BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:

LIVESTOCK WASTE REGULATIONS R97-15
35 Illinois Adm. Code 506 (Rulemaking)

Proceedings held on January 14, 1997, at 9:10 a.m., at Blackhawk Village, 1111 East Morton Street, Jacksonville, Illinois.

Reported by: Darlene M. Niemeyer, CSR, RPR
CSR License No.: 084-003677

KEEFE REPORTING COMPANY
11 North 44th Street
Belleville, IL 62226
(618) 277-0190

KEEFE REPORTING COMPANY
Belleville, Illinois

A P P E A R A N C E S

Illinois Pollution Control Board:

Claire A. Manning, Board Chairman

Ronald C. Flemal, Ph.D., Presiding Board Member

G. Tanner Girard, Ph.D., Board Member

Marili McFawn, Board Member

Joseph Yi, Board Member

Anand Rao, Environmental Scientist for the Board

Marie Tipsord, Attorney for the Board

Audrey Lozuk-Lawless, Hearing Officer

I N D E X

E X H I B I T S

P R O C E E D I N G S

(January 14, 1997; 9:10 a.m.)

HEARING OFFICER LOZUK-LAWLESS: Good morning and welcome.

Today is the first hearing of five, which the Board will be holding in this matter. This proceeding is entitled the Illinois Department of Agriculture Livestock Waste Regulations Proposal, 35 Illinois Administrative Code 506.

The Illinois Department of Agriculture proposed this rulemaking to the Board on November 21st, 1996, and the Board docketed this matter, and it is R97-15.

If you would like to file any motions or testimony or comments with the Board, please do note on those filings R97-15.

My name is Audrey Lozuk-Lawless, and I am the Hearing Officer in this matter. There are several members from the Board present here today.

I would like to introduce Board Chairman Claire Manning.

BOARD CHAIRMAN MANNING: Good morning.

HEARING OFFICER LOZUK-LAWLESS: Board Member Dr. Ronald Flemal.

PRESIDING BOARD MEMBER FLEMAL: Good morning.

HEARING OFFICER LOZUK-LAWLESS: Board Member Joseph Yi.

BOARD MEMBER YI: Good morning.

HEARING OFFICER LOZUK-LAWLESS: Board Member Dr. Tanner Girard.

BOARD MEMBER GIRARD: Good morning.

HEARING OFFICER LOZUK-LAWLESS: Board Member Marili McFawn.

BOARD MEMBER McFAWN: Good morning.

HEARING OFFICER LOZUK-LAWLESS: And we also have an attorney with the Board here, Marie Tipsord.

MS. TIPSORD: Good morning.

HEARING OFFICER LOZUK-LAWLESS: So I would just like to start off by saying that the hearing today will be conducted pursuant to the Board's procedural rules. Any information which is relevant and not repetitious will be admitted into the record.

Any witnesses will be sworn in by the court reporter and subject to cross-questioning. Anyone in the audience can ask a question of any of

the witnesses. You do not need to sign in ahead of time.

All right. Today the general procedure we would like to follow will be, first, we will have the Department of Agriculture present their witnesses. They have three witnesses who have prefiled testimony in this matter.

After the Department of Agriculture presents their witnesses they will be followed by the Illinois Environmental Protection Agency, and their witness, followed then by the Department of Health and, finally, the Department of Natural Resources.

After those proponents have testified we will then go to the two individuals who have prefiled testimony in this matter earlier with the Board, and that would be the testimony from the Illinois Stewardship Alliance, Renee Robinson, and from Ted Funk from the University of Illinois.

Following that testimony, we will then turn to questions from anyone in the audience. If you have a question we would just like you to raise your hand and come -- and I will acknowledge you, and then come to the second table there. There is

a microphone. And go there and state your name and if you represent any organizations, and then go ahead and ask your question.

The agencies will be sitting up in panel form. Right now the Department of Natural Resources is not up there, but they will be up there, and you can ask a question of any of the different agencies or of any of the witnesses who have testified.

Okay. The Board Members may, from time to time, ask questions. I just wanted everyone to be clear that those questions are to complete the record for any Board Members or staff that may not be present with us here today, not to represent any preconceived notions or bias.

And, lastly, to remind everyone that if they don't want to say anything today on the record or don't want to file prefiled testimony, that there will be four additional hearings which are being held in this matter. And those hearings will be held in Champaign, DeKalb, Galesburg and Mt. Vernon.

And so right now I would like to turn the program over to Dr. Flemal.

PRESIDING BOARD MEMBER FLEMAL: Thank you. I want to extend a welcome on behalf of the Board to all of you. We look forward to your participation in this rulemaking.

It is very important to us when we are doing our -- we are undertaking our rulemaking charge that we hear from those people who are affected by the rule. We can factor in all of the appropriate information we can to make the best rule possible. It certainly is encouraging to see this large turn out, and it certainly augurs well for our ability to make a good decision on the matter before us.

Since most of you are new to the Illinois Pollution Control Board process, I am going to take just a short time to run through who we are, what we do, and what specifically we are about in the current rulemaking.

The Pollution Control Board consists of seven members that are appointed by the governor with the consent of the Illinois Senate. Five of the Board Members are presented today. Two of our other two Board Members are off attending to other matters this morning, but will participate fully in

the ultimate decision that the Board is faced with in this matter.

The Board has a broad range of duties. A substantial portion of our time is involved in various quasi-judicial activities. We stand as boards of review. We look at and make decisions in a variety of enforcement actions and so on.

The second hat that we wear is a quasi-legislative one. It is that activity that we are engaged in today. The Board is charged with adopting the environmental standards for the State of Illinois. Most of the regulations that you know as environmental regulations that are state regulations have come through and been adopted by this Board.

In the matter at hand we have been charged by the General Assembly with developing the regulations that will flesh out the Livestock Management Facilities Act. That is, of course, the activity that we are engaged in at the moment.

We will proceed in this matter by conducting the hearings that are beginning at the moment, by gathering other information through public comments that are submitted by the Board,

and when this record is completed, which will be in mid February, the Board will deliberate over the content of that record, that is, what you are telling us today and what we gather through the other processes, and determine what the ultimate fate of the proposal before us is.

Now, that proposal may have one of three fates. We may find that the appropriate decision is to adopt the rule as proposed to us. We might adopt the rule with modifications; those modifications based upon the testimony and, again, other aspects of the record that we develop in this process. Or, conceivably, we might make the decision to not move forward at all.

At any rate, that is the task that the Board is presented with ultimately in this rulemaking procedure. The rulemaking is a fairly normal one for the Pollution Control Board, perhaps with one exception. We all ought to note that this is a somewhat unusual proposal or process, in that we have a fairly short time frame. The General Assembly has mandated that this rulemaking be completed in a term of six months.

At first blush it may appear that six

months is a long time and provides lots of extra elbow room. It, in fact, does not. If one looks at the various steps that are mandated by law before any rulemaking can become law in the State of Illinois, six months becomes a relatively short time frame.

We have had already, for example, had to consume several weeks simply in the notice process for these hearings to be sure that everybody is aware that hearings are happening and that they have adequate time to prepare. We are actually in the eighth week at the moment of a 26-week period to adopt these rules. Ahead of us are substantial blocks of time that are set aside for activity, so we have to move rather expeditiously in the decision.

We appreciate the cooperation that the people who have participated in the rulemaking so far have shown us in accommodating to this rather tight time frame.

With that, let me pass the microphone over to Chairman Manning, who, as well, has a few words of introduction she would like to make.

CHAIRMAN MANNING: As we need to get

started soon, I will make this short. I did, however, want to welcome all of the members here, as well as Dr. Flemal has already done.

I wanted to welcome all the members of the public, all the members of the livestock industry, and all of the persons in government who have been very busy throughout the last several months working with this rule and working with this issue.

Particularly, I would like to recognize the legislative interest and the good legislative work that has been done already on the Livestock Management Facilities Act. I know several legislators may be in and out today. I know my own representative, Representative Poe is here in the back of the room, Ray Poe.

My understanding is that Representative Myers may be here later and Representative Tenhouse and Representative Ryder, as well.

We appreciate that legislative interest and we appreciate all of the work that you have done in terms of the Act and trying to get this issue to the public forefront and resolving it in a way that makes sense for everyone.

The Board's role, as well, is one of working with that Act within the confines of that Act and working with the Department of Agriculture's proposal and ensuring that the proposal is protective of the environment, while at the same time economically reasonable for the industry that is in question; this time the livestock industry.

I would like to also recognize the good work of the state agencies that has been done in terms of presenting this proposal and in presenting the emergency rule that we had earlier, specifically the Department of Agriculture.

I know the Director is here this morning, as well. I don't know if Becky is still here, but I would like to recognize Director Doyle. Becky, if you would stand up so that everybody knows who you are. Director Doyle is here this morning. Thank you.

Becky and her Department have done an excellent job in terms of dealing with this issue, and we will hear from Chet Boruff and Warren Goetsch and the other people in Agriculture this morning.

I would like to also recognize, of course, The Department of Natural Resources, the Environmental Protection Agency, and the Department of Public Health, who really have shown that government working together can really work well in terms of resolving some rather difficult issues that we all face environmentally and economically in this State.

Without further ado, I am going to turn over to Presiding Board Member and his Hearing Officer for us to begin the testimony this morning. Thank you.

HEARING OFFICER LOZUK-LAWLESS: I would just like to tell people that if you are unable to hear any of the witnesses, just raise your hand and we can adjust the microphones, because we want everyone to be able to hear everything that people are saying.

So we will now begin with the Department of Agriculture's witnesses. I will turn to Mr. Chet Boruff, and ask if you have an opening statement or if you would like to call your first witness.

And if the court reporter could then

please swear in all the Department's witnesses.

(Mr. Chester Boruff, Mr. Warren Goetsch and Mr. Scott Frank were sworn in by the court reporter.)

MR. BORUFF: Good morning. Before I would offer my prepared testimony this morning, I would like to, on behalf of the Illinois Department of Agriculture, offer our thanks to the Illinois Pollution Control Board for your interest and activity in this and especially, as was mentioned, in view of the compressed schedule that you are working within, and knowing that there are other pressing matters that you are dealing with at the same time that this issue is before you. So thank you for that.

I would also like to, on behalf of the Department, offer our thanks to the other three departments that served as members of the Advisory Committee established by the Act, the Livestock Management Facilities Act, those being the Department of Natural Resources, the Environmental Protection Agency, and the Department of Public Health.

The representatives of those departments, who you will hear from later on this morning, all put a great deal of time and effort as well as staff support that came from enumerable people to put these regulations together. So I would just like to, on behalf of our Department, issue our thanks to them.

And also to those of you in the audience today, people who represent the industry, folks from around the state and a variety of different interests for the great deal of concern that you have had in this issue and many hours that I know that many of you personally have spent with the whole development of the Act and on the regulations today.

My name is Chet Boruff and I am employed by the Illinois Department of Agriculture as Deputy Director for the Division of Natural Resources and Ag Industry Regulation. I entered the Illinois Department of Agriculture in my current position in July, 1992. As Deputy Director, I am responsible for the program areas of the Department dealing with animal health and welfare, natural resource protection, regulation of the feed, seed and grain

industry, and the weights and measures program.

I was raised on a grain and livestock farm in Rock Island County, Illinois. I received a Bachelor's Degree in Agriculture from Iowa State University, and prior to coming to the Illinois Department of Agriculture, I have worked in agriculture finance, real estate, and agricultural supply sales, as well as operating a diversified grain and livestock farm.

Illinois has long been recognized as one of the leading livestock producing states in the nation. Due to its access to abundant feed supplies, strong markets, and a well developed infrastructure, the Illinois livestock industry has been a major contributor to the state's overall economy.

Livestock production accounts for approximately 2 billion dollars or 25 percent of the total gross income received for Illinois farm commodities. Several types of livestock species are produced in the state, but especially pork, beef cattle, and dairy production are major contributors to the agricultural industry.

The livestock industry is undergoing

major changes in structure due to economic and marketing forces which are not unique to the State of Illinois. As a result, it has become common for many operations to expand, to specialize, and to invest in capital-intensive production units in recent years. Production and marketing trends have shown a major shift in livestock production from areas historically known for livestock production to newer production areas of the country where livestock units are becoming more prevalent.

The livestock industry has been faced with challenges regarding market structure, access to capital, a limited supply of trained employees, and increased regulations. In many cases, in Illinois as well as in other states, traditional and long-established livestock producers have chosen to leave the industry rather than to address the challenges listed above.

In an effort to strengthen the industry and to position Illinois to be a continuing leader in livestock production, Governor Edgar convened the Livestock Industry Task Force in July of 1995. The task force, chaired by Becky Doyle, Director of Agriculture to the State of Illinois, includes

representatives of the major livestock commodity sectors, as well as representatives from the supporting industries, including processing, veterinary medicine, livestock supplies, and grain producers.

The charge given to the Task Force was to consider those factors affecting the livestock industry in the State of Illinois and to make recommendations to Governor Edgar and to the legislature on ways that Illinois could continue to foster a healthy livestock industry. The Task Force has addressed a wide range of topics focusing on areas of economic development, technology transfer, and environmental concerns regarding livestock production.

Intensified livestock production has led to larger operations which, by nature of their size, generate large volumes of animal waste. Concerns have been raised regarding the impact these large volumes of animal waste might have on water, soil and air resources. The Livestock Industry Task Force designated a working group to deal with these environmental issues, and as a result of its deliberations, the Task Force played

a major role in the development of legislation, known as the Livestock Management Facilities Act, which was ultimately passed by the Illinois General Assembly and signed into law as Public Act 89-456 by Governor Edgar on May 21st, 1996.

During the public discussions which led to the development and eventual passage of the Act, it was noted that any new legislation regarding livestock waste and livestock management facilities should be preventive in nature, since Illinois currently has statutes in place to deal with situations once pollution has occurred. By being preventive, the Livestock Management Facilities Act will help Illinois and its livestock producers avoid problems which have occurred in other states regarding contamination of natural resources from livestock production.

The Livestock Management Facilities Act sets in place statutes providing for the proper siting, construction, operation, and management of livestock management facilities and associated waste handling structures. It is the intent of the Livestock Management Facilities Act to "maintain an economically viable livestock industry in the State

of Illinois while protecting the environment for the benefit of both the livestock producer and persons who live in the vicinity of a livestock production facility".

The Livestock Management Facilities Act complements existing statutes contained within the Illinois Environmental Protection Act and regulations adopted thereunder regarding the operation of livestock management facilities and focuses on preventing pollution from these facilities before it may occur. Not only does the Livestock Management Facilities Act address design and operational aspects of livestock production, but it allows for the education and certification of livestock managers, provides for research, and provides for the proper disposal of livestock waste. Once again, the goal being to prevent pollution before it may occur.

Section 55 of the Livestock Management Facilities Act established a Livestock Management Facilities Advisory Committee -- I will be referring to this as Committee -- made up of the Directors of the Department of Agriculture, Natural Resources, Public Health, and the Illinois

Environmental Protection Agency or their designees. I was designated by Director Doyle to serve as the Chair of the Committee.

The Members of the Committee were charged to review, evaluate and make recommendations to the Department of Agriculture for rules necessary for the implementation of the Livestock Management Facilities Act. The Department was mandated by statute to propose rules to the Board for the implementation of the Livestock Management Facilities Act within six months of the effective date of the Act.

Since the effective date of the legislation was May 21st, 1996, the Department prepared its proposal for filing date of November 21, 1996. Section 55 of the Livestock Management Facilities Act also requires that the Board hold hearings on and adopt rules for the implementation of the Act within six months of the Department filing of a rule proposal for that purpose.

The Committee met five times during the summer and fall of 1996 to review, evaluate and recommend amendments to various draft proposals developed by the Department. The departments and

the agency represented on the Committee provided a vast amount of professional knowledge and experience on a broad spectrum of topics pertinent to the subject matter of the Livestock Management Facilities Act. The Department recognizes them for their efforts and appreciates their recommendations and input throughout the rule proposal development process.

The Committee considered several sources of information, such as technical papers, published design standards, pertinent information from other states, and information provided by industry and private individuals as it made recommendations to the Department regarding the rule proposal.

The effective dates of several sections of the Livestock Management Facilities Act are coupled to the effective date of rules promulgated for their implementation. During the time period that the Committee was deliberating possible rule proposals, concerns in several areas of the state were being raised regarding whether or not adequate levels of environmental protection were in place during the interim period between the effective date of the statute and the final adoption of the

rules that were to be submitted by the Department to the Board.

As a result of these concerns, the Department developed and proposed to the Board an emergency rule pertaining to portions of the Livestock Management Facilities Act, namely, lagoon registration, livestock facility siting, waste lagoon design criteria, waste management plans, and certified livestock management training and certification. After allowing for public comment, the Board adopted emergency rules allowing for the implementation of various sections of the Livestock Management Facilities Act on October 31, 1996, with an effective period of 150 days unless extended by the Illinois General Assembly.

Currently, legislation is pending, and I might mention at this point in time, the legislation did pass, so that the rule has been extended, to my knowledge, which would extend the emergency rules and from all indications, as I mentioned, it did pass in General Assembly. During the development of the emergency rule proposal, the Department considered recommendations which had been made by the Livestock Management Facilities

Advisory Committee.

In addition, during the development of the proposal, which is the subject of this document, the Department carefully considered the scope and the design of the emergency rules adopted by the Board. As a result, the adopted emergency rule and the several sections of the rule proposed with this document are very similar in content and regulatory direction.

However, the Department has included sections in this proposal which were not considered relevant during the emergency rule adoption process, and has attempted to develop and propose enhancements or clarifications to sections that were included in the adopted emergency rule. In all cases, the Department proposes to recognize the appropriate regulatory standing of any actions taken by individuals and facilities under the emergency rules.

Prior to the passage of the Livestock Management Facilities Act, regulatory issues associated with livestock waste primarily were addressed by the Illinois Environmental Protection Agency under authorities present in the

Environmental Protection Act and the rules promulgated thereunder. The Livestock Management Facilities Act provides authorities to the Illinois Department of Agriculture relative to livestock waste and facility management and, thus, the Department believes the most appropriate approach is to set the rules implementing the statute in a separate Part.

Part 506 is organized in several subparts, each with its own applicability section and specific requirements. The initial three subparts provide the bulk of this proposal for the Board's consideration regarding: General provisions; lagoon registration, construction standards and construction certification; and waste management plan development, implementation and maintenance.

The final four subparts in the proposal provide a framework for the Department's administration of each of the following: The certified livestock manager program; penalties associated with the Livestock Management Facilities Act; owner or operator financial responsibility requirements; and setback waivers.

Each of the final four subparts set forth authorities for the Department to develop and pursue direct adoption of rules under the Illinois Administrative Procedures Act. In each of the Subparts D, E, F, and G, the rules which we are proposing state that the Department may adopt and promulgate by rule all procedures reasonably necessary to perform its duties and responsibilities under the specific subpart.

This approach was reviewed and recommended by the four-agency advisory committee, in order to give the Department of Agriculture the ability to adopt rules and procedures in a timely fashion and to relieve the Pollution Control Board of being required to consider and act upon minute administrative details. The Livestock Management Facilities Act does not prohibit this approach and the Illinois Department of Agriculture routinely adopts and promulgates rules in a variety of its other programs.

The Illinois Department of Agriculture is requesting that the Pollution Control Board endorse this approach in order that the Department of Agriculture may continue upon its anticipated

course of developing administrative rules, which will complement these proposed Rules.

From this point on, I will be sharing the microphone with Scott Frank and Warren Goetsch, both of whom are members of the staff at the Illinois Department of Agriculture. They and I will be reviewing specific subparts of the proposed rules. Mr. Goetsch will be providing testimony on Subpart A: General Provisions and Subpart B: Standards for Livestock Waste Lagoon, and Subpart D: Certified Livestock Manager. Mr. Frank will be providing testimony on Subpart C: Waste management Plan and Subpart E: Penalties.

I will be finishing our presentation with testimony regarding Subpart F: Financial Responsibility, Subpart G: Setbacks, and final comments by the Illinois Department of Agriculture.

Thank you.

HEARING OFFICER LOZUK-LAWLESS: Thank you, Mr. Boruff.

You may begin, Mr. Goetsch.

MR. GOETSCH: My name is Warren Goetsch. I am employed by the Illinois Department of

Agriculture as the Chief of the Bureau of Environmental Programs, a position that I have held since December of 1991. I joined the Department in July of 1989 and served as the Bureau Chief of Laboratories until assuming my present position.

The responsibilities of the position include providing administrative oversight and technical guidance to the Department's pesticide, nursery, and agrichemical facility containment programs. In addition, I represent the Department on the Interagency Pesticide Committee, the Interagency Coordinating Committee on Groundwater, the Illinois Hazardous Materials Advisory Board and the Agrichemical Facility Response Action Program Board.

Prior to joining the Department, I was employed for over nine years as an Area Extension Engineer by the University of Illinois Cooperative Extension Service. During that time I worked with various agricultural producers on various areas of agricultural engineering including farmstead design, alternative energy systems, livestock housing and waste management, grain drying and tillage systems.

I received both a Bachelor of Science Degree in Agricultural Engineering and a Master of Science Degree in Agricultural Engineering from the University of Illinois at Urbana-Champaign, Illinois. I have been a member of the American Society of Agricultural Engineers since 1980, and have been a Registered Professional Engineer in the State of Illinois since 1984.

Today I come before this group to provide testimony on behalf of the Illinois Department of Agriculture relative to certain provisions of Subpart A, B and D of the proposal.

Subpart A sets forth the applicability, severability, definitions and incorporations by reference for the rule proposal. The applicability statement indicates that each subpart includes its own specific statement of application. Section 506.102 indicates that each section shall be considered on its own merit and does not directly affect the validity of the other subparts.

Section 506.103 contains various definitions of terms used in the rule proposal and, in general, follows concepts developed and included in the emergency rules adopted by the Board under

Docket R97-14.

All but six terms defined within this section have been taken directly from the Livestock Management Facilities Act, thus no additional discussion of them will be offered here. The terms "Aquifer material," "Gravel" or "Sand and gravel," and "Sand" have been included in the proposal for use with the site investigation requirements included at Section 506.202 relative to the design and construction of livestock waste lagoons. These definitions were adopted by the Board as part of the emergency rules and have been proposed in this rulemaking without changes.

Mr. Don Keefer, a hydro-geologist with the Illinois State Geological Survey section of the Illinois Department of Natural Resources, was the principal author of this concept and will provide a discussion of the derivation of these terms, their associated meanings and use with a site investigation during the Department of Natural Resources testimony, which follows later.

Another term included in both the emergency rules and proposed here is the term "placed in service." No changes from the

emergency rule definition are proposed here. The Department believes that it is necessary to tightly define any compliance date from an easily determined point in time and feels that this definition is adequate to serve that purpose.

Also, the Department has offered a definition of the term "Livestock pasture operation" to assist in the interpretation of the statutory definition of a "Livestock management Facility." The Livestock Management Facilities Act, under the definition of a "Livestock Management Facility," specifically exempts "Livestock pasture operations" from compliance with its provisions or those of this rulemaking, but does not provide a specific definition of such facilities.

The Department has developed the proposed definition of "Livestock pasture operations" by modifying various components of the definition of an "animal feeding operation" found at 35 Illinois Administrative Code 501.225. The proposed language requires that to qualify as a "Livestock pasture operation" some form of vegetation must remain present over most of the lot area and that the

animals have free access to the lot areas, both provisions which are in direct opposition of the requirements for classification as an "animal feeding operation" and are consistent with what the Department believes was the type of facility to be exempted by the statute.

The final two definitions that I will briefly discuss today are associated with the terms "Populated Area" and "Residence." The Department proposes to expand the definition of "Populated Area" beyond the statutory definition by:

(1) providing a clear method to follow in determining whether a particular situation qualifies as being within the statutory definition; and

(2) recognizing the seasonal use of either a common place of assembly or a non-farm business should not exclude it from the setback protections afforded under the original definition.

The Department proposes that the existence of a "Populated Area" be determined by considering the setback distance which would be applicable to the livestock facility in question,

as shown in Figures 1 and 2 included in my prefiled testimony.

First, the applicable setback distance is identified as measured from the proposed facility. Then, the number of residences, the existence of a non-farm business or the existence of a common place of assembly within the setback distances are then determined. If at least ten inhabited non-farm residences, a non-farm business or a common place of assembly are located within the determined setback distances, the "Populated Area" definition would apply.

In addition, during discussions with the Advisory Committee, a question was presented relative to whether facilities, such as schools or businesses which have a predetermined seasonal operational shutdown, would fail to be included within the "Populated Area" definition because of those seasonal shutdowns.

In response to this issue, the Advisory Committee has recommended to the Department and the Department has proposed language as part of the "Populated Area" definition which would recognize that the seasonal nature of an operation would not

disqualify them from consideration as common places of assembly or non-farm businesses.

The Department has also proposed a definition for the term "residence." Several either statutory or proposed regulatory definitions include this term as part of a broader definition, but do not clearly specify an exact interpretation of residence as a base term. Specifically, the inclusions of all attachments as being part of the structure for setback measurement purposes is deemed necessary.

In addition, a requirement that the structure be in use as a place of human habitation was deemed as a necessary addition to the final definition. Further, the Department would respectfully suggest that the Board consider a further clarification to the rule, either as part of this definition or as a component of another section of the rule relative to the timing of the application of a setback distance.

The Advisory Committee discussed, on several occasions, the possible need for a clarification regarding when a structure would be considered a residence and thus impact the siting

of a proposed facility. However, a final consensus was never reached. Since the Department's proposed filing, a situation has developed wherein an entity purchased a large parcel of land and initiated the construction of a livestock management facility and lagoon.

At about the same time, other individuals, which opposed the construction of the facility, purchased a small parcel of land directly adjacent to the facility site and within the projected setback distances. Those individuals then located a house trailer on the small parcel of land and are claiming that it qualifies as a residence.

This situation suggests that further clarification is necessary to ensure that the rights of both rural residents and the livestock industry are protected. The long construction period which precedes a facility being "placed in service" renders this possible point in time as unsuitable as a reference point. Another option might be to key the application of setbacks to the date of the lagoon registration receipt by the Department.

This approach would also have a secondary benefit in that proposed facilities would be encouraged to submit their registration request prior to any substantial construction beyond the initial site investigation boring. This would allow for a more constructive and timely interaction between the owner/operator and the Department than is specifically required under the statute, which is rather passive in this area.

However, this approach would not solve potential conflicts relative to facilities being planned which do not incorporate the use of lagoons as part of their livestock waste storage and treatment systems. Nor, would it consider the mobile nature of manufactured housing, which could be moved within a setback zone and established during the construction period associated with a livestock management facility.

In any event, the Department urges the Board to consider a clarification in this area to minimize confusion which could result under the current provision of the statute.

Section 506.104 of the proposal includes documents to be incorporated into the rulemaking by

reference. The Department is proposing two references relative to the analysis of samples collected from monitoring wells which may be required as part of a lagoon design. These references are from the American Public Health Association and the National Technical Information Service for the United States Environmental Protection Agency and are standard references utilized by both government and private laboratories throughout the country.

The final two references are from the American Society of Agricultural Engineers and the United States Department of Agriculture Natural Resources Conservation Service. Both these documents are specifically referenced in the Livestock Management Facilities Act and are required to be used as the basis for lagoon design.

Subpart B of the proposal is organized into eight major sections and outlines the approach required of owners and operators of new or modified livestock waste lagoons for the registration, design, construction, closure, and ownership transfer of such facilities. The proposal closely

follows the emergency rule adopted by the Board and begins with a site investigation designed to determine the degree of environmental protection necessary for incorporation into the design of a lagoon at a specific location based on site-specific hydro-geology.

The proposal then outlines the design standards applicable to each condition, including general lagoon design specifications, liner requirements and groundwater monitoring program components. The lagoon registration and construction certification process are also defined within the subpart. Finally, the proposal provides requirements for ownership transfer and lagoon closure if these actions become necessary.

The Department has attempted to provide additional detail in several areas beyond the adopted emergency rule to assist the livestock producer in achieving compliance with the requirements of the Livestock Management Facilities Act. Section 506.201 sets forth the applicability of the subpart and indicates that these requirements shall apply to all new or modified lagoons not placed in service as of the effective

date of the proposal.

