ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
WATER QUALITY STANDARDS AND EFFLUENT LIMITATIONS FOR THE CHICAGO AREA WATERWAY SYSTEM AND THE LOWER DES PLAINES RIVER: PROPOSED AMENDMENTS TO 35 Ill. Adm. Code Parts 301, 302, 303 and 304	)	R08-09 (Rulemakeing-Water)

REPORT OF PROCEEDINGS held in the above-entitled cause before Hearing Officer Marie Tipsord, called by the Illinois Pollution Control Board, taken before Laura Mukahirn, CSR, a notary public within and for the County of Cook and state of Illinois, Joliet Community College, Joliet, Illinois, on the 10th day of March, 2008, commencing at the hour of 10:00 a.m.

A P P E A R A N C E S

MS. MARIE TIPSORD, Hearing Officer
MR. ANAND RAO, Senior Environmental Scientist
MR. TANNER GIRARD, Acting Chairman
MR. NICHOLS MELAS
MR. THOMAS E. JOHNSON
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MR. ROBERT SULSKI
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MR. ROY SMOGOR

HEARING OFFICER TIPSORD: Good morning, everyone. My name is Marie Tipsord, and I've been appointed by the Board to serve as a hearing officer in this proceeding entitled Water Quality Standards and Effluent Limitations for the Chicago Area Waterway System and Lower Des Plaines River, Proposed Amendments to 35 Ill. Admin Code 301, 302, 303 and 304, Docket No. R 08-9.

To my immediate right is Dr. Tanner Girard. He's the presiding board member assigned to this matter. To Dr. Girard's right is board member Nicholas J. Melas, to his right one of our technical staff Anand Rao, and then Alisa Liu at the end of the table here. To my immediate left is board member Thomas Johnson.

Before we begin, on March 4, 2008, the Agency filed several documents with the Board along with a motion for leave to file a limited number of copies. That motion is granted. For those of you who don't, haven't looked at our website, John scanned those immediately, and they are attached and available on our website. I also told the Agency today if those documents are documents that we begin to refer to while questioning the witnesses, we will enter them as

exhibits for ease of the record. And, as I told you before we went on the record, we have been unable to secure rooms for the hearings currently scheduled April 23 and 24. We'll probably have to reschedule those days, and we'll talk about that on Wednesday when we see how far we've gotten with the IEPA.

This is the second hearing, second set of hearings to be held in this proceeding. The purpose of today's hearing is to continue with the questioning of the proponent, the Illinois Environmental Protection Agency. I will have the Agency introduce the witnesses and they will be sworn in. Then I understand the Agency has some exhibits that we're going to put into the record, and we'll go from there. After we've got all the exhibits in, we will begin with questions. And I believe we left off with the Metropolitan Water Reclamation District of Greater Chicago. I believe we concluded on Page 16 with the District's general questions, and then when we complete the District's general questions, we'll go to Stepan Environmental Law Policy Center, Prairie River Network, Sierra Club, Exxon Mobile Oil Corporation. After we have completed the general questions, we will begin with more specifics for each of the witnesses, and we will start all over at the

beginning as we started before with Ire (ph.), Midwest Gen, et cetera.

Anyone may ask a follow-up question. You need not wait until your turn to ask questions. There are several questions that have already been answered. If you've already had your questions answered, please don't hesitate to say, "Thank you. That one has been answered." I do ask that you raise your hand, wait for me to acknowledge you. After I've acknowledged you, please state your name, whom you represent before you begin your questions. Please speak one at a time. If you're speaking over each other, the court reporter will not be able to get your questions on the record. Please note that any question 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 notions or bias. And I know we're in tight quarters. Please -- we've got -- can we scoot down a little bit. We have someone who is actually sitting outside the door. And, actually, is there room for a couple of chairs at that table there.

I think we're ready to go ahead. The Agency has some exhibits.

MS. WILLIAMS: Do you want us to -- Did you

say you want the us to introduce everyone as well?

HEARING OFFICER TIPSORD: Yes.

MS. WILLIAMS: I'm Deborah Williams. I'm counsel for the Illinois Environmental Protection Agency.

HEARING OFFICER TIPSORD: Deb, you're going to have so to speak up. I can't hear you today.

MS. DIERS: I'm Stephanie Diers, counsel for Illinois EPA.

MR. ESSIG: Howard Essig with Illinois EPA.

MR. SULSKI: Rob Sulski with Illinois EPA.

MR. SMOGOR: Roy Smogor, Illinois EPA.

MR. TWAIT: Scott Twait with Illinois EPA.

MS. WILLIAMS: As Marie indicated, we filed some documents with the Board that were information that was requested at the Chicago hearings. There are a few extra copies I believe on the table over on the opposite side of the room if anyone needs a copy. There's also a few items that we did not have in time to file that we can enter now, if that would be --

HEARING OFFICER TIPSORD: Enter those as exhibits.

MS. DIERS: First we have navigation charts that were requested from Chris Yoder that Mr. Yoder

provided to us last week that we got.

HEARING OFFICER TIPSORD: This is the Illinois Waterway Navigation Charts. If there's no objection, we'll mark that as Exhibit 23. Seeing none, it is Exhibit 23.

MS. DIERS: Next, we have the article that was requested of Mr. Yoder on the white sucker.

HEARING OFFICER TIPSORD: I've been handed what is titled, White Sucker, and I'm not even trying the Latin names, Embryo Development in Early Growth and Survival At Different Temperatures. It's from, looks like, a Canadian publication. I'll mark that as Exhibit 24, if there's no objection. Seeing none, it's Exhibit 24.

MS. WILLIAMS: Marie, the last thing that we have is we prepared some maps. They are similar to the maps that were in Attachments H and I to the proposal, but they included the landmarks that were requested by the Board in Exhibit 22. If you'd rather do that later and go through those points, or if you just want us to enter those now, we can do it. Whichever your pleasure.

HEARING OFFICER TIPSORD: Let's take care of the housekeeping, and then we'll -- then everybody will have it when you start talking about the points.

MS. DIERS: The first one is Chicago Area Water System and Des Plaines River UAA Segment.

The next one is proposed aquatic -- oh, I'll wait.

HEARING OFFICER TIPSORD: The Chicago Area Waterway Systems and Des Plaines River Uaa Segments will be marked as Exhibit 25 if there is no objection. Seeing none, it is Exhibit 25.

MS. DIERS: The next one is Proposed Aquatic Life Use Designation Maps.

HEARING OFFICER TIPSORD: The Proposed Aquatic Life Use Designation I will mark as Exhibit 26 if there's no objection. Seeing none, it is Exhibit 26.

MS. DIERS: The last one we have is Proposed Recreational Use Designation.

HEARING OFFICER TIPSORD: The Proposed Recreational Use Designation we will mark as Exhibit 27, if there's no objection. Seeing none, it is Exhibit 27.

And just as a reminder or everyone, the Agency's testimony was all entered, as if read, as exhibits. Mr. Sulski's was Exhibit 1. Am I pronouncing that correctly?

MR. SULSKI: Sulski.

HEARING OFFICER TIPSORD: I'm sorry. I knew

it was wrong.

MR. SULSKI: I've heard worse.

HEARING OFFICER TIPSORD: Mr. Sulski's as Exhibit 1, Mr. Twait's as Exhibit 2, and Mr. Smogor's as Exhibit 3.

With that, did you want to offer any explanation on any of these now, or did you want to just proceed with questions?

MS. WILLIAMS: Can we start with -- Let's get into questions, and as we get into those areas again --

HEARING OFFICER TIPSORD: Based on my review of the transcript, as I said earlier, I think we're on Page 16 of the District's questions. I think we'll be ready for Question 17, is that correct, Mr. Andes?

MR. ANDES: Correct.

HEARING OFFICER TIPSORD: Whenever you're ready, go ahead.

MR. ANDES: Thank you. I'm Fred Andes from Barnes and Thornberg. I'm counsel for the Metropolitan Water Reclamation District of Greater Chicago, which we'll refer to as the District. And first I just wanted to make sure to reserve our rights to ask questions at a later time both as to the materials we're just seeing

now and the materials that were just added to the record recently since we obviously haven't had enough time to review all of that information.

So let me start on Question 17, which I believe is in our list of questions for Mr. Sulski, though others can feel free to answer, and this question is: Describe the fish and benthic invertebrate communities that have potential to occur in CAWS Aquatic Life Use A Waters.

MR. SMOGOR: I can address the fish part. Simply it's the fish community that can attain a biological condition that is still somewhat imbalanced.

MR. ANDES: Can you be more specific about the particular fish?

MR. SMOGOR: At this point I can't because an imbalanced community, or at least a community that would meet the goal that we've set for the CAWS A waters, that aquatic life use, the proposed aquatic life use, it doesn't necessarily have to be one defined set of species. It can be numerous combinations of different species at different relative abundances.

MR. ANDES: How do you define that in relation to the current community?

MR. SMOGOR: The current fish communities

are not attaining -- are not yet at a level biological condition that would represent attainment of the aquatic life goal that we've set for the CAWS A waters. I believe that's correct, right, Ron?

MR. SULSKI: Yeah.

MR. ANDES: So how would that community change?

MR. SMOGOR: It could change in numerous ways. What you would like to see is the biological condition, which could be called biological integrity as well or at least a low level biological integrity. It can change in several different ways to attain, for example, a higher score on an indicator, an indicator biological condition like a fish IBI.

MR. ANDES: So are you defining the target state completely by reference to what the IBI score is?

MR. SMOGOR: I don't know if I would say completely, but that, throughout this process and throughout the use attainability analysis, a fish IBI is one of the key indicators of the biological condition of the fish community. So I imagine that would be one of the useful indicators to do that.

MR. ANDES: So you haven't defined the -- with precision the exact community you expect to have at

the end of this process?

MR. SMOGOR: No, no, not -- especially not in terms of, say, a fish IBI score.

MR. ANDES: And how about the benthic community?

MR. ESSIG: Benthic is somewhat of a similar situation in that we're looking at more of a, for what the potential that we feel is for the Aquatic Life Use A Waters is, again, tolerant groups and intermediately tolerant groups is what we are potentially thinking that that could reach that goal. Again, to give individual species numbers or types, I think, is -- that would be hypothetical at this point. But basically I think the macrovertebrates also, like fish, do not show attainment of the current condition.

MR. ANDES: Is that defined, again, primarily by reference to scores?

MR. ESSIG: To a lesser extent. The macrovertebrate score that was used in the CAWS system is not a community-driven type of index like the IBI is. We're looking at several different types of indeces, the total number of taxa, the specific types of taxa, the macrovertebrate biotic index that was used is predominantly a tolerance-based index. So all it's

giving you is the tolerance to low DO and organic and BOD and ammonia type situations. So it's not giving you a complete look at the community as a whole in relation to both not only physical but chemical problems.

MR. ANDES: So then as -- as the water body moves towards the combined goal, what happens to the community?

MR. ESSIG: You would expect, in this case, if you're looking at the MBI of that index, that the score would tend to go down more toward moderate to maybe moderately intolerant range possibly; more of them did range type of MBI score. Some of them were maybe six, six to seven.

MR. SMOGOR: It might be helpful when for the MBI as scores go down that means there's -- That reflects less and less human impact. So the lower the score the better. So that one works kind of opposite. It might be helpful to mention that.

MR. ANDES: Thank you. I'm trying to understand how the nature of the community changes. Are there species that aren't there now that are going to come?

MR. ESSIG: That would be the hope, yes.

MR. ANDES: Where would they come from?

MR. ESSIG: They'd be from the water shed. If conditions improved well enough, the new species could occur -- what I mean by new is ones that aren't occurring right now or occurring in very low numbers. The numbers might increase and -- but you haven't defined exactly what those species are.

MR. ESSIG: No, not at this point.

