

NATURAL RESOURCES CONSERVATION BOARD

How to complete the AOPA application form:

Part 2—Technical Requirements, Runoff Control Catch Basins

February 2018

This guide is intended to help applications complete Part 2—Technical Requirements, Runoff Control Catch Basins for an application under the *Agricultural Operation Practices Act* for an approval, registration or authorization to expand or construct a confined feeding operation, manure collection area or manure storage facility.

Table of Contents

How to complete Part 2— Technical Requirements, Runoff Control Catch Basin	1
Filling out the form	1
Naturally occurring protective layer	2
Compacted soil liner.....	4
Synthetic liner	7
Alternative liner	9
Appendix 1: NRCB field office service areas.....	11
Appendix 2: Glossary of terms.....	12

How to complete Part 2— Technical Requirements, Runoff Control Catch Basin

Applicants who wish to construct or expand a confined feeding operation, manure collection area or manure storage facility must complete the required Part 2 application forms. Part 2—Technical Requirements, Runoff Control Catch Basin must be completed if relevant to the proposed expansion or new construction being applied for.

To determine which sections of this form must be completed for your proposed development, please contact a Natural Resources Conservation Board (NRCB) approval officer in your region (see Appendix 1). The approval officer will confirm which sections must be completed and whether other information is required for your application.

In order to complete the Part 2—Technical Requirements, Runoff Control Catch Basin form, you must provide the information, measurements, calculations, plans, and reports as indicated. The NRCB approval officer can identify where you may wish or be required to hire a third party consultant or professional, at your expense, to assist with technical information.

An NRCB approval officer can also help you determine the permit implications of the options you are considering. NRCB approval officers will not carry out any design work or conduct any testing or sampling on behalf of an applicant.

Note: A delay by the applicant, the agent or their consultants in providing the required information will result in a delay in processing the application.

Filling out the form

If the space provided is not sufficient to enter all of your information, please use a separate sheet for additional information.

Shaded portions of the form are marked “NRCB USE ONLY.” Please do not write in these sections. These sections will be completed by the NRCB approval officer during the technical review of the application.

Sections of the form are provided below with examples to illustrate the information applicants should provide.

Naturally occurring protective layer

An engineering soils investigation is required for most runoff control catch basins that have a naturally occurring protective layer. Contact an NRCB approval officer to determine the scope of the required soils investigation.

Naturally occurring protective layers for runoff control catch basins are required to have a minimum thickness of five metres and a maximum hydraulic conductivity of 1×10^{-6} cm/s.

Runoff control catch basins require a clearly visible marker in the catch basin that indicates the amount of storage volume required to accommodate runoff from a one-in-30 year, one-day precipitation event, in addition to maintaining a 0.5 metre freeboard. Markers must not compromise the integrity of the protective layer.

A calculator for determining the volume of a catch basin is available online at <http://www.agric.gov.ab.ca/app19/calc/volume/dugout.jsp>.

Complete the following steps to calculate the minimum catch basin storage requirement:

- Step 1. Determine the area that will drain into the catch basin in square metres.
- Step 2. From [Table 2 of Schedule 2](#) of the **Standards and Administration Regulation**, Agricultural Operation Practices Act, locate the town nearest to the confined feeding operation and determine the one-day rainfall with a one-in-30 year probability.
- Step 3. From [Table 1 of Schedule 2](#) of the **Standards and Administration Regulation**, Agricultural Operation Practices Act, determine the applicable runoff coefficient for the proposed liner or floor type for the determined one-day rainfall.
- Step 4. Multiply the drainage area (in square metres) by the rainfall amount (in metres) and by the runoff coefficient. Be sure to use metres in this calculation. The calculation will indicate (in cubic metres) the minimum required storage capacity that the catch basin will need to provide.

If you have questions about calculating the minimum storage requirement of the catch basin, contact the NRCB approval officer for assistance.

