

# Threatening Iowa's Future

**Iowa's Failure to  
Implement and Enforce  
the Clean Water Act  
for Livestock Operations**

May 2004





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Operations**

**Environmental Integrity Project**

MAY 2004

**THE ENVIRONMENTAL INTEGRITY PROJECT (EIP)** is a non-profit, non-partisan organization dedicated to more effective enforcement of existing federal and state environmental laws and to the prevention of political interference with those laws. EIP's research and reports shed light on how enforcement and rulemaking affect the public health. EIP also works closely with local communities seeking the enforcement of environmental laws.

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### **COVER PHOTOS**

TOP: *This Sac County swine confinement with 30,000 hogs produces as much waste as the City of Cedar Rapids, Iowa with 122,500 people.* (IOWA ENVIRONMENTAL COUNCIL)

CENTER LEFT: *Hog Open Feedlot* (IOWA USDA NATURAL RESOURCE CONSERVATION SERVICE)

CENTER RIGHT: *Turkeys in Confinement* (IOWA DEPARTMENT OF NATURAL RESOURCES)

LOWER LEFT: *Cattle open feedlot with no vegetation in the confinement area* (IOWA USDA NATURAL RESOURCE CONSERVATION SERVICE)

LOWER RIGHT: *Fish killed as a result of a manure spill in Iowa* (IOWA DEPARTMENT OF NATURAL RESOURCES)

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# Executive Summary

**T**his report analyzes how the Iowa Department of Natural Resources (IDNR) regulates livestock operations under the federal Clean Water Act (CWA) to protect water quality. In general, IDNR has failed to implement and to enforce the CWA for livestock operations, resulting in degradation of Iowa's waterways.

Livestock production is increasingly an industrial process, dominated by large facilities that often confine thousands of poultry, swine, and dairy or beef cattle in animal feeding operations or AFOs. The largest of these operations in Iowa confine more than 5 million chickens, 24,000 swine, or 10,000 cattle on a single site. Many of these AFOs are not independently owned and operated family businesses, but industrial-scale operations. Large agribusinesses now own and control much of U.S. livestock and poultry production. For example, in 2002, the top four producers marketed 46% of all hogs in the country. Large corporations have cornered the market for chickens, dairy products and cattle as well.

AFOs produce vast quantities of waste—an estimated 500 million tons of manure annually in the U.S., or three times more waste than is generated by humans. Animal feeding operations generally contain the waste in storage structures and periodically dispose of it by spreading the waste on land as fertilizer. These operations often impair water quality in the nation's rivers and lakes

when manure spills from storage structures or when too much waste is applied on too little land.

The Iowa Department of Natural Resources (IDNR) documented at least 329 manure spills from animal feeding operations between 1992 and 2002. The vast majority of these spills reached surface waters, killing over 2.6 million fish and an unquantified number of other aquatic organisms. Improperly managed manure also contaminates groundwater in Iowa. Moreover, AFOs threaten public health by causing high nitrate levels in drinking water and recreational exposure to waterborne pathogens.

For many years, the federal government and states have relied on voluntary programs to control manure spills and runoff from agricultural operations. However, voluntary programs are no longer sufficient in light of the increasing concentration and industrialization of agriculture.

Recognizing that regulation is necessary to protect water quality, the federal Clean Water Act imposed a permitting scheme, National Pollutant Discharge Elimination System (NPDES), more than 30 years ago to control pollution from municipal and industrial sources, including large AFOs. NPDES permits must contain pollution controls, as well as monitoring and reporting requirements, to prevent discharges or to ensure that discharges do not harm water quality or human health. AFOs that confine the

equivalent of 1,000 animal units (e.g., 1,000 beef cattle; 2,500 swine > 55lbs or 10,000 swine < 55lbs; 700 dairy cattle; 30,000 laying hens, etc.) or smaller AFOs that discharge to waters are defined by the Clean Water Act as Concentrated Animal Feeding Operations (CAFOs). CAFOs are required to obtain NPDES permits and construct and operate facilities that do not release any waste to surface waters, except in extraordinary circumstances.

The Environmental Protection Agency (EPA) may authorize states to implement the federal NPDES program if they meet certain statutory requirements. Authorized states have primary responsibility to implement and enforce the CWA with oversight by EPA. EPA authorized Iowa to implement the NPDES program in 1978.

The Environmental Integrity Project (EIP) analyzed state IDNR data on manure spills, permitting and enforcement to evaluate IDNR's implementation of the Clean Water Act for CAFOs. As a result of its analysis, EIP makes the following findings and recommendations:

## Findings

### *Waste from Livestock Operations Impairs Water Quality and Threatens Human Health*

- Waste from livestock operations caused the majority of pollution related fish kills in Iowa over the last decade. IDNR documented at least 329 manure spills from animal feeding operations between 1992 and 2002. These spills killed over 2.6 million fish and an unquantified number of other aquatic organisms. Manure spills have also jeopardized public health by contaminating both surface water and ground water.
- Animal feeding operations discharge waste throughout the state. Water bodies in some counties are particularly stressed by chronic spills from high concentrations of CAFOs.
- Iowa categorizes animal feeding operations as “confinement feeding operations” or “open feedlots.” Confinement feeding operations tend to be poultry or swine facilities where the animals are confined in buildings that are totally roofed. Open feedlots generally tend to be beef cattle or dairy operations where the animals are confined in a yard that is unroofed or partially roofed. Confinement feeding operations caused 69% of the manure spills. Open feedlots caused 27% of the spills. The main causes for these spills were manure storage structure failures or overflows, equipment failure, run-off from open feedlots and improper manure application.

### *IDNR's Permit Scheme for CAFOs Does Not Conform to Federal Law*

- IDNR estimates that 3,500 of Iowa's animal feeding operations are required to obtain NPDES permits, yet it has only issued 42 permits to open feedlots. IDNR has never issued an NPDES permit to a confinement feeding operation, although the state has documented over 1,800 confinement facilities that should have them.
- IDNR instituted a registration program for open feedlots in March 2001 to encourage voluntary compliance with the NPDES program. 1,576 producers registered for the program. As of April 2004, IDNR had issued only nine new NPDES permits in the 3 years since IDNR instituted the registration program. At this rate of three permits per year, it will take IDNR over 500 years to issue NPDES permits to all 1,576 open feedlot registrants, assuming no new open feedlots are built.
- IDNR issues construction permits to confinement operations that are weaker than NPDES permits in a number of important ways. First,



IDNR's construction permits cover a much smaller universe of facilities than NPDES permits. Second, IDNR's construction permits do not have fixed terms like NPDES permits. Therefore, they are not reviewed and updated on a regular basis to include tighter pollution control requirements as technology improves and circumstances change. Furthermore, construction permits cannot be revoked like NPDES permits if a permittee is not complying with the terms of its permit. Third, IDNR's permitting procedures for confinement feeding operations restrict public participation.

#### *IDNR's Enforcement Actions Are Not Effective*

- IDNR's enforcement actions against some violators are ineffective because penalties are too low to recover the economic benefit of noncompliance or to provide deterrence. Out of the 180 enforcement actions for discharges to water since 1992, IDNR collected the maximum administrative penalty of \$5,000 in only 9 of the actions. IDNR also refers very few cases to the Attorney General for further investigation and prosecution, even though the Attorney General has the ability to seek higher penalties than the IDNR. The result is a regulatory environment where it pays for CAFOs to pollute Iowa's waters.
- The Attorney General's Office has the statutory authority to initiate actions for water quality violations without a referral from IDNR, but these actions do not count as "strikes" under Iowa's habitual violator law.
- IDNR recovers damages for fish kills that are miniscule to nothing. Out of 70 separate fish kill incidents that occurred between 1992 and 2002, the damages recovered per fish killed

averaged only \$0.12 per fish. In 13 cases no damages were assessed.

#### *IDNR Does Not Have Adequate Resources to Regulate the Industry*

- IDNR does not have adequate resources to regulate the entire universe of facilities. IDNR regulates about 3,500 CAFO facilities with only about 27 FTEs (full-time equivalent positions) dedicated to inspections, permitting and enforcement. Twelve of these FTE positions were obtained in 2002. Twenty-one of these positions are field staff who inspect the facilities and review manure management plans. About five people are responsible for construction and operation permitting for the state. The majority of the enforcement work falls on one attorney.

#### *IDNR Does Not Encourage Citizen Participation in the Permitting and Enforcement Process*

- IDNR does not have basic permitting and enforcement data on its website, and paper files may be spread throughout the state at various field offices. The lack of such basic information hampers citizen participation in the permitting and enforcement process. Public access is critical because it allows citizens to make informed decisions regarding environmental issues that affect their communities. The public's direct access to compliance information also provides incentives for regulated entities to comply with the law.

#### *EPA has no Credible Oversight or Enforcement Presence in Iowa.*

- Since 1997, EPA has initiated four administrative actions against open feedlots in Iowa and filed one civil case in federal court. EPA has never initiated an enforcement action against a

confinement operation in Iowa under the Clean Water Act. In addition, EPA rarely inspects animal feeding operations in Iowa—it has inspected only five open feedlots in the last five years.

#### *Conflict Provisions that Conform to Federal Law Do Not Exist for the Environmental Protection Commission*

- Final decisions on IDNR referrals to the Attorney General's Office and appeals of permits and orders are made by the Environmental Protection Commission (EPC), a nine member panel appointed by the governor. At least five of the nine members must be actively engaged in activities that are regulated by the state. Three of the members must be actively engaged in livestock or grain farming. Conflict of interest provisions that conform to federal law do not exist to ensure that the Environmental Protection Commission is impartial and balanced.

### **Recommendations**

#### *Enact a State-wide Moratorium on the Construction of New CAFOs and the Expansion of Existing CAFOs*

- The Iowa legislature should enact a state-wide moratorium on the construction of new CAFOs and the expansion of existing facilities at least until IDNR has enough resources to (1) inspect all of its facilities on a regular basis; (2) issue NPDES permits to the 3,500 CAFOs that require them; and (3) take appropriate enforcement actions against CAFOs in noncompliance.

#### *Increase Funding for CAFO Regulation*

- IDNR should identify the resources necessary to fulfill its regulatory obligations and make its resource needs known at the legislature. State legislators should examine all available

funding mechanisms, including NPDES permit fees which should be set at levels sufficient to recoup the costs of NPDES permitting, monitoring and enforcement activities.

#### *Issue NPDES Permits to All CAFOs Including Confinement Operations*

- IDNR should issue NPDES permits to all CAFOs. A regulatory program that covers only a fraction of pollution sources is not fair, credible or effective. IDNR should tailor NPDES permits to individual facilities or develop them on a watershed basis.

#### *Incorporate Strong Technical Standards and Practices for Land Application in NPDES Permits*

- IDNR should establish strong technical standards and best management practices for nutrient management and incorporate them into NPDES permits. IDNR should require that land application rates be based on the most limiting nutrient in the soil (e.g. phosphorous and nitrogen). In addition, IDNR should prohibit land application on frozen or snow covered cropland, steep slopes and before, during or immediately following precipitation events. Finally, IDNR should remove loopholes in its current state setback requirements (i.e., separation distances between land application fields and protected areas like houses, wells and streams). IDNR should incorporate strong setback requirements in NPDES permits to protect surface and groundwater.

#### *Incorporate Strong Monitoring and Reporting Requirements in NPDES Permits*

- IDNR should incorporate strong monitoring and reporting requirements in its NPDES permits, particularly because it does not have

the resources to regularly inspect all CAFO facilities. IDNR should require CAFO NPDES permittees to monitor (1) the manure and wastewater in any storage structures; (2) groundwater; and (3) surface waters that adjoin or pass through the property. Furthermore, the permit should require the CAFO owner or operator to report the results to IDNR.

### *Enforce the Clean Water Act and CAFO Permits*

- The legislature should increase IDNR's administrative penalty authority so that IDNR may recover the economic benefit of noncompliance in its cases and may impose penalties that provide deterrence.
- IDNR should escalate its enforcement actions more quickly and refer more cases to the Attorney General's Office for prosecution. Polluters will take enforcement actions more seriously if they face increased penalties each time they break the law.
- The Iowa legislature should change the habitual violator law to allow actions independently initiated by the Attorney General's Office to count as "strikes."

### *Increase Public Access to Permitting and Enforcement Data*

- IDNR should post all of its CAFO permits and enforcement orders on its website. Compliance and enforcement data that are transparent and publicly available is necessary to secure environmental and public health protections. Public access to data empowers citizens to hold polluters that affect their communities accountable.

Citizens also need compliance data in order to assist EPA and the states in ensuring that environmental violations are resolved.

### *Citizens Should Use Citizen Suit Provisions*

- When IDNR does not have the resources or political will to act, citizens should evaluate whether it makes sense to use the citizen suit provisions to protect themselves from polluters by initiating enforcement actions in federal court. Citizens play a critical role in enforcement, because state and federal governments may not be able to address all violations of environmental laws. Therefore, Congress gave individual citizens the power under the Clean Water Act to initiate their own enforcement actions. Iowa has a parallel citizen suit provision in its state laws.

### *EPA Should Provide Better Oversight*

- EPA should audit IDNR's CAFO program. Based on the results of the audit, EPA should revise its partnership agreements with IDNR to include a corrective action plan that has measurable goals and timelines to bring Iowa CAFOs into compliance with federal law as quickly as possible. EPA should condition or withhold grant funding if IDNR does not meet the deadlines in the plan.

### *Ensure that there are Adequate Conflict Provisions for the Environmental Protection Commission*

- The legislature and IDNR should develop conflict provisions for members of the Environmental Protection Commission to prevent inappropriate bias or abuse.



# Introduction

Iowa's heritage is rooted in a strong farm economy. Visionary conservation leaders, recognizing that a strong farm economy is dependent upon the health of Iowa's natural resources, called on the state legislature in the early 1900s to pass laws to prevent " ... filth, from hog-lots, barnyards, privies, dead animals, or anything of the sort to drain into or find exit in the waters of any lake or stream."<sup>1</sup> Although Iowa eventually passed state laws that prohibit certain livestock operations from releasing waste into water bodies, these operations have spilled millions of gallons of manure into surface water over the last decade, decimating at least 2.6 million fish and an unquantified number of other aquatic organisms. Manure spills also contaminate underground drinking water supplies.

Part of the challenge for Iowa is that the agricultural community is facing a transformation. Over the last decade, many traditional family farms have been replaced by agricultural operations that are industrialized, confining thousands of animals whose growth and slaughter or milk production is carefully controlled by corporate formulas. This process has resulted in a decrease in the number of farms in Iowa, but an increase in the average number of animals per farm. For example, between 1987 and 1997, the number of farms raising hogs in Iowa halved while the number of hogs and pigs sold per farm more than doubled.<sup>2</sup> Although the number of farms in Iowa

has declined, Iowa remains the number one pork producer in the country, with a hog inventory of 15.5 million hogs and pigs in 2003, or almost a quarter of the nation's swine population.<sup>3</sup> Iowa also ranks number one in the United States for egg production, producing 9.91 billion eggs in 2002 and ranks eighth in the country for producing 3.6 million cattle and calves.<sup>4</sup>

Such large concentrations of animals create vast amounts of manure in single, geographic locations. Some animal feeding operations produce as much waste as large cities. For example, one large swine operation in Sac County, Iowa that confines up to 30,000 hogs produces as much waste as the city of Cedar Rapids (~122,500 people), but has no sewage treatment system to treat the waste.<sup>5</sup> Large quantities of untreated waste increase the potential for harm to the environment and to public health. Manure from industrial animal production pollutes rivers and streams, contaminates drinking water and also results in emissions of noxious air pollutants. These pollutants are generated by the animals themselves and by their decomposing manure.

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*This Sac County swine confinement with 30,000 hogs produces as much waste as the City of Cedar Rapids, Iowa with 122,500 people. (IOWA ENVIRONMENTAL COUNCIL)*



The Iowa Department of Natural Resources (IDNR) is the state agency that is responsible for regulating animal feeding operations so that they do not pollute the environment or jeopardize public health. Animal feeding operations are regulated under both state and federal clean water laws. EPA has the option to authorize states to implement and enforce the federal Clean Water Act (CWA) against sources of water pollution, including animal feeding operations, provided that the states have the proper legal authority and adequate resources.<sup>6</sup> EPA authorized IDNR to implement and enforce the CWA on August 10, 1978.<sup>7</sup>

The CWA requires large agricultural operations that confine animals, or

concentrated animal feeding operations (CAFOs), to obtain federal operating permits, or National Pollutant Discharge Elimination System Permits (NPDES permits). NPDES permits prohibit or limit the amount of pollutants that may be discharged to waters and contain monitoring and reporting requirements, as well as other provisions necessary to ensure that discharges do not harm water quality or human health. Despite this clear federal mandate, Iowa—the number one pork and egg producer in the country—refrains from issuing NPDES permits to the majority of its CAFOs, leaving these facilities essentially unregulated under the federal program.



# What is a CAFO?

**C**oncentrated Animal Feeding Operations (“CAFOs”) are industrialized agricultural operations where animals are kept or raised in confinement. A typical swine CAFO has hundreds or thousands of animals housed in buildings with little or no bedding material. The animals usually stand on slatted metal or concrete floors and their feces and urine drop into concrete pits below the confinement building or are flushed into open air cesspools, sometimes referred to as lagoons. The volume of waste generated by CAFOs is often so great that a single cesspool can be the size of several football fields. The liquefied waste is stored in the cesspools until it is pumped out to fields, where it is applied to cropland. In some cases, these operations shoot the feces and urine from irrigation sprayers onto the fields. Animal waste often enters water bodies from leaks, or spills from cesspools and from over-application of waste to crop land.

Poultry operations resemble hog confinements, except that some of them are “dry.” Bird droppings or litter is not flushed into cesspools; rather, it is

collected from the houses, mixed with other materials, and stockpiled before being spread onto fields. Unlike poultry and swine confinement buildings which are totally roofed and enclosed, many dairy and beef cattle CAFOs confine the animals in partially roofed sheds or barren feedlots. However, like hog confinements, dairy and beef cattle CAFOs usually store waste in cesspools.

