

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

**RECEIVED**  
**CLERK'S OFFICE**  
 NOV 23 2010  
**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 Jennifer L. Wiesch, CSR, for the State of Illinois, at the Michael Bilanic Building, 160 North LaSalle Street, Room N-502, Chicago, Illinois, on Tuesday, the 9th day of November, 2010, commencing at the hour of 9:00 a.m.

A P P E A R A N C E S

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24

MS. MARIE TIPSORD, Hearing Officer  
MS. ALISA LIU, Environmental Scientist  
MR. ANAND RAO, Senior Environmental Scientist  
MR. TANNER GIRARD, Acting Chairman  
MR. THOMAS JOHNSON  
MS. CARRIE ZALEWSKI  
MS. ANDREA MOORE  
MR. DANIEL ROBERTSON, on behalf of GARY BLANKENSHIP

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY  
BY: MS. DEBORAH J. WILLIAMS  
MS. STEPHANIE N. DIERS  
1021 North Grand Avenue East  
P.O. Box 19276  
Springfield, Illinois 62794-9276  
(217) 782-5544

BARNES & THORNBURG LLP  
BY: MR. FREDRIC P. ANDES  
One North Wacker Drive  
Suite 4400  
Chicago, Illinois 60606-2833  
(312) 357-1313  
Appearing on behalf of the Metropolitan Water  
Reclamation District

SIERRA CLUB and PRAIRIE RIVERS  
BY: MR. ALBERT ETTINGER  
53 West Jackson Boulevard  
Chicago, Illinois 60604  
(773) 818-4825

## A P P E A R A N C E S (continued)

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24

ENVIRONMENTAL LAW AND POLICY CENTER

BY: MS. JESSICA DEXTER

35 East Wacker Drive

Suite 1300

Chicago, Illinois 60601

(312) 795-3707

CITGO and SNR DENTON

BY: MR. ARIEL TESHER

233 South Wacker Drive

Suite 7800

Chicago, Illinois 60606

(312) 876-2380

CHEMICAL INDUSTRY COUNCIL OF ILLINOIS

BY: MS. LISA FREDE

1400 East Touhy Avenue

Suite 110

Des Plaines, Illinois 60018

(847) 544-5995

SOUTHEAST ENVIRONMENTAL TASK FORCE

BY: MR. KEITH HARLEY

205 West Monroe Street

Fourth Floor

Chicago, Illinois 60606

(312) 726-2938

MIDWEST GENERATION

MS. SUSAN M. FRANZETTI

10 South LaSalle Street

Suite 3600

Chicago, Illinois 60603

(312) 251-5250

REPORTED BY: Jennifer L. Wiesch, CSR, RPR, CRR

1 MS. TIPSORD: Good morning, everyone. My  
2 name is Marie Tipsord, and I've been appointed by  
3 the 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. Admin. Code 301, 302, 303 and  
8 304.

9 This is Docket Number R08-9, and we are  
10 in sub dockets C and D. With me today, to my  
11 immediate left is Acting Chairman G. Tanner Girard.  
12 To his left, Board Member Carrie Zalewski. And once  
13 again, Board Member Andrea Moore, as soon as traffic  
14 allows. She was trying to get in the express  
15 lane -- ah, perfect timing.

16 MS. MOORE: Sorry.

17 MS. TIPSORD: I just told them that you were  
18 just in the express lane and called me, so. To my  
19 immediate -- to my far right is Board Member Thomas  
20 Johnson. To my immediate right, from our technical  
21 staff, Anand Rao. And to his right, Alisa Liu.

22 Today is the second day of our hearing,  
23 and this is -- in these sub dockets, we'll be in our  
24 45th day overall. Also from the Board staff today,

1 Daniel Robertson is here. He's assistant to Board  
2 Member Gary Blankenship. We are continuing today to  
3 hear testimony on the issue of Asian carp and the  
4 impact of the measures to control Asian carp on the  
5 proposed regulations.

6 At a prehearing conference, a schedule  
7 was set. And we have gone down to where we are  
8 going to begin today with Jennifer Wasik from the  
9 Metropolitan Water Reclamation District of Greater  
10 Chicago. We'll have questions from the IEPA, then  
11 the Environmental Law on Policy Center, finishing  
12 with Midwest Generation -- excuse me, we will  
13 conclude the hearing by going through the testimony  
14 from the American Waterway Operators.

15 The testimony will be marked as an  
16 exhibit and entered as if read. If necessary, we  
17 will continue from day-to-day until tomorrow  
18 morning. I think we're probably not going to have  
19 to do that. Keep our fingers crossed. Today we  
20 will break for lunch. We'll take an extra half-hour  
21 or so at lunchtime. The Board has a closed  
22 deliberative session scheduled at one o'clock.

23 Anyone may ask a follow-up question. You  
24 need not wait until your turn to ask questions. I

1 do ask that you raise your hand, wait for me to  
2 acknowledge you; and after I've acknowledged you,  
3 please state your name, who you represent before you  
4 begin your questioning. Please speak one at a time.  
5 If you're speaking over each other, the court  
6 reporter will not be able to get your questions on  
7 the record. Please note that any questions asked by  
8 a Board member or staff are intended to help build a  
9 complete record for the Board's decision and not to  
10 express any preconceived notion or bias. With that,  
11 Mr. Girard.

12 MR. GIARD: Good morning. Welcome to hearing  
13 day 45. Let's get to work.

14 MS. TIPSORD: Thank you. And is there  
15 anything else preliminarily before we begin? Okay.  
16 Then could we have Ms. Wasik sworn in.

17 (WHEREUPON, the witness was duly  
18 sworn.)

19 MS. TIPSORD: And do we have a copy of her  
20 pre-filed testimony?

21 MR. ANDES: We do. We have a copy paper of  
22 her -- paper copy of her testimony and a disc which  
23 includes all the voluminous attachments.

24 MS. TIPSORD: Okay. If there's no objection,

1 we will mark the pre-filed testimony of Jennifer  
2 Wasik as Exhibit 431. Seeing none, it's  
3 Exhibit 431.

4 (Document marked as IPCB Exhibit  
5 No. 431 for identification.)

6 MR. ANDES: And we also have a corrected  
7 page, which I provided to IPA yesterday afternoon.  
8 We found an error in attachment eight. The number  
9 of species collected in 2009 was actually 11, not  
10 eight. So we have a revised version of attachment  
11 eight to introduce.

12 MS. TIPSORD: All right. If there's no  
13 objection, we'll mark the revised table as  
14 Exhibit 432. Seeing none, it's Exhibit 432.

15 (Document marked as IPCB Exhibit  
16 No. 432 for identification.)

17 MS. TIPSORD: And with that, we'll begin with  
18 the questions from the IEPA.

19 JENNIFER WASIK,  
20 called as a witness herein, having been first duly  
21 sworn, was examined and testified as follows:

22 EXAMINATION

23 BY MS. WILLIAMS:

24 Q. Good morning, Ms. Wasik. I think I'll

1 just ask a couple clarification questions about  
2 Exhibit 432 for the record.

3 A. Okay.

4 Q. Can you identify for us which species are  
5 altered from this original testimony?

6 A. Yes. Under 2009, I've added bluntner,  
7 minnow, emerald, shiner and spot finch on here, and  
8 that was because I realized later that the  
9 spreadsheet I had gotten the original fish species  
10 from didn't include fish that we had bottled and  
11 identified in the lab. So when I added those, it  
12 was 11, or as Roy pointed out, ten species, because  
13 you don't want to count the hybrid.

14 Q. Okay. Thank you. And so is there any  
15 other changes from the original?

16 A. That was it. That was the only year that  
17 there was a problem.

18 Q. Let's turn to pre-filed question number  
19 one. On page 11 of your testimony, you discussed  
20 that ammonia was mainly being considered to produce  
21 toxic zones in the CAWS to prevent this passage.  
22 Has chlorine also been considered to produce a toxic  
23 zone?

24 A. No, not that I'm aware of.



1 Q. And why not?

2 A. I think it wasn't part of the discussion  
3 because it wasn't considered a viable or sustainable  
4 option to purchase a chemical to dump into the  
5 waterway. There's storage issues with chlorine and  
6 also toxic byproducts or degradation products, so  
7 chlorine wouldn't be seen as a good option for a  
8 toxic zone. You'd also have to dechlorinate  
9 downstream of the toxic zone.

10 Q. And when you say it wasn't a viable  
11 option to purchase a chemical, explain what you  
12 mean.

13 A. Well, ammonia, frankly, would be a  
14 cost-effective solution. It doesn't involve buying  
15 a chemical and storing a chemical and dumping it in  
16 the waterway, it's just a --

17 Q. And if --

18 A. -- would involve basically avoiding  
19 treatment -- certain treatment costs, so, in fact,  
20 it would actually be less money than -- it would  
21 cost less to have an ammonia zone than not to, if  
22 that makes sense.

23 Q. But if the agent -- but if the district  
24 was chlorinating its effluent for disinfection

1 obviously, that would be --

2 A. Well, for --

3 Q. -- not in --

4 A. -- chlorinating our effluent, by the time  
5 it was discharged, there would no longer be  
6 chlorine, it would be dechlorinated. We wouldn't --  
7 well, there -- we wouldn't be discharging --

8 Q. Or you could not be -- I mean, that would  
9 be the alternative; right? In the '80s, that's what  
10 was happening; correct?

11 A. Right. In the '80s, we were  
12 chlorinating, and it was shown to be -- that after  
13 we stopped chlorinating, there was a large  
14 improvement in the fish population.

15 MR. ETTINGER: I'm Albert Ettinger. That's  
16 E-t-t-i-n-g-e-r. I represent the Sierra Club and  
17 Prairie Rivers. I do not represent ELPC. The -- my  
18 question is -- and this follow-ups on yours.

19 You say, "Another long-term option the  
20 District has been asked to complete an efficiency  
21 study on using the planned effluent to produce toxic  
22 zones. This would focus mainly on the use of  
23 ammonia discharge." By who were you asked to do  
24 this?

1 THE WITNESS: This was with discussions, I  
2 think, at the executive committee of the Asian Carp  
3 Regional Coordinating Committee.

4 MR. ETTINGER: Do you know who was pushing  
5 that?

6 MR. ANDES: Let's -- let's --

7 THE WITNESS: I'm not aware --

8 MR. ANDES: You want to rephrase that so it  
9 does not talk about pushing.

10 THE WITNESS: I would, yeah. I'm not aware  
11 of --

12 MR. ETTINGER: Do you know who is proposing  
13 that?

14 THE WITNESS: I'm not sure. I wasn't part of  
15 those discussions. I don't think anyone is pushing  
16 it by any means, but it was -- I think it was an  
17 option that was discussed in that meeting, and so we  
18 were asked to do a feasibility study --

19 MR. ETTINGER: If a --

20 THE WITNESS: -- for --

21 MR. ETTINGER: Just to clarify --

22 THE WITNESS: Just a literature search.

23 MR. ETTINGER: Just to clarify, it wasn't the  
24 District's idea?

1 THE WITNESS: I'm not even sure.

2 MR. ETTINGER: Well, was it the District's  
3 idea?

4 THE WITNESS: Like I -- like I said, I don't  
5 know. I wasn't part of that discussion. That was  
6 an executive level...

7 MR. ETTINGER: Okay. So is it your  
8 understanding that anything would be done downstream  
9 to take the ammonia out, or would it be anticipated  
10 that the ammonia would just go ahead and kill the  
11 Upper Illinois River as it did down to Peru until  
12 the '20s and '30s?

13 THE WITNESS: I believe it would be removed.

14 MR. ETTINGER: Where?

15 THE WITNESS: I don't know.

16 MR. ETTINGER: Thank you.

17 THE WITNESS: I mean, the --

18 MR. ANDES: It's your understanding that the  
19 District was asked to consider this option, correct?

20 THE WITNESS: Right. As far as I know,  
21 our -- part of it is a literature search to just  
22 determine basically what levels of ammonia might  
23 have an effect on Asian carp.

24 MR. ETTINGER: Thank you.

1 BY MS. WILLIAMS:

2 Q. Question two. Is another suggested  
3 strategy for potentially controlling the spread of  
4 Asian carp the reduction of nutrient levels from the  
5 MWRDGC plant effluents?

6 A. Not that I know of. Since nutrient  
7 levels don't correlate well with other levels in  
8 Illinois, according to the recent studies over the  
9 past few years that this state has -- has had the  
10 council -- they've had scientists researching and  
11 trying to find correlations between nutrients and  
12 algae, and they haven't been able to identify a  
13 really clear relationship, so I don't think we'd  
14 be -- it would be expected that decreasing nutrient  
15 levels would decrease algae, which is a food source  
16 for the Asian carp. Also, you'd have to consider  
17 the fact that agricultural inputs are the  
18 predominant source of nutrients in the Illinois  
19 waterway.

