

Greenhouse Nutrient Discharge Checklist



The rules for achieving compliance in the Auckland region

This checklist is a self-audit to assist you in determining if your discharge of nutrient solution meets the permitted activity criteria of Auckland Council rules. If you do not meet the permitted activity criteria, you must apply for a resource consent from Auckland Council. If you need assistance in making this determination please contact one of the organisations listed below.

In order to be considered a permitted activity, your operation must meet the following criteria:

- The green house footprint must be less than 1 hectare in size.
- Your irrigation discharge system complies with council rules at all times, regardless of the time of year, weather conditions, breakdown or staff issues.
- Your staff responsible for the discharge system's operation know the rules, are fully trained in its operation and maintenance, and know what to do and who to contact if the system breaks down.
- You maintain records that confirm you comply with the rules and make these available on request by Auckland Council.

Always aim for good practice rather than just achieving compliance.

Contacts

You can check out the rules in the regional plans at: aucklandcouncil.govt.nz.

Horticulture New Zealand 04 472 3795

Auckland Council 09 301 0101



Auckland permitted activity rule checklist

Permitted activity operations – application of discharged nutrient solution to land from greenhouses under 1 hectare in size.

You can carry out permitted activities without a resource consent as long as you comply with all of the following conditions:

✓ x	
Infrastructure and maintenance	
All nutrient solution is fully contained within the system (pipe work, sumps, and ponds) prior to land application.	
There are no leakages or discharges to water or land from the storage structure. This means all storage ponds must be adequately sealed and all tanks must be maintained in a water tight condition.	
The storage system for discharged nutrients must have sufficient capacity to store discharged solution when soil conditions are unsuitable for application. The volume of storage required will vary depending on the volumes discharged in winter, and the soil type.	
Application - Getting the right amount of discharged nutrient solution on the soil at the right time and in the right place	
All sources of nutrients are taken into account to determine the load, including nutrient solution, livestock, and solid fertiliser.	
<p>The application area is large enough to meet the permitted activity requirements for nitrogen loading:</p> <ul style="list-style-type: none"> • Grazed pasture¹: <ul style="list-style-type: none"> ○ limit of 30 kg/ha/month and less than 150 kg/ha/year on sites underlain by sand and volcanic soils ○ limit of 50 kgN/ha/month and less than 200 kgN/ha/year on sites underlain by soils other than sand and volcanic soils • Other cropped land: Maximum nitrogen loadings must be based on reasonable nitrogen requirements of the crop being grown and harvested <p>See the <i>Greenhouse Nutrient Discharge Decision Process</i> sheet for an example of the required application area.</p>	
No discharges into surface water can occur. The irrigation system must be setup to ensure that discharged nutrient solution is applied in a way that does not result in runoff to waterways or artificial water courses.	
Discharges must not result in ponding of more than 3 hours duration following application.	
Application does not occur when soils are wet and do not have the capacity to fully accept the discharged solution. The guidance is that soils must have greater than a 10mm soil moisture deficit in the top 300mm of soil ² .	
A 15m buffer exists between the irrigation field and any surface waters (including artificial drains) and 20m between bores and the irrigation field.	

✓ x

Recordkeeping for Auckland Council evidence	
Storage volume (m ³).	
A property map with the size and unique code of each paddock used for irrigating discharged nutrient solution.	
Soil moisture level. Soil moisture probes (see possible examples below), physical soil checks and rainfall records can be used to show that irrigation occurred when the soil had adequate capacity for the volume of solution applied.	
Daily diary: The date, soil moisture level, rainfall, field code, area irrigated, total volume of nutrient solution applied, and the cumulative nitrogen. See the Code of Practice for a suggested record keeping form.	
Lab results from analysis of discharged nutrient solution samples collected from the storage structure. It is recommended that samples are analysed at least annually for total nitrogen.	

¹ Check with Auckland Council for your nitrogen rate limits.

² Topography, rainfall, soil moisture, soil type and drainage all influence the risk of runoff and ponding. Therefore the soil moisture at the time of irrigation must be checked to ensure there is adequate capacity in the soil to accept the discharged solution. Good practice is to walk over the irrigation area prior to each application event to check soil moisture conditions. Soil moisture can be checked using soil moisture probes or records of evapotranspiration, rainfall and irrigation events. As a general guide between May and August do not apply irrigation unless there has been 10 days without rain (<2mm).

Five key elements of success	
1. Have sufficient winter storage.	
2. Know the soil moisture to determine when and how much discharged solution to irrigate.	
3. Know and track nitrogen application rates.	
4. Ensure even irrigation.	
5. Keep a record of your activities and prevailing conditions.	

Possible soil moisture probes

Quick Draw Tensiometers
Approximately \$975



Hand-held time-domain reflectometer (TDR)
Approximately \$1,300 - \$1,900

