

Appendix A

14.7 Animal Waste Systems

14.7.1 Permitted activities: No resource consent required

14.7.1.1 The use of land for the use and maintenance of an animal waste system (including storage pond(s) and ancillary structures) that was constructed prior to 25 March 2020 is a *permitted* activity providing:

- (a) The storage pond is sized in accordance with the Dairy Effluent Storage Calculator; and
- (b) The storage pond is either:
 - (i) Fully lined with an impermeable synthetic liner and has a leak detection system underlying the storage pond which is inspected not less than monthly, there is no evidence of any leakage, and a written record is kept recording the results of each inspection; or
 - (ii) Of impervious concrete construction; or
 - (iii) An above-ground tank; or
 - (iv) Certified by a Suitably Qualified Person within the last five years as:
 - (1) Structurally sound and without any visual defects; and
 - (2) Meeting the relevant pond drop test criteria in Schedule 18; and
- (c) A management plan for the animal waste system is prepared and implemented that requires:
 - (i) Pond drop tests of the storage pond(s) every three years; and
 - (ii) Implementation of contingency measures to prevent the discharge of animal waste to a surface water body, an artificial watercourse, or the coastal marine area, either directly or indirectly, in the event of power outage or the failure of equipment; and
- (d) Upon written request by the Regional Council a written statement or certificate from a Suitably Qualified Person is provided to show compliance with Conditions (a) to (c).

Appendix B

18. Schedule of storage pond drop test requirements and criteria

This schedule outlines the requirements for undertaking pond drop tests on storage ponds that are part of an animal waste system and the pass criteria for drop test results.

Requirements

- Testing is undertaken over a minimum period of 48 hours.
- Testing recording equipment is to be accurate to 0.8 mm or less.
- Continuous readings are to be taken over the entire test period at not more than 10 second intervals.
- Any change in pond fluid level over the test period needs to be accounted for.
- Ponds must be at or over 75% design depth before a test can be undertaken.
- The pond has been de-sludged in the 12 months prior to the test being undertaken and there is no sludge or crust on the pond surface during the test.
- The pond surface is not frozen during any part of the testing.
- An anemometer is installed for the duration of the test and wind speed is at 10 metres per second or less for at least 24 hours during the test.

Criteria

When tested in accordance with the requirements above, the pond is considered to meet the pond drop test criteria if the maximum pond level drop does not exceed the following:

<u>Maximum depth of pond (m) excluding freeboard</u>	<u>Maximum allowable pond level drop (mm per 24 hours)</u>
<u><0.5</u>	<u>1.2</u>
<u>0.5 to 1.0</u>	<u>1.4</u>
<u>1.0 to 1.5</u>	<u>1.6</u>
<u>1.5 to 2.0</u>	<u>1.8</u>
<u>>2.0</u>	<u>2.0</u>

19. Schedule of progressive implementation of animal waste storage requirements

Many animal waste systems in Otago will need to be upgraded to meet the requirements of this Plan. The intent of this Schedule is to stage implementation of the Plan's requirements according to the environmental risk posed by existing systems. To assess this risk, Schedule 19 provides two calculations that will determine the current storage volume available on a landholding (in days) as follows:

- Schedule 19A sets out the calculations required to determine days of storage available on a landholding.
- Schedule 19B sets out the date by which a complete resource consent application must be lodged with the Otago Regional Council under Rule 14.7.3.1 (and correspondingly Rule 14.7.1.2 ceases to apply). A complete application is one that is not determined as being incomplete by the Otago Regional Council pursuant to section 88 of the Resource Management Act 1991.

19A Storage calculation

Two calculations are required to determine the current minimum number of days of animal waste storage available on a landholding. These are set out below.

Step One: Daily waste volume

To calculate the daily waste volume per farm, use the following formula:

$$\frac{\text{Daily waste volume (m}^3\text{)}}{\text{Daily waste volume (m}^3\text{)}} \equiv \frac{\text{Maximum number of cows milked per day}}{\text{Maximum number of times per day that cows are milked during milking season}} \times 0.05^{\wedge} \times$$

^ being 0.05 cubic metres (50 litres per cow per day)

For example:

During milking season, Farm A milks 500 cows twice per day. Using the formula above:

$$\frac{\text{Daily waste volume (m}^3\text{)}}{\text{Daily waste volume (m}^3\text{)}} \equiv 500 \times 0.05 \times 2$$

$$\frac{\text{Daily waste volume (m}^3\text{)}}{\text{Daily waste volume (m}^3\text{)}} \equiv 50$$

Step Two:

To calculate the minimum number of days of storage available, use the following formula:

$$\frac{\text{Days of storage available}}{\text{available}} \equiv \frac{\text{Actual storage volume (m}^3\text{)}^\wedge \div \text{Daily waste volume (m}^3\text{)}}{\text{available}}$$

^ determined assuming that the storage facility is empty.