20 MR. ETTINGER: Are Illinois --

21 MS. WILLIAMS: Wait --

22 MR. ETTINGER: I'm sorry.

23 MS. WILLIAMS: Let me follow-up, please.

24

1 BY MS. WILLIAMS:

2 Q. So I think -- I mean, accepting your  
3 answer that you don't think it would work, I think  
4 my question was: Is that one of the suggested  
5 potential strategies by the -- what do you call  
6 this -- mini Asian carp --

7 MR. ANDES: Is there a particular statement  
8 you're citing to?

9 MS. WILLIAMS: No, I'm not citing to  
10 anything.

11 BY MS. WILLIAMS:

12 Q. I'm asking if that's one of the  
13 potential --

14 A. Not that I'm --

15 Q. -- strategies that --

16 A. -- aware of.

17 Q. -- you could --

18 MR. ETTINGER: You're not aware of a specific  
19 recommendation within the Asian carp framework for  
20 consideration of nutrient reduction as a means of  
21 controlling Asian carp population?

22 THE WITNESS: Specifically related to the  
23 distract of reducing nutrients?

24 MR. ETTINGER: I don't know if it's specific.

1 Unfortunately, I don't have the document with me.

2 MS. WILLIAMS: Well, is it an exhibit? I  
3 mean, I'd rather --

4 MR. ETTINGER: Do you have the framework?

5 MS. WILLIAMS: I have -- I have the May 2010.

6 MS. TIPSORD: And, Ms. Wasik, keep your voice  
7 up. You're fading away a little bit.

8 THE WITNESS: Okay.

9 MS. TIPSORD: Again with all the outside  
10 noise, I'm not sure how much they can hear.

11 THE WITNESS: Okay.

12 MR. ETTINGER: Yes. Page 37 of the Asian  
13 Carp Control Strategy Framework Study Efficacy of  
14 Reducing Asian Carp Food Source Through Nutrient  
15 Removal. Are you aware of that?

16 THE WITNESS: I've read the document. I  
17 haven't read that page recently, but.

18 MR. ETTINGER: Okay. Well --

19 THE WITNESS: The -- there's a study being  
20 done, if that's what you're saying.

21 MR. ETTINGER: That's one of the  
22 recommendations, but --

23 THE WITNESS: I don't have the document with  
24 me, but --

1 MR. ETTINGER: We can all read the document.  
2 We were just asking if you knew anything in addition  
3 to the document, and I --

4 MS. TIPSORD: If you don't have the document  
5 with you, if you would like to borrow one of ours,  
6 because it is an attachment to your testimony,  
7 because I would guess that you're going to get more  
8 questions.

9 THE WITNESS: Okay.

10 MS. TIPSORD: Okay. So, I mean, I have a  
11 copy of it right here that I haven't marked on if  
12 you would like to borrow it.

13 THE WITNESS: Okay.

14 MR. ETTINGER: I'm sorry, were you going on  
15 to --

16 MS. WILLIAMS: You can --

17 MR. ETTINGER: -- nutrients or --

18 MS. WILLIAMS: I'm going to flip the page, so  
19 if you want to ask follow-ups, that's fine.

20 MR. ETTINGER: I was just going to ask: Is  
21 it your understanding that agriculture is a major  
22 source of nutrients in the Upper Dresden Island  
23 Pool?

24 THE WITNESS: I'm not sure in the Upper



1 Dresden.

2 MR. ETTINGER: Thank you.

3 MS. FRANZETTI: If I may. Ms. Wasik --

4 MS. TIPSORD: Please identify yourself.

5 MS. FRANZETTI: I'm sorry. Susan Franzetti,  
6 counsel for Midwest Generation. Could you explain a  
7 little further what you are referring to when you  
8 were referencing the fact of poor correlation  
9 between -- and that's what I'm not exactly sure --  
10 between what and what elements of nutrients and  
11 algal growth were you referring to?

12 THE WITNESS: Right. Well, as the State has  
13 been promulgating or attempting to promulgate  
14 nutrient standards for Illinois, they have worked  
15 with several institutions at universities through  
16 the C-FAR Council for approving agricultural  
17 research to look at how nutrients -- using existing  
18 data in Illinois, how nutrients affect various end  
19 points, biological end points, like fish or  
20 macroinvertebrate metrics or algae through  
21 chlorophyll levels, and they have not found a clear  
22 relationship in Illinois streams between chlorophyll  
23 and nutrient levels. So there isn't a particular  
24 point where you could say reduce nutrients to this

1 level and algae would be expected to decrease.

2 MS. FRANZETTI: Thank you.

3 MR. ETTINGER: In your understanding, are  
4 those studies of streams or of lakes or of  
5 reservoirs or of large waters?

6 THE WITNESS: I'm sorry. In streams.

7 MR. ETTINGER: So those are all stream  
8 studies of relatively small streams?

9 THE WITNESS: Not just relatively small  
10 streams. It involved --

11 MR. ETTINGER: What's the --

12 THE WITNESS: -- larger rivers, as well.

13 MR. ETTINGER: What's the biggest stream that  
14 you believe that Mark David and others would have  
15 studied that and looked at?

16 THE WITNESS: A larger stream, I couldn't --  
17 couldn't say. I think they used -- let me see. I  
18 think that they used IEPA data, so I'm assuming that  
19 they were able to use Illinois river data, but I'm  
20 not sure.

21 MR. ANDES: To clarify, we can provide a copy  
22 of that report. For the record, it was prepared by  
23 Professor Mark David at U of Illinois for Illinois  
24 EPA. And we'd be glad to provide a copy of that

1 report for the record. And if there are questions  
2 that we can answer during the Aquatic and Habitat  
3 Hearings, I'd be glad to --

4 MR. ETTINGER: I think we'll save it for the  
5 permanent appeal.

6 MR. ANDES: Let me follow-up with one other  
7 question. You talked a little bit, Ms. Wasik, about  
8 chlorophyll. Can you explain what the significance  
9 of chlorophyll is here relative to algae and how  
10 this set of water bodies ranks relative to other  
11 parts of the Illinois waterway?

12 THE WITNESS: So chlorophyll is a measure of  
13 algae, and if you measure chlorophyll from a water  
14 sample that's taken out of a waterway, you can  
15 estimate the amount of phytoplankton or suspended  
16 algae in the water column. The District measures  
17 chlorophyll at 59 stations throughout the Chicago  
18 area, and then we also measure chlorophyll along the  
19 Illinois waterway at several locations six times a  
20 year previous to 2009, and then three times a year  
21 since then.

22 And basically we've found that in the  
23 Chicago Sanitary and Ship Canal, the chlorophyll is  
24 lower than in some of the downstream canals of the

1 Illinois waterway. So in the ship canal, on  
2 average, the chlorophyll is about six micrograms per  
3 liter, whereas as you move downstream and along the  
4 Illinois waterway, there's increased chlorophyll,  
5 which means there's additional algae and a higher  
6 food source for the carp.

7 MR. ANDES: Thank you.

8 MR. ETTINGER: I'm sorry, where does that  
9 start to pick up?

10 THE WITNESS: It's gradual. In Lockport,  
11 like I said, the average is around six. And then as  
12 you move downstream, I think it gets progressively  
13 higher through Peoria, which is the lowest pool that  
14 we've sampled.

15 BY MS. WILLIAMS:

16 Q. So do you have an opinion on the  
17 relevance of that data to any impact on movement of  
18 Asian carp?

19 A. No. Just in reference to your question,  
20 I don't think that reducing the food source or  
21 reducing nutrients is going to necessarily produce  
22 the food -- the food source for Asian carp in the  
23 CAWS.

24 MR. ANDES: Because the algae levels are

1 already low?

2 THE WITNESS: They're quite low, yeah.

3 MR. ETTINGER: Are you a fish biologist? Do  
4 you consider yourself a fish biologist?

5 THE WITNESS: No.

6 MR. ETTINGER: Do you consider yourself a  
7 limnologist?

8 THE WITNESS: An aquatic biologist.

9 MR. ETTINGER: Thank you.

10 MR. ANDES: Can you explain -- is aquatic  
11 biologist a broader category than a fish biologist?

12 THE WITNESS: Yes. I'm not specifically a  
13 fish biologist, but I do work a lot with fish in my  
14 day-to-day job.

15 BY MS. WILLIAMS:

16 Q. So I'm not an aquatic biologist or a fish  
17 biologist, but I'm getting a little confused by the  
18 testimony that we had yesterday and today. If you  
19 conclude that the algae levels are already  
20 relatively low in the CAWS, does that serve one way  
21 or another to impact whether Asian carp are going to  
22 move through the system?

23 A. I wouldn't -- I don't know if the food  
24 source is actually limiting in the CAWS. I'm just

1 saying that it is of lower availability in the CAWS.

2 Q. Okay.

3 MS. WILLIAMS: I'm going to move on. Okay?

4 BY MS. WILLIAMS:

5 Q. Question three. On page 14 of your  
6 pre-filed testimony, you state that, quote, "There  
7 is very little habitat in the CAWS that would be  
8 considered suitable for potential fish spawning,"  
9 unquote. A, which CAWS fish species are you  
10 referring to?

11 A. In my testimony, I didn't refer to a  
12 particular species. I just said there was very  
13 little habitat in the CAWS in general that was  
14 suitable for spawning --

15 Q. For any --

16 A. -- relative --

17 Q. For any --

18 A. -- to a --

19 Q. -- species?

20 A. -- natural waterway. Right.

21 Q. Do you believe that the fish species  
22 found in the CAWS do not spawn in the CAWS?

23 A. I don't know specifically. We haven't  
24 done a spawning study in the CAWS selectively trying

1 to capture larval or juvenile fish. As I said,  
2 there's likely limited areas in the CAWS that might  
3 provide appropriate spawning habitat for a certain  
4 tolerant species; but it would be a lot of  
5 largemouth bass, but it doesn't necessarily mean  
6 that there's suitable adjacencies to nursery  
7 habitat, which is something that Scudder Mackey  
8 talked about in his testimony. So there may be  
9 spawning areas, but in order for that to be a  
10 sustainable situation for the fish, there would also  
11 have to be adjacent nursery areas for the fish, and  
12 I -- I don't know that that -- I don't think that's  
13 common in the CAWS.

14 Q. Do you believe that a relatively small  
15 amount of spawning habitat can be enough to support  
16 a population of some species that require such  
17 habitat?

18 A. A relatively small amount relative --

19 Q. Well, that's what you -- isn't that your  
20 testimony, that the CAWS has a relatively small  
21 amount of spawning habitat?

22 A. No, that I used the word relatively.

23 But --

24 Q. Did you use the word comparatively small?

1 Or you said something like that. Maybe I'm --

2 A. I think I just said a small amount -- or  
3 a small amount of spawning habitat --

4 Q. Okay. And do you believe a small amount  
5 of spawning habitat can be enough to support  
6 population of some fish species that requires it?

7 A. I guess that's difficult to answer that  
8 question because there's a lot of other factors that  
9 would go into whether or not it would be -- you  
10 know, a small amount of habitat would be enough for  
11 a sustainable fish population. Like I said, the  
12 adjacencies to other habitat and a food -- a quality  
13 food source for juvenile or larval fish and  
14 macroinvertebrates would be another one. So I guess  
15 I'm not really sure I can answer that.

16 Q. Do you think that channel catfish are  
17 spawning in the Sanitary and Ship Canal?

18 A. From our electrofishing data, I wouldn't  
19 have necessarily known that. But it appears from  
20 the IDNR testimony that they've found  
21 young-of-the-year, so it was their opinion that  
22 there could be -- that there was spawning. You  
23 know, this is just one species. And their  
24 requirements, as Greg testified, Greg Seegert,



1 testified yesterday, they may have pretty minimal  
2 requirements in terms of -- in terms of a cavity  
3 under some sort of object. And, you know, they may  
4 find those bases in the CAWS that would be able to  
5 spawn.

6 MS. TIPSORD: Mr. Harley, you've got a  
7 follow-up?

8 MR. HARLEY: Keith Harley on behalf of the  
9 Southeast Environmental Task Force. Are you  
10 familiar with spawning that takes place in Lake  
11 Calumet with Coho salmon?

12 THE WITNESS: No.

13 MR. HARLEY: Would you characterize Lake  
14 Michigan as a high quality habitat for purposes of  
15 spawning?

16 THE WITNESS: I mean, it depends on what fish  
17 species.

18 MR. HARLEY: You haven't distinguished among  
19 fish species in your -- in your testimony?

20 THE WITNESS: Right. In my answer, I guess  
21 what I'm trying to say with the channel cats is  
22 among certain intolerant -- or I'm sorry, among  
23 certain tolerant fish species, there could be a  
24 limited amount of spawning going on.

1 MR. HARLEY: Where?

2 THE WITNESS: In the CAWS.

3 MR. ETTINGER: I'm sorry --

4 MS. WILLIAMS: Can I interrupt a second?

5 MR. ETTINGER: Yeah, can I just interrupt  
6 you? You say "the CAWS," I just want to -- are you  
7 using -- when you say "the CAWS," you mean the whole  
8 thing, every -- from the top of the North Shore  
9 Channel to the -- the entire thing? So when you say  
10 there's no habitat in the CAWS, you're saying  
11 there's little or no habitat in the entire system?

12 THE WITNESS: I'm saying that there is little  
13 habitat throughout the system. There's certainly  
14 areas that have more suitable habitat than others.  
15 They're more little pockets --

16 MR. ETTINGER: I just --

17 THE WITNESS: -- as we were talking about.

18 MR. ETTINGER: But I just wanted to -- I  
19 just wanted to clarify what we were saying is the  
20 CAWS, and that was it.

