

Dairy farm effluent

– the rules for achieving compliance in the Waikato

This checklist is a self audit to give farmers confidence they will pass a Waikato Regional Council compliance assessment. The results from your check do not need to be shared with any organisation unless you wish to.

We recommend you follow up any boxes that are not ticked as soon as possible. If you need assistance, please contact one of the organisations listed at the back of the checklist.

- You must remain compliant with Permitted Activity (PA) and consent requirements every day – regardless of the time of year, weather conditions, breakdowns or staffing issues
- Ensure you have a plan in place to cope with any of the above scenarios
- Make sure all permanent and relief staff on your farm know the rules, are fully trained in the operation and maintenance of the effluent system, and know what to do and who to contact if the system breaks down
- Ensure your plan is adjusted to match any changes to your farm system
- The Resource Management Act presumes any discharge to water is illegal unless authorised
- Accompanying this resource is a one-page quick checklist to take on-farm with you.

Note: Please see the Waikato Regional Council Regional Plan: 3.5.5 Farm Effluent Discharges for exact rule wording if required.



Waikato checklist

Effluent management

Includes solids/sludge/slurries generated from:

- milk room and washdown water
- yards, entry/exit and concrete races
- sumps, sand traps
- ponds (desludging)
- stand-off areas, concreted holding areas
- feed pads and wintering barns
- underpasses
- bridges/culverts (effluent/runoff diverted away from waterway).



Condition a) No discharge of effluent to water shall occur from any effluent holding facilities

No evidence of yard/sump/sand trap/pond/storage facilities overflowing. All effluent contained on sealed areas (e.g. by nib walls on concrete areas including entry and exit races) is directed to the effluent system

No evidence of broken pipes discharging/leaking

No overflow pipes in sumps or storage pond diversion

No evidence of effluent discharge to waterways from road underpasses

Condition b) Storage facilities and associated facilities shall be installed to ensure compliance with condition a)

There must be enough storage to hold all effluent in the event of a mechanical failure or if the soil is too wet for effluent irrigation until it can be irrigated onto land. A Dairy Effluent Storage Calculator has been developed to help with selecting storage size – contact one of the organisations listed at the back for more information

Condition c) All effluent treatment or storage facilities (e.g. sumps or ponds) shall be sealed so as to restrict seepage of effluent. The permeability of the sealing layer shall not exceed 1×10^{-9} metres per second (i.e. it does not leak. Waikato Regional Council can provide advice on soil types and sealing requirements

No leaking (observations: wet patches, long grass/dark green areas, a pond that empties itself, never needs emptying or level never varies despite inflows and outflows)

Clay ponds have battered (sloped and compacted) sides

Ponds have a liner and are well constructed. If pond appears to be leaking then a record of construction or an engineer's report may be required. If you are building a new pond, be sure to keep construction records in case they are asked for in future

Effluent sludge/sand trap solids are completely contained on sealed surfaces, which drain back into the effluent system. Solids are spread back over land, meeting conditions a) to j)

Variation 6 – An Environment Court decision has established new rules for managing the allocation of water in the Waikato Region.

If you are drawing more than 15 cubic metres of water a day for dairy wash down and milk cooling, you will most likely need a Resource Consent. For more information about Variation 6, what it will mean for your farm operation, and obtaining a consent see www.waikatoregion.govt.nz/watertakes



Condition d) The total nitrogen loading from dairy effluent shall not exceed the limit as specified

This also includes when effluent ponds are emptied by contractors. It is your responsibility to provide enough area for the contractors to irrigate onto to meet this condition. You must provide your contractor with full written instructions as to the correct application depths and areas/drains/waterways to avoid applying effluent

Check your nutrient budget for total effluent N applied to the effluent area. It must not exceed 150kgN/ha/yr on pasture, 200kgN/ha/yr on maize

Daily run sheets (where and when the irrigator has been each day). For more information refer to the *Irrigator run sheet* template

