the view that as far as possible, consent monitoring should be related directly to the applicant's activities.

18.14 We did consider deleting the agreed conditions relating to lake TLI monitoring on the grounds that it was marginal whether trigger response conditions were relevant to replacement consents. The critical issue for us was whether the effects of replacement consents could be considered less than minor (with respect to lake water quality).

18.15 However upon reflection we have decided that (in the case of the Ahuriri Arm of Lake Benmore, and the Wairepo Arm of Lake Ruataniwha) the existing TTLI is very close to the agreed trigger point, and the TLI may increase even without the grant of new consents (due to groundwater lag effects). We are reasonably confident however that this will not occur because by and large these activities have been 'on foot' for a long period of time and we think this is reflected in the current TLI. However, we cannot be completely certain and it seemed to us rather than leave the matter we should do something about it to at least provide a mechanism to respond to groundwater lag effects, if they occurred.

18.16 Thus, if TLI were to increase above the agreed trigger points then the lake monitoring conditions would serve a resource management purpose; particularly in conjunction with the condition to ratchet back existing irrigation. On balance, we have decided to retain the agreed lake monitoring conditions for Lake Benmore and the Wairepo Arm of Lake Ruataniwha.

19 DURATION

19.1 The applicant has sought a duration of 35 years for the take and use consent. Because this application is a "true replacement" it is not affected by the common conditions sought by Meridian requiring an expiry date of April 2025. This is reflected in the consent conditions provided.

19.2 Meridian, through Mr Turner, suggests that there are benefits in having a common expiry date for all consents to take water within the catchment to do with assessing cumulative effects.

19.3 To determine this issue we have referred to and applied the approach set out within the NRRP, Chapter 1, Section 1.3.5, which sets out some considerations that impact on duration. In particular we have placed weight on the following matters there referred to:

(a) the nature and sensitivity of the affected environment, including:

(i) the degree to which the sensitivity of the affected environment may become more sensitive over time; and

(ii) the probability of future adverse effects arising from the consented activity; and

(iii) the level of knowledge about the affected environment;

19.4 Section 1.3.5 contains a range of other guidance criteria, which includes the consent holder's capital investment in a pre-existing activity. However, we think that the nature and sensitivity of the affected environment plus the three criteria we have listed above are the most significant.

19.5 Given our findings in relation to the current TLI status of the Ahuriri Arm of Lake Benmore and the degree to which the sensitivity of the affected environment, namely the Ahuriri Arm, may become more sensitive over time and the probability or possibility of future adverse effects arising from this consented activity and others, and the level of knowledge about the affected environment, we do support Mr Turner's call for a common expiry date.

19.6 We do recognise this will have impacts upon the consent holder's interests. In particular, the consent holder's need to ensure that there are permanence and economic life of the activity. However, in that regard we do note that provided the consent holder seeks to renew its consent in accordance with the RMA, there is a level of permanence and economic life for the activity. We also think that the term of the grant, which will be approximately 13 years, does provide for a level of permanence and economic life of the activity. A term of this duration would provide benefits to the community and would enable the consent holder to achieve some level of return on capital investment involved.

19.7 In terms of the application to discharge water (CRC011939) we have decided to grant this consents for a period of 35 years notwithstanding the shorter term of the take and use consent. The key reason for this is that the effects of the activities are very minor and there is not the same uncertainty about change in the sensitivity of the receiving environment over time. As such, we consider that there is no resource management basis for a shorter term.

20 DECISION

20.1 Pursuant to the powers delegated to us by the Canterbury Regional Council:

20.2 For all of the above reasons and pursuant to sections 104 and 104B of the Resource Management Act 1991, we **GRANT** the following applications by **McAughtrie DW**:

CRC011940 to take and use water from a water race fed from Wairepo Creek between map references NZMS 260 H39:701-430 and H39:696-396 at a maximum rate of 50 litres per second with an annual volume of 421,388 cubic metres for spray irrigation of 85 hectares of pasture at Willowburn Station.

CRC011939 to discharge surplus irrigation water to Willowburn Swamp at or about map reference NZMS 260 H39:690-346 at a maximum rate of 85 litres per second.

20.3 Pursuant to section 108 RMA, the grant of consent is subject to the conditions specified at **Appendices A** and **B** respectively, which conditions form part of this decision and consent

20.4 The duration of CRC011940 shall be until the 30th April 2025. The duration of CRC011939 shall be for 35 years from the commencement of the consent.

DECISION DATED AT CHRISTCHURCH THIS 16TH DAY OF FEBRUARY 2012

Signed by:

Paul Rogers 

Dr James Cooke 

Michael Bowden 

Edward Ellison 

Take of water

1. Water shall only be diverted from a water race between map reference NZMS 260 H39: 701-430 and H39: 696-396 at a rate not exceeding 85 litres per second, with a volume not exceeding 7,344 cubic metres per day.

