

APPENDIX 1

Proposed Plan Change 4B (Groundwater allocation)

Summary of written comments received on Consultation Draft

Name/Organisation	Provision	Comment or query Summary
Robert and Jackie Aitchison, Treliске Farms Ltd, Roxburgh	Allocation status info – compatible uses/sharing of water Prohibitions on new taking.	<ul style="list-style-type: none"> Allocation status should be made available on line and kept up to date constantly. Lost over \$20,000 in absence of any information that no more water was available from the Ettrick Basin Aquifer. Allocation system is inefficient. People in the catchment take allocation for frost fighting while other methods are available e.g. wind mills. Also water permits for this use do not need to be exercised over summer/during the irrigation season. Often the water is taken over summer without being used (waste). Why can't this water be shared with/taken by other people in the catchment if they can take and use it in a compatible fashion.
Julia Hollis-Pye South Island Operations Manager <i>(for Speight's Brewery)</i> Lion Dunedin	Effects on individual take.	Requesting confirmation of interpretation of the effect of PC 4B. Clarify how MAV is calculated. Will this affect Speight's future water permit applications?
David le Marquand Burton Consultants for Oil Companies.	Rule 12.0.1.3	Offering wording options to provide for temporary dewatering for development and maintenance work.
B.E.H. Backhouse Director Round Hill Agri, Oamaru	Policy 6.4.10A	<p>Consent holder name now transferred from Myles and Sue Chamberlain Family Trust.</p> <p>New owners intend to fully utilise existing groundwater take consent, once development in place. Protecting aquifer's integrity will protect existing users' interests (investments based on water availability).</p> <p>Use Consented Maximum Annual Take to calculate take unless measurement of all takes gives <i>actual</i> annual take.</p> <p>No further water should be allocated to new or existing users, unless actual take data proves there is capacity in the aquifer.</p>

<p>Andrew Curtis CEO Irrigation NZ</p>	<p>Policy 6.4.10A1(b) & Schedule 4E</p> <p>Policy 6.4.10A2 <i>[Limiting replacement quantities in over-allocated aquifers or if an increased take would cause AMAT to exceed MAV (and thus cause an over-allocation situation).]</i></p> <p>Method 15.8.3.1(b)</p> <p>Schedule 4D</p> <p>Schedule 4E.1(b)</p> <p>New matter</p>	<p>Irrigation NZ will discuss comments with relevant technical and policy staff.</p> <p>Supports 50% MAR as default MAV, but Policy needs to say it is the default, only replaced if robust analysis is undertaken.</p> <p>Because of established land uses, irrigators may need more water than used previously, for security against climatic variation. Taking should be that which is required for the purpose of use. If over-allocation still exists, then catchment-specific policies and rules should be developed and implemented. These should be derived collaboratively in a fair and equitable manner with all impacted water users. A case-by-case claw-back upon consent renewal does not achieve this.</p> <p>A daily water balance model, such as IRRICALC, should be used to estimate the assessed annual take, to ensure that the benefits from the region’s available water resource were maximised over time.</p> <p>Expects the table to be populated upon PC4B notification, in which case the volumes to be proposed should be available for comment beforehand.</p> <p>Recharge needs to reflect the actual irrigation practices, but if practices become more efficient, calculation of recharge will need revisiting periodically, and irrigators made aware so they can maximise benefits from available water over time.</p> <p>A methodology that sets out the parameters to be used when establishing an annual (seasonal) volume for irrigation should be included in the Plan, which includes the parameters to be taken account of and the technical criteria that any methodology should meet. Methodology details given which would ensure adequate water for irrigation, based on soils, climate and crop factors.</p>
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<p>Kim Reilly Regional Policy Manager South Island Federated Farmers of New Zealand</p>	<p>General</p> <p>Policy 6.4.10A1 Schedule 4D</p> <p>Policy 6.4.10A2</p> <p>Method 15.8.3.1</p> <p>Schedule 4E.1</p>	<p>Council must appropriately address a range of specific matters when determining its policy on groundwater allocation. The rights of existing users must be allowed for when setting groundwater limits, to ensure the protection of existing infrastructure and investment, and to safeguard productive capacity.</p> <p>Environmental values must also be protected, consistent with part 2 of the RMA. Protection of the environment is required for a number of reasons, and sustaining the effective functioning of water infrastructure and the on-going productivity of land is fundamental to that protection.</p> <p>Supports Policy, as process is robust. Does not support Schedule 4D – although might if numbers to populate it are subject to First Schedule process. Prefers a register of calculated 50% MAR on ORC website.</p> <p>Opposes 5 year as inadequate, prefers 8 years, as reflecting typical cropping cycles. Replacement consent volumes should be determined on the basis of fair and reasonable use. Actual use data, particularly over relatively few years, is largely irrelevant. Volume should also take into account irrigation application efficiency, and FF prefers Aqualinc’s Irricalc model.</p> <p>The total volume of water allocated should be calculated as follows: Total allocation = 90% of consented volume. A 90th percentile water allocation approach to agricultural activities is consistent with Council’s current consenting practices.</p> <p>Opposes Method 15.8.3.1 as inconsistent with operative Water Plan, and recommends that ORC amend Method to reflect an approach which considers either the 90th percentile crop water requirement values for the activity (for agriculture) or the maximum consented volume, whichever is the lesser.</p> <p>Recommends that Schedule 4E.1 be adopted, with capacity to ensure recharge sources include artificial recharge sources and groundwater transfer sources from adjoining aquifers.</p>
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	Schedule 4E.2	Supports as written.
Ulrich Glasner Chief Engineer QLDC	NA	Council supports provisions that look after the environment better. (phoned)
Michael Wong Health Protection Officer Drinking Water Assessor Southern District Health Board Public Health South	General Definition of “Registered community drinking water supply”	Supports the plan change for all the reasons given in S32 report. Refer to S69K not S69J of Health (Drinking Water) Amendment Act 2007 in definition. (Unclear) Definition of Community Water Supply should be that as used in the Drinking Water Standards for New Zealand.
Peter Wilson Environmental Officer Otago Fish and Game Council	Intent of plan change	The Otago Fish and Game Council is broadly supportive of the consultative draft of water plan change 4B, as the Council believes it will improve how groundwater is managed. It is critical to more accurately determine the size of aquifers before allocation takes place, and to be precautionary about that allocation in the absence of sufficient hydrological information. The Council will submit on the notified version.
Peter Deuart Slopes Manager Coronet Peak skifield	Effects on individual take.	Continued ability to rely on water to take, store and use is essential to skifield snowmaking. Take is non-consumptive; needs are timed very differently from irrigation needs, they capture and recycle surface runoff, keep accurate monitoring records. We feel that due to the elevation of our water consents there may be an opportunity for a separate non competing aquifer/ground water consent process or similar special classification. We recognise that due to our location and the fact we are on a mountain and [our source] is a non distressed aquifer very little would change for us. We support the process of ensuring the resources available in the Otago region are used equally, efficiently and sustainably and hope that there could be some consideration to the suggestion we have presented.