This is a change from the adopted emergency rule which only applied to a lagoon serving a livestock management facility with a design capacity of 300 animal units or more. This proposed change from the emergency rule makes the permanent rule consistent with the requirements of the Livestock Management Facilities Act. The Department has also proposed language in Section 506.201 which will provide the appropriate regulatory recognition of lagoon registrations issued under the authorities of the emergency rule.

Section 506.202 provides a description of the site investigations required at each and every proposed new or modified lagoon location. The purpose of the investigation is to determine the degree of sensitivity to groundwater contamination from livestock waste exhibited by a site and to then base the required design criteria on that degree of sensitivity.

In its emergency rule proposal under Docket R97-14, the Department proposed the use of maps contained in an Illinois State Geological

Survey publication in making this sensitivity evaluation. At that time, the Department understood the various limitations of the mapping and attempted to weigh the cost of more site-specific data collection with the resulting environmental protection.

As an alternative to that proposal, the Illinois Department of Natural Resources proposed the concept included in the Board-adopted emergency rule and thus proposed here. The Department is wholly supportive of this concept but defers to Mr. Keefer of the Illinois State Geological Survey for a detailed description and explanation of its scientific basis.

In general terms, the proposal requires at least one soil boring be conducted to a depth of at least 50 feet below the proposed lagoon bottom. The resulting data from the boring log is to be analyzed for the presence of aquifer material as designed under Subpart A as follows:

(1) If aquifer material is present within 50 feet of the lagoon bottom, a liner as described in a subsequent section will be required to be incorporated into the lagoon design; or

(2) if aquifer material is determined to be present within 20 feet of the lagoon bottom a groundwater monitoring program will also be required to be included in the design of the lagoon; or

(3) if aquifer material is not determined to be present within 50 feet of the lagoon bottom, no requirements beyond those specified in Section 506.204 are required to be incorporated into the lagoon design.

The proposal requires that the site investigation soil boring be located within the final lagoon area or within 20 feet of the final exterior berm toe. This requirement, although absent in the adopted emergency rule, has been included in this proposal to ensure that the results of the boring are representative of the actual lagoon site.

The proposal also provides for possible alternatives to the soil boring with prior approval from the Department. This provision was included to allow for instances where other site subsurface investigations may have been conducted as part of the installation of a site water supply well or

other facility planning processes. In those instances, the data to be used as a basis for site sensitivity analysis must result in a site investigation at least as protective of the environment as would have resulted from a soil boring and will be reviewed by the Department prior to its approved use.

The final provision of this section requires that the site investigation be conducted under the direction of a Licensed Professional Engineer or Registered Professional Geologist and that the supervising professional certify the results of the investigation. The results of the site investigation will have a major impact on the design of a lagoon, both in terms of the initial construction costs and the ongoing operation and maintenance costs.

Thus, the interpretation of the boring data and the final classification of the site must be both accurate and documentable. It is for these reasons that the Department proposes a third party professional be directly responsible for this determination. A copy of the site investigation certification form for use by the Licensed

Professional Engineer has been provided within the lagoon registration forms packet currently in use as a result of the emergency rule and attached to my testimony as Exhibit A.

The Department anticipates either a modification of the form or the development of a new form for use by a Registered Professional Geologist as that professional registration program further develops.

Section 506.203 provides the details relative to the lagoon registration process which in almost all cases are predefined by the Livestock Management Facilities Act. Additional items proposed for inclusion in the registration process include disclosure of the location and associated distances to potential routes of groundwater contamination, such as abandoned or plugged wells, drainage wells, injection wells, or subsurface drainage lines in close proximity to the proposed lagoon site.

These have been included in the proposal to ensure that the owner or operator of the lagoon considers whether these items are possibly present at the site and that the appropriate setback is

maintained. Language requiring the submittal of the site investigation certification is also found within this section. If a synthetic liner is included as part of the lagoon design, a manufacturer's compatibility statement and associated maintenance guidelines are required as part of the registration submittal.

The final portion of this section provides the Department authority to conduct periodic site inspections of a livestock waste lagoon to assess the compliance status of the lagoon. The Department suggests that, especially in the case of facilities required to utilize synthetic liners where periodic maintenance is required or where monitoring wells are periodically sampled, follow-up site visits by Department personnel may become necessary.

The Livestock Management Facilities Act clearly mandates the Department to visit the lagoon site at least once during the preconstruction, construction and post construction phases. However, it does not specifically mandate additional site visits nor does the statute prohibit such site inspections. The Department

suggests that the inclusion of liners and monitoring wells as part of the lagoon design warrants the need for possible Department site visits beyond the initial statutory language.

Section 506.204 provides the design standards for all new or modified lagoons placed in service after the effective date of this proposal. The Department's proposal again closely mirrors the Board-adopted emergency rule with some additional refinements or clarifications. This section of the rule proposal includes the requirement for the site investigation, and based on its results, requires liners and/or the inclusion of groundwater monitoring in the lagoon design pursuant to the Livestock Management Facilities Act at Section 15(a) which allows the Department discretion to require additional design standards beyond those expressly included in the Act.

Also, the Livestock Management Facilities Act specifically requires the design of new or modified lagoons be based on one of two documents, as earlier included in my testimony. These documents, in many cases, provide ranges of acceptable design values which may be in conflict

with each other if some components of a design are allowed to be based on one reference while other components of the same design are based on the second document.

Thus, the Department has included in the proposal further requirements to minimize these potential conflicts. First, the Department proposes that the lagoon minimum berm top width measure eight feet, which is consistent with both reference documents. The interior and exterior walls of the lagoon are required to be not steeper than a three to one ratio of horizontal to vertical with a vegetative cover to be established on any exposed berm areas.

These requirements are within the slope ranges allowed in both documents but are somewhat more restrictive in that a vegetative cover is required in all cases and a steeper grade is not allowed on the submerged portion of the interior slope. The Department believes that this somewhat more restrictive standard will simplify the overall design of the lagoons and, more importantly, ensure that all portions of lagoon berms are accessible to mowing and other appropriate maintenance. These

requirements should enhance the ability of facility managers to continually monitor the condition of lagoon berms, properly maintain the structures and thus prevent possible berm failures.

In terms of the actual design volume of a lagoon, the ASAE or American Society of Agricultural Engineers publication seems to provide a more complete approach than the USDA-NRCS document. Thus, the Department proposes that the lagoon design volume be based on the summation of the four components defined within the ASAE document and, in some cases, customized for use in Illinois as follows:

(1) a minimum design volume as calculated pursuant to the ASAE reference;

(2) a livestock waste volume equal to at least the volume of waste generated by the facility for a period of not less than 270 days;

(3) a runoff and wash down volume which is based on the volume of a six inch rainfall covering the lagoon surface area and any other exposed surfaces which are so located as to contribute runoff to the lagoon plus the volume of any wash down liquids utilized within the facility;

and

(4) a sludge accumulation volume as calculated pursuant to the ASAE document. This approach should allow for ease of calculation by the facility representative, ease of Department review as part of the registration process, and is consistent with the approach utilized in the ASAE document.

In addition to the total design volume, the Department has incorporated a freeboard requirement with two options dependent on the size and configuration of the specific lagoon. A one foot freeboard beyond the elevation of the total design volume fluid surface level is required for lagoons which serve less than 300 animal units and do not collect runoff from areas other than the lagoon surface. A two foot freeboard beyond the elevation of the total design volume fluid level is required for all other lagoons.

This approach is somewhat more restrictive than the ASAE design guidance in that all lagoons serving over 300 animal units are required to provide the two foot freeboard, regardless of whether areas other than the lagoon

surface contribute to the runoff volume. The ASAE document does not differentiate the freeboard amount based on lagoon size. The Department has included this provision based upon the advice of the Advisory Committee which suggested that size should be a consideration in the amount of freeboard to be incorporated into the design.

The Department has also included a requirement for the removal of all drainage lines within 50 feet of the outermost extent of the lagoon. Much of Illinois is underlain with drainage lines which may have been installed 50 to 100 years ago. Many of these systems continue to serve a very useful purpose in Illinois agriculture by providing drainage to crop production areas and farmsteads.

However, an active or inactive line in very close proximity to a livestock waste lagoon can provide an unwanted conduit from the lagoon to surface water or groundwater. The proposed minimum separation distance of 50 feet is based on one-half of a typical value for drainage tubing lateral spacing used in drainage system design. The Department recognizes that drainage lateral

spacings are indeed dependent on a number of variables such as the drainage coefficient, line slope, line length, tube diameter as well as others, but certainly in many parts of the state, a 100 foot lateral spacing is typical and its use here is therefore appropriate.

A 100 foot separation distance between the outermost extent of the lagoon relative to other potential routes of groundwater contamination, as identified in the Illinois Groundwater Protection Act, has also been included in the proposal. In addition, the same separation distance is applied to non-potable wells, abandoned or plugged wells, drainage wells or injection wells. These have also been included as further protective measures of groundwater.

To assist the livestock waste lagoon operator, the Department has proposed the inclusion of a lagoon liquid level board or staff gauge in the design and construction of the structure. The purpose of this device is to serve as a visual reminder to the lagoon manager of the specific design volumes associated with the lagoon. It should assist in the maintenance of freeboard by

indicating when design capacities are becoming short and lagoon unloading should therefore commence.

Also, this visual reminder should play a positive role in the reduction of odors by indicating when the removal of waste should be discontinued to ensure adequate dilution volumes remain present within the lagoon. Additionally, the Department is proposing that all lagoons be pre-charged with a water depth of at least 60 percent of the design depth prior to the initial addition of waste. This practice should also decrease the potential of odors during the initial startup of operations at a site by ensuring dilution volumes are present as the lagoon is placed in service.

Section 506.205 of the proposal outlines the requirements relative to the design and construction of liners when their use is required pursuant to the results of the site investigation. In the case of in-situ clay, borrowed clay or clay/bentonite mixtures, the Department has proposed specific construction standards based, in part, on the solid waste landfill liner system

requirements of 35 Illinois Administrative Code 811.306.

The proposed synthetic liner standards include the same hydraulic conductivity requirements as other liners. In addition, the synthetic liner manufacturer is required to provide seam specifications, installation and maintenance guidelines and a certification of chemical compatibility. The design, construction and installation of any liner is to be conducted under the direction of a Licensed Professional Engineer who is also required to provide a certification of compliance to the Department upon completion of the liner installation.

The engineer is also required to submit supporting justification and data with the certification. The Department suggests that this third party oversight relative to liner construction and installation is warranted due to the sensitivity to groundwater contamination of sites where the additional protection of liners are being required under the proposal.

Section 506.206 of the proposal outlines the requirements relative to the design and

construction of groundwater monitoring programs when their use is required pursuant to the results of the site investigation. This section closely follows the provisions of the adopted emergency rules with various additional refinements. Basically, a minimum of three monitoring wells must be installed within 20 feet of the outermost extent of the lagoon with at least two of the wells located down gradient of the groundwater flow direction.

The 20 feet limitation is proposed to attempt to ensure that the wells will provide an early detection of a possible lagoon liner failure. This provision has been included in response to consultant inquiries received by the Department during the initial effective period of the emergency rules relative to monitoring well site limitations. Other construction details relative to the monitoring wells are proposed to provide consistency with the Illinois Water Well Construction Code and to, again, attempt to provide early detection of possible lagoon liner failure.

The Department has proposed an analyte list based on consultations with the Advisory

Committee. The Department continues to question the need for all the listed analytes, such as bacteria, when inclusion of the other analytes should provide for the detection of the presence of lagoon leachate in the monitoring wells. The Department anticipates comment from other interested parties relative to this issue.

In addition to regular owner or operator sampling and analysis, a provision allowing the Department to periodically sample the wells has been included in the proposal. This provision represents a continuation of the Department's commitment to the appropriate monitoring of the facilities located within areas determined to be potentially sensitive to groundwater contamination.

Subsections F and G outline the methodology to be used in the reporting of analytical results, the interpretation of those results, and the development of appropriate response actions in the event a liner failure is suspected. First, the owner or operator is to provide results to the Department within 45 days of sampling. The submittal is to include a comparison of those results with the initial sampling

conducted prior to the lagoon being placed in service.

If impacts to groundwater are suspected, the owner or operator is also to propose possible response actions necessary to mitigate potential impacts to groundwater. The Department is then required to review the submittal and advise the owner or operator of the appropriateness of those response actions. As a result of the review, the Department has the authority to make changes in sampling frequency or analyte list and ultimately require changes to the design, construction, or operation of the lagoon or management facility. This is intended to provide specific authority to the Department to oversee the correction of any problems identified through the groundwater monitoring process.

In addition, the Department is proposing language within these subsections to clearly identify failures on the part of the owner or operator to either sample or report on a timely fashion or to properly implement corrective actions approved by the Department as punishable violations of the provisions of the rule.

Section 506.207 contains the requirements for the various certifications of construction and are, in most cases, reiterations of the language contained in the Livestock Management Facilities Act. The Department is required to make at least one site visit during the pre-construction, construction, or post-construction phases and is to require modifications when needed to ensure compliance with the Act and this proposal.

If a liner was required as a result of the site investigation, a certification by a Licensed Professional Engineer relative to the construction or installation of the liner is required to be submitted to the Department prior to the lagoon being placed in service. The owner or operator of the lagoon is required to provide a certification to the Department that the lagoon has been constructed or modified in accordance with the Act and the rule.

In addition, the owner or operator is to certify that the information submitted to the Department on the registration form, which is attached to my written comments as Exhibit A, is correct. Finally, the section reiterates that the

lagoon may be placed in service no sooner than ten days, ten working days after the submission of the certification of compliance statement.

Section 506.208 contains statutory language relative to the failure to register or construct a lagoon in accordance with the standards contained in the Act and this proposal. The Department is not proposing further details or refinements of the process contained in the original statutory language.

The final section of Subpart B deals with possible lagoon closures and ownership transfers. In the case of a lagoon closer, the Department is proposing that a closure plan be developed by the owner or operator of the livestock waste handling facility and submitted to the Department for review and approval.

The plan shall include the sampling, analysis and reporting of nutrient content of all waste, sludge, and a six inch thickness of soil from the lagoon interior; plans for the removal and land application at agronomic rates of these materials; plans for the removal of all waste conveyances associated with the operation of the

lagoon; plans for the proper management of any impounded precipitation collected during the closure process; plans for the proper abandonment of monitoring wells associated with the lagoon; and a proposed time frame for the closure activity.

Upon approval of the closure plan by the Department, the owner or operator is allowed to complete the closure activities. The Department is then required to make a site inspection and notify the owner or operator in writing whether the closure is deemed complete or whether additional activities are needed to complete closure. In addition, the Department is given the authority within the Livestock Management Facilities Act to consider requests for the use of the lagoon for other purposes and to grant waivers to any of the closure requirements to allow for that alternative use.

The overall purpose of the closure process is to provide for the orderly, environmentally responsible, economically reasonable, proper and complete abandonment of a lagoon and its appurtenances once its use is no longer needed.

The final subsection of the lagoon closure and ownership transfer section simply reiterates the ownership transfer provisions of the Livestock Management Facilities Act and, additionally, specifically requires that it is the responsibility of the new owner to notify the Department in writing of the ownership transfer. This should ensure that the Department's files remain current relative to registered facilities and that the owner is knowledgeable relative to the regulatory status of the facility.

This concludes my prepared comments relative to the provisions of Subparts A and B of the proposal.

Thank you for your kind attention.

HEARING OFFICER LOZUK-LAWLESS: Thank you, Mr. Goetsch. Because you have read your prefiled testimony into the record, there is no need to submit it as an exhibit at this time, but you may want to submit your exhibit which has the setback diagram for the facilities, Exhibit A, into the record.

Would you like to move to admit those?

MR. GOETSCH: Yes.

HEARING OFFICER LOZUK-LAWLESS: Okay. Then we will mark as Exhibit Number 1 the setback diagram from Mr. Goetsch's testimony. And we will mark as Exhibit Number 2 the "Application for the Registration of New or Modified Livestock Waste Lagoons."

Do you have copies of those you could give to us?

MR. GOETSCH: Yes.

HEARING OFFICER LOZUK-LAWLESS: As well as Exhibit Number 3, which will be the "Registration of New or Modified Livestock Waste Lagoons."

(Whereupon said documents were duly marked for purposes of identification as Exhibit Numbers 1, 2 and 3 as of this date.)

HEARING OFFICER LOZUK-LAWLESS: Thank you, Mr. Goetsch. Thank you.

Okay. Mr. Frank, would you like to begin?

MR. FRANK: Yes.

HEARING OFFICER LOZUK-LAWLESS: You may

proceed. Thank you.

MR. FRANK: My name is Scott Frank and I am employed by the Illinois Department of Agriculture as an assistant to the Deputy for the Division of Natural Resource and Agriculture Industry Regulation. I have worked for the Department for three years.

During this time I have been involved with the Livestock Industry Task Force and have assisted in the development of the emergency rules and the proposed permanent rules for the Livestock Management Facilities Act. I also supervise the apiary inspection program for the Department.

I was born and raised on a grain and livestock farm. I earned a Bachelor's degree in Agronomy from Iowa State University and a Master's degree in Agronomy/Plant Breeding also from Iowa State University. Prior to my employment with the Illinois Department of Agriculture, I worked for seed companies developing corn and soybean varieties.

I will be providing testimony regarding the Subparts of proposed rules dealing with waste management plans (Subpart C) and penalties, which

are Subpart E.

Waste management plans have been produced for livestock operations for many years by producers, the Cooperative Extension Service, the Natural Resources Conservation Service of the U.S.D.A., which was formerly the Soil Conservation Service, private consultants, and others. This is not a new concept and plan development assistance is available to livestock facility owners or operators. Regulations in other states require a waste management plan, and university and extension service publications exist providing the basics for plan development.

The application of livestock waste to the land is one of the oldest forms of recycling. Livestock waste has been used for generations to supply nutrients for crop growth and development. When properly applied, livestock waste can be a valuable resource. When improperly applied at excessive rates, surface and groundwater pollution may result. The purpose of the waste management plan regulations is to ensure that producers have adequate land area available for the application of livestock waste at agronomic rates.

The Livestock Management Facilities Act states that it will be considered acceptable to prepare and implement a plan based on the nitrogen rate. The plan does not have to be based on nitrogen. It can be based on other nutrients. However, whichever nutrient is chosen, the rate cannot exceed the agronomic nitrogen demand of the crops to be grown when averaged over a five-year period.

Whereas Subpart B of these proposed rules applies to new or modified lagoons, this Subpart applies to new and existing livestock management facilities of 1,000 or greater animal units regardless of the type of waste storage system utilized. Facilities with deep pits, lagoons, holding ponds, manure stacks, tanks, and other structures and systems may be subject to these regulations. The Livestock Management Facilities Act states that a livestock management facility owner or operator at a facility of less than 1,000 animal units does not have to prepare a waste management plan.

The owner or operator of a facility of 1,000 or greater but less than 7,000 animal units

shall prepare, maintain, and implement a plan and certify to the Department that a plan has been prepared. This plan does not have to be filed with the Department, but it has to be kept on file, along with records of livestock waste disposal, at the facility for a period of three years and be available for inspection by Department personnel during normal business hours.

Waste management plans are required to be prepared under the emergency rules. Existing facilities would have been required to have a plan prepared before the effective date of these permanent rules even if the full six month period to prepare a plan under the emergency rules was utilized. Six months after the effective date of the emergency rules is April 30th, 1997. These permanent rules are not scheduled to be effective prior to this date.

The proposed permanent rule states that facilities that begin operation or expand to 1,000 animal units or more but less than 7,000 animal units, and this change occurs within six months of the effective date of the permanent rules, shall prepare a plan within 60 working days of beginning

operations or reaching or exceeding 1,000 animal units, or within six months of the effective date of the permanent rules.

For facilities that begin operations or expand to this size following the six month period after the effective date of these rules, a plan shall be prepared within 60 working days after achieving this size. Sixty working days was selected as a reasonable period of time and it is also referenced in the Livestock Management Facilities Act as a time frame for plan preparation in the 7,000 and greater animal unit category.

The requirement of the certification of plan preparation is to assist the Department in determining compliance and identify the producers who are required to prepare a plan.

Facilities with 7,000 or greater animal units. The owner or operator of the livestock management facility with 7,000 or greater animal units shall prepare, maintain, and implement a plan and also submit the plan to the Department for approval. The emergency rules require preparation of a plan, so existing facilities of this size are to have a plan prepared prior to the effective date

of the permanent rules.

For facilities that begin operation after the effective date of the permanent rules, the plan will have to be approved by the Department prior to the commencement of operations at the facility. As is also stated in the Livestock Management Facilities Act, owners or operators of existing facilities that reach or exceed 7,000 animal units through growth must submit a plan to the Department for approval within 60 working days of reaching or exceeding 7,000 animal units.

As with the smaller size category, the waste management plan and records of livestock waste disposal must be kept on file at the facility for a period of three years.

Due to the variability in nutrient content of livestock waste from different species and from different types of storage structures, separate plans shall be prepared or separate sections of one plan shall be developed for each different type of livestock waste storage structure or system. The table 10-7 on page 10.5 of the Livestock Waste Facilities Handbook, which is put out by Midwest Plan Service, MWPS-18, 1993,

indicates approximate nutrient contents of livestock waste from different species and waste handling systems.

Ammonium nitrogen values can vary by a factor of six for swine depending on whether a lagoon or liquid pit was utilized. Different species can also produce different nutrient contents. Ammonium nitrogen content of swine versus beef in a liquid pit may vary by a factor of about 2.5. Separate plans or sections are needed to differentiate these major differences.

It is proposed in these rules that an owner or operator who prepared a waste management plan pursuant to the emergency rules would not have to immediately prepare a plan to comply with these permanent rules. The emergency rule requirements are very similar to the proposed permanent rule requirements.

However, the owner or operator would have to comply with the provisions of the permanent rules for maintaining the plan. This would include the testing of the waste for nutrient content prior to application and the updates to the plan as required in Section 506.313. These areas will be

discussed further later in the testimony.

Section 506.303, waste management plan contents. The waste management plan can be visualized as three major segments; a segment for administrative and narrative items, a segment for the calculation of an application rate and the land area required for application, and a segment dealing with restrictions and requirements. Section 506.303 lists the items that are to be included in a waste management plan. The section 506.304 through Section 506.309 describe or further identify some of the items listed in Section 506.303.

The first segment of the plan deals with the administrative and narrative areas such as names and addresses, type of waste storage for the facility, species and size of the animals, number of animal units at the facility, maps and aerial photos of the fields available and intended for livestock waste application with residences and water sources indicated, waste application agreements, cropping schedules for the application fields, optimum crop yields for each crop in each application field, waste application methods,

amount of waste to be disposed of annually, and the nutrient content of the livestock waste.

Waste application agreements with other landowners are important to ensure that the livestock owner or operator has adequate land acreage available for the disposal of the waste. These agreements are to be obtained for any land that is not owned or rented by the livestock owner or operator, and are to be included in the plan.

An aerial photo is to provide site-specific information for the application areas. These can be obtained from the USDA-Farm Service Agency local offices either at no charge to landowners or at a minimal charge. A map of the area is to provide a general perspective of the application areas and to add features on adjacent land that may not be evident or available from the aerial photos.

A listing of the cropping schedules is needed to identify any nitrogen contribution from a legume crop grown during the previous year. This is to be used in the nitrogen credits section to be discussed later. These cropping schedules are also needed to determine the nutrient requirements for

the current crop year. Listing anticipated crops for future years is to be used for planning purposes and to give the owner or operator an indication if more land may be needed in future years because of a cropping change that may reduce the amount of livestock waste that could be applied to a particular field.

The second segment of the waste management plan involves calculations to determine the application rate for the livestock waste and also the amount of land area that will be required to properly apply the waste at the determined rate. An explanation of the components involved in these calculations will be provided. The basic plan involves determining the amount of waste available for application, determining the nutrient content of the waste, adjusting the nitrogen content for losses due to method of application and conversion of organic forms to available forms, determining an optimum crop yield and therefore the crop nitrogen requirements, and determining any nitrogen credits from previous manure applications or legume crops. From these figures the total amount of nitrogen available for application can be

determined. A waste application rate can then be calculated for each field based on the crop needs and the nitrogen credits. Multiplying this rate by the number of acres in the field provides the total amount of waste applied to that field. Summing these application amounts from the different fields will allow the owner or operator to determine if adequate land area is available for the application of the total amount of waste.

In the proposed rule, I will be jumping ahead to Sections 506.304 through 309 as they relate to the calculation portion of the waste management plan. I will then come back to finish out the third segment of the plan content section.

Section 506.304, livestock waste volumes. The volume of livestock waste to be disposed of is to be determined by actual measurements of the storage structure. Book values do exist for determining the amount of waste generated by different species and sizes of animals on a daily basis. These could then be used to calculate the amount of waste generated over the period of time between livestock waste applications to determine the total volume.

However, these book values are based on averages and each individual livestock operation is different. Different sources of book values exist, such as Midwest Plan Service, Natural Resources Conservation Service, and Cooperative Extension Service, and variability exists within these sources. For example, Purdue University data shows a gestating sow will contribute 1.2 gallons of waste a day to a liquid type of storage system while data from Iowa State University shows a gestating sow will contribute 1.6 gallons per day.

Midwest Plan Service shows a slightly smaller gestating sow will produce 1.1 gallons of waste per day, but that these values may vary by 30 percent or more, and that the addition of water may double the actual total amount. Data exists for other species and storage systems. The amount of water used in different facilities can vary greatly which will affect the overall volume. Therefore, the Department believes that actual on-site measurements is the better approach.

Section 506.305, nutrient content of livestock waste. Nutrient content of the livestock waste is to be determined by a laboratory analysis

of waste samples from the storage facility. However, for new facilities initially preparing a plan or facilities preparing a plan after reaching or exceeding 1,000 animal units, estimated values from the University of Illinois Cooperative Extension Service or the Natural Resources Conservation Service of the United States Department of Agriculture may be used. These values would be used only for the initial plan preparation. Actual sample analysis values would have to be obtained prior to waste application and the plan may have to be updated to reflect any changes as a result of the use of these sample analysis values.

The waste to be disposed of shall be sampled and analyzed within 60 working days prior to the waste application, but analysis is required only on an annual basis. The 60 working day period should allow adequate time to allow the owner or operator to obtain a sample, have it analyzed, receive the results, make any changes to the plan, and still have enough flexibility in application times which could be greatly affected by the weather. As with the volumes of livestock waste

produced, book values are available for nutrient content of the waste.

Many of the same problems that were discussed above with waste volumes are relevant with nutrient content book values. Different sources of book values have greatly varying data for nutrient content. The nutrients in livestock waste can vary greatly from facility to facility due to number of animals, diet fed, and the size and species of animals. Differences in storage and the amount of water added can also affect the nutrient content.

The sampling of the waste is to be conducted under the direction of a certified livestock manager. Some problems may exist such as obtaining a representative sample, however, topics such as these can be addressed in the certified livestock manager training. By requiring the involvement of a certified manager, these problems should be reduced.

Another approach could be to obtain livestock waste samples for laboratory analysis during the actual application process. This could alleviate the representative sampling problem, but

analysis results would not be available for that application period. The results could be incorporated into the plan for the next application period, but that may be a year or so later.

Laboratory analysis of the livestock waste sample is to include total nitrogen, ammonium nitrogen, total phosphorus, total potassium, copper and zinc. By subtracting the ammonium nitrogen amount from the total nitrogen amount, the amount of organic nitrogen can be determined. This figure will be used in the plan for determining the amount of plant-available nitrogen through the mineralization of the organic nitrogen. Phosphorus and potassium are included so producers will have an indication of the amount of those nutrients applied so supplemental fertilizer can be applied at the proper rate, if needed.

Phosphorus is also included for those producers who may want to base their plan on the amount of phosphorus in the livestock waste. Testing laboratories generally offer a package which includes the testing of nitrogen, phosphorus and potassium. The cost of this basic package may range from $32.00 to $50.00. The addition of

ammonium nitrogen may cost an additional $6.00 to $20.00. Copper and zinc are common micronutrients added to livestock feed.

These elements are proposed to be added to the analyte list so the owner or operator can monitor their levels or changes in the livestock waste and use the results in combination with the soil test results to be discussed later.

