

STATUS OF RESOURCE CONSENT

TO: Compliance Monitoring
Environment Canterbury
P O Box 345
CHRISTCHURCH

Ph: 0800 324 636 Fax: (03) 365 3194

FOR OFFICE USE ONLY
Pre Lapse Date

CONSENT DETAILS:

Consent no:	CRC172780	File no:	CRC172780
Consent holder:	Hurunui Water Project Limited	Client no:	EC252955
Activity:	to use land for farming		
Location:	Hurunui Catchment, Hurunui		
Lapse date:	18 December 2020	Expiry date:	10 August 2050

SELECT THE RELEVANT BOX and return to Environment Canterbury

☐ **I started using this consent before the above lapse date.**

Approximate start date: _____

BOX 1 Please specify how (e.g. pasture irrigated, discharge from septic tank/boiler/spray booth, etc.)

☐ **I haven't started using this consent.**

Please tick ALL the boxes that apply.

☐ Property has been sold. I have contacted the new owner/s who have advised they do require this consent. Please complete form CON 540 Transfer of Resource Consent available from Customer Services or www.ecan.govt.nz.

☐ Property has been sold. I have contacted the new owner/s who have advised they do not require this consent.

☐ I want to surrender CRC172780. To action this surrender this form must be signed by ALL the consent holder/s as shown at the top of this form. If the consent is held by a company, and there is more than one registered director, at least two directors of the company must sign. Anyone who signs as an authorised agent must provide written confirmation that they are permitted to do so.

Please note that unless CRC172780 is transferred or surrendered you remain liable for any charges associated with this consent and responsible for compliance with the consent conditions until the lapse date of 18 Dec 2020.

There are no charges for the transfer or surrender of a consent.

P.T.O.





I haven't started using this consent and require an extension of the lapse date.

To apply for an extension to the lapse date please complete the following:

BOX 3

I intend to start using this consent before (insert date) _____

As per Section 125 (1A) (b) of the RMA when considering your extension, Environment Canterbury has to consider:

- Whether substantial progress or effort has been, and continues to be, made towards starting to use the consent; and
- Whether the applicant has obtained approval from persons who may be adversely affected by the granting of an extension; and
- The effect of the extension on the policies and objectives of any plan or proposed plan.

Has substantial progress or effort been made and continues to be made towards starting to use the consent?

☐ Yes ☐ No

Please provide details on steps you have taken towards starting to use this consent:
(e.g. pump tested well, subdivision consent obtained, etc.)

BOX 3

Will any person be adversely affected by the extension of the lapse date?

☐ Yes ☐ No

Please comment

Will there be an effect on the policies and objectives of any plan or proposed plan if an extension is granted?

☐ Yes ☐ No

BOX 3

Please comment

- An application to extend the lapse date can only be accepted if received prior to 18 December 2020.
- If your application to extend the lapse date is granted, you will be invoiced for the time spent processing your request.
- If your application to extend the lapse date is declined, this charge will be waived.

Signed:

Date:

Full name of person signing (please print):

Contact phone/s and email address: _____

Please note any updates to your contact details: _____

16 December 2016

Hurunui Water Project Limited
PO Box 29031
Fendalton
Christchurch 8540

Customer Services
P. 03 353 9007 or 0800 324 636

PO Box 345
Christchurch 8140

P. 03 365 3828
F. 03 365 3194
E. ecinfo@ecan.govt.nz
www.ecan.govt.nz

Customer Number: EC252955

Dear Sir/Madam

Transfer of Resource Consent From:

Name: Hurunui Water Project Limited **to** Hurunui Water Project Limited

Consent Number: CRC153349 **to** CRC172780

Environment Canterbury has completed the request to update the name(s) on the above resource consent authorising:

to use land for farming at Hurunui Catchment, Hurunui.

Attached is your new consent document. Please read it carefully so that you understand what you need to do when using your consent.

Important information regarding your consent is on our website:

- For your consent document - www.ecan.govt.nz/yourconsent.pdf
- For monitoring your consent - www.ecan.govt.nz/monitoringconsent.pdf

The cost of monitoring your consent will be charged to you.

Our records indicate that CRC172780 has not yet been used. This consent either needs to be used or an extension applied for before 18 Dec 2020. After this date CRC172780 will lapse and the above activity will no longer be authorised.

It is important that you complete and return the enclosed "Status of resource consent" form to notify us:

- When the consent is used (Box 1); or
- If you require more time to start using this consent (Box 3).

For all queries please contact our Customer Services Section by telephoning 0800 324 636 or via email ecinfo@ecan.govt.nz quoting CRC172780.

Yours sincerely



Brooke Kennedy

Business Support Administrator Level 2

Our Ref: CRC172780
Contact: Customer Services

CC Address:

Ngai Tahu Farming Limited
PO Box 130060
Aragh
Christchurch 8141

RESOURCE CONSENT CRC172780

Pursuant to Section 104 of the Resource Management Act 1991

The Canterbury Regional Council (known as Environment Canterbury)

GRANTS TO: Hurunui Water Project Limited

A LAND USE CONSENT (S9): to use land for farming

COMMENCEMENT DATE: 18 Oct 2016

EXPIRY DATE: 10 Aug 2050

LOCATION: Hurunui Catchment, Hurunui

SUBJECT TO THE FOLLOWING CONDITIONS:

- 1 The use of land for farming shall occur only within a maximum area of 43,762 hectares within the Hurunui River Catchment as shown on Plan CRC172780, which forms part of this consent.
- 2 The maximum annual amount of nitrate-nitrogen that is leached below the root zone from farming activities in the command area within the Hurunui catchment above State Highway 1 for this irrigation scheme shall not exceed a modelled dissolved inorganic nitrogen load of 1270 tonnes per year.

Advice Note: *The soil nitrogen leaching loss of 1270 tonnes per year has been calculated based on the estimated total soil leaching loss below the root zone and an 18.5% increase in the 2005 – 2011 average annual nitrogen load in the Hurunui River at State Highway 1 in accordance with the Technical Note attached as Annexure 2 of CRC172780 which forms part of this consent. This figure was derived by defining the soil leaching loss from the HWP command area within the Hurunui catchment as at 20 December 2013 and then increasing that number by 18.5% of the total modelled root zone loss to reflect the same percentage increase in the Hurunui River at State Highway 1. In order to track the change in leaching as land use change occurs the land use and irrigation database will be updated to reflect the changes. Updated nitrate nitrogen leaching numbers will be assigned to properties where land use change has occurred and the leaching numbers from all properties in the area defined in condition 2 will be summed to check compliance with the limit of 1270 tonnes.*

- 3 Land-use activities within the catchment of each of the contributing waterways shall not cause an increase in Dissolved Reactive Phosphorus reaching the Hurunui River at State Highway 1 as a six yearly average annual in-stream load. Land-use activities occurring as a result of this consent shall be evaluated based on their phosphorus contribution to the Hurunui River mainstem at State Highway One and its tributaries at their confluence with the mainstem above State Highway One.

