



Province of Alberta

AGRICULTURAL OPERATION PRACTICES ACT

STANDARDS AND ADMINISTRATION REGULATION

Alberta Regulation 267/2001

With amendments up to and including Alberta Regulation 119/2017

Office Consolidation

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(Consolidated up to 119/2017)

ALBERTA REGULATION 267/2001

Agricultural Operation Practices Act

STANDARDS AND ADMINISTRATION REGULATION

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Definitions

1(1) In this Regulation,

- (a) “Act” means the *Agricultural Operation Practices Act*;
- (b) “aquifer” means an aquifer as defined under the *Water Act*;
- (c) “catch basin” means an excavation or a diked or walled structure that is designed to intercept and store runoff, or a combination of structures;
- (c.1) “Code” means the Manure Characteristics and Land Base Code adopted under section 2.1;
- (d) “common body of water” means the bed and shore of an irrigation canal, a drainage canal, a reservoir, a river, a stream, a creek, a lake, a marsh, a slough or another exposed body of water, but does not include
 - (i) repealed AR 85/2004 s1,
 - (ii) a reservoir, lake, marsh or slough that is completely surrounded by private land controlled by the owner or operator and has no outflow going directly beyond the private land to a drainage canal, reservoir, river, permanent stream or creek, lake or potable water source that is being used for human or livestock consumption,
 - (iii) an irrigation canal or a drainage canal that is completely surrounded by private land controlled by the owner or operator and has no outflow going beyond the private land,
 - (iv) a roadside ditch,
 - (v) a wastewater system as defined in the *Environmental Protection and Enhancement Act*,

- (vi) a storm drainage system as defined in the *Environmental Protection and Enhancement Act*, and
- (vii) a temporary stream on private land controlled by the owner or operator that has no outflow going beyond the private land directly to a drainage canal, reservoir, river, permanent stream or creek, lake or potable water source that is being used for human or livestock consumption;
- (e) repealed AR 85/2004 s1;
- (f) repealed AR 215/2006 s2;
- (g) “freeboard” means the vertical distance between the full storage level of a structure and the upper edge of the structure;
- (g.1) “groundwater resource” means an aquifer below the site of a confined feeding operation or a manure storage facility
 - (i) that is being used as a water supply for the purposes of domestic use, or
 - (ii) if no aquifer referred to in subclause (i) exists,
 - (A) an aquifer that has a sustained yield of 0.76 litres per minute or more and a total dissolved solids concentration of 4000 milligrams per litre or less as determined by well records, well drilling logs, hydrogeological maps, hydrogeological reports or other evidence satisfactory to an approval officer or the Board, and
 - (B) if there is more than one aquifer that meets the requirements of paragraph (A), the aquifer that an approval officer or the Board considers to be the best suited for development as a water supply for the purposes of domestic use;
- (h) “liner” means, with respect to a manure storage facility or manure collection area, a layer constructed out of natural or manufactured materials that restricts the migration of the contents of the manure storage facility or manure collection area;
- (i) “liquid manure” means manure that is in a predominantly liquid state or manure to which water has been added;

- (i.1) “manure handling plan” means a manure handling plan referred to in section 10;
 - (i.2) “nutrient management plan” means a nutrient management plan referred to in section 26;
 - (j) repealed AR 85/2004 s1;
 - (k) “private land” means land that is not owned by the Crown in right of Alberta or of Canada or their agents;
 - (l) “professional engineer” means a professional engineer under the *Engineering and Geoscience Professions Act*;
 - (l.1) “protective layer” means, with respect to a manure storage facility or manure collection area, one or more layers of naturally occurring materials that, individually or in the aggregate, restrict the migration of the contents of the manure storage facility or manure collection area;
 - (m) “records” include designs, plans, test results and monitoring records;
 - (n) “runoff” means liquid that drains as surface flow out of an agricultural operation or part of an agricultural operation and includes rainwater and meltwater;
 - (o) “run-on” means liquid that drains as surface flow onto an agricultural operation or part of an agricultural operation and includes rainwater and meltwater;
 - (p) “solid manure” means manure that is 20% or more solid matter and that does not flow when piled;
 - (q) “water body” means a water body as defined under the *Water Act*;
 - (r) “water table” means the top of the zone of water saturation where water pressure equals atmospheric pressure regardless of whether the water is usable;
 - (s) “water well” means a water well as defined under the *Water Act*.
- (2)** A reference to manure includes liquid manure, solid manure, composting materials and compost unless the context indicates otherwise.

AR 267/2001 s1;85/2004;215/2006;170/2012

Part 1 Standards

Standards apply

- 2(1)** This Part applies to the owner or operator of a confined feeding operation for which an approval, registration or authorization is required under the Act.
- (2)** This Part applies to the owner or operator of a manure storage facility for which an authorization is required under the Act.
- (3)** This Part applies to the owner or operator of a seasonal feeding and bedding site.
- (4)** This Part applies to the owner or operator of a manure collection area, whether or not the manure collection area is associated with a confined feeding operation required to be approved or registered under the Act or with a manure storage facility required to be authorized under the Act.
- (5)** This Part applies to a person who applies manure, composting materials or compost.
- (6)** A person to whom this Part applies must maintain the agricultural operation in accordance with the standards under this Part.

AR 267/2001 s2;85/2004;215/2006

Adopted document

- 2.1** The document with the title “Manure Characteristics and Land Base Code” published by the Department of Agriculture and Rural Development is adopted in whole without modifications pursuant to section 44(4) of the Act.

