

July 24, 2014

Doug Szenher  
Arkansas Department of Environmental Quality  
Public Outreach and Assistance Division  
5301 Northshore Drive  
North Little Rock, AR 72118



Sent Via Electronic Mail Only: [reg-comment@adeq.state.ar.us](mailto:reg-comment@adeq.state.ar.us)

**Re: APCEC Proposed Amendment to Regulation 6**

Dear Mr. Szenher:

The Socially Responsible Agricultural Project (“SRAP”)<sup>1</sup> submits the following comment on the proposed changes to Arkansas Pollution Control and Ecology Commission (APCEC) Regulation 6 found in Commission Docket 14-004-R.

We support the Arkansas Department of Environmental Quality (“ADEQ”) making the proposed changes to APCEC Reg. 6 because the rule change furthers robust public participation in the CAFO permitting process. Encouraging public participation is a key tenet of the CWA. 33 U.S.C. 1251(e) provides for public participation in the “development, revision, and enforcement of any regulation, standard, effluent limitation, plan or program.” With a more informed public, the community is made aware of and is more able to protect water quality.

SRAP applauds ADEQ for proposing a public notification requirement that includes notice to surrounding municipalities and school districts. CAFOs have a number of negative effects on communities and it is in the public’s best interest to understand what can happen when a CAFO is built in its community. Public notice is a requirement under the Clean Water Act (“CWA”). Notifying citizens of when a CAFO is proposed and its plan for manure management is an important first step in the community’s fight to protect themselves from CAFOs.

In addition to the proposed changes, SRAP recommends that notification should also be provided on the ADEQ’s website and all application materials, as well as the facility’s nutrient management plan, should be made readily available to the public on the website.

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<sup>1</sup> SRAP is a national, grassroots organization that educates the public about the devastating effects of concentrated/confined animal feeding operations (“CAFOs”), while working directly with the communities most heavily impacted by these animal factories. Through education, advocacy, and community organizing, SRAP empowers rural communities to protect themselves from CAFOs and provides guidance and assistance to communities seeking to develop healthy, sustainable alternatives to industrialized livestock production. SRAP has been working with Arkansas communities to protect themselves against large industrialized animal facilities, while also promoting sustainable farming alternatives.

Illinois implements this requirement.<sup>2</sup> Wisconsin also implements this requirement.<sup>3</sup>

Public participation in the CAFO permitting process is recognized by multiple states. New Mexico imposes notice requirements as the amendments proposed in this rulemaking in its regulations for dairy discharge permits. Written notification of new permits and a map of the proposed location of the CAFO is provided by mail to owners of record of all properties within a one-mile distance from the boundary of the property where the CAFO is to be located. If there are no properties other than properties owned by the CAFO within a one-mile distance of the boundary of the property where the facility is located, notice shall be provided to owners of record of the next nearest properties not owned by the CAFO. See 20.6.6.14 NMAC, available at: <http://www.nmcpr.state.nm.us/nmac/parts/title20/20.006.0006.htm>.

Oklahoma has a similar requirement. See 2 Okl.St. Ann. § 20-46. See also, Okla. Admin. Code 35:17-4-5.

Georgia imposes a requirement to notify all property owners within a one-mile radius for large swine operations of a certain size. See, Ga. Comp. R. & Regs. 391-3-6-.20 (attached).

Other states have also required notification in a newspaper of general circulation in the county where the CAFO is located and in a newspaper of state-wide circulation for at least 30 days. New Mexico imposes a similar requirement. See 20.6.2.3108 (B) NMAC, available at: <http://www.nmcpr.state.nm.us/nmac/parts/title20/20.006.0002.htm>.

Oklahoma has a similar requirement. See 2 Okl.St. Ann. § 20-46 Notice and hearing requirements (attached).

As does Georgia. See Ga. Comp. R. & Regs. 391-3-6-.20 (attached).

