BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:

WATER QUALITY TRIENNIAL REVIEW:
AMENDMENTS TO 35 Ill. Adm. Code
302.208(e)-(g), 302.504(a), 302.575(d),
303.444, 309.141(h); and PROPOSED
35 Ill. Adm Code 301.267, 301.313,
301.413, 304.120, and 309.157

PCB No.: R02-11
(Rulemaking - Water)

Proceedings held on March 6, 2002, at 10:00 a.m., at the Illinois Pollution Control Board, 600 South Second Street, Suite 403, Springfield, Illinois, before Hearing Officer Marie Tipsord.

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A P P E A R A N C E S

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Board Member Ronald C. Flemal
Board Member Thomas E. Johnson
Board Member Michael E. Tristano

Anand Rao, Technical Staff

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S. Alan Keller

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P R O C E E D I N G S

(March 6, 2002; 10:00 a.m.)

HEARING OFFICER TIPSORD: Good morning, everyone. My name is Marie Tipsord. Can you all hear me back there? Okay. At any time you have problems hearing today, please let me know by waving your hand, and I will ask the witnesses to speak up.

I have been appointed to serve as the Hearing Officer in this proceeding entitled: In the Matter of Water Quality Triennial Review: Amendments to 35 Ill. Adm. Code 302.208, 302.504, 302.575, 303.444, 309.141, and Proposed 35 Ill. Adm. Code 301.267, 301.313, 301.413, 304.120, and 309.157. This has been docketed as R02-11.

To my right is Dr. Tanner Girard, the lead Board Member assigned to this matter. And to his right is Member Michael Tristano. And to my left over two is Dr. Ronald Flemal. Dr. Flemal and Member Tristano are both assigned to this rule, as well.

In addition, we have at the end Board Member Tom Johnson. And to my immediate left is Anand Rao, from our technical staff.

In addition today, we have with us William Murphy, assistant to Michael Tristano; Alisa Liu, from our technical staff; and I believe Erin Conley is also here.

The purpose of today's hearing is to hear the prefiled testimony from the Illinois Environmental Protection Agency,

Cynthia Skrukrud, Steven Davis, and Michael Callahan.

I am sorry. Cynthia, did I mispronounce your name? I am sorry.

MS. SKRUKRUD: You got the Skrukrud right.

HEARING OFFICER TIPSORD: After the testimony we will allow for questions to be asked. We do have prefiled questions from the Sierra Club of the Agency.

You have the Sierra Club and who else are you representing, Albert?

MR. ETTINGER: The usual crowd.

(Laughter.)

HEARING OFFICER TIPSORD: The environmental groups. That is probably the safest way to say that. We will have those questions read by Albert to the Agency. We will allow for the opportunity to do follow-ups like that with those questions. After the prefiled questions are asked of the Agency, then we will proceed to anyone else who has questions.

Anyone may ask a question. However, I do ask that you raise your hand, wait for me to acknowledge you, and after I have acknowledged you, please state your name and who you represent before you begin your questions. This will allow the court reporter to identify you properly for the record.

Please speak one at a time. If you are speaking over each

other, the court reporter will not be able to get your questions

on the record.

Please note that any questions asked by a Board Member or staff are intended to help build a complete record for the Board's decision and not to express any preconceived notion or bias.

In addition to the prefiled testimony today, we will allow anyone else who wishes to testify the opportunity to do so as time allows. I have placed a list at the side of the room for persons who wish to testify to sign up. Also to the side of the room are copies of the current notice and service lists and the opportunities to sign up for the notice and service lists.

If you place your name on the service list, you will receive all pleadings and all prefiled testimony in this proceeding. In addition, you must serve all of your filings on the persons on the service list. The notice list will allow you to get Board orders and Hearing Officer orders. If you have any questions about which list you may wish to be on, please see me at a break.

Also, just as a little reminder, since I had to make a couple of phone calls this time, before you serve anything on the Board, please contact the Board, either myself or the clerk's office, and ask for a current copy of the service list. The service list in this rulemaking is literally changing almost on a

daily basis. If you don't call and get it you may not have the

proper service list when you make your filing.

Are there any questions about the procedures we are going to follow today?

Okay. At this time I would ask Dr. Girard if he would like to say anything.

BOARD MEMBER GIRARD: Yes. Good morning. On behalf of the Board, I would like to welcome everyone here to the hearing this morning and thank you for taking the time from your busy schedules to help us do our job. We have been very pleased with all of the prefiled testimony from several groups and the many public comments we have gotten in this regulatory proceeding. It makes our job that much easier when we have a lot of input from the public, and we do appreciate it. Thank you.

HEARING OFFICER TIPSORD: Dr. Flemal or Member Tristano, would you like to add anything?

BOARD MEMBER FLEMAL: Nothing additional.

BOARD MEMBER TRISTANO: No.

HEARING OFFICER TIPSORD: Thank you. Then at this time I think we will proceed with the Agency. Could we have the Agency's witnesses sworn.

(Whereupon Robert Mosher, Clark Olson and S. Alan Keller were sworn by the Notary Public.)

HEARING OFFICER TIPSORD: Thank you. Go ahead.

MR. SOFAT: Good morning. I am Sanjay Sofat. I am an

Assistant Counsel with the Illinois Environmental Protection Agency. I work with the Bureau of Water.

With me today are three Agency witnesses. To my right is Robert Mosher, who is the Manager of the Water Quality Standards Unit within the Division of Water Pollution Control at the Illinois Environmental Protection Agency. Mr. Mosher will be available to answer any questions regarding his prefiled supplement testimony or any follow-up questions.

To my immediate left is Clark Olson, who is a toxicologist in the Water Quality Standards Unit of the Division of Water Pollution Control. Mr. Olson will be available to answer any questions regarding his prefiled supplement testimony or any follow-up questions.

To Clark's left is Alan Keller, who is a Supervisor of the Northern Municipal Unit of the Permit Section of the Division of Water Pollution Control. Mr. Keller will answer any questions regarding the BOD/CBOD part of the proposal.

Today the Agency will introduce its Errata Sheet Number 3 into the record. This Errata Sheet contains the Agency's recent revisions to Sections 302.208(b), 302.208(e), and 304.120(g). Mr. Mosher will provide the Agency rationale on proposed changes to Section 302.208(b). Mr. Olson will provide the Agency

rationale on proposed changes to Section 302.208(e). And Mr. Keller will provide the Agency rationale on proposed changes to

Section 304.120(g).

At the January 29th hearing, the Agency indicated it would provide the Board and the stakeholders a copy of its draft rule before today's hearing. Unfortunately, we were not able to do that for various reasons.

First, the Agency believes that this rulemaking proceeding should solely be focused on the process used by the Agency to develop the standards. In other words, the focus should be on the appropriateness of the criteria used by the Agency in developing the proposed standards. We believe such discussions will help the Agency improve its proposal. In fact, based on the information provided at the January 29th hearing, the Agency is today proposing changes to Section 304.120 of the proposal.

Secondly, the Agency rules are still work in progress. Currently, the management is in the process of reviewing the initial working proposal for Agency rules.

Finally, the Agency will follow a separate public participation process before proposing the Agency rules to JCAR for its approval and final adoption. If necessary, the Agency will hold public meetings to discuss this rule in an open and formal setting. Based on the outcome of these meetings, the

Agency will determine its next course of action.

With that, I think we are ready to start with Robert Mosher.

MR. ETTINGER: Excuse me. I am not sure I understood the import of all of that. Are you going to come up with the Agency rules in this proceeding or not?

MR. SOFAT: We would like to keep that separate and independent of this proceeding. As soon as we have a final draft, then we will start the process on that.

MR. ETTINGER: So it is your position, then, that the Board does not need to know about the Agency rules for the purposes of this proceeding?

MR. SOFAT: The Board will be provided with the copies as we have them ready, but we do not want to link both proceedings. The Agency rule is -- rather, the Board rules are not dependent on the Agency rules, and they should be developed in a separate proceeding. That's our plan.

MR. ETTINGER: Well, in the past with the GLI rules and the antidegradation rules, and perhaps some others, the Agency provided the Board with a copy of how it was going to implement the rules, which at that time was felt useful by many to inform the Board more fully as to how -- what the import of its standards are. I gather it has been decided that you don't want to do that at this time?

MR. SOFAT: We believe that is not necessary, because the standards -- what we are proposing here is the numbers, and we would like to know if those numbers are developed properly and if

the formulas were used properly. We would like to focus on the process.

As far as the Agency rules are concerned, we believe that during our public participation process, if everyone comes to the conclusion that they should be part of the Board's rules, they will be, and we will proceed then, but not at this time. Not at this time. We would not like to mix the two rulemakings.

MR. ETTINGER: I guess I don't quite understand. Let's say hypothetically, that everyone, after looking at your Agency rules, conclude that the Board should see these. Are you then going to -- are we going to reopen this proceeding at that point, or what is your intention?

MR. SOFAT: We are working on the Agency rules, and we believe we will have them ready in a couple of months or so. So it is not that we are not in the process of developing them. It is just that they are going through the process that they need to go through at the Agency level, and once that is done then we will make it public.

MR. ETTINGER: I don't know. Maybe we should discuss this at some point. I don't know if this is the appropriate time to

do it. But I believe, and I think other people believe, that it has been helpful to the Board and the parties participating on the standards proceedings to see what the Agency rules will be or at least get some sort of idea what the Agency rules will be in

implementing the standards, because both the environmental and economic impact of the standards can't really be understood fully without getting some idea at least as to how the standards will be implemented.

MR. SOFAT: Mr. Mosher will answer in general the approach that the Agency will take to come up with the Agency rules, if that will help the process.

MR. ETTINGER: Well, I guess we will go on at this point. I think we are going to have to think about that because that is not what our anticipation was as to how we would do this, nor was it the anticipation of the Agency when it filed this petition. And I think we are kind of changing the rules and the level of information available to the Board in the middle of the game, and I am very concerned about that.

HEARING OFFICER TIPSORD: Let's proceed, then, with Dr. Mosher.

MR. MOSHER: My name is Robert Mosher and I am the Manager of the Water Quality Standards Section within the Division of Water Pollution Control at the Illinois Environmental Protection Agency. I have been with the Illinois EPA in excess of 16 years.

Almost all of that time has been spent in my current capacity where my primary responsibility is the development and implementation of Water Quality Standards. I have a Master's Degree in Zoology from Eastern Illinois University where I

specialized in stream ecology. My testimony will cover most of the Agency's responses to questions and requests for further information made at the January 29th, 2002 hearing. Mr. Olson's testimony will cover the remaining Agency responses to questions raised at that hearing.

Hearing Officer Tipsord, at pages 49 and 50 of the January 29th, 2002 hearing transcript, requested a clear copy of Albert Ettinger's Exhibit 4, which is the Agency's derived water quality criteria, with a citation for this publication. The clear copy with citation is provided as Exhibit A. We also provide the most recent published list of the Agency's derived water quality criteria for the Illinois Pollution Control Board's consideration, and this is Exhibit B.

At transcript pages 54 through 57, Mr. Ettinger inquires about the existing and proposed benzene standards. The Agency's monitoring data for public water supply reflects that benzene is not a problem in drinking water obtained from surface water. Since 1989, there have been only four detections in treated drinking water from lakes at Decatur, Staunton, and Carlinville,

and these were 1.3 micrograms per liter or less.

There are undoubtedly several reasons for this low incidence of benzene detection. First, surface waters of the state are not contaminated with benzene. Appendix F in our original Agency petition describes that. Second, benzene is not

very soluble in water and therefore would tend to float on the surface whereupon it would volatilize to the atmosphere. Public water supply intake structures are designed to withdraw water from under the surface, thus avoiding floating substances like benzene. Most benzene that would find its way into streams and lakes would be from spills. Major spills must be reported, which allows public water supplies to stop withdrawing water and avoid the intake of a short-term contamination event.

At this time, we believe that no specific benzene standard is necessary at Subpart C. The existing general provision at 35 Illinois Administrative Code 302.305 is sufficient to protect intakes from hazardous levels of benzene. However, if the Board wishes, the Agency will consult further with our public water supply experts and decide if a Subpart C standard is desirable and then develop a suggested value.

At transcript page 66, Mr. Rao asks about the cadmium standard that existed prior to the 1990 update. The previous standard was 50 micrograms per liter, the same value now present as a cap to the acute standard. A hardness value of greater than

425 milligrams per liter would have to be present to have an acute standard exceed 50 micrograms per liter.

At transcript page 66 Mr. Rao asks for typical hardness levels for the waters of the state. Exhibit C is a list of Ambient Water Quality Monitoring stations maintained by the

Agency. Our designation "critical hardness" means that these are the hardness values that occur under low flow conditions in the stream, the most critical time for metals concentrations and potential impacts to aquatic life. If the critical hardness value is marked with an asterisk, the 25th percentile hardness value from that station is given. For the other stations, the hardness value given is the 10th percentile hardness value from the measurements taken at 10th percentile and lower stream flows. Eight out of the 208 critical hardness values are above 425 milligrams per liter. These are generally found in streams that have a past or present history of mining.

At transcript pages 69 and 70, Mr. Ettinger asks whether the existing General Use cadmium water quality standards are identical to the most recent, 1985, national criteria for cadmium. The chronic standard for cadmium at 35 Illinois Administrative Code 302.208(e) is identical to the national chronic criterion of 1985. The acute criterion for -- I am sorry. That should read the acute standard for cadmium is less

stringent than the national criterion of 1985.

At a hardness of 200 milligrams per liter, the acute national criterion value for total cadmium is 8.6 micrograms per liter. At this hardness, the cadmium standard at 35 Illinois Administrative Code 302.208(e) is 21.3 micrograms per liter. When the Board adopted this standard in 1990, the Agency had

regionalized the national criterion in its proposal to reflect only warm water species sensitivities to cadmium.

At transcript page 111, Mr. Rao questions the accuracy of the conversion factor for the Lake Michigan acute cadmium standard. There is, indeed, a typo in the formula that we must correct. An Errata Sheet is submitted to the Board to correct this typo. The Agency wishes to thank Mr. Rao for finding this error.

This concludes my testimony. I will be supplementing this testimony as needed during the hearing. I would be happy to address any questions.

HEARING OFFICER TIPSORD: Before we proceed, let's take care of some housekeeping matters.

Exhibit A attached to Mr. Mosher's prefiled testimony, we will use that as a replacement copy for Exhibit 4, entered at the first hearing. So we will mark what was Exhibit A to his attached testimony as Exhibit Number 4.

Exhibit B and Exhibit C, if there is no objection, will be

entered as Exhibit Number 6 and Exhibit Number 7, respectively.

Is there any objection? Seeing none, we will admit those as Exhibit 6 and as Exhibit 7.

(Whereupon said documents were duly marked for purposes of identification as Hearing Exhibits 6 and 7 and entered into evidence as of this date.)

HEARING OFFICER TIPSORD: Also on the Errata Sheet, Mr. Sofat, when you were talking about the Errata Sheet in your opening statement, you talked about proposing a change to 304.120 at this hearing. Is that included in the Errata Sheet?

MR. SOFAT: Yes.

HEARING OFFICER TIPSORD: Okay. So this is not just an Errata Sheet, but also a proposed language change?

MR. SOFAT: Yes.

HEARING OFFICER TIPSORD: All right. I just wanted to clarify that.

MR. SOFAT: Sure, sure.

HEARING OFFICER TIPSORD: Okay. If there is no objection, we will admit the Errata Sheet then as Exhibit Number 8. Seeing none, that is admitted.

BOARD MEMBER FLEMAL: Is that two or three?

HEARING OFFICER TIPSORD: This is the third Errata Sheet. We got one in the prefiled testimony and one at the first

hearing, right?

MR. SOFAT: Right.

HEARING OFFICER TIPSORD: Okay.

(Whereupon said document was duly marked for purposes of identification as Hearing Exhibit 8 and entered into evidence as of this date.)

HEARING OFFICER TIPSORD: Okay. With that, let's proceed

with your testimony and then we will go to questions.

MR. SOFAT: Mr. Olson, I am going to give you this document that has been marked as IEPA Exhibit Number 2. Do you recognize this document?

MR. OLSON: Yes, I do.

MR. SOFAT: Would you please tell us what this document is?

MR. OLSON: Well, this is my testimony for today, on the questions that were given to us by the Board.

MR. SOFAT: Is that a true and accurate copy of your supplement testimony that has been filed with the Board?

MR. OLSON: Yes, it is.

MR. SOFAT: Could you please present your testimony to the Board.

MR. OLSON: My name is Clark Olson. I have been employed by the Illinois Environmental Protection Agency for over 20 years. I work in the Water Quality Standards Unit of the Division of Water Pollution Control as a toxicologist. I have

been involved with the water quality standards issues throughout my career with the Agency and have participated in several previous rulemakings of this type.

I have a Ph.D. in Biology from the University of Miami in Florida, and have done postdoctoral research in toxicology at North Carolina State University. My testimony will cover the questions that were specially addressed to me at the January

29th, 2002 hearing.

At transcript pages 54 to 57, Albert Ettinger inquires about the existing and proposed benzene standards. The human health standard proposed for General Use waters protects humans from exposure to harmful levels of benzene through the consumption of locally caught fish and from any incidental contact with water. This proposed standard, 310 micrograms per liter, is identical to the Lake Michigan human health standard protecting this aspect of exposure for waters in the Lake Michigan Basin at a risk level of ten to the minus fifth. The existing human health criterion for General Use waters, 21 micrograms per liter, is based on a risk level of ten to the minus sixth. We recommend the 310 micrograms per liter value for uniformity sake and as a reflection of more recent risk policy.

At transcript pages 101 through 108, Mr. Rao asks a series of questions pertaining to the methods the Agency used to derive

the proposed standards. While Appendix F of the Agency's original proposal details the methods utilized to derive each of these proposed standards, additional explanation and a concise tabular presentation of the methods used is necessary.

Madam Hearing Officer, I didn't ask our lawyer exactly how to present this. Do you want me to read through the table or can that be -- or summarize it or --

HEARING OFFICER TIPSORD: It might be easier if we just

admit the table as an exhibit. It would probably be much easier.

MR. OLSON: Okay.

HEARING OFFICER TIPSORD: We will just admit it as an exhibit.

MR. OLSON: Okay. And then I can answer questions about that afterwards.

HEARING OFFICER TIPSORD: Okay.

MR. OLSON: The Agency was very consistent in using Subpart E methodology for all proposed standards except for the chronic standard for weak acid dissociable cyanide. We recommend adopting numerical standards based on Subpart E procedures because these include more up-to-date thinking on criteria derivation. Our reasons to use the Subpart F procedures for weak acid dissociable cyanide were based on precedent. The Board adopted a site-specific regulation several years ago for several streams in Northeastern Illinois, 35 Illinois Administrative Code

303.444. The chronic value here is ten micrograms per liter. The State of Ohio also has a warm water chronic cyanide standard of approximately ten micrograms per liter.

Mr. Rao made mention of the fact that sometimes the Lake Michigan standards were less stringent than the General Use standards. This seems backward from the point of view that Lake Michigan has what are usually considered more sensitive species, for example, trout and salmon. This is explained by the fact

that when deriving standards for warm waters, cold water species are dropped from the data sets. This reduces the number of species making up the body of information, which increases uncertainty, and thereby in some cases, lowers the standard. We note that the differences between warm water and cold water standards as derived using Subpart E methods is usually minor.

