Access Software

University of Nebraska Lincoln EXTENSION

EC194

The Nebraska MMP-AMUP Document Generator

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The Nebraska MMP-AMUP Document Generator is a planning tool for animal feeding operations. The generator works with the Manure Management Planner (MMP) in development of an Annual Manure Use Plan (AMUP). The AMUP includes an annual nutrient use plan, as required for maintenance of a National Pollutant Discharge Elimination (NPDES) permit for livestock waste control facilities (Nebraska Department of Environmental Quality Livestock Waste Control Regulations Title 130: Chapter 14; available online at: *164.119.180.2/RuleAndR.nsf/Pages/130-TOC* (verified Oct. 31, 2005); see appended summary.

Manure Management Planner "is a Windows-based computer program developed at Purdue University that is used to create manure management plans for crop and animal feeding operations. The user enters information about the operation's fields, crops, storage, animals, and application equipment. MMP helps the user allocate manure (where, when and how much) on a monthly basis for the length of the plan (1-10 years). This allocation process helps determine if the current operation has sufficient crop acreage, seasonal land availability, manure storage capacity, and application equipment to manage the manure produced in an environmentally responsible manner. MMP is also useful for identifying changes that may be needed for a non-sustainable operation to become sustainable, and determine what changes may be needed to keep an operation sustainable if the operation expands" (*www.agry.purdue.edu/mmp*; verified Oct. 31, 2005). MMP is free and nationally supported by both USDA-NRCS and EPA. Instructions, sample plans, and comprehensive built-in program help makes it easy to learn to use MMP.

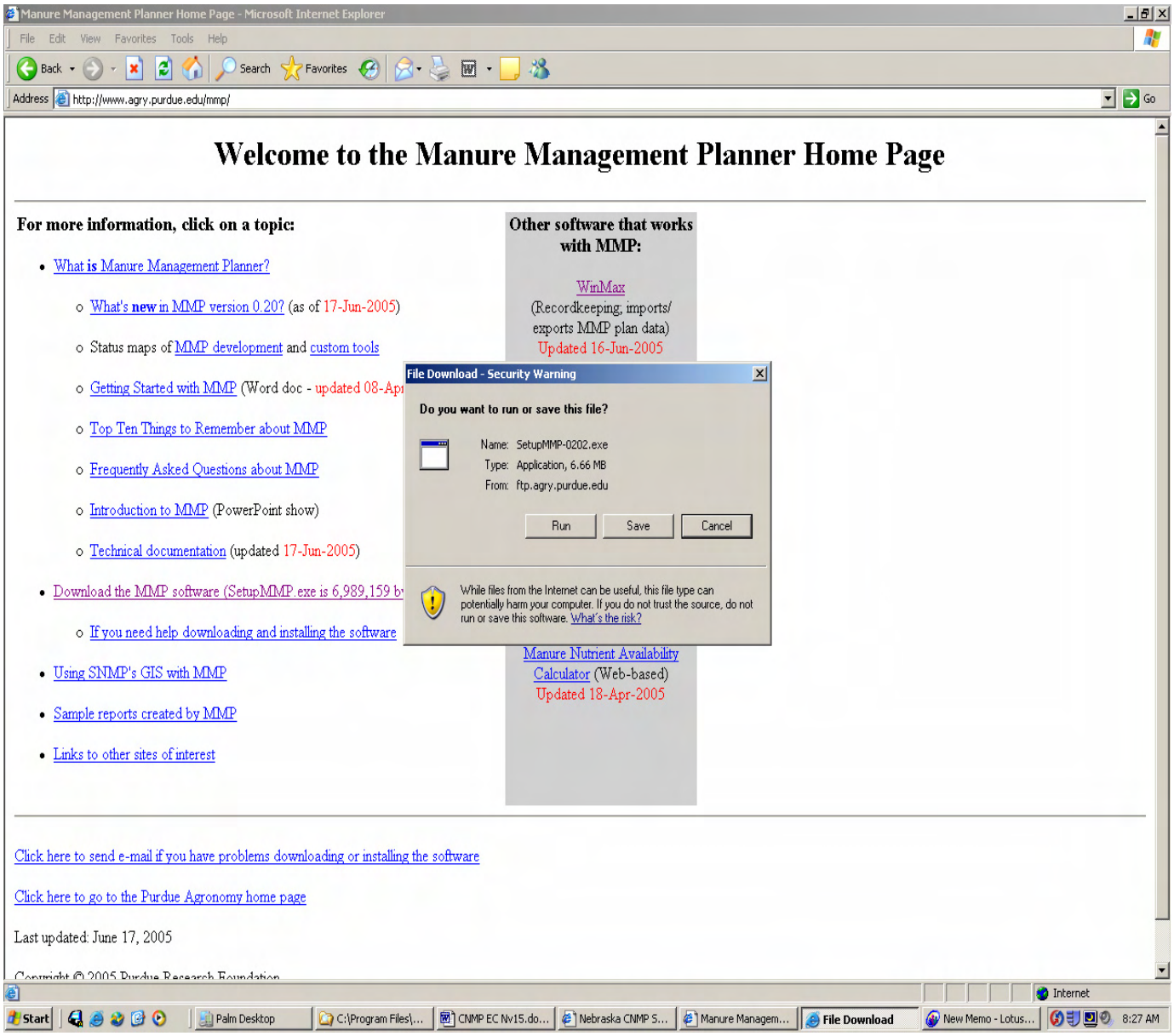
The Nebraska MMP-AMUP Document Generator takes information that has been entered into and calculated by MMP to produce a nutrient management plan. The document generated is a Microsoft Word® document that can be easily edited. Document generation requires Microsoft Access®; the user does not need to know how to use Access but it must be installed on the computer to generate the Word document.