2. Water shall be used from the water race at a rate no exceeding 50 litres per second, with a volume not exceeding 421,388 cubic metres per year between 1 July and the following 30 June.

Use of water

3. Water shall only be used for the border dyke and spray irrigation utilising k-line application systems of 85 hectares of crops and pasture for grazing sheep, beef cattle, deer or non-milking dairying cows per irrigation season within the area of land shown on attached Plan CRC011940/CRC011939, which forms part of this consent.

4. There shall be a minimum 5 metre setback, where there is no irrigation, from any permanently flowing waterways within the irrigation area marked on Plan CRC011940/CRC011939.

5. The consent holder shall take all practicable steps to:

   (a) Ensure that the volume of water used for irrigation does not exceed that required for the soil to reach field capacity; and

   (b) Avoid leakage from pipes and structures; and

   (c) Avoid the use of water onto non-productive land such as impermeable surfaces and river or stream riparian strips.

6. The consent holder shall ensure water races used to convey water diverted in terms of this permit are well maintained to minimise losses.

Water metering – Take of water

7. The consent holder shall, within six months of the commencement date of this consent at the point of take:

   (a) install a water meter(s) that has an international accreditation or an equivalent New Zealand calibration endorsement suitable for use with an electronic recording device, from which the rate and the volume of water taken can be determined to within an accuracy of plus or minus five percent at a location(s) that will ensure the total take of water from the water race is measured; and

   (b) install a tamper-proof electronic recording device such as a data logger that shall record (or log) the flow totals every 15 minutes.

8. The water meter and recording device(s) specified in Condition 7 shall be set to wrap the data from the measuring device(s) such that the oldest data will be automatically overwritten by the newest data (i.e. cyclic recording); and shall either:

   (a) store the entire season's data in each 12-month period from 1 July to 30 June in the following year, which shall be downloaded and stored in a commonly used format and provided to the Canterbury Regional Council upon request in a form and to a standard specified in writing by the Canterbury Regional Council; or

   (b) be connected to a telemetry system which collects and stores all of the data continuously with an independent network provider who will make that data available in a commonly used format at all times to the Canterbury Regional Council and the consent holder. No data in the recording device(s) shall be deliberately changed or deleted.

9. If the water meter specified in Condition 7(a) is not an electromagnetic or ultrasonic meter, the consent holder shall, prior to the first exercise of this consent install or make available an easily accessible straight pipe(s) at a location where the total water take is passing through, with no fittings or obstructions that may create turbulent flow conditions, of a length at least 15 times the diameter of the pipe, as part of the pump outlet plumbing or within the mainline distribution system, to allow the Canterbury Regional Council to conduct independent measurements.

10. The water meter and recording device(s) specified in Condition 7 shall:

    (a) be installed by a suitably qualified person in accordance with ISO 1100/1-1981 (or equivalent) and the manufacturer's instructions; and

    (b) be maintained throughout the duration of the consent in accordance with the manufacturer's instructions; and

    (c) be accessible to the Canterbury Regional Council at all times for inspection and/or data retrieval.

11. All practicable measures shall be taken to ensure that the water meter and recording device(s) specified in Condition 7 are at all times fully functional and have an accuracy standard of five percent.

12. Within one month of the installation of the measuring or recording device(s) specified in Condition 7 (or any subsequent replacement devices), the consent holder shall provide a certificate to the Canterbury Regional Council, attention: RMA Compliance and Enforcement Manager, signed by a suitably qualified person certifying, and demonstrating by means of a clear diagram, that:

    (a) the measuring and recording device(s) is installed in accordance with the manufacturer's specifications; and

    (b) data from the recording device(s) can be readily accessed and/or retrieved in accordance with Condition 8.

13. At five yearly intervals or at any time when requested by the Canterbury Regional Council, the consent holder shall provide a certificate to the Canterbury Regional Council, attention: RMA Compliance and Enforcement Manager, signed by a suitably qualified person certifying that:

    (a) the water meter(s) is measuring the rate of water taken as specified in Conditions 7 to 11 inclusive; and

    (b) the tamper-proof electronic recording device is operating as specified in Conditions 7 to 11 inclusive.

Fish Screen

14. Water shall only be taken when a fish screen with a maximum mesh width and height size of 3 millimetres or slot width and height of 2 millimetres is operated and maintained across the intake to ensure that fish and fish fry are prevented from passing through the intake screen.

15. The fish screen shall be positioned to ensure that there is unimpeded fish passage to and from the waterway and to avoid the entrapment of fish at the point of abstraction, and to minimise the risk of fish being damaged by contact with the screen face.

