



# Odor and Nutrient Management

Summer 2007  
EDC-129-36, Volume 10, Issue 2

## Iowa Open Feedlot Livestock Producers Still Need Nutrient Management Plans by July 31

by Karen Grimes, Iowa Department of Natural Resources

Despite a federal delay, the Iowa Department of Natural Resources (IDNR) has confirmed that Iowa livestock and poultry producers who are required to submit nutrient management plans must meet the state deadline of July 31, 2007.

The U.S. Environmental Protection Agency announced on May 4, a plan to delay the federal deadline for requiring nutrient management plans, moving the due date to Feb. 27, 2009. However, this has little impact on Iowa open feedlot producers because of a state law which requires Iowa producers to submit the plans to the IDNR by July 31, 2007.

A nutrient management plan (NMP) is required for open feedlots that have or exceed 1,000 animal units. That is equal to or more than 1,000 beef cattle, 700 mature dairy cattle or 2,500 finishing hogs.

A few other producers need a nutrient management plan, but only if they are required to have a national pollutant discharge elimination system (NPDES) permit.

Nutrient management plans (NMPs), are similar to the manure management plans that confinement producers must have. Preparing the plan calls for calculating how much manure is produced, the nutrient content of that manure, the appropriate application rates and the acres of crop fields needed to land apply the manure.

Producers must also use the phosphorus or (P) Index to develop their nutrient management plans, something many open feedlot producers probably haven't done. The P Index is used to analyze several factors when determining how much phosphorus can be land applied.

These factors include the erodibility of the crop field, the concentration of phosphorus that is already present in the field and the distance from the nearest stream.

The plans must be approved by the IDNR before removing or land-applying any manure or feedlot nutrients after July 31. Producers can find a form for the plan (IDNR form 542-2021) on the IDNR Web site at <http://www.iowadnr.gov/afo/forms/5422021.doc> or by calling their nearest IDNR field office.

The IDNR notified about 150 open feedlot producers in May that they needed a plan and they needed to provide public notice of that plan. Producers should make sure that the NMP is on file in the regional DNR field office before publishing the notice. The public has 30 days after the date of publication to review and make comments on the plan. Producers need to submit a clipping of the published notice to the IDNR before their plan can be approved.

Additional information can be found on the DNR Web site at [http://www.iowadnr.gov/afo/mhandling\\_nmp.html](http://www.iowadnr.gov/afo/mhandling_nmp.html), including specifics for producers and for the general public. Or, producers can go directly to the Public Notice form (IDNR form 542-1553) at <http://www.iowadnr.gov/afo/forms/5421553.doc> and use it when submitting the public notice to a paper in the area where the manure is stored or land applied. Producers who use the Public Notice form should be able to meet state requirements.



R Klein  
ISU Extension



(Management Plans continued from front page)

The IDNR developed the form after a couple of producers prepared plans and published a public notice that did not have all the required elements. Unfortunately they had to redo the public notice.

More forms, including recordkeeping forms, are available on the Iowa Manure Management Action Group (IMMAG) Web page. These forms can be found at <http://www.agronext.iastate.edu/immag/ppr.html#of>. Use of these specific forms is not required by the IDNR, but the information must be recorded and reported as required by the NPDES permit.

Producers can talk to the IDNR's environmental specialists who can answer questions about the forms and the requirements. The IDNR has environmental field offices in the following areas:

- Northeast Iowa, Manchester, (563) 927-2640.
- North central Iowa, Mason City, (641) 424-4073.
- Northwest Iowa, Spencer, (712) 262-4177.
- Southwest Iowa, Atlantic, (712) 243-1934.
- South central Iowa, Des Moines, (515) 725-0268.
- Southeast Iowa, Washington, (319) 653-2135.

Producers who have developed a Comprehensive Nutrient Management Plan (CNMP) to secure federal cost-share can submit that plan to the IDNR as a substitute for the NMP. However, it must meet all the nutrient management plan requirements to be approved by the IDNR.

Perhaps most important, producers need to follow the plan once it is developed. That includes applying manure at agronomic rates, updating the plan when conditions warrant a change and keeping records of manure application.