21 MS. WILLIAMS: Okay. Go ahead. You can  
22 finish your answer.

23 THE WITNESS: But I guess you have to clarify  
24 which fish species you're talking about.

1 MR. HARLEY: I guess my question is:  
2 Generally would you refer to that as being a  
3 suitable habitat for spawning of some species?

4 THE WITNESS: Well, a lot of fish species  
5 will spawn in rivers and then live as adults in  
6 lakes or feed in lakes, or I'm just not sure of  
7 that.

8 MR. HARLEY: Are you familiar with that  
9 occurring in the relationship between Lake Michigan  
10 and the CAWS, that phenomena of fish species which  
11 are spawning in the CAWS and then would be living as  
12 adults in the lake?

13 THE WITNESS: It's possible. I'm not -- I'm  
14 not sure.

15 MR. HARLEY: As an aquatic biologist, you're  
16 not familiar with that occurring?

17 THE WITNESS: With spawning in the lake -- or  
18 spawning in rivers and moving specifically into Lake  
19 Michigan?

20 MR. HARLEY: Yeah.

21 THE WITNESS: As a fishery biologist, I'm not  
22 sure that that's occurring within the CAWS in the  
23 Great Lakes.

24 MR. HARLEY: You're not familiar with that?

1 Is there a hydrologic connection between Lake  
2 Michigan and the CAWS?

3 THE WITNESS: Yes.

4 MR. HARLEY: Thank you.

5 MR. ETTINGER: Just to follow-up on this a  
6 little about the relatively small amount of habit --  
7 of spawning habitat. I believe yesterday we heard  
8 from Mr. Seegert that you could have spawning in a  
9 particular area of the river, and that because fish  
10 swim, they might fill up a much larger area than  
11 that. Are you disagreeing with that?

12 THE WITNESS: I'm sorry, can you repeat your  
13 question.

14 MR. ETTINGER: Well, if we had a few spawning  
15 areas in the system, would that not be adequate, at  
16 least as to some species, to bring fish to the  
17 entire system of that species?

18 MR. ANDES: Before she answers, I want to  
19 raise an issue in terms of this whole line of  
20 questioning, because we didn't introduce the IDNR  
21 report. It's not part of Ms. Wasik's testimony to  
22 refer to the IDNR report, which was first discussed  
23 for the first time yesterday by another witness. So  
24 we're not -- we didn't really come here prepared to

1 answer detailed questions about the IDNR study. It  
2 wasn't part of the Asian carp -- it's not -- NOT  
3 part of the Asian carp issue, and it certainly is  
4 something that we'll be prepared to talk about in  
5 detail at the Habitat and Aquatic Hearings when  
6 those are scheduled.

7 MS. WILLIAMS: I don't think anyone is asking  
8 about that now. I asked one question, and she  
9 answered it.

10 MR. ANDES: Well, there have been a series of  
11 questions about the spawning issue.

12 MS. WILLIAMS: Well, that's been her  
13 testimony. She -- this is a quote from her  
14 testimony in question three. You state, "There is  
15 very little habitat in the CAWS that would be  
16 considered suitable for potential fish spawning."  
17 That's what we're asking about, not the IDNR --

18 MR. ETTINGER: I -- my --

19 MR. ANDES: Well --

20 MS. WILLIAMS: -- report.

21 MR. ETTINGER: Sorry if you understood my  
22 question as referring to the IDNR study, I wasn't.  
23 In fact, to the extent I referred to anything, I  
24 referred to Mr. Seegert's testimony, which I believe

1 said that you don't have to have -- among his  
2 conclusions or one of -- among his statements is  
3 that you don't have to have spawning everywhere that  
4 you'll have fish. And my question is: Do you  
5 disagree with that?

6 MR. ANDES: What particular statement --  
7 let's be clear about what particular statement  
8 you're referring to, because I'm not sure you're --

9 MR. ETTINGER: Well --

10 MR. ANDES: -- characterizing --

11 MR. ETTINGER: -- I don't want to  
12 characterize or mischaracterize Mr. Seegert's  
13 testimony, but I believe he said that, A, even if  
14 there isn't spawning in the Upper Dresden Pool, he  
15 still expects the area to be taken over by carp; and  
16 furthermore, that he expects that if there is  
17 spawning in the Brandon Pool, that it will certainly  
18 have large numbers of carp, although obviously that  
19 we've heard previously the Brandon Pool constitutes  
20 a relatively small amount of the total area of the  
21 Upper Dresden Island Pool.

22 So my question is: Are you disagreeing  
23 with Mr. Seegert that you could have -- you could  
24 have fish in an area in which there isn't spawning

1 immediately nearby?

2 THE WITNESS: Well, first of all, no, I don't  
3 disagree with Mr. Seegert. What he's talking about  
4 are carp, which are broadcast spawners. I'm talking  
5 about some limited tolerant species in the CAWS that  
6 have some limited habitat in the way of the rare  
7 shallows and hard bottoms, which you don't see a lot  
8 of in the CAWS. Some of these tolerant species may  
9 find isolated, limited areas to spawn in the CAWS.  
10 Whether that spawning is successful, I'm not sure  
11 whether it's enough to create a sustainable  
12 population. It's possible for certain small -- or  
13 for certain tolerant species that it is, but I'm not  
14 sure.

15 MR. ETTINGER: Well, you're not denying that  
16 there are certain tolerant species there now?

17 THE WITNESS: In terms of that are -- that  
18 are spawning?

19 MR. ETTINGER: Well, they're getting there;  
20 right?

21 MR. ANDES: You mean that are present?

22 MR. ETTINGER: You're not denying they're  
23 present?

24 THE WITNESS: No, I'm not denying that

1 there's a presence of tolerant species in the CAWS.

2 MR. ETTINGER: Are they taking the bus, or  
3 how do you think they're getting there?

4 THE WITNESS: Could be some recruitment from  
5 other areas or, like I said, to the extent that  
6 these tolerant species -- like your sunfish or  
7 largemouth bass, crappie, they all require or prefer  
8 shallow areas that have a harder, gravelly bottom to  
9 nest. And so to the extent that those habitats are  
10 available in the CAWS, which I think is pretty  
11 infrequent, as I've testified, there is limited  
12 spawning there.

13 BY MS. WILLIAMS:

14 Q. Can I just clarify? You said limited  
15 spawning, limited habitat, I think, certain limited  
16 tolerant species. I just want to be clear, channel  
17 catfish, they're not tolerant in terms of dissolved  
18 oxygenation, are they?

19 A. I think they're moderately tolerant. To  
20 the extent that they have found young-of-the-year  
21 catfish, and IDNR has -- IDNR has submitted  
22 testimony that they believe they're spawning, it  
23 would appear that the dissolved oxygen requirements  
24 are just being met at least in the area -- in the



1 area that they're discussing where they had the  
2 rotenone event.

3 Q. Do you know what the dissolved oxygen  
4 levels were during the time of year they were --  
5 around the rotenone events where they were found?

6 A. I'm not sure exactly. I think it was  
7 December, and I would imagine they were quite high.

8 Q. Okay. Thank you. I'll move on to  
9 question four. You testify on page 14 that, quote,  
10 "We collected fish on July 23, 2010, in the Lockport  
11 Pool where rotenone had been applied in December  
12 2009. Only three fish species were collected  
13 compared to ten and eight collected in 2007 and 2008  
14 respectively." Is it your testimony that the  
15 December 2009 rotenone treatment is the likely cause  
16 of only three fish species being captured by MWRDGC  
17 sampling in July 2010?

18 MR. ANDES: Before she answers, we have a  
19 chart that shows the numbers, which we thought would  
20 be helpful, in graphic form.

21 MS. TIPSORD: I've been handed a graph.  
22 Across the top, "Number of fish species collected at  
23 Lockport in the Chicago Sanitary and Ship Canal  
24 during 2001 through 2010." If there's no objection,

1 we will mark this as Exhibit 433. Seeing none, it's  
2 Exhibit 433.

3 (Document marked as IPCB Exhibit  
4 No. 433 for identification.)

5 BY THE WITNESS:

6 A. I can't say for sure why we caught three  
7 species that year, but I think it's a fair, educated  
8 determination that since we had caught between, I  
9 think it was, eight and 11 in 2005 through 2009 and  
10 caught three in 2010, and there was within seven  
11 months of a large scale, almost six-mile rotenone  
12 event or fish poisoning event, I think it was an  
13 educated determination that the reason we only  
14 caught three fish was due to the rotenone event. I  
15 don't think it would be expected to recover that  
16 quickly.

17 And that was also backed up by  
18 discussions with Kelly Baerwaldt of U.S. Army Corps  
19 of Engineers. They also went out in July in the  
20 Sanitary and Ship Canal for a telemetry project,  
21 where they were going to tag common carp to  
22 determine their movement in that area for -- as part  
23 of the Asian carp monitoring strategy. And they  
24 were electrofishing within the entire area, I think,

1 between the barrier and the Lockport Lock. And she  
2 mentioned that with a lot of effort, they were only  
3 able to catch, I think, six common carp.

4 BY MS. WILLIAMS:

5 Q. And when did you have this discussion?

6 A. Actually, this was during a -- she  
7 mentioned that at a pre-teleconference to -- a  
8 monitoring rapid response work group conference that  
9 was on September 30th, so this would have been  
10 September 23rd. Her crew was out there in July and  
11 had a similar -- made a similar conclusion about  
12 there being very few fish out there when she was  
13 electrofishing.

14 Q. So what's your explanation for why there  
15 were only a few species in 2001?

16 A. I guess there's a lot of different  
17 reasons; that there's some natural variability year  
18 to year; when you're using electrofishing, it could  
19 be due to weather events or rain events; that one of  
20 the big differences is -- and the reason that I  
21 didn't include our fish data originally in my  
22 testimony from 2001 to 2004 was because our  
23 electrofishing location changed slightly in 2005.  
24 Basically we used to -- and our convention is to

1 shock 400 meters on each side, so a total of  
2 800 meters at a station. And in 2005, there were  
3 some barges that were parked on the east side of the  
4 channel near our Lockport station, and we decided to  
5 shock 800 meters on the west side, and there's a  
6 little bit of additional habitat in the way of riff  
7 raft on that west side, but as it turned out --

8 Q. On the west side of where?

9 A. The west side of the ship canal at our  
10 Lockport station.

11 Q. Okay.

12 A. And as it turned out, this was a better  
13 location for fish shocking. We were able to get a  
14 few -- it seemed like we were getting more fish on  
15 that side. So in the future years, from 2005 until  
16 present, we just changed our sampling location. So  
17 we did an 800 meter straight electrofishing on the  
18 west bank, and I think that has improved our catch.  
19 So I think that's the reason that in 2001 and 2004  
20 we may have gotten the low numbers. I don't think  
21 it's necessarily a good comparison of the 2005  
22 through 2010.

23 Q. Do you think the species that you didn't  
24 find in 2010 are just gone?

1           A.    No.   Electrofishing, as has been  
2 mentioned in previous testimony, is -- you know,  
3 it's not expected to catch every fish that's in the  
4 waterway.  Its efficiency, I think, is -- it's  
5 reported to be somewhere in the order of four  
6 percent or four to seven percent.  So just because  
7 you're not catching a fish doesn't mean that it's  
8 not there, but it speaks to its abundance.

9           Q.    All right.  Thank you.  I don't think  
10 we've asked:  Do you have any evidence that the  
11 rotenone treatments had impact on the Calumet  
12 system?

13           A.    The District doesn't have any fish data  
14 from 2010 in the 2.8 mile region that was where they  
15 applied rotenone in the Calumet River downstream of  
16 the Ryan Lock.  Our closest station that we monitor  
17 annually is at Halsted.  That's about four miles  
18 downstream from the end of the rotenone zone, so I  
19 don't -- I don't have any fish data to --

20           Q.    Do you have the 2009 to 2010 fish data at  
21 that lower station beyond the rotenone to compare?

22           A.    I'm not sure.  I don't -- because it's  
23 four miles downstream, I didn't really see it as a  
24 good comparison, but I didn't look at that data.

1 Q. So you don't know. Okay.

2 Question five. Has any of the  
3 information obtained through your experience with  
4 the Asian carp rapid response efforts caused you to  
5 question the effectiveness of MWRDGC's ongoing fish  
6 sampling programs?

7 A. No, not at all. I mean, as Greg said  
8 yesterday, I think it's an apples and oranges  
9 comparison between the multiagency effort that's  
10 going on to monitor Asian carp using, you know,  
11 multiple techniques and commercial fishermen. I  
12 think the goal of -- you know, as a wastewater  
13 treatment plant, obviously our main mission is water  
14 treatment. And then we have a modest budget that  
15 goes towards our fish monitoring program, which  
16 the -- the goal of which is to determine relative  
17 species abundance and diversity over time and over,  
18 you know, a number of stations throughout the CAWS.

19 So I think that our monitoring and our  
20 fish database has definitely achieved those goals,  
21 that over -- you know, we have, I think, the most  
22 extensive database for fish of anyone for the CAWS.  
23 And I think our cumulative fish species that we've  
24 caught in the CAWS in the time that we've been

1 monitoring is an accurate reflection of species --  
2 the species that are present in the CAWS and their  
3 relative abundance.