Advice Note: *The six yearly average is calculated as an accumulated mean based on the previous six years data including data prior to the commencement of the consent holder's activities.*

- 4 For each property first receiving water, the consent holder shall quantify the aggregate nitrate-nitrogen leaching and phosphorus loss for all properties within the irrigation scheme command area, and:
- a. appoint a suitably qualified and experienced person, in consultation with the Canterbury Regional Council, to:
 - i. audit and verify that the newly supplied property's Farm Environmental Management Plan (prepared in accordance with conditions 10 to 19) achieves best practice management; and
 - ii. audit the maximum annual amount of nitrate-nitrogen that may be leached below the root zone and phosphorus loss for each property; and
 - iii. audit the aggregate amount of nitrate-nitrogen leached and phosphorus loss for all properties irrigated by the consent holder using the numbers derived from condition 4(a)(ii).
 - b. submit a Land Use Compliance Report inclusive of the above auditor's report demonstrating compliance with conditions 2 and 3 above to the Canterbury Regional Council Attention: RMA Monitoring and Compliance Manager by 31 July each year. The Land Use Compliance Report, shall include:
 - i. a cross check against the look-up tables in Environment Canterbury report R14/19; and
 - ii. the annual report required by condition 18.

Unless addressed by conditions 24 and 25.

- 5 Prior to the exercise of this consent, the consent holder shall form a water user group or catchment management group after full consultation with the Canterbury Regional Council to achieve the whole catchment limits for water use and limits on nutrient loss in these consents and of those in the Hurunui and Waiau Rivers Regional Plan. The consent holder, in consultation with this group, shall develop improved methods for monitoring or otherwise determining the contributions from the different landholders in each catchment within the scheme area, particularly for ensuring compliance with catchment nutrient limits including conditions 2 and 3 of this consent. If the water user group or catchment management group pools their individual nutrient limits, then compliance with the load limits specified in the individual resource consents authorising the farming activities, will be assessed by aggregating together all farming activities undertaken on all properties belonging to any water user group or catchment management group formed for the purposes of pooling nutrient limits in compliance with the combined total load limit for the water user group or catchment management group.

- 6 The consent holder shall, prior to the commencement first exercise of this consent:
- a. Install weather monitoring stations at representative locations within the command area that will enable the determination of daily rainfall, evapotranspiration and soil moisture.
 - b. The rainfall, evapotranspiration, and soil moisture data from the weather stations shall be made available for all scheme users for the purpose of irrigation scheduling to ensure efficient water use.

Advice Note: *The information collected from the weather stations will be used to assist individual water users with irrigation management and the efficient on-farm water use as detailed in the Farm Environmental Management Plans (FEMPs).*

Scheme Environmental Management Plan (SEMP)

- 7 Prepare a Scheme Environmental Management Plan (SEMP) in accordance with Conditions 9-11 of CRC120675.

Surface water monitoring

- 8 Undertake surface and groundwater quality monitoring in accordance with conditions 12-20 of CRC120675.

Nutrient Management Issues

- 9 The consent holder shall engage a suitably qualified and experienced person to implement a catchment nutrient load model and budgeting tool to track changes in nutrient discharges arising from the commencement and implementation of the scheme for all the command area that drains into the Hurunui River upstream of the State Highway One flow recorder and the summary output from the model shall be provided to the Canterbury Regional Council Attention: RMA Monitoring and Compliance Manager prior to the commencement of irrigation under this consent and on an annual basis once irrigation commences. All the model input data shall also be provided to the Canterbury Regional Council on request for auditing purposes.

Farm Environment Management Plans

- 10 Prior to and during the use of water from the scheme for irrigation on individual properties, there shall be a Farm Environmental Management Plan (FEMP) prepared, produced, maintained and implemented for each property which shall cover the total farm property (including areas not using water authorised by this consent). The FEMP shall be developed in general accordance with the Irrigation New Zealand Farm Environment Plan Template or the latest revision. The FEMP shall be developed with input from the land owner or manager to ensure it is tailored to their land area and is practical to implement.
- 11 Each FEMP shall take into account all sources of nutrients used for the farming activity and identify all relevant nutrient management practices and mitigation measures. Industry articulated good management practices shall be implemented on all properties receiving water from the scheme to minimise the loss of nitrate-nitrogen to soil drainage water, and to minimise any loss of sediment, phosphorus or nitrogen to surface waters. Industry articulated good management practices shall be specified in each FEMP.
- 12 The consent holder shall:
- Keep a copy of each FEMP, and supply any such FEMP to the Canterbury Regional Council, on request; and
 - Ensure the implementation and auditing of the FEMPs.
- 13 Each FEMP shall include the following objectives:
- Ensure that all irrigation systems on the property area are capable of operating to meet industry and scheme standards for industry articulated good practice irrigation. Water application rates shall be determined for the particular soil types and climate of the property;
 - Maximise water application effectiveness while minimising excess drainage and runoff utilising climate information, including that provided by the scheme;
 - Minimise the incidence of wind and/or water erosion caused as a result of farming

practices;

- d. Minimise nutrient losses to surface and ground water through the use of nutrient budgeting and implementing nutrient management;
- e. Minimise nitrate leaching and/or run-off losses to surface and ground water through measures such as careful fertiliser management, management of drains, and planting of strategic buffer zones around surface water bodies (including drains);
- f. Minimise phosphorus run-off losses to surface water through minimising surface runoff of sediment and effluent through properly designed and operated effluent systems, riparian planting, control of runoff from stock tracks and bridges and ensuring that crops are not grazed close to waterways.
- g. Apply nutrients only where needed to maximise effectiveness and minimise losses to non target areas;
- h. Minimise the risk of groundwater and surface water contamination by nutrients and microbial pathogens by managing and collecting animal effluent to meet industry articulated good management practice standards.
- i. Limit stock access to waterways and wetlands (including drains, races and stockwater races) to maintain water quality and to encourage native vegetation growth;
- j. Minimise soil loss and contamination of waterways;
- k. Avoid, remedy or mitigate effects on native plants and native animals and their habitats on individual farm properties and where possible enhance native plants and native animals and their habitats; and
- l. Ensure that if a property holds any existing consents for the irrigation of land on the property and wishes to use water under this consent on the same area of land, the use of water for these areas shall comply with the water use requirements specified in this consent related to the efficient use of water. The combined application rate for water taken from multiple sources shall not exceed 0.58 l/sec/ha.

14 Each FEMP shall:

- a. include for each objective:
 - i. Measureable targets that clearly set a pathway and timeframe for achievement of the objective;
 - ii. A description of the industry articulated best management practices together with actions required to achieve the objective and targets;
 - iii. The records of measuring performance and achievement of the targets.
- b. Specify (in kg/ha/yr) a maximum annual amount of nitrate-nitrogen that may be leached below the root zone and phosphorus loss estimated for the property using OVERSEER;
- c. To the extent that OVERSEER is updated, then the original input file shall be adopted in the replaced version of OVERSEER to determine the change in the nutrient loss rate specified in sub-clause (b) above.