Section 506.306, adjustments to nitrogen availability. Adjustments shall be made to nitrogen availability to account for nitrogen losses from livestock waste due to the method of application. Nitrogen can be lost to the air if the livestock waste is not injected or incorporated into the soil. These losses can range from 0 percent to 40 percent depending on whether the waste is in a liquid or solid form and the type of application method.

The Department proposes to adopt factors to adjust for the nitrogen loss in the plan. This is to allow for a more responsive action should these factors require changing based upon research results. The Department will propose factors to account for nitrogen loss during and after

application similar to the factors listed in Table 10-2 on page 10.2 of the Livestock Waste Facilities Handbook, MWPS-18.

Plant-available nitrogen can also be gained in the soil through the mineralization of organic nitrogen. This mineralization can occur on the livestock waste just applied and also previous livestock waste applications. The mineralization of previously applied livestock waste will be accounted for under the nitrogen credits section. The Department proposes to adopt the mineralization rates as listed in Table 10-5 on page 10.4 of the Livestock Waste Facilities Handbook.

The Department desires to be able to more quickly make changes to these values as further research may suggest that rates should be changed.

The Midwest Plan Service prepares publications under the direction of agricultural engineers and consulting specialists. It is an official activity of land-grant universities in 12 upper midwest states with the United States Department of Agriculture cooperating. The participating states include Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri,

Nebraska, North Dakota, Ohio, South Dakota and Wisconsin. The plans, specifications, and data used in Midwest Plan Service documents have undergone peer review. This document is used by many dealing with waste management and facility planning and design.

Section 506.307, optimum crop yields. Optimum crop yields are to be determined for each field where livestock waste is to be applied. The optimum yield is to be obtained from proven yields from the particular field, from crop insurance yields, or from assigned yields from the Farm Service Agency of the United States Department of Agriculture. If yields are not available from the previously listed sources, soils based yield data from the Natural Resources Conservation Service of the United States Department of Agriculture shall be used.

Section 506.308, crop nitrogen requirements. Crop nitrogen requirements are proposed to be adopted by the Department. These requirements will be based on the recommendations contained in the Illinois Agronomy Handbook, and from the recommendations of the staff from the

Department of Agronomy at the University of Illinois. The Pollution Control Board has a copy of this document through the filing of the emergency livestock waste rules.

Soybeans do not generally require nitrogen fertilization since, being a legume, they can fix nitrogen from the atmosphere and utilize this for plant development. However, if soybeans are fertilized with nitrogen, the plants will use the added nitrogen before fixing their own. It will, therefore, be proposed that soybeans can be fertilized at the same rate as if corn was being grown.

Section 506.309, nitrogen credits. Credits to the amount of nitrogen for application shall be calculated for any nitrogen-producing crops grown the previous year, for any other sources of nitrogen applied for the growing season, and for mineralized organic nitrogen from livestock waste applied during the previous three years. Credits for nitrogen-producing crops will be obtained from the Illinois Agronomy Handbook and the staff from the Department of Agronomy at the University of Illinois and will be adopted by the

Department.

The Livestock Waste Facilities Handbook, MWPS-18, lists the rates of nitrogen release (mineralization) during the second, third and fourth growing seasons after the initial livestock waste application of 50 percent, 25 percent, and 12.5 percent, respectively, of that mineralized during the first growing season.

Calculations for the sections just described are to be included in the waste management plan. From these calculations, an application rate is to be determined for the crops scheduled to be grown. Due to different crops grown in different fields with different yielding abilities, an application rate needs to be calculated for each field. The plan shall include a listing of the fields for application and the planned application amounts for each field.

The third segment of the waste management plan contents deals with restrictions on livestock waste application and other requirements. Most of these restrictions listed in the proposed rules are directly from the Livestock Management Facilities Act. These are also listed in 35 Illinois

Administrative Code 560. One proposed change is in Section 506.303(r) dealing with the application of livestock waste into waterways. Many types of waterways exist. A common conservation practice is the installation of grassed waterways in fields for erosion control. Many fields contain these, including fields with irrigation systems.

The use of irrigation systems is a common practice for the application of large amounts of liquid livestock waste from lagoons. Waterways generally do not follow straight lines and an irrigation system may be over different portions of the waterway during much of the application process. If no application is allowed in any waterway, the use of irrigation systems may be effectively eliminated for many facilities. Also, the possibility exists that many waterways may be eliminated to circumvent this restriction, thus negating any progress that has been made over the years in controlling soil erosion.

Therefore, additional language has been proposed to allow for the application of livestock waste in grassed waterways if the amount is controlled such that there is no runoff and

application is not made within prescribed distances to potential routes of groundwater contamination.

Discussions among the Rules Advisory Committee members after the proposed rules were filed identified two areas where changes should be made. One area dealt with Section 506.303(r) regarding the application of livestock waste in waterways. To be consistent with Section 506.204(g)(6) and to provide protection to potential routes of groundwater contamination, the following underscored language is proposed to be included in Section 506.303(r):

A provision that livestock waste may not be applied in waterways, however, livestock waste may be applied through irrigation systems onto grassed waterways if there is no runoff, the distance from applied livestock waste to surface water is greater than 200 feet, the distance from applied livestock waste to potable water supply wells is greater than 150 feet, and here is the underscored language, the distance from applied livestock waste to a non-potable well, an abandoned or plugged well, a drainage well, or an injection well is greater than 100 feet, end of underscore,

and precipitation is not expected within 24 hours.

The other change involves adding a subsection to Section 506.303 dealing with the application of livestock waste onto saturated soils. The following underscored language is proposed to be added at 35 Illinois Administrative Code 506.303(v):

Start of the underscore, a provision that livestock waste may not be applied during a rainfall or to a saturated soil and that conservative waste loading rates will be used in the case of a high water table or shallow earth cover to fractured bedrock. Caution should be exercised in applying livestock wastes, particularly on porous soils, so as not to cause nitrate or bacteria contamination of groundwaters. End of underscore.

These restrictions are currently in 35 Illinois Administrative code 560, however, to maintain a continued awareness for groundwater protection, the Committee felt that this language deserved inclusion in this subpart and, therefore, in waste management plans.

Additional requirements included in the

proposed rules address an inspection of the berm tops and sides of earthen livestock waste storage structures for evidence of erosion, burrowing animal activity, and other conditions that may jeopardize the integrity of the storage structure. These inspections are to be performed by the owner, operator or certified livestock manager at least once every two weeks.

Conditions of zinc and copper toxicity in sheep have been reported where sheep have grazed on land that has received applications of livestock waste. Concerns existed among the Rules Advisory Committee members about the possible buildup of relatively large concentrations of zinc and copper in the soil where livestock waste was regularly applied.

As a result, subsection (u) was added to Section 506.303 requesting that the owner, operator or certified livestock manager shall consider the addition of zinc and copper for analysis during the normal soil testing program for crop production from the land where livestock waste is applied. These results could then be used in conjunction with the livestock waste analysis results to

determine any buildup or potential problems with copper and zinc in the soil.

Section 506.310, records of waste disposal. Records of livestock waste disposal shall be kept on file at the facility for a period of three years. These records shall include the dates and the fields where livestock waste application was made, how it was applied, the rate of application, the number of acres receiving waste, and the amount of livestock waste applied.

Section 506.311, approval of waste management plans. For waste management plans subject to approval by the Department, approval shall be based upon the application rate for nitrogen not exceeding the crop nitrogen requirements to obtain optimum yields, demonstration of adequate land area for livestock waste application based upon the nitrogen content of the waste and the determined application rate, and completeness and accuracy of the plan contents. The owner or operator of the livestock management facility shall be notified by the Department within 30 working days of receipt of the plan that the plan has been approved or that further information

or changes are needed. The owner or operator shall provide the information to the Department within 30 working days.

Section 506.312, sludge removal. Sludge removal from a lagoon can occur periodically as sludge builds up or as a result of a lagoon closure. This section requires testing of the sludge prior to application.

Section 506.313, plan updates. Waste management plans are to be reviewed annually by the owner or operator. The plan is to be updated, if needed, after the laboratory analysis results are received but prior to the application of the livestock waste to the land using the most recent analysis results. Section 506.313(b) lists conditions when the plan must be updated such as changes in the amount of land required for disposal, changes in the land available for disposal, changes in the method of disposal, and changes in the cropping sequence which may alter the amount of livestock waste to be applied.

Section 506.314, penalties. Penalties for violations of the requirements of the waste management plan section are taken from the

Livestock Management Facilities Act, begin with a warning letter from the Department, and progress to a $500.00 fine and possibly a cease and desist order. Further details on penalties will be discussed in Subpart E.

This concludes my testimony on Subpart C.

Thank you.

HEARING OFFICER LOZUK-LAWLESS: Thank you, Mr. Frank.

Mr. Frank, would you please re-read the first sentence in the underscored language on page 13? I think you misspoke. It begins with, "a provision."

MR. FRANK: A provision that livestock waste may not be applied during a rainfall or to a saturated soil and that conservation (sic) waste loading rates will be used in case of a high water table or shallow earth cover to fractured bedrock.

HEARING OFFICER LOZUK-LAWLESS: So you did mean "conservation" and not "conservative"?

MR. FRANK: "Conservative."

HEARING OFFICER LOZUK-LAWLESS: "Conservative." Okay. Thank you.

I would request that the changes which

are requested in the proposed language be filed in your final comments later. Would that be all right?

MR. FRANK: Okay.

HEARING OFFICER LOZUK-LAWLESS: Thank you very much.

This would be an excellent opportunity to take a five-minute break. If you have any questions on the proceedings today or any questions about the Board in general, I would be happy to answer those questions.

There are also several attorneys from the Board that are present here today in the audience. We have in the second row Attorney K.C. Poulos, Cynthia Ervin, Kevin Desharnais, Michael Wallace, and Chuck Feinen. If you would like to approach any of those people with any questions you may have, feel free to.

There are washrooms if you go in the back of the room downstairs, as well as washrooms here. And if we could please reconvene in about five minutes. Thank you.

(Whereupon a short recess was taken.)

HEARING OFFICER LOZUK-LAWLESS: Mr. Boruff, if you would like to call your next witness. Is it Warren Goetsch?

MR. BORUFF: Yes, Warren Goetsch.

HEARING OFFICER LOZUK-LAWLESS: Okay. Thank you. You may begin.

MR. GOETSCH: I have previously provided my qualifications relative to this testimony. Thus, I will directly proceed to provide testimony in support of the Department's proposal relative to Subpart D, the certified livestock manager program.

The statutory language included in the Livestock Management Facilities Act at Section 30 mandates the Department to "establish a Certified Livestock Manager Program in conjunction with the livestock industry that will enhance management skills in critical areas, such as environmental awareness, safety concerns, odor control techniques and technology, neighbor awareness, current best management practices, and the developing and implementing of manure management plans." Based on that mandate, the Department proposed and the Board adopted, under Docket 97-14, emergency rules

relative to the establishment of a certification and education program targeted towards the managers of livestock management and waste handling facilities.

The Department has convened an ad hoc committee of livestock industry representatives, University of Illinois Cooperative Extensive Service Educators, and the Department representatives in an attempt to further refine an educational curriculum for this purpose and anticipates that during the month of March 1997 the first training and testing clinics will be offered.

The Department has included within this rule proposal a subpart dealing with the certified livestock manager program. Subpart D includes two sections, the first outlining the applicability of the subpart and the second providing for Department development of procedures necessary to conduct the program.

Under the applicability section, the Department proposes to clarify the statutory language relative to all livestock waste handling facilities being operated "under the supervision"

of a certified livestock manager. The Department proposes to require that a certified livestock manager be immediately available to workers at the livestock handling facility either in person or by telecommunications and shall have the ability to be physically present within one hour of notification.

This proposal is based on the Department's current policy associated with it's commercial pesticide applicator and operator licensing program operated under authorities granted in the Illinois Pesticide Act. In it, licensed operators are required to work under the direct supervision of a licensed applicator. In many instances, a company may employ only one or two applicators at each branch office and have several operators at each of these sites required to work under the supervision of the applicator.

The allowance for immediate contact via telecommunication augmented with the requirement of an on-site contact within a small time period has seemed to allow for both safe and efficient utilization of those individuals with specific training and skills. The Department proposes that

a similar approach would be successful in the livestock industry.

In addition, the Department proposes that the certification status of individuals participating in the program authorized under the Board-adopted emergency rule would be so recognized under this proposal. Also, the Department offers a statement which clarifies that the number of animal units served by a livestock waste handling facility shall be the maximum design capacity of the livestock management facility served by the livestock waste handling facility. This clarification will assist the potential manager in determining which method of certification is required in his or her specific situation.

The second and final section of the Subpart D provides authority to the Department to adopt and promulgate procedures necessary to perform its duties and responsibilities related to the Certified Livestock Manager Program. As referenced earlier, the Department anticipates further development of a program very similar to the existing private and commercial pesticide applicator and operator programs.

As mandated by the Livestock Management Facilities Act, the Department intends to work closely with the livestock industry as well as our current partners in the pesticide programs, the University of Illinois Cooperative Extension Service, as this program is developed. We believe that it will become the "hitch pin" that will secure together the various components of the Livestock Management Facilities Act. It should provide both a forum for the delivery of new technologies as well as for the delivery of regulatory updates.

This concludes my remarks to Subpart D of the rule proposal. Thank you for your kind attention.

HEARING OFFICER LOZUK-LAWLESS: Thank you, Mr. Goetsch.

Okay. Mr. Frank.

MR. FRANK: I have previously provided my qualifications relative to this testimony. Thus, I will directly proceed to provide testimony in support of the Department's proposal relative to Subpart E: Penalties.

Subpart E deals with penalties associated

with violations of three areas of the Livestock Management Facilities Act: Lagoon registration and certification, certified livestock manager, and waste management plans. These three areas have cease and desist orders listed as penalties in the Livestock Management Facilities Act, and this subpart is primarily devoted to this type of penalty.

Two types of cease and desist orders may be issued by the Department. One involves a stoppage of work during construction of a lagoon if violations of the Livestock Management Facilities Act or rules occur during construction. Violations may include failure to register the lagoon prior to construction, failure to construct according to the plans and specifications, false site investigation information and others. An operational cease and desist order may be issued by the Department for violations that have been detected after the facility has been put into operation.

Since living animals are involved, the issuance of a cease and desist order is not as straightforward as closing the doors to a business. Animals of different ages and with

different purposes must be considered, plus the feeding and caring of the animals must continue. The movement of animals out of a facility may not be immediate due to their size, the availability of space at other facilities, and because of biosecurity risks. For these reasons, the Department will develop procedures for the orderly movement of livestock out of a facility in the event a cease and desist order is issued.

This Subpart also proposes that a waste management plan that is prepared as a result of a warning letter from the Department or a compliance agreement shall be subject to review and approval by the Department regardless of the size of the facility. Also proposed is a statement indicating that penalties will not be imposed for excessive nitrogen application for unplanned cropping changes due to the weather or other unforeseeable circumstances.

This concludes my testimony on Subpart E.

HEARING OFFICER LOZUK-LAWLESS: Thank you, Mr. Frank.

Mr. Boruff, would you like to continue?

MR. BORUFF: I have previously provided

my qualifications relative to this testimony. Thus, I will directly proceed to provide testimony in support of the Department's proposal relative to Subpart F: Financial responsibility, Subpart G, and also offer our Department's closing remarks.

Subpart F: Financial responsibility of the proposed rules relates to Section 17 of the Livestock Management Facilities Act. The intent of this section of the Act is to ensure that in the event of the closure of a lagoon associated with a livestock management facility, that the cost of that closure shall be borne by the owner of the lagoon, versus a unit of local government.

During the deliberations of the Livestock Industry Task Force and its working groups, concerns were raised relevant to this issue. It may be possible that the owners of a livestock waste lagoon would be unable to properly close a lagoon and dispose of its contents due to the lack of financial resources. As such, the situation could possibly exist whereby the ownership of the property could revert back to the county in which it is located and the county would then become responsible for the closure of the lagoon.

The legislation outlines several types of surety instruments which may be used to ensure financial responsibility. The legislation further states that the level of surety to be required shall be determined by rule and based upon the volumetric capacity of the lagoon.

In the rules which the Illinois Department of Agriculture is proposing to the Pollution Control Board, the Department is requesting that it be allowed to adopt and promulgate procedures and criteria reasonably necessary to perform its duties and responsibilities under this subpart through a separate rulemaking process. In establishing the level of financial responsibility a lagoon owner would be required to carry, several factors need to be taken into account.

The likelihood of the type of scenario occurring which I have outlined above, even though possible, is very remote. In our review of the issue, the Illinois Department of Agriculture has been unable to find any evidence of this type of occurrence happening before in the State of Illinois and very few documented cases of this

occurrence in other states.

In the event of a financial failure on the part of the owner of a livestock management facility, the title of the property transfers to the lenders or creditors of the operation. As such, the new owners become responsible for the lagoon and any closure requirements connected with it. Since the property would retain some economic value, the likelihood of title being transferred to the local county is very slim.

Based upon our inquiries, the commercial insurance industry does not offer policies which would provide the type of coverage intended in this section of the Livestock Management Facilities Act. However, livestock producer organizations are currently considering the development of a fund which would afford coverage for participants in this industry-sponsored program.

As in the case of commercial insurance, guarantees and surety bonds are difficult to acquire for this type of coverage. Our Department has been able to estimate the cost of cleanup and closure for lagoons based on volumetric capacity making use of current charges for soil excavation

and land application. Through a separate rulemaking process, we intend to develop a formula relating to the level of coverage required on individual lagoons, taking into consideration current projected removal costs and actuarial information based upon rate of incidence.

Since these factors may change from time to time, it was the recommendation of the Advisory Committee that the Illinois Department of Agriculture be allowed to promulgate rules relative to this section in order to allow for revisions from time to time as factors may change. In this rulemaking process we will call upon experts from the financial, insurance, engineering, and livestock industries in order to develop a meaningful program which will afford the type of coverage intended by the General Assembly.

I will now move into our comments relative to the support of Subpart G: Setbacks.

As I mentioned earlier in my testimony, one of the principal objectives of the Livestock Management Facilities Act is to prevent negative impacts to the environment as a result of livestock production and to protect Illinois natural

resources. Earlier subparts of the rules tend to deal with the protection of water and soil resources, and in Subpart G regarding setback distances, it is the intent to protect air quality and to control odors which result from livestock production but may be offensive to neighbors of individual operations.

The establishment of setbacks distances from livestock operations to the residences and populated areas was addressed in the Illinois Environmental Protection Act, Title 35, Subtitle E, entitled "Agriculture-related pollution." The Livestock Management Facilities Act expands upon the setback requirements established under the Illinois Environmental Protection Act by providing for incremental increases in distances from both individual residences and populated areas as the size of proposed livestock operations increases.

It is very likely that any livestock operation, regardless of size, will generate some level of odor by the very nature of the operation. Many factors contribute to the level of odor resulting from an operation including but not limited to size, species, type of waste handling

methods, waste removal and application, management, and climatic conditions. Oftentimes, management at a livestock operation has a large impact on the level of odor which may be produced.

The intent of establishing setback distances is to provide for a dilution effect which will lessen odors coming from a livestock operation before they reach surrounding persons or homes. Due to the fact that the interpretation of odors by individuals is subjective and varies from one individual to the next and since there is no known reliable test which will quantify odor content, it is not possible to prove or disprove that setback distances as outlined in the Act are adequate.

However, the setback distances as outlined in the Livestock Management Facilities Act seem reasonable in the level of isolation which they provide from a livestock unit to a neighboring residence or community and take into account the makeup of rural Illinois, in that setbacks extended beyond current legislation may have a negative impact upon the livestock industry by excluding large portions of the state from production activities.

In the rules which the Illinois Department of Agriculture is proposing to the Pollution Control Board, the Department is requesting that it be allowed to adopt and promulgate all procedures reasonably necessary to perform its duties and responsibilities under Subpart G. For operations which violate setback distance requirements, the Department may issue a cease and desist order which prohibits further construction of the livestock management facility or livestock waste handling facility if either is in the construction phase.

If the livestock operation is subject to the setback provisions within the Livestock Management Facilities Act and has violated setback distance requirements, the Department may issue an operational cease and desist order. The specifics of this type of an action have been covered in testimony relative to the subpart dealing with the penalties provision of the proposed rules. As outlined in our proposal, the Department may cancel a cease and desist order in the event that the owner or operator of a livestock management facility or of a livestock waste handling facility

provides a valid waiver of setback as provided for in Section 506.702(b) or when the Department has verification of compliance with the appropriate setback distances as described in Section 35 of the Livestock Management Facilities Act.

In summary, and on behalf of the Illinois Department of Agriculture, I appreciate the opportunity to provide testimony to the Pollution Control Board relative to the rules which we have proposed. Clearly, the issues which we face are complex, have far reaching impacts, and are not easy to resolve. As discussions have been held at several locations around the state over the last year and a half, it seems that two main themes have emerged regarding livestock production in the State of Illinois.

First, is one of providing protection of the environment and natural resources of the State of Illinois from adverse impact from livestock production. This concern is not unique to Illinois, and other states have dealt with the same issues in a variety of ways. In many regards, the solutions which we are proposing in Illinois are common to ones being implemented in other

livestock-producing states.

As livestock production units grow in size, the use of lagoons for manure storage have become a cost-efficient way of handling large volumes of waste. The regulations which we have proposed to the Pollution Control Board use the best information we have available to us at this time to ensure that the environment is protected and groundwater resources remain free from livestock waste contamination.

By using soil borings and the information they provide, we have been able to recommend a differential, site-specific approach to the protection of groundwater by the use of liners and monitoring wells in the construction and siting of lagoons. The lagoon design criteria and management criteria which we have proposed are based upon current guidelines established by the American Society of Agricultural Engineers and the United States Department of Agriculture Natural Resource Conservation Service, both of which are recognized as authoritative sources in the area of soils engineering and lagoon design. In developing the proposal, we have attempted to anticipate potential

sources of pollution, based upon experiences in other states, and develop a regulatory structure which will prevent these types of occurrences in Illinois.

In many cases, the management of a livestock management facility or a livestock waste management facility is key to ensuring that natural resources are protected. As a result, the regulations have addressed this need for a high level of management by providing for manure management plans and by providing for the certified livestock management program. Illinois livestock producers have traditionally been good stewards of our resources and these two components of the regulations will provide the awareness and training to continue this sound stewardship.

The proposed regulations also address the need for penalties in order to ensure that the rules can be enforced and also allow for financial responsibility to provide for cleanup in those cases where the owner or operator of a livestock management facility may not be able to properly close and clean up a livestock lagoon.

Another theme has developed over the

course of the discussion regarding this issue which relates to the social and economic changes occurring within the livestock industry. Much has been said about protecting the family farm and restricting the size of mega-farms as they are being considered in Illinois. The rules which we are proposing to the Pollution Control Board have not attempted to address these social and economic concerns.

However, there are many producers and industry experts who would warn that the increased cost of regulations may actually lead to an acceleration of small to mid-sized livestock operations leaving the industry. As a result, the Illinois Department of Agriculture recognizes that the rules which will be adopted need to be fair in their approach, economically reasonable in their implementation, and based upon sound scientific information to provide a high level of protection to the environment and our natural resources.

Once again, on behalf of the Department of Agriculture, we appreciate the opportunity to provide these comments to the Pollution Control Board.

Thank you for your time.

HEARING OFFICER LOZUK-LAWLESS: Thank you, Mr. Boruff.

Does that conclude the testimony of the Department of Agriculture, Mr. Boruff?

MR. BORUFF: Yes, it does at this time. Thank you.

HEARING OFFICER LOZUK-LAWLESS: Thank you. We will then continue with the testimony of the Illinois Environmental Protection Agency.

Would the court reporter please swear in the witness.

(Mr. James B. Park was sworn in by the court reporter.)

MR. PARK: My name is James B. Park. I am the Chief of the Bureau of Water for the Illinois Environmental Protection Agency. I am responsible for all water pollution control programs and the community drinking water regulation programs, including groundwater regulation in the State of Illinois.

I have been with the agency in various positions for 25 years. I hold a Bachelor of

Science and a Master of Science Degree in Engineering from Southern Illinois University and I am a Registered Professional Engineer.

The regulations developed by the Illinois Department of Agriculture follow an extended public debate concerning the role of government in the establishment of criteria and guidance for the livestock industry that culminated in the passage of the Livestock Management Facilities Act. At the same time, significant changes in this industry have taken place, realigning and consolidating livestock operations nationwide and in Illinois, and leading to the concern for the structure of this industry and for its effect on the environment.

The Illinois EPA believes the promulgation of these proposed rules will have a positive impact on the public and its understanding of the livestock industry, on the livestock industry itself and its capacity to address the waste management portion of these operations in a consistent and scientifically sound environmental manner, and lastly, on the environment itself, which must be protected in terms of soil, surface

and groundwater, without unduly harming the dynamics and economics of the changing livestock industry.

The livestock industry is changing and doing so rapidly. This is most evident in the swine operations and can be demonstrated in the most recent statistics of this growing segment of the industry. Overall, total hog production in the state has declined one to two percent per year over the last decade. The operations producing these hogs have not remained static, however. There are today fewer small operations, those with less than 1,000 head, than there were in 1985. There are more large operations, those with greater than 1,000 head than there were ten years ago.

These statistics of the swine industry show a trend toward large confinement operations. This trend stands in stark contrast to the environmental regulations that were first adopted in the early 1970s as Chapter 5 of the Illinois Pollution Control Board's Rules and Regulations, and later became 35 Illinois Administrative Code: Subtitle E, when many of the state's hog operations were much smaller and were operated on open lots.

The Illinois EPA supports the adoption of R97-15. The addition of operator certification and the mandate for livestock waste management plans for the largest of these facilities is a positive step in establishing consistent and responsible operation of livestock waste handling facilities in this state. We endorse and encourage the training and education programs set forth in these rules, as a meaningful approach to making the agricultural community aware of the responsibilities and beneficial aspects of sound livestock waste management.

This program, when fully developed, promises to allow for the communication and the evaluation of innovative technology, as it affects the development of the operators' waste management plans. The expansion of the setback limits, as mandated under the Act, is also a necessary step in addressing the potential detrimental aspects of large livestock facilities.

The Agency has several specific recommendations related to the proposal presented by the Illinois Department of Conservation. Soil boring requirements are satisfactory for the vast

majority of sites in Illinois, as prescribed under 35 Illinois Administrative Code 506.202(b). However, the Department of Agriculture needs adequate flexibility to require additional borings in the case of disturbed or mined land that may have altered hydrologic and soil conditions, or routes to groundwater via abandoned shafts. In these circumstances, a single boring for a large four to six acre lagoon would be insufficient.

35 Illinois Administrative Code 506.204(g) specifies the requirements for lagoon design, most of which were derived from the American Society of Agricultural Engineers or the U.S. Department of Agriculture, Natural Resources Conservation Service, guidance documents. The Illinois EPA believes that by specifying these requirements the operators will be better served and better informed. Where conflicts occur between the two sources, the Illinois Department of Agriculture has appropriately identified specific criteria in this Section.

Based on experiences in Illinois and other states, the Illinois EPA recommends two further criteria be specified in the design

standards of this Subpart, both of which are addressed in the reference documents. These are:

First, a prohibition on the use of outlet piping through the lagoon berm. Section 4.6.2 of the ASAE Standards states "An overflow device with a minimum capacity of 1.5 times the peak daily inflow may be installed at the lagoon surface level only if the overflow is to be contained in another lagoon cell or other treatment facility. Outlet devices should be installed in a way that allows effluent to be taken at a level of 150 to 450 millimeters below the surface." This seems to suggest that a subsurface outlet may be approved.

The Illinois EPA is aware of a recent example in North Carolina where lagoon slope failure was related to, and possibly directly caused by, an outlet pipe design of this type. The NRCS recently changed the North Carolina guidance document so that, quote, "if any pipes are to be placed through the embankment, the location and method of installation shall be approved by the designer of the embankment... The installation shall be certified by the inspector." It should be noted that this guidance document, although

designated as an NRCS document, was developed specifically for and applies only to North Carolina.

The Illinois EPA recommends that in addition to R97-15 that either:

Prohibits the use of through the berm outlet piping unless the piping discharges to another lagoon or,

Requires Department of Agriculture's specific approval, as called for in the North Carolina example.

