

BEFORE THE CANTERBURY REGIONAL COUNCIL

IN THE MATTER OF

The Resource Management Act 1991

AND

IN THE MATTER OF

applications by **Waitangi Station Limited** filed under:

CRC030944 for water permits to divert take and use surface water from Sutton Stream (CRC030944-A) and Gibson Stream (CRC030944-B) for irrigation of Waitangi Station

CRC031013 for land use consent to disturb the bed of Sutton Stream and Gibson Stream to install intake structures

CRC031014 for discharge permits to discharge surplus stock water and irrigation water to Lake Aviemore

**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 applications by **Waitangi Station Limited** (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 proposes to irrigate two different areas of Waitangi Station (totalling 88ha) using water taken from two different sources as follows:
- (a) **Proposal A** - To take and use water from Sutton Stream for spray irrigation 55 ha of land on Waitangi Station;
 - (b) **Proposal B** - To take and use water from Gibson Stream for spray irrigation of 23 ha of land on Waitangi Station.
- 2.2 In association with these proposed takes, the applicant is also seeking consent to disturb the beds of Sutton and Gibson Streams to install the intake structures and discharge surplus irrigation water into Lake Aviemore.
- 2.3 In addition to the above, the applicant is seeking consent to irrigate a further area of Waitangi Station using water taken directly from Lake Aviemore ("Proposal C"). However given the geographical separation of this activity from Proposals A and B and the different source of water, we have considered it in a separate decision.
- 2.4 Figure 1 illustrates the proposed irrigation areas, take points and discharge points. Further information on the two proposals is provided below.

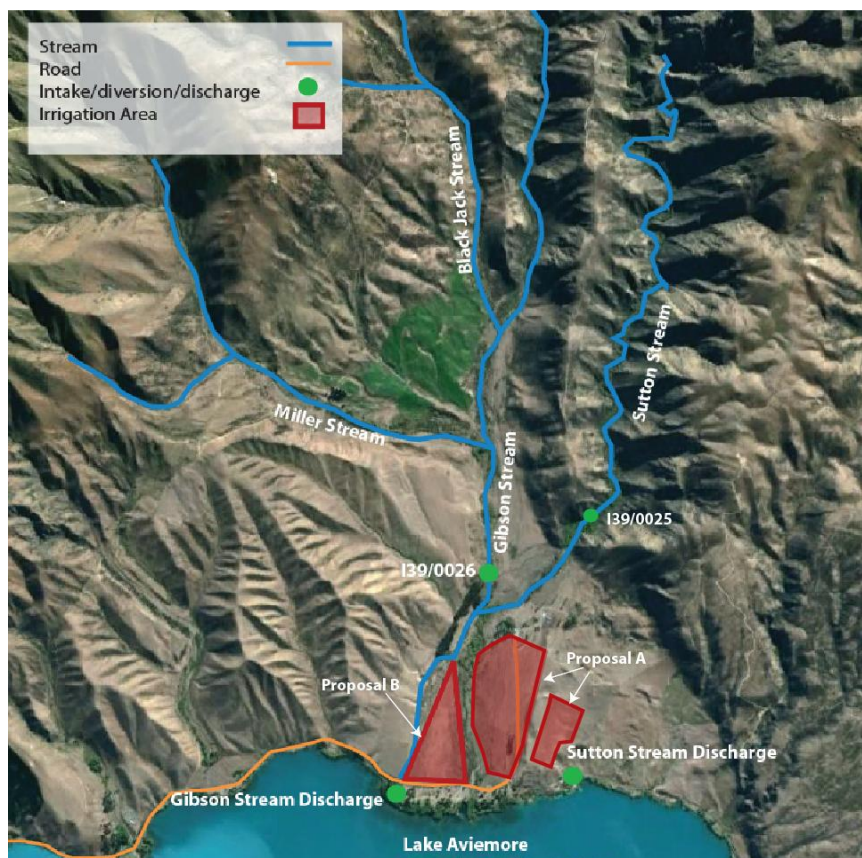


Figure 1: Indicative location map

Proposal A – Sutton Stream

- 2.5 The applicant proposes to divert 55 litres per second of water from Sutton Stream (at map reference NZMS 260 I39:9674-2157). Up to 40 L/s will be used for the irrigation of 55 hectares, with the balance 15 L/s required to ensure conveyance to the end of the race system. The maximum volumes of water taken for irrigation will be 34,560 cubic metres of water per eight consecutive day period and 330,000 cubic metres per year.
- 2.6 Of the 55 hectares to be irrigated under this proposal, approximately 40 hectares are located on the flat land in front of Waitangi Homestead, adjacent to Te Akatarawa Road (either side of Waitangi Station Road) and 15 hectares are located on a raised 'terrace' approximately 20 metres above the road.
- 2.7 Water was originally proposed to be taken from Sutton Stream via a submerged infiltration gallery as for Proposal B below. However this was subsequently modified so that the applicant now proposes to upgrade the existing stockwater intake to take water for irrigation. From the intake, water will be conveyed to the irrigation areas via existing water races. The applicant has advised that the existing races will be upgraded to reduce losses and improve carrying capacity. Water will be piped from the race to the irrigators under this proposal for use in spray irrigation.
- 2.8 Any excess irrigation or stockwater will be piped down a hillside, under Te Akatarawa Road and discharged into Lake Aviemore (at map reference NZMS 260 I40:9687-1954). The maximum rate of discharge will be of 55 litres per second and 34,560 cubic metres per eight consecutive day period.
- 2.9 A minimum flow of 80 litres per second on Sutton Stream at map reference NZMS 260 I39:967-215 (above Sutton Stream intake) will be maintained. This same minimum flow will be adopted for Proposal B, as discussed below.
- 2.10 This proposal (along with Proposed B) also involves a temporary diversion of water during construction of the intake structure to minimise the work required in flowing water. Although a consent for this diversion has not specifically been sought, we have considered this activity as part of the proposal for the reasons outlined in our Part A decision.

Proposal B – Gibson Stream

- 2.11 Under Proposal B, the applicant proposes to divert 55 litres per second of water from Gibson Stream before the confluence with Sutton Stream (map reference NZMS 260 I39:9608-2103). As for Proposal A, up to 40 L/s will be used for the irrigation of 55 hectares, with the balance 15 L/s required to ensure conveyance to the end of the race system
- 2.12 This water will be used for the irrigation of 23 hectares, being a separate area of land to that irrigated under Proposal A. The maximum volumes of water taken for irrigation will be 48,816 cubic metres of water per 19 consecutive day period and 138,000 cubic metres per year.
- 2.13 Water is proposed to be taken via a submerged infiltration gallery in the bed of Gibson Stream. The intake pipe will consist of up to a 20 metre, 500-700 mm diameter pipe, with slots not exceeding 8 mm buried up to 2 metres below the bed level, with gravel over the pipe reinstating the bed level. Water from the intake will be piped out of the riverbed into existing water races, which will convey the water to the irrigation areas. The applicant has advised that the existing races will be upgraded to reduce losses and improve carrying capacity. Unlike Proposal A, the irrigators used for Proposal B will take water directly from the water race.
- 2.14 The existing water race joins Sutton Stream at the boundary of Waitangi Station, adjacent to Te Akatarawa Road which then discharges into Lake Aviemore (at map reference NZMS 260 I40:9551-1919). Any excess irrigation or stockwater will be discharged into the Lake at this point at a maximum rate of 55 litres per second and 48,816 cubic metres per 19 consecutive day period.

The applications

- 2.15 There are three separate applications relating to this proposal, all of which are relevant to both Proposal A and B.

- (a) **CRC030944** – a water permit to take and use of water from both Sutton Stream and Gibson Stream. This application also relates to Proposal C (being a take directly from Lake Aviemore) which is considered in a separate decision.
 - (b) **CRC031313** – a land-use consent to disturb the bed of both Sutton Stream and Gibson Stream to install the proposed intake structures.
 - (c) **CRC031314** – a discharge permit to discharge surplus irrigation water from both proposals into Lake Aviemore.
- 2.16 Consent is required for these activities pursuant to sections 14, 13 and 15 of the RMA respectively. All applications were lodged with the Canterbury Regional Council (the Council) on 23 December 2002. These applications were publicly notified and there were a number of submissions that are referred to later in this decision. The applications requested a duration to 30 April 2025.
- 2.17 We note the recommendation from the reporting officer (Ms Vesey) that application CRC030944 should be split into three separate consent numbers as it effectively relates to three separate proposals. We agree with this approach and for the purpose of this decision have divided that application into CRC030944-A (for Proposal A) and CRC030944-B (for Proposal B) as required. We address Proposal C in a separate decision using the reference CRC030944-C.

Modifications after notification

- 2.18 In addition to taking water for irrigation, the original application also sought to take for stock water supply. However in a response to a request for further information dated 4 February 2009, the applicant clearly stated that it was relying on its rights under section 14(3) of the RMA to take stockwater and that the information on stockwater was only provided to assist understanding. The application also confirmed that the notified annual volumes only related to water for irrigation and that the annual volume for Proposal B should be reduced from 330,000 cubic meters per year to 138,000 cubic metres
- 2.19 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 changes do not significantly alter the intensity or effects of the proposal and that no party would be adversely affected by allowing the changes.
- 2.20 On this basis, we have not considered the issue of stock water in this decision, other than as part of the discharge of excess water (which is not covered by s14(3) of the RMA). Any discussion of appropriate take volumes relates to the water required for irrigation purposes only. As discussed in our Part A decision, the applicant retains 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.

3 DESCRIPTION OF THE ENVIRONMENT

Water bodies

- 3.1 Sutton Stream drains the South Western slopes of Mount Sutton before Douglas Stream joins it. The stream flows through a narrow and steep gorge before being joined by Gibson Stream also. Sutton Stream is ephemeral in nature and only during periods of high and intense rainfall does it flow into Lake Aviemore. The stream dries up at varying distances along the bed where it flows out of the gully onto the river bed.
- 3.2 Gibson Stream begins below the Sutton Stream catchment of Mount Sutton and then combines with Miller and Black Jack Streams. Gibson Stream then confluences with Sutton Stream approximately 1.5 kilometres before Lake Aviemore.
- 3.3 Lake Aviemore is part of a highly modified Waitaki catchment Hydro Electrical Power Scheme constructed in the late 1960 s. The lake is approximately 11 kilometres long and 3.5 kilometres at its widest point. Lake Aviemore is a popular recreation lake and a Statutory Acknowledgement Area.

Irrigation Area

- 3.4 Waitangi Station is a 21,487 ha high country station with a mixture of freehold and leasehold land located on the northern shore of Lake Aviemore. Approximately 1,600 ha of freehold flat land were acquired under the Public Works Act for the construction of the Aviemore Dam and Lake Aviemore which submerged this land. All of the proposed irrigation would be developed on freehold land.
- 3.5 Waitangi Station currently runs 14,000 merino sheep and 300 cattle. All stock are summered and wintered on the hill country. The hogget's are given supplement feed in the winter.
- 3.6 Some of the area to be irrigated under proposal A is already used to grow winter feed. However Waitangi Station does not have any existing irrigation. There is existing irrigation of nearby Te Akatarawa Station, which greens the hillside behind Waitangi Station.
- 3.7 There are camping-grounds along the banks of Lake Aviemore. One of these is opposite the entry to Waitangi Station; the proposed discharge is in this area. The areas to be irrigated are visible from SH8 on the opposite side of the Lake and located within Lakeside Protection Area 2 under the Waimate District Plan.
- 3.8 Further description of the environment is provided in our Part A decision and our summary of the evidence received from the applicants and submitters below.

Site Visit

- 3.9 We detailed our site visits in Part A and we do not repeat this information here. Although we did not carry out a site visit of this property on the ground we did view the site from the air.

4 PLANNING INSTRUMENTS

- 4.1 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) Waimate District Plan (WDP)
- 4.2 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

- 4.3 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.

CRC030944 – Divert, take and use water (s14)

- 4.4 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.
- 4.5 The following rules from the WCWARP are applicable to this application:
- (a) Rule 2 clause (1) –The applicant proposed a minimum flow of the 5-year, 7-day low flow assessed by the Canterbury Regional Council (CRC) (Table 3, row xxii) to be maintained above the proposed intake on Sutton Stream. The downstream end of Sutton Stream naturally goes underground.

(b) Rule 6 – The activity was within the allocation limit of 275 million cubic metres for agricultural activities upstream of Waitaki Dam.

(c) Rule 15 – classifying rule – discretionary activity

4.6 In summary, the proposed water permit is a **discretionary** activity under Rule 15 of the WCWARP and resource consent is required in accordance with section 14 of the RMA.

CRC031013 – Disturb the bed (s13)

4.7 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.