The generated document contains some "boilerplate" text which can be edited, pop-up lists of Word AutoText to select precomposed text, and tables created from queries of information obtained from MMP. (AutoText is a feature of Word for quick insertion of commonly used text, graphics, tables, and other precomposed items.) The document generator allows a major part of the nutrient management plan to be produced automatically and provides guidance on completing the plan. It links to forms that may be useful in completing the plan.

The AMUP is required for maintenance of a permit to operate a livestock waste control facility. It needs to account for the use and harvest of nitrogen from all sources. It must include a nutrient budget for nitrogen and phosphorus that (the following is quoted from NDEQ Livestock Waste Control Regulations Title 130, Chapter 14; available online at: *164.119.180.2/RuleAndR.nsf/Pages/130-TOC*; verified Oct. 31, 2005):

> 001.01 Accounts for all sources of nutrients including, but not limited to, manure, litter, and process wastewater; commercial fertilizer; crop residues and previous legume crops; soil organic matter; available nutrients in the soil; and irrigation water;
> 001.02 Specifies the form, source, amount, timing, and method of application of nutrients on each field; and

IANR



001.03 Minimizes the movement of nitrogen to ground water and minimizes the movement of nitrogen and phosphorus to surface water.

Installation Instructions for the Nebraska MMP-AMUP Document Generator

1) Install the Purdue University **Manure Management Planner** (MMP) from the Web site: www.agry.purdue.edu/mmp/. Follow the installation steps. If you accept the default names for folders created, installation will create **C:\Program Files\MMP 0.20** (or the number of the most recent version) with several folders. One folder is called **C:\Program Files\MMP 0.20\Custom.**

2) To install the Nebraska MMP-AMUP Document Generator, go to cnmp.unl.edu/cnmpsoftware2.html (verified Oct. 31, 2005) under **MMP Document Generators, NE CNMP**. The zip file called **NE MMP cnmpNv05.zip** contains the needed files. Extract NebraskaAMUP.dot, NebraskaAMUP.mdb, NebraskaAMUP.mmt, and NebraskaAMUPqueries.mmt to **C:\Program Files\MMP 0.20\Custom.** The zip file also contains a sample MMP plan and a generated CNMP document.

3) If the Nebraska MMP-AMUP Document Generator was used previously on this computer, delete any ****.amup.doc files from **C:\Program Files\MMP 0.20**.