The second addition is a requirement for emergency spillway. The NRCS document very clearly specifies under what conditions this is to be present. "Lagoons having a maximum design liquid level of three feet or more above the natural ground shall be provided with an emergency spillway or an overflow pipe to prevent overtopping." Since this is not addressed in the ASAE document, a potential point of confusion exists that could be corrected by adding a provision to R97-15 for the design to include an emergency spillway.

The Illinois EPA, acting in its role through the LMFA Advisory Committee, has evaluated

and made recommendations on a wide variety of issues presented on the subject of livestock waste management in the course of our deliberations. Those on this Committee, the Department of Public Health, the Department of Natural Resources and, in particular, the Department of Agriculture, are to be commended for their efforts in drafting a well reasoned set of proposed rules for the Illinois Pollution Control Board consideration.

R97-15 represents a strong step forward in the effective management and prevention of pollution from large livestock facilities in Illinois. We encourage the Illinois Pollution Control Board to adopt R97-15 and include the above noted additions.

As a supplemental comment to these proceedings, the Illinois EPA notes that there are a number of potential inconsistencies between the rules set forth in R97-15 as mandated by the Livestock Management Facilities Act and the existing provisions of Subtitle E. Most notable are the setbacks that apply to livestock facilities and certain definitions. At some point, it will be necessary to revise these issues in detail to

determine -- or to review these issues in detail to determine if changes to Subtitle E are needed. The interrelationships between the existing Subtitle E requirements and those contained in R97-15 are complex and require a level of analysis that may be beyond the scope of these proceedings.

We would encourage the Illinois Pollution Control Board to solicit input from the full range of parties that may have an interest in this subject and open a separate docket, if necessary, to address any substantive proposals to resolve conflicts or clarifications.

Thank you.

HEARING OFFICER LOZUK-LAWLESS: Thank you, Mr. Park.

Mr. Warrington, is there anyone else from the --

MR. WARRINGTON: No, that concludes our testimony.

HEARING OFFICER LOZUK-LAWLESS: Okay. Thank you very much.

Mr. Mudgett, from the Department of Health, would you like to just admit your prefiled testimony into the record or would you like to give

testimony?

MR. MUDGETT: I would like to just briefly summarize it, if I could.

HEARING OFFICER LOZUK-LAWLESS: Fine. Thank you.

Would the court reporter please swear Mr. Mudgett in.

(Mr. Clinton C. Mudgett was sworn in by the court reporter.)

MR. MUDGETT: My name is Clint Mudgett. I am Chief of the Division of Environmental Health for the Department of Public Health. I do have written testimony, so I thought I would just summarize the major points that I included.

First, we are happy to have participated on the committee that developed the rules. We think it was an excellent process. We believe the protection of public health is of primary importance in siting construction and operation of these types of facilities. Protection of drinking water supplies is our most important concern, and we believe that these rules very carefully consider requirements for siting and construction and they

will provide that protection.

Secondly, we were concerned about potential releases from lagoons and following environmental harm. These are not areas of our expertise, but we do believe that the information provided to agriculture was the best available, and the rules proposed provide the best protection we can have at this point.

We also wanted to briefly mention odors. We know it is a major concern. There is little research that supports evidence of physical illness with odors, but that certainly is not to consider that they are not important matters for the people who live around these types of facilities. The anecdotal reports are certainly valid that we hear in this regard.

We also believe the odor control measures provided by the Act and by reference to Illinois EPA rules are probably the best approach, along with training of certified livestock managers that the Department of Agriculture has proposed to try to address these, again, very legitimate concerns about odors and the potential health affects that do follow.

We don't want to imply that because there is a lack of scientific evidence for health affects related to odors that they do not occur. There is certainly adequate testimony that has been provided at other hearings that would verify that people do experience symptoms when they encounter severely adverse odors.

The question, and I think Mr. Boruff has addressed this as well in his testimony, is what is the best approach to trying to deal with that. And, again, the livestock facilities or the Livestock Management Facilities Act itself establishes the necessary setbacks. The reference to IEPA rules to deal with odors seem to be an appropriate approach, as well as training of the people that will operate these types of facilities.

In conclusion, again, I would reiterate that the process that was developed by the Act itself and the manner in which the Department of Agriculture conducted the Rules Committee I thought was laudable. Certainly, it was an open opportunity for people and visitors to have their input. I personally believe that the Department of

Public Health was well represented and the majority of comments that we offered were included in the rules.

I might mention one other thing since there was an issue about the use of bacteriological monitoring in monitoring wells. There certainly has been question as to whether or not that is an appropriate requirement and it was suggested, in fact, that perhaps some other less expensive, less problematic chemical tests could suffice in lieu of bacteriological monitoring.

The Public Health believes the major possible concern as a result of these types of facilities would be waterborne illness. And traditionally the quality of drinking water, the quality of water in monitoring wells, has been dictated by indicator bacteria. And we had proposed that some combination of E. Coli or E. Coliform bacteria and E. Coli streptococcus bacteria be included in the list of perimeters that would be monitored for in monitoring wells when they are required. We stand very strongly by that recommendation.

These are simple tests that virtually any

laboratory that does microbiological testing can do, and they are also very inexpensive. We did check prior to preparation of this testimony with two private laboratories. The cost for each test is $12.00 and $16.00, so we think that is a rather modest cost for bacteriological testing that we believe is important.

With that I would conclude my remarks. Again, I appreciate the opportunity to have participated on the Advisory Committee and to present this testimony for the Board.

HEARING OFFICER LOZUK-LAWLESS: Thank you, Mr. Mudgett. Would you like to submit your prefiled testimony as an exhibit?

MR. MUDGETT: Yes.

HEARING OFFICER LOZUK-LAWLESS: Okay. Mr. Mudgett's prefiled testimony on behalf of the Illinois Department of Public Health will be marked as Exhibit Number 4.

(Whereupon said document was duly marked for purposes of identification as Exhibit Number 4 as of this date.)

HEARING OFFICER LOZUK-LAWLESS: We will

now continue with the witnesses from the Department of Natural Resources.

Mr. Marlin, would you like all of the witnesses to be sworn in at the same time?

MR. MARLIN: Yes.

HEARING OFFICER LOZUK-LAWLESS: Okay. Would the court reporter please swear the witnesses in.

(Mr. John Marlin, Mr. Donald Keefer, Mr. Michael McCulley and Ms. Deanna Glosser were sworn in by the court reporter.)

HEARING OFFICER LOZUK-LAWLESS: Mr. Marlin, you may begin.

MR. MARLIN: On behalf of the Department of Natural Resources I want to thank the Board for this opportunity to comment on the proposal and participate in this process.

My name is John Marlin, assistant to the director of the Waste Management and Research Center, a Department of Natural Resources Division based in Champaign, Illinois. I hold a Ph.D. in entomology from the University of Illinois. I

represent DNR Director Brent Manning on the Livestock Management Facilities Advisory Committee, which helped formulate this proposed rule. DNR is pleased to have this opportunity to appear before the Board and participate in this process.

DNR is aware of the economic importance of the livestock industry to Illinois. Likewise, we are aware of the threat that livestock facilities can pose to neighbors and natural resources if they are not properly constructed and operated.

We appreciate the Board's leadership in this important matter and commend the Department of Agriculture for its effort in drafting the proposed rules. Our comments on the emergency rule noted several areas where ambiguities in the Livestock Management Facilities Act (LMFA) could lead to confusion. These areas include enforcement and the relationship between the LMFA and the Environmental Protection Act especially Subtitle E: Agriculture Related Pollution Rules. The status of two design documents cited in the LMFA "Design of Anaerobic Lagoons for Animal Waste Management" and "Waste Treatment Lagoon" relative to Subtitle E may lead

to additional confusion, since they cover similar concerns differently.

There are a number of ways a design or structural failure at a livestock facility may cause environmental contamination. Contaminants may leak into the groundwater from lagoons or other structures. Structural failure of a lagoon may result in millions of gallons of waste moving across fields and entering a stream or lake. Gases and dust leaving a facility may cause odor and contaminant deposition problems for a significant distance. Additionally, waste applied to the soil may run off the fields and contaminate nearby land and surface water.

The LMFA along with the implementing rules address a number of these concerns. The proposed design criteria, when followed, will provide significant protection to groundwater resources and substantially reduce the risk of structural failure of lagoons. The management plans required of larger facilities require consideration or implementation of a number of criteria which should increase the amount of nutrients utilized by plants while decreasing the

amount lost to runoff.

Finally, the operator training and certification provisions allow the Department of Agriculture great flexibility for designing programs to train livestock facility managers. The training program can be utilized to address techniques to better control odor and improve the effectiveness of such vital activities as lagoon managment and nutrient handling.

While the bulk of the detailed supporting testimony for the proposal will come from the Illinois Department of Agriculture, another DNR witness will provide technical testimony on certain geological and monitoring well location issues that are addressed in the proposed rules.

DNR generally supports the livestock regulation proposal before the Board today. We participated fully in the discussions of the Advisory Committee upon which the Department of Agriculture proposal is based. The proposal, if adopted, will significantly improve the level of protection to ground and surface water resources.

DNR proposes modifying the definition of "Populated Area" contained within the proposal.

The statutory definition is ambiguous. IDOA recognized this fact when it proposed the clarifying language. DNR believes the definition needs further clarification to make it clear that setback protection is required for certain properties. Our proposed definition is attached as DNR Exhibit A. We realize that the acceptance of our suggestions are dependent upon a favorable interpretation of the LMFA by the Illinois Pollution Control Board as it pertains to our proposed definition of populated area. We believe these issues need to be considered and we would like to offer the following points for consideration.

The State of Illinois has made a significant investment in lands that are managed for conservation and recreational purposes. The definition of "Populated Area" as proposed in the rules begins to address concerns regarding these lands. However, the definition does not provide for some of the characteristics of large sites used primarily for outdoor activities.

Our first change addresses the concept of "place of common assembly." The DNR contends that

the Populated Area definition should include examples of "places of common assembly and non-farm businesses." Because the term "places of common assembly" has not been defined either in the statute or the rules, the DNR's proposed list of examples will provide guidance to livestock management facilities owners about the general type of area which qualifies as a common place of assembly under the definition.

The list is not exhaustive, but makes clear that 4H and Scout camps as well as parks can be populated areas. Likewise, there is no distinction between public or private ownership. This language recognizes that a populated area can include a large acreage rather than just a building, provided that the requisite 50 persons per week visit.

The second change adds the concept of seasonal fluctuations in attendance. IDOA's definition logically recognizes that schools and businesses with vacations or seasonal shutdowns qualify as populated areas even if they are not open 52 weeks per year. DNR believes the interpretation of the statutory language should

provide the same consideration to areas which experience reduced attendance during portions of the year.

Schools, parks, and 4H and Scout camps have seasonally reduced attendance but should be protected. These places may have the 2600 people annually, which represents 50 persons times 52 weeks, but will not meet the required attendance of 50 or more people every week of the year due to vacation periods or winter weather.

The third change recognizes that some populated areas cover large acreage rather than a specific point like a building. The size, shape, and use of these areas are such that the Department of Agriculture's proposed definition will not provide adequate protection from odors and other environmental factors associated with livestock management facilities. Within a park, attendance is not limited solely to the visitor centers or picnic areas.

People use the entire designated area for activities such as hiking, nature appreciation, hunting and picnicking. Because of the way these sites are used, DNR proposes that the property

lines of recreational and conservation areas serve as the measuring point when determining setback distances.

In many ways this is comparable to the way the measuring point from a livestock farm is determined. The law does not require a setback from the boundary of the farm, but from the lagoon. This recognizes that much of the farmland upon which the lagoon is located is suitable to act as part of a buffer. This is not true in the case of land used for recreational purposes. Thus, we contend that land at a park or camp which is used by visitors should be protected by a buffer, rather than being considered part of the buffer for a specific building or gathering point.

Finally, the proposed definition of Populated Areas does not address how to determine the appropriate measuring point from places of common assembly for setback requirements. The Act states "minimum distances shall be measured from the," there is some words missing, and then "place of common assembly to the nearest corner of the earthen waste lagoon or livestock management facility, whichever is closer." The Department

recommends that the legal boundary lines of a place of common assembly should serve as the measuring points when determining setback distances at areas used primarily for outdoor activities.

Our next witness will be Donald Keefer.

HEARING OFFICER LOZUK-LAWLESS: Mr. Marlin, would you like to introduce your Exhibit A into the record?

MR. MARLIN: Yes, I would. It is attached.

HEARING OFFICER LOZUK-LAWLESS: The Department of Natural Resources' exhibit, "DNR's Proposed Alternative Definition of Populated Area" will be marked as Exhibit Number 5.

(Whereupon said document was duly marked for purposes of identification as Exhibit Number 5 as of this date.)

MR. KEEFER: My name is Don Keefer. I am a hydrogeologist in the Groundwater Resources and Protection Section of the Illinois State Geological Survey Division of the Illinois Department of Natural Resources. I have been with the Groundwater Section at the Survey since October,

1985.

My work at the Survey has focused on two areas; field observations of chemical movement through the unsaturated and saturated zones; and evaluations of aquifer sensitivity to contamination. In both of these areas, I have focused primarily on the movement and occurrence of agricultural chemicals.

My educational background includes both a Bachelor of Science Degree in Geology and a Master of Science Degree in Agronomy from the University of Illinois at Urbana. My master's degree focused on the fate and transport of pesticides in a tile-drained farm field.

My testimony today addresses the technical justification for portions of Sections 506.103, 202, 204 and 206.

Section 506.103 covers definitions in the proposed rule. The definitions of aquifer material, sand, gravel, and sand and gravel are critical to the successful application of the proposed siting criteria and lagoon design standards. The intent of these definitions is to provide consistent, appropriate identification of

the kinds of geologic materials that allow rapid transport of water and dissolved chemicals. The proposed use of these defined materials will allow for the consistent protection of vulnerable groundwater resources.

"Aquifer materials" are defined and used in this proposed rule rather than "aquifers" because when chemicals leak from a source like a livestock waste lagoon, their rates of travel through unsaturated aquifer materials are very similar to those through saturated aquifer materials. A lagoon leaking livestock waste into a deposit of aquifer material could contaminate a very large volume of the subsurface, regardless of whether the material were saturated or not.

The proposed definitions rely on textural and thickness criteria for defining aquifer materials. Most definitions of aquifers, however, rely on specific measurements of flow characteristics, also known as hydraulic characteristics. The proposed definitions were chosen in order to provide a simple, easily recognizable definition that would offer appropriate protection to groundwater resources.

These definitions did not include hydraulic characterization in order to avoid the significant expense of these measurements, and because these measurements would be of limited additional value.

Section 506.202 addresses site investigations for livestock waste lagoons. Subsections (a) and (b) discuss the collection of soil borings and the subsequent evaluation of geologic materials at the lagoon site, and the determination of the presence or absence of aquifer material within 50 feet of the planned lagoon bottom. Subsection (c) allows for alternative site investigation plans, and Subsection (d) requires qualified professionals to direct and evaluate the site investigation.

In siting any facility that contains a potential source of groundwater contamination, it is critical to evaluate the contaminant transport characteristics of the geologic materials at the facility location. Existing maps of geologic deposits are not detailed enough to provide a reliable characterization for facilities which could contaminate such a significant volume of groundwater. For this reason, the collection of

on-site information is necessary to determine the types of geologic materials present and to evaluate the potential impact to groundwater resources in the event of a leak.

In addition to the need for site-specific geologic information, the amount and chemical nature of the potential contaminants must be considered. This information will allow a better evaluation of the potential impact of any leaks to groundwater. The primary components of livestock waste that are a health or environmental concern include solid organic particles, bacteria, ammonium, and several trace metals, for example, zinc and copper.

In general, solid organic particles will remain in the lagoon due to their large size. Bacteria can transport through some geologic deposits, but will generally be filtered out quickly in fine-grained, non-aquifer materials. Ammonium and the trace metals are chemically charged, and will tend to stick, or adsorb to clay and organic matter particles. For these components, therefore, the greater thickness of non-aquifer materials around the lagoon, the more

likely they are to be removed from the groundwater.

Subsection (a) of the proposed final rule requires on-site geologic information be used to identify any sensitive groundwater resources. This subsection also requires that the geologic materials be evaluated to a depth of 50 feet below the planned lagoon bottom. This depth was selected based on a study of rural private well water quality conducted by the Illinois State Geologic and Water Surveys, with the assistance by the Illinois Department of Agriculture and Public Health.

I was personally involved in the design and early implementation stages of this project. This water quality study was designed so that any potential agricultural chemical spills would be avoided. This meant that any detected chemicals were probably due to leaching from the agricultural use of fertilizers and pesticides. The results from this study found that agricultural chemicals were occasionally present in the well water when the top of the uppermost aquifer was mapped as being within 50 feet of land surface. In addition, the greater the thickness of non-aquifer materials

between a contaminant source and an aquifer, the less likely the contaminants were to reach an underlying aquifer.

The observation of agricultural chemicals in shallow aquifers suggests that these aquifers would also be vulnerable to contamination from large point sources, such as leaking livestock waste lagoons. The 50 foot depth limit observed in the ISGS/ISWS water quality study was used for the required depth of characterization in the proposed rule because of the relatively innocuous and immobile nature of the primary contaminants in livestock waste. A more hazardous contaminant stream would require a greater depth of characterization to ensure adequate protection of groundwater resources.

Subsection (b) specifies the requirements for the collection of on-site borings. The borings are to be made to a depth of 50 feet below the lagoon bottom, or to bedrock. This means that the initial boring need not continue into bedrock material. The definitions of aquifer material have clear thickness criteria for bedrock aquifer materials. Subsection (b)(2) is included to

clarify that additional drilling below bedrock surface may be necessary to determine the thickness of bedrock materials at a site. This subsection is included because when bedrock is not expected within the boring, a drill rig may be used to obtain the necessary samples that may not be suitable for drilling in bedrock.

The collection of continuous samples from the boring in subsection (b)(3) is required to ensure that small sand layers are not missed. A series of small sand layers in any five foot section of core could potentially meet the aquifer materials definition. Based on this definition, it is essential to collect continuous samples from each boring.

In subsection (d), it is stated that the site investigation must be directed and certified by either a certified Professional Engineer, or a Registered Professional Geologist. This requirement is essential to ensure that the geologic materials found in the soil borings will be accurately characterized. Without certification by a qualified professional, it is impossible to guarantee that the definitions for aquifer material

will be understood and correctly applied. These definitions are the foundation of the siting and lagoon design criteria.

Section 506.204 addresses lagoon design standards, of which subsection (d) addresses the criteria for lagoon liner and groundwater monitoring requirements.

The results of the Illinois State Geological Survey and the Water Survey water quality study were again considered in developing guidelines on the need for lagoon liners and groundwater monitoring wells. In the water quality study, significantly higher detection rates were found in wells where the depth to uppermost aquifer material was mapped as less than 20 feet from the ground surface versus areas where the depth was mapped as 20 to 50 feet, or greater than 50 feet. The detection rates were also significantly higher in areas where the depth to uppermost aquifer was between 20 to 50 feet from the ground surface versus areas where the depth to uppermost aquifer was greater than 50 feet. These observations were of chemicals applied in relatively small concentrations over a very large land area. The

observations of different detection rates at different depths demonstrates that these increasing depth ranges are effective for predicting different "aquifer sensitivities" to contamination. Lacking specific data regarding aquifer sensitivity to contamination by livestock waste lagoons, the Illinois State Geological Survey and the Water Survey observations of agricultural chemicals were accepted as useful surrogates.

Accordingly, the more sensitive category of aquifers within 20 feet of the bottom of the lagoon require the use of a lagoon liner. Because of the short distance that leaking contaminants would have to travel to reach an aquifer that was within 20 feet of the lagoon bottom, and because of the rapid transport characteristics of aquifer materials relative to non aquifer materials, groundwater monitoring is also required in these areas.

In areas where an aquifer exists between 20 and 50 feet from the lagoon bottom, only a liner is required. The greater distance between the lagoon and the aquifer material is expected to dramatically reduce the potential for contamination

of the aquifer in these areas, so groundwater monitoring is not required. In areas where no aquifer is found within 50 feet of the lagoon bottom, neither a liner nor groundwater monitoring are required.

Regarding Section 505.206, the minimum of three groundwater monitoring wells are required whenever aquifer materials are identified within 50 feet of the proposed lagoon bottom. The purposes of these wells are to identify the local, shallow groundwater gradient at the site, and to allow the collection of groundwater samples for identifying background chemical concentrations and monitoring for evidence of leaks in the liner.

To ensure that the analytical results from these samples are meaningful, the wells must be located and constructed according to some relatively consistent guidelines. These guidelines will also allow the results from the different wells at any site to be more readily compared over time.

The slotted portion of a monitoring well, called the well screen, is where groundwater is able to flow into the well. In order to ensure

that the wells will generally be below the water table, and therefore able to be sampled, the top of the well screens should be set below the depth of the seasonal low water table. To ensure that each well sample is taken from approximately the same volume of geologic materials, the wells should have a consistent well screen length. A five foot screen is proposed and is intended to provide an optimal volume of water for analysis.

The wells should be constructed consistent with the Illinois Department of Public Health monitoring well construction guidelines. Well construction and sampling requirements suggest that sand be used to fill the space between the boring wall and the monitoring well. This sand is referred to as a sand pack, and should be used on each well. To ensure consistency between wells, the sand pack should be of a relatively consistent length, of no less than five feet and no greater than seven feet.

This concludes my testimony today. I appreciate the opportunity to participate in this process and to provide this testimony today.

HEARING OFFICER LOZUK-LAWLESS: Thank

you, Mr. Keefer.

PRESIDING BOARD MEMBER FLEMAL: Mr. Keefer, actually, I have a question. You stopped at the beginning of the second to the last paragraph.

MR. KEEFER: Right. I was just about to mention that. I believe that is a typo. It says "within 50 feet." It is to be "within 20 feet."

PRESIDING BOARD MEMBER FLEMAL: To be "within 20 feet." Okay. Thank you.

HEARING OFFICER LOZUK-LAWLESS: Thank you. At this time we are going to break for lunch for one hour, after which we will resume the Department of Natural Resources' testimony, finish their testimony, and the two remaining witnesses.

Then we will continue with the prefiled testimony of Renee Robinson and Ted Funk, followed by the testimony of any persons who have signed the witness sign-in list who are here today and wish to testify on the record, after which we will then open the floor for questions of any of the witnesses.

(Whereupon a lunch recess was taken.)

HEARING OFFICER LOZUK-LAWLESS: Okay. We will continue with the Department of Natural Resources. Thank you. If I could just please remind you that you are still under oath at this time.

We will be beginning with the testimony of Mr. Mike McCulley followed by the testimony of Deanna Glosser, and then we will proceed with the prefiled testimony of the other persons who have filed. Okay. Thank you.

MR. McCULLEY: Good afternoon. My name is Mike McCulley, and I am the Administrative Chief of the Division of Land Management within the Illinois Department of Natural Resources. The Division I represent manages 245 of the 283 properties that the IDNR leases.

Two important concerns of the Illinois Department of Natural Resources in the future siting of large livestock management facilities is the odor pollution that will negatively impact the visitor's outdoor experience and subsequent visitor attendance to the property and the potential impact to natural resources from leakage or overflow of the waste lagoon.

Section 35 of the Livestock Management Facilities Act defines the setback distances and how they are applied when siting new livestock management facilities. The Act defines "populated area" as one where at least 50 persons frequent a common place of assembly or a non-farm business per week," (Section 10.60). The proposed rule further states that "a common place of assembly or a non-farm business based on 50 persons or more frequenting the said place once per week shall include places that operate less than 52 weeks per year, such as schools with seasonal vacation periods and businesses or other places which experience seasonal shutdowns."

Minimum setbacks established by the LMFA vary from a half to one mile depending on facility size. (Section 35(c)). In determining setback distances, the LMFA states that "minimum distances shall be measured from the nearest corner of the residence or place of common assembly to the nearest corner of the earthen waste lagoon or livestock management facility, whichever is closer." (Section 35(c1)).

With regard to the setback requirements

of the proposed rule, the Illinois Department of Natural Resources requests that the proposed rule be further clarified to:

Ensure that IDNR owned, leased and managed properties (which meet the 50 person requirement) are clearly included and referenced under the proposed rule definition of "Populated Area." IDNR properties are worthy of being protected for these reasons:

Attendance at the 283 IDNR managed properties exceeded 40 million visitors in 1995, according to the IDNR Attendance report.

IDNR properties include state parks, recreation areas, fish and wildlife areas, forests, natural areas and trails. Visitors come to these areas to participate in outdoor recreation such as camping, picnicking, trail use, hunting, fishing, boating and swimming. Key to the enjoyment of these outdoor recreation pursuits is the natural and aesthetic qualities that make each property unique.

IDNR properties should not be viewed and utilized as buffers from other populated areas when siting new livestock management facilities.

IDNR properties are inextricably linked to the economies of the local communities in which they reside. Visitors to these properties contribute to the economic health of the surrounding communities. Declines in attendance due to increased odor pollution would result in reduced economic benefits to these communities. IDNR properties are a key component of the tourism industry within the state.

It is important that the seasonal definition of common place of assembly apply to IDNR properties as attendance widely varies between seasons and the types of recreation that visitors participate in.

For purposes of applying the setback distances for construction of future livestock management facilities, the entire property should be considered as the "common place of assembly" with the legal property lines utilized as the point of measurement. This is important for these reasons:

Boundaries are defined legal points on the landscape and utilization of them as the measuring point would expedite the siting process

in that boundaries are readily available. Utilizing less defined boundaries would increase the potential for disagreement over whether the proper setback distance was being applied.

Using property boundaries as measuring points is preferred over the use of individual campgrounds, picnic areas, beaches, overlooks and other designated points. The boundaries of these areas and the definition of what constitutes these different types of facilities is confusing and ambiguous.

Using boundaries as the measuring point would not preclude future recreation development in other parts of the property as the setback buffer would start outside the site boundaries.

IDNR properties are utilized by visitors year around for a variety of recreational pursuits and personal enjoyment. Trails are constructed in remote parts of properties with use by hikers, bikers, and equestrians occurring in the spring, summer and fall and winter use by cross country skiers and snowmobilers in the winter. Fishermen utilize the lakes and streams during warm weather and ice fish in the winter.

Hunters and trappers enjoy their recreation pursuits during the fall and winter. Birdwatchers, nature lovers, and sightseers visit all parts of a site for their aesthetic enjoyment of the natural and cultural resources. Walking is the most popular form of physical activity in the United States and visitors seek our properties for this experience to gain fitness, relieve stress, and simply enjoy the scenery.

IDNR properties held in trust for the citizens of Illinois comprise less than 1.2 percent of the state's total land area in a state with a population exceeding 11 million citizens. This is according to the IDNR Land & Water Report from the 1994 State Blue Book. Establishing the boundaries as the measuring point for determining the setbacks would impact less than an estimated two percent of the state's total land area (utilizing the half mile setback distance). This estimate is based on calculation of a doughnut shaped buffer area surrounding each IDNR property with a known acreage. This method overstates the acreage because it does not take into account the fact that much of this land is already within a setback

generated by an existing residence or building.

In conclusion, the IDNR recommends that the properties that it manages be clearly referenced under the definition of "populated areas" and that the setback distances from these properties be determined by measuring from the boundaries of these properties.

Thank you.

HEARING OFFICER LOZUK-LAWLESS: Thank you, Mr. McCulley.

We now have the final witness from the Department of Natural Resources, Ms. Deanna Glosser.

MS. GLOSSER: My name is Dr. Deanna Glosser and I am the Chief of the Illinois Department of Natural Resources' Division of Natural Resource Review & Coordination. This Division is responsible for conducting the environmental reviews for federal, state and local units of government. We implement the Endangered Species Consultation Process, the Interagency Wetlands Policy Act, the Transportation Review Program, the internal Comprehensive Environmental Review Process, and other review processes.

In addition, I hold a position as Adjunct Assistant Professor within the Department of Urban & Regional Planning at the University of Illinois, Urbana-Champaign. Prior to serving as Division Chief, I was the Endangered Species Program Manager within IDNR's Division of Natural Heritage from February of 1990 through July of 1996. Prior to that, I served as the Director of the Environmental Technical Information System, a computerized environmental impact assessment service that was supported by the U.S. Army Corps of Engineers at the University of Illinois. I received my doctoral degree from the University of Illinois Department of Urban and Regional Planning in 1988.