Good practice: Test the nutrient value of your effluent to determine how much N is applied at each pass

Example: 25mm (maximum applied depth) of stirred effluent applying N at a rate of 75kgN/ha, should have a maximum of 2 passes on pasture per year. Keep records of your measurements, nutrient testing, irrigator runs and effluent applications. Size your effluent application area to ensure only maintenance potassium is being applied. This will ensure compliance with N loading rule, optimise nutrient use efficiency and avoid metabolic issues

Condition e) The maximum loading rate of effluent onto any part of the irrigated land shall not exceed 25 millimetres depth per application

Keep written records to demonstrate compliance. For more information refer to the *Irrigator run sheet* template

Measure the depth of effluent applied in an irrigation pass using straight sided containers. Check at least annually. For more information refer to *A staff guide to operating your effluent irrigation system – travelling irrigator* and *A staff guide to operating your effluent irrigation system – low rate irrigator*.

Good practice: have and keep to a maintenance schedule for your effluent system

Note: while 25mm depth is maximum application depth, to avoid ponding and runoff, factors such as available soil water holding capacity, soil type, rainfall/irrigation and topography should be taken into consideration (as per condition f). For more information refer to A farmer's guide to managing farm dairy effluent

Condition f) Effluent shall not enter surface water by way of overland flow, or pond on the land surface following the application

A waterway is a water carrying body, i.e. stream, river, lake, pond, ditch, intermittently flowing drainage channel etc

No irrigation directly or indirectly to water

Good practice: keep effluent spray a minimum of 20m from any waterway at all times

No irrigation on slopes which results in runoff to waterway. Be careful that any runoff to land does not result in deeper than 25mm application or ponding in any area where the water accumulates

No irrigation hose line failures, includes leaks, broken fittings

No ponding observed after irrigator has passed (ponding is the formation of a puddle)

Runoff containing effluent from tracks and raceways, and bridges should be diverted away from waterways i.e. onto a grassy area where runoff can soak away

Condition g) Any discharge of contaminants into air arising from effluent irrigation shall comply with permitted activity conditions in Section 6.1.8 of the Waikato Regional Plan

No offensive odour beyond the boundary of your property for farm neighbours exceeding 'normal' level farm odours. Consider the placement of your irrigator in relation to your neighbours, and the wind. Check with your district council for any minimum distance requirements.

Condition h) The discharger shall provide information to show how the requirements of conditions a) to g) are being met, if requested by the Waikato Regional Council

Keep written records with dates (to demonstrate records are up to date). For more information refer to the *Irrigator run sheet* template



Condition i) The discharge does not occur within 20m of a Significant Geothermal Feature. (i.e. it is locally known, identified) If you are unsure check with the Waikato Regional Council.

Condition j) Where fertiliser is applied onto the same land on which farm animal effluent has been applied in the preceding 12 months, the application must be in accordance with Rule 3.9.4.11 (Permitted Activity for Fertiliser Application) in the Waikato Regional Plan

Implement a nutrient management plan (and make it available to Waikato Regional Council staff if requested) if you are applying fertiliser:

- a) at a rate of more than 60kg N/ha/yr; or
- b) to land that has had farm dairy effluent applied to it in the last 12 months

Spray drift (fertiliser or effluent) must not cause nuisance effects to neighbours

Fertiliser must not enter waterways

Fertiliser must be applied in accordance with the NZ Fertiliser Manufacturers Research Association, 2007: Code of Practice for Nutrient Management (www.fertresearch.org.nz)

Feed pads, stand-off areas, holding areas, concrete raceways, animal shelters, wintering barns

Note: all rules above apply for effluent generated on these areas as well

Condition a) The pad shall be sealed, so as to restrict seepage of effluent. The permeability of the sealing layer for such treatment or storage facilities shall not exceed 1×10^{-9} metres per second

Sealed = lined so that leachate can be captured and treated. If there is doubt about the sealing of your pad, you may have to provide construction records (i.e. constructed using compacted clay where soil type is suitable using standard compaction measures. Photographs are a useful record to demonstrate how the pad was made). For more information refer to the IPENZ note 21: Farm dairy effluent pond design and construction.