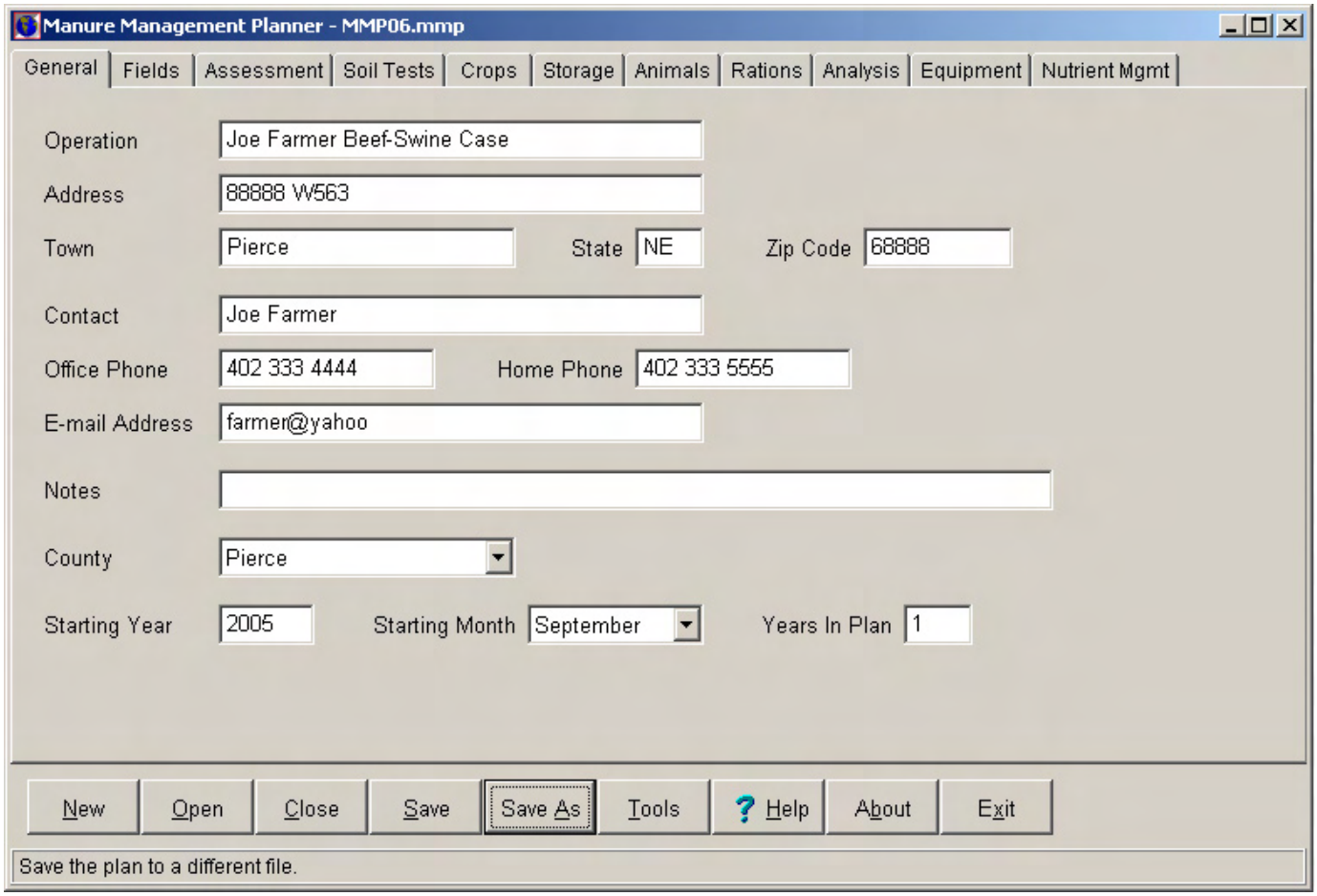


Figure 1. Double left-click on *Make Nebraska Annual Manure Plan* to generate the plan.

Using the Nebraska MMP-AMUP Document Generator

- The AMUP for the next crop year should be created before any application of manure or fertilizer for the next crop. For example, the 2006 AMUP may be developed in August 2005 for September 2005 to August 2006.
- Create an annual manure use plan in MMP. It is suggested that MMP be first used to develop a long-term (e.g. 5 to 10 years) manure management plan. This then provides the basis for making the AMUP each year and avoids re-entry of much data.
- Open the previously created MMP plan and immediately save it with another name, indicating that it is the MMP revised in that year, e.g. MMP06.
- On the **General** page, change the Starting Year to the current year, e.g. if the AMUP is for 2006 but manure and/or fertilizer will be applied in 2005, change the year to 2005. MMP will then ask that you confirm this change; select **Yes** which will delete the earlier years of crop (on the **Crops** page) and nutrient application (on the **Nutrient Mgmt** page) information. Also, change **Starting Month** as appropriate for the start of the annual plan, and change **Years in Plan** to 1.
- Check and update information in MMP. For example, recent soil or manure test data might be added and the manure expected to be on-hand in each manure storage facility at the start month should be adjusted. The nutrient application plan should be revised if needed.
- The AUMP document can be generated once the plan has been verified to be complete using MMP **Tools** "Check the Plans Data for Completeness."
- Save the annual plan with an appropriate name, e.g. save as AMUP06.
- Check the plan again for completeness.
- Go to the MMP **Tools** page and click the Custom tab. This will give several options with yellow symbols and two or more options with green symbols, including: Nebraska AMUP Document Maker and Nebraska AMUP Individual Queries. The latter allows generation of tables for seven individual queries. The AMUP Document Maker is the choice

