

APPLICANT: MAREE HORO

Report of Keri Johnston

Consent ID	Description	Table 4 Location	Table 5 Location
CRC042020	To divert, take and use up to 174 litres per second of water from the East Branch of the Ahuriri River, at or about map reference NZMS 260 G39:486-412; for spray irrigation of 300 hectares of crops and pasture, at Ribbonwood Station, Quailburn Road, Omarama.	All other streams	Upstream of Waitaki Dam but not upstream of the outlets of the glacial lakes
Activity Status:			
<p><u>Rule 2, Table 3 WCWARP:</u> No allocation limit is set for this waterbody, and a minimum flow has been proposed as required in the WCWARP for “all other streams”.</p> <p><u>Rule 6, Table 5 WCWARP:</u> The proposed annual volume is within the allocation limit for “Upstream of Waitaki Dam, but not upstream of the outlets of the glacial lakes”.</p> <p>Overall status: Any activity that complies with Rules 2 and 6 is a discretionary activity under Rule 15</p>			

1 PROPOSAL

1. Maree Horo (hereon in referred to as “the applicant”) proposes to irrigate 532 hectares using spray irrigation, irrigating pasture used predominantly for sheep grazing with some cattle at approximately the same ratio's as are carried now.
2. This report relates to 300 hectares which will be irrigated with water from the East Branch of the Ahuriri River at a rate of 174L/s. Water is gravity fed via race to a small holding pond. Water can be gravity fed from the holding pond to irrigators.
3. The intake is for a stock water race which also finds its way back into the river. The East Branch of the Ahuriri does not have direct connection to the main branch of the Ahuriri River due to a stretch of water being underground for extended periods during summer.

1.1 Timeline and Summary of Significant Amendments made to the Applications

Timeline	CRC042020
Date of Lodging	23 March 2004
First Notifiable Date	24 March 2005
WCWARP Notifiable Date	15 December 2006
Public Notification	4 August 2007

4. The application was lodged in 2004.
5. The application has been reduced significantly since lodging being notified with an annual volume of 2, 100, 000 cubic metres a year, to now only seeking 1, 350, 000 cubic metres per year as advised to the Canterbury Regional Council reporting officers recommendations for these applications by e-mail dated 7 July 2009.
6. A minimum flow of 400 L/s has been proposed for the East Branch of the Ahuriri which is the 1 in 5 year, seven day low flow as required by Table 3 of the WCWARP for "all other streams".
7. No other changes have been made to the applications.

1.2 Mackenzie Irrigation Company Shares held

Name: Classic Properties Ltd	Number
Property Shares	1
Irrigation Shares	950

1.3 Derogation Approval

8. Derogation approval was obtained from Meridian Energy Limited on 11 September 2009.

2 BACKGROUND INFORMATION

2.1 Property Details

9. Maree Horo (heron in referred to as "the applicant") farms two properties known as Ribbonwood Station and Shelton Downs, situated between the Ahuriri River and Lake Ohau. These applications are specific to Ribbonwood Station.
10. The property currently runs sheep and beef cattle.
11. The property is 7289 hecatres, and carries 11,300 stock units (8,000 as sheep and 3,300 as beef cattle).
12. As the property is fully developed within normal economic parameters, irrigation is now required to take the property to the next production step.
13. Farming practice now without water involves a fine wool, sheep and cattle breeding and store stock unit in a high country environment. Stock are currently sold on the store market which has distinct limitations in dry seasons and in terms of market options. It is considered that with irrigation all progeny bred on the property will be able to be finished if the irrigation system is installed as planned.

2.2 Water Source

14. The East Branch of the Ahuriri River East Ahuriri Catchment is located approximately 12km from the start of Birchwood Rd, and is located on the north side of the Main stem Ahuriri River. It has a catchment area above the flow measurement site (at the Ribbonwood confluence) of 84.4km².