4.8 The relevant provisions of the NRRP are as follows:

(a) Rule BLR3 – permits the reconstruction, alteration, extension, demolition or removal of structures in, on, under or over the bed of a lake or river, subject to compliance with a range of conditions

(b) Rule BLR5 – permits the excavation, drilling, tunnelling, depositing, reclamation, drainage or disturbance in, on, under or over the bed of a lake or river, subject to compliance with a range of conditions

4.9 It is possible that these activities could be carried out to meet the permitted activity criteria, however from the information available it is not clear that they will. In particular, condition 9 of Rule BLR3 and conditions 2 and 4 of Rule BLR5 are unlikely to be complied with. The activity is therefore classified as a **restricted discretionary** activity under Rule BLR5.

4.10 As a restricted discretionary activity, the matters we can consider are limited to those specifically identified in Rule BLR5 of the NRRP. However these matters are wide ranging and effectively include all of the key issues that we would be considering if the application was fully discretionary, including effects on bank stability, flooding, other activities, water quality and ecosystems.

4.11 In relation to the minor diversion of water associated with construction activities, the relevant plan for determining the status of the activity is the WCWARP. The diversion fails to qualify as a permitted activity under Rule 1 of the WCWARP due to the quantity and rate of water being diverted. However it complies with all other relevant rules in the WCWARP and therefore requires consent as a **discretionary** activity.

CRC031014 – Discharge water (s15)

4.12 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.

4.13 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.

4.14 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 under Rule WQL48 and requires consent pursuant to Section 15 RMA.

Overall status of the proposal

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

5 NOTIFICATION AND SUBMISSIONS

- 5.1 These applications were notified in May 2003 as part of the Minister's call-in and in August 2007 with 200 other applications for similar activities in the Waitaki Catchment.
- 5.2 In the 2007 public notification 16 submissions in total were made on this proposal. Of these:
- (a) 1 was in support;
 - (b) 13 in opposition; and
 - (c) 2 neither supported nor opposed these applications.
- 5.3 Table 1 is based on the relevant s42A reports and summarises those submissions (from both the 2003 and 2007 notifications) 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

Submitter	Issues	Position
Canterbury Aoraki Conservation Board	Concerned with the duration sought, recommends 11-13 years. Applicant should show commitment to new application methods during the consent period for be considered when comes up for renewal.	Support
Fish and Game	Consent for stockwater should be separate to that for irrigation. Little reason for minimum flow. Metering and fish screen recommended	-
Otematata Station and Aviemore Ltd	Enhance sustainability of the farming operation, positive flow on effects for community, no single user should dominate use.	Support
Mr M Urquhart	Water resource should have multiple users, small take will have long lasting benefit to community, enhancing viability and soils of property.	Support
Ms F Home	All water should be taken from Lake Aviemore.	Oppose
Mr S Carswell	Degradation of water quality	Oppose
Fish and Game	Streams don't have great fishery value, resident trout likely where flows allow. Concerns could be addressed through consent conditions	Oppose
Meridian Energy Limited	MIC shares, flow regimes, metering, water quality	Oppose

- 5.4 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.

6 THE SECTION 42A REPORTS

- 6.1 Three separate section 42A reports (Reports 38A, B & C) on the applications and submissions were prepared by the Council's Consent Investigating Officer, Ms Susannah Vesey.
- 6.2 The primary reports were supported by a number of specialist s42A reports prepared by Messrs Heller, Hanson, Glasson, McNae and Stewart, and Drs Clothier, Schallenberg, Meredith and Freeman. The key issues addressed by these reports were cumulative water quality effects, landscape effects, and environmental flow and level regimes.
- 6.3 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.

Ms Vesey

- 6.4 After considering all relevant matters, Ms Vesey was unsure the actual and potential effects of the proposed divert take and sue were acceptable when taking account the proposed mitigation. In particular, she was uncertain regarding the following aspects of application CRC030944:
- (a) landscape values within the Waitaki Basin;
 - (b) The localised and cumulative impacts on surface water quality;
 - (c) The effects on cultural values in the area.
- 6.5 Ms Vesey did not have any outstanding concerns in relation to the applications to disturb the bed (CRC031013) or discharge water (CRC 031014) and recommended that these applications could be granted, subject to conditions.

Mr Glasson – Landscape architect

- 6.6 Mr Glasson noted that the proposed irrigation areas are located at the base of alluvial fans and adjacent to pastoral farming operations. He told us that the sites are 3.5 km distant from the main public view on SH8 and have low visibility and sensitivity due to modification and being at the junction of landform and lake edge. He considered that the sites had moderate to high absorption capacity.
- 6.7 Notwithstanding the above, Mr Glasson considered that the absence of a buffer between the proposed irrigation and lakeshore road will create moderate adverse landscape effects that require mitigation. He recommended a buffer between the edge of the irrigated land and lake edge of willows, tussock grassland and shrubland. We took his recommendation to apply to these applications, but do note that it was not entirely clear whether he was referring to these proposals or Proposal C (being the take from Lake Waitaki). We also note his contrary recommendation in his addendum report, which we discuss later in the decision.

Mr Stewart - Hydrologist

- 6.8 Mr Stewart prepared a specialist report (Report 2B) where he assessed the hydrology of the catchments for Gibson Stream and Sutton Stream.
- 6.9 If this proposal was to be granted, Mr Stewart recommended that a minimum flow of 80 L/s for Sutton Stream at I39:961-210 which is upstream of existing abstractions. He suggested that the applicant will need to start ramping down their abstractions as flows at the Sutton Stream recorder site reach 135 L/s and cease abstraction when flows reach 80 L/s at this site.
- 6.10 Mr Stewart also recommended a data collection program including continuous flow measurement at the proposed monitoring site immediately upstream of the Waitangi Station intake on Sutton Stream needs to be undertaken over at least a 5 year period to support the value of the imposed minimum flow.

7 THE APPLICANT'S CASE

- 7.1 Legal counsel for the applicant, Mr Ewan Chapman, presented opening submissions and called a number of witnesses, as summarised below.

Opening legal submissions

- 7.2 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 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.
- 7.3 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 stockwater and non-consumptive diverts) and 29% of the total irrigable area.
- 7.4 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.

- 7.5 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.
- 7.6 Mr Chapman then addressed us on the issue of allocation of assimilative capacity. 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.
- 7.7 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.
- 7.8 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.
- 7.9 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.
- 7.10 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.

Ms Haidee McCabe – Consultant

- 7.11 Ms McCabe provided an overview of the proposal as described above and outlined some of the reasons why the proposed irrigation development would be beneficial to the applicant, including the following:
- (a) It would enable the applicant to make enough winter feed (e.g. hay or baleage) to ensure that none had to be purchased. Currently the applicant retains approximately 50% of their merino lambs through a winter, fattens them and sells them in the spring with the remaining 50% being sold as store (sold at a lower weight for a lesser price). It was anticipated that there would be a greater percentage of lambs fattened with the proposed irrigation development.
 - (b) It would enable the applicant to priority feed twin bearing ewes prior to lambing ensuring that those ewes are in the best condition possible when lambing.

Effects on other water users

- 7.12 Ms McCabe said that upstream of the Gibson Stream abstraction, neighbours Te Akatarawa Station (F Graham) have consent to take water at a rate of 17.5 L/s from the tributary, Miller Stream for irrigation. This consent had no minimum flow restriction. Given the applicant proposed to take water downstream and there was no minimum flow restriction, Ms McCabe considered that Mr Graham's existing take would not be adversely affected by the grant of this consent.

- 7.13 Mr Graham has applied to take a further 12 L/s for irrigation from Black Jack Stream (CRC072363) as part of this hearing process which is also upstream of the applicants proposed abstractions. Ms McCabe said that the applicant and Mr Graham both proposed to comply with a minimum flow of 80 L/s for Sutton Stream and flow-sharing. An upstream site on Sutton Stream above the applicant's intake had been chosen because the stream was often dry in the reach below the Homestead Bridge.
- 7.14 Ms McCabe also said that a public camping ground run by the Waimate District Council on the shores of Lake Aviemore was within close proximity to Sutton Stream and the proposed irrigation development. However the stream was already often dry in the lower reach and the minimum flow should provide a level of protection for other users.
- 7.15 Mitigation was proposed restricting the rate of take, volume per week and minimum flows, Ms McCabe therefore considered that effects on other users would be minor.

Effects on Ecosystem values

- 7.16 Ms McCabe believed that the minimum flow proposed by the WCWARP for 'all other streams and rivers' was developed to ensure that the aquatic values of streams were protected. She said that a water level recorder would be installed on the Sutton Stream to ensure compliance with the minimum flow and the take would also be appropriately metered. In addition, the intake was proposed to be fish screened in accordance with "Fish Screening: good practice guidelines for Canterbury, NIWA Client Report: CHC2007.092, October 2007".
- 7.17 Based on the above measures, Ms McCabe considered the effects on ecosystem values were minor.

Efficient Use of Water

- 7.18 Ms McCabe told us that the proposed annual volumes were based on Schedule WQN9v2 on specific soil types determined by Mr Webb and intensive pasture. The amount applied for was less than that calculated under Schedule WQN9v2. In addition, Ms McCabe said that the proposed application depth of 20-35 mm per return period was less than 50% of the water holding capacities expected. She therefore considered that the proposal was an efficient use of water and the irrigation systems would be managed to ensure compliance.
- 7.19 Ms McCabe said that Policy 15 and 19 of the WCWARP encouraged the piping or otherwise sealing of water distribution systems to minimise water losses and meet efficiency and effective use requirements. This system was proposed to be piped from the main head race to a spray irrigation system and a reticulated trough system.
- 7.20 Policy 21 of the WCWARP required all water takes to be metered. Ms McCabe said that this application was consistent with this policy in that the applicant proposed to meter their take.
- 7.21 For the above reasons, Ms McCabe considered that the effects of inefficient water use were minor.

Water Quality

- 7.22 Ms McCabe said that the property, according to the MWRL Water Quality Study, was located within the Lake Aviemore surface water catchment.
- 7.23 The calculated nutrient mitigation requirement of the receiving environments determined in the MWRL Study had identified the N and P thresholds for the property. These are shown in the table below.
- 7.24 OVERSEER® had 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 McCabe told us that this table shows that the applicant can meet the property thresholds which are the most restrictive.

	Nitrogen Threshold	Phosphorous Threshold
MWRL Water Quality Study	56,286 kg/year	2,390 kg/year

Property Thresholds		
OVERSEER® Outputs	46,599 kg/year	675 kg/year

- 7.25 Ms McCabe said that the applicant was committed to implementing the "Mandatory Good Agricultural Practices" set out within the Farm Environmental Management Plan (FEMP) and that implementing these practices would 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.
- 7.26 Ms McCabe also said that whilst the applicant was 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 required a specifically developed FEMP to identify and implement appropriate mitigation measures set out in it.
- 7.27 At a workshop held in Twizel in August 2009, the applicants met with Dr Melissa Robson of GHD Limited. A "desk top" on farm risk assessment was undertaken. This was considered to be the "starting point" of the FEMP. 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 needed to be verified by an appropriately qualified person who had carried out a site visit. It was anticipated that this would occur should the application be granted.
- 7.28 Ms McCabe told us that for Waitangi Station, the desktop risk assessment identified the following potential risks:
- (a) Buffers required from any permanent streams or rivers/lake - for fertiliser application and irrigation development;
 - (b) Bridges/culverts across streams;
 - (c) Track runoff – check;
 - (d) Location of water troughs; and
 - (e) Timing of fertiliser applications.
- 7.29 The applicant had committed to implementing the FEMP including an on farm risk assessment, appropriate mitigation, monitoring and auditing before the first exercise of this consent. The applicant had already identified draft mitigation and as summarised below:
- (a) Fencing stock out of permanently flowing waterways within the irrigation areas
 - (b) Buffer zone created between the irrigation area and Lake Waitaki.
- 7.30 Ms McCabe said that the Reporting Officer had also identifies mitigation from the original AEE. The mitigation would be finalised as part of the FERA to complete the FEMP. Given developments since the original AEE it was considered N and P thresholds are more appropriate to limit discharges rather than specifying farming activities.
- 7.31 Ms McCabe concluded that the N and P thresholds from the MWRL Study can be met, and the applicant was committed to addressing on farm risks with the implementation of the FEMP. As such, Ms McCabe believed 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 amenity values

- 7.32 Ms McCabe told us that the applicant had proposed the minimum flow as specified in the WCWARP for the water body from which they have applied to take and use water. Ms McCabe said that the minimum flow was designed to adequately protect people, community and amenity values. Also the activities all occur in a rural setting, where the dominant land use was pastoral farming. Given that the proposed activities all occur on private farmland; as such the use of water was unlikely to adversely affect amenity values.

- 7.33 Ms McCabe noted that the public camping ground run by the Waimate District Council on the shores of Lake Aviemore is within close proximity of the proposed irrigation development from Sutton and Gibson Stream. However this was already a highly modified rural farming environment and Sutton Stream was already often dry in the lower reaches by the camping area.
- 7.34 Given the applicant's commitment to ensuring efficient use of water on their property and the imposition of minimum flow and flow-sharing regime to protect in-stream values and other users, Ms McCabe considered that effects on people, communities and amenity would be minor.