Section 35 of the Livestock Facilities Management Act defines the setback distances and how they are applied when siting new livestock management facilities. The LMFA defines "populated area" "as one... where at least 50 persons frequent a common place of assembly or a non-farm business per week" (Section 10.60). The proposed rule further states that "a common place of assembly or a non-farm business based on 50 persons or more frequenting the said place once per week shall

include places that operate less than 52 weeks per year, such as schools with seasonal vacation periods and businesses or other places which experience seasonal shutdowns."

Minimum setbacks established by the LMFA vary from one half to one mile depending on facility size (Section 35(c)). In determining setback distances, the LMFA states that "minimum distances shall be measured from the nearest corner of the residence or place of common assembly to the nearest corner of the earthen waste lagoon or livestock management facility, whichever is closer." (Section 35(c1)).

With regard to the setback requirements of the proposed rule, the Illinois Department of Natural Resources recommends that the proposed rule be clarified to ensure protection for sites owned, leased and managed by public natural resource agencies, such as state parks and fish and wildlife areas (which meet the 50 person requirement). IDNR recommends the rule clearly provide setback protection to IDNR properties under the definition of "populated areas" and that the setback distances from these properties be determined by measuring

from the boundaries of these properties.

The acquisition, enhancement, and management of the 283 properties IDNR owns, manages, and leases, totaling approximately 422,566 acres statewide, represent a significant investment by IDNR and the State of Illinois to provide recreational opportunities and to protect natural resources for the benefit of the public. This public investment should not be jeopardized with the siting of a livestock facility within sufficient distance to negatively impact the visitor's outdoor experience, as mentioned by Mike McCulley of IDNR, or to adversely impact the natural resources which are protected on IDNR properties. The potential for adverse impacts include the following:

(1) The introduction of nutrients (such as nitrogen, phosphorus, and ammonia) and other chemicals (such as heavy metals, steroids, antibiotics) at levels sufficient to affect terrestrial and aquatic systems, including groundwater. In the past, most concern has revolved around effects on aquatic systems, but terrestrial organisms and communities can also be

impacted. Among these sensitive organisms and communities, those of particular concern are species listed as endangered and threatened within the State of Illinois and those lands designated as either Illinois Natural Area Inventory Sites and/or Illinois Nature Preserves.

These compounds can be released into the environment in a variety of ways:

(a) The most direct would be the overflow of the lagoon or a break in the lagoon embankment such that the effluent is discharged into the surrounding landscape. Examples of the problems that have resulted from such events, including massive fish kills, are found across the country, most notably from North Carolina.

(b) The land application of the effluent at greater rates than plants can utilize on the chosen application site or in the wrong season can result in runoff to nearby bodies of water, thereby contributing to the introduction of excess nitrogen (ammonia) and phosphorus to rivers, streams and lakes.

(c) Land application of the effluent can also result in an excessive level of nutrients in

the soil which can adversely impact natural communities. The build-up of phosphorus, for example, can impede the uptake of other nutrients, thus limiting growth of plant material. Minor changes in soil chemistry can also lead to the introduction of exotic plant species into high quality natural communities, altering their structure and composition.

(d) Compounds such as nitrogen, phosphorus, and ammonia, heavy metals, steroids and antibiotics found in most animal feeds are excreted with animal waste or can leave the facility as airborne molecules or dust. These materials could be deposited onto IDNR or other public properties. Some of these materials, particularly heavy metals, accumulate in plant and animal tissues, reaching levels that can interfere with metabolic processes and reproduction.

(2) Ammonia contained in the effluent can adversely impact plant communities in close proximity to livestock lagoons. Ammonia's tendency to form a layer near the ground can burn leaves, increase transpiration rates, cause nutrient imbalances, increase frost damage, and increase

susceptibility of plants to disease.

(3) There are also concerns with the release of pheromones and hormones. Even at minute levels, they can affect the growth and behavior of animal species, and alter reproductive behavior.

The LMFA provides for research pertinent to livestock production. An area which warrants research is the potential impact of nutrients, pheromones and other chemicals released from livestock facilities on nearby plants and animals. The decline of the prairie chicken population near the state's largest egg production facility in Marion County would be a good candidate for study.

This facility was constructed in 1987 and is immediately adjacent to the IDNR Prairie Chicken Sanctuary. The local prairie chicken population declined dramatically on three adjacent tracts after the egg laying facility opened, going from 26 males in 1986 to one in 1989. Research is needed to determine whether the decline of this endangered species is due to the operation of the egg production facility or some other factor such as parasites or predation.

In conclusion, certain habitat types

throughout Illinois are particularly sensitive to even slight changes in factors such as groundwater or soil chemistry. Providing a setback as defined in the LMFA would minimize the adverse impacts to natural resources which were acquired and are managed for the public good. Further, using the boundary of these properties as the measuring point, would protect both the recreational uses and natural resources of our sites.

Based on the testimony by Mike McCulley, establishing the measuring point for the setback would impact less than an estimated two percent of the state's total land area. This is further reduced when considering other provisions of the LMFA since much of this land already falls under setback for residences and non-farm businesses. If all dedicated Illinois Nature Preserves and publicly held Illinois Natural Area Inventory Sites were also provided with a one half mile setback, the total area covered would be approximately three percent of the state's land area.

That ends my testimony, and I thank you for the participation.

HEARING OFFICER LOZUK-LAWLESS: Thank

you, Ms. Glosser.

Ms. Bushur-Hallam, was there anything else you would like to say on behalf of the Department of Natural Resources?

MS. BUSHUR-HALLAM: The Department has brought along extra copies of the prefiled testimony if anyone is interested.

HEARING OFFICER LOZUK-LAWLESS: I don't know if everyone was able to hear her. She said that the Department had brought along extra copies of the prefiled testimony of all of their witnesses, and if you would like to get a copy that she would have those with her.

Thank you. That concludes the testimony from the Department of Natural Resources, the Illinois Environmental Protection Agency, the Illinois Department of Public Heath, as well as the Department of Agriculture.

You may have noticed at our break that we were joined by two more members here. As part of our technical unit is Mr. Anand Rao. And Cynthia Ervin, who is Claire Manning's attorney assistant, also has joined us at the front here. So if you were wondering who those people were.

Now we will begin with those persons who have prefiled testimony who were not part of the four agencies involved in the rulemaking.

First we would like to call forward Renee Robinson from the Illinois Stewardship Alliance, if she would like to give testimony at this time.

If the court reporter could swear her in, please.

(Ms. Renee Robinson was sworn in by the court reporter.)

HEARING OFFICER LOZUK-LAWLESS: You may begin.

MS. ROBINSON: My name is Renee Robinson and I am the Executive Director of the Illinois Stewardship Alliance based in Rochester. On behalf of the Alliance, I am pleased to have the opportunity to input into the rulemaking for the Livestock Management Facilities Act and applaud the Board for scheduling a number of hearings to allow for broad public input. We also applaud the Illinois Department of Agriculture and the Inter-Agency Committee's hard work to produce the proposed rule.

The Alliance is a 22-year-old citizen

organization working statewide for healthy rural communities through the stewardship and responsible development of Illinois' natural resources. We are here today because of the dramatic increase in large-scale hog facilities moving into the state -- and their ultimate impact on the environment, family farmers, and rural communities' health and quality of life.

The Alliance promotes environmentally responsible farming -- using farming techniques that prevent pollution and creates sustainable farming systems. The concentration of livestock at the scale we are seeing in Illinois creates a situation for dramatic pollution of our ground and surface waters, as well as our air and soil. For example, Pig Improvement Company/Hanor Corporation is building facilities in Greene County which will concentrate up to 200,000 pigs at three locations. Millions of gallons of hog urine and feces will be collected in holding lagoons. In sustainable agriculture terms, this is not pollution prevention, but an attempt to control pollution.

The Board must recognize that these livestock facilities are industrial plants, not

farms. Therefore, environmental regulations for these industries should be considered part of the cost of doing business. Representatives for the industry will argue that environmental regulations will place an excessive burden on family farmers and cause undue economic harm to Illinois. While promulgating livestock waste regulations, we urge the Board to recognize that the majority of the industrialized farms are not family owned and operated, and the supposed economic benefits they bring to the state and to rural communities is unproven.

The Alliance has participated to the greatest extent allowed in the Livestock Industry Task Force which ultimately was responsible for the statute that we have today. We were allowed one seat out of 19 on the full Task Force. However, many critical issues have been left out of the final Act -- issues that cannot be dealt with in rulemaking.

Unfortunately, the Act was written with very specific language that falls short in many areas pertinent to protecting the public health and rural economies from industrialized farms.

Therefore, in order to protect Illinois' livestock industry, the environment, and public health, issues such as siting, raising setbacks, creating an indemnity fund, and local control will have to be addressed through new legislation this spring that builds upon the current statute and regulations.

There are some issues, however, pertinent to this process that I would like to address. I should mention now that my testimony is only a portion of our organizations issues with the rules. Other members of our organization will testify at later hearings on other key issues. Also, when I refer to the testimony from State Agencies, I am referring to the testimony that they have filed for these hearings.

Definitions. In regard to the definition of a "residence," the Board should maintain the definition as proposed. The discussion that took place within the Advisory Committee raised several concerns with narrowing the definition because a narrow rule may very well exclude bonafide residences. Moveover, to the best of our knowledge, there is not a single situation in

Illinois where neighbors have deliberately moved in a mobile residence within the setback distance solely to prevent an operation from building on a particular site. If what appears to be a home is used as a place for human habitation, it is a residence.

In its testimony for these hearings, the Department of Agriculture raised an option to deal with this issue which we find agreeable -- key the application of setbacks to the date of lagoon registration receipt by the Department. This will minimize potential conflict between operators and neighbors by clearly letting potential neighbors know that if they build or move in a residence within the setback after the operator registers with the Illinois Department of Agriculture, they are moving in at their own risk. Moreover, the rule would prevent operators from beginning costly construction without a clear go-ahead from the Department. Any narrowing of the definition of a residence could risk sacrificing the rights of the owners of bonafide residences.

Site investigation. Section 506.202(c) in the proposed rules gives the Department

authority to exempt operators from performing soil borings to determine the extent of aquifer material beneath the livestock waste handling facility. The Alliance recommends not including this specific section in the final rule or specifying under which conditions the Department of Agriculture may grant a waiver.

Performing borings is a part of the cost of doing business and is critical to determine the potential risks to groundwater. Moreover, existing information is insufficient. The Illinois Department of Natural Resources testified that "existing maps of geologic deposits are not detailed enough to provide a reliable characterization for facilities which could contaminate such a significant volume of groundwater." IDNR also testified that "collection of on-site information is necessary." If an operator has conducted a subsurface investigation as part of the installation of a site water supply well, for example, that investigation must have been performed in accordance with the Section 506.202(b) for IDOA to grant a waiver.

In addition, the Alliance recommends

including a section that would require operators to perform more than one boring in certain cases. The Illinois Environmental Protection Agency also recommends giving the Department of Agriculture flexibility to require more borings in certain cases, specifically in the case of disturbed or mined land that may have altered hydrology and soil conditions, or routes to groundwater via abandoned shafts. They go on to say that "in these circumstances, a single boring for a large (four to six) acre lagoon would be insufficient."

Registration. The Illinois Department of Agriculture testified that in the case of facilities required to utilize synthetic liners where periodic maintenance is required or where monitoring wells are periodically sampled, follow-up site visits by the Department personnel may become necessary... and warrants the need for possible Department site visits beyond the initial statutory language. In these cases, the rules should require follow-up visits. We recommend that the rules should be very clear as to when inspections will be performed so operators and the public know exactly when the inspections will take

place.

Lagoon design standards. Regarding lagoon design standards, the Alliance agrees with the IEPA's recommendations for specifying the ASAE and NRCS standards in the regulations in order to reduce confusion. The IDOA has already specified the criteria where conflicts occur between the two sets of standards.

The Alliance also agrees with IEPA's recommendation for prohibiting the use of outlet piping through the lagoon berm and their recommendation for lagoon design to include an emergency spillway.

Section 506.204(h) of the proposed rule gives IDOA the flexibility to allow operators to deviate from these standards as long as the operator can guarantee that the deviation will be at least as protective of groundwater, surface water and the structural integrity of the livestock waste management facility as the requirements of this Part. We recommend that before the IDOA approve any deviation, a Professional Engineer be required to specifically approve the deviation and certify that the lagoon construction standards are

as protective as the standards in the regulations.

The Alliance also recommends the same language for Section 506.205(f) on liner standards, and Section 506.206(h) on groundwater monitoring.

Groundwater monitoring. IDOA questioned the need for including bacteria in the list of analytes to be tested by operators required to have groundwater monitoring wells. We believe the list of analytes should be approved as proposed by the Department. Testing for bacteria is critical simply because it is important for the Department and the public to know if bacteria is present in water samples. The response process should also be affected if the test for bacteria comes back positive.

Currently, if impacts to groundwater are suspected, the owner or operator is to propose possible response actions necessary to mitigate the potential impacts to groundwater. The Department is then required to review the submittal and advise the owner or operator of the appropriateness of those response actions. As a result of the review, the Department has the authority to make changes in sampling frequency or analyte list and ultimately

require changes to the design, construction or operation of the lagoon or management facility. This process can take a long time. If groundwater tests come back with indications that the lagoon may be leaking, it is important to know as soon as possible if bacteria is present, so that immediate and appropriate responses and follow-through actions can take place.

Conclusion. We appreciate the opportunity to testify publicly on these regulations. We also appreciate the attention the Board has given to helping groups like ours to understand the process and to prepare for the hearings.

Precious hours and taxpayer dollars have been spent preparing the statute and proposed regulations which have been identified by lawmakers and key Administration officials as a first step in the process to deal with the impacts of the large-scale livestock industry. Preparing these regulations and implementing the law in the best way possible is important in order to simplify the task of building upon the regulations in the future.

We look forward to our continued relationship with the Pollution Control Board throughout the rest of these hearings and in the future.

HEARING OFFICER LOZUK-LAWLESS: Thank you very much, Ms. Robinson. Is there anything else?

MS. ROBINSON: No.

HEARING OFFICER LOZUK-LAWLESS: We will have the questions after the next two witnesses testify.

MS. ROBINSON: Okay.

HEARING OFFICER LOZUK-LAWLESS: Okay. Now we will have the testimony of Mr. Ted Funk on behalf of the University of Illinois.

Will the court reporter swear the witness in, please.

(Mr. Ted Funk was sworn in by the court reporter.)

MR. FUNK: My name is Ted Funk. I am an Extension Agricultural Engineer and Assistant Professor in the Department of Agricultural Engineering, University of Illinois at Urbana-Champaign. I have worked as an agricultural engineer for the Illinois Cooperative Extension

Service since July of 1980. My responsibilities include statewide Extension programming in livestock structures and waste handling systems.

I have earned the following degrees: B.S. in Mechanical Engineering, M.S. in Agricultural Engineering and Ph.D. in Agricultural Engineering all from the University of Illinois at Urbana-Champaign. I am licensed as a Professional Engineer in the State of Illinois.

I represent the U of I Department of Agricultural Engineering on the North Central Region Committee NCR-09, Midwest Plan Service, a consortium of 12 member state land grant universities in the North Central Region. The Midwest Plan Service authors many publications on agricultural production practices, including livestock waste management.

As a committee member, I have had many opportunities to exchange information with other engineers regarding waste management. I am a member of the American Society of Agricultural Engineers Swine Housing Committee, which is involved with swine waste management issues. I am also one of the two University of Illinois

Department of Agriculture Engineering representatives to the Southern Regional Experiment Stations Project S-239 on animal waste management, a research and information exchange group which includes scientists from 21 state universities.

I would like to voice support for the Illinois Department of Agriculture's proposed rules, in its entirety, with two minor exceptions:

The first is in Section 506.204, the lagoon design standards, Subsection (g)(2). The maximum embankment slope of three to one is not steep enough for the interior side of the embankment. Two widely recognized sources on lagoon information, Midwest Plan Service Livestock Waste Facilities Handbook MWPS-18, 1993 printing, and American Society of Agricultural Engineers Engineering Practice 403.1, Design of Anaerobic Lagoons for Animal Waste Management, allow for steeper slopes than three to one on the wetted embankment below the freeboard. Tabulated values for design computations of lagoon dimensions include interior embankment slopes of 2.5 to one or two to one. I admit that the three to one slope is appropriate for the parts of the interior

embankment slopes where vegetation will be established, but the rule should allow some design flexibility in terms of using steeper slopes on the part of the embankment below the liquid surface.

And the second, the Section 506.305, nutrient content of livestock waste, Subsection (d). I believe it is an unnecessary burden on the industry to require sampling of copper and zinc in addition to N, P, and K. I have calculated the manure application rates necessary to achieve a certain per-acre loading of copper and zinc. I find that even using worst-case simplifying assumptions it would require 50 years of continuous manure application, at rates of 2.4 to 13 times higher than the phosphorus-based application rate (depending on livestock species), for Illinois soils to exceed the EPA copper and zinc loadings allowable for municipal sewage sludge.

The Council for Agricultural Science and Technology 1996 report, Integrated Animal Waste Management, states that there is no evidence to suggest any concern about copper and zinc buildup in soil due to manure application.

I have contacted two laboratories, one

private and one university, to inquire about the cost of having copper and zinc analyzed in manure samples. The private laboratory would require 25 percent higher fees to test copper and zinc. The university laboratory would more than double the cost per sample, and must send the samples to a second laboratory on another campus to perform the copper and zinc testing.

Because it appears to be both unnecessary and costly for the additional tests, I suggest that copper and zinc be removed from the list of analytes for manure tests.

I appreciate very much the opportunity to submit this testimony today. I am willing to accept questions regarding Subparts B and C of the proposed rules.

I would also like to submit as an exhibit the attached report that I mentioned in my prefiled testimony.

HEARING OFFICER LOZUK-LAWLESS: Thank you, Professor. Are there any objections to entering this report into the record?

Okay. Then we will mark as Exhibit Number 6 the Integrated Animal Waste Management

submitted by Professor Funk.

(Whereupon said document was duly marked for purposes of identification as Exhibit Number 6 as of this date.)

HEARING OFFICER LOZUK-LAWLESS: Now we will have the last individual who has signed up to testify this afternoon, and that would be Dr. Lawrence Judd, if you could come forward.

Could the court reporter please swear in Dr. Judd.

(Mr. Lawrence Judd was sworn in by the court reporter.)

MR. JUDD: Before introducing myself, I would like to say that I have written a written report, which I have given and will give another copy to the Hearing Officer today. However, because we have all been sitting here a long time, I would like to give only a summary statement, which is a bit more brief. It doesn't give the references to various papers and such that are given in the written report, but if anybody later would like to ask questions, you are welcome to do so.

I am Lawrence Judd. I am an Emeritus Professor of Sociology at Illinois College. I hold two graduate degrees in agriculture, relating to agriculture, from Cornell University. I have been engaged in rural development work in Thailand for 22 years prior to coming to Illinois College. I am currently active in what is called the Jacksonville Peace Coalition or Jacks-Pacs environmental project leadership, and also I am the chairman of the local rotary club's environmental committee. The further detail of my background is given in the printed testimony.

To summarize my written comments, I would like to make these following comments, but I would like to say first that I want to thank each of you that have gone to the work you have done in preparing, because I think you have done a lot of good work. My criticisms or suggestions today are not so much on what you have done, but on what you have not yet done.

I feel very strongly that the comments made earlier are all useful. I hope you will pay attention to them, particularly those of the groups that were not so directly responsible for writing

up the paper, that is, the Department of Natural Resources, the Department of Public Health and the Department of Environmental Protection.

Especially at this time I would like to mention the four people that reported from the Department of Natural Resources. I felt that they gave very specific things that were left out of your report that are pertinent, that I hope you will develop, listen to, and develop to include into the statement that you have.

My first comment, control of livestock waste has relevant agricultural and business aspects, but it is primarily an environmental concern and thereby has serious social, community, health, welfare and other statewide and even worldwide implications. This is stated and/or implied in the Illinois Pollution Control Board emergency rules currently in use, and briefly acknowledged in .1 of the prefiled testimony of Ron Morcil (spelled phonetically) on behalf of three farmer groups. Thus, the permanent rules for such control being framed must respond to these other concerns and not merely to the economic and agricultural factors that are focused on by the

state's livestock industry.

Two, the permanent rules being considered at these hearings should clearly distinguish between those applicable to family owned and personally operated small-scale facilities and large-scale livestock operations owned by absentee corporations which are more properly classed as rural industrial plants. These latter installations should conform to much stricter regulations in each aspect of operation, such as siting, lagoon construction and operation, air pollution and public health dangers from flooding and other acts of nature. And in granting waivers they should be much more strict if they are for the larger operations.

Three, claims of technical feasibility and export potential should be given minor weight in setting waste regulation rules. Of much more significance is making livestock and other industrial production meet environmental standards, and letting the price of such products include the true full costs of the same rather than directly or indirectly creating additional subsidies. If such industries cannot compete without paying the full

environmental cost of production, they should not operate at the expense of us Illinois citizens.

Four, mega-farms owned by out-of-state corporations might well be made to conform to the standards for such livestock waste handling facilities in their home state as well as the Livestock Management Facilities Act in R97-15 Regulations. We do our citizens, state and nation no good by reducing environmental standards to attract industries.

Five, any aspects of hog mega-farm regulation, including those mentioned by Ms. Renee Robinson of the Illinois Stewardship Alliance, which are beyond the current mandate of the Illinois Pollution Control Board should not be beyond its concern. Please strongly support legislation this spring in the Illinois legislature to bring these concerns under your mandate or otherwise deal effectively with any such problems.

I will just close with a little personal note. My youngest son currently serves as the Pollution Control and Alternative Energy Project Manager for the China Program of World Wildlife Fund International. He is meeting similar problems

out in China today. And I just had a fax from him this morning, and among other things he is saying that for pig and hog installations like this the Chinese are now requiring that these larger firms also produce their own electricity using the methane gas that is involved.

Thank you very much for this opportunity.

HEARING OFFICER LOZUK-LAWLESS: Thank you, Dr. Judd. Maybe you would like to stay there for a few minutes for questions. Would you like to admit this as an exhibit?

MR. JUDD: Yes.

HEARING OFFICER LOZUK-LAWLESS: Okay. Do you have more copies?

MR. JUDD: I have a few more, and if anybody would like copies I will give them those.

HEARING OFFICER LOZUK-LAWLESS: Could you give one to the Department of Agriculture?

MR. JUDD: Surely.

HEARING OFFICER LOZUK-LAWLESS: Thank you. We will mark the testimony of Dr. Lawrence Judd as Exhibit Number 7.

(Whereupon said document was

duly marked for purposes of identification as Exhibit Number 7 as of this date.)

HEARING OFFICER LOZUK-LAWLESS: At this time is there anyone in the audience that did not sign on the witness sign-up sheet that would like to give testimony today on the record? There is certainly time if anyone wants to come forward.

No? Okay. Then seeing none what we will do now is we will proceed to the questioning portion of today's hearing.

I would like to say in advance that the Board Members will probably defer asking questions right now to those members of the audience who would like to ask questions. It is not to say that they won't be asking any questions later at the other hearings, but for now to just allow an opportunity for anyone who is here at this hearing who won't be able to attend any other hearings, we would like to give you a chance to go ahead and ask any of the witnesses questions.

Although the testimony is concluded for today, there will be additional testimony at the other hearings for certain areas already prefiled

testimony from the Illinois Farm Bureau, the Pork Producers and the Beef Association who will be testifying at a later date as well.

What I would like to do first, then, is actually ask if there are any questions for Dr. Judd, because he is leaving early today. If there are any questions -- yes, Mr. Harrington. If you could, when you approach the microphone, please just identify yourself on the record. Of course, I know Mr. Harrington already, but anyone else please do so. Thank you.

MR. HARRINGTON: Jim Harrington, a question for Dr. Judd.

The question that is probably in yours and some other testimony is how do we define the family farm in contrast to -- how do we draw a distinction between that and the industrial? Can you give some answer to that?

MR. JUDD: I would be happy to. I think we were given good leadership on this thought by the testimony of the Department of Natural Resources. They were saying that the statements of the -- the two terms there, the population -- how it is given in there, I am not sure. I think it is

based on whether it is -- personally, the way I am doing it is if it is owned by the person that operates it, and is actually -- the work is done by their family, that's a family farm.

If it is something which is either owned out-of-state or owned by a corporation, owned by people who are not directly involved in the work, that is not a family farm.

MR. HARRINGTON: Would you agree, then, that a family farm that has been in the same family for a couple generations and they employed four or five hired help under the direction of the owner, that that would still constitute a family farm?

MR. JUDD: That is something I believe that whoever is administrating this program will have to determine, but generally, yes. If the family itself is working at it, not if the family has retired and hired somebody else to do it, but is not actually involved personally in the operation.

MR. HARRINGTON: That would be true even if they had 1,000 hogs on the farm, wouldn't it?

MR. JUDD: From what I have heard from the testimony, 1,000 pigs is fairly common in the

state by many family farms, so I am not ruling out 1,000. If you are talking about 100,000 or 200,000, I certainly would rule those out.

MR. HARRINGTON: Thank you very much. I have no further questions.

HEARING OFFICER LOZUK-LAWLESS: Thank you. Are there any further questions for Dr. Judd?

Seeing none, I would like to say thank you, sir. There are no further questions.

MR. JUDD: Okay.

HEARING OFFICER LOZUK-LAWLESS: Now we will be expecting questions of any of the other witnesses.

All right. Please come forward. Mr. Harrington, if you could go into the questions for Renee Robinson first, because she will not be at the other hearings, and we know that she is here today.

Ms. Robinson, would you like to sit up in the front, or whatever is more comfortable for you.

I would like to also note for the record that Mr. Harrington is here on behalf of the

Illinois Pork Producers, Illinois Beef Association and the Illinois Farm Bureau.

MR. HARRINGTON: Thank you. Good afternoon.

MS. ROBINSON: Hello.

MR. HARRINGTON: Thank you for your testimony. Did you receive these prefiled questions that I sent through?

MS. ROBINSON: Yes.

MR. HARRINGTON: I don't know whether, for the record, it would be easier if I would read the questions out loud.

HEARING OFFICER LOZUK-LAWLESS: Yes, that would be a nice idea. Thank you.

MR. HARRINGTON: The first question is what qualifications or experience do you have that would qualify you as an expert to give expert testimony regarding the performance of soil borings to determine the extent of aquifer material?

MS. ROBINSON: I would answer this as we had quoted from our experts at the Department of Natural Resources, that our geologic maps are not that specific that we based our comments on.

MR. HARRINGTON: Perhaps I can cut

through some of these questions. I understand you are here as a spokesman for an interested group?

MS. ROBINSON: Uh-huh.

MR. HARRINGTON: But do I understand that the technical portion of your testimony is based on that given by the DNR, the Department of Agriculture, and the EPA?

MS. ROBINSON: We had cited those in those cases, right.

MR. HARRINGTON: Well, what I am getting at is that you are not, yourself, testifying as a technical expert on those subjects; is that correct?

MS. ROBINSON: I don't understand the question.

MR. HARRINGTON: Let me see if I can reword it. In legal parlance the expert witness is someone who brings a technical expertise in whatever the field is that they are talking about. There are other witnesses that can also testify that have knowledge of the facts in hearings like this where people are here to express their views and their concerns, all of which are proper before the Board.

I was just trying to get -- determine whether you, yourself, are giving technical testimony or were you relying on others, as quoted in your testimony?

MS. ROBINSON: Well, I think, appropriately, we quoted where we were making our recommendations from. I represent an organization that brings together interests from a variety of sources, and I have an environmental background myself.

MR. HARRINGTON: You do?

MS. ROBINSON: Yes.

MR. HARRINGTON: You have environmental training?

MS. ROBINSON: Environmental -- I worked on an Environmental Master's Degree. I have completed all my classes for an Environmental Master's Degree, at the University of Illinois at Springfield.

MR. HARRINGTON: What is the basis -- I am skipping to question seven in the prefiled questions. What is the basis for your statement that the rules should require a follow-up visit at facilities utilizing synthetic liners?

