

Senate Public Works and Environment Committee Hearing
“An Examination of the Potential Human Health, Water Quality, and other Impacts
of the Confined Animal Feeding Operations (CAFOs)”
Testimony of
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Animal manure management has always been a major component of the design and operation of confined animal production facilities but has certainly increased in importance over the last 30 years. I have been involved with animal production and manure utilization for more than 35 years and been part of the design and implementation of manure utilization technologies in the U.S. and Africa. I am currently a Professor of Agricultural Economics at Oklahoma State University and specialize in the areas of agricultural policy and farm and ranch management. The issues surrounding animal manure are important and I thank the Senate Public Works and Environment Committee for holding this hearing and providing me the opportunity to bring a new perspective to the debate on animal manure management. I am going to focus my remarks on public and private efforts too minimize the adverse impacts of animal manure on human health and the environment.

Oklahoma has 799 registered poultry feeding operations, 220 licensed confined swine feeding operations, 66 licensed confined cattle feeding operations and 12 licensed confined dairy operations. These represent only those operations with actual or potential discharge that are large enough to be required to be licensed or registered under current state or federal statutes and thus there are certainly more animal feeding operations in the state. These Animal Feeding Operations (AFOs) are spread throughout the state but tend to be lumped by species in specific regions of the state.

Oklahoma also contains approximately 11,611 miles of shoreline, (slightly less than the estimated combined general coastline of the Atlantic, Gulf, Pacific, and Arctic Coasts) and approximately 78,578 miles of rivers/streams. From 1996 through 2007 roughly 1000 complaints have been received by the Oklahoma Department of Agriculture Food and Forestry (ODAFFF) related to animal manure concerns from cattle, swine, horse, rabbit, poultry, goat, and dog confined production operations. These complaints dealt with potential or actual water quality problems, odor, dust and noise.

The combination of abundant AFOs, number of water bodies and concerned citizens in Oklahoma provides an excellent opportunity to study the interaction of the three. To

assert there are no problems in animal manure management in the state of Oklahoma would be nothing short of ridiculous, but to assume that the owners of livestock production, feeding and processing firms are not actively engaged in pursuing changes to meet new standards and implement the latest “Best Management Practices” (BMPs) would also be ridiculous. The management of animal manure is just one complicated issue in a very complex industry. Few understand either and even fewer understand both.

My main message is the need to change from dealing with animal manure as a waste and place more focus on fully utilizing this valuable resource through greater support of research and development. By treating manure as a waste we employ all efforts and resources to contain and eliminate rather than collect and utilize. We seem to have abandoned this resource, valuable for energy and food production, in favor of other less efficient sources such as chemical fertilizers and ethanol. The demand for cheap food and international competition from countries with cheaper capital assets has induced the proliferation of the large CAFOs over the last four decades. These facilities were initially constructed to efficiently provide abundant and cheap sources of animal protein with little thought toward their combined environmental impact. As we have become aware of this impact the industry has changed and devoted a considerable amount of their net earnings to meeting the problem. The industry has and continues to implement the strategies provided by public and private research efforts. To demand that an industry continue to adopt cost effective BMPs is not unreasonable but to be unhappy with the result of implementation of these BMPs and then pose new regulations or restrictions without either the available technologies or the financial ability to implement those technologies is unreasonable. And, the continued promulgation of new regulations here and not abroad will eventually shift the industry abroad.

Some view regulation and litigation as the answer to problems and others seek innovation and incentives. Solutions that are profitable and adaptable will be readily adopted by industry. These facts support the idea that our scarce resources are best spent not on forcing change through regulation and litigation but rather inducing change through research and education.

Do we need new CAFO regulations?

