

BEFORE THE CANTERBURY REGIONAL COUNCIL

IN THE MATTER OF the Resource Management Act 1991

AND

IN THE MATTER OF 35 applications (18 applicants) to take and use groundwater from the Waitaki River Catchment

Opening Submissions

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A Introduction to the applications

1. I act for 18 applicants.
2. Between those applicants a total of 35 applications are made for a range of activities including damming, diverting, taking and using of surface and groundwater resources.
3. From the main stem of the Waitaki River there are eight applicants applying for a combined surface water and connected groundwater take of 2.088m³/s.¹
4. From the tributaries of the Waitaki River two applicants seek a combined take of 49.53 L/s from Otekaieke River² and one applicant for 48 L/s from Kurow Creek.³
5. From the Hakataramea River, two applicants seek to renew existing consents and take 90 L/s.⁴
6. From the tributaries of the Hakataramea River five applicants are made to take a combined surface water take of 125 litres per second.⁵ One application is made for consent to divert water (a retrospective application in circumstances where other damming, taking and use consents exist).⁶ Three applications are to harvest water from those tributaries.

¹ Maerewhenua District Water Resources Co. Ltd [CRC041004], Cameron [CRC041002 & CRC0141003], Hakataramea Valley Irrigation Ltd [CRC032177], Waitaki Orchards Ltd [CRC061399], Torach Farms Ltd [CRC073237], [Clarkesfield \[CRC061919\]](#), [CRC061399], Chalmers [CRC042124] [Rutherford \[CRC063815\]](#)

² Warnbro Enterprises Ltd [CRC062308], Sunny Downs Ltd [CRC073249].

³ Westmere Estate Ltd [CRC012051].

⁴ Pringle [CRC050940 and RPNZ [CRC051767, CRC051768 & CRC051769].

⁵ [Star Holdings Ltd \[CRC072756\]](#), [Small \[CRC051766\]](#) and [Hakataramea Station \(1990\) Ltd \[CRC040999\]](#), [Pringle \[CRC050957\]](#), [Sutton \[CRC071114\]](#)

⁶ Sutton [CRC071114]

Deleted: Wainui Farms Ltd

Deleted: ER Rutherford [CRC063815].

7. There are two applicants seeking a combined take 17.5 L/s of unconnected groundwater in the Lower Waitaki Valley.⁷
8. All but one of the applicants applies to take and use water in association with agricultural and horticultural activities. The application by Warnbro Enterprises Ltd [CRC062308] is to take water for a community water supply.

B Status of the Activities

9. The status of the applications is described in the final evidence of the Applicants' planning witnesses, Mr Nick Boyes and Ms Cathy Begley.

C Notification of the Applications

10. No issues arise in relation to the notification of the applications.
11. No amendments have been made to the applications since notification save:
 - a) Six applicants propose to reduce the annual allocation notified;
 - b) Those amendments made in response to issues raised in the Regional Council officers' reports. The amendments are detailed in the evidence of Keri Johnson and Melissa Anthony in support of individual applicants under the heading

⁷ Meikle [CRC040446], Clarkesfield [CRC061931]

'Background'. Also in the evidence of Ian McIndoe generally. The amendments are within the scope of the notified applications.

12. Those applicants who earlier proposed to amend their applications by seeking a higher annual allocation will no longer pursue the same.

D Order of Evidence

13. For the purposes of presentation of the evidence the applications will be divided into three groups, including:
 - The main stem of the Waitaki River;
 - The tributaries of the Waitaki River;
 - The Hakataramea River and its tributaries.

E Issues

14. There are four broad issues for consideration and determination.
15. First, the annual allocation for the catchment downstream of the Dam and upstream of Black Point is 150Mm³. The Commissioners will need to decide:
 - a. What is the existing allocation from this catchment?
 - b. For those applications which exceed the allocation limit, can they satisfy one of the tests in section 104D, RMA ?
16. Secondly, 5 applicants in the main-stem of the lower Waitaki River have proposed a minimum flow condition

which is less than the flow in the WRP (Rule 2, Table 3). These applications are non-complying activities. Will the adverse effects of these activities on the environment be minor? Is the proposed minimum flow contrary to the objectives and policies of the Plan?

