

Before the Hearing Panel appointed by Canterbury Regional Council

IN THE MATTER OF The Resource Management Act 1991

AND

IN THE MATTER OF Application CRC073237 by Torach Farm Ltd for a Water Permit to take and use surface water from a gallery for irrigation.

Section 42A Officer's Report

Date of Hearing: 11th August 2008

Report of Claire Penman

1. I have been employed by MWH NZ Ltd as an Environmental Consultant since December 2005. I have 2 ½ years relevant experience in resource management particularly focused on water resources. I hold a Bachelor of Applied Science (with Honours) in Environment Management from the University of Otago. I have been engaged by Canterbury Regional Council (CRC) to act as Investigating Officer for this application.
2. This report is prepared under the provisions of Section 42A of the Resource Management Act 1991 (RMA). This section allows a Council officer to provide a report to the decision-maker on a resource consent made to the Council, and allows the decision-maker to consider the report at the hearing. Section 41(4) of the RMA allows the decision-maker to request and receive from any person who makes a report under Section 42A "*any information or advice that is relevant and reasonably necessary to determine the application*". This report will provide the decision-maker with information and advice related to:
 - (a) The background to the application;
 - (b) Details of the notification of the application and any submissions received;
 - (c) An outline of the relevant legal and planning provisions;
 - (d) Comments on the assessment of environmental effects provided;
 - (e) Details of Council policy relevant to the application;
 - (f) Comments in relation to the matters specified in Part II of the RMA; and
 - (g) Comments on the decision to be made by the decision-maker including comments on whether the application can be granted or should be declined; if the application is to be granted what measures are required to avoid, remedy or mitigate any adverse effects; what monitoring should be undertaken and the duration of consent.
3. It should be emphasised that any conclusions reached or recommendations made in this report are not binding on the decision-maker. It should not be assumed that the

decision-maker will reach the same conclusion or decision having considered all the evidence to be brought before it by the applicant and submitters.

4. This report should be read together with the introductory s42A report which gives an overview of all applications presented at this hearing. The introductory s42A report covers issues that are common to all applications, and will provide the decision-maker with information and advice related to the notification of all applications and any submissions received, and an outline of the relevant legal and planning provisions.

INTRODUCTION

5. Torach Farm Limited (herein 'the applicant') have applied for a consent to abstract surface water from gallery I40/0708 adjacent to the Waitaki River, near Priest Road, at a rate of 100 litres per second for irrigation of 250 hectares of pasture for crops, sheep and beef on Priest Road.
6. Ms Sue Scott of Opus International Consultants was engaged by the applicant to prepare the application on their behalf. Ms Keri Johnston of Irricon Resource Solutions has been engaged to represent the applicant at the hearing.
7. This is an application for a new activity with a 35 year duration requested.

Background

8. On 6 June 2008, the applicant applied for an amendment to the application regarding the location of take. Originally the applicant proposed to take water from a pond adjacent to the Waitaki River from which Meridian Energy Limited (MEL) already hold a consent to abstract water (CRC030183.1). MEL submitted against the proposal, and following discussions with MEL, the applicant has proposed to move the intake to a gallery 100m from the pond, but still on land owned by MEL.
9. The change in location was assessed as not requiring re-notification after concluding that the effects of the change from the original proposal were reduced.
10. The applicant also applied for a landuse permit to install the gallery on 9 June 2008 (CRC084766).
11. The application was lodged on 28 March 2007. No requests for further information were sent out.

Notification

12. Details of the notification and wording are contained in Appendix 4 of the introductory s42A report.

Submissions

13. Details of the submissions received for this application that are not common to all applications are contained in Table 1. A summary of key issues/effects that are common to all applications is provided in Appendix 5 of the introductory s42A report.