The purpose for this hearing is to address the impacts of CAFOs on human health and water quality to determine the need for increased regulation in an attempt to mitigate any adverse impacts from animal manure. The nutrients in animal manure have found their

way into natural waters and the odor and dust from CAFOs has found its way into the air we breathe. However, I do not know of a single study that has actually measured the benefits and costs of implementing known BMPs in the nations CAFOs. Few studies have attempted to evaluate the benefits and costs of discharge abatement in specific watersheds and most are loaded with assumptions where scientific data is unknown or uncertain. For the most part, federal, state and local actions have been taken to contain and eliminate animal manure under the assumption that the damages, real or perceived, exceed the costs. In theory, environmental regulation of CAFOs should only impose costs where the value of corresponding benefits is greater. In considering all available abatement technologies, only those that have costs for specific operations, where the value of corresponding benefits is greater should be implemented. Otherwise, individuals, communities, regions and society have lower welfare than before the abatement technologies were implemented. To impose this restriction would end the debate pending a benefit/cost assessment. However, to move us beyond this point we will assume that the implementation of nutrient management plans that choose from amongst a set of best management practices is accomplished such that the costs do not exceed the benefits of this implementation.

To induce a change in current behavior we can employ either the stick or the carrot approach. In terms of federal policy, we have used, and continue to use both approaches. The most commonly known carrot approaches include technical and cost-share assistance, subsidies and the less commonly included approaches of research and education. On the stick approach we have federal, state, and local regulations, taxes, and permits that pose constraints on behavior. In either the stick or the carrot approach there are two conditions required to induce or force behavior change. First, there must be clear, cost effective alternatives to current behavior and second the targeted party must have the ability to adopt the alternatives. Of course this presumes that with respect to the CAFOs, we wish to change their behavior regarding manure management rather than eliminate them all together. If the purpose of the debate regarding the further regulation of CAFOs is an indirect attempt to deal with issues of structure in the animal production and processing industry then I would submit that the attempt is misguided and likely to lead to more concentration rather than less.

Current Efforts - Most states are implementing animal manure and water quality standards that exceed those established in federal law. These tighter standards are in response to environmental conditions unique to areas within the state. Certainly

Oklahoma is no exception and has been actively engaged in addressing issues specific to air and water quality concerns resulting from animal manure. For instance;

- In 1998, the Oklahoma USDA-NRCS revised their Conservation Practice Standard, Waste Utilization (Code 633), with a provision specifically for the Eucha/Spavinaw Watershed to restrict poultry litter application on land with a phosphorus index of 300 lbs/acre or greater.
- In 2000, the Oklahoma Water Resources Board required poultry producers in nutrient limited watersheds and nutrient limited groundwater areas to test their soil prior to litter application every year, rather than every 3 years as is required for non-nutrient limited watersheds.
- In 2001, the Oklahoma USDA NRCS published the Nutrient Management standard (Code 590), replacing the Waste Utilization (Code 633) standard from 1995 and 1998. The new standard made phosphorus, rather than nitrogen, the limiting factor in all nutrient management plans. In non-nutrient limited watersheds, the phosphorus index has an upper limit of 400 lbs/acre, after which no additional litter may be applied. In nutrient limited watersheds, 300 lbs/acre is the threshold. The standard is applicable statewide.¹
- The Food Security and Rural Investment Act of 2002 extended and expanded funding for the Environmental Quality Incentives Program (EQIP). The program called for 60 percent of funding to be spent on livestock operations. In order to reach this goal, NRCS has developed the National Animal Agriculture Conservation Framework (December 2003). This National Framework is built from State and Basin Area efforts and presents a vision for voluntary, proactive efforts to foster environmentally sound and economically viable livestock and poultry production. It envisions collaboration among Federal, State, tribal, and local governments; producers; the public; and the private sector to bring the initiative, resources, and commitment to support environmental stewardship in animal agriculture.
- In 2003, The Office of the Secretary of Environment issued a *Coordinated watershed Restoration and protection Strategy for Oklahoma's Impaired Scenic Rivers*".
- In 2003, Oklahoma and Arkansas signed a "Statement of Joint Principles and Actions," outlining how the states would work together to improve water quality in Oklahoma's scenic rivers. The pact calls for "*The states of Arkansas and Oklahoma, acting through their environmental agencies, to work together in partnership with the Arkansas-Oklahoma Arkansas River Compact Commission toward the goal of producing a Watershed Plan.*
- In 2007, Oklahoma signed a \$20.6 million cooperative conservation partnership agreement between USDA and Oklahoma that will create up to 9,000 acres (or 370 miles) of riparian buffers and filter strips under the Conservation Reserve Enhancement Program or CREP.

