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Selwyn District Council
Water Race Management Plan
30 July 2013

Appendices
(Document 2 of 2)

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APPENDICES

APPENDIX A TERMS OF REFERENCE FOR SDC WATER RACE SUBCOMMITTEE

SELWYN DISTRICT COUNCIL WATER RACE SUB-COMMITTEE – TERMS OF REFERENCE NOVEMBER 2007

1. The Selwyn District Council Water Race Subcommittee is established for the purpose of:
 - (a) providing direct user representation into the management and operation of the respective water race systems in accordance with Council Bylaws.
 - (b) review of Council's Water Race Bylaws and Policy and recommending amendment from time to time to accommodate change.
 - (c) enabling local knowledge and expertise to be utilised to the benefit of the overall system.
 - (d) recommending the level of the funds to be raised from respective water areas e.g. so as to ensure sufficient finance is available to meet the proper maintenance needs of the system.
 - (e) in conjunction with Council's engineering staff recommending the annual capital and maintenance work programmes following consideration of the maintenance needs of the scheme.
 - (f) recommending priority of water race works where necessary.
 - (g) recommending the timing and scheduling of water race system pending works.
2. The Selwyn Water Race Subcommittee shall be comprised of 12 members with the following representation:
 - Malvern, Paparua and Ellesmere Water Race Users – 2 each
 - 1 representative from the Paparua Water Race Irrigation User Group
 - Community Boards – 1 Selwyn Central, 1 Malvern
 - 1 Council representative from Ellesmere Ward
 - Christchurch City Council – 1 representative (representing both Waimairi and Wigram Wards)
 - Councils water portfolio representative

In order to provide specialist knowledge or assistance the power to co-opt such persons as required will be permitted. *Note: there is no representation from the Springs Ward due to the very small amount of stock water race within this ward*
3. The term of office shall be three years and will finish after the November meeting following the Triennial Local Government Elections.
4. Elections will be held in the month of November immediately following the Local Government elections.
5. The Subcommittee shall elect from within its numbers a Chairman, such appointment to be made annually. Secretarial services will be provided by Council staff.
6. Frequency of meetings shall be determined by the Subcommittee but with a minimum of two meetings per year.
7. Minutes of meetings shall be available to the next meeting of Malvern and Selwyn Central Community Boards and to the Council meeting.

8. The Subcommittee in conjunction with Council's engineering staff shall prepare an estimate of income and expenditure for each water race system and submit these as part of the normal annual budgetary process for consideration by Council.
9. Works issues coming to the attention of the Subcommittee are to be conveyed to the Asset Delivery Manager or his nominee.

APPENDIX B WATER RACE POLICIES

WATER RACES – As at 26 October 2011

W1

The following policies for the Ellesmere, Malvern and Paparua Water Race schemes should be read in conjunction with the Council water race bylaw and Section 421 to 439 of the Local Government Act.

IRRIGATION FROM WATER RACES

W101

1. Paparua Water Race Scheme Conditions:

- a) Irrigation is permitted only in the Paparua Water Race Scheme.
- b) Permits continue after October 2001 subject to resource consent conditions.
- c) Total use shall not exceed Resource Consent Conditions
- d) That the water race that irrigation is proposed to be taken from is of sufficient size so there shall not be detrimental effect to downstream users.
- e) Application for an irrigation permit must be made in writing to the Asset Delivery Manager
- f) Application fee is non-refundable
- g) Properties must be rated for stock water.
- h) If the application is successful
 - i) An irrigation agreement shall be signed between the Selwyn District Council and the landowner
 - ii) A flow monitoring device shall be installed at all abstraction points to the Council's requirements before irrigation commences.
- i) The proposed irrigation take must be over 5 l/second and based on the 0.6 l/sec/ha formula (except in special circumstances at the discretion of the Asset Delivery Manager). The proposed irrigation take must be for an established business or evidence to support the establishment of a business.
- j) At the discretion and approval of the Asset Delivery Manager an existing irrigator may reduce their irrigation right to below 5 l/second.
- k) That the water shall be conveyed to the applicable properties via reticulation and other structures to the approval of the Asset Delivery Manager.
- l) If the irrigation right is as the result of a subdivision, the subdivided land must prove utilisation of water for irrigation within 12 months of title being made available.
- m) Yearly charge noted in Annual Plan.
- n) The applicant shall be required to show conclusively that irrigation take is within $\pm 5\%$ of approved amount within 48 hours notice from Council.

2) There is no guarantee of water for irrigation use.

3) No additional water shall be made available over what is required for the normal operation of the Paparua water race scheme.

4) Minor irrigation for non-commercial users for house gardens and shelter belts is permitted in the Malvern, Paparua, and Ellesmere Schemes subject to application to the Selwyn District Council with each case being treated on its merits.

5) Conditions for non-commercial users for house gardens:

- a) Maximum take of 4m³ (4,000 litres) per day.
- b) No detrimental effect on downstream users permitted.
- c) Application to the Council required (no permit fee required).
- d) Properties must be rated for stock water.
- e) A maximum of one garden sprinkler shall be used.
- f) Approval for water taken from the stock water race network for garden use purposes shall be at the discretion of the Asset Delivery Manager as per Policy W118.

- g) Water taken from the stock water race network for garden use purposes must be held in a holding tank that is constructed and approved by the Asset Delivery Manager.
 - h) Minor commercial irrigation may be required to cease immediately if there is a water shortage.
- 6) Conditions for non-commercial uses for shelterbelts:
- a) By permits only for 2 years.
 - b) Maximum rate of 4m³ (4,000 litres) per day.
 - c) No detrimental effect on downstream users permitted.
 - d) Application to the Council required.
 - e) The application fee is non-refundable
 - f) Properties must be rated for stock water.
 - g) Approval for water taken from the stock water race network for shelter belt purposes shall be at the discretion of the Asset Delivery Manager as per Policy W118.
 - h) Water taken from the stock water race network for shelter belt purposes must be held in a holding tank that is constructed and approved by the Asset Delivery Manager.
 - i) The water must be trickle fed via the holding tank to the shelter belt.
 - j) Minor commercial irrigation may be required to cease immediately if there is a water shortage.
- 7) Any person irrigating without a permit or approval of the Selwyn District Council shall be required to cease immediately and the Council may at their discretion proceed with prosecution.

Water Race Committee 24.8.99
Amended Operations 29.5.01
Amended Water Race Committee
4.11.02
Amended Water Race Committee
08.05.06
Confirmed by Council 11.7.2007
Council

10.6.2009

WATER RACE PONDS

W102

- 1) A pond is an area of water being used for purposes other than a watering place for stock or for irrigation storage
- 2) Ponds are permitted subject to the following conditions:
 - a) Size restricted to 100m².
 - b) Maximum depth of water shall be 400mm.
 - c) Separate inlet and outlet pipes to water race.
 - d) Inlet and outlet pipes with valves shall be 100mm diameter (nominal).
 - e) Shall have no detrimental effect on downstream users.
 - f) The pond must be isolated from the water race system
 - g) A water loss test must be carried out in consultation with a Council representative before the pond is fully functional.
 - h) The pond must be lined with suitable material such as clay to minimize water loss and/or potential leakage
 - i) No detrimental effect on water quality shall occur.
 - j) Construction and maintenance shall be to the satisfaction of the Asset Delivery Manager.
 - k) Property must be rated for stock water.
 - l) Permit fee is non-refundable.

- m) Where a proposed pond is felt to have a detrimental effect on the water race scheme then permission for the pond will be declined.
- n) Permission for continued use of the pond may be withdrawn if Conditions e, f, g, h and i are not met.

Water Race Committee 22.6.98
Amended Water Race Committee 08.05.06
Confirmed by Council 11.7.2007
Council 10.6.2009

RACE CLEANING AND MAINTENANCE

W103

1. Selwyn District Council (the 'Council') is responsible for the cleaning of designated main and lateral water races. Schedules of the designated main and lateral water races are available on the Council web site and at Council Service Centres.
2. All other races not defined as designated main and lateral races are the responsibility of the surrounding or adjacent property owner/s to maintain to Council's required Levels of Service.
3. Culverts, bridges and other structures are the responsibility of the surrounding or adjacent property owner/s except for:
 - a) Culverts across Council's formed roads.
 - b) Weirs and control structures that control flow to more than one property.
4. Exemptions -
 - a) Water race crossings including control structures, pipes and culverts supplying stockwater to an individual property are the property owner's responsibility.
 - b) Water Race crossings including control structures, pipes and culverts supplying stockwater and/or irrigation water to an individual property in the Paparua Water Race Scheme are the property owner's responsibility.
5. Public notification by the Council shall be given prior to 31 July in each year advising property owners or lessees of their responsibility to clean races.
6. The timing for the cleaning of water races is that all water races are to be cleaned by 30 December.
7. Council undertakes yearly spraying along designated main and lateral races as per Policy W105. All other races are the responsibility of the surrounding or adjacent landowner and could be subject to rules in the Proposed Natural Resources Regional Plan for Canterbury. Resource consent may be required for this activity.
8. This policy does not remove the property owner's responsibility as detailed under the Water Race Bylaw.
9. Cleaning means maintaining a continuous flow of water within the water race system in accordance with the Water Race Management Plan.

Water Race Committee 22.6.98
Amended Water Race Committee 08.05.06
Confirmed by Council 11.7.2007
Confirmed by Council 10.6.2009
Water Race Committee 11.08.2009
Council 9.09.2009

WATER RACE TAILINGS

W104

- 1) CLEAN TO BANK OR REMOVE FROM BANK

In all three schemes Council water races shall be cleaned to truck for a length of 50m outside properties where the road edge is mowed regularly and any additional length will be at the cost of the property-owner.

*Water Race Committee 5.10.98
Amended Water Race Committee 08.05.06
Confirmed by Council 11.7.2007
Council 10.6.2009*

- 2) NOTIFICATION TO PROPERTY OWNER WHERE WATER RACE IS CLEANED TO BANK AND THE WATER RACE FRONTAGE IS REGULARLY MOWN
- a) The property owner shall be individually advised by the contractor either verbally or in writing that this is to occur, 48 hours prior to work being commenced and
 - b) The property owner shall be advised that they can enter into an arrangement with the cleaning contractor (name and phone number to be supplied) for the removal of a water race tailing to truck at the property owner's cost.
 - c) This is to be read in conjunction with Policy W104/1 above.

*Water Race Committee 24.8.99
Amended Water Race Committee 08.05.06
Confirmed by Council 11.7.2007
Council 10.6.2009*

- 3) REMOVAL OF WATER RACE TAILINGS FROM BANK
(These are the race cleanings that have built up over a number of years).
- a) To be removed if it is deemed to be a safety hazard by Council's Roading Engineer.
 - b) To be removed when volume is such that it is within 0.5m of the road formation.
 - c) To be removed when operation of the race is comprised by the cleanings.
 - d) The proportion of tailings to be removed from each scheme shall be determined by each scheme each year".

*Water Race Committee 1.11.99
Amended Water Race Committee 4.11.02
Amended Water Race Committee 08.05.06
Confirmed by Council 11.7.2007
Council 10.6.2009*

SPRAYING OF COUNCIL WATER RACES

W105

The control of noxious plants in water race reserves will be by way of agrichemicals containing glyphosate as the active ingredient.

Wherever possible the occupier will be advised of the intention to spray.

*Water Race Committee 22.6.98
Amended Water Race Committee 08.05.06
Confirmed by Council 11.7.2007
Council 10.6.2009*

RELOCATION OF WATER RACES

W106

Relocation of water races shall be permitted subject to:

- 1) Relocation of the race shall not have a detrimental effect on any other water race users or the water race system operation.
- 2) Application for relocation shall be made in writing to the Asset Delivery Manager and shall include:
 - a) Map showing existing and proposed works.
 - b) Specifications for construction of work.
 - c) Non refundable payment of the application fee as per the Annual Report.
- 3) No works can proceed until Engineering approval of the works has been obtained from the Asset Delivery Manager.
- 4) All costs associated, including any supervision, with the relocation will be at the applicant's expense.
- 5) If any leakage occurs from the relocated race, including anytime in the future, the applicant will undertake all necessary repairs as directed by the Asset Delivery Manager.
- 6) A water loss test must be carried out in consultation with the Council representative prior to the water being fully diverted. If this is not undertaken Council reserve the right to do this at the applicant's cost and all repairs that may be required are at the applicant's expense.
- 7) Where a water race relocation application is an enhancement to the scheme then a cost sharing arrangement may be entered into between the Council and the applicant at the Council's discretion.

Water Race Committee 22.6.98
Amended Water Race Committee 08.05.06
Confirmed by Council 11.7.2007
Council 10.6.2009

CLOSURES OF WATER RACES

W107

- 1) The race network may be rationalised from the extremities of the Water Race Scheme on a race by race basis, in consultation with property owners, and in light of any other decisions pertaining to enhanced use of the scheme for irrigation and/or aquifer recharge for water supply and stream augmentation.
- 2) The request for a closure of a water race must be made in writing to the Asset Delivery Manager.
- 3) Dependent upon the level of consultation required by Council staff and the length of water race requested for closure, a non refundable application fee of \$200 may apply. This is at the discretion of the Asset Delivery Manager.

Water Race Committee 22.6.98
Amended Water Race Committee 08.05.06
Confirmed by Council 11.7.2007
Council 10.6.2009

NEW RACES OR ASSOCIATED STRUCTURES

W108

Installation of new races will be permitted:

- 1) Where new properties are required to be served.
- 2) To serve additional areas of individual properties.
- 3) Conditions:
 - a) Cost of all works including the associated supervision is at the applicant's expense.
 - b) Design and construction to the approval of the Asset Delivery Manager.

- 4) If any leakage occurs from the race, including anytime in the future, the applicant will undertake all necessary repairs as directed by the Asset Delivery Manager.
- 5) A water loss test must be carried out in consultation with the Council representative prior to the water being fully diverted. If this is not undertaken Council reserve the right to do this at the applicant's cost and all repairs that may be required are at the applicant's expense.

*Water Race Committee 22.6.98
Amended Water Race Committee 08.05.06
Confirmed by Council 11.7.2007
Council 10.6.2009*

EXEMPTIONS FROM PAYING WATER RACE RATES

W109

MALVERN and ELLESMERE:

- 1) Where the property is within a water race area and stock water is unable to be supplied to that property or is impracticable to do so then:
 - a) The property shall be exempted from payment of stock water rates.
 - b) Application for such exemption must be in writing and not be retrospective prior to the current financial year in question.

PAPARUA:

- 2) Where the property is within the water race area and a water race does not go through the property or adjacent to that property then.
 - a) The property may be exempted from payment of stock water rates.
 - b) Application for such exemption must be in writing and not be retrospective prior to the current financial year in question.

*Water Race Committee 24.8.98
Confirmed by Council 11.7.2007
Council 10.6.2009*

CARRY OUT WORK ON PRIVATE PROPERTY

W110

- 1) Where Council's Water Race Contractor has had to carry out or commission works on private property to ensure compliance with the Water Race Bylaw and Maintenance Contract Specifications this work shall be paid by Council via the appropriate water race account.
- 2) Council will then invoice the property owner(s) to recover all costs incurred by Council.

*Water Race Committee 22.6.98
Confirmed by Council 11.7.2007
Council 10.6.2009*

SUBDIVISIONS

W111

- 1) Where a subdivision is proposed, all lots within that subdivision shall be served by the race system except if it is physically and or technically impractical to serve each individual lot.
- 2) Piping of the water race through these lots shall be undertaken to assist in ensuring continuity of downstream supply.

- 3) Exemption: Properties within rural residential, residential, commercial, and industrial zones are not required to be serviced.

*Water Race Committee 22.6.98
Confirmed by Council 11.7.2007
Council 10.6.2009*

SOAKHOLES

W112

The maintenance and operation of soakholes are the responsibility of:

- i) Council when the associated water race is within a formed road.
- ii) Property owners when the associated water race and existing soakholes is within the private property.
- iii) Replacement of the soakhole due to its inability to take the water race flow shall be Council's responsibility. Council will only be responsible for installing a standard soakhole.
- iv) If flow increases due to changes in operation, which has a detrimental effect on existing soakholes, Council will be responsible for all costs to upgrade the soakholes.

*Water Race Committee 24.8.98
Confirmed by Council 11.7.2007
Council 10.6.2009*

HOUSEHOLD WATER SUPPLIES

W114

- 1) In the event of domestic water being required to be delivered:
 - a) The Council meets the cost to supply potable water, where the consumer pays the appropriate charges for a domestic supply and the shortage is as a result of a planned outage of the water race system.
 - b) The consumer meets the cost where the consumer pays no charges for a domestic supply.

*Water Race Committee 22.6.98
Amended Water Race Committee 08.05.06
Confirmed by Council 11.7.2007
Council 10.6.2009*

CREDITS FOR UNPLANNED DISRUPTION OF THE WATER RACE SUPPLY

W115

- 1) A ratepayer may apply for a partial write-off of water race rates where:
 - a) a race is blocked for a minimum of 24 hours by materials.
 - b) a drought situation causes part of a system to run dry for a minimum of 24 hours. (This acknowledges that the majority of the system can be supplied but that the reduced quantity of water in the system leaves some isolated areas with no water.)
- 2) Credits shall only be given upon application by the ratepayer in writing to the Asset Delivery Manager and shall apply from the date of non-supply until supply is restored. Supporting evidence of non-supply is required via the complaints system, written correspondence received, or the Council contractor.
- 3) A full day's credit shall be given for every part of a day where disruption occurs (e.g. if a ratepayer is not supplied for water for one day and two hours, this would result in a two day credit being given).

- 4) If more than one water race supplies the property a partial rebate shall not apply.
- 5) Credits shall not apply in situations where:
- a) where the period of unplanned disruption is less than 24 hours; or
 - b) where “Acts of God” occur.
 - c) “Acts of God” cover the following:
 - flood conditions where the intake is closed by:
 - i) the Council to prevent damage to the water race system;
 - ii) flood damage to the intake or associated structure;
 - iii) a change in the course of the river which prevents the intake and associated structures being supplied;
 - drought conditions where the river level is too low to supply the intake.
- Water Race Committee 22.6.98*
Amended Water Race Committee
24.8.98
Amended Water Race Committee
15.11.04
Amended Water Race Committee
08.05.06
Confirmed by Council 11.7.2007
Council 10.6.2009

REPAIR OF WATER RACE SINKHOLES

W116

The repair of water race sinkholes will be the responsibility of Council except where poor maintenance or cleaning by the property-owner has contributed to the problem.

Water Race Committee 4.11.02
Confirmed by Council 11.7.2007
Council 10.6.2009

PLANNED WORKS OUTAGE MANAGEMENT

W117

- (a) Council may stop the flow of the water in any water race for the purposes of carrying extensions, alterations, enlargements, maintenance or any other purpose deemed necessary by the Asset Delivery Manager.
- (b) A minimum of 14 calendar days notice before commencement of planned maintenance works shall be provided where the works will result in a temporary stoppage or disruption to supply of greater than 36 hours.
- (c) Notification of temporary outages shall be provided via appropriate advertisements in local and Selwyn District publications. The cost of notification shall be borne by the organisation or person(s) directly undertaking the planned maintenance outage works.
- (d) Notification shall be arranged by the contract or person(s) undertaking the works in accordance with policy conditions and with approval from Council’s Asset Delivery Manager.
- (e) All practicably identifiable properties taking water for domestic consumption and farms relying on stockwater shall be contacted directly by the maintenance contractor. This shall be completed a minimum of 14 days prior to the planned water race stoppage. Where direct contact is not made, appropriate information shall be left describing the planned water race outage conditions and contact details.

- (f) It will be the responsibility of those reliant on stockwater to make alternative arrangements for supply of water as required during the planned maintenance outage works.
- (g) No water race credits will be available resulting from any planned maintenance outage works.
- (h) Failure to Notify as Required
All costs associated with failure to provide notification as described shall be borne by the organisation/persons directly undertaking the stoppage works. This shall include taking all reasonable measures to ensure that the welfare of persons and stock are not adversely affected.

*Water Race Committee 15.11.04
Confirmed by Council 11.7.2007
Council 10.6.2009*

PURPOSES OF WATER RACES

W118

1. That the primary purpose of water conveyed via the stock water race networks is Stock water.
2. The secondary purposes of water conveyed via the stock water race networks are:
 - 2a) Household consumption (drinking at the sole risk of the user)
 - 2b) Irrigation (as governed by policy and/or agreement)
 - 2c) Fire fighting
 - 2d) Landscaping/Aesthetic
3. Water taken from the stock water race networks for secondary purposes shall be at the discretion of the Asset Delivery Manager.

*Water Race Committee 14.02.05
Reviewed Water Race Committee
08.05.06
Confirmed by Council 11.7.2007
Council 22.7.2009*

APPENDIX C WATER RACE BYLAW

SELWYN DISTRICT COUNCIL WATER RACE BYLAW 2008

1 TITLE:

- 1.1 This bylaw is made by the Selwyn District Council pursuant to the powers and authority vested in the Council by Section 146 (b)(i) of the Local Government Act 2002. This bylaw shall be known as the Selwyn District Council Water Race Bylaw 2008.

2. INTRODUCTION

- 2.1 The primary purpose of the water race system is to provide drinking water for farm animals. Some properties also use the water race system as an untreated domestic water supply. Secondary purposes of the water race system are for irrigation (where permitted by the Council), fire fighting and enhancement of amenity and ecological values.

The activities governed by this Bylaw, including the taking, use, damming and diversion of water, may also be subject to regional rules in the Waimakariri River Regional Plan and the Proposed Natural Resources Regional Plan for Canterbury. Compliance with this Bylaw does not imply compliance with regional rules and a resource consent may be required.

Land use close to water races that may contaminate water quality and other activities involving discharges into water races are subject to rules in the Proposed Natural Resources Regional Plan for Canterbury, and the Selwyn District Plan. Resource consent may be required for those activities.

- 2.2 The Council also has policies which it uses as part of the management of the water races; they do not form part of these bylaws but should be consulted by any person interested in the management of the water races.

3. DATE OF COMMENCEMENT

- 3.1. This bylaw comes into force on the 1 July 2008

4. REPEALS

- 4.1. The Selwyn District Council Water Race By-law 2000 is hereby repealed.

5. APPLICATION OF BYLAW

- 5.1 This bylaw applies throughout Selwyn District and includes properties that are rated for stock water outside of the Selwyn District boundary.

6. DEFINITIONS

References to a repealed enactment include its replacement.
For the purpose of this bylaw, unless the context otherwise requires;

‘Agent’ means any person or body authorised by the Council to maintain and administer the water race system

“Accessories” means all objects used in conjunction with a Water Race and includes, where the context so requires, all weirs, gates and valves used for regulating flow, and flow metering equipment

“Agreement” means a written agreement between the landowner and the Council giving permission to do something within the water race system.

“Bylaw” means this bylaw as altered, varied or amended from time to time

“Commercial irrigation” means irrigation using water supplied from a water race for a fee paid to the Council

“Council” means the Selwyn District Council or any person authorised to exercise the authority of the Council, or its agent

‘Council water race’ means a water race that is on land under the control of the Council

“District” means the Selwyn District and whereby agreement Christchurch City Council.

“Existing Use” means any right to take water from a Water Race where;

- (a) That right was lawfully established at the commencement of this bylaw; and
- (b) The quantity of water taken and use of the water is the same or similar to that which existed before the commencement of this bylaw.

“Farm stock water race” means a water race on land that is not under control of the Council.

“Maintenance” means cleaning and maintaining the water race system in accordance with the Water Race Management Plan

“Non commercial irrigation” means watering a residential garden or shelter belt of trees using water from a water race

“Owner or Occupier” means the owner or occupier of land recorded as such in the valuation roll of the District

“Rural agricultural drinking-water supply” has the same meaning as in the Health [Drinking Water] Amendment Act 2008

“Water race” has the same meaning as in the Local Government Act 2002

“Water Race Management Plan” means the Water Race Management Plan authorised by the Council and altered or amended by the Council from time to time. It is available from the Council on request

“Water Race Policy” means the policies set out in the Water Race Management Plan

“Water Race System” means the system of water races having its origins at;

Earlys Intake on the Rakaia River, grid reference NZMS 260 L35:2413 -5732, and
Lower Rakaia Intake on the Rakaia River, grid reference NZMS 260 L35: 2436-5717,
and
Paparua Intake located on the Waimakariri River, grid reference NZMS 260 L35: 2453-5748, and
Lower Kowai Intake located on the Kowai River, grid reference NZMS 260 L35: 1781-6347, and
Upper Kowai Intake located on the Kowai River, grid reference NZMS 260 L35: 1687-6299, and
Waimakariri Gorge Intake located on the Waimakariri River, grid reference NZMS 260 L35: 3297-6054, and
Glentunnel Intake located on the Selwyn River, grid reference NZMS 260 L35: 2479-6478, and
Haldon Intake, located on the Hororata River, grid reference NZMS 260 L35: 2429-5737, and
and any other source of supply from which the Council may take water for water races, including water races and any tail race, branch, artificial or natural channel connected to a water race and channels which are wholly or partially supplied with water from a water race, other than those channels into which water is spilled when that water is no longer required for operation of the water race system.

6. RIGHT TO TAKE WATER

- 6.1 No person may, whether directly or indirectly, take, divert or use any water in or from a Water Race except;
- (a) Pursuant to a lawfully established existing use, or
 - (b) With the agreement of the Council, granted under this bylaw or any other bylaw; and
 - (c) Upon the payment of annual charges that may be determined from time to time by the Council: or
 - (d) In the case of an emergency, for fire fighting.
 - (e) The New Zealand Fire Service for the purposes of training and testing.
- 6.2 Any person who wishes to take water from a water race may apply to the Council for permission to take water. Such application;
- (a) Must be in writing, and be accompanied by the prescribed application fee.
 - (b) Must describe with sufficient particularity:
 - (i) The applicant

- (ii) The land to be served by the water taken
 - (ii) The Water Race from which water will be taken
 - (iii) The purpose or purposes for which water will be taken
 - (iv) The method (such as pipe, open drain or other method) by which water will be taken
 - (v) The place or places in the Water Race from which water will be taken.
- 6.3 Where construction works are proposed to enable water to be taken, the application must be accompanied by plans and specifications which adequately describe the proposed work.
- 6.4 If the Water Race from which water is to be taken is not located on the applicant's land, the application must be accompanied by written evidence of the agreement of the owner or occupier of the land on which the water race is located.
- 6.5 Within 15 working days of receipt of a complete application the Council will, in writing, either:
 - (a) Grant the application, with or without conditions, or
 - (b) Decline or defer the application, and give the reasons for its decision.
- 6.6 Notwithstanding Clause 6.5, if the water is required urgently and no other sources of water supply are accessible to the applicant, the application will be assessed and given priority by the Council.
- 6.7 When granting an application subject to conditions, those conditions may include, but are not limited to the following,
 - (a) Approval of the construction practices or specifications in accordance with Council requirements;
 - (b) Requiring the supervision of construction works by the Council with the cost of such supervision to be met by the applicant;
 - (c) Requiring the use of contractors approved by the Council, at the applicant's expense, in respect of any work affecting a public road or other utility services
 - (d) Requiring additional work to be undertaken if the Council considers such work necessary for the protection of the Water Race, other water race users, or members of the public;
 - (e) Limiting the quantity of water which may be taken and/or the times at which water may be taken;
 - (f) Limiting the purposes for which water may be taken;
 - (g) Specifying the place or places from which water may be taken;
 - (h) Requiring the installation of accessories relevant to the application at the applicant's expense, or
 - (i) Requiring payment of fees.
- 6.7 The applicant may object to any decision of the Council made under this bylaw by giving notice in writing to the Council. Such notice must set out the grounds of the objection. Within 20 working days of receiving a notice of objection, the Council will convene a hearing at which the objection will be heard. Not less than 5 working days notice in

writing of the time and place of the hearing will be given to the objector. After hearing the objection the Council may:

- (a) Confirm the original decision; or
- (b) Reverse the original decision; and/or
- (c) Impose new or varied conditions.

- 6.8 An agreement to take water from a water race, when granted, runs with the land described in the application and binds successors in title to that land.

6.9 Commercial Irrigation

Upon written approval of the Council, water may be taken for commercial irrigation from water races in the Paparua Scheme that have been designated as irrigation water races or combined stock water and irrigation water races.

6.10 Non Commercial Irrigation

Upon written approval of the Council, water may be taken from water races for non-commercial irrigation of domestic gardens, provided;

- (a) no more than 4,000 litres of water is taken per day,
- (b) water is taken in accordance with the water race policy, and
- (c) the application fee as determined from time to time is paid.

- 6.11 Upon written approval of the Council, water may be taken from water races for non-commercial irrigation of shelter belts, provided;

- (a) no more than 4,000 litres of water is taken per day,
- (b) water is taken in accordance with the water race policy, and
- (c) the application fee as determined from time to time is paid.

7. EMERGENCY

- 7.1 In the case of a fire emergency, water may be taken from water races for fire fighting purposes without the need to first obtain permission from the Council.

8. PROHIBITED USES

The following uses of a water race are prohibited:

- 8.1 No person(s) may bathe or wash clothing or other things in a water race.
- 8.2 Allowing domestic fowl, be they water-fowl or otherwise, into or on a water race.
- 8.3 Allowing detergents, chemicals or nutrients to enter a water race
- 8.4 Allowing backflow from irrigation equipment to enter a water race
- 8.5 Allowing animals to enter a water race, except that a drinking station may be provided outside the water race.

- 8.6 Carrying out any activity on land or in any building or yard which contaminates the water in the water race.
- 8.7 Obstructing the flow of water in the water race by any means whatsoever.
- 8.8 Allowing or causing any animal or vehicle to enter or cross a water race except at bridges, culverts or crossing places provided by the Council or constructed with the Council's written approval.
- 8.9 Allowing or causing any part of any fence to remain in a water race.
- 8.10 Taking or diverting water from a water race without the prior written agreement of the Council.
- 8.11 Allowing water from a water race to be wasted by failing to adequately maintain or repair any pipe or other apparatus.
- 8.12 Interfering with any regulating gate or other apparatus or doing anything which may cause the supply of water from a water race to be increased or decreased without the written approval of the Council.
- 8.13 Permitting a person who does not pay water race rates to take water from a water race.
- 8.14 Widening or deepening any water race or altering the course of any water race without the written approval of the Council.
- 8.15 Permitting or causing any Statutory Nuisance as defined under Section 29 of the Health Act 1956.
- 8.16 Obstructing any crossing point over a water race.
- 8.17 Removing, displacing, altering, damaging or interfering with any bank, dam, sluice, flume, bridge, gauge, meter, reservoir, pipe, or other work or thing used in supplying or distributing water from any water race.
- 8.18 Disturbing the ground so as to uncover any culverts belonging to any water race or lengthening or decreasing the length of any culvert without the written authority of the Council.
- 8.19 Making any structure over, in, or under a water race unless approved by the Council.
- 8.20 Sowing, planting, or allowing to grow any tree, hedge, shrub or other plant of any kind, within a distance of 3 metres of either side of a water race except:
 - (a) Crops and pasture are permitted; and

- (b) Shrubs or plants forming any part of a live fence and maintained to less than 1.5 metres in height may be sown or planted on one side of a water race only, at a distance of not less than 1 metre from the edge of the water race.
- (c) A strip, at least 6 metres wide, must be left unplanted adjacent to one side of the water race to enable access to the water race for machinery used for cleaning.
- (d) As otherwise approved by the Council.

8.21 Erecting any building or structure of any kind or size within ten metres of either side of any water race without the written authorisation of the Council.

8.22 Discharging effluent into a water race.

9. COUNCIL RESPONSIBILITIES

9.1 Notwithstanding anything to the contrary in this bylaw, the Council is responsible for the maintenance and repair of:

- (a) The Water Races classified as Council water races and listed in Plan –006/000/WR (Malvern), 007/000/WR (Paparua), 008/000/WR (Ellesmere);
- (b) Accessories located within any of the water races listed in Plan 002/000/WR (Malvern), 003/000/WR (Paparua) and 004/000/WR (Ellesmere);
- (c) Any weir, gate, or valve located in any water race where more than one property is served by the water race downstream of that weir, gate or valve.

9.2 Except as provided in clause 9.1, the cost of maintaining and repairing any water race or accessory is the responsibility, as the circumstances require, of either:

- (a) The owner or occupier of the land within which the water race or accessory is located; or
- (b) Where the water race or accessory is located within a road or a reserve, the owner or occupier of the land which is contiguous to that road or reserve; or
- (c) Where the water race or accessory is located on or about the common boundary between land in different ownership, the owners of the land in equal shares.

9.3 The person(s) nominated in 9.2 is responsible for the regular inspection, repair, maintenance, and cleaning of the relevant section of the water race to a standard sufficient to ensure that:

- (a) Any obstruction to the free flow of water along the water race is removed as soon as is reasonably practicable;
- (b) As far as is practicable, no water is wasted by seepage or otherwise;
- (c) Continuity of supply and free flow of water downstream is maintained at all times.

10. CLEANING

10.1 Farm Stockwater Race Cleaning

- (a) In addition to Clauses 9.2 and 9.3 the owners or occupiers of land through which a farm stockwater race runs must, at their own cost keep and maintain the water race in good order including the sides and banks in such a condition to ensure a continuous flow preventing any overflow, leakage, or wastage of water to property or roads.

10.2 Other Water Race Cleaning

- (a) Council water races are cleaned by the Council.

10.3 Removal of Matter and Debris

- (a) All matter or debris deposited as part of the cleaning of a water race must be removed by the owner or occupier of the land through which that water race runs, at the time that cleaning is undertaken, or as soon as practicable thereafter; and
- (b) The cost of the removal of that matter and debris will be borne by the owner or occupier of the land through which that water race runs; and
- (c) The owner or occupier will take all reasonable steps to prevent any matter or debris removed from the water race from re-entering the water race; and
- (d) Allow access to the water race by machinery used to clean the water race.
- (e) When working within road reserve a traffic management plan will be required. The person undertaking the work will obtain this approval prior to any work being carried out.

10.4 Maintaining, Cleaning and/or Improving the Races

- (a) When the Council clears, cleans, renovates or improves any part of a water race or any land adjoining a water race, it may deposit any matter removed on any part of the land adjacent to the water race, except where the land is a formed public road.
- (b) When working within road reserve a traffic management plan will be required. The person undertaking the work will obtain this approval prior to any work being carried out.
- (c) All such matter or debris deposited by the Council must be placed in such a manner as to prevent the matter re-entering the water race and to allow access to the water race by machinery used for maintenance.
- (d) If material cleaned from a water race is to be deposited in an area where grass is regularly mown, the Council will notify the owner or occupier of the land 48 hours prior to cleaning work being commenced,
- (e) Material cleaned from Council water races adjacent to a road and deposited in an area of the road verge which is regularly mown will be removed for a length of 50 metres. Removal of any additional material is at the cost of the owner or occupier of the land.
- (f) With the prior agreement of the Council, the owners or occupiers of land through which a water race runs may develop or implement a management plan to

enhance that water race for ecological purposes. Where the Council gives its approval, and such a plan is implemented, that section of the water race will be listed by the Council in the Water Race Management Plan.

11 FAILURE TO REPAIR OR CLEAN A WATER RACE

- 11.1 Pursuant to s.182 of the Local Government Act 2002, if an owner or occupier of land fails to comply with any provision of this bylaw, having been required to do so in writing by the Council, the Council may enter onto the land, make good such failure, and charge the owner or occupier for any costs incurred.
- 11.2 Notwithstanding 11.1, if following a complaint of lack of water or flooding, the Council discovers an obstruction which is capable of an immediate remedy, the Council may, without notice to the owner or occupier of the land upon which the obstruction is located:
- (a) Forthwith remove that obstruction; and
 - (b) Require the owner or occupier of that land to pay an “obstruction removal fee” the amount of which may be prescribed by the Council from time to time.
 - (c) An obstruction removal fee when charged is a debt due from the owner or occupier of the land and the Council may take action to recover such debt without further notice, if the debt remains unpaid after 1 calendar month.

12. DIVERTING WATER

- 12.1 The Council may grant permission to divert water from a water race to a pond or reservoir provided that:
- (a) No person may divert water from a water race unless the Council has issued an agreement to do so in writing. Such an agreement may be revoked by the Council after giving three months notice of its intention to do so.
 - (b) The pond or reservoir must be watertight and lined with impervious material.
 - (c) The intake and outlet of the pond or reservoir must be able to be shut off as required to ensure compliance with water restrictions or resource consent conditions.
 - (d) An outfall must be provided from the pond or reservoir such that any overflow flows back to the water race, at the same water level as the water race.
 - (e) The Council may impose conditions restricting the area, volume or depth of any pond or reservoir.
 - (f) No pond or reservoir may cause any reduction in water flow in the water race from which water is diverted.
 - (g) No person may construct a dam to raise the water level in the water race for the purpose of creating a pond or reservoir.

13. EXISTING USES

- 13.1 If, at the date this bylaw comes into force there are obstructions, including but not limited to;

- (a) Trees, hedges, other plants or shrubs of any kind, growing or dead, in the form or nature of stumps or otherwise, situated contrary to the provisions of this bylaw and irrespective of how, when or by what means they came to be there, or
- (b) Structures, buildings, yards or ponds which are situated contrary to the provisions of this bylaw, and
- (c) If, in the opinion of the Council, any such obstruction interferes with the flow of the water or creates excessive maintenance issues in any water race, the Council may;
Require the owner or occupier of the land on which the obstruction is located to remove that obstruction by giving notice accordingly.

13.2 An owner or occupier who objects to a requirement to remove an obstruction will be given an opportunity to be heard by the Council regarding that objection.

13.3 If, having heard the objection, the Council confirms its opinion that the obstruction must be removed, it will notify the owner or occupier accordingly and will consider whether compensation is payable to the owner or occupier.

13.4 If, after an objection has been heard and the Council has given notice in accordance with Clause 13.3, an owner or occupier fails to remove an obstruction within a reasonable timeframe the Council may take action pursuant to these bylaws and in particular Clause 11.1.

14. EXTRA OR ABNORMAL SUPPLIES

14.1 The Council may, at its discretion, grant an extra supply of water from a water race for special purposes, including fire fighting, or for purposes not otherwise authorised by this bylaw, at a cost to be established by the Council at the time of an application for such extra supply. Such cost may be varied from time to time.

15. POWERS OF THE COUNCIL

15.1 The Council may, pursuant to the powers vested in it under the Local Government Rating Act 2002, the Local Government Act 1974 and the Local Government Act 2002, vary, alter, reduce, increase or remove charges and rates levied for the maintenance and operation of the water race system.

