



31 January 2008

Environment Canterbury
 P O Box 345
CHRISTCHURCH

Attn Dr D Vattala

Dear Dr Vattala

**RESOURCE MANAGEMENT ACT 1991
 RESOURCE CONSENT APPLICATIONS –
 SELWYN DISTRICT COUNCIL- MALVERN STOCKWATER SUPPLY SCHEME**

Notice is hereby given of the decision of Environment Canterbury on the applications by the Selwyn District Council to take water and for works associated with the Malvern Stockwater Supply Scheme.

The applicant and any person who made a submission to the application may appeal the decision in respect of that application, in whole or in part, to the Environment Court.

A notice of appeal shall be in the prescribed form and shall state the reason for the appeal, the relief sought and any other matters required by regulation and shall be lodged with the Environment Court, PO Box 2069, Christchurch within 15 working days of receipt of this notice of decision. A copy of any appeal shall be served on Environment Canterbury within the same 15 working day period and addressed for the attention of the Legal Section.

The reasons for the decision are contained in the Commissioner(s) report attached.

A copy of the Commissioner(s) report is available for inspection at the offices of Environment Canterbury, 58 Kilmore Street, Christchurch.

Yours sincerely

Donald Fraser
CONSENTS OFFICER – HEARINGS
 :JAH
 Encl.

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D. Vattala			

Our Ref: CO6C/17910
Your Ref:
Contact: Donald Fraser

Resource Management Act 1991

Canterbury Regional Council

Hearing of applications by Selwyn District Council for resource consents to disturb the beds of the Kowai River, Waimakariri River, and Selwyn River to maintain intake and discharge structures; to allow the diversion of water; to take water from the Kowai River, Waimakariri River, Selwyn River, Bishops Gully Creek booster; Skurrs Spring, Blacks Creek booster, Springfield Creek at two points; and to discharge water and water containing contaminants into land and/or water from the stock-water irrigation scheme at several points into rivers, drains and soak-pits. A 'duration of consent' period of 20 years is sought for these applications.

Hearing held at Christchurch, 2nd & 3rd October 2007

Report by Hearing Commissioner

Robert William Batty

Application references: CRC012002; CRC012003 and CRC012004

Representation and appearances:

For the Selwyn District Council:

- **Ms R. Dunningham**, assisted by Ms S. Newell, legal counsel; **Mr H. Blakemanson**, Council' Utilities Manager; **Mr J. Waugh**, a hydrologist; **Dr. J Roper-Lindsay**, an ecologist; **Mr G. Birdling**, an environmental engineer; **Ms A. Greenup**, Council's Open Space Manager; **Mr N. Borrie**, an environmental engineer; **Ms S. Brown** a Resource Management Planner.

Submitters:

- **Mr B. Arnold**, a Department of Conservation Manager - Statutory services; **Mr J. Holland**, North Canterbury Fish & Game Regional Environment Officer.

ECan Section 42A reporting officer:

- **Dr. D. Vattala**

1.0 Procedural matters and background

1.1 By instructions from ECan dated 26th September 2007 I was appointed as Commissioner to hear and determine the above applications and subsequent submissions thereon. These three applications, together with an accompanying AEE were originally lodged with ECan in March 2001 as part of a series of twelve applications relating to four stock-water races, being those of Ellesmere, Paparua, Selwyn and Malvern.

1.2 While three resource consents were granted for the Paparua race applications in December 2001 (with a 35 year duration term), the remaining race applications were placed 'on-hold' at the request of the applicant, Selwyn District Council ('SDC'), although those applications were then publicly notified in February 2003. No subsequent notification has taken place since that date. The Selwyn and Ellesmere scheme applications have yet to proceed to a hearing.

1.3 The three consents sought in relation to the Malvern stock-water race network ('the Malvern scheme') were lodged by the SDC to effectively 'renew' existing consents and to regularise the 'historic water takes' which occur on a de facto basis from the Selwyn, Kowai and Wiamakariri Rivers together with the Bishops Gully Creek booster; Skurrs Spring, Blacks Creek booster, and Springfield Creek. These applications comprise CRC012002 for land use consent for the disturbance of the banks and beds of the rivers concerned and the maintenance of related structures in those rivers; CRC012003 for consents to abstract water from those sources; and CRC012004 for the discharge of surplus water.

1.4 Following the 2003 notification a total of 103 submissions were received relating to applications CRC012002 and CRC012003, 92 of which were in support and 11 in opposition, with a total of 18 submitters indicating they wished to be heard at that time. For application CRC012004, 102 submissions were received within the time specified, of which 91 were in support and 11 in opposition, with 17 submitters requesting to be heard. No waivers of the response time frame were granted for 14 'late' submissions.

1.5 When these hearings eventually took place in October 2007, of all of the above submitters, only representatives of the Department of Conservation ('DoC') and the North Canterbury Fish & Game Council ('NCFG') attended the hearings and presented supplementary evidence in support of their original submissions.

1.6 Prior to the hearings, a report on these applications was produced pursuant to s42A by the ECan reporting officer Dr. D. Vattala. In that report applications CRC012002 and CRC012004 were assessed by Dr Vattala as 'discretionary activities' for which he recommended that consent be granted subject to a range of conditions. His report cited three planning documents as being relevant to the assessment of this proposal: the 'Transitional Regional Plan' ('TRP'); the 'Waimakariri River Regional Plan' ('WRRP'); and the 'Proposed Natural Resources Regional Plan' (PNRRP'). Citing a rule in the PNRRP(Rule wqn10) in relation to the taking or diversion of water from the Selwyn River, Dr Vattala identified that as a non-complying activity and in consequence application CRC012003 was assessed by him overall to be a non-complying activity, for which he recommended refusal of consent.

1.7 Dr Vattala's report also made reference to recent 'case law' in relation to the allocation of "A block" water from the Waimakariri River (the principle of 'no-derogation'). In brief, those cases have confirmed a 'priority' system based upon applications lodged first taking precedence over later applications. In this instance, applications lodged subsequent to this one for water take from the Waimakariri River (e.g. the Ngai Tahu application) have been consented to without any recognition of the priority that should have been accorded to the earlier water-take applied for by SDC. The situation now exists therefore where there is (at least theoretically) no remaining "A block" water available to meet that sought by SDC, notwithstanding that this applicant should have been accorded 'priority' access to that resource before subsequent applicants.

1.8 No other procedural issues were raised by any parties during the hearings. Following the hearing on the 3rd October I adjourned to enable representatives of SDC, DoC and NCF&G to meet together with Dr. Vattala to consider the potential for conditions acceptable to all parties that might address the range of issues raised during the hearing, should consents be contemplated

for these applications. I also invited Ms Dunningham to submit her 'right of reply' after those discussions had taken place. That process was completed by the 16th November, after which I received Ms Dunningham's written submissions in reply together with draft conditions, including suggestions by NCF&G for further variations to some of those.