¹ Note that there is no scientific basis for this phosphorus constraint. No upper limit on phosphorus has been found that limits plant growth potential.

In 2005 and 2006 NRCS spent just over 60% of the EQIP funds on livestock operations but less than 20% on CAFOs. However, the 20% includes transportation subsidies and other cost-share assistance not directly tied to changes in the operation of the CAFOs. This is important as the impacts of animal manure more frequently occur at the land application site than at the CAFO. With both the Oklahoma CREP and EQIP, funds have been targeted to produce buffers and filter strip and to fence livestock out of these areas. Because phosphorous readily attaches to soil particles most phosphorous contamination of water is the result of soil erosion. Reducing this erosion or reducing the ability of eroded soil particles from entering the water will reduce phosphorous induced water quality degradation. These fenced buffers and filter strips offer the additional benefits of wildlife nesting habitat and stockpiled forage for emergency use.

Environmental Quality Incentives Program FY-2005 Cost-Share Approved by Livestock Type

Livestock Type	Total Cost-Share Approved	Confined Cost-Share Approved	Unconfined Cost-Share Approved	Practices Undistinguishable Cost-Share Approved	Number of Contracts
Sheep	\$8,883,826	\$1,184,029	\$2,707,934	\$4,991,863	508
Beef	\$327,827,898	\$52,489,151	\$88,672,588	\$186,666,159	20,539
Dairy	\$91,143,643	\$65,057,371	\$4,266,626	\$21,819,646	2,517
Other	\$18,867,510	\$3,069,111	\$6,023,959	\$9,774,440	1,227
Poultry	\$32,524,429	\$28,154,447	\$921,553	\$3,448,429	1,789
Swine	\$17,582,432	\$13,718,812	\$162,807	\$3,700,813	883
Subtotal	\$496,829,738	\$163,672,921	\$102,755,467	\$230,401,350	27,463
Non-Livestock	\$297,430,838	\$0	\$0	\$0	21,943
Total	\$794,260,576	\$163,672,921	\$102,755,467	\$230,401,350	49,406

Source: Protracts FY2005 04OCT05

Environmental Quality Incentives Program FY-2006 Cost-Share Approved by Livestock Type

Livestock Type	Total Cost-Share Approved	Confined Cost-Share Approved	Unconfined Cost-Share Approved	Practices Undistinguishable Cost-Share Approved	Number of Contracts
Sheep	\$6,552,097	\$701,466	\$2,246,764	\$3,603,867	296
Beef	\$312,634,324	\$43,062,776	\$71,465,241	\$198,106,306	17,605
Dairy	\$90,101,196	\$62,284,196	\$3,372,295	\$24,444,705	1,951
Other	\$20,410,903	\$3,198,336	\$6,526,001	\$10,686,566	1,118