Effects on Tangata Whenua values

- 7.35 Ms McCabe noted that Te Runanga O Ngāi Tahu submitted on all applications in the catchment, seeking that all applications be declined. The primary reasons for this 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.
- 7.36 Ms McCabe said that these applications were considered to be within the allocation limits and in accordance with the minimum flows of the WCWARP. However it was acknowledged, that Te Runanga O Ngāi Tahu have a significant relationship with the Waitaki Catchment, and as such, appropriate minimum flow conditions, and management of water quality effects, was proposed by the applicant to ensure that the potential effects on the environment, including tangata whenua values are minor.

Effects of works in the bed

- 7.37 Ms McCabe told us that two intake sites are proposed; one in Sutton Stream and one in Gibson Stream. Ms McCabe said that the intakes are proposed to consist of an infiltration gallery buried up to approximately one metre below stream bed level which is considered appropriate for the intake size and stream velocities. Any excavated materials will be replaced to bring the area back to bed level and the intakes should be installed within approximately half a day.
- 7.38 As mentioned above, the take from Sutton Stream was subsequently modified to a surface take rather than a buried gallery intake. However the following comments still remain relevant in relation to the gallery intake proposed for Gibson Stream.
- 7.39 She provided a discussion on the potential adverse effects of the works, including effects on flood carrying capacity and erosion, effects on water quality and ecosystems and effects on amenity, people, communities and Tangata Whenua values.
- 7.40 In relation to flooding and erosion, Ms McCabe said that proposed intake structure should not create any erosion, affect flow, or increase bank instability given the buried and unobtrusive nature proposed. She noted that both streams are stable at the proposed abstraction site and not subject to adverse bank erosion.
- 7.41 In respect of water quality and ecosystems, Ms McCabe told us that works around the intake area will be undertaken during the initial construction and on an as needed basis for such activities as maintenance at the beginning of the irrigation season. She acknowledged that such instream works could cause temporary discoloration of the water and sedimentation that can affect aquatic ecosystems and downstream users. To address this issue, it was proposed that the stream be temporarily diverted (less than 50mtrs) around where the intake is to be located so that works does not occur in continuously flowing water. In addition, the area of works will be re-instated on completion of works. Given the short-term nature of the work, Ms McCabe considered that effects on ecosystem values and water quality could be effectively mitigated by conditions of consent.
- 7.42 In relation to effects on amenity, people, communities and Tangata Whenua values, Ms McCabe noted that the proposed intake abstractions are located behind the Waitangi Station homestead and are not easily accessible or visible by the public. In addition, the intake will be inconspicuous as it is located under the river bed and covered by rock material. An accidental discovery protocol has also been proposed by the applicant to address Tangata Whenua values. For these reasons, Ms McCabe concluded that the effects on amenity, people, communities and Tangata Whenua values would be minor.

Effects of discharge

- 7.43 There are two separate discharges proposed. Ms McCabe told us that the discharge from Gibson Stream has been occurring with the stock water system and consequently a structure is not

required. For the new Sutton Stream discharge, water will be discharge above the maximum operating level with a drop of 1-2mtrs onto a small rock discharge pad on the lake edge prior to discharging into the lake.

- 7.44 Ms McCabe provided a similar analysis to the above in relation to the potential adverse effects of the proposed discharge, including effects on flood carrying capacity and erosion, effects on water quality and ecosystems and effects on amenity, people, communities and Tangata Whenua values.
- 7.45 In relation to flooding and erosion, Ms McCabe told us that the discharge from Gibson Stream is well established for the existing discharge of excess stock water, without adverse effects on erosion. This discharge is proposed to continue fairly much in the same manner with the likelihood of an increased water flow at times.
- 7.46 Based on the effects of the existing Gibson Stream discharge, Ms McCabe assumed that the new discharge from Sutton Stream will also have no adverse effects on erosion long term with the possibility of some initial erosion when the activity first commences until the disturbance settles. She also told us that the Sutton Stream water discharged into Lake Aviemore will be onto a small rock discharge pad, required on the lakes edge to remove the velocity and potential erosion.
- 7.47 Overall, given the volume of water contained within Lake Aviemore and the historical nature of the Gibson Stream discharge, Ms McCabe considered that the discharge of excess stock and irrigation water is unlikely to effect the erosion of the banks or bed of the Lake or effect flood capacity.
- 7.48 In respect of water quality and ecosystems, Ms McCabe emphasised that the water that will be discharged into Lake Aviemore from both discharge locations is unused (e.g. it has not been used for irrigation prior to the discharge occurring) irrigation and stock water. The water should therefore be the similar quality as that diverted. Ms McCabe also told us that fish should not be able to enter the structures/race at either of the discharge locations. She therefore considered that the effects on ecosystems and water quality of Lake Aviemore were minor.
- 7.49 In relation to effects on amenity, people, communities and Tangata Whenua values, Ms McCabe noted that when water is discharged there is the potential to cause adverse effects on other users of the water body due to the contamination of the water, or create an unsightly plume that may affect amenity. However, she considered that in this case the volume discharged is very small in proportion to the extensive volume of Lake Aviemore providing a significant dilution effect and ensures the quality of the water is unaltered. She also commented on the location of the nearby camp ground and concluded that the effects on amenity, people, communities and Tangata Whenua values would be minor.

Comments on Submissions

- 7.50 Ms McCabe said that the submission made by MEL was subsequently withdrawn in relation to the potential adverse effects of MEL infrastructure on the 21st September 2009 due to the consultation carried out.

Mr David Boraman – Hydrologist

- 7.51 Mr David Boraman undertook a hydrological investigation for the applicant to determine the 5 year 7 day MALF for Sutton Stream. He referred to a report prepared by Gabites / Horrell which determined a 7 day MALF of 81 L/s and noted that he could not improve on this figure.
- 7.52 He told us that the issue was discussed between himself, Mr Stewart (on behalf of the Council) and Mr Scarf (on behalf of Fish and Game), who all agreed that the 7 Day MALF calculated using the Gabites / Horrell equation should be adopted until the dataset improved.
- 7.53 It was agreed that the interim Minimum flow for Sutton Stream should be adopted as 80 L/s above the Waitangi Intake. To mitigate an environmental flow in Sutton stream the abstractions from the catchment should be managed by a user group. This involved a constant reduction in the rate of abstraction from Black Jack, Gibson and Suttons Streams when the flows in Sutton Stream fell below 135 L/s and ceasing all takes when the minimum flow of 80 L/s was reached. He provided graphs in his evidence to illustrate this reduction.

Mr Andrew Craig - Landscape architect

- 7.54 Mr Craig provided a detailed assessment of landscape character on behalf of the applicant. He considered that the wider environment consisted of three major elements; the low mountains of the Kirkliston range complex and lakes Aviemore and Waitaki. In relation to the proposed irrigation areas, he noted that land cover comprises pasture grasses and that they are modified to the extent that they display the characteristics typical of pastoral farming.
- 7.55 In relation to potential effects on visibility and views, Mr Craig considered that the main vantage point from which the site is viewed is SH83. Views can also be obtained from on the lake itself and from the less travelled Te Akatarawa Road running past the application sites on the northern shore of Lake Aviemore. He did not consider the site to be an important focal point, but recognised that they contribute to the overall amenity of their lakeside setting.
- 7.56 Mr Craig considered that, as seen from SH83, there would be no discernable change in view and the existing cultivated appearance of the farm will remain essentially unchanged. Although the sites will be greener for longer, he did not consider this to be visually offensive given the pastoral setting. He also noted that the machinery irrigation will not interfere with views due to the use of spray guns and that the irrigation is confined to low elevations. Overall he considered that there would be no adverse landscape effects arising from the proposed activity.
- 7.57 In response to Mr Glasson's evidence, he noted that the sites are all on the inland side of Te Akatarawa Road and therefore effects will not extend to the area between it and the lakeshore. Consequently, Mr Craig considered that there was no need for a buffer alongside these sites.
- 7.58 In relation to Mr Glasson's comments about the geometrically shaped irrigation areas, Mr Craig noted that the extent of each area is generally small, contained and discrete. He did not consider that their shape would generate any discernable effect. He also referred to the visual principle of foreshortening, which means that the full extent and shape of a plane cannot be appreciated when viewed from more or less the same elevation. He therefore concluded that there was no need to adjust the site boundaries.

Mr Robert Batty - Planner

- 7.59 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.
- 7.60 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.
- 7.61 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

- 7.62 Mr Macfarlane is a farm management consultant with 29 years experience. He provided us evidence on behalf of all of the UWAG applicants.
- 7.63 He assessed the viability of the farm management plans and practicality and robustness of the mitigation measures and the ability to monitor progress.
- 7.64 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.

- 7.65 Mr Macfarlane also discussed with us the costing of various typical irrigation developments.
- 7.66 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.
- 7.67 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.

8 SUBMITTERS

- 8.1 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.

Meridian Energy Ltd – Mr Richard Turner

- 8.2 Mr Richard Turner (Planning Manager – Natural Resources, Meridian Energy Ltd) noted that there were discrepancies between the applicant's proposed consent conditions and those common consent conditions agreed with MEL prior to derogation approval being acquired. He noted that failure to make the application consistent with the common consent conditions would result in derogation approval be revoked. He expected the applicant to clarify the conditions they were seeking before the end of the hearing.
- 8.3 Meridian Energy Ltd original submission opposed the consent citing the effects on water quality and flow metering requirements. However in his supplementary brief of evidence Mr Turner confirmed that this proposal was not of any concern to Meridian in terms of cumulative water quality effects.

Central South Island Fish and Game Council – Mr Frank Scarf and Mr Mark Webb

- 8.4 Central South Island Fish and Game Council opposed the granting of the consent and requested a minimum flow of the 1 in 5 year, 7 day low flow. With respect to this submission, the applicant proposed a minimum flow of 80 L/s to be measured on Sutton Stream.
- 8.5 As noted above, Mr Frank Scarf on behalf of Fish & Game agreed that the proposed minimum flow was appropriate. However he did not see the need to introduce a flow sharing regime at this stage given that the minimum flow site is downstream of all abstraction sites. He also told us that he agreed with the conditions recommended in Ms Vesey's report, including the volumetric limits placed on the application.
- 8.6 In addition to the above, Mr Mark Webb provided comment on the fish and game values of Sutton and Gibson Streams. He noted that resident brown trout are known from the middle and upper reaches of Gibson Stream, but that there was no known resident trout population in Sutton Stream. He highlighted the balance that exists between a lake fishery that sustains the attentions of thousands of anglers and summer holiday makers and the reproductive capacity of its tributaries where only the Aviemore spawning race has an assured flow. If the consent was to be granted, he recommended the auditing of existing intakes to ensure they comply with recommended guidelines for fish exclusion.

Mackenzie Guardians – Dr Susan Walker

- 8.7 Dr Susan Walker (Plant Ecologist, Landcare Research) was engaged by the Mackenzie Guardians to provided evidence at the hearing detailing the effects on terrestrial ecology from the proposed irrigation of an additional 25,000 ha. The majority of Dr Walker's evidence related to the proposed irrigation in all of the Upper Waitaki catchment. A summary of this evidence has been included in Part A of this decision.

- 8.8 In relation to individual applications, Dr Walker's Attachment 15 contained her more particularised reviews in respect of each site. Dr Walker assessed the property as being approximately 10% converted, however it was not clear whether she was referring to a particular irrigation area or Waitangi Station in its entirety. She noted that the site appeared largely undeveloped and that biodiversity values require assessment. She classified the proposal as "moderate" in terms of potential effects of irrigation on terrestrial biodiversity.

Cultural values – Mr Paul Horgan – Environmental Advisor

- 8.9 Mr Horgan told us that Ngāi 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 had 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.
- 8.10 Mr Horgan told us that Ngāi Tahu had adopted two focal points in the Upper Waitaki Basin against which they assessed the applications, being the Upper Haldon Arm / Lower Tekapo River and the Ahuriri Delta. Mr Horgan told us that in addition to being focal points, Ngāi Tahu also propose to undertake mahinga kai restoration in those locations also.
- 8.11 Notwithstanding the interest in the two focal points of the Ahuriri Delta and the Haldon Arm, Mr Horgan for Ngāi Tahu reiterated concern about the possible effects that increased nitrates and phosphorous concentrations in Lake Benmore might have on the Lower Waitaki catchment. In this respect the Ngāi Tahu philosophy of "Ki Uta Ki Tai" or "mountains to the sea" is relevant and recognises that all parts of the catchment are interconnected and an impact on one part will affect all other parts.
- 8.12 A litmus test for Ngāi Tahu was that kai gathered in the waters of the Waitaki system should be able to be eaten safely. They stated that the individual and cumulative effects of the proposed activities required that a precautionary approach must be adopted in our decision making.
- 8.13 The visual evidence provided by Ngāi Tahu at the hearing indicates that no "recorded" archaeological sites are located on that area of Waitangi Station close to Mahi Tikumu/Lake Aviemore and where the proposed activity is to occur.