AR 215/2006 s4;35/2007;68/2008

Minimum distance separation

- 3(1)** An approval officer and the Board must not issue or amend an approval, registration or authorization for a confined feeding operation or for a manure storage facility unless the minimum distance separation for the operation or facility complies with this section.
- (2)** The minimum distance separation must be calculated using Schedule 1 as of the date the application is received by an approval officer or the Board.
- (3)** Despite subsection (2), the minimum distance separation must be not less than 150 m as of the date the application is received by an approval officer or the Board.

- (4) On request by the applicant and before the application is complete, an approval officer must provide the applicant with a preliminary calculation of the minimum distance separation.
- (5) Despite subsection (1), an approval officer or the Board may issue or amend an approval, registration or authorization if the applicant is
- (a) applying to change the type of livestock or category of livestock and the minimum distance separation for the type of livestock or category of livestock is the same as or less than the minimum distance separation for the existing type of livestock or category of livestock on the confined feeding operation,
 - (b) applying to increase the amount of manure, composting materials or compost storage or is applying to change the method of storing manure, composting materials or compost but the total amount of manure, composting materials and compost produced annually will not be increased, or
 - (c) applying to
 - (i) build a new building to replace an existing building,
 - (ii) build an additional building, or
 - (iii) modify or expand an existing buildingon the site of the confined feeding operation but the total amount of manure, composting materials and compost produced annually will not be increased.
- (6) The minimum distance separation calculated under subsections (2) and (3) does not apply to a residence within the minimum distance separation if
- (a) the owner of the residence waives, in writing, the requirements of those subsections, or
 - (b) the owner or operator of the proposed operation or facility owns or controls the residence.
- (7) If there is an application to issue or amend an approval, registration or authorization for the purpose of expanding an existing confined feeding operation or manure storage facility and there is a residence within the minimum distance separation as determined under subsections (2) and (3) an approval officer or the Board may reduce the applicable minimum distance separation.

(8) If there is an application to issue or amend an approval, registration or authorization for the purpose of expanding an existing confined feeding operation or manure storage facility and there is a residence within the minimum distance separation of the existing operation or facility as determined under subsection (9), the minimum distance separation calculated under subsections (2) and (3) does not apply with respect to that residence if an approval officer or the Board is satisfied that the residence was constructed after the owner or operator of the confined feeding operation or manure storage facility

- (a) submitted an application under the Act for an approval, registration or authorization or for an amendment of an approval, registration or authorization,
- (b) submitted an application, before January 1, 2002, for a development permit pursuant to the *Municipal Government Act* or for a licence, permit or other approval pursuant to the *Public Health Act*, or
- (c) started construction of the confined feeding operation or manure storage facility before January 1, 2002 and no development permit, licence, permit or other approval referred to in clause (b) was issued.

(9) The minimum distance separation of the existing confined feeding operation or manure storage facility described in subsection (8) is

- (a) the minimum distance separation calculated for the confined feeding operation or manure storage facility when the operation or facility was constructed, as determined by reference to
 - (i) the approval, registration or authorization issued by an approval officer or the Board,
 - (ii) the development permit issued under the *Municipal Government Act* or a licence, permit or other approval issued under the *Public Health Act*,
 - (iii) the relevant municipal bylaw under the *Municipal Government Act*, or
 - (iv) any other evidence acceptable to an approval officer or the Board,

or

- (b) the minimum distance separation calculated in accordance with Schedule 1 if a minimum distance separation was not

calculated at the time the operation or facility was constructed or if the calculation cannot be determined pursuant to clause (a).

(10) If the application referred to in subsection (8) is to issue or amend a registration or authorization, an approval officer or the Board may, based on a consideration of the effects on the community, if any, within the minimum distance separation of the confined feeding operation or manure storage facility and on consideration of the appropriate use of land, determine that subsection (8) does not apply to that application.

(11) If an approval officer or the Board determines that a confined feeding operation that has manure storage facilities or manure collection areas located on adjacent land parcels, is under the control of a single owner or operator, the approval officer or the Board must determine, for the purposes of calculating the minimum distance separation, whether that confined feeding operation is one or more operations.

(12) The owner or operator of a confined feeding operation or of a manure storage facility who holds an approval, registration or authorization with respect to the operation or facility must locate the operation or facility so that it complies with the applicable minimum distance separation, as calculated under this section.

AR 267/2001 s3;84/2003;85/2004;215/2006

Manure Storage

Seasonal feeding and bedding sites, livestock corrals

4(1) The owner or operator of a seasonal feeding and bedding site or a livestock corral must locate the site or corral 30 metres or more from a common body of water.

(2) Subsection (1) does not apply to a seasonal feeding and bedding site or a livestock corral if the owner or operator

- (a) constructs an interceptor between the site or corral and the common body of water that diverts runoff away from that common body of water, or
- (b) removes manure and bedding that accumulates at the site or corral to an appropriate manure storage facility before runoff occurs from the site or corral.

AR 267/2001 s4;85/2004

Short term solid manure storage

5(1) In this section, “short term” means an accumulated total of not more than 7 months over a period of 3 years.

(2) A person who stores solid manure, composting materials or compost for a short term in a particular location is not considered to be the owner or operator of a manure storage facility because of that storage.

(3) A person to whom subsection (2) refers must store the solid manure, composting materials and compost not less than 150 metres from the nearest residence that is not owned or under the control of the owner or operator of the storage area.

(4) Subsection (2) does not apply to a person who stores solid manure, composting materials or compost on a feedlot.