Other states have also imposed requirements that notification be posted on a 2-foot by 3-foot sign at a place conspicuous to the public at the site of the CAFO for at least 30 days. New Mexico imposes a similar requirement. See 20.6.2.3108 (B) NMAC, available at: <http://www.nmcpr.state.nm.us/nmac/parts/title20/20.006.0002.htm>

Additionally, SRAP suggests that the Commission clarify when notice is required in relation to submission of the Notice of Intent (“NOI”) and the Nutrient Management Plan (“NMP”) by adding language such as:

*(E) An applicant for a CAFO general permit must certify to ADEQ in the application that applicant completed the public notification requirements in subsections (A) — (F) of this section within thirty (30) days prior to when the*

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<sup>2</sup> To view Illinois' CAFO General Permit public notice page, go to: <http://www.epa.state.il.us/water/permits/cafo/>

<sup>3</sup> To view Wisconsin's CAFO permitting and public notice pages, go to: <http://dnr.wi.gov/topic/AgBusiness/CAFO/RecentPermits.html> and <http://dnr.wi.gov/topic/wastewater/publicnotices.html>.

*applicant submits the Notice of Intent (NOI) and Nutrient Management Plan (NMP) to ADEQ.*

The applicant should be required to certify that notice in all forms was achieved within 30 days of the application submission to ADEQ. This clarification will prevent the notice from being ineffective should the application be submitted well after notice is given.

The Committee created under Act 1511 unanimously recommended additional public notice requirements for any applicant for the CAFO general permit issued under Reg. 6. ADEQ has the authority, and duty to carry out the mandates of the Clean Water Act by regulating CAFOs. 33 U.S.C § 1342 *et. seq.*; 40 C.F.R. 123 *et. seq.*; A.C.A. § 8-4-201; APCEC Reg. 6 and Reg. 5. As such, ADEQ should vote to pass the rule amendment to increase public participation in the CAFO permitting process. CAFO permit public notice requirements increase the public's access to information, and provides necessary tools for the community to protect itself from the deleterious effects of CAFOs.

### **Robust Public Participation is a key tenet of CWA.**

Public participation is "a critical means" of advancing the Clean Water Act's goals. *Environmental Defense Center v. E.P.A.*, 344 F.3d 832,857 (9th Cir. 2003). The Act established that "[p]ublic participation in the development, revision, and enforcement of any regulation, standard, effluent limitation, plan, or program established by the Administrator or any State under this Act shall be *provided for, encouraged, and assisted* by the Administrator and the States. 33 U.S.C. § 1251(e)(emphasis added). Congress clearly intended this provision to "guarantee the public a *meaningful* role in the implementation of the Clean Water Act. *Waterkeeper Alliance v. E.P.A.*, 399 F.3d 486, 503 (2d Cir. 2003)(emphasis added).

To participate meaningfully in the permit coverage process, citizens need to be aware of when a CAFO applies for a permit at the time the application is made. Public records requests are an important facet of public participation. However, seeking records through public records requests after the permit application process is already underway does not, in itself, fulfill the CWA public participation requirement. It is unlikely the public will have timely access to relevant records produced by a public records request due to the often extended time agencies take to locate, identify and redact confidential business information before making records available.

### **Environmental Pollution from CAFOs**

The proposed rule change would help inform citizens of potential environmental threats in their community. CAFOs generate massive amounts of untreated manure. CAFO manure contains toxins that threaten water, air, and soil quality and put public health risk. The EPA estimates the annual production of manure produced by animal confinement facilities exceeds that produced by humans by at least three times.<sup>4</sup> The sheer amount of manure generated by CAFOs creates a myriad of negative effects on the environment,

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<sup>4</sup> Pew Commission, *Putting Meat on the Table: Industrial Farm Animal Production in America*, 2008, 23; citing U.S. EPA 2008 *Compliance and Enforcement: Clean Water Act*. 1-3.

human health, economic viability and quality of life for communities, and animal welfare. *Id.* CAFO manure contains many potentially harmful contaminants such as nitrogen and phosphorus, pathogens such as *E. coli*, growth hormones, antibiotics, chemicals used as additives to the manure or to clean equipment, animal blood, and silage leachate from corn feed.<sup>5</sup>