1.8 Given the extensive area covered by the Malvern scheme, on the 28th of November I conducted an inspection of only some parts of the stock-water race system accompanied by Mr J. Holland (NCF&G) and Mr C. Tomlin (SDC). That inspection included the various water intakes on the Waimakariri, Selwyn and Kowai Rivers, together with Scurrs Spring and stock-water race sites at the eastern and southern extremities of the water-race system.

2.0 The hearing

The applicant's case

2.1 Ms Dunningham outlined the history and extent of the Malvern scheme. It was initially commenced in the 1870's and was substantially completed by the 1920's. It comprises 922 kilometres of races supplying just under 44,000ha of farmland with stock-water, with some 968 properties reliant on the scheme as their sole source of stock-water. The scheme also includes 63 'soak holes / tip-out points' where, depending upon geological constraints unused race water is discharged.

2.2 The current applications were lodged in March 2001 pursuant to s386 of the RMA to enable SDC's existing authorities under the earlier Water & Soil conservation Act 1967 (' the WASCA') to be renewed before their otherwise deemed 'expiry' in October of that year. In addition they also seek to regularise water "takes" which occur on a de facto basis either in flood conditions or where water enters the races from adjacent springs or watercourses. Ms Dunningham described how the 'rights' which attached to the scheme prior to the coming into effect of the WASCA had been preserved as 'existing use rights' by the Regional Water Board at that time based upon estimates of the rate of take of water supporting the scheme. She noted that the Court of Appeal had ruled that such Boards at that time had no functions at all to determine the extent of, or to quantify an existing lawful take. Improvements

in accurate flow gauging have been made over subsequent years and recent records have shown those earlier estimates of take to have been "well off the mark". In her submission those findings have no legal effect on the existing right to lawfully take water for this scheme. She stressed that no actual 'additional' take of water was being sought beyond that which has historically been used to run this scheme to date.

2.3 As a result of the above recording inaccuracies however, ECan's records of the allocation of "A" block water permit to this scheme under the WRRP in Ms Dunningham's submission reflect lower than the existing maximum rates of each of the takes actually concerned in these applications. In her view that in turn was a contributory factor in ECan's failure to reserve sufficient "A" permit water to cover the operation of the existing Malvern Scheme resulting in the subsequent 'over allocation' of the balance of these water resources to a later applicant.

2.4 Ms Dunningham submitted that in assessing the effect of these applications on the 'existing environment', this should be recognised to be that which has developed as a consequence of the existence of this scheme in its present form, with farming practices in this area being reliant upon the scheme for the provision of stock-water. In addition it must be accepted that the intake structures and race network all exist. Referring to the s42A report she noted Dr. Vattala accepted that the effects of the takes upon the Waimakariri River's aquatic ecosystem, fish passage, life supporting capacity and other users were considered to be negligible.

2.5 In relation to the Kowai River, she noted that the s42A report accepted that for 90% of the time abstractions to serve the Malvern Scheme had little effect on river flow. For the remaining period the effects of abstraction were in her view likely to merely extend the length of no surface flow on that river by a few hundred metres with no more than minor effect on its fisheries values. Ms Dunningham disagreed with the s42A assessment of the effects of this abstraction on the Selwyn River. In her submission this probably resulted in its already ephemeral nature being extended by a further 6 to 8 weeks during the summer. That degree of change to its fisheries environment was in her view small when considered against the 11 kilometres of dry riverbed which normally

occurs at that time further downstream. Referring to evidence to be presented by Mr Waugh she confirmed that there is no intention by these applications to take 'additional' water from the Selwyn River. She agreed with the conclusions reached by Dr. Vattala that the effects of the remaining takes from booster streams and springs on the aquatic ecosystems, fish passage, and the life supporting capacity of these waterways would be less than minor.

2.6 Turning to comment on the statutory assessment process Ms Dunningham submitted that neither provisions of the TRP nor the PNRRP should be accorded significant 'weight' in this instance (the former being 'compiled' under legislation previous to the RMA, while the latter was still at the hearings stage). She therefore contended that other than those aspects of these consents that are subject to the provisions of the WRRP, the remaining matter should be determined in accordance with the general principles of the RMA.

2.7 In so far as the WRRP is concerned, the primary issue is that the rates of take recorded by ECan as applying to the notified use consents for the Malvern Scheme are less than the actual rates of take established by more recent flow gauging. The sum of those rates of take for the two Kowai takes, the Waimakariri take and the Skurrs Spring take was said (in the s42A report) to be recorded by ECan as 1,064 l/sec, whereas that report assessed a combined take of 1,960 l/sec as now being applied for. Ms Dunningham submitted that under the provisions of the WRRP, 1,064 l/sec could be granted as "A" block water permit, and the balance as "B" block permit water.

2.8 Mr Blake-Manson's evidence outlined the history of the Malvern scheme's development and explained its current features and operation. He also referred to the measures SDC were taking to improve the administration, efficiency and effectiveness of all of the water race systems it operates. In that context he presented a copies of the Council's 'Water Race Management Plan' (May 2007) ('the RMP') and 'Water Race Activity Management Plan (January 2007) ('the AMP'). These were recently adopted by the Council and copied to ECan for information. He noted that in relation to the Selwyn Scheme for example, consideration was being given to its potential closure or modification so as to retain some of its broader amenity and environmental benefits. He

explained that if the present Malvern Scheme was to be replaced it would be estimated to cost \$25.9 million. Replacement with a community piped scheme would have an estimated capital cost of \$18 million and annual operating and maintenance costs of \$1.95 million. Mr Blake-Manson drew attention to provisions in the AMP including a 10 year programme of improvements and replacements to the scheme network, and identified funding and delivery dates. Depending upon the outcome of these applications, the Council intends to develop a strategy focussing upon future use of water races and improvement to these as part of the 2009 – 2010 LTCCP process. In his opinion the existing water race system represented a demonstrably economic and efficient use of capital in relation to the extent of the area it serves.

2.9 The operation of the Malvern scheme is detailed in the RMP. The area is divided into two parts – eastern and western. A high level of input is needed by the operator controlling the eastern side of the scheme in order to ensure that sufficient water is provided in a timely manner to meet demands in the lower part of that area. The RMP also details the varied operation of the race to reflect changing water availability within rivers. These include provision for closing off some distribution branches of races where practicable and implementing other stock handling procedures during severe drought periods. Monitoring of the race operations includes both water quality and leakage from races, is so that repairs can be undertaken as required. Where such repairs have proved unsuccessful in the longer term, piping of small sections of race has been utilised and where high water losses are known to be occurring this method is to receive increased priority under the RMP.

2.10 Mr Blake-Manson acknowledged that more efficient use of the Malvern water race network was desirable and that would entail more thorough communication with stakeholders and users as well as improved management by SDC and contractors. An annual meeting with all stakeholders is proposed to ensure that feedback from these sources concerning the operation of the race system is being acted upon by the Council.

