

ILLINOIS POLLUTION CONTROL BOARD  
February 7, 1991

IN THE MATTER OF: )  
 )  
AMENDMENTS TO 35 ILL. ADM. CODE 501 ) R90-7  
AGRICULTURE-RELATED POLLUTION ) (Rulemaking)  
(MANAGEMENT OF LIVESTOCK WASTES) )

Proposed Rule                      First Notice

OPINION AND ORDER OF THE BOARD (by R.C. Flemal):

This matter comes before the Board upon a regulatory proposal filed on January 29, 1990 by the Illinois Environmental Protection Agency ("Agency"). The Agency's proposal contains certain recommended amendments to the Board's regulations for livestock waste management and handling facilities found at 35 Ill. Adm. Code 501.

In response to a request from the Illinois Farm Bureau, hearings on the proposal were held at various times and locations around the State in order to accommodate the working farmer. Dates and places were: August 14 (DeKalb), August 15 (Stockton), August 20 (Effingham), August 21 (Carterville), August 23 (Jacksonville), and August 24 (Galesburg). The hearings were well attended; representatives from the Agency, various farm organizations, and members of the public testified. The post-hearing comment period expired October 1, 1990; 41 public comments were received.

Today the Board sends the proposed amendments with changes to First Notice.

OVERVIEW

If adopted, today's proposal would amend existing Board regulations pertaining to Agriculture Related Pollution found at 35 Ill. Adm. Code: Subtitle E, Part 501.

The proposal would modify existing regulatory provisions dealing with the siting of new livestock management facilities, and livestock waste-handling facilities. New livestock management facilities and waste-handling facilities would be prohibited from locating within 1/2 mile of a populated area or within 1/4 mile of a non-farm residence, unless located within a designated Agricultural Area. Where new sitings are otherwise allowed, they would be required to locate at the maximum feasible distance from residences or populated areas.

The proposal would also allow for more liberal use of vegetative filter strips for the treatment of livestock waste generated at small- to medium-sized facilities.

The proposal would further establish requirements for the field application of livestock wastes. Operators would be required to practice field application procedures in such manner as to not cause air pollution.

#### HISTORY OF THE PROPOSAL

The development of this proposal relates back to November, 1986, when, after a midcourse review of livestock waste management program policies and procedures, the Agency sent its initial draft of the proposal to various agricultural and environmental organizations. Continuing through 1988 and 1989, the Agency met with agricultural, environmental, and producer groups and further developed the proposal. In March and April, 1989, the Agency conducted public information meetings on a third draft of the proposal. Subsequent to these meetings, the Agency made additional modifications to the proposed amendments, then submitted the proposal to the Board (Agency Statement of Reasons at 2-4.)

In general, the Agency is proposing these amendments to address perceived ambiguity with certain terms within the current regulations. As the Agency states:

The current regulations provide that new facilities shall not be located in 'close proximity' to 'populated areas' so as to cause air pollution ... The ambiguity of these regulations results in differing interpretations between producers and respective affected parties concerning the meaning of 'close proximity' and 'populated area'. Which manure application situations necessitate incorporation or injection is equally obscure. The practical effect of this is to allow the creation and perpetuation of alleged odor nuisances. (Id. at 5).

The Agency further states that it conducts between 60 and 70 odor complaint investigations per year involving land application of livestock waste and the siting of animal confinement operations near residences. The Agency believes that the subjective nature of these complaints makes the investigation of these complaints time consuming and less productive than dealing with other types of pollution incidents (Id.).

The Agency also included amendments designed to encourage the use of runoff field application systems (vegetative filters) by small operators (less than 300 animal units).

The Board next turns to a discussion of the amendments by section, with reasons and changes with respect to the Agency's proposal as noted.

DISCUSSION OF PROPOSED AMENDMENTS

Section 501.102      Policy

The proposed amendment to Section 501.102 consists of an additional policy statement to be added as subsection (d). This new subsection specifies that livestock waste odor is a potential source of air pollution, but that the mere detection of odor does not constitute air pollution per se.

The new subsection is today proposed essentially in the form proposed by the Agency. An exception is that the statutory language found at the end of the first sentence has been placed in capital letters and citation to the statutory language has been added at the end to the first sentence.

Section 501.200      Incorporations by Reference

Section 501.200 is a new section added due to the need to incorporate references to American Society of Agricultural Engineers ("ASAE") documents made in Section 501.405. The section is structured in such manner as to allow for the addition of any future incorporations by reference.

Section 501.246      "Expansion" Definition

Section 501.246 defines the term "expansion" as used within today's overall proposal, and specifically with respect to the term "new facility" found at Section 501.330. As the Agency notes, the concept employed in this definition of expansion is derived from the definition of a "new potential secondary source" found at Section 3.60 of the Illinois Environmental Protection Act (Ill. Rev. Stat. 1989 Ch. 111 1/2, par. 1003.6). The Agency further notes:

Defining expansion as such covers those situations where a facility undergoes such enormous growth that it has an effect on the surrounding population comparable to that of an entirely new facility. This [definition] attempts to strike a balance between the rights of the producer to pursue the growth of his business and the rights of an established population to be free from unreasonable additional air pollution. (R. at 36-7).

Section 501.248      "Farm Residence" Definition  
Section 501.342      "Non-Farm Residence" Definition  
Section 501.356      "Populated Area" Definition

Sections 501.248, 501.342, and 501.356 each present new definitions relating to type of occupancy. Their general purpose is to identify types of residences and areas to which different types of livestock waste regulations are intended to apply.