This concludes my testimony. I will be supplementing this testimony as needed during the hearing. I would be happy to address any questions.

MR. SOFAT: That concludes our witnesses.

HEARING OFFICER TIPSORD: Okay. At this time, then, we will proceed to the prefiled questions from the environmental groups that were a part of their prefiled testimony submission. We will have them read into the record from the environmental groups and then the Agency may answer. We will stick with any follow-ups in

that realm as well.

So if anyone has a follow-up question to one asked by the environmental groups, please raise your hand and be recognized, and we will proceed that way so that we can keep the record as clean as possible.

MR. ETTINGER: I am a little confused here. We are not going to ask about the testimony that was just read now? We are going to save that until later?

HEARING OFFICER TIPSORD: Yes, we will just do the prefiled

questions at this point.

MR. ETTINGER: Okay. We are doing the prefiled questions. Am I supposed to read the whole sheet now or --

HEARING OFFICER TIPSORD: One at a time, read question number one, and they will answer, and then we will go to the testimony.

MR. ETTINGER: Okay. Question number one. If the proposal is adopted, is it the intention of the IEPA to regulate deoxygenating wastes by issuing permits that use a CBOD5 effluent limit instead of a BOD5 in every instance in which a BOD5 limit is now specified by Section 304.120?

MR. KELLER: The Agency will utilize the CBOD5 effluent limit for all municipal treatment plant discharges. The Agency will utilize the CBOD5 effluent limit for all industrial treatment plant discharges unless an effluent limitation for BOD5

is specified for a categorical industry and is more stringent than limitations specified by 304.120 pursuant to the federal regulations for that specific categorical industry. The Agency will use BOD5 in those instances unless the Development Documents for the specific categorical industry indicate that CBOD5 is the applicable standard.

The Agency respectfully requests that the Board read pages 11 through 19 of the March 7th, 1972 Opinion of the Board entitled, "In the Matter of: Effluent Criteria and Water Quality

Standards Revisions" concerning the discussions of, quote, 404 Deoxygenating Wastes, unquote. In the opinion, the Board provided an excellent synopsis of testimony on treatment technology, economics of treatment technology, and effects on dissolved oxygen water quality. In this Opinion, Dr. Pfeffer states that, quote, the BOD5 test principally measures the carbonaceous BOD and ignores the often delayed but eventual oxygen demand exerted by ammonia, unquote.

In addition, the Board clearly identified other problems, such as combined stormwater, combined sewer overflows and ammonia control as problems facing communities and satisfactory stream quality. Ammonia control was clearly identified as a separate problem and required additional treatment beyond secondary and tertiary treatment requirements of proposed Rule 404

Deoxygenating Wastes. The nitrogenous biochemical oxygen demand should therefore not be included in the BOD5 effluent limitations of 304.120.

MR. ETTINGER: Do you want me to ask follow-up on that first question then?

HEARING OFFICER TIPSORD: Yes.

MR. ETTINGER: Okay. The first thing you said is I gather that you will always be basically substituting CBOD5 where it says BOD5; is that correct?

MR. KELLER: Yes.

MR. ETTINGER: All right. As to industrials that won't always be the case because of these federal regulations?

MR. KELLER: Correct, for the categorical industries.

MR. ETTINGER: Now, is that -- I got this Errata Sheet today. This is a third change -- this is another change to the Agency's position regarding how to deal with CBOD5 industrials; is that correct?

MR. KELLER: Well, it is just a clarification. We have to follow the federal regulations anyway. The verbiage is pretty much intact. The only thing we inserted was the reference to treatment works treating industrial waste, and that is just to make sure that everyone knows that we will be looking at industries also with this same rule.

MR. ETTINGER: Okay. So the date of the last hearing we

found out that you were including industrials, and then today we have another reform as to how are going to deal with industrials?

MR. KELLER: Correct.

MR. ETTINGER: Okay. In your answer -- I am sorry. I am losing control of my papers, because I wasn't sure of what the order would be.

In your answer you indicated that the Board should read these particular pages of the March 7, 1972 Opinion of the Board, and that is, In the Matter of: Effluent Criteria and Water Quality Standards Revisions. You also refer to the Dr. Pfeffer

study.

MR. KELLER: Dr. Pfeffer's statement.

MR. ETTINGER: Dr. Pfeffer's statement. In part of that, he, Dr. Pfeffer, I believe, does a study. On page 14 of the Opinion Dr. Pfeffer says, using a modified form of the Streeter-Phelps equation, he demonstrates that given certain conditions, including a stream reaeration rate, he says it is not atypical for small streams with low dilution ratios for dissolved oxygen standards for aquatic life can often be met with ten rather than four milligrams per liter of BOD, even in the total absence of dilution.

My question is, as to that, do you know whether Dr. Pfeffer did that study using BOD or CBOD?

MR. KELLER: I believe he used CBOD, because there was another factor for ammonia in that equation.

MR. ETTINGER: Well, do you know how much ammonia he assumed would be discharged along with the CBOD in calculating that the ten CBOD would be protective of the dissolved oxygen standard?

MR. KELLER: I am not exactly sure what he assumed on that, no.

MR. ETTINGER: Do we have the Pfeffer study?

MR. KELLER: No, I don't.

MR. ETTINGER: Okay. Do we know -- so what is the other equation that you say he used that included the BOD?

MR. KELLER: It is part of the modified Streeter-Phelps equation.

MR. ETTINGER: So the Streeter-Phelps equation. The Streeter-Phelps equation includes a separate factor for BOD and CBOD?

MR. KELLER: No, it includes a separate factor for BOD and for ammonia.

MR. ETTINGER: Okay. So we should assume that here where the Board refers to the equation that Mr. -- that Dr. Phelps used --

MR. KELLER: Pfeffer.

MR. ETTINGER: I am sorry. Pfeffer. That he meant here CBOD, and then there was some assumption as to the amount of

ammonia that was going to be discharged?

MR. KELLER: That would probably be true.

MR. ETTINGER: But we don't know what that ammonia level was?

MR. KELLER: I don't know what he assumed, no.

MR. ETTINGER: Okay. I would request that eventually we do find the Pfeffer study so that we can clarify these points. I assume that they have it somewhere.

With that, do we now have other people with follow-up on the first question?

HEARING OFFICER TIPSORD: Yes, let's do, to keep the record

clear.

MR. ETTINGER: Okay.

HEARING OFFICER TIPSORD: Just for the record, the rulemaking that has been identified by name is also -- it was docketed as R71-14, and it was a Board rulemaking in the early 1970s.

Are there any other follow-ups to questions Mr. Ettinger had?

I just have a small follow-up to the question about 304.120, and that is you refer to federal regulations. Would it be possible to get a citation there? I don't expect you to answer that today, but it will probably help with JCAR if we can

have a citation there.

MR. KELLER: Well, that would include a lot of different citations for all of the different categorical industries, and that would be -- that may be very long.

HEARING OFFICER TIPSORD: If we could at least get it for the record and I could use that answer when JCAR asks me for it. They may not want it in, but let's at least get it in the record so that I have it available.

MR. SOFAT: We will do that.

HEARING OFFICER TIPSORD: Thank you. Anything else? Okay. Go ahead.

MR. HARSCH: I would like to make a raise to the defense of

the Agency witness. The number of federal --

HEARING OFFICER TIPSORD: We need you to identify yourself and who you are representing, please.

MR. HARSCH: I guess I am here today on behalf of myself together with IAWA.

The number of federal categorical pretreatment standards that have a BOD limitation in them is -- would be in the -- close to probably almost 100. There are many, many, many of them.

HEARING OFFICER TIPSORD: Okay. Like I said, we can just get those in the record and that's the answer that I can then give if the staff at the Joint Committee asks for a citation to be added.

Okay. Go ahead. I don't see any other follow-ups, so proceed to the next question.

MR. ETTINGER: Well, actually, I would like to follow-up on Mr. Harsch's clarification.

Do you know why the federal standards use BOD rather than CBOD standards in these hundreds of industrial?

MR. HARSCH: Albert, I am not sure that they do. I mean, I think that they refer to both of them.

HEARING OFFICER TIPSORD: Mr. Harsch, I am going to have to ask that you be sworn.

(Whereupon Mr. Roy Harsch was sworn by the Notary Public.)

HEARING OFFICER TIPSORD: Thank you.

MR. HARSCH: The answer is I think they refer to both of them, if you look at them.

MR. ETTINGER: Well, I --

MR. HARSCH: When they are written.

MR. ETTINGER: Then we will need some clarification here because the thrust of this revision to your -- your third revision to this rule is that there are some federal regulations as to industrials that require using a BOD as opposed to a CBOD, and that's why you put this clarification in here; is that correct?

MR. KELLER: It may require use of BOD.

MR. ETTINGER: But you don't know how many there are?

MR. KELLER: I think you have to really go through and review all of the Development Documents for each specific categorical industry, and that includes a document of hundreds of pages a lot of times. Most of the industries or probably all of them do use the term BOD5. Some industries also use COD.

I could not find, in my brief looking the other day, any that use strictly CBOD5, but I think you need to go to the Development Documents on some of those. You need to also see if they are measuring for ammonia with those industries, and I think some of the same logic would apply as far as getting meaningful numbers for determination of compliance.

MR. ETTINGER: Okay. You don't know why these -- well, we

don't know which ones they are, but you don't know why these rules in this case would specify BOD5 instead of CBOD5?

MR. KELLER: No.

MR. ETTINGER: Okay. I think some of these questions will turn out to be redundant given the previous answer, but I am going to ask them anyway since it was filed.

Number two. If the proposal is adopted, is it the intention of the IEPA to regulate deoxygenating wastes now covered by 304.120(b) with a limit of 20 milligrams per liter CBOD5?

MR. KELLER: Yes, unless categorical standards are more

stringent, as stated in 1 above.

MR. ETTINGER: Three -- sorry.

HEARING OFFICER TIPSORD: Go ahead.

MR. ETTINGER: Okay. Three. If the proposal is adopted, is it the intention of the IEPA to regulate deoxygenating wastes now covered by 304.120(c) with a limit of ten milligrams per liter CBOD5?

MR. KELLER: Yes, unless categorical standards are more stringent, as stated in 1 above.

MR. ETTINGER: I trust there is no follow-up. Four. How does IEPA currently assure that discharges of deoxygenating wastes will not cause violations of dissolved oxygen standards?

MR. MOSHER: The Agency conducts Facility Related Stream

Surveys on the receiving streams of many NPDES permitted discharges. The results are used to develop the 305(b) and 303(d) lists that are published by the Agency on a regular basis. Causes and sources of impairment may be listed for waters not fully supporting designated uses, and these may include dissolved oxygen impacts due to effluent BOD. Facility inspections are also conducted that stress the operation, maintenance and performance of the plant. Problems are sometimes noted during these inspections that would have bearing on stream dissolved oxygen levels.

MR. ETTINGER: Okay. What causes or what triggers a facility related stream survey?

MR. MOSHER: Well, there could be many reasons. We, in general, try to cover facilities on a cycle corresponding to permit renewal. In recent years, our duties have expanded and we have not been able to do that very often. But other reasons for doing facility related stream surveys are noted problems that might be observed by a field inspector. It might be observed by a basin, a general basin stream survey, where we note a problem and we say, well, we better go look at a facility. They might be the source of that problem. So there is quite a few reasons that we schedule facility related stream surveys.

MR. ETTINGER: How often? There is about 5,200 NPDES permits in Illinois now, is that correct, ballpark?

MR. KELLER: It might be more than that.

MR. ETTINGER: Okay. About how many facility related stream surveys do you do a year?

MR. MOSHER: I would say the average number done per year for over the last ten years -- and, again, I said the last couple of years we have not done very many at all. But it is usually around 20, state-wide.

MR. ETTINGER: In the 1972 Board decision that there was reference to, there was discussion of this Streeter-Phelps model. Does the Agency ever run a Streeter-Phelps model on a discharge

to determine whether or not a proposed discharge would cause a violation in the dissolved oxygen standards?

MR. KELLER: It is used now for the determination of lagoon exemptions, I believe.

MR. ETTINGER: It is used --

MR. KELLER: It was originally also included for determining whether a discharge could go to the 10-12 limitations versus the 4-5 limitations, BOD and suspended solids.

MR. ETTINGER: Okay. So it was originally used.

MR. KELLER: Right.

MR. ETTINGER: No one has a 4-5 limit now, do they?

MR. KELLER: No.

MR. ETTINGER: The only one who had a 4-5 limit is the North Shore Sanitary District, and they removed their discharge?

MR. KELLER: There was some that had 4-5 limitations and then they went through the Streeter-Phelps analysis and received the 10-12 standards.

MR. ETTINGER: That was when?

MR. KELLER: In the early 1970s.

MR. ETTINGER: Okay. So other than doing these facility related stream surveys and inspecting the facilities to make sure they are operating properly, we are not really looking at dissolved oxygen in the streams resulting from discharges?

MR. MOSHER: There is another program probably worthy to mention. It is the 305(b) report, and then the 303(d) list of impaired waters. To put those lists together, we use not only facility related stream survey data but also intensive basin survey data, ambient water quality monitoring network data.

And as you know, the 303(d) list of impaired waters are those waters that will eventually have a TMDL study. So there is a lot of data collected by the Agency that goes into evaluations of streams, and sometimes dissolved oxygen is a cause of impairment, and the TMDL program is meant to validate any assumptions made by more intensive study.

MR. ETTINGER: Okay. Illinois has never completed a TMDL, has it?

MR. MOSHER: I don't believe there is a published report out for TMDL yet, no.

MR. ETTINGER: So no permit conditions have ever been set in Illinois based on TMDL?

MR. MOSHER: No. But given the recent nature of conducting or having the 303(d) list, that is not too surprising. It has only been the last few years that we have been looking at that.

HEARING OFFICER TIPSORD: Okay. Any other follow-up? Okay, go ahead.

MR. ETTINGER: Okay. Number five. Does IEPA ever regulate the discharge of ammonia to an extent greater than needed to

prevent ammonia toxicity in order to prevent violations of dissolved oxygen standards? If so, please describe the number of times that this has been done and explain the circumstances in which this has been done.

MR. MOSHER: No.

HEARING OFFICER TIPSORD: Okay. Go ahead. Oh, wait. I am sorry. Anand does have a follow-up.

MR. ETTINGER: I can't see behind me, so I don't know whether to start another one.

HEARING OFFICER TIPSORD: Mr. Rao.

MR. RAO: Yes, I have a follow-up question on that. If you are not setting an ammonia permit limit to prevent the violation of dissolved oxygen -- we heard earlier that we don't have to worry too much about the nitrogenous oxygen demand because we have the ammonia standards to take care of that.

So could you explain a little bit more about the earlier statement, you know, whether there is a need for additional controls on ammonia or not?

MR. MOSHER: Well, I will start off by saying that in situations where dischargers discharge to smaller streams, we have very stringent ammonia limits based on the toxicity of ammonia and the ammonia water quality standard in the regulations. As that dilution ratio increases, in other words,

you have a bigger river or a proportionally smaller discharge, we do mixing zone calculations to decide whether ammonia needs to be regulated in these types of discharges.

And for situations where we have the Mississippi River, for example, I don't believe there are many dischargers that are given ammonia limits because simply the dilution is so tremendous that ammonia is diluted very quickly to very low levels. That is entirely driven by the ammonia water quality standard and the mixing zone regulations. Maybe Al has something to add to that.

MR. KELLER: No, not really.

MR. ETTINGER: Following up on --

MR. FALKNER: On a related question --

HEARING OFFICER TIPSORD: You need to identify yourself, please.

MR. FALKNER: I am sorry. My name is Dean Falkner, with the Rock River Water Reclamation District.

HEARING OFFICER TIPSORD: Thank you.

MR. FALKNER: I have a follow-up question along the idea of the nitrification. Treatment plants do, in fact, have a nitrification requirement to address the toxicity. Don't most of the treatment plants typically fully nitrify and result in relatively low ammonia concentrations unless there was some biological upset? And I guess I am asking for a point of clarification on that.

MR. KELLER: I believe that's a true statement.

MR. FALKNER: So even if they didn't have an extremely stringent nitrification on it, let' say it is only .5, because it is a biological treatment plant, typically you don't want to turn your triggers on and off, so you are going to wind up with an effluent value, such as ours, at .1 or below, very commonly.

HEARING OFFICER TIPSORD: Is that a question or a statement?

MR. FALKNER: That part was a statement.

HEARING OFFICER TIPSORD: Okay. Well, let's have you sworn in, then.

MR. FALKNER: Okay.

(Whereupon Mr. Dean Falkner was sworn by the Notary Public.)

HEARING OFFICER TIPSORD: Thank you.

MR. ETTINGER: Okay. Could I just follow-up on Bob's response to -- I am sorry.

MR. RAO: Anand Rao.

MR. ETTINGER: I am sorry. To Anand's question. The Mississippi River, in various pools, has been reported as having a dissolved oxygen problem, does it not?

MR. MOSHER: I don't have that information. We could look in the 303(d) list and find that out.

MR. ETTINGER: Well, let's say hypothetically, for example,

that there was an issue regarding a 3-M permit discharging into a pool north of Moline, the famous slime pool listed in the Iowa TMDL list. Do you recall that?

MR. MOSHER: Yes, I do.

MR. ETTINGER: Okay. So there was a dissolved oxygen problem in the Mississippi River in that pool; is that correct?

MR. MOSHER: I believe that is another state. I visited that state to look at that situation and, yes, there was slime growing everywhere, and it was a side channel of the river. So you didn't have the full force of the flow, but, yes, at the time I visited I would have guessed there would be a dissolved oxygen problem there.

MR. ETTINGER: Okay. So because there is no ammonia toxicity problem, the municipal discharger typically would receive no ammonia limit under the current IEPA practice?

MR. MOSHER: That's true.

MR. ETTINGER: Thank you. Let me go on, then, to the next

question. I am sorry. What am I down to here?

MR. KELLER: Six.

MR. ETTINGER: Six. Does IEPA currently require industrial dischargers of deoxygenating wastes to limit CBOD5 or BOD5? Under what circumstances do industrial permits have BOD5 limits? Under what circumstances do permits have CBOD5 limits?

MR. KELLER: In general, NPDES permits for industrial

dischargers have limitations for BOD5. However, there are permits for industrial dischargers that have limitations for CBOD5 also. The Agency would propose utilizing a consistent method, as stated in items 1, 2 and 3.

MR. ETTINGER: Okay. Seven. Does IEPA currently calculate the total oxygen demand of a proposed discharge during the permitting process?

MR. KELLER: No. The Agency utilizes the applicable standards provided in 304.120, which is based on the dilution ratios in streams. The Agency wishes to extract the following from the March 7th, 1972 Opinion of the Board entitled, In the Matter of: Effluent Criteria and Water Quality Standards Revisions.

Quote, BOD5 -- this is on page five -- I am sorry. I didn't reference that, but it is on page five. Quote, BOD. The May 12th draft proposed a stream standard of 7.0 for biochemical oxygen demand, five days. This was intended to facilitate the

determination of the degree of treatment required of dischargers without resort to complex formulas for computing oxygen sag and recovery. The evidence is that the effect of a given level of BOD on a stream is too dependent upon reaeration rates to make any prescribed standards meaningful. We have omitted it and will rely on the dilution ratios of Rule 404, together with proof of

violation of dissolved oxygen standards by stream studies or otherwise, until more adequate proof is presented, unquote.