Submitter	Issues	Support/ Neutral/ Oppose	To be heard
G F Keeling	Considers that allocation above Black Point should be 250 million cubic metres. Considers users with annual volume will be efficient.	Support	Yes
S Carswell	Concerns with water quality and irrigation runoff.	Oppose	Yes
Waitaki Valley Irrigators	Considers that allocation above Black Point should be 250 million cubic metres. Considers users with annual volume will be efficient.	Support	Yes
Meridian Energy Limited	Effects on their ability to abstract water from the pond and requirement for access permissions as they own the land, Water metering, water quality, sustainable management and fitting with the flow regime for the Waitaki River.	Oppose	Yes

Table 1: Summary of submissions for CRC073237

DESCRIPTION OF THE PROPOSED ACTIVITY

14. The applicant proposes to take and use water as follows:

- (a) To take and use water at a maximum rate of 100 litres per second and a volume not exceeding 1,225,000 cubic metres per year from gallery I40/0708 (5 metres deep, 2 metres wide and 100 metres long) located adjacent to the Waitaki River, at or about map reference NZMS 260 I40:2252-9457.
- (b) Water shall only be used for the spray irrigation of 250 hectares of crops and pasture on the area shown on the attached plan (see Attachment One).
- (c) The Waitaki River minimum flows in Table 3 of the WCWARP will be complied with.

LEGAL AND PLANNING MATTERS

Consent Requirements

15. The consent requirements under the RMA, Transitional Regional Plan and PNRRP for water permit applications are outlined in the introductory s42A report. A summary of the requirements for this application are provided in Table 2 below, with a detailed discussion of the WCWARP rules in the following paragraphs.

Activity	RMA	TRP	PNRRP	WCWARP				
				Rule 2(1)(a)	Rule 2(1)(b)	Rule 2(2)	Rule 6	Classifying Rule
Irrigation	S14	Discretionary	n/a	Table 3 (xvii)(a)	Table 3 (xvii)(c)	n/a	Table 5, row v Ag & Hort	Rule 16 Non-complying

Table 2: summary of consent requirements for application CRC061399

16. For irrigation use, Rule 2 clause (1)(a) requires that no person shall take or use water unless the flow in the relevant river is above the minimum flow. The Lower Waitaki River is classified under Table 3, row (xvii). Table 3 specifies a minimum flow of 150 m³/s and associated flushing flows. The applicant proposes to comply with the minimum flows and environmental flow regime set out in the WCWARP.
17. As the applicant proposes to comply with the appropriate minimum flows, I am satisfied that the application complies with this rule.
18. For irrigation use, Rule 2 clause (1)(b) requires that no person shall take or use water unless the activity is within the instantaneous allocation limit for the water body specified in Table 3. For the Lower Waitaki River, an allocation limit of 90 m³/s has been established based on flows at the Kurow recorder. The proposed take is within the allocation limit for the Waitaki River taking into consideration the other consents on the river (see Appendix 3 of the s42A introductory report).
19. Rule 6 deals with annual allocation limits. For irrigation use, this activity is over the allocation limit for agricultural activities. Details of allocation and priority are contained in Appendix 3 of the introductory s42A report.
20. In summary, the proposed water permit is **non-complying** under Rule 16.

DESCRIPTION OF THE AFFECTED ENVIRONMENT

21. A description of the values of the Waitaki River in general are provided in the introductory s42A report.
22. The proposed abstraction point is located on the south bank of the Waitaki River, near Duntroon and approximately 16 kilometres downstream of the Waitaki Dam.

ASSESSMENT OF ACTUAL AND POTENTIAL EFFECTS

23. The effects that have been considered for this type of activity (surface water abstraction) are presented in the introductory s42A report. That report includes the presentation of the relevant planning provisions which direct us to consider these effects. A detailed discussion regarding the assessment of individual effects for this application is provided in the following sections of this report.