For the purposes of today's First Notice, the definitions are proposed as recommended by the Agency, except for a deletion in the definition of populated area, as noted below. Nevertheless, the Board has reservations about the wisdom of some of the intended applications of the definitions. If these applications are unwise, then the definitions themselves may be unnecessary or inappropriate.

For example, the Board questions whether it is appropriate to distinguish between farm and non-farm residences for the purposes of the restrictions on the siting of new livestock facilities of Section 501.402<sup>1</sup>. Under the system as proposed by the Agency, a new facility may not be located within 1/4 mile of a non-farm residence or 1/2 mile of a populated area. The rationale which the Agency offers for the distinction between farm and non-farm residence for the purpose of facility location, is that such setback would protect the rights of persons not engaged in farming activities while at the same time "allow farmers to farm in farming territory". The Agency also contends that inhabitants of farm residences are generally more tolerant of farm generated odors, since their livelihoods may create similar odors (R. at 37). Many witnesses and commenters also expressed this view (e.g., R. at 235-9, 367-8).

While the Board accepts this rationale for the purpose of today's First Notice, it does note that this position is not universally held. Some farmers at least do consider that the operation of neighboring farms generate unacceptable odors (e.g., R. at 645, 719-20, 764; PC#25). It is to be further noted that "An Assessment of Separation Distances as a Tool for Reducing Farm/Neighbor Conflict" (Exh. 26), a study conducted in British Columbia, indicated no distinction between farm and non-farm residents in assessing neighbors' perceptions of certain farms as nuisances. The study indicated that the actual determining factors were the distance from the neighboring residence and whether or not the farm could be seen from the neighboring residence (Id.) Therefore, the Board questions whether the distinction between farm and non-farm residences is an appropriate one, as it would apply to the setback zones of Section 501.402. The Board specifically requests additional comment on this issue.

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<sup>1</sup> It is to be noted that in the Agency's proposal and today's action, the distinction between farm and non-farm residences is only applied in Section 501.402, not in Section 501.405, covering field application of livestock waste.

The Agency submitted documents which indicate that the definition of populated area was discussed with farm organizations, and believes that the numbers are a reasonable compromise, especially considering how subdivisions in rural areas are usually established (See R. at 39). The Board deletes "are affected or potentially affected by livestock produced odors" from the definition of "populated area" as this would be unnecessary as the definition applies to "any area".

Section 501.274                    "Liquid Livestock Waste" Definition  
Section 501.372                    "Supernatant" Definition

Sections 501.274 and 501.372 introduce new definitions necessary to support the amendments proposed at Section 501.405 (see below). The terms are as proposed by the Agency.

The Agency had proposed a definition for "solid waste" found at the Agency's proposed Section 501.368. However, the term is not used in today's First Notice proposal, and hence the definition has been deleted.

Section 501.317                    "Maximum Feasible Location" Definition

Section 501.317 proposes a definition for the term "maximum feasible location" as this term is used in proposed Section 501.402(e) and (f). As today proposed, the definition is modified from that originally proposed by the Agency, in accord with the Agency's revised recommendation (PC #29, p. 4-5). The Agency's revised recommendation is based on discussion at hearing indicating that there was some confusion regarding the term as originally proposed by the Agency, especially regarding the siting of a facility in relation to an operator's own residence. The Board agrees that the concept contained in this definition and Section 501.402(e) is useful. This is discussed more fully below in the discussion of subsections 501.402(e) and (f).

Section 501.330                    "New Facility" Definition

The Agency's proposed amendment to the definition of new facility at Section 501.330 has been altered to eliminate the possibility of prospective application of the amendment as drafted by the Agency. The mere addition of the term expansion to the current definition could mean that any facility which expanded after January 1, 1978 (the effective date of the Chapter), would be considered a new facility. The Board believes that this would lead to an unworkable result which it believes was not the intent of the Agency. Therefore, the Board separates the addition of expansion to the definition of new facility with an effective date of July 1, 1991. Should final adoption of these amendments occur after that date, the date will be changed to a date which would coincide with the effective date of the amendments.

Section 501.402            Location of New Livestock Management  
Facilities and New Livestock Waste-Handling  
Facilities

The proposed amendment to Section 501.402 addresses one of the principal goals of today's action. That goal is to provide greater specificity to the existing prohibition against siting of new livestock management facilities "in close proximity to populated areas so as to cause air pollution". Today's proposal, which directly tracks the Agency's proposal, achieves this goal by providing a quantified limitation on the siting of new facilities "within 1/2 mile of a populated area or within 1/4 mile of a non-farm residence". However, today's proposal provides for an exception from this distance limitation for facilities which are reopened even though they may have been idle for as many as ten years<sup>2</sup>, for facilities located within an Agricultural Area as that term is defined in the Agricultural Areas Conservation and Protection Act, and for facilities which have priority of location with respect to non-farm residences or populated areas.

One of the issues most commonly addressed during the Board hearings involved the reasonableness of the 1/2 mile and 1/4 mile setback distances of this Section. In support of its choice of the setback distances the Agency points to ASAE Engineering Practice which states:

Locate a livestock operation at a reasonable distance from residential areas, places of employment, institutions, and other areas frequented by persons other than the operators of the animal enterprise. Although distances have not been established beyond which complaints are invalid, it is desirable to locate the livestock or poultry feeding facility 1600 m (1 mile) from housing developments and 400-800 m (1/4 to 1/2 mile) from neighboring residences. Wind direction and velocity, humidity, topography, temperature, and unique meteorological conditions (such as inversions) affect odor transport and detection. (Exh. 14)

The Agency also presented Midwest Plan Service's "Livestock Waste Facilities Handbook MWPS-18", which states:

First, select a site where odors will create fewest problems. Locate at least 1/2 mile away from neighboring houses and at least 500 feet away from the