(5) Sections 7(1) and 8 apply to the solid manure, composting materials and compost stored under subsection (2).

(6) A short term solid manure, composting materials or compost storage site must be located at least 1 m above the water table and must not be located on land that

- (a) is within 30 m of a common body of water, where the land slopes towards the common body of water and the mean slope of the land measured over 90 m from the edge of the common body of water is 4% or less,
- (b) is within 60 m of a common body of water, where the land slopes towards the common body of water and the mean slope of the land measured over 90 m from the edge of the common body of water is greater than 4% but less than 6%,
- (c) is within 90 m of a common body of water, where the land slopes towards the common body of water and the mean slope of the land measured over 90 m from the edge of the common body of water is 6% or greater but less than 12%, or
- (d) has a mean slope of 12% or greater, where the land slopes towards the common body of water.

AR 267/2001 s5;85/2004;215/2006

Surface water control system

6(1) If required by an approval officer or the Board, an owner or operator of a confined feeding operation or manure storage facility must ensure that the operation or facility has

- (a) a natural surface water control system,
- (b) a constructed surface water control system, or

- (c) a combination of both systems

that meets the requirements of this section.

(2) The design, placement, construction, installation, maintenance, replacement, removal and operation of the surface water control system must comply with the following:

- (a) the system must limit the amount of surface water and run-on and runoff flowing through and from the operation or facility;
- (b) the system must not significantly alter the volume, quality or rate of water flowing to each location where water naturally discharges from the area covered by the confined feeding operation or the manure storage facility;
- (c) the system must not alter or affect any non-flowing water body;
- (d) the system must not be located on a fish bearing water body as determined from maps described in the *Code of Practice for Watercourse Crossings* adopted in section 3(2) of the *Water (Ministerial) Regulation* (AR 205/98);
- (e) if required by an approval officer or the Board, an owner or operator of a confined feeding operation or a manure storage facility must have a professional engineer
 - (i) design and develop the plans for the system,
 - (ii) stamp and sign the plans, and
 - (iii) certify that the design and the plan meet the requirements of clauses (a) to (d).

(3) The owner or operator of a confined feeding operation, manure storage facility or manure collection area must give the Director under the *Water Act* a true copy of the documents referred to in subsection (2)(e) if the Director requests a copy.

AR 267/2001 s6;215/2006

Natural water and wells

7(1) The owner or operator of a manure storage facility or a manure collection area must not construct the facility or area

- (a) less than 100 metres from a spring,
- (b) less than 100 metres from a water well, or
- (c) less than 30 metres from a common body of water.

- (2) Subsection (1)(a) and (b) does not apply if the owner or operator
- (a) demonstrates to an approval officer or the Board, before the facility or area is constructed, that an aquifer from which the spring rises or into which the water well is drilled is not likely to be contaminated by the facility, and
 - (b) if required by an approval officer or the Board, implements a groundwater monitoring program.
- (3) Subsection (1)(c) does not apply if the owner or operator demonstrates to an approval officer or the Board, before the facility or area is constructed, that
- (a) the natural drainage from the facility or area is away from the common body of water, or
 - (b) a berm or other secondary protection for the common body of water constructed by the owner or operator protects the common body of water from contamination.

AR 267/2001 s7;215/2006

Flooded areas

- 8(1)** The 1:25 year maximum flood level at a manure storage facility or at a manure collection area must be not less than one metre below any part of the facility where run-on can come into contact with the stored manure.
- (2) If the 1:25 year maximum flood cannot be determined, the manure storage facility or manure collection area must be not less than one metre below any part of the facility where run-on from the highest known flood level can come into contact with the stored manure.
- (3) Repealed AR 215/2006 s9.

AR 267/2001 s8;215/2006

Groundwater resource protection

- 9(1)** A manure storage facility and a manure collection area must have either a protective layer or a liner that meets the requirements of this section, between the facility or area and the uppermost groundwater resource below the site.
- (2) The bottom of a liner of a manure storage facility and of a manure collection area must be not less than 1 m above the water table of the site at the time of construction.

- (3) If a protective layer is used, the bottom of the manure storage facility or manure collection area must be not less than 1 m above the water table of the site at the time of construction.
- (4) The bottom of a liner or the base of a protective layer of a manure storage facility or of a manure collection area must be not less than 1 m above the top of the groundwater resource.
- (5) The protective layer of a manure storage facility and of a manure collection area must provide equal or greater protection than that provided by naturally occurring materials
- (a) 10 m in depth with a hydraulic conductivity of not more than 1×10^{-6} centimetres per second for a liquid manure storage facility,
 - (b) 5 m in depth with a hydraulic conductivity of not more than 1×10^{-6} centimetres per second for a catch basin, or
 - (c) 2 m in depth with a hydraulic conductivity of not more than 1×10^{-6} centimetres per second for a solid manure storage facility or solid manure collection area.
- (6) The liner of a manure storage facility and of a manure collection area, if constructed of compacted soil or constructed of concrete, steel or other synthetic or manufactured materials, must provide equal or greater protection than that provided by compacted soil
- (a) 1 m in depth with a hydraulic conductivity of not more than 1×10^{-7} centimetres per second for a liquid manure storage facility,
 - (b) 1 m in depth with a hydraulic conductivity of not more than 5×10^{-7} centimetres per second for a catch basin, or
 - (c) 0.5 m in depth with a hydraulic conductivity of not more than 5×10^{-7} centimetres per second for a solid manure storage facility or solid manure collection area.
- (7) An approval officer may issue or amend an approval, registration or authorization for a manure storage facility or manure collection area if it has a liner or a protection system that uses biological methods, monitoring or performance standards that provide equal or greater protection than that provided by subsection (6).
- (8) A solid manure storage facility or solid manure collection area must be constructed to have positive drainage to prevent the collection of water.