MR. ANDES: Okay. Back to Mr. Sulski. On Pages 16 and 17 of your testimony, you state that IBI scores in the A waters generally range from 22 to 30, which are expected waterways with poor to fair habitat attributes while in B waters IBI scores are generally below 22, which are to be expected in waters of very poor to prior habitat attributes. Given the wide range of IBI scores calculated for each station under Figure 5.2, the UAA report, which values were used to categorize the CAWS?

MR. SULSKI: Well, I think Figure 5.2 and the text explanation on the process that went into generating kind of describes --

MS. WILLIAMS: What are you referring to? Figure 5.2 of what?

HEARING OFFICER TIPSORD: I think it's Attachment A, isn't it?

MR. SULSKI: Of CDM's report.
HEARING OFFICER TIPSORD: Attachment B.
MR. SULSKI: That's what you're referring to, right?
MR. ANDES: Yes.
MR. SULSKI: Okay. Well, if you look at 5.2 and you look at the text in the report on how it was generated, I think that answers your question. I could go back to the report and read it, I guess.
MR. ANDES: I guess I'm asking you to explain it here.
MR. SULSKI: Okay. Well, I can go along the table and we can see where they plotted IBIs and QHEIs, and then I can go back to the text and see how they made the cut for designating the different aquatic life uses.
Because CDM, and actually all the stakeholders, agreed that there was really no referenced water body that could be utilized exactly for this system. They took on -- well, they took on two approaches: The first approach is the contractor, and the Agency sat down and plotted out the values and said in all your knowledge of traveling the system and looking at the fish scores and looking at the MBI scores and looking at the habitat and the habitat reports and

everything that we have in the record, where would you place these things in your expert opinion as fisheries, biologists and aquatic life biologists. So they drew arbitrary lines.

MR. ANDES: Based on their own personal --

MR. SULSKI: Based on their own personal -- Based on a weight of evidence approach, weight of evidence being taken into consideration, the habitat, what the IBI scores are, what's intended for the future, if anything, in improvements or not.

MR. ANDES: Is there any kind of clear way in which they all balance the weight of evidence consistently or differently?

MR. SULSKI: Well, let me continue. So with -- Based on the weighted evidence, they drew arbitrary lines on this graph. And then the contractor decided that wasn't going to be good enough for the folks involved. So I'd have to go to the text, but what they did is they pooled all of the data and then they took what they determined to be the most balanced and highest quality location in the system. And at that time, it was the early 2000, turned out to be the North Shore Channel near the Wilmette control works. So you can see in this Figure 5.2 where you have the range of

IBIs plotted and then you have a QHEI bullet right in the middle of it, and that's an indication with a QHEI bullet, far left side North Shore Channel Sheridan Road. You have a bullet in the middle of the IBI spread, then you've got an IBI spread, and that's a good indication that the aquatic life in terms of fish are meeting what the habitat expectations are. And from there they took the top 75 percent and they struck a line there for the --

MR. ANDES: So the initial cut point or reference point was North Shore Channel at Sheridan Road.

MR. SULSKI: Correct.

MR. ANDES: As defining what's attainable in this system.

MR. SULSKI: Yes, as a reference point. That was looked at as the best example of the better habitat in the system. And it also was taken into consideration that it's -- its IBIs fell in line with what the habitat suggested it could, you know, it should support.

So they drew lines based on that, and it turned out that their initial arbitrary lines fell exactly where their lines derived in this method that I

just described fell. So with that, every -- well, at least the contractor was comfortable with the system of delineation as they placed on this graph, and that was later then presented to the stakeholders and discussions occurred. I mean, that's it in as much of a nutshell as I can give you. And you -- I would say go back to the methodology that they used in the report to see exactly how they made those -- the second method of cuts.

MR. ANDES: Okay. I think that you've addressed Questions B and C and how you just explained that, so let me move on to question 20.

MS. WASICK: Jennifer Wasick. I'm with the Water Reclamation District of Greater Chicago. For individual stations, when you have a range of IBI scores that span that line that's drawn the 75th percentile, was a mean or a median used to determine whether to put it in the aquatic life use A or B? A mean or median of the IBI scores that were collected over the years for each station?

MR. SULSKI: I believe that the median of the pool data was used to make the designation between modified and limited, but I'd have to go back to the text.

MS. WASICK: Thanks.

MR. ANDES: Question 20. On Pages 16 and 17 of your testimony, you discussed the fact that the IEPA used QHEI and IBI values for determining proposed aquatic life uses for the CAWS. Why was the abundant benthic invertebrate and sediment quality data contained in the UAA report not used in the process of determining the aquatic life uses?

MR. ESSIG: The benthic data wasn't utilized as much as it may have been able to be primarily because the relationship between the habitat measures, the qualitative habitat evaluation index and the fish index of biointegrity that was developed in Ohio were more directly related to each other. They don't tend to use the -- In Ohio they have another type of index they use for macrovertebrates, but it's more of a supportive role. It isn't generally used in determining habitat and the potential of the IBI scores. And the index that was used for the macrovertebrates in this system, as I mentioned before, was a tolerance based index. It doesn't really look at the wide range of impacts to the macrovertebrate population.

MR. ANDES: So if you'd used this particular data they would have looked at the wide range of impacts. Am I right?

MR. ESSIG: If you had an index that was driven by other types of environmental factors besides just tolerance. If you were looking at numbers of taxa, certain specific groups of taxa like members of mayfly (ph.) taxa, for instance, you would get a better idea of the total environmental impact, both habitat, chemical, and even flow. You do that more with the IBI in relation to the QHEI, because they were kind of developed for that purpose.

MR. ANDES: So if you had taken that alternative route, you would have gotten a better picture of the overall impacts. But that's not what you did, correct?

MR. ESSIG: That's not the index that was available at the time that was used for the macrovertebrate data. That's why it was somewhat limited.

MR. SULSKI: It doesn't mean it was ignored.

MR. ESSIG: It was looked at.

MR. SULSKI: Both of the contractors looked at the data.

MR. ANDES: And how was it considered?

MR. SULSKI: If there's -- It's a weight -- Again, it's a weight of evidence approach. So you have

habitat as a very important bit of data to have, then you have IBIs, then you have other factors that -- even metrics within IBIs and metrics within habitat; and then MBI or macroinvertebrate data. So you put all that together and it's a weight of evidence judgment call, and --

MR. ANDES: I'm sorry. I'm trying to understand how the benthic data in particular was used, because my impression had been that it really wasn't used. It was looked at, but was it actually used in the process?

MR. ESSIG: I don't think it was necessarily looked at in relation to the biotic potential because, as I explained, the index that was used is not looking at the entire macrovertebrate community like the fish index does. And there's more of a -- there has been documented relationships between how the QHEI was developed and the index of biotic integrity. So there's a lot of key relationships that have been developed for that or that have been seen in those two indeces. So that is primarily used both in Ohio, I believe, and I think in the UAA process to indicate the biotic potential of the system. The macrovertebrate data was used primarily, I think in this case, and it's my

interpretation of more of what's the current condition in relation to what that index was designed to show which is oxygen-consuming water quality problems like BOD and ammonia. That's primarily what that index indicates. It doesn't indicate habitat relationships, per se.

MR. ANDES: So the benthic data was considered in defining the current condition, but not the attainable condition. Is that accurate?

MR. ESSIG: I think that that might be a fair assessment.

MR. ANDES: And the sediment data.

MR. SULSKI: The sediment quality data was looked at, everything that the contractors could get their hands on. But it's, again, sediment determination or -- determinations of sediment impact are another weight of evidence, but even more complex than water quality and fish inhabitat. And the data that we had was mostly bulk chemistry. There are some things you can do with -- if you have other parameters along with that bulk chemistry, but in most cases those were missing. Then you have to look at the physical condition of the sediment. So, you know, in a lot of cases there wasn't -- there weren't SIB analysis

designating what the particle sizes of the different sediments are. Then you have the whole biological realm, and then the biochemical realm; biochemical realm being bioaccumulation. The biological realm being, you know, what is the whole sediment toxicity or what is the poor water sediment toxicity. And all of that sort of information is needed to really make a determination. So the bottom line is there wasn't enough data to make a real determination on the impact of sediments on any of these -- in any of these waterways. I think we went through once before.

MR. ANDES: Well, I think that in our discussions at the prior hearings it was discussed that there weren't any sediment data or that the Agency was not relying on sediment data, so I'm trying to clarify that.

MR. SULSKI: No. That's not true. I mean, there was sediment data, and it's in the reports and the contractors looked at it. The bottom line is that they said there's -- Well, you can make a couple of conclusions about -- maybe one particular possible conclusion about a particular site. There isn't enough data or enough evidence to invoke a UAA factor for sediment reasons.

MR. ANDES: I believe part of the statement made at the previous hearing is that the Agency believed that the sediment quality was improving despite the fact that --

MR. SULSKI: That's another whole story. Do you want me to reiterate that story too?

MR. ANDES: Let's go through that again and we'll come back to this issue.

MR. SULSKI: Okay. So the question is the sediment improving and how is it?

MR. ANDES: Right.

MR. SULSKI: Okay. Yes. We believe the sediment is improving for a number of factors, for a number of reasons. No. 1, the volume has gone down with TARP.

MR. ANDES: The volume of?

MR. SULSKI: Solids that create sediment, additional sediment. So the volume has gone down. The quality of those additional contributions have improved because of various programs ranging from storm water programs which, you know, are designed to improve quality of sediments to pretreatment programs which is designed to improve the solids or quality within the wastewater.

MR. ANDES: Those are qualitative conclusions. Am I right? You don't have any data -- Do you have any data on those issues?

MR. SULSKI: I mean, I've got data within the Illinois EPA that the sludge quality and the quality of the solids going into the wastewater treatment plants has improved over time with the pretreatment program. In fact, the District has a program now where they distribute their sludge basically in an unrestricted manner because of the cleanliness of it.

But back to the question, other reasons that lead us to believe that the situation is improving for sediments is some of the programs that we've undertaken to reduce nonpoint source contamination such as -- well, I mean, the Agency collects mercury thermometers and gives away alcohol thermometers. We have household hazardous waste collection programs which removes items that could be dumped down sewers. I mean, there's a whole bunch of programs that have been in place for a while that would -- that are geared for improving conditions and sediment is the sink for a lot of those things in the past.

MR. ANDES: But the sediment data that is in the UAA report was not used in deciding whether sediment

quality is improving. Am I right?

MR. SULSKI: The sediment data in the report was not used to invoke a UAA factor. We couldn't. We didn't have enough information.

MR. ANDES: That wasn't my question. My question was was the sediment data used in the determining whether the sediment quality is improving in part of this analysis?

MR. SULSKI: Not that I'm aware of.

MR. ANDES: And is there any data the Agency has available or the contractors that is not in the UAA report, sediment?

MR. SULSKI: Sediment data?

MR. ANDES: Yes.

MR. SULSKI: The contract -- I can't speak to the lower Des Plaines. There is some data that perhaps CEM used that may not be in the report.

MR. ANDES: I'd like to see that data.

MR. TWAIT: I'd like to point out one clarification. We did use one of the UAA factors for sediment for cadmium. I want that reflected correctly.

MR. ANDES: Okay. Let's move on to the next question. On Page 16 of your testimony, you state that QHEI scores in the CAWS ALU A waters generally range

from 40 to 55. Why was a QHEI of 40, which includes some stations that would be described as poor used as the cut-off, as opposed to setting the boundary at 46 with a fair habitat descriptor begins?

MR. SMOGOR: I think it might help to first point out that the aquatic life use that we're proposing for CAWS A waters is a somewhat imbalanced biological condition because it is -- We're setting the bar less than attainment of the Clean Water Act aquatic life goal. So I'm assuming you're using Ed Rankin's cut-off for habitat, the less than a 45 is generally -- generally represents conditions that cannot attain the Clean Water Act aquatic life goal greater than 60, a score of QHEI generally represents conditions that can attain the clean water act aquatic life goal, and scores between 45 and 60 you have to look a little closer because that's that gray area that we talked about. So it's not -- I shouldn't say -- It's not unexpected that you would -- for CAWS A waters where we're setting the bar less than the Clean Water Act aquatic life goal that you're not going to get the best habitat. We're already admitting, or it's a given that the habitat and CAWS A waters is probably not much better than fair, if we want to put a qualitative term on it. Does that help?