The Clean Water Act legally defines CAFOs as point sources;<sup>8</sup> therefore, CAFOs cannot discharge pollutants into waters of the United States without a National Pollutant Discharge Elimination Permit (“NPDES permit”).<sup>9</sup> To be considered a CAFO under federal law, a facility must first be defined as an Animal Feeding Operation (“AFO”).<sup>10</sup> An AFO is a lot or facility where the following conditions are met:

- Animals have been, are, or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-month period,<sup>11</sup> and



*Confinement Sow with litter on slatted metal floor (KENDALL THU)*



*Uncovered poultry manure pile in farm field (IOWA ENVIRONMENTAL COUNCIL)*

- Crops, vegetation, forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility.<sup>12</sup>

Previous EPA regulations, dating back to the mid-70s, defined AFOs as CAFOs if they confined more than 1,000 animal units.<sup>13</sup> Smaller AFOs that confined 300 to 1,000 animal units were also considered CAFOs if they discharged pollutants through a man-made device or if pollutants were discharged to waters that ran through the facility or otherwise came into contact with the confined animals.<sup>14</sup> AFOs were not CAFOs, however, if they discharged in a 25-year, 24-hour storm event.<sup>15</sup> EPA could designate an AFO as

a CAFO, including those with fewer than 300 animal units, if EPA or an authorized state determined that the AFO was a “significant contributor of pollutants.”<sup>16</sup>

EPA adopted new CWA regulations for CAFOs in February of 2003.<sup>17</sup> The new rules contain many of the basic features and structure as the old rule with some important exceptions. First, EPA no longer uses the term “animal unit,” but instead refers to the actual number of animals at the operation to define an AFO as a CAFO. Under these new regulations, Large AFOs, or operations that confine *the equivalent of more than 1,000 animal units* (e.g., 1,000 beef cattle, 2,500 swine over 55 lbs; 700 dairy cattle; 30,000 laying hens, etc.) require permits regard-

*Cattle grazing on pasture* (IOWA USDA NATURAL RESOURCE CONSERVATION SERVICE)



*Cattle open feedlot with no vegetation in the confinement area* (IOWA USDA NATURAL RESOURCE CONSERVATION SERVICE)





*Poultry Confinement  
in Wright Co.*  
(IOWA ENVIRONMENTAL  
COUNCIL)

less of whether they only discharge in a large storm event.<sup>18</sup> Second, large poultry operations are covered by the new rules, regardless of what type of waste disposal system they use (dry litter operations were previously exempt).<sup>19</sup> Third, all CAFOs must develop and implement a nutrient management plan to ensure the appropriate agricultural utilization of the nutrients when applying waste to cropland.<sup>20</sup> EPA determined that these new rule changes, as well as the other requirements, are economically achievable for CAFOs. EPA's economic analysis shows that this new rule will cause very few CAFOs to experience financial stress.<sup>21</sup>

Because IDNR will need to make statutory changes to implement the new CAFO regulations, it has until April 14, 2005 to make the necessary program revisions.<sup>22</sup> The new federal regulations do not extend the date by which operations that were defined as CAFOs under the prior regulations were required to apply for NPDES permits.

Unlike federal law, Iowa defines and regulates its animal feeding operations differently depending on whether or not the animals are confined in an area

that has a roof. Iowa defines its AFOs as either "open feedlots" or "confinement feeding operations." Open feedlots are defined as unroofed or partially roofed animal feeding operations in which no crop, vegetation or forage growth or residue cover is maintained during the period that the animals are confined.<sup>23</sup> This would include livestock that is confined to an open yard, lot or corral and not livestock raised on pasture. Open feedlots generally tend to be beef cattle or dairy operations. In contrast, a confinement feeding operation is an animal feeding operation in which animals are confined to areas which are totally roofed.<sup>24</sup> These operations tend to be swine or poultry facilities. Just because a facility is a

### **Application on snow covered land**

In December 2003 more than 7,000 gallons of manure spilled from the a swine confinement in Audubon County when a hose broke near the manure agitator during land application of manure. The manure traveled under the snow and spilled into a tributary of a river. (IDNR Press Release, *Hose Break Causes Audubon County Manure Spill* (Dec. 5, 2003))

“confined” feeding operation does not mean that it confines its waste. In fact, as explained in this report, confinement feeding operations are the source of 69% of the documented manure spills in Iowa, including overflows from manure storage

structures and improper application of waste to cropland. Although confinement feeding operations regularly discharge waste to surface waters, IDNR does not issue NPDES permits to them as required by federal law.

# What Pollutants are in Animal Feeding Operation Waste?

The United States Department of Agriculture estimates that operations that confine livestock and poultry animals produce about 500 million tons of manure annually or three times more waste than humans generate each year in the United States.<sup>25</sup> While some of the animal manure is eventually applied to crops as fertilizer, much of it is treated as waste. In some areas, a con-

siderable portion of the manure nutrients (nitrogen and phosphorous) generated by animal confinements exceeds the crop nutrient needs, both at the individual farm and local county levels.<sup>26</sup> In addition to excess nutrients, animal waste contains a number of other pollutants. Table 1 lists the main pollutants in animal waste and some of their potential environmental and public health impacts.

**TABLE 1: POLLUTANTS FOUND IN ANIMAL WASTE** <sup>27</sup>

POLLUTANTS	IMPACTS
<p><b>Nutrients</b> (main constituent of manure, particularly nitrogen and phosphorous)</p> <ul style="list-style-type: none"> <li>Nitrogen</li> <li>Phosphorous</li> </ul>	<p>Excess nitrogen as ammonia can be toxic to aquatic life by reducing dissolved oxygen levels and the ability of a water body to support aquatic life. Excess levels of nitrates in drinking water can produce adverse health effects.</p> <p>Excess phosphorous can lead to fish kills from algae production, reduced biodiversity, objectionable tastes and odors, and increased drinking water costs.</p>
<p><b>Organic Matter</b> (carbon-based biodegradable compounds)</p>	<p>Depletes dissolved oxygen levels leading to fish kills and reduced biodiversity.</p>
<p><b>Solids</b> (manure itself and other elements that it's mixed with such as bedding, spilled feed, litter, hair and feathers)</p>	<p>Increases turbidity in surface waters, physically hinders the functioning of aquatic plants and animals, limits growth of aquatic plants by blocking light, bottom deposits destroy habitat, provides a medium for storage, transport and accumulation of other pollutants including disease-causing pathogens.</p>

**TABLE 1: POLLUTANTS FOUND IN ANIMAL WASTE, CONTINUED**

POLLUTANTS	IMPACTS
<b>Pathogens</b> (disease causing microorganisms including bacteria, viruses and parasites)	More than 150 pathogens found in livestock manure are associated with risks to humans, including the six human pathogens that account for more than 90% of food and waterborne diseases in humans. These organisms include <i>Escherichia coli</i> , <i>Cryptosporidium parvum</i> and <i>Giardia lamblia</i> .
<b>Salts</b> (salts containing sodium and potassium remaining from undigested feed that passes unabsorbed through animals)	Deteriorates soil structure, contaminates ground water, degrades drinking water, reduces crop yields and disrupts the balance of freshwater ecosystems.
<b>Trace Elements/Metals</b> (often added to animal feed as growth stimulants or biocides)	Cumulative metal loadings to fields could impact human health. Metals are leading stressors of estuaries and lakes.
<b>Antibiotics</b> (given to 60-80% of all livestock and poultry to treat or prevent illness and as feed additives to promote growth)	Leads to development of antibiotic resistant pathogens which can make infections in humans difficult to treat.
<b>Pesticides and Synthetic Hormones</b> (pesticides applied to reduce flies and other pests; synthetic hormones used to increase productivity/stimulate growth)	Exposure to pesticides has been linked to certain cancers and chronic diseases. Exposure to synthetic hormones has been linked to endocrine disruption (i.e., reproductive disorders) and some cancers.



# What are the Health and Ecological Impacts of Water Pollution Caused by Iowa CAFOs?

Improperly managed manure from animal feeding operations has degraded both surface and ground water in Iowa. These water quality problems present serious risks to aquatic life and have resulted in numerous fish kills. Human health may also be affected by high nitrate levels in drinking water and by recreational exposure to waterborne pathogens.

## Surface and Ground Water Contamination

EPA and States generally consider a water body to be impaired if it fails to support uses such as fishing, swimming or drinking.<sup>28</sup> Agriculture, including animal confinements, is the leading cause of water quality impairments in the nation's rivers, streams, lakes, ponds and reservoirs.<sup>29</sup> Agriculture is also the fifth leading contributor to water quality impairments in the nation's estuaries.<sup>30</sup>

Consistent with the national picture, IDNR reported to EPA that animal feeding operations cause serious impairments to Iowa's surface waters.<sup>31</sup> In its report, IDNR concluded that surface water impairment by animal feeding operations in Iowa causes ecological impacts, including fish kills, and also threatens groundwater resources:

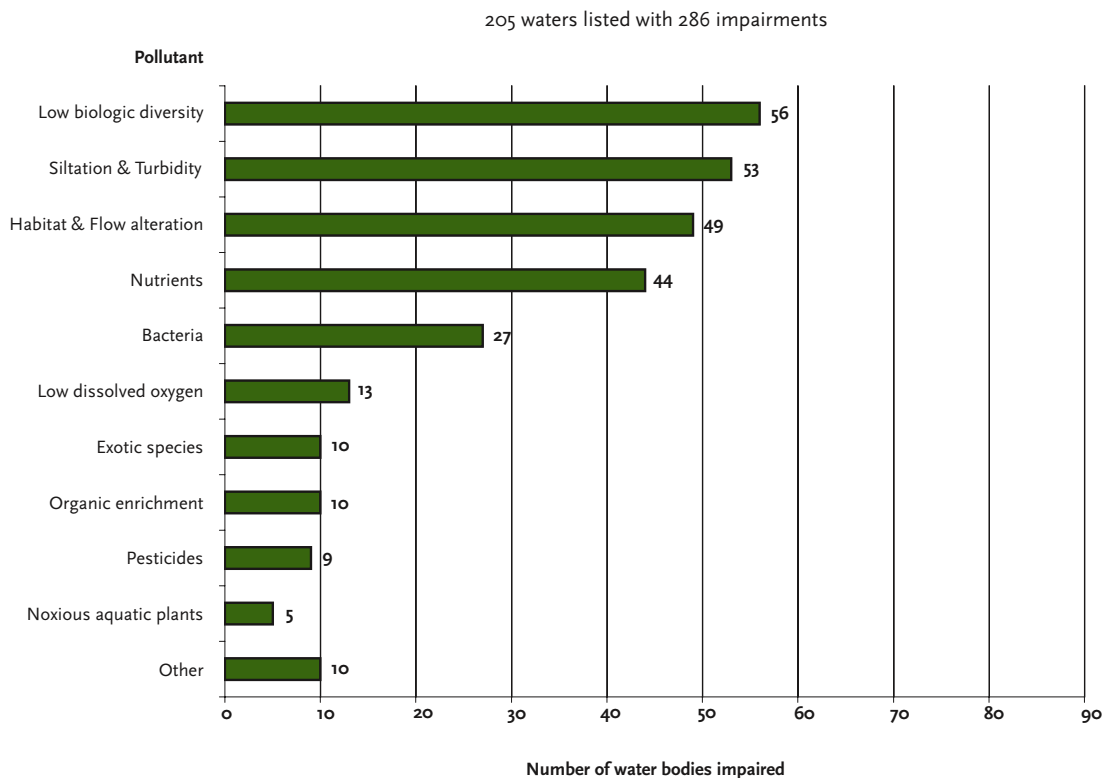
*"The most visible threat to maintaining good water quality in Iowa surface waters is the recent expansion of the*

*livestock industry.* As reflected in the increased numbers of fish kills related to animal wastes reaching streams and rivers, improper management and disposal of animal waste has the potential to seriously degrade the quality of Iowa's surface waters. In addition, groundwater resources are threatened, especially in regions of Iowa, such as portions of northcentral and northeastern Iowa, where surface waters can easily reach and contaminate groundwater."<sup>32</sup> (emphasis added)

*"The most visible threat to maintaining good water quality in Iowa surface waters is the recent expansion of the livestock industry."*

In 2002, IDNR identified the surface waters that are impaired due to nutrients or bacteria which may be related to animal waste spills or runoff.<sup>33</sup> Of the 205 waters that IDNR listed as impaired, 27 are impaired by bacteria and 44 are impaired by nutrients.<sup>34</sup> In addition, livestock waste is contributing to the low diversity of aquatic life for many of the 56 water bodies that are listed as biologically impaired.<sup>35</sup> IDNR also identified the shallow aquifers and wells that are at risk of being contaminated by animal feeding operations and other areas where groundwater is vulnerable to contamination from animal feeding operations because of the operations' proximity to sinkholes and agricultural drainage wells.<sup>36</sup> Because sinkholes and drainage wells are more direct conduits to groundwater, surface pollutants may

## CAUSES OF IMPAIRED WATERS IN IOWA ON 2002 303(D) LIST



Analysis by Iowa Environmental Council based on IDNR data

reach groundwater more rapidly and at higher concentrations.

These state findings are supported by a number of independent studies. For example, the Center for Disease Control and Prevention (“CDC”) tested surface and ground water samples for chemical and microbial constituents at nine large-scale swine operations in Iowa.<sup>37</sup> The CDC generally found the highest levels of chemical pollutants and pathogens in lagoons (*i.e.*, cesspools). The contaminants identified were nutrients, antibiotics, trace elements and pathogens, including bacteria that demonstrated resistance to several antibiotics commonly used in swine feed supplements and therapeutics.<sup>38</sup> These same pollutants were found at other collection points, including several locations associated with land application fields as well as lagoon monitoring wells, an agricultural drainage

well and a river.<sup>39</sup> These findings suggest that chemical pollutants and microbial pathogens from waste generated by animal confinements contaminate ground water by seeping from earthen lagoons and contaminate surface waters by flowing overland from the facility or manure application sites.<sup>40</sup> Shortly after CDC completed this study, Iowa State University scientists studying earthen manure storage structures in Iowa discovered that over one-third of the storage structures included in the study leak or seep into ground water at rates that exceed Iowa seepage standards.<sup>41</sup>

Iowa data also indicate that nutrient concentrations in surface water tend to be the greatest in river basins where livestock operations are concentrated. Water monitoring on the South Fork of the Iowa River by the United States Geological Survey (“USGS”) found that

the high density of animal feeding operations in the watershed of the South Fork of the Iowa River were likely contributing to increased nutrient levels measured in the river.<sup>42</sup> The USGS compared nutrient levels in the South Fork of the Iowa River to the levels in an area of the Iowa River where land use is similar (*i.e.*, both had greater than 80 percent row crops), but the density of hogs in the watershed of the South Fork of the Iowa River is more than twice the density of hogs in the Iowa River basin.<sup>43</sup> The USGS monitoring found about 1.8 times more nitrogen and about 2.5 times more phosphorus were transported by the South Fork of the Iowa River than by the Iowa River basin.<sup>44</sup>

Rivers in Iowa deliver nutrients from animal feeding operation waste to the Mississippi River and as far south as the Gulf of Mexico. Nutrient pollution is a problem in the Gulf of Mexico because nutrients, especially nitrogen, contribute to eutrophication (excessive algal growth) and hypoxia (low dissolved oxygen) in the Gulf of Mexico (“the Dead Zone”). Animal manure contributes 15 percent of the total nitrogen inputs from the Mississippi River Basin to the Gulf of Mexico.<sup>45</sup> Iowa, bordered on the east by the Mississippi River, has been identified as a major source of nutrients from both livestock waste and fertilizer that contribute to hypoxia in the Gulf of Mexico.<sup>46</sup> Streams draining Iowa and Illinois contribute as much as 35% of the total nitrogen load of the Mississippi River during years of average rainfall, and much more in years of high rainfall.<sup>47</sup> However, these two states comprise only about 9% of the Mississippi-Atchafalaya Basin. During the flood year of 1993, Iowa, with only 4.5% of the basin area, contributed about 35% of the nitrate discharged to the Gulf of Mexico.<sup>48</sup>

Animal feeding operations in Iowa also indirectly pollute surface waters by emitting pollutants, such as ammonia, into the air that are subsequently deposited on surface water.<sup>49</sup> The livestock sector is the largest ammonia contributor

nationwide and produces roughly 73% of all ammonia emissions.<sup>50</sup> Volatilized ammonia reacts quickly with moisture in the air and falls into water bodies, acidifying the environment and accelerating vegetative growth, which chokes aquatic life.<sup>51</sup> Before ammonia and other pollutants emitted by agricultural operations even reach surface waters, they may also cause significant health problems in workers and in nearby residents. The Iowa State University and the University of Iowa Study Group documented serious health effects in agricultural workers from CAFOs, including acute and chronic respiratory disease, sinusitis, acute and chronic bronchitis, decline in lung function, respiratory impairment, and even premature mortality.<sup>52</sup> Similarly, residents near large hog operations in Iowa have experienced increased eye and upper respiratory symptoms.<sup>53</sup>

### Human Health Impacts

Pollution from animal confinements may cause nitrate contamination of drinking water supplies, which can result in significant human health problems including methemoglobinemia in infants (“blue baby syndrome”), spontaneous abortions and increased incidence of stomach and esophageal cancers.<sup>54</sup> Nitrate cannot be removed by using conventional drinking water treatment processes. Rather, nitrate removal from drinking water requires additional, relatively expensive treatment units.<sup>55</sup> For example, the Racoon River in western Iowa is so polluted with livestock waste, fertilizer and other sources of contaminants, that by the time it reaches Des Moines, the city has to put it through a special filter to remove nutri-

.....  
*Iowa, bordered on the east by the Mississippi River, has been identified as a major source of nutrients from both livestock waste and fertilizer that contribute to hypoxia in the Gulf of Mexico.*

## Contamination of drinking water aquifer

On April 19, 1997, an improper application of hog manure from a hog confinement on cropland in Wright County led to contamination of groundwater that is also the source of drinking water in the county. The manure was applied on cropland that drains to an agricultural drainage well, which injects excess surface water into underground aquifers. The cropland had been saturated by recent rains and snowmelt and therefore could not absorb the liquid hog waste that was being applied to the field. The liquid manure passed through the soil and entered underground drainage tiles beneath the farm field that are connected to the drainage well. The liquid manure then entered the groundwater aquifer through the agricultural drainage well. The volume of manure that entered the aquifer is unknown, but fecal coliform bacteria levels in the aquifer measured at 4,000 colonies per 100 milliliters were detected in the aquifer following the spill. (IDNR spill records)

The state assessed a \$3000 fine for pollution of groundwater and EPA followed up in October 1997 with an additional \$10,000 fine for contamination of underground sources of drinking water under the authority of the federal Safe Drinking Water Act. (IDNR Enforcement Database and Waterloo – Cedar Falls Courier, Oct. 5, 1997)

ents to meet government drinking water standards for nitrate.<sup>56</sup> Unfortunately, not every Iowan is afforded this protection. The CDC tested domestic water wells in Iowa and found nitrate levels above the federal drinking water standard in many private wells.<sup>57</sup> The likelihood of ground water contamination doubled if manure

had been applied near the wellhead.<sup>58</sup>

In addition to drinking water exposures, pathogens from animal manure threaten human health through recreational contact such as swimming in contaminated waters. Eight of Iowa's thirty-seven state park beaches have been classified as "vulnerable" due to chronic high bacteria levels.<sup>59</sup> Livestock operations are likely contributing to the high bacteria levels at many, if not at all, of these beaches.