16. The fish screen shall be designed and installed to ensure that:

    (a) the majority of the screen surface is oriented parallel to the direction of water flow; and

    (b) where practicable, the screen is positioned in the water column a minimum of 300 millimetres above the bed of the waterway and a minimum of one screen radius from the surface of the water; and

    (c) the approach velocity perpendicular to the face of the screen shall not exceed 0.06 metres per second if no self-cleaning mechanism exists or 0.12 metres per second if a self-cleaning mechanism is operational; and

(d) the sweep velocity parallel to the face of the screen shall exceed the design approach velocity.

17. The fish screen shall be designed or supplied by a suitably qualified person who shall ensure that the design criteria specified in Conditions 14 to 16 inclusive of this consent is achieved. Prior to the installation of the fish screen, a report containing final design plans and illustrating how the fish screen will meet the required design criteria and an operation and maintenance plan for the fish screen shall be provided to Environment Canterbury, Attention: RMA Compliance and Enforcement Manager.

18. A certificate shall be provided to Environment Canterbury by the designer or supplier of the fish screen to certify that the fish screen has been installed in accordance with the details provided to Environment Canterbury in accordance with Conditions 14 to 16 inclusive of this consent.

19. The fish screen shall be maintained in good working order. Records shall be kept of all inspections and maintenance, and those records shall be provided to Environment Canterbury upon request.

Nutrient Loading

20. For the purposes of interpretation of the conditions of this consent Willowburn Station shall be defined as the areas in certificates of title and Pastoral Lease numbers Section 6 Blk XVI Benmore SD, which total 862.7 hectares.

21. The consent holder shall prepare once per year:

    (a) an Overseer® nutrient budgeting model report not less than one month prior to the commencement of the irrigation season; and

    (b) a report of the annual farm nutrient loading for Willowburn Station using the model Overseer® (AgResearch model version number 5.4.3 or later).

22. When undertaking the modelling outlined in Condition 21, the consent holder shall use either weather records collected on-farm or from constructed data from the nearest weather station.

23. A copy of the reports prepared in accordance with Condition 21 shall be given to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager within one month of their completion.

24. The consent holder shall not commence annually irrigation under this consent unless the annual (1 July to 30 June) nutrient loading (the nutrient discharge allowances (NDAs)) as estimated in accordance with Condition 21 from Willowburn Station does not exceed 7,760 kg of Nitrogen and 84 kg of Phosphorus. Where the NDAs have been reduced by the application of a receiving water quality nutrient trigger condition, the reduced NDA shall apply.

25. The NDAs, incorporating any reductions required by receiving water quality nutrient trigger conditions, shall be complied with from the commencement of consent.

26. Where Overseer, or Overseer modelling, is referred for the purposes of calculating or determining compliance with the NDA limits associated with activities on the property, it shall be undertaken by an independent person with an Advanced Sustainable Nutrient Management Certificate issued by Massey University or an equivalent qualification.

27. The consent holder shall at all times comply with the mitigation measures set out in section 5 of the Farm Environmental Management Plan (FEMP) for Willowburn Station as provided to Environment Canterbury in April 2010 and attached to these conditions.

28. Subject to Condition 27, the consent holder shall implement, and update annually the FEMP for Willowburn Station. The FEMP shall include:

    (a) Verification of compliance with NDAs (incorporating any reductions required by receiving water quality nutrient trigger conditions) by farm nutrient modelling using the model Overseer (AgResearch model version number 5.4.3 or later).

(b) Implementation of Mandatory Good Agricultural Practices ("MGAPS") and requirements to manage in accordance with the Willowburn Station Overseer model inputs.

(c) The Overseer parameter inputs report, which shall be supplied to the Canterbury Regional Council.

(d) A property specific environmental risk assessment (including a description of the risks to water quality arising from the physical layout of the property and its operation which are not factored in as an Overseer parameter) prepared by a suitably qualified person which identifies any farm specific environmental risks along with measures to mitigate the farm specific environmental risks.

(e) A requirement to review the risk assessment if there are any significant changes in land use practice.

29. Detailed records shall be maintained of fertilizer application rates, types of crops (including winter feed/forage crops), cultivation methods, stock units by reference to type, breed and age, prediction of realistic crop yields that are used to determine crop requirements and all other inputs to the Overseer nutrient budgeting model.

30. A report on Overseer modelling shall be provided within one month of completion of the Overseer modelling by the person with the qualifications described in Condition 26 and no later than two months prior to the start of the next irrigation season to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager. The consent holder shall supply to the Canterbury Regional Council all model inputs relied upon for the annual Overseer® modelling.

31. Changes may be made to the Willowburn Station Overseer model inputs, provided that written certification is provided that the change is modelled using Overseer, and that the result of that modelling demonstrates that the NDAs are not exceeded. A copy of that certification plus a copy of the resultant Overseer parameter report shall be provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, prior to the implementation of that change.