MR. ANDES: Well, I'm trying to understand why the decision was made to put it at 40 instead of 46. If 46 was a sort of neat dividing line in terms of a goal, why 40 instead?

MR. SMOGOR: I think we're just speaking generally there when we're saying generally the range. And maybe in Figure 5.2 in Attachment B which is the CAWS UAA. If you refer to that figure like Rob was earlier and look at the QHEI scores for the waters that are actually CAWS A, that's about the general range of those scores. And given that CAWS A, we're setting that bar a little lower. We might expect some of the waters to have a little less than 45. I mean, we're not saying that it can attain the Clean Water Act goal. We're saying it attains something less. Exactly where that line is, I really couldn't tell you, but we're talking about attainment in terms of relative ability to attain, we're saying upper Des Plaines island pool is above that Clean Water Act line, we're saying that CAWS A waters is somewhere below that Clean Water Act line, and relatively CAWS B and Branden pool waters are even a little bit lower than the CAWS A waters.

MR. ANDES: And that's my real question, which is -- obviously the dividing line between A and B

makes a big difference in terms of regulatory impact. I'm trying to understand why put the 40 to 45 waters in A rather than B, given that neither attains the Clean Water Act goals. What was the basis of putting them in A instead of B?

MR. SMOGOR: Basis for? I didn't catch the very last part.

MR. ANDES: What was the basis for putting the waters with QHEI between 40 and 45 in A rather than B?

MR. SMOGOR: I think just relatively, and, again, Figure 5.2 in Attachment B shows this, that there is kind of a break in the QHEI scores. That was the judgment that was made. There's a break in the QHEI scores and the waters that were placed into CAWS A generally have the lower QHEI scores which represents that they can attain a higher biological condition than the waters that were put into the CAWS B Branden pool group. Whether or not that's exactly -- There wasn't any -- maybe this is getting better to your question. There was not any exact line in QHEI scores which made that decision that I'm aware of. I think the tendencdy or the overall range of the CAWS A waters is to have a higher QHEI score and the tendency or overall range of

the CAWS B waters is to have a somewhat lower QHEI score.

MR. ANDES: Mr. Sulski?

MR. SULSKI: I'm going to go back to my weight of evidence argument on this as well. Because if you look at the system, you know, QHEIs and IBIs are one thing. You also have to consider other factors. And if you look at the system and you drive down the system or look at the waterways, there's a stark difference in use A and use B waters in that use A waters have a littoral zone, they've got a shelf, they've got places for aquatic life to escape. They have more tributaries that aquatic life can get into and out of. When you get into these use B waters, they're straight wall deep draft shipping channels go straight down to a deep bottom. There's not a whole lot there. So there's a -- there is, you know, when you look at the weight of evidence, there's a stark difference, even just visually for these waterways. And if you look at the chart, there's, you know, model cuts, and that started off as arbitrary cuts actually fall right in line with that other evidence.

MR. ANDES: Does the Cal-Sag channel fit in with that, given that it's straight well deep draft?

MR. SULSKI: Cal-Sag channel fits into that.

MR. ANDES: Even though it's an A water.

MR. SULSKI: Cal-Sag where? Oh, Calumet Sag, no. I was thinking Chicago Sanitary Ship Canal. Calumet Sag has some shoreline, it's got some shelves. I've seen them being weighted. It's different than the sanitary ship canal. It's a different system.

MR. ANDES: Even though it's primarily straight wall deep draft.

MR. SULSKI: It is flanked by a littoral zone. It is not straight walls drop down. There is a littoral zone in the Calumet Sag channel, and there are tributaries into the Calumet Sag channel. There's the lower Little Calumet River.

MR. ANDES: So then those are the critical factors in terms of why the Cal-Sag channels are designated A?

MR. SULSKI: These are decisions that go into making -- These are bits of evidence that go into that weight of evidence decision, yes.

MR. ANDES: Any other factors.

MR. SULSKI: That's primarily it.

MR. ANDES: Okay. Let me move to about Question B. Under what circumstances would a station that scored less than a QHEI of 40 be classified as A in

spite of low score?

MR. SMOGOR: I think it relates to Rob's other factors. QHEI alone was not being used to make the final decision about attainable biological conditions. There was no single QHEI cut-off that defined that in and of itself. And, for instance, as you can see, Cal-Sag Channel in Figure 5.2 in Attachment B, I always have to get that right, appeared to score, at least of the CAWS A waters based on the QHEI value, appeared to score a relatively low QHEI to the rest of the waters that were classified as CAWS A. But it's -- There's a difference in terms of other factors; namely what Rob was saying. The Cal-Sag Channel is not like the Chicago Sanitary and Ship Canal. They're not steep walled exclusively -- primarily steep walled deep draft, exclusively I should say.

MR. ANDES: Even though it's QHEI scores indicate that it is comparable or -- and would not be able to support a good fish population.

MR. SMOGOR: Well, the QHEI in the Cal-Sag -- let's say a QHEI score of 40 is kind of like in between the waters that -- the other CAWS A waters that are scoring higher QHEIs, and most of the waters that are in the CAWS B group.

MR. ANDES: But it is poor, correct?

MR. SMOGOR: It's poor based on Rankin's qualitative cut-offs that are largely in reference to attaining ability to attain or not attain clean water aquatic life goal. Now, if we say what's the ability of the CAWS A habitat to attain the goal that we've set for it, we may slide that qualitative -- that qualitative scale from good to fair to poor a little bit downward, and that might bring a 40 up into the fair category in terms of how good is it for attaining something less than the Clean Water Act goal.

MR. ANDES: Can you point me to any place in the documentation where you've done that sliding?

MR. SMOGOR: No, not explicitly I can't. But that's how we're thinking of this. Because Rankin's scoring cut-offs are largely in reference to asking the question can this water attain the Clean Water Act aquatic life goal. We're already saying that CAWS A, we don't expect that it can attain that goal because it has fair and maybe even into poor category qualitatively speaking habitat.

MR. ANDES: So can you provide me with citation to the record in terms of where your analysis is of how it can attain the goal that you've designated?

MR. SMOGOR: I think that's what's in Chicago -- or that's what's in the CAWS UAA, I believe. That's the use attainability analysis that provides --

MR. ANDES: I didn't see -- the sliding you just described you indicated wasn't anywhere in the documents.

MR. SMOGOR: I'm saying that's one way you can think of it. I'm not saying that that's the only one that one can think and interpret it.

MR. ANDES: I need to know --

MR. SMOGOR: Fair and poor are relative terms obviously, and if something is scoring a QHEI between, say, Level 1 and Level 2, and you want to decide do I put that into the Level 1 or do I put it into Level 2, you look at other things. And you say, is this water that's stored in this middle, kind of this middle QHEI score, what else about this water would I consider to say I'm going to put it in the Level 1 or I'm going to put it in the Level 2. Well, Rob addressed that. We look -- If you look at the Cal-Sag Channel, for instance, it looks more like the Level 1 than the Level 2, and even though it has a slightly lower score, which is higher than the Level 2 score, it made sense to put it into the Level 1 category.

MR. ESSIG: If I might, maybe a little explanation or a little clarification. When Ed Rankin did the analysis using his habitat analysis, he's not just looking at the QHEI total score and where it sits. He's also looking at other types of habitat attributes that are part of the QHEI system; the individual metrics. And what he noted was that there are quite a bit of cobble and rubble along the littoral segments of the Cal-Sag Channel. There's more, if you will, shore-line structure in that system. And that -- those types of things as well as the actual QHEI score are used to kind of determine what type of use it might be able to meet intentionally. So it's not just based solely on it's got to be a 45 or it's got to be a 40. Those are general guidelines. But you look at these different habitat metrics, and of those, some of those were positive habitat attributes. If I remember right, I think the Cal-Sag Channel had four positive habitat attributes in that system in addition to the two that I mentioned. I'm not too sure what those other ones are offhand. It is covered in Ed Rankin's report, which is part of the record.

HEARING OFFICER TIPSORD: Just a point of clarification, Mr. Essig. When you say he noted certain

things, that's -- you're basing that on the report that he provided, not --

MR. ESSIG: Yes.

MS. WILLIAMS: Just to be clear for the record, we're talking about Attachment R to the Agency's proposal.

MR. ANDES: Thank you.

HEARING OFFICER TIPSORD: Go ahead, Miss Franzetti.

MS. FRANZETTI: If I could just continue, you've given --

HEARING OFFICER TIPSORD: You have to identify yourself for the record again.

MS. FRANZETTI: Susan Franzetti, counsel for Midwest Generation. You've given us a description of CAWS aquatic life use B and CAWS aquatic life use A, and we're going upwards, correct, in terms of attainability potential with respect to those categories. So then on a higher attainability is represented by your proposed upper Dresden pool use designation, correct?

MR. SMOGOR: Yes.

MS. FRANZETTI: And then is an even higher -- is full aquatic life goals use represented by the current general use designation?

MR. SMOGOR: Yes. I'd say the lowest -- the lower rung -- let me try to put it this way: Minimal attainment of our current general use, we think of that as minimally attaining the Clean Water Act aquatic life goal.

MS. FRANZETTI: But here you segregated out that minimally attaining category to create the Upper Dresden Pool use, correct?

MR. SMOGOR: Yes.

MS. FRANZETTI: Okay.

HEARING OFFICER TIPSORD: Mr. Andes, before you continue on, I realized just now that I forgot to note at the beginning of the hearing that these witnesses had all been previously sworn in this proceeding and are still sworn. I just thought I better get that on the record.

MR. ANDES: Thank you. Question C, and I think you've explained this, at least partly.

What specific habitat metrics in the QHEI for aquatic Life A Waters cause the physical habitat value to be higher than in aquatic Life Use B Waters.

MR. ESSIG: Generally, it was bottom sub straight of boulders, cobble, and gravel, cover metrics were generally rated as moderate to extensive. In some

of the waters, the ripple pool development was considered moderate to good. I'd have to go back to the original report offhand, but I think that pretty much covers it. The repairing zone would be one of the other positive habitat attributes.

MR. ANDES: Thank you. Next question, Question 22. On Page 18 of your testimony you state UAA found that attainable uses were, in some cases, not achievable without overcoming dissolved oxygen, temperature and bacteria limitations. Waterway aeration, waterway flow augmentation, effluent cooling and effluent disinfection are the recommended options for overcoming the limitations. However, you acknowledge on Page 7 of your testimony the UAA Factors 3, 4, and 5 limit aquatic life potential and preclude possibilities for safe primary contact recreation.

What is the scientific basis upon which you conclude the proposed options are the cost effective options for achieving the proposed use designations?

MR. SULSKI: I'm sorry. I was looking up. I have a note here that your second quote -- in response to the question, we made a -- we made a determination that they were feasible and used elsewhere. So that's basically what our determination was.

MR. ANDES: Okay. Because primary contact recreation in the waterway is excluded in the IPEA's use designation proposal, what leads you to conclude that the benefits of effluent disinfection outweigh the cost to taxpayers and overall adverse impact to the environment.

MR. SULSKI: Well, we didn't perform an indepth federal guidance like determination, economic determination, because we didn't have the data to do it. We've requested that data from the various stakeholders and we don't -- We never got the data to do that.

MR. ANDES: You got substantial amounts of data from the District? Am I right?

MR. SULSKI: Right. But the data wasn't sufficient to perform the check analysis suggested by the water quality standards guidance.

MR. ANDES: You mean a UAA cost analysis?

MR. SULSKI: Correct. Well, a standard setting cost analysis.