15.2 The Council may alter the basis or manner or scale on which any or all such charges or rates are to be assessed as it sees fit in accordance with the powers vested in it.

15.3 The Council may impose restrictions on taking water from time to time.

15.4 Where a person is lawfully entitled to take water from a water race for any purpose other than for stock drinking water, including but not limited to irrigation, the Council may impose a charge.

- 15.5 Nothing in this bylaw limits the entitlement of the Council to levy a rate to recover the cost incurred in maintaining and operating any water race.
- 15.6 The Council may, at any time and from time to time, set or vary by ordinary resolution, application fees, obstruction removal fees, and charges for taking water for purposes other than stock drinking water.
- 15.7 The Council may perform its obligations and exercise its rights under these bylaws or otherwise in relation to the water race system through its nominated agents, employees or contractors, or the Agent, as the Council determines from time to time.

16. BREACHES OF THIS BYLAW

Every person commits an offence who –

- 16.1 Defaults in payment of any rate imposed on their land in respect of the supply of stock water or irrigation water
- 16.2 Fails to do or perform any act, or thing, that he or she is required to do by these bylaws
- 16.3 Permits, allows, or does, any of the acts that are prohibited in this bylaw
- 16.4 Fails to comply with his or her water supply agreement with the Council
- 16.5 Breaches this bylaw.

17. PENALTIES

- 17.1 Every person who contravenes this bylaw is liable to a fine not exceeding \$20,000 or other such amount as may be provided for under the Local Government Act 2002.
- 17.2 In addition to any penalty imposed by any court for a breach of this bylaw, the Council may sue for and recover from any person, the cost of damage done or caused to a water race or associated works, or in respect of any water unlawfully taken or diverted or wasted or lost due to any failure to comply with this bylaw.

18. SAVINGS

- 18.1 Nothing in this bylaw is an undertaking or guarantee by the Council that it will provide water in any water race either at all, or to any quantity or to any specified quality.
- 18.2 Nothing in this bylaw renders the Council responsible or liable to any person or body for the total or partial failure of any water supply from whatever cause such failure may arise.

The **COMMON SEAL** of the
SELWYN DISTRICT COUNCIL
was hereunto affixed, in accordance
with the Special Order made by the
Council on 11th June 2008
in the presence of:



[Signature] Mayor

[Signature] Chief Executive

APPENDIX D ENFORCEMENT PROCEDURES

Standard Operating Procedure WRB001

Council has the ability through the Water Race Bylaw 2008 (Clause 11.2) to charge the owner or occupier of an “Obstruction Fee” where a complaint has been received for lack of water or flooding. The following Water Race Enforcement Procedure details how the contractor shall resolve complaints for the above occurrence. The procedure should be read in conjunction with the Bylaw Enforcement Guideline manual (dated November 2008):

		Cost Charging	
Issue Urgency	Contractors Process for Complaint Resolution	Property Owner	Contractors Rate
1 On arrival at site	Operator assess the problem		
2 In all cases	If obstruction can be cleared or problem resolved within 15 minutes and not a reoccurring problem, then carry out work to resolve problem	No Charge to land owner	Standard Resolution Fee
3 If Urgent	If over 15 minutes and less than one hour, then carry out work to resolve problem. Contractor to provide Council with photo with report form	Obstruction fee shall be charged if land owner is traceable.	Day rates after 15 minute Resolution Fee period
	If problem resolution is greater than 15 minutes: - Contractor to locate land owner/occupier and give written Notice to Repair, Maintain or Clean Water Race. Contractor to provide Council with duplicate form	Obstruction fee shall be charged if land owner is traceable	Day rates after 15 minute Resolution Fee period
4 If Not Urgent	If contractor cannot give notice due to inability to locate land owner or other reasons then contractor to immediately advise Council.		
	Where notice given – Contractor shall carry out reinspection within required time of the “Attend to works” period.	Cost of inspection shall be charged to property owner	Day rates
5 If reoccurring issue	If obstruction can be cleared or problem resolved within 15 minutes, then carry out work to resolve problem. Contractor to locate land owner/occupier and give written Notice to Repair, Maintain or Clean Water Race	No Charge to land owner	Standard Resolution Fee

APPENDIX E NOTICE TO REPAIR, MAINTAIN OR CLEAN WATER RACE

TO: _____



PO Box 90

Rolleston 7643

NOTICE TO REPAIR/ MAINTAIN OR CLEAN WATER RACE

The Selwyn District Council Stock Water Race Bylaw requires that water races be regularly inspected and repaired, maintained or cleaned. Responsibility for that work falls upon the Council in respect of the races listed in Clause 9 to the Bylaw, but otherwise falls on the owners of the land adjacent to or through which the water race passes (The water race referred to below is not one of those races listed in Clause 9).

Recent inspection indicates that the water race specified below, for which you are responsible under the Bylaw, is in need of work. Please attend to the works specified within 24 hours/14 days/7 days/ other _____ (delete one) of service of this notice upon you.

Water Race Location _____

Work Required _____

If any aspect of this notice is unclear, or you are uncertain of the action required of you, please contact either the person who signed this notice, or the Water Race and Land Drainage Coordinator at the Council's Rolleston Office (phone 347 2800).

If you fail to attend to the above work within the time specified, the Council may without further notice carry out that work and the costs incurred will be a debt due by you to the Council. In addition, failure to comply with this notice is an offence under the Bylaw punishable on conviction by a fine not exceeding \$20,000.

SELWYN DISTRICT COUNCIL

per _____
Authorised Officer

Officer's Name _____

Dated _____

Contact Phone Numbers

Business Hours _____

After Hours _____

APPENDIX F COMMUNICATION PLAN

See also the Selwyn District Councils Consultation Policy and Guidelines – July 2010

Survey

Scheme	Date completed	Next Survey
Paparua and Malvern Survey	July 2006	July 2008
Water Race Survey		2010
Ellesmere Water Race Survey		2013

APPENDIX G RIVER WORKS NOTIFICATION FORM

Job Number: _____ Consecutive Number: _____

RIVER WORKS NOTIFICATION – WATER RACES



To:

Water Race and Land Drainage Coordinator Asset Service Delivery Unit SELWYN DISTRICT COUNCIL Fax 03-3472799	Resource Management Team Leader ENVIRONMENT CANTERBURY Fax 03-3653194
--	---

FROM: _____ TITLE: _____
 OF SICONFERGUSON LTD
 DATE: _____ TIME: _____

PLEASE NOTE THAT WORKS WILL BE CARRIED OUT IN THE FOLLOWING AREAS:

No.	River	Consent #	Location	Tick box
1.	Kowai	CRC012002	Upper SH73	
2.	Kowai	CRC012002	Lower SH73	
3.	Waimak	CRC012002	Waimak Gorge	
4.	Selwyn	CRC012002	Glentunnel Camping Ground	
6.	Rakaia	CRC011993	Lower Rakaia	
7.	Hororata	CRC011996	Haldon	
8.	Waimak	CRC012005	Intake Road	

REASON FOR WORKS:

Tick box:

Low flows in river

☐ D

Flooding damage to existing river works

☐ D

Other (Description) _____

THE WORK WILL COMMENCE/HAS COMMENCED ON:

Day: _____

Date: _____ Time: _____

Contractor: _____ Type of Machine: _____

The water race operator is _____ of Sicon Limited.

Phone: _____ Fax: _____

Signed: _____ Date: _____

Updated 8 May 2009

Job Number: _____ Consecutive Number: _____
To: _____

RIVER WORKS NOTIFICATION – WATER RACES
Fax from Canterbury Grasslands



Water Race and Land Drainage Coordinator Asset Service Delivery Unit SELWYN DISTRICT COUNCIL Fax 03-3472799	Resource Management Team Leader ENVIRONMENT CANTERBURY Fax 03-3653194	Neil McAndrew GLENROY IRRIGATION GROUP Representative VIA CANTERBURY GRASSLANDS Fax 03 318 6900
--	--	---

FROM: _ OF GRASSLANDS TITLE: _____
DATE: _____ TIME: _____

PLEASE NOTE THAT WORKS WILL BE CARRIED OUT IN THE FOLLOWING AREAS:

No.	River	Consent #	Location	Tick box
1.	Rakaia	CRC011993	Earlys	

REASON FOR WORKS:

Low flows in river
Flooding damage to existing river works

Tick box:

D
D

Other (Description) _____

THE WORK WILL COMMENCE/HAS COMMENCED ON:

Day: _____

Date: _____ Time: _____

Contractor: _____ Type of Machine: _____

The water race operator is _____ of Sicon Limited.

Phone: _____ Fax: _____

Signed: _____ Date: _____

Updated 8 May 2009

SCHEDULE WORKING IN RIVER

WAIMAKARARIRI INTAKE



Date: between / / & / /

Location number	Weir length	Weir height	Comment	River Conditions (rising, dirty)	Dozer operator	Dozer size/type

G:\EDS\Engside\dwgs\wtraces\WR4.9_Waimakariri_intake

SCHEDULE WORKING IN RIVER

EARLYS INTAKE



Date: between / / & / /

Job# _____

Location number	Weir length	Weir height	Comment	River Conditions (rising, dirty)	Dozer operator	Dozer size/type

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SCHEDULE WORKING IN RIVER

GLENTUNNEL INTAKE



Date: between/....../.... &/....../....

Location number	Weir length	Weir height	Comment	River Conditions (rising, dirty)	Dozer operator	Dozer size/type

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SCHEDULE WORKING IN RIVER

HALDON INTAKE



Date: between/....../.... &/....../....

Location number	Weir length	Weir height	Comment	River Conditions (rising, dirty)	Dozer operator	Dozer size/type

G:\EDS\Engstide\days\ettraces\WFM 8_Haldon_intake

SCHEDULE WORKING IN RIVER

LOWER KOWAI INTAKE



Date: between / / & / /

Location number	Weir length	Weir height	Comment	River Conditions (rising, dirty)	Dozer operator	Dozer size/type

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SCHEDULE WORKING IN RIVER

UPPER KOWAI INTAKE



Date: between / / & / /

Location number	Weir length	Weir height	Comment	River Conditions (rising, dirty)	Dozer operator	Dozer size/type

G:\EDS\Engside\dwgs\wtraces\WR4_7_Kowai_Upper_intake

SCHEDULE WORKING IN RIVER
LOWER RAKAIA INTAKE



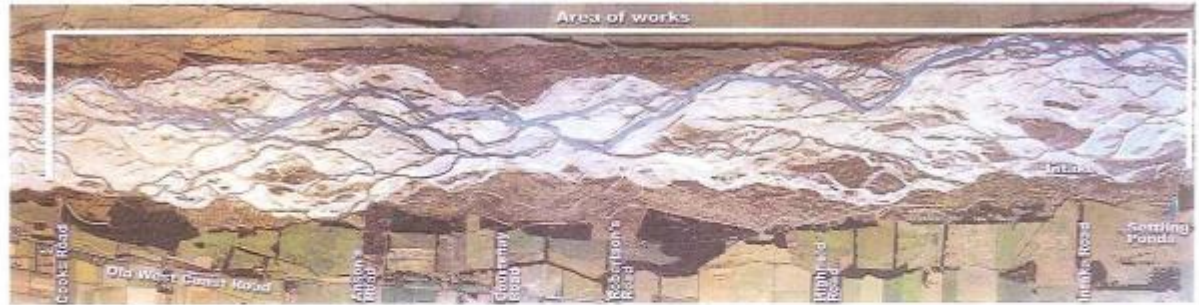
Date: between/....../.... &/....../....

Location number	Weir length	Weir height	Comment	River Conditions (rising, dirty)	Dozer operator	Dozer size/type

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SCHEDULE WORKING IN RIVER

PAPARUA INTAKE



Date: between / / & / /

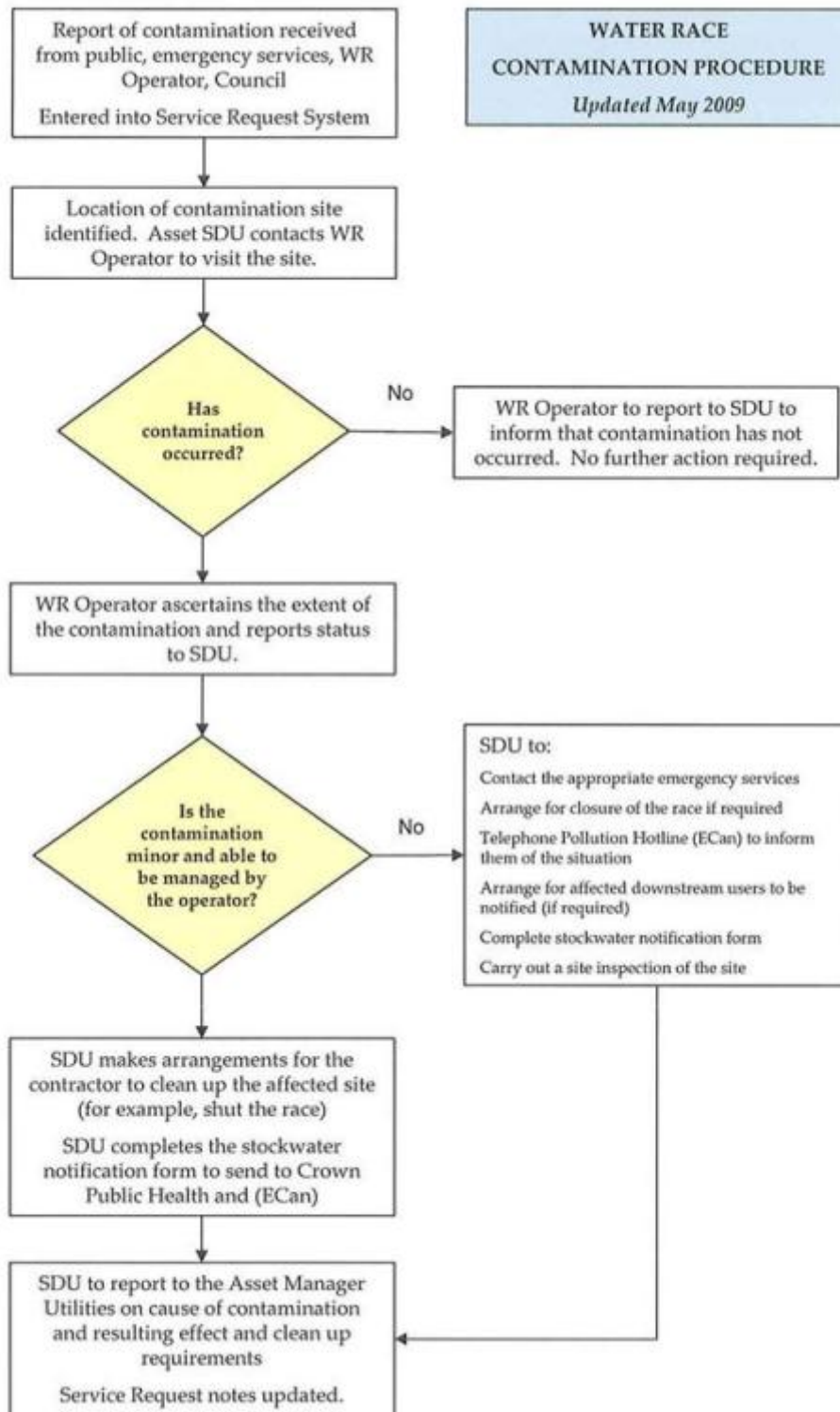
Job# _____

Location number	Weir length	Weir height	Comment	River Conditions (rising, dirty)	Dozer operator	Dozer size/type

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APPENDIX H WATER RACE CONTAMINATION PROCEDURE

Standard Operating Procedure WRP005



APPENDIX I CONTAMINATION FORM NOTIFICATION

CONTAMINATION OF STOCKWATER NOTIFICATION FORM



TO:	Medical Officer of Health (Canterbury) Crown Public Health Fax 03-3796125 Tel 03-3799480	ECan Pollution Hotline Fax 03-3664663 Tel 03-3652194	Sicon Ltd Fax 03-3188578
	FROM: Asset Service Delivery Unit Selwyn District Council Fax 03-3472799 Tel 03-3472800		

FROM: _____ OF SELWYN DISTRICT COUNCIL

DATE: _____ TIME: _____

SCHEME: _____

LOCATION OF CONTAMINATION/LOCATION OF RECEIVING WATER OR ENVIRONMENT:

DISCHARGE BEGAN (IF KNOWN) TIME: _____ DATE: _____

FLOW RATE OF AMOUNT OF POLLUTANT (APPROXIMATELY): _____

CAUSE OF DISCHARGE/SOURCE OF THE CONTAMINATION (IF KNOWN): _____

ESTIMATED TIME TO STOP DISCHARGE POLLUTANT AND CLEAN UP: _____

METHOD USED TO CLEAN UP THE CONTAMINATION OR CONTAINMENT: _____

MECHANISMS FOR CONTACTING DOWNSTREAM USERS: _____

WATER SAMPLING REQUIRED: _____

FOLLOW UP ACTIONS: _____

CONTACT PERSON: _____ Signature: _____

Phone: _____ Fax: _____

APPENDIX J RESOURCE CONSENTS

J.1 Paparua

CRC012006

RESOURCE CONSENT

Pursuant to Section 105 of the Resource Management Act 1991

The Canterbury Regional Council (known as Environment Canterbury)

GRANTS TO: SELWYN DISTRICT COUNCIL

A WATER PERMIT: to divert and take water at the Paparua intake for stockwater and irrigation

DATE GRANTED supply.: 10-DEC-2002 **EXPIRY DATE:** 10-DEC-2037

IN CONNECTION WITH THE FOLLOWING PROPERTY:

LOCATION: STOCKWATER RACE NETWORK SELWYN DISTRICT, PAPARUA SCHEME

SUBJECT TO THE FOLLOWING CONDITIONS:

- 1) The rate at which water is diverted within the bed of the Waimakariri River, within the area shown on attached plan CRC012006, shall not exceed 5 cubic metres per second. Except that whenever the flow in the Waimakariri River, as estimated by the Canterbury Regional Council from measurements at the Old Highway Bridge, at or about map reference NZMS 260 M35: 818-547, exceeds 370 cubic metres per second, the rate at which water is diverted within the bed of the Waimakariri River, within the area shown on attached plan CRC012006, shall not exceed 12.5 cubic metres per second.
- 2) Whenever the flow in the Waimakariri River, as estimated by the Canterbury Regional Council from measurements at the Old Highway Bridge, at or about map reference NZMS 260 M35: 818-547 is:
 - (a) Greater than 370 cubic metres per second, the rate at which water is taken from the Waimakariri River for stockwater and domestic purposes, at or about map reference NZMS 260 M35: 5241-4893, shall not exceed 1,700 litres per second.
 - (b) Greater than or equal to 41 cubic metres per second and less than or equal to 370 cubic metres per second, then the maximum rate of take for stockwater and domestic purposes shall not exceed 1,331 litres per second.
 - (c) Less than 41 cubic metres per second, the maximum rate of take for stockwater and domestic purposes shall not exceed 1,231 litres per second.
- 3) Whenever the flow in the Waimakariri River, as estimated by the Canterbury Regional Council from measurements at the Old Highway Bridge, at or about map reference NZMS 260 M35: 818-547, is
 - (a) (i) 63 cubic metres per second or greater, or
 - (ii) equal to or greater than the sum of 41 cubic metres per second plus the total abstractions authorised by permits which come within the category of "A" permits as defined by the Proposed Waimakariri River Regional Plan; or
 - (iii) greater than 41 cubic metres per second and less than 63 cubic metres per second and all water permit holders who are subject to the same minimum flow restriction of 41 cubic metres per second, are adhering to a water sharing regime that restricts the total rate of abstraction from the Waimakariri River whenever the flow is at or above 41 cubic metres per second;

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then the rate of abstraction for irrigation purposes shall not exceed 800 litres per second and the rate of abstraction for cooling purposes shall not exceed 99 litres per second.

- (b) greater than 41 cubic metres per second and less than 63 cubic metres per second, except where (a) (ii) or (iii) applies, the maximum rate of take during the next 24 hours shall be equal to the rate shown on the vertical axis on the attached graphs for irrigation and cooling purposes respectively (graphs CRC012006A and CRC021006B), that corresponds to that flow on the horizontal axis, by reference to the diagonal line.
 - (c) less than or equal to 41 cubic metres per second, the taking of water for irrigation and cooling purposes shall cease.
- (4) The taking of water for cooling purposes shall cease after 1 May 2002.
 - (5) The rate at which water is taken and used from the Paparua Water Race Network for irrigation purposes shall not exceed the rate of water that is taken from the Waimakariri River for irrigation purposes, in accordance with Condition (3).
 - (6) All necessary measures shall be undertaken to prevent fish entering the intake, including the installation of a fish screen with a 5 millimetre aperture grille, by no later than 1 March 2003.
 - (7) Fish screens shall be operated and maintained on all intakes within the Paparua Water Race Network, to ensure that fish are prevented from entering these intakes.
 - (8) The diversion of water shall not prevent the passage of fish over the entire length of the diversion and discharge channel, and particular regard shall be given to avoiding the stranding of fish in pools or channels.
 - 9) (a) The consent holder shall, in consultation with the Canterbury Regional Council appoint a consultant registered engineer experienced in the design of water race systems, to undertake an audit of the design and operation of the scheme (the audit), within 12 months of the commencement of this consent. The audit shall identify:
 - (i) any physical improvements that can reasonably be made to the scheme to minimise the loss of water and to improve efficiency of water use; and
 - (ii) measures, which can be implemented in the management of the scheme, to minimise the loss of water and to improve efficiency of water use.
 - (b) The audit shall consider the whole scheme, including, but not limited to, intake structures, gates, race bed sealing, flow rates along races, the race system and infrastructure, and control mechanisms.
 - (c) Within 18 months of the commencement of this consent, the consent holder shall provide the Canterbury Regional Council with:
 - (i) a copy of the audit report; and
 - (ii) a programme of any measures the consent holder has agreed to implement as a result of the audit.
 - (10) (a) Within six months of the commencement of this consent, the consent holder shall, install a water flow measuring device that has an International accreditation, New Zealand or equivalent calibration endorsement, to continuously measure the taking of water in terms of this permit to within an accuracy of 10 percent.

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- (b) The measuring device shall, as far as is practicable, be installed at a site likely to retain a stable rating. The measuring device shall be installed in accordance with established standards (National Institute of Water and Atmospheric research (NIWA) manual / standard) by competent / qualified person.
- (c) A site inspection of the site of the measuring device shall be carried out at least once every month to determine the need for re-gauging the site.
- (d) The measuring site shall be gauged at least every three months and at any time, when determined by a site inspection.
- (e) Gaugings and site inspections shall be carried out in accordance with the following manuals: Hydrologists Field Manual (NIWA 1991), Telemetry Manual (NIWA 1994), and Procedure for Rating a Flow Station (NIWA 1993) or any replacement publication.
- (f) The rates and times of abstraction shall be recorded by electronic means, at not greater than fifteen minute intervals, in a tamper-proof recording device such as a data-logger, kept for that purpose. The recorded data shall not be changed or deleted by any person, until after twelve months have passed since the date of recording.
- (g) The measuring and recording device shall be available for inspection at all times by the Canterbury Regional Council.
- (h) All data from the recording device described in clause (a) shall be provided to the Canterbury Regional Council on request, and shall be accessible and available for downloading at all times by the Canterbury Regional Council.
 - (i) Within six months of the commencement of this consent, and at five-yearly intervals thereafter, and at any other time when requested by Canterbury Regional Council, the consent holder shall provide a certificate to the Canterbury Regional Council signed by a suitably qualified person certifying the accuracy of the measuring and recording devices installed in accordance with clauses (a) and (b), and also certifying that data can be readily accessed.
- 11) The damming of water shall only occur as described in the consent application.
- 12) The consent holder shall take all practicable steps, for the irrigation component of this take, to:
 - (a) Ensure that the volume of water applied does not exceed that required for the soil to reach field capacity; and
 - (b) Avoid leakage from pipes and structures forming part of the reticulation system associated with the abstraction; and
 - (c) Avoid the application of abstracted water onto non-productive land such as impermeable surfaces and river or stream riparian strips.
- 13) When requested in writing by the Canterbury Regional Council, the rate at which water is taken from the water race for irrigation purposes shall be measured to within an accuracy of ten percent, and the measurement and the hours during which water is taken shall be recorded. A copy of the records shall be provided to the Canterbury Regional Council in accordance with the request.
- 14) The Canterbury Regional Council may, on any of the last five working days of April and September each year, serve notice of its intention to review the conditions of this consent for the purposes of:

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- (a) 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, including any adverse effect identified in the audit in condition 9.
- (b) altering the rate of abstraction to correspond to the actual rate of water usage.
- (c) requiring the implementation of measures, including any identified in the audit of condition 9, to monitor and / or reduce loss of water and to improve efficiency of water use.

ISSUED AT CHRISTCHURCH ON 24 DECEMBER 2002

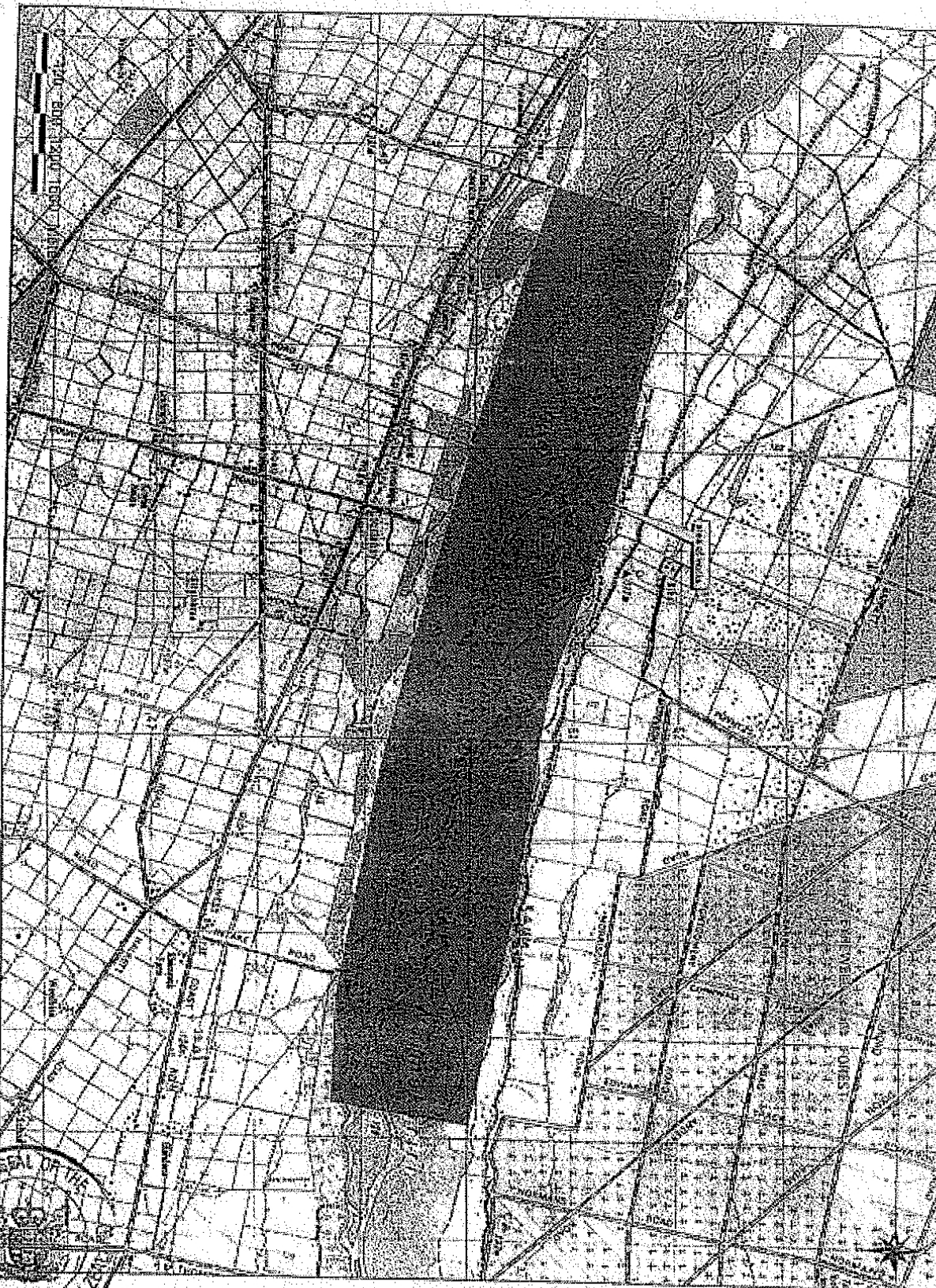
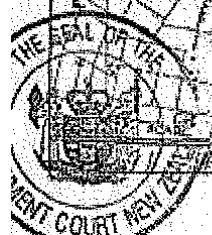


Tania Harris
TEAM LEADER CONSENTS ADMINISTRATION
on behalf of the Canterbury Regional Council

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PLAN C.R.C. 013006

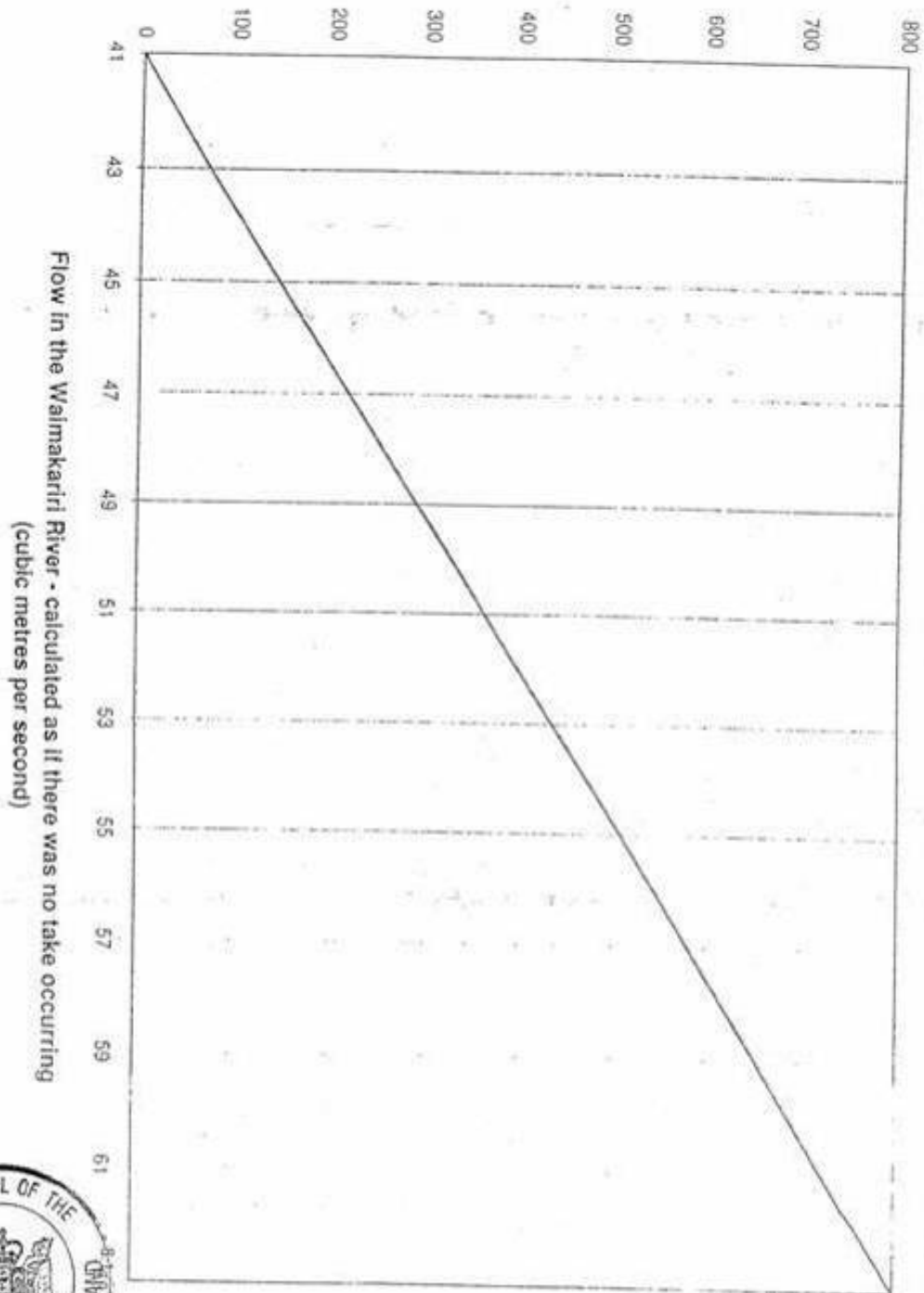


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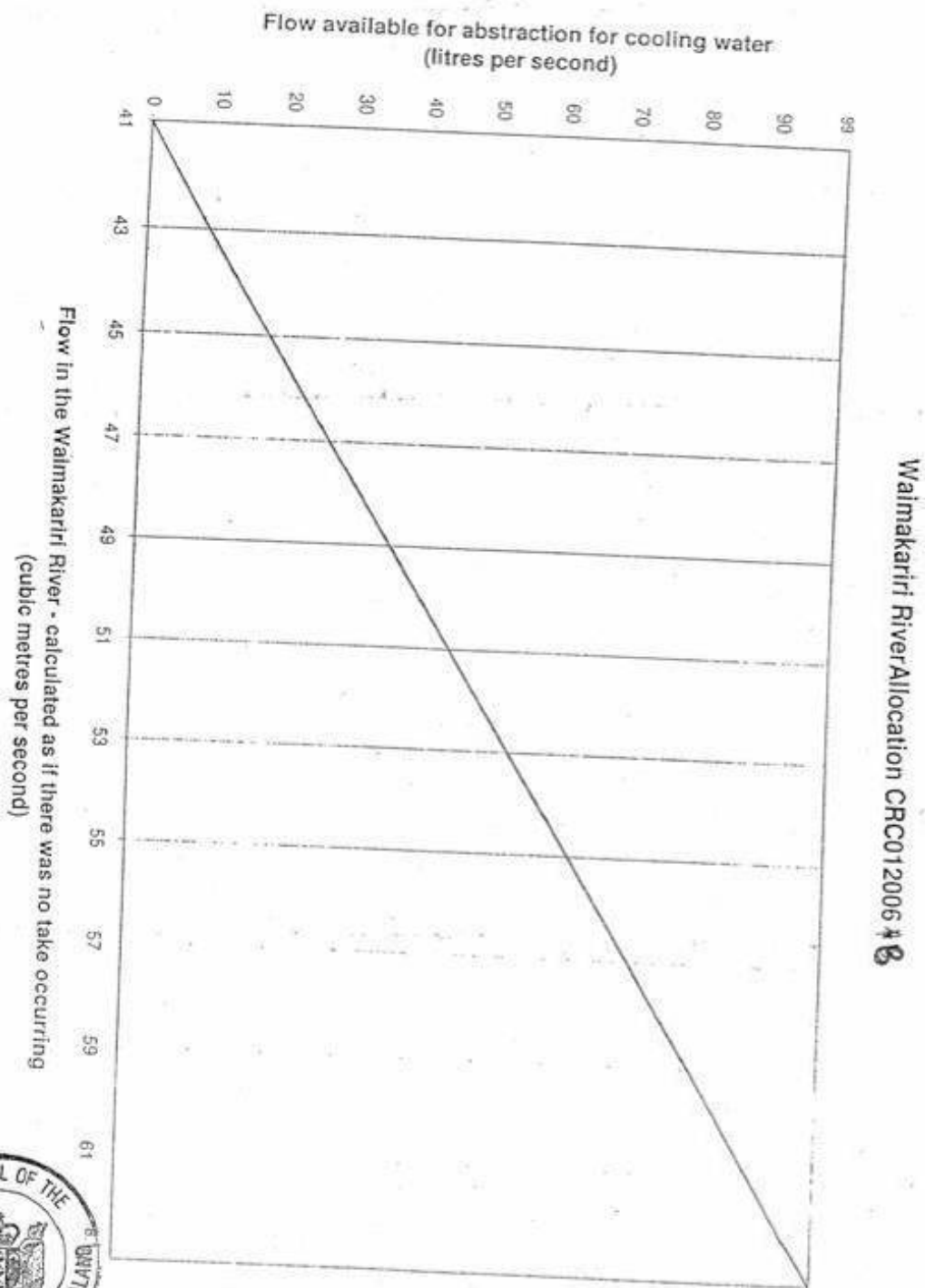
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Flow available for abstraction for irrigation use
(litres per second)

Waimakariri River Allocation CRC012006/A



C



RESOURCE CONSENT

Pursuant to Section 105 of the Resource Management Act 1991

The Canterbury Regional Council (known as Environment Canterbury)

GRANTS TO: SELWYN DISTRICT COUNCIL

A DISCHARGE PERMIT: to discharge water and water containing contaminants into land and/or water from the stockwater scheme at several points into drains and soakpits.