2.11 Mr Waugh's evidence provided a hydrological overview of the effects of this scheme on the Waimakariri, Kowai and Selwyn Rivers, as well as within the race network itself and on downstream groundwater levels. To summarise,

he concluded that the effect upon Waimakariri River flows of the take involved for the Malvern scheme would have a miniscule effect on other users of this river's waters and is so small as to be un-measurable at downstream locations. Turning to consider the effects of the scheme on the Kowai River, he commented upon the upper and lower Kowai River intake and the Glentunnel intake. Based upon his knowledge of the operation of this water race between 1998 and 2007 he expressed the opinion that the flows being taken have not changed over decades and are not being 'increased' by the consents sought here. Rather these are to reflect accurate flow values on the water actually used by this system.

2.12 Noting the seasonal 'drying up' of the Kowai River, he had observed that at times (e.g.1998-99) a 4 kilometre stretch of the river down to its confluence with the Rubicon had no surface flow. From other analyses of the flows in this river he concluded that there will always have been periods where it experienced no surface flow, even before the stock-water intakes were established. While these conditions limited access for trout to the upper reaches of the river, they also protected the populations of Alpine galaxias and upland bully in those areas as a result. In his view the nature of the Kowai does not present a good quality habitat for salmonid species, with or without water abstraction.

2.13 Mr Waugh's assessment of the effects of abstraction of stock-water on the natural flow regime of the Selwyn River was that it had little or negligible effect. In his view the net effect would be that the river would be dry on the surface for a longer period (6 – 8 weeks) and that effect would extend over a slightly increased length (500m – 800m) than the present 11 kilometres which would be 'naturally' dry during the relevant periods. Effects on other river users would in his view remain unchanged. In terms of effects on the biota of the river he concludes that these abstractions have only a minor influence and that they would have naturally adapted to "dry riverbed condition over a period of thousands of years".

2.14 Dr. roper-Lindsay commented on the ecology of the waterways in the area affected by the scheme together with the ecological values and contribution to the bio-diversity of the Canterbury Plains of the races

themselves. She also considered the potential effects of closing or piping the water currently supplied to this area by the scheme. She concluded that the race system contributes a range of aquatic and riparian habitats likely to support important indigenous flora and fauna species. The Council has further recognised this contribution to the bio-diversity of the Canterbury Plains by making specific provision for input from a suitably qualified ecologist into its AMP, RMP, and LTCCP processes. She endorsed the conditions recommended in the s42a report which proposed the gathering of further information on the effects of these abstractions, periodic river works and discharges upon the ecological values of the waterways concerned.

2.15 Mr Birdling's evidence examined the various aspects of efficiency of the existing Malvern Stock-water scheme. In hydraulic terms he described the current race system, being an 'open-channel' scheme, as inherently inefficient. This is due to water losses from seepage, evaporation, evapotranspiration, and discharges at terminal points of the scheme. In addition, its contour-based routing of races does not always provide the most direct routes from intake to any given user. The system itself is dynamic and its state varies continually in response to weather conditions, river levels, control structure settings, stock-water demand and race condition. Overall he rated the efficiency of the scheme at somewhere between 2% and 7%, probably being around 4%. However, in terms of its economic efficiency, he recognised that the scheme contributes significantly to the area's economic output at a very low cost to its users and he could not conceive of any replacement scheme that could provide such service for a similarly low cost. He had made a preliminary estimate of the capital cost of a piped rural water supply network for the Malvern Scheme area and concluded this would be about \$18.2 million, and take between 3 to 5 years to build.

2.16 Mr Birdling had also assessed potential engineering aspect of the installation of fish screens at the main intake head-works. In his view a number of factors (primarily the approach velocity of water at that point) militated against the provision of a screen at the Waimakariri intake. Although Skurr's Spring some 1.5km below the Waimak tunnel exit might provide a suitable site there were other difficulties in that area which indicated no clear-cut solution to the provision of a fish screen for the Waimakariri intake is readily conceivable.

Having met with a representative of Fish & Game at the Kowai River intakes he concluded that ephemeral nature of that river also presented practical difficulties for the provision of fish screening. He did not foresee any significant engineering issues with the provision of a suitable fish screen on the Selwyn River intake at Glentunnel. Having considered the s42A recommended conditions that a water meter be used to provide flow monitoring he concluded that there were more appropriate systems. He recommended alternative conditions to ensure more performance based, accurate and robust monitoring outcomes.

2.17 Ms Greenup discussed amenity, recreation and landscape contributions to the quality of the environment in this part of the district that are made by the Malvern scheme stock-water races. Noting that these had been a visual feature in the district for more than a century, she considered them to be an integral part of the landscape, adding interest, amenity and variety to farmlands and within the townships. In these terms she considers the race system to contribute more than simply practical stock-water, irrigation and economic benefits to the community.

2.18 Mr Borrie had been commissioned by SDC to assess the availability, consenting issues and costs of groundwater as a potential alternative source for stock-water supply. His overall conclusions from that study was that it would be feasible for all properties within the Malvern Scheme area to obtain such supplies, although some might require bores to a significant depth. The overall cost for such a process would in his view be of the order of \$38.2 million, the majority of which would be dependant on and dictated by the depth and installation of new bores.

2.19 The final witness for SDC was Ms Brown whose evidence was focussed upon statutory and planning considerations. Appended to her evidence were recommended conditions of consent. In considering the range of statutory planning documents applying in this case, and in the light of s88A(2) of the Act, in her opinion, given the date on which these applications were first lodged, the provisions of the TRP are to be accorded some weight and the WRRP full weight in relation to the status of the activities involved here. In addition, although the PNRRP was notified after the date on which these

applications were lodged, some regard (but in her view little weight) is to be attached to its provisions, pursuant to s104(1)(b) of the Act. In the light of the above she concluded that these applications are to be assessed as 'discretionary activities'. For the reasons set out in her evidence and given the provisions of s88A, she disagreed with the s42A conclusion that the application to discharge water was to be considered a 'non-complying' activity.

2.20 Ms Brown adopted the SDC's position the application to take and use water in this instance does not seek a greater volume of water than has historically been taken in the operation of this scheme. In terms of the effects on the environment she also relied upon the evidence of other witnesses for SDC that the continuation of the operation of this race system would result in only minor effects on the environment. She acknowledged that the RPS and WRRP, together with Part II (s5(2)) all seek to promote the efficiency with which such water is used. She noted that in cost terms the current scheme is demonstrably 'efficient' and that the volume of water used is that necessary to physically run this network. At the same time while all water may not be 'consumed' it also serves as a source of groundwater re-charge. In her view and given that this scheme has been in operation for over 100 years, it is difficult to see what (if any) adverse effects there could be said to be upon other users from its continuation. Having regard to s6 matters, she concluded that the natural character of the rivers concerned would not be affected from what must be considered to be the 'existing environment'. Overall she concluded that the continuation of the race operation will ensure the sustainable management of both the natural and physical resources involved subject to the range of conditions she recommended.

