

**BEFORE THE ILLINOIS POLLUTION CONTROL BOARD**

IN THE MATTER OF:

CONCENTRATED ANIMAL FEEDING            )  
OPERATIONS (CAFOS): PROPOSED        )  
AMENDMENTS TO 35 ILL. ADM. CODE    )  
501, 502 AND 504                         )  
R 2012-023

**NOTICE OF ELECTRONIC FILING**

To:    **Attached Service List**

PLEASE TAKE NOTICE that on November 7, 2012, I electronically filed with the Clerk of the Pollution Control Board of the State of Illinois, the **TESTIMONY OF STACY JAMES** from Prairie Rivers Network, Illinois Citizens for Clean Air and Water, Natural Resources Defense Council and Environmental Law & Policy Center (collectively, “Environmental Groups”) copies of which are attached hereto and herewith served upon you.

Respectfully Submitted,



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Jessica Dexter  
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**CERTIFICATE OF SERVICE**

I, Jessica Dexter, hereby certify that I have filed the attached **NOTICE OF FILING** and **TESTIMONY OF STACY JAMES** upon the attached service list by depositing said documents in the United States Mail, postage prepaid (or via email where indicated) in Chicago, Illinois on November 7, 2012.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'JD', with a long horizontal flourish extending to the right.

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**TESTIMONY OF STACY JAMES, PH.D.**

**Qualifications/Introduction**

My name is Dr. Stacy James and I am a Water Resources Scientist at Prairie Rivers Network. Prairie Rivers Network is Illinois' statewide river conservation organization and the state affiliate of the National Wildlife Federation. I have been employed by Prairie Rivers Network since 2006. Starting in 2008, I began to focus on the threats to water quality posed by concentrated animal feeding operations (CAFOs). My focus has included commenting on NPDES permits issued to CAFOs, evaluating construction applications for new CAFOs, reviewing peer-reviewed scientific literature on CAFOs, and participating in the stakeholder workgroup assembled by Illinois EPA to provide input on the technical standards contained in this proposed rule. I have a B.S. in Biology from Wake Forest University and a Ph.D. in Conservation Biology from University of Missouri-Columbia. During and after graduate school, I spent seven years at the USGS Columbia Environmental Research Center conducting ecotoxicology experiments with aquatic and terrestrial organisms.

I am offering this supplemental testimony on behalf of the Environmental Groups (Prairie Rivers Network, Environmental Law and Policy Center, Illinois Citizens for Clean Air and Water, and Natural Resources Defense Council). In the last section of my testimony submitted October 16, 2012, I discussed some of the shortcomings of the Livestock Management Facilities Act (LMFA) waste management plans. Because this issue has been raised several times in the public hearings, my testimony today further analyzes how I understand the proposed IEPA CAFO rule to differ from the LMFA regulations, especially with regard to the required technical standards for land application of livestock waste by unpermitted large CAFOs. As my testimony will show, the technical standards set forth in the LMFA fail to satisfy the requirements of the proposed rule and are insufficiently protective of water quality.

I disagree with the Agricultural Coalition that discharges from unpermitted large CAFOs following LMFA waste management plans should qualify for the agricultural stormwater exemption. The Environmental Groups want all unpermitted large CAFOs to follow the same technical standards for land application as permitted CAFOs and to prepare and submit nutrient management plans that reflect those standards.

At the end of my testimony, I also address a question raised by the Board during the DeKalb Hearing on October 30, 2012. The question regarded whether other states require CAFO

operators to get agency permission prior to surface-applying waste on frozen, snow-covered, or ice-covered ground.

**A comparison of the scope of nutrient management plans and waste management plans**

According to Section 502.102(b) of the proposed rule, unpermitted large CAFOs claiming the agricultural stormwater exemption must comply with Section 502.510(b). Section 502.510(b) begins by stating that “The nutrient management plan must specify and demonstrate” various land application requirements and other waste management practices. I interpret this sentence to mean that unpermitted large CAFOs must have nutrient management plans (NMPs). Illinois EPA also indicates a NMP is required in their Technical Support Document (Attachment A). On page 4, they wrote: “Under the proposed rule, large unpermitted CAFOs also must develop the nutrient management plan consistent with the requirements of proposed Section 502.510(b).”

