

July 21, 2011

Secretary Dennis Smith  
Wisconsin Department Health Services  
1 West Wilson Street  
Madison, WI 53703

Secretary Ben Brancel  
Wisconsin Department of Agriculture, Trade, and Consumer Protection  
2811 Agriculture Drive, P.O. Box 8911  
Madison, Wisconsin 53708-8911

Secretary Cathy Stepp  
Wisconsin Department of Natural Resources  
101 S. Webster Street  
PO Box 7921  
Madison, Wisconsin 53707-7921

Subject: **Proposal** re Public Health and the Use of Spray Irrigation for Liquid Manure Disposal (including Center Pivots)

Dear Secretary Smith, Secretary Brancel, and Secretary Stepp:

On April 19, 2011 Secretary Brancel and Secretary Stepp said there are “several farms [Concentrated Animal Feeding Operations (CAFOs) in Wisconsin] that have used center pivots to apply manure for many years with no demonstration of environmental or human health impacts.” They asked the leaders of the Wisconsin Towns Association and the Wisconsin Counties Association to work with their “... members to make sure they do not adopt local ordinances that restrict the use of approved and accepted technologies unless it can be documented and demonstrated that there are environmental or public health risks associated with them.”

According to the DNR’s Watershed Management Program, “The use of center pivot systems for untreated liquid manure is not common in Wisconsin....”<sup>1</sup>

Recently, several local governments discussed and enacted ordinances to ban or regulate the spraying of raw, untreated manure using center pivots and other spray-based methods.<sup>2</sup>

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<sup>1</sup> See the DNR note from 2/3/11 at <http://dnr.wi.gov/org/es/science/eis/RPD/RPD%20MBF%20%20DNR%20response%20to%20comments.pdf>, p 4.

<sup>2</sup> Harmony Township, Rock County, Wisconsin, has passed an ordinance banning the use of spraying manure including center pivots. Johnstown Township, also in Rock County, Wisconsin adopted a Conditional Use ordinance regulating center pivots. The Bradford Township Zoning Committee, again in Rock County, Wisconsin has approved a draft of a Conditional Use ordinance similar to that of Harmony Township; it is currently under review by the Bradford Town Board. Additional activity related to regulating center pivots is also underway in other townships. The Johnstown and Harmony ordinances are enclosed.

Please note that DATCP (Wisconsin Department of Agriculture, Trade, and Consumer Protection) said the ban or regulation of center pivots was not in violation of Wisconsin's Livestock Siting Law, because the Livestock Siting Law covers CAFO facilities and not their spreading fields where the manure is to be sprayed.

I am a lifelong resident of Wisconsin<sup>3</sup> who believes in a strong agricultural sector – for providing food and contributing to our national security. Economically speaking, agriculture is a shining star in our national balance of trade. Closer to home, it creates jobs and provides food and ingredients for agricultural-related products like ethanol.

Unlike small family farms that spread manure, CAFOs operate on an entirely different **scale, given the enormity of the waste generated by them.** Many CAFOs spread tens of millions of gallons of raw, untreated manure stored in large lagoons for months. It is noteworthy that the chemical nature of the manure changes when it is stored in a lagoon.

Sometimes, CAFO proponents attempt to downplay the insufferable odor of CAFO waste by saying “manure is manure.” They argue that manure has been around for 10,000 years, so people who cannot tolerate being around CAFO manure should not live out in the countryside. That argument ignores the fact that liquid manure that is stored in a CAFO lagoon or pit undergoes radical transformation during storage, which completely alters its chemical nature and creates compounds that are not only foul-smelling *but toxic* (italics added).<sup>4</sup>

We all know someone who has undergone chemotherapy, making him or her susceptible to life-threatening infections. Given there are over 150 pathogens found in livestock manure that are associated with risks to humans,<sup>5</sup> the likelihood of someone undergoing chemotherapy and getting a life-threatening infection, because he or she lives close to an untreated manure-spraying center pivot, is high – very high. A century ago, municipalities began to treat human waste, because the cornerstone of public health is to put a protective barrier between infectious material (i.e., feces) and people. Let's not look back 30 years from now and say we should have treated animal manure, following an epidemic of an illness caused by a new strain of mutated bacteria from animal waste.

Most CAFOs hose or vacuum hundreds of thousands of gallons of manure out of the long lines of stalls that house their cows one to three times a day when the cows are milked, and store the manure in “lagoons” lined by plastic or clay on their land or leased land. Then it is spread on fields as fertilizer, often sprayed through irrigation systems or dumped by trucks ....