to generate the full document of the annual manure use plan. (This step requires that Microsoft Access® be installed on the computer.)

- Click on Nebraska AMUP Document Maker and it will give a choice **Make Nebraska Annual Manure Use Plan.** Double left-click on this and the document generation begins *(Figure 1)*. The first time you run the document generator, you should get a message saying it is going to **CREATE** a new document. If you run the generator again for the same plan, it will ask if you want to **UPDATE** the existing document and you should respond with a **YES**. Document generation may take more than one minute to complete, depending on the size of the plan and speed of the computer.
- Find the generated document in **C:\Program Files\ MMP 0.20.** The name will have the form of ****. AMUP.doc with the name of the MMP file from which it was generated (e.g. AMUP06.AMUP.doc). This document can now be revised using Microsoft Word.

The Nebraska MMP-AMUP Document

The generated AMUP document contains a cover page and two sections: the **Annual Plan** and **Documentation and Records**.

Section 1. This section gives the annual plan which has eight parts. A completed table addresses manure to be applied that year: the source, quantity produced, and amount of manure N and P available for land application. The second table lists the manure and effluent handling equipment and the planner must indicate if and when these will be inspected and calibrated. The third table lists the manure storage facilities and the planner needs to indicate when manure sampling will be done. Similarly, the fourth table lists the fields available for manure and effluent application and the planner needs to indicate if and when the soil will be sampled. Table 5 shows the crop to be grown and the recommended nutrient application rates for each field. Table 6 gives manure application information for each field, including the source of manure to be applied, the rate of application, and when and how it will be applied, with particulars such as for applicator settings. Table 7 gives information on fertilizer application for each field, including the rate of application and when it will be applied.

Section 2. This section addresses record keeping with information about 15 types of records that may be required. The document has links to access additional information and forms. These records include:

- the annual plans;
- post cropping season summary;
- manure analysis records;
- soil test records;
- manure application field records;
- manure storage reports;
- groundwater monitoring reports;
- water system inspection;
- livestock waste discharge notification;
- producer record of odor complaints;
- storage inspection checklist and maintenance log;
- storage volume and level record;
- daily precipitation record;
- calibration and maintenance of application equipment; and
- manure transfer to off-farm users.

Nebraska Department of Environmental Control Title 130 Livestock Waste Control Regulations:

Summary of Land Application Requirements Effective February 14, 2005

References to land application of animals manures were extracted from Nebraska Title 130 and included in this document. The full document is available on the Web at *www.deq.state.ne.us/RuleAndR.nsf/Pages/130-TOC*.

Chapter 1 – Definition of Terms

001 "Agronomic rates" means the application of livestock wastes and process wastewater at rates that meet crop needs for nitrogen and phosphorus, while taking into account other sources of nutrients, and without leading to or causing water quality impairment due to over application.

004 "Application area" means land utilized for the land application of livestock wastes.

020 "Irrigation distribution system" means any device or combination of devices having a hose, pipe, or other conduit, which connects directly to any source of ground or surface water, through which livestock wastes or a mixture of water and livestock wastes is drawn and applied for agricultural or horticultural purposes.

026 "Livestock wastes" means animal and poultry excreta and associated feed losses, bedding, spillage or overflow from watering systems, wash and flushing waters, sprinkling waters from livestock cooling, precipitation polluted by falling on or flowing onto an animal feeding operation, and other materials polluted by livestock wastes.

039 "Process wastewater" means water directly or indirectly used in the operation of the animal feeding operation for any or all of the following: spillage or overflow from animal or poultry watering systems; washing, cleaning, or flushing pens, barns, manure pits, or other animal feeding operation facilities; direct contact swimming, washing, or spray cooling of animals; or dust control. Process wastewater also includes spent foot bath water and any water that comes into contact with any raw materials, products, or byproducts including manure, litter, feed, milk, eggs or bedding.