Subdivision

32. The NDAs shall be recalculated if there is a sale or transfer of any part, but not the whole, of the total farm area of 862.7 hectares. The recalculated NDAs shall be undertaken to accurately redistribute the NDA between the resultant properties and shall replace the NDAs specified in Condition 24. The new NDAs may be recalculated on any proportion as long as the total of all the NDAs does not exceed the NDAs of the parent title as set out in Condition 24. The recalculation of the NDAs shall be undertaken and certified using Overseer, completed and provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager together with a copy of the full Parameter report, within one month of the sale or transfer.

Fertiliser and soil management

33. Fertiliser shall be managed and applied in accordance with 'The Code of Practice for Nutrient Management (With Emphasis on Fertiliser Use) NZFMRA 07' or any subsequent updates.

34. The consent holder shall keep a record of all fertiliser applications applied to the property, including fertiliser type, concentration, date and location of application, climatic conditions, mode of application and any report of the fertiliser contractor regarding the calibration of the spreader.

35. For land based spreading of fertiliser:

(a) where an independent fertiliser spreading contractor is used the consent holder shall keep a record of the contractor used, which can be supplied to the Canterbury Regional Council upon request; or

(b) where the applicant's own fertiliser spreaders are used, the consent holder shall test and calibrate the fertiliser spreaders at least annually, and every five years the fertiliser spreader will be certified by a suitably qualified person in accordance with 'The Code of Practice for Nutrient Management (With Emphasis on Fertiliser Use) NZFMRA 07' or any

subsequent updates and the results of testing shall be provided to the Canterbury Regional Council upon request.

36. Nitrogen fertiliser shall not be applied to land between 31st May and 1st September.

37. All fertiliser brought onto the property which is not immediately applied to the land shall be stored in a covered area that incorporates all practicable measures to prevent the fertiliser entering waterways.

38. Applications of nitrogen fertiliser shall not exceed 50 kg nitrogen / hectare per application.

39. If liquid fertilisers, excluding liquid effluent, are stored on-site for more than three working days, the consent holder shall ensure that the fertiliser is stored in a bunded tank, at least 110% of the volume of the tank to avoid any discharge to surface or groundwater and such that it is also protected from vehicle movements.

40. Fertiliser filling areas shall not occur within 50 metres from a water course, spring or bore.

41. For land based spreading, fertiliser should not be applied within 20 metres of a watercourse.

42. Where practicable, the consent holder shall:

    (a) use direct drilling as the principal method for establishing pastures; and

    (b) sow and irrigate all cultivated areas within the irrigation area as soon as possible following ground disturbance.

Irrigation Infrastructure

43. The consent holder shall ensure that all new irrigation infrastructure (not on the property at the time of commencement of this consent) is:

    (a) designed and certified by a suitably qualified independent expert holding a National Certificate in Irrigation Evaluation Level 4, and installed in accordance with the certified design. Copies of certified design documents shall be provided to the Canterbury Regional Council upon request; and

    (b) tested within 12 months of the first installation of the new irrigation infrastructure and afterwards every five years in accordance with the 'Irrigation Code of Practice and Irrigation Design Standards, Irrigation NZ, March 2007' (code of practice) by a suitably qualified independent expert.

44. Within two months of the testing referred to in Condition 43(b) the expert shall prepare a report outlining their findings and shall identify any changes needed to comply with the code of practice. Any such changes shall be implemented within five years from the date of the report. A copy of the report shall be provided to the Canterbury Regional Council Attention: RMA Compliance and Enforcement Manager, within three months of the report being completed.

45. If existing irrigation infrastructure is being used, the consent holder shall obtain an evaluation report prepared by a suitably qualified person, on the following terms:

    (a) The evaluation shall determine the system's current performance in accordance with the Code of Practice for Irrigation Evaluation.

    (b) This report shall be obtained within three months of the first exercise of the consent.

    (c) Any recommendations identified in the report shall be implemented within five years from the date of receipt of the report.

    (d) A copy of the report shall be forwarded to the Canterbury Regional Council within three months of the report being completed.

River water quality monitoring and response

46. The water quality of the Willowburn Stream shall be monitored within six months of the first exercise of consent as follows:

    (a) The location for monitoring of Willowburn Stream shall be as follows unless minor changes are required to ensure that monitoring occurs upstream of all intakes and downstream of the irrigation area to appropriately monitor the localised river effects arising from the exercise of this consent:

        i. Map reference: NZMS 260 H39: 700-429 immediately upstream of all irrigation takes on the Willowburn Stream.

        ii. Map reference: NZMS 260 H39: 691-343 downstream of the discharge Willowburn Stream at Quailburn Road Bridge.