9 UPDATES TO THE SECTION 42A REPORTS

- 9.1 In her addendum report, Ms Vesey identified several matters that had been identified during the hearing, or as a result of changes proposed by the applicant and provided the following comments on what she considered to be the outstanding matters.
- 9.2 In summary, her only outstanding concern related to local water quality effects in relation to the take and use application. She also noted that she had yet to hear the submission from Ngāi Tahu so her original comments on tangata whenua values remained application. Ms Vesey had no outstanding concerns in relation to the applications for works in the bed or the proposed discharge and considered that the effects of these activities were acceptable.

Water quality

- 9.3 In relation to water quality, Ms Vesey told us that the draft FEMP provided by Ms McCabe has been audited by Environment Canterbury's technical experts who have advised that subject to suitable mitigation (water quality conditions), they do not consider the cumulative effect on water quality from this proposal will be more than minor. However Ms Vesey noted that to date no suitable conditions addressing water quality had been proposed by the applicant and as such the issue remains outstanding.
- 9.4 Ms Vesey also noted that while draft mitigation has been proposed by the applicant requiring fencing and buffer zones, no set back distances for the fencing has been proposed. She said that this it is likely that this will be addressed through the on-farm FERA which had not been carried out at the time the applicant presented their evidence. Such conditions could be finalised upon completion of the on-farm FERA.
- 9.5 Additionally she noted the table attached to Mr McNae's s42A report identifies there to be areas of concern with the parameters used in the running of OVERSEER for this applicant. Until such a

time that correct parameters were submitted, Ms Vesey considered that these concerns may contribute in particular to localised effects on water quality

Landscape

- 9.6 On the issue of landscape, Ms Vesey noted that Mr Glasson now considered that no buffer was needed for this proposal. Mr Glasson did not provide any explanation for this change in his addendum report, other than to note that the site is not directly adjacent to the lake edge so no buffer is required.

Intake structures and ecosystems

- 9.7 Ms Vesey referred to the addendum report prepared by Dr Meredith discussing submerged gallery intakes. She did not consider that sufficient information had been provided describing the materials proposed to be used to backfill the proposed gallery. However she considered that an appropriate condition could be worded to ensure effects on ecosystems were mitigated.

Conditions

- 9.8 Ms Vesey also provided comment on a range of conditions of consent proposed by the applicant, including the following, among others:
- (a) She agreed with Ms McCabe's mitigation measures for water quality including fencing permanently flowing waterways in the irrigation areas;
 - (b) She appeared to agree that telemetry should be an optional requirement for water metering rather than mandatory as Ms McCabe had advised that it may not be practical in this circumstance; and
 - (c) Given that the diversion and take will be metered, Ms Vesey agreed metering is not required for the discharge.

10 APPLICANT'S RIGHT OF REPLY

Mr Chapman

- 10.1 As for his opening, Mr Chapman's right of reply was presented on behalf of all UWAG members. He also provided some specific comment on individual proposals, but not in relation to these applications.
- 10.4 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 considered the correct approach for the ranking of the applications was to determine where they sit in relation to the existing environment.
- 10.5 Mr Chapman said that other scenarios would need to apply for those consents whose catchment or sub-catchment was below Benmore or a combination of Benmore/Aviemore and Waitaki. He said that those consents should revert back to the property specific monitoring arrangements with no trigger response or increased monitoring which related to the condition or trends relating to Benmore.
- 10.6 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.
- 10.7 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.
- 10.8 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.

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

Ms McCabe

10.10 In her right of reply, Ms McCabe noted that although the existing race system will be upgraded, the addition 15 L/s will still be required for the takes from Gibson and Sutton Streams. This is to ensure conveyance to the end of the race system rather than to provide for losses within the race.

10.11 Ms McCabe said that during the course of the hearing there has been some discussion around whether there had been adequate detail provided in relation to gallery intakes. We note that this issue was raised by Ms Vesey in her addendum report.

10.12 In response, Ms McCabe told us that gallery intakes with a gravel cover proposed of 1 m would be located in streams or locations within streams where the stream velocity was not high. Many of the streams have "pooled" and protected locations whereby velocity was low and potential for scouring was minimal. In Ms McCabe's opinion the Henburn and Gibson Stream were low gradient streams with lower velocity and therefore 1 m of gravel cover should be sufficient. She provided a concept diagram illustrating how the galleries will be backfilled.

10.13 Mr McCabe also referred to the need for a temporary diversion associated with the construction of the intake and suggested conditions of consent that could be imposed to manage the effects of this activity.

10.14 Finally, we note that in the comments associated with the final condition set from the applicant, it is noted that the applicant amended the proposed gallery intake for Gibson Stream to a surface take with a fish exclusion device. Ms Vesey agreed this was appropriate subject to the imposition of the appropriate fish screening condition for a new take.

11 STATUTORY CONTEXT

11.1 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

12 EVALUATION OF EFFECTS

12.1 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) Water quality
- (b) Flows and instream ecosystems
- (c) Inefficient use of water
- (d) Effects on people, communities and amenity values
- (e) Landscape effects
- (f) Tangata Whenua values
- (g) Effects of works in bed and discharges

- (h) Positive effects

Water quality

- 12.2 The draft FEMP provided by Ms McCabe has been audited by Environment Canterbury's technical experts who have advised that subject to suitable mitigation (water quality conditions), they do not consider the cumulative effect on water quality from this proposal to be more than minor. We agree with this assessment.
- 12.3 We note that the final FEMP submitted to ECan on 22 November 2010 contained suitable mitigation and monitoring. Key mitigation measures included:
- (a) Fencing Gibson and Sutton Streams within the irrigation area, with irrigation set back from the streams of a minimum of 5m.
 - (b) Monitoring and managing stock access, stock type and stock number from all permanently flowing waterways within other non irrigated intensively farmed areas.
 - (c) Applying a 20 metre layback from any water way when applying fertiliser by land based application e.g. bulk spreader.
- 12.4 We note the applicant has also accepted water quality monitoring on Sutton Stream as a condition of consent.

Flows and instream ecosystems

- 12.5 On this issue of flows, there was broad agreement between Messrs Boraman, Scarf and Stewart as to the appropriate minimum flows and conditions of consent. We agree with the measures set out in Mr Stewart's initial report and supported by the other experts including a minimum flow of 80 L/s in Sutton Stream with a graduated reduction in abstraction rates between 135 L/s and 80 L/s.
- 12.6 Given the limited data on which the minimum flow is based, we agree with Mr Stewart's observation about the need for a data collection program including continuous flow measurement at the proposed monitoring site on Sutton Stream. However as a recorder is being installed as part of the flow metering conditions, the MALF is able to be checked at any time without the need for a separate condition to this effect.
- 12.7 In addition, we consider that it is important that an appropriate fish exclusion device be included on the existing intake before water is taken under this consent. With this measure in place in combination with the above flow regime, we are satisfied that there will be no adverse effects on instream ecosystems.

Inefficient use

- 12.8 The proposed annual volume applied for is less than the volume determined under Policy 16 (C)(ii), and the application rate is less than half the water holding capacity of the soil. We are therefore satisfied that the annual volume applied for is efficient.
- 12.9 The only remaining issue under this heading is the efficiency of the distribution systems, with existing races being used to convey the water from the streams to the irrigation areas. We note that Proposal A will involve piping the water from the race to the irrigation area, with Proposal B taking water directly from the race.
- 12.10 The use of this existing race system requires an additional 15 L/s to be diverted from both Gibson and Sutton Stream (above that required for irrigation) to ensure conveyance to the end of the race system. Excess water will be discharged back into Lake Aviemore. However this excess diversion and discharge could be avoided if the entire system was piped.
- 12.11 The applicant has advised that the race system will be upgraded to reduce race losses by sealing any leaks and improve carrying capacity. In addition, it is reply to an earlier further information request in emphasised that piping the existing race systems would not be economically feasible for the applicant.
- 12.12 In terms of effects on the environment of the existing canal system, we are satisfied that there will be not effects on Gibson and Sutton Streams provided the minimum flows are maintained.

There are also no downstream users of the water that would be adversely affected by the higher diversion of water. The issue is therefore more a policy consideration than one based on effects and we return to the issue in our evaluation of the relevant planning instruments.

Effects on people, communities and amenity values

- 12.13 The original AEE stated Sutton and Gibson Streams did not provide any recreational activities to the local community because they are small and ephemeral in nature. There are camping grounds alongside Lake Aviemore, adjacent to Waitangi Station but no submissions were made in relation to this application from people who use those camping grounds. Lake Aviemore is actively used by recreationalists many people camp along the lake edge adjacent to Waitangi Station.
- 12.14 With the minimum flows and a minimum lake level proposed for this application, the potential adverse effects on community and amenity values were considered to be minor by Ms Vesey and we concur with her opinion.

Landscape effects

- 12.15 On the issue of landscape, the potential effects of concern are the greening of the landscape and the visibility of irrigation infrastructure. The key vantage points from where these changes may be viewed are Te Akatarawa Road, Lake Aviemore and SH83 on the opposite side of the lake. We agree with Mr Craig that SH83 is the most important of these is SH83 given its higher use and consider that the distance between SH83 and the irrigation area is an important factor in mitigating any
- 12.16 We accept that the proposed irrigation areas are already modified pastoral grasses and display the characteristics typical of pastoral farming. We agree with Mr Craig that allowing the land to be greener for longer through the use of irrigation is not an adverse effect in this setting and is compatible with the location in which it is proposed. We are also satisfied that the irrigation infrastructure will not be obtrusive, as spray guns are proposed rather than pivot irrigators.
- 12.17 In relation to the need for a buffer, we note that Mr Glasson originally proposed a buffer between the irrigation area and the lake edge. However Mr Craig rightly pointed out that the sites are all on the inland side of Te Akatarawa Road and therefore effects will not extend to the area between it and the lakeshore. Mr Glasson subsequently agreed in his addendum that no buffer is required and we support this conclusion.
- 12.18 We note that the site is located within a Landscape Protection Area in the Waitaki District Plan and return to this in our evaluation of the relevant planning instruments. However, given the nature of the existing environment and the activity proposed, we are satisfied that the effects of the proposal on landscape values are acceptable.

Tangata Whenua Values

- 12.19 Ngāi Tahu in their evidence did not identify any specific cultural or spiritual values that may be adversely affected by this proposed activity.
- 12.20 The proposed activity while for new irrigation is located in a part of the catchment that has a relatively small level of existing irrigation. It is downstream of the area that has been identified by Ngāi Tahu for mahinga kai restoration. However, that does not minimise the duty to avoid adverse effects on the localised cultural values of tangata whenua. The "Ki uta ki tai" (mountains to the sea) concept recognises the interconnected nature of the waters of the Waitaki system and the relationship that Ngāi Tahu hold with all parts of the waterways.
- 12.21 Additionally, Mahi Tikumu/Lake Aviemore is a Statutory Acknowledgement area, which provides for the recognition of Ngāi Tahu mana to be reflected in the management of resources that may impact on the lake. The proposed irrigation area is not within a silent file area nor are there any recorded archaeological sites in the vicinity of the property.
- 12.22 In our assessment of this application we conclude that due to the small scale nature of the activity, coupled with the proposed mitigation and conditions that the effect on cultural values will be minor.

Effects of works in bed and discharges

- 12.23 The only direct evidence we received on the applications for works in the bed and the discharge of water was from Ms McCabe on behalf of the applicant. There were no submitters opposed to these applications and the reporting officer Ms Vesey considered that the effects were acceptable.
- 12.24 We have considered Ms McCabe's evidence on these applications and, like Ms Vesey, agree with the conclusions she has reached. With the imposition of appropriate conditions to mitigate any potential effects, we are satisfied that these activities will not result in adverse effects of concern.
- 12.25 In relation to the applicant
- 12.26 In respect of the diversion associated with construction of the intake, it is over a short length, will be temporary in nature and returns to the same watercourse it is originally part of. Given the nature of the activity, we are satisfied that the effects will be no more than minor. However we consider that it is necessary to impose some brief conditions of consent to ensure that the extent of the diversion is clearly defined and the activity is managed appropriately.

Positive effects

- 12.18 We accept that the use of water for irrigation will result in improved productivity of the land and positive economic benefits for the wider community.

Key conclusions on effects

- 12.32 In relation to the actual and potential effects of the proposal, our key conclusions are as follows.
- 12.33 We are satisfied that cumulative water quality effects (Lake Aviemore and Lake Waitaki) will be less than minor and that with suitable conditions, the effects of granting the consent on Sutton Stream will be minor.
- 12.34 We are satisfied that the flows and ecosystems of the relevant streams will be adequately protected by conditions of consent, including a minimum flow condition for Sutton Stream.
- 12.35 We accept that the proposed annual volume is reasonable and efficient, but return to the efficiency of the distribution system in our discussion of the relevant planning framework.
- 12.36 In terms of effects on landscape values, we do not think that the irrigating of the subject site will have any adverse effects given the nature of the existing environment and the proposed activity.
- 12.37 We accept that the effects of the proposed installation of the intake structures (including the temporary diversion) and the discharge of water to Lake Aviemore will be no more than minor with appropriate conditions.
- 12.38 Finally, in terms of our key conclusions on effects we do accept that there will be economic benefits for the applicant and the wider community if this consent is granted.