RUNOFF CONTROL CATCH BASIN: Naturally occurring protective layer <i>(complete a copy of this section for EACH runoff control catch basin with a naturally occurring protective layer)</i> 1								
Facility description / name <i>(as indicated on site plan)</i>				1. <u>Northeast Catchbasin</u> 2. <u>Southeast Catchbasin</u> 3. _____				
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> Determination of minimum required catch basin volume Show your calculations for determining the minimum required catch basin volume $80000 \text{ m}^2 \times 0.08 \text{ m} \times 0.6 = 3840 \text{ m}^3$ 2 </div> <div style="width: 50%;"> Provide calculation assumptions: Area inside berm = 80000 m^2; 1 in 30 rainfall = $80 \text{ mm} = 0.08 \text{ m}$; runoff Coefficient = 0.6 </div> </div>								
Catch basin capacity								
	Length (m)	Width (m)	Depth (m)	Slope run:rise			Estimated storage capacity (excl. freeboard) (m^3)	Depth below grade of the catch basin floor (m)
				Inside end walls	Inside side walls	Outside walls		
1.	60m	40m	3.5m	3:1	3:1	4:1	4113 m^3	3.0m
2.	60m	40m	3.5m	3:1	3:1	4:1	4113 m^3	3.0m
3.		3			4		5	6
TOTAL CAPACITY							8226m^3	

- 1 Enter the catch basin description/name as indicated on the site plan.
- 2 Enter the drainage area, the one-in-30 year rainfall, the runoff coefficient and the minimum runoff storage volume in the spaces provided.

- 3 Enter the length and width, in metres. These dimensions should be measured at the interior top of the proposed catch basin. Enter in the appropriate box the depth, in metres, measured from the interior top of the catch basin to the top of the floor of the catch basin.
- 4 Enter in the appropriate boxes the proposed interior end wall slope, the interior side wall slope, and the exterior wall slopes of the catch basin. The slopes are required to calculate the catch basin volume as well as provide an indication of slope stability and potential construction limitations.
- 5 Enter the calculated capacity of the catch basin. All catch basins must be able to contain a one-in-30 year rainfall event. In addition, a freeboard of 0.5 metres on top of the maximum designed capacity is required.
- 6 Provide the depth of the catch basin floor below the natural ground level (grade).

Naturally occurring protective layer details			
a. Naturally occurring protective layer <div style="text-align: center;">7</div>	Thickness of naturally occurring protective layer <u>5.0</u> (m)	Provide details: <u>Borehole logs indicate heavy clay for a depth of more than 5m below bottom of facilities and 5m surrounding facilities.</u>	
b. Soil texture <div style="text-align: center;">8</div>	<u>18-20</u> % sand	<u>20-22</u> % silt	<u>60-62</u> % clay
c. Hydraulic conductivity - naturally occurring protective layer <div style="text-align: center;">9</div>	Material tested Borehole: <u>4</u> Depth: <u>3.0-8.0</u> (m)	Hydraulic conductivity (cm/s) <u>5×10^{-7} cm/sec</u>	Describe test standard used <u>Field falling head test conducted in borehole to ATSM 5093.</u>
Additional information: (attach copies of soil test reports) <div style="text-align: center;">10</div> <u>See attd engineering soils rpt for hydraulic conductivity & soil information details. See engineering plan for location & sizes of catch basins.</u>			

- 7 Provide the thickness of the naturally occurring protective layer(s), in metres, that is proposed to provide the groundwater protection. Describe the type of soil material that would be used as the naturally occurring protective layer(s).
- 8 Provide the results of laboratory tests for the percentage of sand, silt and clay for the naturally occurring protective layer(s). Enter this information in the appropriate box, as a range using the highest and lowest values found. Copies of the test results should be attached to the application.
- 9 Not all naturally occurring protective layers require hydraulic conductivity testing. If it is not clear whether or not the naturally occurring material can provide adequate protection, in-situ hydraulic conductivity testing will likely be required. Contact an NRCB approval officer to clarify whether hydraulic conductivity testing is required for your proposed site.