Numerous studies have documented the public health and environmental risks associated with the use of the “lagoon” and sprayfield system, which is commonly used by hog CAFOs to dispose of animal waste. The science is clear, “**All lagoons leach to some degree,**<sup>6</sup> and during hurricanes and storms they can overflow or burst, spilling raw sewage onto the landscape and into waterways.”<sup>7</sup> EPA has estimated that CAFO lagoons leak between 3,330,000 and 39,600,000 gallons of liquid lagoon waste per year into the underlying soils.<sup>8</sup>

Additionally, manure is typically sprayed onto surrounding cropland as fertilizer. However, this practice causes problems as well because the amount of manure applied to the land is often more than the soil can absorb. For example:

When looking at the environmental externalities, the Tufts researchers found that the numbers of animals on the **typical industrial farm produced far more manure than the agronomic capacity of the land to absorb the nutrients** contained in the manure. **The result is that land application of the manure often results in surface and groundwater contamination, placing the burden of cleanup on the adjacent communities.** Waste treatment, beyond lagoon storage, would add costs ranging from \$2.55 to \$4 per hundred weight on a typical industrial hog farm (Starmer and Wise, 2007b). Those environmental costs are currently born by society as a whole.<sup>9</sup>

Application of manure during winter months or rainy weather leads to significant runoff into surface waters.<sup>10</sup> Surrounding communities not only bear the costs to clean up

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<sup>5</sup> Hribar, Carrie, *Understanding Concentrated Animal Feeding Operations and Their Impact on Communities*, National Association of Local Boards of Health 2010, 2.

<sup>6</sup> Environmental Health Perspectives Vol. 6, Issue 21, *CAFOs and Environmental Justice, the Case of North Carolina*, June 2013. Citing: Huffman RL, Westerman PW. Estimated seepage losses from established swine waste lagoons in the lower coastal plain of North Carolina. *Trans ASAE* 38(2):449–453 (1995); Westerman PW, et al. Swine-lagoon seepage in sandy soils. *Trans ASAE* 38(6):1749–1760 (1995). Huffman RL. Seepage evaluation of older swine lagoons in North Carolina. *Trans ASAE* 47(5):1507–1512 (2004), A 186.

<sup>7</sup> Environmental Health Perspectives Vol. 6, Issue 21, *CAFOs and Environmental Justice, the Case of North Carolina*, June 2013. (emphasis added).

<sup>8</sup> US EPA, *Relation Between Nitrate in Water Wells and Potential Sources in the Lower Yakima Valley*, September 2012, ES-6.

<sup>9</sup> *Id.* at 47.

<sup>10</sup> Pew Commission, *Putting Meat on the Table: Industrial Farm Animal Production in America*, 2008, 25; citing Starmer E, Wise TA (2007b). Living High on the Hog: Factory Farms, Federal Policy, and the Structural Transformation of Swine Production. In: *Working Paper 07-04*. Institute GDAE (ed). Tufts University: Medford, Massachusetts, pp. 30.

surface and groundwater contamination, community members are also threatened with harmful health effects from polluted water.

In addition to the manure-related impacts of CAFOs on water quality at local levels, there are potential broader effects on water quality, including heavy water usage and impacts beyond the region, such as the Dead Zone of low oxygen waters in the Gulf of Mexico and elsewhere. Large amounts of water are needed for animal consumption and lagoon management (i.e., cleaning, flushing, filling, recharging). In addition, the processes used in siting CAFOs inadequately consider water quality issues at regional and water-shed levels.<sup>11</sup>

CAFO emissions also threaten surrounding air quality. Toxic gases such as hydrogen sulfide, ammonia, dust, and other respiratory irritants are propelled into the air around animal confinement houses. Hundreds, thousands, and even tens of thousands of animals are concentrated in barns 24 hours a day, seven days a week. The fans in CAFO barns must constantly run to pull out noxious gases created by the animals or the animals suffocate. Some studies have found that swine buildings, for example, have the potential of generating more odor than manure storage facilities such as lagoons and tanks and thus could be the major odor sources causing downwind odor nuisance.<sup>12</sup> Additionally, CAFOs emit air pollutants from the millions of tons of spraying manure that are applied to nearby fields, not to mention the toxic irritants from open manure lagoons and dead animal compost piles.

