

ORIGINAL

IN THE MATTER OF:)
)
WATER QUALITY STANDARDS AND)
EFFLUENT LIMITATIONS FOR THE) R08-09 (L)
CHICAGO AREA WATERWAY SYSTEM) (Rulemaking - Water)
AND LOWER DES PLAINES)
RIVER: PROPOSED AMENDMENTS)
TO 35 ILL. ADM. CODE PARTS)
301, 302, 303 and 304)

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STATE OF ILLINOIS
Pollution Control Board

REPORT OF THE PROCEEDINGS held in the above entitled cause before Hearing Officer Marie Tipsord, called by the Illinois Pollution Control Board, taken by Steven Brickey, CSR, for the State of Illinois, 160 North LaSalle Street, Chicago, Illinois, on the 17th day of December, 2013, commencing at the hour of 9:00 a.m.

 ORIGINAL

A P P E A R A N C E S

MS. MARIE TIPSORD, Hearing Officer

MS. ALISA LIU

MR. ANAND RAO

MR. JERRY O'LEARY

MS. JENNIFER BURKE

MS. DEANNA GLOSSER

1 MS. TIPSORD: Good morning. My name
2 is Marie Tipsord and I've been appointed by the
3 Board to serve as Hearing Officer in this
4 proceeding entitled Water Quality Standards and
5 Effluent Limitations for the Chicago Area Waterway
6 System and Lower Des Plaines River: Proposed
7 Amendments to 35 Ill. Adm. Code 301, 302, 303 and
8 304. The docket number is R08-9 and this is
9 Subdocket D.

10 With me today to my immediate
11 right is Dr. Deanna Glosser, the presiding Board
12 Member, to my immediate left is Board Member
13 Jennifer Burke and to her left is Board Member
14 Jerry O'Leary, to Dr. Glosser's immediate right is
15 Anand Rao and to his right is Alisa Liu from our
16 technical unit.

17 Today's hearing is the third day
18 in Subdocket D, but the 54th overall day of
19 hearing. We have pre-filed testimony from
20 ExxonMobil and Citgo Petroleum Corporation and PVD
21 Midwest Refining. We will begin with ExxonMobil
22 and then go into PVD. Today's hearing will also
23 satisfy the requirements of Section 27(b) of the
24 Environmental Protection Act for Subdocket D.
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1 Section 27(b) of the Act
2 requires the Board to request the Department of
3 Commerce and Economic Opportunity to conduct an
4 Economic Impact Study on certain proposed rules
5 prior to adoption of those rules. If DCEO chooses
6 to conduct the Economic Impact Study, DCEO has 30
7 to 45 days after such request to produce a study
8 of the economic impact of the proposed rules. The
9 Board then must make the impact study or DCEO's
10 explanation for not conducting a study available
11 to the public at least 20 days before a public
12 hearing on the economic impact of the proposed
13 rules.

14 In accordance with Section
15 27(b), the Board requested by letter dated August
16 11th, 2010, that DCEO conduct an Economic Impact
17 Study for this rulemaking. The Board received a
18 response to that letter on September 27th, 2010,
19 indicating that no ECIS will be conducted. We
20 will discuss comments concerning the Economic
21 Impact Study, the decision not to conduct one
22 today before the close of the hearing.

23 We will begin today with
24 ExxonMobil as I stated and we will start with the
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1 IEPA asking questions and then we will go to the
2 environmental groups and Citgo PVD with ExxonMobil
3 and then with Citgo PVD if there is a question,
4 we'll start with the environmental groups and then
5 go to IEPA assuming that schedule works.

6 Anyone may ask a question. I do
7 ask that you raise your hand, wait for me to
8 acknowledge you. After I have acknowledged you,
9 please state your name and whom you represent
10 before you begin your questions. Please speak one
11 at a time. If you are speaking over each other,
12 the court reporter will not be able to get your
13 questions on the record.

14 Please note that any questions
15 asked by a Board Member or staff are intended to
16 help build a complete record for the Board's
17 decision and not to express any preconceived
18 notion or bias. Dr. Glosser, did you have
19 anything?

20 DR. GLOSSER: No, I don't.

21 MS. TIPSORD: With that, I will turn
22 it over to Exxon. Go ahead.

23 MR. READ: My name is Matthew Read.
24 I am at the law firm of Hodge, Dwyer & Driver and
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1 we are counsel for ExxonMobil. To my left is
2 Kathy Hodge, a partner at the firm, and to my
3 right is Lial Tischler. He will be presenting
4 testimony on behalf of ExxonMobil today and we
5 would like to start out with a brief statement.

6 MS. TIPSORD: If you can be sworn in
7 first.

8 WHEREUPON:

9 LIAL TISCHLER

10 called as a witness herein, having been first duly
11 sworn, deposeth and saith as follows:

12 MS. TIPSORD: Also, can we go ahead
13 and enter his testimony as an exhibit?

14 MR. READ: Absolutely. This is the
15 pre-filed testimony of Lial Tischler with all the
16 attachments.

17 MS. TIPSORD: We just need one for
18 the record. If there is no objection, we'll mark
19 the pre-filed testimony of Lial F. Tischler on
20 behalf of ExxonMobil Corporation as Exhibit
21 No. 488. That is his testimony and all exhibits
22 attached. Is there any objection? Seeing none,
23 it is Exhibit 488.

24

1 (Document marked as IPCB Exhibit
2 No. 488 for identification.)

3 MR. TISCHLER: Ms. Tipsord, Board
4 Members, it's my pleasure to be here today.

5 MS. TIPSORD: You're going to have
6 to speak up.

7 MR. TISCHLER: Okay. My name is
8 Lial Tischler. I am a consulting environmental
9 engineer with the firm of Tischler-Kocurek, a two
10 person partnership. I'm here on behalf of
11 ExxonMobil to present testimony relating to the
12 water quality criteria that the Board will adopt
13 in Subdocket D.

14 My pre-filed testimony does
15 describe my experience and the type of work that
16 we typically do. Very briefly. I've been
17 involved in the development and implementation of
18 water quality criteria at both the state and
19 federal level as a consultant to numerous trade
20 associations and companies over the past 40 plus
21 years.

22 My experience and background is
23 primarily in industry, though I've worked also for
24 municipalities and done work for some government
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1 agencies also. The comments that I've offered
2 here in my pre-filed testimony address the scope
3 of several different things that I want the Board
4 to take notice of. First, I ask that the Board
5 take official notice of a proposed rule that EPA
6 issued about a month or two ago. It's called the
7 September 4th, 2013, Water Quality Standards
8 Regulatory Clarifications Rule.

9 The reason I want the Board to
10 take appreciable notice of this, although it's a
11 proposed rule, is that EPA describes in this rule
12 that what it is doing is interpreting their
13 current understanding of how states should adopt
14 water quality criteria, the flexibility the states
15 have and the discretion the states have in terms
16 of adopting criteria for the various uses that are
17 specified as designated uses under Clean Water Act
18 Section 101(a), which is, of course, the subject
19 of this hearing.

20 I want to first say that we
21 support the Board's Second Notice Opinion and
22 Order relating to the designation of the specific
23 category for the Upper Dresden Island Pool, I'll
24 refer to that as the UDIP, as having its own
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1 special aquatic life use in recognition of the
2 fact that it has got physical constraints and
3 constraints with respect to being effluent
4 dominated by upstream sources that do make the
5 achievable water quality use in terms of aquatic
6 life use something different than might be present
7 in other waterbodies.

8 Specifically, my testimony
9 addresses several items that are enumerated
10 starting on page five of the pre-filed testimony.
11 First one, the Board clearly has the ability to
12 adopt subcategories of designated Clean Water Act
13 Section 101(a)2 uses in which you are proposing to
14 do here and EPA makes it very clear in this
15 preamble to the water quality standards
16 classification rule that you do have discretion
17 not only on adopting these subcategories under
18 aquatic life use, but you also have the ability to
19 set numeric criteria, narrative criteria
20 appropriate to those uses.

21 I think it's a very important,
22 from ExxonMobil's standpoint, issue that you look
23 closely at the sources of the chlorides of the
24 UDIP and recognize the fact that the chloride
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1 water quality concentrations and the river during
2 certain seasons of the year are highly influenced
3 by human activity and that is something that needs
4 to be considered when you set the numeric
5 criteria.

6 I think it's very important that
7 the Board consider as part of this rulemaking the
8 ability for facilities to obtain variances because
9 one of ExxonMobil's concerns is that if numeric
10 criteria are set that result in essentially the
11 UDIP being immediately declared as impaired for
12 certain types of pools, we may well be in a
13 situation where it's very difficult, if not
14 impossible, to meet the criteria primarily because
15 it's the upstream sources that are the source of
16 the exceedances of the water quality standard and,
17 again, chloride is one example, temperature would
18 be another.

19 So variances may well be a very
20 important component of rulemaking recognizing that
21 Illinois already, of course, has a variance
22 provision in both its statute and regulations.

23 It's important to be sure that compliance
24 schedules continue to remain available for those
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1 things that can be implemented by a discharger
2 such as ExxonMobil. There's obviously nothing on
3 the table that would suggest that compliance
4 schedules wouldn't be available. I just want to
5 point out that EPA's clarifications rule makes a
6 big point of the fact that compliance schedules
7 will usually be necessary for many dischargers to
8 comply with water quality standards -- clean water
9 quality standards for a surface waterbody.

10 I discuss that I would like the
11 Board to consider the need to change the variance
12 provisions or offer some other form of regulatory
13 relief for multiple discharger variances or
14 waterbody variances. EPA's preamble to their
15 water quality clarifications proposed rule does
16 suggest that for certain instances for things like
17 nutrients and mercury that the ability to
18 streamline the variance process so that each
19 individual discharger doesn't have to make a
20 showing to get a variance from standards that are
21 going to have to be met sometime in the future
22 long-term where you have problems like mercury
23 deposition on land that is completely independent
24 of what the dischargers themselves are generating
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1 or where nutrients are coming from non-point
2 sources.

3 So it's important whether it is
4 part of this rulemaking or a parallel rulemaking
5 in my mind that the Board consider the ability for
6 the IEPA to be able to have a streamline method
7 for having multi-discharger or waterbody
8 variances. We need to -- I need to have the Board
9 thoroughly, which they already intend to do, at
10 the temperature standards that ultimately get
11 adopted for this waterbody, the UDIP specifically,
12 because of the fact that right now the waterbody
13 temperatures are dominated by several thermal
14 sources that are upstream of the ExxonMobil
15 discharge and it's important to us to be able to
16 have standards that we can comply with a normal
17 mixing zone, but without being in a situation
18 where the water is designated as impaired where we
19 could not get a thermal mixing zone.

20 And then, finally, I think again
21 as part of the temperature standards the IEPA and
22 the Board should look carefully and how they go
23 about setting the testimony standards consistent
24 with what the current sources of the thermal
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1 discharges are and what potential long-term
2 actions will be taken to reduce these thermal
3 loads so that whatever temperature standard the
4 Board chooses to adopt can, in fact, be achieved.

5 That concludes my opening
6 statement. My pre-filed testimony goes into more
7 detail on this and I'm obviously available for
8 questions.

9 MS. TIPSORD: Mr. Tischler, one
10 quick question. You mentioned the Federal
11 Register materials, the proposed rules by the US
12 EPA, that's Exhibit C to your pre-filed testimony,
13 is it not?

14 MR. TISCHLER: Yes, ma'am, it is.

15 MS. TIPSORD: Okay. So we will go
16 ahead and start with IEPA.

17 MS. DIERS: Good morning. My name
18 is Stephanie Diers. I will be asking questions on
19 behalf of Illinois EPA. I will start with our
20 pre-filed question number one.

21 On page 11, you state that the
22 UAA factor three states that "Human caused
23 conditions or sources of pollution prevent the
24 attainment of the use and cannot be remedied or
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1 would cause more environmental damage to correct
2 and leave in place." Can salt usage be remedied
3 such as using less salt during winter deicing?

4 MR. TISCHLER: The answer to that
5 question is, yes, salt use can be remedied to some
6 extent. However, to the best of my knowledge,
7 there is no replacement for salt that is
8 economically available and likely to be acceptable
9 in terms of deicing as the current usage of sodium
10 chloride. So this remedy while it makes sense to
11 try to apply it as soon as is practical to do so
12 is going to be, in my opinion, a very long-term
13 effort and that for this particular setting of the
14 water quality standard there is no realistic
15 probability that the proposed water quality
16 criterion of 500 mg/L of chloride can be achieved
17 in the foreseeable future because of the fact
18 we're dealing with an urbanized watershed that
19 uses large amounts of salt for deicing.

20 MS. DIERS: Are you aware that the
21 City of Chicago has started reducing their use of
22 salts?

23 MR. TISCHLER: Yes, I am.

24 MS. DIERS: Question two. On page
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1 11, you state that, "These states, typically
2 western and midwestern states, where natural
3 ambient chloride concentrations exceed the
4 US EPA's recommended criteria, have based their
5 criteria on statistical analyses of ambient
6 chloride historic data." What are the natural
7 ambient chloride concentrations in this system?

8 MR. TISCHLER: I think my answer to
9 that for the UDIP is that the concept of natural
10 if you like or ambient chloride concentration is
11 really somewhat irrelevant to the situation now
12 because the fact is there is no practical way to
13 return to natural conditions. It's basically a
14 baseline condition set by the usage of deicing
15 salt during, you know, the months of the year when
16 you have icing conditions. So there is no, quote,
17 natural concentration that one can use as a
18 benchmark in my opinion.

19 MS. DIERS: Question three. I don't
20 know if you've looked at other pre-filed testimony
21 in this, but there have been some talk about
22 winter months. So my question to you is would
23 ExxonMobil be agreeable to look at winter months
24 being defined as December through March or perhaps
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1 maybe March 15th through -- November 15th through
2 March 15th?

3 MR. TISCHLER: Yes, I believe
4 ExxonMobil would although I think we feel as
5 though and I feel as though there needs to be some
6 additional language that would allow for unique or
7 unusual circumstances where salt had to be applied
8 for icing conditions that occur outside that
9 timeframe.

10 MS. DIERS: Number four. If the
11 Agency were to propose a salt reduction goal
12 throughout the watershed, would Exxon be willing
13 to participate?

14 MR. TISCHLER: Yes. Conceptually, I
15 mean, it would depend on what participation meant,
16 but certainly the company would be willing to work
17 on salt use.

18 MS. DIERS: Number five. Do you
19 know if US EPA would approve a chloride standard
20 that is based on the current ambient conditions?

21 MR. TISCHLER: I cannot --
22 obviously, I can't read the minds of the people in
23 Region 5. I will simply say, yes, they should be
24 able to do it. Chloride -- one of the reasons I
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1 point out in my pre-filed testimony is EPA has
2 approved water standards that multiple states that
3 have chloride concentrations substantially higher
4 than the numbers that we're talking about here as
5 being protective of the aquatic life uses in these
6 particular waterbodies. So there is no reason
7 particularly given that the preamble says that the
8 state should have some discretion with setting
9 their standards. There is no reason they
10 shouldn't approve it.

11 MR. RAO: Mr. Tischler, you
12 mentioned other states and standards approved by
13 US EPA. Are those the states you mentioned in
14 your pre-filed testimony?

15 MR. TISCHLER: Yes, those are some
16 examples.

17 MR. RAO: Are there others, too?

18 MR. TISCHLER: I didn't try to look
19 at every state in the union, but, you know,
20 certainly in many of the midwestern and western
21 states that chloride concentrations exceed the
22 concentrations that would be seen, you know, that
23 are -- for example, in what EPA's criteria
24 documents suggest is necessary and they have
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1 viable aquatic life populations.

2 MR. RAO: Thank you.

3 MR. ETTINGER: Are we still playing
4 the game the way we did?

5 MS. TIPSORD: Yes.

6 MR. ETTINGER: You pointed to a
7 bunch of states and you said that they came up
8 with chloride standards based on natural
9 backgrounds, but you're telling us we can't do it
10 that way here so what is the relevance of those
11 states to what we're doing here?

12 MR. TISCHLER: The relevance of
13 those states is that you can have a protective
14 aquatic life use with elevated chloride
15 concentrations and that aquatic life use can be
16 viable and meet Clean Water Act Section 101(a)
17 requirements.

18 MR. ETTINGER: I understand that you
19 can't have a viable aquatic life use. Obviously
20 in the ocean we have high chloride levels and
21 those have viable aquatic life uses, but in the
22 cases of the states you're pointing to they looked
23 at what you called natural chloride levels and set
24 them based on that and presumably then came up
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1 with what was tolerable to the natural community
2 there.

3 Here, you're saying there is no
4 natural. So shouldn't we be instead looking at
5 what species could live in that system without
6 reference to some natural waters that you say
7 don't exist there?

8 MR. TISCHLER: As far as what could
9 live in the system, I think that's true. We have
10 an adapted aquatic life community at this point in
11 time in the UDIP which is recognized by the Board
12 when they established the UDIP ALU in the proposed
13 Second Notice Opinion and Order. So what I'm
14 basically saying is the existing aquatic life use
15 can be protected and clearly is protected under
16 the current regime of chlorides.

17 MR. ETTINGER: Do you understand the
18 Board to have ruled in its ruling that we're never
19 going to have any improvement to this waterbody
20 and we should put up with whatever aquatic life
21 uses we have for all eternity?

22 MR. TISCHLER: No, I don't think
23 that's true at all. In fact, water quality
24 standards are supposed to be reviewed triennially
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1 and as the Board -- as the questions from IEPA
2 indicated, there are activities in place to try to
3 reduce salt usage for deicing to try to improve
4 the chloride quality in time. The Board can
5 revisit this particular what the appropriate
6 numeric standards are at any time during the next
7 triennial review or the following triennial
8 review.

9 In other words, it can
10 incrementally improve the chlorides without
11 trying -- the chloride situation -- to recognize
12 that the aquatic community can improve potentially
13 provided it wasn't also limited by other physical
14 conditions or other chemical conditions in the
15 receiving waterbody. So it's not like you set it
16 now and it stays that way forever. That's not how
17 the Clean Water Act works.

18 MR. ETTINGER: Could the Board also
19 adopt as a goal a standard which they thought was
20 reasonably protective or use the current goal and
21 grant you a variance for a number of years while
22 we work this out?

23 MR. TISCHLER: Obviously, the Board
24 can do that. In my pre-filed testimony, I
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1 indicate should the Board adopt a chloride
2 criterion that can't be achieved -- in fact,
3 results in the water being declared as impaired
4 some sort of variance provisions are certainly
5 essential whether it's the current individual
6 variance provision which I think is a little
7 cumbersome because there would be multiple
8 dischargers that are going to have this problem or
9 a change to the variance position or other type of
10 regulatory relief that would, indeed, allow a
11 long-term variance which EPA does, in fact, in
12 this preamble to the water quality standards
13 clarifications rule suggest may be needed in some
14 such cases.

15 So they basically have options
16 which I'm sure they are fully aware of. They can
17 adopt a criteria that can be achieved now or in
18 the alternative they adopt a criteria that are
19 goals and then have some sort of streamline
20 variance that are a regulatory relief procedure.

21 MR. ETTINGER: Have you studied the
22 sensitivity of fingernail clams to chloride?

23 MR. TISCHLER: Have I studied the
24 sensitivity? No. I'm aware that the studies
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1 exist on fingernail clams.

2 MR. ETTINGER: Are you aware of the
3 existence of fingernail clams in the Upper
4 Illinois River?

5 MR. TISCHLER: My understanding is
6 that fingernail clams have been reported
7 historically in the Illinois River. As far as the
8 specific locations, how far downstream from the
9 Des Plaines River I don't know, but I'm aware that
10 they were present.

11 MR. ETTINGER: I have one more thing
12 and then I'll be done.

13 MS. TIPSORD: You need to identify
14 yourself for the record.

15 MR. ETTINGER: I'm sorry. I'm
16 Albert Ettinger. I'm sorry. I've been around a
17 while.

18 MR. TISCHLER: I guessed. It wasn't
19 very hard for me to realize you were asking the
20 questions.

21 MR. ETTINGER: You were told there
22 would be somebody here who was really obnoxious so
23 you got it right.

24 MR. TISCHLER: I don't find you
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1 terribly obnoxious.

2 MR. ETTINGER: I'll keep trying.

3 MS. TIPSORD: It's early.

4 MR. ETTINGER: I'm looking at these
5 states that you have here identified. One of them
6 is Wyoming and they have an average chloride of
7 230 and a chronic of 860. Is that the kind of
8 number that ExxonMobil is looking for?

9 MR. TISCHLER: No. The answer is
10 those are examples that are provided as I stated a
11 moment ago to show that you can have viable
12 aquatic life uses consistent with Clean Water Act
13 101(a) goal objectives at higher chloride
14 concentrations. I present a whole range and my
15 take on the chloride as I say in my pre-filed
16 testimony is that I see two basic approaches. One
17 is seasonal chloride standards that recognizes the
18 deicing conditions or the alternative would be
19 express the standard as an annual average which
20 some states do and by averaging cost of seasons
21 the standard can be issued.

22 MS. TIPSORD: Mr. Diamond, you
23 raised your hand?

24 MR. DIAMOND: Go ahead.
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1 MR. FORT: Jeff Fort on behalf of
2 Citgo. Since Mr. Ettinger was veering into the
3 issue of variances and what kind of variances one
4 can get from US EPA, I just wanted to note that we
5 have some more questions coming and we'll get into
6 the capability of this witness to get into those
7 matters later, but since Mr. Ettinger went back to
8 the water quality issue I'll recede from that
9 question.

10 MS. TIPSORD: Thank you. Ms. Diers?

11 MS. DIERS: I'm going to strike six
12 and strike seven. Question eight. On page 26,
13 you state that "On page 26, you state that "The
14 determination of compliance with AS 96-10 is at
15 the I-55 Bridge and applies to the LDIP." Are you
16 aware that the Des Plaines River downstream of the
17 I-55 Bridge is General Use waters?

18 MR. TISCHLER: Yes.

19 MS. DIERS: Question nine. You
20 state on page 21 of your pre-field testimony that
21 the Board should adopt regulations that allow
22 multi-discharger/waterbody water quality variances
23 for various constituents. What would such a
24 variance look like? Have you had any
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1 discussions with US EPA to see if such an approach
2 would be approvable?

3 MR. TISCHLER: First, let's go to
4 the second part of the question first and the
5 preamble for the water quality standards
6 clarification. So it clearly indicates that it's
7 the EPA's intent that such types should be
8 approvable. I would offer for examples of
9 variances for a multi-discharger would be mercury
10 variances that have been adopted by states such as
11 Ohio and New York and Indiana as they call it an
12 individual streamline variance, but, in effect, it
13 is essentially the same thing as a variance
14 mechanism that can be used simply for multiple
15 dischargers that have an issue with the mercury
16 standard.

17 EPA also points out in the
18 preamble another good example where this might be
19 required, this type of variance would be for
20 nutrients that are predominantly generated by
21 non-point sources, nitrogen and phosphorous.
22 Since non-point sources can't be directly -- are
23 not directly regulated by the NPDES program, for
24 example, it may take many years to implement
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1 non-point source controls for nutrients when you
2 have a body of water that is impaired to nutrients
3 and that's the examples that they offer and that I
4 would offer to you.

5 MS. TIPSORD: To clarify, that's US
6 EPA?

7 MR. TISCHLER: US EPA. Yes. Sorry.
8 I have to be a little careful. I'll try.

9 MS. DIERS: Okay. Just for
10 clarification. You refer to the preamble, but
11 this is a proposed rule that hasn't been adopted,
12 correct?

13 MR. TISCHLER: That is correct. Let
14 me make the point again I made before. This is a
15 unique sort of rule in that the EPA in the
16 preamble is discussing they're not, quote,
17 changing any water quality rules, but rather this
18 is their interpretation of how the existing water
19 quality rules can be used by the states to adopt
20 state water quality standards and criteria and
21 they make the point that for the most part this
22 proposed rule will not make any changes in how
23 states are expected to adopt -- review and adopt
24 water quality standards, but rather it's to clear
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1 up questions of interpretation that come up
2 between different regions and different states and
3 US EPA.

4 MS. TIPSORD: Mr. Tischler, are you
5 aware of when the public comment period closes for
6 the US EPA on this proposed rule?