If hydraulic conductivity testing is done, provide the borehole number and the range of depth in metres across the borehole over which the hydraulic conductivity test was conducted. Enter the hydraulic conductivity test results in centimetres per second and describe the test method used to determine the hydraulic conductivity.

Hydraulic conductivity determined using re-compacted soil samples or consolidation tests are typically **not** accepted for naturally occurring protective layers. In-situ hydraulic conductivity testing is generally accepted.
- 10 If there is additional information you would like to provide regarding the runoff control catch basin, enter it in this space. Include details of any proposed leakage detection or groundwater monitoring.

Attach copies of soil test reports.

Note: 1 metre = 3.2808 feet 1 foot = 0.3048 metres
 1 m³ = 35.315 ft³ 1 ft³ = 0.0283 m³

Compacted soil liner

An engineering soils investigation is required for most runoff control catch basins that have a compacted soil liner. Contact an NRCB approval officer to determine the scope of the required soils investigation.

Compacted soil liners for runoff control catch basins must be a minimum of one metre thick and to have a hydraulic conductivity no greater than 5×10^{-7} cm/s.

Runoff control catch basins require a clearly visible marker in the catch basin that indicates the amount of storage volume required to accommodate runoff from a one-in-30 year, one-day precipitation event, in addition to maintaining a 0.5 metre freeboard. Markers must not compromise the integrity of the compacted liner.

A calculator for determining the volume of a catch basin is available online at <http://www.agric.gov.ab.ca/app19/calc/volume/dugout.jsp>.

Complete the following steps to calculate the minimum catch basin storage requirement:

- Step 1. Determine the area that will drain into the catch basin in square metres.
- Step 2. From [Table 2 of Schedule 2](#) of the **Standards and Administration Regulations, Agricultural Operation Practices Act**, locate the town nearest to the confined feeding operation and determine the one-day rainfall with a one-in-30 year probability.
- Step 3. From [Table 1 of Schedule 2](#) of the **Standards and Administration Regulations, Agricultural Operation Practices Act**, determine the applicable runoff coefficient for the proposed liner/floor type for the determined one day rainfall.
- Step 4. Multiply the drainage area (in square metres) by the rainfall amount (in metres) and by the runoff coefficient. Be sure to use metres in this calculation. The calculation will indicate (in cubic metres) the minimum required storage capacity that the catch basin will need to provide.

If you have questions about calculating the minimum storage requirement of the catch basin, contact the NRCB approval officer for assistance.

RUNOFF CONTROL CATCH BASIN: Compacted soil liner <small>(complete a copy of this section for EACH runoff control catch basin with a compacted soil liner)</small>								
Facility description / name <small>(as indicated on site plan)</small>				11 1. <u>North Catchbasin</u> 2. <u>West Catchbasin</u> 3. _____				
Determination of minimum required catch basin volume								
Show your calculations for determining the minimum required catch basin volume $80000 \text{ m}^2 \times 0.08 \text{ m} \times 0.6 = 3840 \text{ m}^3$				Provide calculation assumptions: <u>Drainage area = 80000 m² in 30 yr rainfall = 80 mm = 0.08 m; runoff coefficient = 0.6</u>				
Catch basin capacity								
	Length (m)	Width (m)	Depth (m)	Slope run:rise			Estimated storage capacity (excl. freeboard) (m ³)	Depth below grade of the bottom of the liner(m)
				Inside end walls	Inside side walls	Outside walls		
1.	<u>60</u>	<u>40</u>	<u>3.5</u>	<u>3:1</u>	<u>3:1</u>	<u>4:1</u>	<u>4113 m³</u>	<u>4.0</u>
2.	<u>60</u>	<u>40</u>	<u>3.5</u>	<u>3:1</u>	<u>3:1</u>	<u>4:1</u>	<u>4113 m³</u>	<u>4.0</u>
3.								
TOTAL CAPACITY							<u>8226 m³</u>	