Due to the above Board Opinion and the applicability of a stream BOD standard, the Agency does not believe there is a need for calculating the total oxygen demand in the absence of any effluent limitations for this parameter.

HEARING OFFICER TIPSORD: Before we proceed, I am going to sort of take a little unprecedented step here. And that is given the amount of reference to the Board's Opinion and Order in R71-14, and it is also referenced in some additional prefiled testimony, at this point in time I am going to use my prerogative as the Hearing Officer to admit that into this record as Exhibit Number 10. And I will place that in the record when I return to Chicago, a copy of it, so that it is in the record of this proceeding. Given the amount of reference it is getting, I think it is probably appropriate, if there is no objection.

All right. Seeing none, we will admit that as Exhibit Number 10.

(Whereupon said document was duly marked for purposes of identification as Hearing Exhibit 10 and entered into evidence as of this date.)

HEARING OFFICER TIPSORD: We are ready to go on unless you have follow-up on that.

MR. ETTINGER: Off the record.

HEARING OFFICER TIPSORD: Okay.

(Discussion off the record.)

HEARING OFFICER TIPSORD: Okay. Back on the record.

Mr. Ettinger, before you go on to Question Number 8, there is a question.

MR. ETTINGER: Okay.

BOARD MEMBER GIRARD: This is a question which arises, in my mind, after listening to several of these questions dealing with the ammonia and deoxygenating waste issues that have come up in these several questions.

So I have a question, probably for Mr. Mosher. Are there any published models which show that if you have stringent ammonia effluent limits you are mitigating oxygen demand from the ammonia in aquatic environments?

MR. MOSHER: Well, I don't know personally of any models, but we have got years and years of real life experience. We have had dischargers regulated for ammonia for, oh, probably the last 15 years very consistently. And we have our stream studies,

which generally show that there aren't dissolved oxygen problems in streams below these dischargers. So I think we are almost beyond the need for a model. We have got so much real experience in the matter.

BOARD MEMBER GIRARD: So has anybody put all this data

together into a publishable paper, or is there some internal document, or has it been -- in other words, has it been put together anywhere that you could bring that in and introduce it in this proceeding? It would be very helpful.

MR. MOSHER: Well, I don't know of a specific summary. I could bring in examples of facility related stream surveys that we have done that show no impacts from discharges, if that would be helpful.

BOARD MEMBER GIRARD: Yes. I would like to see that.

MR. MOSHER: We do feel that where treatment plants are meeting their BOD solids and ammonia limits, we don't see dissolved oxygen problems. I am not saying there is no cases at all where someone is not meeting those limits, somebody is having problems with their treatment plant. And we do pick up on that and, in fact, that's where we direct our efforts to try to cure those problems where they happen. But by and large, the average or typical result is no impact. And I will -- I will bring in some recent examples of that, or we will send some.

BOARD MEMBER GIRARD: Okay. Thank you.

HEARING OFFICER TIPSORD: Dr. Flemal?

BOARD MEMBER FLEMAL: Let me try attacking this fundamental question of the role of nitrogen in the in stream dissolved oxygen situation just from a little different angle. Let's cover some basics.

Stream DOs commonly, or with some regularity, at any rate, go below our standard; is that not correct?

MR. MOSHER: That's correct.

BOARD MEMBER FLEMAL: There are multiple causes, are there not, in your understanding, for this circumstance?

MR. MOSHER: That's correct, and including completely natural causes.

BOARD MEMBER FLEMAL: What are some of the causes for decreased DO in streams?

MR. MOSHER: Sediment oxygen demand that could be contributed during storm events, possibly poorly controlled CSO discharges, or just purely stormwater discharges. Dams or obstructions in streams that tend to create deep pools without much flow. The respiration of algae during nighttime hours will reduce DO.

BOARD MEMBER FLEMAL: So there is quite a range of phenomenon that are somehow related to DO concentrations going below what we set as a standard?

MR. MOSHER: Yes.

BOARD MEMBER FLEMAL: In your experience, has there been circumstances where ammonia discharges from point sources, effluence of any sort, have been responsible for those DO sags?

MR. MOSHER: Well, I am sure that in the past there has been

a contribution from ammonia, especially years ago when ammonia was not controlled, as we are up to the point now. Usually if there is ammonia there is also other forms of BOD present, and so it would be hard to purely separate all that out. But, yes, ammonia would contribute.

BOARD MEMBER FLEMAL: It would contribute at least in some circumstances?

MR. MOSHER: Yes.

BOARD MEMBER FLEMAL: Do you have any sense of the magnitude of that contribution?

MR. MOSHER: At the present time, we do not suspect that there are situations where ammonia is a major contributor. DO problems at the present time have been -- well, there has been a trend of increased DO in the state and fewer and fewer cases of problems with DO. And that's a result of better treatment at point source dischargers, better treatment of storm water and CSOs and lots of things.

So it is -- I would say it is very rare to have a DO problem today from purely a point source, where you would just say the classic textbook example of DO sag in a stream is coming

from the dry weather discharge of a sewage treatment plant or industrial facility.

BOARD MEMBER FLEMAL: Including all forms of oxygen demand that that point source may be exerting?

MR. MOSHER: Correct.

BOARD MEMBER FLEMAL: Okay.

HEARING OFFICER TIPSORD: Mr. Harsch?

MR. HARSCH: I guess as a follow-up, it is very rare, is it not, to have a DO sag below a treatment plant whose treatment scheme includes properly functioning nitrification?

MR. MOSHER: Yes. Because, again, those types of treatment plants are located on smaller streams, and they have typically the best kind of treatment that we would find anywhere to meet their lower limits.

MR. HARSCH: You said -- as a follow-up to Albert's question, you went over and viewed that data in our adjoining state where there was reported a BOD problem in that back water area of the Mississippi River, and that reported BOD excursion was in the back water area of the Mississippi.

Was that DO problem reported from a DO measurement that occurred from samples taken in the morning after a diurnal nighttime event?

MR. MOSHER: Well, it has been several years since I have looked at that situation. Maybe I can describe what was going on

there. There was a large facility on the Iowa side of the Mississippi River that did grain processing. I don't know what exactly they did, but they took grain and they made products out

of the grain, and they had discharged into a side channel of the Mississippi River.

MR. HARSCH: Wasn't the sampling locations where the DO -- where the DO measurements were taken that gave rise to the reported DO excursions at a boat launch location, and the actual DO reported violations at a boat launch, and samples taken at approximately 8:00 a.m. in the morning, the reported values?

MR. MOSHER: Yes, the location was downstream from this side channel with this discharger, and I am not exactly sure if they were -- what time of day they were taken. I am sorry. It has been quite awhile ago.

MR. HARSCH: Okay.

MR. MOSHER: We could provide that data for the record.

HEARING OFFICER TIPSORD: Okay. If you would, please.

MR. HARSCH: If that data was taken in the morning, in the early hours, would that value be a result of the diurnal oxygen demand from the algae respirating at night that you referred to in response to Dr. Flemal's question?

MR. MOSHER: It could very well be.

MR. HARSCH: Okay. Thank you.

MR. CALLAHAN: My name is Mike Callahan. I would like to

ask a question in the same vein to Mr. Mosher. Both you and Albert, Bob, described this situation as a green slime pool. What was the nature of that green slime?

MR. MOSHER: Well, the slime I saw was white.

MR. CALLAHAN: White. Okay. It wasn't green.

MR. ETTINGER: I didn't say green.

MR. CALLAHAN: In such a situation generally if we are looking at diurnal oxygen sags, is this not caused by cellular respiration of the algae there?

MR. MOSHER: Yes, it is true that it is a very natural function of aquatic ecosystems that the algae present often very naturally in that ecosystem will respire 24 hours, but only provide oxygen through photosynthesis for the daylight hours. So you get this natural sag in DO.

MR. CALLAHAN: So this would be, then, early in the morning when the low DO concentration is realized?

MR. MOSHER: You would expect them between -- you know, after midnight and through maybe even mid morning.

MR. CALLAHAN: Now, is it necessarily ammonia that contributes to this? Or could nitrate, as well, contribute to this, with nitrogen being a nutrient which is supplied in excess?

MR. MOSHER: Well, now we are talking about what makes algae grow, the fertilizer, so to speak. And nitrates are equally efficient as a fertilizer for plants, as is ammonia.

MR. CALLAHAN: So if the problem was a result of diurnal respiration rates, the contribution of nitrogen could essentially

be irrelevant as to whether it was chemically reduced or chemically oxidized?

MR. MOSHER: That's true.

MR. CALLAHAN: Okay.

HEARING OFFICER TIPSORD: Okay. Anything further? I think we are ready to proceed with Question Number 8.

MR. ETTINGER: I want to apologize for taking us on this extended trip to Moline today, although that was used just as an example.

Let us now ask Question 8, which is what is the basis for the choice of using the ten to the fifth power risk factor for the proposed benzene human health standard?

MR. MOSHER: The Agency used the ten to the minus fifth power risk factor because the recent GLI process sanctioned this method as the most appropriate.

HEARING OFFICER TIPSORD: Okay. Mr. Rao has a follow-up.

MR. RAO: I have a follow-up to that question. So is this the USEPA's current policy to have risk levels, you know, to be protective of human health to be set at tenth to the minus five for water quality standards?

MR. OLSON: Over the years the USEPA has made a number of different risk decisions based on anywhere -- even at higher

levels than that. But the recommended levels are ten to the minus fifth, to ten to the minus seventh, as far as I remember.

MR. RAO: Are the water quality standards under Part 302, you know, the human health standards that have been adopted by the Board, do you know if all those numbers were based on a risk level of ten to the minus fifth, or ten to the minus sixth or lower?

MR. OLSON: Okay. Let me get this straight. We have the Lake Michigan standards. Those were -- if those were carcinogens those were all based on ten to the minus fifth. Those were in the recent past.

We have only a Mercury standard under the General Use, which is called a human health standard, and that is not based on cancer, as far as I know.

And under the public water supply section, those are very old standards, and I have no idea. Those were not based on risk policy.

MR. RAO: Okay.

MR. OLSON: I mean, this modern 1980s, 1990s risk policy.

MR. RAO: Okay. Thank you.

MR. ETTINGER: Just a follow-up on Mr. Rao's question. You indicated that the risk factors used were recommending ten to the minus fifth or ten to the minus seventh. I think Bob indicated ten to the minus fifth was the one chosen in this case because

that was the GLI recommendation. Did the GLI recommend only ten

to the minus fifth, or did they give this range that you were talking about?

MR. OLSON: The standards that we adopted, which were generally acceded to by the other states and the GLI process were all ten to the minus fifth if it was a carcinogen.

MR. ETTINGER: Okay. In some cases under the GLI did they adopt ten to the minus seventh?

MR. OLSON: No, not as far as I know.

HEARING OFFICER TIPSORD: Okay. Is there anything further? Go ahead.

MR. RAO: I have one more follow-up. Under the GLI standards for open waters of Lake Michigan, I think the benzene standard is set at 12 micrograms per liter. Do you know on what basis that standard was established?

MR. OLSON: That is for drinking water as well as for fish consumption. The General Use standard that we are proposing is only for fish consumption and incidental exposure through just touching the water. But the open waters of Lake Michigan included actually drinking two liters of water a day and the algorithm for calculating that number.

MR. RAO: Okay. Thanks.

HEARING OFFICER TIPSORD: Okay. I think we are ready, then, for Question 9.

MR. ETTINGER: For standards development, could Tier I

methods have been used if the Agency had included data regarding North American species not living in the Midwest?

MR. MOSHER: Ethyl benzene is the only proposed standard that was derived using a Tier II methodology. Going back to the database of toxicity studies for this substance, and for that you would refer to Exhibit M of the original petition, the missing family of organisms necessary to complete the database and allow a Tier I derivation is the benthic macroinvertebrate. The only benthic macroinvertebrate data available is for Mysidopsis, an estuarine or salt water shrimp-like crustacean. This organism is used extensively for toxicity testing on effluents that are discharged to salt or brackish waters.

We did not use the data for this organism because it is obviously not Midwestern and is not even a freshwater organism. Under Subpart F, the Agency is required to exclude such data. In our recommendations to the Board in this proceeding, we have maintained this consistent approach whenever possible. However, when establishing numeric standards, any valid approach may be used, not just the one encoded in Subpart F. If the Mysidopsis data were used allowing the Tier I calculation, the acute standard would be 0.900 milligrams per liter, and the chronic standard 0.072 milligrams per liter.

Salt water organisms often have tolerances to toxicants

that fall closely in line with freshwater species. This appears to be the case for an array of organisms tested with ethyl benzene. Having standards for BETX substances that are all derived using the same methodology makes sense. Using the salt water organism puts the ethyl benzene standard more in line with the other BETX. This would be predicted from structure/activity relationships as well. There is probably nothing wrong with using Mysidopsis data in this instance. The Agency is willing to suggest that the Board adopt the revised ethyl benzene values given above as the General Use water quality standards.

HEARING OFFICER TIPSORD: Is there any follow-up? Okay. We will proceed with Question 10.

MR. ETTINGER: Ten. What, if anything, does the federal guidance say about where one should measure the -- I am sorry. What, if anything, does the federal guidance say about where one should measure a site-specific total dissolved metal ratio, in the effluent or in the receiving stream?

MR. MOSHER: The preferred sampling location for determining the site-specific metals translator, according to the federal guidance, is at the downstream edge of the mixing zone. The methodology also allows for testing in the effluent itself, and according to Region 5 USEPA staff, if no mixing zone exists, such as in a zero 7Q10 flow stream, measurements should be made in both the effluent and in the receiving stream downstream of the

effluent and the more conservative, that is, the lower of the two, metals translator values obtained should be used.

MR. ETTINGER: Are the implementation rules, that we are not going to see in this proceeding, going to address that question?

MR. MOSHER: Yes, there will be a section dealing with the metals translator. We intend to rely very heavily on the federal guidance. We would just put that in as a -- what do we call it?

MR. SOFAT: Incorporation by reference.

MR. MOSHER: Incorporation by reference. We would also intend to have some instructions on a very basic level noting that the number of samples that should be taken, the location that is preferred given, whether there is a mixing zone, or whether there is not a mixing zone, just real basic things like that.

MR. ETTINGER: These rules -- will these rules specify where to measure to get your dissolved total ratio?

MR. MOSHER: Yes.

MR. ETTINGER: Okay.

HEARING OFFICER TIPSORD: Seeing no other follow-up, please continue.

MR. ETTINGER: Okay. This is Question 11. Exhibit H describes the different methods used to derive standards, paren, Tiers I through III, close paren. Under the current method of publishing the BETX standard in the Illinois Register, you use

Subpart F methods to derive General Use standards. For your proposed standards in this proceeding, you choose to use Subpart E methods. Exhibit H states, quote, Subpart E uses a more refined approach that applies a more stringent safety factor when fewer families are represented, end quote.

Why, then, are some of the currently published water quality criteria for BETX, paren, page two of Exhibit F, close paren, more stringent than the proposed standards?

MR. OLSON: I will take that. Some of the newly derived proposed water quality standards using Subpart E methodology are less stringent than some of the previously published derived water quality criteria calculated using Subpart F methodology for the following reasons:

A, Subpart F has been in use for over ten years and during that time there was a learning process during which mistakes were made in arithmetic and computer programs designed to aid in the calculations.

B, opinion changed over the years as to what data were appropriate to use. This is a subjective and ongoing process.

C, newer data appear in the literature and are incorporated into the calculations.

Whether criteria become more or less stringent over time is not a consideration of the derivation process. Obtaining all pertinent data, determining the suitability of that data and

correctly applying the data to the methodology are the considerations that are important to this process.

MS. SKRUKRUD: I have a follow-up question.

HEARING OFFICER TIPSORD: Okay.

MS. SKRUKRUD: I am Cindy Skrukrud. The last name is spelled S-K-R-U-K-R-U-D. I am with the Sierra Club.

HEARING OFFICER TIPSORD: Thank you.

MS. SKRUKRUD: I guess that was my question, and I am trying to understand what the comment that there is a more stringent safety factor in Subpart -- using Subpart E than using Subpart F. What is meant by that?

MR. OLSON: Could I ask you in reference to which parameter, as to which substance?

MS. SKRUKRUD: Well, this was -- this was not regarding any specific substance. In Exhibit H, where you describe the different Tier methods, it is stated that Subpart E uses a more refined approach and applies a more stringent safety factor when fewer families are represented. So maybe it is specifically -- it was for one Tier.

MR. OLSON: Well, that really only applies to ethyl benzene, I think, because that was so-called Tier II, and that's where these explicit safety factors are mentioned. It turns out that it is actually more stringent for Subpart E, rather than the old method of Subpart F. It is more fair in that it uses more of the

data, but it may actually produce a greater safety factor.

MS. SKRUKRUD: Okay.

HEARING OFFICER TIPSORD: Just one second.

MR. RAO: I have a related question. I think this one is for Dr. Olson. On page seven of the prefiled testimony you recommended that the Board adopt standards based on Subpart E procedures since they include more up-to-date thinking on criteria derivation. In light of this, can you please comment on whether Subpart F procedures need to be updated to reflect the current signs and criteria derivation?

MR. OLSON: Excuse me. Your question is that --

MR. RAO: Whether the Subpart --

MR. OLSON: Do I think Subpart F should be updated?

MR. RAO: Yes. Are they outdated?

MR. OLSON: Well, you are putting me on the spot, I think. We have not discussed that specifically, but I guess it would probably be a good idea. But we have not proposed that at this time.

MS. SKRUKRUD: I think I could maybe clarify my trying to understand the differences between Subpart F and Subpart E. In Exhibit F, on page one of Exhibit F, you list the proposed standards. And then on page two you have a table that lists the currently published water quality criteria. And if you look under the chronic standard for xylene, what you are proposing,

which was developed with Subpart E, is proposing the standard of 0.36, but the published chronic standard is 0.073, which was developed using Subpart F. So that is a more stringent standard that was developed under Subpart F.

MR. OLSON: Right. I will just reiterate the three reasons that I gave in the -- as I read off this prepared answer. I would only be able to answer that in detail if we actually had the documents in front of us and side by side to do that.

This arrangement is not too good, with the questioner directly behind me.

HEARING OFFICER TIPSORD: We will let you know if we can't hear you.

MR. OLSON: Okay. You are the people making the decisions, but they are the ones asking the questions.

MR. MOSHER: We could probably sit down over lunch and put them side by side and --

MR. OLSON: I am not sure I have those older documents with me.

MR. MOSHER: They are not in here?

MR. OLSON: Well, I have the current criteria document. That might help her to understand it, if we went through in detail.

MS. SKRUKRUD: Okay.

MR. ETTINGER: I think we will discuss later what further

proceedings they will be in. Perhaps there will be the opportunity for more prefiled questions to allow you to look at your documents. I think we will discuss that later.

BOARD MEMBER GIRARD: I have a related question. Mr. Olson, in this whole issue of risk factors, how do you decide whether to use a risk factor of ten to the fifth, or ten to the sixth, or ten to the seventh when deriving a standard?

MR. OLSON: Well, in the proceedings over ten years ago in 88 and 21, which was the toxic regulations that led to Subpart F, it was really a consensus that, well, we will go with ten to the minus sixth. That was through many of -- through the USEPA and the various other states.

By the time that the GLI process came in the middle 1990s for the Lake Michigan, for the Great Lakes system, it was just a policy decision really and sort of at that level, generally, and the Board acceded to it at that time.