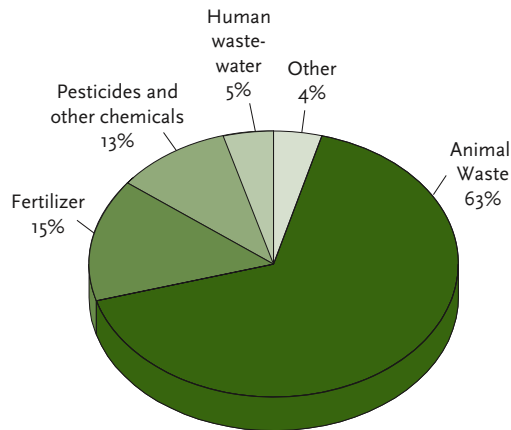
A recent study of state swimming areas in Iowa revealed the presence of potentially dangerous *E. coli* bacteria that is resistant to common antibiotics.<sup>60</sup> Some scientists blame the widespread practice of feeding antibiotics to healthy livestock as contributing to the spread of drug-resistant bacteria in rivers, lakes and streams.<sup>61</sup> Livestock owners regularly feed antibiotics to their animals, even in doses too small to be medically effective, because farmers have found that they increase the growth rate.<sup>62</sup> These antibiotics end up in the manure, which is spread on fields as fertilizer and runs off into streams and rivers. The amount of antibiotics that have been found in Iowa's rivers is not high enough to kill the bacteria, but cause the bacteria to mutate and breed.<sup>63</sup> Over time, these "superbugs" become resistant to antibiotics that are normally used to treat infected humans.

*Wright County swine facility with 24,000 finishing hogs adjacent to poultry layer facility with 1 million chickens (IOWA*

ENVIRONMENTAL COUNCIL)



## FISH KILLS CAUSED BY MANMADE SOURCES, 1994–2002



Analysis by Iowa Environmental Council based on IDNR data

### Other Public Health Concerns

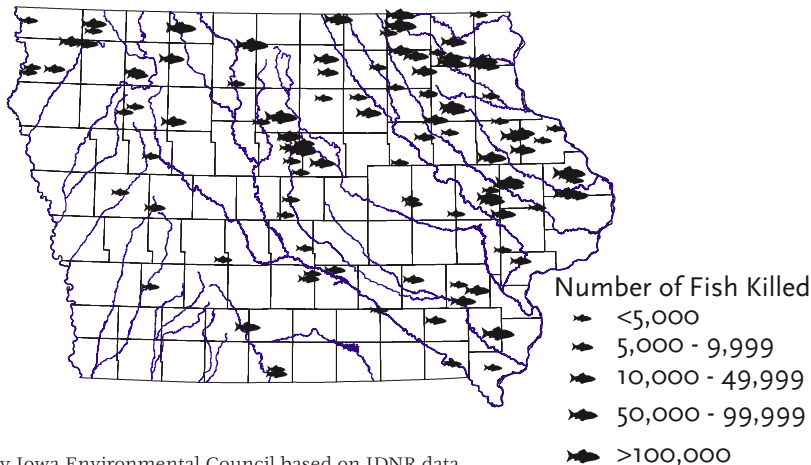
CAFOs are flirting with an avian flu pandemic in Iowa by raising chickens and hogs on the same farm.<sup>64</sup> Scientists have long believed that hogs are the primary carriers of the avian flu virus after it leaves the birds and before it gets to humans.<sup>65</sup> IDNR currently allows chicken CAFOs to be permitted adjacent to hog CAFOs. For example, DeCoster Farms has two hog operations in Wright County that have a combined total of 24,000 finishing hogs. A DeCoster layer operation is adjacent to these swine facilities and confines approximately 1 million chickens.<sup>66</sup> Mary

Gilchrest, a microbiologist who runs the University of Iowa Hygienic Laboratory, said that Iowa has enough farms that raise both animals in close proximity to warrant a state ban.<sup>67</sup>

### Ecological Impacts

The number of fish kills reported to IDNR in the last decade has been high.<sup>68</sup> IDNR attributes the majority (63%) of fish kills from human-caused pollution to run-off and spills of animal waste from livestock operations.<sup>69</sup> From 1992 through

## FISH KILLS CAUSED BY MANURE SPILLS 1992–2002



Analysis by Iowa Environmental Council based on IDNR data

## Fish kills – Not the whole story

Two recent manure spills in Iowa indicate that documented fish kills are only the tip of the iceberg. Chronic pollution from livestock manure and unreported spills of manure or other pollutants are causing additional ecological damage. On June 11, 2003 a release of 5,000 to 10,000 gallons of manure leaked through the wall of an earthen storage basin at a dairy in Sioux County and flowed into an unnamed tributary of the West Branch of the Floyd River. IDNR investigators reported that elevated levels of ammonia were found in the creek, although no dead fish were found.

The June 13, 2003, IDNR press release stated, “[a]lthough there is no evidence of a fish kill, DNR investigators are not sure that fish are normally present in the stream due to somewhat high background levels of ammonia.” This statement implies that at least for this stream, elevated ammonia is a “normal” condition and fish in the stream is not! (Iowa Department of Natural Resources EcoNewsWire, June 13, 2003).

Later in the same month on June 27, 2003, a manure spill at a livestock confinement in Delaware County occurred when a clean-out plug came off and manure flowed into Fountain Spring Creek. IDNR reported that ammonia levels were high enough to kill fish, but no fish were apparently present. IDNR used to stock trout in this stream, but because of problems with fish survival, IDNR has not stocked trout in this stream for at least two years. If IDNR addresses the underlying pollution problems affecting this stream, perhaps someday trout might not only survive, but thrive in Fountain Spring Creek. (Iowa Farmer Today, July 5, 2003; and personal conversation IDNR Field Office #1, September 22, 2003).



*Fish killed as a result of a manure spill in Iowa* (IOWA DEPARTMENT OF NATURAL RESOURCES)

2002, there were 329 documented manure spills from livestock facilities.<sup>70</sup> IDNR documented fish kills for 108 of these spills, resulting in the decimation of over 2.6 million fish.<sup>71</sup> These spill events resulted in fish kills ranging from 3 to over 500,000 fish killed per event. There have been a number of large spills from animal confinements that should have resulted in fish kills but did not,

indicating that the receiving waters experience such chronic pollution from animal confinements and other sources that there were simply no fish left to kill. For example, there have been at least two recent spills from animal confinements in Iowa where IDNR reported that ammonia levels were high enough in the receiving waters to kill fish, although they did not find any.<sup>72</sup>



# Is Iowa's Permit Scheme for CAFOs Consistent with Federal Law?

## Failure to Issue NPDES Permits to all CAFOs

Consistent with federal law, IDNR regulations prohibit the discharge of any pollutant into a water body unless it is authorized by a permit.<sup>73</sup> IDNR violates federal law, however, because it only requires open feedlots to apply for and obtain NPDES permits rather than requiring all CAFOs to apply for NPDES permits if they discharge or propose to discharge. IDNR does not require confinement feeding operations to apply for an NPDES permit unless the IDNR determines after an inspection that a permit is required. Even though there have been hundreds of discharges from CAFOs, IDNR has only issued NPDES permits to 42 open feedlots. IDNR has never issued an NPDES permit to a confinement feeding operation although the state has over 1,800 documented confinement facilities that require NPDES permits. The failure to issue NPDES permits to all CAFOs is a clear abdication of IDNR's responsibilities under the Clean Water Act.

## Failure to Issue NPDES Permits to Open Feedlots

Open feedlots must obtain an NPDES permit under the following conditions:

- An open feedlot with a capacity that exceeds 1,000 beef cattle, 700 dairy

cattle, 2,500 butcher and breeding swine, 10,000 sheep and lambs, 55,000 turkeys, 500 horses, or 1,000 total animal units;<sup>74</sup>

- An open feedlot that discharges wastes directly into water of the states or through a manmade conveyance and the feedlot's capacity exceeds 300 beef cattle, 200 dairy cattle, 750 butcher and breeding swine, 3,000 sheep and lambs, 16,500 turkeys, 30,000 broiler or layer chickens, 150 horses, or 300 total animal units.<sup>75</sup>
- An open feedlot of any size must obtain an operating permit if the Department of Natural Resources determines that it needs one following a site inspection.<sup>76</sup>

In 2001, USDA estimated that there were 300 open feedlots operating in Iowa that exceeded 1,000 animal units, with many more operating in the 300-1,000 range. However, at the time, IDNR had only issued 33 NPDES permits to open feedlots.<sup>77</sup>

Because of IDNR's admitted failure to administer the NPDES program for open feedlots, it instituted a registration program in March, 2001 to encourage voluntary compliance.<sup>78</sup> Feedlots that registered in 2001 receive amnesty from fines for violations resulting from routine inspections by IDNR.<sup>79</sup> Registrants are

not assessed monetary penalties for failure to have a permit or for minor water quality violations.<sup>80</sup> However, for serious water quality violations involving fish kills, IDNR may seek fish restitution.<sup>81</sup> This amnesty extends until the facility receives an NPDES permit, as long as the producer is making “reasonable progress toward compliance.”

Once a feedlot registers for the registration program, IDNR conducts an in-house environmental assessment and assigns the facility a low, medium or high priority based on the feedlot’s potential for causing water quality problems.<sup>82</sup> IDNR staff then visits the high priority sites to work with the producer and to assess whether a permit is needed. The goal of the program was to have all high priority feedlots working towards compliance in two years (Dec. 31, 2003) and all open feedlots in compliance with all state and federal laws within five years (Dec. 31, 2006).<sup>83</sup>

1,576 producers registered for IDNR’s open feedlot plan<sup>84</sup> by indicating on the application form that they may meet the criteria for an NPDES permit.<sup>85</sup> As of April, 2004, IDNR had issued only nine new permits in 3 years since it instituted the registration program. At this rate of three permits per year, if no new open feedlot CAFOs are built, it will take IDNR 86 years to issue permits to all of the 300 feedlots that USDA identified as exceeding 1,000 animal units and over 500 years to issue NPDES permits to all 1,576 registrants.

IDNR not only failed to issue NPDES permits in the first instance to all of the open feedlots that should have had them, but is already backlogged in processing NPDES permit renewal applications. By regulation, IDNR provides that if a permittee applies for a renewed permit 180 days prior to the expiration of its NPDES permit, then the permit is “administratively extended” indefinitely until it issues a final decision on the permit application. There are at least two open

feedlots in Iowa that applied for renewed NPDES permits, however, they applied for them years after their old permits expired.<sup>86</sup> IDNR received these renewal applications in 2000 and has not yet issued final permits.<sup>87</sup> Additionally, there are at least two NPDES permits for open feedlots that have expired,<sup>88</sup> but there is no indication that the facilities have applied for renewed NPDES permits nor is there an indication that they no longer need NPDES permits.<sup>89</sup>

### *Failure to Issue NPDES Permits to Confinement Operations*

IDNR has never issued an NPDES permit to a confinement feeding operation. The state has documented over 1,800 confinement feeding operations with more than 1,000 animal units.<sup>90</sup> These operations are required by federal law to apply for an NPDES permit. However, IDNR requires confinement feeding operations that meet specific criteria to obtain only a construction permit before constructing or expanding a confinement building or manure storage structure. Prior to 2003, IDNR required confinements to obtain construction permits based on their animal weight capacity and the type of manure storage structure employed. Current state law requires all new confinement feeding operations to obtain construction permits if they have at least 1000 animal units.<sup>91</sup>

### **Failure to Issue Construction Permits to Confinement Feeding Operations that Conform to Federal Requirements**

IDNR claims that its construction permits are functionally equivalent to NPDES permits.<sup>92</sup> Indeed, IDNR’s construction permits have a number of positive elements, including the requirement to comply with an approved and current manure management plan. *See* Appendix

A (Chart comparing IDNR's Construction Permit to NPDES permit). However, federal law requires authorized states to issue NPDES permits, even if state permits are functionally equivalent. Moreover, IDNR's construction permits are not functionally equivalent to NPDES permits in a number of important ways.

**a. IDNR's construction permits cover a much smaller universe of facilities than NPDES permits.**

IDNR databases list over 1,800 livestock confinement facilities that exceed 1,000 animal units, but only 623 of these facilities were required to obtain construction permits when they were built. The remaining confinement feeding operations are grandfathered from permitting because they began construction, installation or modifications before March 20, 1996, or before construction permits were required for their size operation. There is no retroactive requirement for a facility to obtain a construction permit after it has already been constructed. Thus, the NPDES permitting program would apply to more facilities than the state construction permit process and would impose consistent operational requirements on all facilities. Furthermore, the actual number of facilities that require a federal NPDES permit is likely much higher than the 1,800 facilities that are currently listed in IDNR's database. In 2001, IDNR reported to EPA during the federal rulemaking proceedings that if Iowa had to develop NPDES permits for confined animal feeding sites containing more than 1,000 animal units, the state would have to issue over 3,500 NPDES permits.<sup>93</sup>

**b. IDNR's construction permits do not have fixed terms like NPDES permits and are not subject to being reviewed and updated on a regular basis.** The CWA requires

permitting authorities to issue NPDES permits for terms not to exceed five years.<sup>94</sup> Before the five year term expires, NPDES permittees must apply for a new permit to continue operating.<sup>95</sup> If permits are not reviewed on a regular basis, it greatly undermines the advancement of water pollution regulation and control. Reissued NPDES permits often have more stringent provisions than the expired NPDES permits they replace, because knowledge concerning treatment and process methods to reduce pollution discharges, and knowledge concerning the extent of pollution problems, advances over time. Since Iowa does not automatically review and update construction permits for confinements, the permits may not reflect the most appropriate and protective regulatory requirements.

There is no guarantee that an NPDES permit will be reissued after five years. Furthermore, EPA or an authorized state can terminate an NPDES permit if the permittee does not comply with its terms.<sup>96</sup> Conversely, IDNR construction permits remain effective indefinitely. IDNR can revoke a construction permit only if it determines that the operation of the AFO constitutes a clear, present and impending danger to public health or the environment.<sup>97</sup>

**c. IDNR's permitting procedures for confinement feeding operations restricts public participation.**

The CWA mandates broad public participation because the public has a compelling interest in cleaning up and protecting the nation's waterways. Public scrutiny leads to better implementation and enforcement of the law. Thus, the CWA requires that the public receive notice of each NPDES permit application and be given an opportunity to comment.<sup>98</sup> The permitting authority must also give the public an

opportunity for a public hearing before making a final permitting decision.<sup>99</sup> Finally, the permitting authority must consider all comments before reaching its final decision and must publish a response to comments when it issues a final permit.<sup>100</sup>

Under Iowa law, the applicant for a construction permit must deliver its application to the IDNR and the county board of supervisors in the county where it intends to build.<sup>101</sup>

While the county is required to issue a public notice that it has received the application, the board may, but is not required to, submit the public comments it receives to IDNR when it makes its own recommendation about permit approval.<sup>102</sup> Furthermore, only the county or the applicant can request a hearing before IDNR makes a final permit decision.<sup>103</sup> Under this permitting scheme, citizens may effectively be cut out of the initial permitting process altogether. Their only recourse is to seek judicial review of any final permit decisions, a time-consuming and expensive process.<sup>104</sup>

### Largest documented volume manure spill

On July 16, 1995, the wall of an earthen manure storage structure at a swine confinement in Hamilton County, failed below ground level. Approximately 1.5 million gallons of manure from the basin entered an underground drainage tile line located under the berm of the structure and flowed a mile and a half through the underground tile into the South Fork of the Iowa River. An estimated 8,861 fish were killed along with other aquatic life. (IDNR spill records) IDNR collected a \$2,000 penalty for this spill and \$6,000 for fish restitution. (IDNR Enforcement Database)



*Location of a 1.5 million gallon manure spill into the South Fork of the Iowa River in Hamilton County—the largest volume manure spill documented in Iowa. (IOWA ENVIRONMENTAL COUNCIL)*

### Manure Management Plans

Some of the more than 1,000 grandfathered operations that do not have construction permits are required to submit manure management plans (MMPs) to IDNR. MMPs indicate how manure will be spread, at what rate, and where. All existing confinement feeding operations above 500 animal units are required to have MMPs if they were constructed or expanded after May 31, 1985.<sup>105</sup> IDNR has MMPs for over 2,900 facilities. However, IDNR estimates that over 600 confinement feeding operations that are required to have MMPs, still do not have them.<sup>106</sup> Moreover, MMPs are not as protective as NPDES permits, because they only impose requirements for land application and not for the facility itself.

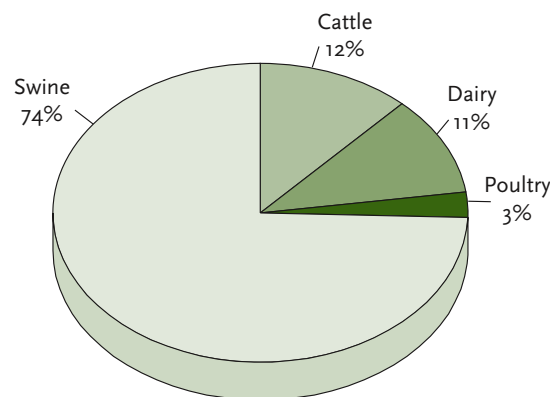
# Does IDNR's Permit Scheme Prevent Clean Water Act Violations?

While Iowa laws prohibit CAFOs from discharging waste into surface water, CAFOs repeatedly violate this requirement. IDNR has documented at least 329 manure spills from CAFOs since 1992. This number is probably low, because most of these spills are self-reported, and IDNR does not inspect all of its CAFOs. According to IDNR, two-thirds of the documented manure spills reached waters of the state and killed over 2.6 million fish. IDNR has estimates on the volume of manure released from only 23 out of the 329 total documented spills. However, the total volume of spilled manure from this small percentage exceeds 4.4 million gallons. (See Table 2 on page 20.)

IDNR documented the source of the spills for 259 events.<sup>107</sup> The majority of these spills came from swine facilities (74%), followed by beef cattle (12%), dairy cattle (11%) and poultry (3%) operations.

Confinement facilities, which currently do not have NPDES permits, were the source of 69% of the spills and open feedlots were the source of 27%, with 4% of spills coming from facilities with both confinement buildings and open feedlots.<sup>108</sup> 77 of the spills (30%) were from confinements or open feedlots that had more than 1,000 animal units. This number could be higher, because IDNR did not always report data on the size of many of the facilities that spilled waste.

