

Schedule XVIII.

Determination of seasonal and annual allocations for water permits as at 29 August 2013 (Tukituki River Catchment)

The method to be used for setting the seasonal and annual volumes for existing water permits is explained in this Schedule.

- A. Groundwater Take Consents Within Groundwater Allocation Zones 1 -3 (Table 5.9.5 Tranche 1)
1. **The Hawke's Bay Regional Council will determine the seasonal volume for each farming property or farming enterprise with an existing groundwater take consent for irrigation that is consistent with Policy 32.** The seasonal volumes will be calculated using a consistent and appropriate scientific methodology⁷ across all takes within the same groundwater allocation zone that will achieve a result consistent with Policy 32. Appropriate scientific methodologies include:
 - Soil Plant Atmosphere System Model (SPASMO-ir), Plant and Food Research;
 - IrriCalc, Aqualinc Research Limited, Report No C09065/4, November 2009).Allocation of water for each farming property or farming enterprise shall take into account multiple consents for irrigation of the same area. Ancillary uses of water (e.g. dairy shed supply) also specified as an authorised use by the consent shall be considered and provided for. This seasonal volume shall be the Seasonal Water Use Limit for each farming property or farming enterprise (*Volume A*).
 2. In order to achieve consistency and equity between farming properties and farming enterprises, the seasonal volumes (**Volume A's**) will be derived without reference to any weekly or seasonal volume limits on the existing consents. The crop area and type as specified by the consent at 29 August 2013 and the mean daily flow rate⁸, will be used for the purposes of calculating a seasonal volume as follows:
 - a. Subject to (b) below, the mean daily flow rate will be divided by the consented crop area (ha) to determine the flow rate per hectare. The maximum flow rate per hectare shall not exceed the 90 percentile mean daily irrigation flow rate per hectare irrigated.⁹
 - b. **To avoid 'water banking', the seasonal volume assigned to the farming property or farming enterprise will be based on the area** of land for which actual irrigation infrastructure exists at 31 May 2015, unless the applicant / consent holder has an implementation plan in place that demonstrates how full irrigation of their consented irrigation area will occur by 31 May 2018.
 3. **The Hawke's Bay Regional Council will sum all of the *Volume A* limits for the farming properties or farming enterprises, excluding the volume allocated to non-irrigation use consents, and this shall be called the *Aggregate Volume A*.**
 4. **The Hawke's Bay Regional Council will determine the *Pro-rata Ratio* for each Groundwater Allocation Zone which shall be *Table 5.9.5 Groundwater Allocation Limit* excluding the volume allocated to non-irrigation use consents divided by *Aggregate Volume A*.**
 5. If the *Pro-rata Ratio* is equal to or greater than 1.0 then the groundwater allocation for each farming property or farming enterprise shall be the Seasonal Water Use Limit (*Volume A*).
 6. If the *Pro-rata Ratio* is less than 1.0 then the groundwater allocation for each farming property or farming enterprise shall be the *Pro-rata Ratio* multiplied by Seasonal Water Use Limit (*Volume A*) for that farming property or farming enterprise.
 7. For non-irrigation use consents, the annual volume shall be the existing consented annual volume, or if this is not specified, the weekly volume multiplied by 52 weeks.
 8. **Hawke's Bay Regional Council will additionally impose instantaneous limits of abstraction¹⁰ (L/s) in all cases, and it may additionally impose 7 day or 28 day abstraction limits on a case by case basis.**
- B. Groundwater takes outside of Groundwater Allocation Zones
9. For groundwater takes outside of Groundwater Allocation Zones the seasonal volume will be set in accordance with clause 1 above. Clauses 7 and 8 will also apply.
- C. Surface water Takes
10. For surface water takes the seasonal volume will be set in accordance with Policy 42. The seasonal volumes will be calculated using a consistent methodology across all takes within the same surface water allocation zone, and an appropriate scientific methodology that will achieve a result consistent with Policy 42. Appropriate scientific methodologies include:
 - Soil Plant Atmosphere System Model (SPASMO-ir), Plant and Food Research;
 - IrriCalc, Aqualinc Research Limited, Report No C09065/4, November 2009.
 11. **Hawke's Bay Regional Council will additionally impose instantaneous limits of abstraction⁴⁷ (L/s) in all cases, and it may additionally impose 7 day or 28 day abstraction limits on a case by case basis.**

⁷ The methodologies enable appropriate adjustments to model inputs to reflect particular circumstances.

⁸ The mean daily flow rate will be determined from the number of pumping hours per day and the maximum instantaneous pumping rate.

⁹ The 90 percentile mean daily irrigation flow rate per hectare is typically not more than 0.58 litres/sec/hectare (the equivalent of 5 mm per day) within Groundwater Allocation Zones 1 – 3.

¹⁰ The maximum instantaneous rate is determined by the applicant and is generally based on what the bore / pump is capable of delivering or the irrigation system specifications. Unless there are well interference effects that need to be managed through an adjustment in the instantaneous rate, it is the rate determined by the applicant that the Council will set as the maximum instantaneous rate on the resource consent.