MS. ROBINSON: One was citing the Department of Ag's testimony. We are concerned -- you know, there is no case that we know of of studies of lagoon performance overall. And we have talked with communities in other states, such as Oklahoma, who have had facilities, lagoons that were lined, actually leak. And common sense would dictate that we need follow-up checkups to ensure that leaking is not occurring.

MR. HARRINGTON: Would a provision, which I believe is in the proposed rule, allowing the Department to have follow-up visits be sufficient?

MS. ROBINSON: I think we are coming from it that if site visits are known and everyone's interests are then protected, because they are mandatory versus voluntary.

MR. HARRINGTON: At what point does a livestock facility stop being a farm and become an industrial plant?

MS. ROBINSON: That's a very interesting question. I think agriculture is at a crossroads where it is trying to figure out what is a family farm, because the definition is changing so much. There is a combination of issues at stake here.

The size of the facility, the management, who is managing these farms, are they outside interests, are the people who are part of these farms actually living at the facility, you know, and where is the money plugged from. These are questions that can't be answered today.

And I think it is an issue that we have to struggle with as we address agriculture in the future, because we don't have a clear indication of what is a family farm, yet we see these trends towards concentration and production which have a larger scale impact on rural communities.

MR. HARRINGTON: Well, for example, would a family farm, a farm where the owner lives and works on the farm and supervises the operation, but yet raises 1,000 pigs or 2,000 pigs still be a family farm?

MS. ROBINSON: Sure.

MR. HARRINGTON: Those would be within the gamut of what you are seeking to protect?

MS. ROBINSON: Well --

MR. HARRINGTON: As opposed to the industrial part of it?

MS. ROBINSON: Well, in effect, any

regulations that are imposed would be regulations that would guide a farmer to site and manage a facility to prevent pollution, so regulations do not stop a farmer from farming. What it does is it sets the rules in place no matter what size.

MR. HARRINGTON: I gather, from what you are saying, that it is not your intent or your organization's intent to develop rules that are technically infeasible or economically impossible to comply with except to the extent necessary to protect human health and the environment; is that right?

MS. ROBINSON: Correct.

MR. HARRINGTON: And your consideration of the economic impact of the rules on the farmers would be a legitimate concern of your organization, as well?

MS. ROBINSON: Yes.

MR. HARRINGTON: I think I will drop the rest of the prefiled questions. I think they have been covered. Thank you very much.

MS. ROBINSON: Thank you.

HEARING OFFICER LOZUK-LAWLESS: Are there any other questions for this witness at this time,

for Ms. Robinson? Are there any members of the public that have questions for her today?

Okay. Thank you, Ms. Robinson, very much.

MS. ROBINSON: Thank you.

HEARING OFFICER LOZUK-LAWLESS: At this time I would like to ask are there any questions for Professor Funk, because he may not be able to attend any of the other hearings either. If you have any questions for him this would be a good time to ask.

CHAIRMAN MANNING: I have just a general question for Dr. Funk, if I might.

Dr. Funk, you talked about the sampling of the manure sampling. I was wondering if you could -- we talked briefly about your laboratories at the University of Illinois. I was wondering whether those laboratories, as well, drew sampling of the groundwater. We do have an issue that Public Health has raised in terms of the E. Coli sampling of the groundwater, and that sort of thing. I was wondering if you had any position on that in terms of what the University does or doesn't do in terms of the sampling?

MR. FUNK: Okay. I think you misunderstood about my inquiries about the university laboratory. It was not the University of Illinois laboratory.

CHAIRMAN MANNING: Okay.

MR. FUNK: It was the University of Wisconsin.

CHAIRMAN MANNING: Okay.

MR. FUNK: And they are listed as a laboratory that does manure sampling as well as soil testing. I am not in a position to address what the University of Illinois laboratories and whatever colleges would be able to --

CHAIRMAN MANNING: So your testimony really went to the manure sampling when you showed the zinc and the copper, and did not have anything to do with the issue of the --

MR. FUNK: No.

CHAIRMAN MANNING: -- groundwater sampling in terms of the issue raised by the Department of Public Health?

MR. FUNK: That is correct.

CHAIRMAN MANNING: Then you have no position today on that particular issue raised by

the Department of Public Health; is that correct?

MR. FUNK: That's correct.

CHAIRMAN MANNING: Thank you.

BOARD MEMBER RAO: I have a question for Dr. Funk. Dr. Funk, in your testimony you cite a report published by the Council for Agricultural Science and Technology, a 1996 report about copper and zinc. Would it be possible for you to give us a copy of your report?

MR. FUNK: You have it.

BOARD MEMBER RAO: We have it? Okay.

HEARING OFFICER LOZUK-LAWLESS: That's the copy.

BOARD MEMBER RAO: Okay. Thanks.

HEARING OFFICER LOZUK-LAWLESS: Any other questions for Professor Funk? Thank you.

BOARD MEMBER GIRARD: I have a question. I am trying to find it. I think maybe I remember it.

The first question I have goes to the question of copper and zinc. You talked about -- you know, you made some calculations and you used some worst-case simplifying assumptions and you came up with some values here in your testimony. I

just wondered if there is some way you could work out those calculations and put them down on paper with those assumptions and file them with the Board so that we could see how you calculated it.

MR. FUNK: I would be happy to do that.

BOARD MEMBER GIRARD: Thank you.

MR. FUNK: When would you like those?

BOARD MEMBER GIRARD: Well, what's the process for doing that?

HEARING OFFICER LOZUK-LAWLESS: Any time until the record closes. As soon as possible but before February 14th.

MR. FUNK: That can be done.

MR. GIRARD: Okay. My second question is similar. You talked about how maybe a slope of less than three to one might be appropriate for the portions of the lagoon under water.

MR. FUNK: Uh-huh.

MR. GIRARD: I just wondered if you could flesh that out a little more also in a comment. Maybe you could say something here. But why do you think it is appropriate in the under water sections of the lagoon to have the slope be less than three to one?

MR. FUNK: Well, I think in certainly some kinds of soils those soils will stand up at steeper slopes than the three to one, and that it reduces the surface area of the lagoon in order to -- when you make the slope steeper for the same amount of volume. It will reduce the cost of construction of the lagoon to some degree, and it will also, by reducing the surface area, if we looked at the potential, whether it be odor potential or whatever, from the surface of that lagoon, anything we can do to reduce that surface area, we should probably do it.

BOARD MEMBER GIRARD: Where would someone find a list of those soils that you feel are appropriate?

MR. FUNK: I would defer to NRCS to make that determination or some other engineer, someone that regularly does construction work of that sort of thing, whether it be ponds or lagoons. That is not really my expertise to look at soil types.

BOARD MEMBER GIRARD: Okay. Thank you.

HEARING OFFICER LOZUK-LAWLESS: Thank you.

BOARD MEMBER McFAWN: To follow-up on

that, what do you mean by appropriate? What is it you are trying to prevent or that you are worried about when you think about how steep the sides would be? Is it erosion of those sides or filtration through the sides under water?

MR. FUNK: I think the steepness is not so important as -- in other words, getting too steep is not so much of a concern as is being able to maintain the parts of the slope above the water line so that you can grow vegetation on them.

BOARD MEMBER McFAWN: Okay.

MR. FUNK: I think that was established in the Department's testimony. In the proposed rules they made sure that anything that -- any part of the lagoon berm that is above water level should be no steeper than three to one, so it can be mowed with mechanized equipment, and it is generally accepted that it should be no steeper than three to one, otherwise it is not safe for a tractor to be on it, a tractor and mower.

BOARD MEMBER McFAWN: Okay. I understand that. Please go on.

MR. FUNK: So my point is that there is no reason that we can't go steeper than that. It

will reduce the cost and it will reduce the surface area of the lagoon to increase those slopes. Okay?

BOARD MEMBER McFAWN: I think so. Thank you.

HEARING OFFICER LOZUK-LAWLESS: Any other additional questions for Professor Funk?

Okay. Thank you, sir, very much.

I will ask again if there are any general questions before we get to the prefiled questions. Any general questions by anyone?

CHAIRMAN MANNING: I have a general request of the Advisory Committee, if I might, on behalf of the Board.

A number of you -- I know the Department of Agriculture and I think as well Jim Park's, in your testimony from the Agency, referred to the speculations of other states regarding livestock management facility regulations. We, too, have been looking at regulations of other states.

In order that we are all looking at the same regulations in comparing what we are doing in Illinois to the other states, I was wondering if one of you, if not Ag or the Agency, if you would

mind putting into evidence those regulations that you have looked at in terms of the other states that you are using as a basis for the conclusion that you have in your testimony about how we are similar, dissimilar from other states.

We would like to make sure that we are all looking at the same regs and the same statutes when we make these comparisons as well. So if I could ask one of you to take the lead in doing that, and just filing them with the Board. That would be much appreciated.

MR. BORUFF: If it is okay with the other members of the Advisory Committee, as the Chair, we would offer to do that for you, and we will make sure our files are current and get that to you.

CHAIRMAN MANNING: Okay. Thank you.

HEARING OFFICER LOZUK-LAWLESS: Okay. Thank you.

Seeing no other questions, I think that it would be appropriate to start with the prefiled questions, because there are a number of other agency personnel here that may be helpful in answering questions if for some reason Mr. Warrington or Mr. Park can't answer it, I know we

have some other people here that may be able to help out.

While Mr. Harrington is asking his questions, if other people have follow-up questions in regards to his, please raise your hand and I will acknowledge you, and you can certainly feel free to go ahead and ask your question. Thank you.

Mr. Warrington, if you want to sit up there or, Mr. Park, if you want to stay there, that is fine, whatever you prefer.

MR. HARRINGTON: Good afternoon. Have you had a chance to review the prefiled questions that we submitted earlier and review them with other people in the Agency?

MR. PARK: Yes, I have.

MR. HARRINGTON: Is it your opinion and that of the IEPA that the proposed regulations, when read together with the existing Pollution Control Board's regulations, it would ensure the protection of the public health and the environment?

MR. PARK: As we have stated in our testimony, we do support the adoption of the rules

and believe that the addition of such provisions as operator certification requirements and waste management plans, it is a very positive step in the right direction toward regulation of this industry.

Two examples are it is important that they represent new and necessary parts of a complete livestock waste management program. No regulation, in and of itself, can guarantee protection of the public health and the environment. It relies on effective implementation and, in a sense, part of the producers of planned stewardship. We feel those are necessary components also.

MR. HARRINGTON: In terms of the regulations as proposed, do they fulfill the functions to provide that level of protection if they are complied with in the context of good agriculture?

MR. PARK: Well, as I said, the regulations cannot anticipate every possible contingency. However, these are very significant steps toward appropriate regulation.

MR. HARRINGTON: Does 35 Illinois

Administrative Code 560 cover substantially the same activities as Section 506.304 through 506.309 of the proposed rules?

MR. PARK: It is generally consistent with the proposed rules, but much less specific in its nature.

MR. HARRINGTON: Is it the Agency's position that Section 560 has ensured the protection of the public health and the environment?

MR. PARK: We believe that Section 560 has played a role in the protection of the environment. I must point out, however, that the provisions of Section 560 were developed and written as advisory and for guidance use by the livestock industry. They are not regulations. They are not used as such by the Agency. We believe the proposed rules provide a much more structured regulatory approach to this important aspect of livestock management.

MR. HARRINGTON: Does the Agency keep any data regarding the livestock waste management program under 560?

MR. PARK: Well, as I say, Part 560 is

not a regulatory program, therefore, we don't have any compliance and reporting statistics. Our experience over the last 20 years or so has been that when problems do occur they often can be traced -- in the area of livestock management or waste management, they often can be traced to violations of the guidelines contained in Section 560.

MR. HARRINGTON: Do you know whether there are any statistics that have been kept with respect to Subtitle E?

MR. PARK: General compliance with Subtitle E?

MR. HARRINGTON: Yes.

MR. PARK: Yes, statistics have been maintained on violations there.

MR. HARRINGTON: Do you have any knowledge of those statistics?

MR. PARK: I don't have the information on violations and excursions from Subtitle E at hand today. We can furnish them at future hearings.

MR. HARRINGTON: Okay. Skipping to question ten, since the other deal with the

statistics that -- to the extent that you have them and they will be made available later. Does the IEPA have an opinion as to whether the incorporation of Part 560 in the proposed rules would fulfill requirements or replace the requirements of 506.304 to 506.309?

MR. PARK: It is difficult for us to evaluate the enforceability of such an approach because, as I have mentioned earlier, 560 was developed as a guidance document as opposed to a regulatory requirement. We are unable to provide examples of how a similar approach might have been used elsewhere in the state. We believe that the specificity contained in the proposed rules is much more effective as a regulatory tool than Section 560.

MR. HARRINGTON: This question is not in the prefiled questions, but which I would like to follow-up with, and deals with your testimony concerning a spillway or an emergency spillway from the lagoons.

I believe you testified that the Agency's opinion is such that the emergency spillway should be included in all lagoons; is that correct?

MR. PARK: Yes.

MR. HARRINGTON: Would it be appropriate in the case of lagoons which do not receive runoff from any other area, to eliminate that requirement so that the material would have to be pumped from the lagoon in order to be removed?

MR. PARK: Well, certainly, it is more critical for lagoons that receive an overload runoff to have some structure for emergency overflows. Our primary concern here is for the protection of the lagoon berm itself.

If, for whatever reason, the volume of waste in the lagoon reaches a point where it is about to overtop the lagoon, we feel that it is critical that there be some emergency structure available to minimize the damage to the berm itself.

In some cases that we have investigated, the primary cause of lagoon berm failure has been overtopping. And when you don't provide an emergency spillway, you have that potential danger, and then you have the problem not only of the overflow from the lagoon, but potentially the loss of the entire volume of the lagoon.

So there are situations that could occur, whether that lagoon receives only waste manure, waste, or a combination of manure, waste and land runoff, where you could have a situation where you were in danger of overtopping the lagoon and couldn't effectively pump that waste down. We think it is a desirable component of lagoon design to have that emergency spillway structure there to deal with those situations.

MR. HARRINGTON: In these situations you are aware of where there was an overtopping of the lagoon, did that involve any lagoons that did not receive other runoff?

MR. PARK: I am not familiar with the specific sources of waste that were going into those lagoons where the failures occurred.

MR. HARRINGTON: Do you have any idea what additional costs might be involved in providing such a facility?

MR. PARK: I don't have specific dollar figures in front of me today. We can try to provide those in general terms. It should not be a particularly expensive component of the lagoon design.

MR. HARRINGTON: May I have just a moment, please?

HEARING OFFICER LOZUK-LAWLESS: Yes, certainly.

MR. HARRINGTON: Okay. Thank you very much. That's all we have.

HEARING OFFICER LOZUK-LAWLESS: Mr. Park, to the extent that the statistics are available on the costs, which Mr. Harrington requested, do you think you could file those perhaps before the DeKalb hearing, and that would give them an opportunity to look at them, to the extent that they are available?

MR. PARK: We will file both information on the cost of overflow structures and any information we have available on violations of Subtitle E, also.

HEARING OFFICER LOZUK-LAWLESS: Okay. Thank you.

PRESIDING BOARD MEMBER FLEMAL: As long as they have got you here, Jim, I have a couple of general questions I might ask to sort of set the scene for how your Agency has dealt with livestock waste lagoons in the past.

Let's first explore the area. It is my understanding that your Agency is responsible for initiating enforcement against violations of water quality regulations, and there have been occasions in the past when those regulations -- where enforcement has been pursued where the source of the pollution is a livestock waste facility?

MR. PARK: That's correct.

PRESIDING BOARD MEMBER FLEMAL: Do you have, off the top of your head, any idea of how frequently your Agency has had to pursue such type of enforcement activities?

MR. PARK: I was going to try to provide that information in more detail in summary of the violations that we have identified for Subtitle E, and I just don't have that information off the top of my head. I would rather go back and gather it for you and furnish it to you later, if I could.

PRESIDING BOARD MEMBER FLEMAL: Do you have any idea at this stage how -- what kinds of events have occasioned you to pursue enforcement activities?

MR. PARK: Well, we have had a variety of situations occur. Obviously, we have a lot of

complaints related to odor problems. And those odors are traced to a variety of sources. The lagoons are certainly one of the sources. But also other facilities on the property, and perhaps most significantly the land application of manure waste is often a source of odor problems.

PRESIDING BOARD MEMBER FLEMAL: I know you have oftentimes had to investigate odor problems. Have you actually taken any of those to the extent of enforcement against the --

MR. PARK: I believe there have been some odor complaints pursued before the Board.

PRESIDING BOARD MEMBER FLEMAL: Okay. So those are basically air violations that your Agency has dealt with? In the area of water you have also pursued enforcement?

MR. PARK: Yes. We have had situations where spills have occurred, where misapplication of liquid manure waste to land has resulted in violations of water quality standards. We have had fish kills and just general water quality violations.

PRESIDING BOARD MEMBER FLEMAL: At some time you can give us some idea of how frequently

these events have been?

MR. PARK: Yes. I will provide that information as far as enforcement actions as well as violations that have been --

PRESIDING BOARD MEMBER FLEMAL: Okay.

MR. PARK: That have been given notification.

PRESIDING BOARD MEMBER FLEMAL: To your knowledge, has the Agency ever pursued a groundwater enforcement action that has stemmed from a livestock waste management facility?

MR. PARK: I can't think of one right off the top of my head but, again, I do want to check up on our --

PRESIDING BOARD MEMBER FLEMAL: If I might just add to this, it is my understanding that the area of groundwater enforcement is a much newer area than air or surface water has been, so maybe there is just a lesser history for that reason?

MR. PARK: Yes, and we historically have never had the ability to go in and demand monitoring wells at sites where groundwater violations potentially could have existed and, therefore, about the only way you are going to find

a groundwater problem is it turns up in somebody's private well or something.

PRESIDING BOARD MEMBER FLEMAL: As well, are you aware of whether there has been any cleanup efforts undertaken of a site that has been contaminated as a result of this type of --

MR. PARK: Not to the best of my knowledge.

PRESIDING BOARD MEMBER FLEMAL: In contrast to a fairly large number of cleanups that have been related to the other kinds of activities other than agriculture?

MR. PARK: Industrial sites and that sort of thing, yes.

PRESIDING BOARD MEMBER FLEMAL: Okay.

CHAIRMAN MANNING: I was just going to ask, if I might, Mr. Park, if you could explain for the record the NPDES permit program, and how it relates to agricultural -- to the Livestock Management Facilities Act, if at all?

MR. PARK: It has very limited application. The U.S. EPA has published guidance documents related to this. NPDES permits are only required when the facility is designed to discharge

under any reasonable precipitation event conditions. In the vast majority of cases for the lagoons that we are talking about here today, they don't discharge. They are designed to hold the waste, water and then it is pumped out and land applied. So for the most part NPDES permits are not needed for this type of facility or they are not required for this type of facility.

PRESIDING BOARD MEMBER FLEMAL: Are there some exceptions? Do we have livestock waste management facilities that do have NPDES permits?

MR. PARK: We do have some that have NPDES permits. Those are discharging facilities.

CHAIRMAN MANNING: Discharging directly to surface water?

MR. PARK: Right.

CHAIRMAN MANNING: And they have a pipe?

MR. PARK: Yes.

CHAIRMAN MANNING: Okay.

PRESIDING BOARD MEMBER FLEMAL: Any other follow-up?

BOARD MEMBER RAO: I have a question. Mr. Park, you cited an NRCS guidance document that applies only to North Carolina?

MR. PARK: Yes.

BOARD MEMBER RAO: And the changes you are suggesting regarding the spillways are based on that document, is it?

MR. PARK: Yes.

BOARD MEMBER RAO: Is this document part of your testimony or has it been submitted to the Board earlier?

MR. PARK: It was not included in our testimony, but we will be happy to furnish it as an exhibit.

BOARD MEMBER RAO: Yes. If you could, that will be helpful.

MR. PARK: Sure.

BOARD MEMBER RAO: Thank you.

PRESIDING BOARD MEMBER FLEMAL: Let me come back to my original line of questioning that had to do with the Agency's enforcement experience with livestock facilities.

If you were to be operating under the rules as proposed to us, do you foresee that there would be a substantial reduction in the occurrences of events that would lead to enforcement?

MR. PARK: Well, I think the inclusion of

effective livestock waste management plans certainly has a potential to reduce odor complaints that we have received in the past. Lagoon failures, where lagoons actually break and dump waste into surface waters, we believe can be reduced. Those incidences can be reduced by incorporating sound engineering design practices similar to the ones that are included here.

So we think, yes, this will be certainly a step in the right direction. As with any other regulation, it is difficult to eliminate all possible problems that might occur, but these certainly are going in the right direction.

PRESIDING BOARD MEMBER FLEMAL: We never want to be in a position where required action is enforcement, because that means we have got a problem.

MR. PARK: Right.

PRESIDING BOARD MEMBER FLEMAL: We want to head off that problem beforehand.

MR. PARK: Yes.

PRESIDING BOARD MEMBER FLEMAL: In yet another direction, the last statement in your prepared testimony had to do with a suggestion that

the Board be alert to the possibility of opening up a separate docket to, in effect, I believe, bring the existing Subtitle E regulations into accord with anything which might be developed as a result of today's proposal.

MR. PARK: That's correct.

PRESIDING BOARD MEMBER FLEMAL: Has your Agency, in any way, looked at what kind of steps or amendments might be necessary to --

MR. PARK: We have made an attempt to preliminarily identify some areas where there are apparent inconsistencies between Subtitle E and the Livestock Management Facilities Act and the associated proposed rules. We will be happy to share those with you.

PRESIDING BOARD MEMBER FLEMAL: Okay.

MR. PARK: My concern is that this is a very complex issue, and we have identified certain things that we think are problems, but I am sure that the Department of Agriculture, the Department of Natural Resources and the producers and the citizens who have tried to work within these regulatory structures can also provide some very valuable input to this.

I think it would be helpful to have that available to us as a docket so we could look at the entire universe of potential issues, rather than just trying to put something on the table by the Agency and then finding out there is a lot of other issues.

PRESIDING BOARD MEMBER FLEMAL: The Board is not, at this stage, suggesting that we open up another document. I think we all have to be aware that the existing regulations that we operate under, which we have been calling Subtitle E, it is the Board's existing Livestock Waste Management Regulations, date back to the mid 1970s, in substantial part. There has been a lot of activity that has occurred. The world has gone on during that period of time.

Particularly now, with the current effort that we are undertaking, what we do want to make sure is that when we are done with this exercise, we have a coherent body of regulations that does not leave the fella out there in the field confused, because if he opens up one part he finds a statement and then turns a few pages later and finds something different. It is very important, I

think, that we get everything in sync.

I would encourage not only you folks, Jim, at the Agency, but all interested persons in this rulemaking to pay attention to the fact that there are some existing regulations and advise us, either through this proceeding or if the Board ultimately does follow this up with a housekeeping kind of docket, that you alert us to the kinds of things that are necessary to get everything on the same page.

MR. PARK: We will certainly be happy to participate in that.

PRESIDING BOARD MEMBER FLEMAL: All right. Thank you.

HEARING OFFICER LOZUK-LAWLESS: Are there any other questions for Mr. Park?

None? Okay. Thank you, Mr. Park.

PRESIDING BOARD MEMBER FLEMAL: You guys are an easy audience out there today.

CHAIRMAN MANNING: I would just indicate, too, on behalf of the Board, that because this proceeding is going to be a month long proceeding and we have other days of hearing, just because we don't ask something today doesn't mean we won't ask

it. We might ask in another proceeding.

We also may regroup ourselves and come up with some sort of written document of written questions for the participants. We have not decided if we are going to do that yet or not, but that is certainly a possibility, that we would pose written questions to the Advisory Committee. We have that option open. For purposes of the public, if we have questions we will ask them.

HEARING OFFICER LOZUK-LAWLESS: I don't want to discourage anyone simply because you have not prefiled any questions, you certainly can come up and ask any questions that you have.

Are there any general questions of any of the witnesses right now?

Okay. Then we will move on to another section of the prefiled questions. Why don't we move on to the prefiled questions addressed to the Department of Natural Resources. Is that okay?

MR. HARRINGTON: That is fine.

HEARING OFFICER LOZUK-LAWLESS: Why don't we take a five-minute break.

(Whereupon a short recess was taken.)

HEARING OFFICER LOZUK-LAWLESS: We have a few preliminary matters before we start with questions directed to the Department of Natural Resources.

First, I would like to recall back to the microphone, if that is possible, Ms. Renee Robinson from the Illinois Stewardship Alliance.

MS. ROBINSON: I would like to submit "Understanding the Impact of Large-Scale Swine Productions, Proceedings from an Interdisciplinary Scientific Workshop." I apologize for missing this earlier.

A year ago last summer scientists who had been studying large-scale swine operations came together in Iowa to talk about what they knew about the environmental, economic, social and occupational health impacts of large-scale swine productions, and these are the proceedings and their recommendations and research, identified research area.

HEARING OFFICER LOZUK-LAWLESS: Okay. Thank you.

MS. ROBINSON: Thank you.

HEARING OFFICER LOZUK-LAWLESS: Are there

any objections to entering this into the record as an exhibit?

Okay. Then we will mark it as Exhibit Number 8, "Understanding the Impacts of Large-Scale Swine Production, Proceedings from an Interdisciplinary Scientific Workshop."

(Whereupon said document was duly marked for purposes of identification as Exhibit Number 8 as of this date.)

HEARING OFFICER LOZUK-LAWLESS: Thank you, Ms. Robinson.

MS. ROBINSON: Thank you.

HEARING OFFICER LOZUK-LAWLESS: Next we have a request from the Illinois Environmental Protection Agency to bring Mr. Park back up to the stand to clarify some issues from his earlier answers.

Okay. Mr. Park.

MR. PARK: Well, I guess it is more than to clarify. I screwed up, and my staff didn't hesitate to remind me that I had.

In fact, we have issued no NPDES permits from long-term discharges from livestock lagoon

facilities. What happens is when a lagoon facility discharges -- we find them discharging waste from their lagoon under conditions less than a 25 year storm event, we issue them a short-term NPDES permit for that discharge, and require that discharge to be eliminated within fourteen months.

The only other NPDES permits that we have issued to livestock facilities are for open feeding operations where there is significant potential for pollution from runoff from the feeding areas, and those have historically gotten NPDES permits with the larger facility. I apologize for the error.

CHAIRMAN MANNING: I appreciate the correction. Thank you.

HEARING OFFICER LOZUK-LAWLESS: Okay. Any follow-up questions with regard to the correction?

Okay. Thank you, Mr. Park.

MR. PARK: Thank you.

HEARING OFFICER LOZUK-LAWLESS: Now, then, we will begin with the questions directed to the Department of Natural Resources. We have prefiled questions filed by the law firm of Ross & Hardies on behalf of the Illinois Farm Bureau, the

Illinois Beef Association and the Illinois Pork Producers.

If you could just once again identify yourselves for the record.

MR. KEEFER: I am Don Keefer with the Illinois State Geological Survey.

MR. MARLIN: John Marlin, Waste Management and Research Center.

MR. McCULLEY: Mike McCulley, Division of Land Management.

MS. GLOSSER: Deanna Glosser, Division of Natural Resource Review & Coordination.

HEARING OFFICER LOZUK-LAWLESS: Thank you.

Okay, Mr. Harrington.

MR. HARRINGTON: I understand that the Department is going to -- has various people nominated to answer various questions, so I will just pose the question as written, and whoever is appropriate will give an answer to it.

HEARING OFFICER LOZUK-LAWLESS: That is fine. I think that will work out best, just answering in a panel form.

MR. HARRINGTON: I will go through them

all essentially verbatim and in order, as the Department has them, and has prepared their answers that way.

HEARING OFFICER LOZUK-LAWLESS: Thank you.

MR. HARRINGTON: Does the Illinois Department of Natural Resources believe that the rules, as they are proposed, are protective of the environment and public health?

MR. MARLIN: The proposed rules, based on the Livestock Management Facilities Act requirements, will provide additional protection to the environment and public health. IDNR believes that limitations on the proposed regulation's ability to provide protection for public health and the environment include:

(1) Ambiguities between the requirements of the LMFA and Title 35 rules.