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<sup>3</sup> My spouse, a physician and farmer from a 5<sup>th</sup> generation farming family on the Rock Prairie in Rock County, is also a lifelong Wisconsin resident.

<sup>4</sup> Francis Thicke, A New Vision for Iowa Food and Agriculture, July, 2010.

<sup>5</sup> Federal Register / Vol. 68, No. 29 / Wednesday, February 12, 2003 / Rules and Regulations, p 7236.

Local residents report nausea, asthma and other breathing problems when manure is being distributed on fields, according to a health survey. Ammonia, the neurotoxin hydrogen sulfide and particulate matter are among the airborne components of manure which are cause for concern.

Kathy Melmoth, a registered nurse and south central Michigan farmer, said serious mental issues including rage and feelings of powerlessness are caused by the constant manure spraying.

“It just hangs in the air, it causes burning eyes and throat and throbbing sinuses,” said Melmoth. “I’ve seen people who get very angry or confused after spraying, or who have suicidal thoughts. I tell people you are breathing feces. It’s involuntary exposure, and it’s a public health disaster.”<sup>6</sup>

Based on scores of comments regarding the Environmental Analysis for a proposed CAFO in Rock County, the DNR asked for an opinion from the Wisconsin Department of Health Services (DHS) regarding the use of center pivots for spreading raw, untreated manure. Dr. Robert Thiboldeaux, the toxicologist who published the opinion in a DHS Memo on February 17, 2011, noted that “Interrupting human exposure to feces, with its attendant risk of infection by bacterial, viral, and parasitic pathogens, is at the foundation of public health practice.”<sup>7</sup> He went on to write that a 500 foot setback (to inhabited dwellings – NR 214) is acceptable **IF** the manure going through center pivots is treated. One of his major requirements is “**to reduce the microbial load** (i.e., pathogens that cause human disease) of the applied material (i.e., the manure).”<sup>8</sup>

On February 3, 2011, the DNR noted that “Center pivot irrigation was not identified as a beneficial management practice (BMP) ...” in reducing ammonia and hydrogen sulfide air emissions – two of the gases mentioned in Dr. Thiboldeaux’s memo. This finding is based on a thirteen member, interdisciplinary advisory study sponsored by the State of Wisconsin and published in December 2010.<sup>9</sup>

Because of Dr. Thiboldeaux’s DHS Memo, the DNR recently forced a CAFO owner to pull the center pivots from his planned dairy as a necessary though not sufficient condition for getting his Wisconsin Pollutant Discharge Elimination System (WPDES) Permit approved. Indeed, the CAFO owner pulled the center pivots temporarily. In discussions with the DNR, that same CAFO owner plans

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<sup>6</sup> See <http://news.infoshop.org/article.php?story=2007lydersen-cafo>.

<sup>7</sup> Robert Thiboldeaux, PhD, Public Health setbacks for manure spray irrigation, February 17, 2011, p 3. See [www.dnr.state.wi.us/org/es/science/eis/RPD/DHSmemo.pdf](http://www.dnr.state.wi.us/org/es/science/eis/RPD/DHSmemo.pdf).

<sup>8</sup> *Ibid.*, p4.

<sup>9</sup> See <http://dnr.wi.gov/org/es/science/eis/RPD/RPD%20MBF%20%20DNR%20response%20to%20comments.pdf>, p 4.

“to propose that they [the CAFO owner who pulled the center pivots] study and monitor their center pivot system in Nebraska this summer so that they can gather data and respond to the items in the DHS memo. They do not plan any liquid manure applications in 2011 in WI. A revised center pivot system request would be submitted this fall.”<sup>10</sup>

Any research that is done or used to show that center pivots or other manure spraying applications are safe for the public should be funded by a neutral party that will not benefit from the results, regardless of the outcome. The tests and evaluation of the results must not be preordained or have the appearance of favoring a given outcome; otherwise, the validity of the results and the legitimacy of the conclusions drawn from them will be suspect and not acceptable. This is especially important given the enormous public health risk attached to their use.<sup>11</sup>

Researchers have noted that researching this is a complex process and requires the involvement of many disciplines – including but not limited to medical clinicians,<sup>12</sup> toxicologists,<sup>13</sup> aerobiologists, clinical microbiologists, epidemiologists, animal scientists, risk modelers,<sup>14</sup> veterinarians, and others.