3 SUBMISSIONS

15. A summary of the submissions is as follows:

Resource Consent	Submissions in support	Submission in opposition	Neutral
CRC042020	4	18	2

16. Details of the submissions made in response to all applications that were publically notified at the same time in 2007 are contained in CRC Report 1, Appendix 5. I have reviewed this report and adopt it as a true and accurate summary of the submissions received.
17. Details of the submissions received made individually on these applications are as follows:

Submitter	Issues	Support/ neutral/ oppose
TJ and J Cooke	Support provided that the effects of the consented activities are appropriately managed and the grant of the consents will not unduly affect the ability of the submitters to use and develop its land for, among other uses, pastoral farming.	Support
Bellfield Land Co Ltd	That a suitable and fair flow-sharing regime can be settled amongst the users outside of the consent hearing process. This will ensure the submitter whom is downstream still has fair access to water during low flow conditions.	Oppose
Meridian Energy Ltd	Insufficient MIC shares, effects on water quality and flow metering requirements.	Oppose

18. In respect of the Meridian Energy Ltd submission, derogation approval has been obtained, and the applicant will install a flow meter, and has provided mitigation to ensure that effects on water quality are minor.
19. In respect of the Bellfield Land Co Ltd submission, this take is from the East Branch of the Ahuriri which has no connection to the Quailburn Catchment, which is catchment that the submitter seeks the required outcome.

4 CRC042020 - TAKE AND USE CONSENT - ASSESSMENT OF ENVIRONMENTAL EFFECTS

4.1 Effects on other water users

Effects on other water users	
Comments	<p>The applications are for new takes, for which MIC shares have been purchased. A minimum flow has been specified as required by Table 3 of the WCWARP.</p> <p>There are no other users on the East Branch of the Ahuriri.</p> <p>The CRC reporting officer for these applications agrees that effects on other water users are minor</p>

20. This river is in the "all other streams" category of Table 3 of the WCWARP.
21. There are no other water users on the East Branch of the Ahuriri, but it is a tributary of the Ahuriri River, where there are numerous consented abstractions.
22. However, the East Branch is specifically excluded from the Ahuriri Water Conservation Order, and the proposed minimum flow for this abstraction is considered to protect other users. It is also noted that whilst these are new applications, the property has held water rights historically, and on the East

Branch was entitled to take 500L/s, which is significantly more than is being sought now, and did so with no known effects on other users.

23. Mitigation is proposed restricting the rate of take and volume per week. Given this, effects on other users are considered to be minor.

4.2 Effects on ecosystems

Minimum flow requirements	
Proposed Environmental Flow Regime	All other rivers and Streams
Comments	<p>The applicant proposes a minimum flow of the 1 in 5 year, 7 day low flow as required by Table 3 of the WCWARP.</p> <p>The applicant will install fish screens on all intakes in accordance with the recommended guidelines.</p> <p>The CRC reporting officer for these applications considers that effects on ecosystems are minor provided a suitable fish screen is installed.</p>

24. The applicant accepts the minimum flow for all takes as specified in Table 3 of the WCWARP for all takes. This included the requirement to specify a minimum flow for the East Branch of the Ahuriri of the 1 in 5 year, 7 day low flow.
25. A fish screen will be installed prior to the commencement of this consent, and will be designed and installed in accordance with NIWA client report.
26. Therefore, effects on in-stream values are considered to be minor.

4.3 Effects of inefficient water use

Reasonable and Efficient Use Seasonal Volumes and Land Use	
Land Use	Mixed (cropping, and pasture for fattening sheep and beef cattle)
Area to be irrigated (hectares)	300
Method of application	Spray
Daily <u>net</u> application depth	5mm
Return period	3 days
Return period application depth	15mm
Soil profile available water	Medium soils (PAW range from 75mm to 110mm)
Effective Irrigation Season Rainfall	300mm
Seasonal volume required (m³/year)	1,350,000 m ³ /year
Volume to be included in Table 5 (WAP) allocation	1,350,000 m ³ /year

Comments	<p>The proposed irrigation annual volume has been determined using Schedule WQNv2, incorporating the parameters described above.</p> <p>The CRC reporting officer for the applications agrees that effects on inefficient water use are minor provided the annual volume is amended.</p>
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27. The proposed application depth of 15mm per return period is less than 50% of the water holding capacities expected. This is considered to be an efficient use of water.
28. The proposed annual volume is based schedule WQN9v2.
29. Policy 19 of the WCWARP encourages piping or sealing distribution systems. The system will utilise existing race systems that are now well sealed.
30. Policy 21 of the WCWARP requires all water takes to be metered. To ensure that this application is consistent with this policy, the applicant proposes to meter their take.
31. Given this, effects of inefficient water use are considered to be minor.

4.4 Effects of the use of water on water quality

Effects on Water Quality	
Comments	<p>The CRC reporting officer for these applications is not currently satisfied that effects of water quality are minor.</p> <p>Cumulative effects on water quality have been addressed by Mackenzie Water Resources Limited (MWRL) and are summarized below.</p> <p>Local effects have also been addressed below</p>

32. The calculated nutrient mitigation requirement of the receiving environments determined in the MWRL Study has identified an N and P threshold for each property.
33. "OVERSEER® has been RUN by a QUALIFIED person to model the N and P outputs from the proposed farming system. The results of the model have been incorporated in to the table below. The following table shows that the applicant can meet the property thresholds proposed by the MWRL study.