It is really hard to deal with orders of magnitude like this, and I am sure the average person, you know, thinks it is -- you know, finds it very difficult to deal with this, the way of looking at things. All I can say is it was really a policy sort of decision, and there aren't any -- the details of how that was arrived at, I can't tell you.

BOARD MEMBER GIRARD: Are you saying it was a policy decision of the Illinois EPA based on federal guidance, or was it

federal policy?

MR. OLSON: I think it was a policy decision that was the general consensus among all of the parties involved at each of those stages, and it just changed over a few years time. The GLI process involved the states meeting with the USEPA for many, many meetings over a number of years. And this was just a gradual consensus that was arrived at. I don't know whether the EPA led that process. And I don't know whether they have any notes or any records to show.

As I said to Dr. Rao, the USEPA, there was a paper in Environmental Science and Technology at the time we did the 88 and 21, and it showed on a graph a number of the risk levels used for a variety of decisions, and it was all over the map. You know, it was ten to the minus three to ten to the minus eighth or something like that.

BOARD MEMBER GIRARD: Okay. Thank you.

HEARING OFFICER TIPSORD: Anything further? Okay. Question Number 12, Mr. Ettinger.

MR. ETTINGER: I will read all of Question Number 12 at once, although it is a three-part question.

Regarding the proposed loosening of the cyanide standard;.

A, why were six data sets rejected in Step 20 of the derivation?

B, how does the absence of a different insect order affect

Step 22?

C, were any mussel data reviewed in considering the proposed standard?

MR. OLSON: Regarding the weak acid dissociable cyanide proposed standards:

A, Step 20 is not a list of rejected data, but rather a list of acceptable data after rejected data are removed. In this case, no unacceptable data were removed. If you need an explanation of that again, it is a matter of looking at the document. There is a little bit of lack of clarity in the way that is stated in the document.

B, Step 21 shows that studies for the five required types of organisms for Subpart F are present. Step 22 shows the additional three studies for organisms required for a Subpart E Tier I derivation are not present, the different invertebrate, insect, is missing. A Subpart F Tier I derivation may be conducted but at Subpart -- a Subpart E Tier I derivation may not.

C, to the best of our knowledge, we know of no mussel data for cyanide.

That second part got a little mixed up. But the fact is there is not any insect data, so it would not -- we don't know how it would affect.

MR. ETTINGER: I am sorry. You just said insect. Do you

mean there is no mussel data?

MR. OLSON: No, I was going back to the cyanide question. I am sorry.

MR. ETTINGER: Okay. Let me just clarify your last answer.

MR. OLSON: Yes.

MR. ETTINGER: Are you aware of mussel data?

MR. OLSON: No, there is no mussel data, as far as we know.

MR. ETTINGER: And you don't know how cyanide affects mussels?

MR. OLSON: No.

MR. ETTINGER: Are you aware that there are endangered mussels species in Illinois waters?

MR. OLSON: Oh, yes, of course.

MR. ETTINGER: Have you consulted with US Fish and Wildlife regarding this proposal's potential affect of cyanide on endangered species?

MR. MOSHER: That is a USEPA obligation and not ours.

MR. ETTINGER: Have you consulted with the USEPA regarding the potential affect of cyanide on mussels?

MR. MOSHER: Not specifically, no.

MR. ETTINGER: Have you consulted with the IDNR regarding the potential affect of increased cyanide discharges on endangered Illinois mussels?

MR. MOSHER: No.

MR. ETTINGER: Are you aware of studies showing an additive or more than additive affect of free cyanide when it is present in the water in combination with ammonia?

MR. MOSHER: No.

MR. ETTINGER: Is cyanide more toxic to fish in conditions of low dissolved oxygen?

MR. OLSON: It should be, yes.

MR. ETTINGER: Are there any dischargers other than the MWRD, the Metropolitan Water Reclamation District of Greater Chicago, that we know may be affected by the change in the cyanide standard?

MR. MOSHER: I don't believe the MWRD is affected, because they already have a site-specific cyanide standard similar to the one we are proposing. There are very few dischargers regulated for cyanide. I don't know of any that this really is meaningful for their compliance or noncompliance.

MR. ETTINGER: Thank you.

HEARING OFFICER TIPSORD: Go ahead.

MR. POLLS: I have a follow-up. I am Irwin Polls, the last name is P-O-L-L-S. I am the Manager of Aquatic Ecology and Water Quality for the Metropolitan Water Reclamation District of Greater Chicago.

This question is for Bob, a follow-up on Question Number 9. Did I understand that you are going to recommend that a marine

species be used in the calculation of ethyl benzene?

MR. MOSHER: We are saying that in this particular case there seems to be no difference in the response of fresh water organisms versus salt water organisms to ethyl benzene. I wouldn't want to say that for anything but ethyl benzene at this point, because we have not looked into it any further, since it has always been our practice to use only fresh water Midwestern organisms in these derivations.

MR. POLLS: Let me ask you this. I believe in your testimony you stated that you did include a marine species in the calculation?

MR. MOSHER: We recalculated.

MR. POLLS: Now, when you recalculated using the marine species, was the proposed standard higher or lower than the one that you have previously recommended?

MR. MOSHER: The recalculated standard is much less stringent than our original proposal.

MR. POLLS: So the number would be higher?

MR. MOSHER: Yes.

MR. OLSON: Could I follow that up? As a matter of fact, if you -- it is much broader than for ethyl benzene. If you look at many, many chemicals and you look at the list of species, the list of sensitivity, you will find that there is very little

difference between a list of salt water organisms and a list of fresh water organisms.

There are a number of publications. I have at least six references. If you look at our data since you will see the same thing whenever you take these other organisms for all of the BETX substances. So it is not really that outlandish. It is just that it is not something that we are accustomed to.

HEARING OFFICER TIPSORD: Did you have something? Albert, did you have another follow-up?

MR. ETTINGER: I just have one follow-up on the sensitivity.

HEARING OFFICER TIPSORD: Okay.

MR. MOSHER: Go ahead.

MR. ETTINGER: Have you looked at -- regarding sensitivity of species, have you looked at whether mussels are generally more or less sensitive than warm water fish?

MR. OLSON: I went ahead and used the data that the USEPA supplied us. All we have are numbers on a sheet of paper. We don't have a publication to go with it. We have no idea what those numbers actually stand for. They may, you know -- there may be something completely different about the way those numbers were presented to us.

But using the numbers as they gave them to us, for nickel and zinc it made virtually no difference in the calculation of the standard on the criterion. So the sensitivity was low, but

we always had data that was just as low or even lower.

MR. MOSHER: For other species?

MR. OLSON: Yes. Ceriodaphnia, for instance, was just as low or lower.

HEARING OFFICER TIPSORD: Mr. Callahan?

MR. CALLAHAN: Yes, I would like to follow-up on that. You indicated that these were numbers that were given to you by the USEPA?

MR. OLSON: Yes, the USEPA --

MR. CALLAHAN: You have no idea of the source of these numbers?

MR. OLSON: The USEPA has done some studies. Bob has done some inquiring about that. This has not really been peer reviewed and in the literature yet.

MR. CALLAHAN: It has not been published?

MR. OLSON: But some of it has been let out and people know about it, and we heard about some of that in a meeting in Chicago a couple of weeks ago. But we really don't know, you know, how well this was done. And the numbers, as I say, that I got were just on a mimeograph piece of paper, essentially.

MR. CALLAHAN: Is it customary for the Agency to advocate a proceeding before this Board that would have in its basis data that has not customarily withstood the rigors of peer review?

MR. OLSON: No, I am not suggesting that we use that data. I am only saying that I did it as a trial and it didn't make any

difference, essentially.

MR. CALLAHAN: All right.

MR. MOSHER: I think we need to clarify this issue a little bit more. As Clark mentioned, there is some newer mussel studies out there. A lot of it is unpublished. All of the newer studies, and by that I mean done within the last three or four years, are not yet sanctioned by the USEPA. And by that I mean they have not put those studies into their acquired database of aquatic life toxicity test results.

There is one older mussel study done in 1991 published in a journal that the USEPA did put into the acquired database, and that study contains information for zinc and nickel, and that study is a part of the data set that we use to derive our proposed zinc and nickel water quality standards.

It may come out in the future that nobody likes any kind of mussel study and we have to do things over again without any mussel data. It may turn out that the mussel studies pass the rigor of peer review and debate, and then all of the states are going to have to use all of that data, and we will probably be back here reproposing standards for a lot of things using mussel data. So just to make the record clear, some mussel data went into zinc and nickel that we are proposing now, but only one

published study.

MR. ETTINGER: Let me just -- some of the studies that we

were talking about regarding mussels with regard to the recent unpublished studies, were those with regard to ammonia or some other --

MR. OLSON: No, the only thing I looked at was zinc and nickel, but they also did a number of other metals. I have no way of knowing comparatively speaking. But the 1991 paper that he referred to does compare on a very small basis their data with other organisms that have been tested on about five or six metals. In each case the mussel data was about the most sensitive, but it was not that much more sensitive. In some cases it was less sensitive than some of the other organisms that they compared it to.

MR. MOSHER: I had a -- if everyone else is finished with follow-ups, there was a good opportunity for me to elaborate a little on Question 12, the last question we dealt with on cyanide. You will note that our Errata submittal has corrected or updated the chronic water quality standard for weak acid dissociable cyanide. We now are saying that number should be 11 micrograms per liter.

The reason for that is that in preparing our response to Question 12 on cyanide, we went back and looked at our data and

what we discovered was that, as we answered in Question 11, there apparently had been a mistake made at some point, possibly an arithmetic mistake or possibly just entering numbers into the

computer program incorrectly. But in any case, we went back and looked at the cyanide data for the chronic standard and discovered that the correct calculation should have -- it did result in a standard of 11 micrograms per liter.

Now, the difference between that and what we proposed is very small, and Clark maybe wants to expound on the significance of that, but that's what we got. Since we were doing this, we discovered that. We then went and rechecked all of the other proposed standards -- I should say Clark did -- and found that there were two other -- was it two other changes that we want to make?

MR. OLSON: Zinc, chronic and acute.

MR. MOSHER: Okay. We have done that in the Errata Sheet also. So I guess we can thank the participants for these questions, because it made us go back and look at things again, and we did discover some errors.

MR. ETTINGER: Just following up on that, is it your intention to now submit an exhibit in which you show the recalculations?

MR. MOSHER: Well, given that we have not added any new data --

MR. OLSON: Actually, I was just -- you know, using the data sets here, I don't know what it was. It was only a one and a two percent error for the zinc. So what it was, I don't know. But

it was just off a little bit. Now, for the cyanide it was off more.

MR. MOSHER: One more thing about cyanide, we don't know of any data for mussels for cyanide at all, whether debated data or not. But the way this process works and one of the reasons we are all here today -- and I note that the Illinois Department of Natural Resources has some representatives here today. If they know of any toxicity tests data on mussels, we would like to know. You know, maybe they do, and we can certainly evaluate that and put it into the mix.

The USEPA would like to know about it. They can start considering cyanide toxicity test data for mussels as well as they are now considering data for ammonia and metals. So if the data is out there, we need to know about it.

MR. ETTINGER: Now, you did get this new standard by throwing the cold water fish data out of the mix; is that correct?

MR. MOSHER: That's correct.

HEARING OFFICER TIPSORD: Mr. Polls, did you have a follow-up?

MR. POLLS: I have a follow-up regarding the availability of data for cyanide on mussels. It is my understanding that for the USEPA and their criteria, the national criteria document, for data to be included in that database it must be intensely peer

reviewed and cannot be data that just anyone has used that has not gone through a peer review process. I think in the appendix or in the introduction it clearly says that only data that has been outside reviewed can be used.

So to ask just that any data be used, we would have an objection in terms of just any data. I think we would go along with the USEPA, that it would have to be reviewed and be included in the database, so that it can't be --

MR. MOSHER: Yes, that's correct. Yes, you are right.

HEARING OFFICER TIPSORD: Mr. Rao?

MR. RAO: Yes, I have a follow-up regarding the submission of recalculations that you have made. Now, in your earlier response you recommended that the Board adopt for the ethyl benzene, the recalculated standards. Would it be possible for you to submit the recalculations that you made using marine species for ethyl benzene, or is it --

MR. MOSHER: Well, it is easier than that.

MR. RAO: Okay.

MR. MOSHER: I would like to refer to one of our original exhibits on ethyl benzene.

MR. RAO: Is that part of Exhibit M?

MR. MOSHER: Well, probably. Let's take a look. Yes. Exhibit M. And as we page through that, to the chronic data --

MR. OLSON: Excuse me. What are you doing?

MR. MOSHER: Well, Clark, help me out here. We are wanting to show people where the Mysidopsis data is for ethyl benzene.

MR. OLSON: Oh, okay. If you will look in the data set in the ethyl benzene document. Is that M? I don't have the --

MR. MOSHER: Yes.

MR. OLSON: Okay. It is listed under Step 9, acute toxicity.

MR. MOSHER: Is there a way to work through what we already have here to show how we developed --

MR. OLSON: Well, if he finds it, I could help him go through the process.

MR. MOSHER: Okay.

HEARING OFFICER TIPSORD: Can you --

MR. RAO: Do you know a page number?

HEARING OFFICER TIPSORD: -- give us a page number?

MR. OLSON: No, I don't have a page number. It is Step 9. It comes after the bibliography. It's acute toxicity.

BOARD MEMBER GIRARD: Page five?

MR. MOSHER: There are page numbers here.

MR. OLSON: Oh, okay. It is page number six.

BOARD MEMBER GIRARD: Okay. Page number six. It starts on page five.

MR. OLSON: In this big book here.

MR. RAO: Okay.

MR. OLSON: Do you find my synopsis in the middle of page -- oh, it is page five.

MR. RAO: Yes.

MR. OLSON: Okay. Under the SMAV it says 15.09. Well, if you go to Step Number 11, you will see that 15.09 would be about in the middle of that series of data, one through six.

MR. RAO: Yes.

MR. OLSON: Well, we just put this into our computer calculation, and that would not -- that would only -- it would -- it would contribute to the value.

MR. RAO: Okay.

MR. OLSON: That's all we did.

MR. MOSHER: We can put together a sheet that runs through the calculation and shows how we arrived at that value.

MR. RAO: Okay.

MR. MOSHER: That would not be -- we will send you that.

MR. RAO: Okay.

HEARING OFFICER TIPSORD: Are there any other questions? Yes, Mr. Polls.

MR. POLLS: Yes, I have a clarification again, another question for Mr. Mosher.

HEARING OFFICER TIPSORD: I am sorry. Could you speak up? I couldn't hear everything.

MR. POLLS: This is for Bob Mosher. It is just a

clarification. So for weak acid dissociable cyanide, in your original testimony back in January you recommended -- I believe this is Exhibit G, with the hardness value of 250, that the General Use chronic standard for weak acid dissociable cyanide would be .099; is that correct?

MR. MOSHER: Well, cyanide is not dependent on hardness, so that part of it is not applicable.

MR. POLLS: Okay. Correct.

MR. MOSHER: But --

MR. POLLS: But using that table, the value of that you were going to propose is .099?

MR. MOSHER: Yes, that's correct.

MR. POLLS: Now, based on the fact of today's testimony when you recalculated, now the one that you will propose for weak acid dissociable --

MR. MOSHER: I am sorry. Let me correct that. That is a misprint. That should be 0.0099. I apologize. That got through everybody.

MR. POLLS: Okay. Now, currently you are proposing 11 micrograms per liter for weak --

MR. MOSHER: Yes.

MR. POLLS: You are changing it from approximately ten now so the number will go up?

MR. MOSHER: Yes. Thank you for pointing that out. That is

a bad typo to have lying there.

HEARING OFFICER TIPSORD: Okay. Then at this time let's go off the record, Darlene.

(Discussion off the record.)

HEARING OFFICER TIPSORD: We will go ahead and take a ten minute break and come back at noon.

(Whereupon a short recess was taken.)

HEARING OFFICER TIPSORD: All right. Let's go ahead and begin.

Are there any questions to the Agency on their testimony as presented today?

MR. ETTINGER: I have one.

HEARING OFFICER TIPSORD: Yes, Mr. Ettinger.

MR. ETTINGER: This is for Mr. Mosher. You talked about how in your testimony regarding cadmium on the third page here it says, eight out of 208 critical hardness values are above 425 milligrams per liter. These are generally found in streams that have a past or present history of mining.

Are there any discharges to those eight streams that you are aware of that would be affected by this?

MR. MOSHER: In regards to cadmium?

MR. ETTINGER: Yes.

MR. MOSHER: I don't believe we have cadmium limits in any permit other than those that have a federal categorical

requirement to have such a limit. And the streams, these eight streams that have this really high hardness above 425 are not in industrial areas generally other than the mining industry. So, you know, I would have to go look at each and every one of those to really give you a good solid answer to that question. And that is something that I could do over lunch or something like that if you want.

MR. ETTINGER: I was just wondering what the import of this provision was. I gather you are not currently aware of any import in terms of a discharger having to meet a limit?

MR. MOSHER: I am not aware, no.

HEARING OFFICER TIPSORD: Is there any other questions for the Agency based on their testimony today?

Okay. Great. Seeing none, thank you very much, and we will proceed with our next witness, Mr. Steven Davis.

If the Agency doesn't mind, we need to at least clear one table for the other witnesses.

MR. SOFAT: Okay.

HEARING OFFICER TIPSORD: Ms. Howard, did you want to make an opening statement?

MS. HOWARD: Good afternoon, and thank you very much for letting us appear here today. My name is Margaret Howard, and I am the attorney that represents the Galesburg Sanitary District in this proceeding.

And Mr. Davis, who is the District Superintendent, would like to present some testimony that we have prefiled earlier.

HEARING OFFICER TIPSORD: All right. We will have you sworn.

(Whereupon Mr. Steven Davis was sworn by the Notary Public.)

MR. DAVIS: I want to thank the Board for allowing me to testify today, in particularly going on ahead and getting started with it.

My name is Steven E. Davis, and I am the District Superintendent of the Galesburg Sanitary District, hereinafter if I refer to it as the District. On behalf of the District I am testifying in support of the following proposed amendments, 35 Illinois Administrative Code 301.267, 301.313, 301.413, and 309.157. And I urge the Pollution Control Board to adopt these proposed amendments.

These proposed amendments are based upon the June of 1996 publication by the United States Environmental Protection Agency,

Office of Water, hereinafter referred to as Water, of the metals translator guidance for calculating a total recoverable permit limit from a dissolved criteria. And that's the EPA publication Number 823-B-96-007, of which I will refer to in my testimony as the translator document.

To briefly summarize, the translator document reaffirms an earlier determination by the Office of Water that dissolved metal

concentrations are a better representation of the biologically active portions of metal and should be used for the application of water quality standards as opposed to total metal standards or total recoverable metal standards. The logic for using dissolved metal standards is that the primary mechanism for toxicity to organisms that live in the water column is by absorption to or uptake across the gills, and that this physiological process requires metal to be in a dissolved form.

The translator document provides detailed technical guidance to develop a metals translator, which is the fraction of total recoverable metal in the water stream which is dissolved. The calculation of limits based upon the fraction of dissolved metals to the total recoverable metals is inherently site-specific. The translator document notes that many local factors influence the dissolve of two total metals ratio, including hardness and dissolved organic carbon and flow rates,

etcetera.

Given the importance of the translator document, I request that this Board incorporate the translator document into this rulemaking by a specific reference.