DATE GRANTED: 10-DEC-2002 **EXPIRY DATE:** 10-DEC-2037

IN CONNECTION WITH THE FOLLOWING PROPERTY:

LOCATION: STOCKWATER RACE NETWORK SELWYN DISTRICT, PAPARUA SCHEME

SUBJECT TO THE FOLLOWING CONDITIONS:

- 1) The rate at which water is discharged into the Waimakariri River downstream of map reference NZMS 260 M35: 5241-4893, shall not exceed 2,769 litre per second. Except that whenever the flow in the Waimakariri River, as estimated by the Canterbury Regional Council from measurements at the Old Highway Bridge, at or about map reference NZMS 260 M35: 818-547, exceeds 370 cubic metres per second, the rate at which water is discharged into the Waimakariri River, downstream of map reference NZMS 260 M35:5241-4893, shall not exceed 10 cubic metres per second.
- 2) The water shall only be discharged directly into an active channel of the Waimakariri River.
- 3) The discharge shall not cause erosion of the bed or banks of the Waimakariri River, or the waterways shown on attached plan CRC012007.1-6.
- 4) (a) The maximum rate at which water is discharged into the soakpits and drains identified on plans CRC012007 1-6 attached to this consent, shall not exceed 10 litres per second.
(b) The maximum rate at which water is discharged into disposal points identified on plans CRC012007 1-6, attached to this consent, shall not exceed 100 litres per second.
- 5) During the first two years from the date of commencement of this consent, a representative sample of water shall be taken:
 - (a) Monthly, from the following sites, as shown on plans CRC012007 1-6, attached to this consent.
 - (i) (1) The water race immediately prior to discharge into unnamed drain at Marshes Road that flows into Knights Stream, at or about map reference NZMS 260 M36: 7265-3663;
(2) the unnamed drain upstream of discharge;
(3) the unnamed drain 25 metres downstream of discharge;
 - (ii) (1) the water race immediately prior to discharge into unnamed drain at Tosswill Road that flows into Dawsons Creek, at or about map reference NZMS 260 M36: 7151-3512;
(2) the unnamed drain upstream of discharge;
(3) the unnamed drain 25 metres downstream of discharge;

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- (iii) (1) the water race immediately prior to discharge into the L1 River upstream of Lincoln township, at or about map reference NZMS 260 M36: 6832-3017;
 - (2) the unnamed drain upstream of discharge;
 - (3) the unnamed drain 25 metres downstream of discharge;
 - (iv) (1) the water race immediately prior to discharge into unnamed drain west of Ellesmere Road that flows into the Halswell River, at or about map reference NZMS 260 M36:7036-3002;
 - (2) the unnamed drain upstream of discharge;
 - (3) the unnamed drain 25 metres downstream of discharge;
 - (v) (1) the water race immediately prior to discharge into unnamed drain at Days Road that flows into the L11 River, at or about map reference NZMS 260 M36: 6474-2834;
 - (2) the unnamed drain upstream of discharge;
 - (3) the unnamed drain 25 metres downstream of discharge.
- (b) Within 24 hours after a flow in excess of 370 cubic metres per second in the Waimakariri River at Old Highway Bridge, from the sites listed in (a). When three samples have been taken and analysed from each site on separate occasions, no further samples need to be taken in accordance with this clause.
- (c) All samples shall be analysed for:
- (i) E. Coli
 - (ii) Nitrate Nitrogen (g/m³)
 - (iii) Temperature (°C)
 - (iv) Turbidity (g/m³)

The results of these analyses shall be provided on a monthly basis to the Canterbury Regional Council.

- 6) The laboratory carrying out analyses required under this consent shall be accredited to NZS/ISO/IEC Guide 17025 or equivalent defined by an accreditation body recognised as operating to ISO/IEC Guide 58 for those analyses.
- 7) All samples shall be taken by a suitably qualified and experienced person using methods approved by the American Public Health Association (APHA) or the American Society for the Testing of Materials (ASTM), for such sampling.
- 8) The Canterbury Regional Council shall be notified of the installation and use of any additional soakpits.
- 9) The Canterbury Regional Council may, on any of the last five working days of April each year, serve notice of its intention to review the conditions of this consent for the purposes of:
 - (a) 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; or
 - (b) requiring the adoption of the best practicable option to remove or reduce any adverse effect on the environment.

ISSUED AT CHRISTCHURCH ON 24 DECEMBER 2002



Tania Harris
TEAM LEADER CONSENTS ADMINISTRATION
 on behalf of the Canterbury Regional Council

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RESOURCE CONSENT

Pursuant to Section 105 of the Resource Management Act 1991

The Canterbury Regional Council (known as Environment Canterbury)

GRANTS TO: SELWYN DISTRICT COUNCIL

A LAND USE CONSENT: to disturb the bed of the Waimakariri River to maintain intake and discharge structures.

DATE GRANTED: 10-DEC-2002

EXPIRY DATE: 10-DEC-2037

IN CONNECTION WITH THE FOLLOWING PROPERTY:

LOCATION: STOCKWATER RACE NETWORK SELWYN DISTRICT, PAPARUA SCHEME

SUBJECT TO THE FOLLOWING CONDITIONS:

- 1) Works shall only be undertaken in the area shown on the accompanying plan CRC012005A.
 - (a) Works shall only be those necessary for forming new channels, widening, deepening and generally reinstating existing channels to activate flow in those channels, constructing temporary weirs to reactivate flow in those channels, constructing channels to redirect floodwaters back to a main channel, maintaining the weir and intake structure and intake channel area, and installing and maintaining erosion protection works, as shown in attached plan CRC012005B.
 - (b)
 - (i) the depth of excavation shall not exceed 0.5 metres below adjacent bed level.
 - (ii) the width of any diversion channels shall not exceed 40 metres.
 - (iii) the length of the diversion weirs shall not exceed 200 metres.
 - (iv) the height of the diversion weirs shall not exceed two metres above adjacent bed level.
 - (v) the width of excavation shall not exceed 75 metres.
- 2) The consent holder shall meet with Canterbury Regional Council during October each year to outline the scale of works to be undertaken by the consent holder to divert water and any erosion protection works required.
- 3) The consent holder shall notify the Canterbury Regional Council of its intention to carry out any works, and their intended type and scope, as soon as the consent holder has decided to undertake such works.
- 4)
 - (a) Works shall not cause erosion of the bed or banks of the Waimakariri River.
 - (b) Works shall not cause damage to 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; diversion channels; and structures erected for the purpose of flood protection.
 - (c) The consent holder shall repair and/or reinstate any erosion control works or access tracks in or alongside the riverbed, which are accidentally damaged or destroyed as a result of the exercise of this consent.

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- 5) Signs shall be erected at known river access points, where access to the river at that point involves crossing channels in which flows are subject to rapid change as a result of the exercise of this consent. The signs shall warn that flow in river channels may change suddenly.
- 6) The diversion works shall not prevent the passage of fish over the entire length of the diversion and discharge channels, and particular regard shall be given to avoiding the stranding of fish in pools or channels.
- 7) All practicable measures shall be undertaken to minimise the adverse effects on property, amenity values, wildlife, vegetation and ecological values.
- 8) 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.
- 9) Vehicles and machinery shall, as far as is practicable, not enter river channels containing flowing water.
- 10) As far as practicable, works shall not occur between April and August of any given year.
- 11) Prior to commencing works, a copy of this resource consent shall be given to all persons undertaking activities authorised by this consent.
- 12) The exercise of this consent shall not increase the suspended solids concentration of the water in the Waimakariri River by more than 20 percent at any point further than 200 metres downstream from where the work is occurring.
- 13) The Canterbury Regional Council may, on any of the last five working days of April each year, 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 consent and which it is appropriate to deal with at a later stage.

ISSUED AT CHRISTCHURCH ON 24 DECEMBER 2002



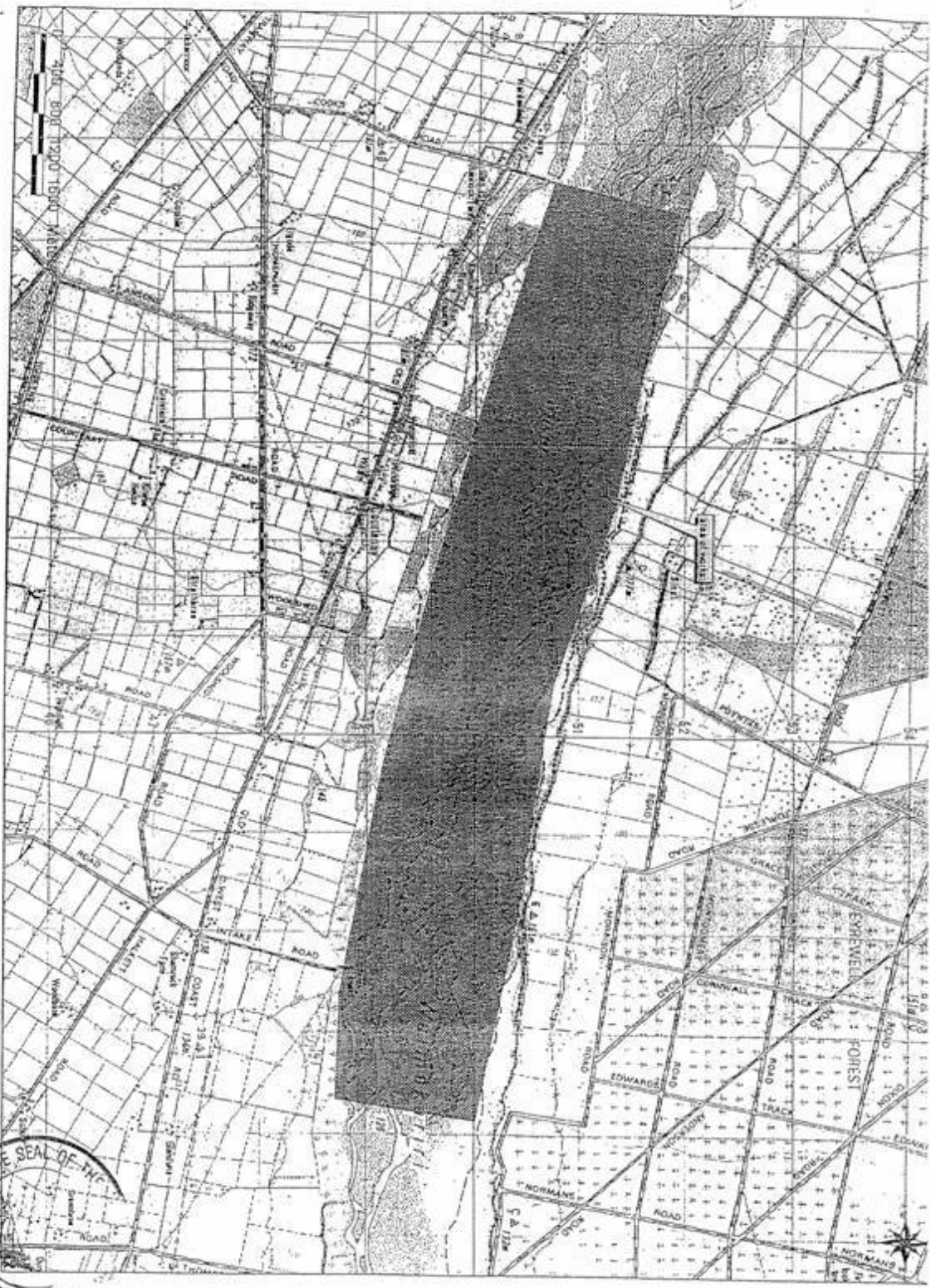
Tania Harris

TEAM LEADER CONSENTS ADMINISTRATION
on behalf of the Canterbury Regional Council

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PLAN CR0012005A



RESOURCE CONSENT CRC012004

Pursuant to Section 104 of the Resource Management Act 1991

The Canterbury Regional Council (known as Environment Canterbury)

GRANTS TO:	Selwyn District Council
A DISCHARGE PERMIT:	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.
COMMENCEMENT DATE:	31 January 2008
EXPIRY DATE:	5 November 2028
LOCATION:	Stockwater Race Network Selwyn District, MALVERN SCHEME

SUBJECT TO THE FOLLOWING CONDITIONS:

- 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:
 - (a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended material;
 - (b) any conspicuous change in colour or visual clarity;
 - (c) any emission of objectionable odour;
 - (d) the rendering of fresh water unsuitable for consumption by farm animals;
 - (e) 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.

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GENERAL CONDITIONS

- 9) 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).
- 10) 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.
- 11) The Management Plan shall include, but not be limited to, the provision of practices and procedures that ensure the following:
 - (a) All systems, procedures and processes enable the effective and efficient management of the network;
 - (b) Appropriate monitoring and reporting is undertaken in accordance with the resource consent conditions;
 - (c) Water users are informed of their obligations in respect of taking water from the network;
 - (d) Systems, procedures and processes to recognise and minimise adverse effects of management practices on the environment.
- 12) In particular the Management Plan shall address the following:
 - (a) A description of the intakes and their locations;
 - (b) Methods for recording and reporting on water use and a description of water measuring devices including calibration or meters or gauging assessment required;
 - (c) Methods of improving the efficiency of the use and transport of water distributed via the scheme;
 - (d) Operational procedures, including during floods and droughts;
 - (e) Methods and procedures for undertaking in-stream works;
 - (f) Maintenance procedures for the raceways including race cleaning;
 - (g) A description of known sites with high natural or ecological values;
 - (h) Methods and procedures for ensuring that management activities, particularly those carried out under (d), (e) and (f), avoid, remedy or mitigate adverse effects on sections of the race system known to have high natural or ecological values.
 - (i) Methods and procedures for monitoring water quality in the races and the discharges;
 - (j) Stakeholder consultation and reporting;
 - (k) 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.
- 13) Subject to any other conditions of these consents, all activities shall be undertaken in accordance with the latest version of the Management Plan.

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- 14) The consent holder may amend the Management Plan as required, and at least once every two years shall provide to the Canterbury Regional Council 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 Canterbury Regional Council, and with reference to the efficiency audit required by condition (9) of these general conditions.
- 15) The consent holder shall provide a copy of the amended Management Plan to the Canterbury Regional Council prior to its implementation specifying the objectives and the minimum requirements intended to meet those objectives.
- 16) The consent holder shall, in consultation with Canterbury Regional Council, 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:
 - (a) 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;
 - (b) The sections of the scheme which shall be closed (if required);
 - (c) A programme for implementation of measures identified above (a), and (b).
 - (d) Any practicable measures which can be taken to reduce the amount of water taken from the Kowai river at times of low flow.
 - (e) Any further investigations required to assist with the development of alternative water supplies.
 - (f) Prior to commencing the review the consent holder shall consult with DoC, F&G and shall agree with the Canterbury Regional Council on the terms of reference for the review.
- 17) Within 18 months of the commencement of this consent, the consent holder shall provide Canterbury Regional Council with:
 - (a) A copy of a report of the review undertaken in accordance with condition (16); and
 - (b) A programme of investigations and funding required to undertake the measures identified in condition (16)(d).
- 18) Prior to supplying the Canterbury Regional Council with a copy of the review, a draft version shall be made available to the DoC and F&G for their comments and the Canterbury Regional Council shall be notified of when this occurs.
- 19) Within 30 months of the commencement of this consent, the consent holder shall provide the Canterbury Regional Council with a report that details the outcomes of the investigations undertaken in accordance with condition (16)(e). The report shall include the outcomes of any consultation undertaken as to the suitability of the alternatives identified.

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- 20) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of resource consents CRC012002, CRC012003 and CRC012004 for the purposes of:
- (a) 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 (16), 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.

Issued at Christchurch on 29 January 2009



Carly Steers
ACTING TEAM LEADER CONSENTS OPERATIONS
on behalf of the Canterbury Regional Council

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RESOURCE CONSENT CRC012002
Pursuant to Section 104 of the Resource Management Act 1991
The Canterbury Regional Council (known as Environment Canterbury)

GRANTS TO: Selwyn District Council

A LAND USE CONSENT: 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.

COMMENCEMENT DATE: 31 January 2008

EXPIRY DATE: 5 November 2028

LOCATION: Stockwater Race Network Selwyn District, MALVERN SCHEME

SUBJECT TO THE FOLLOWING CONDITIONS:

- 1) The intakes shall occur from:
 - (a) Waimakariri Gorge intake of the Waimakariri River at or about map reference NZMS 260 L35: 3297-6094;
 - (b) Upper Kowai intake of the Kowai River at or about map reference NZMS 260 L35: 1687-6299;
 - (c) Lower Kowai intake of the Kowai River at or about map reference NZMS 260 L35: 1781-6347;
 - (d) Bishop Creek booster of Bishop Gully Creek at or about map reference NZMS 260 L35: 2071-6364;
 - (e) Blacks Creek booster of Black Creek Spring at or about map reference NZMS 260 L35: 3144-4647;
 - (f) Springfield Creek booster number 1 of Springfield Creek at or about map reference NZMS 260 L35: 2420-6283;
 - (g) Springfield Creek booster number 2 of Springfield Creek at or about map reference NZMS 260 L35: 2473-6312; and
 - (h) Skurrs Spring booster of Bishop Skurrs Spring at or about map reference NZMS 260 L35: 3358-5844,
 - (i) Glentunnel Intake of the Selwyn River at our about map reference NZMS 260 L35: 2479-4678.
- 2) The diversion shall take place between map references:
 - (a) Waimakariri Gorge intake at map reference NZMS 260 L35:3297-6054;
 - (b) Upper Kowai intake at map reference NZMS 260 L35:1673-6297;
 - (c) Lower Kowai intake at map reference NZMS 260 L35:1768-6346;
 - (d) Bishop Creek booster at map reference NZMS 260 L35:1781-6347;
 - (e) Blacks Creek booster at map reference NZMS 260 L35:3144-4647;
 - (f) Springfield Creek booster number 1 at map reference NZMS 260 L35:2420-6283;
 - (g) Springfield Creek booster number 2 at map reference NZMS 260 L35:2473-6312;
 - (h) Skurrs Spring booster at map reference NZMS 260 L35:3358-5844, and
 - (i) 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.

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- 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 Canterbury Regional Council 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 Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, upon request.

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GENERAL CONDITIONS

- 18) 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).
- 19) 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.
- 20) The Management Plan shall include, but not be limited to, the provision of practices and procedures that ensure the following:
 - (a) All systems, procedures and processes enable the effective and efficient management of the network;
 - (b) Appropriate monitoring and reporting is undertaken in accordance with the resource consent conditions;
 - (c) Water users are informed of their obligations in respect of taking water from the network;
 - (d) Systems, procedures and processes to recognise and minimise adverse effects of management practices on the environment.
- 21) In particular the Management Plan shall address the following:
 - (a) A description of the intakes and their locations;
 - (b) Methods for recording and reporting on water use and a description of water measuring devices including calibration or meters or gauging assessment required;
 - (c) Methods of improving the efficiency of the use and transport of water distributed via the scheme;
 - (d) Operational procedures, including during floods and droughts;
 - (e) Methods and procedures for undertaking in-stream works;
 - (f) Maintenance procedures for the raceways including race cleaning;
 - (g) A description of known sites with high natural or ecological values;
 - (h) Methods and procedures for ensuring that management activities, particularly those carried out under (d), (e) and (f), avoid, remedy or mitigate adverse effects on sections of the race system known to have high natural or ecological values.
 - (i) Methods and procedures for monitoring water quality in the races and the discharges;
 - (j) Stakeholder consultation and reporting;
 - (k) 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.
- 22) Subject to any other conditions of these consents, all activities shall be undertaken in accordance with the latest version of the Management Plan.

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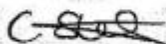
- 23) The consent holder may amend the Management Plan as required, and at least once every two years shall provide to the CRC a report indicating amendments that have been made to improve the operational efficiency of the Scheme and/or to reduce adverse environmental effects. Any such amendments to 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 Canterbury Regional Council, and with reference to the efficiency audit required by condition (18) of these general conditions.
- 24) The consent holder shall provide a copy of the amended Management Plan to the Canterbury Regional Council prior to its implementation specifying the objectives and the minimum requirements intended to meet those objectives.
- 25) The consent holder shall, in consultation with Canterbury Regional Council, 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:
- (a) 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.
 - (b) The sections of the scheme which shall be closed (if required).
 - (c) A programme for implementation of measures identified above (a), and (b).
 - (d) Any practicable measures which can be taken to reduce the amount of water taken from the Kowai river at times of low flow.
 - (e) Any further investigations required to assist with the development of alternative water supplies.
 - (f) Prior to commencing the review the consent holder shall consult with DoC, F&G and shall agree with the Canterbury Regional Council on the terms of reference for the review.
- 26) Within 18 months of the commencement of this consent, the consent holder shall provide Canterbury Regional Council with:
- (a) A copy of a report of the review undertaken in accordance with condition (25); and
 - (b) A programme of investigations and funding required to undertake the measures identified in condition (25)(d).
- 27) Prior to supplying the Canterbury Regional Council with a copy of the review, a draft version shall be made available to the DoC and F&G for their comments and the Canterbury Regional Council shall be notified of when this occurs.
- 28) Within 30 months of the commencement of this consent, the consent holder shall provide the Canterbury Regional Council with a report that details the outcomes of the investigations undertaken in accordance with condition (25)(e). The report shall include the outcomes of any consultation undertaken as to the suitability of the alternatives identified.

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- 29) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of resource consents CRC012002, CRC012003 and CRC012004 for the purposes of:
- (a) 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 (25), 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.

Issued at Christchurch on 29 January 2009



Carly Steers
ACTING TEAM LEADER CONSENTS OPERATIONS
on behalf of the Canterbury Regional Council

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RESOURCE CONSENT CRC012003

Pursuant to Section 104 of the Resource Management Act 1991

The Canterbury Regional Council (known as Environment Canterbury)

GRANTS TO: Selwyn District Council

A WATER PERMIT: To divert, take and use water from the Kowai River, Waimakariri River, Selwyn River, Bishop Gully Creek, Skurrs Spring, Springfield Creek and Black Creek.

COMMENCEMENT DATE: 5 November 2008

EXPIRY DATE: 5 November 2028

LOCATION: Stockwater Race Network Selwyn District, MALVERN SCHEME

SUBJECT TO THE FOLLOWING CONDITIONS:

- 1) The diversion of water from surface water bodies shall take place at the following map references:
 - (a) Waimakariri Gorge intake of the Waimakariri River at or about map reference NZMS 260 L35:330-604;
 - (b) Upper Kowai intake of the Kowai River at or about map reference NZMS 260 L35:167-628;
 - (c) Lower Kowai intake of the Kowai River at or about map reference NZMS 260 L35:177-633;
 - (d) Glentunnel intake of the Selwyn River at or about map reference NZMS 260 L35:243-463;
 - (e) Bishop Creek booster of Bishop Gully Creek at or about map reference NZMS 260 L35:212-634;
 - (f) Black Creek booster of Black Creek Spring at or about map reference NZMS 260 L35:315-462;
 - (g) Springfield Creek booster number 1 of Springfield Creek at or about map reference NZMS 260 L35:249-627;
 - (h) Springfield Creek booster number 2 of Springfield Creek at or about map reference NZMS 260 L35:243-463; and
 - (i) 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:
 - (a) greater than 63000 l/s, the rate at which water is taken from the Waimakariri shall not exceed 800 l/s;
 - (b) between 63000 l/s and 41000 l/s, the rate at which water is taken from the Waimakariri shall not exceed 700 l/s;
 - (c) less than 41000 l/s, the rate at which water is taken from the Waimakariri shall not exceed 630 l/s.

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KOWAI RIVER

- 3) (a) Until the third anniversary of this consent the maximum rate of take from the Kowai River shall:
- (i) not exceed 1,100 litres per second at the upper Kowai intake and shall not exceed 630 litres per second at the lower Kowai intake whenever the flow (above the Selwyn District Council intake at or about map reference NZMS 260 L35:1687-6299) is greater than 7,000 litres per second;
 - (ii) not exceed the corresponding rate on the vertical axis of the annexed **Graph 1**, supplemented by the corresponding part of Table One, whenever the flow above the Selwyn District Council intake at or about map reference NZMS 260 L35:1687-6299 falls below the corresponding flow shown on the horizontal axis of **Graph 1**;
 - (iii) cease at the lower Kowai intake and may continue at the upper Kowai intake whenever the flow above the Selwyn District Council intake at or about map reference NZMS 260 L35:1687-6299 is less than 435 litres per second.
- (b) After third anniversary the following flow regime shall apply:
- (i) the maximum rate of take at the upper Kowai intake shall not exceed 1,100 litres per second and the take at the lower Kowai intake shall not exceed 630 litres per second whenever the flow above the Selwyn District Council intake at or about map reference NZMS 260 L35:1687-6299 is greater than 7,000 litres per second;
 - (ii) the maximum rate of take shall not exceed the corresponding rate on the vertical axis of the annexed **Graph 2**, supplemented by the corresponding part of Table One, whenever the flow above the Selwyn District Council intake at or about map reference NZMS 260 L35:1687-6299 falls below the flows shown on the horizontal axis of the annexed **Graph 2**;
 - (iii) the take at the lower Kowai intake shall cease and the take at the upper Kowai intake may continue whenever the flow above the Selwyn District Council intake at or about map reference NZMS 260 L35:1687-6299 is less than 435 litres per second.
- (c) The consent holder shall install and maintain a flow recorder in the Kowai River below the confluence with Thirteen Mile Bush Stream and upstream of the stock water intake for the purpose of establishing a relationship of flows in the Kowai River with flows in the Selwyn River at the Whitecliffs hydrometric station.
- (d) The consent holder shall provide to Canterbury Regional Council a certificate from a suitably qualified and/or experienced hydrologist advising the type of flow recorder and confirming that the flow recorder is suitable for the purpose of confirming the relationship of flows in the Kowai River with the Selwyn at Whitecliffs hydrometric station.
- (e) The flow recorder shall be installed and maintained by a suitably qualified and/or experienced hydrologist for a period of not less than 24 months from the time of installation.
- (f) The consent holder shall provide in June the flow records for the previous 12 months to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager.
- (g) The flow recorder shall be installed as soon as is practically possible and no later than six months after the commencement of this consent.
- 4) Whenever the flows in the Selwyn River are:
- (a) above 10,000 l/s the rate at which water is taken from the Selwyn shall not exceed 280 l/s;
 - (b) between 9,999 l/s and 500 l/s, the rate at which water is taken from the Selwyn shall not exceed 250 l/s;
 - (c) less than 500 l/s, the rate at which water is taken from the Selwyn shall not exceed 250 l/s.

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- 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)(a)(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)(a)(ii), (iii) and (iv) above, and an operation and maintenance plan for the fish screen(s) shall be provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager; and
 - (vi) A certificate shall be provided to the Canterbury Regional Council 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 Canterbury Regional Council in accordance with condition (6)(a)(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 Canterbury Regional Council upon request.
- (b) A fish exclusion structure shall not be required to be installed within the two 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 three 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.

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- (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 Canterbury Regional Council 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 Canterbury Regional Council on request, and shall be accessible and available for downloading at all times by the Canterbury Regional Council.
 - (h) Within one month of the commencement of this consent, at two-yearly intervals thereafter, and at any other time when requested by Canterbury Regional Council, the consent holder shall calibrate the measuring device and provide to the Canterbury Regional Council:
 - (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:
- (a) be set to wrap the data from the measuring device(s) such that the oldest data will be automatically overwritten by the newest data (i.e. cyclic recording); or
 - (b) store the entire season's data in each 12 month period from 1 July to 30 June in the following year, which the consent holder shall then download and store 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 Canterbury Regional Council; or
 - (c) 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 Canterbury Regional Council upon request in a form and to a standard specified in writing by the Canterbury Regional Council; or
 - (d) be connected to a telemetry system which collects and stores all of the data continuously with an independent network provider who will make that data available in a commonly used format at all times to the Canterbury Regional Council and the consent holder. No data in the recording device(s) shall be deliberately changed or deleted.
- 9) The flow monitoring site and recording device(s) shall be accessible to the Canterbury Regional Council 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.

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- 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 Canterbury Regional Council, the consent holder shall provide a certificate to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, signed by a suitably qualified person certifying, 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 conditions (8) and (9).

GENERAL CONDITIONS

- 13) 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).
- 14) 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.
- 15) The Management Plan shall include, but not be limited to, the provision of practices and procedures that ensure the following:
 - (a) All systems, procedures and processes enable the effective and efficient management of the network;
 - (b) Appropriate monitoring and reporting is undertaken in accordance with the resource consent conditions;
 - (c) Water users are informed of their obligations in respect of taking water from the network;
 - (d) Systems, procedures and processes to recognise and minimise adverse effects of management practices on the environment.
- 16) In particular the Management Plan shall address the following:
 - (a) A description of the intakes and their locations;
 - (b) Methods for recording and reporting on water use and a description of water measuring devices including calibration or meters or gauging assessment required;
 - (c) Methods of improving the efficiency of the use and transport of water distributed via the scheme;
 - (d) Operational procedures, including during floods and droughts;
 - (e) Methods and procedures for undertaking in-stream works;
 - (f) Maintenance procedures for the raceways including race cleaning;
 - (g) A description of known sites with high natural or ecological values;
 - (h) Methods and procedures for ensuring that management activities, particularly those carried out under (d), (e) and (f), avoid, remedy or mitigate adverse effects on sections of the race system known to have high natural or ecological values.

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- (i) Methods and procedures for monitoring water quality in the races and the discharges;
 - (j) Stakeholder consultation and reporting;
 - (k) 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.
- 17) Subject to any other conditions of these consents, all activities shall be undertaken in accordance with the latest version of the Management Plan.
- 18) The consent holder may amend the Management Plan as required, and at least once every two years shall provide to the Canterbury Regional Council 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 Canterbury Regional Council, and with reference to the efficiency audit required by condition (13) of these general conditions.
- 19) The consent holder shall provide a copy of the amended Management Plan to the Canterbury Regional Council prior to its implementation specifying the objectives and the minimum requirements intended to meet those objectives.
- 20) The consent holder shall, in consultation with Canterbury Regional Council, 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:
- (a) 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;
 - (b) The sections of the scheme which shall be closed (if required);
 - (c) A programme for implementation of measures identified above (a), and (b).
 - (d) Any practicable measures which can be taken to reduce the amount of water taken from the Kowai river at times of low flow.
 - (e) Any further investigations required to assist with the development of alternative water supplies.
 - (f) Prior to commencing the review the consent holder shall consult with DoC, F&G and shall agree with the Canterbury Regional Council on the terms of reference for the review.
- 21) Within 18 months of the commencement of this consent, the consent holder shall provide Canterbury Regional Council with:
- (a) A copy of a report of the review undertaken in accordance with condition (20); and
 - (b) A programme of investigations and funding required to undertake the measures identified in condition (20)(d).
- 22) Prior to supplying the Canterbury Regional Council with a copy of the review, a draft version shall be made available to the DoC and F&G for their comments and the Canterbury Regional Council shall be notified of when this occurs.
- 23) Within 30 months of the commencement of this consent, the consent holder shall provide the Canterbury Regional Council with a report that details the outcomes of the investigations undertaken in accordance with condition (20)(e). The report shall include the outcomes of any consultation undertaken as to the suitability of the alternatives identified.

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- 24) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of resource consents CRC012002, CRC012003 and CRC012004 for the purposes of:
- (a) 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 (20), 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.

Issued at Christchurch on 29 January 2009

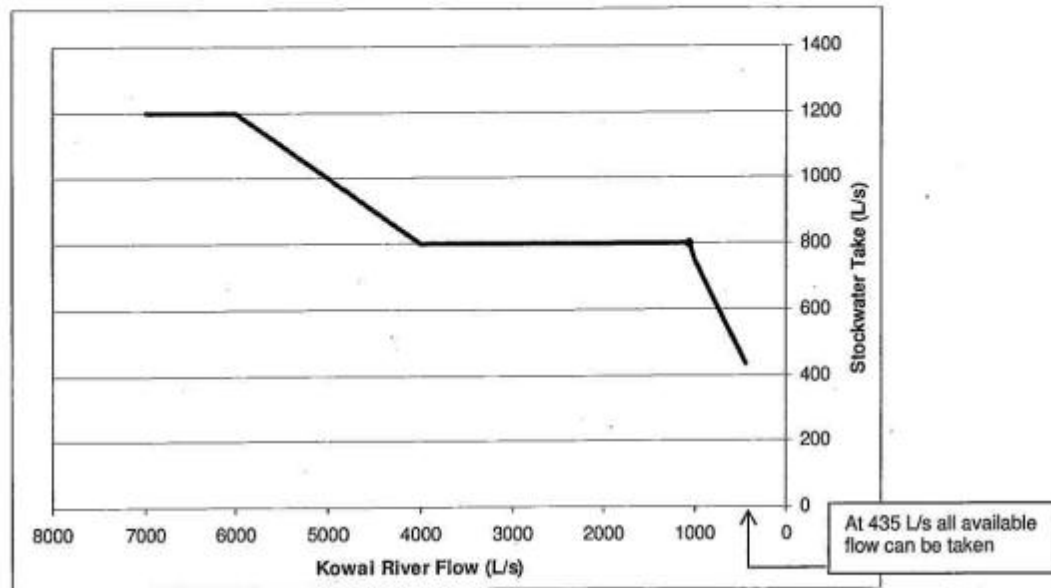


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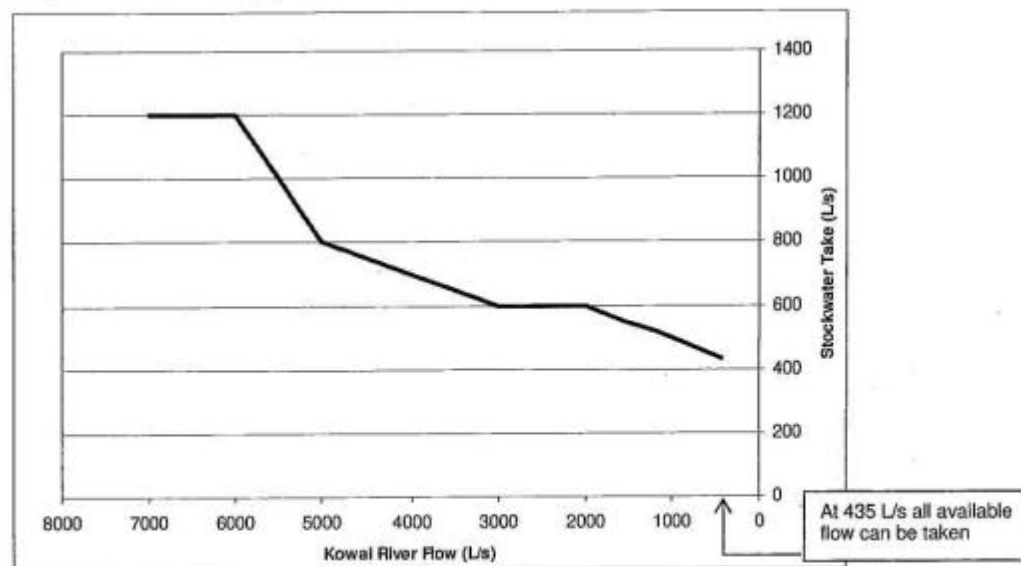


Graph 1 for Condition 3(a)



Condition 3(a)		Condition 3(b)	
Flow in Kowai River (litres per second)	Maximum volume that can be taken for stockwater (litres per second)	Flow in Kowai River (litres per second)	Maximum volume that can be taken for stockwater (litres per second)
greater than 6000	1,200	greater than 6000	1,200
6000 – 4000	20% of the Kowai River flow	6000 - 3000	Relationship as shown on graph
4000 – 1050	800	3,000 – 2,000	600
1050 - 435	Linear relationship as shown on graph	2000 - 435	Relationship as shown on graph
less than 435	All available water at Upper Intake can be taken No take from Lower Intake	less than 435	All available water at Upper Intake can be taken No take from Lower Intake

Graph 2 for Condition 3(b)



RESOURCE CONSENT CRC011996
Pursuant to Section 104 of the Resource Management Act 1991
The Canterbury Regional Council (known as Environment Canterbury)

GRANTS TO:	Selwyn District Council
A WATER PERMIT:	To take from Rakaia River at Headworks Road and Hororata River.
COMMENCEMENT DATE:	21 November 2011
EXPIRY DATE:	21 November 2031
LOCATION:	Stockwater Race Network Selwyn District, ELLESMERE SCHEME

SUBJECT TO THE FOLLOWING CONDITIONS:

- 1) The consent holder shall within three months of the commencement of this consent provide Canterbury Regional Council (CRC) with a copy of a 'Water 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 meet the conditions under this resource consent.

The Management Plan shall include, but not be limited to, the provision of practices and procedures that ensure the following:

- (a) All systems, procedures and processes enable the effective and efficient management of the network;
- (b) Appropriate monitoring and reporting is undertaken in accordance with the resource consent conditions;
- (c) Water users are informed of their obligations in respect of taking water from the network;
- (d) Systems, procedures and processes to recognise and minimise adverse effects of management practices on the environment.

In particular the Management Plan shall address the following:

- (a) A description of the intakes and their locations;
- (b) Methods for recording and reporting on water use and a description of water measuring devices including calibration or meters or gauging assessment required;
- (c) Methods of improving the efficiency of the use and transport of water distributed via the scheme;
- (d) Operational procedures, including during floods and droughts;
- (e) Methods and procedures for undertaking in-stream works;
- (f) Maintenance procedures for the raceways including race cleaning;
- (g) A description of known sites with high natural or ecological values;
- (h) Methods and procedures for ensuring that management activities, particularly those carried out under (e), (f) and (g), avoid, remedy or mitigate adverse effects on sections of the race system known to have high natural or ecological values; and
- (i) Stakeholder consultation and response reporting.

As part of the first 2 yearly review of the Water Race Management Plan, the Consent Holder shall submit to Canterbury Regional Council an updated version of the Management Plan that includes, but is not limited to:

- (a) An assessment of the ecological values of the stockwater race system
- (b) Management objectives that address those ecological values and their enhancement
- (c) A strategy, plan and/or programme for management of ecological values
- (d) Operational guidelines or procedures to manage ecological values throughout the race system
- (e) Approaches that can be adopted to address water quality issues.

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Subject to any other conditions of these consents, all activities shall be undertaken in accordance with the latest version of the Management Plan.

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. The consent holder shall provide a copy of the amended management plan to CRC.

- 2) The diversion of water from surface water bodies shall take place at the following map references:
 - (a) From the Rakaia River via the existing intake structure at Headworks Road at or about map reference NZMS 260 L36: 3600-1710.
 - (b) From the Hororata River via the existing intake structure at Haldon Road at or about map reference NZMS 260 L36: 2950-3711.

- 3) (a) The maximum rate of diversion and taking of water from the Hororata River in terms of this permit shall not exceed 341 litres per second;

EXCEPT THAT WHENEVER:

- (i) the flow in the Hororata River estimated at the diversion exceeds 475 l/s; and
- (ii) there is a residual flow in the Hororata River immediately downstream of the Haldon intake point of 134 l/s;

the maximum rate of diversion and taking shall not exceed 500 L/s.

- (b) The flows in the Hororata River shall be monitored downstream of the Haldon intake (Haldon Site) in accordance with an interim regime as agreed with the consent authority with the objective of establishing a correlation between the Haldon Site and the Canterbury Regional Council Mitchells Road flow recorder site (Mitchells Site).
- (c) The correlation between the Haldon and Mitchells sites shall be reviewed annually by the consent holder and consent authority until agreement in writing is reached. When the agreed correlation is established the monitoring site shall be the Mitchells Site;

HOWEVER

If no correlation is established the consent holder shall maintain a hydrological rating downstream of the take that is suitable for the summer low flow period. A gauge board shall be maintained year round and readings taken during the summer low flow period.

- (d) The diversion and taking of water from the Rakaia River at Headworks Road in terms of this permit shall not exceed 500 litres per second.

EXCEPT THAT WHENEVER

the flow in the Rakaia River at Fighting Hill, at or about map reference NZMS 260 K:35:9970-4370, exceeds 660 cubic metres per second the maximum rate of diversion and taking of water shall not exceed 600 litres per second.