## MANURE SPILLS BY ANIMAL TYPE 1992–2002



Analysis by Iowa Environmental Council based on IDNR data

**TABLE 2: DATA ON MANURE SPILLS FROM CAFOS IN IOWA\***

Year	Total Number of Documented Manure Spills	Number of spills with Documented impact to water	Number of Spills with Documented Fish Kills	Total Estimated Number of Fish Killed
1992	9	9	3	41,508
1993	13	13	4	265,200
1994	6	6	4	19,200
1995	20	18	11	134,737
1996	20	18	12	674,001
1997	33	28	12	438,215
1998	34	33	24	464,677
1999	40	17	4	71,971
2000	17	12	6	65,902
2001	72	37	14	158,573
2002	65	27	8	286,938
<b>TOTALS</b>	<b>329</b>	<b>218</b>	<b>102</b>	<b>2,620,922</b>

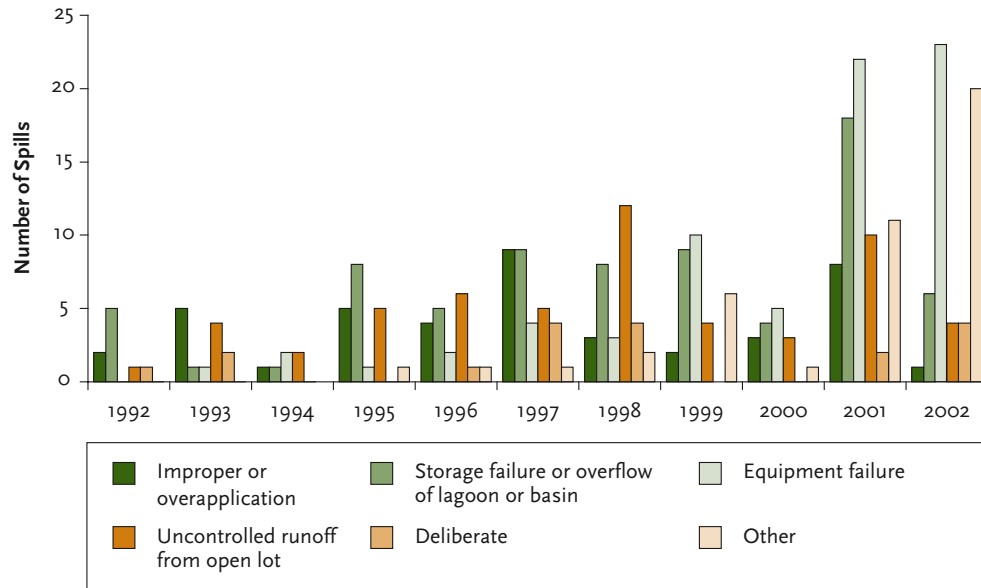
\* SOURCE: IDNR Fish Kill Database; IDNR Enforcement Database; IDNR Emergency Response Database.

IDNR documented the causes of the manure spills for 307 of the 329 spills.<sup>109</sup> The main causes were manure storage structure failures or overflows (74 spills) followed closely by equipment failure (73 spills). 56 spills were caused by uncontrolled runoff from open feedlots. Other common causes of spills include improper manure application or overapplication of manure on cropland (43 spills) and other causes including

transportation accidents (43 spills). Less common, but very significant, are deliberate spills such as lowering the manure level in a storage structure by pumping waste onto the ground or deliberately breaching the berm of an earthen storage basin (18 spills). Trends in spill data indicate that equipment failures are increasing over time while improper manure application is decreasing.



## CAUSES OF MANURE SPILLS



Analysis by Iowa Environmental Council based on IDNR data



*Liquid Manure Application in Northeast Iowa* (IOWA USDA NATURAL RESOURCE CONSERVATION SERVICE)



age Ditch #71, are listed on Iowa's 2002 Impaired Waters list, because biological surveys have found impairments to aquatic life. While the cause of the aquatic life impairment has not been identified, livestock manure is likely a contributing factor. Bear Creek, for example, suffered a fish kill from a swine facility in August 2001 that killed 2,400 fish.

### Case Study #2. Sioux County

Sioux County in Northwest Iowa has the highest concentrations of livestock in the state. Sioux County has approximately 130 livestock facilities with more than 1,000 animal units. These facilities are mostly swine confinements and beef cattle open feedlots, although there are a few large dairies. Based on the livestock inventory numbers from the 1997 U.S.D.A. Agriculture Census, Sioux County has 762,294 hogs and 174,053 cattle, or an average of 990 hogs and 226 cattle per square mile.

Sioux County had 21 documented manure spills between 1992 and 2002. Several water bodies in the County have been significantly impacted by these spills, including Sixmile Creek and the West Branch of the Floyd River. The IDNR manure spill reports show that these streams have suffered repeated manure spills. There have been four major manure spills on Sixmile creek since 1993. One spill killed 1,158 fish and another spill killed an undocumented num-



Tipton Creek

*Concentration of Hog Confinements near Tipton Creek in Hamilton County (IOWA*

*GEOGRAPHIC MAP SERVER  
AERIAL PHOTOS COURTESY  
OF USDA NRCS & MIT)*

ber of fish. There were three documented manure spills into the West Branch of the Floyd River, two in 1998 and one in 2003. The two spills in 1998 killed a total of 38,542 fish. The spill in 2003 did not kill any fish, because there were no fish left to kill in the river due to chronic pollution from animal feeding operations and other sources.

Both Sixmile Creek and the West Branch of the Floyd River in Sioux County are listed on Iowa's 2002 Impaired Waters List because biological surveys have found impairments to aquatic life. Two other rivers in Sioux County are also listed on Iowa's 2002 Impaired Waters List. These are the Big Sioux River on the western border of the county, which is listed for high fecal coliform bacteria, and the Floyd River on the eastern edge of the county, which is listed for biological impairment. Livestock manure is a likely contributing factor to these impairments.



# How Does IDNR Enforce its Clean Water Laws Against CAFOs?

## Enforcement Program Overview

The Legal Services Bureau of IDNR consists of a bureau chief, 6 attorneys, and a legal assistant, located in the Agency's central office.<sup>110</sup> The legal staff's responsibilities are varied. The staff coordinates the adoption of rules, provides counsel on the development of new initiatives, represents the department in administrative legal proceedings, interprets departmental rules for persons and businesses outside of the Department, and coordinates with the Iowa Attorney General's Office on enforcement actions in courts.<sup>111</sup> The majority of the attorneys' work is preparing administrative enforcement actions and representing the department in administrative appeals.<sup>112</sup>

Most administrative enforcement actions arise from inspections conducted by employees in six field offices throughout the state. On average, there are about 55 inspectors for the entire state.<sup>113</sup> These employees conduct routine inspections of all regulated entities (including AFOs), investigate complaints and provide emergency response. Their duties also include reviewing submittals made by the regulated community and providing educational materials to the regulated community to facilitate compliance.<sup>114</sup>

IDNR typically issues Notices of Violation (NOV) to first-time violators to encourage compliance.<sup>115</sup> A Notice of Violation is a letter that informs an operation that it has violated state law and explains

the factual and legal basis for the violation. NOVs may also require the recipient to explain to IDNR the measures that it will take to avoid repeating the violation in the future. For serious or repeated violations, IDNR issues Administrative Orders ("AOs or Orders").<sup>116</sup> AOs direct the violator to cease all non-compliant activity and may require specific corrective actions and schedules. Orders may also include administrative penalties of up to \$10,000. Occasionally, IDNR refers cases to the Iowa Attorney General's office for further investigation and prosecution.<sup>117</sup>

Many of IDNR's actions are appealable, including administrative orders, permit conditions and denials. About 80% of all appeals are resolved prior to a hearing through negotiations.<sup>118</sup> If appeals are not resolved through negotiations, appellants can opt to participate in an administra-

## Largest number of fish killed in one spill

On September 4, 1996, a hog producer in Winnebago County deliberately lowered the pit level at his hog confinement by pumping the manure into a grassed waterway. As a result, more than 100,000 gallons of manure was released into N. Buffalo Creek. An estimated 586,753 fish were killed along with other aquatic life over 22 miles of the creek in Winnebago and Kosuth Counties. (IDNR spill records) IDNR collected a \$3000 penalty and \$30,000 for fish restitution. (IDNR Enforcement Database)

tive hearing before an independent Administrative Law Judge or go before the Environmental Protection Commission ("EPC"), a board appointed by the Governor. The Administrative Law Judge makes a proposed decision which is ultimately appealable to the EPC, which makes the final agency decision. EPC's decisions may be appealed to state court. Currently, IDNR carries a backlog of about 125 pending appeals for all regulated entities.<sup>119</sup> IDNR resolved 105 appeals in 2003, but received 102 new appeals in the same year.<sup>120</sup> The backlog of appeals has been reduced by about 40% in the last four years.<sup>121</sup>

## CAFO Inspection and Enforcement Activities

### Inspections

Many of IDNR's cases against animal feeding operations start with an inspection. IDNR is required to inspect all animal feeding operations with "unformed manure structures," or earthen impoundments used to store manure. Routine inspections are limited to *visual* inspections of the sites where the unformed manure structures are located. IDNR is not required to, and generally does not, conduct routine inspections of other aspects of AFOs, like land application

**TABLE 3 : NUMBER OF IDNR INSPECTIONS OF CONFINED FEEDING OPERATIONS AND OPEN FEEDLOTS, JANUARY 1, 1997-DECEMBER 31, 2003\***

Year	Routine Feedlot Inspections	# of Complaints about Feedlots	# of Feedlot Inspections as a Result of a Complaint	Feedlot Visits	Feedlot Assistance (includes telephone contacts)
1997	43	739	123	51	257
1998	528	1,097	501	259	1,262
1999	844	921	486	268	1,369
2000	912	822	459	240	1,419
2001**	902 (35)	1,037 (88)	489 (45)	301 (54)	1,871 (305)
2002	899 (66)	664 (115)	325 (67)	393 (110)	2,647 (356)
2003	1,675 (74)	788 (121)	430 (63)	552 (135)	6,413 (401)
<b>TOTAL</b>	<b>5,803</b>	<b>6,068</b>	<b>2,813</b>	<b>2,064</b>	<b>15,238</b>

\* SOURCE: Data provided by IDNR, February 12, 2004.

\*\* 1997-2000 data represents the sum of confined feeding operation inspections and open feedlot inspections. In 2001, IDNR began to track the number of open feedlot inspections separately. The numbers in parentheses represent open feedlot inspections, a subset of the total number of inspections.



areas. However, IDNR may investigate a complaint if it determines that the complaint is legally sufficient and an investigation is justified. Approximately 50% of the complaints received by IDNR result in an inspection. As Table 3 demonstrates, the number of routine inspections has increased over the years, yet the vast majority of IDNR visits or assistance to animal feeding operations are not formal inspections. Rather, they are follow-up visits or trips to a facility for reasons other than an inspection

(feedlot visits) or telephone contacts and some visits to assist facilities with technical questions or problems (feedlot assistance).<sup>122</sup>

#### *Informal and Formal Enforcement Actions*

Since 1998, IDNR has issued 623 NOVs and 202 AOs for serious or repeated violations to animal feeding operations. IDNR also referred 12 cases involving a discharge to the Attorney General for further investigation and prosecution.

**TABLE 4: IDNR INFORMAL AND FORMAL ENFORCEMENT ACTIONS AGAINST ANIMAL FEEDING OPERATIONS, JANUARY 1, 1997–DECEMBER 31, 2003**

Year	Notices of Violation <sup>1</sup>	Administrative Orders <sup>2</sup>	Referrals to the Attorney General's Office <sup>3</sup>
1997	0	N/A	7
1998	0	24	1
1999	0	21	2
2000	0	15	0
2001 <sup>4</sup>	84 (14)	31	1
2002	96 (21)	44	1
2003	443 (24)	67	0
<b>TOTAL</b>	<b>623 (59)</b>	<b>202</b>	<b>12</b>

<sup>1</sup> source: Data provided by IDNR, February 12, 2004.

<sup>2</sup> source: Data provided by IDNR, February 11, 2004.

<sup>3</sup> source: Data provided by IDNR, April 1, 2004. This data is the number of referrals for discharges to waterways. Occasionally, there is a referral for repeated non-discharge violation, but these numbers were not provided by IDNR.

<sup>4</sup> The numbers in parentheses represent the total number of NOVs against open feedlots, a subset of the total number of NOVs issued to animal feeding operations.



# Does IDNR's Enforcement Program Prevent Clean Water Act Violations?

IDNR's enforcement actions have not had a deterrent effect across the industry. As mentioned above, discharges from animal feeding operations are occurring throughout the state. Moreover, there are repeat violators. For example, Iowa Select Farms has been discharging manure to waters of the state and violating other terms of its construction permits since 1996. *See* Appendix B (IDNR Iowa Select Farms Enforcement Timeline). IDNR issued AOs with penalties for most of these violations and has referred some violations to the Attorney General for prosecution, yet Iowa Select continues to violate the law. Likewise, DeCoster Farms has

repeatedly discharged manure since 1993 despite IDNR's and the Attorney General's repeated enforcement actions. *See* Appendix C (DeCoster Farms Enforcement Timeline). Much of the problem appears to be that companies, like Iowa Select and DeCoster Farms, can *afford* to continue to pollute Iowa's waterways. Monetary penalties imposed by IDNR are way too low to have a deterrent effect on the industry; rather, they simply become the cost of doing business in Iowa. *See* Appendix D (Table that includes Total Monetary Penalties for 1992–2002). Additionally, IDNR does not have adequate resources to regulate the entire universe of facilities.



*No enforcement action was taken against this Iowa Select confinement for a manure spill in 1998 that reached a tile line.*

(IOWA ENVIRONMENTAL COUNCIL)

## Penalty Amounts Recovered in Enforcement Actions are Too Low

Under state law, an AO can only include a maximum penalty of \$5,000 per violation per day for a discharge or permit violation, and can only include cumulative penalties up to \$10,000 for multiple violations.<sup>123</sup> In a civil proceeding, the Attorney General is also limited to \$5,000 per violation per day, but does not have a penalty cap for multiple violations.<sup>124</sup> IDNR rarely collects the maximum penalty. Out of the 180 enforcement actions for discharges to water since 1992, IDNR collected the maximum penalty of \$5,000 in only 9 of the actions. The Attorney General's Office obtained judgments for penalties above \$5,000 in ten of twelve referred actions.

IDNR can obtain higher penalties, up to \$25,000 for each day a violation continues, but only after IDNR classifies the owner or operator of an animal feeding operation as a "habitual violator."<sup>125</sup> To be classified as a habitual violator, an operation must commit three or more violations enumerated by statute within five years. Additionally, for violations to count towards the "three strikes" provision, IDNR must refer each violation to the Attorney General for legal action, and each violation must result in the assessment of a civil penalty or a court conviction.<sup>126</sup> Administrative orders—the way IDNR addresses the vast majority of violations at animal feeding operations—do not count as strikes. IDNR has only been able to classify one animal feeding operation owner—A.J. DeCoster—as a habitual violator.<sup>127</sup>

Under the Clean Water Act penalties must be high enough to recover any economic gain derived by defendants for their violations of federal law.<sup>128</sup> Otherwise, the penalty is no more than the "cost of doing business" which results in an economic advantage to violators over other companies who spend funds to comply with the law in a timely fash-

ion. While IDNR must assess economic benefit when it determines an administrative penalty amount, the amount is still capped by the statutory maximum of \$10,000 per order.<sup>129</sup> With a penalty cap for multiple violations of \$10,000, it may be more cost-effective for livestock facilities to break the law rather than to comply. Similarly, the Attorney General can only recover \$5,000 per violation per day. Although there is no statutory cap for multiple violations included in one case, the \$5,000 cap per violation may not be enough in some cases for the Attorney General to recover economic benefit. In contrast, Clean Water Act penalties for civil cases may be assessed up to \$27,500 per violation per day.<sup>130</sup>

In addition to penalties, IDNR can assess damages for fish kills which includes (1) the monetary valuation of the fish lost; (2) the value of lost services to the public (*i.e.*, number of fishing trips lost); and (3) costs of the investigation.<sup>131</sup> IDNR uses the fish replacement values published in The American Fisheries Society for all fish except for catfish, trout, northern pike and certain types of bass and perch. For these fish, the value is \$15 each.<sup>132</sup> The value of each fish classified by IDNR as endangered or threatened is \$1,000.<sup>133</sup> The value of lost services to the public is determined by the number of fishing trips, valued at \$30 each, lost over the period of resource loss.<sup>134</sup> The costs of the investigation include salaries and overhead of the staff conducting the investigation plus meals, lodging and mileage.<sup>135</sup>

As Appendix E (IDNR Fish Restitution Table) demonstrates, the damages recovered per fish since 1992 have been miniscule to nothing. IDNR assessed no damages for 13 of the fish kills, even when high numbers of fish were killed. In another 59 cases, IDNR recovered mere pennies per fish. In effect, animal feeding operations can inexpensively buy the right to decimate Iowa's fish populations. For example:

- IDNR assessed no damages or penalties for a spill from Howard County open feedlot in August 2000 that killed 61,173 fish.
- IDNR assessed no damages or penalties for two spills from the same Clay County open feedlot. The first manure spill killed 8,944 fish in September 2001, and the second spill in September 2002 killed 8,988 fish.

Collecting no or low penalties and fish restitution from animal feeding operations is particularly egregious when compared to how IDNR prosecutes individuals who break state wildlife laws by selling illegally caught fish. In 2002, IDNR took action against three Asian grocers who illegally sold 52 fish caught in local waterways to undercover IDNR officials.<sup>136</sup> One store paid a \$34,000 fine and agreed to a 20-year suspended prison sentence. The other stores face fines of \$15,000 and \$8,000.<sup>137</sup>

### **IDNR Does Not Have the Resources to Regulate all of Iowa's AFOs**

IDNR has too few resources to enforce state and federal laws against animal feeding operations. IDNR regulates about 3,500 facilities over 1,000 animal units



*Two 800 head open feedlots along Willow Creek in Clay County that were the source of two manure spills that together killed nearly 18,000 fish with no damages or monetary penalty assessed.* (IOWA GEOGRAPHIC MAP SERVER AERIAL PHOTOS COURTESY OF USDA NRCS & MIT)

with only about 27 full-time equivalent (FTE) positions dedicated to inspections, permitting and enforcement.<sup>138</sup> Twelve of these FTE positions were just obtained in 2002. Twenty-one of these positions are field staff who inspect the facilities and review manure management plans. About five people are responsible for construction and operation permitting for the state. The majority of the enforcement work falls on one attorney.





# Does EPA Provide Adequate Oversight?

**A**lthough the day-to-day NPDES program operation is Iowa's responsibility, the CWA mandates an oversight function for EPA to ensure that Iowa's programs are in conformity with federal requirements. Iowa's state NPDES program must be as least as stringent as the requirements imposed by the federal NPDES regulations. EPA retains the ability to take enforcement actions in authorized states like Iowa when a state fails to act.