MR. ANDES: So --

MR. SULSKI: Which reduces things to dollars and cents for an individual household or an individual, you know, in the population. That's what -- that's --

MR. ANDES: So the question was in terms of

whether the Agency had concluded that the benefits outweigh the costs, am I right to say the Agency did not assess whether the benefits outweigh the costs?

MR. SULSKI: Correct.

MR. ANDES: Has the IEPA studied the unintended environmental consequences that will result from effluent disinfection and artificial suppoementation of dissolved oxygen?

MR. SULSKI: I'm not aware of the details of any.

MR. ANDES: Well, for example, impacts on carbon footprint from increased chemical use, air emissions, et cetera.

MR. SULSKI: I haven't seen any quantification. I'm not an expert along those lines.

MR. ANDES: Does IEPA believe that such considerations are relevant?

MR. SULSKI: I would say yes.

MR. TWAIT: For setting water quality standards, I don't know that we would consider that.

MS. WILLIAMS: But his proposal is layered, so I think you should -- I mean, that question would be answered based on which piece of the proposal you're talking about.

MR. ANDES: Well, does the Agency think that possible environmental consequences of the proposal, nonwater quality consequences, are relevant in either of the setting of uses or the setting of criteria, either one?

MR. TWAIT: I don't think that we know. I don't think that -- We have not looked at the carbon footprint and related that to whether or not we should protect aquatic organisms.

MR. ANDES: And you also haven't weighed it against any possible disinfection benefits. Am I right?

MR. TWAIT: Correct.

HEARING OFFICER TIPSORD: Let's go off the record for just a second.

(Off the record.)

HEARING OFFICER TIPSORD: Back on the record.

MR. ANDES: On Page 18 of your testimony, you state that in order to reduce bacteria levels, effluent disinfection will be required at all domestic wastewater treatment works discharging into water designated for Incidental Contact and Noncontact Recreation Use. Also on Page 19, you state that MWRDGC has indicated that if they were to undertake disinfection in their facilities,

they would likely use UV treatment or be free to select between any available technologies that would meet the 400 fecal coliforms per 100 mL requirement of 35 Illinois Administrative Code, Section 304.224. And I'll stay with general questions here.

What bacteria level will remain in the CAWS if disinfection of all MWRD plants were implemented?

MR. SULSKI: Well, sometimes it would be low during dry weather, other times it would be high during CSO events.

MR. ANDES: But you haven't tried to quantify that either, in either case?

MR. SULSKI: No. Based on the ratio of the waterway to the effluent, I would imagine that the waterway would be fairly close to what the effluent was putting out in dry weather.

MR. ANDES: But not in wet weather?

MR. SULSKI: Correct.

MR. ANDES: To what extent will reduction of bacteria concentrations to this level decrease human risk of illness?

MR. SULSKI: I don't know exactly.

MR. ANDES: What is the current health risk

to contacts and noncontact recreators due to bacteria levels in the CAWS without disinfection?

MR. SULSKI: I don't know that exactly either.

MR. ANDES: I'll skip Question D which is fairly specific about data, and Question E.

HEARING OFFICER TIPSORD: If we start skipping individually -- Let's go ahead and ask these questions. But, like I say, I think we need to keep in mind there are others behind you that still have general questions that will be addressed. Let's do these in order. Otherwise, it will be confusing for the record.

MR. ANDES: Does IEPA have data to show that effluent disinfection will result in reduction of bacteria in the waterway?

MR. SULSKI: Well, we have data that shows how much the treatment plants put out, and if you cut that source off, just by a matter of simple flow ratios you would know that it would be quite reduced.

MR. ANDES: Specific levels haven't been determined. Am I right?

MR. SULSKI: CDM looked at effluent and waterway bacteria and made some comparisons upstream. There's a whole slew of data that the District provided

to show relatively cleaner situations upstream and the wastewater treatment plants, high levels of bacteria at the effluents and downstream for a spell. So there's, you know, there's data available that could be used to make that determination. I think that the contractor did.

MR. ANDES: And their focus was primarily on dry weather?

MR. SULSKI: They did -- I believe there's a graph in here of wet and dry weather. They carved out some wet weather incidences.

HEARING OFFICER TIPSORD: A graph in where?

MR. SULSKI: I'm sorry. In the CDM report, Attachment B.

HEARING OFFICER TIPSORD: Thank you.

MR. ANDES: What data does IEPA have to demonstrate the indicator effluent limits on the District's WRPs will reduce the levels of pathogens in the waterway?

MR. SULSKI: I don't know that we have data. We just know that the effluents from wastewater treatment plants have human-originating pathogens. And it's standard practice to use indicators to show that there's a kill of those pathogens, so.

MR. ANDES: Okay. Data published in peer-reviewed technical literature indicates there is no statistically significant correlation between pathogens and indicators in surface water bodies. How does IEPA protect the public by establishing effluent criteria for indicators?

MS. WILLIAMS: I'm going to object at that point. That seems to be -- You're not saying what data you're referring to, what your review of literature seems to be; either it be testifying or if you could be more specific.

MR. ANDES: Okay. Are you aware of technical reports about the correlation between pathogens and indicators?

MR. TWAIT: Yes.

MR. ANDES: And what's your sense of the conclusions from those, from that literature?

MR. TWAIT: More recently, they don't believe that they are -- the indicator organisms are the best ones to be using, and they're looking for additional or more representative indicator organisms, U.S. EPA is looking for better indicator organisms.

MR. ANDES: Okay. What evidence does IEPA that the indicator effluent criteria for fecal coliform

will protect recreational users of the CAWS from pathogen exposure and pathogen related illness?

MR. TWAIT: The use of the indicator organism is only to ensure that disinfection is being accomplished and not necessarily that pathogens are being reduced, although that is the clear indication.

MR. ANDES: Does IEPA have data to demonstrate that the effluent fecal coliform critera will protect the recreational users under both dry and wet weather conditions?

MR. TWAIT: No. Wet weather conditions we fully expect that we're going to have high fecal coliform and bacteria levels.

MR. ANDES: What data did you analyze to determine the microbial pollutant loads from different sources in the waterway?

MR. SULSKI: The Attachment B CDM report looked at data that the District provided water quality data, effluent data.

MR. ANDES: What data do you have to demonstrate the microbial pollutant loads from different -- do you have to demonstrate the microbial pollutant loads from different sources in the waterway during dry and wet weather conditions?

MS. WILLIAMS: How is this different?

MR. ANDES: I think we can assume that you've already answered it.

What knowledge do you have of the relative contribution of the sources other than the District's effluents on microbial pollutant loads in the CAWS during wet weather conditions?

MR. SULSKI: Again, it's the data that's in the CDM report, Attachment B.

MR. ANDES: Can you describe the data and where it's contained in the report?

MR. SULSKI: Actually, I'm looking at Pages 428 and 429 where I have a distinction between recreation season and nonrecreation season. And I would have to go through this report like I am, page by page, to see if there is wet weather-related bacteria data. I know that there is wet weather-related DO data and some graphs, but I can't say for sure right now unless I go through this entire report on whether there's a distinction or a carving out of wet weather. There may not be.

MR. ANDES: Well, I'd like to get a response to that question eventually.

MR. SULSKI: Okay. We will.

MR. ANDES: What data does the IEPA have to demonstrate that if the fecal coliforms in the District's effluents meet the IEPA discharge criteria, then different reaches of the waterway would be free of pathogens and safer for recreational use.

MS. WILLIAMS: I think we've asked and answered this both last timed and to some degree already today.

MR. ANDES: I'm not sure.

HEARING OFFICER TIPSORD: I'm not sure that you have.

MS. WILLIAMS: Okay.

MR. SULSKI: Well, I can't tell you that it would be free of pathogens, but we believe that it'll be safer for recreational users just based on the fact that they're dominated by wastewater treatment plants composed of human originating pathogens. And if you killed even a portion of those pathogens at the end of the pipe before they dominated the system, I'm assuming some risk will be reduced. How much? I can't tell you.

MR. ANDES: I believe we have asked Question M before. I believe that's been asked and answered.

N: Why would non-contact recreation require the same bacterial criteria as incidental

contact recreation?

MS. WILLIAMS: Object. I'm not -- I don't understand where this question is coming from where there's no bacteria criteria in our report, so.

MR. ANDES: I think it's more of requirements.

MS. WILLIAMS: Would you like to rephrase the question related to technology requirements?

MR. ANDES: Yes. The technology-based requirements apply the same, whether the water body is noncontact or incidental contact, right?

MR. SULSKI: Correct.

MR. ANDES: And why is that?

MR. TWAIT: That's basically if we have a water quality standard, it's my understanding that if it shows that a discharger needs to disinfect, there's nothing -- there's no technology that will get them down -- the technology they use to disinfect will get them down to 400 fecal coliform per 100 milliliters. Whereas if the water quality standard was different, there's no technology that could get them down to 600.

MR. ANDES: But there is no numeric standard proposed.

MR. TWAIT: Correct. I'm just saying that

there is no difference in the effluent standard -- there's no -- if -- We're requiring the disinfection, and there's no difference for the technology as far as I understand to get them down -- either you're disinfecting or you're not disinfecting.

MR. ANDES: Okay. And the legal basis for requiring the disinfection is the same for both types of waters.

MS. WILLIAMS: Why don't -- I would like to answer this, because I think it may get us back to a question that I told you I would answer later, and we'll avoid me having to put it in writing.

Last time you had asked about the legal basis for this effluent disinfection requirement, and I just want to be clear today that our -- as we understand it, our authority for that piece of the proposal is the Board's rulemaking authority under Section 13(a)2 of the Environmental Protection Act. I can quote briefly that it allowed the Board to adopt regulations which prescribe effluent standards, specifying the maximum amounts or concentrations and the physical, chemical, thermal, biological as appropriate here ;and radioactive nature of the contaminatns that may be discharged into the waters of the state as defined herein. So that

authority is very broad and also very specific to this proposal, this piece of our proposal.

Now, I'm not sure if that answers the question that you just asked, but it answered the one that I was supposed to answer last time.

MR. ANDES: Well, let me follow up on that. So is the Agency saying that it can prescribe an effluent standard without any demonstration of need?

MS. WILLIAMS: What do you mean by need?

MR. ANDES: To protect water quality. What's the target? What's the goal?

MS. WILLIAMS: Technical feasibility and economic reasonableness would apply as well.

MR. ANDES: And those are the only limitations? There's no need to refer to protection of a numeric water quality standard or any other target?

MS. WILLIAMS: Correct. No, absolutely not.

MR. ANDES: Okay. Mr. Harley, you have a follow-up?

MR. HARLEY: Yes. Keith Harley, Chicago Legal Clinic, on behalf of the Southeast Environmental Task Force.

Earlier today you handed out Proposed Recreational Use Designation Map. Has this been entered

as an exhibit?

HEARING OFFICER TIPSORD: Twenty-seven.

MR. HARLEY: I call your attention to Exhibit 27. You referred to a series of questions about noncontact recreational waters. On this map, on Exhibit 27, it's correct to state, isn't it, that the noncontact recreational water on this map is the Calumet River; is that correct?

MR. SULSKI: A portion of it, yes, a portion of the Calumet River.

MR. HARLEY: And that noncontact recreational water connects the Calumet, meaning the Little Calumet, the grand Calumet, and lake Calumet to Lake Michigan; is that correct?

MR. SULSKI: Correct.

MR. HARLEY: And is it correct to say that there is a great deal of boat traffic or -- Strike that.

Is it correct to say that there is boat traffic which leaves from points of departure within the Calumet, through the Calumet River into Lake Michigan?

MR. SULSKI: That's correct, power boat traffic.

MR. HARLEY: Power boat traffic. And, therefore, the reason, or one justification for imposing

a disinfection requirement for wastewater which might be entering throughout walls on the Calumet River would be to protect power boaters from ingestion and dermal contact of wastewater; is that correct.

