Common body of water

The term “common body of water” in the legislation includes the bed and shore of a water body that is shared by (common to) more than one landowner. The following table summarizes what is and is not considered a common body of water:

<table>
<thead>
<tr>
<th>Common body of water includes</th>
<th>Common body of water does not include</th>
</tr>
</thead>
<tbody>
<tr>
<td>River, stream, creek, ditch, or drainage channel that is completely surrounded by private land controlled by the owner or operator and has no suitable outflow going directly beyond the private land</td>
<td></td>
</tr>
<tr>
<td>Reservoir, lake, marsh, slough, or irrigation canal that is completely surrounded by private land controlled by the owner or operator and has no suitable outflow going directly beyond the private land</td>
<td></td>
</tr>
<tr>
<td>Irrigation canal or a drainage channel that is completely surrounded by private land controlled by the owner or operator and has no suitable outflow going directly beyond the private land</td>
<td></td>
</tr>
<tr>
<td>Drainage canal or a storm drainage or wastewater system (sewer system)</td>
<td></td>
</tr>
</tbody>
</table>

Determine slope

To determine the average slope, use the shore of the common body of water as the starting point. Measure horizontally 90 metres away and then measure the vertical rise from the shore to the field location by 90 m. The following formula shows the calculation:

Average % Slope = (Elevation A (m) – Elevation B (m)) x 100

The following examples may help as a guide in determining the slope of land:

- 4% slope is equal to a 3.6 m rise over a 90 m horizontal distance
- 6% slope is equal to a 5.4 m rise over a 90 m horizontal distance
- 12% slope is equal to a 10.8 m rise over a 90 m horizontal distance

The following figure illustrates where the elevations should be measured.

Manure Spreading Regulations

The Agricultural Operation Practices Act (AOPA) includes regulations for spreading manure or compost for all livestock operations in Alberta. The manure spreading regulations include requirements for manure incorporation, soil nitrogen and salinity limits, setback distances, record keeping, and soil testing.

The term manure in this publication includes the livestock excreta, straw, other bedding material, litter, soil, wash water and feed in the manure. Composted manure has the same requirements as manure. Terms used in this publication have been simplified to make it easier to read. Complete definitions are found in Section 1 of the legislation.

For more information on the regulations, please refer to the contacts listed at the end of this publication.

Manure incorporation requirements

Manure must be incorporated within 48 hours after application to cultivated land (except when applied to forages or direct-seeded crops, frozen or snow-covered land, or unless an approved manure management plan (AOPA) specifies a different incorporation requirement). Additional requirements related to manure incorporation are outlined in the sections on setback distances in this publication.
The soil nitrate-nitrogen limits are set according to various farming methods, soil groups, soil textures and the depth to the water table.

<table>
<thead>
<tr>
<th>Farming method</th>
<th>Solid (&gt;20% and dry and water table &lt;6 m)</th>
<th>Solid (&gt;20% and dry and water table &gt;6 m)</th>
<th>Medium and fine textured soils</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boyard</td>
<td>60 kg/ha (55 lb/ac)</td>
<td>100 kg/ha (90 lb/ac)</td>
<td>140 kg/ha (125 lb/ac)</td>
</tr>
<tr>
<td>Dark Brown</td>
<td>60 kg/ha (55 lb/ac)</td>
<td>100 kg/ha (90 lb/ac)</td>
<td>140 kg/ha (125 lb/ac)</td>
</tr>
<tr>
<td>Brown School</td>
<td>100 kg/ha (90 lb/ac)</td>
<td>170 kg/ha (150 lb/ac)</td>
<td>220 kg/ha (200 lb/ac)</td>
</tr>
<tr>
<td>Light Brown</td>
<td>140 kg/ha (125 lb/ac)</td>
<td>220 kg/ha (200 lb/ac)</td>
<td>270 kg/ha (240 lb/ac)</td>
</tr>
<tr>
<td>Mixed</td>
<td>180 kg/ha (160 lb/ac)</td>
<td>270 kg/ha (240 lb/ac)</td>
<td>320 kg/ha (280 lb/ac)</td>
</tr>
</tbody>
</table>

Note: To convert kg/ha into lbs/ac, divide by 1.1 (eg. 110 kg/ha / 1.1 = 100 lbs/ac)

**Nutrient management plans**

Nutrient management plans are not mandatory for every person who has manure to apply. Each NRCB approved nutrient management plan is required if a person wishes to exceed the soil nitrate-nitrogen or salinity limits when applying manure. The NRCB can approve a nutrient management plan for all farming methods, soil groups, soil textures and the depth to the water table if the NRCB is satisfied that implementing the plan will not adversely affect the soil or the environment.