- 4) The weir at or about map reference NZMS 260 L36:295-370 on the Hororata River shall not exceed 20 metres in width and either 1.3 metres or the natural height of the river banks whichever is less.
- 5) The damming of water shall be limited to that which occurs behind diversion banks (at or about map reference NZMS 260 L36: 2950-3710) and existing intake structure (at or about map reference NZMS 260 L36: 2950-3711).

- 6) The diversion of water shall not prevent fish passage or cause erosion of the bed and banks of the watercourse.
- 7) The consent holder shall within three years of the first exercise of this consent, design, construct, operate and maintain a fish exclusion device in accordance with the NIWA publication 'Fish Screening: Good Practice Guidelines for Canterbury, October 2007', NIWA client report CHC2007-092 at the Rakia River at Headworks Road intake and Hororata River Haldon intake or in the diversion channels subject to:
 - (a) Water shall only be taken when a fish exclusion device with the following design criteria, or a device that achieves the same, or better, level of fish exclusion effectiveness is operated and maintained across the intake to ensure that fish and fish fry are prevented from passing through the intake.
 - (b) The fish exclusion device shall have a maximum mesh width and height size of three millimetres or slot width and height of two millimetres is operated and maintained across the intake to ensure that fish and fish fry are prevented from passing through the intake screen.
 - (c) The fish exclusion device shall be positioned to ensure that there is unimpeded fish passage to and from the waterway and to avoid the entrapment of fish at the point of abstraction, and to minimise the risk of fish being damaged by contact with the face of the exclusion device.
 - (d) The fish exclusion device shall be designed and installed to ensure that:
 - (i) The majority of the exclusion device surface is oriented parallel to the direction of water flow.
 - (ii) Where reasonable, the exclusion device is positioned in the water column a minimum of 300 millimetres above the bed of the waterway and a minimum of one exclusion device radius from the surface of the water.
 - (iii) The approach velocity perpendicular to the face of the exclusion device shall not exceed 0.06 metres per second if no self-cleaning mechanism exists, or 0.12 metres per second if a self-cleaning mechanism is operational.
 - (iv) The sweep velocity parallel to the face of the exclusion device shall exceed the design approach velocity.
 - (e) The fish exclusion device shall be designed or supplied by a suitably qualified independent person who shall ensure that the design criteria specified in condition 7(a) –(d)(iv) of this consent is achieved. Prior to the installation of the fish exclusion device, a report containing final design plans and illustrating how the fish exclusion device will meet the stated design criteria, and an operation and maintenance plan for the fish exclusion device shall be provided to the Canterbury Regional Council, attention RMA Compliance and Enforcement Manager.
 - (f) A certificate shall be provided to the Canterbury Regional Council by the designer or supplier of the fish exclusion device to certify that the fish exclusion device has been installed in accordance with the details provided to the Canterbury Regional Council in accordance with condition 7(e) of this consent.
 - (g) The fish exclusion device shall be maintained in good working order. Records shall be kept of all inspections and maintenance, and those records shall be provided to the Canterbury Regional Council upon request.
 - (h) The consent holder shall supply annually in November each year an update to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, on the progress of installing fish exclusion devices, until required devices are in place.
- 8)
 - (a) The consent holder shall, within 12 months of the commencement of this consent install and maintain a water measuring device that is capable of measuring the rate of water taken to an accuracy in proportion with the significance of this take but not less than $\pm 10\%$; and which is suitable for use with an electronic recording device.
 - (b) Install a tamper-proof electronic recording device such as a data logger that records or logs the pulse totals at hourly intervals and has the capacity to hold at least 12 months water use data.

- (c) The consent holder shall provide to the Canterbury Regional Council, at least on an annual basis, or upon reasonable request, auditable recorded data in a csv format specified by Canterbury Regional Council.
 - (d) The consent holder shall have the accuracy of the device installed in accordance with (a) verified within 3 months of installation of the device and at five yearly intervals thereafter. Results of this verification shall be provided to the Canterbury Regional Council within one month of the results being received by the consent holder.
- 9)
 - (a) The consent holder shall, in consultation with CRC, appoint a suitably qualified person to undertake a review of the Haldon section of scheme (the review), within 12 months of the date of commencement of this consent. The objective of the review is to identify alternatives for improving the water use efficiency of the Haldon section of the Ellesmere Water Race.
 - (b)
 - (i) Prior to commencing the review the consent holder shall consult with Mr Steven Gerard on the terms of reference for the review.
 - (i) A copy of the terms of reference shall be supplied to the consent authority.
 - (c) 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 could be considered for closure (if required);
 - (iii) A programme for implementation of measures identified above (i), and (ii).
 - (iv) Any reasonable measures which can be taken to reduce the amount of water taken from the Hororata River at times of low flow.
 - (v) Any further investigations required to assist with the development of alternative water supplies.
 - (vi) The potential (including costs) to increase the capacity and flow in the Cross Race so as to supplement the Haldon Scheme and reduce to rate/frequency of take from the Hororata River.
 - (d) Within 24 months of the commencement of this consent, the consent holder shall provide Canterbury Regional Council and Mr Steven Gerard with a copy of a report of the review undertaken in accordance with condition 9(a) above.
- 10) The consent holder shall by 31 August each year provide to Canterbury Regional Council a record of any sections of race that have been closed over the previous 12 month period being 1 July to 30 June.
- 11) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.

Issued at Christchurch on 23 March 2012

Canterbury Regional Council

RESOURCE CONSENT CRC970987

Pursuant to Section 104 of the Resource Management Act 1991

The Canterbury Regional Council (known as Environment Canterbury)

GRANTS TO:	Selwyn District Council
A WATER PERMIT:	To divert, take and use water at Earlys Intake.
COMMENCEMENT DATE:	21 November 2011
EXPIRY DATE:	21 November 2031
LOCATION:	Steeles Road, TE PIRITA

SUBJECT TO THE FOLLOWING CONDITIONS:

- 1) The consent holder shall within three months of the commencement of this consent provide Canterbury Regional Council (CRC) with a copy of a 'Water 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 meet the conditions under this resource consent.

The Management Plan shall include, but not be limited to, the provision of practices and procedures that ensure the following:

- (a) All systems, procedures and processes enable the effective and efficient management of the network;
- (b) Appropriate monitoring and reporting is undertaken in accordance with the resource consent conditions;
- (c) Water users are informed of their obligations in respect of taking water from the network;
- (d) Systems, procedures and processes to recognise and minimise adverse effects of management practices on the environment.

In particular the Management Plan shall address the following:

- (a) A description of the intakes and their locations;
- (b) Methods for recording and reporting on water use and a description of water measuring devices including calibration or meters or gauging assessment required;
- (c) Methods of improving the efficiency of the use and transport of water distributed via the scheme;
- (d) Operational procedures, including during floods and droughts;
- (e) Methods and procedures for undertaking in-stream works;
- (f) Maintenance procedures for the raceways including race cleaning;
- (g) A description of known sites with high natural or ecological values;
- (h) Methods and procedures for ensuring that management activities, particularly those carried out under (e), (f) and (g), avoid, remedy or mitigate adverse effects on sections of the race system known to have high natural or ecological values; and
- (i) Stakeholder consultation and response reporting.

As part of the first 2 yearly review of the Water Race Management Plan, the Consent Holder shall submit to Canterbury Regional Council an updated version of the Management Plan that includes, but is not limited to:

- (a) An assessment of the ecological values of the stockwater race system
- (b) Management objectives that address those ecological values and their enhancement
- (c) A strategy, plan and/or programme for management of ecological values
- (d) Operational guidelines or procedures to manage ecological values throughout the race system
- (e) Approaches that can be adopted to address water quality issues.

Subject to any other conditions of these consents, all activities shall be undertaken in accordance with the latest version of the Management Plan.

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. The consent holder shall provide a copy of the amended management plan to CRC.

- 2) (a) The rate at which water is diverted from the Rakaia River into Early's Intake for the taking of water specified in the table of consents listed below (or any subsequent replacement or transferred consents), at or about map reference NZMS 260 L36:137-329, shall not exceed 1,143 litres per second.

Number	Rate(L/s)
CRC990979.2	113
CRC042529	192
CRC990901	38
CRC050198	38
CRC980976	30
CRC970987	732

- (b) The combined diversion from this consent and diversion authorised in Condition (1)(b) of resource consent CRC052056.1 or any subsequent replacement consent shall not exceed 1,143 litres per second.
- 3) Water may be taken at a rate not exceeding 732 litres per second and shall only be used for stock-water purposes.
- 4) In the event that the existing fish screen (installed as per consent CRC052056.1 or any replacement consent) is not used as part of this consent, the consent holder shall install and maintain a fish exclusion device such that:
- a) (i) fish and fish fry are prevented from passing through the intake and from being trapped against the fish screen; and
- (ii) Ensure that the seepage velocity down into the buried mesh drum intake shall not exceed 0.12 m/s.
- (iii) Ensure that a fish by-pass flow back to an active braid of the Rakaia River is maintained with a continuous flow of at least five percent of the total diversion in a channel with the following minimum dimensions: 0.25 m deep, 0.6 m wide, and a minimum velocity at the entrance to the by-pass of 1.5 m/s.
- b) The consent holder shall cease diverting water and within 24 hours of the fish screen becoming damaged or ineffective, notify the Canterbury Regional Council, Attention: Manager, RMA Compliance, of the situation and of any remedial measures including fish salvage to be implemented. The diversion and taking of water shall not recommence until the effectiveness of the fish screen has been restored in accordance with the specifications detailed in this condition.
- 5) The diversion shall not prevent the passage of fish over the entire length of the fish bypass channel, and particular regard shall be given to avoiding the stranding of fish in pools or channels.
- 6) (a) The consent holder shall, within 12 months of the commencement of this consent install and maintain a water measuring device that is capable of measuring the rate of water taken to an accuracy in proportion with the significance of this take but not less than $\pm 10\%$; and which is suitable for use with an electronic recording device.

- (b) Install a tamper-proof electronic recording device such as a data logger that records or logs the pulse totals at hourly intervals and has the capacity to hold at least 12 months water use data.
- (c) The consent holder shall provide to the Canterbury Regional Council, at least on an annual basis, or upon reasonable request, auditable recorded data in a csv format specified by Canterbury Regional Council.

The consent holder shall have the accuracy of the device installed in accordance with (a) verified within 3 months of installation of the device and at five yearly intervals thereafter. Results of this verification shall be provided to the Canterbury Regional Council within one month of the results being received by the consent holder.

- 7)
 - (a) Within eight months the consent holder shall install a water level measuring device that has an international accreditation or equivalent New Zealand calibration endorsement, and has pulse output, suitable for use with an electronic recording device, to continuously measure the consent holders diversion and taking of 732 L/s of water to within an accuracy of plus or minus ten percent.
 - (b) Water levels shall be recorded by electronic means, at not greater than fifteen minute intervals, in a tamper-proof recording device such as a data-logger, kept for that purpose. The recorded data shall not be changed or deleted by any person, unless twelve months have passed since the date of recording;
 - (c) The measuring and recording devices shall be available for inspection at all times by the Canterbury Regional Council subject to providing adequate protection against vandalism which may require the consent holder's assistance on site to unlock or remove barriers.
 - (d) All data from the recording device described in clause (a), shall be provided to the Canterbury Regional Council, Attention: Manager, RMA Compliance, on request, and shall be accessible and available for downloading at all times by the Canterbury Regional Council;
 - (e) Within one month of the commencement of this consent, or the installation of a new measuring or recording device, and at five-yearly intervals thereafter, and at any other time when requested by Canterbury Regional Council, the consent holder shall provide a certificate to the Canterbury Regional Council Attention: Manager, RMA Compliance signed by a suitably qualified person certifying the accuracy of the measuring and recording devices installed in accordance with clause (a), and also certifying that data from the recording device described in clause (b) can be readily accessed in accordance with clause (d).
- 8) The consent holder shall by 31 August each year provide to Canterbury Regional Council a record of any sections of race that have been closed over the previous 12 month period being 1 July to 30 June.
- 9) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.

Issued at Christchurch on 23 March 2012

Canterbury Regional Council

RESOURCE CONSENT CRC972765

Pursuant to Section 104 of the Resource Management Act 1991

The Canterbury Regional Council (known as Environment Canterbury)

GRANTS TO: Selwyn District Council

A DISCHARGE PERMIT: To discharge water to the Rakaia River.

COMMENCEMENT DATE: 21 November 2011

EXPIRY DATE: 21 November 2031

LOCATION: Steeles Road, TE PIRITA

SUBJECT TO THE FOLLOWING CONDITIONS:

- 1) The consent holder shall within three months of the commencement of this consent provide Canterbury Regional Council (CRC) with a copy of a 'Water 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 meet the conditions under this resource consent.

The Management Plan shall include, but not be limited to, the provision of practices and procedures that ensure the following:

- (a) All systems, procedures and processes enable the effective and efficient management of the network;
- (b) Appropriate monitoring and reporting is undertaken in accordance with the resource consent conditions;
- (c) Water users are informed of their obligations in respect of taking water from the network;
- (d) Systems, procedures and processes to recognise and minimise adverse effects of management practices on the environment.

In particular the Management Plan shall address the following:

- (a) A description of the intakes and their locations;
- (b) Methods for recording and reporting on water use and a description of water measuring devices including calibration or meters or gauging assessment required;
- (c) Methods of improving the efficiency of the use and transport of water distributed via the scheme;
- (d) Operational procedures, including during floods and droughts;
- (e) Methods and procedures for undertaking in-stream works;
- (f) Maintenance procedures for the raceways including race cleaning;
- (g) A description of known sites with high natural or ecological values;
- (h) Methods and procedures for ensuring that management activities, particularly those carried out under (e), (f) and (g), avoid, remedy or mitigate adverse effects on sections of the race system known to have high natural or ecological values; and
- (i) Stakeholder consultation and response reporting.

As part of the first 2 yearly review of the Water Race Management Plan, the Consent Holder shall submit to Canterbury Regional Council an updated version of the Management Plan that includes, but is not limited to:

- (a) An assessment of the ecological values of the stockwater race system
- (b) Management objectives that address those ecological values and their enhancement
- (c) A strategy, plan and/or programme for management of ecological values
- (d) Operational guidelines or procedures to manage ecological values throughout the race system
- (e) Approaches that can be adopted to address water quality issues.

Subject to any other conditions of these consents, all activities shall be undertaken in accordance with the latest version of the Management Plan.

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. The consent holder shall provide a copy of the amended management plan to CRC.

- 2) The rate at which water is discharged between at or about map references NZMS 260 L36:137-328 and NZMS 260 L36:138-319, shall not exceed 3,500 litres per second.
- 3) The discharge shall not cause erosion of the bed or banks of the Rakaia River.
- 4) The discharge of water shall not cause ponding of water or flooding on any land adjacent to the discharge channel.
- 5) The discharge of water shall as far as practicable not restrict legal public access to the Rakaia River.
- 6) The discharge shall not prevent the passage of fish along the diversion and discharge channel, and particular regard shall be given to avoiding the stranding of fish in pools or channels.
- 7) The discharge to surface water shall not give rise to the following effects:
 - (a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended material;
 - (b) the visual clarity of the water shall not be reduced by more than twenty percent;
 - (c) the rendering of fresh water unsuitable for consumption by farm animals.
- 8) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.

Issued at Christchurch on 23 March 2012

Canterbury Regional Council

RESOURCE CONSENT CRC010976

Pursuant to Section 104 of the Resource Management Act 1991

The Canterbury Regional Council (known as Environment Canterbury)

GRANTS TO:	Selwyn District Council
A DISCHARGE PERMIT:	To discharge unused water from race to Rakaia River.
COMMENCEMENT DATE:	21 November 2011
EXPIRY DATE:	21 November 2031
LOCATION:	Steeles Road, TE PIRITA

SUBJECT TO THE FOLLOWING CONDITIONS:

- 1) The consent holder shall within three months of the commencement of this consent provide Canterbury Regional Council (CRC) with a copy of a 'Water 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 meet the conditions under this resource consent.

The Management Plan shall include, but not be limited to, the provision of practices and procedures that ensure the following:

- (a) All systems, procedures and processes enable the effective and efficient management of the network;
- (b) Appropriate monitoring and reporting is undertaken in accordance with the resource consent conditions;
- (c) Water users are informed of their obligations in respect of taking water from the network;
- (d) Systems, procedures and processes to recognise and minimise adverse effects of management practices on the environment.

In particular the Management Plan shall address the following:

- (a) A description of the intakes and their locations;
- (b) Methods for recording and reporting on water use and a description of water measuring devices including calibration or meters or gauging assessment required;
- (c) Methods of improving the efficiency of the use and transport of water distributed via the scheme;
- (d) Operational procedures, including during floods and droughts;
- (e) Methods and procedures for undertaking in-stream works;
- (f) Maintenance procedures for the raceways including race cleaning;
- (g) A description of known sites with high natural or ecological values;
- (h) Methods and procedures for ensuring that management activities, particularly those carried out under (e), (f) and (g), avoid, remedy or mitigate adverse effects on sections of the race system known to have high natural or ecological values; and
- (i) Stakeholder consultation and response reporting.

As part of the first 2 yearly review of the Water Race Management Plan, the Consent Holder shall submit to Canterbury Regional Council an updated version of the Management Plan that includes, but is not limited to:

- (a) An assessment of the ecological values of the stockwater race system
- (b) Management objectives that address those ecological values and their enhancement
- (c) A strategy, plan and/or programme for management of ecological values
- (d) Operational guidelines or procedures to manage ecological values throughout the race system
- (e) Approaches that can be adopted to address water quality issues.

Subject to any other conditions of these consents, all activities shall be undertaken in accordance with the latest version of the Management Plan.

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. The consent holder shall provide a copy of the amended management plan to CRC.

- 2)
 - (a) The rate at which water is discharged, at or about map reference NZMS 260 L36:193-270, shall not exceed 1,143 litres per second.
 - (b) The discharge shall only be water that has been diverted in accordance with the associated diversion consent CRC010987.
- 3) The discharge shall not cause erosion of the bed or banks of the receiving water course including the Rakaia River.
- 4) The discharge shall not prevent or impede the passage of fish along the diversion channel and shall not cause the stranding of fish in pools and channels.
- 5) The discharge of water shall not adversely affect public access along existing legal routes to and along the surface water courses.
- 6) The discharge to surface water shall not give rise to the following effects:
 - (a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended material;
 - (b) the visual clarity of the water shall not be reduced by more than twenty percent;
 - (c) the rendering of fresh water unsuitable for consumption by farm animals.
- 7) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.

Issued at Christchurch on 23 March 2012

Canterbury Regional Council

RESOURCE CONSENT CRC011993

Pursuant to Section 104 of the Resource Management Act 1991
The Canterbury Regional Council (known as Environment Canterbury)

GRANTS TO:	Selwyn District Council
A LAND USE CONSENT:	To disturb bed of the Hororata River.
COMMENCEMENT DATE:	21 November 2011
EXPIRY DATE:	21 November 2031
LOCATION:	Stockwater Race Network Selwyn District, ELLESMERE SCHEME

SUBJECT TO THE FOLLOWING CONDITIONS:

- 1) The consent holder shall within three months of the commencement of this consent provide Canterbury Regional Council (CRC) with a copy of a 'Water 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 meet the conditions under this resource consent.

The Management Plan shall include, but not be limited to, the provision of practices and procedures that ensure the following:

- (a) All systems, procedures and processes enable the effective and efficient management of the network;
- (b) Appropriate monitoring and reporting is undertaken in accordance with the resource consent conditions;
- (c) Water users are informed of their obligations in respect of taking water from the network;
- (d) Systems, procedures and processes to recognise and minimise adverse effects of management practices on the environment.

In particular the Management Plan shall address the following:

- (a) A description of the intakes and their locations;
- (b) Methods for recording and reporting on water use and a description of water measuring devices including calibration or meters or gauging assessment required;
- (c) Methods of improving the efficiency of the use and transport of water distributed via the scheme;
- (d) Operational procedures, including during floods and droughts;
- (e) Methods and procedures for undertaking in-stream works;
- (f) Maintenance procedures for the raceways including race cleaning;
- (g) A description of known sites with high natural or ecological values;
- (h) Methods and procedures for ensuring that management activities, particularly those carried out under (e), (f) and (g), avoid, remedy or mitigate adverse effects on sections of the race system known to have high natural or ecological values; and
- (i) Stakeholder consultation and response reporting.

As part of the first 2 yearly review of the Water Race Management Plan, the Consent Holder shall submit to Canterbury Regional Council an updated version of the Management Plan that includes, but is not limited to:

- (a) An assessment of the ecological values of the stockwater race system
- (b) Management objectives that address those ecological values and their enhancement
- (c) A strategy, plan and/or programme for management of ecological values
- (d) Operational guidelines or procedures to manage ecological values throughout the race system
- (e) Approaches that can be adopted to address water quality issues.

Subject to any other conditions of these consents, all activities shall be undertaken in accordance with the latest version of the Management Plan.

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. The consent holder shall provide a copy of the amended management plan to CRC.

- 2) The works carried out in accordance with this condition shall be located at:
 - (a) Rakaia River, up to 20 metres upstream and 20 metres downstream of the existing intake structure on the north bank, at Headworks Road, Rakaia at or about map reference NZMS 260 L36: 3600-1710;
 - (b) Hororata River up to 2,000 metres upstream and 100 metres downstream of the existing intake structure on the south bank at Haldon Road 5,000 metres southeast of Hororata at or about map reference NZMS 260 L36: 2950-3710; and
 - (c) Mill Farm Creek, a tributary of the Hororata River from the Hororata River and Mill Farm Creek confluence at or about map reference NZMS 260 L36: 2950-3710 up to 400 metres upstream.
- 3) The works shall be limited to:
 - (a) The maintenance of the intake structures and associated infrastructures.
 - (b) The excavation and disturbance of the bed required for the maintenance work.
- 4) Prior to commencing excavation, a copy of this resource consent shall be given to all persons undertaking activities authorised by this consent.
- 5) 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.
- 6)
 - (a) All practicable measures shall be undertaken to prevent oil and fuel leaks from vehicles and machinery.
 - (b) There shall be no storage of fuel or refuelling of vehicles and machinery within 20 metres of the bed of a river.
 - (c) Fuel shall be stored securely or removed from site overnight.
- 7)
 - (a) All practicable measures shall be undertaken to minimise vehicles and machinery entering the Rakaia River and Hororata River.
 - (b) Vehicle and machinery shall, as far as practicable, not enter river channels containing flowing water.
- 8) The consent holder shall adopt the best practicable options to:
 - (a) Minimise soil disturbance and prevent soil erosion;
 - (b) Prevent sediment from flowing into any surface water; and
 - (c) Avoid placing cut or cleared vegetation, debris, or excavated material in a position such that it may enter surface water.
- 9) Works shall not cause erosion of the banks and bed of the Rakaia River and Hororata River.
- 10) All practicable measures shall be undertaken to ensure that works do not deflect floodwaters into the berm.
- 11) The works shall not prevent the passage of fish, or cause the stranding of fish in pools or channels.

- 12) (a) The consent holder shall take all practicable steps to avoid cementitious material entering the Rakaia River and Hororata River including waste wash water from tools and machinery.
(b) Cement shall be stored securely or removed from site overnight.
- 13) All practicable measures shall be undertaken to minimise adverse effects on property, amenity values, wildlife, vegetation, and ecological values.
- 14) As far as reasonable, no works shall occur within 100 metres of sites where birds are breeding or nesting on the bed of the river.
- 15) In the event of any disturbance of Kōiwi Tangata (human bones) or taonga (treasured artefacts), the consent holder shall immediately:
 - (a) Advise the Canterbury Regional Council of the disturbance;
 - (b) Advise the Upoko Runanga of Taumutu Runanga or their representative, and the New Zealand Historic Places Trust, of the disturbance; and
 - (c) Cease earthmoving operations in the affected area until an area has been marked off around the site, and Kaumatua and archaeologists have given approval for the earthmoving to recommence.

Note: This condition is in addition to any agreements that are in place between the consent holder and the Upoko Runanga (Cultural Site Accidental Discovery Protocol) or the New Zealand Historic Places Trust.

- 16) Machinery shall be free of plants and plant seeds prior to use in the riverbed.
- 17) 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 Biosecurity New Zealand's 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 Environment Canterbury Customer Services.

- 18) All spoil and other waste material from the works shall be removed from site on completion of works.
- 19) All disturbed areas shall be stabilised following completion of the works.
- 20) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.
- 21) The lapsing date for the purposes of section 125 shall be 30 September 2014.

Issued at Christchurch on 23 March 2012

Canterbury Regional Council

RESOURCE CONSENT CRC970986

Pursuant to Section 104 of the Resource Management Act 1991

The Canterbury Regional Council (known as Environment Canterbury)

GRANTS TO:	Selwyn District Council
A WATER PERMIT:	To divert water from the Rakaia River.
COMMENCEMENT DATE:	21 November 2011
EXPIRY DATE:	21 November 2031
LOCATION:	Steeles Road, TE PIRITA

SUBJECT TO THE FOLLOWING CONDITIONS:

- 1) The consent holder shall within three months of the commencement of this consent provide Canterbury Regional Council (CRC) with a copy of a 'Water 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 meet the conditions under this resource consent.

The Management Plan shall include, but not be limited to, the provision of practices and procedures that ensure the following:

- (a) All systems, procedures and processes enable the effective and efficient management of the network;
- (b) Appropriate monitoring and reporting is undertaken in accordance with the resource consent conditions;
- (c) Water users are informed of their obligations in respect of taking water from the network;
- (d) Systems, procedures and processes to recognise and minimise adverse effects of management practices on the environment.

In particular the Management Plan shall address the following:

- (a) A description of the intakes and their locations;
- (b) Methods for recording and reporting on water use and a description of water measuring devices including calibration or meters or gauging assessment required;
- (c) Methods of improving the efficiency of the use and transport of water distributed via the scheme;
- (d) Operational procedures, including during floods and droughts;
- (e) Methods and procedures for undertaking in-stream works;
- (f) Maintenance procedures for the raceways including race cleaning;
- (g) A description of known sites with high natural or ecological values;
- (h) Methods and procedures for ensuring that management activities, particularly those carried out under (e), (f) and (g), avoid, remedy or mitigate adverse effects on sections of the race system known to have high natural or ecological values; and
- (i) Stakeholder consultation and response reporting.

As part of the first 2 yearly review of the Water Race Management Plan, the Consent Holder shall submit to Canterbury Regional Council an updated version of the Management Plan that includes, but is not limited to:

- (a) An assessment of the ecological values of the stockwater race system
- (b) Management objectives that address those ecological values and their enhancement
- (c) A strategy, plan and/or programme for management of ecological values
- (d) Operational guidelines or procedures to manage ecological values throughout the race system
- (e) Approaches that can be adopted to address water quality issues.

Subject to any other conditions of these consents, all activities shall be undertaken in accordance with the latest version of the Management Plan.

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. The consent holder shall provide a copy of the amended management plan to CRC.

- 2) The rate at which water is diverted from the Rakaia River into a diversion channel, between map references NZMS 260 L36:110-350 and NZMS 260 L36:127-334, shall not exceed 3,500 litres per second.
- 3) The diversion shall not prevent the passage of fish along the diversion and discharge channel and particular regard shall be given to avoiding the stranding of fish in pools or channels.
- 4) The diversion of water shall as far as practicable not restrict legal public access to the Rakaia River.
- 5) The diversion of water shall not cause ponding of water or flooding on any land adjacent to the diversion channel.
- 6) The diversion of water shall not cause erosion of the banks or bed of the Rakaia River.
- 7) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.

Issued at Christchurch on 23 March 2012

Canterbury Regional Council

RESOURCE CONSENT CRC012001

Pursuant to Section 104 of the Resource Management Act 1991

The Canterbury Regional Council (known as Environment Canterbury)

GRANTS TO:	Selwyn District Council
A DISCHARGE PERMIT:	To discharge to Hororata River from overflow and general discharge.
COMMENCEMENT DATE:	21 November 2011
EXPIRY DATE:	21 November 2031
LOCATION:	Stockwater Race Network Selwyn District, ELLESMERE SCHEME

SUBJECT TO THE FOLLOWING CONDITIONS:

- 1) The consent holder shall within three months of the commencement of this consent provide Canterbury Regional Council (CRC) with a copy of a 'Water 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 meet the conditions under this resource consent.

The Management Plan shall include, but not be limited to, the provision of practices and procedures that ensure the following:

- (a) All systems, procedures and processes enable the effective and efficient management of the network;
- (b) Appropriate monitoring and reporting is undertaken in accordance with the resource consent conditions;
- (c) Water users are informed of their obligations in respect of taking water from the network;
- (d) Systems, procedures and processes to recognise and minimise adverse effects of management practices on the environment.

In particular the Management Plan shall address the following:

- (a) A description of the intakes and their locations;
- (b) Methods for recording and reporting on water use and a description of water measuring devices including calibration or meters or gauging assessment required;
- (c) Methods of improving the efficiency of the use and transport of water distributed via the scheme;
- (d) Operational procedures, including during floods and droughts;
- (e) Methods and procedures for undertaking in-stream works;
- (f) Maintenance procedures for the raceways including race cleaning;
- (g) A description of known sites with high natural or ecological values;
- (h) Methods and procedures for ensuring that management activities, particularly those carried out under (e), (f) and (g), avoid, remedy or mitigate adverse effects on sections of the race system known to have high natural or ecological values; and
- (i) Stakeholder consultation and response reporting.

As part of the first 2 yearly review of the Water Race Management Plan, the Consent Holder shall submit to Canterbury Regional Council an updated version of the Management Plan that includes, but is not limited to:

- (a) An assessment of the ecological values of the stockwater race system
- (b) Management objectives that address those ecological values and their enhancement
- (c) A strategy, plan and/or programme for management of ecological values
- (d) Operational guidelines or procedures to manage ecological values throughout the race system
- (e) Approaches that can be adopted to address water quality issues.

Subject to any other conditions of these consents, all activities shall be undertaken in accordance with the latest version of the Management Plan.

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. The consent holder shall provide a copy of the amended management plan to CRC.

- 2) The rate at which water is discharged to the Hororata River via the overflow channel at or about map reference NZMS 260 L36:3630-2951, shall not exceed 3,000 litres per second.
- 3) The discharge authorised under condition 1 shall only occur if the Hororata River overtops its' banks into the Haldon stockwater race.
- 4)
 - (a) The discharge shall only be water that has been diverted in accordance with the associated diversion consent CRC011996.
 - (b) The rate at which water is discharged to soakpits, and natural water courses shall not exceed the quantity authorised in the associated diversion consent CRC011996.
- 5) The discharge shall not cause erosion of the bed or banks of the Rakaia River and Hororata River.
- 6) 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.
- 7) The discharge of water shall not adversely affect public access along existing legal routes to and along the surface water courses.
- 8) The discharge shall not cause erosion to the bed or banks of the receiving water courses.
- 9) The discharge to surface water shall not give rise to the following effects:
 - (a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended material;
 - (b) the visual clarity of the water shall not be reduced by more than twenty percent;
 - (c) the rendering of fresh water unsuitable for consumption by farm animals
- 10)
 - (a) From the date of commencement of this consent and continuing for two years, monthly water sampling shall be undertaken at the Hororata River above the point of take and at two discharge sites.
 - (b) 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.
- 11) If it is necessary to relocate soakholes, the consent holder shall ensure that the discharge at the new location:
 - (a) avoids surface flooding of land surrounding soakholes;
 - (b) is not within 100 metres of any well used to supply potable water
 - (c) is not on Ngai Tahu sites of significance.

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

Issued at Christchurch on 23 March 2012

Canterbury Regional Council

APPENDIX K HISTORICAL INFORMATION

Ellesmere Stock Water Race System

Haldon Scheme (Originally Known as “Hororata Scheme”)

This scheme was estimated to supply 70,000 acres (28,300 ha) was the first district supply to be completed to the point where block supplies could be taken (Block Supplies were individual supplies to unit areas of 1500 acres (500 ha)).

Construction at the intake commenced in April 1880 and was completed in September of the same year with initial race construction following immediately. The Hororata Water Race District was created on 31 May 1881 much to the delight of the Rakaia Road Board in having put one across their rivals to the north of the Selwyn.

To meet the demand for more water chiefly for the Ellesmere District a second intake was build about 1885. It is recorded that the design capacity of the intake for this 1885 scheme was 6,500,000 gals per day or 342 litres per second (cf. flow recorded on 12 February 1992 was 334 litres per second).

During the late 1950's the scheme was extended by the Selwyn County Council through the efforts of the Council's Engineer (D.M. Patterson).

Throughout its life the system has proved to be extremely reliable and has become known for its reliability apart from water shortages in very dry periods. Owing to the protected nature of the Hororata catchment the sediment load is almost non existent and the water is usually clean.

Te Pirita Scheme

The intake for the Te Pirita Scheme on the Rakaia River was begun concurrently in 1880 with the Haldon intake. The first contract included 11.27 km of timber fluming (half of it rising up the Rakaia Terrace). In all the fluming ran for 17.7 kms.

The 1893 plans for an extra Rakaia supply were deferred but a few years later a new intake and a five kilometre embanked headrace were constructed to replace most of the fluming and to greatly increase the area that could be supplied. It is recorded that the design capacity of this scheme of 1900 was 10,000,000 gals per day or 525 litres per second (cf. 643 litres per second recorded on 12 February 1992). The inability to control the inflow from the Rakaia River and leaks along the terrace led to numerous and continual problems which caused shortages of water. These increasing shortages of water were highlighted around 1929 when there were disputes about how much water was being delivered to supply extensions across the Main South Road into the Ellesmere County area of 1911. At this point 11 races fed across SH1 and were supposed to deliver 5,227,000 gals per day or 275 litres per second (cf. recorded flows on 12 February add up to 277 litres per second). At that time this figure was disputed as it was estimated that it took no account of 2,000,000 gals per day water loss to evaporation and percolation nor of low river flows. Arguments continued until the amalgamation of the areas in 1963.

Early's intake was used by the Council for a temporary supply as early as 1938 because of a major race washout. Another major washout in 1959 virtually forced the county into taking over Early's intake and enlarging it to provide more water to cope with continuing extensions. It is understood

that improvements to the terrace race were carried out in conjunction with this work. In the 1970's a new water right was obtained as the previous existing use water right flow allowance was insufficient. One of the conditions for the new water right was the installation of a fish screen at the intake. The Haldon and Te Pirita schemes passed to Ellesmere in the 1963 amalgamation.

Rakaia Bridge Scheme

It is understood that the Lower Rakaia or Rakaia Bridge intake was constructed about 1887 and that water was initially taken from the same north channel as was feeding the Te Pirita intake. Although this meant that the channel was reasonably stable at this time it also meant that the two Rakaia intakes were competing for the same water. In later years the main problems have been with maintaining flows to the intake while still protecting the intake from damage by the frequent floods in the river itself. With the advent of the North Rakaia Irrigation Scheme in 1976 problems of maintaining flows were reduced because of the shared intake and the larger flows required for irrigation.

No information on flows or design capacity have been found but the intake has not altered for a number of years so the flow of 387 litres per second should be close to historical flows.

Malvern Stock Water Race System

The initial investigation which led to the present Malvern Stock Water Race System was motivated by Colonel James de-Renzie Brett in 1871 following his private investigation of an irrigation scheme from the Waimakariri to serve the Courtenay-Kirwee area. John Hall was instrumental in having the concept enlarged to cover more than just the Malvern area.

Kowai Intake

The final scheme approved by Parliament in the Canterbury Water Supply Act 1874 was a modified scheme for purely a stock water supply with a dam and intake on the Kowai River near the present SH73 Bridge and the supply district defined as the land between the Waimakariri and the Rakaia Rivers. Work started on the headworks in August 1876 and were completed late in 1877. The discharge capacity of the works was estimated at this stage to be 28,000,000 gals a day (or 1513 litres per second). However the works were useless to supply the plains as the water was carried by tunnel and a race for about 4kms to be discharged into Bishops Creek and then about 6kms downstream to the Hawkins River where it was soon lost in the gravels to groundwater. It was immediately apparent that the water had to be transported overland so by July 1878 a 2km extension of the race system had been constructed towards Sheffield from Bishops Creek 2km below Springfield. By 1881 the race system had reached Waddington by a further extension of 4km including a 240m long culvert around the Sheffield Railway Station. Here the flow was divided with one branch going to Kirwee and the other to Darfield. Eventually in November 1881 Selwyn County Council proclaimed the Malvern water race district of 118,000 acres or 47,750 hectares covering virtually the area of the present Malvern Water Race System.

At this stage water was being carted to farms but the great objective of abolishing cartage and bringing water to every homestead and every paddock had still to be attained.

Water was to be supplied to each block of 1500 acres (600 ha) at the rate of 200 gals per acre per day (this has never been achieved).

Some irrigation was allowed in this original design but it was considered that for full irrigation about 10 times the amount of water would be required.

It was noted that although percolation was small the dry northwesterners had an appreciable effect in reducing the quantity of water delivered to the lower ends of the races.

By January 1883 Kowai water has reached Rolleston and soon after Burnham.

Smaller schemes were supplying the Greendale district (from the Hawkins at Waddington 1884) and the area between the Selwyn and Waireka (from the Selwyn at Glentunnel 1886).

By 1884 the Council and the farmers had to face that fact that the Malvern Scheme was overtaxed and at risk. Primitive maintenance methods led to trouble in every flood at the Kowai headworks. Eventually after significant delays plans to supplement the Kowai supply from the Waimakariri were approved and implemented (as recorded below).

In March 1902 a major flood put paid to the Kowai headworks, the damage being compounded by neglected maintenance especially of the tunnel which was virtually filled with shingle. As the job of cleaning the tunnel was considered of questionable value so it was abandoned for the time being and a new intake was constructed about 1km upstream. This with only minor modifications is the present upper intake of the Malvern Scheme.

Still there were problems in maintaining the flows. So three years later an auxiliary intake and cutting were made to feed the tunnel where workmen were faced with the mammoth task of clearing the tunnel.

Waimakariri Intake

Plans to obtain a supplementary supply from the Waimakariri were approved in April 1885 but were not proceeded with until they reappeared in 1889. construction of the intake tunnel and the open cut race up the terrace to join the main Kowai race at Kimberley was completed in September 1891.

Similar problems to those at the Kowai were experienced at the Waimakariri during the early 1990's.

Disaster followed recurring problems with the Waimakariri intake when in July 1908 the Dean's Gully flume collapsed and there were several washouts on the intake race and flumes.

The gorge intake was then abandoned until it was rebuilt in 1961.

Since then it has been operated as a supplementary supply during summer flow flows. Pipes were progressively being installed in the race to overcome the areas of leakage appearing along the terrace but this practise seems to have been dropped about 1975 and leakage has continued to appear.

