

RAKAIA-SELWYN WATER RESOURCE CONSENT REVIEWS

ANNUAL ALLOCATION FACTSHEET

Setting annual allocation limits on consented water takes is essential if water use is to be managed and the sustainability of the resource assured.

Environment Canterbury will be calculating an annual allocation volume for all consent-holders based on Schedule WQN9 of the Proposed Natural Resources Regional Plan (PNRRP). If you have already received a review notice, you will be sent an individual calculation as part of your proposed consent conditions.

Schedule WQN9 sets out a method for calculating a reasonable and efficient use of water. The original version of the schedule included in the Proposed NRRP has been revised as a result of submissions. The revised version is known as WQN9v3. Environment Canterbury has been advised of an alternative methodology developed for Irrigation New Zealand and we are working with their consultants in order to understand, and hopefully resolve, the differences between the two methods.

A hearing considering the WQN9 variation to the PNRRP is still in progress. Environment Canterbury will develop a consent condition mechanism so that the final form of WQN9 arising from the hearing can replace WQN9v3 as a method of calculating an annual volume.

Annual allocation limits calculated using WQN9v3 take account of the following factors:

- the irrigated area,
- the land-use category e.g. Intensive pasture or arable,
- the soil water holding property (profile available water), and
- the effective irrigation season rainfall.

Schedule WQN9v3 may produce a different annual volume from that arrived at by previous methods. We will calculate a proposed annual allocation limit for you and offer you an opportunity to discuss it on a one-to-one basis. Please refer to the accompanying letter for details.

The WQN9v3 methodology has been developed from measurements of soil moisture levels under a range of conditions. Together with the rainfall expected during the irrigation season, the standard is intended to meet demand in four years out of five as specified in the PNRRP.

If in the meantime you would like to calculate your own annual allocation, we are working on a webpage at www.ecan.govt.nz/AnnAlloc that will allow you to do so. The same page will provide a link to maps showing the effective irrigation season rainfall. You will first need to find the approximate location of your well on the appropriate map and make a note of the effective irrigation season rainfall as you will need this for the calculator.

Environment Canterbury is also assessing a proposal made by some consent holders to allow 'banking' of any unused allocation for use in a subsequent year.

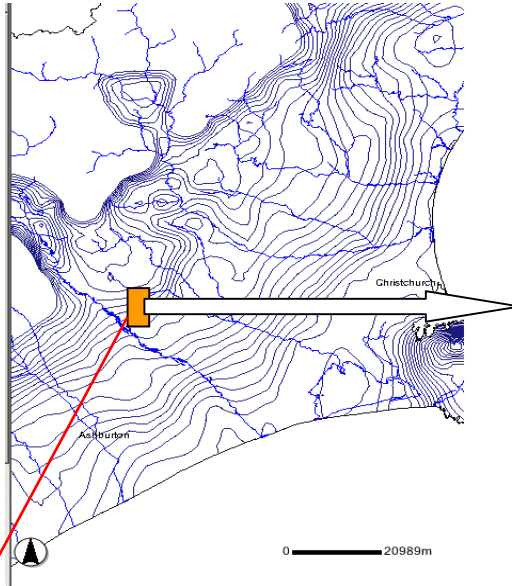
If you do not agree with our proposed annual allocation, you can propose a revised figure, for example, if:

- you have data suggesting the rainfall is different from the figure we use,
- you have information on soil types that differs from those we use,
- you believe that the irrigated area or land use category used in the calculation differ from that stated in your original consent application.

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This is an example of the calculation of Annual Volume for an area with a range of different soil types. A description of the terms used can be found below the calculation table.

Effective irrigation season rainfall contours (from ECan's online GIS)



A specified land area superimposed on the soils map

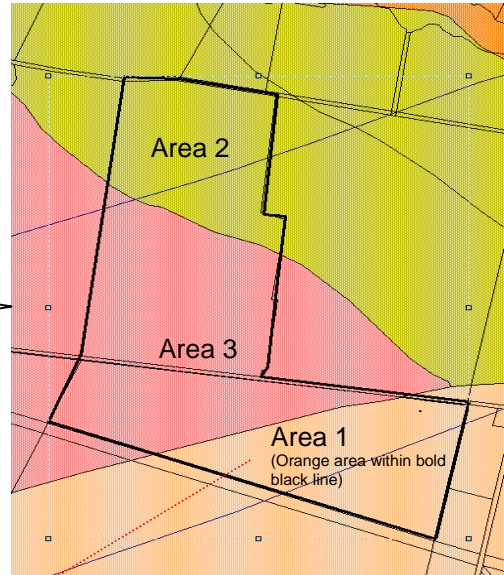


Figure derived from contour map

Profile Available water

	Area (ha)	PAW (mm)	Land Use	Effective irrigation season rainfall (mm)	Total seasonal demand (mm)	Seasonal irrigation demand standard (mm)	Annual volume (m ³)	Reduction Factor (-)	Reduced Annual volume (m ³)
Area 1	59.6	60	Arable	335	730	395	235,420		
Area 2	53.3	95	Arable	335	692.5	357.5	190,548		
Area 3	110.3	70	Arable	335	730	395	435,685		

Total or (Average)	223.2	(73)	Pasture	(335)			861,653		0
			Peak pumping rate (L/s)	Daily pumping duration (hours)	Return period (days)	Days per return period (days)	Effective system capacity (mm/day)		
			120.0	24	1	1	4.65		

Annual Volume
A figure under 4.5 mm/day will lead to a reduction in the Annual Volume

Profile Available Water (PAW) is a measure of the capacity of a soil to hold moisture.

Effective Irrigation Season Rainfall is the amount of rain that will contribute to crop growth over the nominal irrigation season.

Total Seasonal Demand is the total amount of water required to satisfy plant water needs during the main growing season in the demand conditions that occur in 4 out of 5 years.

Seasonal Irrigation Demand Standard is the depth of water required to meet the Total Seasonal Demand after allowing for the Effective Irrigation Season Rainfall.

Reduction factor applies when the effective system capacity is 4.5mm/day because the peak pumping rate is insufficient to deliver the full Annual Volume.