NM-1284

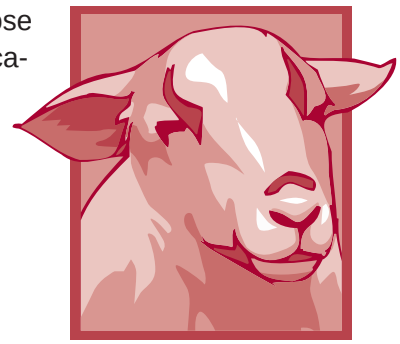
Assessment Tool
for New or Existing Animal Feeding Operations

Bridget Johnson and **Ron Wiederholt**
Area Specialists/Livestock Nutrient Management

This workbook is designed to help producers evaluate their current livestock facility and identify potential impacts their facility may have on waters of the state. Initially, one must determine if the livestock feeding operation is classified as an animal feeding operation (AFO). An AFO is a lot or facility (other than aquatic animal production facility) where the following conditions are met:

- Animals have been, are, or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-month period, **and**
- Crops, vegetation, forage growth or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility

If your operation fits this definition, continue to Step 1 of the worksheet. You will find a table that identifies the three categories of animal feeding operations. A large, concentrated animal feeding operation (CAFO) is any animal feeding operation that stables or confines as many as or more than the number of animals specified in the Large CAFO column of the table in Step 1. If the facility is defined as large CAFO, the appropriate permit must be obtained from the North Dakota Department of Health by Dec. 31, 2006 and completion of either worksheet is not necessary. If the operation is defined as a medium or small AFO, continue to Step 2. Not all medium or small AFOs will require a permit. Those that do must submit the permit application to the North Dakota Department of Health by July 1, 2008.



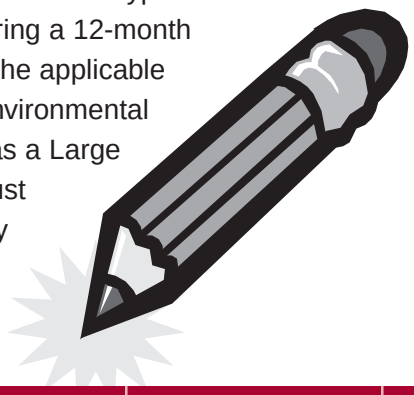
The workbook has been developed through the efforts of the NDSU Extension Service and North Dakota Department of Health.

NDSU Extension Service
North Dakota State University
Fargo, ND 58105

FEBRUARY 2005

Step 1

Complete the table below by inserting the maximum number of each type of livestock fed/housed within a facility for 45 days or more during a 12-month period. If the facility is defined as a Medium or Small AFO, the applicable worksheet should be completed to evaluate the potential environmental impacts associated with the facility. If the facility is defined as a Large CAFO, (see definition on page 3) the appropriate permit must be obtained from the North Dakota Department of Health by Dec. 31, 2006 and completion of either worksheet is not necessary.



Numbers of each livestock type	Maximum Number	Large CAFO	Medium AFO	Small AFO
Mature dairy cows		≥700	200-699	< 200
Veal calves		≥1,000	300-999	< 300
Cattle (not mature dairy cows or veal calves)		≥1,000	300-999	< 300
Swine (<55#)		≥10,000	3,000-9,999	< 3,000
Swine (>55#)		≥2,500	750-2,499	< 750
Horses		≥500	150-499	< 150
Sheep or lambs		≥10,000	3,000-9,999	< 3,000
Turkeys		≥55,000	16,500-54,999	< 16,500
Laying hens or broilers (liquid manure system)		≥30,000	9,000-29,999	< 9,000
Chickens (nonliquid manure system)		≥125,000	37,500-124,999	< 35,000
Laying hens (nonliquid manure system)		≥82,000	25,000-81,999	< 25,000
Ducks (liquid manure system)		≥5,000	1,500-4,999	< 1,500
Ducks (nonliquid manure system)		≥30,000	10,000-29,999	< 10,000

Step 2

Based on the definitions below, determine which worksheet best describes your livestock facility.

Complete the appropriate worksheet.

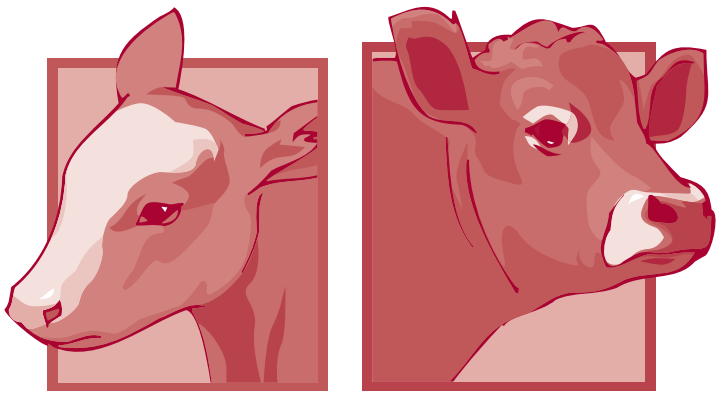
Definitions

Housed Facility — Pens or similar confinement area that is protected from the environment.