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<sup>2</sup> At hearing, the Agency deleted from their proposal the requirement that a facility be operated for "four consecutive months" during the 10-year period in order for the facility to not be considered a new facility for purposes of subsection (c) (R. at 48). Today's proposal incorporates this modification.

farm residence; locate larger operations even farther away. (Exh. 17)

Also cited is the Pork Industry Handbook fact sheet PIH-33 "Controlling Odors from Swine Buildings":

There is a general relationship between the perception of odor nuisance, separation distance, and size of swine production facility. For facilities of 1,000 or fewer animals the incidence of odor complaints is noticeably reduced beyond one-quarter mile. For larger units, separation distances of approximately a half mile are necessary for adequate protection. (Exh. 18)

In evaluating these recommended distances, the Agency has consistently advocated the 1/2 mile and 1/4 mile distances recommended by ASAE (see Exh. 14). Although some may have recommended greater setback distances, the Agency believes that due to the density of inhabited residences in Illinois, compliance with greater distances would not be feasible for facility siting (R. at 47; See also Exh. 29).

The record discloses that a few participants recommended lesser setback distances, or no setbacks at all. At hearing management practices for facilities which would obviate the need for setback distances were also discussed (R. at 468, 478-80). The Agency concluded that management practices which were discussed previously with the Agency were not practical or feasible in most situations (R. at 481). Based on the record in this proceeding to date, the Board concludes that the 1/4 mile and 1/2 mile setbacks for facility siting seem reasonable and technically feasible as a standard for control of odor, especially in light of the exceptions today specified. While some operators may have difficulty siting some facilities in some areas (R. at 560-565), the exceptions may be useful in this regard. The Board encourages further comment on this matter.

The Board believes that the exception for facilities located within Agricultural Areas found at Section 501.402(d)(1) is consistent with the policy statements contained in the Agricultural Areas Conservation and Protection Act to the degree that Act makes it a policy for "all state agencies to encourage the maintenance of viable farming in agricultural areas" and to modify regulations to this end so long as the modifications would be consistent with public health and safety and with federal statutes and regulations (Ill. Rev. Stat. 1989 Ch. 5, par. 1019.; Exh. 32).

The Board also believes subsection (d)(2) providing exemption for priority of location for expanding facilities is meritorious as it would protect those expanding operations from nuisance actions where residential areas are encroaching upon the operation. The requirement that the facility be in operation for

at least one year prior to expansion was questioned at hearing (R. at 471). However, the Board believes the one year period is reasonable to indicate actual establishment of the particular type of farming operation. Furthermore, the one year period is also consistent with language included in what the Agency referred to as the "Illinois Right to Farm Law" (R. at 473). That act, also entitled "Protection of Farming Operations From Nuisance Suits" states in part:

Changed conditions - Negligent operation

No farm or any of its appurtenances shall be or become a private or public nuisance because of any changed conditions in the surrounding area occurring *after the farm has been in operation for more than one year*, when such farm was not a nuisance at the time it began operation, provided, that the provisions of this Section shall not apply whenever a nuisance results from the negligent or improper operation of any farm or its appurtenances. (Exh. 33, emphasis added)

In its post-hearing comments (PC #29), the Agency also advocated addition of subsection (d)(3), a third exemption for areas where local zoning has been established and agricultural facilities have been approved (*Id.* p. 3). This type of exemption which allows for local zoning approval of livestock management and waste handling facilities was also advocated at hearing by the Champaign County Farm Bureau (R. at 487-94) and by the Horsemen's Council of Illinois ("HCI") (R. at 254).

At hearing, HCI also presented the alternative that horses should not be considered livestock and thereby be exempt from regulation (R. at 250-3). However, this alternative would not be feasible because, as the Agency points out, the definition of livestock management facility includes animal feeding operations, which term was amended to be consistent with the federal National Pollutant Discharge Elimination System (NPDES) (Agency Comments, PC #29 p. 3).

For the purposes of this First Notice the Board retains the Agency's proposed subsection (d)(3), because it believes an exemption for local zoning which allows livestock management facilities is meritorious, and that the "recreational or backyard horse owner" as described in the record (R. at 254 and HCI Comments PC #41), would come under this exemption. However, the Board questions whether the language the Agency suggests accomplishes this desired result and specifically requests affected persons to comment on the addition, and to provide alternate language if believed necessary.

Subsection (e) states that new livestock management or waste-handling facilities which locate within 1/4 mile of a farm residence must locate that facility at the maximum feasible



location from that residence. Maximum feasible location is defined in Section 501.317 and discussed above. Likewise, subsection (f) provides that a new facility which locates within the setback zones pursuant to one of the exemptions of subsection (d) shall locate at the maximum feasible location from the residence or populated area. The purpose of subsections (e) and (f) is to assure that producers consider the interests of neighbors, especially when allowed to locate within the 1/4 to 1/2 mile setbacks. A further advantage would be to allow for minimization of odor transport to neighboring residences, and therefore decrease the likelihood of odor complaints even where facilities are located outside the setbacks. Therefore, farmers would have greater assurance that neighbors would be minimally affected and therefore less likely to have cause for a nuisance action.

Another prospective exemption discussed at hearing was the possibility of a cut-off number being established below which only general prohibitions against pollution would apply (R. at 513). In comments, the Agency points out that their 1985-1989 records indicate 41% of odor pollution problems encountered by Agency personnel which were related to feedlot location were attributable to small feedlot operations, and 64% of manure stack odor problems were associated with small facilities (Agency Comments PC #29; See also, Exh. 28). The Board declines to add an exemption based on number of animals at this time.