4           So, you know, I think the goals of those  
5 two projects are extremely different in terms of,  
6 you know, the reasons that the District monitors  
7 fish to see how basically our operations may affect  
8 the CAWS versus the Asian carp monitoring, which,  
9 you know, they're basically looking to identify the  
10 presence of a fish that is present at extremely low  
11 densities, if at all, throughout the CAWS.

12           MR. ANDES: So is it accurate to say that  
13 while the District could pursue a policy that would  
14 kill all the fish and then count them, that's  
15 probably not a productive program?

16           THE WITNESS: No, I don't think that would be  
17 reasonable or feasible for us to do that.

18           MR. ETTINGER: Why wouldn't it be?

19           MR. ANDES: To kill all the fish?

20           MR. ETTINGER: You said --

21           THE WITNESS: Well --

22           MR. ETTINGER: -- it wasn't a reasonable  
23 program.

24           THE WITNESS: Well, we don't --

1 MR. ETTINGER: Why wouldn't it be?

2 THE WITNESS: -- have millions of dollars a  
3 year to spend on fish monitoring.

4 MR. ETTINGER: You don't? How many -- what  
5 did you say, how much does it take?

6 THE WITNESS: I'm guessing that this Asian  
7 carp monitoring has been very expensive. I don't  
8 know exactly what the cost is, but I know that it's  
9 more than what we spend annually on our fish program  
10 or possibly more than we spent in decades on our  
11 fish program.

12 MR. ETTINGER: Okay. Thank you.

13 MR. ANDES: If we're talking about -- correct  
14 me if I'm wrong -- the program here and the results  
15 particularly in terms of the IDNR study was: We'll  
16 count all the dead fish that have been poisoned due  
17 to rotenone?

18 THE WITNESS: That is one method they've  
19 used. In addition, they've used -- they've hired  
20 commercial fishermen. They have contracts with  
21 commercial fishermen to come up from Southern  
22 Illinois and do trawling, and they have several  
23 other netting operations that they're using. And  
24 they're, you know, out on a weekly basis. So the



1 effort is rather extreme for a wastewater treatment  
2 plant to try to mimic something like that. That  
3 seems unreasonable.

4 MS. TIPSORD: Mr. Harley, do you have a  
5 question?

6 MR. HARLEY: Keith Harley on behalf of the  
7 Southeast Environmental Task Force.

8 The fish monitoring station that you have  
9 in the Calumet River system --

10 THE WITNESS: Right.

11 MR. HARLEY: -- you said was located on  
12 Halsted Street, is that correct?

13 THE WITNESS: That is one of our fish  
14 monitoring locations. It's the one that we sample  
15 annually in the Little Calumet River.

16 MR. HARLEY: And are there other fish  
17 monitoring stations in the Calumet River system?

18 THE WITNESS: Yes.

19 MR. HARLEY: Where are those located?

20 THE WITNESS: I had a map here. So in the  
21 Calumet River, the amount there at Ewing and 130th  
22 Street, 130th Street is an annual location, Ewing is  
23 once every four years on a rotating basis. The  
24 amount there in the Little Calumet River at

1 Wentworth and 170th, those are the --

2 MS. TIPSORD: I'm sorry, Ms. Wasik, I  
3 didn't --

4 THE WITNESS: I'm sorry.

5 MS. TIPSORD: -- hear that.

6 THE WITNESS: Those are in the -- I guess the  
7 southern portion of the Little Calumet River.  
8 Halsted --

9 MR. HARLEY: Is that -- I'm sorry to  
10 interrupt, but is that annual monitoring?

11 THE WITNESS: No. Those are on a four-year  
12 basis.

13 MR. HARLEY: Okay.

14 THE WITNESS: Then Ashland on the Little  
15 Calumet, as well as Ashland on the Cal Sag.

16 MR. HARLEY: How frequently is that  
17 monitoring done?

18 THE WITNESS: Those are on the rotating  
19 four-year basis. Cicero and the Cal Sag is  
20 annually. Route 83 and the Cal Sag Channel is on a  
21 four-year rotating basis. I believe that's all that  
22 we do in the CAWS portion of the Calumet system.

23 MR. HARLEY: Thank you.

24 MR. ANDES: Just one follow-up on that. Is

1 there any other public agency that's out there doing  
2 this kind of monitoring?

3 THE WITNESS: On an annual basis, I believe  
4 the Water Reclamation District prior to the Asian  
5 carp monitoring was the only one regularly  
6 monitoring in the CAWS.

7 BY MS. WILLIAMS:

8 Q. The only agency?

9 A. I believe so.

10 MR. ANDES: So no state agencies?

11 THE WITNESS: Not on a -- I think that the  
12 DNR has rotational, you know, monitoring for fish  
13 throughout the state. So they may be in the CAWS  
14 from time to time, but it's not as extensive as our  
15 monitoring.

16 BY MS. WILLIAMS:

17 Q. And Midwest Generation also has an  
18 extensive monitoring program that's gone on for some  
19 time, correct?

20 A. Not throughout the CAWS, but in the Lower  
21 Ship Canal, I believe.

22 Q. Question six refers to the quote on page  
23 15 of your testimony. Quote, "These barriers" -- I  
24 suppose by "these barriers," you're referring to the

1 current electrical barriers -- "limit the source of  
2 fish into the CAWS, which limits the ability of the  
3 CAWS to support a growing fish community."

4 And I'd like to turn to D. "Is it your  
5 opinion that these invasive species barriers will  
6 impact other parts of the CAWS outside the CSSC?  
7 Explain the basis for your opinion."

8 A. Well, I think if you think of the CAWS as  
9 a system, there's not necessarily barriers within  
10 the CAWS. So over time I would think that, you  
11 know, even though these are in the ship canal, that  
12 that effects the source of fish for the entire  
13 system.

14 Q. Are there other sources of fish for the  
15 system besides coming up the CSSC?

16 A. Yes.

17 Q. And I'll also ask B. "Have the fisheries  
18 management agencies ever anticipated in the Asian  
19 carp rapid response activities expressed a  
20 commitment to restocking native species?"

21 A. I've heard it discussed in the past, but  
22 I don't know of any schedule at this point to  
23 restock.

24 MR. ANDES: I just want to clarify. No one's

1 suggesting we kill all the fish so then they could  
2 be restocked, correct?

3 MS. WILLIAMS: Are you asking me a question,  
4 Fred, or are you testifying, what, are you  
5 objecting?

6 MR. ANDES: No, I'm just trying to --

7 MS. WILLIAMS: You said that you're  
8 clarifying. I don't -- there's no question to  
9 clarify.

10 MR. ANDES: I think there was.

11 BY THE WITNESS:

12 A. At this time while there is still  
13 likelihood or possibility of rotenone events, I  
14 don't believe they'll be restocking.

15 BY MS. WILLIAMS:

16 Q. Do you know anything about the future  
17 plans for rotenone events?

18 A. They have -- I've been on a  
19 teleconference with the monitoring and rapid  
20 response work group for the AR -- the ACRCC, and  
21 right now the only plan for rotenone that is  
22 scheduled is during maintenance of one of the  
23 barriers, they're planning on using rotenone as a  
24 deterrent between barriers 2-A and 2-B. But the

1 other kinds of rotenone, you know, it would be on an  
2 as-needed basis. So basically there's triggers  
3 identified, and they evaluate their EDNA data, as  
4 well as their monitoring data, and then at any time  
5 they could decide to rotenone any part of the CAWS.

6 Q. Have you heard that they're considering  
7 no longer rotenoning based on EDNA sampling?

8 A. I have heard that the original trigger  
9 has been adjusted. I think the Little Calumet  
10 rotenone event may have been triggered by the three  
11 positive EDNA samples. And since then, they  
12 require -- basically instead of just using EDNA as a  
13 trigger, they would like to have additional  
14 evidence. And in certain areas where they believe  
15 traditional fish monitoring, like electrofishing and  
16 netting, to be quite efficient, like in the North  
17 Shore Channel where it's a little bit shallower,  
18 they will use extensive monitoring instead of  
19 rotenone. But that's not to say if they don't catch  
20 an individual somewhere in the North Shore Channel  
21 or the North Branch that they won't rotenone, you  
22 know, from wherever they catch it to the lake. You  
23 just don't know. That's very uncertain.

24 MS. FRANZETTI: If I can just ask a follow-up

1 on the restocking question. With respect to native  
2 fish, is the ability to restock them at all affected  
3 by their availability?

4 THE WITNESS: Yes. And then you could also  
5 say that restocking isn't necessarily going to be --  
6 mimic what would naturally be there, what's  
7 naturally in the CAWS. But restocking it wouldn't  
8 necessarily be a viable option.

9 MS. FRANZETTI: And do I understand  
10 correctly, then, that not all native species that  
11 you're trying to restock you can obtain on the  
12 commercial market, so to speak, in order --

13 THE WITNESS: Right.

14 MS. FRANZETTI: -- to do the restocking, is  
15 that right?

16 THE WITNESS: Right. I mean, we are likely  
17 to restock, I think, game fish. But in terms of,  
18 you know, a whole fish community of various species,  
19 I find it doubtful they would be able to stock all  
20 of the species that would be knocked out by  
21 rotenone.

22 MR. ETTINGER: Well, why be so, you know,  
23 pro-abate? I mean, why can't we stock game fish  
24 that aren't native?

1 THE WITNESS: You can. They do it in the  
2 Great Lakes.

3 MR. ETTINGER: They sure do.

4 MS. TIPSORD: Ms. Wasik, for the record,  
5 could you explain what "EDNA" is? I think it's in  
6 the written testimony somewhere, but just for  
7 purposes of the transcript.

8 THE WITNESS: Okay. It's environmental DNA.  
9 So they're using water samples instead of actual --  
10 instead of actually finding an Asian carp, they're  
11 using water samples to identify the basically  
12 presence of DNA in that part of the waterway. And  
13 they use it as a tool to say that they believe it's  
14 likely if there's a positive EDNA hit or a certain  
15 ratio of positive EDNA hits that there may be  
16 presence of silver or bighead carp.

17 MS. TIPSORD: Thank you.

18 BY MS. WILLIAMS:

19 Q. Question seven. On page 15 of your  
20 pre-filed testimony, you also state that, quote,  
21 "Without diversion at the Wilmette Pumping Station,  
22 the 4.5 mile stretch between Wilmette and the North  
23 Side WRP would be completely stagnant except for  
24 flow from stormwater and combined sewer overflows."



1 Do all possible ways of moving water from Lake  
2 Michigan into the CAWS involve an equal risk of  
3 Asian carps getting into Lake Michigan? Why or why  
4 not?

5 A. Technically not. You could put screens  
6 on the gates or you could pump water and then that  
7 there would be a lower risk of Asian carp getting  
8 into the water system.

9 Q. Subpart B asks to describe the methods  
10 being investigated that would allow diversion of  
11 Lake Michigan water into the CAWS without allowing  
12 passage of Asian carp. Is that your answer to that?

13 A. Well, grates and screens have been  
14 explored, but they cannot be put on all the gates or  
15 else there would be a hazard of flooding in the  
16 Chicago area during excessive rain events when water  
17 from the CAWS needs to be reversed into Lake  
18 Michigan. The grates would blind, and then they  
19 would inhibit the huge volume of water from exiting  
20 through to Lake Michigan. And that's even more  
21 critical at Wilmette to have this unimpeded flow,  
22 because there's no lock there that you can open in  
23 an emergency.

24 Eventually they're planning on installing

1 bar screens over existing tunnels that are at  
2 Wilmette, so that they can water into the CAWS using  
3 gravity. And this is -- or they could pump through  
4 screen gates. And this is for award in spring of  
5 2011 they are going to be able to construct those  
6 bar screens. So that's the current schedule.

7 Q. Will MWRDGC be required to phase out  
8 these discretionary diversions at the Wilmette  
9 Pumping Station regardless of the outcome of the  
10 long-term invasive species control measures  
11 selected?

12 A. No. My understanding is that diversions  
13 aren't being phased out but reduced.

14 Q. Will these reductions also result in  
15 stagnation?

16 A. The reductions are overall for the  
17 system, so we would be able to use our discretion in  
18 terms of where we'd reduce diversion. So it's  
19 possible that at Wilmette we wouldn't reduce  
20 diversion and rather it'd be done at different  
21 controlled structures. We have an overall -- right  
22 now, by 2015, they are supposed to reduce diversion  
23 from 305 to 136 cfs. But that reduction could occur  
24 at any controlled structure, not necessarily at

1 Wilmette.

2 Q. Are there --

3 MR. ETTINGER: I'm a --

4 MS. WILLIAMS: Go ahead.

5 MR. ETTINGER: I'm a little confused.

6 Required by what? Who is causing these reductions?

7 Is this -- did you lose your case on the Asian carp?

8 What -- what -- who --

9 THE WITNESS: No. Based on TARP becoming  
10 online and the reservoirs coming online, there was a  
11 schedule to reduce diversion. The thinking as -- as  
12 the reservoirs became more effective or had more  
13 capacity, there would be less need for the  
14 diversion.

15 MR. ETTINGER: Okay. So what -- what's  
16 requiring that; your NPGS permit, something that you  
17 promised the Federal Government in exchange for  
18 getting money for TARP, or what is -- what's causing  
19 the reduction?

20 MR. ANDES: Let me clarify that point.

21 (WHEREUPON, there was a conference  
22 between the witness and counsel.)