15 A suitably qualified and experienced person in conjunction with each water user within the scheme shall write the part of the FEMP that provides the site specific farm environmental risk assessment.

16 The consent holder will audit the FEMPs on an annual basis:

- a. Each FEMP shall be audited by a suitably qualified independent assessor appointed by the consent holder. The purpose of the audit shall be to ensure that the FEMP demonstrates achievement of the objectives as set out in Condition 14 and demonstrates compliance with conditions of this consent.

- b. For the first three years of receiving and using scheme water for irrigation, each farm plan will be independently audited annually. Audits undertaken by an independent assessor will continue annually if there is any non-compliance with the FEMP.
- c. When all the conditions have been complied with for three consecutive years each plan will be independently audited, including a site visit, at least once every three years. If there is a change in the farm ownership or a change in key management staff or if the three yearly audit indicates a failure to fully implement the FEMP or any noncompliance with any of the conditions of this consent then annual independent audits will again be required until full compliance has been achieved for three consecutive years of independent audits.
- d. In the event that the areas of non-compliance are identified, the consent holder shall take all practicable steps including, if necessary, suspending the irrigation water supply to ensure that the water users are fully compliant as soon as practicable and in any case prior to next 30 July.

- 17 The consent holder shall obtain from water users who use any other land (other than a property within the HWP Scheme) for the wintering of stock within the Hurunui catchment, an undertaking that the water user will only use such land where the property has a FEMP or other requirement that incorporates industry articulated good management practices for the management of stock and nutrients.
- 18 As at 31st July each year, the consent holder shall compile the FEMPs and collate the individual property assessments and supply this information, in a schedule and a map, to the Canterbury Regional Council Attention RMA Monitoring and Compliance Manager in the annual report. The schedule and map shall show the area irrigated on each property and the estimated nitrogen and phosphorus losses from each property from the FEMP budgets and the total water used during that season.
- 19 The consent holder shall not use water to supply any farm or group of farms, where the farm or group of farms is causing significant adverse localised effects resulting in:
- a. Breaches of the Drinking Water Standards for New Zealand 2005 (revised 2008); or
 - b. Land drainage problems;
- unless each of the effects listed above are adequately mitigated to an extent that is considered acceptable by the consent holder and the Monitoring and Compliance Manager of the Canterbury Regional Council.
- 20 The consent holder shall not authorise or permit any person to use water under this resource consent unless that authorised person provides a written undertaking to comply with Conditions 10 to 19 of this resource consent, to the same extent as if the resource consent had been granted to that person as well as the consent holder.

Reporting and Review of Scheme Environmental Management Plan (SEMP)

- 21 The consent holder shall prepare a report describing the results of the environmental monitoring outlined in the SEMF, for the period 1 July to the following 30 June for each year compared to monitoring from previous years, together with details of any mitigation implemented. This report will identify any recommended changes to the SEMF, which may only be implemented following the Canterbury Regional Council's approval.
- 22 The consent holder shall submit the annual report to the Canterbury Regional Council,

Attention: RMA Monitoring and Compliance Manager by 31 July each year.

- 23 A review of the SEMP will be carried out by the consent holder each year, and as part of consent reviews at Stage 1, mid-Stage 2 and late Stage 2 (as described in condition 28 of this consent) and as part of the final planning of Stage 2 of the scheme. The review of the SEMP and any revisions to it shall be submitted and approved by the RMA Monitoring and Compliance Manager of the Canterbury Regional Council and prior to the take and use of water for Stage 2.
- 24 If the consent holder supplies water for use for irrigation on land within the Hurunui Catchment (as shown on Plan HWP 1) on which irrigation is authorised by a separate land use consent, the separate land use consent provides that:
- a. The separate consent includes one or more conditions which:
 - i. specify a numerical limit for the annual load of nitrogen that may be leached from the soil (and an annual reporting requirement using Overseer or such other method approved by the Chief Executive of the Canterbury Regional Council);
 - ii. include restrictions (no more lenient than those contained in condition 3 of this consent) on the amount of Phosphorus that may be lost from the property (and an annual reporting requirement using Overseer or such other method approved by the Chief Executive of the Canterbury Regional Council);
 - iii. requires the efficient use of water and places a numerical limit on the amount of water that can be applied to the land;
 - iv. requires the preparation of and compliance with a Farm Environment Plan.
 - b. Prior to the supply of water the consent holder of this consent has:
 - i. undertaken the requirements outlined in conditions 7 and 8 of this consent (unless the requirements or those of conditions intended to achieve equivalent outcomes have already been carried out by the separate consent holder to an equivalent or better standard);
 - ii. informed the Canterbury Regional Council (Attention: RMA Monitoring and Compliance Manager) of the consent holder the water is being supplied to under this condition, and the consent(s) authorising irrigation on those properties.
- 25 If the consent holder supplies water and the water is used in a manner that complies with the relevant conditions of that separate consent then the holder of that separate consent shall not be required to comply with the conditions of this consent. Similarly, the holder of this consent shall not be required to comply with the conditions of the separate consent. For the avoidance of doubt, the holder of this consent is required to account the aggregate nitrate-nitrogen leaching and phosphorus loss for all properties within the irrigation scheme command area in accordance with conditions 4 and condition 5.
- Advice Note:** *the numerical limit for nutrient control in this instance needs to be in such a form in the separate consent so that there is one point of control and monitoring back to the Canterbury Regional Council on nutrient controls. For the avoidance of doubt, where the separate consents meet the requirements of this rule, HWP would not be required to also supply individual farm nutrient information to the consent authority.*
- 26 Reference to best management practices shall be defined as the industry accepted best management practice for irrigated land use applying at the time farm development

commences on an individual property when utilising the consent holder's water for irrigation purposes, and subsequent modifications to best management that are practical to implement on that individual property.

Review

- 27 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, including reviewing the load of 1270 tonnes set in condition 2 above, for any of the following purposes:
- a. dealing with any adverse effects on the environment which may arise from the exercise of this consent; or
 - b. dealing with any matter arising out of a review or survey required under condition 28.