The District's effluent limits for copper provide a good example of how the proposed amendments would work. The District has high values for its influent copper due to high levels of copper in the City of Galesburg water system. Consumer

confidence reports published by the City of Galesburg for the years of 1999 and 2000 show copper levels in our water system for both years as high as 1.4 milligrams per liter. The allowable limit for potable water is 1.3 milligrams per liter.

Based upon a 25th percentile of hardness for the District's receiving stream, the chronic water quality standard for total recoverable copper was calculated by the Illinois Environmental Protection Agency to be 0.031 milligrams per liter. The District, being a separate municipal entity from the City of Galesburg, has no authority or control over the operation of the water system, therefore, it has no means of controlling the levels of copper which flows from that source into the wastewater collection system and treatment plant.

Beginning in October of 1999, the District began sampling and testing its plant effluent for copper pursuant to the requirements of its NPDES permit at least twice weekly.

Composite samples have been taken of the effluent and sent to PDC Laboratories for analysis for total copper.

On the advice of its environmental consultant, the District also began sampling and testing for dissolved copper both in the effluent and from the receiving stream 300 feet downstream from the plant discharge. Overall the District has taken over 180 samples. Total copper in the effluent has averaged 0.030 milligrams per liter. In comparison, the dissolved copper in the

effluent has averaged 0.018 milligrams per liter. For downstream samples the total copper has averaged 0.019 milligrams per liter, and dissolved copper has averaged 0.013 milligrams per liter.

These results clearly indicate that dissolved copper in the District's effluent is only about half the total copper, and that neither total copper or dissolved copper in the receiving stream is anywhere close to the water quality level, 0.031 milligrams per liter.

In short, both the District and the IEPA have agreed that this is a perfect situation for applications of the USEPA metals translator doctrine. It is worth noting that the methodology that is set forth in the translator document is rigorous but with straightforward and practical application. This is important since it is anticipated that the IEPA rules for implementing the rules, the translator rule, will mirror the methodology in the

translator document.

In summary, the District urges the Board to adopt the amendments to 35 Illinois Administrative Codes 301.267, 301.313, and 301.413, and 309.157, as proposed, and to incorporate by reference the USEPA's translator document. It will enable the IEPA to implement discharge limits which better protect stream and aquatic quality based upon levels of dissolved metals and characteristics of the individual streams. By giving the IEPA the same authority that many other states already have, many

costly and extended actions for adjusted standards before this Board can be avoided.

That would conclude the written portion and the read portion of my testimony. I would note for the Board that I had originally, in my testimony, attached these two consumer confidence reports as exhibits, but they did not lend themselves to attachment, particularly by electronic transmission, very easily. I have the hard copies here, should you want them.

I also have a clean copy of the metals translator document from the EPA, should you desire to have that. I am not sure if that has been attached by the Agency or not.

HEARING OFFICER TIPSORD: The translator document is already a part of the rulemaking record. The Agency attached it to its original proposal. So my question to you, is that sufficient to answer your request to incorporate it?

MR. DAVIS: I think so.

HEARING OFFICER TIPSORD: Okay. I would like to have those if we could. We could enter the consumer confidence as exhibits.

MR. DAVIS: Sure.

MS. HOWARD: I will give you two copies of them.

HEARING OFFICER TIPSORD: Okay. Thank you.

MR. DAVIS: I would note for the record --

HEARING OFFICER TIPSORD: These are both the same thing?

MS. HOWARD: Right, the same thing.

MR. DAVIS: -- that the District receives those water confidence reports as a consumer, just like all the other residents and users in the City of Galesburg. So that's how I have come to acquire those documents.

HEARING OFFICER TIPSORD: Okay. We will enter as Exhibit Number 11 the City of Galesburg Water Division Consumer Confidence Report, if there is no objection.

Okay. Seeing none, we will admit that.

(Whereupon said documents were duly marked for purposes of identification as Hearing Exhibit 11 and entered into evidence as of this date.)

MR. DAVIS: Madam Hearing Officer, may I make one point? With regard to the translator document, and to answer your prior question as far as its prior attachment by the Agency, I guess I

would want to reinforce, as I stated in my testimony, that I think this is almost a good cookbook, if you will, for how the -- at least the translator portion of the metals could work, because it has worked very well in our specific instance.

I guess I would urge its incorporation by reference as far as the actual implementation of the rules is concerned.

HEARING OFFICER TIPSORD: Okay. Thank you. Are there any other questions? Just give us a second, please.

(Hearing Officer Tipsord and Mr. Rao confer briefly.)

HEARING OFFICER TIPSORD: Actually, Mr. Rao, in an aside,

just made a good point. Again, when you talk about incorporation by reference, that has a very sort of term-of-art meaning in a rule. Do you specifically believe that in the Board's Rules the Board should say we incorporate by reference this document, even though the Board's Rules don't deal with implementation?

If so, could we have some perhaps proposed language or where you think that amendment might fit best at a later time before the comment period ends?

MR. DAVIS: Well, from our perspective, and I think that I share this with Mr. Ettinger, I think that one of the questions, you know, that concerns us is the devil is in the detail, and how do you implement this translator authority. In our -- I guess the crux of my testimony is that this worked very well in our specific instance. So I guess that we would urge, if this is not

the specific way in which the translator is implemented, that the implementation rules by the Agency mirror them very closely, because I guess that's the thrust of it.

Now, as I understand it, from hearing Mr. Mosher testify, that that is, indeed, a separate -- or the IEPA attorney, that is a separate -- their rulemaking, in terms of their implementation, is separate from the Board. So, indeed, in that case it may not be properly something that is incorporated by the Board as such. But I guess I am urging that it be something along these lines, at least as far as the implementation rules.

MS. HOWARD: I would like to just reserve the opportunity that if Mr. Davis and I talk over the next week or two about this a little bit more that maybe we might have some proposed language that we could incorporate by reference specifically in the rulemaking, that we could reserve that opportunity.

HEARING OFFICER TIPSORD: Yes.

MS. HOWARD: Thank you.

HEARING OFFICER TIPSORD: Okay. Are there any other questions?

MR. MOSHER: I would like to make a comment to Mr. Davis' testimony. He mentioned the fact that this metals translator procedure has worked very well for the Galesburg Sanitary District. I have seen the data, and it does demonstrate that the

District puts in a lesser amount of dissolved copper than it does total copper.

I want to make the point that until the Board adopts these rules, the Agency can't modify the permit for the Galesburg Sanitary District to give them, in a sense, this relief. The only way they can get it at present is to go before you in an adjusted standard, which, of course, is a long process and one that, upon adoption of these rules, will be unnecessary.

And I also wanted to point out that there are several other dischargers in the state right now, all of them community sewage treatment plants, that have the same problem with copper. And

all of them are in various stages of permit noncompliance, I guess I could say, as they are awaiting for the Board to adopt this.

One of those communities, DeKalb, has filed for an adjusted standard for copper based on -- their argument is based on the metals translator process. So I guess this is just a pitch that these rules are necessary to provide relief and make things work for several communities.

MS. HOWARD: Just to add, this is something that we had discussed before, was if -- I know in the last triennial review, about eight years ago, there was a portion of that rulemaking that didn't seem to cause as much controversy as the ammonia portion, and the Board took the initiative to split that docket

into two so that the portion that was not as controversial could continue on through the rulemaking process.

If that is something that -- the Galesburg Sanitary District would urge the Board to maybe consider that in this case on their behalf, as well as the other dischargers that Mr. Mosher has mentioned. I don't know if that is something that we should do specifically by a written motion prior to the next hearing or if our verbal motion right here would constitute that request, if that can be taken up. Whichever way you would like to do it from a procedure perspective is fine with us.

HEARING OFFICER TIPSORD: Procedurally, if you are asking us

to split the docket, I think we need to have it in a written motion, with your arguments as to why that would be appropriate.

MS. HOWARD: Okay. Thank you.

HEARING OFFICER TIPSORD: Okay. Anything further? Thank you very much, Mr. Davis.

MR. DAVIS: Thank you very much.

MS. HOWARD: Thank you.

HEARING OFFICER TIPSORD: We will proceed with Cynthia Skrukrud. Could we have her sworn in.

(Whereupon Ms. Cynthia Skrukrud was sworn by the Notary Public.)

MS. SKRUKRUD: My name is Cindy Skrukrud. I work part-time

for the Sierra Club on water quality matters. I have a B.S. degree in Bio-Agricultural Science from Colorado State University and a Ph.D. in Comparative Biochemistry from the University of California at Berkeley. In my work for the Sierra Club and as President of the Friends of the Fox River, I have been following recent studies on the condition of the Fox River and have reviewed some recent work on the appropriate water quality standards for protection of aquatic life.

It is my testimony that the Board should not adopt several portions of the Illinois Environmental Protection Agency's proposal.

First, the scientific evidence is not adequate to justify

the proposed statewide loosening of cyanide standards.

Second, while basing the standard for metals on the dissolved portion of the total metal concentration is acceptable, we are not convinced that the rule will be applied properly. Indeed, the Board should wait to decide on all of the proposed standard changes until the Agency explains how it is going to apply the standards.

Finally, the proposed change to allow CBOD5 to be used in permits instead of BOD5 is not well thought out and not protective. The fact that the Agency took the law in its own hands 15 years ago by writing permits that violated the effluent rules established by the Board is not in itself a reason to

approve the proposed changes in the Board rules.

Cyanide standards should be protective of mussels and other sensitive species. The Board should not weaken the cyanide standards without proof that native mussels would not require stronger standards. The testimony at the January 29, 2002 hearing indicates that no information on freshwater mussel sensitivity to cyanide was used by IEPA staff as part of their derivation of the proposed new cyanide standards.

At the Midwest Surface Water Monitoring and Standards Meeting held the first week of February of this year, USEPA Region V staff reported on a review underway of new studies which show that mussels are more sensitive than other aquatic life

forms to many pollutants, including ammonia, nickel, zinc, copper and cadmium. The Board should ask the IEPA to use any available information on mussel sensitivity to cyanide to evaluate the impact of the proposed standards on this sensitive -- on these sensitive species.

In addition, the impact of the proposed standard on cool water native fish of Illinois, such as sculpins, should be evaluated. For example, the mottled sculpin is found in tributaries to the Fox River.

Zinc and nickel standards should protect mussels. The standards proposed for zinc and nickel are more stringent than

the current standards. Yet, given the reporting of the sensitivity of mussels to these metals, we ask that the Board require the IEPA to demonstrate that the proposed standards are protective of these fauna. The sensitivity of mussels to particulate metal should also be taken into account in the evaluation of the impact of conversion to standards based on the dissolved form of metals.

The use of the conversion factor and metals translator should be clear. The Board should not adopt dissolved standards without seeing how the proposed conversion factor and metals translator will be applied. For factors which involve hardness as a variable, this is important as the hardness of a given effluent may differ dramatically from that of its receiving

stream. In addition, the specifics of how and when a site-specific metals translator will be deemed more appropriate and receive Agency approval needs to be presented by the IEPA.

Deoxygenating waste rule should be protective of dissolved oxygen levels. The Board should not adopt the proposed change in the deoxygenating waste rule but should order IEPA to develop proper methods for protecting dissolved oxygen, DO, levels in Illinois waters. The evidence of low DO levels in Illinois streams is accumulating. Researchers from the Max McGraw Wildlife Foundation report measuring DO levels less than five milligrams per liter at 9 out of 11 impoundments studied on the

Fox River. In some cases, the standard was violated over a period of 16 hours.

Biological oxygen demand in effluent is made up of demand by both carbonaceous and nitrogenous components. To determine compliance with the Board's BOD5 standard by the analysis of CBOD5, as is proposed, would ignore the nitrogenous component of biological oxygen demand which a receiving water experiences.

Despite the IEPA's claim that nitrogenous BOD is regulated by the incorporation of ammonia nitrogen limits into a permit, testimony at the January hearing verified that the ammonia water quality standard is based on its toxicity, not its contribution to BOD loading to a water body.

Ammonia limits are not adequate to limit BOD because some

permits do not have ammonia limits or have very loose ones. For example, a draft permit for the Beardstown Sanitary District has no ammonia limit despite the known dissolved oxygen problems in the Illinois River. We have given this as Exhibit A.

If the Board adopts the IEPA's proposed CBOD5 language, the Board will be approving IEPA's practice of allowing widely different actual loadings of BOD, depending only on the circumstances regarding ammonia toxicity. Differences in ammonia limits are based on the pH and temperature of the receiving waters, a factor in ammonia toxicity, not its BOD.

It is our understanding that the IEPA has been limiting CBOD5 in municipal permits although the current rule provides for BOD5 limits. The IEPA now proposes to make things worse by allowing industrials to also substitute CBOD5 limits for BOD5 limits in their permits. In the case of GE Plastics, they currently have a BOD5 limit of 20 milligrams per liter monthly, and forty milligrams per liter daily, and an ammonia/nitrogen limit of three milligrams per liter monthly and six milligrams per liter daily. That is Exhibit B.

If because they nitrify, all the ammonia in their effluent is oxidized in the BOD5 test, ammonia may now contribute up to 13.8 milligrams per liter BOD5 out of the 20 milligrams per liter they are limited to on a monthly average basis. In this worst case scenario, that 13.8 milligrams per liter of nitrogenous BOD5

would still exist as well as the 20 milligrams per liter CBOD5 the proposed rules would allow them. This change could increase the amount of BOD going into the Illinois River by nearly 70 percent.

Clearly, the proposed change in the rule could significantly change the level of BOD which Illinois bodies of water will receive. USEPA requires that a lower CBOD limit be used when substituting for BOD in the one instance where it allows such substitutions. That is, 25 milligrams per liter CBOD5 can be substituted for 30 milligrams per liter BOD5.

If the Board feels it must use CBOD5 as the measured parameter in permits, at minimum, you should use 8 and 16 milligrams per liter CBOD5 instead of 10 and 20 milligrams per liter BOD5. However, we strongly urge you to first consider the contribution which nitrogenous BOD makes to the total BOD load in a typical effluent, as it appears that it can well be more than 15 percent of the total. Illinois' whole scheme for regulating deoxygenating waste needs to be reconsidered.

Implementation rules are key to understanding the implication of proposed new standards. For all aspects of the proposal where we have concerns, the Board should not act before seeing the Agency's implementation rules. The proposed changes regarding cyanide, dissolved metals, and BOD5 can only be understood if we have an idea of how the Agency will write the

permits. Permit writing rules will ultimately drive how protective the standards will be and the cost of the standards. This is similar to the Great Lake Water Quality Initiative and Antidegradation situations where the Board may ultimately decide to consider for inclusion in its Board rules language which the Agency thought should be in the Agency rules.

HEARING OFFICER TIPSORD: Before we proceed with questions, I would like to admit your Exhibit A, which is the Beardstown Sanitary District draft permit as Exhibit Number 12.

And your Exhibit B, the GE Plastics permit, the draft permit, as Exhibit 13, if there is no objection.

Okay. Seeing none, then those will be admitted as Exhibits 12 and 13.

(Whereupon said documents were duly marked for purposes of identification as Hearing Exhibits 12 and 13 and entered into evidence as of this date.)

HEARING OFFICER TIPSORD: And now we will open it up for questions for the Doctor.

BOARD MEMBER GIRARD: I have a question. Dr. Skrukrud, when you were discussing dissolved oxygen levels, you made reference to some data from the Max McGraw Wildlife Foundation on the BO levels of the impoundment of the Fox River. Is that a specific published paper? Do you have a reference or could you supply a copy?

MS. SKRUKRUD: It is a study that is just being completed. So I heard of the study researchers report on their study, but their written report is not yet out. I was last told that it would be out in March. So it could -- I could, if it -- if it is available I could submit it soon. I could also check with them and see if there is a summary document that they already have prepared that we can submit.

BOARD MEMBER GIRARD: Thank you. Or if they have any past studies that you can bring to us, that would be very helpful.

MS. SKRUKRUD: Okay.

BOARD MEMBER JOHNSON: I guess while we are on studies and reports, other witnesses testified during the day whether they were aware of any studies or reports regarding the cyanide toxicity on mussels. I guess I will ask you the same question. Are you aware of any?

MS. SKRUKRUD: No. We have been asking, too. We have asked for -- we have been doing the same thing that everyone has been doing, looking and asking. As of now we have no additional information that we can present.

BOARD MEMBER JOHNSON: Okay.

BOARD MEMBER GIRARD: I have a cyanide question, too, but this is for the Agency.

BOARD MEMBER TRISTANO: I had a question for the Agency, too, based on her testimony.

HEARING OFFICER TIPSORD: Okay.

BOARD MEMBER GIRARD: Mine is cyanide. The question of whether or not there is any toxicity studies on sculpins dealing with cyanide has been raised. Do you know of any toxicity studies on that, you know, any of those species?

MR. OLSON: Well, our document has what we have. As far as I remember there was not any. In doing maybe 100 or more criteria over the past few years I have seen it once or twice,

that some substance was tested on sculpins. That's about it.

BOARD MEMBER GIRARD: Thank you.

MR. MOSHER: We need to at some point supplement our testimony in regard to Ms. Skrukrud's testimony. And some of these things, in fact, that particular question was going to come out in our additional testimony. So whenever you would like us to do that --

HEARING OFFICER TIPSORD: Okay. You mean you have additional testimony for today?

MR. SOFAT: Based on what we heard today.

HEARING OFFICER TIPSORD: All right. Then we will do that at the end of the day if that's okay.

MR. ETTINGER: Well, we can do that at the end of day, but I do think I want to raise now the possibility of a further hearing. We keep getting a revised -- we keep getting a revised proposal on the day of each hearing which, obviously, makes it

somewhat difficult for us to react to it, and some of Ms. Skrukrud's testimony, obviously, was addressed to a rule which is now a moving target.

HEARING OFFICER TIPSORD: And I appreciate that, but I would prefer that we wait and address an additional hearing after we finish the questioning, so that we don't get a whole bunch of discussion about a third hearing in the middle of questions when we know we have more questions of the Agency and Dr. Skrukrud on

this stuff.

MR. ETTINGER: Very good.

HEARING OFFICER TIPSORD: Member Tristano, you had a question?

BOARD MEMBER TRISTANO: Yes. I have a question for Mr. Mosher. It relates to what Dr. Skrukrud has just talked about, and that is on the hearing that we had on the 29th of January, you answered specifically that you would present your implementation rule, your drafted implementation rule at today's hearing. You went on at great length at pages 41, 42, 43, and 44 of the transcript as to how that was -- and 45 -- how that was important for the Board in its deliberations. My question is what has changed?

MR. MOSHER: Well, what has changed is that our management has told us that that implementation package is not ready yet to share.

BOARD MEMBER TRISTANO: Well, I can go through your testimony in depth about how you suggested that it was critical for us to look at that implementation before we could make our decision. Who in management should I address the question to, then? I assume this was sworn testimony.

MR. SOFAT: Yes.

BOARD MEMBER TRISTANO: Okay.

MR. SOFAT: At that time Mr. Mosher made the comments we believed that we would have the document ready for the Board to look at. Currently we have -- we are short of staff in the Bureau of Water. And before the deadline arrived we talked to our supervisors and we wanted them to look at it. And they looked at it, and that's when it was determined that this draft needs internal review. This cannot go out unless we have an internal review. So we misstated, however, we were very optimistic.