17. Thirdly, in respect of all other applications seeking a grant of consent to take water from the tributaries of the lower Waitaki River including the Hakataramea River and its tributaries, will their taking affect the reliability of supply and access of other water users?
18. Finally, the management of nitrates and phosphates as a consequence of increased irrigation.
19. Only two applications do not comply with **both** the annual allocation limit and minimum flow provisions under the Plan, being
 - a. Maerewhenua District Water Resource Company Ltd [CRC041004]; and
 - b. Clarkesfield [CRC061919]
 - c. Rutherford [CRC063815]

Both are applications to take and use connected groundwater and surface water in relation to the main-stem of the River.
20. It is convenient to address issues arising in respect of the non-compliance with Plan rules separately.

Deleted: Waitaki Orchards Ltd [CRC061399]

Deleted: ¶

F. Section 104D, RMA

21. Section 104D provides that a consent authority may grant resource consent for a non-complying activity only if it is satisfied that either:
 - a. The adverse effects of the activity on the environment will be minor; or
 - b. The application is for an activity that will not be contrary to the objectives and policies of the relevant plan.
22. If an application passes one of the gateway tests, the applicant must still satisfy the consent authority that consent should be granted having consideration of those matters in s104 and Part II. The Commissioners have an overall discretion under s104B to grant or decline the applications.
23. Issues of precedent and plan integrity, while not effects on the environment, are relevant and can be taken into account under s104(1)(d)&(i) and s104D(1)(b).

G. Annual Allocation above Black Point

Updating Annual Allocation Tables

24. In July 2008 the Regional Council assessed the annual allocation for existing agricultural and horticultural activities in this catchment at **146.27Mm³**. This is **2.63Mm³** less than that previously advised by the Regional Council in December 2007. The reasons for the reduction are given in the tables attached to the Council officers' reports.

25. As at July 2008 the officer's advise is that four applications are within the annual allocation limit:
- Westmere Estate Ltd [CRC012051];
 - Star Holdings Ltd [CRC021585];
 - RH Robertson [CRC031592]⁸; and
 - RJ & JM Meikle [CRC040446]
26. Rule 16, WRP provides any application which exceeds the annual allocation limit is a non-complying activity.
27. The applicants and Meridian interpret and apply the Plan differently to the Council officers. The difference in approach being in the officers' application of allocation limits to consents to divert water. The applicants say that annual allocations apply only to the taking of water.
28. In the joint evidence of Potts/Page December 2007, Mr Potts assessed the combined annual allocation as **123.3Mm3**. The order of priority of applicants has changed since May 2008 making a direct comparison between the December 2007 and July 2008 reports not possible.
29. Ms Keri Johnson has updated Mr Potts' assessment as follows:
- a) Applying the reduction of **2.63Mm3**;

⁸ Represented at this hearing by Rob Makgill

- b) Ordering the applications in accordance with the Priority Decision dated May 2008.
 - c) Recording the reductions to the notified allocation in respect of 6 applicants.
30. As a consequence of those changes Ms Johnson calculates the combined annual allocation for existing consents and the applicants at this hearing to be **153.98Mm3**. There are applicants which are included on the tables of the Council officer and Ms Johnson, but which are not part of this hearing. I do not refer to their proposed allocation.

Number of Applications within the Annual Allocation Limit

31. From Ms Johnson's table 21 applications are within the annual allocation limit.

Objective and Policies

32. The Commissioners are required to have regard to the objectives and policies of the Plan under s104D (1)(b) and s104(1)(b) RMA. The Board, considered but declined to make the activity status of applications exceeding an allocation limit, prohibited.⁹ It is open to any applicant to establish that the adverse environmental effects of the proposed activities are minor and secondly, the applications are not contrary to the objectives and policies of the Plan.

⁹ Annex 1, paragraph 76

33. The Board in its decision also observed that rules and methods for implementing policies for achieving the objectives of the Plan called for evaluative judgements. They were not generally the result of computation or application of scientific principle or method.¹⁰ Ms Keri Johnson will give evidence regarding the accuracy of information tabled at the Board hearing by Meridian and the Regional Council. While in many instances that information was inaccurate, nevertheless the Board's decision on annual allocations was made on the basis of the best information available at that time.
34. The sufficiency of the allocation to each of the activities in Rule 5, Table 6 has been the subject of extensive evidence. Eight different schedules have been tabled since June 2007. Whether you prefer the approach of the Applicants or the Regional Council, some applications will exceed the annual allocation limit.
35. Contemplation of a Plan Change to address this issue is speculative of outcome. Speculative also is what provision the Board might have made had it been presented the correct information. An application for consent for a non-complying activity is not an opportunity for parties to challenge the merits of the Plan provisions. The focus is not on the general merits or otherwise of the rule in question, but whether despite that rule continuing to have general effect, consent might properly be granted to an activity which does