11 Enter the catch basin description/name as indicated on the site plan.


- 12 Enter the drainage area, the one-in-30 year rainfall, the runoff coefficient and the minimum runoff storage volume in the spaces provided.
- 13 Enter the length and width, in metres. These dimensions should be measured at the interior top of the proposed catch basin. Enter the depth, in metres, measured from the interior top of the catch basin to the top of the floor of the catch basin in the appropriate box.
- 14 Provide the proposed interior end wall slope, the interior side wall slope and the exterior wall slopes of the catch basin in the appropriate boxes. The slopes are required to calculate the catch basin volume, as well as provide an indication of slope stability and potential construction limitations.
- 15 Enter the calculated capacity of the catch basin. All catch basins must be able to contain a one-in-30 year rainfall event. In addition, a freeboard of 0.5 metres on top of the maximum designed capacity is required.
- 16 Provide the depth of the bottom of the compacted soil liner below the natural ground level (grade).

Compacted soil liner details			
a. Compacted soil liner 17	Thickness of liner 1.0 (m)	Provide details: Borehole logs indicate clay loam material for a depth of 4m in area where material will be sourced.	
b. Soil texture 18	34-36% sand	30-34% silt	26-32% clay
c. Atterberg limits 19	Plastic limit 19-22	Liquid limit 42-45	Plasticity index 24-27
d. Hydraulic conductivity 20	Hydraulic conductivity (cm/s) 1 x 10 ⁻⁸ cm/sec	Describe test standard used Falling head test done in lab on a recompacted sample to ASTM 5084.	
Additional information: (attach copies of soil test reports) See att'd drawing. 21			

- 17 Provide the thickness of the compacted soil liner material, in metres, that is proposed to provide the required groundwater protection. Describe the compacted soil liner material that would be used.
- 18 Provide the results of laboratory tests for the percentage of sand, silt, and clay for the soil that will be used as the compacted liner. Enter this information in the appropriate box, as a range using the highest and lowest values found. Copies of the test results should be attached to the application.
- 19 Provide the range of values for plastic and liquid limits and the plasticity index of the proposed liner material in the appropriate boxes. If an engineering soils investigation is carried out, this information should be contained in the engineering soils report.
- 20 Not all compacted soil liners require hydraulic conductivity testing. If it is not clear whether or not the compacted soil liner material can provide adequate protection, hydraulic conductivity testing will likely be required. Contact an NRCB approval officer to confirm whether hydraulic conductivity testing is required for the proposed site.
Hydraulic conductivity results determined using consolidation tests are typically **not** accepted for compacted soil liners. Hydraulic conductivity results from samples that have been tested in a laboratory are typically reduced by an order of magnitude to better reflect what can be obtained in the field.

If hydraulic conductivity testing is done, provide the hydraulic conductivity test results in centimetres per second and the test method used to determine the hydraulic conductivity.

If an engineering soils investigation is carried out, the hydraulic conductivity information should be included in the engineering soils report.

-  **21** If there is additional information you would like to provide regarding the runoff control catch basin, enter it in this space. Include details of any proposed leakage detection or groundwater monitoring.

Attach copies of soil test reports.

Note: 1 metre = 3.2808 feet 1 foot = 0.3048 metres
1 m³ = 35.315 ft³ 1 ft³ = 0.0283 m³

Synthetic liner

An engineering soils investigation is required for most runoff control catch basins that have a synthetic liner. Contact an NRCB approval officer to determine the scope of the required soils investigation.

AOPA requires that synthetic liners for runoff control catch basins provide equivalent or greater protection than a one metre thick liner made from compacted soil with a maximum hydraulic conductivity of 5×10^{-7} cm/s.

Runoff control catch basins require a clearly visible marker in the catch basin that indicates the amount of storage volume required to accommodate runoff from a one-in-30 year, one day precipitation event, in addition to maintaining a 0.5 metre freeboard. Markers must not compromise the integrity of the synthetic liner.

A calculator for determining the volume of a catch basin is available online at <http://www.agric.gov.ab.ca/app19/calc/volume/dugout.jsp>.

