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| Minnesota Pollution Control Agency (MPCA), 520 Lafayette Road North, St. Paul, MN 55155-4194 | Manure Management Plan (MMP) requirements when ownership  of manure is transferred  Feedlot program  Doc Type: Permit Information Form |

**Are you transferring ownership of manure?**

MMP and record-keeping requirements for feedlot owners are different when manure ownership is transferred to a third party for land application. The following questions will help you determine if you transfer ownership of manure:

Yes  No Will manure be applied to land that is owned, leased, or rented by the feedlot owner/operator or a member/partner of the feedlot ownership entity (Inc., LLP, LLLP, et. al.)?

Yes  No Does the feedlot owner/operator, feedlot ownership member/partner, or employee under the direction of the feedlot ownership entity control the crop and nutrient planning decisions of the manure application sites, including planning for manure application rates, timing, and methods?

If you answered “No” to both questions, then you are transferring ownership of your manure and the feedlot operator may use these guidelines to complete a MMP.

If you answered “Yes” to either question, you are retaining ownership of manure and must complete a more comprehensive MMP. More information on the requirements when manure ownership is retained and resources to develop a retained ownership MMP can be found on the Minnesota Pollution Control Agency’s (MPCA) website at <https://www.pca.state.mn.us/water/feedlots>.

If only a portion of your manure is considered to have transferred ownership, then use this form to develop a MMP for the manure which has transferred ownership, and develop the more comprehensive MMP for the manure which is not transferred.

MMP development

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| Name of feedlot facility: |  | Registration number: |  |

**Manure generation, storage, and testing**

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| Manure storage areas (check all that apply): | | | | |
| Earthen Basin | Underfloor Concrete Pit | Outdoor Concrete Pit/Tank | Slurry Store | Lagoon |
| Stockpile | Underfloor Dry Storage | Manure Pack | Litter | Other |

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| **Yearly manure generation:** | | |  | **Storage capacity:** | | |  | **Anticipated amount to be transferred (approximate):** | | | | | |
| Liquid: |  | gallons |  | Liquid: |  | months |  | Liquid: | 100% | 50% | Other: |  | % |
| Solid: |  | tons |  | Solid: |  | months |  | Solid: | 100% | 50% | Other: |  | % |

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| **Anticipated nutrient content\*:** | | | | | | |  | **Manure type:** | |  | **Testing frequency:** | | | |
| Source 1: | N |  | P |  | K |  |  | Liquid | Solid |  | Yearly | Once every |  | years |
| Source 2: | N |  | P |  | K |  |  | Liquid | Solid |  | Yearly | Once every |  | years |
| Source 3: | N |  | P |  | K |  |  | Liquid | Solid |  | Yearly | Once every |  | years |
| Source 4: | N |  | P |  | K |  |  | Liquid | Solid |  | Yearly | Once every |  | years |
| \* List the total lbs of N, P, and K. Do not list estimated first year availability if provided by the lab. | | | | | | | | | | | | | | |

**Minimum requirements:**

* Yearly sampling for the first three (3) years and then once every four (4) years - NPDES permits require yearly sampling.
* Samples must also occur when changes to nutrient content are expected (unusual weather, change of animal types, etc.)
* Samples must be representative of manure source and follow University of Minnesota Extension Service recommendations.
* Nutrient analysis must occur at a Minnesota Department of Agriculture certified lab or pre-approved alternative.

**Land application**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Anticipated land application methods (check all that apply): | | | | | | |
| Broadcast with incorporation | | | Broadcast without incorporation | | Injection | Unknown |
| Anticipated land application timing (check all that apply): | | | | | | |
| Fall | Spring | Winter**\*** | | Summer (cover crop required) | | Unknown |
| **\***For NPDES permitted sites only, transfer of manure is prohibited when…  a) liquid manure will be surface applied to frozen or snow covered soils after November 30, or  b) solid manure will be surface applied to frozen or snow covered soils during the month of March. | | | | | | | |