    (b) Water quality variables monitored shall include:

        i. dissolved inorganic nitrogen (DIN);

        ii. dissolved reactive phosphorus (DRP);

        iii. dissolved oxygen;

        iv. conductivity;

        v. turbidity;

        vi. periphyton biomass as chlorophyll *a* per square metre (chl *a*); and

        vii. *E. Coli.*

    (c) This monitoring may be carried out on an individual basis, or may be prepared in collaboration with other consent holders, or on a collective basis by a suitable independent body appointed by all relevant consent holders in the sub catchment.

    (d) Frequency of monitoring: Once per month from 01 December to 30 April each year, with a minimum of three weeks between sampling.

    (e) Methods: The methods of sampling and analysis shall be those that are generally accepted by the scientific community as appropriate for monitoring river water quality and periphyton biomass. The methods of sampling shall be documented and made available to the Canterbury Regional Council on request.

    (f) The water quality monitoring shall be undertaken by a suitably qualified and/or experienced person who demonstrates that they understand the appropriate methods to use for surface water quality sampling, including preservation of samples. That person shall certify in writing that each batch of samples has been sampled and preserved in accordance with generally accepted scientific methods. A copy of those certifications and the person's qualifications shall be provided to the Canterbury Regional Council on request.

    (g) The laboratory undertaking analyses shall be accredited for those analyses by International Accreditation New Zealand (IANZ) or an equivalent accreditation organisation that has Mutual Recognition Agreement with IANZ.

    (h) The results of all sampling shall be provided to the Canterbury Regional Council Attention: RMA Compliance and Enforcement Manager by 30 May each year. This shall include copies of reports from the laboratory that undertook the analyses.

47. If the monitoring undertaken in accordance with Condition 46 shows that the average sample result for the downstream Willowburn Stream monitoring site specified in Condition 46 over the period December to April is greater than 0.14 mg/l of DIN; or 0.006 mg/l DRP; or 90 mg chl *a*/ m^2 (early warning trigger) but does not exceed 0.18 mg/l of DIN; or 0.007 mg/l DRP; or

120 mg chl *a*/ m^2 (environmental standard trigger), then the consent holder shall commission a report into the cause of the breach of the early warning trigger.

48. The reports referred to in Condition 47 and 52 shall:

    (a) be prepared by an expert review panel consisting of two qualified and experienced independent scientists. One of the scientists shall be nominated by the Canterbury Regional Council, and the other shall be appointed by the consent holder; and

    (b) include the experts' conclusion on whether the exceedence(s) were as a result of natural influences, one off events, or in whole or part by nutrient loss associated with the irrigation authorised by this consent; and

    (c) include an assessment as to whether the exceedance measured by the monitoring is likely to continue; and

    (d) be completed by 30 July following the sampling; and

    (e) be provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, by 30 August following the sampling.

49. If both the authors of the report prepared in accordance with Condition 48 conclude, after considering all the relevant available information (including on-site monitoring, sub-catchment monitoring, and catchment resource consent compliance and audit reports made available by the Canterbury Regional Council) that either:

    (a) the cause of the breach of the early warning trigger was unlikely to have been caused in whole or in part by nutrient loss associated with the irrigation authorised by this consent; or

    (b) that it is unlikely that there is a trend towards exceedance of the environmental standard trigger pertaining to the downstream Willowburn Stream monitoring site,

    then no further action needs to be undertaken by the consent holder.

50. If Condition 49 is not satisfied, then:

    (a) the NDA, as specified in Condition 24, shall be reduced by 5% x Irrigation Proportion Factor (IPF) for the irrigation season subsequent to the monitoring period. The IPF shall be the proportion of the total authorised irrigation area developed for irrigation at the time of the exceedance under this resource consent divided by the total farm area (i.e. 85 irrigated hectares divided by the total farm area of 862.7 hectares); and

    (b) the consent holder shall prepare and implement a Remedial Action Plan in accordance with Condition 51.

51. In relation to the Remedial Action Plan referred to in Condition 50(b) and 54(b)(b):

    (a) It shall set out the methods and timeframes for altering and/or adapting farm land use practices to ensure that the exceedance in the early warning trigger pertaining to the Willowburn Stream monitoring site, is returned as soon as practicable to and maintained below the average sample results of 0.14 mg/l of DIN; or 0.006 mg/l of DRP; or 90 mg chl a/ m^2 (early warning trigger) for the Willowburn Stream monitoring site, over the period December to April.

    (b) It shall be prepared by a suitably qualified and experienced person using Overseer or an equivalent method to demonstrate that the actions to be undertaken will achieve the necessary nutrient reductions as soon as practicable.

    (c) If the Remedial Action Plan is prepared in collaboration with other consent holders who are required to prepare a Remedial Action Plan for this sub catchment a common Remedial Action Plan shall be deemed to comply with this condition.