Complete the following steps to calculate the minimum catch basin storage requirement:

- Step 1. Determine the area that will drain into the catch basin in square metres.
- Step 2. From **Table 2 of Schedule 2** of the **Standards and Administration Regulations, Agricultural Operation Practices Act**, locate the town nearest to the confined feeding operation and determine the one-day rainfall with a one-in-30 year probability.
- Step 3. From **Table 1 of Schedule 2** of the **Standards and Administration Regulations, Agricultural Operation Practices Act**, determine the applicable runoff coefficient for the proposed liner/floor type for the determined one-day rainfall.
- Step 4. Multiply the drainage area (in square metres) by the rainfall amount (in metres) and by the runoff coefficient. Be sure to use metres in this calculation. The calculation will indicate (in cubic metres) the minimum required storage capacity that the catch basin will need to provide.

If you have questions about calculating the minimum storage requirement of the catch basin, contact the NRCB approval officer for assistance.

RUNOFF CONTROL CATCH BASINS: Synthetic liner <i>(complete a copy of this section for EACH manure storage facility with a synthetic liner)</i>								
Facility description / name <i>(as indicated on site plan)</i>				1. <u>South Catchbasin</u>				22
				2. _____				
				3. _____				
Determination of minimum required catch basin volume								
Show your calculations for determining the minimum required catch basin volume $80000 \text{ m}^2 \times 0.08 \text{ m} \times 0.6 = 3840 \text{ m}^3$				Provide details: <u>Drainage area = 80000 m², 1 in 30 yr rainfall = 80 mm = .08 m; runoff coefficient = 0.6</u>				
Catch basin capacity								
	Length (m)	Width (m)	Depth (m)	Slope run:rise			Estimated storage capacity (excl. freeboard) (m ³)	Depth below grade of the bottom of the synthetic liner (m)
				Inside end walls	Inside side walls	Outside walls		
1.	60	40	3.5	3:1	3:1	4:1	4113 m ³	3.0
2.		24			25		26	27
3.								
TOTAL CAPACITY							4113 m ³	

- 22 Enter the catch basin description/name as indicated on the site plan.
- 23 Enter the drainage area, the one-in-30 year rainfall, the runoff coefficient and the minimum runoff storage volume in the spaces provided.
- 24 Enter the length and width, in metres. These dimensions should be measured at the interior top of the proposed catch basin. Enter the depth, in metres, measured from the interior top of the catch basin to the top of the floor of the catch basin in the appropriate box.
- 25 Provide the proposed interior end wall slope, the interior side wall slope and the exterior wall slopes of the catch basin in the appropriate box. The slopes are required to calculate the catch basin volume.
- 26 Enter the calculated capacity of the catch basin. All catch basins are required to be able to contain a one-in-30 year rainfall event. In addition, a freeboard of 0.5 metres on top of the maximum designed capacity is required.
- 27 Provide the depth of the synthetic liner below the natural ground level (grade).

Synthetic liner details		
a. Synthetic liner <div style="text-align: center;">28</div>	Thickness and type of liner material : 60 mil	Provide liner material details: Liner type ABC, with ultraviolet protection.
Additional information: <div style="text-align: center;">29</div> See att'd manufacturer's specifications.		

- 28 Provide the thickness and type of synthetic liner that is proposed to provide the required groundwater protection. Provide the details of the proposed synthetic liner and attach information such as manufacturer reports.
- 29 If there is additional information regarding the runoff control catch basin you would like to provide, enter it in this space. Include details of any proposed leakage detection or groundwater monitoring.

Note: 1 metre = 3.2808 feet 1 foot = 0.3048 metres
 1 m³ = 35.315 ft³ 1 ft³ = 0.0283 m³

Alternative liner

An engineering soils investigation is required for most runoff control catch basins that use an alternative liner. Contact an NRCB approval officer to determine the scope of the required soils investigation.

AOPA requires alternative liners for runoff control catch basins to provide equivalent or greater protection than a one metre thick liner made from compacted soil, with a maximum hydraulic conductivity of 5×10^{-7} cm/s.