The rule changes would keep the community informed about possible threats to its water and air quality.

### Public Health Risks from CAFOs

Local citizens should also be aware of the numerous public health impacts from industrial agriculture operations. Human health risks from CAFO-related environmental health hazards are well documented. For example, nitrates from CAFO manure can contaminate groundwater and drinking water.<sup>13</sup> Nitrate, the most common agricultural contaminant in drinking water wells, poses the greatest threat to rural communities that rely mostly on private wells.<sup>14</sup>

Water-borne pathogens such as *E. coli* bacteria can contaminate drinking-water systems and recreational waters, causing diarrheal illnesses and gastroenteritis. The risks and consequences of such problems are particularly serious for vulnerable populations such as infants, the elderly, pregnant women and people with compromised immune systems.<sup>15</sup>

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<sup>11</sup> Hodne, Carol J., *Concentrating on Clean Water: The Challenge of Concentrated Animal Feeding Operations*, April 2005.

<sup>12</sup> TI: A field study on downwind odor transport from swine facilities. AU ZhuJ.;Li X.

<sup>13</sup> *Id.* at 26.

<sup>14</sup> *Id.* citing (Hamilton & Helsel, 1995; U.S.EPA; 2002).

<sup>15</sup> *Id.* citing Krapac, I. G., Dey, W. S., Smyth, C. A., & Roy, W. R. (1998). Impacts of bacteria, metals, and nutrients on groundwater at two hog confinement facilities. In Proceedings from

The current system of industrial farming is broken and does not protect the environment or public health. A 2007 study concluded:

Based on available data, generally accepted livestock waste management practices do not adequately or effectively protect water resources from contamination with excessive nutrients, microbial pathogens, and pharmaceuticals present in the waste. Impacts on surface water sources and wildlife have been documented in many agricultural areas in the United States. Potential impacts on human and environmental health from long-term inadvertent exposure to water contaminated with pharmaceuticals and other compounds are a growing public concern.<sup>16</sup>

CAFO air emissions have been documented as a threat to public health. In February 2002, The University of Iowa released a joint air quality report from a team of scientists at the University of Iowa and Iowa State. The report concluded that “emissions may constitute a public health hazard and that precautions should be taken to minimize exposures arising from CAFOs.” The report stated that hydrogen sulfide and ammonia measurements near livestock operations have been high enough to be harmful to humans. The report recommended air quality standards be enacted for CAFOs.<sup>17</sup>

Hydrogen sulfide (“H<sub>2</sub>S”), a prominent component of odorants released from CAFOs, smells like rotten eggs and is recognized as both an irritant and asphyxiant.<sup>18</sup> Hydrogen sulfide “is considered to be an insidious poison because our sense of smell rapidly fatigues, and therefore, fails to provide a good warning of gas concentration.” Symptoms include eye and upper respiratory irritation headaches, and dizziness. Higher concentrations can cause “severe eye and respiratory tract irritation, acute conjunctivitis, lacrimation, and difficulty breathing, as well as a sudden loss of consciousness.”<sup>19</sup>

Symptoms of exposure to hog gases such as hydrogen sulfide, include, “more tension, more depression, more anger, less vigor, more fatigue, and more confusion.”<sup>20</sup> Other symptoms reported from exposure to gases emitted by hog facilities, “may elicit nausea,

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Animal Feeding Operations and Ground Water: Issues, Impacts, and Solutions – A Conference for the Future (p. 29-50). St. Louis, Missouri. November 4-5, 1998. National Ground Water Association. Krapac, I. G., Dey, W. S., Roy, W. R., Smyth, C. A., Storment, E., Sargent, S. L., & Steele, J. D. (2002). Impacts of swine manure pits on groundwater quality. *Environmental Pollution*, 120(2), 475-492.