048 "Waters of the State" means all waters within the jurisdiction of this State including all streams, lakes, ponds, impounding reservoirs, marshes, wetlands, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, situated wholly or partly within or bordering upon the State.

Chapter 2 – Animal Feeding Operations – Requirements and Prohibitions

008 Any person who owns or operates an animal feeding operation shall not:

> 008.02 Allow livestock at an animal feeding operation to come into direct contact with waters of the State, apply livestock waste on or into waters of the State, or to otherwise allow or cause a discharge;
>
> 008.03 Apply manure, litter, or process wastewater to land in a manner that results in a discharge to waters of the State or that is not in accordance with nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure, litter, or process wastewater;
>
> 008.04 Stockpile livestock waste in a drainage way or other location where it is likely to impact waters of the State;

Chapter 5 – Permit: When to Apply, Application, Terms and Conditions, and Annual Report

004 Each application for a permit or request for coverage under a general permit shall consist of and include at a minimum, the following:

009 The permittee shall operate the facility in accordance with the permit, these regulations, and any terms and conditions as determined by the Department, including the following:

> 009.05 The permittee, authorized representative, or an employee of the operation shall have attended and completed a land application training program approved by the Department within 180 days of permit coverage unless such training was satisfactorily completed in the previous 5 years. Additional training is required every 5 years. The permittee is responsible for insuring that the required training is maintained. Records of training shall be kept by the permittee;

009.06 The permittee is required to conduct a field phosphorus risk assessment prior to initial land application of manure, litter, or process wastewater and then prior to subsequent land application if the risk value of any site category listed in Table 3 of Appendix F has changed, but in no case less than once every five years;

009.07 The permittee shall submit an annual report for the previous calendar year to the Department by March 1. The annual report must include the following:

009.07A The maximum number and type of animals at the operation at any one time, whether in pen confinement or housed under roof;

009.07B Estimated amount of total manure, litter, and process wastewater generated by the operation in the previous calendar year reported in tons or gallons, as appropriate;

009.07C Estimated amount of total manure, litter, and process wastewater transferred to other persons from the operation in the previous calendar year reported in tons or gallons, as appropriate;

009.07D Total number of acres for land application covered by the nutrient management plan;

009.07E Total number of acres under control of the operation that were used for land application of manure, litter, and process wastewater in the previous calendar year;

009.07F Summary of all manure, litter, and process wastewater discharges from the production area that occurred in the previous calendar year, including the date, time over which the discharge occurred, and the approximate volume discharged with supporting figures;

009.07G The name, address, and telephone number of the person who is primarily responsible for land application practices at the operation, whether that person is an authorized representative or employee of the operation, and the date that land application training was last completed;

009.07H A statement indicating whether the current version of the operation's nutrient management plan was developed and approved by a certified nutrient management planner; and

009.07I Any changes made to the nutrient management plan during the previous calendar year, including at a minimum, any changes in land application areas, methods of soil sampling, methods of soil analysis, and means to determine application rates. Information submitted should include all supporting documentation. Changes in methods of land application and other major modifications require a new application and approval prior to the change.

Chapter 7 – Effluent Limitations for Concentrated Animal Feeding Operations

005 For permitted large beef, dairy, heifer, swine, poultry, horse, sheep, and veal concentrated animal feeding operations that land apply manure, litter, or process wastewater, discharges from the land application areas under control of the permittee are subject to compliance with the following:

005.01 Implement a nutrient management plan prior to December 31, 2006, or at the time of reissuance of the permit, for land under the permittee's control. Land under the permittee's control includes;

005.01A Owned areas;

005.01B Rented or leased areas including land rented or leased solely for land application area; and

005.01C Any area where the permittee stockpiles, spreads, or delivers waste to, or otherwise controls the timing, amount, or rate of waste application.