Opposing submitters

2.21 For the Department of Conservation ('DoC'), Mr Arnold expressed support for the conclusions reached in the s42A report subject to some changes to the conditions recommended so as to better provide for ecological values and improvements in the efficiency with which this water is used. Those s42A recommended conditions included:

- An efficiency audit of the scheme;

- A "Race Management Plan" to be reviewed 2 yearly;
- An "Activity Management Plan";
- An overall review of the scheme within 12 months.

2.22 While acknowledging the importance of the Malvern system to that rural community, DoC expressed concern at what it considers to be an "increase" in the amount of water needed to operate this race system. The Department wished to see a review process (including opportunity for stakeholder consultation) aimed at refining the volume of these takes so as to ensure the operation of intake structures and resultant flows are more closely aligned to what is needed to reasonably maintain the operation of the race system. In his opinion the outcome of any such review should also be linked to a potential review of relevant conditions of these consents, pursuant to s128 of the RMA.

2.23 In Mr Arnold's view the intake structures for the system as a whole required updating to enable accurate measurement of the volumes of water being abstracted. In relation to the Kowai River, he also considered that further investigations were necessary with the aim of lowering the water take from that river during times of low flow, such options to possibly include consideration of storage and / or the piping of the upper Springfield section of the race system. Overall he endorsed the s42A recommendations and conditions which if adopted would in his view deliver significant improvements.

2.24 The concerns of the North Canterbury Fish & Game Council ('NCF&GC') were presented by Mr Holland. These focussed upon the impact of the Malvern scheme upon sports-fishery values of the Kowai, Selwyn and Waimakariri Rivers together with other waters which he considered to be affected by the operation of the scheme, notably the Hawkins River which does support a brown trout fishery and contributes to the overall Selwyn river fishery. On balance he considered that the discharges referred to by these applications could have potential negative effects on the Hawkins due to their intermittent nature and dubious water quality, particularly where that might contain contaminant run-off from adjoining farmland, or areas adjoining races to which livestock had ready (unfenced) access. He acknowledged that while 'watering

bays' for stock might reduce the length of exposed race, they did nothing to address the fouling of the race water passing through those bays.

2.25 The primary rivers of concern to NCF&GC are the Kowai, Selwyn and Waimakariri. The Kowai is seen as an important spawning river for Chinook salmon as well as brown and rainbow trout. The Selwyn is noted as a brown trout fishery, although this has exhibited a marked decline since the 1970's. The Waimakariri River supports a nationally significant Chinook salmon fishery and a regionally significant brown and rainbow trout fishery. Approximately 32% of all angling occurs above the SH1 Bridge, the majority of that between there and the Waimakariri Gorge.

2.26 Most salmon spawning occurs in tributaries upstream of the Gorge Bridge, but include the Kowai River. In Mr Holland's view the adverse effects of the Malvern scheme on the sports-fishery values of that river appear to be far greater than on the other rivers. He noted that the likely effects of the Malvern take exacerbating the 'normal' dry periods on the Kowai would be to:

- prevent fish passage during the key migration period (November – June);
- cause stranding and death of juvenile trout and salmon;
- reduce or perhaps eliminate the value of the affected reach as an angling destination.

2.27 Studies of Salmon and trout fry are known to use the Waimakariri mainstream for rearing purposes, approximately half of that available rearing habitat being located below the Browns Rock irrigation intake. That in turn suggests approximately half of the fry population migrate past the Malvern scheme intake on the Waimakariri before finding suitable rearing habitat. Mr Holland acknowledged that given the relative size of the Waimakariri flow, the effects of that isolated abstraction from the river is not significant. However he maintained that the cumulative effects of that take in terms of fish entrapment and fish entrainment in the Malvern race system never the less required attention. He stated that the race system itself was of little or no value to anglers as few parts of it are publicly accessible. In his view therefore fish screening

and bypass channel arrangements were desirable. Screens require careful design and positioning within river flows so as to avoid causing damage to fry. They should be located at or as close as practicable to the intakes concerned. While he accepted that the current fishery environment may have become established 'historically' he maintained that the Act never the less requires remedying or mitigation of adverse effects. Overall he concluded that the duration of consents in this instance should be restricted to 15 years.

3.0 The s42A report

3.1 Dr Vattala's report was taken as read. While he acknowledged SDC's contention that no increase in the volume of water take serving the Malvern Scheme is proposed, he considered himself bound to assess these applications on the basis of ECan's official records, which show a lesser volume of water take than now indicated as necessary. In his opinion these indicate an additional take requirement from the Selwyn River at Glentunnel of 94 l/s which could not be justified under relevant provisions of the PNRRP, which he suggested were 'effectively operative'. He also referred to Ms Dunningham's reliance upon the exemptions provided under the WRRP for the continuance of a reticulated supply of drinking water for animals, questioning whether the current volumes of take were actually related to that purpose.

3.2 Finally in relation to the duration of consent sought, Dr Vattala referred in his s42A report to the *Lynton* case determined by the Environment Court, where ECan was criticised for granting a long period of consent where there was uncertainty about long term effects. He therefore concluded that in this instance a somewhat shorter period of 15 years or so might be more appropriate in order to gauge the effectiveness of any actions stemming from the audit/review processes now proposed by SDC.

4.0 Assessment

4.1 Having regard to the date on which these applications were lodged with ECan (December 2001) and to s88A of the RMA, I note that the WRRP was publicly notified in September 1996, however the relevant chapters of the PNRRP were not publicly notified until July 2004. I therefore accept Ms Brown's observation that those latter provisions are matters more appropriately to be

had regard to in terms of s104(1)(b) of the Act. In her written 'right of reply' Ms Dunningham contended that contrary to Dr Vattala's understanding, the provisions of the PNRRP relevant to these applications are far from settled and questioned whether in fact s19 of the Act could apply in any case (the reference in that section being to "a rule in a proposed plan" rather than to 'policies' as such).

4.2 In terms of these particular circumstances of these applications and given the historic nature of the resources involved I have therefore accorded the provisions of the PNRRP relatively little weight. In that regard I have also considered these applications as 'discretionary activities'. However, in case I am wrong in that conclusion and to dispense with the potential implications of any 'non-complying activity' status, I further conclude that the potential grant of consents in this particular instance would not in my view be 'contrary' (in the sense of being 'repugnant') to the objectives and policies of relevant plans or proposed plans. At least one of the limitations of s104D(1)(b) being thus satisfied therefore enables these applications to be further assessed.