Section 502.510(b) lists a number of excellent practices that must be part of NMPs and will reduce pollution from both the production area and land application area. However, not all of these practices are required to be included in the LMFA waste management plans (WMPs). The practices that pertain to production area management include:

- 3) *Adequate storage of livestock waste, including procedures to ensure proper operation and maintenance of the storage facilities;*
- 4) *Proper management of mortalities to ensure that they are not disposed of in a liquid livestock waste or stormwater storage or treatment system that is not specifically designed to treat animal mortalities;*
- 5) *That clean water is diverted, as appropriate, from the production area;*
- 6) *Prevention of direct contact of confined animals with waters of the United States;*
- 7) *That chemicals and other contaminants handled on-site are not disposed of in any livestock waste or stormwater storage or treatment system unless specifically designed to treat such chemicals and other contaminants;*
- 14) *A spill prevention and control plan;*
- 16) *A description of the storage provisions and schedules provided for livestock waste when cropping practices, soil conditions, weather conditions or other conditions prevent the application of livestock waste to land or prevent other methods of livestock waste disposal.*

In contrast, the WMPs required by LMFA pertain only to the land application of waste (with a few exceptions). Therefore, WMPs are less comprehensive in scope and do not adequately cover the production area. Production areas include the animal holding areas and the waste and feed storage structures, so proper nutrient management at the production area is critical. Production areas can be significant sources of pollution, and therefore they should be part of nutrient management plans.

As I noted in my previous testimony, only the largest of the large facilities ( $\geq 5,000$  animal units) must submit their WMPs to the Illinois Department of Agriculture for approval. Facilities between 1,000-4,999 animal units must prepare and implement a WMP but do not have to submit it. Per a recent communication I had with the Department, the Department does not conduct compliance checks to determine whether facilities have and are following WMPs unless a complaint has been received. Therefore, there is no assurance that the hundreds of large CAFOs in the 1,000-4,999 animal unit category actually have and are following WMPs.

It is also important to note that when IEPA has conducted inspections of large CAFOs, they have sometimes found that the facility did not have a nutrient or waste management plan. This was reported to be the case in several of the Illinois Attorney General's Office Complaints I previously submitted as attachments (Attachments 6, 16, 27), and is supported by the testimony of Arnold Leder. Therefore, it is critical for the rule to include a requirement that unpermitted large CAFOs submit their NMPs to the IEPA.

**A comparison of the land application technical standards for unpermitted large CAFOs in the proposed rule and the LMFA regulations**

In this section I focus on the land application area. The proposed rule requires several excellent technical standards for the application of livestock waste by unpermitted large CAFOs that are not required under the LMFA. Table 1 below compares the technical standards for the two sets of regulations. Because LMFA WMPs are subject to less stringent technical standards, implementing a WMP should not qualify a CAFO for the agricultural stormwater exemption.

**Table 1.** Technical standards required of large unpermitted CAFOs in the proposed rule and in the LMFA regulations. For ease of comparison, comparable standards appear in the same row.

<b>WINTER APPLICATION</b>	
<b>Proposed rule (35 IAC 502.630)</b>	<b>LMFA regulations (8 IAC 900.803)</b>
Surface application on frozen, ice-covered or snow-covered ground is prohibited unless 6 criteria are met	
Application must be done in accordance with a winter application plan, which is part of the NMP	
No discharge may occur during land application	
No application may occur within ¼ mile of a non-farm residence	Application within ¼ mile of a residence not part of the facility must be injected or incorporated on the day of application ( <i>but "existing facilities" applying on frozen ground are not subject to this provision</i> )

Application on frozen ground shall not occur within 24 hours preceding a forecast of $\geq 0.25$ inches of precipitation in a 24-hour period	
Application on ice-covered or snow-covered ground shall not occur within 24 hours preceding a forecast of $\geq 0.1$ inches of precipitation in a 24-hour period	
Application on ice-covered or snow-covered ground is prohibited when predicted high temperature exceeds 32F on the day of application or any of the 7 days following	
Application on ice-covered or snow-covered ground must be visually inspected for runoff on days when temperature is $\geq 32$ F, until the ice or snow melts	
If application on ice-covered or snow-covered ground results in runoff, the owner or operator shall report to the State any discharge of livestock waste within 24 hours of discovery	
Adequate erosion and runoff control practices must exist	Application is limited to land on which adequate erosion control practices exist <i>or</i> slopes are $\leq 5\%$
A down gradient crop stubble, crop residue, or vegetative buffer of 200 feet must exist between the land application area and numerous water features	
Application on slopes $> 5\%$ is prohibited	Application is limited to land on which slopes are $\leq 5\%$ <i>or</i> adequate erosion control practices exist
Application may only occur on sites with a tolerable level of soil loss and the soil phosphorus level is $\leq 300$ lbs/acre	
Application setbacks in 502.615 and 502.645 are tripled if application occurs on fields with slopes of 2-5%, and doubled if on fields with slopes $< 2\%$	
<b>LAND APPLICATION SETBACKS</b>	
<b>Proposed rule (35 IAC 502.645)</b>	<b>LMFA regulations (8 IAC 900.803)</b>
Application shall not occur within 200 feet of surface water, unless there is adequate diking or the water is upgrade	Application shall not occur within 200 feet of surface water, unless there is adequate diking or the water is upgrade
Application shall not occur in a 10-year floodplain unless it is injected or incorporated	Application shall not occur in a 10-year floodplain unless it is injected or incorporated
Livestock waste shall not be applied to waters of the US, grassed waterways, or other conduits to surface waters	Livestock waste may not be applied in waterways ( <i>but may be applied via irrigation to a grassed area serving as a waterway if</i>



