

Memo

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CC		
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LWRP Stream depletion discounts to a groundwater allocation block:

Under Schedule 13 of the Land and Water Regional Plan (LWRP), which sets out the requirements for implementation of water allocation regimes, for groundwater allocation regimes, the amount of water allocated within a groundwater allocation limit is the sum of each seasonal or annual volume of each groundwater take, less any contribution from surface water calculated in accordance with Schedule 9 of the LWRP.

Schedule 9 sets out how seasonal volumes are adjusted in Table S9.1: *Stream depletion effect to be included in the surface and groundwater allocations*. This table directs that for:

- a Direct stream depletion effect allocate none of the annual volume to the groundwater block;
- a *High* stream depletion effect allocate 25% of the annual volume to the groundwater block;
- a *Moderate* stream depletion effect allocate 50% of the annual volume the groundwater block;
- a *Low* stream depletion effect allocate 100% of the annual volume to the groundwater block.

Currently, for a new groundwater take, stream depletion assessments using site specific testing information are required to be undertaken as part of the assessment of environmental effects which must be submitted with the application for resource consent. Depending upon the classification determined from applying Schedule 9, an apportionment of the overall take will be applied to the groundwater allocation block. However, for many existing groundwater takes no site-specific assessment of stream depletion exists. Where this is the case an estimate has been made to ensure that the stream depletion effect is accounted for in the surface water allocation block.

Problem Definition:

The problem with this approach specified in Schedule 9 is that although a conservative (higher) estimate of stream depletion results in a precautionary approach to surface water allocation, this will result in an apportionment to the groundwater allocation block that may be significantly smaller than a site-specific stream depletion assessment would result in. This can make more groundwater available for allocation than should be and so is not precautionary for groundwater allocation management.

Options:

The LWRP gives no direction as to what approach should be taken if no site-specific stream depletion assessments have been undertaken. However, there are a number of approaches that can be taken in these situations:

- Apply no stream depletion estimate to groundwater permits with no assessment (i.e. No depletion counted toward the allocation of a river and 100% of the annual volume allocated from the groundwater allocation block) in which case when a surface allocation block reports "full", it may in fact be over allocated.
- 2. Apply an estimate of stream depletion and then adjust (reduce) the annual groundwater volumes allocation as per Schedule 9. The reduction in annual volume, based on a conservative (high) stream depletion estimate may result in the under reporting of groundwater allocated for abstraction, so that a "full" groundwater block may in fact be over allocated.
- 3. Apply an estimate of stream depletion to the surface water allocation block, but only apply a discount from the groundwater allocation to those assessments which are based on site specific information.

Option 3 is the approach currently being implemented by the consents section for allocation reporting purposes.

Recommendation:

An amendment that could be made to the LWRP to achieve greater consistency while maintaining a precautionary approach where site-specific stream depletion information is missing would be to add a note to LWRP Schedule 13 and/or LWRP Schedule 9 that states that:

A reduction in the annual volume allocated from the groundwater block will only be applied where robust site-specific stream depletion assessments have been carried out. This would allow for option 3 (above) to be adopted as the approach used when no sitespecific assessment exists.

The adoption of option 3 would allow a precautionary approach to water allocation, for both surface water and groundwater, until such a time that a stream depletion assessment can be made using site-specific information. Adopting a precautionary approach allows for the fullest utilisation of the allocation block but minimises the chances of over allocation.

The required site-specific information will be obtained as groundwater permits are renewed as the requirement for site-specific assessments is now required by ECan as part of the assessment of environmental effects that forms part of any application for replacement water abstraction permits.

Reference and Definitions:

From LWRP Definitions:

Stream depleting groundwater: means groundwater abstraction that has a direct, high, medium or low stream depletion effect, calculated in accordance with Schedule 9 of this Plan.

From LWRP Schedule 13 Requirements for implementation of water allocation regimes: For **surface water** allocation regimes:

The amount of water allocated within an allocation limit is the sum of:
(a) the maximum rate of abstraction of each surface water take and
(b) the stream depletion effect of each groundwater take that is calculated in accordance with Schedule 9;

For groundwater allocation regimes:

1. The amount of water allocated within a groundwater allocation limit is the sum of each seasonal or annual volume of each groundwater take, less any contribution from surface water calculated in accordance with Schedule 9;

From LWRP Schedule 9 Assessment of Stream Depletion Effect:

Inclusion in surface and groundwater allocations

Table S9.1: Stream depletion effect to be included in the surface and groundwater allocations

Stream	Amount to be included in	Amount allocated	Pumping	Subject to surface
depletio	the surface water	from the	schedule	water minimum
n effect	allocation limit	groundwater zone		flow restrictions
Direct	Maximum daily rate of	None	Not applicable	Yes
	take ¹ (the rate at which			
	water can be continuously			
	taken to abstract the			
	maximum daily volume that is to be taken), and 100% of			
	the annual volume			
High	The stream depletion	25% of the annual	150 days	Yes if above
	effect ¹ estimated using the	volume	continuous steady	stream depletion
	pumping schedule; and		pumping required	effect cut-off.
	75% of the annual volume		to deliver the	
			annual volume	
Moderate	The stream depletion	50% of the annual	150 days	No
	effect ² estimated using the	volume	continuous steady	
	<i>pumping schedule</i> ; and		pumping required	
	50% of the annual volume		to deliver the	
			annual volume	
Low	None	100% of the annual	Not applicable	No
		volume		