#### Section 501.404      Handling and Storage of Livestock Waste

The proposed amendments to Section 501.404 are designed to accommodate specific and somewhat minor waste handling problems. The proposed amendments add subsection (d) which allows the use of runoff field application systems (also known as "vegetative filters") for livestock management facilities with fewer than 300 animal units<sup>3</sup>. The vegetative filters would be operated in accordance with Agency's "Design and Maintenance Criteria Regarding Runoff Field Application Systems" found at 35 Ill. Adm. Code 570. Section 501.404(e) exempts facilities with 50 or fewer animal units from the handling and storage requirements imposed on larger facilities in Section 501.404(a) through (c), provided that the smaller facilities can prevent actual and threatened discharges of livestock waste to waters of the State.

The Agency's reasons for including the subsection (d) amendments is in recognition that vegetative filters, if properly designed and operated, can effectively treat waste produced by smaller facilities and can be less expensive to build and maintain than other treatment methods (R. at 50). At hearing, a question was raised on whether an operator who handled more than

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<sup>3</sup>"Animal unit" is defined in Section 501.230 of the existing Board regulations.

300 animal units could use a vegetative filter on part of the operation, if the operator used the vegetative filter for less than 300 animal units. As was discussed, the design criteria for vegetative filters recommend less than 300 animal units (R. at 656-9; 35 Ill. Adm. Code 570). The Board notes that at hearing Mr. A. G. Taylor, Agricultural Advisor for the Agency, stated that he did not see any reason why an operator who used a vegetative filter system for less than 300 animal units, but used other systems for additional animal units would not be allowed to do so (R. at 659). Yet in the comments, the Agency affirms its position that Section 501.404 was included to afford small operators the option of using vegetative filters. Therefore, although the Board has included the amendments as proposed by the Agency, the Board requests comment on the possibility of applying the 300 animal unit limitation to the treatment of wastes from the animals, rather than to a single facility, as for example in the following possible language:

Any livestock management facility may construct and operate a runoff field application system for the treatment of livestock waste from fewer than 300 animal units, meeting the requirements of 35 Ill. Adm. Code 570, in lieu of utilizing liquid manure-holding tanks, holding ponds, or lagoons in compliance with subsection (c), or other livestock waste-handling systems which would assure compliance with the Act and (35 Ill. Adm Code.Subtitle E ).

Perhaps such language would make it clear that larger operators may use the system for fewer than 300 animal units only<sup>4</sup>. However, comment is also requested on the consistency such language would have with the design criteria of Section 501.570.

The only change made by the Board to Section 501.404 is the substitution in the last sentence of the citation to 35 Ill. Adm. Code:Subtitle E, rather than the terms "these regulations". This is done to provide greater specificity and to comply with codification requirements.

The Agency included the subsection (e) amendments in their proposal because:

... in the course of developing the proposed amendments, the agricultural interest groups requested that this provision be included in order to allow Future Farmers of America (FFA) and 4-H type projects

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<sup>4</sup>The question also arises as to whether an operator of a large facility can divide the operation into segments and use more than one vegetative filter system, so long as each system is used for less than 300 animal units.

to be conducted without having to implement expensive pollution control measures. The agricultural interest groups' estimate of the number of livestock involved in such projects was 50 animal units or less. (R. at 51)

Virtually nothing more was discussed regarding these subsection (e) amendments. The Board only added a reference to Section 12 of the Act, in subsections (e)(1), (2), and (3), and added the word "and" after subsection (e)(2). The language is otherwise that as proposed by the Agency.

On the whole, the Board finds the amendments to Section 501.404 meritorious and would have a positive economic effect for smaller facilities.

Section 501.405      Field Application of Livestock Waste

The proposed amendments to Section 501.405 are intended to regulate the field application of livestock waste in such manner as to reduce the potential for odor problems. Finding quite the correct way to achieve this end has, however, been most vexing, as is well witnessed by the extensive discussion and debate generated by this topic (e.g., R. at 195-241, 303-421, 482-6, 493-523, 579-605, 641-683, 750-771). In part the problems stems from the fact that the practice of field application of livestock wastes is in most instances economically and environmentally sound, and often even essential, at one and the same time that the odors it causes may be aesthetically objectionable and may constitute valid grounds for the bringing of a nuisance action.

Moreover, how objectionable odors deriving from field-applied livestock waste may be varies greatly from person to person. Much has been said in this record about the different perceptions of livestock odors held by rural versus city residents. While we believe that this distinction is not as rigid as some may suggest (see discussion of Section 501.248, above), it is inescapable that in some communities of people the practice of field application of livestock waste is a socially acceptable, vital activity, whereas in other communities it constitutes an unacceptable intrusion into the enjoyment of life. One need look no further that the long history of application of livestock waste to land versus the number of complaints received by the Agency and others (See testimony of Agency field staff, R. at 95-158; Exhs. 42-52 and R. at 584-589.). Our dilemma is to retain the maximum benefit for the community in which the practice is acceptable, and to reduce to a minimum the nuisance imposed on the community in which the practice is unacceptable.

Throughout the proceeding, persons presented suggested revisions to the Agency proposal, and others advocated deletion of this section from the proposal. In its comments, the Agency, in response to some of the issues raised at hearing, submitted major revisions to the language originally proposed for this

section by the Agency (See PC #29 p.2-3). In today's action, the Board declines to adopt this portion of the Agency's proposal, instead proposing other language, as described below.