¹⁰ Annex 1, paragraph 27

not comply with the same (*Noel Leeming Appliances Ltd v North Shore CC*).¹¹

36. The Commissioners must decide:
- a. Is a grant in excess of the allocation limit contrary to the objectives and policies of the plan because it will foreclose opportunities for other activities to take and use the water resource in the catchment above Black Point?
 - b. If so, will this affect the integrity of those objectives and policies?
37. The Board warned that if any one activity was to use all of the water it could prevent the local community providing for their reasonably foreseeable needs.¹² The Board intended to make provision for:
- Growth in agricultural and horticultural uses;¹³
 - Growth in use of water for hydro-electricity generation downstream of Waitaki Dam;
 - Growth in industrial and commercial activities; and
 - Increased use for town and country supplies.¹⁴
38. The opportunities for growth in sectors other than agriculture and horticulture are not foreclosed by granting these applications. That cannot be the case. In addition to what is sought by these applicants, **15.5**

¹¹ Planning Tribunal, RMA 197/92, p14

¹² Annex 1, page 34, paragraph 195

¹³ Subject to water quality considerations being addressed.

cumecs of surface water remains available for allocation on the lower Waitaki River.¹⁵ Of that, Mr Edred's evidence at the resumed NBTC hearing was that **3.3 cumecs** is needed by future agricultural and horticultural activities above Black Point and **.945** cumecs by other all activities.

39. Policy 16 is concerned with whether a grant of consent will effect the entitlements to those other activities.¹⁶ That cannot occur where surface water allocation remains to be granted to those activities. I submit applications are not contrary to the objectives and policies of the Plan as they pertain to annual allocation limits.
40. The issue of Plan integrity, which the Council officers express as 'precedent', may be given less weight where a rule does not have a place in an integrated set of objectives or policies (I refer to Table 6 provision for agriculture and horticultural activities). However, a non-complying activity will not necessarily be granted whenever a rule in the district plan does lacks the support of an integrated set of objectives and policies. Rather it is the combination of circumstances, including that by allowing the activity this will not offend the objectives and policies (*Noel Leeming v North Shore CC*).¹⁷ Those circumstances include:

¹⁴ Annex 1, page 34

¹⁵In December 2007 Mr. Potts estimated the cumulative rate of take for all existing and proposed activities to be **74.5 cumecs**. It follows **15.5 cumecs** is available for allocation.

¹⁶ Explanation to policy 12, WRP the effect on the entitlements to other activities was the central issue.

¹⁷ Page 14.

- a. The Board made its decision based on erroneous information;
 - b. The Regional Council re-issued all mining consents with annual allocations based on 365 days use (inconsistent with Mr Potts assessment of allocation presented to the Board).
 - c. The annual allocation for agriculture and horticulture is inadequate if it does not enable access to the surface water allocation.
 - d. The balance of the surface water allocation cannot be taken up by other activities save to the extent allowed by their allocation limits.
41. In respect of the second test under s104D will be no adverse 'effects' of the activity on the environment. In respect of the exceedence of the annual allocation limit I submit that the Commissioners will have no difficulty in concluding that there are no adverse effects on the environment. Each applicant has proposed an annual allocation which is reasonable for the intended end use of the water. Policies 15-20, as they apply to the proposed activities, are satisfied. The Council officers do not say in respect of any individual that the proposed allocation does not meet these policies. Section 104D is also satisfied on this limb.
42. A grant of consent exceeding the allocation limit is not contrary to the objectives and policies of the Plan.

H Annual Allocation below Black Point

43. A single applicant, Chalmers [CRC042124], is located in the catchment downstream of Black Point. This application is within the annual allocation limit for this catchment which applies under Rule 5, Table 6.

I Minimum Flows

44. With the exception of surface water and connected groundwater takes from the main-stem of the lower Waitaki River, all applicants propose minimum flow conditions which meet or exceed the provisions in the WRP.
45. The minimum flow conditions proposed will ensure the reliability of supply and access of other water users. The conditions address the issues raised by Council officer Claire Penman in her general report to the Panel. The minimum flows for all of the tributaries (but not the Hakataramea River) have been discussed and agreed with Regional Council's hydrologist Adam Martin.
46. Those applicants seeking consent to take water from the Hakataramea River are applying to renew expired consents. No increase in taking is proposed.