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| How will you ensure that there is enough land available for spreading manure in accordance with allowable rates; and that land owners are willing to accept/purchase the manure? | | | |
| Land application agreements | Approximate acreage under agreements |  | |
| Other (describe below) | Approximate acreage available via other methods | |  |
|  | | | |

**Minimum requirements:**

* Attachment A - *Minimum state requirements for applying manure* must be provided to manure recipient.
  + The nutrient content of the transferred manure must be indicated on Attachment A.
* Records of manure transfer activities will be kept utilizing [*Records when manure ownership is transferred 300 or more animal units* (wq-f6-43)](https://www.pca.state.mn.us/sites/default/files/wq-f6-43.docx), which is available on the MPCA website: [www.pca.state.mn.us/feedlots](http://www.pca.state.mn.us/feedlots).

**Animal mortality management** (NPDES and SDS permitted sites only)

The following best management practices (BMP)s should be employed to assist in compliance with BAH and MPCA requirements.

**Rendering -** Carcass pick-up point BMPs

* Kept in an animal-proof, enclosed area.
* At least 200 yards from a neighbor’s buildings.
* Picked up within 72 hours (seven [7] days if refrigerated to less than 45 degrees).

**Composting -** Composting area BMPs

* Built on an impervious, weight-bearing pad that is large enough to allow equipment to maneuver.  
  Note: Class V gravel material is not considered to be impervious.
* Covered with a roof to prevent excessive moisture on the composting material and eliminate runoff concerns.
* Built of rot-resistant material that is strong enough to withstand the force exerted by equipment.
* Large enough to handle each day’s normal mortality through the endpoint of the composting which consists of a minimum of two (2) heat cycles.

**Burial –** Burial site BMPs

* Stay five (5 feet above seasonal high water table.
* Stay 1000 feet away from lakes and 300 feet away from rivers, streams, ditches, etc.
* Be covered immediately with enough soil to keep scavengers out (three feet is sufficient).
* Not be placed in sandy or gravelly soil types.
* Maintain at least 10 feet vertical separation between dead animals and bedrock.

**Incineration –** Incineration BMPs

* Capable of producing emissions not to exceed 20 percent opacity.
* Fitted with an afterburner that maintains flue gases at 1,200 degrees Fahrenheit for at least 0.3 seconds.
* Ash from the incinerator must be handled in such a manner as to prevent particulate matter from becoming airborne.

**Other Method (describe below)**

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**Attachment A – Minimum state requirements for applying manure**

***Provide this information to the manure recipient***

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| **Manure analysis** | | | |
| **N** |  | **P** |  | **K** |  |

**I. Nitrogen rate limits**

Limit rates so that estimated plant-available N from all manure and fertilizer sources combined does not exceed the nitrogen recommendations of the University of Minnesota. For corn crops, rates should be consistent with the MRTN.

* 195 lbs/N for corn following corn (as of 2020)

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| **Calculating N available this year from manure applied to the previous crop** | | | | | | | | |
|  | **÷** | 1000 | **X** |  | **X** |  | **=** |  | |
| Application rate last year (tons or gal/acre) |  | Liquid only |  | Availability factor  0.15 for swine 0.25 for all others |  | N Test  last year |  | N available  this year  (lbs/acre) | |

* 150 lbs/N for corn following soybeans (as of 2020)

|  |  |  |  |  |  |  |  |  |  |
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| **Calculating a manure application rate for the upcoming crop** | | | | | | | | | |
|  | **÷** |  | **÷** |  | **X** | 1000 | **=** |  |
| Desired amount of N from manure |  | Availability factor  (# from table 1/100) |  | Manure N Test |  | Liquid only |  | Application Rate (tons or gal/acre) |

All sources of nitrogen must be considered when calculating nitrogen application rates. This includes residual nitrogen from alfalfa grown two years ago, commercial fertilizer (starter or supplemental), nitrates in groundwater, and manure applied last year.

Crop-available manure N applied to legumes cannot exceed legume nitrogen removal rates; 3.5 lbs N per bushel of soybeans, 50 lbs N per ton of alfalfa, 27 lbs N per ton grass hay.