    (d) Any actions required by the Remedial Action Plan shall be incorporated into the consent holder's FEMP. The amended FEMP shall be implemented as soon as physically possible.

(e) The consent holder shall provide the Canterbury Regional Council with the Remedial Action Plan and an amended FEMP upon request.

52. If the monitoring undertaken in accordance with Condition 46 shows that the average sample result for the downstream Willowburn Stream monitoring site specified in Condition 46 over the period December to April is greater than 0.18 mg/l of DIN; or 0.007 mg/l DRP; or 120 mg chl *a*/ m^2 (environmental standard trigger), then the consent holder shall commission a report into the cause of the breach of the environmental standard trigger. This report shall satisfy the requirements specified in Condition 48.

53. If both the authors of the report prepared in accordance with Condition 52 conclude, after considering all the relevant available information, including on-site monitoring, sub-catchment monitoring, and catchment resource consent compliance and audit reports made available by the Canterbury Regional Council, that the cause of the breach of the environmental standard trigger was unlikely to have been caused in whole or in part by nutrient loss associated with the irrigation authorised by this consent, then no further action needs to be undertaken by the consent holder.

54. If the report prepared in accordance with Condition 52 concludes that the environmental standard trigger has been exceeded because of farm land use practices, then:

    (a) the NDA, as specified in Condition 24, shall be reduced by 10% x Irrigation Proportion Factor (IPF) for the irrigation season subsequent to the monitoring period. The IPF shall be the proportion of the area under irrigation (at the time of the exceedance) under this resource consent divided by the total farm area (i.e. 85 irrigated hectares divided by the total farm area of 862.7 hectares); and

    (b) the consent holder shall prepare and implement a Remedial Action Plan in accordance with Condition 51.

55. If a required reduction in nutrient load is in effect under Condition 50(a) or 54(a) and monitoring for that period shows that the average sample results for the downstream Willowburn Stream monitoring site over the period December to April is:

    (a) greater than 0.18 mg/l of DIN; or 0.007 mg/l DRP; or 120 mg chl *a*/ m^2 (environmental standard trigger), then there shall be a further NDA reduction of 10% x IPF for the subsequent irrigation season.

    (b) less than 0.18 mg/l of DIN; or 0.007 mg/l DRP; or 120 mg chl *a*/ m^2 (environmental standard trigger), but greater than 0.14 mg/l of DIN; or 0.006 mg/l of DRP; or 90 mg chl *a*/ m^2 (early warning trigger), then there shall be a further NDA reduction of 5% x IPF for the subsequent irrigation season.

    (c) less than 0.14 mg/l of DIN; or 0.006 mg/l of DRP; or 90 mg chl *a*/ m^2 (early warning trigger), then for the subsequent season no NDA reduction shall be required under this condition, and the full NDA for the property, as specified in Condition 24 shall be restored.

Lake water quality monitoring and response

56. The water quality of the Ahuriri Arm of Lake Benmore and Lower Lake Benmore shall be monitored in accordance with this condition from the commencement of consent as follows:

    (a) Locations:

        i. Ahuriri Arm, Map reference: NZMS 260 H39:8027-2667

        ii. Lower Lake Benmore, Map reference: NZMS 260 H39:8802-2371

    (b) Depths: depth integrated 0-10m, 25m, 50m

    (c) Water quality variables:

        i. total nitrogen;

        ii. ammonia;

iii. nitrate;

iv. nitrite;

v. total Kjeldahl nitrogen;

vi. total phosphorus;

vii. dissolved reactive phosphorus;

viii. Secchi disc depth; and

ix. chlorophyll *a.*

(d) Calculated key water quality variable: Trophic Lake Index (TLI), using the following equations:

i. TLc = 2.22 + 2.54 log (chlorophyll *a*)

ii. TLp = 0.218 + 2.92 log (total phosphorus)

iii. TLn = -3.61 + 3.01 log (total nitrogen)

iv. TLI = Σ (TLc + TLp + TLn)/3

(e) Frequency of monitoring: Once per month from 01 December to 30 April each year, with a minimum of three weeks between sampling.

(f) Methods: The methods of sampling and analysis shall be those that are generally accepted by the scientific community as appropriate for monitoring lake water quality. The methods of sampling shall be documented and made available to the Canterbury Regional Council on request.

(g) The water quality monitoring shall be undertaken by a suitably qualified and/or experienced person that demonstrates that they understand the appropriate methods to use for lake water quality sampling, including depth integrated sampling, and preservation of samples. That person shall certify in writing that each batch of samples has been sampled and preserved in accordance with generally accepted scientific methods. A copy of those certifications and the person's qualifications shall be provided to the Canterbury Regional Council on request.