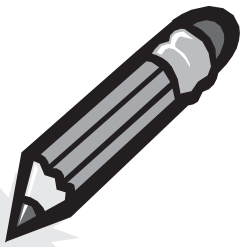
Open lot — Pens or similar confinement areas with dirt, concrete or other paved or hard surface wherein animals or poultry are substantially or entirely exposed to the outside environment except for small portions of the total confinement area affording protection by windbreaks or small shade areas.

Surface Water — For the purpose of the following worksheets, surface water is defined as any stream, lake, reservoir or pond that contains water except for infrequent periods of severe drought. This includes streams that flow only as the result of direct precipitation and snow melt. Waters completely contained on an owner's property and that do not combine or effect a junction with natural surface or underground waters are not included.

Large CAFO — Any animal feeding operation that stables or confines as many or more than the numbers of animals specified in the table of Step 1.



■ Housed Facility Evaluation Worksheet



■ Assessment and prioritization of potential water quality impacts

	Points Available	Points Assessed
1. Based on the number of animals confined for more than 45 days, what is the facility size/type?		
Medium or Small AFO with a complete manure management system permitted by the North Dakota Department of Health	Evaluation is not applicable	
Medium AFO with the numbers in the upper 50 percentile of the animal range for a Medium AFO	10	
Medium AFO with the numbers in the lower 50 percentile of the animal range for a Medium AFO	5	
Small AFO	1	
2. Soil type according to USDA soil survey maps (Unified Soil Classification):		
Course-textured soils (SP, SW, GP, GM)	5	
Silt or loam soils (MH, ML, SM)	3	
Clay soils (CH, CL, SC)	1	
3. Liquid content of manure:		
High liquid content; manure does not stack	5	
Medium liquid content; manure stacks somewhat	3	
Low liquid content; manure stacks easily	1	
4. Feed storage (excludes hay and straw):		
Runoff from raw-fed material is **not** contained	5	
Runoff from raw-fed material is contained or no raw material is fed	1	
5. Type of manure handling practices:		
Stockpiled outside in an uncontained area and is **not** field applied annually	5	
Stockpiled in an uncontained area and field applied annually	3	
Stockpiled in an uncontained area and field applied more than once per year	1	
6. Depth to groundwater below facility:		
Less than 10 feet	10	
Between 10 and 25 feet	6	
Between 26 and 50 feet	3	
Greater than 50 feet	1	
7. Duration livestock are present within the facility:		
270-365 days/year	10	
180-269 days/year	7	
90-179 days/year	4	
Less than 90 days/year	1	

8. Distance to nearest surface water (see definition of surface water):		
Less than ½ mile	10	
Between ½ and 1 mile	6	
Between 1 and 2 miles	3	
Greater than 2 miles	1	
9. Average slope and general topography between the facility and nearest surface water:		
Located adjacent to or within the floodplain of a surface water	10	
Slopes are generally greater than 6% with well defined drainage pattern	6	
Slopes are generally between 3% and 6% with a moderately defined drainage pattern	3	
Slopes are generally less than 3% with poorly defined drainage pattern	1	
	TOTAL SCORE	

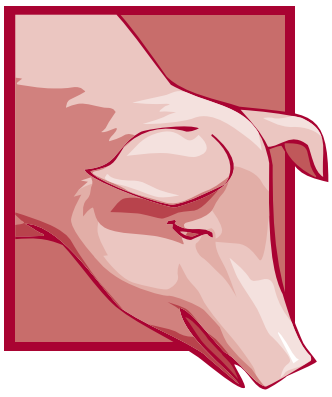
■ Potential water quality impacts associated with the animal feeding operations

Ranking	**Score**
High Potential	> 50
Medium Potential	25-50
Low Potential	< 25

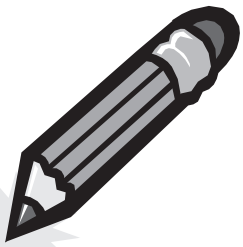
■ Eligibility for a "No Potential to Pollute" designation from the N.D. Department of Health

Some Medium or Small AFOs may qualify for a "No Potential to Pollute" designation from the North Dakota Department of Health (NDDH). Large CAFOs are not eligible for this designation. The final determination of a facility's eligibility for a "No Potential to Pollute" designation can be made only by NDDH personnel. However, if a Medium or Small AFO has a **total** score of 25 or less, the facility may qualify for a "No Potential to Pollute" designation. In such cases, the NDDH should be contacted to provide a final determination on the facility's eligibility.