<p>Ken Murray Resource Management Planner Policy and Planning Group Department of Conservation, Christchurch</p>	<p>Intent of plan change</p> <p>Estimating mean annual recharge</p> <p>4E.2</p>	<p>Supported.</p> <p>Concerned that the matters to be considered could in certain circumstances result in loss of small-stream flow and fish life. Important native fish use spring-fed water bodies. Attached map shows distribution with ORC identified aquifers overlaid.</p> <p>The Director- General’s concern is that the matters to be considered in estimating mean annual surface recharge do not sufficiently take into account:</p> <ul style="list-style-type: none"> • The location(s) and areas of the aquifer recharge area(s). • Soil properties such as massive B horizons found in loess soils. • The underlying geology. <p>Methods for calculating aquifer recharge should include:</p> <p><i>(a) The extent of aquifer including recharge areas, the characteristics of soils within the recharge area including the presence of any subsurface or surface water drainage system such as mole, plastic or tile drains or stream culverting and the underlying geology and the extent and characteristics of the aquifer including aquitards and the implications of the characteristics for estimating aquifer recharge.</i></p>
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<p>Tim Vial Senior Planner Kai Tahu ki Otago Ltd Consultancy</p>	<p>S32 report</p> <p>Policy 6.4.10A(a)</p> <p>Whole Plan Change</p> <p>Policy 6.4.10A1 Schedule 4D</p> <p>Policy 6.4.10A2</p> <p>Rule 12.0.1.3</p>	<p>Tim pointed out an error in Consultation Draft Section 32 analysis introduction- MAV as “mean annual volume”.</p> <p>Suggested simpler wording for subclause. “... for allocation as the amount by which the maximum allocation volume exceeds <u>less</u> the assessed maximum annual take for an aquifer as calculated using Method 15.8.3.1.”</p> <p>Underlying principles:</p> <ul style="list-style-type: none"> • To prohibit applications for new groundwater takes from fully allocated aquifers. • To restrict replacement consents from fully allocated aquifers to the volumes taken under existing consents. <p>are supported.</p> <p>See Te Rūnanga o Ngāi Tahu Freshwater Policy and the Kāi Tahu ki Otago Natural Resource Management Plan.</p> <p>In principle Kāi Tahu supports a maximum groundwater allocation of 50% of MAR until a MAV is established. However, Kāi Tahu is concerned that a significant change in aquifer recharge after 50% MAR is set out in Schedule 4D may result in groundwater over-allocation and a reduction in surface flows. Irrigation efficiency drives and reductions in nutrient flows could reduce recharge, and thus flows in spring-fed streams. In establishing either MAR or MAV robust information is required on the interdependency of ground- and surface water and on the impacts on surface flows of a reduction in aquifer recharge.</p> <p>Policy 6.4.10A2 - Renewal of existing consents Supported.</p> <p>Rule 12.0.1.3 – Prohibited Activity Supported.</p>
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<p>Cathy Begley Senior Environmental Advisor - Freshwater Management / Kaitohutohu Putaiao Waimaori, Toitū Te Whenua Te Rūnanga o Ngāi Tahu</p>	<p>Setting of allocation limits</p> <p>Determination of MAR</p>	<p>Supported.</p> <p>Fundamental issues may need to be addressed.</p> <p>Interconnection between ground and surface water</p> <p>Not clear if the calculation of MAR takes into account the interconnection between ground and surface water. Concerned about separate allocation of groundwater and surface water. Cites Canterbury example where surface water permit holders are looking to get higher minimum flows to ‘keep’ water within rivers on one hand, while on the other, the groundwater allocation zone which feeds these was deemed to still have more water for allocation.</p> <p>Mean annual recharge variables</p> <p>Calculation of MAR requires knowledge of the resource and the recharge variables. Recharge of aquifers from surface water is subject to significant variability. The rate/volume of recharge from this source will change not only on a daily/weekly/monthly basis but also on a yearly basis depending upon a range of factors including climate and the amount of water being taken from that resource.</p> <p>Achieving consensus on the mean annual recharge</p> <p>What the MAR figure should be has been debated in Canterbury. For example, should it be based on the current use of border dyke irrigation in a particular catchment or should MAR be based on either 75% or 90% efficiency of irrigation?</p> <p>Allocation</p> <p>Once allocated, water is almost impossible to get back. How do you recall allocated groundwater and achieve sustainable allocation in over-allocated groundwater?</p> <p>The plan change is silent on how the Otago Regional Council will address over-allocation, where:</p> <ul style="list-style-type: none"> • The current allocation exceeds 50% of MAR; or • MAV, set in Schedule 4A, is less than the default of 50% MAR.
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		The NPS requires ORC to set out how and within what timeframe it will 'phase out' over-allocation of a catchment.
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APPENDIX 2

Proposed Plan Change 4B (Groundwater allocation)

Section 32 Evaluation Report

Regional Plan: Water for Otago

*This Section 32 Evaluation Report should be read in conjunction with
Proposed Plan Change 4B (Groundwater allocation)
to the Regional Plan: Water for Otago.*

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Abbreviations

Council	Otago Regional Council
Proposed plan change / plan change	Proposed Plan Change 4B (Groundwater Allocation)
MAL	Maximum allocation limit
MAR	Mean annual recharge
RMA	Resource Management Act 1991
Water Plan	Regional Plan: Water for Otago (operative at 1 May 2014)
Note: use of section/Section:	
section	A reference to another section in this report. A reference to a section of the Water Plan.
Section	A Section of the RMA.

1. Introduction

Proposed Plan Change 4B (Groundwater allocation) clarifies the controls in the Regional Plan: Water for Otago (Water Plan) for avoiding over-allocation of groundwater in Otago, while retaining the established principles of groundwater allocation.

The plan change affects all water managed as groundwater under Policy 6.4.1A.

Section 32 of the RMA (in effect from 3 December 2013) requires an evaluation of the realistically practicable options, assessing their effectiveness and efficiency and summarising the reasons for deciding on the proposed provisions. This report makes that assessment, and should be read in conjunction with the proposed plan change.

As the proposed plan change is intended to clarify some of the existing groundwater provisions in the Water Plan, there will not be any change to the environmental, economic, social and cultural effects from the amended groundwater regime in the Water Plan. This Section 32 evaluation reflects the limited implications of the plan change.

2. Background

Plan Changes 1C (Water Allocation and Use) and 4A (Groundwater and North Otago Volcanic Aquifer) introduced the following principles to the Water Plan:

- To prohibit applications for new groundwater takes from fully allocated aquifers;
- To restrict the volumes for which existing consents from a fully allocated aquifer would be replaced, to the volumes that have been taken under the existing consent.