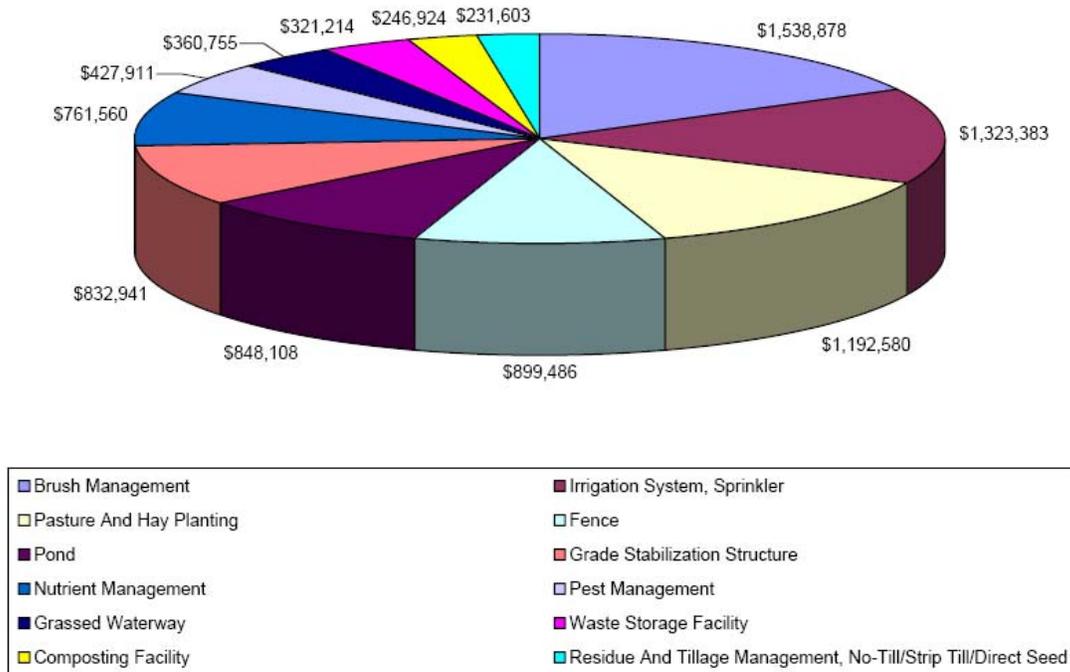
Poultry	\$28,478,004	\$23,036,577	\$629,270	\$4,812,157	1,252
Swine	\$25,570,331	\$20,116,235	\$327,272	\$5,126,824	658
Subtotal	\$483,746,854	\$152,399,586	\$84,566,843	\$246,780,425	22,880
Non-Livestock	\$304,220,696	\$0	\$0	\$0	18,310
Total	\$787,967,550	\$152,399,586	\$84,566,843	\$246,780,425	41,190

Source: NRCS Protracts 10 07 2006

In Oklahoma, about 16% of the 2006 EQIP funds were spent on storage, composting, sprinkler systems and other practices for CAFOs and another 8% was spent on transport and application of manure. Another large portion of the funds were used to produce and fence buffers and filter strips.

**EQIP 2006
Top 12 Practices Applied**

EQIP provided cost-share for 7,577 practice installations of 54 distinct practices across Oklahoma in 2006. Total cost-share provided was \$11.3 million. This chart summarizes the top 12 practices, which account for nearly \$9 million or 80% of the total.



Source: USDA/NRCS

These actions represent a timeline of involvement of CAFO operators, state and federal agencies, and conservation and community groups in an attempt to pursue solutions to local water quality problems posed by animal manure. Also important are the education, research and extension efforts of the state agencies and Oklahoma Agricultural

Experiment Station in addressing animal manure issues. This is not an exhaustive list of all the activities of federal, state, and local governments, community groups and private and public research and education efforts dealing with CAFOs in this decade. To list all these efforts would fill several hundred pages. But these efforts symbolize the engagement of the industry and community in dealing with manure management issues. Clearly, CAFOs are actively implementing the nutrient management practices as per the NRCS technical guides. The EQIP practices are provided with 50-75 percent cost share and the transportation subsidies of \$4 to \$12.50/ton depending on the distance between production and use sites. Current farm bill proposals however, seek to reduce eligibility to EQIP cost share assistance based on producer's gross income. As I will show later, because of the low profit margins in many animal feeding operations (particularly cattle) large gross incomes are needed. The cost –shared practices that NRCS provides through EQIP are frequently part of other changes that must be implemented simultaneously. Thus, the total cost of implementing the practice often exceeds the cost-share. Restrictions on payments based on income will reduce the ability of EQIP to induce change.

Are there clear alternatives?

The current emphasis is on containment and elimination of animal manure from animal feeding operations. The most obvious forms of containment are the manure ponds, lagoons, and holding pits for manure storage and the elimination through land application. Increased efficiency in land application would alone solve many of the water quality issues. But as I stated previously the current paradigm of contain and eliminate is at the core of the problem. Are there alternatives for collection and use?