7 MR. TISCHLER: Yes, I am,
8 Ms. Tipsord. It's, delightfully, January 2nd.

9 MS. TIPSORD: Thank you.

10 MS. DIERS: And just to go back to
11 what -- ExxonMobil or you in general have not had
12 any conversations with US EPA about getting a
13 variance approved? We've talked about
14 multi-dischargers. Have you had any conversations
15 with them about --

16 MR. TISCHLER: About --

17 MS. DIERS: -- a variance in this
18 situation? Have you had any discussion with US
19 EPA?

20 MR. TISCHLER: No.

21 MS. DIERS: You mentioned I think a
22 mercury variance in some of the states. Have
23 those been approved?

24 MR. TISCHLER: Yes.
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1 MS. DIERS: Do you know if a
2 nutrient variance has been approved?

3 MR. TISCHLER: I'm not aware of any
4 waterbody or multi-discharger nutrient variances
5 that have been approved. This is, as I said, an
6 example that EPA has offered up in their preamble
7 to this proposal.

8 MS. DIERS: Moving onto question
9 ten. On page --

10 MS. TIPSORD: Wait. Sorry.
11 Mr. Andes?

12 MR. ANDES: Fred Andes with Barnes &
13 Thornburg for the Metropolitan Water Reclamation
14 District. Good morning, Lial.

15 MR. TISCHLER: Good morning.

16 MR. ANDES: Are you aware that in
17 Montana the state is developing statewide
18 variances for nutrients?

19 MR. TISCHLER: Yes, I am.

20 MR. ANDES: And has EPA
21 preliminarily indicated in letters that that would
22 seem to be consistent with the regulations?

23 MR. TISCHLER: That, I don't know.
24 I haven't seen that.

1 MR. ANDES: Okay. Thank you.

2 MR. TISCHLER: Yes, it's a question.
3 That's excellent that Fred brought that up.
4 Montana is considering a multi-discharger variance
5 for nutrients that I am familiar with.

6 MS. TIPSORD: Mr. Tischler, I have
7 to ask a question about variances in other states.
8 Is this consistent with how Illinois uses the term
9 variance? A variance in Illinois is short-term,
10 five years towards compliance.

11 MR. TISCHLER: Yes, I think,
12 Ms. Tipsord, it has generally been -- generally
13 within the assumption it is a five-year variance,
14 but they also can be extendable and EPA in this
15 clarification rule makes it clear that for five
16 years progress towards, you know, eliminating the
17 need for the variance that variances can be
18 extended.

19 I will give you a specific
20 example of where it is not really a variance, but
21 it's a similar thing for a TMDL, total maximum
22 daily load, for the Los Angeles and Long Beach
23 Harbors where feds got a 20-year implementation
24 plan with inner limits that scale up for the
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1 dischargers over a period of 20 years with the
2 idea being an equivalent method of regulatory
3 relief in this case to long-term variance.

4 MR. ETTINGER: Just to follow up on
5 Ms. Tipsord's question. This is an Illinois law
6 question so maybe you can't answer this. But why
7 do you believe or do you believe that there is
8 some obstacle under current Illinois law to
9 adopting the kind of variance that you feel is
10 appropriate here?

11 MR. TISCHLER: Yes. I'm sorry,
12 Mr. Ettinger. First of all, obviously, no, I'm
13 not an attorney. I'm not going to comment on the
14 statute, this specific statute. My interpretation
15 of the current variance rules that the Board has
16 adopted, the variance rule, is that it is an
17 individual case by case basis with an individual
18 showing by each discharger that, you know, they
19 have a specific burden in terms of complying as
20 opposed to what I was discussing like we'll just
21 take Ohio as an example, a multi-discharger or a
22 waterbody variance for mercury where if, indeed,
23 you have data that shows you can't comply you're
24 basically given an interim goal limit that you
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1 have to meet and certain requirements in terms of
2 mercury minimization plans and if you do that you
3 are subject to this variance without going through
4 an individual demonstration that shows that it is
5 a potential specific hardship on you to try to
6 comply with the standard. Does that answer your
7 question sort of?

8 MR. ETTINGER: You did the best you
9 could. I think it was -- thank you.

10 MS. DIERS: I think you already
11 answered ten. So I'll go to 11. On page 32, you
12 state that, "The Board could justify adopting the
13 existing temperature standards on the basis that
14 the existing indigenous aquatic life biota is
15 adequately protected." Are you proposing to
16 protect the species that are there currently or
17 the species that should be there if the heat was
18 absent?

19 MR. TISCHLER: I am proposing that
20 for this rulemaking you protect the species that
21 are there. Currently as mentioned earlier when I
22 was responding to Mr. Ettinger you have the
23 opportunity to deal with the thermal sources and
24 approve the temperature regime and then the next
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1 triennial review is to change the standards again
2 or as many times as you need to. Again, I think
3 ExxonMobil's concern is that adopting criteria
4 that both ultimately cause the water quality to be
5 designated as impaired which under your rules
6 would not allow someone to have a mixing zone can
7 place a discharger such as ExxonMobil in a
8 situation where they simply wouldn't be able to
9 meet it because, of course, they, like any other
10 manufacturing plant, use cooling water and have
11 heated effluent that cannot meet a water quality
12 criterion at the end of pipe year around.

13 So they would be in a position
14 that unless there was a variance procedure
15 available as an alternative they would be given
16 limits that they couldn't achieve and that is a
17 major concern here because we don't control the
18 upstream temperature and, you know, the water
19 that -- the water that reaches the refinery from
20 upstream is already heated and if it is heated to
21 a level that is above whatever temperature
22 standard the Board might adopt, it creates a very
23 difficult permitting problem for IEPA and for
24 ExxonMobil.

1 MR. ETTINGER: Sorry. Doesn't your
2 concern presuppose that this upstream entity is
3 going to be allowed to violate the standard?

4 MR. TISCHLER: It assumes that that
5 thermal discharge will continue for some
6 indefinite period of time. I guess you could put
7 they would indeed be violating a new standard if
8 the standard was set differently than what is out
9 there today. That's correct.

10 MR. ETTINGER: So assuming that
11 upstream entity is allowed to violate the law like
12 gangbusters with a huge thermal discharge, do you
13 think poor, little ExxonMobil is going to be
14 caught in its mixing zone downstream?

15 MR. TISCHLER: Basically, yes.

16 MR. ETTINGER: Is there any reason
17 that ExxonMobil and that upstream entity couldn't
18 both apply for variances if they were justified?

19 MR. TISCHLER: Well, ExxonMobil's
20 burden on the variance would be potentially
21 different than that for the upstream discharger.
22 The current individual variances that the Illinois
23 regulations allow requires us to make a showing.

24 Could we make that showing? We could probably
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1 make that showing.

2 MR. ETTINGER: Wait a minute. So
3 you're saying you probably could make the showing
4 that would entitle you to a variance, but you're
5 concerned you'll have to get a variance?

6 MR. TISCHLER: No, we assume we can
7 make the showing, but we don't have any certainty
8 that we can make the showing. It depends on how
9 the Board interprets and the IEPA interprets our
10 position in terms of the ability to comply.

11 MS. DIERS: Question 12. In your
12 opinion, are temperatures up to 100 degrees
13 Fahrenheit protective of the existing aquatic
14 life?

15 MR. TISCHLER: No, generally they
16 are not protective of the existing aquatic life.
17 I would note that -- I don't know what the highest
18 recorded temperatures of the UDIP are. To the
19 best of my knowledge, there have been no fish
20 kills so it's probably essentially what happens if
21 the temperature gets that high you basically have
22 the fish moving into areas where the temperatures
23 aren't that high. So, you know, it's basically
24 what is called avoidance, which is not part of the
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1 temperature standard, but which is a reality, a
2 physical, biological thing that occurred.

3 MS. DIERS: Is long-term avoidance
4 acceptable?

5 MR. TISCHLER: I don't know what the
6 term long-term avoidance means. I think I stated
7 a moment ago that, you know, avoidance is not a
8 basis for setting the temperature criteria, but
9 it's a natural phenomena that occurs just like
10 there is a mixing zone whether you allow it or
11 not. It's a physical or biological reality.

12 MS. GLOSSER: I have a question.
13 Then are you saying that you wouldn't support a
14 temperature standard of up to 100 degrees because
15 it wouldn't be protected?

16 MR. TISCHLER: What I'm saying is
17 that I believe that 100 degrees approaches the
18 incipient lethality and that any time there's an
19 extended period of 100 degrees would probably have
20 a significant adverse effect on aquatic life.

21 MR. ETTINGER: Sorry. This is on
22 the avoidance concept. You say that avoidance is
23 not a basis for setting a water quality standard?

24 MR. TISCHLER: It's certainly not in
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1 any guidance that I've read that you set a
2 standard on the basis of the fish can avoid the
3 high temperatures.

4 MR. ETTINGER: Okay. So you're
5 aware of no authority that says that it is okay to
6 have a waterbody in which the fish aren't living
7 there because they've been driven out?

8 MR. TISCHLER: I'm not aware of
9 anything.

10 MR. ETTINGER: Does it make sense to
11 protect a waterbody by allowing conditions to
12 exist there that will drive all the fish out?

13 MR. TISCHLER: No.

14 MR. ETTINGER: You're right. If we
15 had -- if the thing was totally poison, you
16 wouldn't have fish kills because fish would never
17 be there, right?

18 MR. TISCHLER: That would be
19 logical.

20 MS. DIERS: Question 13. On page
21 37, you state that "US EPA's guidance for
22 developing water quality criteria for toxic
23 chemicals uses a 95 percent protection level."

24 Does the guidance for developing water quality
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1 criteria for toxic chemical allow you to choose
2 the 95 percent of the species that you are going
3 to protect?

4 MR. TISCHLER: No, that's not the
5 way the calculation works. It's not directly.
6 Indirectly it, in effect, does because essentially
7 you -- when you're looking at toxic criteria, you
8 list the most sensitive to the least sensitive and
9 then you basically use the upper bound, if you
10 like, so that the upper -- the five percent most
11 sensitive species don't get used in the
12 calculation, but you don't select them. They're
13 self-selected by their tolerance levels.

14 MS. DIERS: Okay. Doesn't the
15 criteria use the four most sensitive species that
16 are present or should be present?

17 MR. TISCHLER: Yes, it does, but
18 then it takes essentially the 50th percentile of
19 that. It basically fits that curve and calculates
20 a mean and that's why they use it and they use
21 what is called -- statistically will use what is
22 called an Alpha level .05, which is equivalent to
23 establish the 95 percent upper boundary.

24 MS. DIERS: What about species that
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1 do not have toxicity data?

2 MR. TISCHLER: Well, they're assumed
3 to be protected by the species that there is a
4 specific set of criteria that EPA recommends in
5 their guidance be used to determine the particular
6 number -- different families that have to be
7 represented in the types of organisms in those
8 that are -- you know, where you have no data or
9 supposed to be captured by the selection of the
10 species that are, in fact, have data and are used
11 in the calculation.

12 MS. DIERS: Okay. Fourteen. On
13 page 39, you suggest using the 95 percent to
14 determine the monthly average. Is this
15 recommendation based on page 1 of Appendix E in
16 the Technical Support Document for Water
17 Quality-based Toxics Control, which states,
18 "Monthly average limits are in most cases based on
19 the 95th percentile of the distribution of
20 averages of daily values"? Isn't the Technical
21 Support Document for Water Quality-based Toxics
22 Control for guidance for writing NPDES permits and
23 not for water quality standards derivation?

24 MR. TISCHLER: Yes.
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1 MS. DIERS: And is the technical
2 support document for water quality based toxic
3 controls for guidance providing EPS permits and
4 not for water quality standards deprivation?

5 MR. TISCHLER: That is true, but as
6 I stated earlier in the preceding question EPA
7 19 -- I believe it is 1985 EPA Water Quality
8 Criteria Guidance For Development of Water Quality
9 Criteria. It basically uses we just discussed a
10 moment ago essentially a 95th percent probability
11 level and, indeed, if you look at multiple EPA
12 regulations whether they're water quality criteria
13 or air quality, they generally use a number like
14 95 percent in recognition that there will be some
15 variance outside of that level, but when you try
16 to use a number with a much higher -- or a smaller
17 probability of occurrence, you develop standards
18 that are unnecessarily conservative.

19 MS. DIERS: Question 15. Can you
20 explain your statement on page 39, "Selection of a
21 list of fish species on an arbitrary assumption is
22 not a scientific basis for setting a standard"?

23 MR. TISCHLER: I believe it is
24 fairly clear what I was trying to state in my
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1 pre-filed testimony which is basically that no
2 effort was made to compare the actual resident
3 aquatic species in the UDIP with the list that was
4 actually used recognizing that that list was a
5 goal, but by not making any attempt to reconcile
6 what you'd like to see with what is actually
7 developed there and recognizing that you have both
8 physical configuration issues and other issues
9 that may restrict the aquatic populations that you
10 develop even in the absence of high temperatures I
11 just think that that is arbitrary and that's why I
12 stated that.

13 MS. DIERS: Question 16. On page
14 40, you suggest putting in a threshold of 0.5
15 billion BTU/hour for application of the Cold Shock
16 provision. What do you believe that ExxonMobil
17 would have to do to comply with the Cold Shock
18 Provision as written?

19 MR. TISCHLER: I believe ExxonMobil
20 can comply with the Cold Shock Provision as
21 written. One reason, however, we would like
22 limitation is that this -- these would simply be
23 another permit requirement which would require
24 additional administrative work on our part for
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1 what we believe would be of no real value because
2 ExxonMobil's discharges effects on the temperature
3 regime of the river are minimal.

4 We are doing modeling that has
5 shown that. So there is really no -- no problem
6 directly with the Cold Shock Provision other than
7 the fact that it is just an extra requirement that
8 doesn't serve any useful purpose in our mind.

9 MS. DIERS: That's all we have.
10 Thank you.

11 MS. TIPSORD: We'll move to the
12 environmental groups.

13 MR. ETTINGER: Let's just talk about
14 cold shock since we're there now. What is your
15 understanding of cold shock? What is it?

16 MR. TISCHLER: The cold shock
17 concept goes back to some of the original EPA
18 water quality criteria documents. I believe it
19 goes back to what they call the Green Book, which
20 was in the late '60s. The idea was when you have
21 a large thermal discharger in very cold water like
22 would occur on one of the Great Lakes during the
23 winter the fish could tend to congregate in the
24 warmer plume because obviously they're cold
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1 blooded species and they would have prefer to have
2 temperature up so they're not essentially in
3 stasis. What would happen is if the power plant
4 or something else, another major source of heat
5 would just shutdown suddenly, the rate of change
6 of temperature would be such that it would cause
7 cold shock and potentially result in a fish kill.

8 MR. ETTINGER: How much -- to what
9 degree is Exxon capable of heating the water
10 around its discharge in the winter?

11 MR. TISCHLER: Not very much. The
12 modeling work that has been done which is
13 basically a requirement of the existing permit
14 which will be submitted sometime this year
15 indicates that about 1,500 feet downstream from
16 the discharger of the I-55 bridge it could have an
17 affect on temperature at the delta above existing
18 of about 4/10th's of a degree Fahrenheit.

19 MR. ETTINGER: That's interesting at
20 the I-55 bridge and we'll get to that, but what
21 I'm concerned about is these poor, little fish
22 that are swimming into the immediate discharge
23 point. In that discharge point, wherever the
24 mixing zone would be, how much warmer would that
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1 be than the water outside of the mixing zone?

2 MR. TISCHLER: I don't -- I'm not --
3 the mixing zone -- of course, there's the
4 allowable mixing zone the size that the Illinois
5 rules allow. But when you say the mixing zone, I
6 mean, there is a grading of temperature. I mean,
7 the temperature goes from the temperature that is
8 in the discharge pipe which may be 10 or 20
9 degrees Fahrenheit above the ambient and it
10 rapidly mixes to where it is a degree or two and
11 then it continues to decline as it moves
12 downstream.

13 MR. ETTINGER: Okay. I think we're
14 getting there. Okay. I'm assuming the fish
15 aren't going to swim into your pipe, right?

16 MR. TISCHLER: That would be
17 difficult.

18 MR. ETTINGER: That would be
19 difficult. So now the question is I assume, tell
20 me if I'm wrong, that there is some area
21 immediately below your pipe which is warmer than
22 the rest of the river because it is warmed by the
23 heated water coming into your pipe, is that
24 correct?

1 MR. TISCHLER: That's correct.

2 MR. ETTINGER: My question is under
3 winter conditions, how much warmer could that area
4 be below the pipe than the rest of the river?

5 MR. TISCHLER: You know, basically
6 I'd have to look at the modeling results, but I
7 don't know the exact number. It dissipates rather
8 quickly because it mixes quickly in the river. It
9 would be a small area until it gets down -- like I
10 said, 1,500 feet is the number I do remember.
11 It's like 4/10th's of a degree Fahrenheit or
12 something like that.

13 MR. ETTINGER: And does -- is the
14 refinery subject to shutting off quickly? Does it
15 have that situation where it might shutoff quickly
16 and quit discharging for a while?

17 MR. TISCHLER: Not really. It's why
18 I stated a moment ago when the IEPA -- Ms. Diers
19 asked me the question would we have directly a
20 problem with the cold shock provision I said "I
21 don't believe we would."

22 MR. ETTINGER: Okay. I'm going to
23 go through my questions now. I don't think I
24 missed anything -- well, I think I came in during
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1 your speech. So I should not be repeating
2 questions earlier.

3 On page three of your testimony,
4 you state that ExxonMobil discharges only 1,600
5 feet from the waters currently designated as
6 General Use in the Lower Dresden Island Pool. Are
7 there any significant tributaries or other sources
8 of dilution between the ExxonMobil discharge and
9 the beginning of the General Use waters of the
10 I-55 bridge?

11 MR. TISCHLER: No, there are not.

12 MR. ETTINGER: To your knowledge, do
13 the General Use waters at the I-55 bridge violate
14 Illinois water quality standards for temperature
15 chloride or copper?

16 MR. TISCHLER: I do not believe
17 they're designated as impaired waters. So the
18 answer would be, no, as far as I know they don't
19 violate the standards.

20 MR. ETTINGER: So nothing happens
21 between your discharge point and the I-55 bridge
22 in terms of dilution?

23 MR. TISCHLER: No, that's not true.
24 It started diluting the moment the discharge hits
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1 the river.

2 MR. ETTINGER: Correct.

3 MR. TISCHLER: So 1,600 feet of the
4 dilution is not insubstantial with river --
5 upstream river water.

6 MR. ETTINGER: So it's being diluted
7 by the upstream river water, but there is no
8 water -- there is no non-Des Plaines water that is
9 coming in there now?

10 MR. TISCHLER: That is correct
11 except during storm water events when there are
12 some storm water discharges.

13 MR. ETTINGER: You have storm water
14 discharges there?

15 MR. TISCHLER: The refinery has
16 storm water discharges.

17 MR. ETTINGER: On page three, you
18 state that any changes to the existing designated
19 use and applicable water quality criteria could
20 have technical and economic impacts on refinery
21 operations. In what ways do you believe
22 ExxonMobil is currently benefitting from the
23 existing use designations?

24 MR. TISCHLER: I believe in my
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1 responses to IEPA's question I indicated our
2 concern is with the uncertainty and how the
3 existing standards may change and I think I
4 stated, hopefully very clearly, that our concern
5 would be if limits were set in the UDIP that
6 resulted in immediately being declared an impaired
7 water where we would no longer have allowable
8 mixing zones for things such as temperature and
9 chlorides it could be very detrimental to the
10 refinery operations unless we were able to receive
11 some sort of regulatory relief. The cost would
12 be -- would be extremely large if we had to meet
13 end of pipe, for example, the chloride standard or
14 the temperature standard.

15 MR. ETTINGER: Okay. Now, I'm
16 trying to make clear. You know what -- you know
17 the Clean Water Act pretty well and the
18 principles. I'm just trying to make clear what is
19 catching you. It's the mixing -- it is the no
20 mixing zone and the impaired water rule, is that
21 correct?

22 MR. TISCHLER: Yes, that is correct.

23 MR. ETTINGER: You're not concerned
24 about the principle that you can't cause or
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1 contribute to a violation of downstream water
2 quality standards?

3 MR. TISCHLER: No. I mean, that's a
4 given. That is part of the statute. That is part
5 of the regulations.

6 MR. ETTINGER: Right. And so you're
7 not concerned that anything that you're doing now
8 is causing or contributing to a violation of the
9 water quality standards at the I-55 bridge?

10 MR. TISCHLER: Well, no, we meet the
11 General Use standards downstream of the I-55
12 bridge with the allowable dilution that is
13 authorized under IEPA rules, but, you know, when
14 you ask about cause or contribute, obviously it's
15 the interpretation. If we add heat to a waterbody
16 that is already heated, I mean, some people are
17 going to take the position that is contributing
18 even if our contribution is immeasurable.

19 MR. ETTINGER: I probably would, but
20 we'll move on to chloride. If -- as I understand
21 it, you're concerned that the chloride standard
22 will be violated or will become applicable and
23 thereby violated above the I-55 bridge. Is the
24 chloride standard now being violated below the
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1 I-55 bridge?

2 MR. TISCHLER: I'm not aware of any
3 data that indicates it is. Clearly, it probably
4 could be if you have high chlorides during
5 seasonal periods above the bridge, but it's not an
6 impaired water for chlorides to the best of my
7 knowledge.

8 MR. ETTINGER: So that's my
9 confusion. What is happening between your
10 discharge and 1,600 feet lower that causes you to
11 be concerned that you would be causing or
12 contributing -- that you'd be concerned you'd lose
13 your mixing zone 1,600 feet above and you're not
14 causing or contributing at the I-55 bridge?

15 MR. TISCHLER: Well, you make -- I
16 mean, your point is well taken. The fact of the
17 matter is we would have a problem if we determined
18 that below the I-55 bridge was impaired for
19 chloride. That would be the same problem.

20 MR. ETTINGER: Okay. My question
21 four is the point of your testimony regarding
22 "Criteria for Use Subcategories." Simply that.
23 Is it permissible for Illinois to establish a
24 separate designation and criteria for the UDIP as
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1 it now proposes to do?

2 MR. TISCHLER: Yes.

3 MR. ETTINGER: Okay. I already
4 touched on this, but I'll ask the general question
5 five and I'll let you reflect to the whole thing.
6 I'm going to read the whole question even though
7 it's a series of questions.

8 You state at page 8 of your
9 testimony that "US EPA's interpretation of the
10 discretion allowed to states in the development of
11 numeric criteria are particularly relevant to the
12 future UDIP criteria for temperature, chlorides,
13 dissolved oxygen and potentially copper." Is it
14 relevant to ExxonMobil? Is water quality as to
15 any of those parameters appreciably worse at the
16 point of ExxonMobil's discharge than it is 1,600
17 feet downstream at the I-55 Bridge? What data
18 does ExxonMobil have regarding dissolved oxygen
19 levels at its point of discharge? I'll stop
20 there.

21 MR. TISCHLER: I mean, the direct
22 answer is we really don't know because the
23 waterbody has not been designated impaired and I
24 don't believe there has been sufficient water
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1 quality data collected by IEPA to make a
2 determination. So I really can't answer that
3 question directly in terms of -- but I already
4 testified there is no additional dilution water
5 that comes in.

6 MR. ETTINGER: All right. So if
7 IEPA would determine that the copper or chloride
8 or the temperature standards were being violated
9 at the I-55 bridge, you'd have all the problems
10 here without regard to the mixing zone rule?

11 MR. TISCHLER: We'd still have -- it
12 is still a mixing zone rule problem and it would
13 still be the predominant sources by far are
14 upstream and our contribution would be in
15 compliance with the standards were it not for the
16 fact that we had the upstream sources.

17 MR. ETTINGER: Then we have a
18 different issue here, though. What data does
19 ExxonMobil have regarding dissolved oxygen at the
20 point of discharge?

21 MR. TISCHLER: We don't collect any
22 ambient dissolved oxygen data in the river. We
23 operate the biological treatment plant at, you
24 know, levels of oxygen that are appropriate for
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1 them to operate, but that is only a small portion
2 of the total effluent. It's a fraction of the
3 total effluent. So we don't really measure DO in
4 discharge.