(h) The laboratory undertaking analyses shall be accredited for those analyses by International Accreditation New Zealand (IANZ) or an equivalent accreditation organisation that has Mutual Recognition Agreement with IANZ and shall be capable of analysing the variables listed in subparagraph c above with detection limits generally recognised by the scientific community as appropriate for oligotrophic lakes.

(i) The results of all sampling including the calculated average summer TLI, shall be provided to the Canterbury Regional Council Attention: RMA Compliance and Enforcement Manager by 30 May each year. This shall include copies of reports from the laboratory that undertook the analyses.

57. If the monitoring undertaken in accordance with Condition 56 shows that the average TLI for the 1 - 10 m depth integrated samples for either the Ahuriri Arm monitoring site or the Lower Benmore monitoring site over the period December to April is greater than 2.75 (early warning trigger) but does not exceed 3.0 (environmental standard trigger), then:

(a) the NDA, as specified in Condition 24, shall be reduced by 5% x the Irrigation Proportion Factor (IPF) for the irrigation season subsequent to the monitoring period. The IPF shall be the proportion of the area developed for irrigation under this resource consent (i.e. 85 irrigated hectares divided by the total farm area of 862.7 hectares); and

(b) a report into the cause of the breach of the early warning trigger shall be prepared by a person with an appropriate post-graduate science qualification, by 30 July following the sampling. A copy of this report shall be provided to the Canterbury Regional Council

Attention: RMA Compliance and Enforcement Manager, by 30 August following the sampling.

58. If a reduction in nutrient loading is required under Condition 57(a) and monitoring in the period that reduction applies shows that the average TLI for the 1 – 10 m depth integrated samples for the monitoring site over the period December to April:

    (a) continues to be greater than 2.75 but does not exceed 3.0, then there shall be a further NDA reduction of 5% x IPF for the subsequent irrigation season.

    (b) is less than 2.75, then for the subsequent season the full NDA for the property, as specified in Condition 24 shall be restored.

59. If the monitoring undertaken in accordance with Condition 56 shows that the average TLI for the 1 - 10 m depth integrated samples for either the Ahuriri Arm monitoring site or the Lower Benmore monitoring site monitoring site over the period December to April is greater than 3.0 (environmental standard trigger), then

    (a) the NDA, as specified in Condition 24, shall be reduced by 10% x Irrigation Proportion Factor (IPF) for the irrigation season subsequent to the monitoring period. The IPF shall be the proportion of the area authorised for irrigation under this resource consent (i.e. 85 irrigated hectares divided by the total farm area of 862.7 hectares); and

    (b) a report into the cause of the breach of the environmental standard trigger shall be prepared by a person with an appropriate post-graduate science qualification, by 30 July following the sampling. A copy of this report shall be provided to the Canterbury Regional Council Attention: RMA Compliance and Enforcement Manager, by 30 August following the sampling.

60. If a reduction in nutrient loading is required under Condition 59(a) and monitoring in the period that that reduction applies shows that the average TLI for the 1 – 10 m depth integrated samples for either the Ahuriri Arm monitoring site or the Lower Benmore monitoring site over the period December to April:

    (a) continues to be greater than 3.0 then there shall be a further NDA reduction of 15% x IPF for the subsequent irrigation season and rising to 20% compounding reductions for any further irrigation season.

    (b) continues to be greater than 2.75 but does not exceed 3.0 then there shall be a further NDA reduction of 5% x IPF for the subsequent irrigation season.

    (c) is less than 2.75, then for the subsequent season the full NDA for the property, as specified in Condition 24 shall be restored.

61. The nutrient load reductions and investigation referred to in Conditions 57 to 60 inclusive shall not be required if a two person expert scientist panel (with one expert nominated by the Canterbury Regional Council) both conclude after considering all the relevant available information (including catchment resource consent compliance, FEMP compliance monitoring pertaining to this consent and audit reports made available by the Canterbury Regional Council) that the cause of the breach of the early warning trigger or environmental standard (as applicable) was unlikely to have been caused in whole or in part by nutrient loss associated with the irrigation authorised by this consent.

Review of conditions

62. The Canterbury Regional Council may, once per year, on any of the last five working days of March or July serve notice of its intention to review the conditions of this resource consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the resource consent and which it is appropriate to deal with at a later stage.

Lapse

63. The lapsing date for the purposes of section 125 of the Resource Management Act shall be five years from the commencement of this consent.