In 2012 ORC staff undertook a review of the Water Plan provisions relating to groundwater allocation in accordance with RMA Section 35(2)(b). This review has shown that the clarity of the Plan's provisions and their efficiency and effectiveness for implementing the two principles described above could be improved.

In particular, provisions relating to when the prohibition applies and how the transition is made from "over-allocation" to the more sustainable allocation volume identified in Schedule 4A, or the default of 50% of the mean annual recharge (MAR).

In recent years ORC staff have calculated MAR of various aquifers to assess available groundwater, and these figures have been used to make decisions on applications to take groundwater. The quantity would remain fixed until a plan change establishes a Mean Annual Volume in Schedule 4A. The Section 35(2)(b) review recognised the value in providing more clarity and certainty around MAR quantities.

3. Calculating the Maximum Allocation Volume (Limit)

Under the operative Water Plan, a "maximum allocation volume" was established for every aquifer in Otago. This quantity is a maximum allocation limit in terms of the National Policy Statement on Freshwater Management. Plan Change 4B refers to this as the maximum allocation limit (MAL) to define the volume of water that is available for taking from an aquifer. The MAL is appropriate for managing the cumulative effects of groundwater takes on long-term storage of an aquifer and on outflows to surface water bodies.

3.1 Estimating takes: Assessed vs consented maximum annual take

The estimated annual volume of take allocated from aquifers listed in Schedule 4A corresponds to the “assessed maximum annual take” as calculated through Method 15.8.3.1. However, for all other aquifers this volume corresponds to the “consented maximum annual take”. The inconsistency between methods for calculating the estimated annual volume of take can cause an aquifer previously considered to be over-allocated based on its MAR to become under-allocated as soon as it is included in Schedule 4A.

Option 1	Maintain the status quo
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| BENEFITS: | <ul style="list-style-type: none">• No plan change required.• Conservative approach that protects any aquifer not listed in Schedule 4A. |
| COSTS/RISKS: | <ul style="list-style-type: none">• Administrative inefficiencies caused by the use of different assessment methods, resulting in increased consent processing costs for applicants.• May needlessly restrict new takes from aquifers outside Schedule 4A because consent holders are unlikely to fully exercise their consents at all times. This could result in fewer economic opportunities. |
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Option 2	Define the estimated annual allocation limit of all aquifers as the consented maximum annual take
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| BENEFITS: | <ul style="list-style-type: none">• Conservative approach that protects aquifers if water users fully exercise their consents.• Consistency between provisions improves the Plan’s clarity and user-friendliness. |
| COSTS/RISKS: | <ul style="list-style-type: none">• May needlessly restrict new takes because consent holders are unlikely to fully exercise their consents at all times. This could result in fewer economic opportunities.• Method has been criticised by the Environment Court.• Requires updating ORC’s systems for calculating volumes allocated from an aquifer.• Plan change required. |
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Option 3	Define the estimated annual allocation limit of all aquifers as the assessed maximum annual take
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| BENEFITS: | <ul style="list-style-type: none">• Allows for new groundwater takes where the aquifer is able to support them and increases the economic opportunities for local communities.• Balanced approach that better reflects actual taking from the aquifer.• Aligns with Environment Court decision on Lynton Dairy Ltd (Decision C108/2005).• Method 15.8.3.1 promotes administrative efficiency and reduces consent processing costs for applicants.• Does not require updating current ORC administrative systems and procedures.• Consistency between plan provisions improves clarity and user-friendliness. |
| COSTS/RISKS: | <ul style="list-style-type: none">• Potential to over-allocate if Method 15.8.3.1 under-estimates actual takes.• Plan change required. |
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RECOMMEND OPTION 3 (NEW POLICIES 6.4.10A & 6.4.10A1, AMENDED METHOD 15.8.3.1)

Using one single method for calculating the estimated annual volume of take ensures that the Water Plan is consistent throughout and that allocation in an aquifer is assessed in the same way whether or not it has been included in Schedule 4A. This improves the Water Plan's clarity and allows for more efficient plan administration.

Using the assessed maximum annual take, calculated with Method 15.8.3.1, is the most appropriate way to assess the estimated annual volume being taken under groundwater permits, as new groundwater takes would not be unnecessarily restricted. The environmental risk of under-estimating the actual takes is also considered low because Method 15.8.3.1 is based on reasonable and realistic assumptions regarding actual water use.

Should this situation arise, however, proposed Policy 6.4.10A2 recognises the value of existing takes when consents are replaced (see section 4 below).

A Glossary definition of "Assessed maximum annual take" can refer to the Method.

Overall, option 3 maximises economic opportunities and reduces costs for applicants, while ensuring the sustainable management of the resource.

3.2 Calculating mean annual recharge (MAR)

Assessing the MAL for aquifers not included in Schedule 4A requires determining the MAR. The method for calculating MAR is not described in the Water Plan.

Option 1	Maintain the status quo
BENEFITS:	<ul style="list-style-type: none">• No plan change required.
COSTS/RISKS:	<ul style="list-style-type: none">• Risk of inconsistencies among Plan administrators.• Use of an inappropriate method for calculating the MAR may result in unnecessarily restricting the taking of groundwater or the allocation of water beyond sustainable levels.
Option 2	Include a new Schedule 4D, the method for calculating MAR
BENEFITS:	<ul style="list-style-type: none">• Greater clarity and consistency in terms of how MAR is determined.• Avoids the use of inappropriate methods for calculating the MAR.
COSTS/RISKS:	<ul style="list-style-type: none">• Plan change required to set up Schedule 4D.

RECOMMEND OPTION 2 (NEW SCHEDULE 4D)

It is appropriate to include a schedule for calculating MAR in the Water Plan because it assists with the sustainable management of the resource, and provides greater consistency, certainty and clarity for plan users.

4. Addressing over-allocation

The Water Plan seeks to impose a sinking lid on over-allocated aquifers and avoid any further allocation of water from these aquifers through the use of prohibited activity rules for consumptive takes. The existing plan provisions, however, do not always prevent new takes from over-allocated aquifers nor do they avoid aquifers becoming over-allocated.

4.1 Applications for new takes in over-allocated aquifers

Rule 12.0.1.3 seeks to prohibit new water takes from over-allocated aquifers, other than those allowed under the permitted activity rules in Section 12.1.2 of the Water Plan. However, the rule does not give full effect to this intention as it does not explicitly prohibit new groundwater permits beyond the MAL.

The reference to a date in Policy 6.4.10A (see introduction to section 3 above) prevents all current consents from being incorporated in the determination of an aquifer's MAL.

Option 1	Maintain the status quo
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BENEFITS:

- No plan change required.