5 MR. ETTINGER: So you don't know
6 what the DO concentration is of your discharge
7 water?

8 MR. TISCHLER: At the point where it
9 enters the river, no.

10 MR. ETTINGER: Does ExxonMobil
11 discharge BOD or phosphorous?

12 MR. TISCHLER: It discharges both.

13 MR. ETTINGER: Does ExxonMobil have
14 a mixing zone for ammonia?

15 MR. TISCHLER: No, we meet the
16 ammonia criteria at the end of the pipe for the
17 discharge.

18 MR. ETTINGER: I'm going to skip
19 eight. I believe we've gone over that enough. At
20 page 11 of your testimony, you suggest that as
21 part of the IPCB proceedings it could take the
22 effects of Chicago deicing activities in the
23 Chicago area into account. Just how would you
24 want the Board to take deicing activities into
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1 account?

2 MR. TISCHLER: I think I stated that
3 a few minutes ago in response to the IEPA's
4 questions. I would request that the Board
5 consider setting either seasonal chloride
6 standards or in the alternative an annual chloride
7 standard which would address the question of the
8 periodic spiking of chlorides in the river due to
9 the deicing activities. And then in concert with
10 that continue to pursue the activities to reduce
11 the use of salt on highways and streets and
12 parking lots and open areas. I see that as a
13 long-term problem. We're not trying to offer up
14 that that is not something that should be
15 addressed, but rather it should be addressed
16 through the standard making process by not
17 adopting achievable standards at this time, but my
18 improving over time.

19 MR. ETTINGER: You talked about
20 seasonal standards before and I think we're going
21 to get there again. Are you aware of data that
22 shows aquatic life is less sensitive to chloride
23 in some part of the season or some part of the
24 year than others?

1 MR. TISCHLER: Yes. That's
2 generally my understanding, and, again, I'm not an
3 aquatic biologist, but my review of the chloride
4 data in some of the literature suggested that
5 chloride concentrations are less important during
6 the periods of the year when the most sensitive
7 life stages are present which is like during
8 reproductive periods and rapid growth periods.

9 MR. ETTINGER: I'm not sure I
10 understood that. You said they are less sensitive
11 or more sensitive when early life stages --

12 MR. TISCHLER: I should have said
13 more sensitive. The more sensitive species -- the
14 more sensitive life stages are -- the sensitive
15 life stages are more susceptible to the
16 concentration of things like chlorides and these
17 life stages are typically during reproduction and
18 growth.

19 MR. ETTINGER: Okay. So are life
20 stages -- sensitive life stages are around
21 generally, what, February to June? We've had a
22 lot of testimony on that. Is that what you're
23 thinking?

24 MR. TISCHLER: February sounds a
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1 little early, but, you know, I suppose it's
2 possible. I think generally my recollection is
3 that it is late March through the summer.

4 MR. ETTINGER: So we'd be more
5 concerned about chloride in March than we would in
6 January because of the early life stages, is that
7 correct?

8 MR. TISCHLER: Yes.

9 MR. ETTINGER: And then as we got
10 further down into the season it would be more of a
11 problem?

12 MR. TISCHLER: I'm not testifying as
13 to exactly where the cutoff should be. I'll make
14 that clear.

15 MR. ETTINGER: I'm not asking you to
16 say anything that you don't know. There's been
17 suggestions that there should be a seasonal
18 standard in the way -- there was a lot of
19 testimony before this Board regarding early life
20 stages with regard to dissolved oxygen and I was
21 trying to figure out whether that was the concept
22 you were alluding to?

23 MR. TISCHLER: That was the concept
24 I was alluding to, but, again, I haven't done
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1 research in that area relating to information that
2 I've seen from the literature.

3 MS. TIPSORD: Mr. Fort?

4 MR. FORT: Madame Hearing Officer, a
5 lot of generalities here by people that are not
6 tying it into particular evidence. Can I ask a
7 follow-up question on this concept?

8 MS. TIPSORD: Absolutely.

9 MR. FORT: Mr. Tischler, when you're
10 talking about sensitivity in early life stages,
11 you're not talking about when you have extreme
12 cold conditions and certain species become
13 dormant?

14 MR. TISCHLER: No, I'm not -- no,
15 that was not what I was referring to.

16 MR. FORT: In fact, it's completely
17 the opposite?

18 MR. TISCHLER: It's when they're
19 most active.

20 MR. FORT: Most active. Not when
21 they're in a dormant stage such as cold and in the
22 wintertime here in the Chicago area?

23 MR. TISCHLER: Correct.

24 MR. FORT: We'll have more testimony
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1 on this obviously later.

2 MR. ETTINGER: Let me just get back.
3 I don't know anything about chloride and toxicity
4 as I've already demonstrated, but what I want to
5 ask about is, for example, on ammonia there is a
6 chemical of -- a chemical process such as ammonia
7 is found to be more toxic when temperatures get
8 warmer because of the ratio of un-ionized to
9 ionized ammonia. There is nothing like that going
10 on with chloride or is there?

11 MR. TISCHLER: I'm not aware. That
12 is beyond my expertise in terms of evaluating
13 aquatic life use -- rather the criteria.

14 MR. ETTINGER: Okay. Do you believe
15 that a showing has been made in the record that
16 chloride pollution caused by human cause
17 conditions cannot be remedied?

18 MR. TISCHLER: I think as I say in
19 my pre-filed testimony and I believe as I
20 responded to the questions by EPA while I believe
21 that there are approaches that will improve things
22 I think it is going to be very long-term actions
23 that from a practical standpoint cannot be
24 remedied certainly during this next triennial
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1 review period nor foreseeably -- for the
2 foreseeable future in my opinion.

3 MR. ETTINGER: I hate to disillusion
4 you, but when do you think Illinois did its last
5 reconsideration of the water quality standards
6 applicable to this waterbody?

7 MR. TISCHLER: I don't wish to cast
8 dispersions on anybody over the triennial review
9 process because there are very few states that
10 actually impact the triennial reviews if that's
11 the point you're making.

12 MR. ETTINGER: That is the point I'm
13 making. So when you say we should wait for the
14 next triennial review, do you have some idea when
15 you think that might be?

16 MR. TISCHLER: Well, I think as I
17 stated a moment ago with respect to chlorides I
18 don't foresee that you're going to be able to
19 introduce alternatives. There is none that I see
20 on the horizon that are going to have any really
21 significant huge effects for five, ten years or
22 more.

23 MR. ETTINGER: So a five-year
24 variance would be about right?

1 MR. TISCHLER: Extendable.

2 MR. ETTINGER: Have you studied
3 whether the City of Chicago or other entities
4 upstream of the ExxonMobil refinery have adopted
5 best management practices to minimize the amount
6 of chloride necessary to keep streets safe in the
7 winter?

8 MR. TISCHLER: My understanding is
9 that, and, again, I'm responsive to IEPA's
10 questions, that, yes, there are efforts being made
11 to reduce the use of chlorides -- sodium chloride.

12 MR. ETTINGER: I'm going to skip
13 down to 11. Have you studied the work of David
14 Soucek regarding chloride toxicity?

15 MR. TISCHLER: I'm aware of the
16 work, but study would be too strong of a
17 statement.

18 MR. ETTINGER: Are you aware of
19 whether US EPA is considering new criteria for
20 chloride?

21 MR. TISCHLER: I know there's been a
22 lot of discussion whether they're really
23 considering criteria and what kind of studies
24 they've done to support revised criteria I'm not
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1 sure of. I will make a point that EPA's criteria
2 whether they're national or regional are just
3 that. They are not what the state adopts the
4 standards if the state can deviate from those
5 criteria as appropriate to the receiving waterbody
6 and the aquatic life conditions they're in.

7 MR. ETTINGER: Has there been any
8 research done to your knowledge as to what species
9 could live in the Lower Des Plaines -- drop the
10 question. It's too convoluted already. We'll go
11 on.

12 MR. READ: I have a follow up while
13 we're still on chloride. When you mentioned the
14 five to ten-year timeframe, would that be to make
15 progress or would that be a final resolution of
16 the program?

17 MR. TISCHLER: It would be to make
18 progress I think as I've stated already. I know
19 of no alternatives certainly probably not in my
20 lifetime, although I'm fairly old, I don't see a
21 complete substitution that would reduce the sodium
22 chloride use to the extent that you wouldn't have
23 issues during periods when you apply it.

24 MR. ETTINGER: Well, to meet what
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1 standard? How far off are you now from meeting a
2 standard that you think might be more protective?

3 MR. TISCHLER: I think as I stated a
4 moment ago one of the problems that I see is by
5 interpreting a standard that essentially sets a
6 chloride limit at any place at any time when you
7 have a phenomena, a use of salt for deicing that
8 causes sporadic, but not long-term changes in
9 chloride then you have -- then the problem is with
10 the standard, per se, and how it is applied.

11 That's why I mentioned one approach that other
12 states have used is an annual average because it
13 averages out these occasional spikes and some
14 states at least believe that that is a better
15 representation of what the appropriate level of
16 control is.

17 The other option is to indeed
18 have language in the -- to have a standard, for
19 example, seasonal that allows for the spikes.

20 There are other options the Board could consider.

21 The Board could consider -- they could consider
22 language in the standard that essentially would
23 allow the standard to be exceeded during periods
24 when there was salt applied. That's a possibility
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1 in the form of somewhat of an exception.

2 So there are opportunities that
3 the Board has to look at and I think that EPA's
4 suggestion in the preamble to that water quality
5 standard clarifications rule they have
6 considerable discretion is the term EPA uses on
7 setting limits. They have some options. You
8 don't have to set the chloride standard that is
9 1,000 all the time, but that would allow for those
10 kind of peaks that would occur in these salting
11 operation -- deicing operations rather.

12 MR. ETTINGER: Well, in terms of the
13 way you normally set standards to protect aquatic
14 life, wouldn't any variance of the standards go
15 back to what you spoke of earlier regarding the
16 sensitivity of species?

17 MR. TISCHLER: Only to some extent
18 and I think you're probably familiar with some of
19 the language in terms of frequency of exceedances
20 and the amounts of exceedances that are in, for
21 example, the Technical Support Doctrine For Water
22 Quality-Based Toxics Control. I mean, EPA
23 presumes in there based on actual data that you
24 can exceed the toxic standards once every three
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1 years without causing significant adverse effects
2 on the aquatic life that they're designed to
3 protect.

4 So, again, there is flexibility.
5 It doesn't mean because you have a chloride number
6 that goes up to 900 PPM for three days or five
7 days or even a week or two that that is going to
8 cause long-term disruption of the aquatic
9 environment -- aquatic life. And so the Board
10 does have discretion to write standards that would
11 address such a thing.

12 MR. ETTINGER: My question is
13 actually more general. As I heard your comments,
14 you were focusing on a rule that would focus on
15 when entities were putting salt on highways. I'm
16 asking is -- when setting allowances and water
17 quality standards for various seasons, don't you
18 normally focus on what is tolerable to aquatic
19 life rather than what is tolerable to people who
20 want to put salt on roads?

21 MR. TISCHLER: Certainly in the
22 development of aquatic life standards you need to
23 look at what is tolerable to the aquatic life if
24 you provide for these kinds of conditions or
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1 unusual exemptions as to whether, indeed, it would
2 have an adverse impact on aquatic populations.

3 MR. ETTINGER: I should start
4 carrying a clock that isn't a cellphone.

5 MS. TIPSORD: 10:15.

6 MR. ETTINGER: How long do you want
7 to go? I have quite a bit more here.

8 MS. TIPSORD: That's okay. Keep
9 going.

10 MR. ETTINGER: Is there any
11 contradiction between the IPCB finding that a use
12 is attainable even if it is not currently being
13 attained?

14 MR. TISCHLER: Certainly the Board
15 could find the use attainable sometime in the
16 future if it is not being attained now. That is
17 certainly allowable under the rules.

18 MR. ETTINGER: Okay. Do the
19 proposed US EPA regulations regarding variances
20 recognize that a waterbody could satisfy one of
21 the 131.10(g) factors for the period of a proposed
22 variance even if the use is attainable in the
23 future?

24 MR. TISCHLER: Yes.
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1 MR. ETTINGER: Had you read the
2 Board's opinion and order of November 21, 2013,
3 might that opinion be properly interpreted as to
4 the Upper Dresden Island Pool as stating that
5 although the water is not currently obtaining all
6 of the fishable, swimable uses the Board has
7 determined that such uses are attainable in the
8 future?

9 MR. TISCHLER: I believe what the
10 Board -- my understanding and reading of that is
11 the Board's current proposal is that the aquatic
12 life uses -- it addresses the question of what
13 currently is adaptive to the waterbody with the
14 potential in the future that a higher use could be
15 attainable.

16 MR. ETTINGER: With regard to your
17 testimony regarding variances, could the Board's
18 opinion be interpreted as finding that some of the
19 131.10(g) factors may be present for several years
20 in the future, but in the long run the Upper
21 Dresden Island Pool should be able to attain
22 fishable, swimable uses?

23 MR. TISCHLER: Yes, I believe that's
24 true.

1 MR. ETTINGER: I'm going to skip 15
2 and 16 in light of our discussion. I think I've
3 done 17.

4 I asked this sort of before, but
5 you understand the process. We all pre-file
6 questions and we don't know what anybody else is
7 filing at the time. So that makes for some
8 awkward moments down the road.

9 With regard to 18, with regard
10 to multi-discharger variances, you ask at page 21
11 that the Board allow -- adopt regulations that
12 allow multi-discharger waterbody water quality
13 variances for constituents including temperature,
14 mercury and chloride for the Upper Dresden Island
15 Pool. Do you know of any obstacles in the current
16 regulations to such variances?

17 MR. TISCHLER: I thought I already
18 answered that question, but my answer is that my
19 reading of the regulations is that individual
20 dischargers must apply for variances to the Board
21 and make individual cases and that there is no
22 sort of streamline mechanism for when you have all
23 the dischargers on a waterbody to have the
24 streamline approach to variance and have to not
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1 make individual appeals to the Board for a
2 variance -- petitions rather.

3 MR. ETTINGER: Well, is there any
4 reason why ExxonMobil couldn't talk to those other
5 entities that might have a problem and file a
6 joint petition to the Board?

7 MR. TISCHLER: I believe that the
8 problem would be is that the circumstances that
9 would justify the variances might differ between
10 the different entities and so, you know, again, I
11 don't read anything in the rules the way I read
12 the rules, and, again, that's me and I'm not an
13 attorney, but the way I read the rules is that
14 each discharger must make the showing of hardship
15 and inability to meet the standard on a case by
16 case basis. So applying as a -- with someone else
17 that wouldn't necessarily be acceptable to the
18 Board in terms of making a determination on
19 whether a variance is due to an individual
20 discharger.

21 MR. ETTINGER: Do you know if
22 ExxonMobil has ever talked to that upstream
23 thermal discharger regarding variances?

24 MR. TISCHLER: Yes, there was
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1 basically one conference call that I'm aware of
2 that I was indeed on.

3 MR. ETTINGER: Nineteen. Have you
4 study the release data for mercury for the
5 ExxonMobil Joliet refinery?

6 MR. TISCHLER: I assume when you
7 mean the release data you're talking --

8 MR. ETTINGER: For mercury. I'm
9 sorry.

10 MR. TISCHLER: Are you talking about
11 for the federal toxic release inventory data?

12 MR. ETTINGER: Yes.

13 MR. TISCHLER: Studied is not the
14 proper term, but, yes, I am familiar with it.

15 MR. ETTINGER: Can you explain the
16 reasons for the apparent recent increase in
17 mercury releases?

18 MR. TISCHLER: Are you taking about
19 the water or air?

20 MR. ETTINGER: I'm trying to
21 remember where I saw it. It must have been in
22 your materials.

23 MR. TISCHLER: Let me talk about the
24 effluent releases. Historically until ExxonMobil
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1 started in this current permit set of conditions
2 using the low level mercury analytical method they
3 had always reported not to protect values using
4 the standard analytical method for mercury and so
5 they had reported I think mostly -- I think they
6 reported zeros for the discharge of mercury.

7 In the last several years, they
8 have been collecting effluent mercury data using
9 low level mercury numbers and they come up with
10 about one pound particularly. So they're rapidly
11 going to increase -- it looks like an increase on
12 paper, but it really is because the analytical
13 method was insufficiently sensitive.

14 With respect to air releases,
15 those calculations are done using EPA emission
16 factors which sometimes change in the way you
17 apply a change so you see the numbers change, but
18 they don't -- they haven't changed much. There
19 were a couple of years that were low, but that was
20 probably an artifact of the factors that were
21 being used.

22 MR. ETTINGER: I think I understood
23 that.

24 MR. TISCHLER: We don't believe in
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1 the past decade that there has been any change in
2 terms of the increase in mercury.

3 MR. ETTINGER: The apparent change
4 relates to increased sensitivity of the detection
5 methods in your belief --

6 MR. TISCHLER: Correct. For water.

7 MR. ETTINGER: Yes, for water.
8 You're using the clean labs method in 136?

9 MR. TISCHLER: Yes.

10 MR. ETTINGER: Let's do 20. Page 21
11 you mention TMDL's as a possible regulatory
12 mechanism. Why is a variance better than a TMDL?

13 MR. TISCHLER: The reason a variance
14 is better than a TMDL for regulatory relief is
15 that a TMDL actually offers no regulatory relief
16 to anyone whose state calculates during permitting
17 has a reasonable potential to cause or contribute
18 to an exceedance of water quality standards.

19 So let's just say the states
20 calculation indicated that you had reasonable
21 potential to cause or contribute to a temperature
22 standard. Even if there is a TMDL going on that
23 will sometime in the future be completed and
24 allocate temperature, the states position on this
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1 and their interpretation of the EPA regulations
2 and their regulations is that you get no mixing
3 zone and, therefore, you have to meet the water
4 quality standard at the end of the pipe
5 immediately next permit or potentially with a
6 compliance schedule of a certain number of years.

7 That may, in fact, be
8 impractical. So the TMDL is not a substitute for
9 a variance during that period. Some states use a
10 different approach and actually permit what is
11 called existing effluent quality and hold you
12 where you are until the TMDL is completed, but
13 that's apparently not what Illinois EPA's
14 interpretation of 40 CFR 122.44 is.

15 MR. ETTINGER: I wish I agreed with
16 you on Illinois' interpretations, but this brings
17 us to my next question.

18 Is there any reason why Illinois
19 can't both allow a temporary variance and prepare
20 a TMDL that will be implemented and eventually
21 bring the waterbody into compliance with criteria?

22 MR. TISCHLER: No, there is no
23 reason they can't do that, but there has to be
24 recognition that the variance period could be
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1 potentially long because, in fact, TMDL's
2 historically take a long time to complete and
3 indeed I think that the impairments on the Des
4 Plaines River and UDIP are actually given low
5 priority in IEPA's TMDL implementation procedure.
6 So it could be many years before the TMDL is
7 completed.

8 MR. ETTINGER: Twenty-one.
9 Regarding chloride you state at page 22 that under
10 current US EPA policy if a waterbody designated as
11 impaired for a constituent, all renewed NPDES
12 permits should be based upon an improved TMDL that
13 will assure that the impairment be removed. I'm
14 going to break down my question first and say what
15 is your understanding of that policy? Where is
16 that stated?

17 MR. TISCHLER: I believe it is a
18 TMDL guidance. It's also in, I believe,
19 essentially section, what is it, 304 whatever the
20 TMDL provisions are in the Clean Water Act. If a
21 body of water is impaired, there shall be a
22 development of the total maximum daily load and
23 that would be the basis for the water quality
24 effluent limits for all dischargers.
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1 MR. ETTINGER: Is there some reason
2 that this should be done for chloride with regard
3 to the Upper Dresden Island Pool?

4 MR. TISCHLER: No. As I stated
5 before, certainly a TMDL potentially could -- I
6 mean, at some point a TMDL for chloride probably
7 is going to be developed and has to be developed.
8 The problem with a TMDL process is it takes many,
9 many years. I've just been involved in a couple
10 that were relatively quick because they're higher
11 priority -- they were complicated and they still
12 took six or seven years to complete. And that's
13 to complete the TMDL and get it approved by EPA,
14 not to implement the TMDL which is implemented
15 over multiple years.

16 MR. ETTINGER: Which ones are you
17 involved in?

18 MR. TISCHLER: The most recent one
19 was the Los Angeles Long Beach Harbor TMDL for
20 toxic pollutants, which actually had a 20-year
21 implementation period.

22 MR. ETTINGER: Who paid for that?

23 MR. TISCHLER: US EPA Region 9.

24 Another example of the adoption of the TMDL was
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1 for the Houston Ship Channel. That TMDL has taken
2 almost ten years to identify the sources and do
3 all the sampling that is required to try to
4 control it, but they still have not developed the
5 final TMDL and implementation plan because the
6 sources are all non-point. So the TMDL is
7 appropriate, but it's not really a solution that
8 will work for dischargers in the short term if
9 they're denied mixing zones or a variance.

10 MR. ETTINGER: Let's get back to
11 mercury then. Regarding mercury -- I'm on 22.
12 I'm actually back on my program here. Regarding
13 mercury, are you aware if the Illinois River and
14 other waters downstream of the Upper Dresden
15 Island Pool are impaired by mercury?

16 MR. TISCHLER: I believe that they
17 aren't indicated as impaired by mercury because of
18 fish tissue concentrations most of which were
19 sampled some time ago, but I think they're on the
20 303(d) list for that.

21 MR. ETTINGER: Have any such mercury
22 impairments affected ExxonMobil permits?

23 MR. TISCHLER: Not today.

24 MR. ETTINGER: Does ExxonMobil
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1 currently meet the mercury criteria at the end of
2 the pipe?

3 MR. TISCHLER: Based on the sampling
4 that we've been doing with the low level methods
5 we do meet the criteria at the end of pipe which
6 is expressed as an average. We meet it quite
7 easily.

8 MR. ETTINGER: Then you don't have a
9 problem as to mercury? ExxonMobil doesn't have a
10 problem as to mercury. You're meeting the water
11 quality standard at the end of the pipe.

12 MR. TISCHLER: We certainly hope we
13 don't.

14 MR. ETTINGER: So you're trying to
15 get the Board to change a rule that you're not
16 violating. Okay.

17 MR. TISCHLER: I'm sorry?

18 MR. ETTINGER: That's okay. On
19 pages 27 and 28 of your testimony, you --

20 MS. TIPSORD: Excuse me, Albert.

21 MR. FORT: A clarification on the
22 question. Which mercury standard are you
23 talking -- asking the question of and which
24 mercury standard are you thinking about in
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1 answering the questions? We've got the acute, the
2 chronic and the human health standard.

3 MR. ETTINGER: I'm sorry. I did
4 presume you meant the most sensitive human health
5 standard.

6 MR. TISCHLER: I did mean the
7 General Use standard of 12 ng/L. Thank you for
8 pointing that out.

9 MR. ETTINGER: Since Mr. Fort was so
10 kind as to bring that up, do refineries vary in
11 their ability to meet that standard?

12 MR. TISCHLER: Yes. Because
13 typically there is -- there is some mercury in the
14 crude oil that they use. So that crude oil slate
15 can have some dependency on that, but for the most
16 part refinery treatment systems remove mercury
17 fairly efficiently because of absorption onto
18 solids and other materials in the treatment
19 process.

20 MR. ETTINGER: Other than being
21 unusually smart, is there some reason why
22 ExxonMobil would do a better job with mercury than
23 oil companies?

24 MR. TISCHLER: It's really hard to
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1 answer that. I mean, it's the performance that we
2 measure is what the performance is that we've
3 measured and, remember, we've only been actually
4 analyzing it for a period of a year and a half,
5 but the results that I gave you are the results
6 that we have today.

7 MR. ETTINGER: On pages 27 to 28 of
8 your testimony, you discuss provisional variances
9 that have been attained by Midwest Generation from
10 temperature standards. You state that the
11 variances do not address other downstream Upper
12 Dresden Island Pool or Lower Dresden Island Pool
13 dischargers. Does that mean that past ExxonMobil
14 discharges during the period of provisional
15 variances were illegal?