MR. SULSKI: Well, there are no major wastewater treatment plant effluents going into the Calumet River in that reach. The use designation is to identify what users, what type of recreational user is protected, so. I don't mean to say it's not a good question, but I need to clarify that there are no effluents going into there aside from combined sewer overflows.

MR. HARLEY: But in terms of the use itself, there is boat traffic, recreational boat traffic, power boats, which are using the Calumet River in order to get to Lake Michigan; is that correct?

MR. SULSKI: Correct.

MR. HARLEY: Thank you.

MR. ANDES: Next question, and I know this one is fairly specific: What are the fecal coliform densities in receiving water upstream of the WRPs and in major tributaries to the CAWS? To what extent do pathogens in these waters contribute to the overall risk to CAWS recreators?

MR. SULSKI: Well, again, sometimes they're low in the summer, and they could be high in the winter if you have combined sewer overflows going on upstream or there's a disinfection exemption for the nonrecreation season. So it's in different places in terms of levels of bacteria.

MR. ANDES: Do you have data that addresses this issue?

MR. SULSKI: There is data. I mean, some of the points are upstream of the wastewater treatment plants in the CDM report, Attachment B. So it's -- the data is there.

MR. ANDES: Has there been an assessment to the extent that those pathogens contribute to the overall risk?

MR. SULSKI: I would have to look back at the report. I know that it was considered. I know that it was also considered that just by virtue of the disparity and flows between upstream sources and the district effluents that anything occurring upstream of the District effluents is relatively insignificant.

MR. ANDES: Including CSOs?

MR. SULSKI: No. In dry weather. I should clarify that. Thank you. But there are some combined

sewer overflows.

MR. ANDES: And storm water loads?

MR. SULSKI: There are storm water loads, yes.

MR. ANDES: I think we have asked and answered P. I believe we addressed that in the last round of hearings.

The USEPA's Municipal Wastewater Disinfection manual requires disinfection of those instances where significant disinfection benefits outweigh the environmental risks and costs. Have those conditions been demonstrated or even considered in the CAWS? And, if so, where in the record is it documented?

MR. SULSKI: Well, you know, I have a copy of that manual. Could you ask the question again, please?

MR. ANDES: The manual requires disinfection in those instances where significant disinfection benefits outweigh the environmental risks and costs. And my question was whether those aspects had been demonstrated or considered by the Agency.

MR. SULSKI: They have been. And, to clarify, you know, whenever I see a statement regarding something that USEPA puts out in a manual, if it was a

statement like this, they always have qualifiers, and this document is filled with qualifiers on what they mean by that. And they mean things like, and I should say that this is before we had dechlorination and this manual deals largely with chlorination. So those are the types of risks they're talking about. Is it worth it to kill everything in the waterway to chlorinate if you're out in the middle of nowhere. So those are the sorts of risks that they're pointing towards. And they also say that you should consider other disinfection options besides chlorine; for example, ozone and UV light, which were considered in a stakeholder process and by the District, so.

HEARING OFFICER TIPSORD: Mr. Sulski, just for point of clarification, you are referring to the USEPA's Municipal Wastewater Disinfection EPA/625/1-86/021, correct?

MR. SULSKI: It's right here.

AUDIENCE MEMBER: Could you tell us the date on that document?

MR. SULSKI: Well, it's 1986.

MR. ANDES: Thank you. I believe that the next several questions we have addressed including 24, 25, 26, and 27 I think have all been asked and answered,

unless the Agency feels differently and would like to take the opportunity to respond to any of those. I think we've heard about each of them.

MS. WILLIAMS: That's fine with us.

HEARING OFFICER TIPSORD: Then in that case, let's take a short break, about 10 minutes. We're going to check on, I believe, that they have cafeteria here. We'll check on that. We'll then go until 1:00 o'clock when we break for lunch. We'll break for lunch between 1:00 and 2:00, come back around 2:00, and then we'll have another probably 45 minutes to hour break later in the afternoon for a dinner break before we come back in and finish up. I've actually been told we can have this room later than 8:00 o'clock, but I suspect we'll all be pretty done by 8:00 o'clock, but let's shoot for that.

(Short break taken.)

HEARING OFFICER TIPSORD: Then I think we're ready, Mr. Andes?

MR. ANDES: Thank you. We'll start with questions for Mr. Smogor. And, in the interest of time, we'll skip Question 1 and go to the substantive issues.

No. 2, on Page 3, Paragraph 1 of your prefiled testimony you state, "Illinois EPA proposes

that the lowest applicable level of biological potential service as the aquatic-life life goal for the remaining part of the Chicago Area Waterway System and part of the lower Des Plaines River. These waters are collectively called Chicago Area Waterway System and Branden Pool Aquatic Life Use B Waters. This final level of biological potential represents capability to maintain aquatic life populations predominated by individuals of tolerant types that are adaptive to the unique physical conditions, flow patterns, and operational controls designed to maintain navigational use, foot control, and drainage functions in deep-draft steep-walled shipping channels.

MS. WILLIAMS: Can we clarify at the beginning of that quote, I think there's a slight typographical error. Instead of Illinois EPA proposes that the lowest applicable level of biological potential, it says service, one word. It should be serve as.

MR. ANDES: Accepted. Is the only difference identified in the definitions of A and B Waters is the aquatic life and B Waters reside in deep-draft, steep-walled shipping channels?

MR. SMOGOR: No.

MR. ANDES: Can you expand on that a little?
MR. SMOGOR: Because these two definitions are largely focussed on biological potential. That's the big difference that the definitions are supposed -- are intended to reflect. One aspect of -- multiple aspects of that potential is the fact that B waters are steep-walled deep draft channels, much more so than the A waters. But that's not intended to be the sole difference between these two definitions.
MR. ANDES: Okay. And can you identify what the other differences are? We've heard a little bit about littoral zone, but I'm curious about what other differences are there?
MR. SMOGOR: I don't have the details. I thought maybe Howard had mentioned some of the differences in individual QHEI metrics. Over all QHEI scores on average are higher in CAWS A than CAWS B waters. We talked about that earlier. And the various metrics of the QHEI that tended to be higher or lower, I don't know that offhand.
MS. WILLIAMS: I believe Howard already addressed those, right?
MR. SMOGOR: I thought he did earlier.
MR. ANDES: So that's the Agency's response

to that question.

In terms of B and C, I guess we can ask them together. Is there a definition anywhere in the Agency documents of deep-draft shipping channels?

MR. TWAIT: No. I don't think we've got that definition in there.

MR. ANDES: I believe that as to Question D we've talked about the Cal-Sag Channel, but let's ask the question more broadly. If you can explain why the proposal is that Cal-Sag channel, Little Calumet River and the Calumet River from the O'Brien Lock and Dam to Torrence Avenue be classified as CAWS Aquatic Life Use A Waters?

MR. SMOGOR: Primarily because we believe that they have a physical habitat and other conditions that represent a biological, an attainable biological condition that's greater than that represented in the B waters.

MR. ANDES: Now, on the Cal-Sag channel, Mr. Sulski had talked about the fact that even though the QHEIs were low, were in some cases poor, there were other factors that led to designating those as -- that water body as A. How about the other water bodies here.

MR. SULSKI: You want to start with the

Little Calumet River and then go to the Calumet River?

MR. ANDES: Sure.

MR. SULSKI: Okay. So the Little Calumet River has even got -- even has a wider littoral zone. It's a wider body of water for the most part, and besides the cobble and rubble that was left behind when the Cal-Sag Channel was dug and broken up, the Little Calumet River has some sandy areas, it's got an inside bend, it's got other features that would put it in this category. The same with that section of the Calumet River between the O'Brien Lock and the -- and Torrence Avenue. One side of the shore line has got a slight relief with sandy shores. There was a seep gestation (sic.) over there. It's different than the upper part of the Calumet River.

MR. ANDES: Is it also different in terms of QHEIs? How does it rank relative to both overall scores and as to individual metrics.

MR. SULSKI: You can see then on Figure 5.2 from Attachment B there are two sites for the Calumet River: One at 130th Street and another one right at the O'Brien Lock and Dam. You can see how -- you can see where the QHEIs fall.

MR. ANDES: Can you explain them for the

record.

MR. SULSKI: Their QHEI scores fall at or above the line that cuts between modified and limited. And these are the Rankin scores. It's also based on our knowledge of the system that this sort of habitat carries through this area northward towards Torrence Avenue. So Rankin went on either side of the O'Brien Lock, and then we know that this sort of -- these sorts of features carry through northward towards Torrence Avenue.

MR. ANDES: Okay. I believe Question E has been answered.

Question 3, on Pages 2 and 3 of your prefiled testimony, you discuss the aquatic life use designations applied to the CAWS. You testified that ALU A Waters are predominated by individuals of tolerant or intermediately tolerant types; while ALU B Waters are predominated by individuals of tolerant types of waters.

Can you define intermediately tolerant aquatic life organisms?

MR. SMOGOR: The terms intolerant and intermediately tolerant and tolerant, we intended, not necessarily specific definitions of each, but in these

uses we use those as descriptive terms of relative degree of balance or imbalance. The Clean Water Act requires that to meet the aquatic life goal, you have a balanced population of aquatic life. And if your -- if you can't attain balance populations of aquatic life, you are successively more imbalanced, and that's all these terms were used to reflect, a common pattern of how human impact creates imbalance.

MR. ANDES: And how is the imbalance determined? It sounds like the Agency did not actually think of specific types of organisms that are tolerant or intermediately tolerant. Am I right?

MR. SMOGOR: Correct. Correct.

MR. ANDES: So when you talk about, well, it was really an issue of balance, what are the aspects that make it balanced or not balanced?

MR. SMOGOR: Well, we were judging it largely on, again, we're looking at what is an attainable biological condition in measures of -- protective measures of biological condition can indicate whether you have relatively balanced or imbalanced condition.

MR. ANDES: And which metrics are those?

MR. SMOGOR: Well, for instance, one of

those we looked at in terms of existing conditions is a fish IBI.

MR. ANDES: A fish IBI?

MR. SMOGOR: Index of biotic integrity.

MR. ANDES: I'm trying to get into more detail in terms of is there any -- any specific metric within the fish IBI that actually deals with whether you're seeing more tolerant species?

MR. SMOGOR: Within a fish IBI, there are metrics that address that, yes.

MR. ANDES: Which ones are those?

MR. SMOGOR: It depends on your fish IBI, and, off the top of my head, the Ohio boatable IBI was what was being used here. I'm not sure. I'd have to look that up in terms of each of the individual metrics. Off the top of my head I'm not --

MR. ANDES: I'd like to get that for the record so we --

MS. WILLIAMS: You'd like to get what for the record?

MR. ANDES: What are the specific metrics within the Ohio IBI scores that deal with the issue of tolerance and presence of tolerant or intermediately tolerant organisms?

MS. WILLIAMS: Thank you.

MR. SMOGOR: I don't have that off the top of my head. I'm sorry.

MR. ANDES: Okay. So as I'm looking through the next several questions, they may be difficult to answer until you can provide that information.

MR. SMOGOR: I mean I'd also like to make it clear that we weren't necessarily using that metric in the Ohio IBI to define these terms. These terms, again, in terms of describing what was a reasonable aquatic life use were pretty much forced into a narrative; and just like existing uses, the existing uses, aquatic life uses that are in our standards today don't really have quantitative definitions of terms. These are descriptive uses of what we believe -- or descriptions of what we believe are attainable biological conditions in a narrative form.

MR. ANDES: What I'm trying to understand is the presence or absence of a connection between the definitions of the uses that relate to presence of tolerant or intermediately tolerant organisms in any kind of measure of whether those organisms are actually there. And it doesn't sound like there's a specific connection between that description of the uses and any

data.