COSTS/RISKS:

- Allocation in over-allocated aquifers could be increased.
- Increased risk of water storage depletion, aquifer compaction and groundwater contamination.
- Rule 12.0.1.3 does not give effect to Objective 6.3.2A and Policy 6.4.10A.
- Cost of preparing and processing consent applications that are likely to be declined.

Option 2	Amend Rule 12.0.1.3 and Policy 6.4.10A to effectively prohibit applications for groundwater takes from an over-allocated aquifer
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BENEFITS:

- Allocation in over-allocated aquifers bound to decrease to sustainable levels.
- Gives better effect to Objective 6.3.2A and Policy 6.4.10A.
- Provides certainty to Water Plan users.
- Avoids unnecessary costs for applicants.
- Promotes administrative efficiency (no need to consider applications for new takes from over-allocated aquifers).

COSTS/RISKS:

- Plan change required.

RECOMMEND OPTION 2 (NEW POLICY 6.4.10A1, NEW RULE 12.0.1.3)

Prohibiting applications for groundwater takes from over-allocated aquifers is the most appropriate way to reduce over-allocation because it gives effect to the intent of the policy framework and provides more certainty for plan users. Recommended option 2 provides more surety (of supply) and investment security for existing water takers and reduces the plan administration costs.

4.2 Applications for new takes that result in over-allocation

Rule 12.0.1.4 seeks to prohibit new water takes that would cause aquifers to become over-allocated, other than those allowed under the permitted activity rules in Section 12.1.2 of the Water Plan. However, the Rule fails to give effect to this intention because it prohibits only those water takes that would cause the MAL to exceed the relevant limit and new consents in over-allocated aquifers cannot cause the MAL to exceed this limit.

Option 1	Maintain the status quo
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BENEFITS:

- No plan change required.

COSTS/RISKS:

- Allocation may become unsustainable (risk aquifer compaction, depletion).

- Rule 12.0.1.4 does not give effect to Objective 6.3.2A and Policy 6.4.10A.
- Cost of preparing and processing consent applications that are likely to be declined.

Option 2 Amend prohibited activity rule to effectively prohibit applications for groundwater takes that would cause an aquifer being over-allocated

- BENEFITS:**
- Promotes good environmental management and avoids over-allocation of aquifers.
 - Gives better effect to Objective 6.3.2A and Policy 6.4.10A.
 - Provides certainty to Water Plan users.
 - Avoids unnecessary costs for applicants.
 - Promotes administrative efficiency (no need to consider applications for new takes from over-allocated aquifers).

- COSTS/RISKS:**
- Plan change required.
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RECOMMEND OPTION 2 (NEW RULE 12.0.1.3)

Prohibiting applications for groundwater takes that cause the aquifer being over-allocated is an effective way to prevent over-allocation of aquifers. Recommended option 2 provides more surety (of supply) and investment security for existing water takers and reduces the plan administration costs.

4.3 Non-consumptive takes and short-term dewatering takes

Non-consumptive takes are takes where use of the water results in no net loss from the source water body. There may be some temporary local reduction in aquifer water levels, but it is only short-term, for example during construction activities.

Existing Policy 6.4.10A and Method 15.8.1.3 exclude non-consumptive takes when calculating the estimated annual volume of take from aquifers, because their environmental impacts are considered *de minimis*. This approach is not reflected in the prohibited activity rules for takes considered groundwater in terms of Policy 6.4.1A.

Similarly, taking for the temporary dewatering of a site for placing or maintaining a structure is prohibited if the water present is in an over-allocated aquifer.

Option 1 Maintain the status quo

- BENEFITS:**
- No plan change required.

- COSTS/RISKS:**
- Non-consumptive and temporary dewatering takes from over-allocated aquifers are needlessly restricted.
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Option 2 Exclude non-consumptive and temporary dewatering takes from the prohibited activity rules

- BENEFITS:**
- Provides better opportunities for water take and development.
 - Greater consistency between plan provisions

- COSTS/RISKS:**
- Plan change required.
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RECOMMEND OPTION 2 (NEW RULE 12.0.1.3)

Allowing for the consideration of non-consumptive takes, where water finds its way back into the aquifer after short-term use, and takes for dewatering a site for a short term with respect to a structure, in over-allocated aquifers, is appropriate because it optimises the use of the groundwater resource in situations where no adverse impacts on the resource or other water users are anticipated, or effects are short-term and justifiable.

4.4 Transition: Replacing existing consents, considering past water use

Existing Policy 6.4.10AA applies when the consented volume of takes exceeds the sustainable MAL identified in Schedule 4A or, in non-Scheduled aquifers, the default of 50% MAR. It requires existing consent holders who wish to apply for a replacement consent to provide evidence of the rate, volume, timing and frequency of water taken. The policy states no minimum period for which evidence such as water metering records must be provided. For surface water the equivalent Policy 6.4.2A, requires this information to be provided for at least the preceding five years.

Option 1	Maintain the status quo
BENEFITS:	<ul style="list-style-type: none">• No plan change required.
COSTS/RISKS:	<ul style="list-style-type: none">• Existing users may be adversely affected if actual take exceeds assessed take.• Risk of decisions being made on insufficient or inappropriate information.
Option 2	Grant replacement consent for the taking of water for a volume up to the volume taken under the existing consent in the previous five years
BENEFITS:	<ul style="list-style-type: none">• Clarity around information requirements for consent applications avoids unnecessary consent processing costs for applicants• Protects existing consent holders.• Consistency among Plan provisions.• Consideration of water usage over a 5-year period provides for reasonable assessment of actual water needs and facilitates good decision-making.
COSTS/RISKS:	<ul style="list-style-type: none">• Plan change required.• Slows down the progressive reduction in the allocation of over-allocated aquifers.• Standard for information requirements may generate additional cost for applicants.• Where an applicant can furnish only 5 years of information about past taking, it may not be enough to account for variation of taking due to typical crop cycles.

RECOMMEND OPTION 2 (NEW POLICY 6.4.10A2)

When considering applications for replacement consents to take water from over-allocated aquifers, it is appropriate to allocate a volume that equals the actual volume taken under the existing consent because it better protects existing users and does not cause any further environmental impacts. Option 2 would protect existing investments.

Requiring applicants for a replacement consent to provide information on past water usage over at least the preceding five years contributes to good and consistent decision-making and provides certainty and clarity for plan users. The applicant may furnish longer term evidence.

The risk of additional costs for applicants due to the standardisation of information requirements is considered acceptable given current regulations requiring water meter records be kept.

5. RMA simplifying and streamlining

The RMA was amended in 2005 to remove the requirement for plans to include matters that are not directly relevant to the regulatory material. In line with this, it is intended that plan provisions will be made more concise and self-explanatory.