Adverse effect on ecosystems

24. The applicant proposes to comply with the Waitaki River minimum flows. I consider that this is appropriate for protecting the values of the Waitaki River.
25. There are a number of submissions which identify establishing a minimum flow and protecting fisheries values in all rivers and tributaries in the Lower Waitaki catchment as a concern (see Appendix 5 of the introductory s42A report).
26. Fish and Game NZ and the Department of Conservation lodged submissions on the application and describe in detail the Waitaki River catchment, its importance for fisheries values, gamebird habitat and recreational area (see paragraphs 14 to 19 of Fish and Game's submission (submission id #16866)).
27. A fish screen is not required as the take will occur via a gallery beneath the surface.

28. The applicant has not specifically proposed to install a measuring or recording device. I consider that it would be necessary to meter the take in order to monitor how much water they will be taking and when restrictions should be imposed in order to minimise adverse effects on ecosystems and other water users. Proposed wording for a consent condition to address this concern is contained in the 'list of standard conditions' in Appendix 6 of the s42A introductory report.
29. I am satisfied that as the applicant has proposed to comply with the minimum flow outlined in the WCWARP and provided they install a water meter, the adverse effects of the proposed activity on ecosystems are likely to be minor.

Adverse effect on other users

30. The applicant has proposed to adopt the minimum flow conditions for the Waitaki River and along with other applicants in this reach will be within the allocation limit for the river.
31. The applicant does not consider that there will be any effect on other users as they will comply with the limits in the WCWARP and there are no nearby consent holders.
32. Whilst the applicant has proposed an appropriate minimum flow on the Waitaki River consistent with the plan, I note that there remains some uncertainty regarding the effects on other applicants in terms of flow-sharing or banding, should all consents be granted (see Report 2). Therefore, I cannot conclude that effects of the proposed activity on other consent holders on the Waitaki River would be minor.

Adverse effect on people, communities and amenity values

33. The applicant considers that the inclusion of the Waitaki River minimum flow will ensure sufficient flows are left in the waterways to maintain amenity values. They therefore consider effects will be less than minor.
34. While the Waitaki River is well used for fishing, hunting and recreation, I consider that the Waitaki River minimum flows were set taking into account provision of flow for recreational and amenity values.
35. The applicant has not addressed the wider effects on community in respect of Policy 12 and availability of water to other activities listed in Objective 2 with regards to annual allocations to activities. This policy specifies that any activity that falls outside of the allocation limits specified in Rule 6, Table 5 must demonstrate the effect of granting the consent on the entitlements to other activities over the timeframe of the consent.
36. While a number of submitters raised concerns with regard to natural character and amenity values, I am satisfied that the local effects on people, communities and amenity values would be minor as appropriate minimum flows have been proposed. However, as the applicant has not provided an assessment of the cumulative effects on people, communities and amenity values, I am not satisfied that this effect would be minor.

Adverse effects of inefficient use on other users

37. The taking of water in excess of that required for the intended use may contribute to water levels being unnecessarily reduced and less water available for other users. A number of submitters have identified this issue.

38. The applicant proposes a total annual volume of 1,225,000 cubic metres per year. The irrigation volume is based on intensive land use, heavy soils, expected irrigation season rainfall of 180mm and seasonal demand per hectare of 670mm.
39. The applicant is proposing to irrigate with an average application rate of 3.45mm per day, with 34.5mm being applied every ten days. As the property is considered to have an average water holding capacity of 110mm, the proposed irrigation does not exceed half the AWHC of the soil and is considered efficient.
40. I have used Environment Canterbury's GIS system to confirm the parameters used by the applicant. This indicates that the soil types of the irrigation area are likely to have an average PAW between 75-110mm. Using Schedule WQN9ver2 the annual volume with this soil type would come to 1,425,000 cubic metres per year for the property. Therefore, I consider the volume proposed by the applicant would be efficient.
41. I am satisfied that that the proposed seasonal allocation is reasonable for the proposed irrigation area.