**Manure handling plans**

A person applying for a CDW permit can submit a manure handling plan to the NRCB for approval, or the person can voluntarily follow the requirements under ADPA. The NRCB may approve a manure handling plan that provides for alternative composting with the manure application and storage requirements under ADPA. An NRCB approved nutrient management plan operation must submit a manure handling plan where an agreement is in place with others who will be accepting the manure from the operation. Manure production and transfer records must also be kept in these situations.

**Record keeping and soil testing**

Each person who handles manure on land must keep manure management records for five years and must also provide soil test results for five years. The records must also be applied to the soil nitrate-nitrogen and salinity limits in the legislation or an NRCB approved nutrient management plan. The soil test results for land on which manure is applied must be no older than three years except for land on which manure is applied at a rate that does not exceed the soil nitrate-nitrogen limits. The records required are:

- soil test results
- amount of manure produced and handled
- name and address of each person who receives or applies manure
- land location where manure is applied
- application rate of manure and fertilizer

**Compliance and enforcement process**

The NRCB is responsible for enforcing the legislation. An inspection by the NRCB can result in a citation or a notice of violation. Further details and examples of record-keeping forms are available from the contacts listed at the end of this publication.

**Minimum setback distances for manure application**

Minimum setback distances for manure application differ based on whether land is frozen, snow-covered, cultivated and/or under forage, direct-seeded crops, frozen or snow-covered land. If manure is spread on frozen and/or snow-covered ground, the minimum setback distances for manure application must be increased to 30 m from the common body of water. If manure is spread on cultivated land, the minimum setback distances for manure application must be increased to 60 m from the common body of water.
Manure Spreading Regulations

A person applying for a CFO permit must implement the plan will not exceed the soil nitrogen and salinity limits if the NRCB is satisfied that the application rates of manure and fertilizer are required as well as applicable dates of application. If a problem is found, the operator must be notified by the NRCB before spreading. The setback distances required are based on slope if the land slopes toward a common body of water, as shown in the following table and diagram:

Minimum setback distances for manure application

If manure is spread on forage, direct-seeded crops, frozen or snow-covered land, the setback distances for application and storage must not exceed 150 m away from a common body of water. If manure is spread on frozen and snow-covered land, an operation (CFO) or manure storage facility that does not have nine months of manure does not enter a common body of water.

The setback distances are based on the slope of the land near the common body of water. An operation or manure storage facility that does not have nine months of manure storage can continue to spread manure on frozen and snow-covered land, but they must comply with the various setbacks and soil nutrient limits in the regulations.

Setback distances on land with less than 12% slope (on forage, direct-seeded crops, frozen or snow-covered land)

The setback requirements are based on the slope of the land near the common body of water, as shown in the following table and diagrams:

For example, if the slope is 4%, no setback is required for manure spread on frozen or snow-covered land. If the slope is 14% or greater, double the setback distance.

The setback distances are based on the slope of the land near the common body of water. An operation or manure storage facility that does not have nine months of manure storage can continue to spread manure on frozen and snow-covered land, but they must comply with the various setbacks and soil nutrient limits in the regulations.

A person who applies manure on frozen, direct-seeded crops, frozen or snow-covered land, must keep the minimum setback distances for manure applications, keeping in mind the average slope of the land near the common body of water.

The setback distances required are based on the slope of the land slopes for application and storage that do not exceed 150 m away from a common body of water. If manure is spread on frozen and snow-covered land, an operation (CFO) or manure storage facility that does not have nine months of manure storage can continue to spread manure on frozen and snow-covered land, but they must comply with the various setbacks and soil nutrient limits in the regulations.

If a problem is found, the operator must be notified by the NRCB before spreading. The setback distances required are based on slope if the land slopes toward a common body of water, as shown in the following table and diagrams:

Minimum setback distances for application and storage

The setback distances are based on the slope of the land near the common body of water. An operation or manure storage facility that does not have nine months of manure storage can continue to spread manure on frozen and snow-covered land, but they must comply with the various setbacks and soil nutrient limits in the regulations.

A person who applies manure on frozen, direct-seeded crops, frozen or snow-covered land, must keep the minimum setback distances for manure applications, keeping in mind the average slope of the land near the common body of water.