This question can be broken into 1) are the technologies available and 2) can they be implemented. Let's first consider whether there are clear alternatives to current behavior.

The U.S. Department of Agriculture's Natural Resource Conservation Service (NRCS) is charged with providing technical assistance to agribusiness to both improve production and minimize the impacts of the production activities on the environment. The NRCS has been active in assisting animal agricultural by providing technical guides for every type of production agriculture. With respect to the CAFOs, the USDA/NRCS has a national technical guide for developing a comprehensive nutrient management plan. According to the NRCS National Planning Procedures Handbook (Subpart B, Part 600.51 Draft Comprehensive Nutrient Management Planning Technical Guidance) "*a CNMP is a conservation plan that is unique to animal feeding operations. It is a grouping of*

conservation practices and management activities which, when implemented as part of a conservation system, will help to ensure that both production and natural resource protection goals are achieved. A CNMP incorporates practices to utilize animal manure and organic by-products as a beneficial resource. A CNMP addresses natural resource concerns dealing with soil erosion, manure, and organic by-products and their potential impacts on water quality, which may derive from an AFO. A CNMP is developed to assist an AFO owner/operator in meeting all applicable local, tribal, State, and Federal water quality goals or regulations. For nutrient impaired stream segments or water bodies, additional management activities or conservation practices may be required to meet local, tribal, State, or Federal water quality goals or regulations.”

Many states have their own set of BMPs that are more restrictive, have been in place longer, and provide their own programs to assist in implementation. As we have more experience with the management of animal manure in the various feeding structures, in unique environments these BMPs may change. A list of common list of BMPs is provided below, divided into four categories, covering a specific operation or management task: grounds, buildings, lagoons, settling basins and holding ponds, and land application².

Grounds - BMPs involving the grounds at pork production facilities are basically common sense and being considerate of your neighbors. Below are examples of BMP activities that you may be able to implement at your facility:

- locating the facility as far as possible from surface water bodies
- locating the facility in an area with sufficient soil drainage
- having wind breaks and buffer strips around the facility
- diverting rain water away from areas where it could become contaminated
- maintaining proper gravel cover and landscape gradient so that water does not stand in access roads and around the production facility
- scraping away manure in open feed lots to reduce buildup of solids and to control odor and fly production
- collecting runoff from lots through settling basins for subsequent land application
- immediately loading manure into a manure spreader and directly applying to the field
- removing spilled feed promptly
- keeping feeder equipment in good repair
- keeping watering devices in good repair

Buildings - Routine maintenance and good housekeeping practices are the two easiest ways to prevent pollution in buildings. Some ways that you can use BMPs in buildings are:

- constructing interior surfaces with smooth materials to reduce dust and grime accumulation and facilitate cleaning
- maintaining adequate ventilation in the building to prevent buildup of dusts, gases, moisture and heat
- preventing liquids from collecting under animals and watering equipment by using slotted floors or other technologies
- repairing leaking water lines immediately
- maintaining clean and dry buildings

² <http://www.epa.state.il.us/water/cafo/publications/pork-bmp.pdf>

- installing an under floor ventilation system in confinement buildings where below floor manure storage is used
- using a power washer when hosing down walls, dividers and floors in order to reduce water usage
- covering feeders and extending feed downspouts to minimize dust
- scraping off or flushing away manure in confinement areas on a frequency which is adequate to minimize odors
- covering sumps at lift stations
- pumping manure from accumulation areas to storage areas on a frequency which is adequate to prevent odors and overflow

Lagoons, settling basins and holding ponds - Undersized or poorly designed lagoons, settling basins and holding ponds can cause pollution. Below are some examples of ways to improve your lagoons, settling basins and holding ponds:

- locating lagoons, settling basins and holding ponds away from valleys which can trap odors in low lying areas
- constructing lagoons, settling basins and holding ponds so that wastes do not overflow or leach into groundwater and so that odor is minimized
- covering the lagoon, settling basin or holding pond to reduce surface odors being released
- adding aeration
- pumping or draining manure to a lagoon in small enough quantities to avoid slug loadings, maintaining a stable microbial population within the lagoon
- maintaining sufficient storage capacity to prevent overflow of lagoons, settling basins and holding ponds
- using a pump and a solids separator to lower solids loading
- removing sludge from the primary lagoon frequently enough to prevent overloading or carryover of solids to a second stage lagoon
- equipping lagoons and holding ponds with a free board gauge that shows when it is time to pump out and land apply supernatant, preventing overflows
- dewatering lagoons only down to the minimum treatment volume level as indicated on the lagoon marker
- filling new or emptied lagoons with water to the minimum treatment level before manure is introduced

Land application - Manure as a fertilizer can be environmentally beneficial. However, there are additional opportunities for reducing pollution when applying the manure to the land. Some examples of BMPs in land application practices are:

- developing a manure management plan
- scheduling application times that are compatible with crop rotations
- having sufficient land available to apply during various times of the year so that the rate of application will be at or below agronomic rates
- applying manure early in the morning until early afternoon
- applying manure on days with low humidity and little or no wind
- applying manure at a site remote from neighboring residences if manure is not injected or immediately incorporated into the soil
- applying manure on land which is not frozen or snow-covered
- preventing contaminated runoff by not applying manure to land which is saturated or contains ponded water
- preventing contaminated runoff by not applying manure near a creek or river
- preventing contaminated runoff by not applying manure during precipitation or when precipitation is imminent
- injecting manure
- determining the necessary application rate and properly calibrating your equipment
- using injection equipment which leaves crop residue intact and creates a level surface to plant crops without further tillage
- applying liquid wastes at low pressure with little agitation if spreaders or sprayers are used to land apply
- fixing leaks in over-the-road manure hauling equipment and cleaning tillage equipment used to incorporate manure if travel on public roads is necessary

This list is both complete and reflective of the current “contain and eliminate” manure management paradigm. This list is what the industry is being asked to implement and is

engaged in implementing. However, there are other less known alternatives and research is underway to minimize the amount of nutrients in the manure and the quantity of manure, transportation and storage of manure, and more efficient utilization of the manure in the production of alternative products from fuel to food. Examples of successful alternative manure management strategies include the Mason-Dixon Dairy in Gettysburg, Pennsylvania, S&S Aqua farms in West Plains, Missouri and the Solar Aqua Farms in Sun City, California.

The Mason-Dixon operation produces 80,000 quarts of milk daily from over 2,000 cows, designs and manufactures its own innovative equipment, producing energy, fertilizer and bedding from the dairy cow manure in a nearly self contained operation.

Solar Aqua Farms raises 5 million pounds of tilapia in the middle of the desert, in tanks under greenhouses. A patented treatment and recycling system purifies the water and converts fish waste to organic fertilizers. The process was developed from efforts to turn human sewage into edible outputs and fresh water.

S&S Aqua farms also uses a closed cycle, self balancing system and the natural nutrients from a biological source to grow safe, chemical-free, quality food.

These are all examples of farms that have moved from monoculture production schemes to multiple product systems. These farms have incorporated animal manure into the production process – “collect and utilize”. There are many of these new types of farming systems developing throughout the world but they are still far outside mainstream thinking.

In addition, considerable research efforts are underway at private and public universities and businesses. Some examples of these research thrusts include;

- Improving nutrient content of feeds (e.g. high oil corn) and better animal genetics will reduce the total quantity of manure while improved feed additives may enable more efficient uptake of feed nutrient.
- New collection systems to move manure from feed pens to storage facilities.
- New storage facilities that actively process manure for incorporation into new products (e.g. feed, fertilizer, soil additives, fuel)
- Use of manure as an input into fuel production (e.g. heat, methane, ethanol), food production (e.g. aquatic plants and animals, land based crops)

Prior to the 1980s research in all these areas received a great deal of federal support but today are almost exclusively funded through private industry. Currently, some \$7.5 billion is provided to the ethanol industry through the \$0.52 per gallon ethanol subsidy. Perhaps this level of funding on manure management could also induce more efficient use of the resource.