16 MR. TISCHLER: No, we meet our
17 thermal limits of temperature conditions in the
18 permit. So we're complying with the permit as far
19 as I know. There has never been any contention
20 that our discharges were illegal.

21 MR. ETTINGER: Okay. But they have
22 a provisional variance at the time and you are
23 discharging as you generally discharge, why isn't
24 there some recognition of your permit that a
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1 waterbody is not meeting water quality standards?

2 MR. TISCHLER: I think IEPA's fact
3 sheet for the last permit in that analysis of the
4 discharge from the ExxonMobil refinery suggests
5 that they didn't believe the refinery -- the
6 thermal dischargers caused or contributed to any
7 exceedances of the water quality standard as I
8 interpreted it. And so I can't answer your
9 question any better than that.

10 MR. ETTINGER: Let's say someone
11 were to object to your next permit and say you
12 can't have a mixing zone for temperature because
13 there have been these provisional variances which
14 throw the Upper Dresden Island Pool out of
15 compliance with the existing temperature standards
16 at the I-55 bridge, would ExxonMobil have a
17 response to that argument?

18 MR. TISCHLER: Our response to that
19 argument would basically be what I alluded to much
20 earlier in this hearing, which is we would have a
21 problem and have to have some sort of variance or
22 some form of regulatory relief because, you know,
23 our discharge would not be the cause of the
24 temperature standard being exceeded. It, indeed,
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1 would have very little effect on the receiving
2 water temperature, but we would be essentially
3 caught in the trap of not being able to get an
4 allowable mixing zone temperature and put in a
5 position where it would be virtually impossible to
6 operate.

7 MR. ETTINGER: So if that upstream
8 thermal discharger goes on acting the way it has
9 been acting you might need to do something by way
10 of a variance in your next permit?

11 MR. TISCHLER: Again, depending on
12 how the Board acts with respect to how they set
13 temperature standards, yes.

14 MR. READ: I have a follow-up
15 question and this is about the provisional
16 variances. Is ExxonMobil made aware in realtime
17 of when a provisional variance is being issued --

18 MR. TISCHLER: No.

19 MR. READ: -- or is the facility
20 contacted?

21 MR. TISCHLER: No, we don't have any
22 information on provisional variances until after
23 the Board has authorized them. And even then we
24 don't know what the temperature of the receiving
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1 water is including whether the standard is --
2 whatever the standard is that the variance is
3 intended to address.

4 MR. READ: Okay. One more follow
5 up. Does ExxonMobil measure the temperature at
6 the bridge, the I-55 bridge?

7 MR. TISCHLER: No, they do not.

8 MR. RAO: Can I ask a follow-up
9 question? In your testimony, you mentioned the
10 use of variance by US EPA as a means of ensuring
11 compliance during the status where the waterbody
12 is not achieving standards. Are you aware of any
13 other provisions under the Board rules that maybe
14 use that -- that it is consistent with the
15 variance in the Clean Water Act like an adjusted
16 standard?

17 MR. TISCHLER: Yeah, I am aware of
18 the Board's adjusted standards that they may issue
19 that addresses this issue. I'm familiar with it
20 in general. Not real specifically.

21 MR. RAO: With those adjustment
22 standards, the burden is different than the
23 variance, the state variance?

24 MR. TISCHLER: That's my
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1 understanding and I have looked at -- I mean,
2 ExxonMobil I think has an adjusted standard for
3 total dissolved solids if I'm not correct -- that
4 is a site specific standard non-adjusted. Okay.
5 The terminology I'm not familiar with.

6 MR. RAO: Are you aware of any other
7 Board rules where the Board sets the burden of
8 proof for an adjusted standard in their rule?

9 MR. TISCHLER: I haven't really
10 looked at the adjusted standard rules to be able
11 to answer your question.

12 MR. RAO: Thank you.

13 MR. ETTINGER: Going back to
14 temperature. We're jumping around here. My
15 question 25. Based on Exhibit E, Figure 3, you
16 claim that the IEPA proposal would apply
17 temperature standards in the Upper Dresden Island
18 Pool that are substantially more restrictive than
19 General Use standards downstream of I-55. Are you
20 aware of the temperature criteria applicable to
21 Midwest Generation at the I-55 bridge?

22 MR. TISCHLER: I am aware of it. I
23 couldn't cite to you item by item, but I'm aware
24 that they have a specific temperature standard
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1 they have to meet at the I-55 bridge.

2 MR. ETTINGER: Have you considered
3 what temperatures would be allowable in General
4 Use waters under the provision requiring that the
5 maximum temperature rise above natural be kept
6 below 5 degrees Fahrenheit?

7 MR. TISCHLER: You start with the
8 question what is natural? I don't know what -- I
9 don't really know how to answer that question in
10 the case of ExxonMobil's discharge because the
11 temperature when its discharge enters the river is
12 certainly not natural. I know that the five
13 degree Fahrenheit allowable increase above, I'll
14 call it background, is determined by IEPA at the
15 edge of the authorized mixing zone whatever they
16 authorize either the allowable mixing zone
17 approach or the formally adopted mixing zone.

18 MR. ETTINGER: Have you considered
19 the other restrictions on temperatures and General
20 Use waters provided by 35 Ill. Adm. Code 302.211?

21 MR. TISCHLER: Yes, I did look at
22 all of those.

23 MR. ETTINGER: Is it your
24 understanding that the five degree above natural
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1 in those other standards relate solely to what is
2 allowable within the mixing zone?

3 MR. TISCHLER: If I recall, yes,
4 they do. Well, some of them relate to what is
5 allowed in the mixing zone, at the edge of the
6 mixing zone.

7 MR. ETTINGER: Do you think that
8 Midwest Generation has a mixing zone from the
9 Joliet plant down to the I-55 bridge?

10 MR. TISCHLER: I don't know. I
11 didn't look at that question specifically so I
12 can't give you an answer.

13 MR. ETTINGER: On page 31 of your
14 testimony, you state that the IEPA proposal is
15 supposed to represent the ambient river
16 temperatures in the absence of point source
17 thermal loading. Is it your understanding that
18 this is true of the IEPA proposal for the whole
19 year or only for part of the year?

20 MR. TISCHLER: It was for part of
21 the year and I guess I should clarify a little
22 further. They did, in fact, of course include
23 certain portions of the year temperature increases
24 in the seasonal numbers for -- associated with the
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1 Metropolitan Water Resource District.

2 MR. ETTINGER: All right. So they
3 use the MWRD discharge temperatures in the winter,
4 is that correct?

5 MR. TISCHLER: I believe that's
6 correct.

7 MR. ETTINGER: Do you believe that
8 the winter temperatures in the Upper Dresden
9 Island Pool are accurately reflected by the
10 temperatures of the discharges in the Metropolitan
11 Water Reclamation District sewage treatment plant?

12 MR. TISCHLER: The winter
13 temperatures in the UDIP in the absence of thermal
14 discharges may be reasonably estimated using the
15 method that IEPA used considering the MWRD
16 discharges.

17 MR. ETTINGER: Is there any cooling
18 that occurs between Stickney and the ExxonMobil
19 plant?

20 MR. TISCHLER: I would assume in the
21 winter there is some cooling.

22 MR. ETTINGER: What is your
23 understanding about the temperature of sewage
24 treatment plant discharge relative to ambient
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1 temperatures?

2 MR. TISCHLER: In the winter months,
3 it will generally be higher than what the natural
4 receiving water temperatures would be. That's not
5 necessarily so over summer.

6 MR. ETTINGER: Summer it's normally
7 cooler, isn't it?

8 MR. TISCHLER: It may be. It may
9 not be. It depends on how hot it is for how long
10 outside.

11 MR. ETTINGER: Let's say they put
12 the water out at Stickney at a temperature
13 considerably above the ambient temperature in
14 January, isn't it likely that it will cool by the
15 time it reaches the ExxonMobil refinery?

16 MR. TISCHLER: It will cool
17 somewhat, but the degree of cooling is highly a
18 function of the depth of the water, the surface
19 area, the outside temperature, cool to some
20 extent. If there is no other influences, yes, it
21 would cool to some extent in the winter.

22 MR. ETTINGER: Does ExxonMobil have
23 data regarding non-summer temperatures at its
24 discharge point that cause it to fear that there
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1 may be violations of the temperature standards in
2 the vicinity of its plant if the IEPA proposal is
3 adopted?

4 MR. TISCHLER: Not that I'm aware
5 of.

6 MR. ETTINGER: Is it your
7 understanding that the Yoder report you discuss at
8 page 37 of your testimony did not consider the
9 fish species actually present in the Upper Dresden
10 Island Pool?

11 MR. TISCHLER: It considered the
12 fish species that were present plus an array of
13 other species that were not currently present.

14 MR. ETTINGER: And what is your
15 understanding of how he selected those additional
16 species?

17 MR. TISCHLER: If I recall from the
18 Yoder report, what he indicated is the species
19 that he selected were based on what he believed
20 could have successful population in an impounded
21 waterbody.

22 MR. ETTINGER: Were those not
23 species that already live in the Kankakee or the
24 Upper Des Plaines River?

1 MR. TISCHLER: I don't recall
2 whether he actually explicitly stated that.

3 MR. ETTINGER: Did he consider
4 walleye?

5 MR. TISCHLER: I'm sorry?

6 MR. ETTINGER: Did he consider
7 walleye?

8 MR. TISCHLER: I don't remember the
9 species individually.

10 MR. ETTINGER: Well, were there any
11 of the species that he considered that you would
12 identify as not being representative species that
13 could live in the waterbody?

14 MR. TISCHLER: If you recall, and I
15 think you were here for my earlier testimony, my
16 opinion is that presuming that a full range of
17 aquatic species that can survive in any sort of
18 impounded water quality like a typical lake that
19 doesn't have the specific hydrographic
20 characteristics of the UDIP or Lower Des Plaines
21 River which is highly varied flows during storm
22 water periods and constituted, you know, over 90
23 percent either urban runoff or effluent that you
24 cannot make the presumption that all those species
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1 that you can list under those conditions are going
2 to be successful in the UDIP. That's my position.

3 MR. ETTINGER: How many species do
4 you think he added that aren't there now?

5 MR. TISCHLER: I don't recall the
6 exact numbers, but if I recall correctly there's
7 like nine plus species that were actually
8 identified and I think he used the number more
9 like 26 in his calculation. That's my
10 recollection. That may not be right exactly.

11 MR. ETTINGER: Do you think the
12 Kankakee River is devoid of sewage treated water
13 or the Upper Dresden -- the Upper Des Plaines
14 River?

15 MR. TISCHLER: Devoid? No, of
16 course there is virtually no waters in the US that
17 are devoid of any major rivers, but there is not
18 that many rivers that are 90 percent effluent
19 urban runoff in the US.

20 MR. ETTINGER: Do you know what
21 percentage urban runoff -- sorry. Not urban
22 runoff. You're not saying that the Upper Dresden
23 Island Pool is 90 percent runoff? You meant --

24 MR. TISCHLER: No, it depends on
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1 whether there is runoff occurring. During the low
2 flow periods, if I recall the numbers correctly,
3 the 7Q10 approximately 90 percent of the 7Q10
4 represent dischargers. During wet weather periods
5 when you have runoff from the urban areas, the
6 urban areas constitute a significant portion of
7 the watershed. So there are approximately during
8 runoff wet weather periods -- urban runoff is
9 going to constitute, you know, again, 75, 80, 90
10 percent. I don't know the exact number, but it's
11 a significant amount.

12 MR. ETTINGER: Do you have any idea
13 what the comparative numbers would be for the
14 DuPage River or the Upper Des Plaines River or the
15 Kankakee River?

16 MR. TISCHLER: No, I didn't look at
17 that?

18 MS. TIPSORD: Ms. Diers?

19 MS. DIERS: Did the Yoder report
20 look at historical data for fish species?

21 MR. TISCHLER: Not that I recall. I
22 believe he referenced the data -- the information
23 that was collected from the Use Attainability
24 Study and the other study done on the UDIP, for
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1 example. When you said look at it, you know, I
2 can go back and look and verify this, but I
3 believe at least he considered that data.

4 MS. TIPSORD: Just a point of
5 clarification. The Yoder report you're referring
6 to is the report that Mr. Yoder presented as part
7 of this rulemaking, correct?

8 MR. TISCHLER: Yes, ma'am.

9 MS. TIPSORD: Ms. Glosser?

10 MS. GLOSSER: I have a question. On
11 this issue of the fish in the Yoder report, I
12 don't think you did it in your pre-filed
13 testimony, but could you provide greater
14 clarification in post-hearing comments as to which
15 exact fish -- with what is the exact objection to
16 the fish he uses and give me the list of fish that
17 you think should have been considered?

18 MR. TISCHLER: Yes, I can do that.

19 MS. GLOSSER: Thank you.

20 MR. ETTINGER: I guess this follows
21 with Dr. Glosser's comment of which of those fish
22 do you think it would be okay to eliminate through
23 heat discharges?

24 MR. TISCHLER: I beg to differ with
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1 the characterization. It is not eliminate. This
2 is determining what prospectively could populate
3 the UDIP, for example, if the temperature was
4 reduced. It's not a question of eliminating
5 species that are there. It is what will
6 repopulate and my position as I mentioned a moment
7 ago is it's very unlikely in my opinion that the
8 UDIP could basically be repopulated by a full
9 range of species that might be in another
10 impounded waterbody that did not, in fact, have
11 the characteristics of the UDIP, both physical
12 characteristics, i.e. navigation, hydro- -- the
13 variation in flows and the high percentage of
14 treated domestic effluent in urban runoff. What
15 I'm saying is you should not be able to just
16 assume that all those species are going to move
17 and have successful populations once you adjust
18 the temperature standard.

19 MR. ETTINGER: Let me go back. I
20 want to ask about the Tischler method for setting
21 water quality standards. The 95th percentile
22 numbers back from the 9th, the US EPA report, that
23 is based on testing a wide range of species of
24 different genuses, is that correct?
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1 MR. TISCHLER: That's correct.

2 MR. ETTINGER: And then we use based
3 on that wide variation of data we set a toxicity
4 level that will protect 95 percent of the species,
5 is that correct?

6 MR. TISCHLER: Correct. Basically,
7 yes.

8 MR. ETTINGER: As I understand the
9 Tischler method, what we do instead is we find the
10 specific species already present in that waterbody
11 and then you protect 95 percent of those?

12 MR. TISCHLER: Basically, what I'm
13 suggesting is that you are already protecting
14 those. You look at your water quality standards
15 and you look at the other factors and you
16 determine what else is being protected, but
17 remember what I'm advocating here is we used a
18 measured improvement approach and you don't try to
19 adopt standards based on a target that is not
20 going to likely be achievable in the next
21 triennial review. So, therefore, you make sure
22 you protect the species that are there plus any
23 that you feel like that you had a high probability
24 that they would also be inhabited.

1 MR. ETTINGER: Okay. The general
2 US EPA method of setting national toxicity
3 criteria is not really relevant to what we're
4 doing here, is it?

5 MR. TISCHLER: No. I mean, it's
6 only relevant in the context that they don't use
7 one hundred percent of the species or all of the
8 most sensitive species, but let me add their very
9 method is intended to be, by design, highly
10 conservative and I'm sure you're familiar with the
11 fact that let's just take toxic metal standards
12 for things like aluminum.

13 They have, indeed, got
14 methodologies for adjusting those standards to be
15 protective to recognize the water quality in an
16 actual waterbody that you're setting the standard
17 on. For something like aluminum, for example, you
18 get a water effects ratio, i.e., their standard is
19 usually overprotected by a factor of four or more
20 and, again, the same thing is going on when you're
21 setting temperature standards. You want to be
22 protective, but where is the level at which you're
23 overprotective of what you're trying to have as
24 the protected aquatic population.

1 MR. ETTINGER: Well, I just want to
2 finish what I'm doing on this here. So let's say
3 we're not using the US EPA broad method of looking
4 at national criteria and we've instead identified
5 particular fish. Now, you don't apparently agree
6 with all of Yoder's choices, but let's say we
7 identified a particular fish that we want to
8 protect in that waterbody, you wouldn't then use
9 some sort of 95 percent statistical method that
10 would kick out some of those fish, would you?

11 MR. TISCHLER: No.

12 MR. ETTINGER: When we set acute
13 water quality standards for toxics, you generally
14 use something like the LC50 of your four most
15 sensitive species, right, the lethal concentration
16 of that toxin that kills 50 percent of them, is
17 that correct?

18 MR. TISCHLER: Yes.

19 MR. ETTINGER: And then the number
20 you set for the acute is 50 percent of that
21 number, is that correct?

22 MR. TISCHLER: Correct, to adjust
23 the LC50 to an LC1, if you like.

24 MR. ETTINGER: Right. Now, we can't
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1 do anything comparable to that for temperature
2 standards, can we?

3 MR. TISCHLER: No, they have to be
4 developed differently.

5 MR. ETTINGER: That would be silly.
6 We obviously are not going to have the temperature
7 that we would find as the lethal temperature, is
8 that correct?

9 MR. TISCHLER: Correct.

10 MR. ETTINGER: So really this whole
11 toxicity method doesn't have much to do with the
12 temperature standards, does it?

13 MR. TISCHLER: The point I was
14 trying to make as I stated before is that you -- I
15 was stating particularly in determining upstream
16 water temperatures and the like is the use of a
17 percentile is not a hundred percent, is typically
18 used to make an adjustment when you make water
19 quality standards so that you're not so
20 overconservative that you result in the standard
21 being violated most of the time and I think Yoder,
22 in fact, points that out in the introduction of
23 his report that there -- you have to make a
24 balancing about between setting the standards low

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1 enough to be protective in terms of high
2 temperatures, but also not so low as to result in
3 a condition where natural conditions or earth
4 conditions that occur in the receiving water cause
5 frequent violation of the standards because
6 they're not necessarily meaningful in terms of the
7 protection of the aquatic population.

8 MR. ETTINGER: Now, you'd agree that
9 if we're trying to protect the species, adopting a
10 standard that will kill 50 percent of it is not
11 acceptable?

12 MR. TISCHLER: No, that's not
13 acceptable.

14 MR. ETTINGER: So we'd have to make
15 some allowance if we're using the equivalent of an
16 LC50 for temperature, we'd have to make some
17 allowance for the fact that we don't want to kill
18 half of our representative species we're trying to
19 protect, is that correct?

20 MR. TISCHLER: Yes.

21 MR. ETTINGER: So my final question
22 because I'm going to skip back here. Are you
23 asking -- is ExxonMobil asking the Board to
24 reconsider and revise its current variance rules
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1 before completing this UAA proceeding?

2 MR. TISCHLER: I think as I
3 testified earlier what I'm requesting the Board to
4 consider is either as part of the Subdocket D rule
5 with some explicit relief mechanism if the
6 standards are set at a point for certain
7 constituents that would result in immediate permit
8 designations, some sort of a variance procedure or
9 in a parallel rulemaking and, again, I don't want
10 to tell the Board what the approach is. Some sort
11 of variance procedure or other regulatory relief
12 mechanism that would allow dischargers that
13 contribute potentially to an exceedance of a
14 standard that are by far not the predominant cause
15 of the standard and would indeed comply with the
16 standard in the absence of upstream sources that
17 some sort of provision needs to be made either in
18 this docket or in this subdocket rather or in the
19 other Illinois rules. That was sort of a long,
20 drawn-out rule. Sorry.

21 MR. ETTINGER: I'm done.

22 MS. TIPSORD: With that, let's take
23 a ten-minute break.

24

1 (Whereupon, a break was taken
2 after which the following
3 proceedings were had.)

4 MR. FORT: Mr. Tischler, I'm Jeff
5 Fort from Dentons on behalf of Citgo Lemont
6 Refinery. I have a couple of questions for you.
7 I appreciate you coming all this way today and I
8 appreciate your conversation with Mr. Ettinger. I
9 felt like I was back in a college classroom or a
10 law school classroom.

11 I have a few pre-filed questions
12 to ask you. On page 17 of your pre-filed
13 testimony, you state that US EPA has essentially
14 vacated the existing Illinois variance rule, end
15 quote. With except to that statement, do you have
16 any basis for that statement other than as a
17 comment on the action taken by US EPA with respect
18 to the Citgo variance which you cite on page 11
19 and footnote 15?

20 MR. TISCHLER: The answer is no and
21 that was probably a poor choice of words,
22 Mr. Fort. I would agree with your comment that
23 essentially they've made it much more difficult to
24 get a variance than what had been previously
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1 required in Illinois, but vacating was probably
2 not the appropriate word to use.

3 MR. FORT: And with respect to that
4 Citgo variance, do you know if US EPA in that
5 action made any references in their memorandum to
6 the uses of the Chicago Sanitary and Ship Canal or
7 to any of the evidence developed before the Board
8 in Docket C?

9 MR. TISCHLER: As I recall, yes,
10 they did. I mean, I didn't look at the letter
11 recently, but as I recall they referenced some of
12 the 131.10(g) factors.

13 MR. FORT: I agree that they cited
14 the factor, but I don't think they had any of the
15 evidence that the Board developed in Docket C on
16 the uses for the Ship Canal.

17 MR. TISCHLER: You mean the
18 evidence? No, I agree.

19 MR. FORT: And with respect to the
20 131.10(g) factors, those are the use factors that
21 are permitted as exceptions to the fishable
22 swimable goal?

23 MR. TISCHLER: Yes, that is correct.

24 MR. FORT: In your view, if there is
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1 a variance, you believe that those use factors are
2 relevant to establishing a basis for a variance as
3 well as whatever the interim conditions or goals
4 are?

5 MR. TISCHLER: I have to say that,
6 you know, EPA makes its own interpretation. I
7 don't believe historically that's been the
8 interpretation that you have to make a 131.10(g)
9 showing in order to obtain a variance. Indeed, in
10 other states as in Illinois in the past, variances
11 were frequently issued and approved by EPA. That
12 did not involve having to make a showing that one
13 of the 131.10(g) factors applied.

14 MR. FORT: Thank you. With respect
15 to question number two, for a body of water which
16 is upstream sources of pollution that went from
17 non-point or point sources which cause a water
18 quality standard to be violated and for a
19 discharger who uses that water in its processes
20 before discharging pursuant to an NPDES permit, do
21 you recommend that the Board approve any one or
22 more of the following as an alternative to the
23 existing rule, which provides that there is no
24 mixing zone in the extent of an exceedance of a
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1 water quality standard use of the BMP with respect
2 to the pollutant of concern as a condition of the
3 NPDES permit until a TMDL is adopted and allowing
4 a mixing zone for that pollutant based on that BMP
5 plan?

6 MR. TISCHLER: Yes. And I believe,
7 Mr. Fort, when I referred to that other states use
8 what is called existing effluent quality, that's
9 exactly what they're doing.

10 MR. FORT: Okay. What about
11 conditions imposed through variance procedures if
12 those conditions in the variance procedures are
13 part of the state water quality standards?

14 MR. TISCHLER: Yes, I think that's
15 another approach I would agree with.

16 MR. FORT: Why could not the
17 variance procedures be generic and merely cross
18 referenced from the water quality standards?

19 MR. TISCHLER: Clearly, they could
20 and I believe that's what states like Ohio and New
21 York have done for their mercury variances.

22 MR. FORT: On page 24 of your -- I'm
23 going to go to my number three. On page 24 of
24 your testimony, you indicated that BMP's for
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1 mercury control have been used by some states to
2 address point source discharges. Can you expand
3 on the type of BMP activities that one might
4 include in such a BMP?

5 MR. TISCHLER: Yes. In general,
6 those have been what you would call mercury
7 minimization plans, which are then implemented by
8 the discharger to do things such as identify
9 sources of mercury like seals and instruments and
10 plans that are placed to reduce use of mercury
11 containing devices, handling of fluorescent light
12 bulbs and basically identifying all the potential
13 sources of mercury and doing -- having a plan to
14 figure out how to make sure that they don't
15 contribute to the waste water discharge.

16 MR. FORT: Thank you. I think
17 you've answered the rest of the question.

18 MR. RAO: May I ask a follow up? In
19 these BMP's that you talked about for mercury, do
20 they qualify the amounts to offset what is being
21 discharged by a plant?