In the Agency's proposal as revised, Section 501.405(b) through (e) prohibits, except under certain circumstances, the surface application of liquid livestock waste within 1/4 mile of a neighboring inhabited residence. The section allows liquid waste to be land applied within the 1/4 mile setback if the waste is injected or incorporated within 24 hours of application. The circumstances under which the exceptions apply include application on snow covered or frozen ground, and the only land available to the producer if application is within the 1/4 mile setback. In addition, the Agency would allow supernatant from livestock wastes stored in a lagoon system to be applied within the 1/4 mile setback without incorporation if the lagoon system was designed and operated according to certain ASAE recommendations (Exh. 59), and the wind direction is such that the wind would not carry odors or drift to neighboring inhabited residences. Also, subsection (e) would prohibit the surface application of solid livestock waste within the 1/4 mile setback without incorporation when wind direction would convey odors to neighboring inhabited residences (PC #29 p. 2-3).

The Board believes that the proposed requirements of Section 501.405(b) through (e), even as revised by the Agency in PC #29, would place an undue economic burden on the farming community with little gain for those possibly affected by the livestock odors. In many instances, such amendments would be technically infeasible as well. As can be seen in the record, it is doubtful whether farmers could consistently comply with the requirements of incorporation of livestock waste within 1/4 mile of inhabited neighboring residences. The resulting rule could easily become an unenforceable paper-law. Moreover, it is questionable whether such regulation is necessary to prevent odor pollution in many instances, i.e, that application within 1/4 mile may not be objectionable for many residents. Also, where there are odor problems, the amendments as proposed by the Agency may not help curb the number of complaints or lawsuits, as desired by the Agency. Such reduction in complaints is at best, speculative.

One of the main objections to the Agency proposed amendments to Section 501.405 was the difficulty and, in some cases, inability of farmers to incorporate waste into land after application where the land contains growing crops which would be destroyed or damaged (R. at 199, 518; DOA PC #33), and furthermore, where the land is highly erodible and is enrolled in the soil conservation ASCS program (R. at 382-5, 377, 391-2, 493, 657). Such conservation programs many times require no-till practices or certain amounts of crop residue to remain in the fields (IFB PC #28 Attachment A). The only solution the Agency offered was storage of the wastes or location of other suitable fields (Statement of Reasons at 14). It was brought out that

storage would result in other problems, including increased odor and costs, and in many instances, particularly for smaller operators, additional land may not be available (R. at 331-4, 344-8, 353-7, 377).

The Board believes that a regulation which offers assistance to farmers in making determinations in their individual situations would offer the best solution here. Accordingly, the Board's proposed amendments begins with a general requirement to use odor control methods during the course of field application within 1/4 mile of neighboring residences, so as not to cause air pollution (Section 501.405(b)). It is important to note that the relationship between air pollution and the operation of livestock management facilities is discussed in Section 501.102. The reference to Section 501.102 is included to ensure that the policy statement will be considered in application of this Section 501.405(b) since the policy statement recognizes that waste-handling can cause odors which can cause air pollution, but that detection of odor does not per se constitute air pollution. The Board requests comment as to whether this intent is sufficiently clear in today's draft amendments.

The Board considers incorporation of livestock waste a good method of odor control. Nevertheless, the record discloses that incorporation of wastes is not the only method of odor control, but rather one method in a series of possible options, some of which can be used alone or in combination with other methods to achieve odor control (R. at 518), and as noted in the ASAE document on odor control:

4.1.10 Land application is the primary method of animal waste management and is an integral part of nearly every manure handling system. Odors can be reduced by using the following land application procedures for liquid or solid manure:

4.1.10.1 Spread or apply manure within 4 days of excretion if possible to reduce time in anaerobic storage.

4.1.10.2 Avoid spreading when the wind would blow odors toward populated areas or nearby residences or businesses.

4.1.10.3 Avoid spreading or applying manure immediately before weekends and holidays when people are likely to be engaged in nearby outdoor and recreational activities.

4.1.10.4 Avoid spreading near heavily traveled highways.

4.1.10.5 Spread or apply manure in morning when air is warming and rising rather than in the late afternoon.

4.1.10.6 Use available weather information to best advantage. Turbulent breezes will dissipate and dilute odors. Rain will remove the odors from the atmosphere.

4.1.10.7 If possible, incorporate manure into the soil during or immediately after application. This can be done by 1) soil injection or 2) plowing or disking the soil during or after application. These practices not only minimize the spreading of odor but also preserve nutrients and reduce water pollution potential.

4.1.10.8 Apply manure uniformly and in a layer thin enough to insure drying in less than 5 days or less and to prevent fly propagation in warm weather. (Exh. 14)

In addition, incorporation may not be needed in every circumstance to control the odor. This fact became evident in testimony presented by the Illinois Pork Producers and Dr. Arthur Muehling who advocated an exception allowing for the use of irrigation of certain lagoon treated wastes which emit less odor (R. at 484-6). Also, the distinction between odor from solid livestock waste and liquid livestock waste and the effect of certain climatic conditions on odor were brought out by the Illinois Farm Bureau (R. at 195-206). The Agency elected to handle these situations by using exceptions to a general incorporation requirement (See PC# 29 at 2-3). The Board chooses to use these as examples of how to handle certain odor problems. Therefore, rather than using the term "adequate" to describe types of odor control methods, examples of odor control methods, as well as references to ASAE material presented at hearing (Exh. 59 and 14), are included in subsection (b)(1-4)<sup>5</sup>. Also, the Board does not think it is necessary to distinguish between solid and liquid manure for the purposes of this proposed amendment, since operators would have the choice, depending on their particular operation, of which odor control method or methods to use.