	<i>certain conditions are met)</i>
Application shall not occur within 200 feet of potable water supply wells	Application shall not occur within 150 feet of potable water supply wells
Application shall not occur within 100 feet of down gradient agricultural drainage wells, subsurface drainage intakes, sinkholes, grassed waterways, or other conduits to surface water, unless a 35 foot vegetative buffer exists between the application area and these features, or alternative practices achieve equivalent pollutant reductions	
Application within ¼ mile of a residence not part of the facility must be injected or incorporated on the day of application	Application within ¼ mile of a residence not part of the facility must be injected or incorporated on the day of application ( <i>but facilities with irrigation systems operating before May 21, 1996 are not subject to this provision</i> )
<b>PLAN REQUIREMENTS</b>	
<b>Proposed rule (35 IAC 502.510(b) and referenced sections)</b>	<b>LMFA regulations (8 IAC 900 Subpart H)</b>
	The nitrogen content of waste shall be adjusted to account for mineralization and loss
	Soil nitrogen credits shall be calculated when determining application rates
Sludge is part of the proposed definition of “livestock waste” but required timing of testing relative to application is not specified	Sludge from waste storage structures shall be tested prior to application
Livestock waste application rate is not to exceed single-year crop nitrogen and single year or multiple-year phosphorus requirements for realistic crop yield goals	Livestock waste application rate is not to exceed the agronomic nitrogen demand when averaged over a 5-year period, or the phosphorus rate
	Phosphorus-based application rate required when soil test phosphorus >300 lbs/acre
Adequate land application area	Adequate land application area
Appropriate conservation practices to control runoff of pollutants to waters of the United States	
Livestock waste must be analyzed a minimum of once annually for nitrogen and phosphorus content, and results must be used for determining application rates	Nutrient value of livestock waste can be based on table values or collected samples, and WMP may be based on either
Soil must be analyzed a minimum of twice every 5 years for phosphorus content	Soil shall be sampled for phosphorus every 3 years
Application of waste in accordance with site-specific practices that ensure appropriate agricultural utilization of the nutrients in	Application of waste in accordance with site-specific practices and at agronomic rates

livestock waste	
No waste application shall occur on fields with available soil phosphorus >400 lbs/acre	
Application shall not occur on land that is saturated or has ponded water	Application shall not occur on land that is saturated
Application is prohibited on slopes >15%	
Liquid livestock waste shall not be applied where there is <10 inches of soil covering fractured bedrock, sand or gravel	Conservative application rates will be used in the case of shallow earth cover over fractured bedrock
Application is prohibited on bedrock outcrops	
Livestock waste may not be applied during precipitation when runoff of waste will occur	Livestock waste may not be applied during rainfall
Livestock waste shall not occur within 24 hours of predicted precipitation	
	Conservative application rates will be used in the case of a high water table
	Caution should be exercised during application so as not to cause nitrate or bacteria contamination of groundwater
Winter application plan must be prepared	
Plan for monitoring, inspecting, managing, and repairing subsurface drainage at land application site	
Spill control and prevention plan must be prepared	
Maintenance of records to document implementation and management	Records must be kept
Description of how waste will be managed when conditions prevent land application or other methods of waste disposal	

As you can see, the proposed rule contains a number of protective technical standards that are absent from the LMFA regulations. For example, the proposed rule requires CAFOs to have a winter application plan which identifies the appropriate fields for winter application. The surface application of waste on frozen, snow-covered, or ice-covered ground is allowed only on fields with slopes  $\leq 5\%$  and adequate erosion and runoff control practices exist and there is a buffer between the field and various water resources and there is a tolerable rate of soil erosion and soil test phosphorus is  $\leq 300$  lbs/acre and slope-based setbacks are met. Application is also only permitted if precipitation is not predicted and temperatures don't get above freezing. In contrast, the LMFA regulations allow application simply if application field slopes are  $\leq 5\%$  or adequate erosion control practices exist. My earlier testimony provides evidence as to why the LMFA regulations for winter application are not adequately protective.