23 BY THE WITNESS:

24 A. Okay. I'm sorry about that. I wasn't

1 sure. It's an existing consent decree. We can  
2 provide further --

3 MR. ETTINGER: It's an existing consent  
4 decree? It doesn't relate to the carp?

5 THE WITNESS: Oh, no.

6 MR. ETTINGER: Okay. And so this reduction  
7 in diversions has been being planned for how long?

8 THE WITNESS: I'm not sure. I can find out.  
9 I'm not sure.

10 MR. ETTINGER: Okay. Is it the intention of  
11 the Metropolitan Water Reclamation District to allow  
12 malarial conditions and a visible public nuisance in  
13 the waters of the CAWS?

14 THE WITNESS: No. As I said --

15 MR. ETTINGER: Is that part of the plan --

16 THE WITNESS: No. As I --

17 MR. ETTINGER: -- the consent decree?

18 THE WITNESS: As I said, the diversion has to  
19 be reduced overall, not necessarily at Wilmette. So  
20 it's possible that at Wilmette, we would not change  
21 the diversion position for this particular  
22 requirement.

23 MR. ETTINGER: So --

24 THE WITNESS: The conditions that you're

1 talking about, I believe, refer to the preliminary  
2 injunction.

3 MR. ETTINGER: I'm just referring to your  
4 testimony, and you talk a lot about reduction and  
5 diversions, and I'm trying to relate the reduction  
6 and diversions to something to do with the carp.  
7 And so what does it have to do with the carp?

8 THE WITNESS: There was a preliminary  
9 injunction, and this was -- I was referring to the  
10 Federal Court case that's pending now against the  
11 District and the Army Corps of Engineers. There  
12 were several requirements that are outlined in my  
13 testimony through the preliminary injunction.

14 MR. ETTINGER: Is it your understanding that  
15 the preliminary injunction was granted or denied?

16 THE WITNESS: At this point, neither. I'm  
17 sorry, I'm not talking about the Supreme Court case,  
18 I'm talking about the Federal Court case in the  
19 Illinois District Court.

20 MR. ETTINGER: The District Court has not  
21 ruled on the preliminary injunction --

22 THE WITNESS: Right.

23 MR. ETTINGER: -- motion. But you feel that  
24 it may grant the preliminary injunction motion, and

1 these are the -- these malarial conditions are the  
2 likely result of the Board granting the preliminary  
3 injunction motion?

4 (WHEREUPON, there was a conference  
5 between the witness and counsel.)

6 THE WITNESS: I'm sorry, you were just asking  
7 if it's possible that they could grant the  
8 preliminary injunction --

9 MR. ETTINGER: No, I'm just -- you're talking  
10 about all sorts of dire things that will happen as a  
11 result of the diversion. I'm just trying to see how  
12 it will relate --

13 MR. ANDES: So let me clarify. So is it your  
14 testimony that if the District Court were to grant  
15 the preliminary injunction, the conditions you've  
16 described in your testimony could happen?

17 THE WITNESS: It's possible, yes, depending  
18 on what sort of relief is granted.

19 MR. ETTINGER: Is it possible that the Water  
20 Reclamation District would then allow mosquitoes and  
21 a breeding ground for mosquitoes and a visible  
22 public nuisance in the North Shore Channel as a  
23 result of the injunction being granted?

24 THE WITNESS: If we're forced to stop

1 diversion, there will be a stagnant area of waterway  
2 between the lake and our water reclamation plant.  
3 You know, if that -- if that is an immediate order,  
4 obviously we wouldn't be able to do something about  
5 it necessarily right away.

6 MR. ETTINGER: Oh, okay. Well, I live up  
7 there now, and I can tell you that it's kind of  
8 stagnant a lot of the time already. Okay. Thanks.  
9 I think I understand. I -- okay. I think I  
10 understand how the diversion fits or doesn't fit.  
11 Thank you.

12 MR. ANDES: So just to clarify for a minute,  
13 because I want to make sure we understand what  
14 you're saying about the North Shore Channel, so if  
15 the injunction were granted and it forced the  
16 District to reduce or eliminate diversions at  
17 Wilmette, you're talking about the conditions that  
18 would result in the North Shore Channel because  
19 there would be no water?

20 THE WITNESS: Right.

21 MR. ANDES: Okay. And do you know of any  
22 options the District would have since it would be  
23 prohibited from moving water into there?

24 THE WITNESS: That's my point. I don't think

1 that we could do something immediately to avoid it.

2 MR. ETTINGER: Not immediately.

3 MR. ANDES: Well --

4 MR. ETTINGER: Right.

5 MR. ANDES: Well, as long as that injunction  
6 lasts, there's nothing you could do to avoid it;  
7 correct?

8 THE WITNESS: Yes.

9 MR. ETTINGER: Well, has the District, to  
10 your knowledge, ever studied pumping water up to the  
11 top of the channel and letting it flow down?

12 THE WITNESS: Yes.

13 MR. ETTINGER: They have?

14 THE WITNESS: We don't have any design for  
15 that or contract for that, so it would -- it would  
16 likely take a few years to do so.

17 MR. ETTINGER: Okay. Thank you.

18 MR. ANDES: It'd also require various permits  
19 to be granted?

20 THE WITNESS: Yes.

21 MR. ETTINGER: Apparently anything can happen  
22 to stop carp immediately.

23 BY MS. WILLIAMS:

24 Q. So is it your position, Ms. Wasik, that



1 based on the consent decree requiring reduction and  
2 diversions to 136 cfs, will that require the  
3 District to do any supplemental erosion or flow  
4 augmentation to prevent stagnate -- these stagnant  
5 conditions anywhere in the system?

6 A. Like I said, because the reduction  
7 doesn't have to occur at Wilmette, we can keep --  
8 it's -- there's a potential that we could keep the  
9 diversion at the level it is now at Wilmette --

10 Q. And no where --

11 A. -- but the existing --

12 Q. -- throughout --

13 A. -- conditions would --

14 Q. Throughout the system, though, you won't  
15 have to -- you won't have any stagnant conditions  
16 elsewhere as a result of -- that was my question  
17 here.

18 If you continue at Wilmette and use your  
19 whole 136 to keep that from getting stagnant, will  
20 there be places elsewhere in the system that will  
21 be -- like bubbly creeks or where -- I mean, I don't  
22 know where. I can't -- the main stem, what will  
23 happen at the main stem? I don't -- I don't know.  
24 Anywhere in the system I'm just asking.

1           A.    My understanding is that there wouldn't  
2   be stagnant conditions in the system.

3           Q.    Okay.

4           A.    Bubbly -- I mean, bubbly creek is a  
5   separate issue.

6           Q.    Separate issue.  But the main stem will  
7   be fine?  If you focus all your diversions in the  
8   North Shore Channel, the main stem will not  
9   stagnate?

10          MR. ANDES:  Wait, wait, wait.  I think that's  
11   a separate -- you said if you focus all the  
12   diversions on the North Shore Channel, then the main  
13   stem wouldn't stagnate, is that --

14          MS. WILLIAMS:  That was my -- yeah, I mean,  
15   if it's a stupid question, I'm sorry, but that's my  
16   question.  I don't know the answer.

17   BY THE WITNESS:

18          A.    No, I mean, I think that it will be up to  
19   our M&O department, our maintenance operations, how  
20   diversion will decrease.  And as I mentioned before,  
21   it is based on progression of TARPs and reservoirs,  
22   so I'm not even sure exactly when this is likely to  
23   happen, but the thinking is by the time they are  
24   reducing the diversion, there will be -- the

1 conditions will be -- have been improved by TARP.

2 Q. Thank you.

3 MR. ETTINGER: This raises a question. And  
4 the next -- or one of the sentences on page 16,  
5 "Stagnant septic conditions would also dominate in  
6 the 1.5 mile stretch of the Chicago River mainstream  
7 without flow from the lake through the Chicago River  
8 controlling works." That's what you fear will  
9 happen if the preliminary injunction is granted  
10 or --

11 THE WITNESS: That will --

12 MR. ETTINGER: -- what will happen as a  
13 result of the diversion controls that were being put  
14 in independently?

15 THE WITNESS: No, that would not be as a  
16 result of diversion controls. That would be if  
17 there was an immediate preliminary injunction  
18 granted that -- if that stopped diversion.

19 MR. ETTINGER: So we'll have malarial  
20 conditions in downtown Chicago as a result of this?

21 MR. ANDES: I don't think the word "malarial"  
22 was used in her --

23 MR. ETTINGER: Oh, I'm sorry. I'm sorry.  
24 Breeding ground for mosquitoes and a visible public

1 nuisance in the main stem --

2 MR. ANDES: That's what her testimony says.

3 MR. ETTINGER: Okay. Thank you. And that's  
4 what you -- that's what the Metropolitan Water  
5 Reclamation --

6 THE WITNESS: Well, if you --

7 MR. ETTINGER: -- District would put up with  
8 if they got the injunction?

9 THE WITNESS: If you look at my testimony,  
10 you can see exactly what is laid out in the  
11 preliminary injunction. I think it's fair to say  
12 that we would appeal if the preliminary injunction  
13 was granted.

14 MR. ETTINGER: So we don't need to start  
15 evacuating the Board offices downtown? Thank you.

16 THE WITNESS: Okay.

17 BY MS. WILLIAMS:

18 Q. I think we've covered nine. Question  
19 ten. You state on page 15 that, quote, "I have  
20 personally removed both dead and injured fish from  
21 trammel nets that were set for only 24 hours in the  
22 CAWS." Which species of fish did you personally  
23 remove from these nets?

24 A. Well, during 2003 through 2005, the

1 District was part of a multiagency rotational  
2 monitoring for Asian carp in Lockport and Brandon  
3 Road Pools. And at that time we set trammel and  
4 mini fyke nets. I was referring to trammel nets,  
5 which can do a lot of damage to fish. And I looked  
6 back at our records, and common carps were the only  
7 fish that we had caught in those trammel nets during  
8 those three years. They had such injuries as, you  
9 know, scales that were damaged or removed, the  
10 hemorrhages or -- damaged their eyes and that sort  
11 of thing from trying to get untangled from the nets.

12 Q. Were they dead?

13 A. We did have some dead fish. Others were  
14 just -- appeared injured or stressed. But you can  
15 see how that can be a -- how nets can be stressful  
16 for fish as they're trying to escape.

17 Q. Has the District ever found sauger in the  
18 Chicago Sanitary and Ship Canal?

19 A. Yes. I couldn't say -- or in the Ship  
20 Canal, I'm not sure. I know they've found them --  
21 that we found them in the CAWS. I'd have to check  
22 our records to see where. They're found quite  
23 rarely in our fish collection.

24 MS. WILLIAMS: I don't have anything further.

1 MS. TIPSORD: Then let's go ahead to ELPC.

2 EXAMINATION

3 BY MS. DEXTER:

4 Q. I'm Jessica Dexter for ELPC. I think  
5 we've covered most of what's on here, but I'm going  
6 to ask you some questions, too. In about what  
7 percentage of the CAWS has rotenone or another  
8 poison been placed for Asian carp?

9 A. Almost 11 percent.

10 Q. Has the Metropolitan Water Reclamation  
11 District ever studied how fluid that's discharge  
12 from the sewage treatment plants are effecting  
13 growth or population of bighead or silver carp in  
14 downstream waters?

15 A. No.

16 MS. DEXTER: Thank you.

17 MS. TIPSORD: All right. Let's take a short  
18 break, so we can readjust, and we'll move on to  
19 Midwest Generation.

20 (WHEREUPON, a recess was had from  
21 10:18 a.m. to 10:33 a.m.)

22 MS. TIPSORD: We're ready to begin with  
23 Midwest Generation's questions.

24 MS. FRANZETTI: Good morning. My name is

1 Susan Franzetti. I'm counsel for Midwest  
2 Generation.

3 EXAMINATION

4 BY MS. FRANZETTI:

5 Q. Ms. Wasik, let me start with question  
6 number one. On pages eight and 14 in your testimony  
7 regarding the December 2009 rotenone application in  
8 Lockport Pool below the electric barriers. Given  
9 the electric barriers located at the upper end of  
10 the application zone and the locks located at the  
11 lower end, do these conditions make it more  
12 difficult for the fish population to recover in this  
13 area? And if so, please explain why.

14 A. Yes, it's more difficult because the  
15 recruitment of fish is -- there's no recruitment of  
16 fish from above the barrier since the barrier is  
17 affected from both upstream and downstream. And  
18 then the lock, while it doesn't stop fish from  
19 moving, it does impede their -- I think there is  
20 progress.

21 Q. Moving to question 1-A. On page 14 of  
22 your testimony, you reference certain 2010 fish  
23 survey efforts that showed significant reductions in  
24 the fish population. You note that during the

1 District's July 2010 fish survey at Lockport, only  
2 three fish species were collected compared to ten  
3 and eight fish species in 2007 and 2008. What were  
4 the three fish species that were collected?

5 A. Gizzard shad, green sunfish and  
6 largemouth bass.

7 Q. In addition to the number of species  
8 being significantly reduced, did it appear that the  
9 number of fish for those three fish species that  
10 you've just named that were collected were all also  
11 reduced?