In conclusion, the amendments to Section 501.405 are drafted in a manner which would require the use of odor control methods within 1/4 mile of neighboring inhabited residences, while allowing operators the most flexibility in choosing which odor

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<sup>5</sup> Terms such as "adequate" are usually not favored among the Joint Committee on Administrative Rules, unless examples are given.

control method suits the individual situation. Where no odor problem is likely to exist, minimal odor control could be practiced. Where a definite odor problem may exist, an operator could determine which odor control method is best, and may end up using incorporation as offering the most control. As was noted in the record, many operators wish to be "good neighbors", and are already practicing odor control methods (See R. at 330-331, 578-9). The Board believes that this type of rule, rather than a series of exceptions to a requirement of incorporation of wastes, would better serve rural residents, farm and non-farm alike.

This proposed Opinion supports the following Order and proposed amendments.

ORDER

The Board hereby proposes for First Notice the following additions to 35 Ill. Adm. Code 501. The Clerk of the Board is directed to file these proposed amendments and rules with the Secretary of State.

TITLE 35: ENVIRONMENTAL PROTECTION

SUBTITLE E: AGRICULTURE RELATED POLLUTION

PART 501  
GENERAL PROVISIONS

SUBPART A: AUTHORITY AND POLICY

Section  
501.101 Authority  
501.102 Policy

SUBPART B: DEFINITIONS AND INCORPORATIONS

Section  
501.200 Incorporations by Reference  
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501.205 Act  
501.210 Administrator  
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501.245 Existing Livestock Management Facility and Livestock  
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- 501.325 Navigable Waters
- 501.330 New Livestock Management Facility and New Livestock Waste-Handling Facility
- 501.335 NPDES
- 501.340 NPDES Permit
- 501.342 Non-farm Residence
- 501.345 Owner or Operator
- 501.350 Person
- 501.355 Pollutant
- 501.356 Populated Area
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- 501.375 Temporary Manure Stack
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SUBPART C: OPERATIONAL RULES

Section

- 501.401 General Criteria
- 501.402 Location of New Livestock Management Facilities and New Livestock Waste-Handling Facilities
- 501.403 Protection of Livestock Management Facilities and Livestock Waste-Handling Facilities
- 501.404 Handling and Storage of Livestock Waste
- 501.405 Field Application of Livestock Waste
- 501.406 Inspections and Disease Prevention

Appendix A: References to Previous Rules

AUTHORITY: Implementing Sections 9, 12, 18, 21, and 22 of the Environmental Protection Act (Ill. Rev. Stat. 1989, ch. 111 1/2, pars. 1009, 1012, 1013, 1021 and 1022) and authorized by Section 27 of the Environmental Protection Act (Ill. Rev. Stat. 1989, ch. 111 1/2, par. 1027).

SOURCE: Filed and effective January 1, 1978; amended 2 Ill. Reg. 44, p. 137, effective October 30, 1978; codified at 7 Ill. Reg. 10592; amended at \_\_\_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_.

SUBPART A: AUTHORITY AND POLICY

Section 501.102 Policy

- a) It is the purpose of the General Assembly in adopting the Environmental Protection Act to restore, maintain and enhance the purity of the air and waters of Illinois in order to protect health, welfare, property and the quality of life. An adequate supply of healthy livestock is essential to the well-being of Illinois citizens and the nation. They provide the daily source of meat, milk, and eggs. Their efficient, economic production must be the concern of both producers and consumers if we are to have a continued abundance of high quality, wholesome food and of other livestock products at reasonable prices. The policy shall be to establish regulations that will provide a balance between a wholesome environment and the efficient production of adequate livestock products.
- b) Livestock produce wastes which, when properly used, supply nutrients and organic matter to soils. The mere presence of livestock waste in a given location does not denote pollution, but may, when improperly stored, transported or disposed of, undesirably affect the environment.
- c) It is hereby determined that the construction, establishment and operation of certain livestock management facilities and livestock waste-handling facilities without environmental planning and safeguards or the use of certain livestock wastes for agricultural purposes causes, threatens or allows the discharge of contaminants into the air or waters of Illinois so as to cause or threaten to cause pollution or to render such waters harmful to public health, safety or welfare or to domestic, commercial, industrial, agricultural and recreational uses or to man, livestock, wild animals, birds or fish or other aquatic life.
- d) It is hereby determined that the construction, establishment and operation of livestock management facilities and livestock waste-handling facilities without environmental planning and safeguards or the use of livestock wastes for agricultural purposes causes, threatens or allows air pollution, THE DISCHARGE OF CONTAMINANTS INTO THE AIR OF ILLINOIS IN SUFFICIENT QUANTITIES AND OF SUCH CHARACTERISTICS AND DURATION AS TO BE INJURIOUS TO HUMAN, PLANT OR ANIMAL LIFE, TO HEALTH, OR TO PROPERTY, OR TO UNREASONABLY INTERFERE WITH THE ENJOYMENT OF LIFE OR PROPERTY. (Ill. Rev. Stat. ch. 111 1/2 par. 1003.2) It is recognized

that the presence of odor is an inherent characteristic of livestock management facilities and livestock waste-handling facilities, and that the detection of such odor does not per se constitute air pollution.

- d)e) It is the purpose of this Chapter to prevent pollution of the air and waters of Illinois caused by failure to plan with regard to proper environmental safeguards the construction, location and operation of certain livestock management facilities and livestock waste-handling facilities. A permit system is established to ensure that such activities take account of environmental considerations and to meet the requirements for federal approval, as established by the CWA. It is also the purpose of these regulations to prevent pollution from the numerous point and non-point discharges, both continuous and fluctuating, which are present in certain livestock management facilities or livestock waste-handling facilities. To this end, procedural safeguards are required, in addition to compliance with the CWA, NPDES filing requirements and the feedlot category of point source effluent guidelines.

(Source: Amended at \_\_\_\_ Ill. Reg. \_\_\_\_, effective \_\_\_\_\_).