(2) Over reliance on the design guidance documents in Section 15 of the LMFA.

(3) Differences between the terms defined in the LMFA and Title 35.

(4) Confusion over enforcement responsibilities.

(5) The lack of emphasis on odor control.

These concerns could be addressed legislatively providing a framework for development of a more comprehensive internally consistent body of regulations.

MR. HARRINGTON: Are you suggesting that the rules, as proposed, subject to the modifications the Department has already talked about, meet the requirements of the Act, but that additional legislation is necessary? Is that what I understand?

MR. MARLIN: I am saying that the rules are very good within the limitation of the Act. Meaning, in plain English, we feel that we have done as good a job as possible with the environmental protection and public health, as provided by the Livestock Management Facilities Act, but that there are certain ambiguities that remain outside of the issues that these rules cover.

We believe these rules are extremely good in the areas of the stability of the lagoons to avoid breakage, spills and leaks. They are

particularly good in relation to the improvements of these rules over the existing situation in terms of groundwater protection, etcetera. The concerns I raise just point out some of the limitations where the rules being developed under this law couldn't address some other areas. Several people have mentioned that the law does not address certain areas, thus, the rules don't.

But to the extent that these rules have been developed, the Department is very supportive of the general structure of these rules and believes it is a significant step forward in protecting the environment and public health.

Is that clear enough?

MR. HARRINGTON: Yes, thank you. Do the design standards in the proposed rules adequately protect the environment and public health from the failure of the lagoon?

MR. MARLIN: The design standards that address embankment stability and design hydraulic capacity are consistent with today's design standards and, thus, adequately protect the environment and public health from the failure of the lagoon embankment.

At this time we would also like to comment on a recommendation by Professor Funk and one of the IEPA's, if this is an appropriate time. Regarding Assistant Professor Funk's comments on embankment slopes, the three to one embankment slope criteria was established as an adequate, non-designed minimum.

One of the reasons for choosing three to one was for ease of maintenance. Steeper slopes for the interior embankment slope below the liquid surface line can be designed for adequate performance. Allowing for design flexibility for steeper interior slopes below the liquid surface line is acceptable. That is based on the input from our office of Water Resources Management, which has considerable experience in dams, levees and similar construction.

The second comment we would make regards IEPA's comment regarding outlet pipes and emergency spillways and, again, it is from our office of Water Resources.

Prohibiting the installation of outlet conduits through the embankment will reduce the probability of embankment failure from piping.

Inadequately designed and more typically, inadequately installed conduits are a primary source of piping failures of embankments.

Similarly, prohibition of outlet conduits can also increase the probability of embankment failure from overtopping if adequate freeboard is not included in the design and operation of the facility. With adequate freeboard and insured appropriate operation, prohibiting outlet pipes is acceptable.

Requiring emergency spillways will typically necessitate some additional site specific design. Emergency spillways are best placed in in-situ material. For any ring type embankment an emergency spillway is really just a protective low point in the embankment. Properly designed and constructed emergency spillways are beneficial, but for the typical structure being addressed, it is more critical to design for and operate with adequate freeboard.

MR. HARRINGTON: Do the design standards in the proposed rules adequately protect the environment and public health from contaminants leaking into the groundwater from lagoons or other

structures?

MR. KEEFER: In response, the proposed design standards, the lagoon design standards, do provide a reasonable level of protection to nearby aquifer resources. The lagoon construction requirements appear to be consistent with standard engineering methods used in these types of facilities. The widespread acceptance of earthen liners by experts in livestock waste management suggests that this technology offers protection of human health and the environment.

However, it should be noted that an unknown fraction of the installed liners will likely fail, even when using the proposed design standards. Any such failure will result in shallow groundwater contamination and some may result in contamination of aquifer resources.

As discussed in the Department's testimony, in IDNR's testimony, however, the chemical nature of some constituents in these anaerobic lagoons are such that they will tend to be attenuated or filtered from the groundwater as they move through geologic materials. Their movement through non aquifer materials should

provide more effective filtering than would occur in aquifer materials. The second criteria portion of the design standards are based on this idea.

Further, there are several technical issues that should be evaluated regarding the stability and the integrity of both earthen and synthetic liners when used in livestock waste lagoons. For example, earthen liners used in lagoon systems have a potential for failure because of:

(1) The potential for damage due to drying out of exposed portions of the liner prior to lagoon filling, during waste removal, and the subsequent drought periods.

(2) Liner instability on the lagoon site slopes.

(3) The adverse effects of freeze-thaw cycles on the hydraulic properties of the liner.

These and other significant issues should be addressed in the future. The proposed siting criteria, design standards, and monitoring well requirements should correspondingly provide adequate means for preventing and identifying groundwater contamination problems, and should be

relied upon until more information is available regarding appropriate liner technologies.

The proposed lagoon design standards provide, therefore, a reasonable level of protection within the context, again, of the LMFA. The issue of leaking from other structures, as you stated in your question, cannot be addressed, because there are no proposed design standards for the structures in the proposed rules.

PRESIDING BOARD MEMBER FLEMAL: Jim, could I interrupt your train of thought on this just to get our question in the right place.

Mr. Keefer, it has been said that the accumulation of sludge in the bottom of lagoons is itself a sealing process, in effect, a self-liner development. Do you give any petulance to that kind of observation?

MR. KEEFER: That was definitely part of our consideration when we were developing and proposing, I guess, guidelines for design standards and monitoring well requirements. Based on expertise and the experience I guess of people at the State Geological Survey in this issue there is some feeling that -- basically, the short answer, I

guess, would be we feel more work needs to be done.

My opinion is, I guess, specifically with regard to the hydraulic integrity of the self-sealing characteristics, is that while they probably do occur, to some degree, there is so little known about them and the potential for variability that probably would exist in these self-sealing layers, at this point is significant enough, you know, to not rely upon them as part of the design standards or layers of protection within the lagoon design.

PRESIDING BOARD MEMBER FLEMAL: Thank you.

MR. KEEFER: If I may also, I guess, add, referring back to lagoon siting criteria, that was definitely one consideration we had when allowing the -- when proposing, I guess, the absence of a liner in situations where no aquifer material, as defined, was present within 50 feet. And if you look specifically at the definitions, you can have course grain materials up to -- approximately up to two feet within five, so there still could be presence. And, again, it was the reliance on this

self-sealing layer, I guess, for lack of other term at this point.

PRESIDING BOARD MEMBER FLEMAL: Thank you.

MR. KEEFER: That we felt offered protection.

MR. HARRINGTON: Do the proposed rules adequately protect the environment and public health from gases and dust leaving the facility and causing odor contaminant deposition problems beyond the setback distance?

MS. GLOSSER: The regulations address the odor issue only in regard to reducing or eliminating lagoon management and waste application practices that are potentially odor producing. Given the complexity of odor production, odor intensity levels, and the variability of odor sensitivity in humans, the setback distances will help reduce the adverse impacts of odor and dust.

However, in some circumstances odor may be a nuisance beyond the setback distance. The Midwest Plan Service Livestock Waste Facilities Handbook recommends siting lagoons at least one half mile from neighboring houses. Also, Minor

(spelled phonetically) has suggested that odors can be transported at least .93 miles. This is taken from a 1982 publication, Research Results in Manure Digestion Runoff Feeding and Odors by the North Central Regional Research Publication.

In most cases under the proposed rule the setbacks are less than 0.93 miles, suggesting the potential for odor beyond the setback distance. Additionally, witnesses at the legislative hearings on the LMFA testified to odor problems beyond the setback distances.

Regarding the environmental impact of odor and dust transport, the ammonia emitted as gas from hog operations returns to the earth in rain. Release of gases and dust from a facility has a potential of impacting plants and animals. For example, excessive amounts of ammonia gas may act as a fertilizer and change the fertility of soil, influencing the types of plants which grow in affected areas. Excessive amounts of ammonia gas may result in avoidance and behavioral changes in wildlife. Further research needs to be done to more thoroughly understand the factors controlling odor and dust transport from these facilities and

their affects on nearby biotic communities.

MR. HARRINGTON: That's a long answer. I am trying to think through it myself. Just so I am clear, the Department continues to support the recommended setback zone in the rules with the changes you have already proposed; is that correct?

MS. GLOSSER: I believe the setbacks are established by statute, so what is in the rules would be consistent with that.

HEARING OFFICER LOZUK-LAWLESS: I think we have another follow-up question.

MS. K.C. POULOS: Can you give us an example of the types of animals or plants or animal behavior that would change due to odor or dust?

MS. GLOSSER: Well, there is not a lot of research available on this, but animals that would be heavily dependent on smell, such as deer, could very easily be affected by their migration patterns, or their use of an area may be greatly altered by the odors associated with a facility like this.

HEARING OFFICER LOZUK-LAWLESS: Any other follow-up questions?

MR. HARRINGTON: Are there any studies or other material that you can cite to for -- that have looked into the impact directly of odors particularly associated with farming operations and wildlife?

MS. GLOSSER: I believe the question related both to odors and other particles that are being emitted. There is fairly extensive literature on certain things, such as I have one article on toxicity of ammonia to plants, which goes into great detail talking about how the ammonia is emitted into the air and travels, lays low to the earth, and can cause extensive damage.

One citation in here was extensive injury done to a Spruce stand 400 meters from a facility such as this. So there is some data, particularly on plants. There is actually another bibliography that was done by the State of Missouri that we have a copy of that has extensive documentation on other aspects of certain portions of this, not all of them, such as the question of maybe the affects of -- on the total affects of wildlife.

HEARING OFFICER LOZUK-LAWLESS: Would you like to admit that into evidence as an exhibit?

MS. GLOSSER: Yes, we can.

HEARING OFFICER LOZUK-LAWLESS: Okay. If you want to give it to me now we can admit it.

MS. GLOSSER: Okay.

HEARING OFFICER LOZUK-LAWLESS: Okay. Thank you.

We will admit the "Toxicity of Ammonia to Plants" as Exhibit Number 9. It is from the Agriculture and Environment Magazine, it looks like, from 1982.

(Whereupon said document was duly marked for purposes of identification as Exhibit Number 9 as of this date.)

MS. GLOSSER: Did you want the bibliography, as well?

HEARING OFFICER LOZUK-LAWLESS: Yes, if you have it.

MS. GLOSSER: Okay.

HEARING OFFICER LOZUK-LAWLESS: Are there any objections to these reports being admitted?

MS. GLOSSER: Here is the copy of the bibliography and these are abstracts of selected items from that list.

HEARING OFFICER LOZUK-LAWLESS: Okay. We have to introduce into evidence as an exhibit "The Impacts of Manure on Aquatics, a Bibliography." Are there any objections to this being admitted?

Okay. Then we will mark that as Exhibit Number 9 (sic).

(Whereupon said document was duly marked for purposes of identification as Exhibit Number 10 as of this date.)

HEARING OFFICER LOZUK-LAWLESS: And lastly, then, we have "The Summary of Manure Impact Papers."

Are there any objections to this being admitted into evidence?

Okay. Hearing none, we will mark this as Exhibit Number 10.

MR. TABER: Excuse me.

HEARING OFFICER LOZUK-LAWLESS: Yes, Mr. Taber?

MR. TABER: So Exhibit Number 9 is the --

HEARING OFFICER LOZUK-LAWLESS: "The Impacts of Manure on Aquatics Bibliography."

MR. TABER: And the article, "The

Toxicity of Ammonia to Plants" is --

HEARING OFFICER LOZUK-LAWLESS: I misspoke. I am sorry. So "The Toxicity of Ammonia to Plants" will be Exhibit Number 9. "The Impact of Manure on Aquatics Bibliography" will be Exhibit Number 10. Then "The Summary of Manure Impact Papers" will be Exhibit Number 11.

Thank you, Mr. Taber.

(Whereupon said document was duly marked for purposes of identification as Exhibit Number 11 as of this date.)

HEARING OFFICER LOZUK-LAWLESS: Mr. Harrington, you can continue.

MR. HARRINGTON: I believe you have essentially answered question six as we have gone along, but if the Department has prepared additional answers to it, I will be happy to restate the question.

For the benefit of the audience, it was, if the answer of any of the last five questions was no, please explain in detail. Actually, I think that was done.

MR. MARLIN: I think you are skipping

five. But you are right, we are answering six as we go along.

MR. HARRINGTON: Well, we will do five. Do the proposed rules adequately protect the environment and public health from waste applied to the soil from running off the fields and contaminating nearby land and surface water?

MR. KEEFER: In response, the proposed rules provide a true protection from livestock waste runoff into nearby land and into surface waters. The enhanced requirements for waste management plans and manager training, if followed by the owner and operator and if enforced, will improve these practices. Enhanced neighbor awareness of the waste management plans provisions may also improve compliance.

MR. HARRINGTON: Moving to prefiled question seven. In your testimony you state that, quote, if all Dedicated Illinois Natural Preserves and publicly held Illinois Natural Area Inventory Sites were also provided with one half mile setback the total area covered would be approximately three percent of the state's land area. What evidence is there to support this conclusion?

MS. GLOSSER: The three percent estimate of the acreage was determined by placing a one half mile setback around the boundaries of all IDNR properties and nature preserves and publicly owned natural areas within Illinois Natural Area Inventory Sites and was prepared by the following two-step process.

First, for IDNR owned and leased properties the acreage included in the setback estimates was determined by calculating the doughnut shaped area surrounding a circle with an area equal to the acreage of a specific property.

Then, secondly, the acreage for publicly held INAI Sites, because they are so much larger, we identified and prepared an estimate calculated to the one half mile buffer using the ratios that were developed in the first step.

We believe this two-step process overestimates the potentially effective areas for two reasons. It includes all DNR properties and nature preserves and publicly held INAI Sites of which an undetermined number of these sites will not meet the 50 persons per week as required by the LMFA. And it includes land that is already

protected by setbacks for existing residences and businesses which are within a half mile of IDNR property.

MR. HARRINGTON: Has the Illinois Department of Natural Resources performed any study regarding how much acreage would be taken out of service if the IDNR's changes were adopted? I take it your answer is yes, and my question is how much acreage would be taken out of service?

MR. McCULLEY: The answer is that none other than the estimate described in my previous written testimony, where the acreage is calculated to the doughnut shaped buffer surrounding each IDNR property known acreages. Furthermore, the acreage will not be taken out of service, but will be available for other uses, including crop production.

MR. HARRINGTON: Do you know what percentage of Illinois farmland would no longer be available for use for animal feeding operations if these rules were adopted, if your proposed changes were adopted?

MR. McCULLEY: What -- excuse me?

MR. HARRINGTON: I will rephrase the

question. Do you know what percentage of Illinois farmland would be taken out of service for the concentrated animal production if these rules were adopted with the changes that you have requested?

You were talking about three percent of the state as a whole would be affected by your extended setback zones. My question is what percentage of the farmland would be affected, if you know?

MR. McCULLEY: I do not know that estimate. We can work on getting a better answer to that last question you posed, but it would be dependent upon the availability of information, if we can find the information we need to make the calculation.

MR. HARRINGTON: Thank you. As a follow-up, many of the sites, I believe, that would be protected under your proposal are not necessarily compact in nature; is that correct?

MR. McCULLEY: True.

MR. HARRINGTON: There are strip sites?

MR. McCULLEY: There are some, but not that many. There are some trail sites.

MR. HARRINGTON: Is it your proposal,

then, that the setback zone be calculated from the edge of those trail sites?

MR. McCULLEY: Yes, because they meet the requirement of the 50 person per week attendance. The two that come to mind, our heavily traveled state trail along the canals in Northern Illinois that, in one case, one of them has quite a bit of houses along it and it runs through a number of communities, so that it would be protected just by its location near the municipalities.

MR. HARRINGTON: Has the Illinois Department of Natural Resources done a study regarding how much the IDNR property would be covered by the setback requirements as contained in the proposed rules, without your changes?

MR. McCULLEY: No such assessment has been conducted. The location of each common place of assembly is not easily determined. It would require a major undertaking to clearly identify and calculate a one half mile setback around each of these locations, such as individual campgrounds and points of interest. The well defined nature of property boundaries is one reason it supports the Department's proposed use of property boundaries as

a measuring point for common places of assembly and non-farm businesses. We feel the use of property boundaries would expedite the identification of appropriate locations of new facilities.

MR. HARRINGTON: There is a large area that is used by over 50 people a week, but all their activity occurs in -- for most of those people, occurs within a limited space, and the surrounding areas are used very seldom and very lightly by people visiting the site. Why would that entire boundary need to be protected?

MR. McCULLEY: I would disagree with your assumption that just a small percentage of most of our area is used. Take, for instance, a lot of our sites have lakes. That is a major part of the recreational activity. Those lakes may stretch from one end of the site to the other.

Boaters, sailers, people who use personal water craft and fishermen use the entire lake surface, different parts according to the different times of year. In the spring they may be crappie fishing on one end of the lake and may be canoeing on another part of the lake at another time of the year, depending on the use. They may be sailing in

the main basin in the summer.

Trail use is an extremely popular use of the Department sites. We have over 1,500 miles of trails on our sites. The minimum length we strive for on a horse trail is 10, 16 miles in length. So you have trails that take into -- they impact a lot of the acreage of a site. So you have use in a lot of different areas of the site. It is not just the campgrounds that is the only use of the site.

MR. HARRINGTON: For clarification -- I don't really require a further answer -- I did not assume that all sites were not used. I was depositing a given site where that might be the case.

Regarding getting a list of places of common assembly, is that list necessary since it does not change the definition of populated area and really does not clarify the existing definition?

MR. MARLIN: We believe it does clarify the definition. The list is intended to clarify the definition. The terms "common places of assembly" and "non-farm business" have not been defined in the statute nor in the proposed

regulations. The list of examples, which is not all inclusive, provides explanation as to what types of areas and establishments can be considered either a common place of assembly or a non-farm business. The Department believes its proposed changes will be beneficial as they will provide better guidance in determining that the location meets the definition of a populated area. Basically our answer is yes.

MR. HARRINGTON: Is the purpose of the setback requirement from populated areas primarily due to odor concerns?

MS. GLOSSER: Odor is the primary issue of concern to IDNR with respect to setbacks. A strong odor of manure is clearly incompatible with many family picnics, camping, and other outdoor activities that Illinois citizens enjoy when visiting our facilities.

There are other concerns, however, such as possible impacts from dust, noise and gases, such as ammonia, which we discussed earlier, but were not addressed in the statute or rule, but will be reduced by the setbacks that exist in the rules.

MR. HARRINGTON: This is follow-up to an

earlier question. Do the setback rules apply to modified facilities as well as new facilities? Is that not correct?

MR. MARLIN: That is my recollection, but the statute will speak for itself.

MR. HARRINGTON: It is my understanding, as well. So my follow-up question is, has any effort been made to determine what number of existing facilities would be prohibited from expanding by the expanded definition of the setback areas you are asking for?

MR. MARLIN: I think the fact that there is no current or proposed requirement for existing facilities to register, make it impossible to answer that question. We don't know the location of these facilities, and based upon my participation on the Committee, I don't think that such a list exists.

MR. HARRINGTON: Do you have a list of facilities that have caused the Department to have concern?

MR. McCULLEY: We have no sites right now other than one in Iroquois County where a facility is under construction that we know to have received

odor complaints.

MR. HARRINGTON: Are you saying you received an odor complaint from a facility that is not yet built?

MR. McCULLEY: No. Let me clarify that. We have a concern about it.

MR. HARRINGTON: Okay. Thank you. We have heard of that happening where people have gotten odor complaints before it is completed, but that is another problem.

How would the Illinois Department of Natural Resources propose prime season?

MR. McCULLEY: For purposes of the proposed rule, the Department defines prime season as the period when the majority of public use occurs at a property. In most instances this would include the spring, summer and fall periods. At sites where hunting is the primary recreational activity, the late summer, fall, and early winter months would be the prime season, although visits for hiking and nature appreciation occur all year.

At the five designated state forests of the IDNR, all have prime seasons longer than a week or two because public use includes more than just

hunting. State forests are utilized for camping, trail use, picnicking, photography, and nature appreciation.

We are not aware of any site that only has a two-week prime season. It is incorrect to assume that only one or two people a week visit any of these sites.

MR. HARRINGTON: I am going to skip over question 13.

HEARING OFFICER LOZUK-LAWLESS: Okay.

MR. HARRINGTON: Question 14, by taking large portions of uninhabited property out of service for use of setback zones, would not an owner or operator of a livestock waste lagoon have to move lagoons closer to an area with a denser population?

MR. McCULLEY: I will refer to the answer in number 8 where we stated the acreage will not be taken out of service. It will be available for other uses, including crop production. Any property within the setback zone under the LMFA will be restricted from use only as a livestock waste facility.

IDNR property and the publicly owned

natural areas -- I can't read my own writing -- within the Illinois Nature Inventory Sites will affect less than three percent of the total land available in Illinois. The Department cannot speak to every possible facility site.

MR. HARRINGTON: In follow-up to that, if someone does have a 160 acre farm bordering one of the sites you want protected, and say it borders it on one side, that whole area would become a setback, would it not?

MR. McCULLEY: It would be within the appropriate setback, yes.

MR. HARRINGTON: So that farm could not be used for animal production?

MR. McCULLEY: According to the setback of the size limits in the Act.

MR. HARRINGTON: So by expanding the definition, the property line for all IDNR sites, anybody who has a border section farm or similar would be, in effect, taken out of business, of the potential business of raising livestock in a modern operation on their farm; is that not correct?

MR. McCULLEY: For the size and, you know, if they fell within the appropriate setback

distance, and are going to construct a facility of the size that applies to the setback.

HEARING OFFICER LOZUK-LAWLESS: Mr. Harrington, there is a follow-up.

MS. TIPSORD: I would like to follow-up with that. It is my recall, and I apologize if I am recalling wrong. It has been a long day.

But my recall is that there is an ability within the rules to allow for a waiver of the setback zone, an appropriate waiver, under the Department of Ag's proposal.

How would the DNR anticipate allowing for the potential of waivers for the setback zones if the Board were to extend the definition to include the DNR properties, or would you anticipate that there would be a waiverability?

MR. McCULLEY: We would have to look at that on a case-by-case basis.

MR. MARLIN: One thing I think we should point out here is that there currently exists setbacks and there is currently the use of a term "populated area" in the existing body of regulations. It would be our position that those definitions have never been clarified to the point

like we are talking today. And the expansion we are talking about is really an expansion of the definition as it currently exists. But the definition today does not spell out what part of a park or recreation area is considered a populated area. That is part of the discussion we are having here.

But I think it is important to remember that setbacks exist now from populated areas. It is just that there has never been a clear definition of how populated area applies in the case of the DNR facility. I don't really think that's been an issue in the past.

MS. TIPSORD: As a further follow-up to my question, if I might, I guess my question really is would you anticipate that if someone wanted to seek a setback that they would apply to the Department of Natural Resources itself? I mean, have you anticipated that?

MR. MARLIN: That's the type of thing that would have to be worked out in the rulemaking process. And the Advisory Committee discussed this in some detail and some of the other members of the Department might want to chime in here, but

basically, where there is an instance where a waiver type situation is considered warranted by a producer, that person would make the request to the Department of Agriculture. That's the way I understand it now.

The Department of Agriculture would consult with DNR and other interested parties and try to work something out. I am not aware of any firm procedure, but I believe it would go through the Department of Agriculture, and if I recall the setback provisions in the proposed rule, the Department of Agriculture is intending to promulgate the rules that deal with some of the details. So there is no firm answer to your question. It is one of those things that is out there looming.

MR. HARRINGTON: Just note for the record that I believe the only waivers that are provided for are 506.702 (b) and that speaks only of waivers being obtained from owners of residences, and does not provide for waivers from any other source. We are missing something there. I appreciate it being pointed out.

MR. MARLIN: That's another example of a

situation where perhaps the statute needs some clarification or tweaking to take into account things that were not considered when the statute was originally put together.

HEARING OFFICER LOZUK-LAWLESS: I think Mr. Boruff may have something to add to this.

Would you like to add anything?

MR. BORUFF: A couple of points. A good point that Mr. Harrington just brought up in terms of the waiver, or the ability for someone other than residents to grant that would need some clarification. But if I understood Mr. Marlin correctly, I think that maybe we, as the Department of Agriculture, may have viewed that a little bit differently. That if, in fact, there is a waiver being considered, it would be negotiated between the two property owners.

In the case -- in the question that I think that Ms. Tipsord had, it would be negotiated between, in this case, IDNR and the producer wishing to put in a livestock facility. We would be brought into the matter after the negotiations between the two parties for our approval of that. I think that's the point where we would become

involved.

HEARING OFFICER LOZUK-LAWLESS: Thank you.

MR. HARRINGTON: Is there any reason to believe that the impact to property owned or leased by IDNR would be any different than the impact on other property located in the same area?

MR. MARLIN: The difference in impact of the property owned or leased by IDNR is that it is land held in public trust for outdoor recreation and for the protection of natural resources, many of which are unique or have valuable natural characteristics. These lands represent a major public investment.

In the most basic terms IDNR facilities are used annually by millions of citizens to get away from urban areas and enjoy camping and other outdoor social gatherings. Such experiences are totally incompatible with the level of odor known to occur near livestock facilities.

Citizen testimony at the legislative hearings on the LMFA is replete with references to families being unable to use their yards for outdoor activities due to odor. Thus, the main

difference regarding human impact is the much larger number of people using the DNR facilities.

State owned and/or managed lands also provide habitat for many plant and animal species. Some properties, especially those designated either as Illinois Natural Area Inventory Sites and/or Illinois Nature Preserves contain aquatic or terrestrial habitat with species listed as endangered and threatened.

Factors such as species diversity and richness reproductive capability and overall ecosystem stability can be affected directly or indirectly from the introduction of livestock waste into the environment. Similar impacts would occur to natural resources on other properties with similar characteristics regardless of ownership.

MR. HARRINGTON: I believe you answered 16, as well, essentially. Question 17, with regard to your statement and testimony that, quote, Subsection D requires qualified professionals to direct and evaluate the site investigation, do you consider the NRCS staff and other similarly qualified personnel to be, quote, qualified professionals, close quote, that would be able to

direct and evaluate site investigations?

MR. KEEFER: The requirement for direction and certification by a Professional Engineer or a Licensed Professional Geologist is an attempt to ensure that the site investigation, the groundwater monitoring well installation, and the lagoon construction components are directed by licensed professionals who are familiar with the methods and problems in those issues. The professional affiliation of a licensed professional or those under their direction is not an issue, from the Department's perspective. Certification by a licensed professional does not require that the certified professional directly conduct all facets of the work.

So non licensed professionals are able to conduct any component of these activities, assuming their work is directed by a Professional Engineer or a Licensed Professional Geologist. This means that any NRCS staff and others similarly qualified could be directly involved in any facet of the activities.

MR. HARRINGTON: I understand, then, that the licensed engineer and licensed professional

geologist would both be considered qualified people in your --

MR. KEEFER: For different facets, correct, if I understand you correctly, yes.

MR. HARRINGTON: If they did not have a state license, they would not be qualified to direct such an investigation?

MR. KEEFER: To direct or certify. Again, the Licensed Professional Engineer, I believe, as the proposed rule reads, are the only ones able to certify that lagoon construction standards have been met. I believe that the groundwater monitoring -- I believe that the groundwater monitoring criteria must be approved by a Licensed Professional Geologist, as well as the site boring information.

But the intent was to make sure that in those three facets, specifically, that they were at least directed by licensed professionals. In other words, to clarify, if you have a junior staff member under your direction or even a non licensed professional, again, an NRCS staff with a certified professional or licensed professional is felt competent to handle a component of the project as

written, and it is our intent that that would be acceptable.

MR. HARRINGTON: Do not licensed geologists often serve to provide the basic evaluation of the lagoon construction, where the Licensed Professional Engineer is already required by statute or regulation?

MR. KEEFER: If I understand your question correctly, you are stating a hypothetical, is that correct? I mean, we don't currently now -- to my understanding, we don't currently have these type of lagoon design criteria standards in place.

MR. HARRINGTON: There are other lagoons that are constructed for a variety of reasons. Quite frankly, the reason for my question was that I have been told by both engineers and geologists that engineers are always certifying the work that is really done by the geologist, and it makes them both nervous.