005.02 Land apply manure, litter, and process wastewater at application rates that minimize phosphorus and nitrogen transport from the field to waters of the state in compliance with the technical standards established in Chapter 14;

005.03 Analyze manure, litter, and process wastewater at least once a year for nitrogen and phosphorus content. Analyze soil at each application site for nitrogen content prior to the first application of any manure, litter, or process wastewater and then at least annually thereafter when used for application. Analyze soil at each application site for phosphorus content prior to the first application of any manure, litter, or process wastewater and then at least once every 5 years thereafter if used anytime in the 5 years for land application. The results of these analyses are to be used in determining application rates for manure, litter, and other process wastewater;

005.04 Periodically inspect equipment used for land application of manure, litter, or process wastewater for leaks;

005.05 Maintain setback distances during land application practices in compliance with Chapter 9; and

005.06 Maintain the records onsite as specified in Chapter 12.

Chapter 9 – Location Restrictions and Setbacks

005 For large concentrated animal feeding operations, manure, litter, and process wastewater may not be stockpiled or applied closer than 100 feet to any downgradient surface waters, open tile line intake structures, well heads, or other conduits to surface or ground water, except that one of the following two compliance alternatives may be substituted for the application setback requirement:

005.01 A 35 foot wide vegetated buffer where the application of manure, litter, or process wastewater is prohibited. For the purposes of these regulations vegetated buffer means a permanent strip of dense perennial vegetation established parallel to the contours of and perpendicular to the dominant slope of the field for the purposes of slowing water runoff, enhancing water infiltration, and minimizing the risk of any potential nutrients or pollutants from leaving the field and reaching surface waters; or

005.02 A satisfactory demonstration that a setback or buffer is not necessary because implementation of alternative conservation practices will provide pollutant reductions equal to or better than reductions that would be achieved by the 100 foot setback.

006 For small and medium concentrated animal feeding operations and animal feeding operations not required to seek permit coverage, manure, litter, and process wastewater may not be stockpiled or applied closer than 30 feet of any streams, lakes and impounded waters identified in Chapter 6 and Chapter 7 of Title 117 (Nebraska Administrative Code) – Nebraska Surface Water Quality Standards, unless in accordance with a Department approved nutrient management plan.

Chapter 10 – Disposal Through an Irrigation Distribution System: Equipment Requirements

001 An animal feeding operation proposing to use an irrigation distribution system for disposal shall submit a plan to the Department for its approval detailing the type and location of mechanical devices to be installed. The plan must clearly indicate whether or not there are any water source connections (such as well heads or surface water diversions), show the location of the water source, indicate whether or not the system will be completely disconnected from the water source when the irrigation system is used for land application, and detail the type and location of all piping and mechanical devices.

002 Any irrigation distribution system, except an open discharge system, through which livestock wastes are distributed shall be equipped with one of the mechanical devices specified below. The equipment shall be installed in accordance with the manufacturer's specifications and at the location specified. The purpose of this equipment is to prevent livestock wastes or a mixture of livestock wastes and water from being pumped, drained, or siphoned into the irrigation water source.

003 The Department may rely on inspections conducted by the Natural Resources Districts, pursuant to Title 195 (Nebraska Administrative Code) – Rules and Regulations Pertaining to Chemigation, to help verify compliance with the requirements of this Chapter.

004 Irrigation pipeline check valve assembly. The check valve assembly may be one component or a combination of components consisting of an irrigation pipeline check valve, vacuum relief valve, inspection port and low pressure drain. The assembly shall be located in the pipeline between the irrigation pump and the point of livestock wastes injection into the irrigation pipeline.

004.01 Irrigation pipeline check valve. The check valve shall be located in the pipeline between the irrigation pump and the point of livestock wastes injection into the irrigation pipeline.

004.01A Existing irrigation distribution systems which, as of the date of these rules and regulations, are equipped with a properly located check valve shall be considered in compliance if the valve provides a watertight seal against reverse flow.

004.01B Irrigation distribution systems which are not equipped with a check valve or contain a check valve which after repair cannot provide a watertight seal against reverse flow shall be equipped with a check valve model certified to the director as meeting the leakage test requirements in Appendix I of Title 195 (Nebraska Administrative Code) - Rules and Regulations Pertaining to Chemigation.

004.02 Vacuum relief valve. The vacuum relief valve shall be located on the pipeline between the irrigation pump and the irrigation pipeline check valve. Its purpose is to prevent creation of a vacuum when the water flow stops.

004.03 Inspection port. The inspection port or other viewing device shall be located on the pipeline between the irrigation pump and the irrigation pipeline check valve. In many cases the vacuum relief valve connection can serve as the inspection port.

004.03A The inspection port or viewing device shall be situated in such a manner that the inlet to the low pressure drain can be observed.

004.03B A minimum four-inch diameter orifice or viewing area is required.

004.04 Low-pressure drain. The low-pressure drain shall be located on the bottom of the horizontal pipe between the irrigation pump and the irrigation pipeline check valve. Its purpose is to drain any mixture of water and livestock waste away from the irrigation water source.