#### SUBPART B: DEFINITIONS AND INCORPORATIONS

##### Section 501.200

- a) The Board incorporates the following material by reference:

ASAE. Available from American Society of Agricultural Engineers, 2950 Niles Road, St. Joseph, MI 49085-9659 (616-429-0300).

"Design of Anaerobic Lagoons for Animal Waste Management," ASAE EP403.1 (March 1990).

"Control of Manure Odors," ASAE EP379.1 (December 1986).

- b) This Section incorporates no later editions or amendments.

(Source: Added at \_\_\_\_ Ill. Reg. \_\_\_\_, effective \_\_\_\_\_).

##### Section 501.246      Expansion

Commencement of construction at a livestock management facility or livestock waste-handling facility where the fixed capital cost of the new components constructed within a 2-year period exceeds

50% of the fixed capital cost of a comparable entirely new facility.

(Source: Added at \_\_\_\_ Ill. Reg. \_\_\_\_, effective \_\_\_\_).

Section 501.248 Farm Residence

Any residence on a farm occupied by the farm owners, operators, tenants or seasonal or year-round hired workers. For purposes of this definition, a "farm" is the land, buildings, and machinery used in the commercial production of farm products, and "farm products" are those plants and animals and their products which are produced or raised for commercial purposes and include but are not limited to forages and sod crops, grains and feed crops, dairy and dairy products, poultry and poultry products, livestock, fruits, vegetables, flowers, seeds, grasses, trees, fish, honey and other similar products, or any other plant, animal, or plant or animal product which supplies people with food, feed, fiber, or fur.

(Source: Added at \_\_\_\_ Ill. Reg. \_\_\_\_, effective \_\_\_\_).

Section 501.274 Liquid Livestock Waste

Livestock waste which can be spread with a conventional liquid manure spreader. This includes pit manures, lagoon manures, holding pond or tank manures, and any other livestock waste consisting of less than 20% solids concentration.

(Source: Added at \_\_\_\_ Ill. Reg. \_\_\_\_, effective \_\_\_\_).

Section 501.317 Maximum Feasible Location

Any location for the establishment of a new livestock management facility or new livestock waste-handling facility where one of the following conditions exist:

- a) The site is located closer to the livestock owner's or operator's residence than to a neighboring residence or populated area; or
- b) The site is adjacent to an existing livestock management facility or livestock waste-handling facility, or is farther away from a neighboring residence or populated area than the existing livestock management facility or livestock waste-handling facility, when the livestock owner or operator does not reside on the farm where the livestock are to be raised; or
- c) The site is accessible to roads, water and electricity and is at the farthest location from a neighboring residence or populated area; there is no existing

livestock management facility or livestock waste-handling facility on the site, and the livestock owner or operator does not reside on the farm where the livestock are to be raised.

(Source: Added at \_\_\_\_ Ill. Reg. \_\_\_\_, effective \_\_\_\_).

Section 501.330            New Livestock Management Facility and New  
Livestock Waste-Handling Facility

Any livestock management facility or livestock waste-handling facility the construction or modification of which is commenced on or after ~~the effective date of this Chapter~~ January 1, 1978, or any expansion which occurs on or after July 1, 1991.

(Source: Amended at \_\_\_\_ Ill. Reg. \_\_\_\_, effective \_\_\_\_).

Section 501.342            Non-farm Residence

Any residence which is not a farm residence.

(Source: Added at \_\_\_\_ Ill. Reg. \_\_\_\_, effective \_\_\_\_).

Section 501.356            Populated Area

Any area where at least ten (10) inhabited non-farm residences or at least fifty (50) persons frequenting a common place of assembly or a non-farm business at least once per week.

(Source: Added at \_\_\_\_ Ill. Reg. \_\_\_\_, effective \_\_\_\_).

Section 501.372            Supernatant

The liquid portion of the livestock waste that overlies deposited or settled solids that are stored in a tank or lagoon.

(Source: Added at \_\_\_\_ Ill. Reg. \_\_\_\_, effective \_\_\_\_).

SUBPART C: OPERATIONAL RULES

Section 501.402            Location of New Livestock Management  
Facilities and New Livestock Waste-Handling  
Facilities

- a) No new livestock management facility or new livestock waste-handling facility shall contain within its boundaries any stream or other surface waters except small temporary accumulations of water occurring as a direct result of precipitation.
- b) New livestock management facilities and new livestock waste-handling facilities located within a 10-year flood height as recorded by the United States

Geological Survey or as officially estimated by the Illinois State Water Survey shall be protected against such flood.

- c) New livestock management facilities and new livestock waste-handling facilities shall not be located ~~in close proximity to populated areas so as to cause air pollution~~ within 1/2 mile of a populated area or within 1/4 mile of a non-farm residence. For purposes of this subsection (c), the commencement of operations at an idle facility which has been operated as a livestock management facility or livestock waste-handling facility for four consecutive months at any time within the ten (10) previous years shall not be considered location of a new livestock management facility or new livestock waste-handling facility. Adequate odor control methods and technology shall be practiced by operators of new and existing livestock management facilities and livestock waste-handling facilities so as not to cause air pollution.
- d) The setback requirements of subsection (c) shall not apply to any livestock management facility or livestock waste-handling facility which meets any of the following conditions:
- 1) The facility is located in an Agricultural Area, designated as such pursuant to the Agricultural Areas Conservation and Protection Act, Ill. Rev. Stat. 1989, ch. 5, para. 1001 et seq.;
  - 2) The facility undergoes expansion, and the owner of the facility certifies and notifies the Agency in writing as such that the facility was operating as a livestock management facility or livestock waste-handling facility for at least one year prior to the existence of any non-farm residence within 1/4 mile of the facility or of a populated area within 1/2 mile of the facility; or
  - 3) The facility is part of a subdivision that complies with local zoning requirements and is platted for the express purpose of developing a residential area in which the residential developer has planned for the construction of a livestock management facility or livestock waste-handling facility for use by the residential owners within the subdivision.
- e) A new livestock management facility or new livestock waste-handling facility which locates within 1/4 mile of a farm residence shall locate at the maximum feasible location from such residence.