BOARD MEMBER TRISTANO: Well, no, I am not worried just about the date. You know, I have missed many dates in my life, unfortunately, on projects. But that is not the issue. The issue is -- well, I will take you to page 42 of his testimony. On page 42 he says that it is important, for the Agency really needs some instructions from the Board on implementation. So it is more than a date. It is a philosophy that there is some interaction between what we are suggesting today that you are

asking us to review and the actual implementation.

I could take you to the bottom of page 43 of the transcript. I could take you to page 45 of the transcript, line 19 and 20. It is pretty replete in some of the answers. And I am just wondering why -- what is the change in philosophy? I understand missing a date. I understand that. We are all under pressure, and there has been a reduction in government. But I am

wondering about the change of philosophy.

Is it now the position of the Agency that they don't need the guidance from the Board, and there is not an interaction?

MR. MOSHER: Well, I would like to look at the transcript. I don't recall the part that we need guidance from the Board. I thought that we were going to be supplying -- the other way around, that the Agency would be supplying the guidance to the Board.

BOARD MEMBER TRISTANO: Well, I will read it to you. "Okay. The Board's rules as they now exist and then with the changes that we propose have several aspects that the Agency really needs and some instruction."

MR. MOSHER: Really needs -- pardon?

BOARD MEMBER TRISTANO: Yeah, well, it is your language, not mine. "Really needs and some instruction." "And I think people looking at what the Agency would like to do need to know what the procedures the Agency will have, to be put in place."

MR. MOSHER: Well, when we come up with this Agency rules document, it will undergo a public process and we will get input. I am sure Mr. Ettinger already knows what some of his input is going to be, and others will have input. And that's going to be probably a longer process than the ones -- the one we are involved in now.

While our management at the Agency has said that this is not ready, we are here and available today to answer questions on implementation. Like a written document that if we were to hand you one today, these answers will be, from our understanding right now, without Mr. Ettinger's input, without any other input. Because no one -- no one has seen this document. So in one form or another we will do the best we can today and answer questions. But those answers might not hold. If people suggest changes, you know, it will be a different situation. And that's part of our whole issue here of when to give the document, when it is going to be ready, is that it is a moving target.

BOARD MEMBER TRISTANO: Sure. Okay. Thank you for the answer.

HEARING OFFICER TIPSORD: Okay. Anything further for Dr. Skrukrud at this time? Mr. Polls.

MR. POLLS: I have some follow-up questions.

HEARING OFFICER TIPSORD: Could you speak up? We are having a hard -- there is some noise up here.

MR. POLLS: Under item number four in your testimony, you said there was evidence of low DO levels. How do you define low DO?

MS. SKRUKRUD: A violation of the standard.

MR. POLLS: Then what you mean rather than low is you mean a violation, correct?

MS. SKRUKRUD: Yes.

MR. POLLS: Now, you also refer in your --

THE COURT REPORTER: Excuse me. I didn't hear. I am sorry.

HEARING OFFICER TIPSORD: Mr. Polls, you are going to have to come up front because we can't hear you.

MR. POLLS: Do you have any information, references, that specifically tell you that there are Illinois streams with low DOs that it is accumulating? Is this your opinion, or is there information that you have in the literature? Do you have references?

MS. SKRUKRUD: Well, I gave the example of this new study on the Fox River.

MR. POLLS: I am asking do you have any other examples other than the specific example on the Fox, because you said in Illinois streams.

MS. SKRUKRUD: I have not pulled that together, no.

MR. POLLS: So when you say that there is evidence of low DO

levels in Illinois streams accumulating, you have no information specifically that says that? That is your opinion? Because what I am asking for is do you have any information that tells you that? Or is that your opinion that it is accumulating? Have you looked at the Illinois 305(b) reports or the 303(d) list?

MS. SKRUKRUD: Yes, I have looked at those reports. There are -- and I have to -- the most -- the Fox River system is one of the systems that I am most familiar with. The Fox River is listed in the 305(b) report for problems with DO levels. But, no, I have not gone through the whole 305(b) report and tallied the number of water bodies that are listed.

MR. POLLS: Could you provide the Board with additional information as far as what other water bodies that have --

MS. SKRUKRUD: I would be happy to do that.

MR. POLLS: Under item number four, near the end it says, USEPA -- or in your testimony you said that the USEPA requires that a lower CBOD limit be used when substituting for BOD in the one instance where it allows for such substitution. Do you have a reference on that?

MS. SKRUKRUD: No, but I can -- not with me, but I can get it.

MR. POLLS: Is that in a federal regulation? Is it a rulemaking?

MS. SKRUKRUD: Yes, it is a federal regulation.

MR. POLLS: Okay. So you can provide that. Okay. Finally, in there in the second to the last sentence you said, however, we strongly urge you to first consider the contribution of which nitrogenous BOD makes to the total BOD load in a typical effluent, as it appears that it can be more than 15 percent of

the total -- can well be more.

Where did you get the 15 percent? Is that a reference? Where did you get that number?

MS. SKRUKRUD: That would be the 15 percent -- what we are -- when we talk about here the possibility of -- when we make the suggestion that if you are going to substitute CBOD5 for BOD5 that it should be a lower value, that value, 25 compared to 30, 8 compared to 10, and 16 compared to 20, is 15 percent less.

MR. POLLS: Okay.

MS. SKRUKRUD: That's where that number comes from.

MR. POLLS: Okay. Thank you.

HEARING OFFICER TIPSORD: Mr. Callahan?

MR. CALLAHAN: Yes. Cynthia, do you have any idea of the stoichiometric relationship between ammonia and oxygen demand?

MS. SKRUKRUD: Yes, I do.

MR. CALLAHAN: What is that?

MS. SKRUKRUD: 4.6.

MR. CALLAHAN: Right. So Let's presume that we have Beardstown, which is discharging to the Illinois River, you said?

MS. SKRUKRUD: Yes.

MR. CALLAHAN: Do we know the dilution capability of the Illinois River with regard to the discharge coming from Beardstown?

MS. SKRUKRUD: I don't think I have that in materials in front of me.

MR. CALLAHAN: You indicated that the limit in their permit was 3, I believe I heard you say, milligrams per liter of ammonia?

MS. SKRUKRUD: No, that was when I was talking about the GE Plastics permit. There is no ammonia limit in the Beardstown.

MR. CALLAHAN: What is their BOD limit?

MS. SKRUKRUD: They have a CBOD5 limit of 20 milligrams per liter, a monthly average, and a weekly average of 40.

MR. CALLAHAN: Okay. Well, that would require by our state regulations significant dilution capability of that effluent, right? Is that your understanding?

MS. SKRUKRUD: They would have to have a dilution ratio of greater than 5 to 1.

MR. CALLAHAN: Right.

MS. SKRUKRUD: Otherwise, they would have to have a 10 to 12 limit.

MR. CALLAHAN: Right. Exactly. Okay. How much of the -- am I to -- what is your understanding of the rate at which

nitrogenous oxygen demand is determined in a five day BOD test?

MS. SKRUKRUD: Well, it really -- it could depend -- it depends on whether there is nitrifying bacteria present, whether you are likely to see -- whether your BOD test is likely to

measure a nitrogenous BOD.

MR. CALLAHAN: Okay. But you --

MS. SKRUKRUD: You need the nitrifying bacteria in your test --

MR. CALLAHAN: Right.

MS. SKRUKRUD: -- to be able to measure that.

MR. CALLAHAN: Precisely, right. My point, though, is that if we are going to look at going from a five day total BOD effluent limit to a five day carbonaceous BOD effluent limit, have we suddenly ignored all of the nitrogenous oxygen demand in the sample?

MS. SKRUKRUD: My understanding is when you want to measure a -- when you do a CBOD5 test, that you add something to inhibit the nitrifying bacteria, so that you actually are measuring only the --

MR. CALLAHAN: No, no, I mean --

MS. SKRUKRUD: -- CBOD.

MR. CALLAHAN: If we go from a five day BOD test to a carbonaceous BOD test, your contention is that we are suddenly ignoring the nitrogenous oxygen demand of the water that we are

testing?

MS. SKRUKRUD: Yes, you could be. Yes.

MR. CALLAHAN: Are we ignoring all of it?

MS. SKRUKRUD: No, you are not necessarily ignoring all of it. It is a complicated --

MR. CALLAHAN: Actually, we --

MS. SKRUKRUD: It is a complicated --

MR. CALLAHAN: We really ignore very little of it, don't we, when we think about it? Isn't an ultimate oxygen demand test one that goes for 60 to 90 days the procedure by which we would determine both all of the nitrogenous oxygen demand and all of the carbonaceous oxygen demand?

MS. SKRUKRUD: Yes.

MR. CALLAHAN: So if we have to go from five days out to 90 days to measure the total nitrogenous oxygen demand through the ultimate oxygen demand test, then just how much of it are we really missing by going from a total BOD5 to a carbonaceous BOD5? Correct me if I am wrong. It is my understanding that that portion of the nitrogenous oxygen demand is very, very small compared to the total nitrogenous oxygen demand that we would have to sample?

MS. SKRUKRUD: In a BOD --

MR. ETTINGER: Are you testifying?

MS. SKRUKRUD: In a BOD5 test, is that what you are saying?

MR. CALLAHAN: Yes.

MS. SKRUKRUD: Well, my understanding is even more complicated, because it can vary -- what the -- the amount of

nitrogenous BOD that you measure in a five day test can vary -- it varies very much on the presence of nitrifying bacteria.

MR. CALLAHAN: Right.

MS. SKRUKRUD: So if you have a plant that is nitrifying, you may well see a greater percentage of that, of the total nitrogenous BOD present itself in the five day test.

MR. CALLAHAN: What of the nutrient salts that we have to add as a source of micronutrients for the organisms that we employ in BOD bioacid? Is ammonium sulfate? In other words, we are adding ammonium sulfate to the test.

HEARING OFFICER TIPSORD: Mr. Callahan, could we go ahead and have you sworn now.

(Whereupon Michael Callahan was sworn by the Notary Public.)

HEARING OFFICER TIPSORD: Thank you.

MR. CALLAHAN: Okay. We are adding ammonium.

MS. SKRUKRUD: Well, obviously, if you add ammonium you need to take that into account.

MR. CALLAHAN: Or we need to assume that maybe the test really was not set up to measure that in the first place, right?

MS. SKRUKRUD: Exactly, and so maybe --

MR. CALLAHAN: Okay. One of --

HEARING OFFICER TIPSORD: Let her finish, Mr. Callahan. Please let her finish her answer.

MR. CALLAHAN: Okay. I am sorry.

MS. SKRUKRUD: Possibly a better way to get a handle on the BOD in effluent would be a test that -- a CBOD5 test that measures the carbonaceous BOD demand and then a calculated nitrogenous BOD that you calculate based on the ammonia in your effluent.

MR. CALLAHAN: Right. So then if we were going to measure secondary or tertiary treatment processes, as required by federal law, then we would be measuring them by the CBOD parameter and we would be looking at nitrogenous oxygen demand through a different venue?

MS. SKRUKRUD: You could do that.

MR. CALLAHAN: Okay. Most of our permits that are issued across the state by the Agency today have permit numbers somewhere in the vicinity of 1 to 2 as a monthly average in the summer. Would you agree?

MR. ETTINGER: Excuse me, 1 to 2 what?

MR. CALLAHAN: Milligrams per liter, ammonia, give or take.

MS. SKRUKRUD: I couldn't say because I have not reviewed all of the permits. I see a lot of permits with a summer monthly average in that range, but then I have seen permits where there are no ammonia levels.

MR. CALLAHAN: Okay. Let's assume where they exist they are important and let's assume that it is 2. Okay. And 4.6, that

means a BOD of 9.2, right? A straight --

MS. SKRUKRUD: Yes.

MR. CALLAHAN: So we are not talking about tons of nitrogenous BOD that is being released in the effluent, are we?

MS. SKRUKRUD: Well, if you have a plant on a small stream where, say, you have an ammonia limit of 2 milligrams per liter, and that is exerting a -- giving you an end BOD of 9.2 milligrams per liter, and say you have a permit that has a -- it is small stream so you don't have much dilution so your CBOD5 limit is 10, then your nitrogenous BOD is as much as your CBOD.

MR. CALLAHAN: I will get into this somewhat in my testimony. But I think, once again, we get back to the Streeter-Phelps equation which has an oxygen demand parameter in it that is completely different from the nitrogenous oxygen demand. And the principal application of those two considerations is the decay coefficiency parameters that are markedly different. And there is a tremendous longitudinal distribution of the oxygen demand that is exerted by both species.

But the fact of the matter remains that we are still talking about somewhere in the vicinity of 5 to 10 milligrams per liter BOD with an ammonia permit of 1 to 2 milligrams per liter,

something like that. It is not a 200 or a 300 milligram per

liter oxygen demand.

HEARING OFFICER TIPSORD: Mr. Keller?

MR. KELLER: I would like to make a couple of comments in answer to Mr. Callahan's questions. One is concerning the dilution ratio. If you look at Exhibit A of Ms. Skrukrud's prefiled testimony, it gives the seven day ten year low flow of the Illinois River as 3,634 CFS. That equates to 2,347 MGB. And the design average flow of 4. The Beardstown plant is 1.13 million gallons per day, so that would provide a dilution ratio of 2,077 to 1.

I would like to also respond to another question that he had concerning the number of permits that have ammonia limits in them. There are very many permits that have ammonia limits in them because of the low dilution ratio and taking the ammonia into account.

HEARING OFFICER TIPSORD: Okay. Thank you.

MS. SKRUKRUD: In presenting the Beardstown permit, our intention there was to just present an example of a permit where there is no ammonia limit.

HEARING OFFICER TIPSORD: Mr. Harsch?

MR. HARSCH: Cindy, are you not part of a study group of environmental groups and POTWs that are involved in looking at the Fox River, and one of the parameters that you are looking at

is the potential impact that dischargers are having on the Fox

River, the potential impact that those dischargers are having on the Fox River, including dissolved oxygen at the present time?

MS. SKRUKRUD: Yes, the Fox River study that we are currently getting underway is designed not just to look at the impact of point sources but nonpoint sources on what is happening at the Fox River.

MR. HARSCH: And you were also aware, are you not, that the Fox River has a very important recreational value for sport fishery, and is recognized as having a very high quality present reputation for its sport fishery in terms of the small mouth bass at the present time, despite the draft study reporting lower DO values; is that correct?

MS. SKRUKRUD: I will really try and get this study -- make this study available to the --

MR. HARSCH: There are a number of guides -- there are a number of guides that are doing guide services at the present time out there at the Fox River?

MS. SKRUKRUD: Pardon?

MR. HARSCH: There are a number of fishing guides, a number of commercial guide services --

M S. SKRUKRUD: Yes, I was --

MR. HARSCH: -- at the Fox River right now? There is a lot of recreational value right now?

MS. SKRUKRUD: Yeah, well, that is.

MR. HARSCH: Is that --

MS. SKRUKRUD: Okay. What I was going to say, what I wanted to say about the study that the Max McGraw Wildlife Foundation has done is that it does show that in addition to measuring dissolved oxygen levels, there is information available on fish populations at various points along the river. And the study shows that where there is low DO levels there is a depleted population of fish, and in the parts of the river where you have higher water quality that we do have very good fisheries on the Fox River.

HEARING OFFICER TIPSORD: Anything further?

MR. POLLS: Yes.

HEARING OFFICER TIPSORD: Mr. Polls.

MR. POLLS: I have a follow-up. On the Beardstown permit, you say in your testimony, for example, a draft permit for the Beardstown Sanitary District has no ammonia level despite the known dissolved oxygen problems in the Illinois River.

Have you looked at the 305(b) list specifically? Does it say in that 305(b) list that there is a dissolved oxygen problem in the Illinois River, or is that your belief?

MS. SKRUKRUD: I will need to go back and look specifically at the 305(b) list. There have been reports of dissolved oxygen -- low dissolved oxygen levels in the Illinois River in

the past. Whether that -- that is a subject under much discussion.

MR. POLLS: Well, that is the past. Because why I am asking you the question is because here you are basically saying because there is no ammonia limit, I guess you are suggesting that that ammonia limit through the NOD is causing a problem as far as DO.

I want you to go back specifically and find out is there a current problem in DO. I don't want to know about the past. I want to know currently based on the permit is there a problem regarding dissolved oxygen in that segment, the segment below their discharge.

All you have to do is go back to the 305(b) list and find out if that segment below their discharge is limited for DO.

MS. SKRUKRUD: I can certainly check into that. Once again, the point was to give an example, not specific -- to talk about a specific statement on the Illinois River, but to give an example of a permit where there are no ammonia limits.

MR. POLLS: All I am getting at is you make statements in here that I want backed up by actual information, unless you are claiming that there is a DO problem, as a scientist, I want to know specifically was it identified by the IEPA as a problem.

It is my understanding there is no DO problem in the Illinois River. It is not on the 305 --

HEARING OFFICER TIPSORD: Mr. Polls, we are going to have to

have you sworn.

(Whereupon Mr. Irwin Polls was sworn by the Notary Public.)

HEARING OFFICER TIPSORD: Thank you.

MR. POLLS: Let me ask the Agency. Do you know, is the Illinois River on the 305(b) list for dissolved oxygen?

MR. MOSHER: Do you mean the 303(d) list?

MR. POLLS: Well, the assessment was made on 305. On the 305(b) was DO found as a problem in the Illinois River and then translated on the 303(d) list? I don't care which one you look at.

MR. MOSHER: Well, we just noted in the Beardstown example provided in the testimony here that particular segment is not listed as impaired. So it is a fully supporting water.

MR. POLLS: Okay.

MR. MOSHER: There are other segments on the Illinois River that I believe are listed on the 303(d), and it would be quite easy to verify whether dissolved oxygen is a cause of impairment in those segments if we had the report in front of us, which we don't. So we could come back to the Board and --

MS. SKRUKRUD: We can all go home and look it up on the 303(d) list.

MR. MOSHER: Okay.

HEARING OFFICER TIPSORD: Mr. Falkner.

MR. FALKNER: Just for a point of clarification and perhaps

the department staff can provide some insight. If I heard things correctly, the facilities that do not have an ammonia limit are typically those where there is significant dilution and where their probability of impact to the stream is negligible?

MR. MOSHER: That's true.

MR. FALKNER: So that, yeah, there are permits, and if I have heard right, and maybe I am carrying this too far, but there may well be a lot of permits out there that do not have an ammonia limit, however, they didn't have an ammonia limit because they represented a relatively insignificant impact on the stream and, therefore, wouldn't need it. Is that paraphrasing correctly?

MR. MOSHER: That's a true statement, yes.

HEARING OFFICER TIPSORD: Okay. Thank you. Is there anything further?

Okay. I think it looks like we are going to have to break for lunch and come back.

MR. ETTINGER: Who do we have other than Callahan?

MR. FALKNER: Me. I don't care. I can say mine in about a minute.

MR. MOSHER: Well, we still have our additional testimony.

MR. ETTINGER: All right.

HEARING OFFICER TIPSORD: I was going to say, the Agency has indicated that they have additional testimony to give this

afternoon, too.

So let's be back at 2:00, please. Let's start promptly at 2:00. We have people who need to drive back north today. Thank you.

(Whereupon a lunch recess was taken from approximately 1:00 p.m. to 2:00 p.m.)

A F T E R N O O N S E S S I O N

(March 6, 2002; 2:00 p.m.)

(Board Member Flemal not present for the afternoon session after the lunch recess.)

HEARING OFFICER TIPSORD: Thank you, everyone, for being back so promptly. That is probably the fastest I have seen everybody back. Thank you very much.