5.1 The MAL as an environmental limit

Under existing Policy 6.4.10A of the Water Plan the maximum allocation volume (now maximum allocation limit) is either set in Schedule 4A, or is equal to 50% of the aquifer's mean annual recharge (MAR), but when the total volume of water taken annually from an aquifer under groundwater consents exceeds the limit in Schedule 4A or 50% of MAR, then the MAL equals that total volume. In this latter transitional situation, the MAL is not a set limit, but a cap on allocation that reduces over time. It is unclear how this reducing cap works in practice.

5.2 Clear information on allocation status of aquifers

The Water Plan does not provide clarity on the allocation status of individual aquifers nor does it state the relevant MAL for fully-allocated aquifers, as both may change with the granting of new consents or the cancellation, surrendering or expiry of existing ones. This status, along with any known recharge statistics can be made available on ORC's website.

Consequently, the MAL may not always be a constant value representing an environmentally sustainable limit.

Setting the MAL as either a limit in Schedule 4A or 50% of MAR is appropriate because it gives better effect to the Water Plan's objectives, and improves the clarity and simplicity of the Water Plan's provisions. It gives effect to the 2011 National Policy Statement on Freshwater Management.

5.3 Removal of Explanations and Principal Reasons for Adopting

In order to streamline the Water Plan in giving effect to the Resource Management Amendment Act 2005, it is proposed to remove Explanations and Principal Reasons for Adopting from all provisions amended by this plan change. Policies will be self-explanatory and succinct. This will make the Water Plan easier to read and use, and removes potential ambiguity between policies and explanations.

As a consequence, the Glossary requires a new definition for "Registered community drinking water supply" as the explanation to this term is proposed to be deleted along with the Explanation to Policy 6.4.10AA. For certainty, the new definition can specify the statute under which registration occurs.

6. Consultation

Prior to notifying Proposed Plan Change 4B, discussions were held with representatives of groundwater applicants who were uncertain about the implementation of the allocation provisions. A Consultation Draft was released for comments on 30 November 2013. Comments were received by 31 January 2014 and were summarised for ORC Committee Report 2014/0692. Subsequent to the Consultation Draft comments period, meetings were held with Kai Tahu on 26 February 2014 and Federated Farmers and Irrigation NZ on 4 March 2014.

7. Conclusion

The purpose of the RMA is to promote the sustainable management of natural and physical resources. It is considered that each of the above recommended changes to the Water Plan will assist in clarifying the groundwater allocation provisions and improve consistency, certainty and clarity in Plan implementation.

8. Reference material

- *Otago Regional Council Reports:*
 - *Section 35(2)(b) Assessment of efficiency of policies, rules and other methods: Groundwater Allocation. [Appendix 1 of Report 2013/0998.]*
 - *Report 2014/0692 - Notification of Proposed Plan Change 4B (Groundwater Allocation)*
- *Other material:*
 - *National Policy Statement on Freshwater Management. Ministry for the Environment 2011*
 - *Proposed amendments to National Policy Statement on Freshwater Management, 2011. A discussion Document. Ministry for the Environment 2013*

APPENDIX 3

Proposed Plan Change 4B (Groundwater allocation)

Regional Plan: Water for Otago

ISBN 978-0-478-37672-2

17 May 2014



Introduction

The Otago Regional Council has prepared Proposed Plan Change 4B (Groundwater allocation) to the Regional Plan: Water for Otago. Proposed Plan Change 4B:

- Clarifies the mechanism for avoiding over-allocation in the aquifers of Otago;
- Simplifies the wording of existing policy without changing the already established principles of groundwater allocation.

This document should be read in conjunction with:

- Section 32 Report – Evaluation Report; and
- The Regional Plan: Water for Otago operative as at 1 May 2014.

Amendments to the Regional Plan: Water as a result of Proposed Plan Change 4B are shown as follows: (additions underlined, deletions ~~struck out~~).

This proposed plan change will have legal effect from 17 May 2014 in accordance with Section 86B(3) of the Resource Management Act 1991.

Any person may make submissions on this proposed plan change. You may do so by sending written submissions to the Otago Regional Council. The submission must be in Form 5, as prescribed by Schedule 1 of the Resource Management Act 1991. Copies of this form are available by phoning the Council on 0800 474 082, or can be found on the ORC website www.orc.govt.nz. When making a submission, please ensure you clearly state the provision you are submitting on by using the appropriate reference number.

Post to	Otago Regional Council Private Bag 1954 Dunedin 9054		
Fax to	(03) 479 0015		
Email to	policy@orc.govt.nz		
Deliver to	70 Stafford Street Dunedin	William Fraser Building Dunorling Street Alexandra	The Station, First Floor Cnr Shotover and Camp Streets Queenstown

If you have any questions concerning this process:

Telephone (03) 474 0827;
0800 474 082

Submissions close at 5pm on Tuesday 17 June 2014.

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* Regional Plan: Water for Otago operative as at 1 May 2014.

6

Water Quantity



6.1 to 6.3 [*Unchanged*]

6.4 Policies applying to the management of the taking of water

6.4.0 to 6.4.10 [*Unchanged*]

Groundwater Takes

~~6.4.10A To enable the taking of groundwater by:~~

6.4.10A Enable the taking of water allocated as groundwater by Policy 6.4.1A, by:

- (a) Determining the volume available for taking as the maximum allocation limit less the assessed maximum annual take for an aquifer calculated using Method 15.8.3.1; and**
- (b) Applying aquifer restriction levels where specified in Schedule 4B.**

6.4.10A1 Define the maximum allocation limit for an aquifer as:

- (a) That specified in Schedule 4A; or**
- ~~(a) In each aquifer other than any in Schedule 2C or within 100 metres of a connected perennial surface water body, defining a quantity known as the maximum allocation volume, which is:~~
 - ~~(i) For aquifers in Schedule 4A, the greater of:~~
 - ~~(1) A limit specified as the maximum allocation volume in Schedule 4A; or~~
 - ~~(2) The sum of assessed maximum annual take for that aquifer at 10 April 2010, less any quantity in a consent where:~~
 - ~~(A) All of the water taken is immediately returned to the aquifer or connected surface water body;~~
 - ~~(B) The consent has been surrendered or has expired (except where the quantity has been granted to the existing consent holder as a new consent;~~
 - ~~(C) The consent has been cancelled (except where the quantity has been transferred to a new consent under Section 136(5));~~
 - ~~(D) The consent has lapsed;~~
 - (ii)(b) For aquifers other than those not in Schedule 4A, the greater of:**
 - (1) A limit which is 50% of the calculated mean annual recharge; or**
calculated under Schedule 4D,

and, beyond that maximum, avoid allocating for a consumptive use any water not previously taken under a resource consent.