Manure storage

10(1) Subject to subsection (2), the owner or operator of a confined feeding operation must construct manure storage facilities that are sufficient to store all the manure produced by the operation over a period of at least 9 consecutive months or fewer consecutive months if an approval officer or the Board approves a manure handling plan submitted by the owner or operator.

(2) Subsection (1) does not apply to an owner or operator of a confined feeding operation who stores solid manure in accordance with section 5.

AR 267/2001 s10;85/2004;215/2006

Liquid manure containment

11(1) An open liquid manure storage facility must have a freeboard of not less than 0.5 metres when the facility is full.

(2) In addition to the requirements of subsection (1), the owner or operator of an open liquid manure storage facility must provide a system of secondary containment of the liquid manure if there is a reasonable possibility that liquid manure can be discharged into a common body of water.

12, 13 Repealed AR 215/2006 s12.

Side slope

14(1) The horizontal to vertical ratio of the slope of the inside wall of an earthen liquid manure storage facility must not be less than 3:1 and must be consistent with the requirements of the design of the liner and the equipment used in the facility.

(2) The horizontal to vertical ratio of the slope of the outside wall of an earthen liquid manure storage facility must not be less than 4:1.

(3), (4) Repealed AR 215/2006 s13.

AR 267/2001 s14;215/2006

Manure storage facility protection

15(1) The owner or operator of a manure storage facility or a manure collection area must construct it so that the outside walls are protected from erosion.

(2) The owner or operator of a liquid manure storage facility must

- (a)** construct the facility so that the inside walls, bottom and outside walls are protected from erosion and damage, and

- (b) maintain the physical integrity of the liner or protective layer.

AR 267/2001 s15;215/2006

Bottom filling

16 The owner or operator of a liquid manure storage facility must construct the facility so that the structure through which the primary cell is filled is located within the bottom quarter of the facility.

Sealing

17 The owner or operator of a liquid manure storage facility must seal the liner so that the piping and other extrusions that pass through or under the liner do not leak or create leaks in the liner.

AR 267/2001 s17;215/2006

Leak detection

18(1) If an approval officer considers that there is a risk to the environment, the approval officer may require the owner or operator of a liquid manure storage facility to install and maintain a leakage detection system for the liquid manure storage facility consisting of at least one monitoring well up gradient of the facility and at least 2 monitoring wells down gradient from the facility of a type appropriate to determine whether there are leaks.

(2) As determined by an approval officer or the Board, the owner or operator of a liquid manure storage facility must monitor the monitoring wells installed under subsection (1) at regular intervals to detect contamination from the facility.

AR 267/2001 s18;85/2004;215/2006

Catch basins

19(1) If required by an approval officer, the owner or operator of a long term solid manure storage facility or a confined feeding operation must construct a catch basin that meets the requirements of this section.

(2) The catch basin must have a storage capacity that can accommodate at least a one day rainfall that has a one in 30 year probability, as calculated in accordance with Schedule 2.

(3) In addition to the storage capacity under subsection (2), the catch basin must have a freeboard of not less than 0.5 metres when the basin is filled to capacity.

(4) The catch basin must have a marker that is clearly visible at all times and that indicates the minimum volume required to

accommodate a one day rainfall that has a one in 30 year probability, as calculated in accordance with Schedule 2.

AR 267/2001 s19;85/2004;215/2006

19.1 Repealed AR 85/2004 s11.

Fly and dust control

20(1) The owner or operator of a confined feeding operation or a manure storage facility must employ reasonable measures to control the level of infestation of flies at a location occupied by the operation, facility or site.

(2) An approval officer, an inspector or the Board may require an owner or operator of a confined feeding operation or a manure storage facility to use a specific dust or fly control program at a location occupied by the operation, facility or site.

AR 267/2001 s20;215/2006

Unused operation or facility

21 The owner or operator of land or buildings that are a confined feeding operation, a manure storage facility or a seasonal feeding and bedding site that are not being used as a confined feeding operation, a manure storage facility or a seasonal feeding and bedding site must remove the manure, composting materials and compost from the land or buildings within one year, or a shorter or longer term set by an approval officer, an inspector or the Board.

AR 267/2001 s21;85/2004;215/2006

Nutrient Management

Application and interpretation

22(1) Sections 22 to 27 apply to manure, composting materials and compost.

(2) All the contents of a catch basin are manure, composting materials and compost for nutrient management purposes.

AR 267/2001 s22;85/2004

Nutrient management requirements

23 The owner or operator of an agricultural operation must manage manure, composting materials and compost in accordance with the nutrient management requirements of Schedule 3.

AR 267/2001 s23;85/2004

Manure application limits

24(1) A person must apply manure, composting materials or compost only to arable land and, subject to subsections (5) to (7), if applied to cultivated land, the manure, composting materials or compost must be incorporated within 48 hours of application.

(2) An applicant for an approval or registration or an amendment of an approval or registration must satisfy an approval officer or the Board that for the first year following the granting of the application, the applicant

- (a) has access to sufficient land, to meet the land base requirements determined in accordance with the Code,
- (b) has a nutrient management plan that indicates that the applicant has access to sufficient land for application of the manure to be produced, or
- (c) has a manure handling plan that reduces or eliminates the need to comply with the land base requirements determined in accordance with the Code.