12 A. It looks like gizzard shad and green  
13 sunfish were comparable. There were fewer  
14 largemouth bass collected than in past years, but it  
15 looks like it's within the natural variation.

16 Q. Okay. Moving to question 1-B, is it  
17 likely that it will take a long time, months or  
18 years even, before the fish population in this area  
19 recovers?

20 A. Yes, probably.

21 Q. Moving to question two. On page ten of  
22 your testimony, you indicate that one of the  
23 short-term strategies recommended by the ACRCC will  
24 be to, quote, "concentrate and confine," end quote,



1 Asian carp in areas that would be conducive to  
2 targeted removal by the use of fish toxicants and  
3 netting techniques. Can you explain more  
4 specifically what activities are included in this  
5 short-term strategy?

6 A. Well, the Army Corps of Engineers uses  
7 the military language "seek and destroy." For this  
8 technique, they're going to be using EDNA as a tool  
9 to determine whether or not they believe Asian carp  
10 to be present in certain areas; for instance, warm  
11 water discharges, water reclamation plant outfalls,  
12 marina basins, tailwaters and locks and dams and  
13 barge splits, et cetera, I think that they expect to  
14 find Asian carp.

15 And then if there's a positive hit,  
16 they'll try to concentrate and confine the fish  
17 presumably rounding them up through electroshocking  
18 or herding them, as we talked about yesterday, and  
19 then they'll be herded into an area where they're  
20 more susceptible to toxicants like rotenone being  
21 applied or netting techniques.

22 Q. And the netting, when you say "netting  
23 techniques" in that context, that's capturing  
24 them --

1 A. Right.

2 Q. -- removing them from the waterway?

3 A. Right.

4 Q. Okay. Does the use of -- do you agree  
5 that the use of fish toxicants and netting  
6 techniques does have adverse impacts on native fish?

7 A. Yes. I mean, clearly if they use a fish  
8 toxicant, it kills all the fish, it's not Asian carp  
9 specific. And then netting is stressful to native  
10 populations, as well. I mean, they may allow native  
11 survivors if they remove them from the net, but I  
12 mean, they'll still be stressed.

13 Q. Moving to question three. On page 11 of  
14 your testimony, you refer to technologies that will  
15 herd Asian carp and reduce their population. Are  
16 you referring -- I'm going to change this a little  
17 bit just in case your last answer didn't cover it.

18 With respect to the herding technologies  
19 that are going to be used to reduce the Asian carp  
20 populations, were you describing those in your  
21 answer to my question two?

22 A. Yeah, that would be a similar answer, the  
23 confined and concentrate option that I just talked  
24 about.

1 Q. And you do agree that the effect of this  
2 thinning of the herd will be adverse, as well, on  
3 other species of fish?

4 A. Yeah, just as we discussed previously.

5 Q. Moving to question four. On page 11 of  
6 your testimony, you indicate that the ACRCC is  
7 investigating seismic waves to, quote, "eradicate  
8 Asian carp," end quote, and physical methods are  
9 being explored, quote, "to disrupt Asian carp  
10 spawning and egg viability," end quote. What are  
11 the likelihood that these activities if they prove  
12 to be successful will also adversely effect other  
13 species of fish?

14 A. Well, while the researchers are going to  
15 try to find and identify sound wave frequencies that  
16 are best suited to deter various ages of Asian carp,  
17 it's very likely that the sound waves that they find  
18 are also going to have a negative impact on native  
19 fish species. Same with using sonication to disrupt  
20 Asian carp eggs. If there were any fish eggs from a  
21 native species in the CAWS, then it would also  
22 potentially negatively impact them.

23 Q. Moving to question five. On page 14 of  
24 your testimony, you state, quote, "The unprecedented

1 amount of monitoring activities currently taking  
2 place in the CAWS are likely to take a toll on the  
3 resident fish population," end quote. Given that  
4 annual fish monitoring has gone on in the past in  
5 the CAWS, how is the current monitoring  
6 unprecedented?

7 A. Well, the District's current monitoring  
8 in the CAWS, as I mentioned, is on a four-year  
9 rotational basis except for -- I think it's eight  
10 stations in the CAWS that we monitor annually. And  
11 the kind of monitoring that we're talking about  
12 going on now, the multiagency effort is -- every  
13 week, there's some kind of sampling going on in the  
14 CAWS. There's five fixed stations that they're --  
15 that they're monitoring every other week, and then  
16 there's also some sampling that they -- just  
17 continuous electrofishing that they're doing along  
18 the banks of the entire CAWS basically over time.

19 Q. Okay.

20 A. And then, of course, there's commercial  
21 fishermen coming up and doing trawling efforts and  
22 other netting techniques. So it's just -- the  
23 effort is incredibly higher than it has been in the  
24 past.

1 Q. What is the basis of your opinion that  
2 this unprecedented amount in monitoring activities  
3 will likely take a toll on the resident fish  
4 population?

5 A. Well, I cited a USGS, or U.S. Geological  
6 Survey, publication in my testimony that talks about  
7 the effects of electrofishing, the health indicator  
8 of fish and just my personal knowledge from being in  
9 the field and seeing how netting operations will  
10 affect fish, as well as electrofishing, and I think  
11 that it's obvious that that extensive amount of  
12 monitoring would stress the population.

13 Q. Moving on to 5-C. At present, has any  
14 date been set by which these monitoring efforts will  
15 cease?

16 A. Not that I know of. I know that they're  
17 scaling back the monitoring for the winter. I think  
18 that they'll be kind of targeting warm water areas  
19 and warm water discharges during the winter. But  
20 from the recent teleconference on September 30th  
21 that I mentioned with the monitoring rapid response  
22 work group of the ACRCC, they plan on resuming the  
23 monitoring to the same level in the spring and March  
24 of 2011.

1 Q. Moving to question six. On page 15 of  
2 your testimony, you mention that the electrical  
3 barriers in the ABS system will cut off the CAWS  
4 from downstream native fish populations. Could you  
5 explain what downstream native fish populations you  
6 are referring to?

7 A. Well, granted, not a lot of -- not all of  
8 the riverine fish species can tolerate the physical  
9 habitat conditions in the CAWS. But there's a --  
10 the Des Plaines River and the Illinois River are  
11 probably a source of some of the tolerant fish  
12 species that move into the CAWS and, you know, the  
13 sunfish, largemouth bass, channel catfish, suckers,  
14 and maybe some of the species that are sort of  
15 rarely caught in the CAWS, like walleye or sauger.  
16 But, yes, having a barrier that cuts off the CAWS  
17 from the typical riverine fish species that would be  
18 moving upstream, that would come into Des Plaines,  
19 would have a negative impact on aquatic life in the  
20 CAWS, because then there'd be no source for some of  
21 these fish in the CAWS.

22 MR. ETTINGER: Excuse me. When was the  
23 electrical barrier put in, or is this -- hasn't  
24 there been an electrical barrier there?

1 THE WITNESS: Yes.

2 MR. ETTINGER: Are you suggesting that all of  
3 these fish that we found in the CAWS got past that  
4 electrical barrier, as well as the carp?

5 THE WITNESS: No. In my testimony, I'm just  
6 saying that it slows the recruitment of fish because  
7 of the barrier.

8 MR. ETTINGER: So the barrier's been in place  
9 since 2002, is that -- am I correct?

10 THE WITNESS: I think Barrier 1 has been  
11 since 2002, yeah.

12 MR. ETTINGER: So unless they're all  
13 getting -- a whole lot of fish are getting through,  
14 can't we kind of assume that what's there is  
15 probably getting there from sources other than  
16 downstream since 2002?

17 THE WITNESS: I'm just trying to remember the  
18 specific question. Well, the -- I mean, it's true  
19 that the barrier has been in effect since 2002. And  
20 I think that that is a negative impact on the  
21 aquatic life usually in the CAWS. Just it reduces  
22 the source of fish.

23 BY MS. FRANZETTI:

24 Q. So I mean, are you saying that if we're

1 looking at what the fish community is and/or can be  
2 in the CAWS, we really should be looking at data  
3 that's post 2002 when the electric barrier started  
4 as being more relevant?

5 A. That seems that that would be advisable.

6 MR. ETTINGER: So for once we agree here,  
7 that basically unless the electric barrier is  
8 extremely leaky, what we've seen from 2002 is what  
9 we get vis-à-vis the barrier?

10 MR. ANDES: Well, let me --

11 THE WITNESS: To the extent of the Des  
12 Plaines River being the source, yes.

13 MR. ETTINGER: Thank you.

14 MR. ANDES: Let me clarify. We're talking  
15 about -- when we're talking about a barrier, let's  
16 clarify what we're talking about. One issue is what  
17 impact the barrier operations to date have had on  
18 the fish population. But if I understand your  
19 testimony correctly, you were speaking about the  
20 future actions, the actions that are being  
21 contemplated through the coordinating committee,  
22 which would further the barrier efforts and the  
23 impact that would have; am I right?

24 THE WITNESS: Right.



1 MR. ANDES: Because the barrier has  
2 apparently not been fully effective, and we're  
3 talking about upgrading and strengthening?

4 THE WITNESS: I wouldn't say that the barrier  
5 hasn't been fully effective. But they are -- they  
6 have changed operations over the years.

7 MR. ANDES: And further changes are being  
8 contemplated?

9 THE WITNESS: Yes. And, of course, there's  
10 additional barriers, as well, now in addition to  
11 just Barrier 1.

12 MR. ETTINGER: I think we agree that it's  
13 been somewhat leaky, we don't -- but we -- but you  
14 do -- you don't believe that there's been massive  
15 migration through the barrier that's been in place  
16 since 2002?

17 THE WITNESS: No, I don't think so.

18 MR. ETTINGER: Thank you.

19 BY MS. FRANZETTI:

20 Q. Question seven. Is it true that most of  
21 the actions recommended by the ACRCC to be  
22 implemented in the UAA waters to control or prevent  
23 the migration of Asian carp will also kill or  
24 otherwise harm resident fish populations in the CAWS

1 and the Lower Des Plaines River?

2 A. I think that's a fair assessment, that  
3 many of the options they're looking at would equally  
4 harm native fish populations. I think they are  
5 looking into trying to find Asian carp specific  
6 methods, but to date, that hasn't been -- that  
7 hasn't been successful, and I think that may be  
8 unlikely.

9 Q. And the last question. Given that the  
10 District is a party to the pending Federal District  
11 Court litigation initiated by certain of the Great  
12 Lakes states, have there been -- your pre-filed  
13 testimony gave us a brief overview of the status of  
14 that litigation. Since your pre-filed testimony on  
15 October 8th to today, have there been any further  
16 developments in that litigation that may be worth  
17 informing the Board and us interested parties of?

18 A. All of the arguments have been heard and  
19 final arguments are finished, so basically the judge  
20 could decide on the preliminary injunction at any  
21 time. I've heard that it's likely to be this year.

22 MS. FRANZETTI: I have no further questions.

23 MS. TIPSORD: Any other questions?

24 MR. ETTINGER: I just had a couple of

1 follow-ups. Ms. Franzetti asked you how long the  
2 fish take to recover after the rotenoning in the --  
3 I guess the Lower CAWS. Below the rotenone or above  
4 the rotenone that you were talking about that you  
5 looked at?

6 THE WITNESS: The particular -- I think her  
7 question was referring to below the barrier and  
8 above Lockport Lock where the rotenone zone was. So  
9 the station that I referred to is right near the  
10 Lockport Lock in the Ship Canal where we collect  
11 fish and --

12 MR. ETTINGER: And how did the fish recover  
13 at all?

14 THE WITNESS: How did they recover at all?  
15 Like where did the --

16 MR. ETTINGER: Yeah, where -- what -- why do  
17 you think there are fish there at all?

18 THE WITNESS: They can move in through the  
19 Lock.

20 MR. ETTINGER: Through the Lock from?

21 THE WITNESS: Through Lockport Lock.

22 MR. ETTINGER: Through the Lockport Lock from  
23 the Lower Des Plaines --

24 THE WITNESS: Uh-huh.

1 MR. ETTINGER: -- or from the Upper Des  
2 Plaines at that point?

3 THE WITNESS: Yes.

4 MR. ETTINGER: Thank you.

5 MS. TIPSORD: Any other questions?

6 Thank you, Ms. Wasik. It's been a  
7 pleasure.

8 (WHEREUPON, the witness was  
9 excused.)

10 MS. TIPSORD: All right. We will move to the  
11 American Waterways Operators.

12 (WHEREUPON, a recess was had from  
13 10:51 a.m. until 10:53 a.m.)

14 MS. TIPSORD: Before we get to the actual  
15 testimony, I understand that Terri O'Brien is unable  
16 to make it today due to an emergency. So we will  
17 move Ms. O'Brien's testimony from testimony to a  
18 public comment, and I'll have the Clerk's Office  
19 take care of that this afternoon. And --

20 MR. GERARD: Her name is Terri Doyle.

21 MS. TIPSORD: Doyle, I'm sorry.

22 MR. GERARD: Not the head of the District.

23 MS. TIPSORD: I am so sorry. I do have --  
24 and I actually wrote O'Brien at the prehearing

1 conference the other day, so I'm sorry. Is it  
2 T-e-r-r-i?