	Nitrogen Threshold (kg/farm)	Phosphorous Threshold (kg/farm)
MWRL Water Quality Study Property Thresholds	16,533	438
OVERSEER® outputs	16,194	352

34. The applicant is committed to implementing the "Mandatory Good Agricultural Practices" set out within the FEMP (see Appendix E). Implementing these practices ensure that the OVERSEER® results are validated. This along with ensuring that the property thresholds of the WQS (set out in the table above) are not exceeded will ensure that the cumulative effects of the use of water for irrigation on water quality are no more than minor.
35. Whilst the applicant is within their property thresholds, the MWRL Study identified that the applicant still has to consider specific on farm effects and the impacts these activities could have on the local receiving environment. This requires a specifically developed Farm Environmental Management Plan (FEMP) to identify and implement appropriate mitigation measures set out in the draft attached (see Appendix E).

36. At a workshop held in Twizel in August 2009, the applicants met with Ms Melissa Robson of GHD Limited. A “desk top” on farm risk assessment was undertaken. This is considered to be the “starting point” of the FEMP.
37. The workshop identified potential on farm risks specific to each farm along with possible mitigation measures. The on farm risks identified during the desktop risk assessment need to be verified by an appropriately qualified person who has carried out a site visit. It is anticipated that this will occur should the applications be granted. For Ribbonwood Station, the following potential risks were identified:
 - Evidence of erosion
 - Runoff from winter feed crops
 - Laybacks from waterways from fertiliser application
 - Track runoff - check
 - The many water ways that flow through the property
 - Fencing off water races
 - Stock access to water ways
38. The applicant has committed to carrying out a full on farm risk assessment, proposing mitigation, monitoring and auditing will occur prior to the commencement of the consents. All risks will be addressed in a Farm Environmental Management Plan (FEMP).
39. Given that the N and P thresholds from the MWRL Study can be met, and the applicant’s commitment to addressing on farm risks with the implementation of the FEMP, the effects of the use of water on water quality for both the local receiving environment and cumulative effects are considered to be minor.

4.5 Effects on people, communities and recreational value, including landscape

Effects on People, Community and Recreational Values, including Landscape	
Comments	<p>Landscape effects have been addressed by UWAG’s Landscape Architect, Mr Andrew Craig, who considers that this proposal will have a minor effect on landscape values.</p> <p>An appropriate minimum flow is proposed and the applications are within allocation limits set by the WCWARP, therefore effects on people, communities and recreational values are minor.</p> <p>The CRC reporting officer for these applications is satisfied effects are minor subject to conditions.</p>

4.5.1 Landscape

40. This application is for “new” water, however, the property is intensively farmed and part of a substantially modified rural environment, whereby cultivation, and fencing occur regularly.
41. Greening of this specific area of land therefore occurs seasonally during the irrigation season, which is therefore a temporary effect that is already experienced in this location with the applicant’s existing consent and others nearby.
42. The applicant has a defined area to be irrigated.
43. Mr Andrew Craig is a landscape architect who is providing general and specific recommendations on behalf of UWAG clients to this hearing. His conclusions reflect that the general effects on the MacKenzie landscape of these applications within the basin will be significantly less than minor. I adopt his recommendations to the committee.

4.5.2 People, communities and recreational values

44. The applicant has proposed the appropriate minimum flow condition from the WCWARP for the water body from which they have applied to take and use water. A minimum flow is considered to

adequately protect people, community and amenity values within the waterway specific to the application.

45. The activities all occur in a rural setting, where the dominant land use is pastoral farming. Given that the proposed activities all occur on private farmland; as such the use of water is unlikely to adversely affect amenity values.
46. The WCWARP sets an annual allocation “cap” for agricultural and horticultural activities within defined areas (Table 5). The applicant has proposed an annual allocation limit for their own resource consents for the use of water, as well as implementing Farm Management Plans, which require existing irrigation systems to be audited and improved where possible, and new systems to be designed and installed by accredited personnel, and implementing initiatives to ensure that water is used wisely.
47. The primary objective of an annual allocation is to ensure that the water is used efficiently and effectively for the land use, soil type and climatic conditions. The applicant has proposed an annual volume that is considered to reflect reasonable and actual use and this is within the allocation limit defined by Table 5.
48. Therefore, given the applicant’s commitment to ensuring efficient use of water on their properties, and that the take is within allocation limits set to protect in-stream values and other users, it is considered that effects on people and communities will be minor.