004.04A The drain shall be constructed of corrosion resistant material or otherwise coated or protected to prevent corrosion.

004.04B The drain shall have an orifice of at least three-quarter inch diameter and shall not extend into the horizontal pipe beyond the inside surface of the bottom of the pipe; and

004.04C When the pipeline water flow stops, the drain will automatically open. A tube, pipe or similar conduit shall be used to discharge the solution at least 20 feet from the irrigation water source.

Chapter 11- Best Management Practices

005 All livestock wastes removed from the facility and the animal feeding operation itself shall be land applied or stockpiled in a manner which will not contribute to water pollution. The owner or authorized representative shall remain responsible for wastes removed from the operation to land under his or her control.

008 In the event of an accident or emergency, such as a spill, release or discharge of animal waste due to such events as power failures, large storms, leaks or breaks in water supply systems, component failure of the waste control facilities and any releases during land application due to equipment failure or accidents or irrigation equipment failure, the owner or authorized representative will take actions as needed to stop the cause, contain and control any release, and cleanup any affected areas. Any discharge of waste shall be reported to the Department within 24 hours of the event. A written report is also required to the Department within seven days of the event. The Department may require additional actions or additional information. In the event of an immediate safety hazard, the owner or authorized representative must also notify the appropriate local official, such as the county sheriff.

012 For a field or field segment with a high or very high phosphorus risk assessment rating, there shall be no application of manure, litter, or process wastewater when the soil is frozen, or snow or ice covered.

Chapter 12- Inspection, Maintenance, and Record Keeping Requirements

001 The permittee is required to have routine inspections conducted of the production area, irrigation distribution system, and land application areas as follows:

001.04 Inspections prior to operation of the irrigation distribution system and the water source protection equipment identified in Chapter 10 to ensure that the system and equipment operate as intended. The system must be monitored while in use to insure the system operates as intended; and

002 The owner or authorized representative must maintain all facilities and equipment in proper working condition. Any deficiencies found must be corrected as soon as possible. For a permittee the deficiencies and corrective actions must be documented and an explanation of the factors preventing immediate correction must be included for deficiencies not corrected within 30 days.

004 ... land application area records must be maintained at the concentrated animal feeding operation for a period of five years from the date they are created. A complete copy of the following information is required:

004.01 For large concentrated animal feeding operations, records to document the inspections required in 001 above;

004.03 Records to document any actions taken to correct deficiencies found as a result of required inspections. For any deficiencies not corrected within 30 days, the record must include an explanation of the factors preventing immediate correction;

004.06 The nutrient management plan, which also includes the test methods used to sample and analyze manure, litter, process wastewater, and soil;

004.07 The date, time, and estimated volume of any overflow or discharge;

004.08 Expected crop yields for the land application areas;

004.09 The date(s) manure, litter, or process wastewater was applied to each field;

004.10 For large concentrated animal feeding operations, weather conditions at the time of application and for 24 hours prior to and following application;

004.11 Results from manure, litter, process wastewater, irrigation water, and soil sampling and testing;

004.12 Explanation of the basis for determining manure, litter, and process wastewater application rates, as required by the Department;

004.13 For large concentrated animal feeding operations, results of the most recent phosphorus risk assessment for each field or field segment including the legal description, date assessed, name of the person who completed the assessment, and the level of risk assessed;

004.14 Calculations that show the total nitrogen and phosphorus to be applied to each field;

004.15 Total amount of nitrogen and phosphorus actually applied to each field, including documentation;

004.16 The method used to apply the manure, litter, or process wastewater;

004.17 For manure, litter, or process wastewater transferred to other persons the nutrient analysis results and the date, recipient name and address, and approximate amount transferred; and

004.18 Dates of inspections of equipment used to apply manure, litter, or process wastewater.

005 Owner or authorized representatives of animal feeding operations, which have livestock waste control facilities, but which are not concentrated animal feeding operations shall, at a minimum;

005.02 Inspect any irrigation distribution system used for land application of animal wastes and the water source protection equipment identified in Chapter 10 prior to operation and monitor periodically while in use to ensure that the system and equipment operate as intended.