3 MR. GERARD: Yes.

4 MS. TIPSORD: D-o-y-l-e?

5 MR. GERARD: Yes.

6 MS. TIPSORD: All right. I will have John  
7 move that to a public comment.

8 And then with that, gentlemen, I'll have  
9 you each sworn in, and then we'll have you introduce  
10 yourselves. And then if you'll give me a copy of  
11 your testimony, we'll enter it and mark them as  
12 referred.

13 And also, Mr. Kindra, I just wanted to  
14 thank you for rearranging your schedule today.

15 (WHEREUPON, the witnesses were duly  
16 sworn.)

17 MS. TIPSORD: And if you could introduce  
18 yourselves.

19 DARREN MELVIN,

20 JOHN KINDRA,

21 DELBERT WILKINS,

22 called as witnesses herein, having been first duly  
23 sworn, were examined and testified as follows:

24 MR. MELVIN: Darren Melvin with Hanson

1 Material Service. I'm also representing the  
2 American Waterway Operators.

3 MR. KINDRA: John Kindra. I'm the owner of  
4 Kindra Lake Towing. I'm also the president of the  
5 Illinois River Carriage Association. Today I'm just  
6 representing my company.

7 MR. WILKINS: I'm Del Wilkins with Canal  
8 Barge Company. I'm also representing AWO.

9 MS. TIPSORD: And do we have copies of their  
10 pre-filed testimony? Wonderful. Thank you. Since  
11 Mr. Melvin got here first, if there's no objection,  
12 we will mark Mr. --

13 MS. WILLIAMS: Yes.

14 MS. TIPSORD: -- Melvin's testimony as  
15 Exhibit 434.

16 MS. WILLIAMS: I would like to raise an  
17 objection at this time, Madam Hearing Officer. As  
18 you know, the Agency object -- filed an objection to  
19 the entrance of the testimony, which was denied. In  
20 addition to the discussion of procedural issues,  
21 which was addressed in Hearing Officer's order. We  
22 did raise the question about the fact that much of  
23 the testimony is not relevant to sub dockets C and  
24 D.

1 I guess at this time I would solicit a  
2 ruling from you that if the Board -- 90 percent of  
3 the questions, probably 95 percent of the questions,  
4 that I have for these witnesses are in reference to  
5 issues that are the subject of sub docket A and  
6 possibly B. If you issue a ruling today that this  
7 testimony will not be considered by the Board in any  
8 way whatsoever in either sub docket A or B, then the  
9 Agency doesn't have any questions for these  
10 witnesses today. Otherwise, we'll have to proceed  
11 with specific --

12 MS. TIPSORD: Well, I would note that they  
13 also filed comments in -- both in sub docket A, and  
14 I believe also B, but it's certainly in --

15 MS. WILLIAMS: I certainly --

16 MS. TIPSORD: -- sub docket A.

17 MS. WILLIAMS: -- wouldn't want to  
18 cross-examine them on public comments. I would  
19 never consider doing that. That is not appropriate.

20 MS. TIPSORD: And I would say that since this  
21 is sub docket C and this is being entered in sub  
22 docket C, this testimony will be considered in sub  
23 docket C. And if it's not relevant to sub docket C,  
24 then it wouldn't be considered. But that's not to

1 say that -- I have not read the public comment. So  
2 if public comment covers some of the same territory,  
3 which I assume that it would.

4 And then, in fact, that was one of my  
5 questions I was going to ask of the gentlemen today  
6 and make sure they understand that the comments  
7 regarding recreational use are not appropriate for  
8 this docket but for docket A. So you may see those  
9 in comments, but this testimony is for sub docket C  
10 only.

11 If there is no other objection, we'll  
12 mark Mr. Melvin's testimony as Exhibit 434,  
13 Mr. Kindra's testimony as Exhibit 435 and  
14 Mr. Wilkins' testimony as 436.

15 (Documents marked as IPCB Exhibits  
16 Nos. 434, 435 & 436 for  
17 identification.)

18 MS. TIPSORD: And, in fact, are there any  
19 questions for the gentlemen, Ms. Williams?

20 MS. WILLIAMS: I may reserve the right to  
21 follow-up if you have questions for the witnesses,  
22 but otherwise, no.

23 MS. TIPSORD: Okay. Anyone else? All right.  
24 Gentlemen, I do note that your testimony does cover



1 the issues that are addressed in sub docket A, as  
2 well as some in sub docket B, and I do know that  
3 the -- that's true with the waterway, not so much  
4 appears to Mr. Kindra, but that you have filed a  
5 comment in sub docket A.

6 And I want to be sure you understand that  
7 the points you make in certain recreational use in  
8 this testimony aren't relevant to this docket but  
9 are relevant to the other dockets. Are you aware of  
10 that?

11 MR. MELVIN: Yes.

12 MR. WILKINS: Yes.

13 MS. TIPSORD: All right. And you have -- I  
14 know that there has been public comment filed --  
15 and, Mr. Kindra, you've actually filed comments  
16 before -- before you pre-filed your testimony, you  
17 had already filed comments in sub docket A.

18 MR. KINDRA: Yes.

19 MS. TIPSORD: So I just want to be sure that  
20 you know that any of that information that you want  
21 the Board to consider in sub docket A, the closing  
22 of that comment period does not close until  
23 November 30th, so you still have time to submit them  
24 in sub docket A.

1 MR. KINDRA: Okay. Thank you.

2 MS. TIPSORD: Okay. Anybody else have any  
3 questions?

4 MS. FREDE: I have a couple of questions.

5 MS. TIPSORD: Okay.

6 MS. FREDE: My name is Lisa Frede. I'm with  
7 the Chemical Industry Council of Illinois.

8 Yesterday, gentlemen, there was a lot of  
9 discussion regarding a restricted navigational area.  
10 And from what I understand, this is a very important  
11 area to you all. Last August 2009, there was a  
12 safety testing done by the U.S. Coast Guard  
13 regarding the electrical barrier. The barrier was  
14 then shut down to all red-flag barges going through  
15 the barrier area. And could you please explain to  
16 the Board what a red flag barge is?

17 MR. WILKINS: A red flag barge -- this is Del  
18 Wilkins speaking. And a red flag barge is a barge  
19 that carries hazardous cargoes. Under U.S. Coast  
20 Guard provisions, hazardous cargoes are defined as  
21 chemical pulling cargoes, can be volatile and  
22 flammable.

23 MS. FREDE: Could you also please talk to the  
24 concern of what occurred during that safety testing

1 and what requirements came out of the safety testing  
2 for barges and recreational boats?

3 MR. WILKINS: During the safety testing of  
4 the barges transiting the electric barrier area --

5 MS. WILLIAMS: I'm going to object. Can you  
6 repeat the question.

7 (WHEREUPON, the record was read by  
8 the reporter.)

9 MS. WILLIAMS: I'm going to object to this  
10 question as related to recreational uses are not  
11 appropriate for this docket.

12 MS. TIPSORD: I think it relates to Asian  
13 carp, so let them answer the question.

14 MS. WILLIAMS: Okay. I just was going to say  
15 it's going to open up a lot more areas. Okay.

16 MS. TIPSORD: You may answer the question.  
17 Go ahead.

18 MR. WILKINS: Okay. During the testing of  
19 the red-flag barges and the initial electric barrier  
20 area corridor, it was noticed that there was  
21 sparking between the barges, sparking -- electrical  
22 arcing or sparking, if you will, between the barges  
23 which gave great concern to the Corps of Engineers  
24 to be able to recognize that they had to do further

1 testing, and they also put some restrictions by  
2 working with their colleagues at the Coast Guard,  
3 who is basically the policing agency and authority  
4 for the interim waterway system, to restrict  
5 navigation and then the Corps of Engineers to do  
6 further testing to understand the levels of current  
7 weather to the barrier and its effect on steel  
8 barges.

9 MS. FREDE: And so then did the Coast Guard  
10 issue a set of requirements for the barge industry  
11 at that point?

12 MR. WILKINS: Requirement at that point in  
13 time, there was the requirement for us just to make  
14 sure that we don't transit by passing, meeting other  
15 tows. There was requirements around crew members  
16 being exposed to this area, proper PPE, which is  
17 a -- PPE is a proper protocol of having safety  
18 requirement on the mariners themselves. And also  
19 they -- at that point in time initially, further  
20 testing was going to be done by the Corps to  
21 ascertain the safety of navigation.

22 MS. FREDE: You mentioned arc flashing. Why  
23 is arc flashing an issue with the barges going  
24 through this area?

1           MR. WILKINS: Arc flashing is a -- especially  
2 in concerns to red-flag barges, I mentioned the fact  
3 that they're hazardous and flammable commodities.  
4 And if you introduce electrical arcing and sparking  
5 on steel, which is also a conduit of electricity,  
6 you could end up with a kaboom.

7           MS. FREDE: Is there a safety group  
8 specifically set up to meet regarding this safety  
9 barrier?

10          MR. MELVIN: Yes, Lisa -- it's Mr. Melvin --  
11 there is. The group meets approximately every other  
12 month now. The group's focus is transiting safely  
13 through the area, bringing up issues that have  
14 occurred, you know, during the time since the last  
15 meetings, as well as there's some subcommittees,  
16 such as recovery and rescue groups that have been  
17 put together and signage groups that have been put  
18 together, to try to coordinate safe passage for  
19 both -- you know, all vessels transiting the area.

20          MS. FREDE: And is there any restriction for  
21 the companies or the barges going through should a  
22 man fall overboard in that area?

23          MR. MELVIN: Currently the recommendation  
24 through the safety work group is not to attempt

1 recovery in the area, to try to -- you know, if you  
2 can throw a soft line or a nonconductive line to a  
3 person if they're coherent to grab the line, drag  
4 them out of the electrical field, then try to pull  
5 them out of the vessel.

6 MS. FREDE: And will the Coast Guard put  
7 their boats in this area?

8 MR. MELVIN: The Coast Guard has said this is  
9 the only area of the country that they will not  
10 attempt to rescue in.

11 MS. DEXTER: Can I ask a question, please?  
12 Jessica Dexter, ELPC.

13 Are any of you under the impression that  
14 the Pollution Control Board has the power to select  
15 the means of patrolling Asian carp in this  
16 proceeding?

17 MR. ANDES: Are you asking them a legal  
18 issue?

19 MS. DEXTER: I'm wondering what we're talking  
20 about here. I mean, the only way that this relates  
21 to Asian carp is that we're talking about electrical  
22 barriers, and the Board isn't in control of  
23 electrical barriers. I don't --

24 MR. ANDES: There are already motions about

1 this, and the Board's hearing testimony on the --

2 MS. DEXTER: I know --

3 MR. ANDES: -- Asian carp --

4 MS. DEXTER: -- that we've heard more about  
5 what the testimony actually consists of, so I'm  
6 going to object to what's going on.

7 MS. TIPSORD: Well, I -- frankly I'm not  
8 sure -- I mean, yesterday we were asking questions  
9 about Coast Guard's studies about how long people  
10 could be in water, and no one objected to that line  
11 of questioning yesterday. So I'm not sure why we're  
12 objecting to it today, because to me it seems to be  
13 the same thing.

14 Because my question to you gentlemen is  
15 the safety concerns that are developing as a result  
16 of the barrier, do you know, is there a possibility  
17 that the barrier may not be used in the future  
18 because of the potential harm to commercial  
19 navigation?

20 MR. KINDRA: Not that I'm aware of.

21 MR. WILKINS: Yeah, I would echo that. Not  
22 that I'm aware of that there's -- it's permanent.

23 MS. TIPSORD: Okay.

24 MR. RAO: Were some of the safety issues,

1 were they present since 2002 when the first  
2 electrical barrier went into place?

3 MR. WILKINS: Not at all, sir.

4 MS. TIPSORD: No.

5 MR. WILKINS: Prior to electrical barriers,  
6 there was no safety zone established and no  
7 restricted navigation or area established in this  
8 corridor.

9 MS. TIPSORD: To further on that answer, the  
10 electrical barrier, when the design and installation  
11 was taking place, the Illinois River Carriers  
12 Association had worked closely with the Army Corps  
13 of Engineers and had been ensured that it would not  
14 create any safety issues. In approximately 2004,  
15 two years after the installation and startup of the  
16 demonstration barrier, which later became known as  
17 "Barrier 1," a towboat was placing a face wire, a  
18 steel cable, from the towboat to a barge, and an arc  
19 jumped approximately 12 inches; that raised safety  
20 concerns.

21 MR. ANDES: Can you explain how the -- how  
22 the changes in the barrier operation have effected  
23 the safety concerns in terms of 2002, 2004, and then  
24 much more recently, and how those two situations



1 differ?

2 MS. TIPSORD: In 2002, 2003, we were  
3 operating normally through there. 2004, once the  
4 safety testing began and the electrical current in  
5 the field was realized that it could cause a problem  
6 above, there were -- had been restrictions on safety  
7 gear going through there, a location of personnel  
8 going through there. No personnel are to be on open  
9 decks to where there's a chance of falling overboard  
10 unless they have a special type of life jacket on to  
11 keep their head afloat.

12 Red-flag barges are required now to hire  
13 an assist boat to get them safely through; that way,  
14 if the main towboat was to lose steering and lose  
15 propulsion for some reason, there's another vessel  
16 there that can take control of the tow to where they  
17 do not have to land on the wall, which could cause  
18 arcing across to the wall.