Most state programs were approved in the 1970s, including Iowa's. However, many of these programs have not been reviewed since their initial approval by EPA, despite changes in both EPA and state statutes and regulations. EPA's lack of oversight has contributed to the inconsistent and inadequate implementation of federal CAFO programs by the authorized states. Eleven authorized states with more than 1,000 large animal feeding operations do not properly issue NPDES permits.<sup>139</sup> EPA officials acknowledge that Iowa is one of those states, but have only been able to persuade Iowa to begin issuing NPDES permits to open feedlots.<sup>140</sup>

To compel states like Iowa to implement the NPDES program with all federal requirements, EPA may either withhold grant funding to states or withdraw the state's authority to run the entire NPDES permit program—including components that regulate industrial and municipal waste treatment facilities. EPA is

reluctant to use these tools, claiming that withholding grant funding would further restrict the states' ability to effectively implement their programs and that EPA does not have the resources to directly implement the programs itself.<sup>141</sup>

EPA has no credible oversight or enforcement presence in Iowa. EPA has rarely taken actions against animal feeding operations in Iowa. Since 1997, EPA has initiated four administrative actions against open feedlots in Iowa for clean water act violations and filed one civil case in federal court.<sup>142</sup> EPA has never initiated an enforcement action against a confinement operation in Iowa under the Clean Water Act. In addition, EPA rarely inspects animal feeding operations in Iowa—it has inspected only five open feedlots in the last five years.<sup>143</sup>

## Greatest impact to threatened or endangered species

On July 26, 1997, the piping between the primary and secondary cesspool cells at a hog confinement in Howard County became plugged causing the primary cesspool cell to overflow into Crane Creek. An estimated 109,172 fish were killed, including 302 American Brook Lamprey, a threatened species in Iowa, and other aquatic life. (IDNR spill records) The fine for this spill was \$10,000 and the fish restitution penalty was \$30,000. (IDNR Enforcement Database)



# Recommendations

## 1. Enact a State-wide Moratorium on the Construction of New CAFOs and the Expansion of Existing CAFOs.

Iowa should enact a state-wide moratorium on the building of new CAFOs and the expansion of existing facilities. Recently, the American Public Health Association called for a national moratorium on new CAFOs “until additional scientific data on the attendant risks to public health have been collected and uncertainties resolved.”<sup>144</sup>

A moratorium is especially appropriate in Iowa given the number of facilities and the lack of resources devoted to regulating the industry. At a minimum, a moratorium should be in place until IDNR has enough resources to (1) fully inspect all CAFOs on a regular basis; (2) issue NPDES permits to all CAFOs required under federal law to obtain them; and (3) take appropriate enforcement actions against CAFOs in noncompliance.

## 2. Increase Funding for CAFO Regulation

IDNR has not met its responsibilities to regulate CAFOs under state or federal laws, so it is difficult to comprehend how it will meet its additional responsibilities under the new Clean Water Act regulations without a significant increase in resources. IDNR state water program officials should identify the necessary

resources to fulfill their regulatory obligations and make their resource needs known within the agency and to EPA and the state legislature.

State legislators should examine all available funding mechanisms, including setting NPDES permit fees at levels sufficient to recoup the costs of NPDES permitting, monitoring and enforcement activities.

Iowa collects a number of fees for its construction permit program including a permit application fee,<sup>145</sup> a manure management plan filing fee,<sup>146</sup> an annual compliance fee<sup>147</sup> and an educational program fee for certifying confinement site manure applicators.<sup>148</sup> These fees, along with civil penalties arising out of certain violations of animal feeding operations, are deposited in the animal agriculture compliance fund.<sup>149</sup> Moneys in the compliance fund are used by IDNR to administer and enforce its construction permit program.<sup>150</sup> In contrast, Iowa collects no fees for NPDES permits issued to CAFOs.

In addition to permit fees, IDNR should use existing sources of financial assistance to implement an NPDES program for CAFOs. Section 106 of the Clean Water Act authorizes EPA to award grants to states to develop and administer a water pollution control program, including an NPDES permitting, monitoring and enforcement program.

Cost-share funding for waste management is also available to CAFO owners through the Environmental Quality Incentives Program (EQIP) in the 2002

Farm Bill.<sup>151</sup> Although many organizations oppose the allocation of EQIP funds to livestock owners with 1,000 animals or more, currently large and small feedlots as well as pasture and grazing operations, may participate in the program. From 2002 through 2007, an operation is eligible to receive a maximum of \$450,000.

### 3. Issue NPDES Permits to All CAFOs Including Confinement Operations

IDNR must issue NPDES permits to all CAFOs required under federal law to obtain them, including confinement operations. Federal regulations allow IDNR to issue one of two types of NPDES permits to CAFOs—individual or general. An individual permit is specifically tailored for a facility based on the information contained in the permit application. Once the permitting authority develops a draft individual permit for a facility, it must provide an opportunity for the public to comment on the permit. After the permitting authority addresses the comments, it may finalize the permit and issue it to the permittee.

In contrast, a general permit is developed and issued by a permitting authority to cover multiple facilities within a specific category that have common elements.<sup>152</sup> General permits usually involve the same or similar type of operation and discharge the same type of waste. After a general permit has been developed, facility owners or operators who want a facility to be covered by the general permit submit a Notice of Intent (NOI) to be covered. The permitting authority may then either request additional information from the facility, notify the facility that it has been covered by the general permit, or require the facility to apply for an individual permit. In some states, facilities that submit an NOI are automatically covered by the permit within a certain time period and do not need to be noti-

fied of coverage by EPA. Authorization to operate under a general permit is usually issued more quickly than individual permits, because permitting authorities can cover a large number of facilities without expending the time and resources necessary to develop and issue an individual permit to each facility in the source category. The public has the opportunity to comment on the general permit before it is finalized but generally does not have the opportunity to comment on whether a specific facility should be covered by the general permit. The public does have the opportunity to petition EPA to require a discharger authorized to operate under a general permit to apply for and obtain an individual permit, however.<sup>153</sup>

#### *Establish Triggers for Individual Permits*

IDNR should require certain operations to have individual permits that are tailored specifically to their facilities and that have more stringent conditions than general permits. IDNR should establish triggers to require an individual permit such as (1) CAFOs located in ecologically sensitive areas or areas where groundwater is threatened; (2) CAFOs with a history of noncompliance; or (3) CAFOs that are exceptionally large.<sup>154</sup> Even smaller operations should be required to have individual permits if discharges cannot be controlled by a general permit<sup>155</sup> or if the operation is a significant contributor of pollutants.<sup>156</sup>

#### *Issue Watershed-Based General Permits*

Ideally, IDNR should have enough time and resources to issue and enforce individual permits for each CAFO. However, given the sheer number of facilities in Iowa and the rate at which IDNR is able to issue individual permits, the most expeditious way for IDNR to establish a meaningful NPDES permitting program is to develop watershed-based general permits in addition to some individual

permits. State law does not currently authorize IDNR to issue general permits to CAFOs,<sup>157</sup> so the legislature should amend the law to allow IDNR to do so.

EPA has been encouraging states to increase the use of watershed-based permitting,<sup>158</sup> because it leads to more environmentally beneficial results. A watershed-based approach would reduce the number of permits IDNR currently has to develop while providing some level of public involvement. Conversely, a single statewide general permit that is not targeted to address specific water quality concerns, would not only be less protective of Iowa's resources but also would essentially cut the public out of the permit decision-making process. No watershed-based general permit should be larger than a Hydrologic Unit Code 8 watershed (*i.e.*, 56 basins identified by the United States Geological Survey).

Watershed based permitting is particularly appropriate for Iowa, because CAFOs exist in high concentrations in certain watersheds and contribute to water quality impairment (see case studies on page 22 on the impact of manure spills from the concentration of livestock facilities in Sioux and Hamilton counties). A watershed-based approach will allow IDNR to address multiple pollutant sources and their cumulative impacts within a hydrologically defined drainage basin instead of viewing individual sources in isolation. Watershed-based permits will also help to provide additional protection for High Quality and High Quality Resource designated water bodies. IDNR would be able to tailor the general permits to reflect watershed-specific water quality standards to reduce the total load of pollutants like fecal coliform and ammonia. For example, in watersheds that have experienced repeated manure spills due to overflows from manure storage structures, IDNR could require CAFOs to install additional controls such as secondary containment.

*Require corporations that own animals to share the responsibility for waste disposal and liability for spills to waters.*

One of the trends in livestock and poultry production is that large corporations, typically large producers or processors, enter into contracts with smaller producers to raise animals to market weight. The corporation often provides the contract farmer with the animals and instructs them on how they must be housed and fed. The contract farmer provides the land, facilities and labor, and retains ownership of and responsibility for the proper disposal of animal waste. As a result, the large corporations have no incentive to ensure that their contractors are capable of properly disposing of the waste.

Iowa restricts, to some degree, corporate control of agricultural production by banning meatpacker ownership of livestock. IDNR should go one step further and co-permit producers that own animals, or control how they are raised, along with the owner or operator of the CAFO who actually raises them. Co-permitting would make the proper disposal of manure the joint responsibility of all entities covered by the permit.

#### **4. Incorporate Strong Technical Standards and Practices for Land Application in NPDES Permits**

IDNR regulates discharges from land application areas by requiring manure management plans for some of its confinements (but not open feedlots) and by requiring and recommending some practices for proper land application. Despite these requirements, animal feeding operations frequently discharge waste from application fields. IDNR has a duty to protect the waters of the state and therefore must incorporate enforceable requirements for land application in NPDES permits for both open feedlots and confinement operations.

Federal law requires every NPDES permittee to develop and implement a nutrient management plan (NMP), but states can determine whether or not its terms should be part of the permit. IDNR should require each NMP and all of its terms to be incorporated into an NPDES permit so that it is enforceable. IDNR should also require that the NMP be included with the NPDES permit application to allow for public input. Moreover, IDNR should require that NMPs be prepared by certified specialists.

Under federal law, permitting authorities have discretion to set technical standards and best management practices for nutrient management. At a minimum, IDNR should:

- Require that land application rates be based on the most limiting nutrients in the soil (e.g. phosphorous and nitrogen) for each field. The analysis should include the application method, type of crop, realistic crop yields, soil types, slope and erodability of land, and all other nutrient inputs from sources other than manure or wastewater.
  - Issue NPDES permits that prohibit application to frozen or snow covered cropland, because it increases the potential for discharges, particularly when snow or ice melts. Currently, IDNR only recommends that manure not be spread on frozen or snow-covered cropland.
  - Prohibit the application of waste during precipitation events, because it increases the chances for discharges of sediment and waste. IDNR should also require that land application be delayed if rainfall with the potential to create runoff is forecasted within 24 hours of the planned application.<sup>159</sup> Likewise, permits should prohibit application immediately after precipitation events that saturate soils.
- Currently, IDNR only requires that manure applicators use practices that minimize discharges caused by runoff or other manure flow resulting from precipitation events.
- Issue NPDES permits that prohibit application on slopes that have greater than 4% grade, because the application of manure on steep slopes increases the potential for discharges, even in dry weather. Currently, IDNR only recommends that application be limited where land slopes are 4% or greater.
  - Remove loopholes related to setback distances from surface waters and residences. IDNR requires CAFOs to maintain separation distances between protected areas (e.g., houses, streams, wells etc.) and the area where manure is applied. There are a number of exceptions to the general rules, however. For example, when applying liquid manure, a confinement feeding operation is required to maintain a separation distance of 750 feet from a residence, business, church, or school.<sup>160</sup> However, the separation distance is *zero* if the manure is injected into the soil or incorporated within the soil not later than 24 hours after the original application.<sup>161</sup> Furthermore, facilities may even apply manure on land right next to an agricultural drainage well, drinking water well or high quality water resource if the manure is land-applied by injection or incorporation on the same date as the manure was land-applied.<sup>162</sup> IDNR should remove these loopholes and incorporate stringent setback requirements in federal NPDES permits to protect groundwater, surface water and public health.
- Although the setback distances from homes, surface water and wells should never be zero, IDNR should continue





*Liquid Manure  
Storage Pit at a  
Dairy in Northeast  
Iowa (IOWA USDA  
NATURAL RESOURCE  
CONSERVATION SERVICE)*

to encourage manure applicators to inject or fully incorporate manure into the soil by setting higher setback requirements for manure that is sprayed from irrigation devices. Injecting or incorporating manure significantly reduces the amount of ammonia that is volatilized into the air and deposited, through settling and precipitation, in local waterways. IDNR should incorporate this concept in NPDES permits as well.

### 5. Incorporate Strong Monitoring and Reporting Requirements in NPDES Permits<sup>163</sup>

Adequate monitoring and reporting requirements are essential for the successful implementation of an NPDES permit. Most industries that receive NPDES permits are required to test the receiving waters on a regular basis and report the results to the state or EPA. Historically, CAFOs have not been held to this stan-

dard making it difficult, if not impossible, for regulatory agencies to fulfill their duties of protecting the state's surface and groundwater. Discharges from land application areas and manure storage structures in Iowa have contaminated both groundwater and surface water. Therefore, IDNR should require CAFO NPDES permittees to monitor (1) the manure and wastewater in any storage structures; (2) groundwater; and (3) surface waters that adjoin or pass through the property. Furthermore, the permit should require the CAFO owner or operator to report the results to IDNR.

#### *CAFOs Should Know What is in Their Waste*

IDNR should require CAFOs that have manure storage structures to analyze the waste and wastewater before they submit a permit application. The analysis should include, but not be limited to, all chemical, nutrient, or medicinal inputs used at the facility as well as any potential byproducts and waste products.

The results of the waste characterization process should be submitted with the permit application. IDNR should require CAFOs to regularly monitor groundwater and surface water for all constituents of concern identified in the analysis and report the results to the Department. The results of the monitoring will help CAFO facilities and IDNR to identify leaking cesspools and to determine when waste has been over-applied on cropland.

IDNR should require permittees to characterize their waste on a regular basis. If the results of an analysis reveal any new constituents, the permit monitoring requirements should be automatically updated.

#### *Require CAFOs to Monitor and Report Liquid Levels in Cesspools*

CAFOs should actively operate and maintain liquid manure storage structures, including solids removal and dewatering, to retain adequate capacity to prevent seepage and overflows. Recent studies suggest that proper operation and maintenance will prevent most, if not all, discharges from manure storage structures.<sup>164</sup> Manure storage structure failure or overflows is the most common cause of documented spills from CAFOs in Iowa. These failures may be attributed to a number of operation and management deficiencies, including careless transfer of manure to application equipment, eroded or cracked storage berms and sidewalls,<sup>165</sup> and infrequent visual confirmation of adequate storage capacity.

#### *Require CAFOs to Monitor Groundwater Quality*

Discharges to groundwater occur as a result of seepage from manure storage structures and land application fields.<sup>166</sup> NPDES permits should include groundwater monitoring requirements to ensure that CAFOs are not impacting groundwater quality. The placement of monitoring wells should be based on the site-specific hydrogeology of the area surrounding the CAFO. At a minimum, groundwater monitoring wells should be placed upgradient and downgradient of the facility and upgradient and downgradient of each waste cesspool. Wells should be monitored at least twice annually for total coliform, fecal coliform, dissolved solids, nitrates, ammonia and chloride,<sup>167</sup> as well as other contaminants of concern identified through waste characterization.

#### *Require CAFOs to Monitor Surface Waters that Adjoin or Run Through the Property*

IDNR should require CAFOs to conduct in-stream monitoring of all waters of the state that adjoin or pass through their property, including land application fields. All of the monitoring results should be reported to IDNR.

Monitoring locations for streams should be upstream of the CAFO facility, and at the exit point of the stream from the facility, as well as other appropriate locations. The monitoring protocol should include basic parameters such as flow, pH, ammonia, nitrogen as N, Nitrate + Nitrite as N, total phosphorous as P, chloride, temperature, total suspended solids, pathogens and dissolved oxygen, as well as any other contaminants of concern detected by the waste characterization. In addition, IDNR should require CAFOs to conduct biological monitoring.

## 6. Enforce the Clean Water Act and CAFO Permits

Enforcement provides a powerful incentive for CAFO permittees to comply with the law. However, IDNR does not have the necessary resources nor does it appear to have the political will to aggressively enforce state laws or the Clean Water Act. IDNR does not routinely inspect all of its CAFOs to determine compliance. Furthermore, its enforcement actions against some violators are ineffective, because penalties are too low to recover the economic benefit of noncompliance or to provide deterrence. The result is a regulatory environment where it pays for CAFOs to pollute Iowa's waters.

### *Inspect Whole Facilities, Not Just Manure Storage Structures*

IDNR should proactively inspect entire CAFO facilities to identify and correct potential problems before they result in harm to the environment or public health. Inspections should not be limited to visual assessments. Rather, IDNR should require field staff to periodically conduct sampling of surface water and ground water. In addition, IDNR should review CAFOs' nutrient management plans to evaluate if permit requirements are being met or to determine if permit conditions are adequate. IDNR should also conduct follow-up inspections after enforcement actions to evaluate any remedial work.

### *Increase IDNR's Penalty Authority*

Penalties play a vital role in environmental and public health protection by promoting compliance and by deterring future violations. Penalties also keep the economic playing field level for facilities that comply with the law. The legislature should increase the current \$5,000 penalty cap for each violation. IDNR

should also resist reducing already low administrative penalties in negotiations. In addition to assessing increased penalties, IDNR should always assess damages for fish kills that include the value of the lost fish as well as an assessment for the investigation costs and the value of lost services to the public.

### *Refer Cases to the Attorney General's Office*

Because IDNR does not have adequate administrative penalty authority to compel compliance in all cases, it should refer cases involving the worst violators or repeat violators to the Attorney General's Office for prosecution. Although the Attorney General's Office is also capped at \$5,000 per day for each violation, it does not have a penalty cap for multiple violations in the same action.

Furthermore, IDNR can obtain even higher penalties, up to \$25,000 for each day a violation continues, if it classifies animal feeding operations as habitual violators. To do so, it must make three referrals to the Attorney General's Office for violations that occur within a five year time-frame and that result in the assessment of a civil penalty or a court conviction. Without referrals from IDNR, the habitual violator law is meaningless.

### *Strengthen the Habitual Violator Law*

Iowa's habitual violator law is currently ineffective, because the majority of IDNR's enforcement actions are administrative, and independent actions by the Attorney General's Office that result in civil penalties or court convictions do not count as strikes. Furthermore, the Attorney General's Office can be tied up in litigation and appeals for years before they obtain civil penalties or court convictions for three violations referred by IDNR. At a minimum, the habitual violator law should be strengthened to allow independent actions taken by the Attorney General to count as strikes.

## 7. Increase Public Access to Permitting and Enforcement Data

Basic CAFO permitting and enforcement data is not readily available to the public. IDNR's posts no CAFO construction permits, NPDES permits or basic compliance and enforcement data on its website. Members of the public can visit a record center to view files, but the files may be spread throughout the state at a number of IDNR offices.

The unavailability of this basic enforcement and compliance information has broad implications. Public access is critical because it allows citizens to make informed decisions regarding environmental issues that affect their communities. Citizens also need compliance data in order to assist EPA and the states in ensuring that environmental violations are resolved. Moreover, the public's direct access to compliance information provides incentives for regulated entities to comply with the law. Finally, providing information on the internet will free up more resources for core permitting and enforcement activities.

IDNR should post key enforcement information on its website, including all of its fact sheets, public notices, draft permits, final permits and orders. While IDNR has posted some of its air pollution permits on its website, this practice should be extended to cross all media areas (i.e., water, air, hazardous waste) and regulated industries. Some states like Indiana<sup>168</sup> and Illinois<sup>169</sup> have developed good enforcement databases on the internet that could be useful templates for Iowa. Indiana's database, for example, contains over 5,000 enforcement actions dating from 1997 to the present. Viewers can sort the cases by media, facility, type of enforcement action, order number, or date. Finally, IDNR should post its CAFO databases related to discharges and fish kills on its website.