Chapter 14 – Nutrient Management – Plan requirements, Field Assessment, and Performance Standards

001 The nutrient management plan, as required in Chapters 4 and 5, shall provide for the agronomic utilization of nitrogen from all sources, as well as the expected removal of nitrogen in the harvested plant biomass and include a nutrient budget for nitrogen and phosphorus that:

001.01 Accounts for all sources of nutrients including, but not limited to, manure, litter, and process wastewater; commercial fertilizer; crop residues and previous legume crops; soil organic matter; available nutrients in the soil; and irrigation water;

001.02 Specifies the form, source, amount, timing, and method of application nutrients on each field; and

001.03 Minimizes the movement of nitrogen to ground water and minimizes the movement of nitrogen and phosphorus to surface water.

002 The nutrient management plan must, at a minimum, include the following:

002.01 For each field or field segment used for land application area:

002.01A The legal description and maps of planned waste application areas to be utilized by the operation;

002.01B A description of the field areas to be used including the number of useable acres, dominant soil type, cropping practices, historic yields with supporting documentation or published county average yields, a description of any setbacks or buffers, and use of the land by other animal feeding operations;

002.01C Maps or aerial photos which clearly show the location and extent of any surface water or wetlands within the boundaries of the field, as well as the location and extent of any surface water within 200 feet of the field;

002.01D For any areas not owned by the permittee or an owner or authorized representative of the operation, the landowner's name, address, legal description, number of acres and an agreement signed by the landowner that clearly identifies the area (legal description and field acres) and allows for the agronomic application of manure, litter, or process wastewater to the land;

002.01E Waste sampling and analytic methods, land application area soil sampling procedures including sampling depths, soil analytic methods, land application methods to be used, and procedures and assumptions used to determine appropriate application rates and frequencies, which comply with these regulations; and

002.01F Record keeping of locations and quantities of livestock wastes and other sources of nutrients land applied, and soil and waste sampling and testing results.

003 The nutrient management plan shall, at a minimum, provide for sampling and laboratory testing as follows:

003.01 Manure, litter, and process wastewater at least annually for nitrogen and phosphorus content;

003.02 Application site soils for nitrogen content before the initial application of manure, litter, or process wastewater, and then sample and analyze at least annually thereafter if used for application;

003.03 Application site soils for phosphorus content before the initial application of manure, litter, or process wastewater and then at least once every five years thereafter if used for application;

003.04 Irrigation water prior to initial use and at least once every five years thereafter for nitrogen; and

003.05 University of Nebraska guidelines for sampling and analysis may be used. The Department may approve alternate methods as appropriate.

004 The application rate of liquid containing manure, litter, or process wastewater that is applied through any irrigation system shall not exceed the intake rate of the soil such that runoff of the manure, litter, or process wastewater occurs. Total liquid application shall not exceed the field capacity of the soil.

005 The owner or operator is required to update the Department annually of any changes to the nutrient management plan as provided for in Chapters 4 and 5.

006 The permittee of a large concentrated animal feeding operation is required to conduct a field phosphorus risk assessment prior to initial land application of manure, litter, or process wastewater and then prior to subsequent applications if the risk value of any site category listed in Table 3 of Appendix F has changed, but in no case less than once every five years. For existing large concentrated animal feeding operations, this section is effective January 1, 2007. The assessment evaluates such factors as soil type, slope, crop residue, soil fertility, potential for erosion, and planned cropping practices for each application site, to determine the potential for phosphorus transport from the field. The assessment shall be completed for each field or field segment using the form provided in Appendix F, which is based on a method developed by the United States Department of Agriculture Natural Resources Conservation Service, or by using a comparable field phosphorus risk assessment method and forms approved for use by the Department. The plan shall identify the phosphorus risk assessment used for each field or field segment. The planned application rates for manure, litter, or process wastewater shall be consistent with the risk assessment for each field, or field segment, as follows:

006.01 For a field where there is a low or medium risk of movement from the field of significant levels of phosphorus, the applicant or permittee may base a single year's application of manure, litter, or process wastewater on multiple years of expected phosphorus removal by the crop, limited by the proper accounting for use by the crop of the expected annual available nitrogen from the waste and other sources;

006.02 For a field where there is a high risk of movement from the field of significant levels of phosphorus, the applicant or permittee must keep the planned application of manure, litter, or process wastewater at or below the expected phosphorus removal by the crop for the year, but limited by the proper accounting for use by the crop of the expected annual available nitrogen from the waste and other sources; and

006.03 For a field with a very high risk, the applicant or permittee must not apply any manure, litter, or process wastewater.