Can the Alternatives be implemented?

The animal feeding industry is actively seeking new technologies for manure management and use, and implementing the currently available BMPs. However, they face financial constraints in the adoption of new technologies.

Livestock producers typically exhibit extremely high levels of gross profitability although recent increases in energy and feed prices has severely reduced the profitability of poultry and hog production enterprises. Except in drought areas beef and dairy producers have been somewhat successful in maintaining high levels of gross profitability through the substitution of forage for feed. Gross profitability, defined as cash sales less cash expenses divided by cash sales (profit margin) has been consistently maintained at 15-30 percent from 2000 to 2005. However, because the amount of sales generated per dollar of fixed assets has been low (due to land prices), the return on investment has been low relative to other businesses with equal risk.

The beef feedlots, poultry processors and other similar downstream agribusinesses tend to have similar returns on investment. However, the low return on investment is the result of low profitability and high rates of sales per dollar of assets (Asset Turnover). The return on investment represents the potential income available to management for salaries and new investment, the funds available for constructing new structures and adopting new practices. The numbers provided below are averages and do not reflect the variation between years or within the industry. For example, the typical 30,000 head feedlot had losses of nearly \$1 million and profits of \$600 thousand over a 10 year period from 1997 to 2006. Poultry production operations had negative incomes over the last two years as a result of the high energy costs associated with heating and cooling and higher than normal feed costs.

	S/FA	GPOCR	ROI
Feed Grains	\$0.39	15.6%	6.1%

Wheat	\$0.26	28.1%	7.3%
Cotton	\$0.59	7.9%	4.7%
Rice	\$0.44	-3.4%	-1.5%
Dairy	\$0.42	18.2%	7.6%
Beef	\$0.17	21.7%	3.7%
Poultry	\$0.18	31.4%	5.7%
Feedlot	\$2.17	1.2%	2.6%
Poultry Processor	\$2.53	2.7%	6.8%

S/FA is the dollar of sales per dollar of fixed assets

GPOCR is the profit margin

ROI is the pre-tax percent of total income available to the owner for management and capital

Thus, while some funds are available for the adoption of new technologies, the amount of funds in a given year are highly variable and will reduce ownership's income. Because the return to investment is often below the returns to limited risk investments such as Certificate of Deposits, the decision to continue the operation is frequently not a good business decision but rather a decision that includes non-business factors such as desired lifestyle. Increased regulations that required the adoption of costly new technologies may lead to a relocation of the firm (to avoid the regulations) or exit from the industry. In most cases the exit is by smaller firms less able to spread the cost of new technologies over larger numbers of production units. The smaller operations assets are then acquired by larger firms, increasing industry concentration.

Should new regulations be imposed?

The Environmental Protection Agency (EPA) (Final rule: 40 CFR Parts 122 and 412) extended certain compliance dates in the National Pollutant Discharge Elimination System (NPDES) permitting requirements and Effluent Limitations Guidelines and Standards for concentrated animal feeding operations (CAFOs) as a result of the decision of the U.S. Court of Appeals for the Second Circuit in *Waterkeeper Alliance et al. v. EPA*, 399 F.3d 486 (2nd Cir. 2005).

The final rule revised the dates established in the 2003 CAFO rule by which facilities;

- newly defined as CAFOs
- defined as CAFOs after April 14, 2003, due to operational changes
- and permitted CAFOs required to develop and implement NMPs,

must seek permit coverage and develop and implement their nutrient management plans from July 31, 2007, to February 27, 2009

Major changes made by EPA in its revised CAFO Rule include:

- All large CAFOs must apply for an NPDES permit, or demonstrate that they have no potential to discharge into waters of the United States.
- Large poultry operations using dry waste management systems are now covered by the CAFO Rule.
- New source poultry, swine, and veal operations, as defined by EPA in the Rule, must meet a “no discharge” standard. This standard only allows for discharge from the production area in the event of a 100-year, 24-hour storm or greater

EPA proposed to require only owners or operators of those CAFOs that discharge or propose to discharge to seek authorization to discharge under a permit. Second, EPA proposed to require CAFOs seeking authorization to discharge under individual permits to submit their NMPs with their permit applications or, under general permits, with their notices of intent. Permitting authorities would be required to review the NMP and provide the public with an opportunity for meaningful public review and comment. Permitting authorities would also be required to incorporate terms of the NMP as NPDES permit conditions.