Producers seeking assistance in the development of nutrient management plans can access a list of service providers on the IMMAG Web page at: <http://www.agronext.iastate.edu/immag/sp.html>

In addition to the IDNR forms identified in this article, all IDNR forms for animal feeding operations can be found at: <http://www.iowadnr.gov/afo/forms.html>

## Living with Your NPDES Permit

by John D. Lawrence, Iowa State University

Livestock producers and their engineers expend a great deal of time, energy and money to get a construction permit to build or expand a Concentrated Animal Feeding Operation (CAFO). For first-time National Pollutant Discharges Elimination Systems (NPDES) permit holders, receiving the permit is seen as the end of the journey, but what they find is that it is only the beginning. Running their operation in accordance with the permit and maintaining the documentation required is a shock to producers who haven't had a permit. Often times there is a disconnect between the engineer who designed the system and the producer who must operate it. To help producers better understand their obligations and develop strategies to meet them, Iowa State University Extension in conjunction with Heartland Water Coordination Program conducted two workshops entitled *Living With Your Permit*.

The target audience was Iowa NPDES permit holders and those who are in the process of receiving a permit. The Iowa Department of Natural Resources (IDNR) provided a mailing list of these operations and each was sent a personalized letter inviting them to attend one of two workshops. A letter also was sent to consultants operating in Iowa who service these producers. IDNR field staff that inspects these operations also attended to hear what producers were told regarding management and reporting. In total over 120 people attended the 10 a.m. to 2 p.m. workshops.

The workshop walked participants through the permit and discussed what is required to be monitored with records kept on site and what is required to be submitted to DNR. Participants received a notebook that included:

- Two checklists with requirements stated in their permits:
  - one for daily and weekly monitoring and recording to be kept on site
  - one for reports that must be submitted to DNR
  - Record and report forms for each activity stated in their permit.
- Steps and timeline for developing a nutrient management plan and records required to implement and maintain an NMP.
- Resource materials and information to support their environmental management.



The checklists, forms and other materials are available at: ISU's April 2007 Feedlot Meetings at <http://www.agronext.iastate.edu/immag/ppr.html#of>.

The purpose of the workshop was to educate producers and their consultants on responsibilities identified in their permit, provide them the forms to complete, and discuss strategies for managing within their permit. The checklists provided a management framework. A sample of the monitoring checklist is shown in Figure 1. It lists the activity, how often it must be done, who is responsible, and how the data will be captured and recorded. The forms identified can be found on the IMMAG Web page at the above link.



**Figure 1. Sample Monitoring and Recordkeeping List**

Records Checklist for NPDES permit (Recorded and maintained on the farm, records are used to support reports)					Form #10
Activity	Frequency	Form Number	Who will record	How to record	
Precipitation Temperature	Daily	DNR 542-1551			
Waters and waterlines	Daily	Form #6			
Feedbunk Reading	Daily	Form #6			
Liquid level in runoff basin	Weekly, (daily if above must pump level)	Form #2			
Inspect solid settling basins	Weekly	Form #2 Pg. 2			
Inspect Clean Water Diversion	Weekly	Form #2 Pg. 2			
Pen cleaning	Per event	Form #1			
Manure application (Solids)	Per event	Form #1			
Transfer of Manure	Per event	Form #7			
Manure application (Liquids)	Per event	Form #3			
Discharges	Per event	Form #3			
Equipment Inspection/ Calibration	Per event	Form #5 & Form #2			
Soil Test Results	Per event	Lab Copies			
Animal Mortality	Monthly	Form #8			
Manure Sample	Yearly	Lab Copies plus Form #4			
Crop Yield Commercial Nutrients Applied	Yearly	Individual Field Records Statement of Intent DNR 542-8167			
Water Withdrawal	Yearly	DNR 542-3115			
Other _____					

Additional copies of form can be found at: <http://www.agronext.iastate.edu/immag/ppr/form10rchecklistnpdespermit.doc>

(continued on page 4)



(NPDES Permits continued from page 3)

The reporting checklist is similar but identifies when reports are due and where to send them as well as the form number and who is responsible for completing and sending the report, see Figure 2.