Runoff control catch basins require a clearly visible marker in the catch basin that indicates the amount of storage volume required to accommodate runoff from a one-in-30 year, one-day precipitation event, in addition to maintaining a 0.5 metre freeboard. Markers must not compromise the integrity of the synthetic liner.

A calculator for determining the volume of a catch basin is available online at <http://www.agric.gov.ab.ca/app19/calc/volume/dugout.jsp>.

To calculate the minimum storage requirement for the catch basin, complete the following steps:

- Step 1. Determine the area that will drain into the catch basin in square metres.
- Step 2. From [Table 2 of Schedule 2](#) of the **Standards and Administration Regulations, Agricultural Operation Practices Act**, locate the town nearest to the confined feeding operation and determine the one day rainfall with a one-in-30 year probability.
- Step 3. From [Table 1 of Schedule 2](#) of the **Standards and Administration Regulations, Agricultural Operation Practices Act**, determine the applicable runoff coefficient for the proposed liner/floor type for the determined one day rainfall.
- Step 4. Multiply the drainage area (in square metres) by the rainfall amount (in metres) and by the runoff coefficient. Be sure to use metres in this calculation. The calculation will indicate (in cubic metres) the minimum required storage capacity that the catch basin will need to provide.

If you have questions about calculating the volume of the catch basin, contact the NRCB approval officer for assistance.

RUNOFF CONTROL CATCH BASINS: Alternative liner (complete a copy of this section for EACH runoff control catch basin with an alternative liner)					
Facility description / name (as indicated on site plan)				1. <u>Catchbasin #4</u> 30	
				2. _____	
				3. _____	
Determination of minimum required catch basin volume					
Show your calculations for determining the minimum required catch basin volume 31				Provide calculation assumptions:	
Catch basin capacity					
	Length (m)	Width (m)	Depth (m)	Estimated manure storage capacity (excl. freeboard) (m ³)	Depth below grade of the bottom of the liner (m)
1.		32		33	34
2.					
3.					

- 30 Enter the catch basin description/name as indicated on the site plan.
- 31 Enter the drainage area, the one-in-30 year rainfall, the runoff coefficient and the minimum runoff storage volume in the spaces provided.
- 32 Enter in the appropriate box the length and width of the catch basin. These dimensions should be measured at the interior top of the proposed catch basin. Enter in the appropriate box the depth of the catch basin.
- 33 Enter the calculated capacity of the catch basin. All catch basins are required to be able to contain a one-in-30 year rainfall event. In addition, a freeboard of 0.5 metres on top of the maximum designed capacity is required.
- 34 Provide the depth of the alternative liner below the natural ground level.

Alternative liner	
a. Describe the proposed alternative liner <div style="text-align: center; border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; margin: 0 auto; line-height: 30px;">35</div>	Provide details:
b. Information and calculations used to show liner equivalency <div style="text-align: center; border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; margin: 0 auto; line-height: 30px;">36</div>	Provide details:
Additional information: <div style="text-align: center; border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; margin: 0 auto; line-height: 30px;">37</div>	

- 35 Describe the proposed alternative liner. If additional space is required, either provide the information under “additional information” or attach the information on separate sheets.
- 36 Provide the details and calculations used to show the alternative liner is equivalent to AOPA requirements.
- 37 If there is additional information you would like to provide regarding the runoff control catch basin, enter it in this space. This may include details of any proposed leakage detection or groundwater monitoring.

Note: 1 metre = 3.2808 feet 1 foot = 0.3048 metres
 1 m³ = 35.315 ft³ 1 ft³ = 0.0283 m³

Appendix 1: NRCB field office service areas

Peace and North Central Regions - Morinville

Provincial Building
201, 10008 – 107 Street
Morinville AB T8R 1L3
Phone: 780-939-1212
Fax: 780-939-3194