Condition b) No runoff or discharge of pad effluent into surface water

Effluent must be contained on the feed/stand-off pad and directed to a sealed holding facility

The surface area of a feed pad captures a lot of rainwater which needs to be dealt with. If the pad is clean, then rainwater may be diverted. Otherwise the water needs to be dealt with as effluent by way of irrigation. For more information refer to *Stand-off pads*

The pad must be located at least 20m from surface water

Condition c) Materials used to absorb pad effluent or the effluent itself when spread on land as a means of treatment do not exceed 150kg N/ha/yr on pasture or 200kg N/ha/yr on maize

Silage leachate

No runoff from the silage stack to groundwater or surface water

Good practice for silage: Silage should be stored on a sealed surface when there is a high risk of leachate reaching ground or surface water (e.g. when making low dry matter grass silage). Silage leachate should be directed to an effluent irrigation system such as a sump with a portable pump (with a storage capacity of at least 3m³/100T of grass), or into effluent storage ponds for land application, but not into two pond oxidation treatment systems as the leachate is too strong. Divert rain water away from the silage stack to reduce leachate.

(Sealed = lined so that leachate can be captured and treated)

Consented pond discharge treatment systems



Make yourself familiar and comply with the terms of your individual consent

Consent current and still relevant for the farming operation (e.g. herd size etc). A new consent will be required if there are any changes (increase) to the volume of waste to be discharged

Treated discharge not causing significant colour or clarity change to the receiving water. Pond is sealed to restrict leaching (permeability 1×10^{-9} m/second)

No untreated effluent able to get into waterways

Conditions could include (but check your individual consent):

Embankments are battered (sloped compacted sides) with no sign of water breach

At least 300mm of freeboard (difference between the water level and max pond water level)

Pond surface clear of weeds and hasn't formed a crust

Baffle in place keeping solids out of the second pond

No evidence of water short-circuiting system

Ponds are well maintained and fenced off

You can check out the rules on www.waikatoregion.govt.nz or the Waikato Regional Council publication "A Farmer's Guide to Permitted Activities Guides One and Two" which cover the following Permitted Activity Rules:

Waikato Regional Council Guide One

- Farm dairy effluent
- Stock in water-bodies
- Fertiliser and agrichemicals
- Bridges
- Culverts
- Earthworks and vegetation clearance

Waikato Regional Council Guide Two

- Composting and burning
- Dams and damming water
- Drain construction and cleaning
- Dumps and offal holes
- Indoor farming
- Lines, cables, pipelines, ropeways and associated structures
- Planting and layering near water
- Removal or demolition of structures in river and lake beds
- Sand and gravel extraction

Disclaimer: The information that appears in this checklist is intended to provide the best possible compliance guidelines for dairy farm effluent practices. However, the information is provided as a general guidance only, and is not intended as a substitute for specific advice. Practices, systems and advice may vary depending on the circumstances applicable to your situation. The information may also be subject to change at any time without notice. DairyNZ, Federated Farmers, Waikato Regional Council, Fonterra, Open Country Dairy, Tatua and AgITO take no responsibility whatsoever for the currency and/or accuracy of this information, its completeness or fitness for purpose.

Contacts

For assistance with any compliance issues on your farm, call any of these organisations:

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| DairyNZ | Sustainability team 0800 4 DairyNZ (0800 4 324 7969) |
| Fonterra | Sustainable Dairying Team 0800 65 65 68 |
| Open Country Dairy | 0508 Our Milk (0508 687 6455) |
| Tatua | 07 889 3999 |
| Waikato Regional Council | 0800 800 401 |
| Federated Farmers | 0800 Farming (0800 327 6464) |
| Primary ITO | 0800 80 20 80 |