The setback distances required are based on the slope of the land slopes for application and storage that do not exceed 150 m away from a common body of water. If manure is spread on frozen and snow-covered land, an operation (CFO) or manure storage facility that does not have nine months of manure storage can continue to spread manure on frozen and snow-covered land, but they must comply with the various setbacks and soil nutrient limits in the regulations.

A person who applies manure on frozen, direct-seeded crops, frozen or snow-covered land, must keep the minimum setback distances for manure applications, keeping in mind the average slope of the land near the common body of water.
Manure Spreading Regulations

Nitrate-nitrogen limits in soil (Standards and Administration Regulation, Schedule 3, Table 3)

<table>
<thead>
<tr>
<th>Farming method</th>
<th>Soil group</th>
<th>Sandy (&gt;40% sand and water table &lt; 4 m)</th>
<th>Sandy (&gt;40% sand and water table &gt; 4 m)</th>
<th>Medium and fine textured soils</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brown</td>
<td>60 kg/ha (130 lb/ac)</td>
<td>110 kg/ha (240 lb/ac)</td>
<td>140 kg/ha (300 lb/ac)</td>
<td>80 kg/ha (175 lb/ac)</td>
</tr>
<tr>
<td>White</td>
<td>90 kg/ha (195 lb/ac)</td>
<td>150 kg/ha (330 lb/ac)</td>
<td>200 kg/ha (440 lb/ac)</td>
<td>110 kg/ha (240 lb/ac)</td>
</tr>
<tr>
<td>Brown mottled</td>
<td>120 kg/ha (265 lb/ac)</td>
<td>210 kg/ha (460 lb/ac)</td>
<td>270 kg/ha (590 lb/ac)</td>
<td>140 kg/ha (300 lb/ac)</td>
</tr>
<tr>
<td>Alluvial</td>
<td>150 kg/ha (330 lb/ac)</td>
<td>250 kg/ha (550 lb/ac)</td>
<td>330 kg/ha (730 lb/ac)</td>
<td>170 kg/ha (375 lb/ac)</td>
</tr>
</tbody>
</table>

Note: To convert kg/ha into lbs/ac, divide by 1.1 (eg. 110 kg/ha / 1.1 = 100 lbs/ac)

Nutrient management plans

Nutrient management plans are mandatory for every person who handles or stores manure. An approved nutrient management plan is required if a person wants to exceed the soil nitrate-nitrogen or salinity limits when applying manure. The NRCB can approve a nutrient management plan for a person who wishes to exceed the soil limits if the NRCB is satisfied that implementing the plan will not adversely affect the soil or the environment.

Manure handling plans

A person applying for a CFO permit can submit a manure handling plan to the NRCB for approval in lieu of or to eliminate the need to meet the manure application and storage requirements under AOPA. The NRCB may approve a manure handling plan that provides an alternative to complying with the nutrient management plan or storage requirements under AOPA. The NRCB may approve a manure handling plan where an agreement is in place with others who will be implementing the plan. Manure production and transfer records must also be kept in these situations.

Record keeping and soil testing

Each person who handles 50 tonnes or more per year of manure must keep a nutrient management plan for five years and must also provide test results which must also be applied according to the soil nitrate-nitrogen and salinity limits in the legislation or an NRCB approved nutrient management plan. The soil test results for land on which manure is applied must be obtained before three years except for every 10 years for which a one-time application of manure occurs. The soil test results do not apply to the manure produced by livestock when they are grazing. Further details and examples of record-keeping forms are available from the contacts listed at the end of this publication.

Compliance and enforcement process

The NRCB is responsible for enforcing the legislation. An inspection by the NRCB can result in a compliance order. Inspectors may inspect and take samples from any residence, other building or other structure if a person does not own (including livestock owners, schools and hospitals). Inspections may be triggered if the NRCB receives a complaint. Inspectors may look at potential risks to the environment or problems related to manure handling, storage or application. The enforcement process includes notification, environmental assessment, and, in the event of non-compliance, enforcement orders and even criminal prosecution. If the inspector does not agree with the findings, the person whose residence or other building or other structure is inspected may request a hearing. If the inspector makes a final decision, the person whose residence or other building or other structure is inspected may appeal the decision to the division or to the court. If the inspector requests that the person whose residence or other building or other structure is inspected take action, the person whose residence or other building or other structure is inspected must take action within 48 hours. If the person whose residence or other building or other structure is inspected does not take action within 48 hours, the inspector may take action to rectify the situation.