MR. KEEFER: You are talking to a geologist, so there is a bias involved here, I suppose. There are facets of site characterization efforts and other types of activities that are done by geologists characteristically, but that is a

generalization. There are -- I will leave it at that, I guess.

Also, though, to address some confusion that you may have, there currently is no Licensed Professional Geologist classification in place in Illinois. It has been accepted by the General Assembly. They are working on getting the finals in place so that people can begin registering, I believe, sometime this summer. This language was built around the expectation that in Illinois, probably around the end of the year, those professionals will be recognized by state statute -- or excuse me -- state licensing, and would be available in Illinois.

CHAIRMAN MANNING: On that note, if I might interject, Mr. Harrington and Mr. Keefer.

Our rules have a definition of Licensed Professional Engineer. We are absent the definition of Registered Professional Geologist. I would make this note to the Department of Agriculture, the proponent, as well. Should you choose to propose the definition of that geologist to us, that may be better than us coming up with it.

But I do think that by the time we are ready to go through with these rules we should have a definition of Registered Professional Geologist just like we have an accepted definition of Licensed Professional Engineer. Should we accept that portion of the rule, I think it should be defined as specifically as we can what we mean by a Registered Professional Geologist.

PRESIDING BOARD MEMBER FLEMAL: I would certainly second that. The Board has, for quite some time, in several rulemakings had the difficulty of dealing with work that would seemingly be most appropriately certificated by a geologist, and not having a certified geologist program in effect in the state. We all know it is under development and perhaps this is a rulemaking where we might anticipate that kind of professional person eventually being available. It is not now, but the proper way to prepare for that, I think, would be to at least have the definitions as to what constitutes an appropriately qualified geologist.

MR. HARRINGTON: Do you believe that the 50 foot depth needed to assess the potential impact

of groundwater resources is sufficient to protect the groundwater environment and the public health?

MR. KEEFER: Just to clarify that, in our response I guess we wanted to state the protection of the environment and public health, as referred to in this question, are assumed to be limited only to instances where they are threatened to exposed groundwater, just to clarify that. Other exposure routes are not considered in our response, as well.

The siting criteria -- or the proposed siting criteria limits the evaluation of only 50 feet below the lagoon. It is not the only lagoon design factor or operating practice included in the proposed rules that addresses the protection of groundwater. The lagoon construction and operation requirements, as well as the monitoring well requirements in the proposed rule, will reduce the likelihood of aquifer contamination, in our opinion.

In addition, the evaluation of materials to a depth of 50 feet below the proposed lagoon will provide sufficient information to evaluate the relative contamination potential of groundwater at

proposed lagoon sites. Collectively, these factors will be generally sufficient to protect groundwater resources.

CHAIRMAN MANNING: Before you move on, I have a question in that regard, too. The proposed rules would require as much as the emergency rules did, this concept of 0 to 20 feet and the liner and a groundwater monitor required from 0 to 20 feet.

My question has to do with a situation where the aquifer is actually above the bottom of the lagoon. I am wondering whether the Department, the Geological Survey, considers the rule protective where the aquifer is actually above the bottom of the lagoon?

MR. KEEFER: Yes, that is --

CHAIRMAN MANNING: In terms of the liner requirement? Go ahead.

MR. KEEFER: There is specifically a couple of aspects that we worked with in discussions for the emergency rule, even, that revolved around the concept that you just mentioned of having an aquifer basically above the bottom of the lagoon.

There is a couple of different situations

where that could occur. A simple one would be in areas of the state where you might have basically sand from the surface to several hundred feet. In that situation, again, that was one reason we went to the use of the word "aquifer material" and reliance of that as opposed to the word "aquifer."

In those situations you can easily have the water table in a saturated zone not begin until 50 feet from the lining surface. So there was some difficulty in worrying about the actual term aquifer in that sense. According to the Groundwater Protection Act, the aquifer doesn't begin until 50 feet.

However, given the system involved in a lagoon, where you have got basically millions of gallons potentially, a large volume of water, above a liner, whether it is synthetic or earthen, the hydraulic characteristics effectively of that aquifer material are not significantly different than when they are unsaturated relative to when they are saturated, if you have that much water behind it. I am sort of generalizing to make the point in this forum. But that is the gist of it that we were concerned about.

In other situations you may have a thinner aquifer present. If you are a lagoon excavationist, and 20 feet as an example, as a hypothetical, you could have a five foot sand or sand and gravel deposit within the upper 20 feet. That would be aquifer material.

Again, because of fluctuations in the water table, the definition of that as an aquifer could be problematic, but the contaminant transport characteristics of that material could be potentially significant, and when they met, when the materials, as observed in the boring, meet the qualifications of our proposed aquifer material, being at least two feet within five, we felt that at that point they were thick enough to be laterally continuous to a large enough degree to allow a significant amount of transport should a leak occur. And for that reason, again, we recommended the use of -- we thought the liner was necessary and would be protective if its integrity were preserved.

MR. RAO: I have a follow-up question. You talked about aquifer material. In situations where the water table itself is very close to the

lagoon bottom, do you think the design standards that are being proposed, basically the liner requirements are protective of the groundwater, the appropriate thickness, the minus seven hydraulic activity?

MR. KEEFER: I just wanted to make sure we addressed that one. I believe that is in question three, where we talked about some of the concerns we still have with regard to the appropriateness of specific liner technologies in these facilities. So my answer is sort of two-part in a sense.

I believe if the liner is able to be constructed according to standards, that ten to the negative seventh is probably as sufficient to adequately protect the groundwater resources around there. In other words, even assuming some kind of abusive transport through the liner, you are going to be moving into that aquifer, your aquifer in saturated material at rates probably low enough to assimilate enough of the waste.

MR. RAO: You think that attenuation will take place due to the transport of leakage through the liner?

MR. KEEFER: Ten to the negative seventh is actually permeable, in other words, is what you are saying?

MR. RAO: Yes.

MR. KEEFER: Okay. I understand. I guess what I am trying to say is that even given that permeability let's assume that we can design and maintain and control that and attain that and keep that, let's assume that as a simple situation, then the amount of material -- let's remove attenuation as a concept. The amount of material moving through is going to be probably small enough to not be a -- we feel to not be a significant threat to the groundwater resources.

Now, stating that again I want to reference back to our number four concerns, question number four concerns, that we still feel that there are questions that need to be addressed regarding the ability to ensure this type of hydraulic characteristics within liners with these types of facilities.

MR. RAO: Are you going to discuss your concerns in future hearings or in your comments?

MR. KEEFER: At this point we had not

intended to. We were going to leave that up to follow-up, I guess, in response.

MR. RAO: Okay. Thank you.

HEARING OFFICER LOZUK-LAWLESS: Yes, you have a question, sir?

MR. KENT ELWOOD. I am Kent Elwood. I may have lost the gist of the discussion. Could you design a floating lagoon in a groundwater lake, according to these rules?

MR. KEEFER: It makes me smile, getting back to the arguments between geologists and engineers. There is a little schism there, I suppose. I guess, in short, sir, I don't have the qualifications to respond to design capabilities.

MR. ELWOOD: I was just thinking about the statute as being proposed, would that allow that to occur?

MR. KEEFER: You mean in a surface water body?

MR. ELWOOD: To design a floating lagoon in a fresh water lake.

MR. KEEFER: Well, I don't -- first of all, your ability to get a continuous boring within 20 feet of lagoon is going to be difficult, I would

suggest.

CHAIRMAN MANNING: Excuse me. If I may interject, as well. There has to be some sort of presumption in terms of wisdom on the part of the industry here in terms of what it is they are proposing. I would interject -- Dr. Flemal and I were talking here on the side -- that whatever design criteria -- I will say this for the record, and we said this in our emergency rules, whatever design criterias we may or may not come up with, the Board and the Department as proposing, those design criterias are intended to, to the best degree possible, the best science possible, the best wisdom possible, protect our environment.

They are not, however, a defense against a potential violation if those design criterias do not, for whatever reason, adequately protect the groundwater adequately or protect the surface water. They are intended to do that. They are intended to make sure that the environment is protected, but, certainly, they don't act as an absolute either.

So there is wisdom on the part of the industry, obviously, when they go out and build

these things with that knowledge that it is important to keep these things safe, as well. And I rather doubt that the livestock industry is going to go build these in your example, in your hypothetical.

HEARING OFFICER LOZUK-LAWLESS: Any follow-up questions? Okay.

MR. HARRINGTON: Question 19, do you believe the monitoring well guidelines proposed in Section 505.206 are protective of the environment and the public health? And you state that insofar as monitoring wells are concerned they provide the level of protection that one would expect.

MR. KEEFER: Right. Again, just in our written response we have that same caveat that the assumption that the present public health of the environment is only through exposure to groundwater as a threat. To clarify, the groundwater monitoring requirements in the proposed rule are only intended to provide a way of identifying when the shallow groundwater is being contaminated near lagoons in areas of comparably high aquifer contaminations.

In other words, areas where aquifers are

detected in borings within 50 feet of the proposed lagoon bottom -- excuse me -- 20 feet. There is that typo. They do not serve any protective capacity by themselves, the monitoring wells. It does not serve a protective capacity by itself. When monitoring wells are located -- when they are constructed and sampled properly, only then can they be used to reliably provide information on groundwater quality. Correct interpretation and then more importantly action on these interpretations determine whether or not groundwater quality is protected.

The guidelines in the proposed rules, we feel, are sufficient to identify when shallow groundwater is being significantly contaminated. Some additional guidance is needed, the Department feels, separate from the proposed rules to address the sampling protocol of these wells, the storage, the transport, and the analysis of samples collected from these wells, as well as the proper interpretation of the monitoring well sample results.

Regarding the specified guidelines, the requirement of three monitoring wells is intended

to be a minimum number at any location. Additional wells can increase the ability to reliably detect any leaks. It is not practical, however, to define -- the Department feels it is not practical, however, to define a single optimum number as location of monitoring wells that will work best for every site.

Areas with more variable geological materials will generally benefit or require more wells to adequately monitor that site than would areas with very uniform geological materials. Given this type of difficulty and the type of contaminants in wells, the Department feels a minimum of three wells should be sufficient and the ability for the Department of Ag to require additional wells on specific sites should then also be utilized when they feel it is necessary.

MR. HARRINGTON: I think question 21 has already been addressed in earlier comment that you have made, unless you have something that you wish to add.

MR. MARLIN: What about 20? Are you saying you want to bypass 20?

MR. HARRINGTON: No, I will come back to

20. Is there any reason to believe that if the proposed rules were adopted without the suggested changes by IDNR that IDNR properties would be, quote, viewed and utilized, closed quote, as stated in the testimony, as buffers from other populated areas when siting new livestock management facilities?

MR. McCULLEY: IDNR properties already experience significant single family dwelling construction next to the property boundaries of its properties. This is due to the attractiveness, green space, and perceived lack of future residential or industrial encroachments or adverse development of the IDNR properties. In a similar manner to the extent livestock producers believe that the boundaries of public lands are not subject to setback production, we believe that they would have an incentive to use them as buffers to avoid future conflicts with residential property.

If I could interject here, too, Question 16 was skipped over. The Department found -- would like to read into the record a couple studies that we found that we feel illustrates additionally why we feel the IDNR properties are important to be

protected. A study completed for the then Illinois Department of Conservation in 1990 by David M. Griffith & Associates, titled, "Analysis of the Economic Impact of Programs Administered by the IDOC" reported that in 1989 the total economic impact to the State's economy attributable to Department programs equaled 2.7 billion dollars from visitor spending.

A second study completed by the Texas Parks & Wildlife Department in 1990 titled "Estimated State and Federal Lands for Recreation" reported that Illinois ranked 48th among the 50 states in terms of public land acres per 1,000 population of state and federal land for recreation. We feel these two studies illustrate the importance of protecting Illinois' limited amount of publicly held property for recreation and its associated economic impact to the state's economy.

MR. HARRINGTON: Question 22, is there any evidence to suggest that there would be decreased attendance at Illinois Department of Natural Resources' owned or leased property if the livestock waste lagoons were located within the

property setbacks as proposed in these rules? Meaning, obviously, that the waste lagoon was the proper distance from the populated area within the IDNR property.

MR. MARLIN: Okay. By skipping 21 you are throwing us out of sequence here.

MR. HARRINGTON: Okay. I will ask 21, if you like.

MR. MARLIN: There were 20-some people involved in putting this together. We have the difficult job of trying to express the views of I don't know how many divisions our department has involved with this, so we tried to set this up the way you presented it, so we are kind of stuck with what you gave us.

MR. HARRINGTON: Moving back to 21, is there any evidence that odor pollution would result in the location of a livestock waste facility within the proper setbacks, as defined by the regulations?

MR. MARLIN: Okay. I have got new bifocals. This is a little bit of a difficulty here.

Before answering questions 21 through 24

it is necessary to point out that the rules do not provide a clear point from which to measure the setback distance of a facility such as a state park or a 4H camp, for that matter. Using a park as an example, 50 persons per week congregate at great numerous specific points, such as a parking lot, visitor center, pavilion or boat ramp. Likewise, 50 or more people per week will use a perimeter trail or open field, which does not have a single point from which to measure. Other popular activities such as nature appreciation and hunting have even less clearly defined center points from which to measure.

If boundary lines are not established as measuring points it will be virtually impossible to determine setback unless each common place of assembly within a park is individually defined, and a potential livestock operator measures from each such point. Reaching agreement on the points would be a major endeavor in itself.

To specifically answer question 21, then, yes, there is evidence that odor pollution would result. Prior answers have addressed our contention that odor pollution can exceed the

setback distances specified in the law. The setbacks do not control odor pollution, but set a distance which odor can dissipate before reaching a residence or populated area. The proposed rules, if followed, will help reduce but not eliminate odor from lagoons and the field application of manure.

The rules do not address odors originating from other sources, such as the confinement buildings and manure pits. Additionally, odor pollution is difficult to define due to the subjective judgments involved with the issue and the variability of human sensitivity to odor. The specific impacts that concentrated livestock odor may have on the behavior of wildlife, especially species dependent on the sense of smell to avoid predators or find prey or mate, need further consideration.

MR. HARRINGTON: Question 22, is there any evidence to suggest there would be decreased attendance at Illinois Department of Natural Resources' owned or leased property if a livestock waste lagoon were located within the proper setbacks proposed under these rules?

MS. GLOSSER: When siting a new recreational facility, the IDNR would seek to identify any potential sources of odor pollution. It is our view that the majority of people will find concentrated livestock waste to be offensive and that they would not frequent an area where this odor is strong. As stated before, odor is expected to be at least an occasional problem beyond the setback distances. If people testifying at the legislative hearings would not use their yards for cookouts and general recreation because of odor, it is reasonable to assume that similar odors will cause people to avoid IDNR facilities.

As an example, I want to reference back to a situation that we referenced earlier which was a livestock lagoon in Iroquois County, which is currently under construction within 50 feet of the property line of an IDNR State Conservation Area.

The IDNR staff that visited a lagoon in service and operated by the same operator that is constructing the one in Iroquois County has stated that based on their experience of having been at the operating facility, that when operational the one in Iroquois County will certainly reduce the

attendance at the Iroquois County Conservation Area.

MR. HARRINGTON: Question 23, is there any reason why the ambiguity and, quote, potential for this agreement, close quote, mentioned in your testimony could not be cleared up short of using the legal property line, as has been suggested?

MR. MARLIN: IDNR is aware of no practical alternative to using legal boundaries as a measuring point. The difficulty is determining and measuring points for the common places of assembly. IDNR boundaries are legally defined. IDNR properties are utilized for various types of recreation including camping, picnicking, trail use, boating, fishing and hunting. Activities like trail use, boating and fishing and hunting occur in remote areas of the site and the measuring point is difficult, if not impossible, to determine.

Using existing buildings and campgrounds as measuring points will limit future development of new recreational facilities. For example, if a lagoon is located one half mile from a campground, which is one fourth mile from the IDNR property boundary, additional expansion toward the property

boundary would be limited as the new developments are within a half mile of the lagoon.

MR. HARRINGTON: To avoid causing confusion, I will just go through the rest of the questions, although several I could skip easily.

Will a lagoon which is properly built and operated, according to the standards set forth in this proposal, be a source of significant odor problems? And if so, why is that?

MR. MARLIN: Okay. Then answer number 25, when compared to less stringent practices, the anaerobic lagoon operation requirements specified in the proposed regulations are accepted practices by agricultural engineers that will reduce, to some extent, the production of odor from an anaerobic lagoon. However, odor will continue to be produced by the lagoon. The rule relies heavily on the training of operators to ensure good management practices.

Depending on the time of year, and the management practices being utilized, i.e., agitation prior to waste removal, odors could increase. Whether or not the odor emissions will be a significant odor problem will depend on many

variables, such as location of residences and populated areas, weather, wind direction, and sensitivity of potential receptors to odor.

On days when the wind is strong, odors and waste gases, for example, ammonia, may be carried for miles. Movement of gases off site have the potential to impact sensitive plants, animals and humans.

And Number 26, the question is why is that? As discussed in our response to Question 21 and later in response to Question 29, livestock facilities operating according to the proposed guidelines will still have a significant odor. The lagoon will still be a source of odor, particularly during seasonal turnover and agitation.

MR. HARRINGTON: Question 27, are you familiar with such lagoons being operated in Illinois or in other states?

MR. MARLIN: The Department is familiar with some lagoons being operated in Illinois.

MR. HARRINGTON: To your knowledge, have the lagoons themselves been a source of significant odor problems beyond the setback zones?

MR. MARLIN: The Department has no direct

knowledge concerning the distance that odor will travel from these facilities, and refers you to the IEPA and their nuisance complaint staff. The Department does, however, have staff members involved with research on the impacts of hog waste lagoons on shallow groundwater quality. These researchers have identified published research results from experts outside of Illinois that document odor traveling more than 0.93 miles from these facilities. It is unclear whether these facilities were operated in a method consistent with those in the proposed rule. This observation was referenced in more detail in our response to Question 4. Additionally, witnesses at the legislative hearings on the LMFA testified to odor problems beyond the setback distances.

MR. HARRINGTON: Question 29, would the animal feeding operations themselves be a likely source of significant odor problems if properly carried out?

MR. MARLIN: Yes. The confined animal feeding operations themselves are a source of significant odor even when the proposed guidelines are followed. Basically the rules don't address

the other facilities.

MR. HARRINGTON: Would the odor problem be minimized if the waste from the livestock facilities was referenced to properly operated waste lagoons?

MR. MARLIN: The extent and duration of odor problems could be reduced if lagoons are properly designed and operated according to the proposed rules. However, other waste treatment technology exists which would further reduce odor generation at these facilities. Whether or not the odor would be considered minimal is dependent on a number of considerations, some of which are subjective. Refer to the answers to questions 4 and 25 for additional considerations. Lagoons do not necessarily address other sources of odor, such as confinement buildings and animals themselves.

MR. HARRINGTON: Would you expect that a properly operated facility would produce less odor than a pasture or an open feeding facility that is not equipped with a properly operating waste lagoon, with the same number of animals?

MR. MARLIN: The Department has not addressed this issue.

MR. HARRINGTON: As follow-up on that, there is no restriction on grass trained or feeding animals in an open field anywhere near a Department of Natural Resources facility, is there?

MR. MARLIN: I am not aware of one. It would depend on -- some of the feeding operation rules might kick in Under Title 35. Unless there is something that speaks for itself, I will say, no, I am not aware of one.

MR. HARRINGTON: Question 33, what would be the usual principal source of odors, if any, from the concentrated feeding operation built in compliance with the proposed rules?

MR. MARLIN: Sources of odor in livestock confinement facilities include but are not limited to the lagoon, storage pits below confinement buildings, which contain manure, manure on animals, dust and gases from confinement buildings, application of manure to fields and the decay of dead animals. These sources are identified based on those listed in the literature and the expertise of several DNR staff members, due to their visits to several operating facilities.

The rules basically address two of these

sources, lagoon operating methods and field application. They should reduce but not eliminate odors from these sources. The other source will remain but may be reduced to voluntarily address through the education and training efforts.

It has just been pointed out that where I said "expertise" of several department staff members I should have said "experience."

MR. HARRINGTON: We will agree to both. Question 34, would not the principal source of odor be from the improper application of manure to fields when it occurs?

MR. MARLIN: When it occurs, the improper application of manure in the fields can be the most acute, meaning short-term and intense source of odor. We know that even proper application of manure is a source of odor. However, the lagoon and other structures would likely be the principal source of chronic or long-term and either intense or diffuse odor.

MR. HARRINGTON: Question 35, under the proposed regulations what steps are taken to minimize the potential of improper application of manure in the field?

MR. MARLIN: Overall, the management plans, training provisions, and application requirements of the regulations are steps taken to minimize improper application. This also includes the general policy stated in the LMFA which refers to neighbor education and awareness programs. The section regarding the criteria for waste management plans addresses the steps which can be taken to minimize the improper application to manure to fields. In addition, the training and certification of livestock managers will provide guidance to the facility personnel regarding the proper application of manure.

MR. HARRINGTON: Would the odor problems from proper application of manure from the modern feeding operation be any better or worse from the historical practice?

MR. MARLIN: The response by IDNR to this question would be speculative. The density of animals per unit of area in large confinement facilities is historically unprecedented.

MR. HARRINGTON: When you use the term large confinement facility, what would you define those as, in that answer?

MR. MARLIN: For purposes of this discussion, the Title 35, which, I believe, is 1,000 animal units. The basic response is we don't want to speculate in that area.

MR. HARRINGTON: Okay. I believe Question 37 has been answered, but I will ask it again so we don't lose anything.

Do you have an opinion as to impact of livestock waste lagoons on natural resources, and what is the scientific basis for that opinion?

MS. GLOSSER: Livestock waste lagoons collect large amounts of manure, animal feed supplements and medications in small areas and quantities which far exceed those found in nature. The potential adverse impacts on environment and natural resources are primarily associated with the release of these materials at rates that cannot be assimilated by the local, air, land or water resources.

The direct release of lagoon contents by spill, lagoon failure, illegal discharge or poor operating methods can contaminate the local land and water resources, thus, changing water and soil chemistry. In water, the result can vary from a

dramatic fish kill to long-term changes in the species mix and population density of many aquatic plants and animals.

A discharge on land can inundate local habitat. The subsequent change in soil chemistry can result in local plant species being replaced by invaders better able to tolerate the contaminants.

Another impact to natural resources are the gases released from lagoons. For example, a large portion of the ammonia contained in livestock waste is emitted into the atmosphere. Ammonia's tendency to form a layer near the ground presents the risk of adverse affects on vegetation in the vicinity of lagoons. High ammonia can burn leaves, increase transpiration rates, cause nutrient imbalances, increase frost damage and increase susceptibility of plants to disease. Chronic exposure to ammonia can add nitrogen to soils, which can adversely impact sensitive species and habitat.

Finally, a leaking lagoon will contaminate groundwater which, in turn, may enter a stream or impact soil in low lying areas. Certain habitat types in Illinois such as bogs, fins, and

cave systems are particularly sensitive to even slight changes in groundwater or soil chemistry.

MR. HARRINGTON: I believe that is the last of the written questions. There was a duplication at the end, but if I could have a moment to confer with my clients to see if there is any follow-up questions.

HEARING OFFICER LOZUK-LAWLESS: Certainly.

MR. HARRINGTON: Thank you.

HEARING OFFICER LOZUK-LAWLESS: While Mr. Harrington is conferring with his clients, are there any other questions for any of the Department of Natural Resources' witnesses?

Okay. Please stand up and state your name so the court reporter can hear you.

MR. BALL: I am Gary Ball. Aren't there some positives to lagoons? Do properly operated lagoons bring wildlife in, such as deer?

MS. GLOSSER: We have seen no studies or anything in the literature that would suggest that there was a positive impact to deer, but if you have any information that would, you know, lead us to explore that we would be more than happy to see

that.

MR. BALL: I have just seen some properly operated lagoons that do attract a lot of deer for purposes that I have no idea of, but except for mineral reasons, I would say.

MS. GLOSSER: You say that they are attracting the deer to the facilities?

MR. BALL: Yes.

MS. GLOSSER: Just as an observation, I know one of the sites that I visited actually was concerned about wildlife encroachment upon the lagoons, because in this case they were using synthetic liners, and they were concerned about the deer actually getting onto the synthetic liner and causing a rupture, so they were erecting fences very near the edge of their lagoon to actually keep out deer. So while I don't know if they attract them, maybe it isn't always in the best interest if they did.

HEARING OFFICER LOZUK-LAWLESS: Mr. Harrington?

HARRINGTON: We have no further questions at this time. Thank you very much, and thank you very much to the panel and the Department.

HEARING OFFICER LOZUK-LAWLESS: Thank you. Are there any other questions, then, from anyone else in the room for the Department of Natural Resources?

Are there any questions for any of the witnesses today? Of course, that includes the Department of Agriculture, besides the prefiled testimony.

Okay. Thank you, DNR. I would like to add at this time that if anyone came late and wanted to provide any testimony on the record, if you wanted to say anything on the record right now.

No? Okay. Then what we will do is explain what we will be doing in Urbana. We are continuing this hearing on Thursday in Urbana and that convenes at 9:00 in the morning. What we will do is when we begin we will have the four agencies give a very short summary of their testimony, very short, and then we will continue with those persons who have filed prefiled testimony, and those persons would be Ron Warfield, Ellen Hanes, Jill Apple and Danny Wilret (spelled phonetically). We will allow those people to testify and then we will

begin the questioning period.

What I would like to see happen is each one of the Departments could bring, say, 50 copies of either the summaries which you are going to be giving or 50 copies of your prefiled testimony, if you could bring that and then we can have those for anyone who is coming and doesn't have access to the whole proposal or may have questions. That would be wonderful.

The hearings, which will be held for the remainder of this month, the second hearing, as I said, will be on January 16th. That is Thursday at 9:00 a.m. in Urbana.

The third hearing on Monday, January 27th, also at 9:00 a.m. is in DeKalb. The fourth hearing will be held on January 29th at 9:00 a.m. in Galesburg. Then the last hearing will be on Friday, January 31st in Mt. Vernon.

If you need any addresses, where those hearings will be held, or actually even I have a map of how to get to all of those hearings, you can come up and ask me for the address or you can look on the Board's Web Page. And all of that information, as well the Department of

Agriculture's proposal is posted on the Web Page.

I would like to thank the Department of Agriculture for being so patient. I know we will finish then with prefiled questions addressed to the Department of Agriculture. It was nice to be able to finish the three agencies and the three witnesses. It has been very productive. Thank you.

Also, if you have not signed up and if you wish to be on the notice list, those lists are at the door. Again, the service list, you will receive copies of all the prefiled testimony, questions, court orders, hearing officer orders. If you would like to put your name on the notice list, you will receive copies of the hearing officer orders and the board orders.

And after we finish with the second hearing we will go ahead and distribute a new service list and new notice list so everyone is working on updated copies. I know there has been some confusion. Now everyone will be on the same page with all the new people that wanted to add their names.

Are there any closing comments from any

Board Members?

CHAIRMAN MANNING: Thank you all for your attention. We look forward to seeing you in Champaign-Urbana.

HEARING OFFICER LOZUK-LAWLESS: Okay. We will adjourn to 9:00 a.m. in Urbana. Thank you.

(Whereupon, the proceedings were adjourned at approximately 4:30 p.m.)

(Exhibits 1 through 11 were retained by Hearing Officer Lozuk-Lawless.)

STATE OF ILLINOIS)
) SS
COUNTY OF MONTGOMERY)

C E R T I F I C A T E

I, DARLENE M. NIEMEYER, a Notary Public in and for the County of Montgomery, State of Illinois, DO HEREBY CERTIFY that the foregoing 291 pages comprise a true, complete and correct transcript of the proceedings held on the 14th of January A.D., 1997, at Blackhawk Village, 1111 East Morton Street, Jacksonville, Illinois, in the matter of Livestock Waste Regulations, 35 Illinois Administrative Code 506, Docket R97-15, in proceedings held before the Honorable Audrey Lozuk-Lawless, Hearing Officer, and recorded in machine shorthand by me.

IN WITNESS WHEREOF I have hereunto set my hand and affixed my Notarial Seal this 21st day of January A.D., 1997.

Notary Public and
Certified Shorthand Reporter and
Registered Professional Reporter

CSR License No. 084-003677
My Commission Expires: 03-02-99