Main-Stem Applicants – Pre NBTC

47. There are eight applicants seeking to take surface water and connected groundwater from the main-stem of the Waitaki River. The total proposed take is **2.088m³/s**.

48. Five applicants have proposed a minimum flow in the River of 100 cumecs. These applications are non-complying activities (Rule 16).
49. Three applicants proposed a minimum flow based on Rule 2, Table 3 (i.e. 150 cumecs between the Dam and the Sea); being
- Torach Farms Ltd [CRC073237],
 - Waitaki Orchards Ltd [CRC061399],
 - Chalmers [CRC042124].
50. Their applications have been assessed by the Council officers on this basis. While these applicants support an alternative flow regime based on 100 m³/s, the minimum flow applicable to these three consents is the minimum 150 m³/s.
51. 5 main-stem applicants propose minimum flow conditions based on the variable flow regime proposed for the North Bank Tunnel Concept.
52. This is done in response to Meridian's and the Regional Council officers' stance on rule 7. The applicants do not agree that rule 7 cannot be triggered until 2025. Rule 7 is triggered by Meridian's application for a new hydro scheme. However, as Meridian has also stated that it may not implement NBTC if granted.
53. Until NBTC is commissioned Meridian says that its operations at the Dam will not change. The mean flow in the lower Waitaki River is 364m³/s. Flows below 150 m

3/s occur 3% of time. If HDI is granted this will increase to 4%.

54. The conditions proposed on the main-stem consents are in every sense managing around the margins. A margin which occurs 3% of time.
55. The evidence in support of a minimum flow of 100 m³/s between the Dam and the Sea and a variable flow regime above Black Point was presented by Meridian witnesses at the HDI and NBTC hearings. Mr Nick Boyes identifies the relevant witnesses and details of their evidence in support.
56. Meridian has advanced NBTC variable flow on the basis that both limbs of the s104D test are met. IF you accept that proposition then it is open, and I submit proper to consider these applications on the same basis.

Alternative Flow Regime

57. An alternative flow regime based on a minimum flow in the River of 100 m³/s has been presented to Meridian as an alternative to HDI ramping conditions. Absent an agreement with Meridian it cannot be imposed as a condition on these consents. However, I will address that proposal and evidence will be presented on the same.

Post NBTC

58. Following the commissioning of the North Bank Tunnel no minimum flow condition is appropriate (or is

proposed) for the main-stem applicants. Meridian has given its undertaking that it will ensure 100% reliability of supply of all consent holders, including these applicants (if granted). This undertaking is unqualified. It applies during periods of low inflows (as defined in Rule 5, Table 6).

59. How that is achieved is a matter solely within Meridian's control.
60. If the Commissioners accept the undertaking given by Meridian at the NBTC hearing, including the evidence that the proposed releases for downstream users will provide this level of reliability, then a minimum flow condition on the applicants' consents has no purpose. The sustainable management of this resource is provided for under the NBTC consent conditions.

Risk Arising from Low Inflows and Dam Operation across the Network

61. Supply reliability is two-tiered and includes a measure of how often a consent holder is required to reduce or cease abstraction as a result of minimum flow conditions being reached and secondly, the ability of the consent holder to physically access water at the consented point of taking.¹⁸
62. Only Meridian has the ability to manage risk across its generating network. Abstractors in the lower Waitaki have no capacity or ability to manage an assumed risk

¹⁸ Kerry Johnson, paragraph 1, August 2007 NBTC

based on Meridian's operating decisions or as a consequence of low inflows.

63. The most significant risk to downstream users is that associated with the variability of flow releases at the Dam and the frequency, extent and duration of flows at the minimum flow in the River or the trigger flow of 190 cumecs proposed in the HDI application. Flows releases at the Dam are unpredictable and reflect market demand for hydro electricity.
64. What is to occur during periods of low inflow is provided for under the WRP. Rule 2, Table 3 states that where there is a period of low inflow between 1 November to 30 April, the minimum flow between 1 June and 31 August is either the natural flow at the Waitaki Dam or the minimum flow in the Plan (whichever is the lesser).