22 MR. TISCHLER: No, they generally do
23 not, at least the ones I'm familiar with which
24 primarily are the ones in New York state, Ohio and
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1 Indiana. They require the discharger as part of
2 the plan to estimate it, but they don't set a
3 required target. Now, they may, and indeed they
4 do for both New York and Ohio, they do establish
5 an effluent limit that is substantially above the
6 water quality standard itself that somebody has to
7 meet unless they get a special variance external
8 to the general variance.

9 MR. RAO: Okay. And these BMP's
10 are -- are these requirements written into the
11 rules in those states?

12 MR. TISCHLER: Well, I mean, the
13 BMP's are actually -- the rules describe -- they
14 have a mercury minimization plan in the
15 rulemaking.

16 MR. RAO: That's what I was --

17 MR. TISCHLER: Yeah, the rules,
18 themselves, do describe that certain BMP's
19 delineate it, but mainly it's the mercury
20 minimization programs that is required.

21 MR. RAO: Would it be possible for
22 you to provide us a citation to those?

23 MR. TISCHLER: Yes, we can.

24 MR. RAO: Thank you.

1 MR. FORT: Following up on that
2 question. In terms of the regulatory language
3 that is included in these other states like New
4 York, how detailed are they? Are they more in
5 general to, say, a mercury minimization plan where
6 their guidance documents is developed by an
7 implementing agency? How detailed is the
8 regulatory language I guess is my question?

9 MR. TISCHLER: They're not
10 particularly detailed and to give you the
11 specifics I haven't looked at them reasonably
12 enough to be able to give you a direct answer in
13 this hearing.

14 MR. FORT: Okay. Thank you. On
15 page 23 of your testimony, you cite in the
16 footnote several EPA reports and the testimony of
17 Marcia Willhite with respect to air deposition of
18 mercury and its effect on the US watershed and
19 fish tissue levels of mercury. Is this evidence
20 applicable to the Chicago Sanitary and Ship Canal
21 and other bodies of water which are tributary to
22 the UDIP?

23 MR. TISCHLER: Yes. Basically, this
24 testimony is applicable to all the waters in the
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1 US because EPA studies and studies done for
2 individual watershed have shown that mercury
3 deposition is usually the principal, by far,
4 source of the mercury that goes into the surface
5 waters of these watersheds.

6 MR. FORT: The quantities that you
7 calculate for mercury are reported for mercury and
8 that testimony seems to be in order of magnitude
9 or so greater what we're talking about in this
10 proceeding for discharges.

11 MR. TISCHLER: That's generally
12 true. I mean, let me just add. That's the reason
13 that these variances are in place because, in
14 fact, relying on the NPDES program of point
15 sources to try to remedy these mercury impairments
16 will have virtually no effect on the mercury
17 impairment because the source of the mercury
18 impairment is a non-point point source --
19 atmospheric deposition.

20 MR. FORT: Thank you. I'll skip
21 over five. Number six. On page 24, you ask the
22 Board to include a "multi-discharger/waterbody
23 variance." Do you have any recommendations for
24 processes or language for variances from state
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1 water quality standards which could meet the
2 proposed US EPA policy which you attach as
3 Exhibit C to your testimony?

4 MR. TISCHLER: I believe that the
5 Ohio, the New York and the Indiana variance
6 procedures are all applicable. I wouldn't
7 necessarily -- you know, you could pick and choose
8 language and mix for the different variance
9 procedures in those states, but they all address
10 primarily the same issue and generically would be
11 the same way and I think we just agreed the Board
12 would be provided with copies of those.

13 MR. FORT: Thank you. One other
14 follow-up question here. We've talked about
15 variances and mixing zones and the like and you
16 had a colloquy with Mr. Ettinger about setting
17 water quality standards. Are you familiar with
18 the US EPA water quality recalculation procedure
19 for setting site specific criteria?

20 MR. TISCHLER: Yes, I am.

21 MR. FORT: Do you have any comments
22 or objections to that process?

23 MR. TISCHLER: I have no objections
24 to it. I will tell you that I've often found that
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1 it doesn't work very well unless when you remove
2 nonresident species you also place in terms of the
3 number of resident species the ones you took out
4 in the database because of the way the
5 calculational procedure works is what is called a
6 confidence interval. If you make the database
7 smaller, you actually even if the one -- if the
8 most sensitive organism is dropped out, you may
9 get a more restrictive limit. So it has its
10 limitations.

11 MR. FORT: But in that situation if
12 you replace that nonresident species with another
13 that is representative of species that are
14 present, but there may not be particular toxicity
15 data, that's how you deal with that confidence
16 internal issue?

17 MR. TISCHLER: That's correct.
18 Indeed, I would say most of the southern states
19 and western states have had to use recalculation
20 when they set their standards because they have to
21 remove the cold water species from the databases
22 that EPA has used to develop the criteria.

23 MR. FORT: But in setting those
24 standards you're first starting with the uses and
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1 the indigenous species that are present and then
2 moving from there to calculate the appropriate
3 protective water quality criteria?

4 MR. TISCHLER: Yes, that's correct.

5 MR. FORT: Thank you.

6 MS. TIPSORD: Anything further for
7 Mr. Tischler? Thank you very much. It's been a
8 pleasure.

9 MR. TISCHLER: Thank you.

10 MS. TIPSORD: With that, we'll move
11 to the witnesses for Citgo PVD.

12 MR. FORT: Okay.

13 MS. TIPSORD: Do you want to show
14 the video first?

15 MR. FORT: Let's swear in Bruce
16 Nelson and then we'll show the video and then we
17 can figure out where we're going to have everybody
18 sit.

19 MS. TIPSORD: Awesome.

20 WHEREUPON:

21 BRUCE NELSON

22 called as a witness herein, having been first duly
23 sworn, deposeth and saith as follows:

24 MR. FORT: You can probably move the
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1 table once we do the video.

2 MS. TIPSORD: Do we have a copy of
3 Mr. Nelson's testimony? If there is no objection,
4 we will enter Mr. Nelson's testimony as Exhibit
5 489. Seeing none, it is Exhibit 489.

6 (Document marked as IPCB Exhibit
7 No. 489 for identification.)

8 MR. FORT: Madame Hearing Officer,
9 we have copies of the video that we would ask to
10 be marked as an exhibit.

11 MS. TIPSORD: If there is no
12 objection, we will be showing a short video and we
13 will mark the DVD of that video as Exhibit 490.
14 Seeing none, it is Exhibit 490.

15 (Document marked as IPCB Exhibit
16 No. 490 for identification.)

17 MS. TIPSORD: Just a point of fact,
18 Mr. Nelson. Your testimony is actually the
19 narrative of what we're about to see as well,
20 correct?

21 MR. NELSON: Yes.

22 MR. FORT: Mr. Nelson, would you
23 state your name for the record.

24 MR. NELSON: My name is Bruce
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1 Nelson.

2 MR. FORT: And, Mr. Nelson, you were
3 involved in the preparation of the video that we
4 are about to show?

5 MR. NELSON: Yes, I was.

6 MR. FORT: And can you describe how
7 it was prepared and made?

8 MR. NELSON: We set out samples for
9 microbes and vegetation in the Sanitary and Ship
10 Canal along with Roger to sample above and below
11 our intake and our outfall for the refinery and in
12 the course of doing that a videotape was created
13 and it was edited down to this version.

14 MR. FORT: And this is your voice on
15 the video that we're about to see?

16 MR. NELSON: Yes, it is.

17 MR. FORT: And this video you
18 believe is representative and demonstrative of the
19 conditions in the Ship Canal when you were on the
20 boat?

21 MR. NELSON: Yes, it was.

22 MS. TIPSORD: While Irene is working
23 on that, let's swear in the rest of your
24 witnesses.

1 MR. FORT: I'm sorry?

2 MS. TIPSORD: Why don't we go ahead
3 and swear in the rest of your witnesses.

4 WHEREUPON:

5 LARRY TYLER and ROGER KLOCEK
6 called as a witness herein, having been first duly
7 sworn, deposeth and saith as follows:

8 MS. TIPSORD: We'll rearrange
9 once -- we might as well get what we can.

10 MR. FORT: Our other witnesses
11 besides Mr. Nelson are Mr. Larry Tyler,
12 environment manager at the refinery; Mr. Jim Huff
13 vice president of Huff & Huff; and Mr. Roger
14 Klocek who is a biologist with Huff & Huff and all
15 of whom have submitted pre-filed testimony here.
16 So Mr. Huff has been sworn in before I know, but
17 do you want to do it again?

18 MS. TIPSORD: Yeah, let's do it
19 again.

20 WHEREUPON:

21 JAMES HUFF
22 called as a witness herein, having been first duly
23 sworn, deposeth and saith as follows:

24 MR. FORT: Okay. Off the record.
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1 (Whereupon, a discussion was had
2 off the record.)

3 MS. TIPSORD: If there is no
4 objection, we will mark the pre-filed testimony of
5 Roger Klocek as Exhibit 491. Seeing none, it is
6 Exhibit 491.

7 (Document marked as IPCB Exhibit
8 No. 491 for identification.)

9 MS. TIPSORD: If there is no
10 objection, we will enter the pre-filed testimony
11 of Larry Tyler as Exhibit 492. Seeing none, it is
12 Exhibit 492.

13 (Document marked as IPCB Exhibit
14 No. 492 for identification.)

15 MR. FORT: Jim Huff is the next one.

16 MS. TIPSORD: If there is no
17 objection, we will marked the pre-filed testimony
18 of James E. Huff as Exhibit 493. Seeing none, it
19 is Exhibit 493.

20 (Document marked as IPCB Exhibit
21 No. 493 for identification.)

22 MR. FORT: Before we get to the
23 video now that we're all ready to go, Madame
24 Hearing Officer, we submitted as a public comment
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1 a proposed regulatory proposal as a public comment
2 and we'd like to have that marked as an exhibit.

3 MS. TIPSORD: You know what, for
4 ease of citation, we have the public comment
5 number so we can just use the public comment
6 number.

7 MR. FORT: That's fine with me.

8 MS. TIPSORD: And we all have copies
9 of it up here so that's Public Comment 1394.

10 MR. FORT: Thank you.

11 MS. TIPSORD: We're ready for the
12 video then.

13 MR. FORT: Before you start running
14 it, let me say a few things. The few things
15 concern Citgo's testimony today. We have
16 presented prepared testimony and we look forward
17 to the questions that focus on two major issues; a
18 chloride water quality standard, seasonal
19 standard, for the winter months based upon the
20 existing biota and designated uses of the Ship
21 Canal.

22 So we've taken the Board's
23 processes so far and taken it to a chloride water
24 quality data. We're going to present that data.
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1 Separately, and this is the regulatory proposal
2 that we have submitted and if anybody needs copies
3 we've got them up here, regulatory proposal
4 attempts to deal with the effluent dominated
5 stream phenomena and the issues for the Lemont
6 Refinery are entirely due to upstream water
7 quality conditions.

8 We've identified chlorides, of
9 course, as being an issue in TDS. We also see a
10 risk of mercury in upstream samples. So this is
11 all about the mixing zone and the condition of our
12 proposal to get a mixing zone even when water
13 quality standards are exceeded at the location, in
14 our case, the Lemont Refinery has a BMP plant in
15 place for that pollutant.

16 We have some suggested language
17 here. We've circulated it to several interested
18 parties. We welcome any comments on it, but we
19 see this as something that would be environmental
20 progress while also not subjecting downstream
21 dischargers to impossible conditions based upon
22 what happens above them in terms of the waterbody.
23 So, with that, let's do the video.

24 We thought a good place to start
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1 was on the regulation navigation area, the
2 immediate vicinity of the Citgo refinery, what
3 that looked like and also it shows the mixing
4 zone.

5 (Whereupon, a DVD was played.)

6 MR. FORT: Madame Hearing Officer,
7 there was one pre-filed question asked to
8 Mr. Nelson from the Agency and I would propose
9 that we have that question propounded to him and
10 then anybody else who has questions so that we
11 don't need to keep him the rest of the day.
12 Ms. Diers is --

13 MR. TWAIT: She is upstairs.

14 MR. FORT: I can read the question,
15 Scott, or if you want to ask it or re-ask it,
16 that's fine with me.

17 MS. TIPSORD: Yeah. If you want to
18 ask the question, that's fine.

19 MR. TWAIT: Since the intake is only
20 60 feet upstream of the outfall, are there any
21 conditions where the intake is drawing water from
22 the effluent?

23 MR. NELSON: It is located upstream
24 and every day as part of my job I look at it --
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1 it's a USGS website that gives the current speed
2 for the day and I have never seen a negative flow
3 on that output when I look at the website. Plus
4 any training or drills that I've done on the
5 Canal, I've never seen the water flow the other
6 way.

7 MR. FORT: And, Mr. Huff, you've got
8 a few other comments?

9 MR. HUFF: Yes. If you saw the
10 discharge in that video, the discharge I believe
11 is about 15 feet below the surface. However,
12 there is a lot of entrained air in the outfall.
13 So the outfall is very positively buoyant and
14 comes right up to the surface literally right
15 around that pipe and you have a lot of turbulence
16 there and then spreads out from there basically as
17 a surface plume one to three feet as it gets
18 deeper in there. The water intake upstream is
19 also a submerged discharge, but well below the
20 three feet down. So even if there were backflow,
21 it would not take in any effluent under that
22 condition.

23 MR. TWAIT: Thank you.

24 MS. TIPSORD: Mr. Ettinger?
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1 MR. ETTINGER: The report you
2 referred to, you said there was no negative flow.
3 What exactly was that?

4 MR. NELSON: It's a US Geological
5 Survey site that is available on the web.

6 MR. ETTINGER: Do they have a site
7 right there?

8 MR. NELSON: It says near Lemont.

9 MR. ETTINGER: It's near Lemont. So
10 does it -- it shows whether there is negative flow
11 going north of the fall?

12 MR. NELSON: It goes in feet per
13 second and the average is 0.5 feet per second.

14 MR. FORT: Can I ask a couple
15 questions that will give you a context of this.
16 It may help the next --

17 MR. ETTINGER: I'm just trying to
18 understand how a chart from Lemont would tell us
19 about whether there was negative flow in the
20 relatively limited area between your discharge and
21 your intake.

22 MR. NELSON: The website we've used
23 I've compared it to conditions on the Canal when
24 we do training and the positive flow is showing
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1 the flow from north to south. So this website
2 chart is live maybe up to within an hour. If
3 there was a flow from south to north, I would
4 assume it would read as a negative instead of a
5 positive flow.

6 MR. FORT: Mr. Nelson, this is
7 something you do as part of your duties?

8 MR. NELSON: Right. If we have an
9 emergency response and oil spill, it helps us
10 calculate how far or how much time we have to
11 collect that oil, how far downstream we have to
12 go. So the faster the current, we may have to go
13 further downstream to catch it before it gets past
14 where we're trying to contain it. So we kind of
15 rely on that site to help us. When we get on
16 scene, we'll have to evaluate more when we get on
17 scene.

18 MR. FORT: Any other questions?

19 MS. TIPSORD: Any other questions
20 for Mr. Nelson? Thank you, Mr. Nelson.

21 MR. FORT: Can we excuse Mr. Nelson?

22 MS. TIPSORD: We can excuse
23 Mr. Nelson.

24 MR. FORT: Thank you, Madame Hearing
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1 Officer.

2 MR. ETTINGER: Am I up next?

3 MS. TIPSORD: Yes. We're going to
4 let the environmental groups begin asking their
5 questions.

6 MR. ETTINGER: So I don't have to
7 talk into the court reporter's back I'm going to
8 move over here if that is okay with people. So
9 shall we start? Who wants to start or do you
10 care? My questions were to individual witnesses.

11 MR. FORT: We can start with Jim or
12 start with Larry. You have more questions to Jim
13 than anybody else. Whatever you want.

14 MR. ETTINGER: All right. Let's do
15 Jim. For what parameters is the Chicago Sanitary
16 and Ship Canal currently listed as impaired?

17 MR. HUFF: PCB's, or polychlorinated
18 biphenyls, dissolved oxygen, total dissolved
19 solids, total phosphorous, channelization,
20 unknown, combined sewer overflow, sediment
21 resuspension, storm sewers, hydro-structure flow
22 regulators, atmospheric deposition and municipal
23 point discharges.

24 MR. ETTINGER: Does the Citgo Lemont
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1 Refinery discharge BOD or phosphorous?

2 MR. HUFF: It discharges BOD. They
3 had phosphorous into their biological activated
4 sludge system. So I have not calculated it. I
5 would guess on a mass basis they discharge
6 approximately what they take in in the way of
7 phosphorous.

8 MR. ETTINGER: Do you have -- do you
9 measure dissolved oxygen at your intake?

10 MR. HUFF: I'll differ that question
11 to Mr. Tyler.

12 MR. TYLER: We do not measure
13 dissolved oxygen in our intake.

14 MR. ETTINGER: You measure chloride
15 and I think later we talked about what you take in
16 in your intake. You do measure chloride at the
17 intake, but not DO?

18 MR. TYLER: Repeat your question,
19 please.

20 MR. ETTINGER: I'll just ask a
21 different question. What do you measure at your
22 intake?

23 MR. TYLER: We measure TDS and from
24 December through March we measure chlorides
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1 temperature.

2 MR. ETTINGER: On page two of your
3 testimony, you state the Chicago Sanitary and Ship
4 Canal upstream of the Lemont Refinery exceeds
5 1,500 mg/L TDS during snow melt periods during
6 deicing practices throughout Northeast Illinois.
7 How much of this 1,500 mg/L is chloride?

8 MR. HUFF: Under periods when we
9 have elevated TDS, approximately 50 percent, 5-0,
10 would represent -- be represented as chlorides.

11 MR. ETTINGER: What is the rest?

12 MR. HUFF: Well, sodium within
13 approximately 30 percent of that and then the rest
14 would be made up of sulfates, manganese, magnesium
15 and carbonates.

16 MR. ETTINGER: So if we were to
17 apply the current chloride standard to the
18 Sanitary and Ship Canal, your concern is that 750
19 mg/L, which I think is 50 percent of 1,500, is
20 over 500, is that the issue?

21 MR. HUFF: Yes.

22 MR. ETTINGER: I guess I kind of
23 asked the next question, but I'll ask it more
24 generally. At page two, you describe difficulties
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1 that Citgo has had in getting a variance approved
2 by US EPA. How will the IEPA proposed changes to
3 the criteria make things any worse as to chloride
4 or TDS?

5 MR. HUFF: The US EPA focus has
6 shifted in the case of the Citgo NPDES permit from
7 an increase in total dissolved solids to chloride
8 specifically despite that there was no increase in
9 chlorides that were associated with the Wet Gas
10 Scrubber Project that triggered the need to get
11 the variance in the first place. The Agency
12 proposal will continue to result in an inability
13 to get a NPDES permit without the expenditure of
14 literally tens of millions of dollars.

15 MR. ETTINGER: So as I understand it
16 the problem is the 750 over the 500 mg/L, is that
17 correct?

18 MR. HUFF: I'm not quite sure. The
19 750 is when the stream is at 1,500, you would have
20 750 mg/L of chloride. We currently have higher
21 chloride and TDS levels than 1,570.

22 MR. ETTINGER: I'm sorry. I'm
23 missing something then. When those -- when the
24 stream has problems that we're concerned with is
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1 when? When it is at the 1,500 TDS?

2 MR. HUFF: When it is above 1,500
3 TDS.

4 MR. ETTINGER: How high does it get?

5 MR. HUFF: In the way of chlorides
6 or total dissolved solids?

7 MR. ETTINGER: Actually, chloride, I
8 guess we've decided is more important. So how
9 high does it get for chloride?

10 MR. HUFF: We have recorded on the
11 water intake as high as I believe it was 1,090
12 mg/L chloride.

13 MR. ETTINGER: What dilution is
14 present in the system between the Lemont Refinery
15 and the Upper Dresden Island Pool?

16 MR. HUFF: 168 to 1.

17 MR. ETTINGER: That's 168 -- I'm
18 sorry. My question isn't very good. It's 168 to
19 1 between the effluent of -- from the Lemont
20 Refinery and the Sanitary and Ship Canal, is that
21 correct?

22 MR. HUFF: I think you asked about
23 the Upper Dresden Island Pool and, no, that's not
24 correct. It would be 1 to 168. There is 168
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1 times more flow in the Upper Dresden Island Pool
2 at the 7Q10 than what the design average flow from
3 the Lemont Refinery is.

4 MR. ETTINGER: Okay. That's useful.
5 Let me ask the question I was thinking of as
6 opposed to the one I asked.

7 What dilution sources are there
8 to the river between the point of the Lemont
9 Refinery discharge and the Upper Dresden Island
10 Pool and just to spoil some of the suspense I'm
11 thinking mainly of the Upper Des Plaines River,
12 but what other sources of water are there to the
13 system that would dilute the chloride between the
14 Sanitary and Ship Canal and the Upper Dresden
15 Island Pool?

16 MR. HUFF: I don't know that they
17 would dilute the chloride. You're assuming that
18 the Upper Des Plaines River has lower chlorides.
19 So if you make that assumption and you're correct,
20 that would be the primary source of flow. There
21 are other tributaries that come in, Deep Run
22 Creek, for example right below the Lockport Lock
23 and Dam and a number of others, but absolutely the
24 Upper Des Plaines would be the largest source.
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1 MR. ETTINGER: I'm not making that
2 assumption. Do we have any reason to believe that
3 the Upper Des Plaines River has any less chloride
4 in it on a concentration level than the Chicago
5 Sanitary and Ship Canal?

6 MR. HUFF: I would believe that
7 would be the case because there is slightly less
8 urbanization through parts of the Upper Des
9 Plaines watershed and certainly through the
10 Sanitary and Ship Canal.

11 MR. ETTINGER: What happens to
12 chloride and sulfate that the Lemont Refinery puts
13 into the Chicago Sanitary and Ship Canal?

14 MR. HUFF: So the chlorides are for
15 all practical purposes highly sailable and I would
16 anticipate that the vast majority of any chlorides
17 discharged will find their way down into the Gulf
18 of Mexico. Sulfates less true. There would be
19 some precipitation of sulfates as the water flows
20 downstream toward the Gulf of Mexico.

21 So I would anticipate a pretty
22 significant reduction in sulfates that were
23 discharged from the refinery.

24 MR. ETTINGER: What happens to the
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1 mercury that the Lemont Refinery puts into the
2 Chicago Sanitary and Ship Canal?

3 MR. HUFF: They're predominantly in
4 a very, very fine particulate state. They would
5 slowly, gradually settle out, get incorporated
6 into flocculated solids and settle to the bottom
7 of the streams.

8 MR. ETTINGER: Have you or Citgo
9 measured how far mercury can travel downstream
10 from the point of discharge?

11 MR. HUFF: No, sir.

12 MR. ETTINGER: What mercury effluent
13 limits is the Lemont Refinery currently subject
14 to?

15 MR. HUFF: The current NPDES permits
16 under which the Lemont Refinery operates has no
17 effluent limits. The permit that is under appeal
18 also has no mercury limits on there and that is
19 based on Illinois EPA doing a reasonable potential
20 to violate a water quality standard that exists on
21 the Sanitary and Ship Canal and determined there
22 was no reasonable potential and, therefore, there
23 was no effluent limit imposed.

24 MR. ETTINGER: Are you meeting
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1 technology-based effluent limits for mercury?

2 MR. FORT: Object. I don't know if
3 there are any technology-based effluent limits in
4 this category.

5 MR. HUFF: You're referring to
6 the --

7 MR. ETTINGER: I'm sorry. I'll
8 withdraw that question. Have there ever been any
9 sort of best professional judgment analysis that
10 would set technology-based limits for mercury for
11 the Citgo plant?

12 MR. HUFF: For the Citgo refinery,
13 not to my knowledge, no.

14 MR. ETTINGER: That's interesting.
15 Is the Upper Dresden Island Pool currently listed
16 as impaired by TDS?

17 MR. HUFF: Not based on the 2004
18 proposed 303(d) list.

19 MR. ETTINGER: Should it be?

20 MR. HUFF: The Agency makes a
21 decision, a determination not only based on the
22 chemical results, TDS in this case, but also on
23 the biology. So you'd have to have impaired
24 biology before one would put a parameter such as
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1 TDS on the impaired list. So I think that
2 question is better asked to the Agency.