13 EVALUATION OF RELEVANT PLANNING INSTRUMENTS

- 13.1 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.
- 13.2 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. In addition, the Proposed and Operative CRPS and the relevant District Plans are of assistance in relation to landscape issues that arise.
- 13.3 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 these applications.

Water quality

- 13.4 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.
- 13.5 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 and lakes and 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.
- 13.6 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. The load arising from this activity will not adversely affect the trophic status of Lake Aviemore. There are streams on the boundary of the irrigation area but with the small area of irrigation proposed and the short travel time before entering Lake Aviemore we are satisfied that effects on these stream will be minor. Overall, we conclude that a grant of consent, with conditions, would be consistent with Objective 1 of the WCWARP.
- 13.7 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.
- 13.8 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 NRRP provisions on the basis that they represent the current approach for achieving the common goal of protecting water quality.
- 13.9 Under the NRRP, Lake Aviemore is classified as an “Artificial On-River Lake”. 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) cause the TLI maximum to be breached.
- 13.10 Under the NRRP Sutton and Gibson Streams are classified as Hill-fed upland streams. 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 chlorophyll-a should be less than 50 mg /m² (periphyton guideline for safeguarding aquatic biodiversity and also recreation). Hill-fed upland rivers also have associated water quality performance standards for DRP and DIN (Table WQL16) of 0.006 and 0.21 mg/L, respectively.
- 13.11 We understand that the applicant and reporting officer agreed on periphyton water quality conditions that included a 120 mg/m² Chlorophyll *a* standard (and an early warning trigger of 90 mg/m² Chlorophyll *a*) for Sutton Stream. 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.
- 13.12 We must have regard to the current provisions of the NRRP, which is unequivocal in respect to the water quality outcomes expected. We consider therefore that the standard trigger for Sutton and Gibson Streams should be 50 mg/m² chlorophyll a together with water quality performance standards for DRP and DIN of 0.006 and 0.21 mg/l respectively, Because 50 mg/m² chlorophyll a is indicative of oligotrophic water quality, and also because the methodology for periphyton biomass estimation below this threshold is subject to significant error, our view is that there is no case for having an early warning trigger. Thus we have modified the condition set to reflect this standard trigger and the provisions for reducing irrigated area in the event these conditions are breached.
- 13.13 Overall then having regard to the scheme of the WCWARP and the NRRP we reach a conclusion that granting consent with appropriate conditions to the proposal would be consistent with the key objectives and policies of both of these plans relating to water quality.

Environmental flow and level regimes

- 13.14 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.
- 13.15 The issue of environment flows is discussed in more detail in the assessment of effects section. As the applicant is proposing to adopt the minimum flow required by the WCWARP and is within the applicable allocation limit, we are satisfied that the proposal is consistent with these policies.
- 13.16 Policy 7 of the WCWARP requires that when considering whether to grant or refuse consent to take, dam, divert or use water from streams where the mean annual low flow is less than 100 litres per second (such as Gibson and Sutton Streams), we must have regard to whether there are alternative locations for the activity on larger water bodies. In this case the applicant has given consideration to an alternative take from Lake Aviemore, but concluded that the costs associated with pumping and piping water from the lake would be so great that this would be outside the economic scope of the project.

Efficient use of water

- 13.17 Policies 15 – 20 provide for an efficient use of water so that net benefits are derived from its use and are maximised and waste minimised. 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. As discussed in our evaluation of effects, we are satisfied that the rates and annual volumes reflect an efficient and effective use of water and that the reasonable use test can be met.
- 13.18 Policy 19 encourages the piping or sealing of water distribution systems to minimise water losses and maintain water quality, and where appropriate, requiring their progressive upgrade and piping “*where there is an environmental and/or economic net benefit for so doing*”. As mentioned above, the applicant proposes to use the existing canal system to convey the water. Although this is not as efficient as a piped system, we do not consider that there is sufficient environmental or economic benefit in this case to justify imposing a requirement for piping. Provided that a condition is included to ensure that the water races are well maintained to minimise losses, we are satisfied that the proposal would not be contrary to this policy.

Landscape and amenity

- 13.19 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.
- 13.20 In considering these provisions we are informed by the provisions of the Waimate District Plan (WDP) which identifies the applicant’s property as having a rural zoning and being located within Lakeside Protection Area 2 (LPA2). This is linked to Policy 4A, which seeks to avoid the adverse visual effects of development on the landscape and visual values of the lakeshore and hinterland of the Waitaki Lakes. In relation to LPA2 (described as the “hinterland area”), the plan controls new buildings to achieve development which is sensitive to the landscape character of the area.
- 13.21 The explanations and reasons to this policy note that the shoreline and areas up to the crest of hills surrounding Lake Waitaki provide a “dramatic visual setting for productive and recreation activities in the District”. We consider that the reference to “productive activities” anticipates the use of the land for farming activity as currently proposed in this environment. We also note that the key control on activities in LPA2 is a limit on buildings with a floor area greater than 25m², which require consent as a controlled activity. The use of spray guns as proposed by the applicant would not trigger this rule and that irrigation can occur as a permitted activity.
- 13.22 In summary, notwithstanding the presence of the site within LPA2, there is nothing in the planning instruments that alters our conclusion that the proposal is appropriate for the environment in which it is located and will therefore be consistent with the relevant objectives and policies relating to landscape.

Tangata whenua

- 13.23 Objective 1(a) of the WCWARP relates to the integrity of mauri and is closely linked to Objective 1(b). If we are satisfied that the health of a particular water body is being safeguarded then the mauri is being safeguarded also.
- 13.24 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 for providing mahinga kai for Ngāi Tahu and (d) protecting wāhi tapu and other wāhi taonga of value to Ngāi Tahu. This objective aligns with the Ngāi Tahu philosophy “Ki Uta, Ki Tai”, or recognising the interconnected nature of the Waitaki catchment and safeguarding the associated cultural values. Our finding is that there is unlikely to be deterioration in water quality of Mahi Tikumu / Lake Aviemore as a consequence of this proposal and that this application is consistent with this Objective.
- 13.25 Objective WTL1(a)&(d) from Chapter 7 of the NRRP seeks to achieve no overall reduction in the contribution of wetlands to the relationship of Ngāi Tahu and their culture and traditions with their ancestral lands, water, mahinga kai sites, wāhi tapu and wāhi taonga. We consider that the localised and cumulative impacts when subject to the proposed mitigation measures will ensure that the proposed activity is consistent with this Objective.

Activities in beds of lakes and rivers

- 13.26 The key objectives and policies that are relevant to the land use application (CRC031013) can be found in Chapter 6 of the NRRP, which relates to activities in the beds of lakes and rivers. The chapter contains one objective and two related policies.
- 13.27 Objective BLR1 aims to ensure that works in the beds and banks of lake, rivers and streams can be undertaken while minimising effects, including flood-carrying capacity, natural character, ecosystems, other structures, erosion, Ngāi Tahu values. Given the conclusions we have reached on these matters above, we consider that, subject to appropriate conditions, the proposed works in the bed are consistent with this objective.
- 13.28 Policies BLR1 and BLR2 aim to control activities associated with the erection, placement, use and maintenance of structures within the bed of rivers to ensure that Objective BLR1 is achieved. This may include restricting activities so that they do not affect flood-carrying capacity, erosion or create plant infestations. For the reasons discussed above, with the imposition of appropriate conditions, we consider that the proposed works in the bed are consistent with these policies.
- 13.29 In respect of the proposed temporary diversion, given its minor nature and our conclusions on effects outlined above, we consider that the activity is consistent with the relevant objectives and policies in the WCWARP seeking to sustain the quality of the environment.

Discharge of water

- 13.30 In relation to the discharge application (CRC031014), 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. Given our conclusion on the effects of the discharge above, we are satisfied that the proposed activity is consistent with these provisions.

Key conclusions on planning instruments

- 13.31 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, and tangata whenua values.

14 EVALUATION OF OTHER RELEVANT S104 MATTERS

- 14.1 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. After hearing all the relevant evidence, we consider that no such matters exist in relation to this application.

- 15.1 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.
- 15.2 The following discussion relates to the take and use application rather than the applications to disturb the bed or discharge water. However, we note that we have assessed the proposed works in the bed against the Part 2 purpose and principles, and consider that it is consistent with them.

Section 6 – Matters of National Importance

- 15.3 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 Māori with the environment (s6(e)).
- 15.4 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.
- 15.5 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.
- 15.6 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.
- 15.7 In relation to section 6(e) we are cognisant of the relationship that Ngāi Tahu hold with the natural resources of this area, and while no specific values were specified by Ngāi Tahu in relation to this application, we believe that the mitigation measures and conditions provide for the cultural relationship to this catchment that is of importance to Ngāi Tahu.
- 15.8 For the above reasons, we consider that granting consent to the proposal would recognise and provide for s6 matters, as we are required to do under the RMA.

Section 7 – Other Matters

- 15.9 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:
- 15.10 Sub-section (a) refers to kaitiakitangā. We consider that the proposed activity with mitigation measures and conditions sits within the acceptable environmental parameters outlined by Ngāi Tahu such that that it will not cause distress to the function of kaitiakitangā.
- 15.11 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.
- 15.12 Sub-section (c) refers to the maintenance and enhancement of amenity values. Having regard to the amenity values of the area proposed for irrigation, we do not think that allowing irrigation to occur will impact on sub-section (c) issues.
- 15.13 In terms of sub-sections (d) and (f), we have had particular regard to the intrinsic values of ecosystems and the maintenance and enhancement of the quality of the environment. We consider that through the grant of consent with the conditions imposed such values will be safeguarded.
- 15.14 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

- 15.15 Finally, section 8 requires that we shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).
- 15.16 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 Runangā 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.
- 15.17 We are satisfied that the consultation procedures provided Ngāi Tahu with 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

- 15.18 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 is consistent with the purpose of sustainable management;
 - (b) Irrigation will make a contribution to the overall regional (Waitaki) wellbeing; and
 - (c) The natural and physical resources of the site (water and land resources) will all be sustained.
- 15.19 This leaves section 5(2)(c) RMA and the obligation to avoid, remedy or mitigate any adverse effects of activities on the environment. We are satisfied that the applicant has proposed appropriate mitigation to avoid and remedy the adverse effects arising from this proposal.

16 OVERALL EVALUATION

- 16.1 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.
- 16.2 The key issues for us in relation to this application were to do with water quality issues, efficiency, and, overall, how well the grant of consent sat alongside the key policies and objectives within the WCWARP. There were not, in our view, any significant competing or conflicting considerations and no significant opposition to the proposal. The only real debate was around the nature of conditions that were appropriate to mitigate any potential adverse effects of the proposal. We are satisfied that any such effects will be adequately addressed by the conditions we impose, as discussed further below.
- 16.3 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 all the applications, subject to conditions.

17 CONDITIONS

- 17.1 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.

- 17.2 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.
- 17.3 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.
- 17.4 We note that the agreed conditions between the applicant, submitters and ECan do not include any water quality monitoring conditions for Lake Aviemore with a requirement to ratchet back irrigation should thresholds be exceeded. We are satisfied that this is reasonable because Lake Aviemore is well-flushed with a mean retention time of ~ 16-20 days. This together with the minor area of irrigation proposed means there is no risk of nutrient inputs from irrigation causing the TLI to exceed the threshold in the NRRP (3.0).
- 17.5 In relation to streams and rivers, we recognise that streams and rivers in the catchment are nutrient limited by nitrogen and/or phosphorus. We consider that the NZ (MfE) Periphyton Guidelines provide appropriate thresholds for managing nuisance periphyton growths and provides 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.
- 17.6 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. 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. We have therefore included monitoring conditions on Sutton and Gibson Streams as discussed in earlier in this decision.

18 DECISION

- 18.6 Pursuant to the powers delegated to us by the Canterbury Regional Council; and
- 18.7 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 **Waitangi Station Limited**:
- CRC030944-A** to divert and take water from Sutton Stream at a rate of up to 55 L/s and 330,000 m³/yr for the irrigation of 55 ha on Waitangi Station;
- CRC030944-B** to divert and take water from Gibson Stream at a rate of up to 55 L/s and 138,000 m³/yr for the irrigation of 23 ha on Waitangi Station;
- CRC031013** to disturb the bed of Sutton and Gibson Streams for the purpose of installing and maintaining intake structures; and
- CRC031014** to discharge excess stock and irrigation water from two locations into Lake Aviemore at a maximum rate of 55 L/s.
- 18.8 Pursuant to section 108 RMA, the grant of consent is subject to the conditions specified at **Appendices A-D** respectively, which conditions form part of this decision and consent.
- 18.9 The duration of all consents shall be until the 30th April 2025.