Kross, B. C., Hallberg, G. R., Bruner, D. R., Cherryholmes, K., & Johnson, J. K. (1993). The nitrate contamination of private well water in Iowa. *American Journal of Public Health*, 83(2), 270-272.

<sup>16</sup> Burkeholder, JoAnn, *Impacts of Waste from Concentrated Animal Feeding Operations on Water Quality*, *Environ Health Perspect.* Feb 2007; 115(2): 308–312.

<sup>17</sup> The University of Iowa, Feb 8, 2002 Debra Venzke. UI College of Public Health.

<sup>18</sup> Hydrogen Sulfide is an extremely toxic gas to humans and animals. *Handbook of Hazardous Materials*, 1993.

<sup>19</sup> Safety Net, UC Davis Environmental Health and Safety, 2-1993.

<sup>20</sup> Susan Schiffman, Duke University.

vomiting and headache, cause shallow breathing and coughing; upset stomach and loss of appetite; irritated eyes, nose and throat; disturbance, annoyance and depression...”<sup>21</sup>

In fact, public health scientists now recognize that hydrogen sulfide is a potent neurotoxin, and that chronic exposure to even low ambient levels causes irreversible damage to the brain and central nervous system. Children are among the most susceptible to this poison gas. It is unacceptable for communities to have to continue suffering the ill effects of H<sub>2</sub>S when the technology to control H<sub>2</sub>S emissions is available and affordable.<sup>22</sup> Children living or going to school near CAFOs also face higher asthma risks.<sup>23</sup> Additionally, children living on swine farms where antibiotics are added to feed have a significantly higher prevalence of the respiratory disease.<sup>24</sup>

Because of the increased threat to public health, citizens need to know if and when a CAFO operator is proposing to build in their town. The changes to Reg. 6 would help accomplish that goal.

### **CAFOs cause negative community impacts.**

The public also needs to be aware of what can happen to their community as a result of CAFOs. CAFOs depress surround property values.<sup>25</sup> For example, economist John Kilpatrick studied properties near CAFOs and concluded, “... it is clear from the above case studies that diminished marketability, loss of use and enjoyment, and loss of exclusivity can result in a diminishment ranging from 50% to nearly 90% of otherwise un-impaired value.”<sup>26</sup>

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<sup>21</sup> Overcash, et al. 1984, Understanding the Impacts of Large-Scale Swine Production, June 1996.

<sup>22</sup> J Environ Sci Health B, 200003, 35: 2, 245-58.

<sup>23</sup> Concentrated Animal Feeding Operations Near Schools May Pose Asthma Risk Children who attend school near large-scale livestock farms known as concentrated animal feeding operations (CAFOs) may be at a higher risk for asthma, according to a new study by University of Iowa researchers. The study, led by Joel Kline, M.D., professor of internal medicine in the UI Roy J. and Lucille A. Carver College of Medicine, appears in the June issue of Chest, the peer-reviewed journal of the American College of Chest Physicians ([www.chestjournal.org](http://www.chestjournal.org)).

<sup>24</sup> University of Iowa News Release, Increased Asthma Found Among Iowa Children Living On Hog Farms-New research conducted by investigators in the University of Iowa College of Public Health has found that the prevalence of asthma is elevated among children living on farms where swine are raised, Dec. 9 2004.

<sup>25</sup> See Weida, Bill, *Pollution Shopping in Rural America: The myth of economic development in isolated regions*, November 2001; Mubarak, Hamed, Johnson, Thomas G., and Miller, Kathleen K., *The Impacts of Animal Feeding Operations on Rural Land Values*, Report R-99-02, College of Agriculture, Food and Natural Resources, Social Sciences Unit, University of Missouri – Columbia, May 1999, <http://www.epac.missouri.edu>; and Kilpatrick, John A., *Concentrated Animal Feeding Operations and Proximate Property Values*, *The Appraisal Journal*, July, 2001, p. 306.