4.3 From the evidence presented at the hearing there are three primary issues to be considered in determining these applications:-

- In the light of consents to 'take water' already 'allocated' to other applicants, whether pursuant to the provisions of the WRRP sufficient water can be consented to here so as to meet that sought by these applications;
- The issue of the relative 'efficiency' or otherwise of the use of the water resources by the existing Malvern race system and the opportunity to improve ways in which those water resources may be utilised;
- The quantum of water utilised by the Malvern race system and its effects upon the natural character of the rivers concerned and in particular the habitat of trout and salmon

4.4 Dr Vattala's report acknowledges that while the applicant in this case had been entitled to priority consideration in the allocation of "A" block water from the Waimakariri River under the WRRP, that priority placement

was 'overlooked' by ECan decision makers and subsequent consents to 'later in time applications' now account for all of the ECan "A" permit allocation. The potential to 'make up the balance' of water required by these applications utilising "B" block water was considered as an alternative by Dr Vattala. As I understood his report, consideration of that possibility derived from discussions with other ECan officers before the hearing. That consideration indicated new "B" permit allocations could only be taken at times where minimum river flow exceeds 104,405 l/s.

4.5 In the event Dr Vattala concluded (s42A report, paragraph 454) that the applicant should be given "A" permit water for the total abstraction sought from the Waimakariri River. I agree with that conclusion. Given that the Malvern scheme has been operating for over 100 years, I do not consider that the principle of 'non-derogation' could be said to apply in this case, as the holders of subsequently consented rights would have been well aware of the existence and operation of this scheme. In addition, given the relatively small scale of the "excess allocation" (notionally) to be recorded here (4% of the available "A" permit block) it is conceivable that amount may also be below the level of confidence that could be placed on the accuracy of calculation of the overall quantum of allocatable water.

4.6 Before proceeding further I wish to record that the conclusions reached above and in the following paragraphs are in no way to be interpreted as being potentially applicable to consideration of those resource consent applications by SDC that remain 'on hold' (at the applicant's request) related to the Selwyn and Ellesmere irrigation schemes. I have no knowledge of the particulars of those applications or the reasons why they still await a hearing.

4.7 Dr Vattala was not satisfied that consent could be granted for abstraction of "an additional 96 L/s from the Glentunnel intake" on the Selwyn River. With respect, that pre-supposes that an actual increased abstraction is intended to take place over that which historically has been taken and continues currently to be taken at that point. I have seen no evidence to that effect, indeed the evidence presented at the hearing was to the contrary. What Dr Vattala is referring to seems in reality to be a

change to ECan's records as to the quantum of water is being taken by the Malvern Scheme at Glentunnel. For that reason I do not consider that consent should be declined, or that granting it would necessarily result in any detriment to the environment or to other existing users of that resource.

4.8 Turning to the 'efficiency' of the use of the water abstracted, various definitions of that term were considered in the evidence presented on behalf of the applicant to show that the financial cost of full piped replacement of the present system together with its operational cost indicate the desirability of its retention in economic efficiency terms. However, the primary concern about the 'efficiency' of use relates to the volume of water required to physically service the extremities of this open race system and the degree to which that volume is then necessary to serve the consumptive needs made of it. At the time of my site visit flows in the Waimakariri River varied between (approximately) 65 to 240 cumecs, and those in the Selwyn River between 1.2 cumecs at Whitecliffs and 0.625 cumecs at Coes Ford. Under those conditions of abstraction the supply of water to the race system as a whole was not quite sufficient to reach the south-eastern most extremity of the Malvern Race Scheme just east of SH1 at Burnham.

4.9 I accept that the length of race system involved and its hydraulic design could not be commended if the provision of stock-water to this area was being contemplated for the first time today. I also accept that very little of the water actually diverted is consumed for its intended purpose of stock-water irrigation (possibly as little as 2%). It is clear from evidence presented that progressive improvements could (and should) be made to reduce the overall volume of water used by meeting those needs in other ways. The SDC's Activity and in particular Water Race Management Plans indicate how progress towards that end is intended to be made. I am therefore satisfied that subject to conditions to ensure achievement of the progressive implementation of the ends set out in those Management Plans, improved efficiency in terms of a reduction in the quantity of water abstracted from these rivers can be attained progressively over the period of consent sought.

4.10 The effects of the operation of the existing race system essentially form part of the existing environment and amenity, both in terms of the area served and the nature of the river environments from which the intake flows are abstracted. The quality of the biosphere that has 'evolved' in this area over the past 100 years or so will not be significantly 'changed' by the continued operation of the race system. Never the less, as the concerns expressed by both Doc and NCF&G confirmed it is not only the maintenance of the quality of existing amenity and environment that is now to be considered, but also its improvement, where this would better meet the purposes of the Act and specifically the future sustainable management of the resources concerned. For that reason I consider it appropriate to audit the efficiency of current intake structures, gates, flow meters/measuring devices, fish screens, race bed sealing, flow rates along races, the race system, infrastructure, and control mechanisms. Give such an audit it should be possible to identify opportunities for improvement and confirm the cost/benefit of such measures.

4.11 There was some difference of opinion between the applicant, those submitters heard and Dr Vattala about the appropriate duration for the consents sought. The submitters and Dr Vattala considered a shorter period of 15 years would be more likely to ensure appropriate priority being given by the SDC to addressing such improvements as may be identified by more detailed audit of the existing scheme. For the SDC both Ms Dunningham and Mr Blake-Manson indicated the need for certainty of investment in undertaking progressive capital works over this extensive area. On the basis of the evidence of the effects of the operation of this scheme on the existing environment presented at the hearing, I do not consider that these are sufficiently adverse and/or of such a scale as to warrant a shorter period of consent than the 20 years sought, given that the SDC could easily have requested consideration being given to the full 35 year term allowed for under the Act.

5.0 Determination

5.1 For all of the foregoing reasons and pursuant to sections 104B and 108 of the Act, I therefore determine that resource consent be granted to applications reference CRC012002; CRC012003 and CRC012004 subject to the following conditions:-

General conditions applicable to consents CRC012002, CRC012003 and CRC012004.