We are going to pick up with the testimony of Michael Callahan, on behalf of the Illinois Association of Wastewater Agencies. Mr. Harsch and Mr. Callahan.

MR. HARSCH: My name is Roy Harsch with Gardner, Carton & Douglas, here on behalf of the Illinois Association of Wastewater Agencies.

Mike Callahan is the Executive Director of the Bloomington-Normal Water Reclamation District, here on behalf of the Illinois Association of Wastewater Agencies. Mr. Callahan.

HEARING OFFICER TIPSORD: We need to have you -- I am sorry. We previously swore you in. I am sorry.

MR. CALLAHAN: Yes, you did. Okay. I will tell you a little bit about my background before I get into my prefiled testimony. Then after reading that, I would like to sort of ad-lib a discussion about a couple of other items that I have heard during this morning's session.

I have a Bachelor of Science Degree from Illinois State

University, with a double major in biology and environmental health. I have Master's work at the University of Missouri, Columbia, biological sciences, doctoral work at ISU, also in biological sciences, and both of those efforts involve ecosystem nutrient cycling.

I have been with the Bloomington & Normal Water Reclamation District for 30 years. For 14 of those years I have been the Executive Director. I have held an Illinois EPA Class I Wastewater Treatment Plant Operator's License since 1977.

I have been involved in a number of professional organizations within the state regionally, and that includes Past President of the Illinois Association of Wastewater Agencies, Past President of the Illinois Water Pollution Control Operators Association, Past Chairman, as well as Trustee, of the Central States Water Environmental Association, Illinois Section.

What I would like to do is get right into my written testimony, read that verbatim.

I am submitting this testimony to the Pollution Control Board in support of a component of the proposal made by the Illinois Environmental Protection Agency in PCB R02-11. Specifically, the IAWA endorses the Agency's recommendation to change the term designating the oxygen demand of wastewater effluents from the term five day biochemical oxygen demand to five day carbonaceous biochemical oxygen demand.

It is IAWA's observation that opposition to this change is based on the erroneous belief that the change will relax the existing effluent standard. The IAWA believes that the change is not a mechanism to relax existing effluent standards. Rather, the reason for the change in this term is the need to clarify the terminology of the present regulations. In support of its view, the purpose of this testimony is to provide the Board with a collective IAWA recollection of the history of this matter in Illinois.

IAWA believes that the effluent regulation of BOD5 in NPDES discharge permits issued by the Board's rules was historically intended to address five day carbonaceous biochemical oxygen demand. The effluent limit at issue was first considered by the Board in PCB R71-14. Please see the Opinion of the Board in PCB R71-14, as written by Mr. Currie on March 7th, 1972. The general intent of the R71-14 proceedings was to consolidate and codify the various water quality standards that the Board had inherited from its predecessor, the Sanitary Water Board. One of the standards considered in this docket was the effluent limit for BOD5. Prior to the R71-14 rulemaking, the effluent limit for BOD5 in Illinois had been developed by the Sanitary Water Board and was established as four milligrams per liter. The initial proposal of PCB R71-14 contained a recommendation of a water quality standard for BOD of seven milligrams per liter. Through

the rulemaking process the Board decided to delete such a standard. On page five of the Opinion of the Board the following statement was made relative to this water quality standard.

Quote, the evidence is that the effect of a given level of BOD on a stream is too dependent upon reaeration rates to make any prescribed standard meaningful, unquote.

Also during the R71-14 proceeding, Dr. John Pfeffer provided testimony that the four milligram per liter BOD limit was overly protective for most streams of Illinois. He stated in his testimony that the Streeter-Phelps stream reaeration equation, using reaeration rate constants typical of small Illinois streams with low dilution ratios, showed that a BOD effluent limit of ten milligrams per liter was protective of our present day dissolved oxygen water quality standards.

The Board concurred with Dr. Pfeffer's contention and adopted a BOD effluent limit of ten milligrams per liter contingent upon the downstream dissolved oxygen levels remaining adequate. This analysis by Dr. Pfeffer has since come to be known as the "Pfeffer Exemption" and was applied by the Agency to issue effluent BOD limits of ten milligrams per liter in Illinois.

The following text is taken from the discussion contained in the Opinion of the Board in R71-14 on page 15. Quote, as Dr. Pfeffer points out, the BOD5 test principally measures the

carbonaceous BOD and ignores the often delayed but eventual oxygen demand exerted by ammonia, to which we have directed our attention in the regulations adopted January 6, unquote.

This statement in the Opinion of the Board has historically been interpreted to imply that effluent regulation of BOD5 in NPDES discharge permits issued by the Board's rules was meant to address five day carbonaceous biochemical oxygen demand. Additional text taken from page 15 of the Opinion of the Board states:

Quote, inherent in Dr. Pfeffer's proposal, as several witnesses representing municipal dischargers expressly agreed, is that a considerable number of plants may be required to do something about ammonia in addition to those already subject to the January 6 effluent standards, unquote.

This statement by the Board was, at that time, quite farsighted, given the extent to which dischargers have subsequently been required to provide nitrification capability in their wastewater treatment processes. This is evidenced by the example used in the Opinion of the Board on page 15 to illustrate the extent of nitrogenous oxygen demand. This example involved an ammonia concentration of 20 milligrams per liter. The evolution of effluent ammonia regulation within Illinois has, since the R71-14 proceedings, established an absolute maximum discharge limit of 15 milligrams per liter with the vast majority

of NPDES permits containing limits of between less than one milligram per liter and four milligrams per liter.

Though it is clear that the Board originally intended to regulate biochemical oxygen demand in wastewater discharges as five day carbonaceous biochemical oxygen demand, after the adoption of the ten milligrams per liter CBOD5 effluent standard by the Board, the Agency remained obligated by USEPA to determine the efficiency of secondary treatment plant processes in terms of 85 percent BOD5 removal. Initially the BOD5 required by USEPA for this determination was total BOD5. Consequently, the Agency initially wrote NPDES permits for Illinois dischargers with total BOD5 effluent limits.

A problem shortly developed with the use of the total BOD5 test for determining secondary treatment process efficiencies. Wastewater treatment plants, which were under-loaded organically, were found to inadvertently develop some nitrification capabilities and the effluents of these plants were thus inoculated with nitrifying bacteria. These nitrifying bacteria would then exert a nitrogenous oxygen demand in vitro when subjected to the BOD5 analysis. A portion of the sample's -- a portion of the sample's nitrogenous oxygen demand was, therefore, being detected simultaneously with the carbonaceous biochemical oxygen demand, resulting in an erroneously high analytical result.

The converse of this situation also occurred. Secondary treatment systems that provided no nitrification capability would not inoculate their effluents with nitrifying bacteria, and thus the nitrogenous oxygen demand of these samples would not be detected. Consequently, such effluents could be determined by the total BOD5 test to be of comparable or better quality than the under-loaded treatment plants which, in reality, were producing higher carbonaceous oxygen demand removal efficiencies and better overall treatment. A detailed discussion of this phenomenon is given in the following two articles enclosed with this submittal:

Attachment A, Nitrification in BOD5 Test Increases POTW Noncompliance, J.C. Hall and R.I. Foxen, Journal of the Water Pollution Control Federation, Volume 55, Number 12, pages 1461 through 1469, December, 1983.

Attachment B, 30/30 Hindsight, K.B. Carter, Journal of the Water Pollution Control Federation, Volume 56, Number 4, pages 301 through 305, April, 1984.

This inconsistency was realized by USEPA in 1984. USEPA subsequently determined that the use of carbonaceous BOD5 was a better measurement of secondary treatment removal efficiencies than was total BOD5, and thus authorized the use of CBOD5 as the parameter for such determinations. At that time the Agency began

defined in terms of CBOD5 believing that such was the original intent of the Board.

Another source of information on this matter can be found in the recognized source of analytical protocol used by our industry, Standard Methods for the Examination of Water and Wastewater, commonly referred to as Standard Methods.

Attachment C, with this testimony, is a copy of the introduction to the section on biochemical oxygen demand from Standard Methods, 20th Edition. Standard Methods clearly states that, quote, nitrogenous demand historically has been considered an interference in the determination of BOD, as clearly evidenced by the inclusion of ammonia in the dilution water, unquote.

Further, Standard Methods indicates that only ultimate oxygen demand will measure both the carbonaceous oxygen demand and the nitrogenous oxygen demand. The ultimate biochemical oxygen demand test exists as only a proposed analytical procedure at this time in Standard Methods, 20th Edition. An incubation period of 60 to 90 days is required for this test. This is obviously not the type of oxygen demand determination that was considered with the initial application of the BOD5 effluent regulation.

The IAWA believes that the present action before the Board regarding BOD is an attempt to more clearly define the wording

issuing NPDES permits in Illinois with effluent BOD limits

and terminology of this existing regulation, in accordance with

the Board's historical intent, and not an attempt to affect a quantitative change in allowable discharges of biochemical oxygen demand. The accuracy of the BOD5 test has always been a problem because of the variable contribution of the nitrogenous BOD5 to the point that the BOD5 test is of limited value. From a performance measure, compliance measure, and from an historical regulatory perspective, CBOD5 is the appropriate test for wastewater discharges.

IAWA appreciates this opportunity to provide testimony and input to this current proceeding. The IAWA has a history before the Board of contributing to the development of protective and economically justifiable water quality and effluent standards. The IAWA wishes to continue with such assistance and will remain at the Board's disposal for further assistance in this matter.

That would conclude my written testimony. I would like to elaborate, as I earlier indicated, just a few points that I have noticed of interest that came up this morning. First of all, I think that the issue that is before us with both antagonists and supporters of this change is more appropriately viewed from three different perspectives.

First, we are looking at a USEPA required monitoring of our secondary treatment efficiencies, which has been determined to be

done with biochemical oxygen demand removal. The most accurate and meaningful way to do that is with CBOD, and that is the

origin of the effluent limits that we currently find -- with which we have to deal with.

Ammonia has been discussed this morning as a toxicant, and the regulations that control it within our state have also been seen to be either adequate or inadequate to control its oxygen demand. I think we need to look at ammonia as a toxin and not look at ammonia as an oxygen demanding parameter. Unless we move into another realm of monitoring, which I believe the Agency and the state will shortly find itself, and that is with nutrients. Now, you heard a little bit of discussion this morning about diurnal oxygen variations, the ability of an overly enriched water body to effectively deplete itself of oxygen. Ammonia as a form of nitrogen is a contributor to this.

In keeping with that, the Board would not be expected, I don't think necessarily, to be aware of this. But there has been some discussion about the adequacy of our BOD standard in this state. Perhaps, indeed, it is too high in some circumstances. This is an issue that will all be worked out, I think, within the next three or four years and undoubtedly it will be before the Board for some action shortly beyond that. I think that is the appropriate venue to look at oxygen demand in terms of a nutrient parameter such as ammonia.

Secondly, I would like to move on to the stoichiometric discussion that I had with Cindy here earlier today. We are

looking at a 4.5 ratio of oxygen demand per milligram per liter of ammonia. Our permit effluence in this state are currently, as I say, somewhere between 1 and 4, depending on the nature of the receiving stream and the time of year. We are not talking about horrendous amounts of oxygen demand that are being released in the form of ammonia.

That would lead into my third point that I would like to talk about, which is the Streeter-Phelps equation that was also mentioned this morning. That has historically used carbonaceous BOD as the oxygen demand component, and it has also had a variable coefficient that accompanies ammonia and the consideration of stream reaeration capabilities.

So that has, indeed, separated the two entities right there. And, again, this is in response to different decay rates, based upon carbonaceous organic source of oxygen demand as opposed to one of a nitrogenous source.

I had occasion to speak with Dr. Pfeffer last week and basically asked him if what I was presenting to you here this morning was his recollection and his intent of what he had advocated some 30 years ago, and he concurred that, indeed, it is.

I would also like to draw the Board's attention to something that we have noticed. If you go back and review your web site since 1995, you will find reference to 17 provisional

variances which have been granted to various dischargers across the state, referencing directly Sections 304.120 and 304.141, and all of these provisional variances address carbonaceous BOD.

So I basically think that what we are looking at here is an attempt by IEPA to effectively house clean our regulation, to put it on paper specifically what it is that we have already been doing for 20 years, and effectively there will be no relief beyond what we have -- beyond the levels that we have been treating for the last 20 years.

So that would conclude my testimony.

HEARING OFFICER TIPSORD: Before we go to questions, some housekeeping. You have three attachments to your testimony, Attachment A, Attachment B, and Attachment C.

If there is no objection, I will be entering attachment A as Exhibit 14, and Attachment B as Exhibit 15, and Attachment C as Exhibit 16.

Are there any objections? Okay. Seeing none, those will be admitted.

(Whereupon said documents were duly marked for purposes of identification as Hearing Exhibits 14, 15 and 16 and entered into evidence as of this date.)

HEARING OFFICER TIPSORD: Then I will open the floor for questions.

MR. ETTINGER: First of all, if you don't mind, can I stand

over here next to the court reporter. It would be a little awkward with me talking to Mr. Callahan's back of his head the whole time.

HEARING OFFICER TIPSORD: Sure.

MR. ETTINGER: First of all, I want to say I think we disagree a lot more than -- I am sorry -- disagree a lot less than has been implied by some of the questioning here.

But going through first your testimony, as I understand the way Dr. Phillips did the Streeter --

MR. CALLAHAN: Pfeffer.

MR. ETTINGER: I am sorry. The way Pfeffer did the Streeter-Phillips equation.

MR. HARSCH: Phelps.

MR. ETTINGER: Phelps. You are going to make me sound much better than I am, right?

Okay. They had a CBOD -- a CBOD equation and an ammonia calculation in this. Do you know -- or have you seen this study? And do you know whether, when he calculated that, the ten BOD was -- when he calculated that, that the ten BOD was protective when there was a 5 to 1 dilution? What amount of ammonia did he

assume would be discharged?

MR. CALLAHAN: I don't know that he assumed anything there unilaterally or, rather, universally, Albert. The whole thing addresses -- I think it is the statement that was referenced

here, the site-specific capabilities of the streams to reaerate themselves. I think we look at -- my understanding of it, and I am not going to speak for Dr. Pfeffer, because he is not here. He agreed --

MR. ETTINGER: You already have.

MR. CALLAHAN: -- to what I would say here in general. But I don't know exactly what he did or not. But there is a significantly different differential decay rate for ammonia as compared to organic material. This was something that I think has been very strongly recognized over the years. That's the reason for the inclusion of both parameters in the calculation.

What that means is that that oxygen demand for ammonia if, indeed, it is met, is going to be expressed further down stream. And in all likelihood, after the oxygen demand for the organic material has been fulfilled. That's why it exists as a different parameter.

MR. ETTINGER: Okay.

MR. CALLAHAN: The extent to which he plugged four parts per million, or two and a half parts per million, or 20 parts per million in the ammonia slot, I think is really not relevant,

because it is going to depend basically upon the individual stream, which is being analyzed. The considerations in that are sediment composition, radiant, time of year, temperature affecting oxygen solubility. There are a variety of factors that

go into that.

MR. ETTINGER: Since you are such a pal of Pfeffer's, could you get us a copy of that study that was presented to the Board in 1972?

MR. CALLAHAN: We have --

MR. HARSCH: You can go to the record and dig it up.

MR. ETTINGER: Perhaps.

HEARING OFFICER TIPSORD: I think perhaps that if you have one available that would be appropriate for you to submit it.

MR. HARSCH: We have -- excuse me. It is -- do you have a copy of it?

MR. CALLAHAN: I have a copy of the Streeter-Phelps equation and the way in which it is applicated. I don't know that I necessarily have a copy of his complete study that he presented to the Board. It would be part of the Board's docket.

HEARING OFFICER TIPSORD: I understand that, but the Board's docket now is on microfiche, which would make it very difficult to pull out and copy a readable copy. So if we could get a copy from someone who does have a hard copy, that would be very much

helpful here.

MR. ETTINGER: Okay. On page -- the second page of your testimony, you say, after you discuss the Streeter-Phelps stream reaeration equation, you say the Board concurred with Dr. Pfeffer's contention and adopted a BOD effluent limit of ten

milligrams per liter, contingent upon the downstream dissolved oxygen level remaining adequate.

How is it you are understanding that the Board provided for this contingency of the downstream dissolved oxygen level remaining --

MR. CALLAHAN: That is what Dr. Pfeffer recommended.

MR. ETTINGER: Does it --

MR. CALLAHAN: The Board basically took Dr. Pfeffer at his recommendation there. He indicated that unless there was some extraordinary circumstances that would result in oxygen depletion below the plant or below any point source outfall, that that equation would be applicable. And that based upon that, that BOD -- that a carbonaceous BOD of ten would be warranted. So that's where the qualification comes in there about -- I think we heard some of the things this morning that can lead to that, sediment composition, or whatever else, those are things that are far beyond the capability of --

MR. ETTINGER: I am sorry. I guess my question is you are not suggesting, then, that there is any portion of the existing

rule that makes this limit contingent on the downstream dissolved oxygen level remaining adequate?

MR. CALLAHAN: Not the current rule, because it was my understanding that there was a matter before the Board in the late 1970s or the early 1980s where this was completely adopted

as state-wide zero low flow stream limits of 10 and 12, and that was based upon the successful application of the Streeter-Phelps equation from the 1971 proceeding.

MR. ETTINGER: Okay.

MR. CALLAHAN: In other words, it was a little bit of what Bob was talking about this morning in terms of we don't have a model. We have ten years of real world to work with, and it seems to be appropriate.

MR. ETTINGER: So what is your understanding of how the State assures that there will be DO compliance?

MR. CALLAHAN: Of how the State assures --

MR. ETTINGER: How the State assures that there will be dissolved oxygen compliance?

MR. HARSCH: Can I answer that question?

MR. ETTINGER: Sure.

MR. HARSCH: The Board's rules were amended and took out the Pfeffer exemption provision. There was the 4-5 exempt -- the 4-5 standard, you could apply the Pfeffer exemption, do the showing

using the Streeter-Phelps, and qualify then for the 10-12 rule by going through doing the numerical calculation using the formula, show that the DO values would be protected, and qualify for the then 10-12 standard by going through the numerical calculations. I think Bob presented that this morning, the calculation.

Subsequently, the rules were amended in the late 1970s and

the 4-5 rule was changed, which Mike just testified to, and we changed the rules and replaced it with the 10-12.

Is that your --

MR. CALLAHAN: Yes, right.

MR. HARSCH: -- understanding, Bob?

MR. MOSHER: Yes.

(Board Member Tristano entered the hearing room.)

MR. ETTINGER: Is it the IAWA's position that the oxygenating affects of ammonia should be ignored in permit writing?

MR. CALLAHAN: Well, Albert, I just said no. I said they need to be considered, but this is not the venue in which they need to be considered. This bothers me a little bit. Because what we are doing is taking an industry that has required investments of billions of dollars by the citizens of our State, and suddenly we are trying to modify the way which we control and direct this industry by something that was never intended to do that.

MR. ETTINGER: Well --

MR. CALLAHAN: BOD has always been carbonaceous oxygen demand as released into our waters. That is the way we have always interpreted it.

MR. ETTINGER: Well, always interpreted it after 1986. If you want to remit your --

MR. CALLAHAN: I am sorry. I thought I was answering your question.

MR. ETTINGER: No, you weren't. But let's just -- getting back to this history, the permits did say BOD from 1972 to 1986; did they not?