Central Region - Red Deer

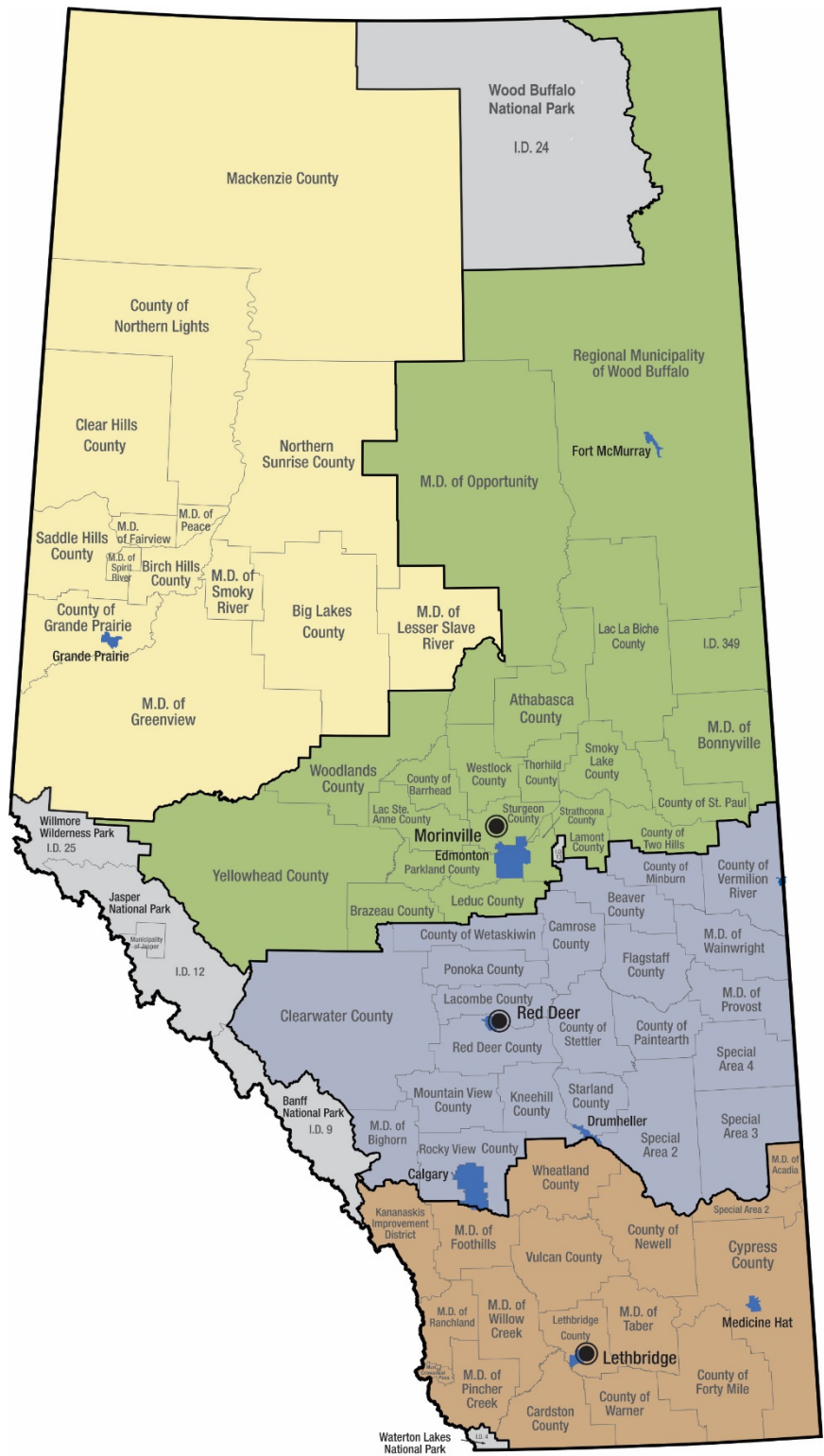
Provincial Building 303,
4920 – 51 Street
Red Deer AB T4N 6K8
Phone: 403-340-5241
Fax: 403-340-5599

Southern Region - Lethbridge

Agriculture Centre
100, 5401 – 1 Avenue S
Lethbridge AB T1J 4V6
Phone: 403-381-5166
Fax: 403-381-5806

Response line (toll-free)

1-866-383-6722
www.nrcb.ca



Appendix 2: Glossary of terms

These definitions are based on existing definitions in AOPA and its associated regulations.