3 MR. ETTINGER: Is the Upper Dresden
4 Island Pool impaired for mercury?

5 MR. HUFF: I believe it is, yes.

6 MR. ETTINGER: Would the Lemont
7 Refinery have a problem meeting the Illinois
8 General Use Standard for sulfate?

9 MR. HUFF: No, sir.

10 MR. ETTINGER: On pages three and
11 four of your testimony, you describe the very slow
12 process of IEPA's creation of TMDL's. Could
13 you -- could that process be sped up and are you
14 concerned with chloride work with the Agency to
15 advance completion of a TMDL?

16 MR. HUFF: I do, indeed, think that
17 that would speed up the process with the caveat
18 that you would have to have active participation
19 by the City of Chicago and the Metropolitan Water
20 Reclamation District of Greater Chicago as those
21 would be the largest sources of chloride entering
22 into the waterway.

23 MR. FORT: Excuse me, Mr. Ettinger.

24 Maybe this is a good place to do this. We've
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1 included as an excerpt to Mr. Huff's testimony a
2 report from the Illinois State Water Survey, but
3 it's only the relevant pages as judged by us. We
4 did bring a copy of the full report that we
5 thought might be appropriate for the Board to have
6 as an exhibit. It's easier to read than trying to
7 find it online.

8 MS. TIPSORD: Thank you. I have
9 been handed the Sources, Distribution and Trends
10 of Chloride in the Waters of Illinois, Walton R.
11 Kelly, Samuel B. Panno, Keith Hackley, authored
12 March 2012, Illinois State Water Survey, Prairie
13 Research Institute, University of Illinois at
14 Urbana Champagne. If there is no objection, we
15 will mark this as Exhibit 494.

16 MR. FORT: Thank you.

17 MS. TIPSORD: Seeing none, it is
18 Exhibit 494.

19 (Document marked as IPCB Exhibit
20 No. 494 for identification.)

21 MR. FORT: Mr. Huff, you have
22 reviewed the document we just marked as an
23 exhibit?

24 MR. HUFF: Yes.
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1 MR. ETTINGER: You said the US EPA
2 issue is now with chloride?

3 MR. HUFF: With respect to the
4 Lemont Refinery NPDES permits that they objected
5 to, yes.

6 MR. ETTINGER: What chloride
7 standard is currently applicable to the Chicago
8 Sanitary and Ship Canal?

9 MR. HUFF: There is none.

10 MR. ETTINGER: Then how will
11 changing the standard or not changing the standard
12 affect your current situation?

13 MR. HUFF: I think you just asked
14 that question, that was about your third question,
15 is that the chloride standard if it is adopted at
16 a 500 mg/L as opposed to a 1,500 mg/L TDS is more
17 restrictive as a water quality standard because at
18 1,500 we have approximately 750 mg/L. So a
19 500 mg/L water quality standard is the equivalent
20 of a TDS of 1,000.

21 MR. ETTINGER: Okay. You're saying
22 the grief is about chloride now and not TDS and
23 there is no chloride standard in the Sanitary and
24 Ship Canal?

1 MR. FORT: Let me interpose a
2 suggestion here. I think we're getting very
3 technical on a complex subject and my
4 understanding is that it is both TDS and chloride,
5 not one or the other.

6 MR. ETTINGER: I'm sorry. I'm just
7 trying to understand your problems with the
8 regulations that would cause you to oppose or
9 support the standards, changes and -- I think I
10 understand it as well as I can now.

11 MR. FORT: I think Mr. Huff made it
12 clear that if we have a problem with the 1,500
13 mg/L TDS, 500 mg/L chloride would be more
14 difficult and we're looking forward and trying to
15 come up with how do we address the issue.

16 MR. ETTINGER: That's fine. If the
17 Board found -- and I'm down to 12 now. If the
18 Board found that meeting the chloride standard
19 could not be attained in the Chicago Sanitary and
20 Ship Canal and perhaps downstream waters affected
21 by chloride due to manmade causes for a number of
22 years during which a variance might be issued,
23 would that take care of the Lemont Refinery
24 chloride problem?

1 MR. HUFF: So as I note in my
2 testimony, US EPA has active involvement in this.
3 So any variance, of course, would have to have
4 their full support in order to be improvement as I
5 understand the process today. In addition, the
6 variance granted would have to provide the
7 necessary relief from a refinery and as I
8 understand the Illinois variance process we could
9 get a maximum of five years, but we would have to
10 somehow show our ability to achieve compliance
11 after five years and if you heard Mr. Tischler
12 testify, he thinks meeting 500 mg/L in five years
13 would be very difficult and I certainly concur
14 with that. So I'm not sure a variance by itself
15 is going to resolve this issue.

16 MR. ETTINGER: Is it your
17 understanding that under the current Illinois
18 variance procedure as opposed to a compliance plan
19 that you have to prove you'll be in compliance at
20 the end of the five years?

21 MR. HUFF: Yes.

22 MR. ETTINGER: It says in your
23 testimony you state that in your permitting
24 experience IEPA will impose a limit equal to the
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1 water quality standard on dischargers discharging
2 through a 303(d) listed water. What is your
3 understanding of why IEPA does that?

4 MR. HUFF: To be placed on the
5 303(d) list, a stream segment must show biological
6 impairment and an exceedance of one or more of the
7 water quality standards. With this understanding,
8 if there has been a water quality exceedance, then
9 the Agency sets the water quality based effluent
10 limit at the water quality standard. This
11 typically is the most restrictive -- that is more
12 restrictive than the Illinois effluent standards
13 or any of the categorical standards.

14 MR. ETTINGER: Fourteen. You state
15 that no fishing is allowed in regulated navigation
16 area -- in the regulated navigation area at pages
17 four the five of your testimony. Could the Board
18 remove fish consumption as a designated use and
19 adopt criteria accordingly?

20 MR. HUFF: I assume that means that
21 the human health standard for mercury would not be
22 included for dischargers to the stretch of the
23 Canal which would eliminate the Lemont Refinery
24 concern.

1 MR. FORT: Let me just note for the
2 record that I believe the Board has declared that
3 this segment of the Ship Canal is non-recreation.

4 MR. ETTINGER: That was the crux of
5 my question actually. So, presumably, if we're
6 not going to allow fishing there we're not going
7 to allow people to fish and eat fish from that
8 area, is that correct?

9 MR. HUFF: Well, then the second
10 part of that is what about downstream? So, again,
11 my same answer is as long as the human health
12 standard does not apply in that zone so the Lemont
13 Refinery would not end up with a 12 ng/L effluent
14 limit, that would resolve the Lemont Refinery
15 concern.

16 MR. ETTINGER: If we had other
17 standards that were designed to protect fishing in
18 that area or recreation in that area, those
19 shouldn't be applicable to the Lemont Refinery?

20 MR. HUFF: It seems reasonable to
21 me, yes, sir.

22 MR. ETTINGER: I'll skip 15.
23 Sixteen. At page six, you suggest flow
24 augmentation to dilute chloride concentrations
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1 during winter. Have you studied how this might
2 affect flooding?

3 MR. HUFF: So on page 16, I was
4 talking about the likely outcome of a TMDL study.
5 I have not studied that. However, when we have
6 these elevated TDS or chloride levels, they are
7 not at flood stage conditions. My professional
8 opinion is there would be no impact on flooding.
9 This would certainly not exacerbate flooding.

10 MR. ETTINGER: Can MWRD's
11 discretionary diversion from the Great Lakes
12 remain at current levels in the future?

13 MR. HUFF: My understanding is that
14 the discretionary diversion that the MWRDGC had
15 was lowered to accommodate additional growth in
16 the Chicagoland area. The discretionary flow is
17 to decline to 101 cubic feet per second beginning
18 in 2015 from the current 270 cubic feet per
19 second. Historically, this discretionary flow has
20 been used to help dissolved levels at low flow
21 periods. With the side stream aeration systems
22 installed and the lower temperatures with the loss
23 of the two electric power plants in Chicago, there
24 should be less need for the diversion going
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1 forward than historically.

2 If chlorides are such an
3 environmental issue, why not use diversion to help
4 achieve the appropriate levels? Maybe we should
5 also rethink that the growth allocation as well as
6 it is clear the streams will have a very difficult
7 time eliminating additional chlorides. I offer
8 this flow augmentation as an option that could be
9 explored.

10 MR. ETTINGER: At page nine of your
11 testimony, you suggested imposition of a 500 mg/L
12 effluent limit which would require the Lemont
13 Refinery to use mixing zone -- I can't remit
14 that -- to use distillation. Has distilling --
15 drop that. Drop the question.

16 Has distilling the high chloride
17 waste water stream been considered?

18 MR. HUFF: Yes. On page nine, I
19 refer to a multi-effect evaporator. That is
20 distillation, but it's more energy efficient
21 because you're recovering the heat through
22 multiple evaporation stages.

23 MR. ETTINGER: How much does that
24 cost?

1 MR. HUFF: I believe that was
2 referred to on page nine of my testimony. What we
3 came up with in treating the individual chloride
4 streams was \$42 million and that was with reverse
5 osmosis and then the evaporation with a
6 multi-effect evaporator on the concentrated
7 stream. The problem with that is when the Ship
8 Canal is over 500 mg/L, we would still not meet an
9 effluent limit of 500 mg/L.

10 MR. ETTINGER: Now, reverse osmosis
11 isn't the same as distillation?

12 MR. HUFF: No, it's more cost
13 effective than distillation. So what you're doing
14 is you're concentrating the ions, specifically in
15 this case chlorides, on one side and allowing
16 basically water to pass through a semi-permeable
17 membrane and typically you can concentrate it four
18 to five fold with reverse osmosis. So if you had
19 five million gallons a day, you would still have a
20 one million gallon a day concentrated stream that
21 you have to address and that's where the
22 multi-effect evaporation would come in. That
23 would evaporate that further down and concentrate
24 it to the point that it begins to precipitate as
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1 sludge.

2 MR. ETTINGER: What are the yearly
3 net revenues of the Lemont Refinery?

4 MR. FORT: I object to the question
5 as irrelevant, but go ahead.

6 MR. HUFF: I do not have any
7 information on the net revenue of the Lemont
8 Refinery nor do I believe it's relevant. A better
9 question is a cost benefit perspective of does it
10 make sense spending \$21 million in capital costs
11 to reduce the peak chlorides in the Ship Canal by
12 0.2 percent? The answer to that question in my
13 opinion is clearly no.

14 MR. ETTINGER: It might become
15 relevant when you apply for your variance, but
16 we'll go on now since you don't know the answer.
17 At pages 12 to 13 of your testimony, you suggest
18 an alternative regulatory approach. What
19 obstacles are there to implementing your suggested
20 approach under current Illinois law and
21 regulations in IEPA practice?

22 MR. HUFF: The first obstacle would
23 be the belief that we really need a numeric limit
24 on chloride as a water quality standard on the Use
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1 B stream which is what we've proposed here. I
2 think if we can get past that hurdle that we don't
3 need a numeric limit, then I think the rest of it
4 is already in place and I point out like on
5 suspended solids, we don't have a quality -- water
6 quality standard on suspended solids and under the
7 storm water regulations we get at that through
8 best management practices. So this would be
9 taking the wintertime chlorides and applying the
10 same concept as what we already apply under the
11 storm water program for suspended solids and I
12 believe under the Illinois regulations today we
13 regulate storm water that those regulations
14 clearly include snow melt, but we already have a
15 structure and the Illinois EPA already has the
16 authority under the storm water permits, whether
17 they be industrial or the municipal sewer storm
18 water permits, to impose a best management
19 practices on highway deicing practices that are
20 used in these communities.

21 MR. ETTINGER: Now, my understanding
22 is you want to do away entirely or not enact a
23 chloride standard for Use B waters?

24 MR. HUFF: A winter chloride
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1 standard.

2 MR. ETTINGER: A winter chloride
3 standard. And when is winter?

4 MR. HUFF: I would think you'd want
5 to pick up the snowfalls that occur in November
6 and March. I mean, we've had snowstorms in excess
7 of 13 inches in both November and in April. So my
8 suggestion would be November 15th through April
9 15th.

10 MR. ETTINGER: It would be
11 convenient if we wrote water quality standards so
12 that they would never be violated, but my question
13 is is that what you think would be protective of
14 sensitive aquatic life?

15 MR. HUFF: Sensitive? We're talking
16 Use B waters here. So could you highlight for me
17 which sensitive aquatic life we're referring to?

18 MR. ETTINGER: I guess that will be
19 my next question. What do you also do with --
20 we'll talk to the next witness about that. What
21 about the Upper Dresden Island Pool?

22 MR. HUFF: I'm sorry. What is the
23 question?

24 MR. ETTINGER: Do you have a
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1 chloride standard in the Upper Dresden Island
2 Pool?

3 MR. HUFF: I don't think I'm
4 prepared to render an opinion on the Upper Dresden
5 Island Pool. My focus was on Use B.

6 MR. ETTINGER: Use B. Okay. We
7 heard all of your salt goes all the way to the
8 Gulf of Mexico, is that correct?

9 MR. HUFF: Yes, sir.

10 MR. ETTINGER: So, presumably, it
11 also goes to the Upper Dresden Island Pool,
12 correct?

13 MR. HUFF: Yes, sir.

14 MR. ETTINGER: Would the Lemont
15 Refinery have any problem with a chloride if we
16 adopted the standards for -- US EPA standards for
17 chloride in the Upper Dresden Island Pool?

18 MR. HUFF: The US EPA standard?
19 That would be the 230 mg/L chronic and 860 acute?

20 MR. ETTINGER: Yes.

21 MR. HUFF: Would the Lemont Refinery
22 have any problem?

23 MR. ETTINGER: Yes.

24 MR. HUFF: Well, I guess it would go
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1 back to the interpretation are they causing or
2 contributing to a water quality violation that may
3 get that far downstream? If they're 2/10th's of a
4 percent of the loading where they discharge in, by
5 the time you're down to the Upper Dresden Island
6 Pool, they would be even smaller portions. So how
7 far down are you going to regulate chloride
8 dischargers? Are we going to stop allowing people
9 to buy salt at hardware stores so they can do
10 their --

11 MR. ETTINGER: That's not a
12 non-point source. So --

13 MR. HUFF: I'm not understanding the
14 relevance of the non-point source. The major
15 cause of the chloride is in that waterway.

16 MR. ETTINGER: What I'm attempting
17 to probe is the inconvenience and the cost to the
18 Citgo Refining Company of the chloride standard.
19 That's what I'm asking. And if we take care of
20 your problem in the Use B waters, but you are
21 causing or contributing to a violation in the
22 Upper Dresden Island Pool, we may not have solved
23 your problem and your cost estimates may not be
24 accurate. And that's why I'm asking have you
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1 studied the effect of -- sorry -- have you studied
2 what the chloride standard should be that would be
3 applicable to the Upper Dresden Island Pool?

4 MR. HUFF: First, I would take
5 disagreement that we would be causing or
6 contributing. I believe the proposal that is
7 outlined in my testimony is to the extent that we
8 are contributing to water quality violations. We
9 are committed to offsetting those through best
10 management practices at which point I believe we
11 are no longer causing or contributing to a water
12 quality violation.

13 MR. ETTINGER: And that's under your
14 proposed new regulation or -- maybe this question
15 is best addressed to Mr. Fort.

16 MR. FORT: Well, there are two
17 answers to that. One of them is certainly the
18 regulatory proposal we put forth would deal with
19 that issue as a regulatory change. Mr. Huff's
20 point, though, here in terms of if you're
21 employing certain practices and activities, then
22 you are no longer causing or contributing and it
23 is an offset. It's an offset of an amount.

24 You're no longer causing or contributing to a
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1 violation.

2 MR. ETTINGER: The Citgo refinery,
3 is it a net adder of chloride?

4 MR. HUFF: They are indeed, yes.

5 MR. ETTINGER: I'll skip the rest.
6 I'll go onto the next question.

7 MR. FORT: Who are you asking
8 questions to?

9 MR. ETTINGER: Mr. Klocek, would
10 that be good? Page three of your testimony you
11 discuss rotenone collections of fish. Is that the
12 best way to determine what fish are capable of
13 living in a waterbody?

14 MR. KLOCEK: Yes, actually it is
15 because it samples all the fish. It is just a
16 very harsh way of finding out what is there.

17 MR. ETTINGER: But if a fish is
18 found dead in the waterbody, obviously it can live
19 there?

20 MR. KLOCEK: Absolutely, yeah.

21 MR. ETTINGER: On page nine of your
22 testimony, you refer to sphaerium. I have to
23 correct my Latin. Is that the fingernail clam?

24 MR. KLOCEK: Yes, sphaerium is the
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1 fingernail clam.

2 MR. ETTINGER: Are you aware of the
3 work of Dr. Richard Sparks on the fingernail clam
4 in the Illinois River?

5 MR. KLOCEK: Yes. He did an
6 excellent study.

7 MR. ETTINGER: And what did he
8 conclude?

9 MR. KLOCEK: That it was abundant in
10 the Illinois River and it would be a great test
11 organism to use because it is specifically
12 sensitive to different toxins or stressors.

13 MR. ETTINGER: Did you say the
14 fingernail clam prior to its extirpation in the
15 '50s was one of the keystones or base of the
16 Illinois food chain in the Illinois River?

17 MR. KLOCEK: Yeah. Because it's so
18 thin shelled all types of fish could eat it as
19 well as a diving waterfowl.

20 MR. ETTINGER: So it was very
21 important to the Illinois River historically.

22 MS. TIPSORD: Mr. Ettinger, before
23 we move on, can we get a citation -- you brought
24 it up in your question. Can we get a citation to
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1 that study by Dr. Sparks if there is a published
2 piece?

3 MR. ETTINGER: Yes, I could look
4 that up.

5 MS. TIPSORD: Absolutely. You can
6 give it to us later.

7 MR. ETTINGER: I can get it. This
8 is a very famous study by Dr. Sparks.

9 MS. TIPSORD: Okay.

10 MR. ETTINGER: Three in my
11 questions. It appears you used an musculium
12 instead of the fingernail clam because the
13 fingernail clam has not been found in the Chicago
14 Sanitary and Ship Canal. How are musculium
15 similar to the fingernail clam?

16 MR. KLOCEK: They're in the same
17 family and they look very similar and have similar
18 habits.

19 MR. ETTINGER: Do they have similar
20 habitat and similar breeding methods?

21 MR. KLOCEK: Yes.

22 MR. ETTINGER: Are there differences
23 between the musculium and the fingernail clam that
24 are found -- that enable musculium to live in the
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1 Chicago Sanitary and Ship Canal?

2 MR. KLOCEK: Yes, lab tests show
3 that musculium is much more tolerant of chloride
4 and probably other stressors compared to sphaerium
5 and the fingernail clam.

6 MR. ETTINGER: Could ammonia be a
7 factor?

8 MR. KLOCEK: Yeah. And that's a
9 tough one because the bivalve mollusk -- the clams
10 and mussels are very sensitive to ammonia.

11 MR. ETTINGER: And question four.
12 How does the GMAV, and I forget what that stands
13 for, for chloride of musculium compare to that of
14 the fingernail clam?

15 MR. KLOCEK: So --

16 MR. FORT: Maybe you should define
17 first what GMAV stands for.

18 MR. ETTINGER: That would be fine.

19 MR. KLOCEK: GMAV is genous mean
20 acute value and that is kind of like the LC50. So
21 for sphaerium it is relatively low. 1,128 mg/L
22 and for musculium it is 1,930 mg/L. So musculium
23 is a little more tolerant than sphaerium.

24 MR. ETTINGER: You calculate an
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1 acute value for the Chicago Sanitary and Ship
2 Canal of 991 mg/L and a chronic value of 624 mg/L.
3 I assume that was discussing chloride. How do
4 sulfate and hardness figure into that calculation?

5 MR. KLOCEK: We didn't take hardness
6 or sulfate into account. We used the Iowa values
7 that were given for the calculation and that's how
8 we derived it.

9 MR. ETTINGER: It they didn't use --
10 they didn't -- Soucek didn't use sulfate in
11 calculating his numbers?

12 MR. KLOCEK: He did and to be honest
13 I don't remember the sulfate value, but the
14 hardness value that he used was 300 mg/L.

15 MR. ETTINGER: Do you know what the
16 hardness is in the Sanitary and Ship Canal?

17 MR. KLOCEK: It's about 200 mg/L.

18 MR. ETTINGER: Do you know whether
19 that would affect the calculation as they were
20 done by Soucek?

21 MR. KLOCEK: It would, but it would
22 affect it downward by a couple of percent, about
23 two percent.

24 MR. ETTINGER: Sorry. What do you
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1 mean by downward? Downward from --

2 MR. KLOCEK: It wouldn't be as high.
3 It would be lowered by about two percent. So I
4 can't do the math in my head right now.

5 MR. ETTINGER: So you're saying the
6 number should be two percent lower than 991?

7 MR. KLOCEK: Approximately, yes.

8 MR. ETTINGER: How do your acute and
9 chronic figures compare with those used in Iowa?

10 MR. KLOCEK: If we use the Iowa
11 formula to calculate chloride values, our figures
12 are much higher and if we use the Iowa calculation
13 we'd get 536 mg/L for acute values and 375 mg/L
14 for chronic values. So much lower with the Iowa
15 one.

16 MR. ETTINGER: So what factors cause
17 your acute and chronic figures to be different
18 than those that were calculated for Iowa waters?

19 MR. KLOCEK: Iowa was looking at a
20 statewide standard. So they have to use a larger
21 group of organisms. So they use 29 species to get
22 their final chronic and acute values. We shaved
23 that down to 23 species based on what we felt was
24 present in the CSSC and came up with different
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1 figures.

2 MR. ETTINGER: Okay. Mr. Huff, in
3 his pre-filed testimony, expresses concern that US
4 EPA may move to lower its chronic criteria from
5 230 mg/L to a figure below 200 mg/L. Have you
6 reviewed any of the signs or concerns of US EPA
7 that might cause it to change its chloride
8 standard?

9 MR. KLOCEK: No, I haven't reviewed
10 any of those documents or data and I've only seen
11 Internet postings on certain organisms that are
12 recently tested. Some of them have very low acute
13 values and that may be what is driving the idea
14 that they're trying to lower the standard, but I
15 don't have specific information or ideas about
16 them.

17 MR. ETTINGER: Do you want me to now
18 go to Mr. Tyler or does somebody else have
19 follow-up questions?

20 MR. FORT: I think he has a little
21 more he can say on the difference with this US EPA
22 information you have and what you've seen. You've
23 seen some streams that are being identified or
24 they're locations of these species that are --
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1 MR. KLOCEK: Yes, there was a very
2 sensitive mayfly under the test that has an
3 aquatic larval stage and it is the type of mayfly
4 if it were Illinois it is only known from 18
5 records and about six or seven different streams.
6 All very high quality. So it's great that these
7 tests are being done. It's just not a mayfly --

8 THE COURT REPORTER: Mayfly?

9 MR. KLOCEK: Mayfly.

10 MR. FORT: You were starting to say
11 it was a mayfly that --

12 MR. KLOCEK: You wouldn't find in
13 the CSSC ever. You find very rarely only in high
14 quality streams. So it might not be the most
15 appropriate organism to use as a surrogate for all
16 mayflies.

17 MR. FORT: Can we go off the record?

18 (Whereupon, a discussion was had
19 off the record.)

20 MS. TIPSORD: Back on the record.

21 MR. ETTINGER: This is to Mr. Tyler.

22 On page seven of your testimony, you state that
23 the treatment options for TDS in the waste water
24 were evaluated to be neither technologically
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1 feasible nor economically reasonable. What were
2 all the treatment options evaluated?

3 MR. TYLER: In terms of the
4 treatment options, Mr. Huff has touched on this.
5 So I'll yield to him to respond to that.

6 MR. ETTINGER: You have nothing
7 further to add to this?

8 MR. HUFF: No. What was in the
9 testimony was what was evaluated.

10 MR. ETTINGER: What criteria were
11 used to decide if something was technologically
12 feasible?

13 MR. TYLER: With respect to what
14 criteria was used for technological feasibility,
15 it was an experienced professional engineering
16 judgment that the design intent of potential
17 treatment options were practical and could be
18 reasonably achieved.