4.6 Effects on Tangata Whenua Values

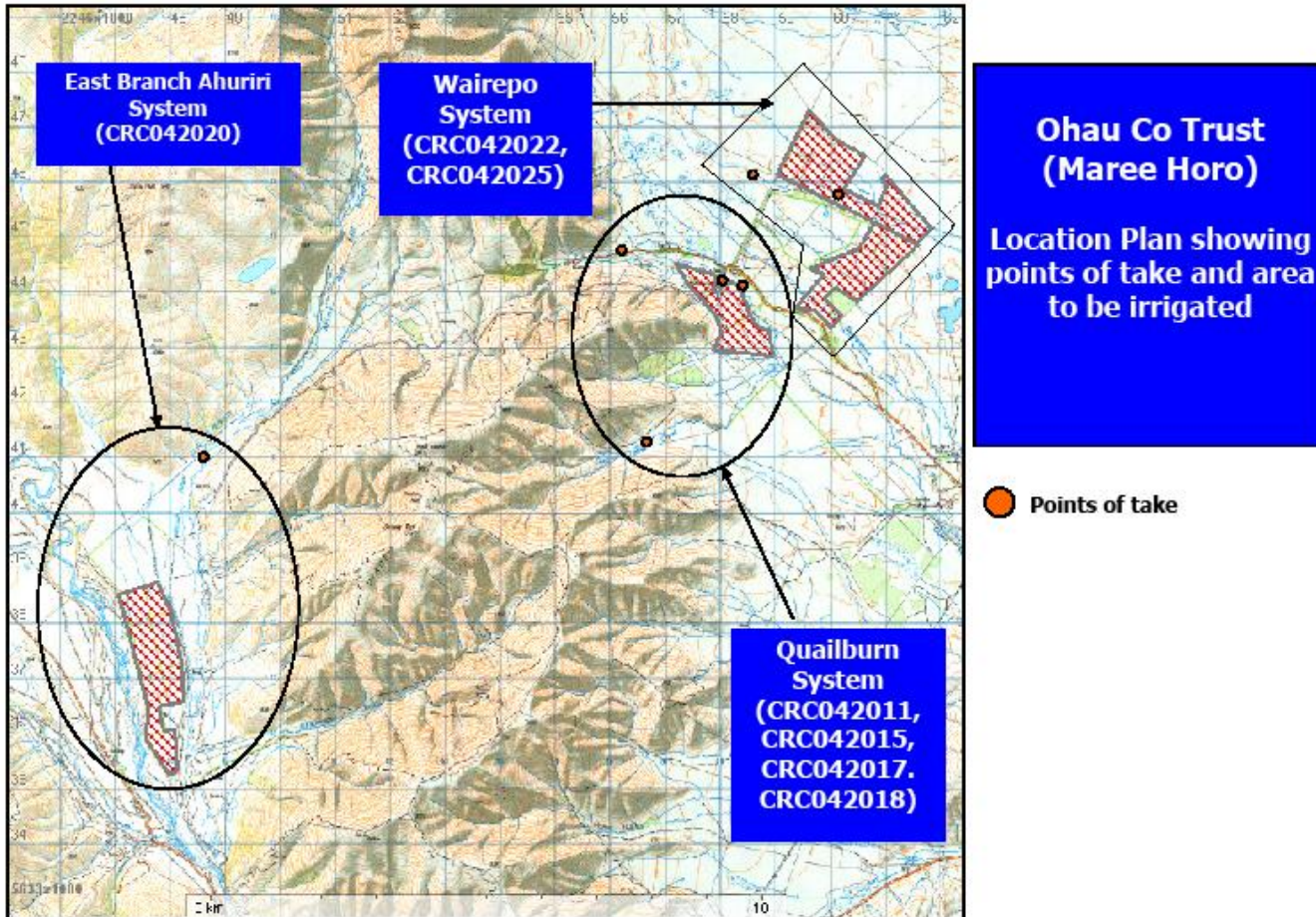
Effects on Tangata Whenua	
Comments	The CRC reporting officer for these applications considers the effects on Tangata Whenua are uncertain and may therefore be more than minor

49. Te Runanga O Ngai Tahu submitted on all applications in the catchment, seeking that all applications be declined.
50. The primary reasons for this were that the applications were considered to be inconsistent with the policies and objectives of the WCWARP, and also at odds with the cultural objectives of the RMA.
51. This application is entirely within the limits defined by the WCWARP. Te Runanga O Ngai Tahu had considerable input into the creation of the WCWARP.
52. However, it is acknowledged that Te Runanga O Ngai Tahu have a significant relationship with the Waitaki Catchment, and as such, appropriate minimum flow conditions, and management of water quality effects, is proposed by the applicant to ensure that the potential effects on the environment, including tangata whenua values are minor.