- 28 The consent holder shall carry out the following assessments of their performance against the conditions of these consents within the time periods specified below:
- a. At the time the design details for the reservoirs are lodged with the Canterbury Regional Council, the consent holder shall report whether the actual storage volume (either live or total storage) of any of the reservoirs differs by more than five percent from those volumes described in the AEE; and
 - b. Upon completion of the further ecological surveys and studies required under the conditions of CRC120692, the consent holder shall report whether this work reveals taxon or taxa within any proposed dam or reservoir footprint of such conservation value that:
 - i. the population or their habitat is deemed by an appropriately qualified expert to be of national significance; and/or
 - ii. additional mitigation or offset measures are required to address the adverse ecological effects of the proposed inundation.
 - c. Within the earlier of:
 - i. six months of irrigation water first being used to irrigate 15500 hectares of land (Stage 1); or
 - ii. seven years after water is first being used for irrigation

the consent holder shall assess the following matters:

- i. the appropriateness of the annual volume limit on water taken;
- ii. compliance with nitrogen and phosphorus limits (including any limits specified in the Hurunui and Waiau River Regional Plan or subsequent regional plan);
- iii. review of mitigation and offsets provided for in the Ecological Plan; and
- iv. assessment of measures necessary to ensure compliance with limits applying to the remainder of Stage 2 of the scheme (including any limits specified in the Hurunui and Waiau River Regional Plan or subsequent regional plan).
- d. Unless otherwise agreed by a catchment nutrient management agreement approved by the Canterbury Regional Council, Stage 2 of the proposed irrigation scheme, as described in the application, cannot commence unless the review process under condition 28(c) has been completed.
- e. Within the earlier of:
 - i. six months of irrigation water first being used to irrigate 33,500 hectares of land; or

- ii. within twelve years after water is first used for irrigation;

the consent holder shall assess the following matters:

- i. the appropriateness of the annual volume limit on water taken;
 - ii. compliance with nitrogen and phosphorus limits (including any limits specified in the Hurunui and Waiau River Regional Plan or subsequent regional plan);
 - iii. review of mitigation and offsets provided for in the Ecological Plan; and
 - iv. assessment of measures necessary to ensure compliance with limits applying to the remainder of Stage 2 of the scheme (including any limits specified in the Hurunui and Waiau River Regional Plan or subsequent regional plan).
- f. Within the earlier of:
- i. six months of irrigation water first being used to irrigate more than 45000 hectares of land;; or
 - ii. eighteen years after water is first used for irrigation;

the consent holder shall assess the following matters:

- i. the appropriateness of the annual volume limit on water taken;
- ii. compliance with nitrogen and phosphorus limits (including any limits specified in the Hurunui and Waiau River Regional Plan or subsequent regional plan);
- iii. review of mitigation and offsets provided for in the Ecological Plan; and
- iv. assessment of measures necessary to ensure compliance with limits applying to the remainder of Stage 2 of the scheme (including any limits specified in the Hurunui and Waiau River Regional Plan or subsequent regional plan).

29 The assessments described in conditions 28(c) to 28(f) are temporal assessments (conditions 28(c)(ii), 28(e)(ii) and 28(f)(ii)) and hectare assessments (conditions 28(c)(i), 28(e)(i) and 28(f)(i)). The hectare assessment requirements are fixed but in order to avoid duplication of the assessment process, a temporal assessment does not need to be conducted if a hectare assessment has been completed within 18 months of the temporal assessment date. In addition, the consent holder, on reaching a temporal assessment date, may elect to complete a hectare assessment at the same time to determine the next stage of development where the hectares irrigated are within 1,500 hectares of a hectare review.

30 Within six months of completing the assessments described in Condition 28, the consent holder shall report to the Canterbury Regional Council RMA Monitoring and Compliance Manager on the findings of those assessments and the measures proposed to be implemented to ensure effects on the environment are no more significant than under the original proposal.

31 Upon receipt of any of the review reports described in Condition 30, the Canterbury Regional Council shall review the conditions of the consents pursuant to Section 128(1) of the Resource Management Act 1991 for the purpose of avoiding, remedying, or mitigating any adverse effect on the environment arising from the review or any increased risk of future non-compliance with conditions of the consents.

32 Reviews under Condition 28 (c), (e) or (f) shall include consideration of whether the area to be irrigated under the proposal should be reduced in order to reasonably ensure compliance with the nutrient load limits of this consent.

33 In accordance with Section 127 of the Resource Management Act 1991 the consent holder may, no

earlier than twelve months after the approval of the Management Plans required by Condition 2 in WHIS General Conditions], apply to change or cancel any of the conditions of this consent.

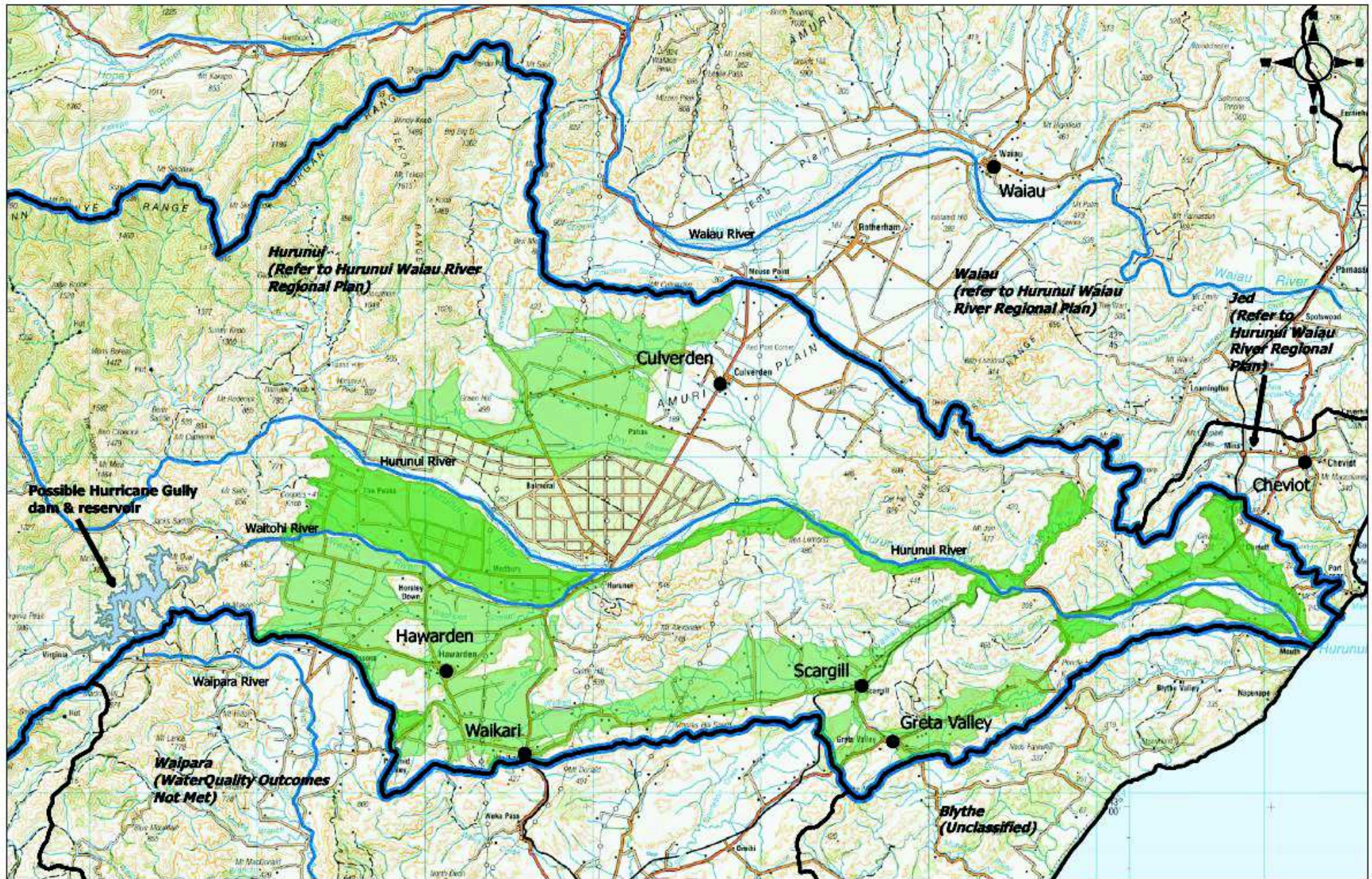
Advice Note: *These conditions apply where specific review conditions have not otherwise been imposed.*