19 MR. ETTINGER: What criteria were
20 used to decide if an option was economically
21 reasonable?

22 MR. TYLER: With respect to criteria
23 for economic feasibility, it was, again, an
24 experienced professional engineering judgment that
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1 assessed the potential treatment options to not
2 have an excess of magnitude of costs for minute or
3 questionable gain to the Ship Canal.

4 MR. ETTINGER: What is the annual --
5 sorry -- what approximately is the annual net
6 revenue of the Lemont Refinery?

7 MR. FORT: Same objection as before,
8 but he can answer.

9 MR. TYLER: The Lemont Refinery is
10 not claiming inability to pay for potential
11 treatment options. So providing a revenue
12 estimate doesn't seem appropriate. We hereby
13 respectfully decline to do so.

14 MR. ETTINGER: I'll just ask my
15 question. Number three, how was it apparent that
16 the TDS levels in the discharge from the Lemont
17 Refinery were not associated with the level in the
18 Ship Canal or at the I-55 bridge?

19 MR. TYLER: We've already submitted
20 the data in prior variances to the Agency and the
21 Board. I have with me copies of some of this data
22 which Jim Huff has also previously submitted in
23 this proceeding. For ease of reference about this
24 document and submitted for this record, I note
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1 that the Board has already agreed with the
2 conclusion that there is no relationship between
3 the discharge from the refinery and the water
4 quality conditions relating to TDS in its opinion
5 regarding our second notice -- second variance.
6 Sorry.

7 MR. FORT: This is the document you
8 were referring to in terms of data?

9 MR. TYLER: Yes.

10 MR. FORT: Can we mark this as the
11 next one?

12 MS. TIPSORD: If there is no
13 objection, we will mark Attachment 2 Des Plaines
14 River TDS Sampling I-55 Bridge with the date on
15 the left column, total dissolved solids on the
16 right column as Exhibit 495. Seeing none, it is
17 Exhibit 495.

18 (Document marked as IPCB Exhibit
19 No. 495 for identification.)

20 MR. ETTINGER: Mr. Tyler, you're an
21 engineer, not a biologist, right?

22 MR. TYLER: That's correct.

23 MR. ETTINGER: You just got out of
24 one question. So all I've got left is number
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1 four. What sampling was done at the I-55 bridge
2 that you referred to?

3 MR. TYLER: TDS sampling.

4 MR. ETTINGER: Only TDS?

5 MR. TYLER: Chlorides were also
6 sampled.

7 MR. ETTINGER: That net data is
8 available and that's what we just passed out?

9 MR. TYLER: Yes.

10 MR. ETTINGER: Was anything else
11 sampled at the bridge as part of the sampling
12 referenced that notes -- I guess it's one of your
13 pre-filed testimony?

14 MR. TYLER: Repeat your question
15 again, please.

16 MR. ETTINGER: There was a reference
17 to sampling at the I-55 bridge and I was just
18 wondering whether there was any other information
19 beyond TDS that was available from that sampling?

20 MR. TYLER: The exhibit also shows
21 sulfate.

22 MR. ETTINGER: So you looked at
23 sulfate and TDS at the I-55 bridge?

24 MR. TYLER: And chloride.
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1 MR. ETTINGER: Does the Lemont Citgo
2 refinery have problems with copper?

3 MR. TYLER: I wouldn't have any
4 information on that.

5 MR. ETTINGER: Thanks. I'm done.

6 MS. TIPSORD: All right. With that,
7 let's take a lunch break. We'll come back at
8 1:30.

9 (Whereupon, a break was taken
10 after which the following
11 proceedings were had.)

12 MS TIPSORD: Okay. Let's go ahead
13 and go back on the record. Good afternoon. We'll
14 start with the Illinois Environmental Protection
15 Agency's questions for Citgo PVD.

16 MS. DIERS: Good afternoon. My name
17 is Stephanie Diers for the Illinois EPA. And I'll
18 start with Mr. Huff, is that okay?

19 MR. FORT: Go right ahead.

20 MS. DIERS: I'm going to go to our
21 pre-filed question four since you've answered one,
22 two and three already. You mentioned best
23 management practices on page 12 of your pre-filed
24 testimony. What best management practices do you
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1 envision to address chloride issues?

2 MR. HUFF: Safety is a top priority
3 at the Lemont Refinery. Safety is a priority at
4 the refinery and personnel that are responsible
5 for deicing fully understand that slips and falls
6 from icy conditions are not an acceptable outcome.
7 This mindset leads to an outcome if a little salt
8 is good, more salt is better. This is the exact
9 same mindset that exists with highway deicing
10 employees and really requires the retraining and
11 safe conditions can exist with the use of less
12 salt. The exact same technologies that are
13 emerging in the transportation sector would be
14 used by the Lemont refinery.

15 First, training is critical to
16 change the thought process. Second, anti-icing
17 which is applying saturated brine ahead of storms
18 to prevent adhesion of ice to the roadway. That
19 is often combined with beet juice typically in a
20 90 percent brine, 10 percent beet juice
21 combination. In order to make that brine, a
22 refinery will have to expend capital to install a
23 brine dissolution tank as well as a brine storage
24 tank.

1 Third, prewriting of the rock
2 salt with the brine solution so that the rock salt
3 doesn't bounce off onto the grass. Fourth, is
4 calibration of the equipment and, fifth, would be
5 improved tracking of storms and pavement
6 temperatures to determine application rates and
7 then applying what you've learned from each storm
8 as you go forward. What has worked, what was not
9 sufficient in the way of applications.

10 MS. LIU: Can I follow up?

11 Mr. Huff, could you please describe what beet
12 juice is?

13 MR. HUFF: Sure. So it's an
14 alternative to chlorides. There have been a
15 number of products on the market. The one that is
16 commercially most popular right now is literally
17 carbohydrates that come from the growing of beets
18 and is sold as a product called beet juice, but
19 there are also other carbohydrate products that
20 are on the market similar to that today. And so a
21 lot of work has been done by transportation
22 sectors on looking at complete switching over to
23 beet juice or some combination and what they find
24 with the carbohydrates is when they get above
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1 about ten percent in the anti-icing, it tends to
2 cause slipperiness on the road conditions and so
3 the ten percent seems to becoming rapidly an
4 industry accepted concentration.

5 MS. DIERS: Number five, if the
6 Agency were to propose a salt reduction goal
7 throughout the watershed, would Citgo be willing
8 to participate?

9 MR. HUFF: I defer to Mr. Tyler as
10 he is an employee of Citgo.

11 MR. TYLER: The answer to that would
12 be yes.

13 MS. DIERS: Number six. If the
14 Board adopted a summer chloride standard of 500
15 mg/L and opened a new subdocket to address the
16 winter chloride standards, would that remove the
17 concerns for chlorides that you have stated in
18 your pre-filed testimony?

19 MR. HUFF: Obviously, it would
20 depend on the outcome of such a docket. However,
21 in the interim, the Lemont Refinery has an NPDES
22 permit under appeal and that concern would remain
23 US EPA's -- an integral part of the NPDES permit
24 negotiations. So any delay in addressing chloride
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1 water quality standards would require their sign
2 off on a method forward with the refineries NPDES
3 permits would have to be included before the
4 Lemont Refinery would support such a proposal.

5 MS. DIERS: That's all we have for
6 Mr. Huff. Do you care which order we go, Jeff?

7 MR. FORT: No.

8 MS. DIERS: Is it Mr. Klocek, am I
9 saying that right?

10 MR. KLOCEK: (Affirmative nod.)

11 MS. DIERS: I'll start with you in
12 our pre-filed questions then. Question number
13 one, would high chloride concentrations permit
14 some of the more intolerant fish and aquatic life
15 from using the Chicago and Sanitary Ship Canal?

16 MR. KLOCEK: No, it wouldn't because
17 the fish in general are very tolerant of high
18 chloride. It's the invertebrates that are less
19 tolerant and the very sensitive invertebrates are
20 the types that are present in the CSSC. During
21 the winter, both fish and invertebrates go dormant
22 and their metabolism lowers and the cold actually
23 protects them to a degree from any type of
24 stressor just because their metabolism is low.
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1 But for the invertebrates there
2 are types like the bivalves or snails that burrow
3 into the substrates so they are somewhat protected
4 from spikes in chloride because once they burrow
5 in they become dormant. They cease to actively
6 feed and others like daphnia or rotifers that are
7 very abundant and warm weather go into a type of a
8 resting egg, an overwintering egg, that has a
9 protective coating and those eggs are found in the
10 sediment. So they're protected from a lot of
11 different stressors that could occur during
12 wintertime including chloride.

13 MS. DIERS: Question two. On page
14 seven, you state that, "The recommended procedure
15 allows deletion of non-resident tested species, if
16 and only if, they are not appropriate surrogates
17 of resident untested species based on taxonomy."
18 Would ceriodaphnia be representative of any
19 resident untested species?

20 MR. KLOCEK: No, it wouldn't because
21 it's a completely different genus than anything
22 that is found in the Ship Canal and there are
23 daphnia present in the Ship Canal and those were
24 included in the calculation. However, if I could
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1 backtrack a second. There was until very recently
2 just a single report of ceriodaphnia in the Canal
3 from 1978 and the Illinois Natural History Survey
4 had done three years worth of sampling and they
5 didn't publish it yet from 2010 to 2012 and they
6 actually found ceriodaphnia again at their Western
7 Avenue station. So pretty high up in the CSSC and
8 the results were pretty spotty for ceriodaphnia.

9 So, for instance, in 2010 their
10 June sampling got zero organisms; July, zero
11 organisms; August, 20 organisms in a 90 liter
12 sample; and in October zero organisms. In 2012,
13 they only found ten organisms in 90 liters in the
14 month of July, even though they sampled May, June,
15 August, September and October of that year. Their
16 highest concentration was in 2011 in July again
17 and they actually collected 42 ceriodaphnia at
18 Western Avenue in July.

19 MS. DIERS: What are you reading
20 from again -- I'm sorry -- for the record?

21 MR. KLOCEK: I'm sorry?

22 MS. DIERS: What are you reading
23 from, your notes, so we can identify it for the
24 record.

1 MR. KLOCEK: The Illinois Natural
2 History Survey did a plankton survey of, oh, gosh,
3 much of the Chicago Area Waterway all the way down
4 the Illinois River to I want to say Havana,
5 Illinois. I may be wrong on that, but pretty far
6 down in Illinois. So I was just looking at their
7 CSSC data and they only had the one sampling
8 station on Western Avenue.

9 MS. DIERS: Is that document
10 something that we can provide for the record?

11 MR. FORT: Sure.

12 MS. DIERS: Is it in your testimony?

13 MR. KLOCEK: I'm sure we could, but
14 we'd have to ask the Survey if they'd release it.

15 MR. FORT: This is not published
16 data?

17 MR. KLOCEK: It's not published
18 data.

19 MR. FORT: But from this
20 non-published data your review of it is that they
21 found at one station, Western Avenue, and only in
22 July and not in any of the other months?

23 MR. KLOCEK: But they did find it in
24 June, July, August and September often as a single
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1 specimen in 2011.

2 MR. FORT: Okay.

3 MR. KLOCEK: In other years, they
4 found it in just one month.

5 MS TIPSORD: I would like -- whether
6 it's you guys or you guys you can talk about it
7 off the record that you ask if DNR will release
8 that. They have been involved. We do have them
9 on the record. So if we can get that information
10 on the record it would be very helpful.

11 MR. FORT: If I can do a follow up
12 just to summarize. But nothing in the winter
13 months?

14 MR. KLOCEK: No, nothing in the
15 winter, but they didn't really sample in the
16 winter months.

17 MR. FORT: Would you expect that
18 kind of plankton to be there in the winter months?

19 MR. KLOCEK: I would not expect it.
20 Even though we're currently looking for it, I
21 would be surprised if we find it.

22 MR. FORT: And that is why?

23 MR. KLOCEK: Because the plankton
24 disappears in the winter as soon as the water gets
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1 around 50 the plankton dive back because there is
2 no food source for these types of critters to feed
3 on. They feed on the single cell algae. So when
4 the lighting gets bad, the temperature cools down,
5 photosynthesis stops almost, the algae disappear,
6 then all the plankton disappear and they go into
7 these resting egg states that lie dormant on the
8 bottom all winter for many of the creatures.

9 MR. RAO: A follow-up related
10 question.

11 MS. LIU: On page eight of Exhibit
12 B, you state that Huff & Huff collected plankton
13 samples in the CSSC on July 12th, 2013, and the
14 next paragraph on the same page you refer to
15 plankton sampling collected in June of 2013. I
16 want to know if you could clarify the sampling
17 dates.

18 MR. KLOCEK: The July 12th date is
19 correct. The June 12th date is a typographical
20 error.

21 MS. LIU: Thank you.

22 MR. KLOCEK: Which I'm sorry to
23 admit to.

24 MS. DIERS: Question three. In
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1 Table 9, rainbow trout is listed as one of the
2 species that you are protecting. Is the Chicago
3 Sanitary and Ship Canal a cold water stream that
4 has trout present? Are your calculations in Table
5 10 based on the removal of the rainbow
6 trout?

7 MR. KLOCEK: No. Obviously, CSSC
8 isn't a cold water stream and trout are not
9 present, but not just the recalculation procedure,
10 but the criteria calculation requires that a
11 representative of the trout and salmon family be
12 included in the calculations as one of the eight
13 groups that are necessary for calculation.

14 So we kept the rainbow trout in
15 and originally we were going to take it, but then
16 we found in some of the fish data I think it was
17 2005 MWRD reported chinook salmon down near the
18 Lemont Lockport area. You know, it was obviously
19 one that had come in from the lake and was making
20 its way wherever. So trout and salmon could be
21 present sometimes.

22 MS. DIERS: Question four. On page
23 nine, you state that the ceriodaphnia was not
24 retained because it's not present during the
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1 winter. Are you aware of any peer reviewed
2 studies on the absence of ceriodaphnia during cold
3 weather?

4 MR. KLOCEK: No. No peer reviewed
5 studies and I doubt that there is any literature,
6 gray literature out there either, because the
7 plankton sampling just usually isn't done.

8 MS. DIERS: Number five.

9 MR. RAO: Can I ask a follow up?

10 MS. DIERS: Sure.

11 MR. RAO: On page ten of Exhibit B,
12 you state "The goal of this analysis is to develop
13 a winter chloride water quality recalculation
14 based on species present in the CSSC during the
15 winter season. Could you please comment on
16 whether the fish and macroinvertebrate data used
17 in your recalculation was focused on what was
18 collected in the winter months or the winter
19 season.

20 MR. KLOCEK: No. I believe, you
21 know, almost all of the data was collected during
22 late Spring through early Fall for fish and
23 macroinvertebrate data. That is the traditional
24 time such data would be gathered. So that I'm
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1 aware of there is actually very little winter data
2 that was incorporated. Maybe the one November
3 plankton one we did.

4 MR. RAO: The criteria you came up
5 with in your recalculation, would that be
6 protective of aquatic life year around?

7 MR. KLOCEK: No, it would strictly
8 be a winter criteria, but you would expect those
9 spikes -- the high spikes in chloride and it would
10 be protective of the more sensitive invertebrates
11 because of the state that they're in, the resting
12 overwintery egg state --

13 MR. RAO: Okay.

14 MR. KLOCEK: -- or burrowing. You
15 know, if ceriodaphnia ever became abundant in the
16 CSSC, it would also go through the overwintery egg
17 state. It's not -- I think it's just a visitor
18 there from the lake. Currently, it is not there
19 in any substantial numbers, but it too could
20 survive as the overwintery egg.

21 MR. RAO: Thank you for that
22 clarification.

23 MR. FORT: Can I follow up on that
24 question? So the data is collected you said
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1 Spring through Fall because that's a more
2 sensitive time for fish and invertebrates because
3 they're dormant in the winter?

4 MR. KLOCEK: They're just more
5 abundant, yeah. When they become dormant, they'll
6 tend to hide. So, you know, fish are -- you just
7 wouldn't collect them in the winter.

8 MR. FORT: So you took the data that
9 was published and available and applied that data
10 for the species, even though you were only looking
11 at a winter criteria?

12 MR. KLOCEK: Thank you. I should
13 have said that.

14 MR. RAO: Thank you.

15 MS. DIERS: Question five. Are you
16 aware of any other water quality derivations,
17 either site specific or statewide, that have
18 removed the ceriodaphnia?

19 MR. KLOCEK: No, I am not aware of
20 any site specific derivations.

21 MS. DIERS: Number six. Why is one
22 mussel genera (Villosa) included in the data set,
23 but another mussel genera (Lampsilis) is not
24 included?

1 MR. KLOCEK: We needed to include a
2 bivalve and the bivalves that are present there
3 are two that are relatively common, the zebra
4 mussel and the Asiatic clam. And the Asiatic clam
5 is closer to -- it's an introduced clam from Asia,
6 but it's closer to our native mussels than the
7 zebra mussel is and it's very tolerant to high
8 chloride. It is actually an estuary organism in
9 southeast Asia and in California at this point,
10 too. So we were looking for a native mussel that
11 had a higher chloride tolerance and Villosa of the
12 two choices was it. It was a few hundred mg/L
13 more tolerant than the Lampsilis mussel was.

14 MS. DIERS: Seven. Do you know if
15 there are other states that have a winter chloride
16 standard?

17 MR. KLOCEK: No, I don't know.

18 MS. DIERS: Have you discussed with
19 US EPA if this recalculation would be approvable?

20 MR. KLOCEK: We've submitted a
21 recalculation, but we haven't had a formal
22 response returned yet and we, you know, went to
23 fairly great length to follow the proper
24 recalculation procedure familiar with the fauna
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1 through the various studies that have been done
2 over the years. We internally reviewed our
3 recalculation, sent it out for external peer
4 review and gotten informal comments back from US
5 EPA and IEPA all of which were very helpful.

6 MS. DIERS: And number nine. Page
7 10 Conclusions and Recommendation: "A winter
8 chloride criteria is proposed (November through
9 April), on a site specific basis for the Chicago
10 Sanitary and Ship Canal that is based on a limited
11 aquatic fauna present in the lower Ship Canal."
12 Why April through November? According to MWRDGC
13 and IEPA data on the Chicago Sanitary and Ship
14 Canal from 2000 through 2010, chloride
15 concentrations above 500 mg/L have occurred only
16 from December through March?

17 MR. KLOCEK: I think we did that
18 just to give us a breathing space on either side
19 of those two dates. Remembering back to 1970
20 something, '78, when we had that gigantic snow in
21 Chicago in late April. So it can occur, but I
22 think we're just trying to be, you know, overly
23 cautious.

24 MS. DIERS: Okay. Thank you.
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1 MR. HUFF: Could I add something?

2 MR. FORT: Yes.

3 MR. HUFF: We also submitted as
4 Attachment 2 to my testimony that chloride water
5 intake at the Lemont Refinery which does show
6 values in November that are above the 500 mg/L for
7 chlorides.

8 MS. DIERS: That's all the questions
9 we have. Do you have follow up?

10 MR. READ: Yes, we had a follow up
11 and this was to a couple of questions ago about
12 the winter dormancy phenomena. Is the winter
13 dormancy phenomena in the Sanitary and Ship Canal
14 a broad phenomena that would also apply to other
15 waterways like the UDIP?

16 MR. KLOCEK: Sure. Yeah.
17 Absolutely. Yeah, I was going to equivocate, but
18 I'm not.

19 MR. RAO: Mr. Klocek, we had a few
20 other clarifications. So I'll ask them now. On
21 page six of your pre-filed testimony, you state
22 Table 6 of Exhibit 2 presents the data and results
23 of 2013 macroinvertebrates sampling. Can you
24 please clarify that you meant Table 6 of Exhibit
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1 B?

2 MR. KLOCEK: Yes. Absolutely,
3 Exhibit B.

4 MR. RAO: Okay. And could you also
5 clarify whether this macroinvertebrate sampling
6 was conducted by Huff & Huff?

7 MR. KLOCEK: It was conducted by
8 Huff & Huff, yes.

9 MR. RAO: All right. Okay.

10 MS. LIU: Mr. Klocek, question
11 number two. On page eight, you state, quote, fish
12 and invertebrate data set for organisms found in
13 the CSSC were examined from reports and web-based
14 sources such as INHS collections and reports,
15 MWRDGC collections, US ACE collections, US EPA
16 reports, Limnotech reports and Huff & Huff
17 collections, end quote.

18 Could you please clarify the
19 aquatic life data you considered included all fish
20 and macroinvertebrate data available for the CSSC
21 in the current rulemaking record?

22 MR. KLOCEK: Yes. I didn't look at
23 the entire docket because it is such a large body,
24 but I did use what I believe are all the current
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1 and important references that would apply and I'm
2 sure all of them have been utilized before in the
3 CSSC and CAWS reports and I did -- I was selected
4 because some of the MWRD reports go back to the
5 early '70s for fish and invertebrates and water
6 quality and those contain information that is
7 actually superceded by later reports -- reports in
8 the last 10 or 15 years because the number of
9 species, the data set is just richer. The number
10 of species has increased since the '70s for both
11 fish and invertebrates. The numbers of organisms
12 by and large have increased. So I kind of threw
13 out the earlier data just because it is
14 represented by the current data.

15 MS. LIU: Thank you.

16 MR. RAO: And by current data, can
17 you identify what -- is that the rotenone?

18 MR. KLOCEK: I would say probably
19 from 2000 or 2001 on and a lot of the MWRD data is
20 two years behind. So, you know, they're reports
21 for 2010 as the most current thing even though
22 it's, you know, three years later.

23 MR. RAO: On page eight of your
24 pre-filed testimony, you talk about the species
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1 listed used in your recalculation. You note that
2 23 of the 29 species in the Iowa list were
3 included in the data set for CSSC. Could you
4 please clarify whether the Iowa list is the one
5 that was derived from Iowa's Department of Natural
6 Resources 2009 Water Quality Standards Reviewed
7 Report?

8 MR. KLOCEK: Exactly. That is the
9 correct reference.

10 MR. RAO: Has this list been
11 reviewed by the US EPA or endorsed by US EPA or in
12 some way is US EPA recommending this list to
13 determine the recalculation of the chloride
14 standard?

15 MR. KLOCEK: I don't know that it is
16 being pushed, but it's certainly being utilized by
17 other states as is because it is a very
18 comprehensive list and it includes -- the text of
19 that would be common and at least midwestern
20 states, if not, you know, the belt across the
21 middle of the United States.

22 MR. RAO: In your pre-filed
23 testimony, you also mentioned several midwestern
24 states have adopted the new chloride standards and
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1 some of them are in the process of adopting
2 chloride standards. Are they using this list?

3 MR. KLOCEK: Yes, they're using this
4 list that I'm aware of, the ones that I've seen.

5 MR. RAO: Would it be possible for
6 you to provide the proposed adopted standards of
7 some of these midwestern states?

8 MR. KLOCEK: Yes, I believe I have
9 them.

10 MR. FORT: Mr. Klocek, this is --

11 MS TIPSORD: Thank you very much.
12 I've been handed a table that is Table of Chloride
13 Criteria For Selected States: Ohio, Illinois,
14 Indiana, Iowa and Missouri. If there is no
15 objection, we will mark this as Exhibit 496.
16 Seeing none, it is Exhibit 496.

17 (Document marked as IPCB Exhibit
18 No. 496 for identification.)

19 MR. RAO: And all these standards
20 listed in this exhibit, Exhibit 496, they are all
21 year round standards?

22 MR. KLOCEK: Yes, all year round and
23 statewide standards and some are not -- some are
24 still in the proposal phase and under
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1 consideration.

2 MR. RAO: Okay.

3 MR. FORT: Can I ask a follow up on
4 this line of questions?

5 MR. RAO: Yes.

6 MR. FORT: Mr. Klocek, do you know
7 if US EPA is recommending the Iowa approach or is
8 this something that other states have begun to
9 follow?

10 MR. KLOCEK: I honestly don't know.

11 MR. FORT: But US EPA did approve
12 the Iowa standard for Iowa?

13 MR. KLOCEK: Yes.

14 MS. LIU: Mr. Klocek, based on your
15 recalculation you proposed a winter chloride
16 criteria for the CSSC for the Criterion Maximum
17 Concentration and -- Criterion Maximum
18 Concentration. I was just wondering if you meant
19 chronic concentration of 620 mg/L?