(3) A person must

- (a) have access to sufficient land for the application of manure, composting materials and compost so that the application limits for nitrate-nitrogen in Schedule 3 are not exceeded, or
- (b) have a nutrient management plan that has been approved by the Board.

(4) A person must not apply manure, composting materials or compost to land if the person does not have permission to apply manure to the land or does not manage or control the land.

(5) A person may apply manure, composting materials and compost without incorporation

- (a) on forage or directly seeded crops, and
- (b) subject to subsections (6) and (7), on frozen or snow-covered land,

if the manure, composting materials or compost is applied at least 150 m from any residence or other building or structure occupied by people.

(6) An owner or operator of a confined feeding operation or manure storage facility who stores manure in accordance with

section 10 must not apply manure, composting materials or compost on frozen or snow-covered land unless

- (a) the application of manure, composting materials or compost has been permitted by an inspector, or
- (b) the Board publishes a notice permitting the application pursuant to subsection (7).

(7) If the Board considers that weather conditions prevent the normal application of manure, composting materials or compost, the Board may permit, by a notice, the owners or operators of confined feeding operations or manure storage facilities described in subsection (6) to apply manure, composting materials and compost on frozen or snow-covered land in a geographical area, within a set time and subject to any other conditions imposed by the Board in the notice.

(8) The notice referred to in subsection (7) may be published by the Board in a form and manner that the Board considers appropriate.

(9) A person must not apply manure, composting materials or compost

- (a) within 10 m of a common body of water if the person is using subsurface injection,
- (b) within 30 m of a common body of water if the person is applying the manure, composting materials or compost to the surface and incorporating it within 48 hours, or
- (c) within 30 m of a water well.

(10) A person must not apply manure, composting materials or compost on frozen or snow-covered land and on forage and directly seeded crops on land that

- (a) is within 30 m of a common body of water, where the land slopes towards the common body of water and the mean slope of the land measured over 90 m from the edge of the common body of water is 4% or less,
- (b) is within 60 m of a common body of water, where the land slopes towards the common body of water and the mean slope of the land measured over 90 m from the edge of the common body of water is greater than 4% but less than 6%,
- (c) is within 90 m of a common body of water, where the land slopes towards the common body of water and the mean

slope of the land measured over 90 m from the edge of the common body of water is 6% or greater but less than 12%, or

- (d) has a mean slope of 12% or greater, where the land slopes to a common body of water.

AR 267/2001 s24;85/2004;215/2006

Soil protection

25(1) Subject to subsection (2), a person must not apply manure, composting materials or compost to soil unless the soil has been tested within the previous 3 years in accordance with Schedule 3.

(2) Subsection (1) does not apply to a person who applies less than a total of 500 tonnes of manure, composting materials or compost annually.

(3) A person must not apply manure, composting materials or compost in an amount that would increase the soil salinity after the manure, composting materials or compost is applied by more than one decisiemens per metre as measured by the electrical conductivity from a soil depth of 0 to 15 cm.

(4) A person must not apply manure, composting materials or compost to soil if the soil salinity is more than 4 decisiemens per metre as measured by the electrical conductivity from a soil depth of 0 to 15 cm.

(5) A person must not apply manure, composting materials or compost to soil if the nitrate-nitrogen in the soil after the manure, composting materials or compost is applied will exceed the limits in Schedule 3.

(6) Despite subsections (3), (4) and (5), an approval officer, an inspector or the Board may, if the approval officer, inspector or Board considers that it will be beneficial to the soil, permit a person to apply any one or more of the following to the soil:

- (a) manure;
- (b) composting materials;
- (c) compost.

(7) A person who meets the land requirements of section 24(2)(a) and who applies manure, composting materials or compost in accordance with this section is not required to submit a nutrient management plan to the Board.

AR 267/2001 s25;85/2004;215/2006

Nutrient management plan

25.1 A person who meets the requirements of section 24(2) and when applying manure, composting materials or compost meets the requirements of section 25, is not required to submit a nutrient management plan to the Board.

AR 85/2004 s17

Nutrient management plan

26 Despite sections 24 and 25, an approval officer, an inspector or the Board may permit a person to apply manure to land in accordance with a nutrient management plan proposed by the person if the approval officer, the inspector or the Board considers that implementing the nutrient management plan will provide equal or greater protection to the water and soil than would be achieved by complying with sections 24 and 25.

AR 267/2001 s26;85/2004;215/2006

Irrigation of manure

27(1) A person who applies liquid manure or catch basin contents must ensure that the manure or catch basin contents do not create a risk to the environment by leaving the land to which they are applied, by entering a common body of water or by becoming return flow.

(2) A person must not apply liquid manure or catch basin contents on a crop that is grown for human consumption and intended to be eaten uncooked.

Part 2

General Administration Matters

Records

28(1) An owner or operator of an agricultural operation involving livestock or manure, composting materials or compost must keep the following records:

- (a) the documents, or true copies of them, submitted to the Board on an application under Part 2 of the Act;
- (b) the designs, plans or other documents, or true copies of them, certified by a professional engineer for the purposes of this Regulation or a variance under the Act.

(2) A confined feeding operation must keep the following records:

- (a) the volume or weight of manure, composting materials or compost production;

- (b) the name and address of a person to whom control of a total of 500 tonnes or more of manure, composting materials or compost in a year is transferred;
- (c) the date of the transfer of manure, composting materials or compost;
- (d) the volume or weight of manure, composting materials or compost transferred.