Glentunnel Intake

As noted above this intake was constructed about 1886 to supply water to the Greendale area. The absence of records of this intake suggests that it has given little trouble during its lifetime. It is still very reliable although owing to the degradation of the river bed the gravel bank required for

diverting flows is now over 1.5 metres high and is becoming difficult to replace. Deepening of the intake and main race could overcome this difficulty.

Selwyn Stock Water Race System

The original Coalgate intake on the Selwyn River (called the Bluff Bridge Intake) was installed on the northern bank around 1886 with a pipe supported on the bridge to supply the downs area and the area around Hororata between the Selwyn and Hororata Rivers. This intake had a design capacity of 2,500,000 gals per day.

There appears to have been few problems with this intake throughout its history. The present intake is now sited on the southern bank upstream of the present bridge but immediately downstream of the abutment of the old "Bluff Bridge".

The schemes served a 2,500-hectare area between the Selwyn and Hororata Rivers.

This scheme was decommissioned in 2008/2009 and is no longer managed or owned by the Selwyn District Council.

The Selwyn Scheme Intake access was about 50 metres west of the south end of the Coalgate Selwyn River Bridge. There is a small track on the west side that leads back to the river bed.

The main source of water for the Selwyn Water Race was the Selwyn River and was covered by Resource Consent NCY 800923. Rain in the Selwyn River catchment could cause high river flows with consequential effects on the intake.

The intake structure was set into the southern river bank of the Selwyn River. The structure was a simple headwall structure with a sluice gate and grill attached at the front of this headwall. Leading from the headwall is a 20 metre length of 600 mm pipe through the river bank exiting into an open channel race.



This gate was generally set at a 300mm opening for medium to high flows within the river and when the flows are at a medium to low flow, the gate is opened wider to keep the required flow into the scheme.

During flooding this gate was closed down to an even lower opening but not completely closed, as flooding was normally not a problem with this intake.

The water was diverted into the intake by a boulder and gravel dam that spans across a small 15 metre side channel against the south bank of the Selwyn River. This side channel takes only part of the river flow. The rest of the flow is in the main channel to the east.

The dam consisted of large boulders, which were stacked up to form the dam. The height of the dam was 1.5m, the width 7m and the length 15m. These dimensions could vary dependent upon the flows in the river. The dam was constructed with a “weak section” so this section could be “overtopped” or fail in floods. This approach avoided the need to reconstruct the entire dam after flooding.

When the river floods, this dam was designed to collapse allowing the river level to drop thus stopping water from overtopping the intake and river bank. When the river flooding had receded to a level where machinery could work in the river, the dam was reconstructed. This minimized the taking of water volumes during high river flows.

This intake required care in its operation, as it was prone to flooding. A pipe leads directly from behind the control gates and is subject to filling with river material if the gates are not closed before flooding. This gate was closed completely in a flood and was only opened when flooding has receded to a point where shingle would not enter the intake when the intake gate was reopened. As river flows drop, the intake gate had to be adjusted to keep race flows up to the required scheme demand. This demand would change from low flows in the winter period to high flows in the summer period.

A minimum inspection of once per day was required seven days per week. High river flows and winds would cause rubbish to be introduced into the river, which caught on and blocked the intake screens. This rubbish had to be removed from these screens as soon as possible to enable an unobstructed flow through the intake gates. River flows and weather conditions would dictate how many inspections were required over any 24-hour period.

Monitoring Points were sited 25 metres downstream of the intake at the outlet of the pipe section from intake. .

There were no emergency discharge point on this scheme.

Eastern (Or Ex Paparua) Stock Water Race System

In 1885 Selwyn County Council installed an intake at Halkett to supply not only the immediate vicinity but through 145km of races North Papanui, St Albans and Upper Riccarton.

In 1906 a new intake was built which very quickly became known as the “white elephant” because of all the problems associated with maintaining it and keeping it operating.

The new Paparua County Council replaced this intake in 1909/10 with the new Sandy Knolls intake.

In the end a concrete dam was built during the 1930's proved the most successful method of diverting water and protecting the intake. This has continued in operation until now.

The original design capacity of the present intake is unknown but it is unlikely to have altered in the last 60 years. The flow of 1519 litres per second recorded on 30 January is therefore considered close to the design capacity of the scheme, but the assessed flow at the time of notified water rights was a lot lower than this flow.

APPENDIX L AGREEMENTS FOR ACCESS TRACKS IN MALVERN



COMPUTER FREEHOLD REGISTER UNDER LAND TRANSFER ACT 1952

Search Copy



Identifier **CB23K/713**
Land Registration District **Canterbury**
Date Issued 28 July 1982

Prior References

CB149/244

Estate	Fee Simple
Area	12.5781 hectares more or less
Legal Description	Part Rural Section 22912 and Part Rural Section 26422

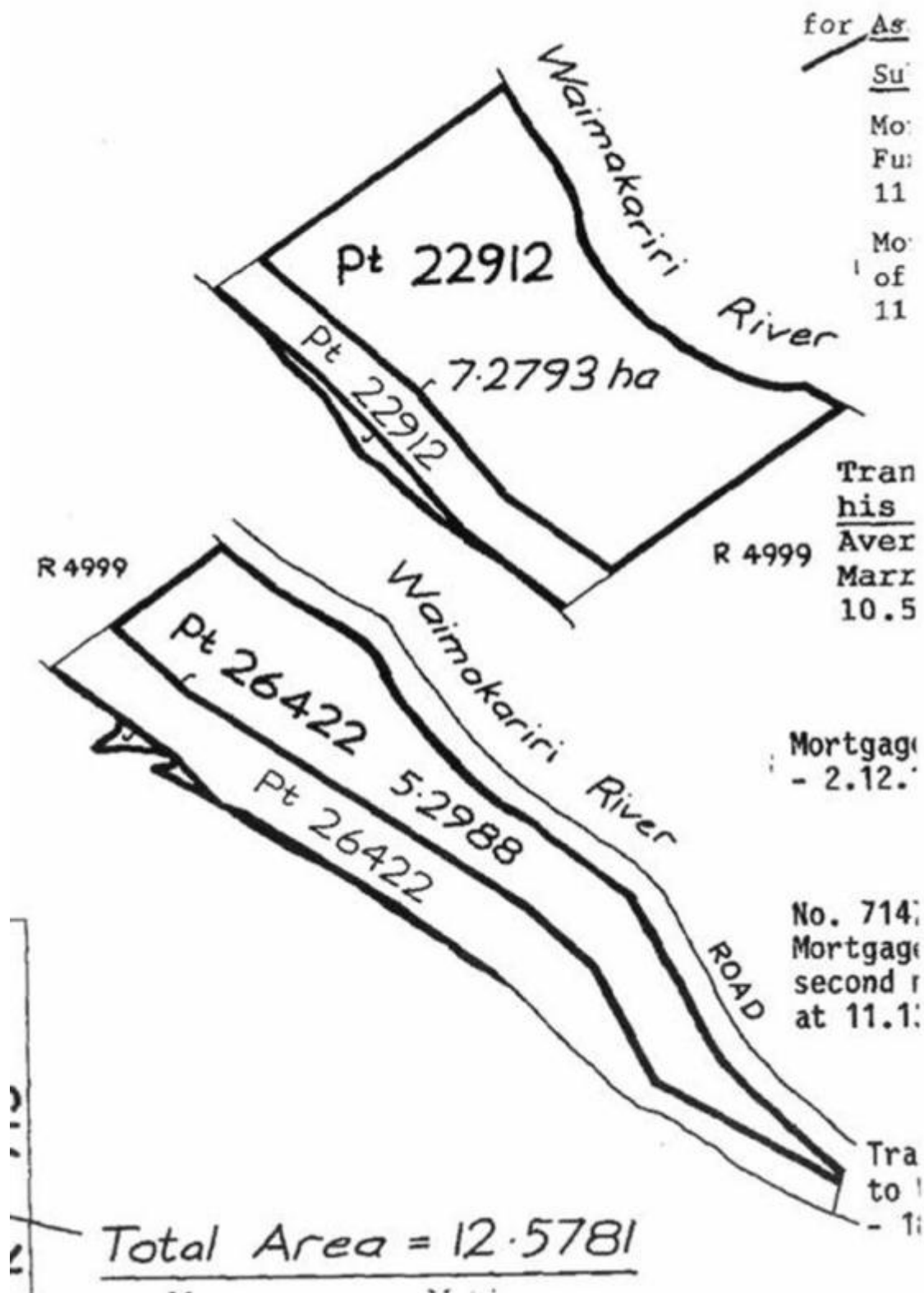
Proprietors
Mark Harnish Bull as to a 1/2 share
Anthony Miles Bull as to a 3/10 share
Averil Faye Bull as to a 1/5 share

Interests

Transaction Id 249943
Client Reference kullison001

Search Copy Dated 17/09/02 11:37 am, Page 1 of 1
Current Certificate of Title Version No. 0

Malvern County



542159

No.

Transfer of

Correct for the purposes of the Land Transfer Act.

Solicitor for the Purchaser.

Created in 1900 XV District Survey District

Vendor
Purchaser

Particulars entered in Register Book,

Vol. 126 Folio 14

at 12.14 o'clock p.m.

Assistant District Land Registrar
of the District of Canterbury

I ELIZABETH REED of Darfield Widow the Mortgagee under and by virtue of Memorandum of Mortgage Registered Number 489483 registered against all that piece of land as described in the foregoing Memorandum of Transfer DO HERBY CONSENT to the foregoing Memorandum of Transfer creating Grant of Easement for conveyance of water across the said land.

DATED this day of August 1960.

SIGNED by the said ELIZABETH REED in the presence of:

I ROBERT OVERLAND REED of Darfield Farmer the Mortgagee under and by virtue of Memorandum of Mortgage Registered Number 490548 registered against all that piece of land as described in the foregoing Memorandum of Transfer DO HERBY CONSENT to the foregoing Memorandum of Transfer creating Grant of Easement for conveyance of water across the said land.

DATED this day of August 1960.

SIGNED by the said ROBERT OVERLAND REED by his Attorney EDWARD JAMES BRADSHAW

In the presence of:

HARPER, PASCOE, BUCHANAN & PENLINGTON
Solicitors
Christchurch

Printed by D. S. Adams Ltd., 1960



**COMPUTER FREEHOLD REGISTER
UNDER LAND TRANSFER ACT 1952**

Search Copy



Identifier **CB27A/618**
Land Registration District **Canterbury**
Date Issued 11 March 1985

Prior References
CB125/271

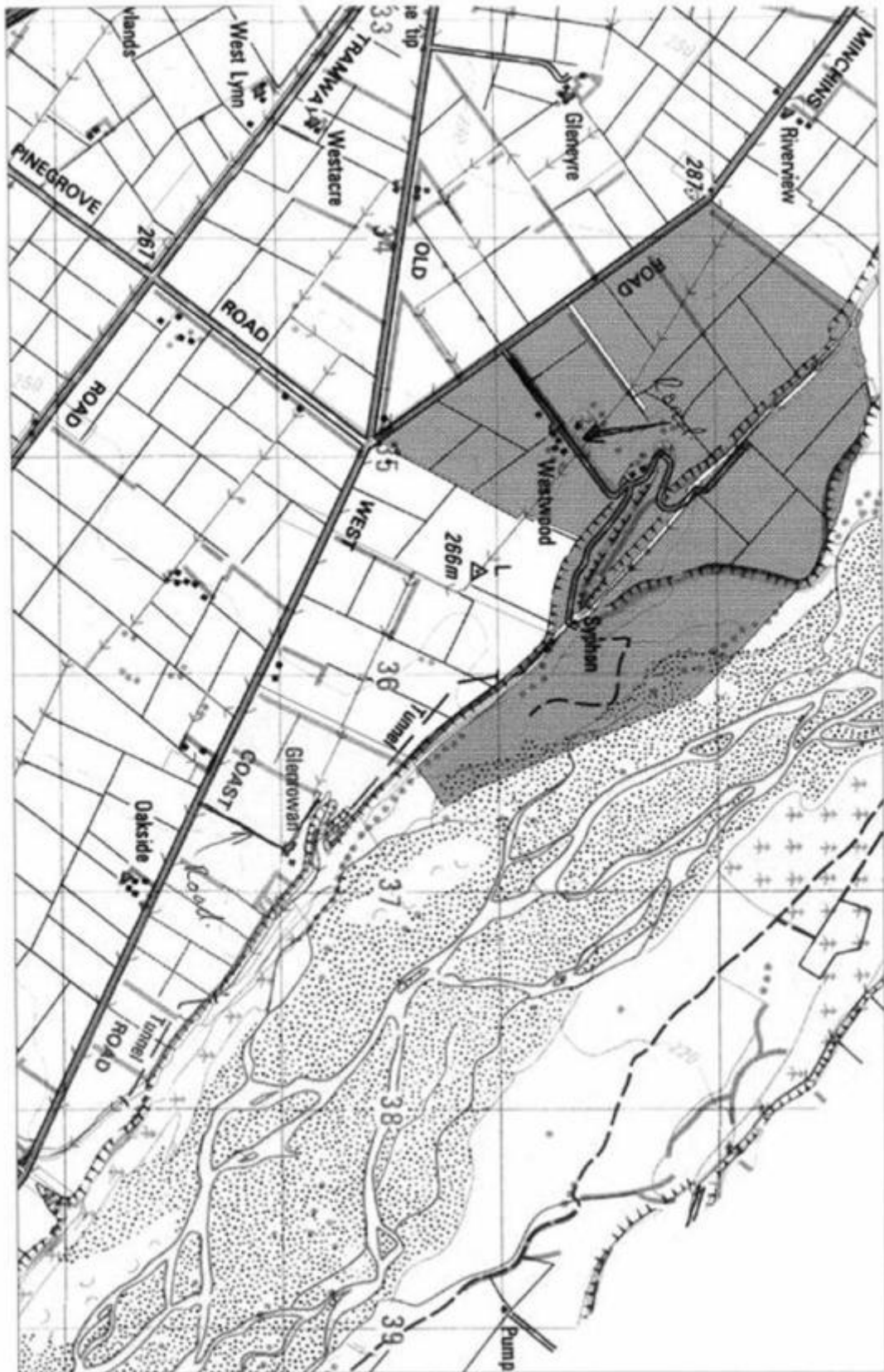
Estate	Fee Simple
Area	107.1665 hectares more or less
Legal Description	Part Rural Section 2667, Part Rural Section 3162, Part Rural Section 4864, Part Rural Section 2668, Part Rural Section 2669, Part Rural Section 2670, Part Rural Section 3985, Part Rural Section 3986 and Part Rural Section 14788

Proprietors
Mark Hamish Bull

Interests

Transaction Id 2419343
Client Reference hallison001

Search Copy Dated 17/09/02 11:41 am, Page 1 of 1
Current Certificate of Title Version No. 1



(New Zealand)

546168

Chad, was put in custody - also
(C.F. 774/77) as partner of
the American Dr. William Smith
S.O.A.

WHELEAR HOLWOOD ESTATE LIMITED a Company duly incorporated having its Registered Office at Garfield (hereinafter together with its successors and assigns referred to as "the Grantor")

being registered as the proprietor of an estate in fee simple

subject however to such circumstances here and there as are notified by memoranda

Block XIV of the Oxford Survey District containing SIXTH HUNDRED AND EIGHTY TWO ACRES THREE HUNDRED THIRTY SEVEN PERCHES (1982 s. 3 r. 33 p.) being Rural Division 2482 Part Rural Sections 3634, 3636, 14681 and 21993 Part of the said Land being more particularly described as being Part 1 Deposit Plan 1299 and being the whole of the land in Certificate of Title Volume 773 Folio 33

AND WHEREAS the Halverson County Council is the controlling authority for a water race shown at the "Fishley Water Race" which adjoins the said piece of land AND WHEREAS for the purpose of providing access to the said water race the Grantor has agreed to grant to the said Council a right of way as hereinafter described.

Now THEREFORE THIS MINDORAMON HITHESAY that in consideration of the sum of ONE SHILLING (1/-) paid by THE COMMON COUNTEILS AND INHABITANTS OF THE CITY OF WALWICK (hereinafter referred to as "the Grantees") (the receipt of which sum is hereby acknowledged) the Grantor JOHN HENRY TRANSFER AND COUNT unto the Grantees the full and free right and liberty for them their agents contractors servants workmen licensees and invitees (in common with the Grantor and all other persons lawfully using the same) from time to time and at all times by night or by day forever hereafter to pass and repeat with or without motor vehicles implements machinery plant and equipment of any kind over and along all the said piece of land being that part of the said piece of land as shown on the plan annexed hereto and thereon coloured yellow such piece of land being of a uniform width of Twenty Feet (20 ft.) for the purpose of giving access for the Grantees from Windline Road at the point marked "D" on the said Plan to the said Kimberley Water Race at the point marked "H" on the said Plan AND IN CONSIDERATION of the said grant the Grantees DO HEREBY COVENANT with the Grantor that they will to the satisfaction of the Grantor properly form and metal that part of the said right of way not already so formed and metalled and will in the future properly keep and maintain the whole of the said right of way throughout its entire length in satisfactory condition but so that the Grantees shall not be called upon to keep and maintain the said right of way to a higher standard than is reasonably required for the normal use at all times of the Grantor and the Grantees and further will ensure that all persons using the said right of way will at all times properly close all gates at present erected or hereafter to be erected by the Grantor across the said right of way immediately after use AND IF IT HEREBY AGREED AND DECLARED that if by reason of the construction of the said right of way it shall become necessary as the Grantor shall so decide to erect fences or gates alongside or across the said right of way then the cost of such fencing shall be borne by the Grantor and no such fencing or gates shall be

15. On a loose sheet of paper, describing your
 future writing.

so constructed or erected by the Grantor as will in any way interfere with the full and effectual use of the said right of way as herein granted

IN WITNESS whereof, these presents have been executed this
 2nd day of August 1960.

THE COMMON SEAL of HEATHROW
ESTATE LIMITED was hereto
affixed in the presence of:

THE SEAL of THE CHIEFMAN
CONCILIATING AND IMMEDIATE
OF THE COUNTY OF MALVERN
was hereto affixed in the
presence of:

.....Chairman.
.....S. J. Hall, Jr., Secy. Clerk.

— *Staphylococcus aureus* —

doi:10.1017/S0022292412001611

• **Dispersal**

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COMPUTER FREEHOLD REGISTER
UNDER LAND TRANSFER ACT 1952

Search Copy



Identifier **CB23K/714**
Land Registration District **Canterbury**
Date Issued 29 July 1982

Prior References
CB126/19

Estate Fee Simple
Area 74.6240 hectares more or less
Legal Description Part Rural Section 3636
Proprietors
Mark Hamish Bull as to a 1/2 share
Anthony Miles Bull as to a 3/10 share
Averil Faye Bull as to a 1/5 share

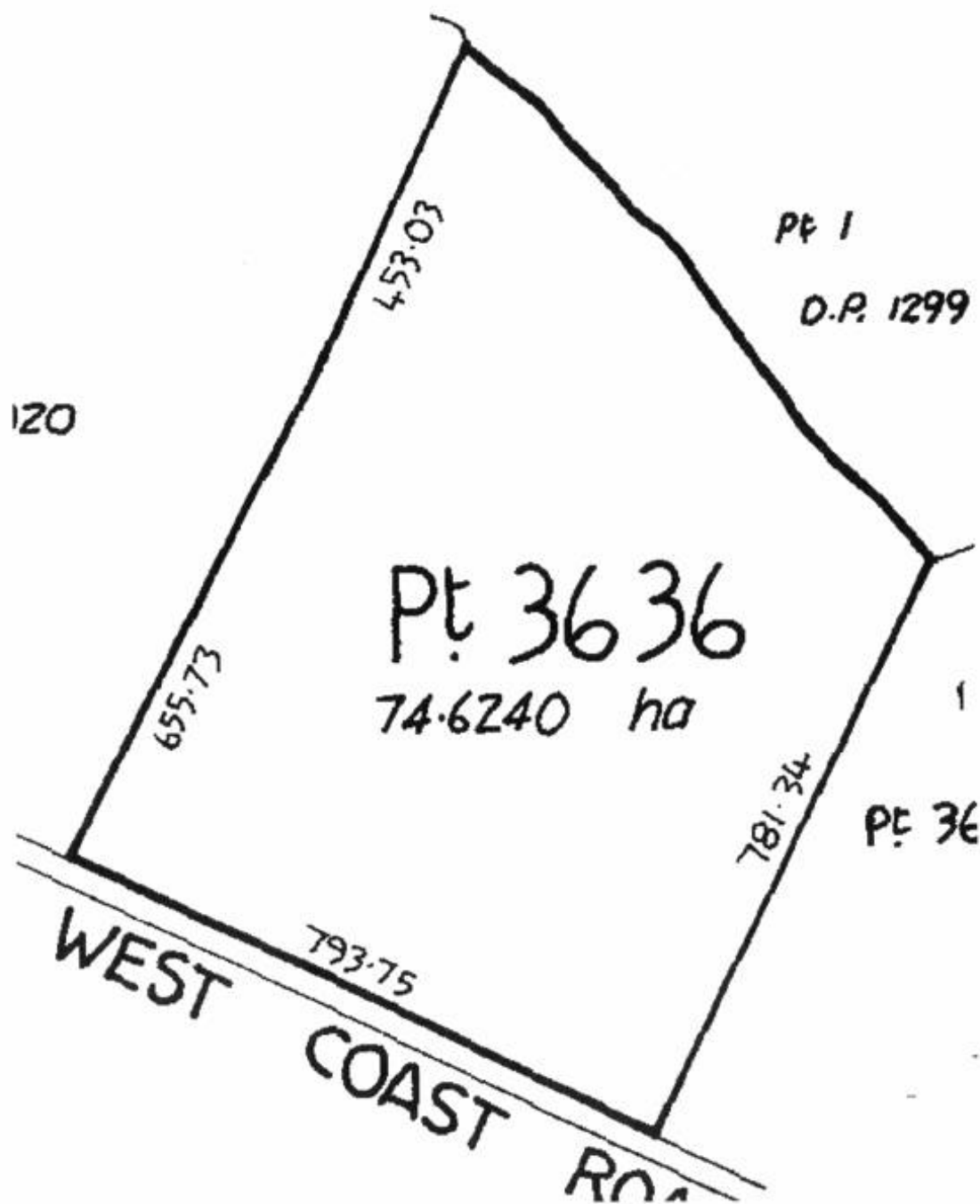
Interests

542159 Transfer creating the following easements in gross

Type	Servient Tenement	Easement Area	Grantee	Statutory Restriction
Convey water	Part Rural Section 3636 - herein	Part herein	Malvern County Council	

Transaction Id 2439343
Client Reference hallison001

Search Copy Dated 17/09/02 11:31 am, Page 1 of 1
Current Certificate of Title Version No. 0



INL 4554

542159 TE

Approved by the D.L.R. Canterbury, 01/03/2020.

(New Zealand)

(C)

Memorandum of Transfer



12 DEC 2019 11:00 AM

WHEREAS JAMES ROBERTSON of Darfield Farmer (hereinafter referred to as "the Grantor")

being registered as the proprietor of an estate in fee simple

subject however to such encumbrances liens and interests as are notified by memoranda underwritten or endorsed hereon in all that piece of land situated in Block XIV of the Oxford Survey District and Block II of the Hawkins Survey District

containing ONE HUNDRED AND SEVENTY FOUR ACRES ONE HUNDRED AND THIRTY FOUR PERCHES (184 ac. 1 ro. 24 per.)

be the same a little more or less being part of Rural Section 3636 and being the whole of the land comprised in Certificate of Title Volume 126 Folio 19

SUBJECT to Memoranda of Mortgage Registered Numbers 439483 and 440540 AND WHEREAS the Malvern County Council is the controlling authority for a water race known as the "Kimberley Water Race" which adjoins the said piece of land

AND WHEREAS it is proposed to change the course of the said water race and to convey same by means of a pipe line over and under the said piece of land the centre line of such pipe line being shown as Diagram 2 on the plan annexed hereto and thereon coloured blue

NOT THEREFORE THIS MEMORANDUM WITNESSETH that in consideration of the sum of ONE SHILLING (1/-) paid by THE CHAIRMAN COUNCILLORS AND INHABITANTS OF THE COUNTY OF MALVERN (hereinafter called "the Grantees") (the receipt of which sum is hereby acknowledged) the Grantor DOETH HEREBY TRANSFER AND GRANT unto the Grantees the full free and uninterrupted rights liberties and privileges following TO THE INTENT that the same shall be an easement forever appurtenant to the said piece of land:

1. TO take and convey water from the said Kimberley Water Race in a free and uninterrupted flow from the point where the said race enters upon the said piece of land to the boundary of the said piece of land as the same is shown on the said plan annexed hereto and thereon marked with the letters "B" and "C" respectively either by means of an open race or by means of pipes leading through over and under the said piece of land.

2. TO construct and excavate through over and under that portion of the said land along the line of the said race as shown on the said plan a tunnel having dimensions of six feet in height and four feet in width for the purpose of carrying the said pipe line for conveyance of the said water and to construct and lay in such tunnel concrete pipes having an internal diameter of 36" and for the purposes aforesaid to remove convey and dispose of all spoil taken from the said tunnel and/or water race into the Waimakariri River Bed adjoining the said property.

3. TO enter together with contractors engineers workmen or agents with all necessary machinery, vehicles, plant, tools, equipment and materials in and upon the said piece of land at all times for the purpose of carrying out all work necessary for the construction and excavating of the said tunnel and/or water race

1. On a loose sheet of paper, describing each
lower order.

h. DURING the period that the said tunnel is under construction to open from the said tunnel to the surface of the ground above the said tunnel ventilation shafts at such points along the line of the said tunnel as shall be required by the contractor and after completion of the said tunnel to close up and seal the said ventilation shafts to the satisfaction of the Grantor as little damage as possible being caused to the surface of the said land all surplus spoil taken from such shafts to be removed by the Grantees and deposited in the bed of the Taimakoriri River and for the purpose of carrying out such work to enter together with contractors engineers workmen and agents and together with all machinery vehicles plant equipment and material as may be necessary in and upon the said land at such times as shall be necessary.

SIGNED by the said JAMES DOUGLAS
PATERSON in the presence of:-

THE SEAL OF THE CHAIRMAN COUNCILLORS
AND INHABITANTS OF THE COUNTY OF
MALVERN was hereto affixed in the
presence of:-

N. E. Jenkins.....Chairman.
W. H. Jones.....County Clerk.



For more information, visit www.daneshmandipublishing.com

staxwvdx

effluent drop threshold

where σ_{max} is the maximum value of σ and σ_{min} is the minimum value of σ .

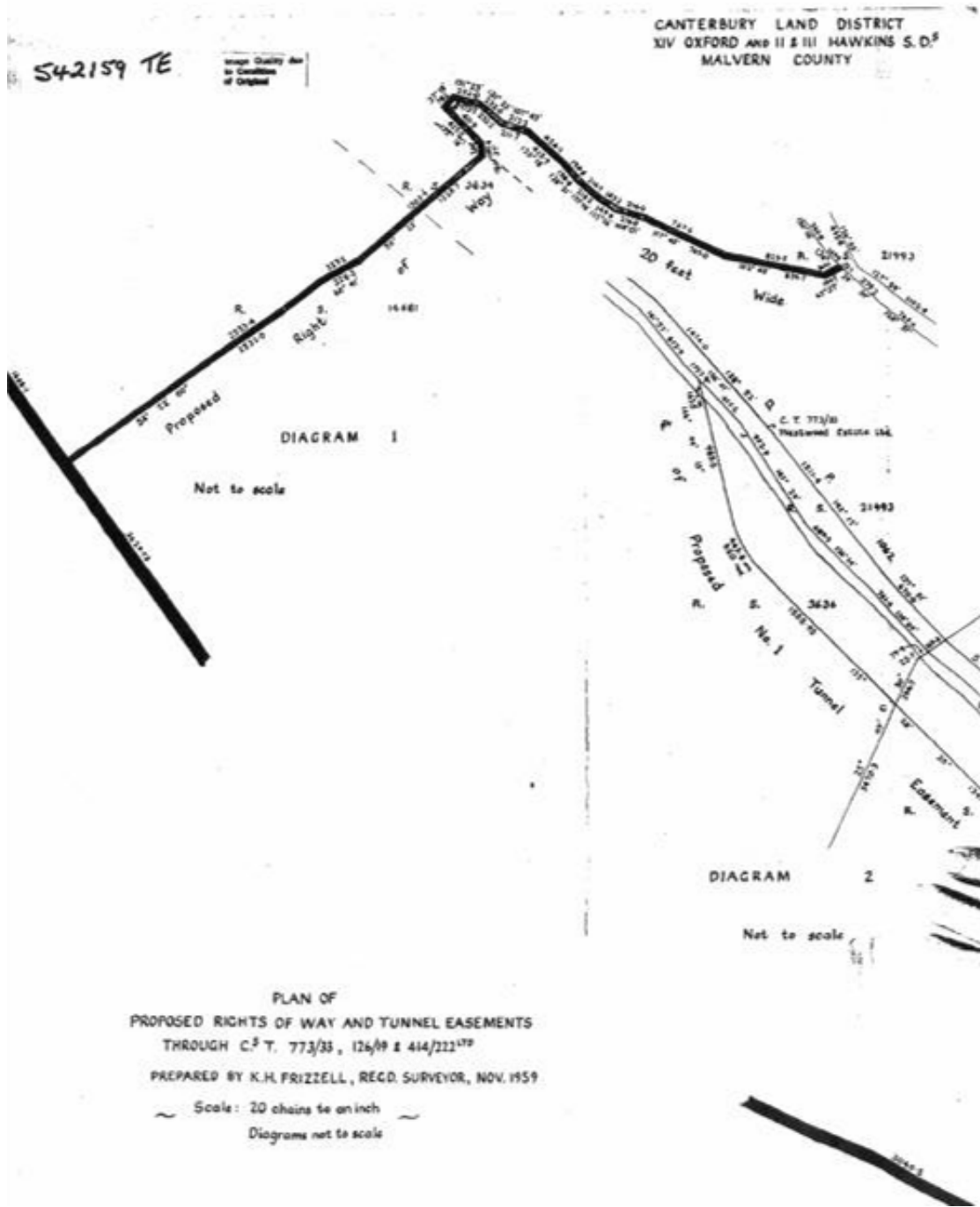
References

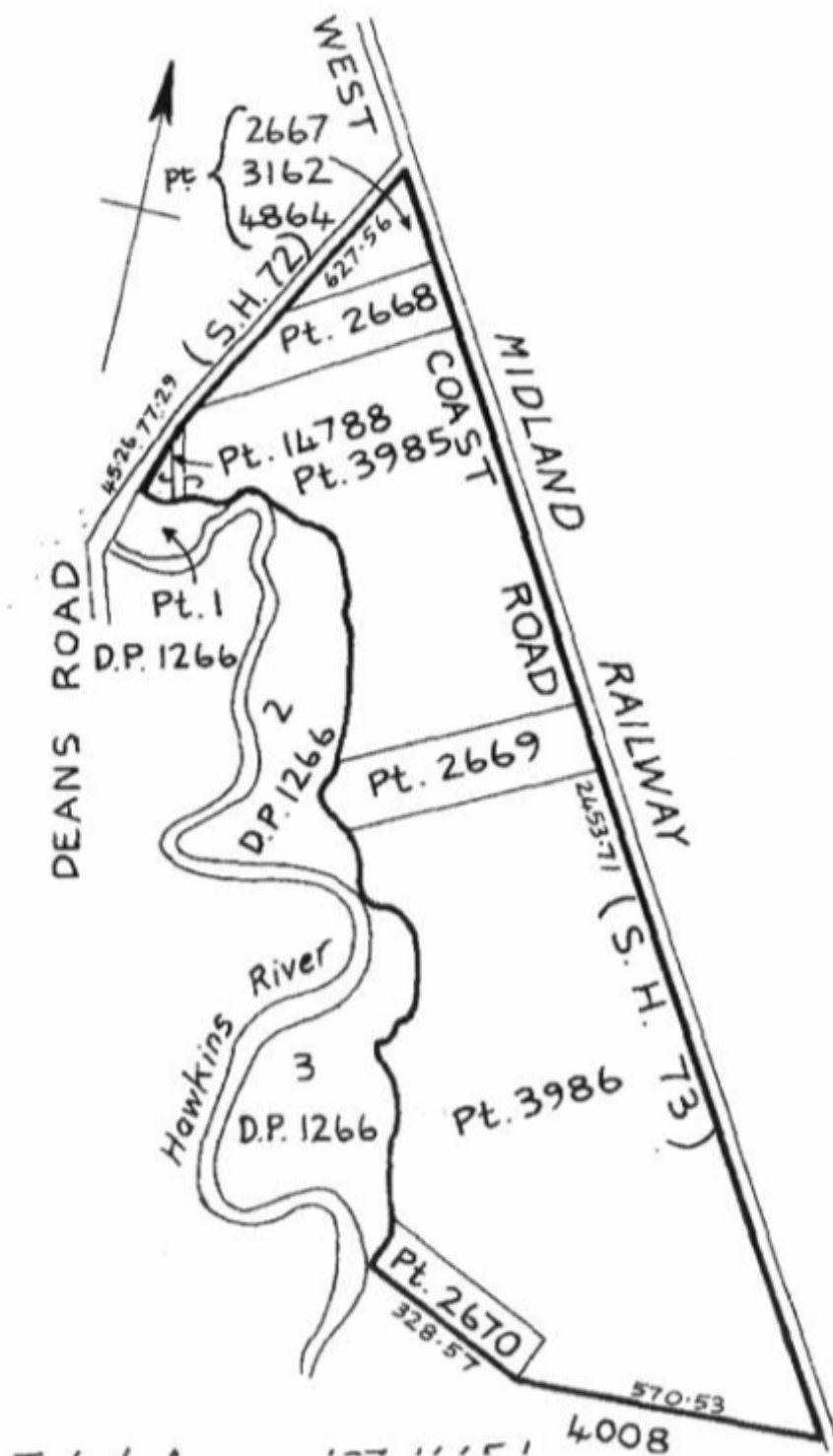
Measurement

© 2004 Blackwell

References

5. Witness went to a saloon, friend of the owner, at Portsmouth.





**APPENDIX M IRRIGATION AGREEMENT, RESTRICTIONS,
REBATE**

M.1 PAPARUA IRRIGATION AGREEMENT

Dated

2007

IRRIGATION AGREEMENT
(Paparua Water Race Scheme)

Landowner

Name: _____

Council

THE SELWYN DISTRICT COUNCIL

CONTENTS

1. DEFINITIONS AND INTERPRETATIONS.....	1
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3. TERM	3
4. CHARGES.....	4
5. NO GUARANTEE OF WATER SUPPLY	4
6. COMPLIANCE	5
7. PROVISION OF INFORMATION.....	5
8. REVIEW	5
9. SUBDIVISION OF LAND	5
10. COUNCIL'S RIGHT OF INSPECTION	6
11. CANCELLATION.....	6
12. MISCELLANEOUS.....	6
13. MEDIATION AND ARBITRATION	7
SCHEDULE 1	9
SCHEDULE 2	10

IRRIGATION AGREEMENT

Dated

2005

PARTIES

1. _____ ("Landowner").
2. **THE SELWYN DISTRICT COUNCIL** ("Council")

BACKGROUND.

- A. The Landowner is the registered proprietor of the land described in Schedule 1 ("the Land").
- B. The Council owns a water race (as that term is defined in Section 422(1) of the Local Government Act 1974) system known as the Paparua Water Race Scheme ("the Water Race") and holds the requisite resource consents for the operation of the Water Race.
- C. *The Landowner has applied pursuant to the Selwyn District Council Water Race Bylaw 2000 a copy of which is attached to this Agreement ("the Bylaw") for the right to take water from the Water Race to enable the irrigation of the Land and the Council has agreed to grant such rights on the terms and conditions set out in this Agreement.*

OR

- D. *The Landowner currently takes water from the Water Race to enable the irrigation of the Land pursuant to the Selwyn District Council Water Race Bylaw 2000 a copy of which is attached to this Agreement ("the Bylaw"). The Landowner and Council have now agreed to enter into this Agreement to record the terms and conditions upon which the Landowner will continue to take water from the Water Race.*

TERMS OF THIS AGREEMENT

1. DEFINITIONS AND INTERPRETATIONS

- 1.1 For the purpose of this Agreement the following definitions will apply:

"Accessories" means all objects used in conjunction with the Water Race and extends to include where the context requires, all weir gates and valves used for regulating flow and flow metering equipment.

"Annual Charge" means the annual charge payable by the Landowner for the Irrigation Rights pursuant to clause 4, calculated by reference to the scale of charges determined by a resolution of Council.

"Default Interest Rate" means a rate of interest equal to the Bank of New Zealand Base Rate at the date of default, plus 5%.

"Irrigation Rights" means the irrigation rights granted to the Landowner by the Council pursuant to this Agreement.

“Resource Consents” means resource consents CRC012005, CRC012006 and CRC012007 which have been granted to Council allowing it to operate the Water Race, and includes any subsequent amendment to the conditions of those consents, or any resource consents obtained in substitution for or instead of resource consents. Copies of the current resource consents are attached to this agreement as Schedule [2].

“Working Day” means any day of the week other than:

- (a) Saturday, Sunday, Good Friday, Easter Monday, Anzac Day, the Sovereign’s Birthday, Labour Day, New Zealand’s anniversary day and Canterbury Anniversary Day; and
- (b) A day in the period commencing with the 24th day of December in any year and ending with the 5th day of January in the following year.

1.2 Interpretations

- (a) Words importing the singular shall include the plural. Words importing the masculine gender shall include the feminine or neuter and vice versa. Words importing persons shall include companies.
- (b) Any covenant or agreement on the part of two or more persons shall be deemed to bind them jointly and severally.
- (c) Subject to Clause 9 of this Agreement, any reference to the Landowner in this Agreement includes any receiver, liquidator, statutory manager, assignee in bankruptcy or successor in title of the Landowner or any licensee, lessee or other occupier or mortgagee in possession of the Land or any part of it.
- (d) Any covenant or agreement on the part of the Landowner includes a covenant to also ensure compliance by the Landowner’s servants, agents, visitors and other permitted invitees, workmen and contractors.
- (e) The Table of Contents and any headings and marginal notations in this Agreement have been inserted for convenience only and shall not limit or govern the construction of the terms of this Agreement.
- (f) Any reference in this Agreement to any statute or regulation is deemed to include all amendments and revisions made from time to time to that statute or regulation and any re-enactments thereof.
- (g) Where the Council’s consent or approval is required pursuant to any provision of this Agreement such consent or approval shall be required for each separate occasion notwithstanding any prior consent or approval obtained for the like purpose on a prior occasion.