Mean Flows

65. Under Rule 2, Table 3, the minimum flow in the River is to be measured at the Kurow Recorder and is based on one hour rolling averages. It is not proposed to manage these applications, for the purpose of maintaining the minimum flow, by using a one hour rolling average because:
 - a. The Waitaki River is a controlled river, it does not have a natural recession flow;¹⁹
 - b. All flows are managed by Meridian through the Waitaki Power Scheme;

- c. Consent holders and the Canterbury Regional Council for monitoring and compliance purposes cannot manage taking based on rolling hourly averages.
66. The applicants propose that it is the mean of those flows over a 72 hour period which controls the taking of water. Applicants cease taking if the mean flow over the preceding 72 hours falls below the minimum flow in the River.
67. Managing the minimum flow in the river around a 72 hour mean flow is not predictive of flows for the purposes of maintaining the minimum flow between the dam and the sea. It is not predictive because Meridian controls the release of flows through the dam. Rather it is an operational tool for downstream users and the Regional Council.

Inflows into the Catchment

68. Mr Stewart and Dr Ward have peer reviewed the water balance evidence presented on behalf of Meridian and others at NBTC, Project Aqua and to the Board on the Water Allocation Plan. They have reviewed the evidence regarding the contribution of ground water and surface water flows to flows in the lower Waitaki River. There is an average inflow between the Dam and Blacks Point of 13m³/s, of which 4m³/s²⁰ is

¹⁹ See evidence of Dave Stewart, HDI.

²⁰ 3.8 cumecs of groundwater inflows are above Black Point

groundwater. There is a seasonal variation in inflows. Actual inflows are given in Mr Stewart's evidence.

69. While Mr Stewart and Dr Ward estimate the mean flow contribution from natural inflows to the river is small relative to the mean flow in the river, nevertheless the occurrence of inflows is important for the purposes of managing these new takes relative to existing consent holders and secondly, for the purpose of assessing actual flows at the river mouth. By themselves it is highly unlikely these takes will cause the minimum flow to be breached.
70. The occurrence of inflows means there is no reason for additional flow sharing mechanisms (such as banding) for any consent granted; in particular above Black Point. The Plan does not contemplate flow sharing in the main-stem of the lower Waitaki River (Rule 5, Table 6).

Hunter Downs Irrigation Scheme

71. In contrast, Hunter Downs proposed three alternate flow regimes (four if priority bands are also counted). In effect, a trigger level is set at 190 cumecs at which restrictions on taking commence.
72. HDI invite the Commissioners to make a decision on what level of restriction should apply to existing consent holders (if any) and new users. The options identified are that:²¹

²¹ The HDI condition set updated 18/12/07

- a. All existing consent holders share equally with new users the flows released at the dam below 190m³/s;
 - b. All existing consent holders share partially with applicants, at a rate to be determined by the Commissioners, the flows released at the Dam below 190 m³/s but the balance of consented take is not subject to ramped restrictions; or
 - c. All existing consent holders are not subject to the proposed HDI flow sharing regime.
73. Restrictions are to occur when flows calculated at the Kurow Recorder fall below 190m³/s (Condition 8). Abstraction is to cease when flows calculated at the Kurow Recorder fall below 100m³/s (Condition 7).
74. The variable rates of taking based on gauging at the Kurow Recorder is only possible where an irrigation system is fully automated; meaning the intake structure at the River is fully automated and that there is telemetering on each point of take (i.e. at the farm gate). Telemetering may be required on each divert and discharge point. None of these applicants propose such automation or telemetering of their irrigation systems.
75. Submitters opposed the HDI flow sharing regime on the basis that while it was theoretically possible, it was incapable of being implemented. The reliability of supply was unacceptable.

76. It is open to HDI to propose conditions managing its taking based on ramped restrictions occurring where flows fall below 190m³/s. It is not open to HDI say that this is the basis that these applications are to be dealt with. These applicants will not assume the risk of restrictions arising from Meridian's operational decisions or from low inflows except to the extent proposed.

HDI Will Be Superseded by the Tunnel

77. HDI is estimated to become operational 10 years after the grant of consent. A lapsing date of 10 years has been sought as a condition of consent. Even after HDI is operational that will not necessarily mean the scheme will be fully subscribed, a matter noted by the Reporting officer in her discussion on duration of consent.
78. If consent for NBTC is granted and the tunnel scheme commissioned, the new regime created as a consequence of that consent will supersede what is proposed here.
79. The commissioning date for NBTC was estimated for 15 years. It is possible, if not probable, that tunnel will be commissioned, with all that this entails in respect of a new flow regime, before the Hunter Downs Scheme.
80. Unless, and until HDI, is operational managing abstraction for all downstream users on the basis that the full HDI take is not justified having regard to the environmental effects of that abstraction relative to the actual flow in the river.