20 MR. KLOCEK: Absolutely, yes.

21 MS. LIU: The second part of my
22 question. Currently, the standard proposed by
23 Illinois EPA is a single value standard, 500 mg/L.
24 Could you please explain how you would recommend
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1 implementing the CMC and the CCC in the standards?

2 MR. KLOCEK: So there would be an
3 acute and a chronic standard as there is for many
4 other criteria and that would be -- I'm missing
5 it. My eyes are going bad here. Acute and
6 chronic standards that we'd find in 302.208(a),
7 (b) and (e) for General Use waters.

8 MS. LIU: Thank you.

9 MR. RAO: Mr. Klocek, looking at
10 this chloride standard from other states that you
11 put together for us in Iowa they have proposed
12 these acute and chronic standards, but they're
13 based also on hardness and sulfate. Is there any
14 specific reason they went that route instead of
15 just the way you had proposed the standard?

16 MR. KLOCEK: Yes. And with Iowa the
17 moderately high chlorides and sulfates are
18 actually protected aquatic life at different
19 temperatures and so it's valuable to have those
20 entering into the calculation here to simplify it
21 and make it very site specific for a particular
22 waterway. We didn't include hardness or sulfate
23 calculations. If we used the Iowa formula as is,
24 we'd come up with much lower calculations for the
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1 given hardness and sulfate levels on the CSSC. So
2 we weren't interested in pursuing that.

3 MS. LIU: Would it also be because
4 the Iowa standard was for the whole state and this
5 is just a specific body of water?

6 MR. KLOCEK: Yes, it's a statewide
7 standard. So it used to be all inclusive and
8 perhaps in that sense more restrictive rather than
9 a very site specific standard for an unusual
10 waterbody.

11 MR. FORT: Excuse me. Unusual
12 waterway meaning the Ship Canal?

13 MR. KLOCEK: The Ship Canal, yes.
14 Thank you. Sorry.

15 MR. RAO: That's all we have. Thank
16 you very much.

17 MS TIPSORD: We'll go back to IEPA
18 then.

19 MS. DIERS: We'll ask our pre-filed
20 questions for Mr. Tyler and we'll start with
21 number one. You mentioned amending existing
22 mixing zone rules in order to provide relief to
23 the Lemont Refinery, which I think has now been
24 marked as Public Comment 1394?
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1 MS TIPSORD: Yeah. Let me double
2 check. Yes.

3 MS. DIERS: Could you please explain
4 your proposal?

5 MR. TYLER: In answer to that, let
6 me reference the proposed rule change document.

7 MS. DIERS: Have you had any
8 conversations with US EPA to see if such a change
9 to the mixing zone rules would be approvable?

10 MR. TYLER: Not in the affirmative.
11 Things are very incipient right now, but I can't
12 go any further than that.

13 MS. DIERS: Number two. On page 13,
14 you state that, "the Board amend the mixing zone
15 rule to provide an opportunity for use of a mixing
16 zone for discharges into waters which exceed
17 applicable water quality standards, if the
18 discharger employs best management practices for
19 that pollutant with an objective of that BMP plan
20 being to offset the amount by which the discharger
21 would discharge that pollutant during times of
22 water quality above the applicable standard."

23 I'll just ask the first part of that question.

24 How would this work?

1 MR. TYLER: Huff & Huff has been in
2 preparation to draft the BMP document and I'd like
3 to yield to Mr. Huff to explain the key components
4 of the BMP proposal.

5 MR. HUFF: I think I've already
6 described what is in the draft BMP plan, the six
7 items that we have. I can expand on those if you
8 have specific questions.

9 MS. DIERS: Is this kind of looking
10 at a training? Is this how you're envisioning
11 this?

12 MR. HUFF: Well, I think it is
13 consistent with the trading. If we do it
14 internally, I guess I would use the term offset.
15 Normally, my understanding of the US EPA trading
16 policy is when there is an increase in a pollutant
17 that you develop a trading one. In this case,
18 there was no increase in chloride associated with
19 the wet gas scrubber. But if you look at the
20 criteria of the trading policy, you can directly
21 measure the salt consumption, you can directly
22 regulate this as part of the NPDES permit. It
23 seems consistent with the trading policy.

24 MS. DIERS: No further questions.
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1 Thank you.

2 MR. RAO: Mr. Huff, a follow up on
3 your response. I think Mr. Tischler mentioned in
4 some of the other states that are doing BMP's they
5 don't quantify the actual amount of offset of the
6 pollutants. Could you explain how that would work
7 if you -- if this is some sort of a trading
8 program?

9 MR. HUFF: I believe the question
10 Mr. Tischler was -- specifically related to
11 mercury and I fully understand that was mercury.
12 I think chlorides are very different and much like
13 a highway department the refinery purchases
14 deicing salt. They have purchasing records. You
15 know exactly how much is used every year. So you
16 have an excellent database to establish, if you
17 will, a baseline condition and we have at the
18 refinery a good four years of data on how much
19 deicing salt has been used and so what I would
20 envision is that as part of the NPDES permit there
21 would be a special condition that this storm water
22 pollution prevention plan addressed specifically
23 chlorides as part of that and include in there an
24 annual report to the Agency.

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1 And as part of that annual
2 report we would include how much deicing salt was
3 used that year and then a five year running
4 average because we've had two very mild winters
5 prior to this one where salt use was down. You
6 get into a storm -- bad years and the salt usage
7 can literally double because, frankly, it's the
8 number of storms is probably the biggest variable.
9 There are others in there.

10 So I would kind of gauge the
11 goal, if you will, or this offset on a five year
12 running average where you would try to offset
13 whatever chlorides the refinery is discharging
14 during periods where the Ship Canal is over 500
15 mg/L in that increment.

16 MR. RAO: Mr. Huff, in your
17 testimony, and as I think Mr. Tyler touched on
18 this, one of the recommendations involves amending
19 the mixing zone rules to provide opportunity for
20 mixing zones when applicable water quality
21 standards are exceeded and you also -- I think
22 Citgo has given us some proposed language of that
23 concept.

24 Does Citgo envision that an
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1 amendment to the mixing zone rules would apply
2 throughout the year or only when the seasonal
3 standard recommended by Citgo would apply?

4 MR. HUFF: I would think throughout
5 the year would be simpler. If you take chlorides
6 as an example, we don't have chloride water
7 quality violations in the summer if you were to
8 adopt a 500 mg/L. So I would argue under the
9 existing mixing zone regulation that the Lemont
10 Refinery would be entitled to a mixing zone for
11 chlorides in the summer months.

12 So the need for the relief is
13 when you have water quality exceedances, if you
14 will, which is the winter, but I don't know why
15 you would separate and say only in the winter.
16 Just make it whenever these conditions exist.

17 MR. RAO: Okay. Besides chloride,
18 does Citgo envision this recommendation applying
19 to other pollutants? If so, what pollutants do
20 you think would fall under this?

21 MR. HUFF: I would anticipate it
22 would also apply to mercury would be the other
23 parameter that I think that would be absolutely
24 applicable for.

1 MR. FORT: Excuse me, Mr. Huff.
2 This is because you believe there could be mercury
3 violations upstream of the Citgo intake?

4 MR. HUFF: Yes, sir. Whenever the
5 harmonic flow exceeds the -- whenever the flow
6 exceeds the harmonic mean. That is what our data
7 shows. So 60 to 70 percent of those higher flow
8 periods the mercury is above the 12 ng/L level.

9 MR. FORT: Excuse me. So the
10 problem is during the high flow conditions, not
11 during low flow conditions?

12 MR. HUFF: That's correct.

13 MS. LIU: Mr. Huff, you touched on
14 this next question a little bit. I was hoping you
15 could go into a little more detail to give us a
16 better picture of what you are envisioning.

17 Your pre-filed testimony
18 suggests that the BMP approach could be rolled
19 into the existing storm water NPDES program.
20 Currently, the Board's NPDES permit regulations
21 under Part 309 do not contain specific
22 requirements for implementing BMP's to offset
23 discharge of specific pollutants.

24 Could you please explain how
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1 Citgo envisions implementing regulatory
2 requirements to employ BMP's for the purpose of
3 providing an offset in exchange for the
4 entitlement to the mixing zone? Do you think that
5 the BMP should be implemented through the NPDES
6 provisions of Part 309 or in separate IEPA
7 implementation regulations?

8 MR. HUFF: I'm not sure I've given
9 that a lot of thought. Clearly, I think
10 incorporating this into a discharger to NPDES
11 permit is perfectly appropriate. We already have
12 a requirement that they have a storm water
13 pollution prevention plan and the key elements of
14 that storm water pollution prevention plan I don't
15 believe are in the Board's regulations now. This
16 would be analogous in my mind as to allow some
17 flexibility for the individual dischargers to
18 address what kind of best management practices are
19 really applicable. So I guess that would fall
20 under the agencies implementing the program.

21 MS. LIU: I know the Agency isn't
22 testifying today, but in post-hearing comments if
23 you could comment on the concept, that would be
24 really helpful. I would appreciate that.
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1 MR. TWAIT: I will answer. I don't
2 know the answer to that. But I'll have to talk to
3 the permit people.

4 MS. LIU: Thank you. Mr. Huff has
5 already described in his BMP plan some of the ways
6 that it can address chloride, but I was also
7 wondering about sulfates and mercury?

8 MR. HUFF: I don't believe sulfates
9 are an issue, but mercury I'd be more than happy
10 to for mercury -- collection of the mercury vapor
11 lamps immediately responding to any kind of
12 mercury spills, which would include breaking of
13 the CFL type light bulbs could be an absolute BMP
14 type of thing, identifying a program for
15 replacement of all mercury switches within a
16 facility over a period of time, making sure
17 mercury switches are properly handled when they're
18 removed, identifying any remaining mercury
19 thermometers within a facility and then
20 establishing a program to replace those with
21 non-mercury thermometers with proper disposal
22 again and I think this is one of your questions a
23 collection point promotion of mercury containing
24 devices for the community and its employees and
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1 basically trying to eliminate the maximum extent
2 the mercury that is in the laboratories.

3 There are still some analytical
4 chemistry methods that have mercury salts that I
5 think there is an opportunity to find alternative
6 chemistry methods for those. A lot of times
7 cleaning the traps on sinks in laboratories there
8 is a common source and there are some industrial
9 sewer lines not necessarily in a refinery that
10 have residual mercury that needs to be cleaned
11 out.

12 So you can put that in as a
13 potential BMP and then your question also went to
14 the community. Citgo has an annual Earth Day for
15 its employees and its contractors and, in fact,
16 they are already collecting mercury at their
17 facilities from its employees and contractors and
18 then returning those for mercury recycling. I
19 mean, they're really out there and I think there's
20 an opportunity in that same program to establish a
21 residential anti-icing program that we're working
22 on as well to really kind of take anti-icing to
23 the residential houses for people that have to use
24 rock salt it's a very good alternative.
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1 MS. LIU: Could you describe a
2 little bit more about the residential program?

3 MR. HUFF: Yes, I will tell you that
4 I anti-ice at my house and it is very effective.
5 I have a wife that is handicap. So any snow or
6 ice on the steps she can't get out of the house
7 and so I go out ahead of storms and I basically
8 apply brine solution to those steps ahead of time
9 and you go out in the morning and if there is snow
10 on there it comes right off and there is never any
11 ice on that and I would envision basically almost
12 like a container that would direct the resident
13 how much salt to put in there to make up the
14 saturated brine solution, a way to mix that, and
15 then just like a watering can you would use that
16 to apply that to your sidewalk or whatever area
17 ahead of the storm. I think that would be a very
18 novel program that Citgo is entertaining moving
19 forward with that at its next Earth Day.

20 MS. LIU: Great.

21 MR. RAO: Does Citgo envision the
22 recommended BMP's being implemented just onsite or
23 also offsite as long as it could benefit the same
24 waterway?

1 MR. HUFF: Really a good question.
2 We have outlined what I believe is a very
3 aggressive BMP. I think we need to cut our
4 deicing salts by 50 percent. That would be on
5 about the outer extreme of where the technology is
6 today. I'm anxious to try to implement that and
7 look for refineries moving in that direction.
8 We've also had some very preliminary talks with
9 two of the local communities about a potential
10 offset.

11 I will tell you the response on
12 the first round was tepid. Maybe because they
13 don't really understand what we're offering them
14 to do that. So I think the answer is we're going
15 to do everything in our power to do it onsite and
16 then if that doesn't look like we're going to be
17 able to achieve the necessary reduction from that
18 we are prepared to go offsite to get some
19 additional offsets.

20 MS. LIU: Mr. Huff, you suggested
21 adopting the 12 ng/L mercury water quality
22 standard as an annual average, but you expressed
23 concern where a mixing zone could be applied.
24 Would the annual average be a rolling average?
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1 MR. HUFF: I don't think it makes
2 any difference. I think administratively an
3 annual average is superior to the rolling average.
4 I think they would be equally protective.

5 MS. LIU: So either or?

6 MR. HUFF: Either or would be fine.

7 MS. LIU: Could the mixing zone/BMP
8 amendments proposed by Citgo address mercury as
9 well?

10 MR. HUFF: I believe it could with
11 the caveat that Mr. Tischler indicated quantifying
12 changes in mercury releases would be very
13 difficult and I put in what the net mercury
14 emission is from Citgo on an annual basis. As I
15 recall, it's about 0.075 pounds or something on
16 that order. If we select one mercury switch,
17 we're well over that. So we can take credit for
18 hundreds of times the amount that is discharged,
19 but then you say that's not quite fair. It's
20 apples and oranges. So I think it's a very
21 difficult thing to do, to offset like I would
22 envision for chlorides.

23 MS TIPSORD: Excuse me. Mr. Read
24 has a follow up.

1 MR. READ: Matt Read on behalf of
2 ExxonMobil. The mixing zone -- alternative mixing
3 zone approach that you're discussing, could that
4 be used to apply to thermal standards as well?

5 MR. HUFF: I have to think about
6 that. I have not given that any thought. So you
7 would -- if your BMP's would be in this case the
8 minimized temperature increases somewhere in the
9 refinery in return for being granted the mixing
10 zone in a stream that was basically impaired for
11 mixing zone, sure, I think you could make that
12 work.

13 MS. LIU: In terms of annual or the
14 rolling average, would you be able to document if
15 either one would be protective of aquatic life?

16 MR. FORT: Excuse me. Aquatic life
17 for the 12 nanograms or --

18 MR. RAO: That's a human health
19 standard.

20 MR. FORT: That's a human health
21 standard. Right.

22 MS. LIU: So it wouldn't matter.

23 MR. FORT: I'm sure if we met the 12
24 nanograms because that is a lot lower than the
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1 acute or the chronic proposed mercury numbers the
2 answer would be yes, but you should answer that
3 question.

4 MR. HUFF: If you're referring to
5 the chronic standard, I believe the proposed is
6 650 ng/L and I believe the acute is 1,200 ng/L and
7 there is no issue on the Chicago Sanitary and Ship
8 Canal with either of those numbers.

9 MR. RAO: I think our final question
10 is about whether Citgo is aware of other state
11 regulations that allow the use of BMP's to offset
12 point source discharges of one or more pollutants
13 as being proposed by Citgo?

14 MR. HUFF: I would refer to
15 Mr. Tischler's questions and his testimony also
16 specifically with respect to mercury. I will tell
17 you that I'm very active in the transportation
18 sector. We have negotiated successfully with the
19 resource agencies, including US EPA and IEPA, on
20 the building of the Elgin O'Hare expressway a
21 chloride offset program where we're doing the
22 exact same thing.

23 I am -- will submit this week
24 the I-90 offset for adding the third lane in each
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1 direction there. The tollway believes, again,
2 through implementation of best management
3 practices they can offset that increase in
4 chloride use on lane miles internally through
5 BMP's. In the case of the Elgin O'Hare, we had to
6 go out to the communities and basically fund the
7 brine tanks, the training, the calibration and new
8 equipment to get that offset and we're well on our
9 way of making that happen and they have been
10 issued all the appropriate permits and that
11 project is under construction. So there is
12 precedent here in Illinois on the transportation
13 side for exactly what is proposed here.

14 MR. RAO: Since you mentioned that
15 you're working with a lot of these transportation
16 agencies, tollway authority and DOT, could you
17 comment on, you know, what do you think about the
18 prospects of these BMP's when using the
19 introduction of chlorides to the CAWS or Lower Des
20 Plaines River in the near future like do you think
21 they will make a significant difference in what is
22 going on?

23 MR. HUFF: Positively, yes. I'm
24 very active in the DuPage River Salt Creek
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1 Workgroup where we have worked diligently now.
2 We're in our seventh year and there has been a
3 significant reduction in chloride use and
4 improvement in the streams as a result of that
5 work. I will tell you that the training and
6 changing of mindset is the absolute hardest
7 factor. If you're a public works director that
8 has been doing this for 20 years, you know your
9 job depends on having dry pavement in front of the
10 mayor's house.

11 So you go into these communities
12 and when you have the long-time public works
13 directors that's where we're finding the greatest
14 opposition. Where we have the younger guys who
15 are willing to say, yeah, we can do this and maybe
16 they don't know any better that their job is on
17 the line if they don't have dry pavement and,
18 frankly, you have the same thing and you get into
19 a larger organization like the Department of
20 Transportation or the tollway, there is a lot of
21 layers that you have to go through with this
22 retraining process and I will tell you on the
23 tollway we're well on the way, but we're not there
24 yet.

1 We still have additional people
2 there that have not totally bought into this
3 because their job depends on making these accident
4 free expressways and the concept to use less salt
5 they believe their job is in jeopardy and we have
6 to train them that there is no correlation between
7 salt use and safe roadways and there are enough
8 studies to clearly document that, but it's a
9 mindset that takes several years to really change
10 that mindset.

11 MR. RAO: But you are working on it?

12 MR. HUFF: Yes, sir, I am.

13 MR. FORT: If it wasn't clear
14 already, you're optimistic of the progress and
15 success?

16 MR. HUFF: I think I concur with
17 Mr. Tischler if the question is could we in the
18 Use B waterways achieve 500 mg/L through strictly
19 BMP's that is really pushing the envelope. I have
20 no doubt we can get down to fewer exceedances of
21 that 500 mg/L level, but when you get these
22 intense storms and you get the cold weather with
23 the freezing ice and there is no alternative to
24 that point when you're pouring down that rock salt
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1 there will still be exceedances of the 500 mg/L,
2 but I'm optimistic we could in five to ten years
3 reduce those numbers of exceedances by 80 to 90
4 percent of the time.

5 MR. RAO: Thank you.

6 MS TIPSORD: Are there any other
7 questions for Citgo PVD? Mr. Read?

8 MR. READ: We have a couple of
9 follow-up questions. First, aside from the
10 Sanitary and Ship Canal, do other riverways in the
11 area receive significant contributions of chloride
12 from suburban and urban deicing activities?

13 MR. HUFF: So I'll interpret the
14 word significant do they exceed the 500 mg/L
15 chloride? The answer is there is probably not a
16 stream in any urban area in the northern part of
17 the country that does not exceed 500 mg/L during
18 deicing events.

19 MR. READ: So that would obviously
20 include the DuPage River, the Kankakee River and
21 the Fox River?

22 MR. HUFF: Fox River, that is
23 correct; DuPage River, that is correct; I can't
24 speak about the Kankakee River specifically. That
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1 is much more rural there. I'm not sure that there
2 are exceedances there. I just don't know.

3 MR. READ: Another follow up. This
4 is actually a follow up from before lunch, but you
5 stated that the Lemont Refinery would not have a
6 problem meeting the General Use standards for
7 sulfate. Does that envision a mixing zone or is
8 that --

9 MR. HUFF: That is assuming a mixing
10 zone because there is no water quality violation
11 under the proposed General Use standard. That's
12 correct.

13 MR. READ: One last question. Has
14 there been any quantified reduction in chloride
15 from the Salt Creek program?

16 MR. HUFF: Yes.

17 MR. READ: Can you describe that?

18 MR. HUFF: Not very efficiently. I
19 mean, we send questionnaires out annually to all
20 the public works departments. We get a reasonably
21 good response on 70 to 80 percent and overall
22 there has been reduction and I've not looked at
23 the data in a long time, but I believe they're
24 down 20 to 25 percent since we started doing those
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1 questionnaires as a river basin.

2 MR. READ: Okay.

3 MS. GLOSSER: Mr. Huff, I have a
4 question. In looking at alternatives to deicing,
5 one of the areas that seems to be a problem,
6 particularly in the Chicago area, is deicing
7 bridges. Are they looking at alternatives to
8 deicing, taking care of ice on bridges?

9 MR. HUFF: So almost all communities
10 today are anti-icing the bridges. That is
11 probably the most common application of anti-icing
12 because you can prevent the ice from forming on
13 those bridges and that is what is being used.
14 They continue to look at putting electrical
15 heaters in the bridges themselves. There is some
16 problem with the concrete from doing that and
17 stuff, but that is being researched, but not
18 commercialized is my understanding of where that
19 is at.

20 MS. GLOSSER: Do you know if the
21 City of Chicago using non-salt alternatives on
22 their bridges?

23 MR. HUFF: I do not. That's a good
24 question.

1 MS. GLOSSER: There's a lot of
2 bridges.

3 MS. LIU: Mr. Huff, just to be
4 clear, can you define anti-icing?

5 MR. FORT: Good question.

6 MR. HUFF: So anti-icing is
7 preventing the bonding between the snow or water
8 that freezes and the pavement itself. So by
9 putting down a layer of brine on the surface it
10 prevents that adhesion of ice onto the roadway.
11 So when they talk about black ice and things like
12 that where that ice is literally stuck onto the
13 pavement and they can't scrape it off very
14 successfully so they put copious amounts of rock
15 salt, had they been out there ahead of that storm
16 and anti-iced, then their scraper would have
17 removed snow and not ice ahead of the storm and if
18 it is only a quarter of an inch or a half of an
19 inch of snow, it would have melted before you
20 would have expended the brine that is in the brine
21 solution of salt that is in there.

22 MS TIPSORD: Mr. Read?

23 MR. READ: This gets back to the
24 quantification number. You gave 25 percent.
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1 That's in the amount of salt used?

2 MR. HUFF: Correct.

3 MR. READ: So that's not an actual
4 concentration in the waterbody that you're looking
5 at?

6 MR. HUFF: If your question was have
7 we seen a reduction in the chloride concentrations
8 in the stream? The answer is yes to that. That
9 is a much more complicated question because of all
10 the seasonal variations. You may recall we've
11 gone through two very mild winters. So our
12 chlorides were way down the last two winters and
13 I'm not going to tell you that's because of
14 improved deicing practices. I'm going to tell you
15 that's because we put less salt down because we
16 had fewer snow events.

17 MR. READ: Thank you.

18 MS TIPSORD: We're making up for it
19 this year. Anything else? Let's go off the
20 record for just a minute.

21 (Whereupon, a discussion was had
22 off the record.)

23 MS TIPSORD: As I indicated off the
24 record if the participants would like to basically
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1 stay this proceeding while negotiating I'd like to
2 see something in writing to the Board and --
3 actually, you know what, let's direct it to the
4 Hearing Officer. Then it won't require a Board
5 order to set it up. So you can file something
6 with the Hearing Officer before the end of
7 January. If I do not receive anything in writing
8 asking the proceedings to be stayed, we will set a
9 final comment period at that point in time.

10 Thank you again for all of your
11 willingness to make accommodations today. I know
12 that Mr. Ettinger appreciated it and I appreciate
13 it. Once again your professionalism and your
14 courtesy to one another has been awesome
15 throughout this proceeding so thank you very much
16 and happy holidays.

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1 STATE OF ILLINOIS)
2) SS.
3 COUNTY OF COOK)
4

5 I, Steven Brickey, Certified Shorthand
6 Reporter, do hereby certify that I reported in
7 shorthand the proceedings had at the trial
8 aforesaid, and that the foregoing is a true,
9 complete and correct transcript of the proceedings
10 of said trial as appears from my stenographic
11 notes so taken and transcribed under my personal
12 direction.

13 Witness my official signature in and for
14 Cook County, Illinois, on this 27th day of
15 December, A.D., 2013.

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