DECISION DATED AT CHRISTCHURCH THIS 29TH DAY OF MARCH 2012

Signed by:

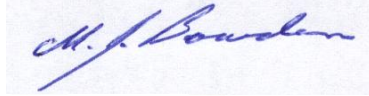
Paul Rogers



Dr James Cooke



Michael Bowden



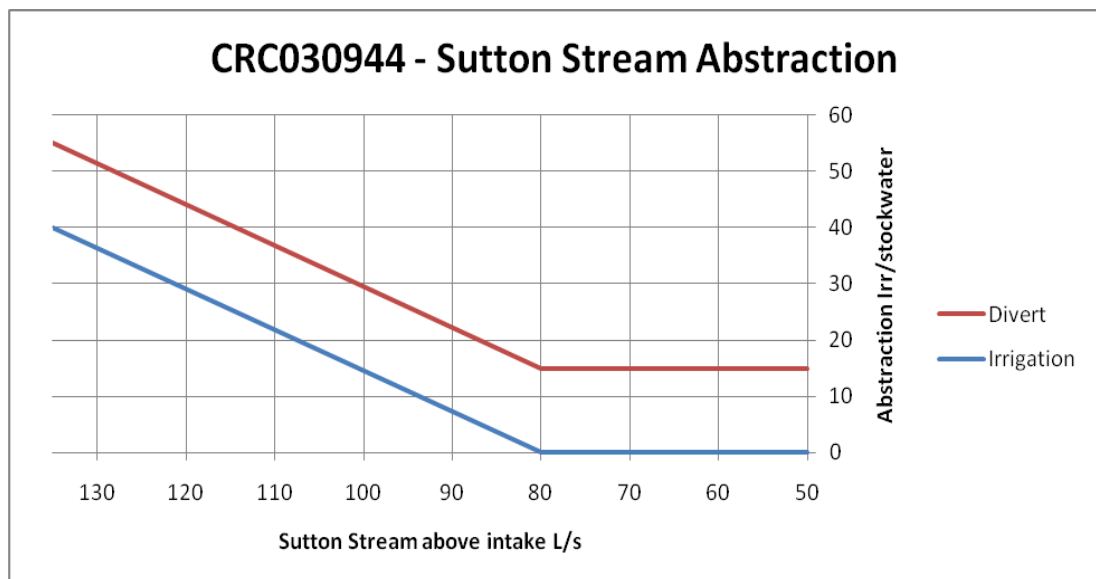
Edward Ellison



To divert and take water from Sutton Stream for the irrigation of 55 ha on Waitangi Station

Diversion and take of water

1. Water shall only be diverted between 1 September and 30 April from Sutton Stream at map reference NZMS 260 I39:9674-2157 at a rate not exceeding 55 litres per second.
2. Water for irrigation shall only be taken from the irrigation race flowing from Sutton Stream at a rate not exceeding 40 litres per second, with a volume not exceeding 34,560 cubic metres per eight consecutive days and 330,000 cubic metres per year between 1 September and the following 30 April.
3. The total combined rate and volume of water used for irrigation under this consent, CRC030944-B and CRC0944-C, shall not exceed 110 litres per second, 9,504 cubic metres per day (being from 12.00am to 12.00am on the following day) and 768,000 cubic metres per year (measured between 1 September and the following 30 April).
4. Subject to Condition 5, whenever the flow in Sutton Stream, as measured by the Canterbury Regional Council calculated as the mean flow for the previous 24 hour period (midnight to midnight) at map reference NZMS 260 I39-967-212:
 - (a) is equal or greater than 135 litres per second, the maximum rate of diversion under Condition 1 shall not exceed 55 litres per second and the maximum rate of take for irrigation purposes shall not exceed 40 litres per second;
 - (b) falls below the flow shown for irrigation on the horizontal axis of the following Minimum Flow Graph attached to these conditions, then the rate of diversion and take permitted in terms of this permit shall not exceed those shown as corresponding flows on the vertical axis;
 - (c) is equal to or less than 80 litres per second, the maximum rate of diversion under Condition 1 shall not exceed 15 litres per second and the taking of water for irrigation purposes shall cease.



5. Where the Canterbury Regional Council, in consultation with a Water Users Committee representing, but not limited to, surface water and hydraulically connected groundwater users who are subject to the above minimum flow, has determined upon a water sharing regime that limits the total abstraction from the resource as referred to above, then the taking of water in accordance with that determination shall be deemed to be in compliance with Condition 4.

Use of water

6. Water shall only be used for the spray irrigation of 55 hectares of crops and pasture per irrigation season for grazing sheep and beef cattle within the area of land identified as "Proposal A Irrigation Area" on attached **Plan CRC030944-A/B**, which forms part of this consent.
7. There shall be a minimum 5 metre setback, where there is no irrigation, from any permanently flowing waterways within the Proposal A Irrigation Area marked on **Plan CRC030944-A/B**.
8. Water for irrigation shall only be used on or applied to land that is subject to a memorandum of encumbrance that complies with the requirements of the agreement entitled "Agreement in Relation to the Allocation of Water for Irrigation" between Meridian Energy Limited and the Mackenzie Irrigation Company Limited dated the 31st of October 2006.
9. The consent holder shall, six months prior to this consent being exercised, provide to the Canterbury Regional Council a certificate from the consent holder's solicitor certifying that the memorandum of encumbrance is registered on the computer registers for the land shown on Plan CRC041031 and any other evidence of registration as the Canterbury Regional Council may require (if any).
10. 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.
11. 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 – Minimum flows

12. The consent holder shall, prior to exercising this consent, install:
 - (a) a water level measuring device in a stable reach of Sutton Stream at map reference NZMS 260 139:961-210 that will enable the determination of the continuous rate of flow in the reach of the water body to within accuracy of ten percent.
 - (b) a tamper-proof electronic recording device such as a data logger(s) that shall time stamp a pulse from the flow meter at least once every 15 minutes.
13. The measuring device shall be installed at a site that will retain a stable relationship between flow and water level. The measuring device shall be installed in accordance with the manufacturer's instructions.
14. The recording device(s) shall:
 - (a) be set to wrap the data from the measuring device such that the oldest data will be automatically overwritten by the newest data (i.e. cyclic recording); and
 - (b) store the entire season's data in each 12-month period from 1 July to 30 June in the following year, which the consent holder shall then download and store and provide to the Canterbury Regional Council in a format and standard specified in the Canterbury Regional Council's form for Water Metering Data Collection; and be readily accessible to be downloaded by the Canterbury Regional Council or by a person authorised by the Canterbury Regional Council: RMA Compliance and Enforcement Manager; and
 - (c) shall be connected to a telemetry system that 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.

15. The measuring and recording devices described in Condition 12 shall be available for inspection at all times by the Canterbury Regional Council.
16. Data from the recording device and the corresponding relationship between the water level and flow, and any changes in that relationship shall be provided to the Canterbury Regional Council annually in the month of June, and shall be accessible and available for downloading at all times by the Canterbury Regional Council.

Water metering – Diversion of water

17. The consent holder shall, prior to exercising this consent, install:
 - (a) a water level measuring device in a location that will enable the determination of the continuous rate of flow and volume of water being diverted from Sutton Stream to within an accuracy of ten percent; and
 - (b) a tamper-proof electronic recording device such as a data logger(s) that shall time stamp a pulse from the flow meter at least once every 15 minutes.
18. The measuring device shall, as far as is practicable, be installed at a site likely to retain a stable relationship between flow and water level. The measuring device shall be installed in accordance with the manufacturer's instructions.
19. All data from the recording device and the corresponding relationship between the water level and flow, shall be provided to the Canterbury Regional Council annually in the month of June, and shall be accessible and available for downloading at all times by the Canterbury Regional Council.

Water metering – Take of water

20. The consent holder shall, prior to exercising this consent, install:
 - (a) 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 irrigation race is measured; and
 - (b) a tamper-proof electronic recording device such as a data logger that shall record (or log) the flow totals every 15 minutes.
21. If the water meter specified in Condition 20(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.

Water metering - General

22. The measuring and recording device(s) specified in Conditions 17 and 20 shall:
 - (a) 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);
 - (b) 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
 - (c) unless certified by a suitably qualified person that telemetry is not feasible, 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;

- (d) be installed by a suitably qualified person in accordance with ISO 1100/1-1981 (or equivalent) and the manufacturer's instructions;
 - (a) be maintained throughout the duration of the consent in accordance with the manufacturer's instructions; and
 - (b) be accessible to the Canterbury Regional Council at all times for inspection and/or data retrieval.
23. No data in the recording device(s) shall be deliberately changed or deleted.
24. All practicable measures shall be taken to ensure that the water meter and recording device(s) specified in Conditions 17 and 20 are at all times fully functional and meet the accuracy standard stated in that condition.
25. Within one month of the installation of the measuring or recording device(s) specified in Conditions 12, 17 and 20 (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 these conditions.
26. 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 these conditions; and
 - (b) the tamper-proof electronic recording device is operating as specified in these conditions.

Fish Screen

27. 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.
28. 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.
29. 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.
30. The fish screen shall be designed or supplied by a suitably qualified person who shall ensure that the design criteria specified in Conditions 27 to 29 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.

31. 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 27 to 29 inclusive of this consent.
32. 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

33. For the purposes of interpretation of the conditions of this consent Waitangi Station shall be as those areas identified on Map A in the Farm Environmental Management Plan (attached to these conditions and marked **CRC030944-FEMP**), which total approximately 22,875 hectares.
34. 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 Waitangi Station using the model Overseer[®] (AgResearch model version number 5.4.3 or later).
35. When undertaking the modelling outlined in Condition 34, the consent holder shall use either weather records collected on-farm or from constructed data from the nearest weather station.
36. A copy of the reports prepared in accordance with Condition 34 shall be given to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager within one month of their completion.
37. Following conversion 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 34 from Waitangi Station does not exceed 56,286 kg of Nitrogen and 2,390 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.
38. The NDAs, incorporating any reductions required by receiving water quality nutrient trigger conditions, shall be complied with from the commencement of consent.
39. 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
40. 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 Waitangi Station, which is attached to these conditions and marked **CRC030944-FEMP**.
41. Subject to Condition 40, the consent holder shall implement, and update annually the FEMP for Waitangi 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 Waitangi 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.
42. 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.
 43. 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 39 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.
 44. Changes may be made to the Waitangi 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

45. 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 22,875 hectares. The recalculated NDAs shall be undertaken to accurately redistribute the NDA between the resultant properties and shall replace the NDAs specified in Condition 37. 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 37. 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

46. 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.
47. 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.
48. 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.
49. Nitrogen fertiliser shall not be applied to land between 31st May and 1st September.

50. 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.
51. Applications of nitrogen fertiliser shall not exceed 50 kg nitrogen / hectare per application.
52. 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.
53. Fertiliser filling areas shall not occur within 50 metres from a water course, spring or bore.
54. For land based spreading, fertiliser should not be applied within 20 metres of a watercourse.
55. 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

56. 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.
57. Within two months of the testing referred to in Condition 56(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.
58. 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.

