

# ASSOCIATED NOTES

## TO TAKE AND USE GROUNDWATER

Associated Notes for Part B of Form CON200

### 1. FOR TAKE AND USE OF GROUNDWATER

For your application to be accepted, an assessment must be included with your Application for Resource Consent. This form is a guide to help you complete PART B: ASSESSMENT OF EFFECTS. Also consult Sections 4.7 of Chapter 4 (Land and Water Quality) and 5.7 of Chapter 5 (Water Quality) of the Proposed Natural Resources Regional Plan (PNRRP) for further details.

### 2. ABOUT ASSESSMENTS OF EFFECTS ON THE ENVIRONMENT

This assessment is required so that you and others can understand what happens to the environment when groundwater is taken and used. You need to know this so you can decide:

- the extent of environmental effects from your proposal
- whether your proposal is likely to get consent and whether this is likely to be on a notified or non notified basis;
- what you can do to prevent or reduce adverse effects on the environment;
- who is likely to be affected by your proposal, and therefore who you should consult with.

#### (a) What happens to your assessment

When the Council receives your assessment, staff check it for completeness and accuracy. If you believe your proposal will not cause any harm to the environment, you need to explain why you think that, so staff can make an informed decision on your application. An application can only proceed without public notification if the effects on the environment will be minor.

#### (b) Preparing an assessment

If you would like more information on preparing an Assessment of Effects on the Environment, call the Council's Customer Services Section on either:

(03) 353 9007 or 0800 EC INFO (0800 32 4636) or visit our website [www.ecan.govt.nz](http://www.ecan.govt.nz)

### 3. LEGAL AND PLANNING MATTERS

#### The Resource Management Act (RMA)

*No one may take any water (Section 14(1)(a) of the RMA), unless the take is:*

- Permitted by a rule in a plan (being the Transitional Regional Plan (TRP) General Authorisation) and a rule in a proposed plan (being the Proposed Regional Natural Resources Regional Plan (PNRRP) Permitted activity status), or
- Authorised by a resource consent.

#### The Transitional Regional Plan (TRP)

A take not exceeding 20 cubic metres per day is permitted without a consent, provided the bore is more than 50 metres from any waterway or neighbour's bore, (TRP General Authorisation for water, Condition 3).

A take not exceeding 100 cubic metres per day is permitted without a consent, as long as the size of the property is greater than 20 hectares and the bore is more than 100 metres from any waterway or other neighbour's bore (TRP General Authorisation for water Condition 4).

#### Proposed Regional Natural Resources Regional Plan (PNRRP)

Chapter 5, Water Quantity, of the PNRRP, Rule WQN13 permits the take and use of water not exceeding five litres per second.

### Summary of Consent Requirement

1. Takes not exceeding 20 cubic metres per day and not exceeding 5 litres per second are permitted in most areas of Canterbury as long as the bore separation distance is 50 metres from surface water or a neighbour's bore.
2. Takes not exceeding 100 cubic metres per day and not exceeding 5 litres per second may be permitted as long as the property is greater than 20 hectares in size and the bore separation distance is 100 metres from surface water or a neighbour's bore.

### The following exceptions apply:

- *Woolston/Heathcote Management Zones 1 & 2.* The abstraction of groundwater in these areas is a restricted discretionary activity and therefore requires a consent.
- *Yaldhurst/West Melton area.* The abstraction of groundwater in this area is excluded from the permitted activities listed above and is a discretionary activity which therefore requires a consent. This area is bounded by Intake Road, Station Road, Hoskyns Road through to Main South Road, Carmen Road, Russley Road, Ryans Road, Guys Road and a line 1,000 metres (one km) north of, and parallel to, the Old West Coast Road.
- *Parts of the Waitaki Allocation Zone and the Waipara Allocation Zone* are also excluded from the permitted activities listed above, therefore abstraction of groundwater may require a consent in these areas.

Please consult our Customer Services Section regarding other permitted activities, e.g. pumping test requirements, de-watering of construction sites and other water related activities not mentioned above.