General Conditions

- 34 In addition to the above, Conditions 1 – 43 contained in General Conditions applying to all consents issued for the WHIS apply (referred to as schedule 1 in those consents).

Issued at Christchurch on 16 December 2016

Canterbury Regional Council



Legend

- HWP - Command Area located within the Hurunui Nutrient Management Area
 Hurunui Nutrient Allocation Zone
 Other Nutrient Allocation Zone

Schedule 1: General Conditions

General Conditions Applying to All Resource Consents - CRC120687, CRC120695, CRC120691, CRC120696, CRC120692, CRC120694, CRC122547, CRC120675, CRC130467

The following are General Conditions applying to all resource consents granted for the Waitohi Irrigation and Hydroelectricity Project (also known as the HWP scheme):

General

- 1 No water takes or uses shall commence until all obligations relating to that stage of scheme development and contained in other conditions of these consents have been met to the satisfaction of the Canterbury Regional Council RMA Monitoring and Compliance Manager.

Management Plans

- 2 The consent holder shall prepare for the approval of the Canterbury Regional Council RMA Monitoring and Compliance Manager such Management Plans as are required to give effect to the purposes and objectives specified in this consent, including, but not limited to the following:
 - (a) Scheme Environmental Management Plan (SEMP);
 - (b) Ecological Management Plan (EP);
 - (c) Waitohi Restoration Plan for the lower Waitohi and Washpen Stream;
 - (d) Braided River Birds Monitoring and Management Plan (BRBMMP);
 - (e) Reservoir Management Plan; and
 - (f) Recreation Management Plan;
 - (g) Excavation Management Plan.
- 3 The likely timing of the delivery of these Management Plans shall be identified by the consent holder within three months of the issue of this consent. The consent holder shall work collaboratively with the Canterbury Regional Council to ensure that ample notice of the delivery date for each plan is provided to assist the Canterbury Regional Council with planning the allocation of resources to assess each of the plans.
- 4 The consent holder may, without changing the purpose or objectives of a Management Plan referred to in Condition 2 above, seek the approval of the Canterbury Regional Council RMA Monitoring and Compliance Manager for any necessary amendment to such plan.
- 5 The consent holder may review and revise any Management Plan at any time on the following terms:
 - (a) The review shall be undertaken in consultation with and be approved by the Canterbury Regional Council RMA Monitoring and Compliance Manager;
 - (b) The consent holder shall, in relation to any change to any Management Plan, consult with the same parties it is required to consult in relation to the preparation of the original Management Plan under these conditions of consent;
 - (c) Such review shall be necessary to give effect to the purpose or objectives of the Management Plan.
- 6 All Management Plans shall state the objective or objectives sought to be achieved by such plans.
- 7 The consent holder shall pay all actual and reasonable costs of the Canterbury Regional Council in connection with the review of all Management Plans, design statements and design specifications prior to their approval.

Advice Note: Approval from the Canterbury Regional Council to be within 30 working days of receipt of each plan or plans.

Community liaison group

- 8 Within twelve months of the date of issue of these consents, the consent holder shall undertake an open public process to offer local residents and interested people, including representatives from the consent holder, the Canterbury Regional Council, and the contractors for the scheme the opportunity to be involved in a Community Liaison Group. The Community Liaison Group shall be chaired by an independent facilitator appointed by the consent holder in consultation with the Canterbury Regional Council.
- 9 In the event that it is not possible to establish such a group through no fault of the consent holder then such failure to do so shall not be a breach of these conditions.
- 10 The objectives of the Community Liaison Group shall be to:
 - (a) Build effective working relationships and mutual trust between the local community and the consent holder (including its contractors), especially during construction;
 - (b) Promote the free flow of information in all directions between the local community, the consent holder, the contractors, and the Canterbury Regional Council, in order to try to anticipate and resolve any potential issues before they arise;
 - (c) Participate in subsequent design and consent processes, including being consulted on detailed design of Stage 1 and Stage 2 water distribution and on Phase 2 consents;
 - (d) Evaluate the results of monitoring activities on a periodic basis;
 - (e) Oversee a Community Complaints Procedure, ensuring appropriate responses from the consent holder are forthcoming; and
 - (f) Recommend any changes to proposed mitigation measures that might be appropriate in light of the monitoring.

Complaints procedure

- 11 Within twelve months of the date of issue of these consents, the consent holder shall establish and operate a Community Complaints Procedure as follows:
 - (a) The consent holder shall have a clearly nominated and publicly communicated contact person within its own organisation or within one of its local agents for receipt of, and attendance to, complaints during construction;
 - (b) The consent holder shall establish a 24-hour free phone number for the local community to call if they have any concerns or complaints regarding construction. The free phone number shall be advised to all residents within the area affected by scheme construction via post and shall be advertised in the local newspaper prior to the commencement of construction of the scheme and at regular periods during construction;
 - (c) The consent holder shall maintain a log of any complaint received, including the following: the date, time, complainant name and contact details, nature of the complaint including the cause and effect if known, and record action taken to address or mitigate the complaint;
 - (d) The consent holder shall respond to complaints as soon as is practicable but not later than 24 hours and shall log the action that it intends to take in response to the complaint;
 - (e) The consent holder shall communicate with the complainant about actions taken;
 - (f) The consent holder shall document any other longer term actions to be taken;
 - (g) The consent holder shall present an incident summary (i.e. (c) to (e) above) to the meetings of the Community Liaison Group (in the event it is established) for review; and
 - (h) The consent holder shall make the complaints and response log available to the Canterbury Regional Council RMA Monitoring and Compliance Manager on request.