Fertigation

59. If the irrigation system used in association with taking water in terms of this permit is to be used to distribute effluent, fertiliser or any other added contaminant, then one of the following shall be installed upstream of the point of addition of the effluent, fertiliser or other added contaminant:

- (a) a reduced pressure zone device (RPZD), or
 - (b) a pressure vacuum breaker (PVB), or
 - (c) an air gap backflow prevention system.
60. Installation of a RPZD or a PVB shall be in accordance with section 9 (PVB) or section 12 (RPZD) of Australian/New Zealand Standard AS/NZS 2845.1 Water supply - Backflow prevention devices, Part 1: Materials, design and performance requirements, or an equivalent standard.
61. An air gap backflow prevention system shall have an unobstructed vertical air gap separation of at least twice the diameter of the inlet pipe, from the lowest point of the inlet pipe to the flood level rim of the receptacle into which it discharges.
62. Field testing and maintenance shall be carried out of an RPZD or a PVB at commissioning of the use of the system for application of effluent or fertiliser and annually afterwards, in accordance with AS 2845.3 Water supply—Backflow prevention devices, Part 3: Field testing and maintenance, or an equivalent standard.
63. An air gap backflow prevention system shall be tested at commissioning and annually afterwards. Maintenance shall be undertaken as necessary to ensure that backflow prevention is effective.
64. Installation, testing and maintenance shall be undertaken by a certified irrigation evaluator. A report on the annual testing shall be provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, within two weeks of initial commissioning and within two weeks of each annual testing. Each report shall be accompanied with the name, qualifications and experience of the person who undertook the installation, testing or maintenance

River water quality monitoring and response

65. The water quality of Gibson and Sutton Stream shall be monitored from the commencement of this consent as follows:
- (a) The location for monitoring 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 I39 960-241 immediately upstream of the applicant's irrigation on Gibson Stream
 - ii. Map reference: NZMS 260 I39: 960-207 downstream of the discharge.
 - (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.
66. If the monitoring undertaken in accordance with Condition 65 shows that the average sample result for the downstream monitoring site specified in Condition 65 over the period December to April is greater than 0.21 mg/L of DIN; or 0.006 mg/L DRP; or 50 mg chl *a*/ m² (environmental standard trigger), then the consent holder shall commission a report into the cause of the breach of the environmental standard trigger.
67. The reports referred to in Condition 66 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 exceedance(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.
68. If both the authors of the report prepared in accordance with Condition 66 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.
69. If the report prepared in accordance with Condition 66 concludes that the environmental standard trigger has been exceeded because of farm land use practices, then:
- (a) the NDA, as specified in Condition 37, 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 area under irrigation (at the time of the exceedance) under this resource consent divided by the total farm area (i.e. 55 irrigated hectares divided by the total farm area of 22,875 hectares); and

- (b) the consent holder shall prepare and implement a Remedial Action Plan in accordance with Condition 71(b).
70. If a required reduction in nutrient load is in effect under 69(a) and monitoring for that period shows that the average sample results for the downstream monitoring site over the period December to April is:
- (a) greater than 0.21 mg/L of DIN; or 0.006 mg/L DRP; or 50 mg chl *a*/ m² (environmental standard trigger), then there shall be a further NDA reduction of 10% x IPF for the subsequent irrigation season.
 - (b) less than or equal to 0.21 mg/L of DIN; or 0.006 mg/l of DRP; or 50 mg chl *a*/ m² (environmental standard 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 37 shall be restored.
71. In relation to the Remedial Action Plan referred to in Condition 69(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 environmental standard trigger, is returned as soon as practicable to and maintained below the average sample results of 0.21 mg/L of DIN; or 0.006 mg/L of DRP; or 50 mg chl *a*/ m² (environmental standard trigger) for the downstream 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.

Review of conditions

72. 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, including (but not limited to) amending the flow in Sutton Stream at which abstraction is required to be reduced or discontinued as set out in Condition 3.

Lapse

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

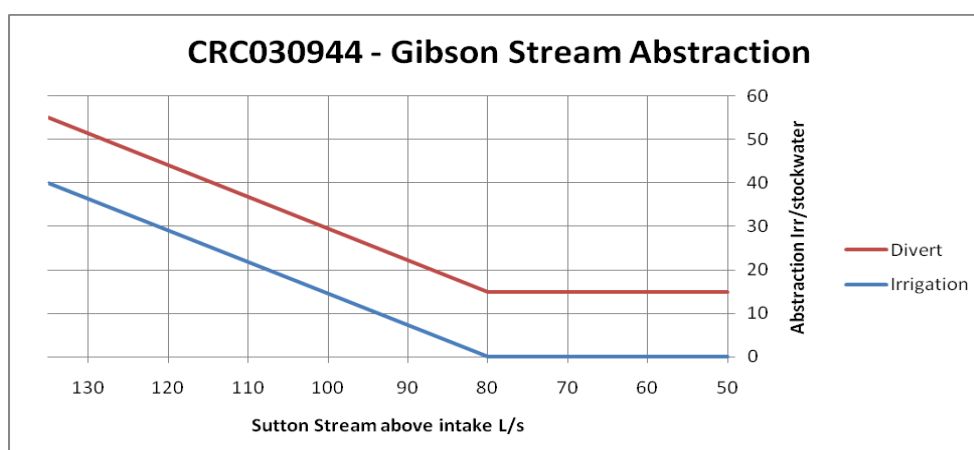
Advice notes:

- *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.*
- *The discharge of effluent, fertiliser or any contaminant would require authorisation as a permitted activity or via a discharge permit. Contact Environment Canterbury for advice on the relevant regional rules.*

To divert and take water from Gibson Stream for the irrigation of 23 ha on Waitangi Station

Diversion and take of water

1. Water shall only be diverted between 1 September and 30 April from Gibson Stream at map reference NZMS 260 I39:9608-2103 at a rate not exceeding 55 litres per second.
2. Water for irrigation shall only be taken from the irrigation race flowing from Gibson Stream at a rate not exceeding 40 litres per second, with a volume not exceeding 48,816 cubic metres per 19 consecutive days and 138,000 cubic metres per year between 1 September and the following 30 April.
3. Water for irrigation shall only be taken between 1 September and the following 30 April at a rate and volume not exceeding 40 litres per second, 34,560 cubic metres per eight consecutive days and 330,000 cubic metres per year between 1 September and the following 30 April.
4. The total combined rate and volume of water used for irrigation under this consent, CRC030944-A and CRC0944-C, shall not exceed 110 litres per second, 9,504 cubic metres per day (being from 12.00am to 12.00am on the following day) and 768,000 cubic metres per year (measured between 1 September and the following 30 April).
5. Subject to Condition 5, whenever the flow in Sutton Stream, as measured by the Canterbury Regional Council calculated as the mean flow for the previous 24 hour period (midnight to midnight) at map reference NZMS 260 I39-967-212:
 - (a) is equal or greater than 135 litres per second, the maximum rate of diversion under Condition 1 shall not exceed 55 litres per second and the maximum rate of take for irrigation purposes shall not exceed 40 litres per second;
 - (b) falls below the flow shown for irrigation on the horizontal axis of the following Minimum Flow Graph attached to these conditions, then the rate of diversion and take permitted in terms of this permit shall not exceed those shown as corresponding flows on the vertical axis;
 - (c) is equal to or less than 80 litres per second, the maximum rate of diversion under Condition 1 shall not exceed 15 litres per second and the taking of water for irrigation purposes shall cease.



6. Where the Canterbury Regional Council, in consultation with a Water Users Committee representing, but not limited to, surface water and hydraulically connected groundwater users who are subject to the above minimum flow, has determined upon a water sharing regime that limits the total abstraction from the resource as referred to above, then the taking of water in accordance with that determination shall be deemed to be in compliance with Condition 4.

Temporary diversion

7. In addition to the diversion provided for in Condition 1, water shall only be temporarily diverted within the Bed of Gibson Stream for the purpose of installation and maintenance of a submerged gallery intake in accordance with consent CRC031013.
8. The diversion of water shall only occur over a maximum reach of 50 metres at or about at map reference NZMS 260 I39:9608-2103.
9. The diversion of water shall not impede fish passage or cause the stranding of fish in pools or channels.
10. For the period of diversion, all water diverted shall remain within the bed.
11. When diversion ceases, water shall be returned to its original course.

Use of water

12. Water shall only be used for the spray irrigation of 23 hectares of crops and pasture per irrigation season for grazing sheep and beef cattle within the area of land identified as "Proposal B Irrigation Area" on attached **Plan CRC030944-A/B**, which forms part of this consent.
13. There shall be a minimum 5 metre setback, where there is no irrigation, from any permanently flowing waterways within the Proposal B Irrigation Area marked on **Plan CRC030944-A/B**.
14. Water for irrigation shall only be used on or applied to land that is subject to a memorandum of encumbrance that complies with the requirements of the agreement entitled "Agreement in Relation to the Allocation of Water for Irrigation" between Meridian Energy Limited and the Mackenzie Irrigation Company Limited dated the 31st of October 2006.
15. The consent holder shall, six months prior to this consent being exercised, provide to the Canterbury Regional Council a certificate from the consent holder's solicitor certifying that the memorandum of encumbrance is registered on the computer registers for the land shown on Plan CRC041031 and any other evidence of registration as the Canterbury Regional Council may require (if any).
16. 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.
17. 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 – Minimum flows

18. The consent holder shall, prior to exercising this consent, install:
 - (a) a water level measuring device in a stable reach of Sutton Stream at map reference NZMS 260 I39:961-210 that will enable the determination of the continuous rate of flow in the reach of the water body to within accuracy of ten percent.
 - (b) a tamper-proof electronic recording device such as a data logger(s) that shall time stamp a pulse from the flow meter at least once every 15 minutes.
19. The measuring device shall be installed at a site that will retain a stable relationship between flow and water level. The measuring device shall be installed in accordance with the manufacturer's instructions.

20. The recording device(s) shall:
- (a) be set to wrap the data from the measuring device such that the oldest data will be automatically overwritten by the newest data (i.e. cyclic recording); and
 - (b) store the entire season's data in each 12-month period from 1 July to 30 June in the following year, which the consent holder shall then download and store and provide to the Canterbury Regional Council in a format and standard specified in the Canterbury Regional Council's form for Water Metering Data Collection; and be readily accessible to be downloaded by the Canterbury Regional Council or by a person authorised by the Canterbury Regional Council: RMA Compliance and Enforcement Manager; and
 - (c) shall be connected to a telemetry system that 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.
21. The measuring and recording devices described in Condition 12 shall be available for inspection at all times by the Canterbury Regional Council.
22. Data from the recording device and the corresponding relationship between the water level and flow, and any changes in that relationship shall be provided to the Canterbury Regional Council annually in the month of June, and shall be accessible and available for downloading at all times by the Canterbury Regional Council.

Water metering – Diversion of water

23. The consent holder shall, prior to exercising this consent, install:
- (a) a water level measuring device in a location that will enable the determination of the continuous rate of flow and volume of water being diverted from Sutton Stream to within an accuracy of ten percent; and
 - (b) a tamper-proof electronic recording device such as a data logger(s) that shall time stamp a pulse from the flow meter at least once every 15 minutes.
24. The measuring device shall, as far as is practicable, be installed at a site likely to retain a stable relationship between flow and water level. The measuring device shall be installed in accordance with the manufacturer's instructions.
25. All data from the recording device and the corresponding relationship between the water level and flow, shall be provided to the Canterbury Regional Council annually in the month of June, and shall be accessible and available for downloading at all times by the Canterbury Regional Council.

Water metering – Take of water

26. The consent holder shall, prior to exercising this consent, install:
- (a) 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 irrigation race is measured; and
 - (b) a tamper-proof electronic recording device such as a data logger that shall record (or log) the flow totals every 15 minutes.
27. If the water meter specified in Condition 2620(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.

Water metering - General

28. The measuring and recording device(s) specified in Conditions 23 and 26 shall:
- (a) 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);
 - (b) 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;
 - (c) unless certified by a suitably qualified person that telemetry is not feasible, 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;
 - (d) be installed by a suitably qualified person in accordance with ISO 1100/1-1981 (or equivalent) and the manufacturer's instructions;
 - (c) be maintained throughout the duration of the consent in accordance with the manufacturer's instructions; and
 - (d) be accessible to the Canterbury Regional Council at all times for inspection and/or data retrieval.
29. No data in the recording device(s) shall be deliberately changed or deleted.
30. All practicable measures shall be taken to ensure that the water meter and recording device(s) specified in Conditions 23 and 26 are at all times fully functional and meet the accuracy standard stated in that condition.
31. Within one month of the installation of the measuring or recording device(s) specified in Conditions 18, 23 and 26 (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 these conditions.
32. 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 these conditions; and
 - (b) the tamper-proof electronic recording device is operating as specified in these conditions.

Fish Screen

33. The consent holder shall ensure that water is abstracted using a gallery intake and shall be designed to prevent native and exotic fish species from entering the system.
34. The fish screen shall be designed by a person with experience in freshwater ecology and fish screening techniques, and constructed in a manner that ensures the principals of the NIWA fish screening guidelines (Fish Screening: Good Practice Guidelines for Canterbury, NIWA Client Report 2007-092, October 2007, or other revision of these guidelines. (Copy available on www.ecan.govt.nz)) are achieved.
35. No water may be taken in terms of this permit until, upon completion of the intake structure a report is provided to the Canterbury Regional Council, Attention: RMA Compliance and

Enforcement Manager. The report shall be prepared by the consent holder for certification and shall demonstrate compliance with the following:

- (a) Design plan for the gallery specifying gallery dimensions;
 - (b) Detail of depths and sizes of layers of gravel over the gallery;
 - (c) Photographic evidence of key stages of construction of the gallery, including demonstrating compliance with gravel specifications in sub clause (c)(ii) above; and
 - (d) Any ongoing maintenance required by the manufacturer is carried out in accordance with their specifications.
36. The intake structure shall be maintained in good working order. Records shall be kept of all inspections and maintenance. And those records shall be provided to the Canterbury Regional Council upon request.