1. The consent holder shall within three months of the commencement of this consent provide Canterbury Regional Council with a copy of an audit of the technical efficiency of the scheme. In addition the audit shall identify those aspects of the scheme where potential exists to improve on technical efficiency. The audit shall consider the whole scheme, including, but not limited to, intake structures, gates, flow meters/measuring devices, fish screens, race bed sealing, flow rates along races, the race system, infrastructure, and control mechanisms. The consent holder shall supply a copy of the audit to the stakeholders including Fish and Game Council (F&G), Department of Conservation (DoC).
2. The consent holder shall within three months of the commencement of this consent provide Canterbury Regional Council (CRC) with a copy of a 'Stockwater Race Management Plan' (Management Plan) that sets out the practices and procedures for the operation and maintenance of the network, that are to be adopted to ensure that compliance with the conditions under resource consent can be achieved.
3. The Management Plan shall include, but not be limited to, the provision of practices and procedures that ensure the following:
 - (i) All systems, procedures and processes enable the effective and efficient management of the network;
 - (ii) Appropriate monitoring and reporting is undertaken in accordance with the resource consent conditions;
 - (iii) Water users are informed of their obligations in respect of taking water from the network;
 - (iv) Systems, procedures and processes to recognise and minimise adverse effects of management practices on the environment.
4. In particular the Management Plan shall address the following:
 - (i) A description of the intakes and their locations;

- (ii) Methods for recording and reporting on water use and a description of water measuring devices including calibration or meters or gauging assessment required;
 - (iii) Methods of improving the efficiency of the use and transport of water distributed via the scheme;
 - (iv) Operational procedures, including during floods and droughts;
 - (v) Methods and procedures for undertaking in-stream works;
 - (vi) Maintenance procedures for the raceways including race cleaning;
 - (vii) A description of known sites with high natural or ecological values;
 - (viii) Methods and procedures for ensuring that management activities, particularly those carried out under (iv), (v) and (vi), avoid, remedy or mitigate adverse effects on sections of the race system known to have high natural or ecological values.
 - (ix) Methods and procedures for monitoring water quality in the races and the discharges;
 - (x) Stakeholder consultation and reporting;
 - (xi) Ecological investigations required. A major study of the full length of every race is not required. A focused sampling programme is required to identify important places, habitats and species. Once identified, new places or sections of races of ecological value will be included in an appendix to the management plan, and provided race operation for stockwater use is not compromised, the management plan will be amended to provide for their protection.
5. Subject to any other conditions of these consents, all activities shall be undertaken in accordance with the latest version of the Management Plan.
6. The consent holder may amend the Management Plan as required, and at least once every two years shall provide to the CRC a report indicating amendments that have been made to improve the operational efficiency of the Scheme and/or to reduce adverse environmental effects. Any such amendments to the Plan shall be undertaken in consultation with race users, maintenance contractors, and stakeholders including Fish and Game Council (F&G), Department of Conservation (DoC) and the CRC, and with reference to the efficiency audit required by condition 1 of these general conditions.

7. The consent holder shall provide a copy of the amended Management Plan to the CRC prior to its implementation specifying the objectives and the minimum requirements intended to meet those objectives.
8. The consent holder shall, in consultation with CRC, appoint a suitably qualified person experienced in the design of water supply schemes, to undertake a review of the scheme (the review), within 12 months of the date of commencement of this consent. The objective of the review is to consider the physical aspects of the current scheme and to identify alternatives for improving the water use efficiency of the Malvern Water Race.

The review shall identify:

- (i) Any alternative provisions or measures to improve management of the scheme, which can be implemented to improve the efficiency of water use and/or minimise the loss of water and to;
 - (ii) The sections of the scheme which shall be closed (if required);
 - (iii) A programme for implementation of measures identified above (i), and (ii).
 - (iv) Any practicable measures which can be taken to reduce the amount of water taken from the Kowai river at times of low flow.
 - (v) Any further investigations required to assist with the development of alternative water supplies.
 - (vi) Prior to commencing the review the consent holder shall consult with DoC, F&G and shall agree with the CRC on the terms of reference for the review.
9. Within 18 months of the commencement of this consent, the consent holder shall provide Canterbury Regional Council with:
 - (i) A copy of a report of the review undertaken in accordance with condition 8; and
 - (ii) A programme of investigations and funding required to undertake the measures identified in condition 8 (iv).
 10. Prior to supplying the CRC with a copy of the review, a draft version shall be made available to the DoC and F&G for their comments and the CRC shall be notified of when this occurs.
 11. Within 30 months of the commencement of this consent, the consent holder shall provide the CRC with a report that details the outcomes of the investigations undertaken in accordance with condition 8 (v). The report

shall include the outcomes of any consultation undertaken as to the suitability of the alternatives identified.

12. The CRC may, once per year, on any of the last 5 working days of May or November, serve notice of its intention to review the conditions of resource consents CRC012002, CRC012003 and CRC012004 for the purposes of:
13. 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:
 - (i) effects on a waterway arising from taking of water,
 - (ii) effects of works in the riverbeds,
 - (iii) effects on a waterway arising from discharges, and
 - (iv) effects on ecological or natural values present in the races;
 - (v) Altering the rate of taking to correspond with the actual rate of water usage;
 - (vi) Requiring the implementation of measures, including any identified in the review in Condition 8, to monitor and/or reduce loss of water and to improve efficiency of water use;
 - (vii) Reviewing the Stockwater Race Management Plan; and
 - (viii) Requiring the adoption of the best practicable option to remove or reduce any adverse effect on the environment.
15. The duration period for these consents shall be 20 years.

CRC012002 - To disturb the beds and banks of the Kowai River, Waimakariri River, Selwyn River, Bishop Gully Creek, Skurrs Spring, Springfield Creek and Black Creek for the purpose of maintaining intake structures and maintain diversion braids

- (1) The intakes shall occur from:
 - (i) Waimakariri Gorge intake of the Waimakariri River at or about map reference NZMS 260 L35: 3297-6094;
 - (ii) Upper Kowai intake of the Kowai River at or about map reference NZMS 260 L35: 1687-6299;
 - (iii) Lower Kowai intake of the Kowai River at or about map reference NZMS 260 L35: 1781-6347;
 - (iv) Bishop Creek booster of Bishop Gully Creek at or about map reference NZMS 260 L35: 2071-6364;
 - (v) Blacks Creek booster of Black Creek Spring at or about map reference NZMS 260 L35: 3144-4647;
 - (vi) Springfield Creek booster number 1 of Springfield Creek at or about map reference NZMS 260 L35: 2420-6283;
 - (vii) Springfield Creek booster number 2 of Springfield Creek at or about map reference NZMS 260 L35: 2473-6312; and
 - (viii) Skurrs Spring booster of Bishop Skurrs Spring at or about map reference NZMS 260 L35: 3358-5844,
 - (ix) Glentunnel Intake of the Selwyn River at our about map reference NZMS 260 L35: 2479-4678

- (2) The diversion shall take place between map between map references:
 - (i) Waimakariri Gorge intake at map reference NZMS 260 L35: 3297-6054;
 - (ii) Upper Kowai intake at map reference NZMS 260 L35: 1673-6297;
 - (iii) Lower Kowai intake at map reference NZMS 260 L35: 1768-6346;
 - (iv) Bishop Creek booster at map reference NZMS 260 L35: 1781-6347;
 - (v) Blacks Creek booster at map reference NZMS 260 L35: 3144-4647;