## 8. Citizens Should Use Citizen Suit Provisions

The federal government and states do not have the resources and political will to address all violations of environmental laws. Therefore, Congress gave individual citizens the power under the Clean Water Act to initiate their own enforcement actions in federal court.<sup>170</sup> The court may award citizens the same relief as it would the government, including an injunction compelling compliance or prohibiting noncompliance, civil penalties up to \$27,500 per day per violation, as well as attorney's fees. Iowa has a parallel provision in its laws, although penalties are capped at \$5,000 per violation per day.<sup>171</sup> When IDNR does not have the resources or political will to act, citizens should use the citizen suit provisions to protect themselves from CAFO polluters.

## 9. EPA Should Provide Better Oversight

EPA has exerted little leadership to improve Iowa's NPDES permitting and enforcement program. EPA should improve its oversight by doing the following:

- EPA should conduct a formal audit of IDNR's CAFO permitting and compliance activities. The audit should include a review of the state's legal authorities as well as a review of the overall NPDES program operation and performance.
- Based on the results of the audit, EPA should update its August 10, 1978 Memorandum of Agreement with IDNR and its supporting documents, including the Performance Partnership Grants, which provide funding, and the Performance Partnership Agreements, which outline how EPA and the state will work together. These

documents should include strong commitments to bring all CAFOs into compliance with federal law as quickly as possible, including a corrective action plan that has measurable goals and timelines.

- EPA should condition the receipt of grant funding on IDNR meeting the deadlines in the corrective action plan.
- EPA should assist state permit writers in developing a strong NPDES permit for CAFOs. EPA should review state-issued CAFO permits and veto them when they fail to meet Clean Water Act requirements.
- EPA should significantly increase the number of CAFO inspections it conducts in Iowa and take enforcement actions when it discovers violations.
- EPA should initiate proceedings to withdraw Iowa's NPDES program authority if IDNR refuses to comply with federal Clean Water Act permitting and enforcement requirements.

## 10. Ensure that there are Adequate Conflict Provisions for the Environmental Protection Commission

The Environmental Protection Commission, a nine member panel appointed by the governor and subject to senate confirmation, establishes policy, adopts rules, hears permit appeals and approves IDNR referrals to the Attorney General's Office. Because at least five of the nine members must be actively engaged in activities that are regulated by the state (three must be actively engaged in livestock or grain farming), it creates the potential for the "fox to guard the henhouse." The legislature and IDNR should make sure that there are adequate provisions in place to prevent inappropriate bias or a conflict of interest. These provisions must be at least as stringent as federal law, which requires that any member of a Board that approves all or portions of permits must not receive, or have received in the previous two years, a significant portion of income directly or indirectly from permit holders or applicants for a permit.<sup>172</sup>

## NOTES

- <sup>1</sup> Iowa Department of Natural Resources, *Iowa-Portrait of the Land* (April 22, 2000), at 32.
- <sup>2</sup> Iowa State University and The University of Iowa Study Group, *Iowa Concentrated Animal Feeding Operations Air Quality Study*, (Feb. 2002), at 28 [hereinafter Iowa State University, *Air Quality Study*].
- <sup>3</sup> United States Department of Agriculture (U.S.D.A.) National Agriculture Statistics Service, *Iowa's Rank in Agriculture*, <http://www.nass.usda.gov/ia/lvstk/ranklvst.txt> (last visited on Apr. 16, 2004).
- <sup>4</sup> *Id.*
- <sup>5</sup> Kauffman Clark, *Iowa Select to Appeal Jury Award; Some think the \$33 Million in damages against the pork producer will spur more nuisance suits*, DES MOINES REGISTER (Oct. 11, 2002).
- <sup>6</sup> 33 U.S.C. § 1342 (b) (2003).
- <sup>7</sup> United States Environmental Protection Agency (USEPA), *National Pollutant Discharge Elimination System, Memorandum of Agreement between Regional Administrator and the Executive Director* (Aug. 10, 1978).
- <sup>8</sup> Federal Water Pollution Control Act, 33 U.S.C. § 502 (14) (2003) [hereinafter Clean Water Act].
- <sup>9</sup> Clean Water Act, 33 U.S.C. § 402 (a) (2003).
- <sup>10</sup> 40 C.F.R. § 122.23 (b) (2) (2003).
- <sup>11</sup> 40 C.F.R. § 122.23 (b) (1) (i) (2003).
- <sup>12</sup> 40 C.F.R. § 122.23 (b) (1) (ii) (2003).
- <sup>13</sup> 40 C.F.R. § 122.23 (b) (3) (2000).
- <sup>14</sup> 40 C.F.R. § 122.23 (c) (2) (2000).
- <sup>15</sup> 40 C.F.R. § 122.23 (b) (3) (2000).
- <sup>16</sup> 40 C.F.R. § 122.23 (b) (3) (2000).
- <sup>17</sup> USEPA, National Pollutant Discharge Elimination System Permit Regulation and Effluent Limitation Guidelines and Standards for Concentrated Animal Feeding Operations (CAFOs), 68 Fed. Reg. 7176 (2003) (to be codified at 40 C.F.R. pts. 9, 122, 123 and 412). [hereinafter USEPA, *CAFO Final Rule*].
- <sup>18</sup> 40 C.F.R. § 122.23 (b) (4) (2003).
- <sup>19</sup> *Id.*
- <sup>20</sup> 40 C.F.R. § 122.42 (e) (2003).
- <sup>21</sup> USEPA, *CAFO Final Rule* at 7246-7. EPA estimates that approximately 3 percent of all Large CAFOs and about 4 percent of all affected small business CAFOs nationwide may be vulnerable to closure.
- <sup>22</sup> 40 C.F.R. § 123.62 (e) (2003).
- <sup>23</sup> IOWA CODE § 459.102 (33) (2003).
- <sup>24</sup> IOWA CODE § 459.102 (13) (2003).
- <sup>25</sup> USEPA, *CAFO Final Rule* at 7180.
- <sup>26</sup> United States Department of Agriculture, *Manure Nutrients Relative to the Capacity of Cropland and Pastureland to Assimilate Nutrients: Spatial and Temporal Trends for the United States* (Dec. 2000).
- <sup>27</sup> Information in this table compiled from USEPA, *CAFO Final Rule*, at 7235-7236.
- <sup>28</sup> USEPA, *Water Quality Conditions in the United States*, <http://www.epa.gov/305b> (last visited on May 6, 2004).
- <sup>29</sup> USEPA, *National Water Quality Inventory* (2002), [http://oaspub.epa.gov/waters/w305b\\_report.nation](http://oaspub.epa.gov/waters/w305b_report.nation) (last visited on May 6, 2004).
- <sup>30</sup> USEPA, *National Coastal Conditions Report* (Sept. 2001), at p.xxi.
- <sup>31</sup> Iowa Department of Natural Resources, *Water Quality in Iowa During 1998 and 1999* (2001), at 1-2 [hereinafter IDNR, *Water Quality in Iowa Report*].
- <sup>32</sup> IDNR, *Water Quality in Iowa Report*, at 1-7.
- <sup>33</sup> IDNR, *Iowa Section 303(d) Impaired Waters Listings*, <http://www.iowadnr.com/water/tm-dlwqa/wqa/303d.html> (last visited on May 5, 2004).
- <sup>34</sup> *Id.*
- <sup>35</sup> *Id.*
- <sup>36</sup> IDNR, *Animal Feeding Operation Maps*, <http://www.state.ia.us/epd/wastewtr/feedlot/afo-map.htm> (last visited on May 7, 2004).
- <sup>37</sup> Centers for Disease Control and Prevention, National Center for Environmental Health, *Report to the State of Iowa Department of Public Health on the Investigation of the Chemical and Microbial Constituents of Ground and Surface Water Proximal to Large-Scale Swine Operations*, Oct.-Dec. 1998 [hereinafter CDC, *Ground and Surface Water Report*].
- <sup>38</sup> CDC, *Ground and Surface Water Report*, at 16.
- <sup>39</sup> CDC, *Ground and Surface Water Report*, at 3.
- <sup>40</sup> CDC, *Ground and Surface Water Report*, at 17.
- <sup>41</sup> Glanville, T.D., et al., *Measurement of Seepage from Earthen Waste Storage Structures in Iowa*, published in *Transactions of the ASAE, A Report to the Legislature of the State of Iowa*, Iowa State University (Jan. 1999), at 53 and 60.
- <sup>42</sup> Kalkhoff, S.J., et. al., *Water Quality in the Eastern Iowa Basins, Iowa and Minnesota, 1996-98*, U.S. Geological Survey Circular 1210 (2000) [hereinafter Kalkhoff, *Water Quality Report*].
- <sup>43</sup> Kalkhoff, *Water Quality Report*, at 13.
- <sup>44</sup> Kalkhoff, *Water Quality Report*, at 13.



- <sup>45</sup> U.S. Geological Survey, *Nitrogen in the Mississippi Basin—Estimating Sources and Predicting Flux to the Gulf of Mexico*, USGS Fact Sheet 135-0 (Dec. 2000).
- <sup>46</sup> Goolsby, D.A., et. al. *Flux and Sources of Nutrients in the Mississippi—Atchafalaya and River Basin Topic 3 Report for the Integrated Assessment on Hypoxia in the Gulf of Mexico: National Oceanic and Atmospheric Administration Decision Analysis Series No. 17* (Nov. 7, 1999), at 130. An expanding hypoxic zone develops each spring and summer in the Gulf of Mexico. Hypoxia refers to seasonally depleted dissolved oxygen concentrations (less than 2 milligrams per liter) in a water body. Hypoxia can cause death or stress in fish and other organisms if they cannot leave the hypoxic zone. Consequently, the hypoxic zone in the Gulf of Mexico is often referred to as the “Dead Zone.”
- <sup>47</sup> *Id.*
- <sup>48</sup> *Id.*
- <sup>49</sup> Iowa State University and The University of Iowa Study Group, *Iowa Concentrated Animal Feeding Operations Air Quality Study*, at 42 (Feb. 2002) [hereinafter Iowa State University, *Air Quality Study*].
- <sup>50</sup> EPA, *Ammonia Emission Factors from Swine Finishing Operations*, <http://www.epa.gov/ttn/chief/conference/ei10/ammonia/harris.pdf> (last visited on April 12, 2004).
- <sup>51</sup> Iowa State University, *Air Quality Study* at 42.
- <sup>52</sup> Iowa State University, *Air Quality Study* at 121.
- <sup>53</sup> K. Thu et al., *A Control Study of the Physical and Mental Health of Residents Living Near a Large-Scale Swine Operation*, 3 J. Agric. Safety & Health 1, 13-26 (1997).
- <sup>54</sup> EPA, *CAFO Final Rule*, at 7238. See also, U.S. Environmental Protection Agency, Office of Children's Health Protection, *Drinking Water Contaminants—America's Children and the Environment: A First View of Available Measures*, <http://yosemite.epa.gov/ochp/ochpweb.nsf/content/drinking-water-contam.htm>; Centers for Disease Control and Prevention, *Spontaneous Abortions Possibly Related to Ingestion of Nitrate- Contaminated Well Water-La Grange County, Indiana 1991-1994*, Morbidity and Mortality Weekly, Report 45 (26) (1996), at 569-571 (linking high nitrate levels in Indiana well water near confinement operations to spontaneous abortions in humans), <http://www.cdc.gov/mmwr/preview/mmwrhtml/0042839.htm> (last visited on April 2, 2004).
- <sup>55</sup> USEPA, *CAFO Final Rule*, at 7238.
- <sup>56</sup> Elizabeth Becker, *Big Farms Making a Mess of U.S. Waters, Cities Say*, THE NEW YORK TIMES, Feb. 10, 2002.
- <sup>57</sup> Centers for Disease Control and Prevention, National Center for Environmental Health, *A Survey of the Quality of Water Drawn from Domestic Wells in Nine Midwest States*, (Sept. 1998), <http://www.cdc.gov/nceh/emergency/wellwater/default.htm>.
- <sup>58</sup> *Id.* at Results.
- <sup>59</sup> Iowa Department of Natural Resources Water Fact Sheet 2004-2, *Iowa's Beach Monitoring 2003*, (January 2004).
- <sup>60</sup> The Associated Press State & Local Wire, *Antibiotic Resistant Bacteria Found in Lakes* (Aug. 4, 2002).
- <sup>61</sup> Perry Beeman, *Some Link Bacterial Peril to Antibiotics Put in Feed*, DES MOINES REGISTER (Aug. 4, 2002).
- <sup>62</sup> Perry Beeman, Des Moines Register, *State-Lake Tests Detect 'Superbugs'; E. coli Bacteria Able to Withstand Antibiotics are Found at Four Sites, Which Pose Some Threats to Swimmers*, DES MOINES REGISTER (Aug. 8, 2004).
- <sup>63</sup> *Id.*
- <sup>64</sup> Perry Beeman, *Flu expert: Keep Chickens, hogs apart*, Des Moines Register (Mar. 31, 2004).
- <sup>65</sup> *Id.*
- <sup>66</sup> See Citizen Letter to EPA regarding Clean Air Act Investigations at Concentrated Animal Feeding Operations (Sept. 2, 2003), <http://www.environmentalintegrity.org/pub76.cfm> (last visited April 12, 2004).
- <sup>67</sup> Perry Beeman, *Flu expert: Keep Chickens, hogs apart*, Des Moines Register (Mar. 31, 2004).
- <sup>68</sup> IDNR, *Water Quality in Iowa Report*, at 1-2.
- <sup>69</sup> This percentage was generated by analyzing information in IDNR's database that contains information on spills to waters, including those from livestock operations, that resulted in fish kills [hereinafter IDNR Fish Kill Database].
- <sup>70</sup> This number was generated by compiling information from three different IDNR databases. The first database we used was the IDNR Fish Kill Database. The second database we used lists prohibited discharges from livestock operations that resulted in monetary penalties and/or fish restitution for fish kills [hereinafter IDNR Enforcement Database]. The third database we used lists spills, including those from livestock operations, that were investigated by Emergency Response [hereinafter IDNR Emergency Response Database].
- <sup>71</sup> IDNR Fish Kill Database.
- <sup>72</sup> Iowa Department of Natural Resources, *EcoNewsWire*, (June 13, 2003); *Iowa Farmer Today* (July 5, 2003); Conversation with Rick Martens, IDNR Field Office #1, (Sept. 22, 2003).
- <sup>73</sup> IOWA CODE § 455B.186 (2003); IOWA ADMIN. CODE. 567-62.1 (2003).
- <sup>74</sup> IOWA ADMIN. CODE. 65.4 (1) (2003).
- <sup>75</sup> IOWA ADMIN. CODE. 65.4 (2) (2003).

- <sup>76</sup> IOWA ADMIN. CODE. 65.4 (3) (2003).
- <sup>77</sup> Iowa Department of Natural Resources, Environmental Protection Division, *Policy/Procedure Statement: Concentrated Animal Feeding Operation Registration Program* (March 22, 2001), at 5-b-15-1, 5-b-15-2 [hereinafter IDNR, *Open Feedlot Registration Program*].
- <sup>78</sup> IDNR, *Open Feedlot Registration Program*, at 5-b-15-2 ("Our lax enforcement and administration of the operation permit program for large open feedlots are inconsistent with our duties under the Clean Water Act and state law").
- <sup>79</sup> Iowa Department of Natural Resources, *Iowa Plan for Open Feedlots* (April 2001), at 3 [hereinafter INDR, *Open Feedlot Plan*].
- <sup>80</sup> IDNR, *Open Feedlot Plan*, at 3.
- <sup>81</sup> *Id.*
- <sup>82</sup> IDNR, *Open Feedlot Plan*, at 2.
- <sup>83</sup> IDNR, *Open Feedlot Plan*, Summary.
- <sup>84</sup> Iowa Department of Natural Resources, Press Release: *DNR Increases Emphasis for Open Feedlots* (August 2003).
- <sup>85</sup> Iowa Department of Natural Resources, *Open Feedlot: Operation Permit Application Form* (Rev. 10/25/00).
- <sup>86</sup> Iowa Department of Natural Resources, *Status of the NPDES (operation permits) for the open feedlots in Iowa* (2003).
- <sup>87</sup> Iowa Department of Natural Resources, *Status of the NPDES (operation permits) for the open feedlots in Iowa* (2003).
- <sup>88</sup> IOWA ADMIN. CODE 567-65.7 (1) (2003).
- <sup>89</sup> Iowa Department of Natural Resources, *Status of the NPDES (operation permits) for the open feedlots in Iowa* (2003).
- <sup>90</sup> This number was generated by analyzing an IDNR database that includes information about facilities that have construction permits and manure management plans as well as facilities that registered under the open feedlot program [hereinafter IDNR Livestock Database].
- <sup>91</sup> IOWA CODE § 459.303 (2003).
- <sup>92</sup> Letter with attached comments from Jeffrey Vonk, Director of Iowa Department of Natural Resources, to EPA Office of Water, regarding the Concentrated Animal Feeding Operation Proposed Rule. (July 30, 2001).
- <sup>93</sup> Letter with attached comments from Jeffrey Vonk, Director of Iowa Department of Natural Resources, to EPA Office of Water, regarding the Concentrated Animal Feeding Operation Proposed Rule. (July 30, 2001).
- <sup>94</sup> Clean Water Act, 33 U.S.C. § 1342 (b) (1) (B) (2003).
- <sup>95</sup> 40 C.F.R. § 122.23 (h) (2003).
- <sup>96</sup> 40 C.F.R. § 122.64 (2003).
- <sup>97</sup> IOWA ADMIN. CODE. 567-65.7 (6).
- <sup>98</sup> Clean Water Act, 33 U.S.C. § 1342 (b) (3).
- <sup>99</sup> Clean Water Act, 33 U.S.C. § 1342 (b) (3).
- <sup>100</sup> 40 C.F.R. § 124.11 (2003) ; 40 C.F.R. § 124.17 (2003).
- <sup>101</sup> IOWA ADMIN. CODE. 567-65.9 and 567-65.10.
- <sup>102</sup> IOWA ADMIN. CODE. 567-65.10 (2) (b).
- <sup>103</sup> IOWA ADMIN. CODE 567-65.10 (7), (8).
- <sup>104</sup> IOWA CODE § 17A.19 (2003).
- <sup>105</sup> IOWA CODE § 459.312 (2003).
- <sup>106</sup> Beeman, Perry, *State to Crack Down on 600 Hog Producers*, Des Moines Register (Mar. 5, 2004).
- <sup>107</sup> IDNR Fish Kill Database; IDNR Enforcement Database; IDNR Emergency Response Database.
- <sup>108</sup> *Id.*
- <sup>109</sup> *Id.*
- <sup>110</sup> Iowa Department of Natural Resources, Legal Services Bureau, *2003 Annual Summary of Activities* [hereinafter, IDNR, *2003 Annual Summary of Activities*].
- <sup>111</sup> IDNR, *2003 Annual Summary of Activities*.
- <sup>112</sup> *Id.*
- <sup>113</sup> Iowa Department of Natural Resources, Environmental Protection Division, Compliance and Enforcement Bureau, *1999, 2000, 2001 Annual Reports*.
- <sup>114</sup> *Id.*
- <sup>115</sup> Conversation with IDNR staff, December 18, 2003.
- <sup>116</sup> IDNR, *2003 Annual Summary of Activities*; Iowa Department of Natural Resources, Environmental Protection Division, Compliance and Enforcement Bureau, *1999, 2000, 2001 Annual Reports*.
- <sup>117</sup> IDNR, *2003 Annual Summary of Activities*.
- <sup>118</sup> *Id.*
- <sup>119</sup> IDNR, *2003 Annual Summary of Activities*.
- <sup>120</sup> *Id.*
- <sup>121</sup> *Id.*
- <sup>122</sup> E-mail communication with IDNR staff on March 1, 2004.
- <sup>123</sup> IOWA ADMIN. CODE. 567-10.3 (2003).
- <sup>124</sup> IOWA CODE § 455B.191 (2003).
- <sup>125</sup> IOWA CODE § 459.604 (2003).
- <sup>126</sup> *Id.*
- <sup>127</sup> Iowa Department of Justice, News Release: *DeCoster to be Classified as First "Habitual Violator"* (June 15, 2000).