Summary

81. All flows are measured at the Kurow Recorder. The Recorder is upstream of most, if not all consented and proposed takes. Between the Dam and Black Point inflows nearly always meet or exceed abstractive outflows. The taking by these **5** applicants will not cause the flows to fall below the variable flows proposed. Nor will the taking of the **3** applicants which proposed minimum flows of 150 m³/s cause the flow in the River to fall below the minimum flow.
 82. In respect of the 5 who propose to take below 150m³/s section 104D(1)(a) is satisfied as the adverse effects of the activities on the environment will be minor. These applications can be considered under s104, Part II and in terms of the general discretion in S104B to grant or decline consent.
 83. Under section 104B the correct enquiry is whether the effects as proposed to be remedied avoided and/or mitigated by conditions and taken as a whole, are more than minor.²²It is the effects of 8 applications taking on the environment taken as a whole and in light of the conditions offered, which are to be considered.
- J. The Applicants' Alternative Flow Regime**
84. Hunter Downs Irrigation Scheme was presented on the basis of a minimum flow of 100m³/s between the Dam and the Sea. The purpose of the ramping condition is

²² *Stokes v CCC Environment Court C108/99*

to ensure the minimum flow was maintained. The conditions were tabled as an alternative management approach to that under Rule 2, Table 3; “...an opportunity for a different regime to be crafted through decisions on the resource consent applications currently in progress that could apply until at least 2025.”²³

85. A different regime is presented on behalf of these applicants.
86. The applicants propose an alternative flow regime also based on a minimum flow of 100 m³/s between the Dam and the Sea. Meridian will:
 - a) Ensure that the flow in the river does not fall below 170 or 190 m³/s; or
 - b) Release the flow that is equal to or greater than actual demandwhichever is the lesser
87. The Applicants shall notify Meridian of the rate of take required 14 days in advance of the requirement.
88. This proposal is subject to an agreement by way of private treaty between the Applicants and Meridian.
89. Meridian has been presented with this proposal and has not indicated whether it will enter into a commercial arrangement. An agreement (if reached) would be

²³ Ms Appleyard Opening Submission, HDI, para 66

incorporated by reference into the Conditions of Consent.

90. The Applicants proposal is their response to the constraints on Meridian operations at time of low inflows. Apart from what is proposed here, how low inflows are to be managed is provided for under the Plan.
91. However, abstractors would expect Meridian to advice of its risk at the earliest opportunity, and then would consider water saving/rationalizing in good faith.

Detail of Proposal

92. At the HDI hearing, hydrologist Dave Stewart, presented evidence on behalf of these applicants concerning the average the additional release (required on a continuous basis) to ensure 100% reliability of supply. He assumed there was a full uptake of the 90 cumec allocation and the minimum flow in the River was 100 cumecs.
93. The additional release equated to 1.53 m³/s over the 44 years modelled. If the last 20 years was considered separately (being the period when the Waitaki Power Scheme was fully operational), the average release was 0.14 cumecs²⁴. Average monthly releases were also presented.²⁵ The demand modelled was not actual

²⁴ Dave Stewart, paragraph 46, Supplementary Evidence (document 3)

²⁵ Table 13, Supplementary Evidence (document 3)

demand; rather derived demand using values produced Mr Potts.

94. Mr Stewart has refined his approach. Continuous or even average monthly releases are not required where there is no not shortfall in actual demand relative to supply. Actual daily demand may exceed supply. The fundamental proposition remains; what is required to be released by Meridian to ensure reliability of supply for downstream users is de minimis when compared to the mean flow in the River. The objective is to provide an acceptable level of reliability of supply for all abstractive users.

Irrigation Operations

95. This proposal involves no risk to the applicants. It is not proposed to fix demand for any period, either by agreement with Meridian or as a condition on consent.
96. There will be times when the consented peak rate of take is required. It is usual for the peak rate of taking to be occurring between November to February inclusive. There will be times when the peak rate of take is required during the shoulder months of an irrigation season. And times when taking is occurring outside of the irrigation season, between May to August (inclusive).
97. The applicants are not proposing to amend or reduce the peak rate of take sought under their applications.