2. IRRIGATION RIGHTS

- 2.1 In consideration of the payment of the Annual Charges to the Council the Landowner is granted Irrigation Rights to the Water Race, subject to the following conditions:

- (a) That, subject to any restrictions imposed pursuant to clause 5.2, the quantity of water taken from the Water Race does not exceed the rates specified in the Schedule of Specified Rates Schedule 3 or as otherwise agreed by the parties in writing from time to time, subject always to the conditions of the Resource Consents which specify the permitted rates of take;
 - (b) That the Landowner will familiarise himself with the provisions of the Resource Consents and agrees to comply with the conditions of the Resource Consents;
 - (c) Any water taken from the Water Race by the Landowner is used solely for the irrigation of the Land, such irrigation to be undertaken in a manner consistent with prudent farming practices;
 - (d) Where water is taken directly from the Water Race, the Landowner will ensure that a fish screen approved by the Council is installed, such approval not to be unreasonably or arbitrarily withheld;
 - (e) The location of the point(s) on the Water Race from which the water will be taken from the Water Race has the prior written approval of the Council, such approval not to be unreasonably or arbitrarily withheld;
 - (f) Except in an emergency, a minimum of 24 hours notice of any take of water from the Water Race is given to the Council where such take exceeds 10 litres per second, together with a minimum of 12 hours notice prior to the ceasing of a take of water of such quantity; and
 - (g) Any changes to the details recorded in Schedule 2 have the prior written consent of the Council.
- 2.2 In granting any approval under clause 2.1 the Council will have full discretion whether to grant the necessary approval and may impose such reasonable conditions to its approval as the Council thinks fit.
- 2.3 At the commencement of the Initial Term, the details contained in Schedule 2 are deemed to have been agreed by the parties. Any subsequent change to these details, will be subject to clauses 2.1 and 2.2 of this Agreement.

3. TERM

- 3.1 **Initial Term:** The term of this Agreement will commence on 1 July 2001 and expire on the earlier of:
- (a) 1 July 2010; or
 - (b) the expiry of any existing consent for the taking of water from the Waimakariri River for the Water Race held by the Council and granted under the Resource Management Act 1991.
- 3.2 **Renewal:** If, upon receipt of six months' written notice from the Council of the expiry date of the Initial Term of this Agreement
- (a) the Landowner has not been in breach of this Agreement; and

- (b) has given to the Council written notice to renew the Agreement at least three (3) calendar months before the end of the Initial Term; and
- (c) a current consent for the taking of water from the Waimakariri River for the Water Race granted under the Resource Management Act 1991 is held by the Council;

then the Council will at the cost of the Landowner renew this Agreement for a further period of 10 years or such other lesser period as is provided for in any consent for the taking of water from the Waimakariri River for the Water Race granted under the Resource Management Act 1991 and held by the Council. The renewed Agreement will be on the same terms and conditions as are contained in this Agreement (as varied pursuant to clause 8) provided that the right of renewal contained in this clause will not apply.

- 3.3 **Early Cancellation:** Either party may by 12 months' written notice to the other party, cancel this Agreement at any time during the Initial Term or any renewal of this Agreement pursuant to clause 3.2.

4. CHARGES

- 4.1 **Annual Charges:** The Landowner will pay the Annual Charge plus GST in advance in each year during the term of this Agreement within 20 Working Days of receipt of an invoice in respect of the same. All payments under this Agreement will be paid without deduction or set off of any kind to the Council.
- 4.2 **Non – payment:** If the Landowner fails to make payment of any part of the Annual Charges on the due date for payment then without prejudice to any other remedy Council may have the Landowner will pay interest on the amount so unpaid at the Default Interest Rate calculated on a daily basis from the due date for payment until actual payment. Interest at the Default Interest Rate will continue to accrue both before and after judgment.
- 4.3 **Review:** The scale of charges set to determine the Annual Charge will be reviewed as part of the Council's annual budgetary process.

5. NO GUARANTEE OF WATER SUPPLY

- 5.1 The Landowner acknowledges that:
- (a) Pursuant to Section 426(5) of the Local Government Act 1974, the Council is not responsible for the failure or reduction of any water supply to the Water Race, notwithstanding the cause of any such failure or reduction; and
 - (b) No representations or warranties are given by the Council in respect of the quantity, volume, purity and standard of water available for use by the Landowner from the Water Race,
- and that no claim for compensation or damages on such grounds will be entertained.
- 5.2 **Reductions:** The Council may in its sole discretion at any time and for any period of time:

- (a) reduce the quantity of water specified in Schedule 2 that the Landowner is entitled to take from the Water Race (any such reduction to be on a pro rata basis on all holders of irrigation rights for the Water Race); or
- (b) impose irrigation bans on all holders of irrigation rights for the Water Race;

where low flows in the Waimakariri River result in the imposition of irrigation bans/restrictions on the Water Race. The Landowner will be entitled to a reduction in the Annual Charges in the event of any such restrictions or irrigation bans and no claims for compensation or damages on such grounds will be entertained.

6. COMPLIANCE

- 6.1 The Council will comply with the provisions of all statutes, ordinances, regulations and bylaws relating to the Water Race and in particular will comply with the Bylaw and the relevant sections of the Local Government Act 1974.
- 6.2 The Landowner will comply with the provisions of all statutes, ordinances, regulations and by-laws relating to its use of the Water Race in accordance with this Agreement and in particular will comply with the Bylaw and Sections 436, 437, 438 and 693 of the Local Government Act 1974.

7. PROVISION OF INFORMATION

- 7.1 **Flow Monitoring:** Within 14 Working Days of a written request being made by the Council, the Landowner will provide details of the rate at which the water is being taken from the Water Race by the Landowner. Measurements are to be taken to an accuracy of plus or minus 10%.

8. REVIEW

- 8.1 The Council, in consultation with the Landowner, may at any time review the terms of this Agreement if the Council determines in its reasonable opinion that the efficient and effective use of the Water Race by all users requires this Agreement to be reviewed.
- 8.2 The Landowner will be entitled to participate in any such review process and will supply all information requested by the Council to enable any such review to be carried out.
- 8.3 If as a result of any such review, the Council resolves that the Agreement requires variation, the Landowner agrees to sign all necessary documents to effect any such variation.

9. SUBDIVISION OF LAND

- 9.1 Prior to the sale of any part of the Land following a subdivision the Landowner will give 3 months written notice to the Council applying for a reallocation of the Irrigation Rights between those parts of the Land to be sold or retained by the Landowner. Such reallocation will be made at the Council's sole discretion and new agreements on such terms and conditions as the Council may reasonably require will be entered into between the Council, the Landowner and any purchaser of any part of the Land.

10. COUNCIL'S RIGHT OF INSPECTION

- 10.1 The Council's employees, contractors and invitees may at all reasonable times enter upon the Land to view the Landowner's Accessories and intake structure.

11. CANCELLATION

- 11.1 In the event that:

- (a) Any annual charges or other money payable by the Landowner is in arrears for 30 Working Days after the same has become due or demanded, whichever is the later; or
- (b) The Landowner defaults in the performance or observance of any of the covenants or conditions contained in this Agreement and the Council has given notice to the Landowner specifying the particulars of the alleged default and requiring the Landowner to remedy the same and the alleged default has not been remedied by the Landowner within 20 Working Days after the notice has been given;

then notwithstanding any prior waiver or failure to take action by the Council or indulgence granted by the Council to the Landowner in respect of any such matter or default whether past or continuing it will be lawful for the Council and any other person duly authorised by it to cancel this Agreement without releasing the Landowner from any liability in respect of any antecedent breach of this Agreement.

12. MISCELLANEOUS

- 12.1 **No Partnership:** Nothing in this Agreement shall create or be deemed to create the relationship of partnership between the parties.
- 12.2 **Waiver:** No waiver of any breach of any term of this Agreement shall be effective unless in writing signed by the Council and no such waiver shall be construed as a waiver of any subsequent breach.
- 12.3 **Variation of agreement:** This Agreement shall not be cancelled, nullified, amended or modified by any means, unless the fact of cancellation, nullification, amendment or modification as the case may be is expressed in writing signed by duly authorised representatives of the Parties, or occurs in accordance with express provisions of this Agreement.
- 12.4 **Non reliance:** The Landowner acknowledges that it has relied on its own judgment in respect of all matters under this Agreement.
- 12.5 **Force majeure:** No Party shall be liable for any delay or default due to natural calamities, acts or demands of governments or any government agency, wars, riots, strikes, fires, floods, accidents or other unforeseen causes beyond its control and not due to its fault or neglect.
- 12.6 **Severance:** If any provision of this Agreement, or part thereof, is rendered void, illegal or unenforceable by any legislation or law to which it is subject, it shall be rendered void, illegal or unenforceable to that extent and no further.

- 12.7 **Release and indulgence:** Any liability to any of the Parties hereunder may in whole or in part be released, compounded or compromised by time or indulgence given by the other Parties in their absolute discretion without in any way prejudicing or affecting their rights against that Party.

13. **MEDIATION AND ARBITRATION**

- 13.1 All disputes and questions relating to or arising from the interpretation and implementation of the terms of this Agreement shall, if they cannot be resolved by the Parties, be referred to mediation and failing resolution to a single arbitrator agreed upon by the Parties within 10 Working Days and if one cannot be agreed upon then by a single arbitrator appointed by the President of the Canterbury District Law Society in accordance with and subject to the provisions of the Arbitration Act 1996 or any statutory modification thereof for the time being in force. The decision of the arbitrator to whom any dispute or question is referred shall be final and binding.

EXECUTION

SIGNED by)
(Landowner))
in the presence of) Signature _____

Signature

Full Name

Address

Occupation

THE COMMON SEAL of)
THE SELWYN DISTRICT COUNCIL)
was hereto affixed by and in the)
presence of:)

Mayor

Chief Executive

SCHEDULE 1

LAND

Legal Description of Land

Location of Property

Location of take points to be detailed on plan.

SCHEDULE 2
RESOURCE CONSENTS

SCHEDULE 3

Maximum amount of water to be used in litre per second: _____

Specify type and make of pump: _____

Specify rated kW or Hp: _____

Specify Flow Rate of Pump: _____

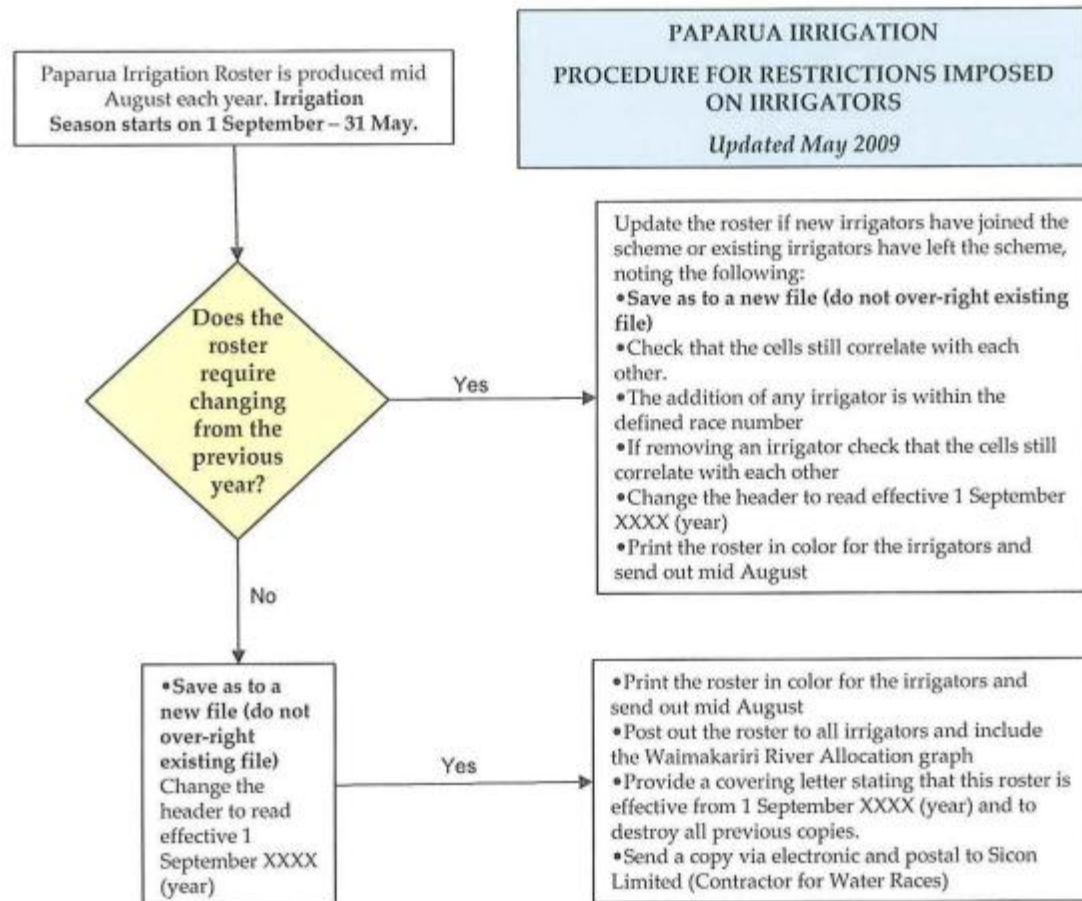
Pump Specification Sheet to be supplied.

The months irrigation will be used: _____

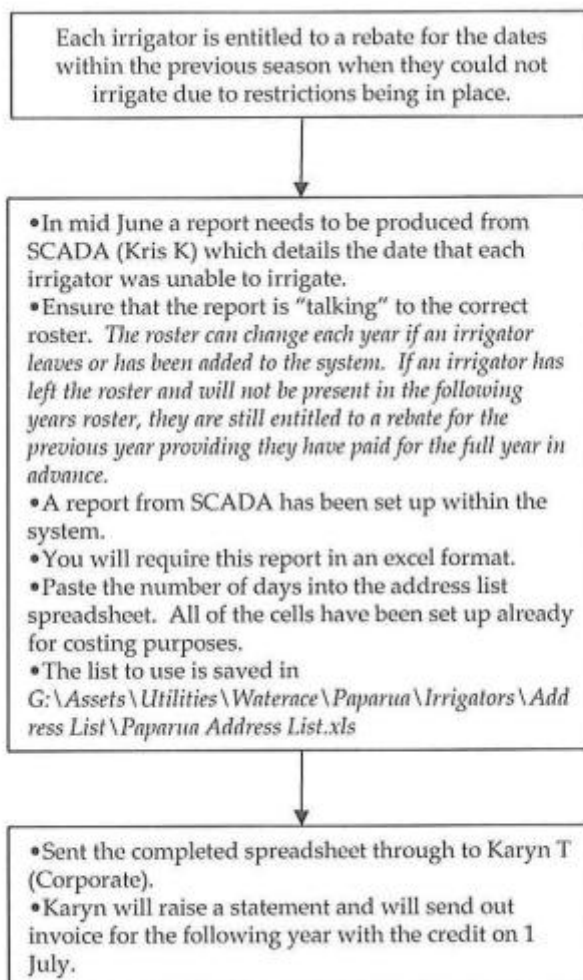
Proposed method of flow measurement: _____

Sketch of intake structure

M.2 PAPARUA IRRIGATION RESTRICTIONS



M.3 REBATE PROCEDURE



PAPARUA IRRIGATION REBATE PROCEDURE

Updated May 2009

M.4 IRRIGATORS LIST

List current as at 1 May 2009

Race Number	Irrigator Number	Name	Allocated L/Sec
Race 1	61	Ergodee Trust	9.30
	41	Hayes	30.00
	15	Le Cornie M	54.00
	33	McPhee	2.00
	18	Ang Pheng Pheng	18.50
	37	Pigeon Bay Properties	16.50
	40	Prouling	1.50
	26	Thomas	22.00
Total for Race 1			151.80
Race 2	12	Isaac Construction Co Ltd	47.00
	53	Brown J	20.00
Total for Race 2			67.00
Race 3	3	Dimbley	5.00
	7	Gordon	1.90
	34	Raikes	15.00
	53	Birchgrove Farm Co. Ltd	40.00
	32	Wilson	37.00
Total for Race 3			98.90
Race 4	56	Bergler H	1.80
	38	Brooks	1.80
	1	Brown	4.80
	22	Paparua (Horticulture)	60.00
	60	Haurua Properties	5.00
	54	Davies R H Ltd	4.90
	5	Frances Development	3.50
	16	Fulton Hogan	3.90
	59	Fulton Hogan	2.70
	36	Haurua Properties	4.80
	62	Laurenson V	4.80
	52	Lowen	2.70
	14	McCready	2.80
	55	McDonald P	15.00
	44	Mitchell	2.40
	19	Nicol	9.50
	20	Oakley	5.00
	49	Pidwell D	2.50
	48	Plato J	2.40
	24	Islington Park Ltd	135.00
	26	Templeton Country Club	28.00
	51	Tidemann Scott	2.16
	27	Turner G W	10.00
	45	van Ameyde	2.50
	50	van Ameyde	2.50
Total for Race 4			320.26
Race 5	57	Amber Lodge Trust	2.40
	35	Clarke/Rockell	2.40
	42	Cockburn	30.00
	9	Heier	2.80
	11	Hirsch	2.80
	43	Larson	2.00
	23	Neale & Carr	1.80
	39	Shaw	5.00
	29	West Melton School	2.00
	31	Wilson FE	2.60
Total for Race 5			53.80
Race 6	2	Gallagher	2.80
	10	Henderson KJ	2.80
	28	Weedons Country Club	26.00
Total for Race 6			31.60
Race 7	Total for Race 7		0.00
Race 8	4	Fletcher	0.90
	17	Maffey	0.90
	8	Thomas	0.90
Total for Race 8			2.70
Max Lps 800	Total for all Races		725.06

APPENDIX N IRRIGATION COMPLIANCE CHECK

Standard Operating Procedure WRP002

PAPARUA IRRIGATION COMPLIANCE CHECK									
1. Inspected by									
2. Date inspected						Time inspected			
3. Valuation Number									
4. Property Owner									
5. Road Name						Rapid			
6. Allowed Take									
7. Restriction Roster in Place		63.0	59.9	56.7	53.6	50.4	47.3	44.1	41.0
		No Restriction Go to (8)							
8. If no restrictions are in place, is the landowner irrigating? Go to (12)								Yes	No
9. If restrictions are in place, is the landowner irrigating on their allocated day? If no, go to (11)								Yes	No
10. State method used by operator to ascertain if they are taking their allowable take									
• Flow Meter		<input style="width: 50px; height: 20px;" type="text"/>		Manual Test by the Operator		<input style="width: 50px; height: 20px;" type="text"/>			
• Other , please detail method		<input style="width: 50px; height: 20px;" type="text"/>							
<div style="border-top: 1px dashed black; height: 10px; margin-top: 5px;"></div> <div style="border-top: 1px dashed black; height: 10px; margin-top: 5px;"></div>									
11. Illegal Irrigation Take Investigation									
• Date		<input style="width: 50px; height: 20px;" type="text"/>		Photograph Site		<input style="width: 50px; height: 20px;" type="text"/>			
• Time		<input style="width: 50px; height: 20px;" type="text"/>		Sketch of illegal take		<input style="width: 50px; height: 20px;" type="text"/>			
• Description									
<div style="border-top: 1px dashed black; height: 10px; margin-top: 5px;"></div> <div style="border-top: 1px dashed black; height: 10px; margin-top: 5px;"></div> <div style="border-top: 1px dashed black; height: 10px; margin-top: 5px;"></div> <div style="border-top: 1px dashed black; height: 10px; margin-top: 5px;"></div> <div style="border-top: 1px dashed black; height: 10px; margin-top: 5px;"></div> <div style="border-top: 1px dashed black; height: 10px; margin-top: 5px;"></div> <div style="border-top: 1px dashed black; height: 10px; margin-top: 5px;"></div> <div style="border-top: 1px dashed black; height: 10px; margin-top: 5px;"></div>									
12. Forward copy of this completed form and documentation to Asset Service Delivery Unit.									

Section 10 : This portion of the form will not be used until we can measure their allocation Page 1 of 2

SDC OFFICE USE ONLY

13. SDU to provide comment and forward to Asset Manager Utilities

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Signature: _____

Date: _____

14. Asset Manager Utilities Comment

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Landowner informed

Signature: _____

Date: _____

Section 10 : This portion of the form will not be used until we can measure their allocation

Page 2 of 2

APPENDIX O SELWYN DISTRICT AND CHRISTCHURCH AGREEMENT

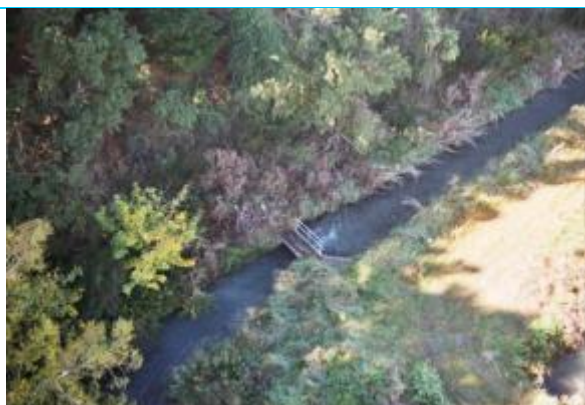
Insert agreement on SDC administrating and managing the water race in Christchurch City once completed.

APPENDIX P PHOTOS OF INTAKES AND GENERAL

P.1 PHOTOS OF INTAKES

The following photos were taken in April 2007 by Skyworks Ltd.

Ellesmere – Grasslands Intake





Ellesmere - Haldon Intake



Ellesmere - Lower Rakia Intake



Paparua Intake



Malvern - Waimakariri Intake



Malvern – Glentunnel Intake



Malvern – Kowai Intakes





P.2 GENERAL PHOTOS

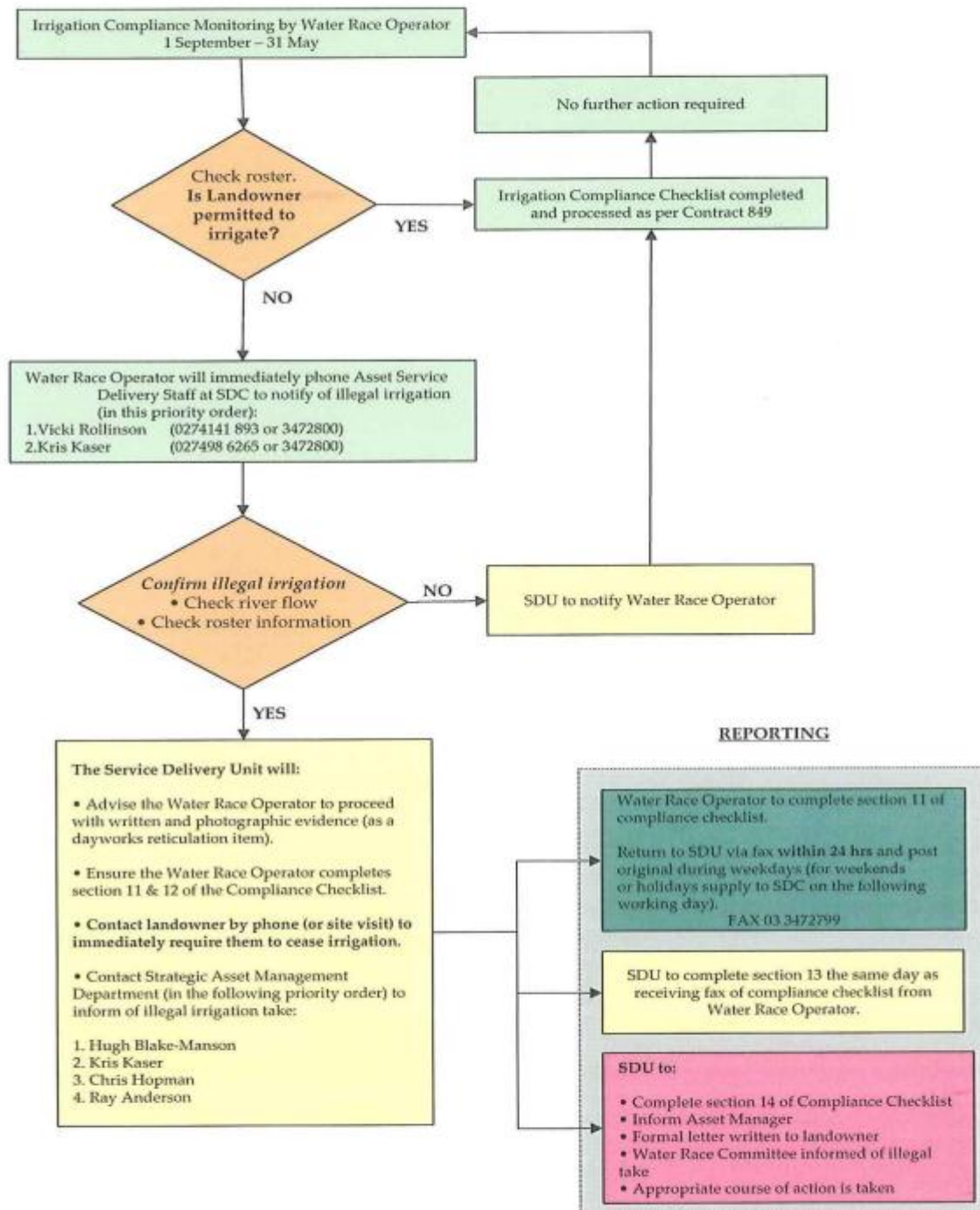


BISHOPS CREEK
Downstream View of Odges Divide

APPENDIX Q IRRIGATION INSPECTION PROCESS

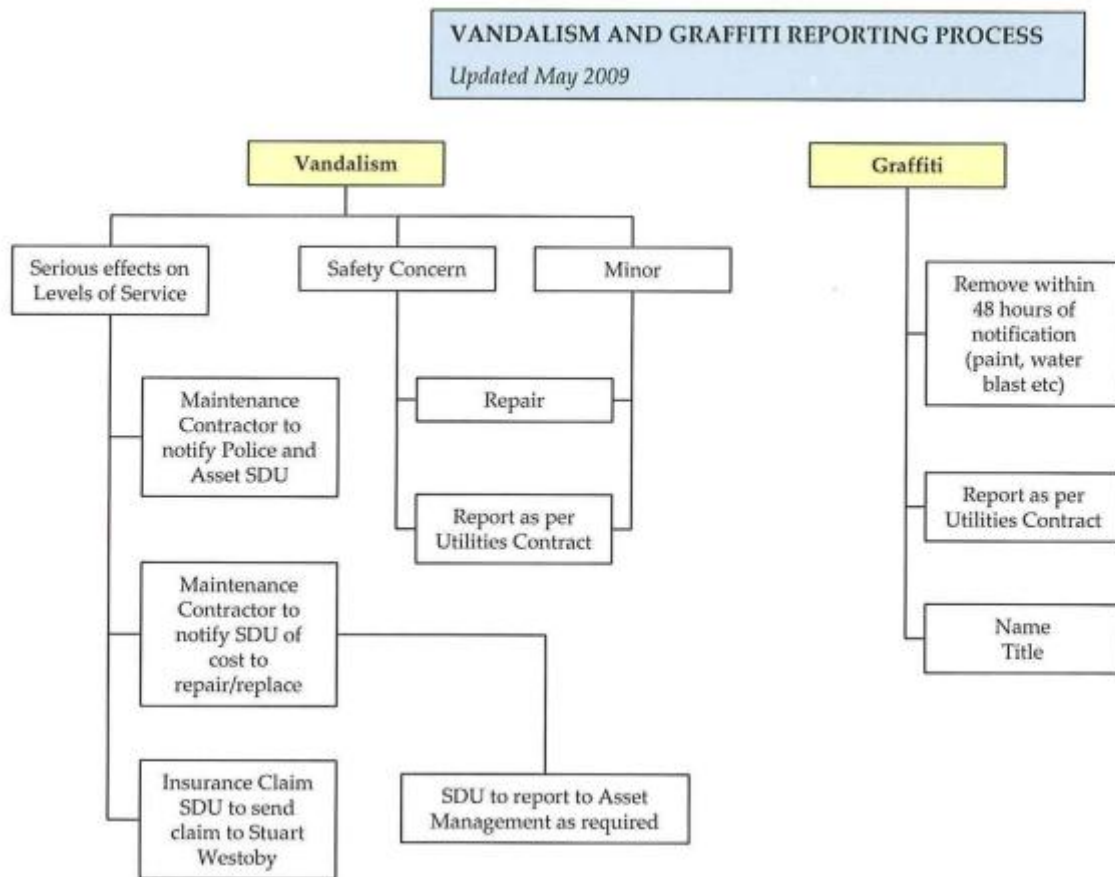
Standard Operating Procedure WRP001

Response to **ILLEGAL IRRIGATION** Paparua Water Races Updated May 2009



APPENDIX R VANDALISM REPORTING PROCESS

Standard Operating Procedure WRP004



APPENDIX S ENVIRONMENTAL CANTERBURY RIVER LEVEL PROCESS

Still to be inserted

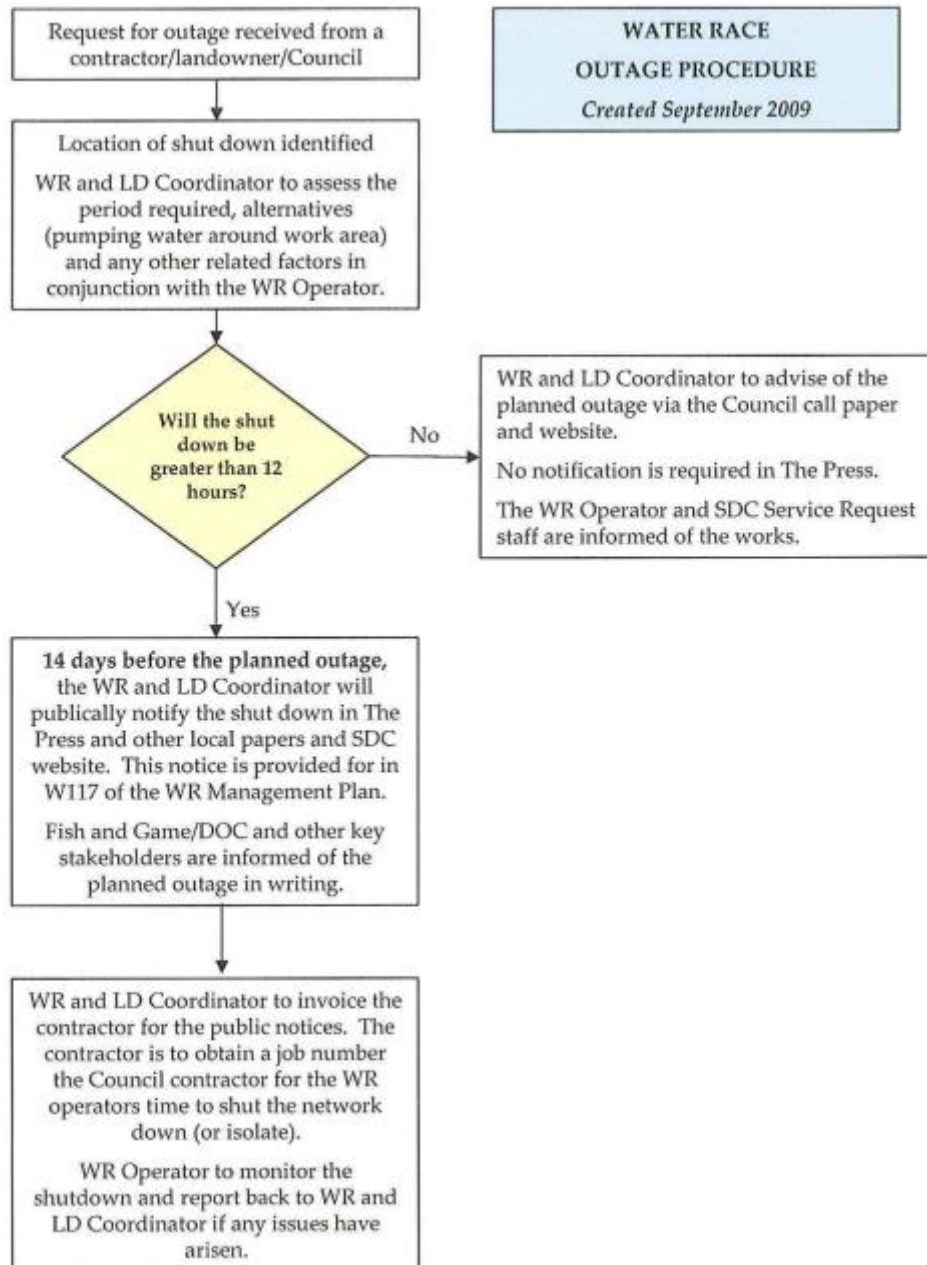
APPENDIX T CONTACTS PERSONNEL

The following table details companies and individuals that are associated with the servicing of the water race schemes.