**Figure 2. Sample Reporting Checklist**

Reports Checklist for NPDES Permit (Reports are filed with DNR)				Form #11
Report	Frequency	Form number	Who will complete	Where is to be sent and how many copies
Daily precipitation	Quarterly April 10 July 10	DNR 542-1551		Your local DNR Field Office
Temperature	Oct. 10 Jan 10			Example: Field Office #3 1900 N. Grand Ave. Spencer, IA 51301
Liquid Level	Quarterly April 10 July 10 Oct. 10 Jan 10	DNR 542-1551		
Surface or Groundwater samples; Soil Samples (lab report and sample location); Manure Samples	Per event	DNR 542-1551		
Discharges	Per Event	Form #9		
Annual Report	January 10, annually	DNR 542-1552		

Additional copies of form can be found at <http://www.agronext.iastate.edu/immag/ppr/form11reportscnpdes.doc>

The objective is to make the monitoring and reporting for the permit part of the regular management of the feedlot. The checklist clearly identifies what needs to be done and when. An individual within the operation is assigned responsibility for the task and the procedure is defined to assure consistency in how the data are recorded. If the person responsible is gone, instructions are written for the next person. Likewise, the reporting checklist has the dates, forms and addresses all in one place to simplify the reporting. Examples procedures were provided and partici-

pants offered suggestions on how they did things in their operation. For example, is weather data collected from an on-site electronic weather station or the nearby school-net station? Who inspects and reports water lines, the feed truck driver or the pen-checker?

The participants also were provided a set of recommended forms to use in their operation. IDNR has two required forms for the reports that must be submitted. There are no official forms for monitoring activities, yet producers are required to monitor certain activities and with specified frequency and have evidence that they did so. The forms in the notebook provide producers an acceptable format that can be used as is or can be modified to fit their operation.

Participants also were walked through the process for developing, receiving and reporting on a nutrient management plan. In Iowa, the deadline for having a NMP is July 31, 2007. A timeline was presented working backwards from July 31 that included time for departmental review, public notice, plan development, including development of the Iowa P Index and RUSLE2 calculations, and soil sampling. The key message is that there is a series of activities that have to occur in a set order and that the clock is ticking.

At the end of the day participants had a much better understanding of their responsibilities under their NPDES permit. They had a checklist of daily, weekly, monthly, quarterly and annual activities to monitor and record and they have the forms to use. Participants also better understand the process and time required for developing an NMP. The measure of success of the workshop will be how effectively participants manage their operations to stay in compliance with their NPDES permits.



The monitoring and recordkeeping checklist and the reporting checklist, along with the form numbers referenced in the checklists can be found on the IMMAG Website at <http://www.agronext.iastate.edu/immag/ppr.html#of>. Except for the required IDNR forms, forms 1-11 may be downloaded to your computer and modified as necessary for your operation.



### Upcoming Events

#### Feedlot Permit Workshops

Several manure management events throughout Iowa and the Midwest are being offered by commodity groups, local producers, watershed groups, equipment manufacturers, state agency staff and extension services during this summer and fall.

Some of these events require registration. For more information regarding these events, including directions, please visit the Iowa Manure Management Action Group (IMAG) Web page at <http://www.agronext.iastate.edu/immag/> and click the Events button. The list on the IMMAG Web site is updated continuously throughout the year.

#### Manure Application Field Day – July 11

The Elk River Watershed Project, in conjunction with the Clinton and Jackson Soil and Water Conservation Districts, the Natural Resources Conservation Service (NRCS), Iowa State University Extension and IMMAG are sponsoring a Manure Application Field Day Scheduled for July 11 from noon to 3 p.m. The objective of this field day is to help feedlot producers determine the value of their feedlot manure and to apply rates to help meet crop nutrient needs. Topics include: feeding distiller's grains, sampling manure for nutrient analysis and how to calibrate your manure spreader. The field day will be held at the Todd Shannon farm located at 502 525th Ave, Miles, Iowa. Drive south out of Miles on Z40 for a half mile, turn east on 1st St. and go 1.5 miles, turn north on 525th Ave. The field day will be at the first farm on the left. Lunch is provided, so please RSVP to (563) 659-3456, extension 3 by July 9, if you plan to attend. If you have any questions, please contact Leah Sweely, Elk River Watershed Coordinator, at (563) 659-3456, extension 3.