Nutrient Loading

37. For the purposes of interpretation of the conditions of this consent Waitangi Station shall be as those areas identified on Map A in the Farm Environmental Management Plan (attached to these conditions and marked **CRC030944-FEMP**), which total approximately 22,875 hectares.
38. 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 Waitangi Station using the model Overseer[®] (AgResearch model version number 5.4.3 or later).
39. When undertaking the modelling outlined in Condition 38, the consent holder shall use either weather records collected on-farm or from constructed data from the nearest weather station.
40. A copy of the reports prepared in accordance with Condition 38 shall be given to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager within one month of their completion.
41. Following conversion 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 38 from Waitangi Station does not exceed 56,286 kg of Nitrogen and 2,390 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.
42. The NDAs, incorporating any reductions required by receiving water quality nutrient trigger conditions, shall be complied with from the commencement of consent.
43. 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
44. 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 Waitangi Station, which is attached to these conditions and marked **CRC030944-FEMP**.
45. Subject to Condition 44, the consent holder shall implement, and update annually the FEMP for Waitangi 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 Waitangi 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.
46. 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.
47. 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 43 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.
48. Changes may be made to the Waitangi 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

49. 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 22,875 hectares. The recalculated NDAs shall be undertaken to accurately redistribute the NDA between the resultant properties and shall replace the NDAs specified in Condition 41. 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 41. 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

50. 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.
51. 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.
52. 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.

53. Nitrogen fertiliser shall not be applied to land between 31st May and 1st September.
54. 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.
55. Applications of nitrogen fertiliser shall not exceed 50 kg nitrogen / hectare per application.
56. 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.
57. Fertiliser filling areas shall not occur within 50 metres from a water course, spring or bore.
58. For land based spreading, fertiliser should not be applied within 20 metres of a watercourse.
59. 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

60. 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.
61. Within two months of the testing referred to in Condition 6056(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.
62. 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.

Fertigation

63. If the irrigation system used in association with taking water in terms of this permit is to be used to distribute effluent, fertiliser or any other added contaminant, then one of the following

shall be installed upstream of the point of addition of the effluent, fertiliser or other added contaminant:

- (a) a reduced pressure zone device (RPZD), or
 - (b) a pressure vacuum breaker (PVB), or
 - (c) an air gap backflow prevention system.
64. Installation of a RPZD or a PVB shall be in accordance with section 9 (PVB) or section 12 (RPZD) of Australian/New Zealand Standard AS/NZS 2845.1 Water supply - Backflow prevention devices, Part 1: Materials, design and performance requirements, or an equivalent standard.
65. An air gap backflow prevention system shall have an unobstructed vertical air gap separation of at least twice the diameter of the inlet pipe, from the lowest point of the inlet pipe to the flood level rim of the receptacle into which it discharges.
66. Field testing and maintenance shall be carried out of an RPZD or a PVB at commissioning of the use of the system for application of effluent or fertiliser and annually afterwards, in accordance with AS 2845.3 Water supply—Backflow prevention devices, Part 3: Field testing and maintenance, or an equivalent standard.
67. An air gap backflow prevention system shall be tested at commissioning and annually afterwards. Maintenance shall be undertaken as necessary to ensure that backflow prevention is effective.
68. Installation, testing and maintenance shall be undertaken by a certified irrigation evaluator. A report on the annual testing shall be provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, within two weeks of initial commissioning and within two weeks of each annual testing. Each report shall be accompanied with the name, qualifications and experience of the person who undertook the installation, testing or maintenance

River water quality monitoring and response

74. The water quality of Gibson and Sutton Stream shall be monitored from the commencement of this consent as follows:
- (i) The location for monitoring 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:
 - iii. Map reference: NZMS 260 I39 960-241 immediately upstream of the applicant's irrigation on Gibson Stream
 - iv. Map reference: NZMS 260 I39: 960-207 downstream of the discharge.
 - (j) Water quality variables monitored shall include:
 - viii. dissolved inorganic nitrogen (DIN);
 - ix. dissolved reactive phosphorus (DRP);
 - x. dissolved oxygen;
 - xi. conductivity;
 - xii. turbidity;
 - xiii. periphyton biomass as chlorophyll *a* per square metre (chl *a*); and
 - xiv. *E. Coli*.

- (k) 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.
 - (l) Frequency of monitoring: Once per month from 01 December to 30 April each year, with a minimum of three weeks between sampling.
 - (m) 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.
 - (n) 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.
 - (o) 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.
 - (p) 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.
75. If the monitoring undertaken in accordance with Condition 65 shows that the average sample result for the downstream monitoring site specified in Condition 65 over the period December to April is greater than 0.21 mg/L of DIN; or 0.006 mg/L DRP; or 50 mg chl *a*/ m² (environmental standard trigger), then the consent holder shall commission a report into the cause of the breach of the environmental standard trigger.
76. The reports referred to in Condition 66 shall:
- (f) 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
 - (g) include the experts' conclusion on whether the exceedance(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
 - (h) include an assessment as to whether the exceedance measured by the monitoring is likely to continue; and
 - (i) be completed by 30 July following the sampling; and
 - (j) be provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, by 30 August following the sampling.
77. If both the authors of the report prepared in accordance with Condition 66 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.
78. If the report prepared in accordance with Condition 66 concludes that the environmental standard trigger has been exceeded because of farm land use practices, then:
- (c) the NDA, as specified in Condition 37, 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 area under irrigation (at the time of the exceedance) under this

resource consent divided by the total farm area (i.e. 55 irrigated hectares divided by the total farm area of 22,875 hectares); and

- (d) the consent holder shall prepare and implement a Remedial Action Plan in accordance with Condition 71(b).
79. If a required reduction in nutrient load is in effect under 69(a) and monitoring for that period shows that the average sample results for the downstream monitoring site over the period December to April is:
- (c) greater than 0.21 mg/L of DIN; or 0.006 mg/L DRP; or 50 mg chl *a*/ m² (environmental standard trigger), then there shall be a further NDA reduction of 10% x IPF for the subsequent irrigation season.
- (d) less than or equal to 0.21 mg/L of DIN; or 0.006 mg/l of DRP; or 50 mg chl *a*/ m² (environmental standard 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 37 shall be restored.

80. In relation to the Remedial Action Plan referred to in Condition 69(b):

- (f) It shall set out the methods and timeframes for altering and/or adapting farm land use practices to ensure that the exceedance in the environmental standard trigger, is returned as soon as practicable to and maintained below the average sample results of 0.21 mg/L of DIN; or 0.006 mg/L of DRP; or 50 mg chl *a*/ m² (environmental standard trigger) for the downstream monitoring site, over the period December to April.
- (g) 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.
- (h) 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.
- (i) 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.
- (j) The consent holder shall provide the Canterbury Regional Council with the Remedial Action Plan and an amended FEMP upon request.

Review of conditions

69. 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, including (but not limited to) amending the flow in Sutton Stream at which abstraction is required to be reduced or discontinued.

Lapse

70. 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:

- *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.*
- *The discharge of effluent, fertiliser or any contaminant would require authorisation as a permitted activity or via a discharge permit. Contact Environment Canterbury for advice on the relevant regional rules.*

APPENDIX C: CONDITIONS OF CONSENT (CRC031013)

To disturb the bed of Sutton and Gibson Streams for the purpose of installing and maintaining intake structures

Limitation on works

1. The works shall be limited to:
 - a. Maintain, upgrade and reconstruct intake structure in the bed of Sutton Stream, including excavation of gravel and sediments, and to maintain adequate flow of water to irrigation and stockwater intake;
 - b. The excavation of a 20 metre long, 2 metre wide and 3 metre deep trench for the purposes of installing a buried intake structure in Gibson Stream;
 - c. Depth of excavation for Gibson Stream will be up to 2.5 metres below bed level, with the gallery installed at a depth of at least 1 metre below bed level.
 - d. Maintenance works including replacing the intake structures.
2. The works carried out in accordance with Condition 1 shall be located at the "Sutton Stream Intake" at or about map reference(s) NZMS 260 I39:9674-2157 and the "Gibson Stream Intake" at or about map reference(s) NZMS 260 I39:9608-2103, as shown on attached **Plan CRC030944-A/B**.
3. Works described in Condition 1 shall take no longer than a week, except that maintenance works in accordance with Condition 1(d) shall take no longer than two days.
4. All practicable measures shall be undertaken to ensure that works do not deflect floodwaters into the berm.
5. Erosion and sediment control measures shall be constructed in accordance with the Environment Canterbury Erosion and Sediment Control Guidelines, and any amendments to that document to ensure works do not cause erosion to the bed and banks of Sutton and Gibson Streams. Works shall not cause erosion of the banks and bed of the Sutton Stream and Gibson Stream.
6. Works shall not be undertaken in any manner likely to reduce the flood-carrying capacity of the waterway
7. Prior to commencing excavation, a copy of this resource consent shall be given to all persons undertaking activities authorised by this consent
8. The Canterbury Regional Council Compliance Monitoring Officer shall be notified of the intention to carry out works and their intended type and scope at least 48 hours prior to the commencement of work.
9. Excavation or the operation of vehicles and/or machinery shall not occur within 100 metres of birds listed in **Schedule A**, which are nesting or rearing their young in the bed of the river.
10. All practical measures shall be taken to minimise the disturbance of the bed of the Sutton Stream and Gibson Stream
11. All practicable measures shall be undertaken to prevent the discharge of sediment to the Sutton and Gibson Streams, arising from the works, including, but not limited to the placement of hay bales to collect sediment
12. The consent holder shall adopt the best practicable options to:
 - a. Minimise soil disturbance and prevent soil erosion;

- b. Prevent sediment from flowing into any surface water; and
 - c. Avoid placing cut or cleared vegetation, debris, or excavated material in a position such that it may enter surface water.
13. All practicable measures shall be undertaken to minimise vehicles and machinery entering Sutton and Gibson Streams, including, but not limited to:
- a. The consent holder shall take all practicable steps to avoid cementitious material entering Sutton and Gibson Streams including waste wash water from tools and machinery.
 - b. Cement shall be stored securely or removed from site overnight.
- 14.
- a. All practicable measures shall be undertaken to prevent oil and fuel leaks from vehicles and machinery.
 - b. There shall be no storage of fuel or refuelling of vehicles and machinery within 20 metres of the bed of a river.
 - c. Fuel shall be stored securely or removed from site overnight.
15. Machinery shall be free of plants and plant seeds prior to use in the riverbed
16. All practicable measures shall be undertaken to minimise adverse effects on property, amenity values, wildlife, vegetation, and ecological values
17. The works shall not prevent the passage of fish, or cause the stranding of fish in pools or channels

Accidental discovery

18. In the event of any disturbance of Koiwi Tangata (human bones) or taonga (treasured artefacts), the consent holder shall immediately:
- a. Advise the Canterbury Regional Council of the disturbance;
 - b. Advise the Upoko Runanga of [Runanga], or their representative, and the New Zealand Historic Places Trust, of the disturbance; and
 - c. Cease earthmoving operations in the affected area until an area has been marked off around the site, and Kaumatua and archaeologists have given approval for the earthmoving to recommence. Note: This condition is in addition to any agreements that are in place between the consent holder and the Upoko Runanga (Cultural Site Accidental Discovery Protocol) or the New Zealand Historic Places Trust.

Completion of works

19. All spoil and other waste material from the works shall be removed from site on completion of works
20. On completion of works, the area shall be restored to its original condition as far as practicable.

Administrative conditions

21. 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.
22. The lapsing date for the purposes of section 125 shall be 5 years from the commencement of consent.

Schedule A – List of birds

South Island Pied Oystercatcher

Black Stilt

Pied Stilt

Wrybill

Banded Dotterel

Black-fronted Dotterel

Spur-winged Plover

Paradise Shelduck

Grey Duck

NZ Shoveler

Grey Teal

NZ Scaup

Black-billed Gull

Red-billed Gull

Caspian Tern

White-fronted Tern

Black-fronted Tern

White-winged Black Tern

Australasian Bittern

Marsh Crake

Spotless Crake

Cormorant/shag colonies

APPENDIX D: CONDITIONS OF CONSENT (CRC031014)

To discharge excess stock and irrigation water from two locations into Lake Aviemore

1. Water shall only be discharged from:
 - a. Sutton Stream to Lake Aviemore at or about map reference NZMS 260 I40:9687-1954, identified as the "Sutton Stream discharge point" on attached **Plan CRC030944-A/B**; and
 - b. Gibson Stream to Lake Aviemore at or about map reference NZMS 260 I40:9551-1919, identified as the "Gibson Stream discharge point" on attached **Plan CRC030944-A/B**.
2. The water shall be unused irrigation and stock water
3. Water shall only be discharged at a rate not exceeding:
 - a. 55 litres per second from 1st September to 31st April.
 - b. 15 litres per second from 1st May to 31st August.
4. All practicable measures shall be undertaken to avoid erosion of the bed or banks of Lake Aviemore occurring as a result of the discharge.
5. 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.
6. The discharge shall not occur in a manner likely to cause erosion of, or instability to, the banks or bed of the unnamed stream channel; or reduce the flood-carrying capacity of the waterway
7. The discharge, after reasonable mixing, shall not cause a change in the colour or a reduction of the clarity of the receiving water body.
8. 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.
9. The lapsing date for the purposes of section 125 shall be 5 years from the commencement of this consent.