MR. SMOGOR: I don't know if it was ever intended that there should be or would be a specific reference to quantitative indeces at this point. Again, these terms are being used in a relative way, just as a general description. In other words, we're trying to capture a general pattern of becoming more and more imbalanced. And one common manifestation of that pattern is for -- is the disappearance of relatively intolerant forms and the successive increasing predominance of relatively more and more tolerant forms. That's a very common pattern of human impact on fish communities.

MR. ANDES: And are you assessing that pattern specifically in these water bodies?

MR. SMOGOR: Not specifically, no. We're using it only in a relative way. We know -- when we set levels of biological condition, lower levels of biological condition, as you go down the chain from higher biological condition to lower biological condition, we're representing imbalance here in terms of one common pattern of imbalance. And that is as you go from high biological conditions to lower and lower and lower biological conditions, you lose your intolerant

forms and then there's an increase in the predominance of the most tolerant forms as you go lower and lower, and that's all that was intended in these definitions. And each of the uses is -- represents a rung in that progression in terms of biological conditions.

MR. ANDES: Once those categories are defined and they're defined by the terms what species are present, okay, the specific definitions of those waters are whether they're predominated by individuals of certain types, then there could be information that comes out later as to what is actually present that might not have any relation to where those waters were initially classified because they weren't classified based on looking at data concerning which species were there.

MS. WILLIAMS: Is that a question?

MR. ANDES: I'm trying to make sure I understand this. Because the classifications weren't actually based on data concerning presence of tolerant species, right.

MR. SMOGOR: Not specifically, no.

MR. ANDES: Okay.

MR. SMOGOR: Only to the point, only to the degree -- My guess is we're going around circles here is

now that I have a list of the Ohio boatable IBI metrics, there is one metric in the Ohio boatable IBI. We did not rely on that metric explicitly as a cut-off or anything, but there is a metric called number of intolerant species and there is another metric called percent tolerant species in the Ohio boatable IBI. So to answer your earlier question, there are aspects -- and that reflects the idea that a common pattern of human impact, which is what an IBI is trying to reflect is human impact, one of the common patterns of human impact in terms of -- in addition to other effects is the loss of intolerance and the relative increase in tolerance.

MR. ANDES: What weight do those two factors have in the IBI scores?

MR. SMOGOR: I'm not -- if I'm counting correctly here, there's about 12 metrics in the Ohio boatable IBI, and those are two of the metrics.

MR. ANDES: Do they all have equal weight?

MS. DIERS: Can I ask a clarification question. He's referring to Attachment B, correct, is where you're getting?

MR. SMOGOR: I'm looking at a list of the Ohio boatable IBI metrics from Attachment B.

MS. DIERS: Can you refer to a page number, please.

MR. SMOGOR: Yes. Page 417.

MR. ANDES: Does each metric have an equal weight in the score?

MR. SMOGOR: Yes.

MR. ANDES: Okay. So two out of twelve relate to tolerance?

MR. SMOGOR: Yes, specifically.

MR. ANDES: Do any of the others relate to it in some other way?

MR. SMOGOR: It's complicated. Yeah. These metrics aren't mutually exclusive. They don't act mutually exclusive from the others. Organisms that contribute to some -- one metric may also contribute in ways to other metrics, because organisms don't only serve one role out there. They're serving multiple roles. They're functioning in multiple roles.

MR. ANDES: Okay. As to Question C as to describing the populations in this type of community, I think that's already been answered, because I don't think you really defined that.

MS. WILLIAMS: Objection.

MR. ANDES: Okay. Have you defined that,

that community?

MS. WILLIAMS: I was just referring to the characterization of the question. I agree with you that it's been asked and answered.

MR. ANDES: Fine. We'll move on. Please identify the species that were included as tolerant, intermediately tolerant, and intolerant that are adaptive to unique physical conditions flow patterns, and operational controls necessary to maintain navigational use, flood control, and drainage functions of the waterway system?

MR. SMOGOR: No specific classifications were made.

MR. ANDES: Am I right to say as to E that there are no specific species of fish that IPA has identified that would be supported in A versus B waters?

MR. SMOGOR: Correct.

MR. ANDES: Okay. Does IEPA have any scientific data or evidence indicating DO requirements for the species that they expect to find in ALU A waters?

MR. SMOGOR: We believe that these requirements are addressed in the National Criteria Document for dissolved oxygen USEPA 1986, which I

believe is Attachment X. Specifically criteria -- we believe our proposed DO standards are -- consist at the present time with that National Criteria Document, and specifically the criteria to protect for early life stages, the criteria that we've proposed that are consistent with Attachment X which is the National Criteria Document are set to protect for early life stages as sensitive as early life stages of channel catfish, and they're set to protect for later life stages as sensitive as later life stages of large mouth bass. And that's covered -- the basis for that and the reasons for that are covered in that document, mostly because of a lack of detail data on warm water species. Those are two important game species, and that's why there was more information on those two.

MR. ANDES: And are the EPA information related to criteria that would support attainment of the Clean Water Act goals?

THE WITNESS: Can you ask that again, please.

MR. ANDES: Are the DO criteria in the document focussed on attainment of the Clean Water Act goals?

MR. SMOGOR: Yes. But there is information

in that document, in the National Criteria Document, that addresses less than Clean Water Act goals as well.

MR. ANDES: How is that information used here?

MR. SMOGOR: That information is primarily -- was used for what we term our -- Again, I don't have the details right at the top of my head, and I'll refer you to a page in our statement of reasons which will probably be the easiest place to look. Page 60 in our statement of reasons, there's a table that summarizes the proposed dissolved oxygen standards for the various water in these proceedings. And, sorry, can you ask your question again?

MR. ANDES: I mainly just wanted to understand how the DO requirements in the IEPA document were used in determining the requirements in the proposed standards.

MR. SMOGOR: For the most part we set some of the -- the DO standards occur as more than one number. The DO standard, there's acute numbers and there's chronic numbers, and they also apply differently to whether early life stages are present versus not present. For the most part, our acute numbers, which in those columns it's called a daily minimum. And a

seven-day mean of daily minimum, which is about four columns over, is also related to that daily minimum and also related to preventing acutely lethal conditions. For the most part, we were pretty consistent with the National Criteria Document in preventing fish death. If it's lethal, it's lethal. If it gets too low, it's going to kill fish. So those numbers are fairly consistent, as you can see, for early life stages. The National Criteria Document basically says to not kill early life stages of fish, you have to keep your DOs up above 5 as a daily minimum. And to not kill -- to not kill later life stages of fish you have to keep your DO up above 3.5 as a minimum, a daily minimum. So we tried to be consistent with that. The differences, as you see, once we get below the Upper Dresden Island Pool, the last two rows of the table, is we're providing different protection in the last row and the row before the last row in terms of chronic DOs. In fact, we're not proposing the chronics that apply in the general use waters. We believe that's also consistent with the National Criteria Document that allows you to do that if your goal is something less than the Clean Water Act Product Life Goal.

MR. ANDES: The difference between the use A

waters and the use B waters is the dial lie minimum requirement when the early life stages are present, the criteria exists there for the A waters and not for the B waters.

MR. SMOGOR: Yes.

MR. ANDES: Okay. Well, I think answers F, E, and G. On H is there data or evidence of fish spawning, and this is a little unclear when we say in all of the waters proposed to be designated ALUA. I would ask for each of the waters, designated as ALUA, is there data or evidence of fish spawning.

MS. WILLIAMS: And are you conceptualizing each of the waters in the same way we have as segments.

MR. ANDES: Yes.

MS. WILLIAMS: Okay.

MR. SMOGOR: Evidence of? I think there is. It's based on -- We have data from MWRB fish data of 2001 through 2005 that we looked at, and based on small sizes of some of those data -- the data basically goes site by site, collection site. They sample the fish and they let you know how many of each type or species of fish, and they also create -- they also provide some weights and size ranges. So based on the small sizes of some of those individuals captured, one could deduce

that there must be some kind of spawning going on in that -- in those waters because of the small sizes of fish present. These are small sizes compared to their adult size of species. In terms of the specifics, again, I don't have anything right in front of me, but there is presence of young fish in those waters.

MS. WILLIAMS: Mr. Smogor, are you referring to data that's currently in the record somewhere?

MR. SMOGOR: No. I don't believe this is in the record yet.

MS. WILLIAMS: Can we enter the data he's referring to now as an exhibit?

HEARING OFFICER TIPSORD: That would be a good idea. And we'll reserve the right to ask more questions about it later.

And we have a follow-up.

MS. BARKLEY: I'm Tracy Barkley with Prairie Rivers Network. I wonder with the sampling that MWRD uses are sufficient and effective at capturing larval or even younger fish?

HEARING OFFICER TIPSORD: Could we hold off on that until we get this exhibit admitted.

I've been handed Metropolitan Water District of Greater Chicago, a table, Total Number of

Fish Collected From Each Sampling Station in the Chicago Area Waterway System from 2001 through 2005 as a Part of the Ambient Water Quality Monitoring Program. If there's no objection, we'll enter this as Exhibit No. 28? Seeing none, it is Exhibit No. 28. And then can you answer --

MR. SMOGOR: I believe I can. And Howard and Rob might be able to correct me if I'm wrong. It's my understanding that the collections that are represented in this exhibit now are primarily -- would miss larval fish, but they can catch, and is evidenced in some of the length and weight information, they can catch subadult fish, but not necessarily all the way down to the sides of larval fish.

MR. ANDES: Can I ask where the weight and length information is? I just see total numbers.

MR. SMOGOR: I guess they're missing. We had several parts of a worksheet, spreadsheet filed, and this appears to be not every worksheet from that file. There was a worksheet in the file that did have weight and length.

MR. SULSKI: You can get it off your own website.

HEARING OFFICER TIPSORD: They can. We

might not be able to.

MR. SMOGOR: I'm sorry. We'll have to add that to this. I'm sorry.

MR. ANDES: Whether we need to get it off the website or not, I need to know what the Agency is relying on.

MS. WILLIAMS: Can you just explain where -- Is that where we obtained this data? From the website? Or where did this data come from?

MR. SULSKI: The District sent a link to this data to us sometime late last spring.

MR. ANDES: Late in the spring of 2007?

MR. SULSKI: Correct. And then we downloaded it and it became a part of what we reviewed when we formulated --

MR. ANDES: So is this the only information that could relate to fish spawning?

MR. SMOGOR: As far as we can tell, yeah. It's indirect evidence of spawning by just looking at the sizes of each species that they caught.

MR. SULSKI: In CAWS. I want to clarify in CAWS.

MR. ANDES: So if you saw a small fish, it was assumed they were young?

MR. SMOGOR: Subadult sizes, yes.
MR. ANDES: Okay. And do we know whether the spawning occurred in the areas where they were caught or could it have occurred elsewhere?
MR. SMOGOR: We don't know for sure.
MR. ANDES: I think -- Let me ask Question I, although I think you've answered part of it. Has the IEPA analyzed the CAWS fish data to determine life stages present in various waterways? I think I understand how you've looked at younger life stages. Is there anything else you can add to that?
MR. SMOGOR: I would say no, not other than looking at the sizes of the fish as I've talked about.
MR. ANDES: Do the proposed designated aquatic life uses for the CAWS fit within the long-term fisheries management strategies that the Illinois Department of Natural Resources has for the CAWS?
MR. SULSKI: I don't know what those are.
MR. SMOGOR: We don't know.
MR. ANDES: Okay. I believe that Question No. 4 has been answered this morning. We talked about the Cal-Sag Channel.
MR. ANDES: On Page 3, paragraph 2 of your prefiled testimony, you state Illinois EPA primarily

bases these proposed aquatic life uses and designations on direct measurements and observations of the chemical, physical -- chemical and physical conditions in these waters and on how foreseeable improvements in these conditions or lack thereof relate to the potential biological condition. Illinois EPA also considered direct observations including measures of biological integrity of the types, life stages, and relative numbers of aquatic organisms that have lived or currently live in the Lower Des Plaines River and Chicago Area Waterway System. Although understanding the past and present biological conditions of these waters provides essential contacts, the primary responsibility in defining and designating aquatic life uses is to consider what level of biological condition represents a reasonable and attainable goal from now into the foreseeable future. My next few questions relate to some of the terms used here including, particularly, biological condition, reasonable goal, and foreseeable future . And I wondered if you could tell us how you define those for purposes of this rulemaking.