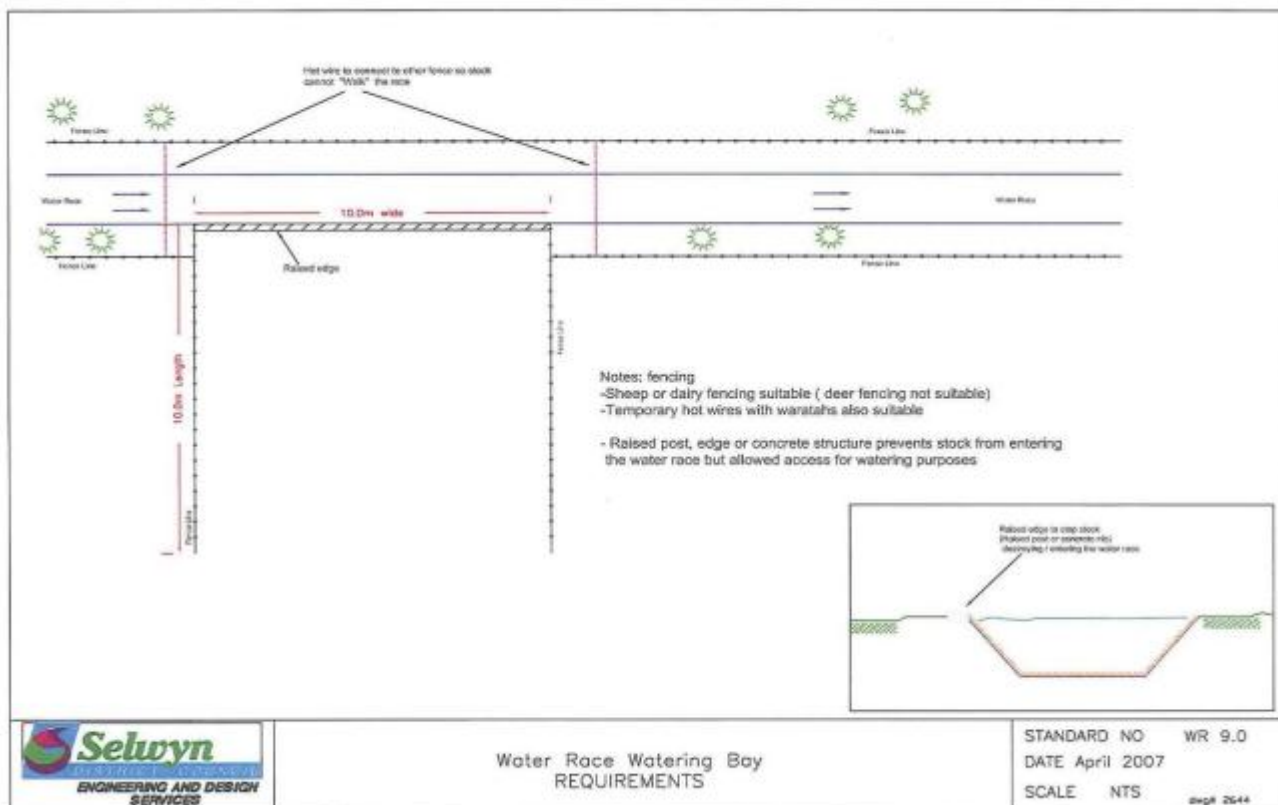
Company	Person	Contact Details	Relationship
SDC	Dave Maccoll	3472 800	Maintenance of SCADA system
North Rakaia Diversion Group	Rowan McMath	324 2166	Secretary of the Nth Rakaia Diversion Group
Nairn Electrical	Gary Roxburgh	324 3752	Councils nominated electrical maintenance contractor for utilities
Densem Contractors	Ian Densem	027 2215288	River works contractor
Environment Canterbury	RMA Compliance and Enforcement Manager	365 3828	River Engineer Team Leader Compliance Water Meter Manager
Fish and Game	Environment Officer	3 Horatio Street Christchurch	Trout removal when race is to be shut down for maintenance Key stakeholder
Department of Conservation	Grant Campbell	03 341 9104 027 2843360 gcampbell@doc.govt.nz P O Box 4715, Christchurch	Key stakeholder
Dr Leanne O'Brien		(03) 488 3454 I_niche@xtra.co.nz	Specialist knowledge of Canterbury Mudfish
Mahaaanui Kurataiao Ltd	Ms. Frania Zygadlo	P O Box 3246 Christchurch 8140 frania.zygadlo@ngaitahu.iwi.nz	Key stakeholder
Royal Forest and Bird	Chris Todd	P O Box 2516, Christchurch	Key stakeholder
Sicon Limited	Dave Wilson CEO	P O Box 40, Darfield 03 318 8320	Council Utilities Contractor
Canterbury Grasslands (Glenroy)	Sean Wilson Operations Manager	0274 826 600	Water Race Intake (Earlys)

APPENDIX U SHUT DOWN PROCEDURES (OUTAGES)

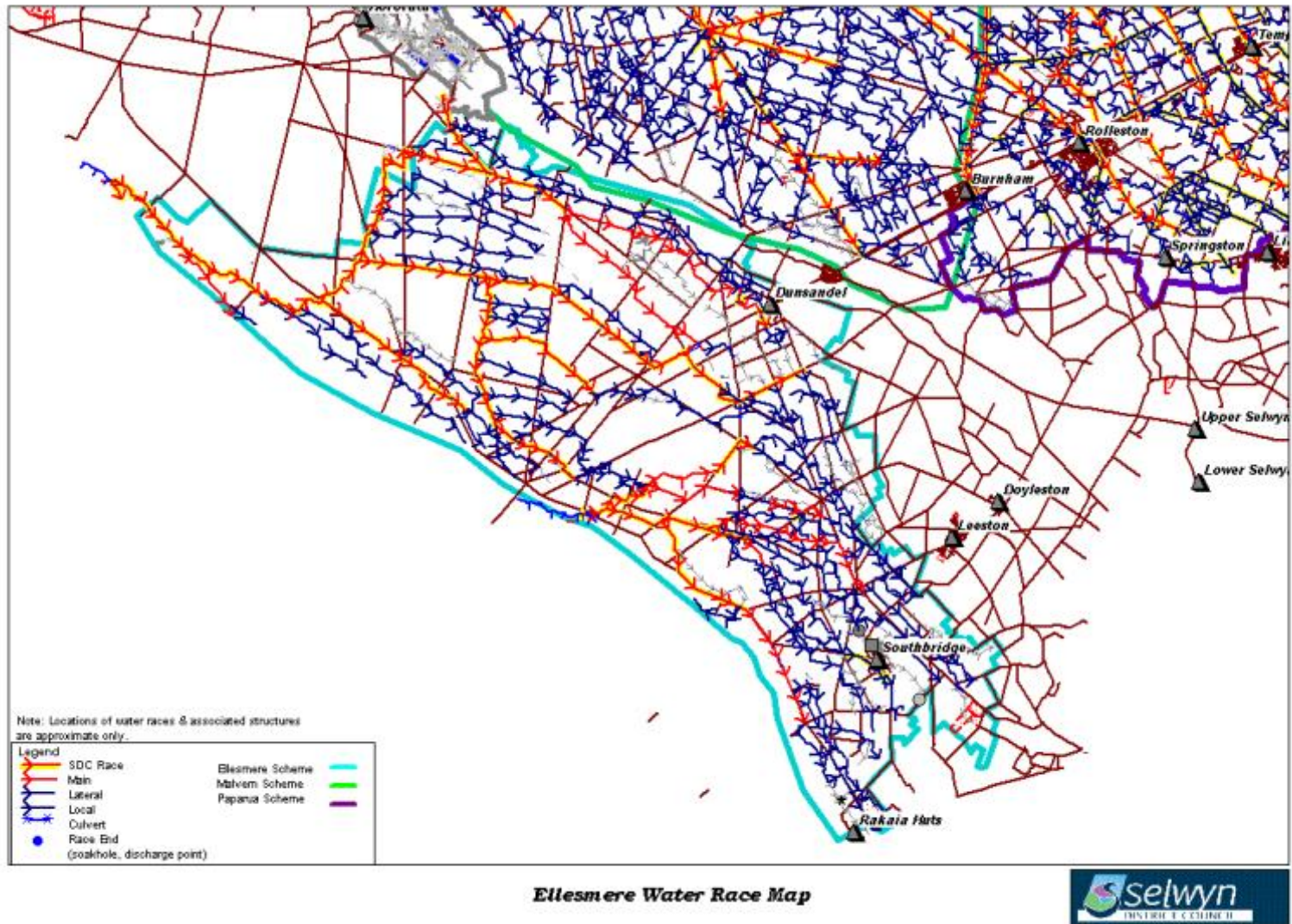
This procedure should be read in conjunction with Policy W117 Planned Works Outage Management

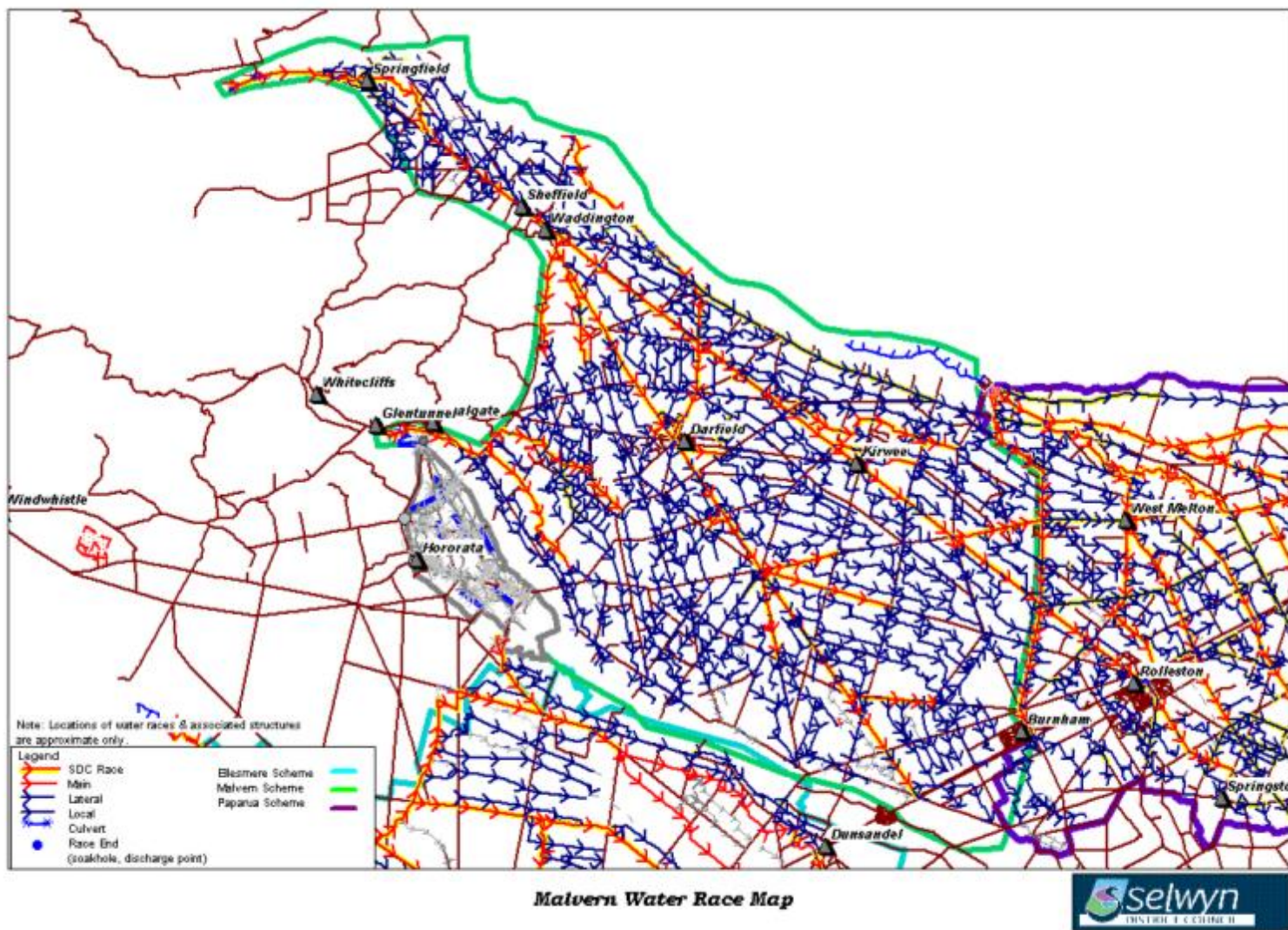


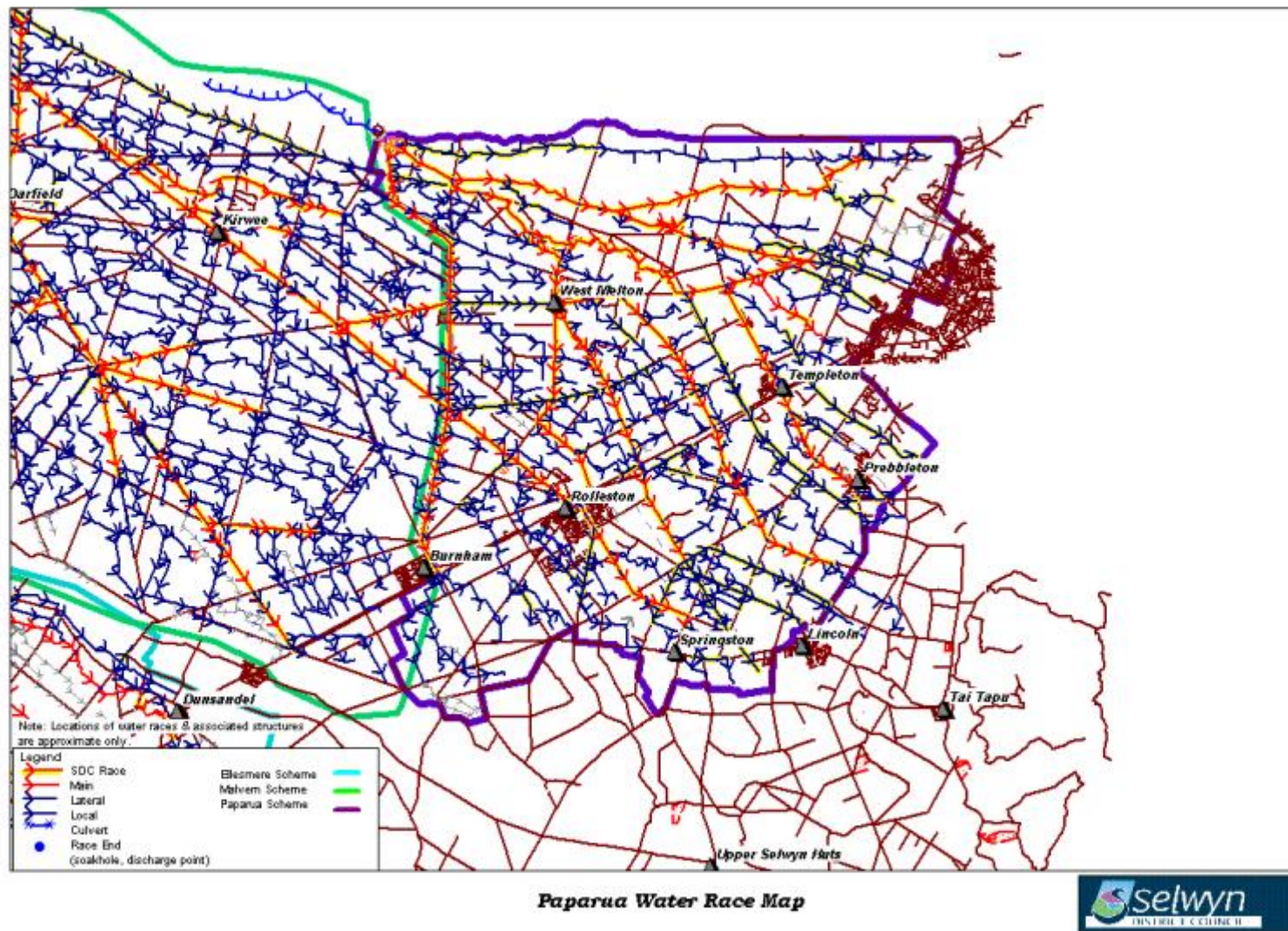
APPENDIX V WATERING BAY SCHEMATICS



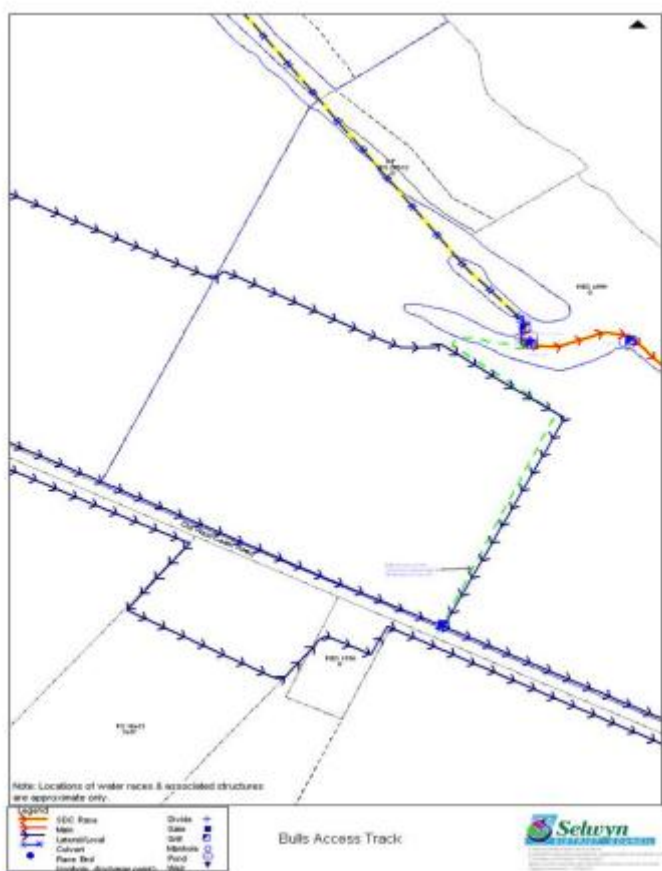
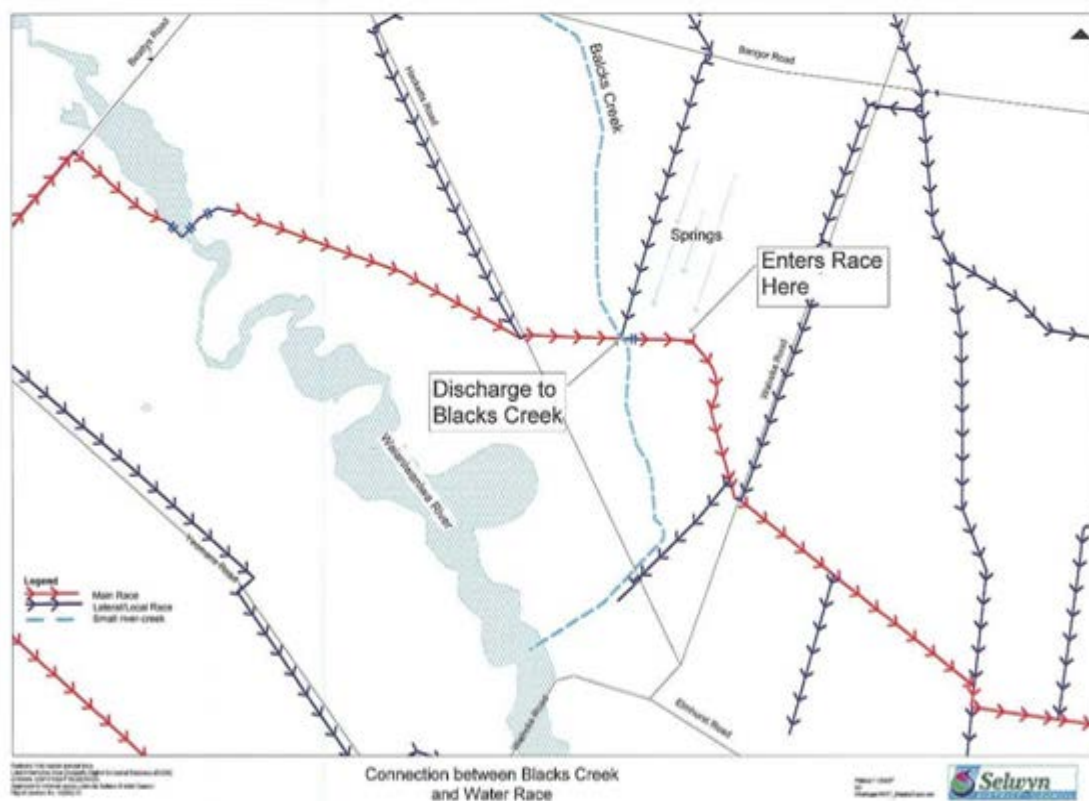
APPENDIX W MAPS: SCHEMES

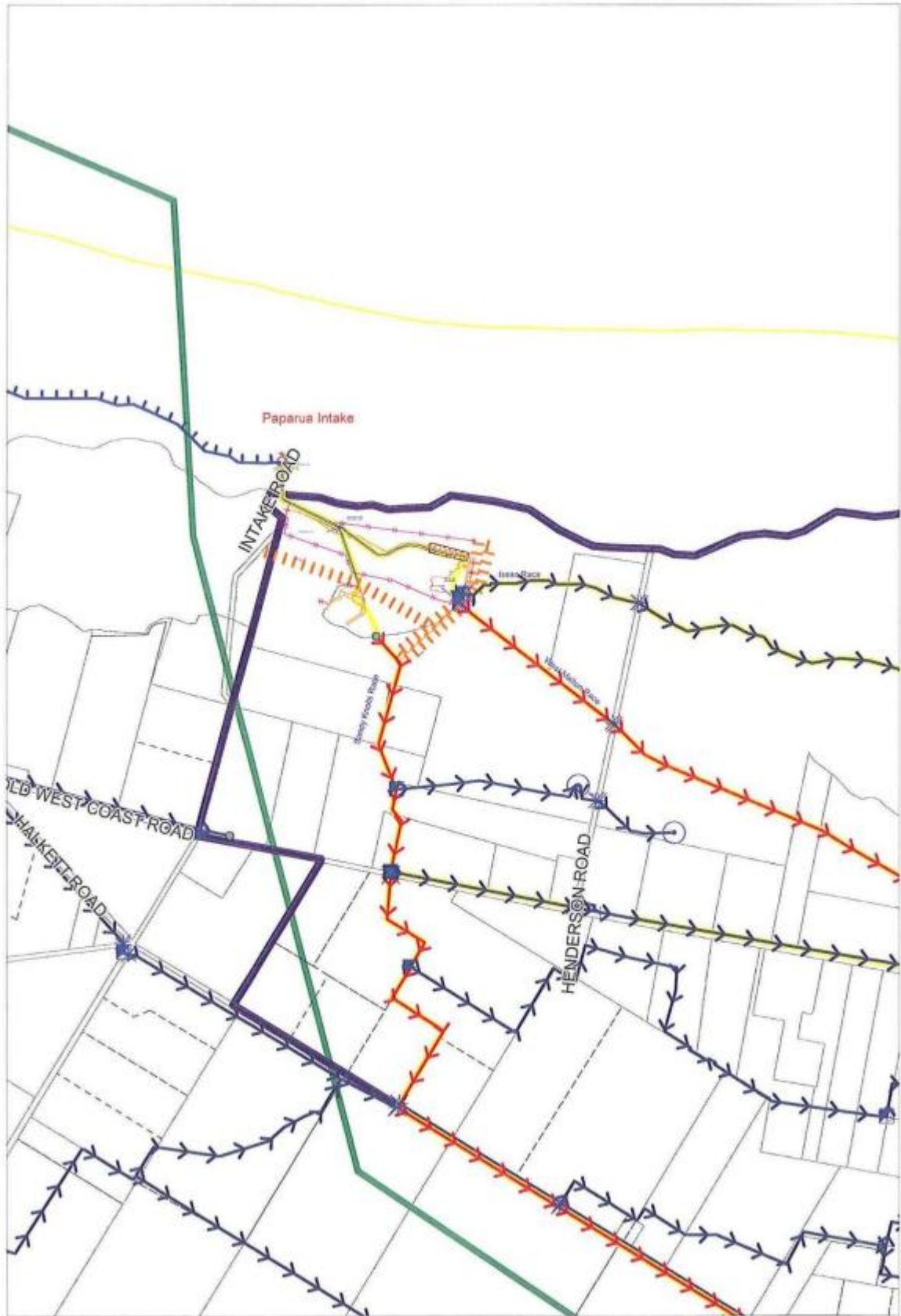


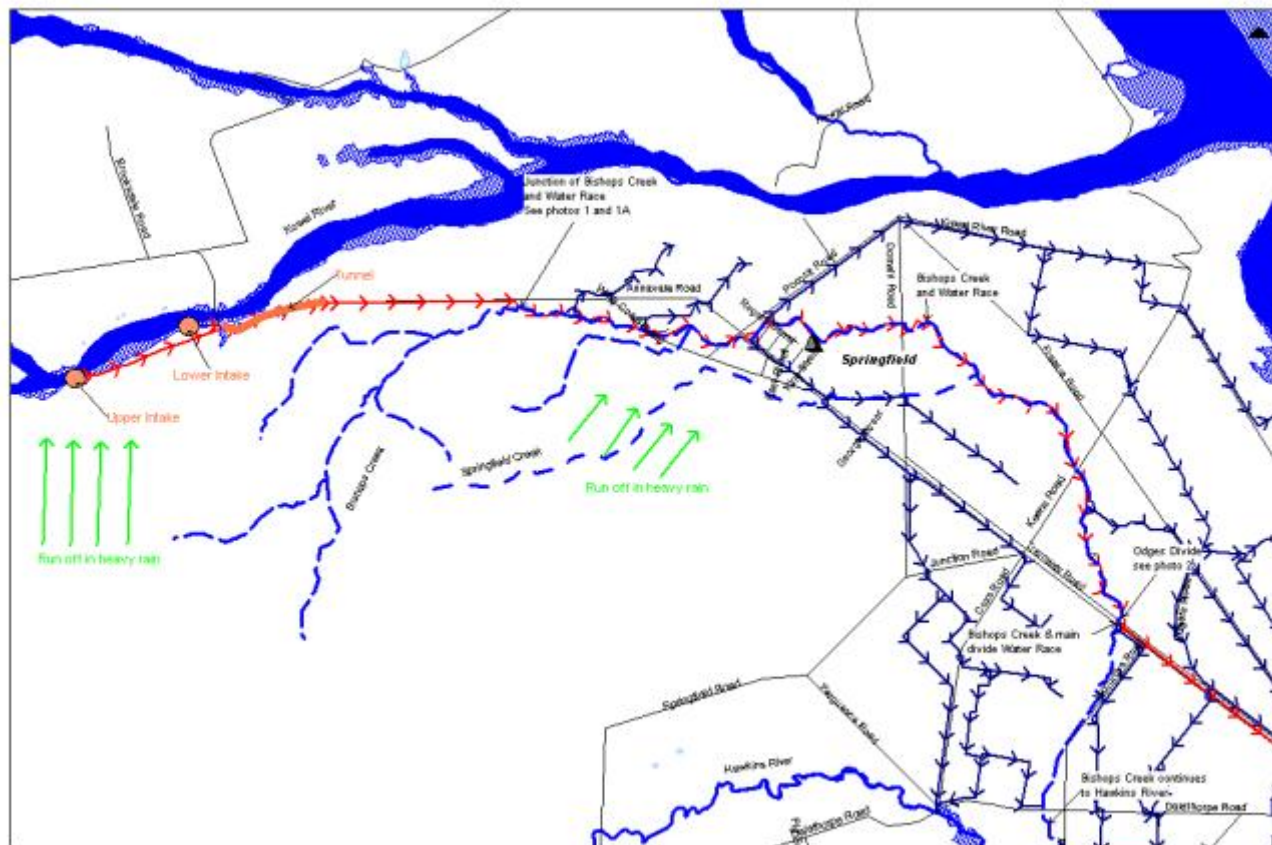




APPENDIX X MAPS: INDIVIDUAL AREAS

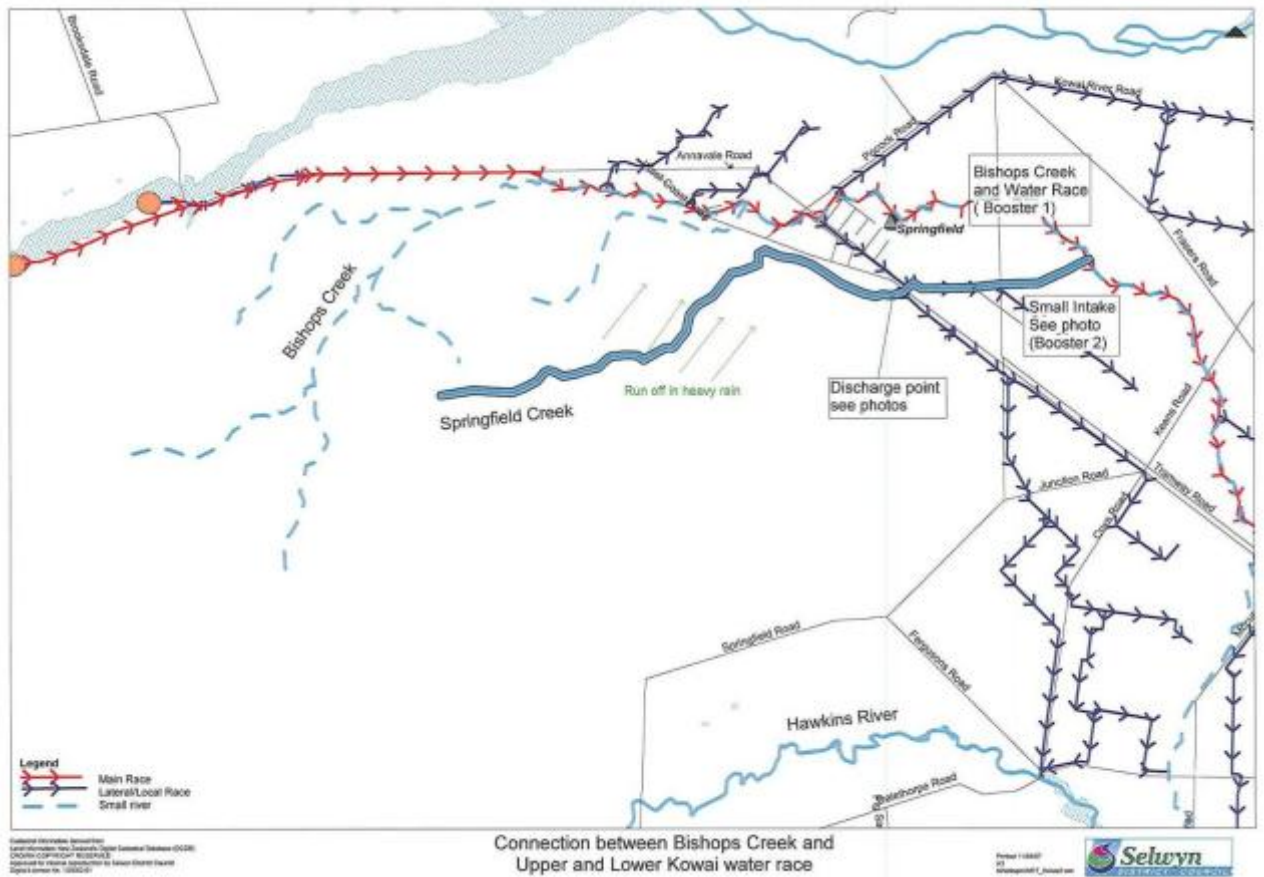






Connection between Bishops Creek and Upper and Lower Kowai water race





**APPENDIX Y KOWAI RIVER AGREEMENT WITH FISH AND
GAME**

SCHEDULE 1

**COPY OF AUTHORISATION UNDER S.59
FRESHWATER FISHERIES REGULATIONS
1983**

3 November 2008

Hugh Blake-Manson
Selwyn District Council
Private Bag 1
LEESTON


Dear Hugh

AUTHORISATION TO LIBERATE FISH

This letter represents written authorisation under section 59 of the Freshwater Fisheries Regulations 1983 from the North Canterbury Fish and Game Council ("Fish & Game") for the Selwyn District Council ("SDC") to liberate fish from the Kowai River. This authorisation is subject to the following conditions:

1. The authorisation shall take force immediately from the date this authorisation was signed.
2. This authorisation shall be for a term as per the consents granted to SDC from the Canterbury Regional Council for the Malvern stockwater scheme.
3. This authorisation is limited to the Selwyn District Council and persons authorised to act by the Selwyn District Council.
4. Fish shall only be salvaged from the Kowai River.
5. The salvaging of fish shall only occur when fish are stranded in isolated pools or channels, and would otherwise be likely to die if not salvaged and liberated in a manner consistent with Conditions 6 and 7 below.
6. All fish salvaged under this authorisation shall be expeditiously and carefully transferred live into an actively flowing channel in either:
The Kowai River downstream of the confluence with the Rubicon River; or
The Rubicon River itself.
7. Where Fish & Game has provided additional direction via training of, or ongoing advice to the Selwyn District Council regarding the salvaging and liberation of fish under this authorisation, then those activities shall also be undertaken in a manner consistent with those directions.
8. The Selwyn District Council shall ensure records are kept of any salvaging or liberation undertaken under this authorisation. These records shall be provided in written format and posted to Fish & Game (ATTN: Environment Officer) annually in the month of August, and shall include:
Dates that salvaging/liberation occurred;
The approximate location where stranded fish were found;
Numbers of fish salvaged, including the numbers of different species; and
The approximate location where fish were liberated.

9. Fish & Game will notify the SDC in writing of any intention to review the conditions of, or to revoke this authorisation, and will consult in good faith with SDC prior to making a determination as to any changes to conditions or cancellation of this authorisation.


Signed by: _____
Ian McCrory
Manager
North Canterbury Fish and Game Council

7-11-08
Dated: _____

AGREEMENT

between

**NORTH CANTERBURY FISH AND GAME
COUNCIL**

and

SELWYN DISTRICT COUNCIL

THIS AGREEMENT is dated the 3rd day of ~~November~~ 2008
BETWEEN **NORTH CANTERBURY FISH AND GAME COUNCIL**
AND **SELWYN DISTRICT COUNCIL**

1. BACKGROUND

- 1.1 On 1 February 2008 the Canterbury Regional Council notified its decision on applications by the Selwyn District Council ("SDC") related to the operation of the Malvern Stockwater race network.
- 1.2 The SDC lodged notice of appeal on 25 February 2008. The appeal was restricted to Condition 3 of consent CRC012003, to take water from the Kowai River for stockwater purposes. There were no other appellants.
- 1.3 The North Canterbury Fish and Game Council ("Fish and Game") submitted in opposition to these applications. On 28 March 2008 Fish and Game lodged a notice under s.274 of the Act opposing the relief sought by the SDC. There were no other s.274 parties to this appeal.
- 1.4 SDC, Fish and Game and the Canterbury Regional Council ("The Parties") subsequently participated in mediation. The Parties have agreed that the appeal can be disposed of by consent.
- 1.5 In addition SDC and Fish and Game have agreed that a separate agreement between those two organisations is necessary and appropriate to provide for fish salvage and liberation. The conditions of the latter agreement is set out below.

2. SELWYN DISTRICT COUNCIL COMMITMENTS

- 2.1 The SDC agrees it shall observe river flows in the Kowai River above, adjacent to, or immediately below its stockwater intake/s on a daily basis.
- 2.2 The SDC agrees that whenever the river flow rate has dropped so that fish may become trapped in isolated pools or channels between the stockwater intake/s and the confluence of the Kowai River and the Rubicon River;
 - a) A visual inspection shall be undertaken along this reach for the presence of fish in isolated pools or channels.
 - b) Any live fish observed trapped in isolated pools or channels shall be salvaged and liberated in a manner consistent with conditions of the authorisation granted to the Selwyn District

Council by Fish & Game under section 59 of the Freshwater Fisheries Regulations 1983 (attached as Schedule 1 to this Agreement).

- c) The actions described in 2.1 and 2.2 shall be repeated on a daily basis until it is evident that no more fish could have gained passage to isolated pools or channels.
- 2.3 The SDC agrees it will pay any costs associated with the commitments agreed to in clauses 2.1 and 2.2.

3. NORTH CANTERBURY FISH & GAME COUNCIL COMMITMENTS

- 3.1 Fish and Game agrees it shall advise, to the best of its ability, the SDC of any authorisation that may be required from Fish & Game under any Act or Regulation to enable the salvaging and liberation of fish under this agreement.
- 3.2 Fish and Game agrees it shall provide required authorisation where it is within the powers of Fish & Game to do so, subsequent to agreement being reached on appropriate conditions for such an authorisation to be granted.
- 3.3 Fish and Game agrees that where Fish & Game has provided authorisation, Fish & Game shall not initiate any proceedings against any person acting in good faith under this authorisation if other authorisations should have been sought from Fish & Game, but Fish & Game did not previously advise the SDC that other such authorisations were also necessary.
- 3.4 Fish and Game agrees to provide training or ongoing advice to persons authorised by SDC to operate under this agreement and associated authorisation. Fish & Game agrees it shall respond to requests for training or advice as soon as practicable after having received such requests.
- 3.5 Fish and Game agrees it will pay any costs associated with the commitments agreed to in clauses 3.1 – 3.4.


4. DISPUTE RESOLUTION

- 4.1 The Parties will use their best endeavours to resolve any dispute which may arise between the parties in connection with this agreement by negotiation in good faith. The Parties will attend at least one meeting to discuss an attempt to resolve the dispute as a condition precedent to taking any other steps concerning the dispute.
- 4.2 If the dispute cannot be resolved in accordance with clause 4.1, then the Parties will refer the dispute to mediation by a mediator

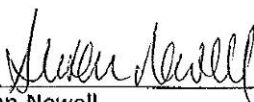
appointed by the chairperson for the time being of LEADR (New Zealand).

- 4.3 Any dispute that is not resolved within 20 working days of its reference to mediation in accordance with clause 4.2, will be referred to and resolved by arbitration by a sole arbitrator under the Arbitration Act 1996. The arbitral proceedings will commence on the date that a written request for the dispute to be referred to arbitration is received by the Respondent. The arbitrator will be appointed by the parties to the dispute.

Signed as an agreement.

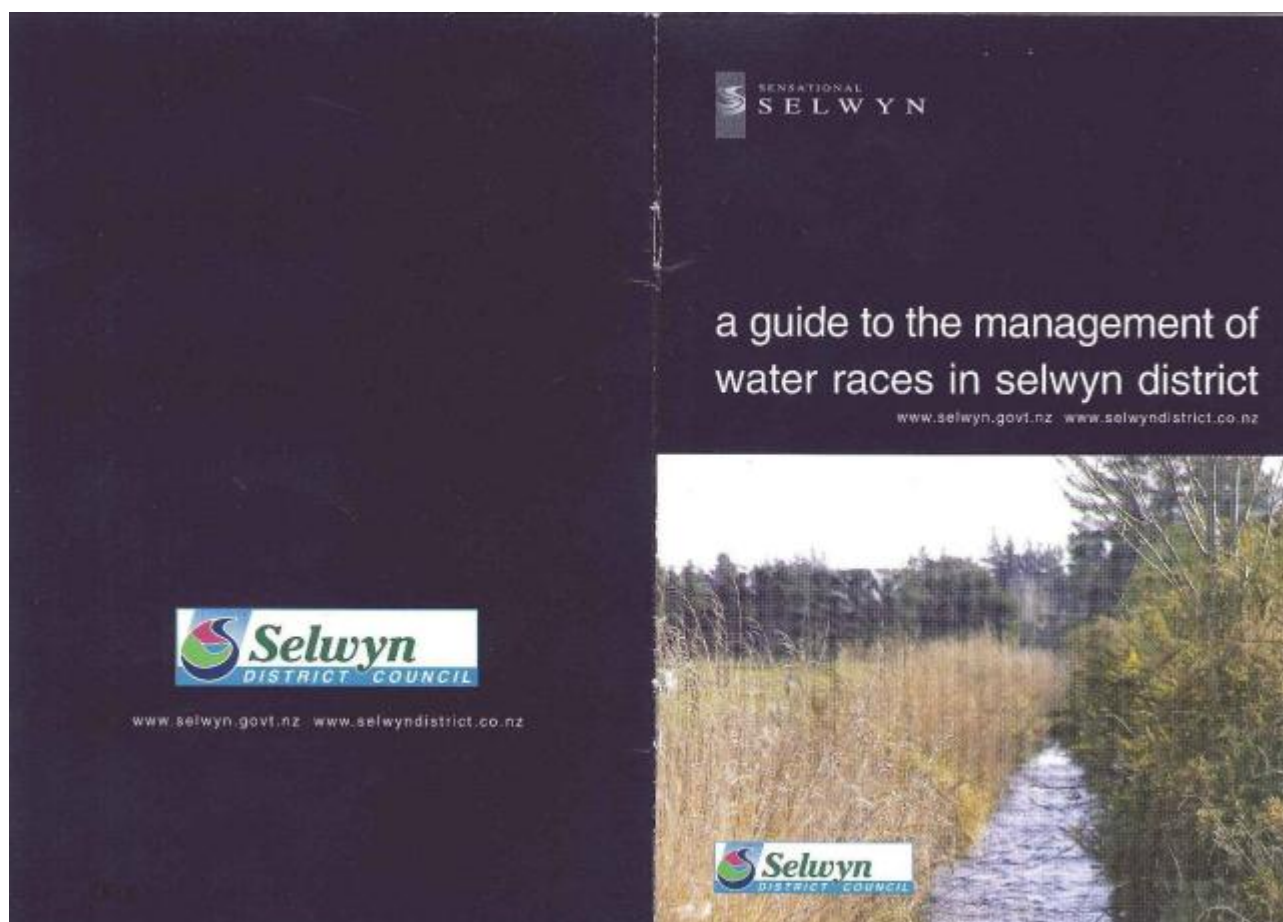


Ian McCrory
For and on behalf of the North Canterbury
Fish and Game Council



Susan Newell
For and on behalf of the Selwyn District
Council

APPENDIX Z WATER RACE BROCHURE





Introduction

The water race network in central Canterbury began operation over 120 years ago and was established to provide a reliable water source for agriculture. The primary purpose of the water race network today is essentially the same, although the source and network faces increased pressure from other resource users such as recreational, cultural, fisheries and wildlife users.

The water race systems must be able to function and co-exist alongside other resource users. Management and operation of the network has now recognised and reflects the values of other resource users. This required a more structured and effective management process which is outlined in the Water Race Management Plan.

Malvern was the first system to be installed in 1874. Other systems followed soon after with Ellesmere in 1880, Papanui in 1885 and Selwyn in 1886. Water intakes are located at key points on rivers around the region including the Kowai, Waimakariri, Selwyn, Rakai and Hororata Rivers.

If you have a problem with your water race

• Public Enquiries and Concerns (PEC) can be passed on to the Council via the Council's normal phone number, (03) 347 2600 or Darfield residents call free on (03) 318 6338. These calls enable the Council to compile a computerized record of public concerns, both to ensure a prompt response and to ensure that the Council's maintenance standards are of sufficient quality. Calls are answered 24 hours.

References/Further Information

A guide to Managing Waterways on Canterbury Farms – Environment Canterbury.
Caring for Streams of the Canterbury Plains: A Guide to Riparian Management – Environment Canterbury.
Streamside Planting Guide – What to plant and how to maintain native plants along freshwater streams in Christchurch – Christchurch City Council.
Sustainable Drain Management, Field Guide – New Zealand Water Environment Research Foundation.
Waiata Wai: Water of Canterbury – Section Four: Discovering your local waterway.
Lake Ellesmere/Te Waihora and its tributaries – Environment Canterbury.

Acknowledgements

Environment Canterbury
For provision of photographs and source material from existing publications
Brochure jointly developed by Selwyn District Council and the Waihora Ellesmere Trust.