## 4. CONSULTATION

Consultation with potentially affected people is recommended as good planning practice but is not mandatory. Someone who has provided their written approval for an application can no longer be considered affected under Section 95 E(3) of the Resource Management Act. Therefore if written approvals have been provided from all bore owners within two kilometres, an assessment of effects on the surrounding bores is not likely to be required.

## 5. DESCRIPTION OF THE AFFECTED ENVIRONMENT

To effectively determine if your proposed activity has any adverse effects on people, other resource users or the natural and physical environment, it is essential that you accurately confirm the locations and extent of the following features within 2000 metres of your bore(s):

- All other bores regardless of what they are used for
- Surface waterways (whether flowing or not) including water races
- Your proposed area of irrigation
- Any other areas of irrigation on your property, (using groundwater or surface water authorised by other consents)

Please note the Environment Canterbury database of bore locations is only as accurate as the information past applicants have provided to us. Establishing the correct location and therefore distance between bores is very important in accurately assessing the drawdown effects on other groundwater users.

Therefore, please provide a map that accurately shows the location of your bore and all recorded bores within 2000 metres. Please confirm the location of the bores on this map and mark any that you know are no longer used, or that are not included, or are not correctly located. Please use arrows to clearly show the correct location of any bores that are shown in the wrong place. This will be used to correct our bore and GIS records.

Additionally, establishing the correct locations of surface waterways and accurately describing them in terms of habitat quality ("clean spring-fed, abundant trout" or "ephemeral drain or swale") is very important in accurately assessing the potential for depletion effects on surface waterways.

*Please Note: Your application may not be accepted if the signed verified map is not enclosed. Your consent, if granted on the basis of incorrect information, may be reviewed at your cost or may even be cancelled if deliberately misleading information is provided.*

## 6. ASSESSMENT OF ACTUAL AND POTENTIAL EFFECTS

Assessments of effects of groundwater abstractions can be complex, as effects cannot easily be measured. Frequently analytical numerical modelling is required (See Environment Canterbury website [www.ecan.govt.nz](http://www.ecan.govt.nz); consent tools). For higher rates of abstraction, a technical assessment of effects is required. Even small takes in some areas can have adverse effects on neighbouring bores. If a technical assessment is required you will be contacted by an Investigating Officer.

### (a) Effects on surrounding groundwater users

The technical assessment of interference effects on other groundwater users must meet the requirement of Policy WQN20 and Schedule WQN10 of Chapter 5 of the Proposed Natural Resources Regional Plan (3 July 2004) which states *"the existing bore should not have its protected available drawdown reduced due to the direct cumulative interference effects from other bores, unless the effect is mitigated."*

Your assessment of effects must be based upon the maximum rates and volumes you have specified.

### (b) Cumulative effect of take on other groundwater users

The allocation limits for groundwater zones can be found in the Environment Canterbury website [www.ecan.govt.nz](http://www.ecan.govt.nz) under Groundwater Allocation Summary and in Variation 4 of the PNRRP Schedule WQN4.

### (c) Effects of inefficient water use

**Daily stock water requirements** – Schedule WQN11

Table WQN26: Daily stockwater requirements

**Stock type Litres/head/day**

Stock type	Litres/head/day
Dairy cattle – in lactation	70
- dry	45
Beef cattle	45
Calves	25
Horses - working	55
- grazing	35
Breeding ewes	3
Sows	25
Pigs	11
Poultry - per 100 birds	30
Turkey - per 100 birds	55

For the purposes of determining stockwater requirements for rules WQN1, WQN3, WQN13 or WQN28, the total daily requirements shall be determined by establishing the number of each stock per type, multiplying the number of stock on the property by the litres per head per day for each of the different stock types and summing these. The annual requirement can be obtained by multiplying the total l/day by the days water is to be taken over the season.

An example is set out in the table below:

Stock type	Numbers	Litres/head/day	Total L/day	Seasonal water taken	days	Annual Requirement
Sheep	1780	3	5340	150		801,000
Beef	660	45	29700	150		4,455,000
			35040			5,256,000

The total l/day may be multiplied by a factor of 1.2 to allow for peak demand and for some potential loss from the system.