#### Manure Application Education Day – Aug. 7

The NRCS office in Carroll County has scheduled a manure application education day beginning at registration at 9:30 a.m. The event will begin at 10 a.m. and continue to 2:30 p.m. Lunch will be served. Demonstrations will include how to calibrate a manure spreader and collect manure samples for nutrient analysis. Discussion will also include the proper use of a Comprehensive Nutrient Management Plan and a brief regulatory update. Directions to the site: take Grant Road south of Hwy 30 in Carroll, go approximately a half mile to Anthony Road, go east a quarter mile past Keumper Fieldhouse. The site is located in an alfalfa field on the north side of the road. For more information contact Kelly Heather at (712) 792-5785, extension 3.

#### Upper Midwest Manure Handling Expo-Manure Tech 2007 – Aug. 21

This year's Expo will be held at the Dairy Forage Research

Center Farm near Prairie du Sac, Wisconsin (between Madison and Wisconsin Dells). Featured highlights of this year's event include demonstrations of pit agitation, tanker, dragline and solid manure application equipment, hose laying and live action confined space entry/rescue and manure spill response demonstrations.

Educational seminars include compost barn management, sod and pasture manure application, tools for evaluating soil moisture in the field, runoff prevention and manure management in no-till. A trade show and equipment vendor display (from application to treatment, in-barn handling to environmental risk assessment) round out the event. There is no admission charge. ManureTech 2007 is sponsored by the Professional Nutrient Applicators Association of Wisconsin, in cooperation with University of Wisconsin Extension and the USDA Dairy Forage Research Center. For more information, and an updated list of vendors exhibiting, visit [www.wimanuremgt.org](http://www.wimanuremgt.org). Watch the Web site for updates on tentative equipment information, including the remote controlled sonar boat for measuring solids in a manure storage structure and floating pit dredge boat for sand and solids removal. For information, contact Ted Bay at (608) 723-2125 or Kevin Erb at (920) 391-4652.

#### Ag Field Day – Aug. 23

The Winnebago Soil and Water Conservation District in cooperation with NRCS and ISU Extension are sponsoring a manure management and strip-till field day located a half mile south of Hwy 9, on 90th Ave. The field day begins at 9:30 a.m. and will continue through mid-afternoon with lunch being served. The field day will focus on manure sampling, equipment calibration, and meeting application rates, including discussion on the P Index. A local EQIP participant will also share his success story of converting from conventional tillage to no-till/strip-till and the benefits he has seen. There will be strip-till demonstrations in the morning with all manure activities to follow after lunch. For more information contact Brenda Tenold-Moretz at (641) 584-2211.

#### Manure Management Clinic – Aug. 28-29

The purpose of this clinic is to train service providers, commodity partner, agency personnel, extension field staff and producers in issues related to manure management. This is the fourth year for this clinic, and unlike the previous years, this clinic will not focus on species-specific issues but will focus on a broader range of topics that will help take manure management to the next level. Topics for the clinic include: regulatory update; on-farm mortality composting; trends in feed management; no-till manure application; siting livestock facilities and manure application issues. Registration information and a complete program agenda can be found at <http://www.aep.iastate.edu/feel/manure.html>.

ISU Extension Distribution Center  
119 Printing and Publications Bldg.  
Iowa State University  
Ames, Iowa 50011-3171

## Iowa Manure Matters: Odor and Nutrient Management



Iowa Manure Matters: Odor and Nutrient Management is published by Iowa State University Extension, with funding support from the USDA Natural Resources Conservation Service through Cooperative Agreement No. 68-6114-4-230. To subscribe or change the address of a current subscription, write to Angela Rieck-Hinz, 2104 Agronomy Hall, Iowa State University, Ames, Iowa, 50011-1010 or call (515) 294-9590, fax (515) 294-9985 or email: [amrieck@iastate.edu](mailto:amrieck@iastate.edu). Please indicate you are inquiring about the Odor and Nutrient Management Newsletter. The newsletter's coordinators are Angela Rieck-Hinz, extension program specialist, Department of Agronomy; and Robert Burns, animal waste management extension specialist, Department of Agricultural and Biosystem Engineering. The editor is Jean McGuire, the subscription manager is Rachel Klein; Web design by Liisa Järvinen, and production design by Jane Lenahan.

### **. . . and justice for all**

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Many materials can be made available in alternative formats for ADA clients. To file a complaint of discrimination, write USDA, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call 202-720-5964. Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Jack M. Payne, director, Cooperative Extension Service, Iowa State University of Science and Technology, Ames, Iowa.