Adverse effect of use on water quality

42. The applicant has stated the irrigation system and rate of irrigation has been designed to minimise the effects on groundwater and surface water quality. However, they also note that the property may be converted to dairying in the future and have not assessed the increase in effects of this change in land use.
43. I note that intensive land use such as dairying is likely to increase the nitrates leaching through to groundwater or in runoff to surface water.
44. There were a number of submissions received which identified water quality as a result of land use intensification as a concern.
45. Given there are a number of submissions identifying this effect, and that the applicant has not adequately assessed the effects, I am not satisfied that the adverse effects of the taking and use of water on groundwater and surface water quality will be minor.

Adverse effect on Tangata Whenua values

46. The Waitaki River has a statutory acknowledgment in the Ngai Tahu Claims Settlement Act 1998.
47. The site of the proposed abstraction is within the rohe of Te Runaka O Waihao. Te Runaka O Waihao and Te Runanga O Ngai Tahu were served notice of the applications in August 2007. Submissions were received in opposition to this application from Te Runanga O Ngai Tahu.
48. Given that there are a number of submitters who wish to be heard who identify cultural values, I cannot conclude whether the actual and potential effects on the cultural values of the area will be minor.

STATUTORY ASSESSMENT

Part II Purpose and Principals

49. Part 2 of the RMA contains sections 5 to 8 which define the purpose and principals of the RMA.

50. In my opinion the proposed activity is not consistent with the purpose and principals of the RMA most notably Section 6 (a) and (c), Matters of National Importance, due to outstanding issues with effects on water quality, and Section 7 (f) and (g), Other Matters, in relation to allocation limits and water quality effects.

Regional Policy Statement (RPS)

51. Under Section 104(1)(b)(iii) of the RMA, the consent authority shall have regard to any relevant regional policy statement. The Canterbury Regional Policy Statement has been operative since 26 June 1998.
52. Of significance to these applications is Chapter 9, which relates to the management of the Region's water resources. The WCWARP and PNRRP take into account policies in the RPS and address the issues outlined in more detail. Any assessment of effects has been made using these documents and therefore I have had regard to the RPS throughout this assessment.

Decisions on consents - Water permits

53. The taking and use of water is a non-complying activity and must be discussed in the context of s104D of the RMA. If it meets the threshold test of s104D it must then be considered under s104.
54. Section 104D outlines matters that must be considered when determining an application for a non-complying activity. This section states that a consent authority may grant a resource consent for a non-complying activity only if it is satisfied that either, the adverse effects of the activity on the environment will be minor (s104D(a)(1)), or the application is for an activity that will not be contrary to the objectives and policies of the relevant plan (s104D(1)(b)).

S104D(1)(a)

55. As discussed in the assessment of effects section of this report, with the information provided to date, I am not satisfied that the adverse effects of the proposed activity on the environment will be minor, even when taking into account the proposed mitigation. In particular, I am not satisfied that other water users reliability of supply will be protected, or that adverse effects of the use of water on people and communities and water quality will be less than minor.

S104D(1)(b)

56. Rule 16 of the WCWARP which classifies the taking, diversion and damming of water activities as non-complying states that the consent authority will have regard, among other matters, to all the policies of the WCWARP. The objectives and policies of the WCWARP that are relevant to each potential adverse effect have been identified in the introductory s42A report. A discussion of the policies and objectives where I consider there is conflict with these applications is provided in the following paragraphs. Where I am satisfied that there is no conflict with the policies and objectives, I have not discussed them.

Environmental flow and level regimes

57. Policies 2 – 8 and 45 deal with environmental flow and level regimes.
58. Policy 4 outlines a number of matters that must be considered when setting an environmental flow and level regime and is particularly relevant to this application. As discussed in the assessment of effects section above, I am satisfied that the effects

on the values of the Lower Waitaki River will be less than minor, particularly since the proposed minimum flow is consistent with the plan. However, I am concerned that the application may be contrary to (h) effects on water quality, (p) existing flow and level regimes, physical resources and activities and (q) the amount and reliability of water that can be taken, used, dammed or diverted.