- ~~(2) The sum of consented maximum annual take for that aquifer at 10 April 2010, less any quantity in a consent where:

 - ~~(A) All of the water taken is immediately returned to the aquifer or connected surface water body;~~
 - ~~(B) The consent has been surrendered or has expired (except where the quantity has been granted to the existing consent holder as a new consent;~~
 - ~~(C) The consent has been cancelled (except where the quantity has been transferred to a new consent under Section 136(5));~~
 - ~~(D) The consent has lapsed; and~~~~
- ~~(b) In an aquifer other than any in Schedule 2C or within 100 metres of a connected perennial surface water body, applying aquifer restriction levels where specified in Schedule 4B; and~~
- ~~(c) In any aquifer, avoiding contamination of groundwater or surface water; and~~
- ~~(d) In any aquifer, avoiding permanent aquifer compaction.~~

Explanation

Policy 6.4.1A(a) and (b) provide for the management of connected groundwater as if it were surface water. All water allocated as groundwater in terms of Policy 6.4.1A(c) or (d) needs to be managed for the protection of aquifers and the maintenance of any long term outflows. The outflows from any aquifer need to be maintained to prevent long term depletion of base flow to surface water bodies and prevent seawater intrusion.

Sustainable allocation of groundwater will be achieved by considering as restricted discretionary activities, those applications where:

- ~~(i) The individual take would not cause the cumulative take from the aquifer to exceed 50% of the mean annual recharge of the aquifer, or the maximum allocation volume listed in Schedule 4A, unless that take was the subject of a resource consent granted before 10 April 2010; and~~
- ~~(ii) Relevant aquifer restriction levels are met; and~~
- ~~(iii) Aquifer contamination or compaction will be avoided.~~

For some aquifers identified in Maps C1–C17, maximum allocation volumes are specified in Schedule 4A, where there is sufficient information to set them. Maximum allocation volumes are appropriate for managing the cumulative effects of groundwater takes on long term storage of an aquifer and on outflows to surface water bodies. Matters that will be considered when setting maximum allocation volumes are given in Schedule 4C.1. Significant drawdown effects are addressed under (b) of this policy.

Allocation is available when the assessed maximum annual take is below the limits specified in (a)(i)(1) or (a)(ii)(1) of this policy. Where the assessed

~~maximum annual take reduces below those limits, through surrender, lapse, cancellation or non-replacement on expiry of existing consents, new quantities may be granted. The assessed maximum annual take is calculated using the process outlined in Method 15.8.3.1.~~

~~When an existing consent holder applies for a new consent for the same activity, and is able to continue to lawfully exercise the consent under Section 124, that quantity of water retains its status within maximum allocation volume and may be granted to the new consent. Only where the application is approved does the quantity remain within maximum allocation volume.~~

~~Note that where the quantity from an existing consent within maximum allocation volume is transferred to a new consent, calculation of the maximum allocation volume in (a)(i)(2) and (a)(ii)(2) of this policy is based on the quantity specified in the new consent.~~

~~When the aquifer levels specified in Schedule 4B are reached, the actual taking of water will be restricted as provided for in the Schedule. Restrictions will apply to all consents to take groundwater under Policy 6.4.1A(e) or (d), including those for community water supply specified in Schedule 3B, as well as permitted taking in accordance with Rule 12.2.2.2. Maps D1–D4 show the Schedule 4B aquifers to which the restrictions apply.~~

~~When considering the taking of any groundwater, the adverse effects identified in (e) and (d) of this policy must be avoided.~~

~~Principal reasons for adopting~~

~~This policy is adopted to ensure that potentially long term or irreversible adverse effects on aquifer properties resulting from taking groundwater are avoided. It is important to achieve this outcome in order to provide for the needs of Otago’s present and future generations.~~

~~This policy also maintains levels and pressures within identified aquifers. This will assist in achieving the environmental results detailed in Schedule 4B, by avoiding significant reductions.~~

~~This policy allows for sustainable taking of groundwater from aquifers, where the take will not have a direct effect on any surface water body, while avoiding adverse effects, including in particular the matters listed in Policies 5.4.2 and 5.4.3. Allocating no more than the limits in the policy ensures the remaining groundwater provides for adequate levels of system outflow.~~

~~**6.4.10AA Where an application is received to take groundwater within the maximum allocation volume and Policy 6.4.10A(a)(i)(2) or (a)(ii)(2) applies to the aquifer, to grant no more water than has been taken under the existing consent, except in the case of a registered community drinking water supply where an allowance may be made for growth that is reasonably anticipated.**~~

~~**6.4.10A2 Where an application is received to take groundwater by a person who already holds a resource consent to take that water, grant no more water than has been taken under the existing consent, in at least the preceding five years, when:**~~

(a) The take is from an aquifer where the assessed maximum annual take exceeds its maximum allocation limit; or

(b) The take results in the assessed maximum annual take of an aquifer exceeding its maximum allocation limit,

except in the case of a registered community drinking water supply where an allowance may be made for growth that is reasonably anticipated.

Explanation

~~This policy intends that in aquifers where water is only available from within the maximum allocation volume under a new consent for the same activity for which an existing consent is held, only water actually taken under that existing resource consent will be considered for the new consent.~~

~~In the new consent, a consent holder may benefit from using water actually taken in the past more efficiently.~~

~~A registered community drinking water supply, in terms of this Policy, is a drinking water supply serving a community of more than 25 people for more than 60 days a year. In the case of such supplies, consent may be granted for more water than has been taken under the existing consent where there is evidence that growth is reasonably anticipated.~~

~~In all cases, the effect of seasonal extremes will be considered.~~

~~Evidence of the rate, volume, timing and frequency of water taken under the existing consent is required, such as metering or measuring data. Where there is limited or no such data available, any relevant supporting evidence may be presented, for example a description of existing circumstances and use. Infrastructure present or photography showing irrigated land may also indicate how much water has been taken and when.~~

Principal reasons for adopting

~~This policy is adopted to assist in the reduction of the maximum allocation volume under Policies 6.4.10A(a)(i)(2) or 6.4.10A(a)(ii)(2) to reflect the amount of water actually being taken. This policy also intends that the taking of groundwater is not constrained by resource consent holders who are underutilising the groundwater allocated to them, improving efficiency of water resource use.~~

6.4.10A3 *[Moved from Policy 6.4.10A(b) and (c)]* **Avoid in any aquifer:**

(a) Contamination of groundwater or surface water; and

(b) Permanent aquifer compaction.

6.4.10AB to 6.7.8 *[Unchanged]*

WATER QUANTITY

12

Rules: Water Take, Use and Management



12.0 Applications for taking water

12.0.1 Prohibited activity: No resource consent will be granted

12.0.1.1 *[unchanged]*

12.0.1.2 *[unchanged]*

12.0.1.3 ~~An~~ The application to take groundwater for a consumptive use within the maximum allocation volume in an aquifer where Policy 6.4.10A(a)(i)(2) or (a)(ii)(2) applies, by a person who does not hold the existing resource consent to take that water, is a **prohibited** activity from an aquifer where the assessed maximum annual take:

(i) Exceeds the aquifer's maximum allocation limit; or

(ii) Would exceed the aquifer's maximum allocation limit as a result of this take.

is a **prohibited** activity, unless all of the water taken:

(1) Is allocated as surface water under Policy 6.4.1A; or

(2) Is taken for dewatering at a site to allow a construction or structure maintenance activity.