### Seasonal Irrigation Requirements – Schedule WQN9 Version 3

*Note: You can work this out using our Annual Volume calculator on our website [www.ecan.govt.nz](http://www.ecan.govt.nz). You will need: Area irrigated, Soil Profile Available Water (PAW) (mm), Effective irrigation season rainfall (mm), Land use (arable or intensive pasture).*

## 7. STANDARD CONDITIONS FOR GROUNDWATER TAKES

If your consent is granted, it will include standard conditions. There are three sets of standard conditions for groundwater consents:

- WG037 – Large takes (>30 L/s),
- WG038 – Middle (7 – 30 L/s) and
- WG039 – Small takes (< 7 L/s)

Your conditions will be similar to one of these. Standard conditions can be found on our website [www.ecan.govt.nz](http://www.ecan.govt.nz).

Search as follows:

Tools; Resource Consent Condition Templates; Conditions; Resource Consents; Water Conditions; Take Groundwater; Groundwater Take General Conditions; double click on the type number e.g. WG037

### ADMINISTRATIVE CONDITIONS

*Note: The RMA sets out a procedure for reviewing consents in certain circumstances. The RMA sets a default period of time after which a consent lapses and ceases to have effect if it is not exercised. This is five years unless there is a condition in the consent specifying a different lapsing period. These conditions are placed on all consents.*

1. The Canterbury Regional Council may, once per year on any of the last five working days of either March and July or May and November serve notice of its intention to review the conditions of this consent for the purpose of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.
2. The lapsing date for the purposes of section 125 shall be five years from the date of grant of the consent.

### DEFINITIONS

#### APPLICATION RATE

The application rate is the amount of water to be applied to ensure 'optimal' crop growth. This amount should relate to how much water you have applied.

#### ARABLE

Arable (cropping) is where land is cultivated and used predominantly to produce a mix of annual crops being grown in rotation. Arable farms have a mix of crops that usually have a single harvest and the rotation may include process vegetable crops or pasture. The definition does not include perennial bush, vine or tree crops.

#### CUMULATIVE EFFECTS

Cumulative drawdown effects on water availability can be created by the overlapping of localised drawdown where there is a concentration of bores at varying depths. This may result in a decrease in water levels over time.

#### DRAWDOWN

Abstraction of groundwater from a bore creates a cone-shaped depression in groundwater levels, which can affect water levels in nearby bores depending on: separation distance between wells, abstraction rates, aquifer characteristics, and regional water levels.

#### EVAPOTRANSPIRATION

The amount of moisture lost as direct evaporation from the soil surface, and transpired by the plant – for Canterbury the weekly average ranges from 4-5mm per day.

#### INTENSIVE PASTURE

Intensive pasture is land-use relying on perennial pasture production, where yield and quality must be kept high over the major growing period from mid-October to mid-March. In Canterbury, the predominant agricultural activity under this system is dairying, but may include some intensive meat-producing systems that rely on a similarly high level of pasture production such as lamb and beef fattening operations.

#### RETURN PERIOD

The amount of time before 'paddock one' must be irrigated again to maintain necessary soil moisture content, during 'design' rates of evapotranspiration. Also known as the irrigation return period.

#### WATER HOLDING CAPACITY

The amount of water available to the plant is described by its water-holding capacity, and is a function of soil type and plant root depth.

A typical shallow soil (e.g. stoney) would hold about 80 mm to root depth. A typical medium soil (e.g. silt loam) would hold about 120 mm to root depth. A typical deep soil would hold about 150 mm to root depth.

**WRITTEN APPROVALS**

There may be persons that you know could be adversely affected by the proposed activity. You may seek approval before lodging the application, but it is Environment Canterbury which must decide which persons may be adversely affected and whether approval is required if the application is not to be publicly notified (advertised).

Discussing the proposed activity with neighbours and other interested persons prior to submitting your application may help to make processing faster and cheaper.