<sup>26</sup> Kilpatrick, John, *Concentrated Animal Feeding Operations and Proximate Property Values*, *The Appraisal Journal*, July 2001, 301-306, at 306.

For example, large hog CAFOs tend to hinder rural economic growth, despite promises of increased economic growth in local communities.<sup>27</sup> A study by Palmquist, Roka and Vulkina (1998) shows that large hog operations tend to depress the sales value of nearby homes and real estate.<sup>28</sup> These findings were confirmed by a second study at the University of Missouri-Columbia by Hamed, Johnson, and Miller that found that proximity to a hog CAFO does have an impact on property values. Based on the averages of collected data, loss of land values within three miles of a hog CAFO would be approximately \$2.68 million (US) and the average loss of land value within the 3-mile area was approximately \$112 (US) per acre.<sup>29</sup>

Quality of life is severely reduced as a result of factory “farms.” Residents that live near CAFOs complain of incessant flies, odor, dust, and rodents. Air pollution and odors from hog operations are emitted by barns, lagoons, pits, slurries and land application. Noxious gases have been detected four miles downwind that are as intense as at a lagoon. Even small levels of odors and gas molecules can produce strong reactions in humans. Roof shingles, siding, fabrics and other material can trap odors and release them when conditions are right. Workers can become desensitized because the molecules tie up their olfactory nerves.<sup>30</sup>

Research suggests exposure to odor has an effect on secretory immune function and is particularly important in that it documents a physiologic effect among neighbors of industrial hog operations.<sup>31</sup> Additionally, new research indicates that short-term exposure in an environmental chamber to malodorous emissions from a swine house at levels expected downwind can induce clinically important symptoms in healthy human volunteers.<sup>32</sup>

The Reg. 6 amendments will help keep citizens informed about how a proposed industrial facility will affect their community economically as well as their quality of life.

## **Conclusion**

Notifying the public when a CAFO files an NOI and NMP provides for, encourages, and assists the public to participate meaningfully in the development, revision, and enforcement of the CAFO permitting program as required under the Clean Water Act.

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<sup>27</sup> A study of 1,106 rural communities by Gómez and Zhang of Illinois State University found that large hog farms tend to hinder rural economic growth at the local level. Weida, Bill, Nutrient Management Issues, April 2001, 3.

<sup>28</sup> *Id.* citing Palmquist, R.B., F.M Roka, and T. Vukina. 1997. Hog operations, environmental effects, and residential property values, *Land Economics*, 73, 114-124.

<sup>29</sup> *Id.* citing Mubarak, Hamed, Johnson, Thomas G., and Miller, Kathleen K., *The Impacts of Animal Feeding Operations on Rural Land Values*, Report R-99-02, College of Agriculture, Food and Natural Resources, Social Sciences Unit, University of Missouri – Columbia, May 1999, <http://www.cpac.missouri.edu>.

<sup>30</sup> Susan Schiffman, Duke University Swine Odor Task Force.

<sup>31</sup> Health Effects Associated with Exposure to Airborne Emissions from Industrial Hog Operations in Eastern North Carolina.

<sup>32</sup> Shiffman et al., *Environmental Health Perspectives* Vol. 1113 #5 May 2005.

Numerous negative effects from CAFOs are documented – water and air pollution from the intense concentration of animals and the manure generated, public health threats from toxic substances and pollutants from CAFO manure, economic degradation and decreased quality of life for surrounding communities. The proposed changes to Reg. 6 discussed above are necessary to inform the public about industrial facilities that are proposed in the community so citizens can protect themselves from some of these harmful effects.

Respectfully Submitted:

Danielle Diamond  
Executive Director,  
Socially Responsible Agricultural Project

Denise Luk  
Interim National Coordinator,  
Socially Responsible Agricultural Project