f) A new livestock management facility or new livestock waste-handling facility which locates within 1/4 mile of a non-farm residence or within 1/2 mile of a populated area, pursuant to subsection (d), shall locate at the maximum feasible location from such residence or populated area.

d)g) New livestock management facilities or new livestock waste-handling facilities located on soil types or geological formations where the deposition of livestock waste is likely to cause groundwater pollution shall be constructed in such a way that pollution will be prevented, or supplementary measures shall be adopted which will prevent pollution.

(Source: Amended at \_\_\_\_ Ill. Reg. \_\_\_\_, effective \_\_\_\_).

Section 501.404 Handling and Storage of Livestock Waste

a) Any livestock waste stored in excess of six months shall be contained in a manure storage structure.

b) Temporary Manure Stacks

1) Temporary manure stacks shall be constructed or established and maintained in a manner to prevent runoff and leachate from entering surface or groundwaters.

2) No temporary manure stack shall be constructed within 100 feet of a water well.

c) Livestock Waste-Holding Facilities

1) Liquid manure-holding tanks shall be impermeable and capable of withstanding pressures and loadings to which such a tank may be subjected.

2) Holding ponds and lagoons shall be impermeable or so sealed as to prevent groundwater or surface water pollution.

3) The contents of livestock waste-handling facilities shall be kept at levels such that there is adequate storage capacity so that an overflow does not occur except in the case of precipitation in excess of a 25-year 24-hour storm.

4) Liquid Livestock Waste

A) Existing livestock management facilities which handle the waste in a liquid form shall

have adequate storage capacity in a liquid manure-holding tank, lagoon, holding pond, or any combination thereof so as not to cause air or water pollution as defined in the Act or applicable regulations. If inadequate storage time causes or threatens to cause a violation of the Act or applicable regulations, the Agency may require that additional storage time be provided. In such cases, interim pollution prevention measures may be required by the Agency.

- B) New livestock waste-handling facilities which handle the waste in a liquid form shall provide a minimum of 120-day storage with a liquid manure-holding tank, lagoon, holding pond, or any combination thereof unless the operator has justifiable reasons substantiating that a lesser storage volume is adequate. If inadequate storage volumes cause or threaten to cause a violation of the Act or applicable regulations, the Agency may require corrective measures.

d) Runoff Field Application Systems

All livestock management facilities with fewer than 300 animal units may construct and operate a runoff field application system for the treatment of livestock waste, meeting the requirements of 35 Ill. Adm. Code 570, in lieu of utilizing liquid manure-holding tanks, holding ponds, or lagoons in compliance with subsection (c), or other livestock waste-handling systems which would assure compliance with the Act and 35 Ill. Adm Code.Subtitle E.

- e) Subsections (a) through (d) shall not apply to livestock management facilities with fifty (50) or fewer animal units, provided that the following conditions exist:

- 1) The location of the facility relative to waters of the State is such that there is no discharge of livestock waste into waters of the State, in violation of Section 12 of the Act (Ill. Rev. Stat. 1989, ch. 111 1/2, par. 1012);
- 2) There is no discharge of livestock waste into waters of the State by means of a man-made ditch, flushing system or other similar man-made device, in violation of Section 12 of the Act (Ill. Rev. Stat. 1989, ch. 111 1/2, par. 1012); and



- 3) The facility is managed so that livestock waste is not allowed to accumulate to an extent which threatens to cause a discharge to waters of the State, in violation of Section 12 of the Act (Ill. Rev. Stat. 1989, ch. 111 1/2, par. 1012).

(Source: Amended at \_\_\_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_).

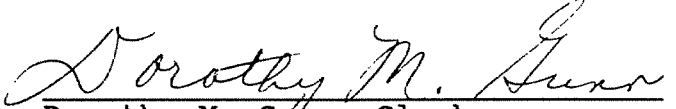
Section 501.405 Field Application of Livestock Waste

- a) The quantity of livestock waste applied on soils shall not exceed a practical limit as determined by soil type, especially its permeability, the condition (frozen or unfrozen) of the soil, the percent slope of the land, cover mulch, proximity to surface waters and likelihood of reaching groundwater, and other relevant considerations. These livestock waste application guidelines will be adopted pursuant to Section 502.305, unless otherwise provided for by Board regulations.
- b) Operators of livestock waste handling facilities shall practice odor control methods during the course of manure removal and field application within 1/4 mile of an inhabited residence so as not to cause air pollution described in Section 501.102(d). Odor control methods include, but are not limited to,
- 1) Soil injection or other methods of incorporation of waste into the soil including discing or plowing;
  - 2) Consideration of climatic conditions including wind direction and inversions;
  - 3) For liquid livestock waste: whether supernatant which is used for irrigation purposes has been stored in a livestock waste lagoon system which is designed and operated in accordance with "Design of Anaerobic Lagoons for Animal Waste Management", as incorporated by reference at Section 501.200.
  - 4) Other methods as described in "Control of Manure Odors", as incorporated by reference at Section 501.200.

(Source: Amended at \_\_\_\_\_ Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_).

IT IS SO ORDERED.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 7<sup>th</sup> day of February, 1991, by a vote of 6-0.

  
Dorothy M. Gunn, Clerk  
Illinois Pollution Control Board