98. The offer made is to notify Meridian in advance of requirement; the consideration sought is that Meridian will release flows sufficient to meet their demand.
99. Whether Meridian stores or generates electricity using water not required by irrigators is a matter for Meridian.
100. If the actual demand notified by an irrigator to Meridian is less than 170 (190)m³/s and Meridian meets actual demand by releasing flows (supply) then abstraction will not be restricted.

Reliability of Supply

101. If Meridian enters into an agreement to supply actual demand then under this proposal there is no risk to the reliability of supply of any consent holder.
102. No distinction is made between existing consent holders and applicants. It is proposed that applicants will have 100% reliability of supply. That is because applicants have offered to provide notice to Meridian in advance of their requirement.
103. Mr Stewart will give evidence that if Meridian releases flows at the Dam which are from time to time less than the minimum flow but otherwise the mean of all flows over each 24 hour period is maintained, it is unlikely that the minimum flow of 100m³/s will be breached, or if breached the effect on flow at the river mouth will be immeasurable.

Operational Flows

104. Mr Stewart evidence is based on flows of 170m³/s and 190m³/s. 70m³/s is the peak rate of take required by all existing, proposed and future users (not including HDI). 90m³/s is the full uptake of the surface water allocation for the lower Waitaki River, including HDI.

Actual Demand

105. The actual demand by irrigators may be less than the consented peak rate of take. If it is Meridian may store water if notified in advance.
106. The applicants have obtained records from the Lower Waitaki Irrigation Company, the Morven Glenavy / Ikawai Scheme, and the North Otago Irrigation Company of their actual use. Mr Stewart has modelled actual demand from those records relative to supply (flows released from the dam).
107. The Lower Waitaki Irrigation Company and the Morven Glenavy / Ikawai Schemes have consent to take 31.9m³/s. The peak rate of taking varies during each irrigation season (notionally 1 September – 30 April). These are two quite different Schemes with differing proportions of spray and border dyke operations.
108. Factors controlling demand by consent holders are principally rainfall, soil type, soil moisture, rate of evapotranspiration and crop demand. Demand varies each year and within a given irrigation season. Lower demand during the shoulders of the irrigation season is also the result of higher efficiencies achieved by newer

irrigation systems, greater regulatory constraints and higher pumping costs associated with spray irrigation.

109. From records of actual use in the shoulder months of the irrigation seasons (September/October and March/April), taking is generally **less** than the peak rate of taking authorised under the consent. Currently the water that is not taken remains in the river. Meridian can maximise its operational flexibility if notified in advance of requirement as proposed.

Supply and Demand

110. Mr Stewart's evidence is that over the last 16 years actual irrigation demand exceeded supply (where flows = or < 170m³/s) on **14 occasions** and demand exceeded supply (where flows = or < 190m³/s) on **64 occasions**.
111. If natural inflows between the dam and Blacks Point which augment river flows are accounted for, then over the same period demand exceeded supply on only **3 occasions** (where flows were = or < 170m³/s) and on **29 occasions** (where flows were = or < 190m³/s).
112. On those occasions it is proposed that Meridian release flows required to maintain either 170 (190) m³/s or actual notified demand.

K Nitrates/Phosphates and Farm Management Programs

113. The final issue concerns the management of nitrates and phosphate as a consequence of increased

irrigation. Lynn Torgesson will present evidence in two parts. In respect of applicants in the lower Waitaki River she has evaluated the existing distribution of the nitrate concentration in groundwater and the potential effects of the proposed consent applications. She proposes consent conditions and farm management programs to reduce the nitrates losses to ground.

114. Ms Torgesson reports separately on the Hakataramea Valley. The issues in the Hakataramea are unlike those in the lower Waitaki Valley. In its 2007 study the Regional Council calculated that mass balance for nitrates and phosphates in the Hakataramea River significantly exceeded measured concentrations. Ms Torgesson discusses a subsequent report prepared on behalf of the applicants by Agresearch which came to a similar conclusion in respect of mass balances.

115. Ms Torgesson has used the Hakataramea's database of measured water quality to evaluate the effects of increased irrigation. Based on that data she concludes that a major nutrient pathway is stock in or adjacent to the waterways. A secondary pathway is dust-storms. Groundwater drainage and overland flows is not the primary mechanism. She has recommended land management measures to minimise the transport of nitrates/phosphates in this catchment which have been adopted by the Applicants in conditions of consent.