~~12.0.1.4 An application to take groundwater within the maximum allocation volume, where that take would cause the maximum allocation volume of an aquifer to exceed the limits in Policy 6.4.10A(a)(i)(1) or (a)(ii)(1), is a **prohibited** activity.~~

The Otago Regional Council will, upon request, advise the applicant of the aquifer's current allocation status before any application is made.

Principal reasons for adopting

~~These rules are adopted to expressly prohibit more water being allocated as primary allocation, or for groundwater within the maximum allocation volume, when the allocation already exceeds or would exceed the catchment or aquifer limit. Sections 124A-C of the Act cannot apply where no application can be received. Any further taking of surface water or connected groundwater must be from supplementary or further supplementary allocation, in order to assist in maintaining the aquatic ecosystem and natural character of source water bodies. The taking of groundwater beyond maximum allocation volumes is considered only where that take is immediately returned to the aquifer or connected surface water body.~~

12.1 to 12.2.3.1A *[unchanged]*

12.2.3 Restricted discretionary activities: Resource consent required

12.2.3.2A Except as provided for by 12.0.1.3 and 12.2.3.1A, the taking and use of groundwater is a **restricted discretionary** activity, if:

(a) The volume sought is within:

- (i) The maximum allocation ~~volume~~ limit identified in Schedule 4A; or
 - (ii) 50% of the ~~calculated~~ mean annual recharge calculated under Schedule 4D, for any aquifer not ~~specified~~ identified in Schedule 4A; or
 - (iii) That volume specified ~~on~~ in an existing resource consent ~~granted before 10 April 2010, or the take applied for is a volume equal to or less than that on the existing consent~~ where the assessed maximum annual take of the aquifer exceeds its maximum allocation limit; and
- (b) It is subject to any aquifer restriction levels identified in Schedule 4B; and
 - (c) Where the rate of surface water depletion is greater than 5 l/s, as calculated using Schedule 5A:
 - (i) Primary surface water allocation is available; and
 - (ii) For the Waitaki catchment, allocation to activities set out in Table 12.1.4.2 is available.

The matters to which the Otago Regional Council has restricted the exercise of its discretion are set out in Rule 12.2.3.4.

...

12.2.3.4 Restricted discretionary activity considerations

In considering any resource consent for the taking and use of groundwater in terms of Rule 12.2.3.2A, the Otago Regional Council will restrict the exercise of its discretion to the following:

- (i) The maximum allocation ~~volume~~ limit for the aquifer; and
- (iA) The assessed maximum annual take for the aquifer; and
- (ii) The mean annual recharge of ~~that~~ the aquifer; and
- (iii) The effect of the take on the hydrodynamic properties of the aquifer and the vulnerability of the aquifer to compaction; and

...

R U L E S : W A T E R T A K E , U S E A N D M A N A G E M E N T

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Methods other than Rules



15.1 to 15.8.2.2 [unchanged]

15.8.3 Methodology for calculating assessed maximum annual take for groundwater

15.8.3.1 The assessed maximum annual take of groundwater from any aquifer for the purposes of Policy 6.4.10A(a), will be the sum of:

- (a) The annual volume specified on consents to take groundwater from that aquifer; and
- (b) Where a consent does not specify an annual volume, it is calculated using the instantaneous, daily, weekly or monthly limits specified as shown below:
 - (i) ~~Except as provided for by (iii) below, w~~Where the purpose of use includes irrigation, convert the consent limit as follows:

(1) Where a daily or a monthly limit is specified:

Consent Limit	Purpose of use irrigation
Daily	Multiply by 90
Monthly	Multiply by 6

Note: A 90 day limit is equivalent to irrigating 150 days at 60% of the maximum take rate. A 6 month limit is representative of an annual irrigation season.

Where both limits are specified, use the limit which yields the smaller volume.

(2) Where no daily or monthly limit is specified:

Consent Limit	Purpose of use irrigation
Instantaneous (e.g. litres/second or m ³ /hour)	Convert to a daily volume assuming taking of 12 hours per day, and then multiply by 90.
Weekly	Convert to a monthly volume, by multiplying by 4.3, and then multiplying by 6.

Where both limits are specified, use the limit which yields the smaller volume.

(3) If a consent specifically restricts taking over different periods, use the quantity and time limits specified on the consent.

METHODS OTHER THAN RULES

- (ii) Where the only purpose of use is frost-fighting, convert any consent limit to a 20 day volume.
- (iii) Except as provided for by (i) and (ii), convert the consent limit to a 12-month volume.
- (c) less any quantity in a consent where all of the water taken is ~~immediately~~ returned to the aquifer or connected surface water body.

The assessed maximum annual take sums only those consents allocated as groundwater under Policy 6.4.1A(c) and (d).

Principal reasons for adopting

This method is adopted to assess the annual volume of take from an aquifer, and so assist in determining the remaining allocation available from an aquifer.

METHODS OTHER THAN RULES

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Schedules



4. ~~Schedule of specified restrictions on the exercise of permits to take the allocation and restriction regime for groundwater~~

4A to 4C *[unchanged]*

4D Matters to be considered in calculating mean annual recharge

For any aquifer not included in Schedule 4A the setting of the maximum allocation limit will involve calculating the mean annual recharge of the aquifer (see Policy 6.4.10.A1(b)). The mean annual recharge is a statistical value based on the past climate, aquifer hydrology, soil properties, irrigation practice and other factors with direct influence over groundwater recharge.

This schedule sets out the matters to which consideration will be given when calculating the mean annual recharge of an aquifer.

4D.1 Sources of aquifer recharge

Sources of aquifer recharge may include:

- (a) Land surface recharge due to rainfall excess.
- (b) Land surface recharge due to irrigation excess, which should be based on the application of irrigation at an efficient rate.
- (c) Land surface recharge due to intermittent runoff flowing over the land surface.
- (d) Surface water recharge due to river infiltration.
- (e) Surface water recharge due to wetland, pond or lake infiltration.
- (f) Through-flow from any other aquifer.

The mean annual recharge can arise from a single recharge source or a combination of recharge sources, in which case the mean annual recharge is based on the combined recharge from all relevant sources.