MR. SMOGOR: Biological condition is a determination of how similar or dissimilar sampled assemblage of organisms is from one expected to occur in

least impacted conditions, least impacted by humans.

MR. ANDES: Okay. So I think you've talked about biological condition and reasonable goals and how you've determined what goals are reasonable and what the foreseeable future is.

MR. SMOGOR: As far as reasonable goal, I think the only intent was there was one that made sense taking into account the available information; and I guess also it would have to be one that meets the requirements of the Clean Water Act as well.

MR. ANDES: Okay. I believe that Questions D and E have been addressed already, so I'll skip over those and as to -- We have a lot of questions on the IBI scores and the question there is whether we're getting fairly specific in terms of these issues.

HEARING OFFICER TIPSORD: I think that, yeah, let's wait on the IBI scores.

MR. ANDES: The next several questions we also get into in seven, eight, are fairly specific to DO standards.

HEARING OFFICER TIPSORD: Let's hold off on those, on the specific standards. Let's hold off until we get through the general, and then we can ask specific standards.

MR. ANDES: Okay. That's fine. That can run through a number of questions.

HEARING OFFICER TIPSORD: Okay. And that's fine. If you want to move on to Mr. Twait and see if there are any of those that can be addressed now and then come back to the more specific standards questions.

MR. ANDES: Okay. Well, the first several questions for Mr. Twait are also regarding certain numeric water quality standards.

MS. WILLIAMS: I would think most of Scott's would be since that's what his testimony was on, so.

HEARING OFFICER TIPSORD: In that case, if we want to move on then to the next group of general questions and then come back to the District on the more specific standards.

MR. ANDES: I'm just going back to confirm that.

We have some, I'd say, follow-up questions on some of the issues raised in other hearings, but I can fit that into issues as they come up. I think it would probably make sense to move on to the next set of general questions, then I'll reserve the opportunity to come back later.

HEARING OFFICER TIPSORD: Great. Thank you

very much, Mr. Andres. Then I believe it's Stepan next? Go ahead.

MR. DIMOND: Tom Dimond, Mayer Brown on behalf of Stepan Chemical Company. I'll try to give you some idea, Madam Hearing Officer, as to which ones I'm going to do. I think out of Mr. Sulski's, out of the questions that we've identified for Mr. Sulski, we'll do 1-4.

On Page 14 of your testimony, Mr. Sulski, you refer to intermediately tolerant and intolerant types of aquatic life that are adaptive to the unique flow conditions of the Upper Dresden Island Pool. Please describe what types of aquatic life are meant by those terms.

MR. SULSKI: This was asked and answered.

MR. SMOGOR: I tried to address this.

MS. WILLIAMS: But we weren't talking about the Dresden Island Pool specifically. So why don't we just -- Is that okay, Mr. Dimond? We'll answer specifically to that.

MR. SMOGOR: Again, these terms were used in a descriptive sense in narrative form to reflect relative degrees of balance or imbalance in the structure of aquatic life communities to meet the

proposed -- to meet the proposed aquatic life use. The Clean Water Act aquatic life use, aquatic life needs to be in a balanced condition, and these terms were merely used to represent a typical pattern as you go from a balanced biological condition to a more and more imbalanced biological condition. And one manifestation of that, one typical pattern of the effects of human impact on a balance system, is to first lose intolerant forms and then as more and more impact occurs, there's an increasing predominence of most tolerant forms.

MR. DIMOND: As you assess whether or not a particular stream segment can meet a standard that implies the presence of intolerant forms, do you have a specific list of species that you're looking for?

MR. SMOGOR: Not at this point, no.

MR. DIMOND: Well, if you don't have a specific list of species, then how can you determine whether or not any particular segment has the capability to meet a standard for -- that includes intolerant species?

MR. SMOGOR: I think what we're trying to attain is an overall level of biological condition. One aspect of that is this relative -- these relative differences in -- differences in the relevant numbers of

intolerant versus tolerant forms. That's not the sole aspect of achieving the particular biological condition. So we're looking for a particular level of biological condition, and we've said that our proposed use based on what we believe is attainable, the attainable biological condition, and that's largely determined by what the physical and chemical template can provide for biology in that -- in the Upper Des Plaines Island Pool.

MR. DIMOND: What do you mean by the physical and chemical --

MR. SMOGOR: We're looking primarily at physical habitat and chemical conditions to determine what's attainable in terms of the biological condition.

HEARING OFFICER TIPSORD: Miss Franzetti?

MS. FRANZETTI: If Mr. Dimond is -- Are you going to move on to your next question?

MR. DIMOND: Go ahead.

MS. FRANZETTI: Sorry. Mr. Smogor, can you give us, based on the fish studies that have been done in Upper Dresden Pool, can you tell me whether any species that would be covered by using the phrase intolerant species have been found typically in the fish studies in Upper Dresden Pool? I mean can you give us some idea of when that term is used?

MR. SMOGOR: Even though that level of specificity is not necessarily intended by these use definitions, our proposed use definitions, there are classifications available in the scientific literature, there are classifications of fish species into each of these boxes: Intolerant, moderately intolerant, or depending on what piece of literature you go to, there are these boxes that cover the gradient from most tolerant to least tolerant forms. We're not necessarily picking one of those and using one of those, but there is information like that out there that helps inform, for example, that helps inform how you might score a particular metric in a particular fish IBI.

MS. FRANZETTI: Can you explain for us why the Agency is reluctant for purposes of the use designations in the rules it's proposed to make reference to any of those reference documents or classification type reference materials on what types of fish tend to fall into tolerant and intermediately tolerant and intolerant? I mean because, understand, I'm not trying to be difficult.

MR. SMOGOR: I understand.

MS. FRANZETTI: It helps for the regulated community, at least, the general public, to have a bit

of clarity and certainty to what the proposed language means. So I'm trying to understand why, if those kinds of fish classification systems do exist, why did the Agency make the decision, no, we don't want to reference those or rely on those in these use designations?

MR. SULSKI: Could I address that, Susan? If you start carving out species, you can have different assemblages of species that are tolerant but it may be five tolerant species or intolerant species here, but it may be five other ones that are also intolerant or five other ones that are intolerant. So limit yourself to species in a regulation, you can box yourself into a corner. In other words, if you go out and you assess and you find that, well, we listed this species, but this year we didn't find these. Boom, we're on a list, and, you know, people want to sue us. But we do use metrics and other things to access waterways. So they're covered indirectly. So we go out and we do our assessment to determine whether they meet what our regulations say the use is and so they come in indirectly. But I think the answer is the primary reason is to not box oneself into a corner. So all of a sudden you're in violation one year, and all it takes is just one thing and you're in violation when that may

not be the case, so does that --

MS. FRANZETTI: Yeah. Maybe I'm not understanding what these reference materials show. Because I guess I thought based, on what's been said, that the standard or references that do contain list of fish species divided by tolerant, intermediately tolerant or intolerant, would kind of be like an encyclopedia. So that what you basically would be saying is if you're saying in a rule that the tolerant predominate, okay, then one could go to the reference and see the types of species; not that every one of them needed to be there for the use designation to apply, but species of the type that are in that category would be found to predominate in that water body. See what I'm -- Do you understand why I'm confused? I don't say that the rule has to specify the fish species, but why can't the rule, if it's using these categories, make reference to some source, some resource that contains the encyclopedia, so to speak, of types of species that are in each one of these categories?

MR. SMOGOR: I don't believe that we've got that far in this analysis in terms of -- I don't disagree that that may be a fruitful path, but I don't think we've gone that far in the intention or the intent

of these terms. For the most part, these terms pretty much reflect balance or degrees of imbalance, and that was the intent and so there was never an explicit intent to go that far on that path at this point.

MR. SULSKI: When the stakeholders tried to do it, they were very swiftly knocked off that course. I mean even CDM listed some species this their proposed classification, but everybody argues, well, that's not the species we should be using, so I don't think it's necessary to list particular species to define a goal. Because species are used as one element of a decision anyways on whether a goal is being met.

MS. FRANZETTI: Thank you.

MR. DIMOND: So is it your sense -- is it the Agency's position then that you don't need to identify species or categories of species that are either tolerant or intolerant, but that this metric of balance is somehow measured by the IBI scores?

MR. SMOGOR: I think one way that can inform you about whether fish bleeding is balanced or imbalanced is to use a biological indicator like an index of biotic integrity and IBI. I think that's one possible way to answer the question do I have a balanced fish community or do I not have a balanced fish

community.

MR. DIMOND: Has the Agency used any metrics or devices other than IBI scores to measure the balance?

MR. SMOGOR: For the most part when we assess attainment of the current uses for waters throughout the state, the current aquatic life uses in streams for waters throughout the state, other than the waters that we're talking about in these proceedings, so I'm dealing with the general use waters, we rely on an index of biotic integrity for fish, an index for biotic integrity for macroinvertebrates, and other -- and components of those two indeces, individual components of those two indeces. Those are pretty much our biological indicator's toolbox for the general use waters.

MR. DIMOND: And what have you -- were you done?

MR. SMOGOR: Yes.

MR. DIMOND: What, if anything, have you tried to use for the waters at issue in this proceeding?

MR. SMOGOR: Well, the use attainability analyses for both the Lower Des Plaines River and for the Chicago area waterway system were informed by -- they were informed by -- the existing biological

condition was reflected in part in terms of Ohio and Ohio boat electrofishing index of biotic integrity. So that helped inform the -- helped inform us about the existing biological condition of these waters.

MR. DIMOND: Our second question was what are the unique flow conditions that the Agency believes exist in the Upper Dresden Island Pool?

MR. SULSKI: Relative to CAWS and the Branden Pool, the Upper Dresden Island Pool is flanked by a greater degree of a better quality habitat, some islands. It is impounded, so it's less, I guess, it's less unique on the stressor level than what is found upstream. So we're looking at it relative to all the -- the three groups of waterways that we could find.

MR. DIMOND: Is impoundment generally considered to be a stressor?

MR. SULSKI: I'd have to refer to my --

MR. SMOGOR: I think in general, yes.

MR. DIMOND: In what way does it stress the aquatic life -- I assume we're talking about aquatic life here in terms of stressors of impoundment being a stressor?

MR. SMOGOR: Yeah. I was referring to aquatic life.

MR. DIMOND: In what way does it stress the aquatic life community?

MR. SMOGOR: To me, when we refer to stressors, I'm considering that term pretty broadly as what do humans do to create conditions that are -- degrade from a natural condition. And when you have a naturally flowing stream and you impound it, that is a stressor then on what was occurring there before the impoundment. That's how I'm looking at that.

MR. DIMOND: So you're just looking at -- so there you're just defining stress as a change from what would otherwise -- what the condition would otherwise be?

MR. SMOGOR: Well, what the condition would otherwise be with a relative lack or under least impacted -- least affected by human conditions.

MR. DIMOND: Okay. Now, our next question was --

MS. FRANZETTI: Can I interject on that?

MR. DIMOND: Sure.

MS. FRANZETTI: But the language of the proposed use designation does use this phrase unique flow conditions. So you've mentioned impoundment. Would it also include the fact that the flow levels in

Upper Dresden Pool can change significantly in a short amount of time due to the operation of the lock and dam system, for example? Is that part of what was meant to be captured by unique flow conditions?

MR. SULSKI: The statement reads that it says necessary to maintain navigational uses and upstream flood control functions. So, yes, we've got a navigational channel which bifurcates some of the system that's sort of unique in the grand scheme of things. I wouldn't speak that far in terms of the effect of flood control function because all streams have some flood control function.