L Conditions

116. Technical conditions are supported by expert witnesses.

117. Consultants giving evidence in support of the individual applications propose general conditions of consent.

M Duration

118. The duration sought for all consents is 35 years. The officers recommend 10-15 years.

119. The Officer reports refer to the decision of *PVL Proteins Ltd v The Auckland Regional Council*.²⁶ This case sets out matters which are relevant to determining the duration of a consent to discharge contaminants to air. Many factors considered in that case are of no relevance to an application to take and use water, save the general statement that "*a decision on what is the appropriate term of the resource consent is to be made for the purpose of the Act, having regard to the actual and potential effects on the environment and relevant provisions of applicable instruments under the Act...*"²⁷

120. In support of the 35 year duration proposed:

- a) This is one of the most highly studied Rivers in the country. It is not a water short catchment.
- b) If all of the applications were granted, surface water allocation is still available under the WRP.
- c) All applications meet the reasonable use test in Policy 16, WRP.

²⁶ Environment Court, decision number A061/2001.

²⁷ PVL Proteins, para 27

- d) All applications propose farm management programs which contain provision for their regular review and update. This is an effective mechanism to deal with unforeseen effects of the taking and (in particular) using water on the environment. The response is on a farm by farm basis. Compliance with these plans is enforceable.
- e) The cost of irrigation investment is significant.
- f) The duration sought ensures that the cost of infrastructure is repaid. Shorter duration leads to uncertainty. Consent holders need as much security as is consistent with sustainable management.
- g) The cost of investment relative to return is important. Important also are the benefits for both local and regional community.

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August 2008

Minimum flow conditions for the Lower Waitaki River

A. The minimum flow from Dam to Sea is 100 cumecs

This condition would only apply if agreement with holder of the Waitaki Dam consent is reached to the effect that the Dam consent holder will ensure that the following condition is not activated.

Minimum Flow Condition

If the holder of the Waitaki Dam consents provides notice to the Canterbury Regional Council that the mean flow in the Waitaki River as measured at the Kurow Recorder in the next 24 hour period is estimated to be less than 170 cumecs or actual demand (and taking of water has not commenced under the HDI consents) or 190 cumecs or actual demand (and taking of water has commenced under the HDI consent) the taking of water under this permit shall cease at the start of that period.

For the purpose of this condition:

- i. Actual demand means the peak rate of taking required and notified to the consent holder of the Waitaki Dam at least 14 days in advance.*
- ii. Flows shall be estimated at the Kurow Recorder (Kurow Recorder flow map ref: 140:079-088) by the Canterbury Regional Council and expressed in cubic metres per second.*
- iii. Each 24 hour period shall start 12.00am and finish 11.59pm.*
- iv. The flow in the Waitaki River at the Kurow Recorder shall include any flow taken from the Waitaki catchment upstream of the Kurow Gauge and returned downstream of the Kurow Recorder but upstream of the Hunter Downs Irrigation Scheme point of take.*

This condition incorporates by reference an agreement between the holder of the Waitaki Dam consents [CRC references], the signatories to the 1990 Access Agreement and MRNAG dated (date).

The minimum flow condition shall not apply upon commissioning of the North Bank Tunnel Concept [CRC references] and the diversion of flows through the tunnel.

B. The minimum flow in the River is the NBTC variable minimum flow between the Dam and Black Point

Minimum Flow Condition

Whenever the mean flow in the Waitaki River in the preceding 72 hour period falls below the minimum flow rates in Table 1 the taking of water from the Waitaki River shall cease.

Table 1

Month of Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Minimum River Flow m³/s	140	150	145	125	120	110	110	110	120	125	130	140

This condition shall not apply if the consent holder of the Waitaki Dam consents provides notice to the Canterbury Regional Council that the mean flow in the Waitaki River in the next 24 hour period is estimated to be equal to or exceed the flows in Table 1.

For the purpose of this condition:

- i. Flows shall be estimated at the Kurow Recorder (Kurow Recorder flow map ref: 140:079-088) by the Canterbury Regional Council and expressed in cubic metres per second.*
- ii. Each 24 hour period shall start 12.00am and finish 11.59pm.*
- iii. The flow in the Waitaki River at the Kurow Recorder shall include any flow taken from the Waitaki catchment upstream of the Kurow recorder and returned downstream of the Kurow Recorder but upstream of Blackpoint. ~~The Hunter Downs Irrigation Scheme point of take.~~*

The minimum flow condition shall not apply upon commissioning of the North Bank Tunnel Concept [CRC references] and the diversion of flows through the tunnel.

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