Minimum setback distances for manure application

Minimum setback distances for manure application are required to reduce nuisance effects on neighbours and to minimize the risk of manure leaving the land on which it is applied and entering a common body of water. Manure must be applied at least:

- 10 m away from a residence or other occupied building that the operator does not own if the manure will not be incorporated when spreading on forage or direct-seeded crops
- 10 m away from a common body of water if subsurface injection is used
- 30 m away from a common body of water if manure is surface-applied and incorporated within 48 hours of application, except when applied on forage, direct-seeded crops, frozen or snow-covered land

The setback distances required are based on slope if the land slopes toward a common body of water, as shown in the following table and diagrams:

Minimum setback distances for application on land with less than 12% slope

Minimum setback distances for application on land with 12% or more slope

CPDs constructed before January 1, 2002, that do not have nine months of storage can continue to spread on forage and snow-covered land, but they must comply with the various setbacks and soil nutrient limits in the regulations.

A person who applies manure on forage, direct-seeded crops, frozen or snow-covered land must meet the minimum setback distances for manure applications, keeping in mind the various setbacks and soil nutrient limits in the regulations.

CPDs constructed before January 1, 2002, that do not have nine months of storage can continue to spread on forage and snow-covered land, but they must comply with the various setbacks and soil nutrient limits in the regulations.

A person who applies manure on forage, direct-seeded crops, frozen or snow-covered land must meet the minimum setback distances for manure applications, keeping in mind the various setbacks and soil nutrient limits in the regulations.

Even if setbacks are met, reasonable care must be taken to ensure manure does not enter a common body of water from runoff.
Environmental Standards for Alberta’s Livestock Industry

Alberta Agriculture and Forestry  ... markets in an 
environmentally 
sustainable manner.

Manure Spreading Regulations
Revised Sept 2015 Agdex 096-5

The following figure illustrates where the elevations should be measured.

- • • •

The bed and shore of the following:
- River, stream, creek
- Reservoir, lake, marsh, slough
- Irrigation canal
- Drainage canal

A common body of water includes a reservoir, lake, marsh, slough, or drainage canal that is completely surrounded by private land controlled by the owner or operator and has no surface runoff going directly beyond the private land to a stormwater drain, reservoir, river, permanent stream or creek, lake or pondable water source that is being used for human or livestock consumption. An irrigation canal or a drainage canal that is completely surrounded by private land controlled by the owner or operator and has no surface runoff going directly beyond the private land.

A storm drainage or wastewater system (sewer system).

For more information, contact:

Alberta Agriculture and Forestry
www.agriculture.alberta.ca/aopa

Natural Resources Conservation Board
www.nrcb.ca

The Agricultural Operation Practices Act (AOPA) includes regulations for spreading manure or compost for all livestock operations in Alberta. The manure spreading regulations include requirements for manure incorporation, soil nitrogen and salinity limits, setback distances, record keeping and soil testing.

The term manure in this publication includes the livestock excreta, straw, other bedding material, litter, seepage, wash water and feed in the manure. Composted manure has the same requirements as manure. Terms used in this publication have been simplified to make it easier to read. Complete definitions are found in Section 1 of the AOPA. Terms may be used as manure if the regulations specify that manure must not be applied at levels that exceed the limits, setback distances, record keeping and soil testing. A storm drainage or wastewater system (sewer system).

The following table summarizes what is and is not considered a common body of water.

A common body of water includes

90 m.

The purpose of AOPA is to ensure that local and world markets in an environmentally sustainable manner.

The regulation sets soil nitrogen and salinity limits. It should be noted that these limits can only be exceeded if a producer has a nutrient management plan that has been approved by the Natural Resources Conservation Board (NRCB).

To ensure the salts in manure do not affect plant growth, the regulations specify that manure must not be applied at levels that exceed the soil nitrogen and salinity limits. It should be noted that these limits can only be exceeded if a producer has a nutrient management plan that has been approved by the NRCB.

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Environmental Standards for Alberta’s Livestock Industry

Alberta Agriculture and Forestry is committed to ensuring that livestock operations in Alberta maintain a high standard of animal care, hygiene, and management to keep livestock and manure safe. The province’s livestock industry has an opportunity to present one of the world’s most successful livestock industries, while remaining environmentally sustainable.

The purpose of the Agricultural Operation Practices Act (AOPA) is to ensure that the livestock operations in Alberta operate in such a manner to protect public health and the environment. The AOPA is to ensure that the opportunities presented by local and world markets in an environmentally sustainable manner.