MR. CALLAHAN: Yes, they did.

MR. ETTINGER: And the rule says BOD, not CBOD, does it not?

MR. CALLAHAN: That's correct.

MR. ETTINGER: Okay. Thank you. Looking at the Board's opinion, it also talks about that a 10-12 standard is economically reasonable. Is that your position?

MR. CALLAHAN: I believe that -- it is readily attainable. I think the industry has a very high compliance rate with that on zero low flow streams across the State right now and it seems to be done with moderately appropriate user fees and citizen tax rates.

MR. ETTINGER: Okay. Is it your understanding that this

proposal is limited to permits in which there is an ammonia limit?

MR. CALLAHAN: No.

MR. ETTINGER: Is it your understanding that this proposal is limited to permits in which there is an ammonia limit of four or less?

MR. CALLAHAN: No.

MR. ETTINGER: Given that the vast number of permits, in your view, are limited with an ammonia limit of four or less, would you have any problem with writing this standard so that it only applied to permits which had an ammonia limit of four or less?

MR. CALLAHAN: I am not -- I don't understand your question. Please repeat that.

MR. ETTINGER: Well, as I understand, your position is that we don't really need to worry about ammonia in those cases as a deoxygenating waste, because it is normally treated for toxicity reasons such that you have a limit for ammonia of 1 to 4; is that correct?

MR. CALLAHAN: Not exactly. What I am saying is that the problem that results from ammonia right now is very, very small. That its contribution to an ultimate oxygen demand is very, very small. I subsequently said, with my ad-lib remarks at the end of my testimony, that I think we need to take a look at ammonia.

But I think we need to do it in the venue of an appropriate dissolved oxygen standard. We need to do it with consideration of its nitrogen nutrient input. And we need to do it in conjunction with phosphorus.

We are talking about a different realm of regulation here than was originally intended in terms of measuring secondary and tertiary treatment processes. I am not saying that we ignore

ammonia at all. But what I am saying is that we stay with the original intent of this regulation, which was to demonstrate an adequate secondary treatment process by the facilities that we have in the State.

MR. ETTINGER: Well, we will all read the opinion ourselves and decide what the original intent of the rule was.

So my question, though, is does the IAWA think that NBOD should be ignored in shaping effluent limits designed to protect dissolved --

MR. CALLAHAN: I am sorry. I couldn't hear you.

MR. ETTINGER: Does the IAWA think that NBOD should be ignored in shaping effluent limits designed to protect DO standards?

MR. CALLAHAN: Well, I believe I just said that through the venue of an appropriate DO standard and in conjunction with the other diurnal oxygen demands that are placed upon a receiving

stream, yes, we should look at it that way. Not in terms of what the original intent was, which was a measurement of secondary treatment. You are asking me the same question, I think, that you just asked me.

MR. ETTINGER: Okay. You are a student of this 1972 opinion. They, in fact, note in that opinion, don't they, that the discharge of ammonia is causing dissolved oxygen problems at that time, in 1972, in the Illinois River, right?

MR. CALLAHAN: At that time I believe it probably was. We didn't have anywhere near the sophistication we have placed across the State right now. I don't know that you compare apples and apples in that analogy.

MR. ETTINGER: Okay. Just one -- just a couple little things here. Have you looked at any other states that have regulations or worked to assure compliance with their dissolved oxygen standards?

MR. CALLAHAN: No, I have not, Albert.

MR. ETTINGER: Okay. I have no further questions, Mr. Callahan.

HEARING OFFICER TIPSORD: Okay. Are there any other questions for Mr. Callahan?

Okay. Thank you very much, Mr. Callahan.

MR. CALLAHAN: Thank you.

HEARING OFFICER TIPSORD: Okay. We have one more testifier,

Mr. Falkner.

Mr. Falkner, you have not been previously sworn today, have you?

MR. FALKNER: Yes, I was.

HEARING OFFICER TIPSORD: Okay. Thank you.

(Whereupon Mr. Falkner was previously sworn by the Notary Public.)

MR. FALKNER: I appreciate your patience and the opportunity

to speak. One thing I have to say, I have absolutely no history here in the State of Illinois. I have been in the business for over 25 years, however, I was working in Wisconsin. I do have an operator's license and I have a Master's in biology.

You already have a copy of the brief letter that was submitted to you. I really want to just highlight a few points that have come up and that I think are important for you to be aware of in understanding this challenge.

When it comes to carbonaceous BOD and nitrogen oxygen demand, all this is is a test, a test where you wind up having a sample of wastewater and it has bacteria present. And the bacteria are going to wind up using oxygen, depending on what waste or what materials are present in that bottle.

The thing that really has not been brought up is the fact that this nitrogen oxygen demand really only occurs if the

treatment facility was growing nitro virus. Most treatment facilities that are not required to remove nitrogen typically will not have nitro virus present. Even if they do, they won't have them present in significant numbers.

So as a result, when you run that test, the odds are just as good that you are not going to have any nitrogen oxygen demand as it will have a nitrogen oxygen demand. That's why they were talking about that as being an interference with the test. It is literally what was present for bacteria to run the test in the

first place.

The other thing is -- and I don't want to be showing my age. Back in the old days they used to say you could chlorinate out your BOD. And when they talk about chlorinating out your BOD, it never made sense to me, the way the biologists and chemists say things. Until I realized what they were talking about doing was they kill off the nitro virus in the final effluent, so that the bottom line is that you don't have nitro virus present in that sample bottle. It converts the ammonia to nitrate, and then made the BOD go away. What I am trying to -- the point I am trying to get at is truly the only real reliable performance measure is one that winds up taking the variability out.

As far as showing performance of a facility or, you know, this concern about the stream impacts, you are not measuring it

with this test. You have seasonal disinfection requirements. If you are effectively disinfecting your effluent to kill off the bacteria, the fecal coliforms, you killed off the nitro virus. If the person running the facility understands this test, he knows to go take bacteria from the very head part of the plant, nothing -- that does not have any nitro virus, and save the sample to make the test work. That person will come through with a low value.

Someone that does not understand that will wind up taking a

sample from another location and he is going to have a high value, but the plant was running the same. I think that is important for you to consider. I guess that is part of the reason why I was supporting the carbonaceous BOD limit. It is just a matter of do you have the bacteria present or not. It is not a true indication of what is going to happen in that stream.

The other thing is I heard a comment, and it really kind of bothered me, the idea that if you don't have a really tight limit a treatment plant is going to wind up dumping more waste into the stream. I defer to the IEPA staff, but I have got a feeling that you could wind up having a data review that will highlight the fact that typically treatment plants are way below standards.

In our treatment facility we have got a 20 milligram per liter carbonaceous BOD limit and suspended solids limit. Up

until about three years ago our plant had an effluent concentration of 5 to 6 milligrams per liter in both parameters. By refining our operation, we are actually taking it down, for carbonaceous BOD, to 3 or 4 milligrams per liter. So just because, you know, there is the debate over these numbers, it is more a debate. It is not a reality. The rest of this really holds true. So I will shut up and hopefully we will get out of here in a timely manner.

HEARING OFFICER TIPSORD: Thank you, Mr. Falkner. I will just note for the record that the comment Mr. Falkner is speaking

about has been entered in the docket as Public Comment Number 8.

Are there any questions for Mr. Falkner? Okay. Thank you very much.

At this time, then, we will proceed with the Agency's supplemental testimony.

MR. MOSHER: Okay. This testimony is in response to the prefiled testimony of Cynthia Skrukrud. I have indicated which of her topics I am going to be addressing by the Roman Numeral from her testimony.

So for Roman Numeral one, the cyanide standard should be protective of mussels and other sensitive species, we would like to add this information to the record.

The Agency agrees that mussels are an important feature of the native aquatic life community in Illinois and should be

protected by water quality standards, as should all other forms of aquatic life. To the best of our knowledge, no toxicity tests have been conducted on mussels using cyanide. Moreover, in the science of aquatic life toxicity testing, studies on mussels are not yet an established and reliable procedure.

Not only are data lacking on the affects of cyanide on mussels, there is no approved methodology for conducting toxicity tests on mussels. The USEPA has been experimenting with mussel toxicity testing, but has not finished these investigations. The USEPA does not require or endorse the use of mussel toxicity data

at this time, other than the one study mentioned previously today for nickel and zinc.

Even when such studies have been published, as USEPA continues to study the issue, they have not used mussel data in the derivation of a national water quality criteria for any substance, to my knowledge. Should toxicity testing for mussels become an approved and standardized process, the USEPA will incorporate mussel data into national criteria and states will be obliged to use mussel data in standards derivation.

When and if this occurs and if mussel data show that these organisms are generally more sensitive than the body of species already tested, states must update water quality standards to reflect this new information. Until then, we must use the

approved data for the species that have been correctly tested and conclude, as has been done repeatedly under the USEPA document entitled, Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Organisms and Their Uses, that we are protecting all species when criteria are derived using this procedure.

The IPCB rulemaking process has always been open to the concept that new data may dictate that standards must be revised. Of course, we are in that mode right now. Data on the cyanide toxicity to native cool water fish is not present in the known database. The previous explanation of how missing information

must be dealt with applies to this situation also. We probably should never expect that all species will be tested with all substances.

Cool water adapted species, such as the sculpins, are present in Illinois in very limited habitats, namely small streams fed by springs. These streams are not now thought to contain significant amounts of cyanide. Proposed new sources of cyanide to these streams must be evaluated under the antidegradation regulation. At such time the unique circumstances presented by these unusual habitats will be assessed, and it is very unlikely that new loadings of cyanide would be allowed.

In reference to Roman Number two, zinc and nickel standards

should protect mussels. We had an earlier discussion about that, but there is another facet in Ms. Skrukrud's testimony that I need to address, and that entails the affects of total metals on mussels that she mentions.

The mention of the affects of particulate metals on mussels illuminates yet another aspect of potential aquatic life toxicity affects that has yet to be documented with reliable information. The Agency's proposal recommends that metals water quality standards should be in the dissolved form because the USEPA and the general consensus of the scientific community has endorsed this approach.

Dissolved metals standards better describe the protection needs of aquatic life. If future research demonstrates that we must go back to regulating total metals to protect mussels, we will have to update the Board's standards yet again. Our obligation is to adopt standards that are shown to be necessary to protect aquatic life while being scientifically defendable.

In reference to Roman Numeral three, the use of the conversion factor and metals translators should be clear.

We would like to add this. The Agency believes that it has made the use of the conversion factors, as they are proposed in the General Use water quality standards, exceedingly clear. Each total metals standard has been assigned a USEPA derived

conversion factor. This has also been done for the new zinc and nickel standards. Multiplying the total metals value, which is currently the standard, by the conversion factor yields a dissolved metals standard.

We are proposing this exactly as USEPA has intended. The metals translator procedure is much more technical. When a dissolved metal water quality standard is to be used as a permit limit, it must be translated into the amount of total metal that has been shown to yield the protective amount of dissolved metal in streams or lakes. This is simply the reciprocal of the conversion factor unless site-specific data say otherwise. If dischargers desire to pursue the site-specific factor route, they

will follow the USEPA metals translator guidelines.

The Agency intends to adopt rules that would further guide our permitting responsibilities regarding the metals translator. In addition to a few short instructions consisting generally of sample frequency and location requirements, the Agency rule will defer to the USEPA guidance on this subject.

And that concludes my additional testimony.

HEARING OFFICER TIPSORD: Are there any questions?

MR. ETTINGER: I don't think so.

HEARING OFFICER TIPSORD: Okay. Thank you very much, Mr. Mosher.

Now at this time, Mr. Messina, did you want to --

MR. MESSINA: Yes, please. Thank you. My name is Alec Messina. I represent the Illinois Environmental Regulatory Group and the Illinois Chamber of Commerce. And we would like to request that the Board hold a third hearing in this matter.

Actually, we were contacted yesterday by two of our members who had some concerns with some of the calculations, and we have since asked all of our members to crunch the numbers with regard to these calculations. And we have been in contact with the Agency and they are committed to helping us assist our members in working through these calculations and making sure that we actually have a proper understanding of how they do, indeed, work.

We think that a third hearing would allow us time to work through these calculations and make sure we do, indeed, have a correct understanding of how this proposal will work, and, if necessary, will allow us to supplement the record with our position if that would, indeed, change.

HEARING OFFICER TIPSORD: Mr. Harsch?

MR. HARSCH: With all due respect, there are number of municipalities that are impacted by these rules, as you have heard from the Galesburg Sanitary District, that are impacted by these rules that are presently compliance issues. We would hope that this Board could move these rules quickly along towards

adoption.

We have had two exhaustive full days of hearing. All the issues appear to be resolved. And if there are questions concerning the calculations, that you could get with the Agency and resolve those questions of the calculations and answer those questions regarding the calculations and hopefully avoid any need for a third day of hearing.

MR. MESSINA: We would certainly like to be able to do that. But I would have to disagree, that all issues have not been resolved. I think we have heard from the various parties today that they will be presenting additional information, have additional information to present. We do have some outstanding issues that perhaps have not been resolved. That's why we have

requested the third hearing.

MR. ETTINGER: As it is so often the case --

HEARING OFFICER TIPSORD: Excuse me. I am sorry. Mr. Harsch had something else to say.

MR. HARSCH: If there is a need for a third -- if there is actually a need for that after you have had a chance to get back then you could ask for -- present that need, after you have had an opportunity then to discuss with the Agency. I am not -- obviously, I am not saying to forgo the absolute need for that hearing.

But after you have had a chance to go over the calculations

with your members and sit down with the Agency, possibly with the calculations, and go over the calculations with the Agency and then present that request to the Agency -- or to the Board -- for a third day of hearing.

But to schedule it now after we have seemed to have gotten through everything -- from what I have seen, it looks like we are actually through everything. I just don't see, at this point, any loose ends right now that would require an additional day of hearing.

Obviously, you may come up with something that would mandate and require a hearing. I don't mean to foreclose on behalf of IERG or the State Chamber if there truly is an issue. But hopefully you could resolve that with the Agency and that

there would not be the need for another hearing.

HEARING OFFICER TIPSORD: Mr. Ettinger.

MR. ETTINGER: Oh, come on. I mean, what we have got here is we have got a new set -- we have had a new proposal every time we hold a hearing. We just doubled the cyanide limits from the last proposal. We have just changed the BOD proposal again. They promised us at the last hearing that they were going to have these implementation rules. They announced this morning that they don't have the implementation rules. It is fairly obvious that we have not had time to consider the proposal because we are

shooting at a moving target and we never know what information we have got.

This has been a good discussion. I think we have brought out a lot of facts. We have learned what reports we need to find and what we need to come back with at the third hearing. But to say that this has all been resolved, it is much less resolved than in the average hearing in which we at least have the final proposal months or weeks before the hearing day. And I hope that they will commit to at least at the next hearing not coming in and, you know, doubling the cyanide standard again and coming up with some new BOD rule.

And, furthermore, that they -- the other problem is I really believe that the Agency should come forward, as they have with the GLI proceedings and the antideg proceedings and give the

Board some idea of how that is going to be implemented.

I am, frankly, sympathetic, however, to Mr. Harsch's problem, with some of his clients having some compliance problems. I think that's with regard to the metals; is that true? Or is there -- are there other things there? Is it just on the dissolved versus total? Is that the issue?

MR. HARSCH: I think the whole issue has to do with the metal translator issues.

MR. ETTINGER: I mean, I would be ready to explore whether there -- and I believe it was proposed by the Counsel who does

represent the Galesburg Sanitary District -- whether there is a way to cut part of this proceeding out to put that on a faster track. The other thing is -- although, once again, because they don't have the rules forward. Finally, though, I don't think it is like Galesburg is going to be sued and all of their operators are going to be sent to jail if you guys take an extra month and get the data right.

MR. MOSHER: We need to address those recent comments. We have submitted an Errata Sheet that updates very slightly several of our proposed regulations. We have proposed it in answer to questions, some of which were posed by Mr. Ettinger.

We have not doubled our original proposal for cyanide. We have increased it from 9.9 micrograms per liter to 11 --

MR. ETTINGER: Well, why does it go --

MR. MOSHER: -- micrograms per liter.

MR. ETTINGER: -- from 22 to 49?

MR. MOSHER: That was our original proposal.

MR. ETTINGER: Okay. I am sorry. I stand corrected.

MR. MOSHER: What else I want to say here is that despite some of the input, we looked at this proposal as rules that were very orthodox, very much in keeping with what USEPA wants states to do across the nation, in keeping with federal regulations for BOD. And we told people that we didn't have -- we didn't

anticipate great controversies in this rulemaking.

I think controversies are being created where they don't belong. This is very orthodox stuff. We have gone to great lengths to supply information. And there is no moving target for what we have proposed as Board regulations.

We believe USEPA is in agreement with what we have proposed, that they will give federal approval to these new standards as we have proposed, and we are here right now to answer questions about implementation as far as we can, and there haven't been many thus far. But we are here to answer them right now.

HEARING OFFICER TIPSORD: Well, I would just note, in fairness to the lack of questions on implementation, we were expecting to receive the implementation rules at this hearing. I think given that, it would have been a little hard for us to

prepare for questions about how you might implement these rules.

You know what, I think I need to take a break, because I think I need to consult with the Board Members involved. Then we will go back on the record in about ten minutes.

(Whereupon a short recess was taken.)

HEARING OFFICER TIPSORD: Okay. We can go back on the record now.

Given that there is some disagreement about whether or not there is need for a third hearing, I am not going to rule on the

decision of whether or not we should hold a third hearing. What I am going to do is this is not an expedited transcript. So I believe that is ten working days, eight working days. So it will be about two weeks before the transcript comes in.

I am going to keep the public comment period open for 30 days after the transcript comes in. During that time, if anyone would like to ask or request a third hearing, they should file that motion with the Board.

In addition, I would like to strongly urge the Agency to provide the Board with even a draft of your implementation procedures. Given the history in the area of water, where the implementation procedures have been placed in Board rules, based on requests from both industry and environmental groups, I think it is very important that the Board view the implementation procedures prior to going to first notice. So I really urge you

to get us even a draft, and that we would understand that it would be a draft.

Are there any questions? I will do a written Hearing Officer Order after the transcript comes in setting the specific date for the close of public comment. And, again, anyone who would like to request a third hearing at that time may do so. And we will let the Board make the decision about whether or not there should be a third hearing.

Is there anything else? Okay. Thank you all, again, for your attention. I appreciate it. We are adjourned.

(Whereupon, the hearing concluded at approximately 3:15 p.m. The hearing exhibits were retained by Hearing Officer Marie Tipsord.)

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 150 pages comprise a true, complete and correct transcript of the proceedings held on the 6th of March A.D.,

2002, at 600 South Second Street, Springfield, Illinois, IN THE MATTER OF: WATER QUALITY TRIENNIAL REVIEW: AMENDMENTS TO 35 Ill. Adm. Code 302.208(e)-(g), 302.504(a), 302.575(d), 303.444, 309.141(h); and PROPOSED 35 Ill. Adm Code 301.267, 301.313, 301.413, 304.120, and 309.157, in proceedings held before Hearing Officer Marie Tipsord, and recorded in machine shorthand by me.

IN WITNESS WHEREOF I have hereunto set my hand and affixed my Notarial Seal this 14th day of March A.D., 2002.

Notary Public and
Certified Shorthand Reporter and
Registered Professional Reporter

CSR License No. 084-003677
My Commission Expires: 03-02-2003