(3) A person who transfers control of manure, composting materials or compost to another person must keep the following records:

- (a) the name and address of the person to whom a total of 500 tonnes or more of manure, composting materials or compost in a year is transferred;
- (b) the date of the transfer of manure, composting materials or compost;
- (c) the volume or weight of manure, composting materials or compost transferred.

(4) A person who receives or removes a total of 500 tonnes or more of manure, composting materials or compost in a year must keep the following records:

- (a) the volume or weight of manure, composting materials or compost received or removed;
- (b) the name and address of a person from whom manure, composting materials or compost are received or removed;
- (c) the date of the receipt or removal of manure, composting materials or compost.

(5) A person who applies a total of 500 tonnes or more of manure, composting materials or compost in a year to land under the person's control must keep the following records:

- (a) the name and address of the person from whom manure, composting materials or compost are received;
- (b) the date the manure, composting materials or compost are received;
- (c) the volume or weight of manure, composting materials or compost received;

- (d) the legal land description of the land to which manure, composting materials or compost are applied;
- (e) the area of the land to which manure, composting materials or compost are applied;
- (f) the date the manure, composting materials or compost are applied;
- (g) the volume or weight of manure, composting materials or compost applied;
- (h) the application rates of manure, composting materials or compost nutrients and fertilizer by field and year;
- (i) the dates of application and incorporation and the methods used for each field;
- (j) the soil test results by field for the nutrients specified in Schedule 3.

(6) A person who is required to keep a record under subsection (1) must keep it for as long as the owner or operator of the agricultural operation involving livestock owns or operates the operation.

(7) A person who is required to keep a record under subsections (2) to (5) must keep it for 5 years.

AR 267/2001 s28;85/2004

Expiry

29 For the purpose of ensuring that this Regulation is reviewed for ongoing relevancy and necessity, with the option that it may be repassed in its present or an amended form following a review, this Regulation expires on June 30, 2020.

AR 267/2001 s29;85/2004;31/2014;119/2017

Coming into force

30(1) This Regulation comes into force on January 1, 2002.

(2) Sections 4, 23 and 25 do not apply before January 1, 2005 to an agricultural operation.

Schedule 1

Determination of Minimum Distance Separation

Definitions

1 In this Schedule,

- (a) “dispersion factor” allows for a variance to the MDS due to the unique climatic and topographic influences at the site, and is determined in accordance with section 5;
- (b) “expansion factor” applies only to expanding operations that are increasing the size of the facility to store more manure, composting materials and compost or to accommodate more livestock, and is determined in accordance with section 6;
- (c) “exponent” (K) equals 0.365 for all categories or types of livestock;
- (d) “Factor A” is the nuisance value of the category or type of livestock determined in accordance with Table 1;
- (e) “MDS” means minimum distance separation determined in accordance with section 2;
- (f) “MU” is a manure unit based on the amount of manure produced by a category and type of livestock determined in accordance with Table 1;
- (g) “odour objective” means the odour objective determined in accordance with section 4;
- (h) “odour production” means odour production determined in accordance with section 3;
- (i) “technology factor” is the effect the manure system will have on reducing the odour nuisance level and is determined in accordance with section 7.

Minimum distance separation (MDS)

2 The MDS is measured from the outside walls of neighbouring residences (not property line) to the point closest to manure storage facilities or manure collection areas. The MDS is calculated in metres as follows:

- (a) for new operations, $MDS = (\text{odour production}_{(total)})^K \times \text{odour objective} \times \text{dispersion factor}$;
- (b) for expanding operations, $MDS = (\text{odour production}_{(total)})^K \times \text{odour objective} \times \text{dispersion factor} \times \text{expansion factor}$.

Odour production

3 Odour production $_{(total)}$ is calculated by the following steps:

- (a) $LSU \text{ Factor}_{(type of livestock)} = \text{Factor A} \times \text{technology factor} \times \text{MU}$;

- (b) odour production_(type of livestock) = LSU factor_(type of livestock) X number of animals_(type of livestock);
- (c) odour production_(total) = sum of odour production from each type of livestock.

Odour objective

4 The odour objective factor must be determined according to the category of land zoning and residential type as follows:

- (a) for Category 1 - residences on land zoned for agricultural purposes (e.g., farmstead, acreage residences), odour objective factor 41.04;
- (b) for Category 2 - residences on land zoned for non-agricultural purposes (e.g., country residential, rural commercial businesses), odour objective factor 54.72;
- (c) for Category 3 - residences on land zoned for high use recreational or commercial purposes, odour objective factor 68.40;
- (d) for Category 4 - residences on land zoned for large-scale country residential, rural hamlet, village, town or city, odour objective factor 109.44.

Dispersion factor

5(1) Unless information is provided to establish otherwise to an approval officer's or the Board's satisfaction, the dispersion factor must equal 1.0.

(2) The dispersion factor, if applied, must be determined for the following unique conditions that can influence dispersion:

- (a) topography factor (D_T), the effect of topographical features on air dispersion;
- (b) screening factor (D_S), the effect of natural or constructed screening which reduces wind effects at the manure storage facility;
- (c) micro-climate factor (D_W), the effect of temperature, humidity and wind direction and intensity that demonstrates significant alteration in odour intensity or frequency of occurrence in relation to neighbouring residences.

Expansion factor

6(1) Unless information is provided to establish otherwise to an approval officer's or to the Board's satisfaction, the expansion factor must equal 1.0.