The Agricultural Operation Practices Act (AOPA) includes regulations for spreading manure on crop land for livestock operations in Alberta. The manure spreading regulations include requirements for manure incorporation, soil nitrogen and salinity limits, setback distances, record keeping and soil testing.

The term “common body of water” in the legislation includes the bed and shore of a water body that is shared by (common to) more than one landowner. The following table summarizes what is and is not considered a common body of water:

### Common body of water

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>River</td>
<td>Stream, creek, brook, or perennial stream that is completely surrounded by private land controlled by the owner or operator and has no eaves above surface going directly beyond the private land to a drainage canal, reservoir, river, permanent stream or creek, lake or shallow water source that is being used for human or livestock consumption.</td>
</tr>
<tr>
<td>Reservoir</td>
<td>A natural water body that is formed by impounding water with a dike or embankment.</td>
</tr>
<tr>
<td>Drainage canal</td>
<td>An irrigation canal or a drainage canal that is completely surrounded by private land controlled by the owner or operator and has no eaves going directly beyond the private land.</td>
</tr>
<tr>
<td>Irrigation canal</td>
<td>An irrigation canal or a drainage canal that is completely surrounded by private land controlled by the owner or operator and has no eaves going directly beyond the private land.</td>
</tr>
<tr>
<td>Reservoir</td>
<td>A natural water body that is formed by impounding water with a dike or embankment.</td>
</tr>
<tr>
<td>River, stream, creek</td>
<td>A natural water body that is formed by impounding water with a dike or embankment.</td>
</tr>
<tr>
<td>Lake</td>
<td>A natural water body that is formed by impounding water with a dike or embankment.</td>
</tr>
<tr>
<td>Marsh</td>
<td>A natural water body that is formed by impounding water with a dike or embankment.</td>
</tr>
<tr>
<td>Slough</td>
<td>A natural water body that is formed by impounding water with a dike or embankment.</td>
</tr>
<tr>
<td>Potable water source</td>
<td>A water source that is being used for human and livestock consumption.</td>
</tr>
<tr>
<td>Public body of water</td>
<td>A reservoir, lake, marsh, slough, river, stream, creek, or lake or shallow water source that is being used for human or livestock consumption.</td>
</tr>
</tbody>
</table>

The following figure illustrates where the elevations should be measured.

### Determining slope

To determine the average slope, use the shore of the common body of water as the starting point. Measure horizontally 90 metres away and then measure the vertical difference in elevation. The percent (%) slope is calculated by dividing the vertical rise from the shore to the field location by 90. The following formula shows the calculation:

\[
\text{Average % Slope} = \frac{\text{Elevation A (m) – Elevation B (m)}}{90 \text{ m}} \times 100
\]

The following examples may help as a guide in determining the slope of common body of water:

- 4% slope is equal to a 3.6 m rise over a 90 m horizontal distance
- 6% slope is equal to a 5.4 m rise over a 90 m horizontal distance
- 12% slope is equal to a 10.8 m rise over a 90 m horizontal distance

For more information on the regulations, please refer to the contacts listed at the end of this publication.

### Soil nitrogen and salinity limits

The regulation sets soil nitrogen and salinity limits. It should be noted that these limits can only be exceeded if a producer has a nutrient management plan that has been approved by the Natural Resources Conservation Board (NRCB).

To ensure the salts in manure do not affect plant growth, the regulations specify that manure must not be applied to soils that have an electrical conductivity (salinity) greater than 4 dS/m over a 15 cm soil depth. The term manure in this publication includes livestock excreta, straw, other bedding material, litter, soil wash water and feed in the manure.

### Manure incorporation requirements

Manure must be incorporated within 48 hours when applied to cultivated land (except when applied to forage or direct-seeded crops, frozen or snow-covered land or unless an approved nutrient management plan specifies a different incorporation requirement). Additional requirements related to manure incorporation are outlined in the sections on setback distances in this publication.

### For more information, contact:

<table>
<thead>
<tr>
<th>Contact</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alberta Agriculture and Forestry</td>
<td>(403) 340-3134</td>
</tr>
<tr>
<td>Natural Resources Conservation Board</td>
<td>(403) 340-3411</td>
</tr>
</tbody>
</table>

EXCERPT: This document is not intended as legal advice, but an interpretive document to the Agricultural Operation Practices Act and Regulations.

For more information, contact: (403) 310-0000 to be connected toll-free

[Agdex 006-5] Manure Spreading Regulations

The standard Environmental Standards for Alberta’s Livestock Industry