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| **Calculating N available from manure applied for the upcoming crop** | | | | | | | | |
|  | **÷** | 1000 | **X** |  | **X** |  | **=** |  |
| Application rate  (tons or gal/acre) |  | Liquid only |  | Availability factor  (# from table 1/100) |  | N Test  this year |  | N available  this year  (lbs/acre) |

*Summer applications* – Plant a cover crop where manure is applied in June, July, or August to harvested fields that would otherwise remain without crop cover for the rest of the growing season.

**II. Manure application setbacks**

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| --- | --- | --- | --- | --- | --- |
| **Table 1. Percent of total manure nitrogen available the first year** | | | | | |
|  | **Broadcast** | | | **Injection** | |
| **Animal Type** | Incorporation after 4 days | Incorporation 12 - 96 hrs | Incorporation within 12 hrs | Knife | Sweep |
| Beef | 25 | 45 | 60 | 50 | 60 |
| Dairy | 20 | 40 | 55 | 50 | 55 |
| Swine | 35 | 55 | 75 | 70 | 80 |
| Poultry | 45 | 55 | 70 | 70 | 70 |
|  |  |  |  |  |  |
| **If you have a manure spill contact  the state duty officer at 1-800-422-0798** | | | | | |

Manure application must comply with the following setbacks. County setbacks may be more restrictive.

|  |  |  |
| --- | --- | --- |
| **Feature** | **Surface application** | **Incorporation  within 24 hrs** |
| Lakes, streams | 300′\* | 25′ |
| Wetlands (10+ ac) | 300′\* | 25′ |
| Drainage ditches w/o berms | 300′\* | 25′ |
| Open Tile Intakes | 300′ | 0′ |
| Sinkholes w/o berms  Downslope  Upslope | 50′  300′ | 50′  50′ |
| Wells and quarries | 50′ | 50′ |
| *\* 100*′ *vegetated buffer can be used instead of 300*′ *setback for  non-winter applications (50*′ *buffer for wetlands/ditches)* | | |

**III. Soil phosphorus (P) management**

*Soil P testing* – Test soils for P at least once every four years.

*Avoid P build-up within 300 feet of waters\**– Where soils test P levels exceed 21 Bray P-1 or 16 Olsen, the rate and frequency of manure applications must not allow soil phosphorus build-up over a six year period, unless a 50-100′ vegetative buffer is established along the waters. Single year applications can be based on nitrogen if the remaining phosphorus is removed by subsequent crops.

*Avoid extremely high P soils* – Avoid manure application onto fields where soils exceed:

* 150 ppm Bray P-1 or 120 ppm Olsen
* 75 ppm Bray P-1 or 60 ppm Olsen within 300 feet of water or tile intakes.

*\* “waters” refers to lakes, streams, intermittent streams, wetlands over 10 acres, and drainage ditches without protective berms.*

**IV. Manure recipient record keeping requirements**

The cropland manager must keep records of the following for at least three years (six years if applying near waters):

|  |  |
| --- | --- |
| * Manure test dates and results | * Carry-over N from previous manure applications |
| * Field ID and acreage | * Date and rate of manure application |
| * Soil P test dates and results | * Method of application and incorporation timing |
| * Crop grown and yield goal | * Manure N and P2O5 available |
| * Previous crop grown | * Fertilizer N and P2O5 applied |
| * N recommendation for the crop grown | * Total lbs N available/acre (all sources) |
| * N from irrigation water | * Total lbs P2O5 available/acre (all sources) |

**V. Short-term stockpiling practices**

Follow all stockpiling setbacks for waters and conduits to waters (ranging from 50 to 300 feet); avoid sandy soils and high water table soils (<2′); avoid slopes over 6%; use diversions if slopes exceed 2%; and keep records as required in Minn. R. 7020.2125. The stockpile size must not exceed the amount of manure needed to supply nutrient needs to the tract of land where applied.

**More information:** For more information, contact the MPCA or visit the website at <https://www.pca.state.mn.us/water/feedlots>.