(2) Despite subsection (1), an approval officer or the Board must apply an expansion factor of 0.77 when calculating the minimum distance separation if the confined feeding operation or manure storage facility cannot meet the minimum separation distance without the use of this factor.

(3) For the purposes of subsection (2), an approval officer or the Board may apply the expansion factor of 0.77 only if 3 or more years have passed since the completion of the most recent construction arising out of an approval, registration or authorization or an amendment of an approval, registration or authorization.

Technology factor

7 The technology factor must be determined according to Table 1 unless information is provided to establish otherwise to an approval officer's or to the Board's satisfaction.

New types of livestock

8 An approval officer or the Board may determine, within a category of livestock specified in the Schedules to the *Agricultural Operations, Part 2 Matters Regulation* (AR 257/2001) for an unlisted type of livestock, based on manure production, the relevant factors, units and other measurements required to apply this Regulation to that type.

Table 1
Livestock Siting Unit (LSU) Table for
Livestock Categories and Types

Category of Livestock	Type of Livestock	Factor A	Technology Factor	MU	LSU Factor
Beef	Cows/Finishers (900+ lbs)	0.700	0.700	0.910	0.446
	Feeders (450 - 900 lbs)	0.700	0.700	0.500	0.245
	Feeder Calves (< 550 lbs)	0.700	0.700	0.275	0.135
Dairy (*count lactating cows only)	*Free Stall – Lactating Cows with all associated dries, heifers, and calves *	0.800	1.100	2.000	1.760
	*Free Stall – Lactating with Dry Cows only *	0.800	1.100	1.640	1.443
	Free Stall – Lactating cows only	0.800	1.100	1.400	1.232

Category of Livestock	Type of Livestock	Factor A	Technology Factor	MU	LSU Factor
	Tie Stall – Lactating cows only	0.800	1.000	1.400	1.120
	Loose Housing – Lactating cows only	0.800	1.000	1.400	1.120
	Dry Cow	0.800	0.700	1.000	0.560
	Replacements – Bred Heifers (Breeding to Calving)	0.800	0.700	0.875	0.490
	Replacements - Growing Heifers (350 lbs to breeding)	0.800	0.700	0.525	0.294
	Calves (< 350 lbs)	0.800	0.700	0.200	0.112
Swine Liquid (*count sows only)	Farrow to finish *	2.000	1.100	1.780	3.916
	Farrow to wean *	2.000	1.100	0.670	1.474
	Farrow only *	2.000	1.100	0.530	1.166
	Feeders/Boars	2.000	1.100	0.200	0.440
	Growers/Roasters	2.000	1.100	0.118	0.260
	Weaners	2.000	1.100	0.055	0.121
Swine Solid (*count sows only)	Farrow to finish *	2.000	0.800	1.780	2.848
	Farrow to wean *	2.000	0.800	0.670	1.072
	Farrow only *	2.000	0.800	0.530	0.848
	Feeders/Boars	2.000	0.800	0.200	0.320
	Growers/Roasters	2.000	0.800	0.118	0.189
	Weaners	2.000	0.800	0.055	0.088
Poultry	Chicken – Breeders - Solid	1.000	0.700	0.010	0.007
	Chicken – Layer - Liquid (includes associated pullets)	2.000	1.100	0.008	0.018
	Chicken – Layers (Belt Cage)	2.000	0.700	0.008	0.011
	Chicken – Layers (Deep Pit)	2.000	0.700	0.008	0.011
	Chicken – Pullets/Broilers	1.000	0.700	0.002	0.001
	Turkeys – Toms/Breeders	1.000	0.700	0.020	0.014
	Turkey – Hens (light)	1.000	0.700	0.013	0.009
	Turkey – Broilers	1.000	0.700	0.010	0.007
	Ducks	1.000	0.700	0.010	0.007
	Geese	1.000	0.700	0.020	0.014

Category of Livestock	Type of Livestock	Factor A	Technology Factor	MU	LSU Factor
Horses	PMU	0.650	0.700	1.000	0.455
	Feeders > 750 lbs	0.650	0.700	1.000	0.455
	Foals < 750 lbs	0.650	0.700	0.300	0.137
	Mules	0.600	0.700	1.000	0.420
	Donkeys	0.600	0.700	0.670	0.281
Sheep	Ewes/rams	0.600	0.700	0.200	0.084
	Ewes with lambs	0.600	0.700	0.250	0.105
	Lambs	0.600	0.700	0.050	0.021
	Feeders	0.600	0.700	0.100	0.042
Goats	Meat/Milk (per Ewe)	0.700	0.700	0.170	0.083
	Nannies/Billies	0.700	0.700	0.140	0.069
	Feeders	0.700	0.700	0.077	0.038
Bison	Bison	0.600	0.700	1.000	0.420
Cervid	Elk	0.600	0.700	0.600	0.252
	Deer	0.600	0.700	0.200	0.084
Wild Boar	Feeders	2.000	0.800	0.140	0.224
	Sow (farrowing)	2.000	0.800	0.371	0.594

AR 267/2001 Sched.1;215/2006;306/2006

Schedule 2

Determination of Catch Basin Volume

One Day Rainfall (mm): A one day rainfall that has a 1 in 30 year probability.