4.7 CONCLUSIONS

53. The potential effects associated with the take and use of water have been assessed and are considered to be minor.

APPENDIX A – LOCATION PLAN SHOWING AREA TO BE IRRIGATED



APPENDIX B – DEROGATION APPROVAL



11 September 2009

Gillian Ineson
Environment Canterbury
PO Box 345
Christchurch

Dear Gillian:

Application by Maree Horo (Ohau Co Trust)

- 1 We write to you to outline the basis of Meridian Energy Limited (*Meridian*) providing its derogation approval of the application numbered CRC042020 by Maree Horo (Ohau Co Trust). We refer to the letter to Ecan from Chapman Tripp dated the 26th of June 2008 setting out Meridian's position on derogation approvals generally.
- 2 Meridian has read and considered the application CRC042020 by Maree Horo (Ohau Co Trust) and provides derogation approval on the following basis:
 - 2.1 Maree Horo (Ohau Co Trust) shall only be entitled to take and use water from the east branch of the Ahuriri River (NZMS G35:186-412) at a maximum rate of 174 litres per second for the spray irrigation of 180 hectares defined in the application;
 - 2.2 The maximum daily volume shall not exceed 14,034 cubic metres per day and the maximum annual volume shall not exceed 1,350,000 cubic metres per annum and this shall be a located as an agricultural and horticultural activity upstream of Waitaki Dam but not upstream of the outlets of the glacial lakes under Rule 6, Table 5 of the Waitaki Catchment Water Allocation Regional Plan;
 - 2.3 the annual volume provided for in Clause 2.2 shall be time branched in accordance with the following table:

APPENDIX C – PROPOSED CONDITIONS

CRC proposed conditions with tracked changes.

Please note that conditions relating to water quality thresholds and FEMP's are to be added.

Table 3: Recommended draft conditions for water permit CRC042020		
No.	Condition Code ¹	Details
Divert & Take		
1	WP01	<p><i>Name of waterbody:</i> East Branch Ahuriri River</p> <p><i>Map reference:</i> NZMS 260 G39:486-412</p> <p><i>Instantaneous rate:</i> 174 litres per second</p> <p><i>Volume:</i> 15,033 cubic metres per day and 1,455,000 1,350,000 cubic metres between 1st July and the following 30th June</p> <p>Insert tranching table from derogation approval</p>
Use		
2	WP04	<p><i>Type of irrigation:</i> Spray irrigation</p> <p><i>Number of hectares:</i> 300 hectares</p> <p><i>Use:</i> crops and pasture for grazing stock excluding milking dairy cows</p> <p><i>Plan No:</i> "CRC042020" (Attachment 1)</p>
3	WP05	Efficiency of use
4	WP06	Backflow preventer
Mitigation		
5	WP07	<p><i>Name of waterbody:</i> East Branch Ahuriri River</p> <p><i>Map reference:</i> NZMS 260 G39:483-355</p> <p><i>Minimum flow:</i> 400 litres per second</p> <p><i>Flow graph:</i> See Report 2A No flow sharing required as below mean flow of 2,060L/s</p>
6	WP09	Fish screen
7		The consent holder shall ensure water races used to convey water diverted in terms of this permit are well maintained to minimise losses.
Measuring & Metering		
8	ME03	
9	ME04	

¹ See Report 1, Appendix 6 for condition code and wording.

10	ME05	
11	ME06	
12	ME07	<i>Waterway: East Branch Ahuriri River</i>
13	WP08	<i>Waterway: East Branch Ahuriri River</i> <i>Map reference: NZMS 260 G39:483-355</i> To be used with ME03-05
Administrative Conditions		
14	AD01	
15	AD02	<i>Number of working days: 5</i> <i>Month 1: March</i> <i>Month 2: July</i> <i>Waterbody: East Branch Ahuriri River</i> <i>Cross reference to Condition: 5</i>
16	AD04	Lapse date

APPENDIX D – DRAFT FARM ENVIRONMENTAL MANAGEMENT PLAN