- (vi) Springfield Creek booster number 1 at map reference NZMS 260 L35: 2420-6283;
 - (vii) Springfield Creek booster number 2 at map reference NZMS 260 L35: 2473-6312;
 - (viii) Skurrs Spring booster at map reference NZMS 260 L35: 3358-5844, and
 - (ix) Glentunnel intake of the Selwyn River at or about map reference NZMS 260 L35: 2479-4678.
- (3) Where practicable the Canterbury Regional Council (Attention: RMA Compliance and Enforcement Manager) shall be notified at least 48 hours prior to works being undertaken in the riverbeds and streambeds. If notification at least 48 hours prior is not practicable, notice shall be given no more than 24 hours after completing works in the riverbeds and streambeds.
 - (4) Works shall be limited to that which is necessary for maintenance of the intake structure and associated infrastructure.
 - (5) All practicable measures shall be taken to avoid excavating, gravel, sand and natural material within 10 metres of the banks of the river or any flood protection works. For the purpose of this consent flood protection works are defined as: areas of vegetation maintained or planted in the beds of rivers; stopbanks; access tracks; rockwork; anchored trees; wire rope; and structures erected for the purpose of flood protection.
 - (6) Prior to commencing excavation, a copy of this resource consent shall be given to all persons undertaking activities authorised by this consent and their attention drawn to its conditions.
 - (7) All practicable measures shall be taken to minimise adverse effects to property, amenity values, public access routes, wildlife, vegetation and ecological values and particular regard shall be given to avoiding disturbance of bird life and the stranding of fish in pools; including, as far as practicable, no works shall occur within 100 metres of sites where birds are breeding or nesting on the bed of the river.
 - (8) All practical steps shall be taken to avoid deflecting floodwaters into the bank and berm areas, and no excavated material will be placed in a manner that contributes to increased river bank erosion.
 - (9) Vehicles and machinery shall be checked for leaks prior to work.
 - (10) There shall be no storage of fuel or refuelling of vehicles or machinery anywhere in the bed of the River.

- (11) Fuel shall be stored securely or removed from site overnight.
- (12) All practicable measures shall be undertaken to ensure machinery used in the riverbed shall be free of plants and plant seeds, prior to use in the riverbed.
- (13) To prevent the spread of Didymo or any other aquatic pest, the consent holder shall ensure that activities authorised by this consent are undertaken in accordance with the attached Biosecurity New Zealand hygiene procedures. (Note: You can access the most current version of these procedures from the Biosecurity New Zealand website <http://www.biosecurity.govt.nz> or the CRC Customer Services).
- (14) Vehicles and machinery shall, as far as practicable, not enter river channels containing flowing water.
- (15) All practicable measures shall be undertaken to minimise the discharge of sediment to rivers and streams arising from the works.
- (16) All practicable measures shall be undertaken to minimise the discharge of dust resulting from the works.
- (17) The consent holder shall maintain a record that describes the timing and extent of all those works. This record shall be made available to the CRC (Attention: RMA Compliance and Enforcement Manager) upon request.
- (18) The CRC 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.

CRC012003 – To divert, take and use water from the Kowai River, Waimakariri River, Selwyn River, Bishop Gully Creek, Skurrs Spring, Springfield Creek and Black Creek.

1. The diversion of water from surface water bodies shall take place at the following map references:
 - (i) Waimakariri Gorge intake of the Waimakariri River at or about map reference NZMS 260 L35: 330-604;
 - (ii) Upper Kowai intake of the Kowai River at or about map reference NZMS 260 L35: 167-628;
 - (iii) Lower Kowai intake of the Kowai River at or about map reference NZMS 260 L35: 177-633;
 - (iv) Glentunnel intake of the Selwyn River at or about map reference NZMS 260 L35: 243-463;
 - (v) Bishop Creek booster of Bishop Gully Creek at or about map reference NZMS 260 L35: 212-634;
 - (vi) Black Creek booster of Black Creek Spring at or about map reference NZMS 260 L35: 315-462;
 - (vii) Springfield Creek booster number 1 of Springfield Creek at or about map reference NZMS 260 L35: 249-627;
 - (viii) Springfield Creek booster number 2 of Springfield Creek at or about map reference NZMS 260 L35: 243-463; and
 - (ix) Skurrs Spring booster of Bishop Skurrs Spring at or about map reference NZMS 260 L35: 338-580.

Waimakariri River

2. Whenever the flow in the Waimakariri River, as estimated by the Canterbury Regional Council (CRC) from measurements at the Old Highway Bridge, at or about map reference NZMS 260 M35: 818-547 is:
 - (i) greater than 63000 l/s, the rate at which water is taken from the Waimakariri shall not exceed 800 l/s;
 - (ii) between 63000 l/s and 41000 l/s, the rate at which water is taken from the Waimakariri shall not exceed 700 l/s;
 - (iii) less than 41000 l/s, the rate at which water is taken from the Waimakariri shall not exceed 630 l/s.

Kowai River

3. Whenever the flow in the Kowai River (above the Selwyn District Council Intakes):
- (i) is greater than 7200 l/s, the take at the Upper Kowai Intake shall not exceed 1100 l/s (this is during floods) and the take at the Lower Kowai intake shall not exceed 630 l/s;
 - (ii) is between 7200 l/s and 1000 l/s, the take from the Upper Kowai intake shall not exceed 900 l/s, and the take from the Lower Kowai intake shall not exceed 300 l/s;
 - (iii) is less than 1000 l/s, the take from the Upper Kowai intake shall not exceed 435 l/s, and the take from the Lower Kowai intake shall cease.

(Note that these cut-off flows can be determined from the Selwyn River at Whitecliffs);

- (iv) is between 1,000 l/s and 500 l/s, SDC shall endeavour to reduce the take from the Kowai River, and offset this reduction by increasing the take from the Waimakariri at Gorge intake subject to the maximum takes from the Waimakariri River provided in condition 2.

Selwyn River

4. Whenever the flows in the Selwyn River are:
- (i) above 10,000 l/s the rate at which water is taken from the Selwyn shall not exceed 280 l/s;
 - (ii) between 1,000 l/s and 500 l/s, the rate at which water is taken from the Selwyn shall not exceed 250 l/s;
 - (iii) less than 500 l/s, the rate at which water is taken from the Selwyn shall not exceed 250 l/s.
5. The maximum rate of take for stockwater purposes from other streams shall not exceed the rates provided in the following table.