One Day Rainfall Runoff Volume =
Drainage Area x One Day Rainfall x Runoff Coefficient

Table 1
Runoff Coefficients for
Paved and Unpaved Drainage Areas

One Day Rainfall (mm) 1 in 30 year probability	Runoff Coefficient Unpaved Drainage Area	Runoff Coefficient Paved Drainage Area
65 - 86	0.60	1.0
87 - 95	0.65	1.0
96 - 105	0.70	1.0

Table 2
Precipitation Data

Location	One Day Rainfall (mm) 1 in 30 year
Acadia Valley	75
Airdrie	95
Athabasca	80
Banff	60
Barrhead	80
Bashaw	85
Bassano	85
Beaumont	90
Beaverlodge	85
Berwyn	80
Black Diamond	90
Blackfalds	95
Bon Accord	85
Bonnyville	75
Bow Island	80
Bowden	95
Brooks	80
Bruderheim	95
Calgary	95
Calmar	95
Campsie	80
Camrose	85
Canmore	65
Cardston	100
Carstairs	105
Castor	85
Claresholm	95
Coaldale	85
Cochrane	75
Cold Lake	75
Coleman	70
Coronation	85

Location	One Day Rainfall (mm) 1 in 30 year
Cowley	75
Crossfield	105
Daysland	85
Devon	90
Didsbury	100
Drayton Valley	85
Drumheller	80
Eckville	105
Edmonton	90
Edson	75
Elk Point	75
Embarras Portage	80
Fairview	80
Falher	55
Foremost	70
Fort Chipewyan	70
Fort Macleod	90
Fort McMurray	85
Fort Saskatchewan	80
Fort Vermilion	60
Fox Creek	90
Gibbons	85
Gliechen	90
Grand Centre	75
Grande Cache	70
Grande Prairie	80
Granum	95
Grimshaw	80
Habay	65
Hanna	90
Hardisty	70
High Level	75

Location	One Day Rainfall (mm) 1 in 30 year
High Prairie	75
High River	95
Hinton	75
Innisfail	95
Irvine	75
Jasper	70
Keg River	60
Killam	90
Kitscoty	80
Lac La Biche	80
Lacombe	85
Lake Louise	55
Lamont	90
Leduc	90
Lethbridge	90
Lloydminster	70
Magrath	80
Manning	75
Mayerthorpe	90
McLennan	65
Medicine Hat	85
Milk River	70
Millet	95
Morinville	90
Morrin	75
Mundare	90
Nanton	95
Okotoks	95
Olds	95
Oyen	75
Peace River	60
Penhold	95
Picture Butte	85
Pincher Creek	100

Location	One Day Rainfall (mm) 1 in 30 year
Ponoka	80
Provost	80
Rainbow Lake	75
Ranfurly	85
Raymond	75
Red Deer	90
Redcliff	85
Redwater	80
Rimbey	100
Rocky Mountain House	80
Ryley	90
Sangudo	95
Sedgewick	95
Sexsmith	85
Sherwood Park	90
Slave Lake	75
Smoky Lake	75
Spirit River	75
Spruce Grove	90
Stavely	95
Stettler	90
Stony Plain	90
Strathmore	80
St. Albert	95
St. Paul	75
Suffield	80
Sundre	95
Swan Hills	95
Sylvan Lake	95
Taber	85
Thorhild	75
Three Hills	80
Tofield	95

Location	One Day Rainfall (mm) 1 in 30 year
Trochu	75
Turner Valley	90
Two Hills	80
Valleyview	80
Vauxhall	85
Vegreville	80
Vermilion	80
Viking	65
Vulcan	90
Wagner	70
Wainwright	75
Warner	75
Wembley	85
Westlock	75
Wetaskiwin	80
Whitecourt	90
Wimborne	85

AR 267/2001 Sched.2; 215/2006

Schedule 3 Nutrient Management and Determination of Land Base

Soil Testing

Soil testing and sampling must be conducted according to the most recent edition of the Manual on Soil Sampling and Methods of Analysis, published by the Canadian Society of Soil Science.

Soil Analysis

Standard laboratory procedures must be used for the soil analysis and this information should be reflected and referenced in the records kept and soil testing must include the following:

- (a) extractable nitrate-nitrogen (NO₃-N) from a soil depth of 0 - 60 cm;
- (b) soil salinity based on Electrical Conductivity (E.C.) from a soil depth of 0 - 15 cm;

- (c) soil texture; one-time analysis from a soil depth of 0 - 15 cm and 15 - 30 cm.

Tables 1 and 2 Repealed AR 215/2006 s25.

Nitrate-Nitrogen Limits

The nitrate-nitrogen (NO₃-N) levels in the top 60 cm of the soil profile must not exceed the following limits shown in Table 3.

Table 3
Nitrate-Nitrogen Limits

Soil	Sandy (> 45% Sand and Water Table < 4m)	Sandy (> 45% Sand and Water Table > 4 m)	Medium and Fine Textured Soils
Brown	80 kg/ha (75 lb/ac)	110 kg/ha (100 lb/ac)	140 kg/ha (125 lb/ac)
Dark Brown	110 kg/ha (100 lb/ac)	140 kg/ha (125 lb/ac)	170 kg/ha (150 lb/ac)
Black	140 kg/ha (125 lb/ac)	170 kg/ha (150 lb/ac)	225 kg/ha (200 lb/ac)
Grey Wooded	110 kg/ha (100 lb/ac)	140 kg/ha (125 lb/ac)	170 kg/ha (150 lb/ac)
Irrigated	180 kg/ha (160 lb/ac)	225 kg/ha (200 lb/ac)	270 kg/ha (240 lb/ac)

Tables 4 to 30 Repealed AR 215/2006 s25.

AR 267/2001 Sched. 3;215/2006



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