This rule follows the 1999 USDA/EPA United National Strategy for Animal Feeding Operations. This National Strategy *is based on a national performance expectation that all Animal Feeding Operations should develop and implement technically sound, economically feasible, and site-specific CNMPs to minimize impacts on water quality and public health.*

This regulation requires that CAFOs have NMPs in place by 2009 and that these NMPs will incorporate the best management practices as indicated in the NRCS National Technical Guide. Thus, by 2009, CAFOs will have plans in place for implementing best available technology.

Some have suggested that we move animal manure under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). Will this improve upon the results obtainable under the EPA NPDES rule?

CERCLA Overview: The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, was enacted by Congress on December 11, 1980. This law created a tax on the chemical and petroleum industries and provided broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. Over five years, \$1.6 billion was collected and the tax went to a trust fund for cleaning up abandoned or uncontrolled hazardous waste sites. CERCLA:

- established prohibitions and requirements concerning closed and abandoned hazardous waste sites;
- provided for liability of persons responsible for releases of hazardous waste at these sites; and
- established a trust fund to provide for cleanup when no responsible party could be identified.

The law authorizes two kinds of response actions:

- Short-term removals, where actions may be taken to address releases or threatened releases requiring prompt response.
- Long-term remedial response actions, that permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious, but not immediately life threatening. These actions can be conducted only at sites listed on EPA's [National Priorities List](#) (NPL).

CERCLA also enabled the revision of the National Contingency Plan (NCP). The NCP provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The NCP also established the NPL.

Does the suggestion to move animal manure under CERCLA mean that a tax will be levied on the animal feeding industry, the animal industry, or agriculture in general? Do the proponents of this move intend that we fund the oversight agency with personnel sufficient to define manage each CAFO in the United States as a hazardous waste site? Are we prepared to fund the economic assessment of implement such a far reaching policy as required by statute? While the answers to these questions are important to determine the feasibility of redefining animal manure as a hazardous material, that fact that we already have regulations that have yet to be fully implemented makes the questions moot.

Summary

The fact that we are here today discussing the animal manure issue conveys the importance of the issue. Animal manure has too long been treated as a waste to be

contained and eliminated rather than as a valuable resource that should be collected and utilized. The “contain and eliminate” paradigm has led to environmental issues of great concern to those individuals and communities near and downstream from the animal feeding operations. In response, state and federal government regulations have been promulgated to address these concerns and have not as yet been fully implemented.

The new regulations will require many operations to make major investments in plant and operational changes that were not part of the original operation plans. We are currently unsure if the costs of implementing these strategies is exceeding by the benefits of doing so. BMPs developed to incorporate animal manure into fuel and food production may provide added benefits and increase the economic feasibility of both private and public support of adoption.

CAFO initial operation plans contained the best technologies of the time. As we learn more about how animal manure interacts with the environment through different operations and in unique ecological systems, the best management practices of today will be changed. The animal feeding operations have limited funds to incorporate new technology and of course technological economies of size exist in the industry. Thus, requirements to adopt new technologies puts a greater burden on smaller operations. In response to financial constraints federal and state governments have provided cost-share assistance and adequate timelines and consideration for financial burden.

The industry is engaged in developing NMPs and implementing BMPs but these efforts won't be fully realized for several years. After full implementation of the new EPA National Pollutant Discharge Elimination System (NPDES) permitting requirements and Effluent Limitations Guidelines and Standards rule we can revisit the environmental concerns related to animal feeding operations and determine a future course of action. However, until we change to a paradigm of collect and utilize we will never truly address the issues surrounding animal manure.