59. Policy 3 and 45 outline values that must be maintained when setting an environmental flow regime for the Lower Waitaki River and links directly to Rule 2 and the environmental flow and level regimes outlined in Table 3. Policy 3 is incorporated in Policy 45(1)(ii) and is therefore discussed under that policy. Policy 45 is a key policy in relation to the proposed application, as it recognises the natural and recreational values of the Lower Waitaki River that the plan seeks to maintain when setting an environmental flow regime.

Policies on the allocation to activities

60. Policies 10 to 14 deal with the allocation to activities. Policies 10 and 14 are not applicable to this application.
61. Policy 12 outlines a number of matters that must be considered and links directly to Rule 6 and the annual allocations to activities outlined in Table 5 of the Waitaki Regional Plan. The proposed activity is not within the annual allocation limit set for this type of use between the Waitaki Dam and Black Point.
62. The applicant has not assessed the effect of granting these consents on entitlements of water to other activities listed in Objective 2 and the matters outlined in Policy 12. Therefore I cannot assess the application against Policy 12, and in particular, I cannot determine whether the application is contrary to Policy 12(f) relating to effects on water quality.
63. Policy 13 deals with water quality issues resulting from land use intensification and enables the consent authority to have regard to the water quality objectives in the PNRRP. The WCWARP incorporates by reference Objectives WQL1, 2 and 3 of the PNRRP which contain particular outcomes to be achieved in the regions waterbodies. Given that the applicant has not provided an adequate assessment of the effect of the proposed irrigation on water quality, I cannot determine whether the application is contrary to this policy.

Restrictions

64. Policies 23 – 27 deal with restrictions during times of low water availability.
65. Policy 23 ensures that environmental flow and level regimes are complied with by requiring that all consent holders restrict their rate of take during times of low flow. As the applicant agrees to the minimum flow set out in Table 3, I am satisfied that the activity is not contrary to this policy.
66. Policy 25 deals with flow sharing among users and reliability of supply. As there are a number of existing consents to take water in the Waitaki River which are limited by minimum flow conditions, reliability of supply in the context of these policies is discussed in more detail in a separate planning report.

Policies for the Lower Waitaki River

67. Policy 45 deals with the environmental flow regime of the Lower Waitaki catchment. Policy 45(1)(ii) enables access to water for the activities identified in Objective 2, to

the extent consistent with Objective 1. Policy 46 also addresses flows in the Lower Waitaki River and this is discussed further in a separate report (Report 2).

68. In particular, with regard to policy 45(1)(i), this policy recognises the physical and ecological characteristics of the river, its connectedness with riparian margins and wetlands, the habitat for aquatic plants, invertebrates, birds and, its cultural values and its natural and recreational appeal. Given that the applicant proposes to comply with an environmental flow regime consistent with that established in Table 3, I am satisfied that the application is not contrary to Policy 45(1)(i).
69. With regard to policy 45(1)(ii), the applicant has not provided an assessment of the effect so I cannot determine whether the application is contrary to this policy. Therefore, I am not satisfied that the proposed activity will allow access to water for the activities identified in Objective 2.

Objectives

70. Objectives 1 and 2 are key objectives in relation to the proposed taking of water. I have considered whether Objective 1 can be met in terms of sustaining the quality of the river and surrounding environment. This is a finely balanced decision and that while the proposal may not entirely be consistent with Objective 1 and the associated policies (particularly policies regarding the reasonable and efficient use of water and flow sharing), it is difficult to determine if the inconsistencies are significant enough to make the proposal contrary to Objective 1.
71. The proposed activity will impact on the matters outlined in Objective 1, particularly (a), (b) and (c). There have been a wide range of people who have submitted against the proposed activity due to concerns about impacts on these values. I therefore cannot determine whether the proposed activity is contrary to these values at the time of preparing this report.
72. Objective 2 aims to provide water for different activity types. The proposed activity is not within the annual allocation limit for agricultural and horticultural activities outlined in Rule 6. The applicant has not assessed whether the granting of this application would affect availability of water to other users.
73. Objective 3 recognises that there are beneficial and adverse effects on the environment at a national and local scale, and that these factors must be considered.
74. Objective 4 aims to achieve a high level of technical efficiency in the use of water. The applicant has demonstrated that the use of water for irrigation is technically efficient.
75. Objective 5 deals with the practical and fair sharing of allocated water during times of low water availability. Given submitters concerns, I cannot be certain that the application is not contrary to this objective. This matter is discussed in detail in a separate planning report (Report 2).