3

The threatened Canterbury mudfish also inhabit water races in places and protecting their habitats is important in the on-going preservation of this species.

Maintaining the health of the resources of Te Waihora/Lake Ellesmere is key to Tangata Whenua. Factors such as sedimentation, pollutants and discharge of nutrients to waterways that feed Te Waihora/Lake Ellesmere are of great concern. Therefore limiting these in-puts is important in the management of water races to protect the cultural values of the overall area.

Receiving Environments

Water races can impact on the receiving environments that they empty into. Water races can be a vehicle to transport sediments, nutrients and bacteria to streams, drains and lakes. In order to protect these environments, and the ecological and cultural values of the water races themselves, it is important that appropriate management practices are employed. This booklet will provide guidance on management practices that will minimise negative impacts and possibly enhance the ecological and cultural values of the races.



Grass margins

Although it can look untidy rank grasses, native sedges and rushes are the most effective filter for removing sediment, bacteria and nutrients from over land flow before it reaches water races.

Grass margins are most effective in:
areas of poorly-drained soil where a lot of water reaches the water races by way of over land flow;
paddocks that are grazed in autumn and winter;
cultivated paddocks.

Factors to consider when creating a grass margin;
The type of vegetation – dense grass makes the best filter;
The width of the grass margin – within reason the wider the better, with two or three metres generally being sufficient to cope with run-off on flat land;
Allow a wider grass margin at low points where paddock run-off enters the waterway.
A grass margin will not be as important in free draining soils where surface run-off is rare.

A long grass margin provides shade and filters out sediment.



Fish in Water Races

Native Fish

Water races provide habitat for populations of some of our nationally threatened freshwater species including Canterbury mudfish, longfin eel, freshwater mussel and koura (freshwater crayfish). It is important to manage water races to maintain their habitat value and to minimise negative impacts on these species. As mentioned earlier in this booklet this can be done through:

- Timing cleaning to avoid migration and spawning.
- Planting native vegetation on the banks of water races to create habitat and cool water temperatures.
- Blocking sediment inputs into water races.
- Preventing stock access to water races

Introduced, pest fish

Introduced, pest fish may make it into the water race system from unsecured private ponds or if people release them. It is illegal to introduce any new species of fish into any freshwater body without approval from the Minister of Conservation under the Conservation Act 1987. Therefore, landowners should not allow any introduced fish into water races.

Of the four pest fish species of primary concern in New Zealand, Koi carp, gambusia, rudd and catfish, rudd and catfish are known or suspected to be present in Canterbury. If you see or suspect introduced fish in the water races on your property, make contact with the Department of Conservation Mahanui Area Office on 03 371 3706.



Rudd are suspected to be in Canterbury. Photo courtesy of Sjaan Charteris, DOC.

What time of year should you plant?

Sufficient soil moisture is necessary for new plants to successfully establish, so it is important to plant at the right time of the year.

Generally plant during late August/September. For frost sensitive plants late spring is best.

Plantings may need to be irrigated, mulched or planted so that the soil surface dips around them, to retain moisture.

In unusually dry seasons it is best to delay planting until soil moisture is adequate.

What spacings are required between plants

Planting at correct spacing will ensure that a canopy is quickly formed and weeds are shaded out.

Small plants such as tussocks, sedges and rushes should be planted half a metre apart and larger plants one or two metres apart (the previous table includes recommended spacings).

It can be tempting to plant at wider spacings to reduce costs, however this can compromise the success of the plantings and result in extra time costs involved with weed control.

For more information on planting next to water ways see "A guide to managing waterways on Canterbury farms", which can be downloaded from the Environment Canterbury Website www.ecan.govt.nz, or ordered from Environment Canterbury customer services – 0800 324 636.

Purpose of the Water Race Network

The primary purpose of the water race network is to provide

- Stock water
- Drinking water (at the sole risk of the user).

Secondary purposes of the water race network are;

- Irrigation (as governed by policy and/or agreement);
- Fertilising and;
- Landscape/aesthetics/biodiversity.

Secondary purposes are increasingly relevant to the longer term survival of the water races.

Council Goal

The Council's goal of providing a Stock Water Race System is:

"To provide effectively operated and managed stock water race schemes to meet the present and likely future needs of the consumers and promote sustainability".

This statement provides a clear indication to water users and other resource users of Selwyn District Council's (SDC's) primary objective in operating and managing the network. The above statement includes reference to customer needs, efficiency, and environmental objectives. An overall plan guiding the operation and management of the network to meet these objectives and outcomes is specified the Water Race Management Plan.

Designed to provide water for stock and domestic use, water races have proven to also have valuable ecological functions. The vast network of water races across the Selwyn District, connected to drains, streams and ultimately Te Waihora/Lake Ellesmere, provide habitat for fresh water fish and invertebrates. The vegetation that races can host also provides habitat and corridors for the movement of birds and invertebrates through a very dry area.

Culturally, water races are significant to Tangata Whenua as like all waterways linked to Te Waihora/Lake Ellesmere, they can provide habitat for Mahinga kai, food sources and unique flora and fauna. Eels (tuna) are known to use the water races and maintaining the water quality and fish passage within them is important for the management of the eel resource.

Responsibilities – Who is Responsible for What?

Responsibilities for water race use and maintenance are determined by The Local Government Act and Selwyn District Council by-laws and policies. These can be read on the Selwyn District Council website www.selwyn.govt.nz or paper copies are available at all Selwyn District Council Service Centres. Responsibilities are as follows.

Selwyn District Council

Selwyn District Council is responsible for the maintenance, repair and cleaning of the main Council designated races and the accessories associated with them. Schedules listing the main races are available on the SDC website as are the By-laws and policies pertaining to water races. www.selwyn.govt.nz

In the Papanui scheme, including Christchurch City, Selwyn District Council is also responsible for water races that are within legal roads maintained by the Council

Landowners

All other water races are the responsibility of surrounding or adjoining land owners. Land owners are responsible for water races and associated structures, such as culverts and bridges, on their property and on roads or reserves contiguous to their property.

Landowners are also responsible for the impacts land uses adjoining the water races may have on the races, such as hedge trimming which can result in trimmings blocking the water races.

Landowners are not responsible for culverts across Council formed roads and weirs and control structures that control flow to more than one property.

Water Race Sub-Committee

The water race Sub-Committee is made up of Councillors and water race users. The Committee meets four times a year and is responsible for water race issues including policies, the on-going operation, maintenance and improvement expenditure and recommends yearly estimates and water rates to the Council Operations Committee. The Sub-Committee plays a vital role in the on-going operation and administration of the water race schemes.

The Sub-Committee members and the Committee's terms of reference are available on the Selwyn District Council website. Members can be contacted to discuss concerns that you may have regarding the water race schemes.



Figure 1: List of hearty species suited to open, exposed sites

Native Name	Common Name	Height (m)	Spread (m)	Flower Colour	Flower Time	Seed Colour	Seed Shape	Seed Size (mm)
<i>Carex acuta</i>	Slugg	0.5-1	0.5-1					
<i>Chenopodium rubrum</i>	Crab	0.5-1	0.5-1					
<i>Coriaria ruscifolia</i>	Crab	1-1.5	1-1.5					
<i>Phormium tenax</i>	Flax	1.5-2	1.5-2					
<i>Coprosma propinqua</i>	Shrub	1.5-2	1.5-2					
<i>Cordia alliodora</i>	Shrub	1.5-2	1.5-2					
<i>Hebe sedifolia</i>	Shrub	1.5-2	1.5-2					
<i>Olearia speciosa</i>	Shrub	1.5-2	1.5-2					
<i>Cassiope robusta</i>	Shrub	1.5-2	1.5-2					
<i>Corydalis australis</i>	Small tree	1.5-2	1.5-2					
<i>Docosia villosa</i>	Small tree	1.5-2	1.5-2					
<i>Leptospermum scoparium</i>	Small tree	1.5-2	1.5-2					
<i>Melicope maritima</i>	Small tree	1.5-2	1.5-2					
<i>Olearia paniculata</i>	Small tree	1.5-2	1.5-2					
<i>Phoradendron laetifolium</i>	Small tree	1.5-2	1.5-2					
<i>Kunzea ericoides</i>	Tree	1.5-2	1.5-2					
<i>Persea carolinensis</i>	Tree	1.5-2	1.5-2					
<i>Plagiostylus repens</i>	Tree	1.5-2	1.5-2					
<i>Solanum elaeagnifolium</i>	Small tree	1.5-2	1.5-2					

As water races carry water for stock to downstream users, no plants that are poisonous to stock should be planted on their edges. Native plants that can be poisonous to stock include Tara, Ngaho, Kowhai, and Pigeon. A more detailed list of native plants poisonous to stock can be found at Selwyn Council Office. If you are unsure of whether a plant is poisonous to stock, contact your local nursery for more information.

Which plants where?

Tussocks and sedges are the best plants to put in immediately adjoining a water race. Diggers can reach over them easily, they have a small root structure and will not impede the flow of the water.

If you wish to plant a wider strip alongside a water race you can include shrubs and trees further away from the margins of the race where they will not impede flows or create blockages. If you wish to plant on both sides of the water race you must leave an unplanted strip on one side at least five metres wide for machine access. Only use low-stature plants such as tussock and sedges between the digger and the stream.

Wider planted strips can be a real asset to your property, providing fantastic habitat for birds and invertebrates, creating buffer zones between the water race and surrounding land use and improving the aesthetics of your property.

When selecting species to plant you need to consider such things as frost hardiness, soil moisture levels and whether they are tolerant of full sun. The following table provides a list of hardy species best suited to open, exposed sites around water races.

A waterway planted on one side so that the digger still has access for cleaning.



What to do if there is a water race is on your property

If there is a water race on or adjacent to your property you are responsible for maintaining it.

What to manage for

As a landowner you need to regularly inspect, repair, maintain and clean water races to ensure:

- Blockages are removed promptly to maintain free flow;
- As far as practicable, wastage of water does not occur, by seepage or otherwise;
- Continuity of supply to downstream users at all times;
- Culvert crossings are maintained in good condition;
- Gorse, broom and tree branches are cleared from race edges.

If landowners do not carry out the maintenance and cleaning requirements of water races specified in any written notices given by the Council, the Council may carry out required works and recover the costs as a debt from the land owner.

Water Race Cleaning

Cleaning of water races is needed to remove sediment and weeds from the races. Sediment and weeds can:

- Slow or stop the flow of the water races;
- Elevate water levels and lead to spill over and loss of water;
- Change the magnitude and direction of currents which may cause bank erosion;
- Slow flows and encourage deposition of suspended sediments leading to more weed growth.

Removal of weed and sediment can be carried out mechanically with a digger, by hand or by spraying to kill the weeds.

Keeping water races clean is a requirement of land owners under Selwyn District Council's By-law relating to water races and should be carried out at least annually.

Stock Access

Under section s228 of the Local Government Authority it is an offence to allow stock to enter a water race and the Selwyn District Council has the discretion to take action if a breaches are allowed to occur.

When to clean

Landowners with races running through arable land within the Maelern and Eilemere water race schemes should clean races before the crops are put in to avoid the need for emergency cleaning and potential damage to the crops. If not cleaned before the crops are planted, races should be cleaned once crops are removed, or by the 31st of May. Races running through grazed land should be cleaned by the 30th of December.



Cutting into the edge of the race bank is not permitted



A race that has been cleaned with spoil positioned neatly on the water race bank

Planting

Benefits of planting:

Planting alongside water races can be beneficial for a number of reasons.

Planting on the northern side of the water race can shade the water, limiting aquatic weed growth and cooling water temperatures, which is beneficial for fish and invertebrates.

Planting of water race banks can provide erosion protection.

Plants can enhance the habitat value of the water race providing food and shelter for invertebrates and birds.

Planting increases biodiversity within the district, improving ecological values.

Plantings can enhance the aesthetic value of your property.

When planting bear in mind:

Access for diggers to clean water races needs to be maintained at all times. When planting on the digger access side, leave an unplanted strip at least six metres wide for machine access. Only use narrow, low-growing plants such as sedges between the digger track and the water race.

If the adjoining land is to be grazed, plantings need to be fenced off to ensure they are not damaged or destroyed by stock.

When selecting species to plant, you need to ensure plants are not going to migrate into the race itself. Selwyn District Council Water race Policies state that landowners may not plant or permit to grow any tree or shrub in the vicinity of a water race if the roots or foliage of that plant may impede the free flow of the water race or access to the water race for the purpose of repair and maintenance or cleaning.

Stock and vehicle crossings

Stock and vehicle crossings can be a major source of sediment in water races and can create substantial erosion of the banks and race bed.



Sediment inputs from vehicle and stock crossings can be substantial.



A well-installed culvert



A badly installed culvert – placed too high above the stream bed to allow fish passage.

Creating culvert or bridge crossings is an excellent way to minimise these impacts. However, culverts and bridges need to be designed carefully and installed well to ensure they do not cause erosion or restrict fish movement up and downstream. Culverts and bridges need to be constructed to Selwyn District Council specifications, which include size requirements depending on the designation of the water race. As a general rule culvert size cannot be smaller than those up or downstream of the new one. Contact Selwyn District Council before installing a new culvert or bridge in a water race to ensure engineering specifications are correct.

If you are carrying out mechanical cleaning you need to bear in mind;

If the race has significant habitat value schedule works to minimise disturbance to the species that use it. In particular consider and avoid adversely affecting fish migration, spawning and nesting.

If possible, avoid cleaning sensitive areas (such as patches of native vegetation) and rehabilitate disturbed land especially if erosion is likely to occur. Ensure water races are kept shallow and narrow to maintain sufficient water velocity. Wide, deep races result in increased surface area for evaporation and maintenance.

Cleaning can result in sediments being re-suspended and washed downstream, leading to sediment build ups in other users races or the receiving streams and drains. Cleaning the lower end of a race last can limit sediment loss by capturing silt from above.

Use experienced, knowledgeable operators

Incorrect cleaning practices can lead to deepening and widening of water races and sediments being washed down stream. Using experienced digger operators who understand the importance of maintaining correct width and depths and minimising sediments being washed downstream, can avoid these problems.

A list of complying contractors can be found on the Selwyn District Council website at www.selwyn.govt.nz

Spraying

Spraying is an effective way to control weeds growing in water races, however it can have damaging effects on aquatic life and water quality.

When spraying bear in mind

- Do not spray the banks of water races as the vegetation stabilises the banks and provides a filter for nutrients and sediment in run-off.
- Ensure you are using the correct herbicide for the plants you are trying to kill.
- Spray at minimum effective rates more often, rather than at high concentrations and less often.
- Spray weeds when they are smaller to reduce the amount of dead vegetation that remains in the race and reduce the risk of blockages.
- Do not allow spray to contact the water.
- Use a knapsack sprayer to ensure bank vegetation is not damaged.
- Do not clean spray equipment in water races.

Resource Consent Requirements

A resource consent from Environment Canterbury is required for spraying water races. Prior to spraying, write to Environment Canterbury specifying your intended activity, the type of spray to be used, amount and frequency of spraying.

Time of year to spray

To avoid peak spawning and migration periods spray aquatic weeds between November and April.

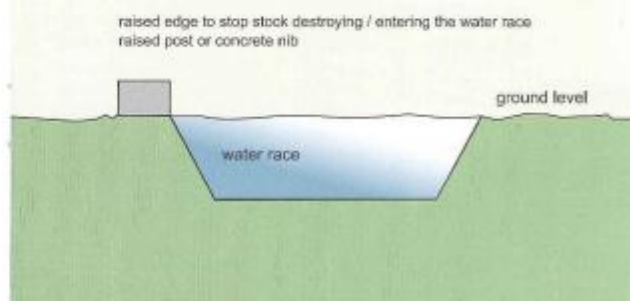
Suggested Herbicides for water weeds

Glyphosate and Diquatol

For more information on spraying contact: Selwyn District Council

Hardened access points

Hardened access points work by hardening the bank of the race, reducing the potential for banks to be eroded and sediments to enter the race when stock are drinking. Posts and gravel can be used at access points to 'harden' the bank and a hot wire erected across the middle of the water race to stop stock walking into the race. Stock should be limited to these access points through the use of fencing both along the race and across the race above and below the access point. These drawings can be viewed on the Selwyn District Council website or paper copies are available at all Selwyn District Council Service Centres.



Using temporary fences to protect waterways

Another option is to use temporary fences to keep stock out of water races. Temporary fencing can be more work than permanent fencing but it is adaptable and has minimal cost. Temporary fencing can be especially useful when break-feeding crops and when grazing stubble.



Temporary fencing is an adaptable form of fencing

Retaining access for diggers carrying out water race maintenance

When fencing water races it is critical to maintain access for diggers to at least one side of the water race. This can be achieved by:

Using temporary electric fences which can be taken down when maintenance work is required.

Ensuring fences on at least one side of the water race are erected either within one metre of the water race so that a digger can reach over, or preferably, six to ten metres clear of the race so a digger can fit inside the fence line.

Ensuring there is access through fences for diggers. Fencing away from the water race is preferable as it allows space for spoil disposal. If fences are close to the water race and diggers have to reach over the fence, spoil is likely to be trucked away to prevent build up.

Plant Pests

Plant pests can often grow alongside water races and are the responsibility of landowners to manage. Under the Regional Pest Management Strategy (RPMS) landowners are responsible for eradicating and/or managing the following plant pests that can be common alongside water races. The RPMS can be read on Environment Canterbury's website at www.ecan.govt.nz

Plant Pest	Landowner's Responsibilities
Spreading Thistle	Landowner must eradicate all plants within 40 metres of their property boundary and within 40 metres of any water race.
Witchweed Thistle	Landowner must eradicate all plants within 40 metres of their property boundary and within 40 metres of any water race.
Blackberry	Landowner must eradicate all plants within 40 metres of their property boundary and within 40 metres of any water race.
Goatsfoot	Landowner must eradicate all plants within 10 metres of their property boundary and all individual and small clumps of plants up to 50m ² .
Broomrape	Landowner must eradicate all plants within 10 metres of their property boundary and all individual and small clumps of plants up to 50m ² .
Crabapple Bush	Landowner must eradicate all plants within 20 metres of their property boundary and all individual and small clumps of plants up to 100m ² .

The Regional Pest Management Strategy identifies a number of additional plant pests that may grow alongside, or in, water races as total control pests e.g. African Feather Grass. Environment Canterbury biosecurity officers will carry out control of these plant pests and may require access to private properties to do so. Please provide them access if required.



How to reduce the need for cleaning water races

With good management practices the need for cleaning water races may be reduced. The main function of cleaning is to remove sediment and weed from water races. If these two factors are limited, water race maintenance can be reduced and the negative impacts of cleaning on ecological and cultural values can also be reduced.

Sediment and weeds are connected in a continuous circle with weeds often growing in fresh sediment, which in turn traps more sediment, leading to more weed growth. Therefore, if you can reduce sediment inputs and weed growth, their combined impacts will be greatly reduced.

Sediment

To reduce the amount of sediment needing to be removed from water races prevent sediment getting into the water race in the first place.

Sediment sources include:

- Run-off from overland flow especially from cultivated paddocks;
- Erosion of the water race bed leading to a re-suspension of sediments;
- Break down of banks caused by stock and vehicle access or erosion of soil left bare on the side of races.

Stock access can cause bank erosion and water pollution.



Two hot wires are acceptable for cattle

What sort of fence?

Fencing needs to be appropriate to the stock grazing on the property.

For dairy and beef cattle and horses, a two or three wire electric fence with permanent posts is sufficient.

For deer, a conventional deer fence will be necessary; however you must ensure that access is available at all times to clean and maintain the water race.

For sheep and pigs, four electric wires may be enough if you don't need to protect riparian plants. If you need to protect plantings, a conventional fence is best.

Access to the water race for cleaning and maintenance purposes is still required and the distance from the edge of the water race to where the fence is installed is dependent upon the type of fencing installed e.g. conventional deer fencing versus dairy and beef cattle and horse fencing.

For more information on fencing contact: Selwyn District Council

Light grazing with sheep can be an acceptable option as they do limited damage to the banks of water races and can be useful for keeping weed levels down.

Light sheep grazing is acceptable.



Control sediment inputs by:

- Intercepting overland flow with grassed filter strips.
- Prevent or limit stock and vehicle access to water races so that they cannot disturb the bed or break down the banks.
- Vegetate banks of water races to reduce erosion of exposed soil.

Fencing will keep stock out of water races and allows a grass strip to grow, which in turn traps sediments entering the water from overland flow.



Aquatic weeds

Major factors contributing to aquatic weed growth include;

- Nutrients in the water and in stream bed sediments;
- Fresh sediments;
- Light and temperature;
- Slow flowing water;



The same stretch of water before and after weed growth.

Reduce weed growth by:

- Limiting nutrient and sediment inputs to races through intercepting overland flow and bank erosion.
- Shading water races with plantings to reduce light levels and temperature.

Reducing Sediment and Weed Growth

There are five main actions landowners can carry out to reduce sediment inputs and weed growth and lead to improved ecological values of water races and their receiving environments:

- Preventing stock access to water races
- Limiting vehicle access to water races
- Establishing shading vegetation on water race margins
- Using filter strips along side water races
- Carrying out regular maintenance

Stock Access

The main function of water races is to provide water for stock. However, stock access to water races can be one of the major causes of damage to water races and is a source of sediment, nutrients and bacterial contamination. Fencing stock out of water races will generally reduce erosion and habitat degradation; improve water quality and health and safety of livestock.

There are a number of ways land owners can limit stock access to water races while still utilising the water for stock water.

- Pipe water to troughs and fence water races.
- If piping water is not an option limit stock access to water races to hardened access points only, fencing the rest.

This photo shows the difference between waterway banks where stock do and do not have access.



APPENDIX AA PROTOCOL FOR DIDYMO DECONTAMINATION

The following protocol is in response to the outbreak of *Didymosphenia geminata* (didymo) in the South Island.

This protocol is designed to minimise the risk of unintentional transfer of didymo as a result of the operation and maintenance of the Selwyn District stockwater and land drainage schemes. It applies to all activities where there is a risk of transferring didymo as follows:

- Between sites on the same waterway, water race, land drainage scheme or river catchment; or
- From one waterway, water race, land drainage scheme or river catchment to another.

When moving items between waterways, water races, land drainage schemes or river catchments you must:

CHECK

- Remove all obvious clumps of algae from hands, boots / waders, clothing, equipment, and vehicles before leaving one waterway, water race, land drainage scheme or river catchment.

CLEAN

- Wash / spray all potentially contaminated hands, boots / waders, clothing, equipment and vehicles with a 5% dilute of dishwashing solution. Use a hand held pump / spray bottle to ensure surface contact for one minute (a 5% solution is 500ml of dishwashing liquid with water added to make ten litres).

- Staff should carry sufficient solution made up for a day's work programme. Decontamination using the solution should be carried out in a place where splashing and / or disposal of the used solution will not cause environmental damage.

- At the end of the day, visually check all potentially contaminated boots / waders, clothing, equipment and vehicles to ensure they are cleaned / decontaminated.

- Before entering another waterway, water race, land drainage scheme or river catchment:

- On the same day: Ensure that all boots / waders, clothing, equipment, and vehicles have been well sprayed or soaked with detergent

Or

- Ensure all boots / waders, clothing, equipment, and vehicles have been dry for 48 hours prior to entering another waterway, water race, land drainage scheme or river catchment.

DRY

- If cleaning is not practical, dry items completely and then leave for at least 48 hours before using in another waterway, water race, land drainage scheme or river catchment.

For more information visit: www.biosecurity.govt.nz

APPENDIX BB WEED SPRAYING CONSENT

RESOURCE CONSENT CRC084966

Pursuant to Section 104 of the Resource Management Act 1991

The Canterbury Regional Council (known as Environment Canterbury)

GRANTS TO:	Selwyn District Council
A DISCHARGE PERMIT:	To discharge contaminants onto land in circumstances where they may enter surface water
DATE DECISION:	28 April 2010
EXPIRY DATE:	28 April 2020
LOCATION:	Global Consent, SELWYN DISTRICT COUNCIL

SUBJECT TO THE FOLLOWING CONDITIONS:

LIMITS

- 1) The discharge of herbicides and surfactants shall be only:
 - (a) Onto vegetation located adjacent to water races, and roads;
 - (b) Onto vegetation emerging from, or hanging over, water races, culvert headwalls, drains, water tables, soakholes, under and around bridges; and
 - (c) Onto noxious weeds emerging from, or hanging over, Classified Drains; within the Selwyn District.
- 2)
 - (a) The discharge shall only be of proprietary formulations containing the herbicide glyphosate as the active ingredient; and
 - (b) Additives to these herbicide formulations shall only be surfactants added in accordance with the manufacturers' instructions; which are registered for use in aquatic environments.
- 3) The application rate and concentration of any herbicides and surfactants discharged shall not exceed the chemical manufacturers' recommended rate for the product and purpose of use.
- 4) There shall be no aerial discharge of herbicides and surfactants.

OPERATIONS

- 5) All persons undertaking the discharge authorised by this consent shall be familiar with the provisions of this consent and shall be provided a copy of this consent prior to spraying.
- 6) The methods of discharge shall be ground-based spraying, which includes hand-held spot application using backpack sprayers and fine droplet hand-held sprayers or guns.
- 7) No mixing or diluting of any herbicide shall take place within :
 - (a) Twenty metres of the edge of a river, lake, or an artificial water course, bore, or onto land containing a subsurface drainage system; or
 - (b) Within the Christchurch Groundwater Protection Zone 1 or Sub-Zones 1A, 1B, 1C, 1D, or Zone 2; unless the mixing takes place over an impervious surface that will contain any spillage.
- 8) Water used to rinse or clean containers and equipment shall not be discharged:
 - (a) Into surface water; or
 - (b) Onto land where it may enter surface water; or

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- (c) Onto land within the Christchurch Groundwater Protection Zone 1 or Sub-Zones 1A, 1B, 1C, 1D, or Zone 2.
- 9) All practicable measures shall be taken to prevent the application of herbicides or surfactants directly onto or over non-target surface waters, including back-waters, ponded waters and similar, with spraying being directed away from the surface waters wherever practicable.
 - 10) The discharge shall not result in the concentration of glyphosate in water 25 metres downstream of spray areas exceeding 0.1 grams per cubic metre.
 - 11)
 - (a) The discharge shall be undertaken in accordance with the "New Zealand Agricultural Education Growsafe Agricultural Users' Code of Practice" and Appendices.
 - (b) The person carrying out the discharge shall hold a current certificate as a registered herbicide applicator issued by a nationally-recognised herbicide applicator training organisation.
 - 12)
 - (a) All practicable measures shall be taken to prevent the application of herbicides or surfactants directly onto or over non-target surface waters, including back-waters, ponded waters and similar, with spraying being directed away from the stream or river wherever practicable.
 - (b) Spraying shall not occur more than one metre from the target area.
 - 13) The discharge shall be carried out using a method and equipment that minimises the risk for spray drift to cause a hazard and which ensures public safety at all times, and shall include, but not be limited to, prohibiting spraying when rain is publicly forecast to occur before the manufacturers' labelled drying times.
 - 14) The operator shall ensure that the filling of tanks to dilute concentrated herbicides is carried out in a manner that prevents back-flow. The filling procedures and back-flow prevention devices and methods shall comply with Standard AS/NZS 2845 Part 1 (1998).

PROHIBITED DISCHARGE PERIODS AND LOCATIONS

- 15) There shall be no discharge onto vegetation with edible fruits and berries between 1 October and 28 February.
- 16)
 - (a) There shall be no discharge on public holidays, or weekends which immediately precede or follow public holidays; and
 - (b) Discharge shall not occur during the following holiday periods:
 - (i) 20 December to 10 January, inclusive;
 - (ii) Between Good Friday and Easter Monday, inclusive; and
 - (iii) Canterbury Anniversary weekend
- 17) In order to avoid or mitigate potential effects on receiving waters, the consent holder shall establish and maintain a register of "Sites of Ecological Significance". In developing the Register the consent holder shall consult with the relevant Fish and Game Council(s) and the relevant Department of Conservation Office(s). The Register shall identify the extent of the site, the reason for inclusion and any specific spraying requirements. The Register may be updated at any time and shall be supplied to the Canterbury Regional Council on request.
- 18) The discharge shall not be carried out within 250 metres upstream of any public or community surface water domestic supply intake.
- 19) There shall be no discharge onto flood protection plantings, native vegetation or other vegetation planted for aesthetic purposes, such as for enhancement works, or planted for economic purposes, such as crops and forestry planting.

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NOTIFICATION REQUIREMENTS

- 20) (a) The consent holder shall place public notice advertisements in a newspaper covering the area of operations, notifying the community of the discharge, at least seven days prior to the start of operations.
(b) At the same time, a copy of the public notice shall be provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager and Attention: Regional Engineer.
- 21) The public notice advertisement shall include, but not be limited to:
 - (a) The location(s) of the spray operations;
 - (b) The likely duration for the spray operations;
 - (c) The target vegetation for the spray operations; and
 - (d) A name and contact phone number of the agency carrying out the spray operations.
- 22) Vehicles associated with the spraying shall display road works signs on the front and back of the vehicles advising that spraying is in progress.
- 23) Where practicable, spraying within 250 metres of schools shall be carried out in the school holidays.
- 24) The consent holder shall notify the appropriate Ngai Tahu papatipu runanga at least seven days prior to the commencement of spraying.

RECORDING AND REPORTING

- 25) (a) The personnel carrying out the spraying shall keep daily records of any herbicides and surfactants discharged during the spraying operation/programme. This shall include the location of the water sources used for diluting herbicide solutions and for cleaning spray equipment.
(b) The records shall include:
 - (i) The types and amounts of herbicides and surfactant used;
 - (ii) The areas of operation;
 - (iii) Methods and equipment used;
 - (iv) Start and finish dates;
 - (v) Discharge locations; and
 - (vi) Any consultation undertaken.
 (c) These records shall be provided to the Canterbury Regional Council on request.
- 26) Each year, by 15 August, the consent holder shall provide a copy of the programme for the upcoming 12 months to Te Runanga o Ngai Tahu, Crown Public Health, the Department of Conservation Area Offices, North Canterbury Fish and Game Council, and the Ngai Tahu papatipu Runanga. This programme shall identify in detail:
 - (a) The herbicides and surfactants to be discharged;
 - (b) The areas of operation, including but not limited to:
 - (i) Whether or not the areas are new or have been sprayed previously;
 - (ii) A map that identifies any areas on the 'Sites of Ecological Significance' Register;
 - (iii) A map that identifies any areas of Classified Drains, where spraying is to occur downstream of The Lake Road or within 200m of the edge of Te Waihora/ Lake Ellesmere; and
 - (iv) A map that identifies any areas of Classified Drains that drain into a natural waterway, including but not limited to the Selwyn, LII and Irwell Rivers;
 - (c) Methods to be used, including any specific requirements for areas on the 'Sites of Ecological Significance' Register;
 - (d) Proposed starting dates and locations; and
 - (e) The likely duration of the discharge.

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- 27) Any alteration to the annual programmes supplied to the organisations listed in Condition (26) shall be notified to these organisations, in writing, prior to commencing the discharge.

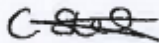
SPILLS

- 28) In the event of a herbicide and/or surfactant spill into a water body, the consent holder shall immediately:
- (a) Notify the owners or operators of any public, community, or private drinking water supplies located within that water body;
 - (b) Notify the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager;
 - (c) Implement all practicable measures to reduce the concentration of the contaminant in the receiving environment. Such measures may include cessation of activities that may have caused the excessive concentrations or removal of contaminant source(s).
 - (d) Implement all practicable measures to prevent a recurrence of the spill event.

ADMINISTRATION

- 29) The lapsing date for the purposes of section 125 of the Resource Management Act 1991 shall be 30 June 2015.
- 30) The Canterbury Regional Council may, once per year, on any of the last five working days of January or July, serve notice of its intention to review the conditions of this consent for the purposes of:
- (a) Dealing with any adverse effect on the environment which may arise from the exercise of this consent and which it is appropriate to deal with at a later stage; or
 - (b) Requiring the adoption of the best practicable option to remove or reduce any adverse effect on the environment; or
 - (c) Requiring the consent holder to carry out monitoring and reporting instead of, or in addition to, that required by the consent.

Issued at Christchurch on 29 April 2010



Carly Steers
TEAM LEADER CONSENTS OPERATIONS
on behalf of the Canterbury Regional Council

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APPENDIX CC APPROVED PLANTING TABLE



Approved Planting List for Water Races

Scientific Name	Common Name	Plant type	Margin	Heavy Frost	Light Frost	Boggy Soils	Dry Soils	Full sun	Recommended spacing between plants (metres)
<i>Carex dipsacae</i>	tussock sedge	Grass	0-0.5m	*	*	*		*	0.5-1
<i>Carex secta</i>	tussock sedge	Grass	0-0.5m	*	*	*		*	0.5-1
<i>Carex virgata</i>	tussock sedge	Grass	0-0.5m	*	*	*		*	0.5-1
<i>Chionochloa rubra</i>	red tussock	Grass	0-0.5m	*	*	*		*	1-1.5
<i>Cyperus ustulatus</i>	Umbrella sedge, upoki-tangata		0-0.5m	*	*	*		*	0.5-1
<i>Blechnum minus</i>	Swamp Kioio	Fern	0-0.5m	*	*	*		*	0.5-1
<i>Phymatosorus pustulatus</i>	Hounds tongue fern	Fern	0-0.5m		*	*		*	0.5-1
<i>Blechnum fluviatile</i>	Kioio	Fern	0-0.5m		*	*		*	0.5-1
<i>Histiopteris incisa</i>	Mata, water fern	Fern	0-0.5m		*	*		*	0.5-1
<i>Liberia looides</i>	NZ iris, mikokoi	Grass	0.5-1m	*	*	*		*	0.5-1
<i>Poa cita</i>	Silver tussock	Grass	0.5-1m	*	*	*		*	0.5-1
<i>Carex testaceae</i>	tussock sedge	Grass	0.5-1m	*	*	*		*	0.5-1
<i>Hebe saicifolia</i>	Koromiko	Shrub	0.5-1m			*		*	1-1.5
<i>Coprosma propinqua</i>	Mikimiki	Shrub	0.5-1m	*	*	*		*	1-1.5
<i>Coprosma aff. parviflora (sp.t)</i>	Mikimiki	Shrub	0.5-1m	*	*	*		*	1-1.5
<i>Coprosma rubra, C. areolata</i>	Mikimiki	Shrub	0.5-1m	*	*	*		*	1-1.5
<i>Coprosma rotundifolia</i>	Mikimiki, round leaved coprosma		0.5-1m	*	*	*		*	1-1.5
<i>Coprosma virescens</i>	Mikimiki	Shrub	0.5-1m	*	*	*		*	1-1.5
<i>Coprosma crassifolia</i>	Mikimiki	Shrub	0.5-1m	*	*	*		*	1-1.5
<i>Lophomyrtus obcordata</i>	Pohutu, NZ myrtle		0.5-1m		*	*		*	1-1.5
<i>Coprosma lucida</i>	Shining karamu		0.5-1m		*	*		*	1-1.5
<i>Asteria fragrans</i>	Kakaha, bush lily		0.5-1m	*	*	*		*	0.5-1
<i>Anemanthella lessertiana</i>	Wind grass, bamboo grass		0.5-1m	*	*	*		*	0.5-1
<i>Polystichum vestitum</i>	Puniu, prickly shield fern		0.5-1m		*	*		*	0.5-1
<i>Corokia cotoneaster</i>	Korokio	Shrub	0.5-1m	*	*	*		*	1-1.5
<i>Melicope simplex</i>	Postaniwa	Shrub	0.5-1m	*	*	*		*	1-1.5
<i>Muehlenbeckia astonii</i>	Shrubby Tororaro	Shrub	0.5-1m	*	*	*		*	1-1.5
<i>Leptospermum scoparium</i>	manuka	Small tree	1-1.5m	*	*	*		*	1-1.5
<i>Phormium tenax</i>	flax, harskeke	Flax	1-1.5m	*	*	*		*	1-1.5
<i>Olearia odorata</i>	A fragrant shrub daisy	Shrub	1-2.5m			*		*	1-1.5
<i>Myrsine australis</i>	Mapou		1-2.5m			*		*	1.5-2
<i>Coprosma robusta</i>	Karamu	Small tree	1-2.5m			*		*	1.5-2
<i>Pseudowintera colorata</i>	Horopito, peppertree	Shrub	1-2.5m		*	*		*	1.5-2
<i>Carpodetus serratus</i>	Putaputaweta, marbleleaf		1-2.5m		*	*		*	1.5-2
<i>Myrsine divaricata</i>	Weeping mapou	Shrub	1-2.5m		*	*		*	1.5-2
<i>Pseudopanax crassifolius</i>	Lancewood, horokea		2.5m+	*	*	*		*	1.5-2
<i>Dodonaea viscosa</i>	Akeake	Small tree	2.5m+		*	*		*	1.5-2
<i>Pseudopanax arboreus</i>	Five finger, whauwhaupaku		2.5m+		*	*		*	1.5-2
<i>Melicope ramiflora</i>	mahoe	Small tree	2.5m+	*	*	*		*	1.5-2
<i>Myoporum laetum</i>	ngalo	Small tree	2.5m+		*	*		*	1.5-2
<i>Olearia paniculata</i>	akiraho	Small tree	2.5m+	*	*	*		*	1.5-2
<i>Pittosporum tenuifolium</i>	kohuhu	Small tree	2.5m+	*	*	*		*	1.5-2
<i>Pittosporum eugenioloides</i>	lemonwood	Tree	2.5m+	*	*	*		*	1.5-2
<i>Plagianthus regius</i>	ribbonwood	Tree	2.5m+	*	*	*		*	1.5-2
<i>Hoheria angustifolia</i>	Houhere, narrow-leaved lacebark	Tree	2.5m+	*	*	*		*	1.5-2
<i>Griseelinia littoralis</i>	Kapuka, broadleaf	Small tree	2.5m+	*	*	*		*	1.5-2
<i>Pennantia corymbosa</i>	Kakomako	Small tree	2.5m+		*	*		*	1.5-2
<i>Kurzea encoides</i>	kanuka	Tree	2.5m+	*	*	*		*	1.5-2
<i>Olearia paniculata</i>	Golden akeake, akiraho	Shrub	2.5m+	*	*	*		*	1.5-2
<i>Elaeocarpus dentatus</i>	Hinai	Tree	2.5m+	*	*	*		*	1.5-2
<i>Sophora microphylla</i>	Kowhai	Small tree	2.5m+	*	*	*		*	1.5-2

Land Drainage Planting Design and Recommended Plant Species