Intake location	Maximum rate of take
Bishop Gully Creek booster	500 litres per second
Black Creek Spring booster	500 litres per second
Springfield Creek booster No. 1	40 litres per second
Springfield Creek booster No. 2	20 litres per second
Skurrs Spring booster	60 litres per second

- 6(a) The consent holder shall, within two years of the commencement of this consent, design, construct and commission fish exclusion structures to be applied near, at or within the Waimakariri, Kowai and Selwyn River intakes, where required subject to condition 6(b), subject to:
- (i) The design of any fish screen shall be completed by a chartered professional engineer with experience in the design and operation of fish screens;
 - (ii) Any fish screen shall as far as practical prevent the entrainment of fish in the race system;
 - (iii) The design shall be approved by a fisheries biologist with post graduate qualifications in fisheries or a fisheries biologist with internationally recognised experience in fisheries research; and
 - (iv) In carrying out the obligations under (6)(i) and (ii), the applicant shall consult with Fish and Game on the design parameters to be adopted;
 - (v) Prior to the installation of any fish screen(s), a report containing the approved design plans and illustrating how the fish screen(s) will meet the obligations in 6(ii), (iii) and (iv) above, and an operation and maintenance plan for the fish screen(s) shall be provided to the CRC, attention Manager RMA Compliance and Enforcement; and
 - (vi) A certificate shall be provided to the CRC by the designer or supplier of the fish screen(s) to certify that the fish screen has been installed in accordance with the details provided to the CRC in accordance with condition 6(v) of this consent;
 - (vii) Any fish exclusion works shall be maintained in good working order. Records shall be kept of all inspections and maintenance, and those records shall be provided to the CRC upon request.
- 6(b) A fish exclusion structure shall not be required to be installed within the 2 years timeframe specified under condition 6 on the Kowai River takes if, through the investigations required under General Conditions, it becomes apparent at 20 months after the commencement of this consent that an alternative means of taking water from the Kowai River is to be implemented within 3 years of the commencement of this consent. Any alternative means of taking water must have a fish exclusion structure installed in accordance with conditions 6(a) (i) to (vii).

7. The consent holder shall within two years of the commencement of this consent:
- (a) Install a water level measuring device in a location that will enable the determination of the continuous rate of flow and volume of water being taken to within an accuracy of 10 percent.
 - (b) 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.
 - (c) The flow at the measuring site shall be gauged at least every twelve months whilst this consent is being exercised, and at any other time when required (for example, after flood events) as determined by a site inspection. Site inspections are to be carried out by the race operator at least once every month.
 - (d) Gauging and site inspections shall be carried out in accordance with the following manuals: Hydrologists Field Manual (NIWA 1991) and Procedure for Rating a Flow Station (NIWA 1993) or any equivalent publication.
 - (e) The level of water in the race, and times of abstraction, shall be recorded by tamper-proof electronic recording system such that the flow through the site is measured at least once every 15 minutes, and a record made either on site or at a remote location via telemetry of the total flow volume passing through the site in time increments not exceeding 60 minutes. The recorded data shall not be changed or deleted by any person, unless twelve months have passed since the date of recording.
 - (f) The measuring and recording devices described in clauses 7(a) and 7(e) shall be available for inspection at all times by the CRC subject to providing adequate protection against vandalism which may require the consent holder's assistance on site to unlock or remove barriers.
 - (g) All data from the recording device described in clause 7(e), and the corresponding relationship between the water level and flow, shall be provided to the CRC on request, and shall be accessible and available for downloading at all times by the CRC.
 - (h) Within one month of the commencement of this consent, at two-yearly intervals thereafter, and at any other time when requested by CRC, the consent holder shall calibrate the measuring device and provide to the CRC:
 - (i) a certificate signed by a suitably qualified person certifying the current accuracy of the measuring and recording devices, and also

- certifying that the recording device described in clause 7(e) can be readily accessed in accordance with clause 7(f); and
- (ii) supporting information containing details of the calibration test.
8. The recording system in 7(e) shall:
- (i) 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); or
 - (ii) 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 in a commonly used format and provide to the Canterbury Regional Council upon request in a form and to a standard specified in writing by the CRC; or
 - (iii) be part of the consent holder's SCADA system which stores and forwards data on a quasi-continuous basis to the consent holder's base station where it is stored in an industry-standard database, and can be provided in a commonly accepted format to the CRC upon request in a form and to a standard specified in writing by the CRC; or
 - (iv) 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 CRC and the consent holder. No data in the recording device(s) shall be deliberately changed or deleted.
9. The flow monitoring site and recording device(s) shall be accessible to the CRC at all times for inspection and/or data retrieval, subject to providing adequate protection against vandalism which may require the consent holder's assistance on site to unlock or remove barriers.
10. The measurement and recording system(s) shall be installed and maintained throughout the duration of the consent in accordance with the manufacturer's instructions.
11. All practicable measures shall be taken to ensure that the flow measurement and recording systems(s) are fully functional at all times.
12. Within one month of the installation of the measuring or recording device(s), or any subsequent replacement of the measuring or recording device(s), and at five-yearly intervals thereafter, and at any time when requested by the CRC, the consent holder shall provide a certificate to the CRC, attention: RMA Compliance and Enforcement Manager, signed by a suitably

qualified person certifying, and demonstrating by means of a clear diagram, that:

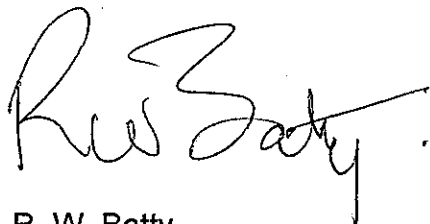
- (a) The measuring and recording system(s) have been installed in accordance with the manufacturer's specifications; and
- (b) Data from the recording device(s) can be readily accessed and/or retrieved in accordance with clauses (ii) and (iii) of condition 7(i) & 7(ii).

13. The CRC 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.

CRC012004 – To discharge water and water containing contaminants into land and/or water from the stockwater scheme at a number of points into waterways, drains and soakpits.

1. The rate at which water is discharged to soakpits, and natural water courses shall not exceed the quantity authorised in the associated diversion consent.
2. The discharge shall only be water that has been diverted in accordance with the associated diversion consent.
3. The discharge shall not prevent or impede the passage of fish along the diversion channel and shall avoid the stranding of fish in pools and channels.
4. The discharge of water shall not adversely affect public access along existing legal routes to and along the surface water courses.
5. The discharge shall not cause erosion to the bed or banks of the receiving water courses.
6. The discharge to surface water shall not give rise to the following effects:
 - (i) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended material;
 - (ii) any conspicuous change in colour or visual clarity;
 - (iii) any emission of objectionable odour;
 - (iv) the rendering of fresh water unsuitable for consumption by farm animals;
 - (v) any significant adverse effects on aquatic life.
7. Over the first two years, from the date of commencement of this consent, 12 representative samples of water, taken at least a month apart, shall be taken from sites including at least two sites on the Selwyn and Hawkins Rivers, at least one drain and one discharge to ground.
8. All samples shall be analysed for *Escherichia coli*, Nitrate and Nitrite Nitrogen, Dissolved reactive phosphate and turbidity. The results of these analyses shall be provided on a six monthly basis to the Canterbury Regional Council (CRC), attention: RMA Compliance and Enforcement Manager.

9. The CRC 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.

A handwritten signature in black ink, appearing to read 'R. W. Batty', with a stylized flourish at the end.

R. W. Batty

Hearing commissioner,

28th January 2008