Section 104(1)

76. If the Commissioners consider that the proposed activity passes either of the two “gateway” tests of section 104D, they may wish to consider the applications with regard to section 104(1).
77. Section 104(1) outlines matters that the consent authority must have regard to when considering an application.

78. With regard to s104(1)(a), the actual and potential effects of the activity have been discussed in the assessment of the activity and summarised in the discussion regarding section 104D(1)(a). As discussed earlier, with the information provided to date, I am not satisfied under s104D(1)(a) that the actual and potential effects of the activity are minor. In addition, given that the applicant has not addressed several areas of concern (effects on water quality, effects on other users reliability of supply and effects on provision of water to other activities) I cannot determine under s104(1)(a), whether the actual and potential effects of the proposed activity are acceptable.
79. With regard to s104(1)(b), the relevant provisions of the RPS, WCWARP, and PNRRP have been considered, Specifically, the relevant provisions of the WCWARP have been discussed in detail in the section 104D(1)(b) discussion.
80. With regard to s104(1)(c), the consent authority can consider any other matter relevant and reasonably necessary to determine the application. Other matters that the Commissioners may wish to consider include the integrity of the WCWARP, and the precedent effect of granting a consent over the annual allocation limit for agricultural and horticultural activities.
81. With regard to plan integrity, the WCWARP is an operative plan and several submitters expressed concern that the proposed activity contravenes the allocation limits specified in the plan, which was developed after a lengthy consultation process.
82. Annex 1 of the WCWARP at paragraph 76 states that:
- “The environmental level and flow regimes, and the allocations to activities, are two key components of the allocation framework established by this Plan. They should be binding except in specific cases where it can be established that the adverse environmental effects of the proposal are minor, and where the activity is not contrary to the objectives and policies of this Plan.”*
83. While the effects of the proposed activity, and its relationship to the provisions of the WCWARP are discussed elsewhere, I consider that this statement adds support to the argument that consideration of any consent that is over the allocation limit is a *“key component of the allocation framework of the Plan”*, and therefore must be considered very carefully in light of both plan integrity and public confidence in the plan development process.
84. The Waitaki Allocation Board did not prohibit a proposal such as that sought under consent application CRC073237. However, it is my view that granting this application with an annual allocation over that set out in Table 5 could be seen as a review of the Waitaki Allocation Board’s decision on what an appropriate allocation limit for agricultural and horticultural activities between the Waitaki Dam and Black Point should be. I consider that the Commissioners should take into account the precedent effect of granting this application, as it will inevitably result in existing and future water permit holders seeking consents with annual allocations above than that specified in the WCWARP, and ultimately be treated as a plan change with respect to the allocation limits.

RECOMMENDATION

Grant or Decline

85. Section 104B applies to any application which is a non-complying activity and states that the consent authority may grant or refuse an application for a non-complying activity, and may impose conditions under s108.
86. Having considered all relevant matters outlined in section 104D which contains particular restrictions for non-complying activities, I am not satisfied that either the adverse effects of the proposed activity on the environment will be minor, or that the activity will not be contrary to the objectives and policies of the WCWARP. I have also considered s104(1) and cannot determine whether the actual and potential effects are acceptable.
87. This is due to the lack of assessment of effects by the applicant. Of primary concern are effects on water quality from the use of water for irrigation, effects on allocation to other activities as the proposed activity is over the allocation limit for agricultural and horticultural activities and effects on other water users through reduced reliability of supply and lack of an appropriate minimum flow to protect their reliability.
88. Under section 104B I cannot recommend that consent application CRC073237 be granted.