MR. DIMOND: Our next question was why are the geographic features of the Upper Dresden Island Pool, paren, its earthen banks and overhanging vegetation, closed paren, given more weight than the effects of upstream contamination in evaluating the Upper Dresden Island Pool's aquatic life potential.

MS. WILLIAMS: Can you specify what upstream combination you're talking about?

MR. DIMOND: Well, among others, the contaminated sediment throughout the entire waterway system.

MR. SULSKI: Well, we haven't established

that the upstream sediment -- We haven't established that it's contaminated to the extent that we -- we don't know what effects it has exactly, the sediment, aside from it being a metric in a habitat, for example. But aside from that, we just had a discussion on most of our information on sediments is bulk chemistry. So what other upstream contamination are we talking about?

MR. DIMOND: So the Agency has not evaluated what the impact of sediment -- of sediment contamination is on the ability of the Upper Dresden Island Pool to improve its aquatic life uses?

MR. SULSKI: The contractors made an effort to do that, and both agreed that there was either not enough information or the information was not sufficient enough to invoke a UAA factor based on sediment contamination. We didn't have any additional data that can answer that question definitively.

MS. FRANZETTI: Mr. Dimond, if I may?

MR. DIMOND: Yes.

MS. FRANZETTI: What's confusing is that why was the sediment information sufficient for purposes of, I believe it's cadmium standard to factor it in, but not for anything else? Could you explain that a little further?

MR. TWAIT: Well, to explain the cadmium, we looked at the district's water quality data in their receiving stream. And we noticed that in some places where we don't have a point source, the cadmium in the stream was still elevated. And then we also noticed that some of those same places that during the winter when we've got less large traffic, that we believe that the levels of cadmium in the stream were lower than when they were in the summer when we would have more. So we surmised that the barge traffic was stirring up sediment and that was causing the cadmium to be found in the water quality, in the water.

MS. FRANZETTI: Do you have any -- Is there any data -- I understand what you were saying that you were comparing cadmium levels in the water in that area and drawing the conclusions as you've just said about the cause of the differences in the cadmium levels. Did you do any similar review for organic parameters to see whether or not you saw changes in their level in the water column as between high navigation times versus lower navigation use times.

MR. TWAIT: Are you talking about BOD or other organic chemicals?

MS. FRANZETTI: Organic chemicals, not BOD.

MR. TWAIT: No. We did not look at that.
MS. FRANZETTI: Is that because that information isn't available or you're not sure why? Because I don't know.
MR. TWAIT: We looked at -- We looked at cadmium specifically because we were not meeting the -- what we had -- We were not meeting the national criteria for cadmium. So we looked at it specifically and tried to determine why we weren't meeting with the organics other than B text we're now proposing the water quality standards other than derived criteria. So we did not look at it because we did not have a problem with the proposal.
MS. FRANZETTI: Okay.
MR. DIMOND: Our next set of questions go to differences in the UAA factors between the CAWS Aquatic Life Use A Waters and the Branden Pool Aquatic Life Use B Waters in the Upper Dresden Island Pool. For UAA factor No. 3, how was it determined that there are no irrepairable human-caused conditions or sources of pollution that would prevent the attainment of Illinois EPA's recreational and aquatic life goals in the Upper Dresden Island Pool.
MS. WILLIAMS: Mr. Dimond, can I just ask

for our clarification about the question. Have you had a chance to look at the table that Mr. Sulski filed since the last hearing?

MR. DIMOND: I've looked at the table, but it just states the conclusion. It doesn't answer the question.

MS. WILLIAMS: Well, okay.

MR. DIMOND: I mean unless I'm -- maybe you should --

MS. WILLIAMS: It seems that the question suggests that we determine Factor 3 did not apply. So I guess I was suggesting that all the places where there's a 3, we've determined that it does apply on that chart.

HEARING OFFICER TIPSORD: Oh, okay. We're going to have to enter the chart as an exhibit.

MS. WILLIAMS: That's fine. I think we should.

HEARING OFFICER TIPSORD: UAA Factor Application to the Lower Des Plaines River and CAWS which was filed by the Agency on the 4th will be entered as Exhibit 29 if there's no objection. Seeing none, it's marked as Exhibit 29, and the Board's docketing sheet will reflect that.

MR. SULSKI: Can I answer the question?

MR. DIMOND: Sure.

MR. SULSKI: Well, we didn't deem that the source of pollution are irreversible stressors on the system, and habitat modifications are not severe enough to invoke a factor. But that's for the aquatic life side. You asked about recreation, too. We invoke Factor 3 because of the barge traffic and other industrial activities, and considering that primary activities were not known to occur, so they're not existing uses and we didn't have any information that suggests their plan for the near future. So in that regard, we invoke Factor 3 for recreation. We didn't invoke any factors for aquatic life in Dresden Island Pool.

MR. DIMOND: So it was the Agency's conclusion that the barge channel did not have an impact on the ability to -- the aquatic life use in the Upper Dresden Island Pool?

MR. SULSKI: We didn't think that the barge channel in itself should ignore the other qualities within that system to the extent that we'd be justified in invoking a UAA factor.

MR. DIMOND: What were the other qualities?

MR. SULSKI: Looking at a navigation chart

here. Do we have -- what was it filed under?

MS. WILLIAMS: For the record, Mr. Sulski is referring to what was No. 5 in our list of documents that we filed with the Board; navigation charts with QHEI values, and it's color copies and the copies are there.

HEARING OFFICER TIPSORD: Say that again, please.

MS. WILLIAMS: It's navigation charts with QHEI values is what it's numbered on our list. It didn't have a cover page, I believe, but it's the colored maps.

HEARING OFFICER TIPSORD: This is it?

MS. WILLIAMS: Correct.

HEARING OFFICER TIPSORD: We'll enter that as an exhibit as well. We'll make that Exhibit No. 30. And it's U.S. Army Core of Engineers Illinois Waterway Mile 277.8 to 280.4 at the top of the chart. The date is 1998 on the bottom left-hand side. Map No. 109. That's the first map. It's No. 110 and 111. They're stapled together, so we'll give them one exhibit number of Exhibit 30 if there is no objection. Seeing none, it's Exhibit 30.

MR. DIMOND: You were going to answer the

question.

MR. SULSKI: In response to the question, I was compelled to drag out these maps because it gives you a better pictorial understanding of what this pool consists of. And while -- and these navigation charts are a good demonstration data. Because they show you where the navigational channel is and what other just basic features exist in the system. And, as you look up and down it, you do see that there's a navigational channel, but you also see that that channel is flanked by many areas of nonnavigation channel habitat including, you know, island and delta mouths and channels behind islands and tail waters and side channels and flaps and an inside bend. And so in utilizing the weight of evidence decision, we can't ignore that these things exist. They don't exist upstream in those straight wall channels, but they do exist here, and they do exist sufficient enough for us to make the determination that we can't invoke a UAA factor based on habitat, that there's sufficient enough habitat to meet the goal that we've set for this reach of waterway.

MR. DIMOND: And that conclusion is based on the various QHEI scores that you've obtained, and I

think you testified last time your own personal observations.

MR. SULSKI: Correct. I mean QHEIs are one measure of habitat, but it's habitat as well as certain metrics of the QHEI. And just, yeah, my experience and other folks' experience with what exists in this reach.

MR. DIMOND: I believe 4B and 4C have been asked and answered, probably several times over. So I'm going to move on to Page 5 to Question 1 there.

How is it determined that the highest level of biological potential should serve as the aquatic life goal for the Upper Dresden Island Pool?

MS. WILLIAMS: Can we just clarify for the record? I think you said you were moving on to 5.

MR. DIMOND: Page -- I'm sorry.

MS. WILLIAMS: You meant D, right?

MR. DIMOND: I'm sorry. My page numbering is different because I spaced it out differently. It's Question 1 under the heading for Mr. Smogor.

HEARING OFFICER TIPSORD: Which is Page 3 of the prefiled questions. It's what happens when you leave space for notes.

MR. DIMOND: Let me just reread the question now that everyone knows where I was. How is it

determined that the highest level of biological potential should serve as the aquatic life goal to the Upper Dresden Island Pool?

MR. SMOGOR: I believe a lot of that is documented in the Lower Des Plaines River use attainability analysis Attachment A. And when you say highest, the way I am interpreting that is that's just in a relative degree. Of the three uses we've proposed, the level of biological conditions proposed for Upper Dresden Island Pool is the highest. That's not -- there's not any intent of ultimate highest in a larger frame of reference there. So the information in the UAA Attachment A primarily, again, it was physical habitat conditions, water chemistry conditions, and existing -- that are existing, and biological -- existing biological conditions also informed of that process. But with the caveat that existing biological conditions themselves don't necessarily define biological potential for these waters.

MR. DIMOND: Did you consider the potential impact of other lower level areas, particularly those that are upstream, upon the Upper Dresden Island Pool.

MR. SMOGOR: Can I ask you to clarify what you mean by lower level areas? I'm not quite sure what

you're getting at.

MR. DIMOND: Well, there are, for example, the Branden Lock and Dam is identified as an Aquatic Life Use B area. In other words, it doesn't have -- It's a lower level of biologic potential apparently, than at least in the Agency's view, than the Upper Dresden Island Pool. Did you consider the impact of those areas on the Upper Dresden Island Pool?

MR. SMOGOR: I would -- To the extent that a particular body of water is -- conditions in a particular stream are affected by what flows into that stream from upstream, I would say yes. Because if you're looking at conditions in Upper Dresden Island Pool, those conditions in part reflect what's flowing into the pool. So in part, yes.

MR. DIMOND: So you just -- You considered it in the sense that whatever the impacts of the upstream reaches are, you would consider those to already be reflected in the conditions present in the Upper Dresden Island Pool.

MR. SMOGOR: Yes. I would say that's a good way to put it.

MR. SULSKI: Goal conditions, not existing conditions, though. I mean existing conditions can and

some cases are less than the goals that we've established. So I wanted to add that clarification on existing conditions because we're going to get into existing conditions quite a bit here down the road.

MR. DIMOND: What do you mean when you say we're going to get into existing conditions down the road?

MR. SULSKI: Well, because we have a disparity between habitat and IBI scores throughout Upper Dresden Island Pool. There's a disparity. In other words, it's not living up to the potential we expect it to live up to, and that's due to stressors. Some of the stressors are upstream causing that. We're not going to minimize and ignore those stressors, but we're not going to say that those are going to make us change our mind on what we think that the -- what we expect of the Dresden Island Pool.

MR. DIMOND: So even -- So is what you're saying is that even dischargers that are outside the Upper Dresden Island Pool may be impacted by the change in use that the Agency wants to achieve for the Upper Dresden Island Pool?

MR. SULSKI: That's possible.

MR. DIMOND: Did you consider whether the

effluent concentrations in the water flowing into the Upper Dresden Island Pool from the upstream areas would render the high level of biological potential unrealizable?

MR. SMOGOR: Again, to the extent that water chemistry conditions in Upper Dresden Island Pool reflect conditions of the waters flowing into Upper Dresden Island Pool, yes, to that extent.

HEARING OFFICER TIPSORD: And then, Mr. Dimond, if you're -- when you're finished with question one, we'll go ahead and take a lunch break.

MR. DIMOND: Unless anybody has follow-ups, I'm finished.

HEARING OFFICER TIPSORD: It's right at 1:00 o'clock, so let's go ahead and take an hour for lunch.

(Lunch break taken.)

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STATE OF ILLINOIS)
) SS.
COUNTY OF COOK)

I, LAURA MUKAHIRN, being a Certified Shorthand Reporter doing business in the City of Chicago, Illinois, County of Cook, certify that I reported in shorthand the proceedings had at the foregoing hearing of the above-entitled cause. And I certify that the foregoing is a true and correct transcript of all my shorthand notes so taken as aforesaid and contains all the proceedings had at the said meeting of the above-entitled cause.

_____
LAURA MUKAHIRN, CSR
CSR NO. 084-003592