- <sup>128</sup> Clean Water Act, 33 U.S.C. § 1319 (d) (2003).
- <sup>129</sup> IOWA ADMIN. CODE § 567-10.3 (2) (2003).
- <sup>130</sup> 33 U.S.C. § 1319 (d) (2003).
- <sup>131</sup> IOWA ADMIN. CODE 571-113.4 (2) (restitution); 567-133.6 (3) (natural resource damages).
- <sup>132</sup> IOWA ADMIN. CODE 571-113.4 (2) (c); 567-133.6 (3) (b) (3).
- <sup>133</sup> IOWA ADMIN. CODE 571-113.4 (2) (c); 567-133.6 (3) (b) (3).
- <sup>134</sup> IOWA ADMIN. CODE 571-113.4 (2) (d); 567-133.6 (3) (b) (4).
- <sup>135</sup> IOWA ADMIN. CODE 571-113.4 (2) (e); 567-133.6 (3) (b) (5).
- <sup>136</sup> Basu, Reka, *DNR dragnet entraps Asian grocers*, DES MOINES REGISTER (Dec. 19, 2002); see also Press Release from Iowa State Representative Ed Fallon, *State to Investigate DNR Fish Investigation* (Dec. 20, 2002).
- <sup>137</sup> *Id.*
- <sup>138</sup> Conversations with IDNR staff on December 18, 2003 and February 12, 2004.
- <sup>139</sup> United States General Accounting Office, *Livestock Agriculture: Increased EPA Oversight Will Improve Environmental Program for Concentrated Animal Feeding Operations*, GAO-03-285 (Jan. 2003), at 3 [hereinafter GAO, *Livestock Agriculture Report*].
- <sup>140</sup> GAO, *Livestock Agriculture Report*, at 11.
- <sup>141</sup> GAO, *Livestock Agriculture Report*, at 3.
- <sup>142</sup> Telephone conversation with EPA staff person on February 26, 2004.
- <sup>143</sup> Telephone conversation with EPA staff person on November 6, 2003.
- <sup>144</sup> American Public Health Association, *Precautionary Moratorium on New Concentrated Animal Feed Operations*, 2003-7, <http://www.apha.org/legislative/policy/2003/2003-007.pdf> (last visited on March 10, 2004).
- <sup>145</sup> IOWA CODE § 459.400 (1) (a) (2003).
- <sup>146</sup> IOWA CODE § 459.400 (1) (b) (2003).
- <sup>147</sup> IOWA CODE § 459.400 (1) (c) (2003).
- <sup>148</sup> IOWA CODE § 459.400 (1) (d) (2003).
- <sup>149</sup> IOWA CODE § 459.400 (2) (2003).
- <sup>150</sup> IOWA CODE § 459.401 (3) (2003).
- <sup>151</sup> 7 C.F.R. § 1466 (2003).
- <sup>152</sup> 40 C.F.R. § 122.28 (2003).
- <sup>153</sup> 40 C.F.R. § 122.28 (b) (3) (2003).
- <sup>154</sup> EPA declined to include these types of triggers in the federal regulations, but left it up to the states to determine whether they needed to establish such conditions. EPA, *CAFO Final Rule*, at 7205.
- <sup>155</sup> See 40 C.F.R. § 122.28 (b) (3) (E) (2003).
- <sup>156</sup> See 40 C.F.R. § 122.28 (b) (3) (G) (2003).
- <sup>157</sup> 40 C.F.R. § 122.23 (b) (3) (2000). § 455B.103A (2003); IOWA ADMIN. CODE. 567-64.4.
- <sup>158</sup> USEPA, Memorandum from G. Tracy Mehan, III to Water Division Directors, Region I-X, *Watershed-Based National Pollutant Discharge Elimination (NPDES) Permitting Policy Statement* (Jan. 7, 2003).
- <sup>159</sup> USEPA, Final Internal Review Draft: Guidance Manual and Sample NPDES Permit for Concentrated Animal Feeding Operations, Appendix F: sample CAFO NPDES Permit, (Sept. 21, 2000).
- <sup>160</sup> IOWA ADMIN. CODE § 567-67.3 (3) (a) (2003).
- <sup>161</sup> IOWA ADMIN. CODE § 567-67.3 (3) (b) (1) (2003).
- <sup>162</sup> IOWA ADMIN. CODE § 567-67.3 (3) (g) (1) (2003).
- <sup>163</sup> Some of the ideas and language in this section are borrowed from a letter to Ms. Aimee D.G. Davenport, Legal Counsel for Missouri Department of Natural Resources, from Maxine Lipiles and Beth Martin, Washington University in St. Louis School of Law, Interdisciplinary Environmental Clinic, regarding Missouri State Operating Permits for Concentrated Animal Feeding Operations (June 14, 2002).
- <sup>164</sup> USEPA, *CAFO Final Rule*, at 7215.
- <sup>165</sup> See Slideshow on failed manure storage structures presented at Iowa environmental Protection Commissions meeting, <http://www.state.ia.us/epd/wastewtr/feedlot/files/slideshow.pdf> (last visited on April 2, 2004).
- <sup>166</sup> Miner, J.R., Humenik, F. J., Overcash, M.R., *Managing Livestock Wastes to Preserve Environmental Quality*, Iowa State Press (2000). Seepage from land application to groundwater can occur when over application increases nitrogen loss to groundwater.
- <sup>167</sup> USEPA, National Pollutant Discharge Elimination System Permit Regulation and Effluent Limitations Guidelines and Standards for Concentrated Animal Feeding Operations, Proposed Rules, 66 Fed. Reg. 2960 and 3144 (Jan. 12, 2001).
- <sup>168</sup> See Indiana Department of Environmental Management, *Office of Enforcement Monthly Actions and Orders*, [http://www.in.gov/serv/idem\\_oe\\_order](http://www.in.gov/serv/idem_oe_order) (last visited on May 7, 2004).
- <sup>169</sup> See Illinois Environmental Protection Agency, *Enforcement Orders*, <http://www.epa.state.il.us/enforcement/orders/> (last visited on May 7, 2004).
- <sup>170</sup> Clean Water Act, 33 U.S.C. § 1365 (2003).
- <sup>171</sup> IOWA CODE § 455B.111 (2003).
- <sup>172</sup> 40 C.F.R. § 123.25 (c) (2000).



## APPENDIX A

### Comparison of Requirements for Iowa's Construction Permit for Confinement Feeding Operations and Requirements for Federal Clean Water Act NPDES Permits for CAFOs

Issue	Iowa Construction Permit for Confinement Feeding Operations	Federal Clean Water Act Permits for CAFOs <sup>1</sup>
Which Operations Require Permits?	<p>Iowa Code § 459.303 Confinements with at least 1,000 animal units or confinements with unformed manure storage structures (e.g., earthen manure storage structure).</p> <p>Note: IDNR's regulations have not been updated to reflect this 2003 statutory change so some of the animal thresholds in the regulations are not consistent with federal law.</p> <p>IAC 567-65.7 Confinements are grandfathered from permitting if they began construction, installation or modifications before March 20, 1996; after March 20, 1996, need a permit prior to beginning construction or installation of an animal feeding operation structure used in that operation or prior to beginning significant modifications in the volume or manner in which the manure is stored or prior to reopening the operation if it was discontinued for 24 months.</p>	<p>40 C.F.R. § 122.23 (b) (2) Large CAFOs (1,000 beef; 2,500 swine &gt; 55lbs; 10,000 swine &lt; 55lbs; 700 dairy cattle; 30,000 laying hens or broiler (liquid); 125,000 chickens (not liquid); 82,000 laying hens (not liquid))<sup>2</sup>; Medium CAFOs (300-999 beef, 200-700 dairy, 750-2499 hogs) + discharge.</p> <p>40 C.F.R. § 122.23 (c) If smaller than medium CAFO, permit authority can designate operation as a CAFO if EPA determines it to be a significant contributor of pollutants after an inspection.</p> <p>40 C.F.R. § 122.23 (d) (2) May apply for no potential to discharge determination, which exempts operations from permit requirement.</p>
What information is required in a permit application?	<p>IAC 567-65.9 Name of owner and contact person; facility location; indication of whether application is for expansion or for construction of new facility; animal weight capacity; for manure storage structure that stores in liquid form or for egg washer storage structure, an engineering report by licensed professional engineer or NRCS person; report on soil corings in area of manure storage structure; if 3 or more structures, certification that drainage is not impeded; information clearly showing proposed location and required separation distances; names of parties with controlling interest who also have interest in at least one other operation in Iowa; documentation that manure management plan and permit application has been sent to county where located; application fees; information necessary to know if in 100 year flood plain to determine if flood plain permit is required.</p>	<p>40 C.F.R. § 122.21(i) Name of owner or operator; facility location; latitude and longitude of production area; topo map of CAFO showing production area; number and type of animals in open confinement or under roof; type of containment and storage; total number of acres under control of applicant available for land application; estimated amounts of manure, litter and process wastewater generated per year; estimated waste transferred to other persons/year; for CAFOs that must seek permit after 12/31/06, certification that a NMP has been completed and will be implemented upon date of permit coverage.</p> <p>40 C.F.R. § 122.28 (b) (2) (ii) NOI must include same information as application for individual permit.</p>

<sup>1</sup> Some of the language in this column was borrowed from Melanie Shepherdson, Natural Resources Defense Council, *CAFO Rule side-by-side* (2003).

<sup>2</sup> Does not include thresholds for horses, veal calves, sheep or lambs, turkeys or ducks.

Issue	Iowa Construction Permit for Confinement Feeding Operations	Federal Clean Water Act Permits for CAFOs <sup>1</sup>
What is the duty to maintain permit coverage?	Renewal not addressed	40 C.F.R. § 122.23 (h) Must submit renewal application 180 days before permit expires (permit term not to exceed 5 years); do not need to renew if facility stopped operating or is no longer a CAFO and permittee has demonstrated to permitting authority that there is no remaining potential for discharge of waste that was generated while operation was a CAFO, other than agricultural storm water.
What requirements apply to production areas?	<p>IAC 567-65.2 (3)-(7) Operations shall retain all manure between periods of manure application; in no case shall manure from a confinement be discharged directly into a water of the state or into a tile line that discharges to waters of the state or a publicly owned lake, sinkhole or an agricultural drainage well; manure shall be removed to prevent overflows or discharges; manure in an unformed manure structure or earthen waste slurry storage basin shall be removed to maintain a minimum of 2 feet of freeboard in the structure (1 foot for unroofed formed manure storage structure).</p> <p>IAC 567-65.18 Operations must submit a certification from a licensed professional engineer that the manure storage structure for liquid manure complies with approved design plan and guidelines in state regulations (see 65.15). The engineer must supervise during critical points of the construction and inspect upon completion of the construction.</p> <p>IAC 567-65.1 Separation distances between CAFO and neighboring residences, churches, schools, businesses, wells, sinkholes, lakes, rivers and streams. Distance requirements vary based on size of operation, animal type, and type of manure storage facility.</p>	40 C.F.R. §§ 412.10, 412.20, 412.30, 412.40 Requirements only apply to large CAFOs, controls for medium and small CAFOS based on the permit writer's best professional judgment; for existing sources, standard is no discharge of manure, litter, or process wastewater from the production area except whenever precipitation causes an overflow, provided that the production area is designed, constructed, operated and maintained to retain all manure, litter and process wastewater including runoff and direct precipitation from a 25-year, 24-hour rainfall event; CAFOs may seek voluntary alternative performance standards that would achieve better or the same results as under the baseline performance standards; standards for new sources same as for existing sources except for hogs, poultry, and veal, which must have waste storage facilities designed, constructed, operated and maintained to contain 100-year, 24-hour rainfall event.

Issue	Iowa Construction Permit for Confinement Feeding Operations	Federal Clean Water Act Permits for CAFOs <sup>1</sup>
What requirements apply to land application areas?	<p>IAC 567-65.2(7) All manure removed from an animal feeding operation or its manure control facilities shall be land-applied in a manner which will not cause surface or groundwater pollution. Applications in accordance with state law and the rules and guidelines in Chapter 65 shall be deemed compliance with this requirement.</p> <p>IAC 567-65.16 Manure management plans (MMPs) are required to be submitted with applications for a construction permit; existing operations above 500 animal units are required to have MMPs if constructed or expanded after May 31, 1985 or if owner constructs a manure storage structure; MMPs also required for a person who applies manure on land in Iowa from an operation above 500 animal units outside of Iowa.</p> <p>IAC 567-65.16 (4) IDNR shall review and approve all MMPs</p> <p>IAC 567-65.16 Updated MMP, or document stating MMP hasn't changed, must be submitted annually</p> <p>567 IAC-65.17 MMPs must include owner and name of operation, address, contact person, location of confinement and animal weight capacity of the operation; calculations to determine land area required for manure application; determinations of the nitrogen content of the manure per year; calculations of the crop usage rate; identification of manure application methods and timing, location of manure application; estimate of annual animal production and manure volume of weight produced; summary of methods to reduce soil loss and potential surface water pollution; methods to reduce odor if spray irrigation used.</p> <p>IAC 567-65.3 (3) Separation distances for land application depend on the type of manure and the method of application, e.g., manure cannot be land-applied within 200 feet from a water source unless the manure is injected or if dry manure is incorporated into the soil on the same day it is applied; 800 feet from designated high quality resources</p>	<p>40 C.F.R. § 122.23 (e) Land application discharges from a CAFO are subject to NPDES requirements except when an agricultural storm water discharge.</p> <p>40 C.F.R. § 122.23(e) Where manure, litter or process wastewater has been applied in accordance with site specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients, a precipitation-related discharge of manure, litter or process wastewater from land areas under the control of a CAFO is an agricultural storm water discharge.</p> <p>40 C.F.R. § 122.42 (e) All permits must include requirement to develop and implement a nutrient management plan (NMP) with best management practices that ensure adequate storage of manure, litter and process wastewater, ensure proper management of mortalities, ensure that clean water is diverted from production area, prevent direct contact of confined animals with waters, ensure that chemicals and other contaminants are disposed of properly, identify site-specific conservation practices, identify protocols for appropriate testing manure, litter, process wastewater and soil, establish protocols for land application that ensure proper agricultural utilization of nutrients and identify records to document the above requirements.</p> <p>NMP not reviewed or approved by permitting authority.</p> <p>40 C.F.R. § 412.4 Application rates for manure applied to land must minimize phosphorous and nitrogen transport from the field to surface waters in compliance with technical standards for nutrient management set by the state; technical standards shall include field-specific assessment for the potential for run-off; manure sampling once annually and soil sampling once every five years for phosphorous; periodic inspections of land application equipment; and 100 ft setback from conduits to surface waters with option to employ alternatives that achieves same result.</p>

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## Issue

Iowa Construction Permit for  
Confinement Feeding Operations

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IAC 567-65.3 (1)

The operation shall not apply manure in excess of the nitrogen level necessary for optimum crop yields.

IAC 567-65.3 (4)

Recommended practices: manure application on frozen or snow-covered cropland should be avoided where possible and limited to areas where land slopes are 4% or less or adequate erosion measures exist; manure on cropland subject to flooding once every 10 years should be injected or incorporated into soil; unless adequate soil erosion controls exist and manure is injected or incorporated, application should not be within 200ft of a stream or surface tile intake; manure spread on waterways only for the purpose of seedings; manure spread on slopes of greater than 10% should be limited to areas with soil erosion control practices.

IAC 567-65.19

Commercial manure applicators must be certified. Persons who apply manure as an incidental part of employment duties or who are actively engaged in farming activities do not have to be certified.

Note: for violations of manure management plan, facility only subject to penalty

Federal Clean Water Act Permits for CAFOs<sup>1</sup>

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40 C.F.R. § 122.42

NMP is kept on-site and not made publicly available.

Existing sources have until December 2006 to develop and implement a NMP; new sources have to develop and implement NMP by date of permit coverage.