Monitoring of Hurunui and Waitohi River Channel Geomorphology

- 12 The consent holder will undertake a topographic survey of river cross sections at the below locations on a 5 yearly cycle and report the findings to the Canterbury Regional Council;
- a) 250 m downstream of Powers Rd Bridge (Waitohi River) N5255673 E1564159;
 - b) 250 m downstream of Waitohi Rd Bridge - Horsley Downs (Waitohi River) N5252660 E1571473;
 - c) 250 m downstream of Medbury Rd Bridge - SH7 (Waitohi River) N5252300 E1578899;
 - d) 500 m downstream of Intake 4 (Hurunui River) N5257407 E1553286;
 - e) 500 m downstream of Intake 3 (Hurunui River) N5261307 E1564486;
 - f) 500 m upstream Camp Road (Hurunui River) N5258320 E1571226 Adjacent to Duns Road (Hurunui River) N5254307 E1576439; and
 - g) 1.5 km downstream of SH7 (Hurunui River) N5254107 E1582453.
- *Advice Note: Particular regard shall be taken to record accumulation of fine sediments, sand and silts at river cross sections. Surveys shall be to standards consistent with those used by Canterbury Regional Council, and where practical, these surveys shall coincide with any being carried out by the Canterbury Regional Council.*

Braided River Birds

- 13 The Consent Holder shall establish an Environmental Management Trust (the Trust). The purpose of the Trust shall be to collect and administer funding for ecological management of the Waitohi and Hurunui Rivers, as set out in Conditions 14 to 17. The funding and work of the Trust is not to be applied to implementation of other ecological conditions and mitigations specifically required under these consents.
- 14 The Consent Holder shall contribute a sum of \$20,000 to settle the Trust within 12 months of the commencement of these consents. Thereafter the consent holder shall contribute \$15,000 per annum to the Trust until water is made available to 15500ha being Stage 1 of the scheme. Thereafter the consent holder shall contribute \$30,000 per annum, with at least \$20,000 being paid in cash and the remainder either paid in cash or through water users' in-kind contributions to achieving the Trust's objectives on the ground (examples of in-kind contributions being assistance with predator control, riverbed weed control, bird monitoring and riparian re-vegetation in locations not otherwise required under these consents).
- 15 The Trust shall prepare and submit to the Canterbury Regional Council for approval a Braided River Birds Monitoring and Management Plan (BRBMMP). The BRBMMP shall be submitted prior to the abstraction of water authorised under these consents and prior to commencing the surveys set out in Condition 17(b). The BRBMMP shall provide for the following objectives;
- (a) To maximise opportunities to protect and enhance braided river bird populations.
 - (b) To monitor populations of braided river birds in order to detect long-term changes in distribution and abundance.
- 16 To achieve the objectives set out in Condition 15, the BRBMMP shall include:
- (a) Timeframes and reporting requirements;
 - (b) Methods to monitor the abundance and distribution of black-fronted terns, pied oystercatchers, and black-billed gulls on the Hurunui River between the Mandamus River confluence and the Hurunui River mouth, and on the Waitohi River from and including the reservoirs to the confluence with the Hurunui River. Monitoring shall occur at least once within two years before exercising these consents, and once within two years after exercising these consents and thereafter at least once every five years. Bird monitoring shall include replicated counts within each year during which monitoring is undertaken;
 - (c) Methods to characterise and measure the suitability of habitat for braided river birds. These may include but not be limited to measurement of major habitat types and vegetative cover using aerial photography and measurement of river braiding (numbers and widths);

- (d) Methods to control introduced weeds species that invade bird habitat, including but not limited to European broom, gorse, tree lupin, willows, poplars, pines, and alders;
 - (e) A long-term weed control strategy that aims to maximise conservation benefits in relation to resources invested, including identification of opportunities for water users to contribute in-kind;
 - (f) Methods to collaborate with councils or gravel extractors, if opportunities arise, to use heavy machinery to ensure that important nesting islands remain surrounded by water during the breeding season;
 - (g) Methods to control southern black-backed gulls to reduce their numbers on the Hurunui River to less than 10% than present immediately prior to exercise of these consents, and maintain numbers at or below this level; and
 - (h) Methods to record, and electronically store, audit and backup data gathered under these consents.
- 17 The BRBMMP shall be implemented by the Trust.
- 18 The Trust shall prepare and submit to the Canterbury Regional Council an annual report, reporting on the work undertaken and effectiveness of achieving the objectives of the BRBMMP, and make recommendations as necessary for an adaptive management approach to achieve the objectives set out in Condition 15. The Trust shall submit this annual report to the Canterbury Regional Council Attention RMA Monitoring and Compliance Manager by the 31 July each year.

Advice Note: The consent holder is not expected to achieve total weed or southern black-backed gull control on the Hurunui River.

Archaeology

- 19 The consent holder shall erect display panels identifying the known historic heritage features of the area; the Upper Wagon Cut which is a road belonging to the 1860s, Leith's Black Hotel built circa 1865 and the Rabbit Fence constructed in the 1880s. These display panels are to feature these sites and describe the gold rush, the Waitohi Gorge settlement as well as the early pastoral history. These interpretative signs are to be erected alongside the road to the Lower Gorge that overlooks these features.
- 20 A survey of the Hurricane Gully inundation area shall be undertaken by a qualified archaeologist in consultation with the local Rununga prior to the filling of the reservoirs. The results of this survey shall be provided to the Historic Places Trust and the Canterbury Regional Council.
- 21 An exploratory excavation shall be undertaken of the area known as the Waitohi Gorge Settlement Area. An Excavation Management Plan shall be prepared in consultation with the Historic Places Trust.
- *Advice Note: An Archaeological Authority under the Historic Places Act 1993 will be required in respect of the exploration of the Waitohi Gorge Settlement Area, and the removal of the section of historic rabbit fence. If any evidence of heritage features is discovered within the inundation area as a result of the survey required at Conditions 20 and 21, a further Archaeological Authority will be required.*

Accidental Discovery for areas not covered by an Archaeological Authority

- 22 This protocol shall cover archaeological sites, historic sites and historic buildings classified under the Historic Places Act 1993. Where appropriate, all contractors, project managers and stakeholders shall be inducted into the protocol and made aware of their individual responsibilities under the protocol.
- 23 In the event of any disturbance of kōiwi tangata (human bones) or taonga (treasured artefacts), the consent holder shall immediately:
- a) Advise the Te Rūnanga o Ngāi Tahu, Te Rūnanga o Kaikōura and Te Rūnanga o Ngāi Tūāhuriri, or their representative, and the Canterbury Regional Council of the disturbance; and
 - b) Cease earthmoving operations in the affected area until the area containing the kōiwi tangata or taonga has been clearly demarcated, and kaumatua and archaeologists have certified that it is appropriate for earthmoving to recommence.