For example:

As calculated above, Farm A has a daily waste volume of 50 m³. The farm has a storage pond with a storage volume of 1000 m³. Using the formula above:

$$\frac{\text{Days of storage available}}{\text{available}} \equiv \frac{1000 \div 50}{\text{available}}$$

$$\frac{\text{Days of storage available}}{\text{available}} \equiv \frac{20}{\text{available}}$$

Using the table in Schedule 19B, Otago Regional Council must receive a complete resource consent application under Rule 14.7.3.1 from Farm A no later than two years from the date Plan Change 8 is made operative.

19B Application dates

The following table sets out the dates by which complete resource consent applications must be received under Rule 14.7.3.1 (and correspondingly Rule 14.7.1.2 ceases to apply). The “application date” is the date Plan Change 8 is made operative, plus the number of years in the “year” column below.

<u>Days of storage available as calculated in accordance with Schedule 19B</u>	<u>Year</u>
<u>0 – 10</u>	<u>0.5</u>
<u>11 – 40</u>	<u>2</u>
<u>41+</u>	<u>3</u>

Appendix C

14.7.2 Controlled activities: Resource consent required

14.7.2.1 The use of land for the construction, use and maintenance of an animal waste system (including storage pond(s) and ancillary structures) constructed after 25 March 2020 is a *controlled* activity provided the following conditions are met:

- (a) The storage pond is sized in accordance with the Dairy Effluent Storage Calculator; and
- (b) The storage pond is either:
 - (i) Fully lined with an impermeable synthetic liner and has an effective leak detection system that underlies the storage pond; or
 - (ii) Of concrete construction; or
 - (iii) Is an above-ground tank; and
- (c) The design of the animal waste system has been certified as being in accordance with IPENZ Practice Note 21¹ and IPENZ Practice Note 27;² and
- (d) The animal waste system is not located:
 - (i) Within 50 metres of any lake, river or regionally significant wetland; or
 - (ii) Within 90 metres of any water supply used for human consumption; or
 - (iii) Within 50 metres of any bore or soak hole; or
 - (iv) Within 50 metres of the property boundary; or
 - (v) Above subsurface drainage (other than a leak detection system); and
- (e) A management plan for the animal waste system is prepared and implemented that requires:
 - (i) For ponds that are fully lined with an impermeable synthetic liner and has an effective leak detection system that underlies the storage pond, inspections not less than monthly with a requirement to keep a written record of the results of each inspection; and
 - (ii) Pond drop tests of the storage pond(s) every three years; and
 - (iii) Implementation of contingency measures to prevent the discharge of animal waste to a surface water body, an artificial watercourse, or the coastal marine area, either directly to water or onto or into land in circumstances which may result in these contaminants entering water, in the event of power outage or the failure of equipment; and
 - (iv) If a leak is detected by the leak detection system, an assessment is undertaken by a Suitably Qualified Person within two months of the detection to determine whether the leak is within the normal operating parameters of the pond.

In granting any resource consent under this rule, the Otago Regional Council will restrict the exercise of its control to the following:

- (a) The design and construction of the system, including storage capacity, nature of the animal waste and the anticipated life of the system; and
- (b) The design, construction and adequacy of ancillary structures that are components of the animal waste system; and
- (c) The height of embankments and the placement and orientation relative to flood flows and stormwater run-off; and
- (d) Methods to protect the system from damage by animals and machinery; and
- (e) Quality of, and implementation of, a management plan for the animal waste system which requires pond drop tests of the system's storage pond(s) every three years; and
- (f) Potential adverse effects of construction, maintenance and use on water bodies, drains, groundwater, bores, drinking water supplies, the coastal marine area, stop banks, dwellings, places of assembly and urban areas; and
- (g) Location of the animal waste system; and
- (h) Measures to avoid, remedy or mitigate adverse effects on Kāi Tahu cultural and spiritual beliefs, values and uses.