There are a number of other important technical standards that are missing or inadequate in the LMFA regulations. Among them are setbacks from conduits to surface waters. Conduits such as

subsurface drainage intakes, grassed waterways, swales, and sinkholes need to be protected from livestock waste because they serve as avenues for land-applied livestock waste to reach surface waters. The proposed rule also provides clear standards for protecting groundwater, in contrast to the LMFA regulations which allows too much applicator discretion. The proposed rule also contains some important prohibitions against applying livestock waste when the risk of polluted runoff becomes elevated due to high slope and high concentrations of soil test phosphorus; these prohibitions are not found in the LMFA regulations. And finally, only the proposed rule requires CAFOs to have a plan to prevent and control livestock waste spills and a plan for monitoring and managing subsurface drainage at land application areas. Given the potentially devastating impacts of spills and the leakiness of tile-drained fields, it is an excellent idea for CAFOs to have such plans.

However, there are also instances where the LMFA requires standards that the proposed rule does not seem to require of unpermitted large CAFOs. For example, the LMFA requires phosphorus-based application rates when soil test phosphorus exceeds 300 lbs/acre. The proposed rule also has this requirement, but it applies only to permitted CAFOs. As has been shown, the vast majority of CAFOs in Illinois are unpermitted.

I support the IEPA's proposed rule in many respects, but there are significant gaps that are not covered by either the proposed rule for unpermitted large CAFOs or the LMFA. However, the proposed rule for permitted CAFOs includes technical standards that I very much support, including standards that are required by LMFA but are not proposed to be required of unpermitted large CAFOs. Therefore, the final rule should require unpermitted large CAFOs to comply with the land application technical standards proposed for permitted CAFOs and to prepare, submit, and implement a NMP. This approach would be simpler than adopting a rule that creates three sets of technical standards in Illinois: permitted CAFO standards, unpermitted CAFO standards, and LMFA standards.

#### **Precedent from other states to require agency permission prior to winter application**

In our proposed amendments filed October 17, 2012, the Environmental Groups suggested that agency permission be required before surface-application of waste on frozen, snow-covered, or ice-covered ground. This suggestion was made so that the Agency can determine whether the immediate conditions are appropriate for winter application. The proposed rule only allows application if a number of site-specific conditions are met, because surface-applying waste in winter can increase the risk of polluted runoff leaving the field. Therefore, it is important for the Agency to run through the various requirements with the CAFO owner or operator immediately prior to application.

In the proposed rule, only permitted CAFOs must submit their winter application plans to the Agency for review; these plans are part of the nutrient management plan and are submitted at the time of NPDES permit application. Currently, there are only approximately 36 CAFOs with permits, which represents less than 1% of Illinois' commercial livestock operations. Therefore, very few CAFOs will have their plans checked for compliance with the regulations in advance of winter application. The universe of unpermitted large CAFOs is much greater than the permitted

universe. The proposed rule requires that unpermitted large CAFOs also must develop a winter application plan, but they do not have to submit that plan or have it approved by the Agency. Even if a plan meets regulatory requirements, there are time-sensitive environmental parameters such as temperature and forecasted precipitation that could easily be overlooked by the applicator. Therefore, the most protective approach is to require Agency permission in advance of winter application.

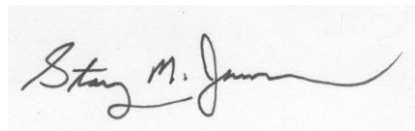
A number of other states require livestock operations to provide agency notification (e.g., Iowa, Indiana), and some also require agency permission before surface application on frozen or snow-covered ground. Among those states requiring permission are:

1. Ohio: surface application of manure on frozen or snow-covered ground must be done in accordance with OAC 901:10-2-14(G)(1)(a): *Prior approval for each surface application of manure shall be obtained from the director or his designated representative.*
2. Wisconsin: surface application of liquid manure on frozen or snow-covered ground is prohibited unless there is an emergency situation or the existing source CAFO exception is met. If it is an emergency and the existing source CAFO exception does not apply, the permittee must act in accordance with Wis. Adm. Code s. NR 243.14(7)(d)(1)(c) (Apr. 2007): *The permittee has notified the department verbally prior to the emergency application. Unless necessitated by imminent impacts to the environment or human or animal health, the permittee may not apply manure to a field on an emergency basis until the department has verbally approved the application.*

In our final comment on the proposed rule, the Environmental Groups will provide information about additional states requiring agency permission.

Dated: November 7, 2012

Respectfully submitted,



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