- 24 In the event of accidental discovery of archaeological remains, the following steps shall be taken:
- a) All activity affecting the immediate area shall cease and the Regional Archaeologist of the New Zealand Historic Places Trust shall be contacted;
 - b) The site shall be secured to ensure that the remains are not further disturbed;
 - c) Further works affecting the remains will not commence until either:
 - (i) The Regional Archaeologist of the New Zealand Historic Places Trust has confirmed in writing that the archaeological provisions of the Historic Places Act 1993 do not apply or that the requirements of the archaeological provisions of the Historic Places Act 1993 have been met;
 - (ii) and, if required, an archaeological authority has been granted by the New Zealand Historic Places Trust.
- 25 If human remains (koiwi tangata) are located, in addition to the above steps, the runanga representative for the area and the New Zealand Police must be contacted.
- 26 The above protocol shall only be amended in consultation with the New Zealand Historic Places Trust (NZHPT), Te Rūnanga o Ngāi Tahu, Te Rūnanga o Kaikōura, and Te Rūnanga o Ngāi Tūāhuriri. Once finalised, copies shall be lodged with those parties and the Canterbury Regional Council prior to any construction commencing.

Recreation

- 27 A Recreation Management Committee shall be established by the consent holder. A representative of Whitewater NZ and/or Jet Boating New Zealand shall be on the Recreation Management Committee. The Recreation Management Committee shall be consulted in the development of the Recreation Management Plan under Condition 28.
- 28 A Recreation Management Plan shall be prepared and implemented to address the following issues:
- (a) The use of the reservoirs, and particularly the lower two, for recreational purposes;
 - (b) The development of cycle tracks.
 - (c) The cessation of takes for river boating provided for in consents CRC120687 and CRC120695.
 - (d) provision for replacement of reserves lost and mitigation of effects of the scheme on other reserves, and specifically replacement of the camping ground at the reserve located at Lake Sumner Bridge on the Waitohi River with one of a similar type and scale;
 - (e) mitigation for loss of angling amenity, including potential creation of fish spawning habitat, especially within the lower Waitohi;
 - (f) provision of river access points for recreational water users, especially access at Intakes 1A and 4.

Advice Note: The extent to which river access can be provided pursuant to a Recreation Management Plan will depend to an extent on the ability of the consent holder to negotiate access with landowners.

Flow monitoring

- 29 The consent holder may at its discretion install a water level recorder between the confluence of the North and South Branches of the Hurunui River and Intake 4. The exact location must be determined in consultation with the Canterbury Regional Council.

Water level recorder

- 30 The water level recorder will enable the determination of the continuous rate of flow and volume of water in the Hurunui River.

- 31 The water level recorder shall, as far as is practicable, be installed at a site likely to retain a stable relationship between flow and water level. The water level recorder shall be installed in accordance with the manufacturer's instructions.
- 32 The flow at the shall be gauged at least every three months, and at any other time when required as determined by a site inspection, to be carried out at least once every month.
- 33 Gaugings 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.
- 34 The level of water in the Hurunui River 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 and which is telemetered. The recorded data shall not be changed or deleted by any person. All data older than 12 months shall be archived in original format and provided to the Canterbury Regional Council upon request.
- 35 The measuring and recording devices described in Conditions 30 and 34 shall be available for inspection at all times by the Canterbury Regional Council
- 36 All data from the recording device described in Condition 34 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.

Advice Note: This flow recorder could assist with the timing and magnitude of flushing flows and life cycle flows and the take from Intake 4 as detailed in consents CRC120687, CRC120695 and CRC120691.

- 37 The water meter and recording device(s) shall be installed and maintained throughout the duration of the consent in accordance with the manufacturer's instructions.
- 38 All practicable measures shall be taken to ensure that the water meter and recording device(s) are fully functional at all times.
- 39 Within six months of the installation of a water level recorder under condition 31, and at five-yearly intervals thereafter, and at any one time when requested by Canterbury Regional Council, the consent holder shall provide a certificate to the Canterbury Regional Council signed by a suitably qualified and experienced person certifying the accuracy of the measuring and recording devices installed in accordance with Conditions 30 and 35, and also certifying that data can be readily accessed.

Reporting

- 40 An annual report shall be prepared and provided to the Canterbury Regional Council Attention RMA Monitoring and Compliance Manager by 31 July each year. This report shall include all reporting referred to in the conditions of consents CRC 120687, CRC120695, CRC120691, CRC120696, CRC120675, CRC120694, CRC122547 and CRC130467.

Costs

- 41 Any costs arising from any Management Plans, restoration programmes, or condition under these resource consents shall be met by the consent holder.

Lapse Date

- 42 Pursuant to section 125 of the Resource Management Act 1991, if not given effect to these consents shall lapse on the following dates:
 - (a) The consents associated with Stage 1 of this consent shall lapse 5 years after the commencement of the consents, where Stage 1 means the irrigation of up to 15500ha. and "give effect to" means for Stage 1 the taking of water for the purpose of irrigation through any part of the Stage 1 infrastructure being Intakes 1A or 1B and reservoirs at Seven Hills, Inches Road, the Lower Gorge and on-plain storage; and

- (b) The consents (or parts thereof) associated with Stage 2 of this consent shall lapse 10 years after the commencement of the consents, where Stage 2 means the irrigation of up to 58,500 hectares as shown on attached **Plan HWP1**, and “give effect to” means for Stage 2 that construction of the Hurricane Gully dam has commenced. If Stage 2 has lapsed pursuant to this condition then the consents thereafter may only be exercised to the extent of conditions applying to Stage 1 of the proposal.
- 43 The Canterbury Regional Council (Attention: RMA Monitoring and Compliance Manager) shall be informed immediately on first exercise of this consent by the consent holder.

Review

- 44 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 effects on the environment which may arise from the exercise of this consent and which it is appropriate to deal with at a later stage.
- 45 The consent holder shall carry out the following assessments of their performance against the conditions of these consents within the time periods specified below:
- (a) At the time the design details for the reservoirs are lodged with the Canterbury Regional Council, the consent holder shall report whether the actual storage volume (either live or total storage) of any of the reservoirs differs by more than five percent from those volumes described in the AEE; and
 - (b) Upon completion of the further ecological surveys and studies required under the conditions of CRC120692, the consent holder shall report whether this work reveals taxon or taxa within any proposed dam or reservoir footprint of such conservation value that:
 - (i) the population or their habitat is deemed by an appropriately qualified expert to be of national significance; and/or
 - (ii) additional mitigation or offset measures are required to address the adverse ecological effects of the proposed inundation.
 - (c) Within six months of irrigation water first being made available to 15500 hectares of land (Stage 1), or within seven years after commencement of the consents, whichever is earlier, the consent holder shall assess the following matters:
 - (i) the appropriateness of the annual volume limit on water taken;
 - (ii) compliance with nitrogen and phosphorus limits;
 - (iii) review of mitigation and offsets provided for in the Ecological Plan; and
 - (iv) assessment of measures necessary to ensure compliance with limits applying to of Stage 2 of the scheme.
 - (d) Within six months of irrigation water first being made available to the next 18000 hectares of land after completion of Stage 1, Or within twelve years after commencement of the consents, whichever is earlier, consent holder shall assess the following matters:
 - (i) the appropriateness of the annual volume limit on water taken;
 - (ii) compliance with nitrogen and phosphorus limits;
 - (iii) review of mitigation and offsets provided for in the updated Ecological Plan; and
 - (iv) assessment of measures necessary to ensure compliance with limits applying to the remainder of Stage 2.