Affected party	A person or municipality determined in accordance with the regulations to be an affected person.
Agent	A party that is authorized in writing to act on behalf of the applicant.
AOPA	Alberta provincial legislation consisting of the Agricultural Operation Practices Act (AOPA) and its associated regulations.
Applicant	The person or company that is applying to the NRCB for a permit, or an amendment to an existing permit, for a new or expanded confined feeding operation, manure collection area, or manure storage facility.
Application	A two-part application for an approval, registration, or authorization to construct a new or expanded CFO, manure collection area, or manure storage facility, or an application for an amendment to an existing permit issued by the NRCB, municipal district, or health authority.
Approval	The permit type required to construct or expand a confined feeding operation in accordance with the number of animals and livestock type set out in Column 3, Schedule 2 of the Part 2 Matters Regulation.
Authorization	The permit type required to construct or to expand a manure storage facility that is for containment of 500 tonnes or more of manure for seven months or more in any calendar year.
Compost	A solid mature product resulting from composting. Does not include compost to which the Fertilizer Act (Canada) applies.
Composting	A managed process of bio-oxidation of composting materials, including a thermophilic phase.
Composting materials	Organic material generated by an agricultural operation described in clause (b)(ii), (iv), (v), or (vi) of AOPA, other than carcasses or parts of carcasses. Includes other substances permitted by the regulations.
Construct	Includes reconstructing, renovating, altering, or expanding a structure, operation or facility, but does not include general maintenance of a structure, operation or facility, or the clearing and levelling of land.
Confined feeding operation (CFO)	Fenced or enclosed land or buildings where livestock are confined for the purpose of growing, sustaining, finishing, or breeding by means other than grazing, and any other building or structure directly related to that purpose. Does not include residences, livestock seasonal feeding and bedding sites, equestrian stables, auction markets, racetracks, or exhibition grounds.
Development permit	A permit issued under a land use bylaw, pursuant to the Municipal Government Act .
Expansion	The construction of additional facilities to store more manure, composting materials, or compost, or to accommodate more livestock.
Freeboard	The vertical distance between the full storage level of a structure and the upper edge of the structure.
Liner	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.

Liquid manure	Manure that is in a predominantly liquid state or manure to which water has been added.
Manure	Livestock excreta, associated feed losses, bedding, litter, soil and wash water. Does not include manure to which the Fertilizers Act (Canada) applies.
Manure collection area	The floor of a barn, the under-floor pits of a barn, the floor of a feedlot pen or a catch basin where manure collects. Does not include the floor of a livestock corral.
Manure storage facility	A facility for storing manure, composting materials or compost, or a composting facility. Does not include such a facility at an equestrian stable, an auction market, a racetrack or exhibition grounds.
Minimum distance separation	Under AOPA, the minimum distance required between a manure storage operation or facility and the nearest residence that is not owned or controlled by the facility's operator.
Municipal development plan	A municipal land use plan adopted by bylaw, under the Municipal Government Act .
Operator	The operator of a confined feeding operation, manure collection area, or manure storage facility.
Permit	An approval, registration, or authorization that is issued by the NRCB or grandfathered under AOPA.
Registration	The permit type required to construct or expand a confined feeding operation in accordance with the number of animals and livestock type set out in Column 2, Schedule 2 of the Part 2 Matters Regulation.
Referral agency	Government of Alberta authorities with responsibility for agriculture, health, the environment, and transportation that are provided by the NRCB with a copy of applications to expand or construct a confined feeding operation, for their information, review and response.
Runoff	Liquid (including rainwater and meltwater) that drains as surface flow out of an agricultural operation or part of an agricultural operation.
Run-on	Liquid (including rainwater and meltwater) that drains as surface flow onto an agricultural operation or part of an agricultural operation.
Solid manure	Manure that is 20% or more solid matter, and that does not flow when piled.