■ Comments on management options for facility:



■ Open Lot Evaluation Worksheet



■ Assessment and prioritization of potential water quality impacts

	Points Available	Points Assessed
1. Based on the number of animals confined for more than 45 days, what is the facility size/type?		
Medium or Small AFO with a complete manure management system permitted by the North Dakota Department of Health	Evaluation is not applicable	
Medium AFO with the numbers in the upper 50 percentile of the animal range for a Medium AFO	10	
Medium AFO with the numbers in the lower 50 percentile of the animal range for a Medium AFO	5	
Small AFO	1	
2. Soil type according to USDA soil survey maps (Unified Soil Classification):		
Course-textured soils (SP, SW, GP, GM)	5	
Silt or loam soils (MH, ML, SM)	3	
Clay soils (CH, CL, SC)	1	
3. Type of manure handling practices within the facility:		
Manure is **not** removed or field applied annually	5	
Stockpiled and field applied once per year	3	
Stockpiled and field applied more than once per year	1	
4. Bedding practices:		
No bedding material is used	5	
Animals are bedded only in harsh weather	3	
Animals are bedded on a regular basis	1	
5. Feed storage (excludes hay and straw):		
Runoff from raw-fed material is **not** contained	5	
Runoff from raw-fed material is contained or no raw material is fed	1	
6. Depth to groundwater below facility:		
Less than 10 feet	10	
Between 10 and 25 feet	6	
Between 26 and 50 feet	3	
Greater than 50 feet	1	
7. Duration livestock are present within the facility:		
270-365 days/year	10	
180-269 days/year	7	
90-179 days/year	4	
Less than 90 days/year	1	

8. Distance to nearest surface water (see definition of surface water):		
Less than ½ mile	10	
Between ½ and 1 mile	6	
Between 1 and 2 miles	3	
Greater than 2 miles	1	
9. Average slope and general topography between the facility and nearest surface water:		
Located adjacent to or within the floodplain of a surface water	10	
Slopes are generally greater than 6% with well defined drainage pattern	6	
Slopes are generally between 3% and 6% with a moderately defined drainage pattern	3	
Slopes are generally less than 3% with poorly defined drainage pattern	1	
	TOTAL SCORE	

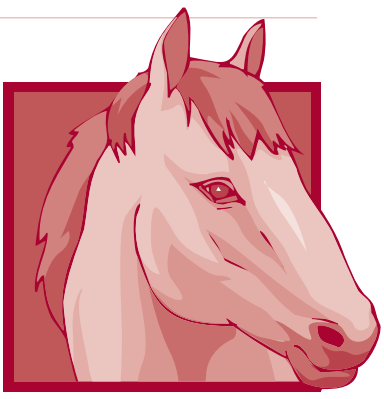
■ Potential water quality impacts associated with the animal feeding operations

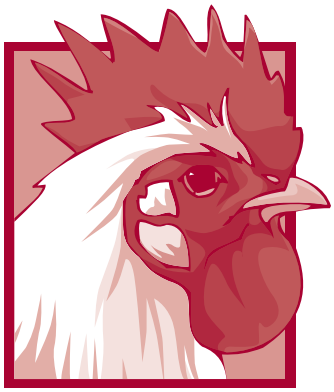
Ranking	**Score**
High Potential	> 50
Medium Potential	25-50
Low Potential	< 25

■ Eligibility for a "No Potential to Pollute" designation from the N.D. Department of Health

Some Medium or Small AFOs may qualify for a "No Potential to Pollute" designation from the North Dakota Department of Health (NDDH). Large CAFOs are not eligible for this designation. The final determination of a facility's eligibility for a "No Potential to Pollute" designation can be made only by NDDH personnel. However, if a Medium or Small AFO has a **total** score of 25 or less, the facility may qualify for a "No Potential to Pollute" designation. In such cases, the NDDH should be contacted to provide a final determination on the facility's eligibility.

■ Comments on management options for facility:





For more information on this an other topics, see: www.ag.ndsu.edu

NM-1284

NDSU Extension Service, North Dakota State University of Agriculture and Applied Science, and U.S. Department of Agriculture cooperating. Duane Hauck, Director, Fargo, North Dakota. Distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914. We offer our programs and facilities to all persons regardless of race, color, national origin, religion, sex, disability, age, Vietnam era veterans status, or sexual orientation; and are an equal opportunity employer. 200-2-05

This publication will be made available in alternative format upon request to people with disabilities (701) 231-7881.