- (e) Within six months of irrigation water first being made available to 45000 hectares of land, or within eighteen years after commencement of the consents, whichever is earlier, the consent holder shall assess the following matters:
 - (i) the appropriateness of the annual volume limit on water taken;
 - (ii) compliance with nitrogen and phosphorus limits;
 - (iii) review of mitigation and offsets provided for in the updated Ecological Plan; and
 - (iv) assessment of measures necessary to ensure compliance with limits applying to the remainder of Stage 2.
- 46 Within six months of completing the assessments described in Condition 45, the consent holder shall report to the Canterbury Regional Council RMA Monitoring and Compliance Manager on the findings of those assessments and the measures proposed to be implemented to ensure effects on the environment are no more significant than under the original proposal:
- 47 Upon receipt of any of the review reports described in Condition 46, the Canterbury Regional Council shall review the conditions of the consents pursuant to Section 128(1) of the Resource Management Act 1991 for the purpose of avoiding, remedying, or mitigating any adverse effect on the environment arising from the review or any increased risk of future non-compliance with conditions of the consents.
- 48 Reviews under Condition 45 (c), (d) or (e) shall include consideration of whether the limit on the annual volume of water taken should be reduced, and whether the area to be irrigated under the proposal should be reduced in order to reasonably ensure compliance with the nutrient load limits of the consents.
- 51 In accordance with Section 127 of the Resource Management Act 1991 the consent holder may, no earlier than twelve months after the approval of the Management Plans required by Condition 2 above, apply to change or cancel any of the conditions of this consent.

Advice Note: These conditions apply where specific review conditions have not otherwise been imposed.

ANNEXURE 1 (AS REFERRED TO IN CONDITIONS)

Restrictions on taking C permit water

- 1 Whenever the unmodified flow in the Hurunui River falls below the following flows (Y L/s), the taking of C permit water in terms of this consent shall cease:

<u>Month:</u>	<u>Flow (Y L/s):</u>
Jan	36,470
Feb	36,470
Mar	36,470
Apr	36,470
May	28,470
Jun	28,470
Jul	28,470
Aug	28,470
Sep	36,470
Oct	36,470
Nov	36,470
Dec	36,470

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• **Restrictions on taking B permit water**

- 2 Whenever the unmodified flow in the Hurunui River falls below the following flows (Y L/s), the taking of B permit water in terms of this consent shall cease:

<u>Month:</u>	<u>Flow (Y L/s):</u>
Jan	26,470
Feb	26,470
Mar	26,470
Apr	26,470
May	18,470
Jun	18,470
Jul	18,470
Aug	18,470
Sep	26,470
Oct	26,470
Nov	26,470
Dec	26,470

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• **Restrictions on taking A permit water**

- 3 Whenever the unmodified flow in the Hurunui River falls below the following flows (Y L/s), the taking of A permit water in terms of this consent shall cease:

<u>Month:</u>	<u>Flow (Y L/s):</u>
Jan	15,000
Feb	15,000
Mar	15,000
Apr	15,000
May	12,000
Jun	12,000
Jul	12,000
Aug	12,000
Sep	15,000
Oct	15,000
Nov	15,000
Dec	15,000

N load adjustment to correct for Overseer drainage estimates

Pivot			
Soil	MAR=640mm	MAR=750mm	MAR=895mm
XL	1.32	1.14	1.09
VL	1.32	1.14	1.09
L	1.27	1.14	1.12
M	1.24	1.13	1.12
D	1.22	1.11	1.11
PdL	1.22	1.11	1.11
Pd	1.22	1.11	1.11
Rotorainer			
Soil	MAR=640mm	MAR=750mm	MAR=895mm
XL	1.62	1.33	1.24
VL	1.62	1.33	1.24
L	1.53	1.31	1.26
M	1.43	1.25	1.22
D	1.27	1.17	1.15
PdL	1.27	1.17	1.15
Pd	1.27	1.17	1.15
Borderdyke			
Soil	MAR=640mm	MAR=750mm	MAR=895mm
XL	2.27	1.74	1.55
VL	2.27	1.74	1.55
L	2.29	1.77	1.59
M	2.18	1.73	1.55
D	1.90	1.56	1.42
PdL	1.90	1.56	1.42
Pd	1.90	1.56	1.42
Dryland			
Soil	MAR=640mm	MAR=750mm	MAR=895mm
XL	1.10	0.99	1.00
VL	1.10	0.99	1.00
L	1.14	1.04	1.05
M	1.07	1.00	1.02
D	1.02	0.97	1.00
PdL	1.02	0.97	1.00
Pd	1.02	0.97	1.00

ASSESSMENT OF SOIL LEACHING LOSS FOR HWP

1. Updated assumptions for soil leaching between Mandamus and SH1, based on amended land areas, new look-up tables and some extra leaching under spray irrigation

Land Area Categories	HWP Stage 2			AIC shareholders outside HWP ³	NTP (Balmoral)	Other Irrigable Land	Non-Irrigable Land	Total Soil Leaching Contribution to SH1
	AIC Shareholders within HWP ³	Other HWP	Total HWP					
Modelled Area (ha) contributing to load ¹	7,622	27,591	35,214	9,714	8,545	2,292	92,500	148,265
Average leaching (kg/ha/yr) ²	48.5	21.3	27.2	50.4	8.5	31.0	3.0	12.6
Total load (t/yr)	370	589	959	490	73	71	278	1870
Note 1 : The areas listed above exclude areas identified as 'water' and 'roads'. Leaching from these landuses is set to 0.								
Note 2: Average leaching rates derived from updated Ecan look-up Tables (Ecan report R14/19) with the exception of Non-irrigable land where a rate of 3.0 kg/ha/yr was								
Note 3 : AIC Command Area overlaps with 'Other HWP' and 'Other Irrigable Land'								

2. Total soil leaching contributing to SH1

Soil leaching from Mandamus to SH1 (t/yr)	1,870
Soil leaching above Mandamus (based on in river load of 39 t/yr at Mandamus)	78
Total leaching load above SH1 (t/yr)	1,948
18.5 % of total leaching load (t/yr)	360

3. Allocation to HWP

Current HWP loss (t/yr)	959
16% of total leaching contribution to SH1 (t/yr)	311
Total Allocation to HWP (t/yr)	1,270
Portion of 25% allowable increase	16%