4D.2 Methods for calculating aquifer recharge

Methods for calculating aquifer recharge from various recharge sources may include:

- (a) Daily soil moisture balance for the calculation of land surface recharge.
- (b) Daily soil moisture balance for calculation of irrigation recharge.
- (c) Differences between surface water flows measured at different flow monitoring sites for the determination of bed infiltration passing to an aquifer.
- (d) Direct measurement of land surface recharge using subsoil measuring devices such as lysimeters.
- (e) Calibrated recharge estimation using unsaturated zone matric potential or saturated zone water table height fluctuation.
- (f) Environmental tracers such as isotopes (radioactive or stable) and conservative anions.
- (g) Groundwater computer modelling, especially where calibration and parameter estimation can be used to constrain initial estimates of surface water contributions and land surface recharge.

21

Glossary

Allocation limit ~~or allocation volume~~

The maximum flow or quantity of water in a water body, which is able to be allocated to resource consents for taking.

Assessed maximum annual take

The sum of the takes of groundwater as calculated by Method 15.8.3.1.

Maximum allocation limit

The quantity of groundwater as established under Policy 6.4.10A1.

Mean annual recharge

The quantity of groundwater recharge as calculated by Schedule 4D.

Registered community drinking water supply

A drinking water supply, which is registered under Section 69J of the Health Act and serves a community of more than 25 people for more than 60 days a year.

Table of minor and consequential changes

Plan Provision	Detail of proposed change								
Page numbers	Update page numbers.								
Footers	Change footer to read “ <u>Regional Plan: Water for Otago (Updated to <date to be inserted>)</u> ”.								
Title page	Change the date to read “ <u>Updated to <date to be inserted></u> ”.								
ISBN number	Obtain new ISBN numbers for Regional Plan: Water for Otago.								
Chronicle of key events	<p>Add the following to the end of table:</p> <table border="1" data-bbox="456 752 1401 1014"> <thead> <tr> <th data-bbox="456 752 810 864">Key event</th> <th data-bbox="815 752 999 864">Date notified</th> <th data-bbox="1003 752 1187 864">Date decisions released</th> <th data-bbox="1192 752 1401 864">Date operative</th> </tr> </thead> <tbody> <tr> <td data-bbox="456 871 810 1014"><u>Plan Change 4B (Groundwater allocation) to the Regional Plan: Water</u></td> <td data-bbox="815 871 999 1014">17 May 2014</td> <td data-bbox="1003 871 1187 1014"><Date to be inserted></td> <td data-bbox="1192 871 1401 1014"><Date to be inserted></td> </tr> </tbody> </table>	Key event	Date notified	Date decisions released	Date operative	<u>Plan Change 4B (Groundwater allocation) to the Regional Plan: Water</u>	17 May 2014	<Date to be inserted>	<Date to be inserted>
Key event	Date notified	Date decisions released	Date operative						
<u>Plan Change 4B (Groundwater allocation) to the Regional Plan: Water</u>	17 May 2014	<Date to be inserted>	<Date to be inserted>						
Table of contents [on page viii]	<p>Update page numbers.</p> <p>Reference to Maximum Allocation Volume: Volume <u>Limit</u>;</p> <p>Add the following: <u>4D Matters to be considered in calculating maximum annual recharge</u> <u>20.67</u></p>								
Table of contents [on page 20-2]	<p>Reference to Maximum Allocation Volume: Volume <u>Limit</u>;</p> <p>Add the following: <u>4D Matters to be considered in calculating maximum annual recharge</u> <u>20.67</u></p>								
section 1.4	<p>Proposed Plan Change 4A builds on the groundwater management system of taking water within a maximum allocation volume <u>limit</u>, established...</p> <p><u>Proposed Plan Change 4B (Groundwater allocation) clarifies groundwater allocation provisions. It was notified on ..., and a total of ... submissions and ... further submissions were received. Following the hearing, decisions on submissions received were released on Plan Change 4B was made operative on</u></p>								

MINOR AND CONSEQUENTIAL CHANGES

Plan Provision	Detail of proposed change												
Index to policies in 6.4	<p>Delete reference to Policies 6.4.10A and 6.4.10AA, which this Plan Change deletes.</p> <p>Replace the above with the following: <u>6.4.10A System for groundwater allocation and restriction levels</u> <u>6.4.10A1 Defining the maximum allocation limit</u> <u>6.4.10A2 When a groundwater take will be no more than under an existing consent</u> <u>6.4.10A3 Avoiding aquifer contamination and compaction</u></p>												
Policy 6.4.10.AC	<p>Both references to maximum allocation volume: maximum allocation volume <u>limit</u></p>												
Schedule 3A: Schedule of human uses of particular aquifers	<p>Correct the following incorrect map number for the Papakaio Aquifer:</p> <table border="1" data-bbox="456 853 1386 1164"> <thead> <tr> <th data-bbox="456 853 683 898">Aquifer</th> <th data-bbox="687 853 794 898">Map</th> <th data-bbox="799 853 1386 898">Values</th> </tr> </thead> <tbody> <tr> <td data-bbox="456 904 683 1010">Lower Waitaki Plains Aquifer</td> <td data-bbox="687 904 794 1010">C9 C10</td> <td data-bbox="799 904 1386 1010">– Human consumption without treatment – Stock drinking water supply and farm dairy water.</td> </tr> <tr> <td data-bbox="456 1016 683 1088">Papakaio Aquifer</td> <td data-bbox="687 1016 794 1088">D4 C9a</td> <td data-bbox="799 1016 1386 1088">– Irrigation</td> </tr> <tr> <td data-bbox="456 1095 683 1167">North Otago Volcanic Aquifer</td> <td data-bbox="687 1095 794 1167">C10</td> <td data-bbox="799 1095 1386 1167">– Irrigation</td> </tr> </tbody> </table>	Aquifer	Map	Values	Lower Waitaki Plains Aquifer	C9 C10	– Human consumption without treatment – Stock drinking water supply and farm dairy water.	Papakaio Aquifer	D4 C9a	– Irrigation	North Otago Volcanic Aquifer	C10	– Irrigation
Aquifer	Map	Values											
Lower Waitaki Plains Aquifer	C9 C10	– Human consumption without treatment – Stock drinking water supply and farm dairy water.											
Papakaio Aquifer	D4 C9a	– Irrigation											
North Otago Volcanic Aquifer	C10	– Irrigation											
Schedule 4	<p>All references to Maximum Allocation Volume: Maximum Allocation Volume <u>Limit</u></p>												
Schedule 4B	Ettrick Basin: Calder Bore should read “ <u>Cemetery Bore</u> ”.												
Schedule 4C	Note at foot: Reference to Policy 6.4.10A should read “Policy 6.4.10A <u>1</u> ”.												
Plan Maps: Map Index for section C	Amend “Map C Index – Aquifers, Groundwater Zones and Groundwater Protection Zones” to update the relevant Policy number references.												
Plan Maps: Map C16	Delete every reference to Kuriwao Basin Aquifer. <i>There is no aquifer at this location.</i>												
Plan Maps: Map Index for section D	Amend “Map D Index – Aquifer Water Take Restriction Areas and Monitoring Bores” to update the relevant policy number references.												