Advice notes:

- *In relation to the lake monitoring required under Condition 56, it is anticipated that all consent holders subject to this condition would coordinate and cooperate together to ensure that the lake water quality monitoring is undertaken and the costs of that monitoring is shared between those consent holders. The Canterbury Regional Council may provide resources to facilitate that coordination and recover the costs of that facilitation from the relevant resource consent holders as a cost of supervising and administering the resource consents. Any non-compliance with water quality monitoring requirements would be a matter for all relevant consent holders and may be the subject of enforcement proceedings.*

- *If any additional land use consents are required to carry out the proposed activity, those consents must be obtained before giving effect to this consent.*

1.

a. Water shall only be discharged into Willowburn Swamp at or about map reference NZMS 260 H39: 690-346 as shown on attached Plan CRC011940/CRC011939:

b. The discharge shall only be unused conveyance water and shall contain no contaminants.

c. Water shall only be discharged at a rate not exceeding 85 litres per second.

2.

a. All practicable measures shall be undertaken to avoid erosion of the bed or banks of Willowburn Swamp channel occurring as a result of the discharge.

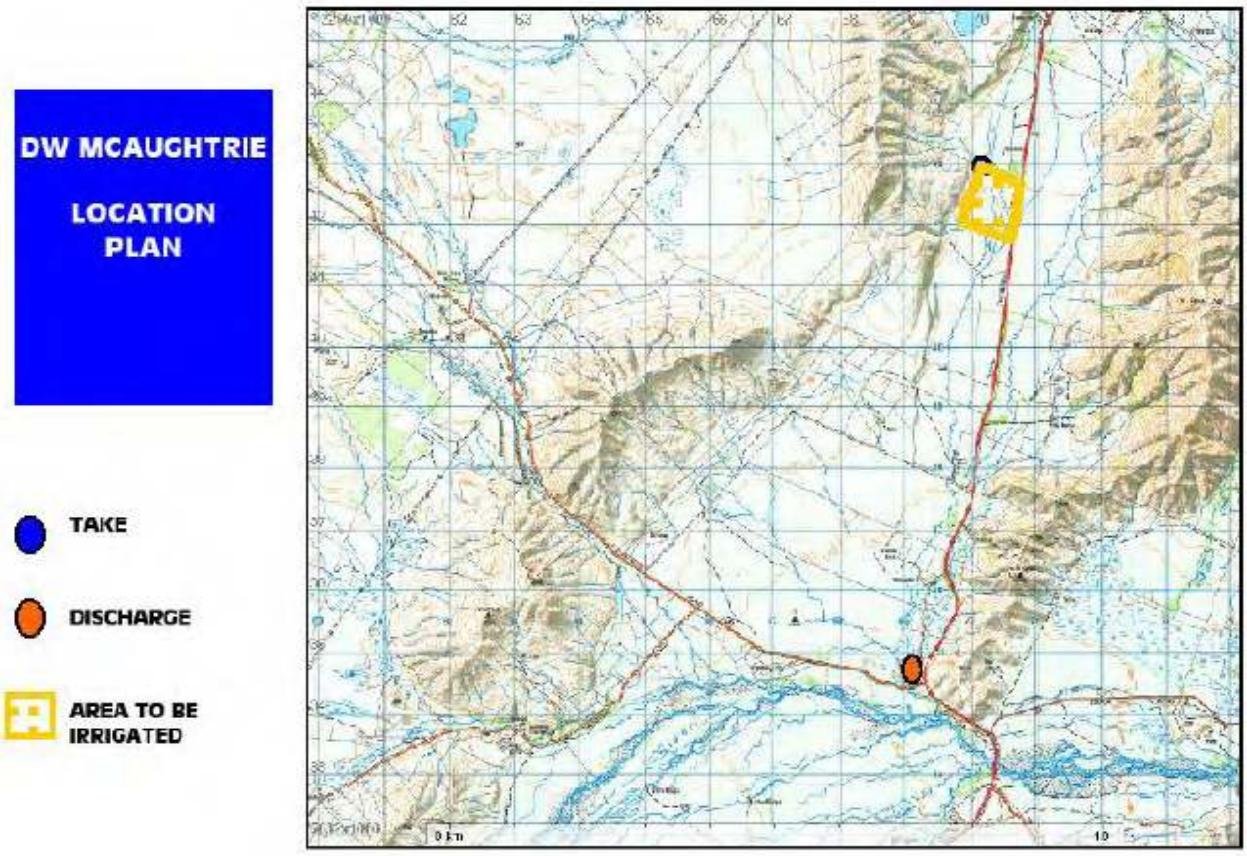
b. In the event of any erosion occurring to the bed or banks of the unnamed water channel, as a result of the discharge, the consent holder shall be responsible for rectifying the situation as soon as practicable.

3. The discharge shall not occur in a manner likely to cause erosion of, or instability to, the banks or bed of the Willowburn Swamp; or reduce the flood-carrying capacity of the waterway

4. The discharge, after reasonable mixing, shall not cause a change in the colour or a reduction of the clarity of the receiving water body.

5. The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.

6. The lapsing date for the purposes of section 125 shall be 5 years.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