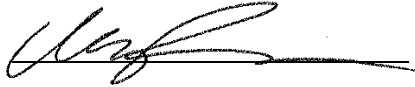
Duration

89. The applicant has requested a duration of 35 years.
90. Section 1.3.5 of Chapter 1 of the PNRRP relates to the duration of resource consents. Resource consents (other than for land use or subdivision) can be granted for a maximum duration of 35 years. This section outlines a number of factors that must be taken into account when considering the duration of any resource consent to be granted. Some of the key clauses which I would like to direct the Commissioners attention to are clauses (a) (i), (ii) and (iii) which talk about the degree to which the sensitivity of the affected environment may become more sensitive over time, the risk of unforeseen effects arising over time and the level of knowledge about the affected environment.
91. A number of submissions have been made which consider the potential duration for water permits. Most of those submissions consider that a duration of 10 to 15 years is more appropriate for these consents.

RECOMMENDED CONDITIONS

92. Comments on the mitigation proposed by the applicant for each application are provided earlier in this report.
93. If the Commissioners decide to grant the water permit application, a list of conditions that are usually included in a water permit are provided in Appendix 6 of the introductory s42A report. A list of conditions for this application can be provided to the Commissioners upon request.
94. It should be noted that the investigating officer is not satisfied that these conditions would adequately mitigate that adverse effects that are of key concern, for example, adverse effects on water quality and existing users.

Signed:

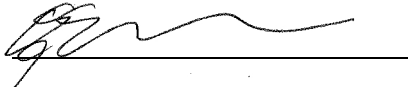


Claire Penman
Consultant Investigating Officer

18 July 2008

Date:

Signed:



Reviewed by Gillian Ensor
Consents Project Leader (Waitaki)

18 July 2008

Date:

REFERENCES

Canterbury Regional Council 2004. Proposed Natural Resources Regional Plan – Chapter 4, Water Quality. Report No R04/15/4. ISBN: 1-86937-530-0

Canterbury Regional Council 2004. Proposed Natural Resources Regional Plan – Chapter 5, Water Quantity. Report No R04/15/5. ISBN: 1-86937-531-9.

Canterbury Regional Council 2004. Proposed Natural Resources Regional Plan – Chapter 6, Beds and margins of lakes and rivers. Report No R04/15/6. ISBN: 1-86937-532-7.

Canterbury Regional Council 1998. Regional Policy Statement. Report No R98/4. ISBN 1-86937-337-5.

Canterbury Regional Council 1991. Transitional Regional Plan. October 1991.

Gabites, S, & Horrell, G. 2005. Seven day mean annual low flow mapping of the tributaries of the Waitaki River. Canterbury Regional Council Report R05/16. ISBN: 1-86937-570-X.

New Zealand Society on Large Dams, 2000. New Zealand Dam Safety Guidelines.

Te Maire Tau, Anake Goodall et al., 1990. Te Whakatau Kaupapa: Ngai Tahu Resource Management Strategy for the Canterbury Region. ISBN: 0-908925-06-9.

The Resource Management Act 1991. Consolidated version including the Resource Management Amendment Act 1995. August 2005.

Waitaki Catchment Water Allocation Board 2006. Waitaki Catchment Water Allocation Regional Plan. ISBN: 0-9582620-7-1.

Waitaki Catchment Water Allocation Board 2006. Waitaki Catchment Water Allocation Regional Plan, Material Incorporated by Reference. ISBN: 0-9582620-6-3.

Waitaki Catchment Water Allocation Board 2006. Waitaki Catchment Water Allocation Regional Plan, Annex 1 – Decision and principal reasons for adopting the Plan provisions. ISBN: 0-9582620-4-7.

Waitaki Catchment Water Allocation Board 2006. Waitaki Catchment Water Allocation Regional Plan, Section 32 Report. ISBN: 0-9582620-5-5.

ATTACHMENT ONE – MAP SHOWING LOCATION OF ABSTRACTION AND IRRIGATION AREA