Issue	Iowa Construction Permit for Confinement Feeding Operations	Federal Clean Water Act Permits for CAFOs <sup>1</sup>
What are the recordkeeping requirements?	<p>Iowa Code § 459.312 (12) MMP shall be maintained in sufficient fashion to demonstrate compliance.</p> <p>IAC 567-65.17 (2) Owner must maintain a current copy of MMP</p> <p>IAC 56767.17 (13) Land application records kept on-site so that a copy can be made available to INDR within two working days of a request; records to demonstrate compliance with MMP include methods of application, date manure was applied or sold, location of the field where manure was applied, and the manure application rate.</p>	<p>412.37(b)(c), 412.47(b)(c), 122.42(e)(3) Records kept on site for 5 years and made available to state and EPA Region for review upon request.</p> <p><i>production area:</i> maintain on-site for 5 years a complete copy of information submitted in permit application (required in 122.21(i)(1)); records to document the implementation and management of nutrient management plan (122.42(e)(1)(ix)); records documenting weekly inspections of storm water diversion devices, daily inspection of water lines, and weekly inspections of waste impoundments; weekly records of waste depth in impoundment; records documenting actions to correct deficiencies; records of mortalities management; records documenting design of waste storage structures, records of date, time and volume of overflow.</p> <p><i>land application area:</i> copy of NMP and records to document implementation and management of NMP; expected crop yields; date(s) waste applied to field; weather conditions at time of application and for 24 hours prior to and following application; test methods to sample and analyze manure, litter, process waste water, and soil; results from manure, litter, process waste water, and soil sampling; basis for determining manure application rates; calculations showing total N and P to be applied to each field; total N and P actually applied to field; method used to apply waste; date(s) of manure application equipment inspection.</p> <p><i>Manure Transfer:</i> Large CAFOs must keep for 5 years records of date, recipient name and address, and approximate amount of waste transferred.</p>
What are the reporting requirements?	<p>567 IAC-65.2(9) A person storing, handling, transporting, or land-applying manure who becomes aware of a discharge must notify IDNR within 6 hours after the onset or discovery of the discharge. This rule does not apply to land application of manure in compliance with state rules.</p>	<p>122.42(e)(4)(i)-(vii) Annual report to permitting authority: # and type of animals, whether in open confinement or housed under roof; estimated amount of waste generated by CAFO in previous 12 months; estimated amount of waste transferred to other person by CAFO in previous 12 months; # of acres for land application covered by the nutrient management plan; #acres under control of CAFO that were used for land application of waste in previous 12 months; summary of all waste discharges from the production area in previous 12 months; whether current version of NMP was developed or approved by a certified planner.</p>

Issue	Iowa Construction Permit for Confinement Feeding Operations	Federal Clean Water Act Permits for CAFOs <sup>1</sup>
What access does the public have to information?	<p data-bbox="383 279 878 506">567 IAC-65.10 County publishes notice that a construction permit application (along with MMP) has been received. Notice includes name of applicant, name of township where confinement is to be constructed, each type of structure to be built, the proposed animal unit capacity and the time and place where application can be viewed.</p> <p data-bbox="383 537 878 590">The county <i>may</i> submit its comments and the public's regarding the application to IDNR</p> <p data-bbox="383 621 878 730"><i>See</i> IAC 567-67.17(2) and 67.17(13) The public does not have access to approved MMPs or records regarding land application as they are kept on-site</p>	<p data-bbox="915 279 1422 621">124.10 Public must be given notice of draft permits and at least 30 days to comment. Notice includes name address of office processing application; name and address of permittee; name, address and # of person to contact for copies of application, statement of basis or fact sheet; if EPA-issued the location of the administrative record and times when it can be inspected by the public; a general description of the location of each existing or proposed discharge point and the name of the receiving water.</p> <p data-bbox="915 653 1422 789">For general permits, public only has an opportunity to comment on the draft general permit, but not to weigh-in on decisions related to individual CAFOs applying for coverage under the permit.</p> <p data-bbox="915 821 1422 961">122.23(f)(3) have to notify public of request for no potential to discharge accompanied by fact sheet including description of type of facility, summary of basis for request, and description of procedures for reaching a final decision.</p>

## APPENDIX B

### *Iowa Select Enforcement History<sup>1</sup>*

- 03/15/96: Hamilton County, Arends Sow Site. Order 96-WW-14 (NO PENALTY) issued due to improper land application by contractor resulting in discharge to tile line/unnamed Boone River tributary. Order requires ISF to properly land apply manure and prohibits discharge to water of state. No appeal, but 1SF submitted letter of protest.
- 09/19/97: Hardin County, Gast Finishing Farm. Order 97-WW-26 (\$1,500) issued due to improper land application by manager Gast resulting in small quantity of discharge to tile line but no discharge to receiving stream. On appeal, Order upheld (penalty reduced to \$1,125) by AU but reversed by EPC due to its view that enforcement action was not appropriate in this case.
- 12/12/97: Wright County, Sow Farm #8 (leased DeCoster Sow #1 1). Order 97- WW-46/97-HC-1 1 (\$3,000) issued due to manure discharge caused by severing of manure piping by contractor installing propane line. Manure discharged to tile line and then to unnamed Drainage Ditch 107 tributary. On appeal, Order upheld (penalty reduced to \$2,166).
- 11/05/99: Hamilton County, Hines Finisher Farm. Order 1999-AFO-18 (\$3,000) issued to ISF and manure disposal contractor (by injection) due to manure infiltration (despite compliance with MMP) through soil into tile drainage system resulting in discharge to Keigley Branch. Appeal by ISF and contractor is pending.
- 04/17/00: Clarke County, Sow Unit #20; Ringgold County, Jernquist Nursery. 1999 incidents involving discharge of manure from Sow Unit #20 to Sevenmile Creek and failure to retain manure at Jemquist Nursery referred to Attorney General. Consent Order issued on 3/01/01 for the following violations regarding Sow Unit #20: failure to retain manure; discharge to water of the state; and exceedance of water quality standards; Consent Order assessed penalty of \$12,000.00.
- 02/18/02: Hamilton County, Sow #7 (leased DeCoster Sow 10). Incident involving plugged manure line resulting in manure discharge to tile line and then to South Fork Iowa River, causing a fish kill, referred to Attorney General; petition filed 2/3/2003.
- 05/20/02: Clarke County, Sow 20. Incident involving manure discharge/fish kill in Four Mile Creek, Union County resulting from land application by certified manure applicator, and associated manure management plan violations, not referred to Attorney General; under review by Legal Services for potential administrative enforcement.
- 10/14/02: Hardin County, Stockdale Sow Unit. Order 2002-AFO-32 (\$10,000) issued to ISF due to violations of statutory separation distance to residence and location of facility as provided in construction permit. Appeal by ISF is pending.
- 01/31/03: Hardin County, Swartz Finisher Farm. Order 2003-AFO-Q7 (\$500.00) issued to ISF due to failure to maintain records showing compliance with its manure management plan. Appeal by ISF is pending.

<sup>1</sup> This document was obtained from IDNR staff on December 18, 2003.

## APPENDIX C

### *DeCoster Farms Enforcement History*

- July 1993 Discharge into Iowa River tributary from pit leakage; IDNR Administrative Order—\$3,000 fine.<sup>1</sup>
- March 1993 Discharge into Eagle Creek from improper land application of manure; IDNR Administrative Order – \$3,000 fine.<sup>2</sup>
- 4/28/95 Discharge into Iowa River from improper land application of manure; referred to Attorney General's Office. *See* judgment on 7/8/99.<sup>3</sup>
- 2/26/96 Poultry manure applied to frozen ground which resulted in stream pollution during snowmelt; IDNR Administrative Order—settled as part of Lucas County consent decree. *See* settlement on 6/15/00.<sup>4</sup>
- 5/03/96 Discharge into Iowa River tributaries from hog waste leakage; referred to Attorney General's Office—\$5,000 judgment.<sup>5</sup>
- 11/11/96 Hog manure applied to frozen ground which resulted in discharge to tile lines and Lyons Creek; referred to Attorney General's Office—\$5,000 judgment.<sup>6</sup>
- 2/9/97 Land application runoff to tile lines; referred to Attorney General's Office—\$22,000 penalty in Consent Decree.<sup>7</sup>
- 4/10/97 Hog manure discharge into road ditch. Plugged culvert prevented discharge to tile intake; IDNR Administrative Order—settled as part of Lucas County consent decree. *See* settlement on 6/15/00.<sup>8</sup>
- 4/19/97 Hog manure land application entered tile line and agriculture drainage well; referred to Attorney General's Office—\$3,000 penalty in Consent Decree.<sup>9</sup>
- 4/24/98 Hog manure discharge into Chariton River tributary with impact on the Chariton
- 10/13/99 River; referred to Attorney General's Office—settled as part of Lucas County Consent Decree. *See* settlement on 6/15/00.<sup>10</sup>

<sup>1</sup> IDNR Database of Prohibited Discharges at Iowa Livestock Operations Resulting in Monetary Penalties and/or Restitution for Fish Kill Being Proposed, Collected, or Pending—1992 to Present, August 5, 2003.

<sup>2</sup> *Id.*

<sup>3</sup> *Id.*

<sup>4</sup> *Id.*

<sup>5</sup> *Id.*

<sup>6</sup> *Id.*

<sup>7</sup> *Id.*

<sup>8</sup> *Id.*

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

<sup>10</sup> *Id.*

- 6/2/99 The Attorney General was granted a judgment of \$25,000 against DeCoster Farms in a suit involving three separate liquid hog manure pollution violations in 1997.<sup>11</sup>
- 7/8/99 The Iowa Supreme Court upheld a ruling and a \$59,000 civil penalty against DeCoster Farms. The suit involved numerous water pollution and animal waste violations at three hog facilities in central Iowa in 1995. This case marked the first strike toward “habitual violator” status.<sup>12</sup>
- 3/22/00 The Iowa Supreme Court upheld rulings against DeCoster Farms in two suits involving pollution and waste violations. These suits were the second and third strikes toward “habitual violator” status and imposed a \$20,000 fine.<sup>13</sup>
- 4/24/00 The Attorney General filed suit in Lucas County District Court against DeCoster Farms for two water pollution and hog waste control violations in 1998 and 1999. The violations stemmed from an unreported discharge from a main waste pipe.<sup>14</sup>
- 6/15/00 “Joint Stipulation and Agreement” between DeCoster and Attorney General’s Office—DeCoster was classified as a habitual violator and paid a penalty of \$150,000 for Lucas County cases and others.<sup>15</sup>
- 4/19/01 Discharge into South Fork Iowa River from hog manure lagoon leakage; IDNR Administrative Order—\$2,000 fine, SEP.<sup>16</sup>
- 4/25/01 The Attorney General’s Office sued to enjoin DeCoster Farms from expanding its operations while it was involved in judicial enforcement actions. The Iowa Supreme Court reversed the District Court and granted injunctive relief.<sup>17</sup>

<sup>11</sup> “Court Orders DeCoster Farms to Pay \$25,000 in Penalties,” News Release, Iowa Department of Justice, Attorney General Tom Miller (June 2, 1999).

<sup>12</sup> *State v. DeCoster*, 569 N.W.2d 898 (Iowa 1999); “DeCoster Farms Decision by the Iowa Supreme Court,” News Release, Iowa Department of Justice, Attorney General Tom Miller (July 8, 1999).

<sup>13</sup> *State v. DeCoster*, 608 N.W.2d 785 (Iowa 2000).

<sup>14</sup> “State Sues DeCoster Farms—Environmental Violations Alleged,” News Release, Iowa Attorney General, Tom Miller (April 24, 2000).

<sup>15</sup> “DeCoster to be Classified as First ‘Habitual Violator,’” News Release, Iowa Department of Justice, Attorney General Tom Miller (June 15, 2000).

<sup>16</sup> IDNR Database of Prohibited Discharges.

<sup>17</sup> *State v. Midwest Pork*, 625 N.W.2d 654 (Iowa 2001).

## APPENDIX D

*Environmental Impacts and Penalties for Manure Spills from Livestock Operations*

Year	Total Number of Documented Manure Spills	Number of spills with Documented impact to water	Number of Spills with Documented Fish Kills	Number of Spills with Monetary Penalties (fish restitution or fine)	Total Estimated Number of Fish Killed *	Fish restitution penalties (\$)	Fines for pollution (\$)	Total Monetary Penalties (\$)
1992	9	9	3	8	41,508	3,448.00	22,750.00	26,198.00
1993	13	13	4	10	265,200	10,000.00	29,950.00	39,950.00
1994	6	6	4	6	19,200	4,385.00	9,550.00	13,935.00
1995	20	18	11	15	134,737	26,822.00	85,500.00	112,322.00
1996	20	18	12	15	674,001	48,030.00	28,896.00	76,926.00
1997	33	28	12	29	438,215	53,166.00	98,250.00	151,416.00
1998	34	33	24	28	464,677	72,039.00	183,850.00	255,889.00
1999	40	17	4	16	71,971	9,019.00	44,192.00	53,211.00
2000	17	12	6	12	65,902	459.00	31,500.00	31,959.00
2001	72	37	14	33	158,573	11,963.00	95,004.00	106,967.00
2002	65	27	8	15	286,938	39,055.00	42,550.00	81,605.00
TOTALS	329	218	102	187	2,620,922	\$278,386	\$671,992	\$950,378.00



## APPENDIX E

## Iowa Department of Natural Resources Fish Restitution Values 1992-2003

Company/Owner	Location (County)	Fish Killed	Date	Fish Restitution*	Individual Fish Worth
Ted Diehl	Warren	6,264	Jul-92	\$3,448.00	\$0.55
Tracy Below	Hardin	34,994	Aug-92	\$0.00	\$0.00
Eldon Waller	Jackson	265,000	May-93	\$10,000.00	\$0.04
David Schultz	Clayton	8,397	May-94	\$722.00	\$0.09
Hennings Farms Corp.	Bennington	1,777	May-94	\$1,472.00	\$0.83
Jeff Buch	Jefferson	8,618	May-94	\$2,118.00	\$0.25
Michael Reding	Kossuth	408	Sep-94	\$73.00	\$0.18
Ron Rechkemmer	Fayette	23,416	Jul-95	\$8,155.00	\$0.35
SNB Farms	Hamilton	8,861	Jul-95	\$6,000.00	\$0.68
Thomas Buckley	Howard	16,280	Jul-95	\$1,410.00	\$0.09
Gary Watson	Cerro Gordo	9,002	Sep-95	\$839.00	\$0.09
Postville Pork	Allamakee	60,650	Sep-95	\$10,000.00	\$0.16
Team Pork, Inc.	Sac	4,928	Nov-95	\$418.00	\$0.08
Duane Kerns	Fayette	23,379	Jul-96	\$6,210.00	\$0.27
Bill Hennings	Benton	3,388	Aug-96	\$286.38	\$0.08
Callaway Farms	Hamilton	46,315	Aug-96	\$3,908.00	\$0.08
Myron Meinhart	Cedar	871	Aug-96	\$237.00	\$0.27
Randall Sander	Cedar	3,676	Aug-96	\$408.76	\$0.11
Stickle Farms	Jones	5,670	Aug-96	\$6,979.00	\$1.23
Jeff Pitkin	Winnebago	586,753	Sep-96	\$30,000.00	\$0.05
Northwest Iowa Coop	O'Brien	5,558	May-97	\$470.05	\$0.08
Elsbernd Acres, Inc.	Winneshiek	20,774	Jul-97	\$3,147.00	\$0.15
Trace, Inc.	Howard	109,172	Jul-97	\$30,000.00	\$0.27
A.J. Decoster	Hamilton	3,232	Aug-97	\$264.00	\$0.08
Dean Adrian	Clinton	93,403	Sep-97	\$2,500.00	\$0.03
Theisen Farms, Inc.	Jackson	133,034	Sep-97	\$12,500.00	\$0.09
Robert Butler	Buena Vista	4,194	Oct-97	\$267.50	\$0.06
Tom's Livestock Service.	Cedar	28,134	Oct-97	\$4,000.00	\$0.14
Troy Hanson	Wright	215	Oct-97	\$17.20	\$0.08
John & Alice Vande Harr	Marion	5,000	Mar-98	\$400.00	\$0.08
Farmers Cooperative	Sioux	1,158	Jun-98	\$1,398.32	\$1.21

Company/Owner	Location (County)	Fish Killed	Date	Fish Restitution*	Individual Fish Worth
Bernadette Ryan	Delaware	92,404	Jul-98	\$8,949.94	\$0.10
Don Willaims	Hamilton	93,242	Jul-98	\$8,226.48	\$0.09
James Verdoorn	Sioux	7,978	Jul-98	\$3,554.79	\$0.45
Duane Meyer	Jackson	4,264	Jul-98	\$0.00	\$0.00
Charles Wirtz	Palo Alto	10,997	Aug-98	\$991.35	\$0.09
Dan Gotto & Matt Daly	Dubuque	929	Aug-98	\$60.41	\$0.07
Darwin Eimers/David O'Brien	Bremer	1,483	Aug-98	\$801.64	\$0.54
Gary Frana	Winneshiek	12,417	Aug-98	\$4,094.63	\$0.33
Norman Nietert	Linn	2,699	Aug-98	\$436.26	\$0.16
Peter Bockenstedt	Dubuque	34,326	Aug-98	\$11,877.13	\$0.35
Rick & Steve Breitbach	Chickasaw	11,814	Aug-98	\$1,035.78	\$0.09
Ron Meythaler	Linn	26,481	Aug-98	\$3,217.99	\$0.12
Scott Sannes	Allamakee	1,650	Aug-98	\$0.00	\$0.00
Greig & Co., Inc.	Emmet	75,278	Sep-98	\$22,059.50	\$0.29
Richard Greiner	Washington	38,322	Sep-98	\$3,733.87	\$0.10
Riddel Farms, Inc.	Pocahontas	13,643	Sep-98	\$1,200.45	\$0.09
Robert Fisher	Hamilton	30	Sep-98	\$0.00	\$0.00
Leo Pipper	Guthrie	200	Jun-99	\$0.00	\$0.00
Tom Kronlage	Linn	64,104	Jul-99	\$8,337.68	\$0.13
Nutrient Technologies, LLC	Muscatine	7,547	Oct-99	\$680.97	\$0.09
Charter Oak Ag Supply	Crawford	15	Feb-00	\$0.00	\$0.00
Jerome Kriener	Winneshiek	3,014	May-00	\$655.44	\$0.22
Milk Unlimited, LP	Cass	2,400	May-00	\$279.80	\$0.12
Burco Farms, Inc.	Buchanan	2,129	Aug-00	\$178.64	\$0.08
Harold Murphy & Jason Sieren	Washington	161	Aug-00	\$0.00	\$0.00
Duane Majewski	Butler	24	Aug-00	\$0.00	\$0.00
Ron Dohlman	Howard	61,173	Aug-00	\$0.00	\$0.00
Winding Creek Coop	Lyon	25	Jan-01	\$0.00	\$0.00
Henry Piper, LC	Lee	25	Jun-01	\$0.00	\$0.00
Donald Kurtenbach	Chickasaw	32,769	Jul-01	\$4,486.00	\$0.14
Ray Slach	Cedar	1,891	Aug-01	\$392.16	\$0.21

Company/Owner	Location (County)	Fish Killed	Date	Fish Restitution*	Individual Fish Worth
Einck Dairy/D&J Pumping	Winneshiek	18,674	Sep-01	\$1,686.84	\$0.09
Iowa Select Farms & Southern Waste Handling	Clarke/ Union	10,276	Sep-01	\$955.50	\$0.09
Iowa Select Farms	Hamilton	20,761	Sep-01	\$1,745.64	\$0.08
Jim Christensen	Clay	8,944	Sep-01	\$0.00	\$0.00
Hawkeye Star Farm/ Hoefer Pumping	Black Hawk	6793	Nov-01	\$996.60	\$0.15
Pine Meadows, LLC & Will Axmear	Keokuk	8,308	Nov-01	\$1,149.69	\$0.14
Greig & Co., Inc.	Emmet	33,428	May-02	\$15,000	\$0.45
Dale Winkowitsch	Lyon	10,148	Aug-02	\$1,588.53	\$0.16
Percy Zlystra	Osceola	1,637	Aug-02	\$1,034.05	\$0.63
New Horizons, Inc.	Fayette	12,724	Sep-02	\$1,352.39	\$0.11
Jim Christensen	Clay	8,988	Sep-02	\$0.00	\$0.00
New London Dairy, LLC & Steve Walter	Henry	123,498	Dec-02	\$20,079.60	\$0.16
Richard Bockenstedt	Delaware	27	May-03	\$2827.79	\$97.51
<b>TOTALS:</b>		<b>2,390,161</b>		<b>\$281,535.68</b>	<b>\$0.12 each</b>

The above table does not represent all fish kills caused by manure spills. It only includes fish kills caused by manure spills where the responsible party was identified and an estimate of the number of fish killed was reported by IDNR.

- \* Fish restitution includes damages paid by the responsible party based on the monetary value of the fish killed. Starting in August 2002 some fish restitution penalties also include an assessment for the investigation costs and the value of lost services to the public such as lost fishing trips.



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