A comprehensive and thorough assessment of the health risks attendant with the spraying of raw, untreated manure requires multiple disciplines. It would be difficult, if not impossible, to accomplish this over the course of a year let alone a summer. If it were easy, it would have been done already. It is highly unlikely that a CAFO owner, however well-intentioned, who wants to install center pivots to spray raw, untreated manure, can assess their health risk comprehensively in a short period of time.

Given the serious health risk and the need to establish regulations for **reducing the microbial load** related to the spraying of raw, untreated manure, other agencies, **especially the Wisconsin Department of Health Services**, must be involved in establishing these regulations. While the **DNR** may be the ‘screening and enforcement’ agency, it **is not, and should not be, the final arbiter on developing the regulations for this important public health issue.** In the absence of such regulations, the DNR should not approve any manure spraying applications going forward until such regulations are developed and approved by the agency responsible for public health, namely, the Wisconsin Department of Health Services.

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<sup>10</sup> Letter from Mark Cain, DNR to Andrew Craig, Kenneth Johnson, and Susan Josheff – all of the DNR -- March 11, 2011.

<sup>11</sup> I am in no way suggesting or implying any impropriety on the part of any CAFO owner or the DNR.

<sup>12</sup> Dr. Chakoian, a family practice physician from Viroqua, Wisconsin, has written extensively on the health risks associated with CAFOs. A single page excerpt from his work is enclosed.

<sup>13</sup> Dr. Thiboldeaux (noted previously) is a toxicologist.

<sup>14</sup> R. S.Dungan said: “... emphasis must be placed on research addressing the airborne transport of pathogens because there is a lack of information on this topic. Furthermore, there is a surprising lack of information concerning the infectivity of aerosolized pathogens, especially enteric pathogens.... To advance our understanding of risks associated with airborne pathogens from animal feeding operations, it will be necessary for a variety of scientists, including but not limited to aerobiologists, clinical microbiologists, epidemiologists, animal scientists, and risk modelers, to convene under a common setting to address these issues in more detail and work toward a common goal of standardizing of variety of bioaerosol collection and analytical methodologies.” See Dungan, R. S. 2010. BOARD-INVITED REVIEW: Fate and transport of bioaerosols associated with livestock operations and manures. *J. Anim Sci.* 88:3693-3706.

## Proposal

I propose we appoint an interdisciplinary, advisory team of people under the aegis of the Wisconsin Department of Health Services to establish regulations for reducing the microbial load of raw, untreated sprayed manure. Wisconsin can lead the nation in defining the treatment conditions, including enforcement, in which spray applications for the spreading of manure are regulated for the public. The appointments to this advisory team should not be done in a way that 'stacks the deck' in favor of a given outcome. They should be strictly non-partisan, non-ideological appointments.

Until this is done, the spraying of raw, untreated manure should be removed from all CAFO applications. The CAFO owner in Rock County, whose center pivot proposal was taken out of his application, said he could go forward with his CAFO without center pivots.<sup>15</sup>

Respectfully submitted,

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<sup>15</sup> DNR - NOTICE OF FINAL DETERMINATION TO ISSUE A WISCONSIN POLLUTANT DISCHARGE ELIMINATION SYSTEM (WPDES) PERMIT No. WI-0064807-01-0.

Enclosures:

Harmony Township, Rock County, Wisconsin – Ordinance Relating to The Prohibition of Liquid Manure Application by Airborne Emission (including spray irrigation / center pivots as well as any other spraying applications)

Johnstown Township, Rock County, Wisconsin, Conditional Use Permit for the Use of Center Pivot Manure Distribution Systems

One page excerpt from Dr. David Chakoian's paper on *Odors and Confinement Animal Feeding Operations: Human Health Risks, a Review of the Current Medical Literature* submitted to the Wisconsin Natural Resources Board, December 6, 2007

c: Richard J. Stadelman (Wisconsin Towns Association)  
Mark D. O'Connell (Wisconsin Counties Association)

Lloyd Eagan, Wisconsin DNR  
Russell Rasmussen, Wisconsin DNR  
Susan Josheff, Wisconsin DNR  
Mark Cain, Wisconsin DNR  
Andrew Craig, Wisconsin DNR  
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Board Members, Wisconsin Department of Agriculture, Trade, and Consumer Protection  
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Walworth County Board of Supervisors  
Walworth County Zoning and Planning Agency Committee  
Walworth County Township Chairmen  
Walworth County Health Department

Rock County Board of Supervisors  
Rock County Township Chairmen  
Johnstown Township Town Board, Rock County, Wisconsin  
Harmony Township Town Board, Rock County, Wisconsin  
Bradford Township Town Board, Rock County, Wisconsin  
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