19 MR. ANDES: And then there were additional  
20 issues, and there was a decrease in voltage?

21 MR. MELVIN: All right. In 2008, I believe  
22 it was, with the installation of Barrier 2-A, it had  
23 the additional ability to be turned up to four volts  
24 per square inch, I believe it was, which again added

1 safety concerns. A new round of safety testing had  
2 to be done. There was a kneejerk reaction to raise  
3 the voltage based on some evidence that the carp may  
4 be closer than they thought, then that prohibited  
5 red flags from transiting at all.

6           Once the voltage was turned up, the Coast  
7 Guard said, Absolutely not. Until we get some  
8 safety testing done, we're not comfortable letting  
9 any vessels pass through the area. So there was  
10 about a week delay before any vessels could transit.  
11 And I believe it was about two weeks before red  
12 flags could begin to transit.

13           MR. GIRARD: Could I ask a general question?  
14 I'll direct this to the panel, and you can decide  
15 who can answer it.

16           But given the safety concerns with the  
17 electrical barrier and the fact that we're turning  
18 up the amount of energy going through that barrier,  
19 and is -- is the barge industry going to consider  
20 taking the stand that we should find some other way  
21 to make a barrier, such as the, you know, acoustic  
22 bubble system or some other type of barrier rather  
23 than electrical? And are you putting forward that  
24 position?

1 MR. MELVIN: We've made recommendations for  
2 other types of preventative measures to be taken.  
3 We have not made a recommendation to completely shut  
4 down the electrical barriers. We believe it's an  
5 effective line of defense.

6 MR. KINDRA: There's something called a disco  
7 barrier; it's lights, it's sound and it's waves.  
8 And the Corps of Engineers are developing that. We  
9 strongly support that they develop that and install  
10 it. And it would be another barrier in addition to  
11 the electrical barrier.

12 MR. WILKINS: And I would add that we have  
13 worked with the Corps as they have gone through  
14 these steps; as there I mentioned, going from the  
15 one volt to the maximum of four volts per square  
16 inch. But they don't operate at the high end, they  
17 operate in middle range. And we're comfortable with  
18 that testing and comfortable working with them, so  
19 we have no initiative to try to say shut down the  
20 barriers, per se.

21 MR. KINDRA: One thing we found out is that  
22 if the barges are wired together hard so that they  
23 are -- several barges are wired as a unit, then  
24 there's no flexing, there's no moving, there's just

1 one big unit hardwired -- hardwired to the boat,  
2 then sparking and arcing does not occur.

3 MR. ANDES: Does that mean that you're  
4 occupying most of the space in the waterway with --  
5 are they positioned laterally, the boats, or --

6 MR. WILKINS: The -- or you can answer that,  
7 John.

8 MR. MELVIN: The tow configuration can vary.  
9 But what John's saying is that by connecting barge  
10 to barge to barge with steel cables -- it's like  
11 having one long piece of copper wiring in your  
12 household. You can grab that, and you're fine. But  
13 if there's two pieces that are bumping back and  
14 forth together, you better not touch those because  
15 you're going to get a jolt out of them. Same  
16 scenario.

17 MR. ANDES: And you've got a long line of  
18 wire that's all connected?

19 MR. WILKINS: True.

20 MR. MELVIN: Yes.

21 MR. WILKINS: Which is standard operating  
22 procedure connected by a series of wires and  
23 turnovers.

24 MR. TESHER: This is Ariel Tesher from --

1 representing Citgo and SNR Denton.

2 Just a question, I guess, more about the  
3 work that you guys do on the waterways. We've been  
4 talking about the Asian carp, and an electric  
5 barrier is one way to keep them out. Assuming a  
6 pretty bad case scenario that the Asian carp problem  
7 gets worse and they're able to thrive in the  
8 waterways and one of the solutions proposed gets  
9 implemented and some loss of closure intermittently  
10 or permanently, how's that going to affect your  
11 activities on the waterways?

12 MR. MELVIN: I'll start out. You know, my  
13 concern is not only locks, but you're also going to  
14 have possibly water fluctuation problems and/or, you  
15 know, stagnant water or lack of navigational water.  
16 If the locks were to be closed and our operation,  
17 which is based in Romeoville, Illinois, cannot ship  
18 via the waterway, just our small company alone would  
19 put about 75 to 80,000 trucks a year on the road in  
20 Chicago to deliver the product that we deliver by  
21 barge annually.

22 MR. KINDRA: Our company, if they were to  
23 close O'Brien Lock, O'Brien Lock, a study that the  
24 Port of Indiana did, that the barge traffic that

1 goes through O'Brien Lock represents 17,000 jobs and  
2 1.9 billion dollars in economic activity. That's  
3 for O'Brien Lock. That's barges going through  
4 O'Brien Lock. We move the barges that are going  
5 through O'Brien Lock. We'd be out of business. I'd  
6 have to fold up and sell my stuff and retire --

7 MR. ANDES: And that --

8 MR. KINDRA: -- so that is --

9 MR. ANDES: -- traffic -- and that traffic  
10 would go by truck most likely, right?

11 MR. KINDRA: Well, no, the ultimate  
12 destination may be that they rail it from -- a lot  
13 of our products come from New Orleans. It may go by  
14 rail from New Orleans to the steel mills, or it may  
15 go to Lemont or Lockport or Joliet and truck it  
16 across the balance. We don't know.

17 MR. WILKINS: I think there's two steps to  
18 the answer to your question. Let me rephrase the  
19 question, because intermittent versus permanent  
20 closure are two different scenarios and two  
21 different results. Both have consequences,  
22 obviously permanent. I would side with my  
23 colleagues in their answer. Intermittent closure is  
24 also a challenge in the sense that I liken -- the

1 best knowledge that I've heard is that, you know,  
2 Metra runs from all around the city to downtown five  
3 days a week. People have to go to work five days a  
4 week.

5 And the same with barging. You have to  
6 move five to seven days a week, 365, 24/7. So  
7 intermittent really starts to infringe on the timing  
8 of moving equipment from not just the Chicago area  
9 but around the country. We can't forget that we  
10 receive goods and commodities from around the  
11 country, not just in the greater area.

12 MS. TIPSORD: Anything further?

13 MS. DEXTER: I have one other question.

14 You talked about working with the Corps  
15 and Coast Guard closely. Is there anything that the  
16 barge operators are doing currently with the Corps  
17 in regards to Asian carp transfer on the barges?

18 MR. KINDRA: That's called the Ballast Water  
19 Sampling Group. And both Darren and I are involved  
20 in that. The -- and I think Del, as well. As last  
21 summer, they came out and measured the amount of  
22 water that was in barges, and I think they measured  
23 75 barges, opened all the tanks and measured the  
24 water, the temperature and the oxygen.

1                   In 2011, they're planning during the  
2 spawning season to have a barge outfitted so that it  
3 can take water on to act as if a barge had been  
4 damaged, that the water would come in, and see if  
5 larvae could get in this, and then move this barge  
6 back and forth, assuming it's moving up and down the  
7 river, also testing for the survivability of the  
8 Asian carp inside the barge.

9                   MS. DEXTER: So basically there is a  
10 potential for the Asian carp to make it past the  
11 barrier in this regard if there should be a crevice  
12 or a void in the barge itself? The potential?

13                  MR. MELVIN: The potential is there, no  
14 different than the potential is there for a minnow  
15 bucket transfer.

16                  MS. DEXTER: That's all I have.

17                  MS. TIPSORD: Anything further?

18                  MS. WILLIAMS: I have one question for  
19 Mr. Kindra, I believe.

20                         The last sentence on the second page of  
21 your testimony, "I believe the Invasive Species Act  
22 outranks and should take priority over the Clean  
23 Water Act." Can you just explain that to us,  
24 please?



1 MR. KINDRA: I'm sorry, where -- what  
2 question number is it? What question number?  
3 Because I have --

4 MS. TIPSORD: It's --

5 MS. WILLIAMS: What do you mean? What are  
6 you asking me? Do I have a list of questions?

7 MS. TIPSORD: At the bottom of page two of  
8 your testimony.

9 MR. KINDRA: Okay. Could you please repeat  
10 the question for me.

11 MS. WILLIAMS: Sure. I would just like you  
12 to explain a sentence from page two of your  
13 testimony. It's the very last sentence. And I'm  
14 counting this from where -- you know, I'm not  
15 counting the latter but then --

16 MR. KINDRA: Okay. I see where you are. You  
17 don't have to repeat it.

18 MS. WILLIAMS: Okay. Thank you.

19 MR. KINDRA: I had heard that in the state of  
20 Colorado -- and I don't have specifics, so. That  
21 the State of Colorado was able to invoke the  
22 provisions of the Invasive Species Act over the  
23 provisions of the Clean Water Act.

24 MS. WILLIAMS: Okay.

1 MR. KINDRA: And so that was my --

2 MS. WILLIAMS: That's what you're --

3 MR. KINDRA: That's what I'm referring to  
4 here.

5 MS. WILLIAMS: Okay. Thank you.

6 MS. TIPSORD: Anything further?

7 MS. WILLIAMS: I don't think so.

8 MS. TIPSORD: Okay. Gentlemen, thank you  
9 very much.

10 MR. WILKINS: Thank you.

11 MR. KINDRA: You're welcome.

12 MR. MELVIN: Thanks.

13 (WHEREUPON, the witnesses were  
14 excused.)

15 MS. TIPSORD: And let's go off the record for  
16 just one moment.

17 (WHEREUPON, a recess was had from  
18 11:17 a.m. to 11:21 a.m.)

19 MS. TIPSORD: I want to thank everyone again  
20 for all your professionalism. And we'll see you  
21 next year. Thank you. We're adjourned.

22 (WHEREUPON, at 11:22 a.m. the  
23 hearing adjourned.)

24

1 STATE OF ILLINOIS )

2 ) SS:

3 COUNTY OF W I L L )

4

5 I, JENNIFER L. WIESCH, a Certified  
6 Shorthand Reporter of the State of Illinois, do  
7 hereby certify that I reported in shorthand the  
8 proceedings had at the hearing aforesaid, and that  
9 the foregoing is a true, complete and correct  
10 transcript of the proceedings of said hearing as  
11 appears from my stenographic notes so taken and  
12 transcribed under my personal direction.

13 IN WITNESS WHEREOF, I do hereunto set my  
14 hand at Chicago, Illinois, this 23rd day of  
15 November, 2010.

16

17

18

*Jennifer Wiesch*  
Certified Shorthand Reporter

19

20 C.S.R. Certificate No. 84-4528.

21

22

23

24

A					
<b>ability</b> 44:2	<b>achieved</b> 38:20	<b>adjacent</b> 23:11	26:21 51:4	41:24 68:1	49:12 58:16
47:2 89:23	<b>acknowledge</b> 6:2	<b>adjourned</b> 98:21,23	62:1 83:17	69:2,11	66:17,21,22
<b>able</b> 6:6	<b>acknowled...</b> 6:2	<b>adjusted</b> 46:9	<b>Albert</b> 2:22	90:18 95:21	83:13,16
13:12 18:19	<b>acoustic</b> 90:21	<b>Adm</b> 1:9	10:15	<b>Anand</b> 2:5	88:9 90:15
25:4 35:3	<b>ACRCC</b> 45:20 64:23	<b>Admin</b> 4:7	<b>algae</b> 13:12	4:21	92:6 94:18
36:13 47:19	67:6 69:22	<b>adults</b> 27:5	13:15 17:20	<b>ANDES</b> 2:17	94:23
50:5,17	73:21	27:12	18:1 19:9	6:21 7:6	<b>answered</b> 29:9
55:4 83:24	<b>across</b> 33:22	<b>adverse</b> 66:6	19:13,16	11:6,8	<b>answers</b> 28:18 33:18
93:7 97:21	89:18 94:16	67:2	20:5,24	12:18 14:7	<b>anticipated</b> 12:9 44:18
<b>about</b> 8:1	<b>act</b> 96:3,21	67:2	21:19	18:21 19:6	<b>Anybody</b> 82:2
11:9 19:7	96:23 97:22	<b>adversely</b> 67:12	<b>algal</b> 17:11	20:7,24	<b>anyone</b> 5:23
20:2 23:8	97:23	<b>advisable</b> 72:5	<b>Alisa</b> 2:4	21:10 28:18	11:15 29:7
26:17,24	<b>Acting</b> 2:6	<b>affect</b> 17:18	4:21	29:10,19	38:22 80:23
28:6 29:1,4	4:11	39:7 69:10	<b>allow</b> 49:10	30:6,10	<b>anything</b> 6:15 12:8
29:8,11,17	<b>actions</b> 72:20	93:10	52:11 54:20	31:21 33:18	14:10 16:2
30:7 31:3,5	72:20 73:21	<b>affected</b> 47:2	66:10	39:12,19	29:23 45:16
35:11 37:17	<b>activities</b> 44:19 65:4	63:17	<b>allowing</b> 49:11	40:13 42:24	56:21 61:24
40:13 45:16	67:11 68:1	<b>affect</b> 17:18	<b>allows</b> 4:14	43:10 44:24	95:12,15
51:24 53:1	69:2 93:11	39:7 69:10	51:20 54:13	45:6,10	96:17 98:6
53:4,17,18	<b>activity</b> 94:2	93:10	55:12,21	58:10 59:21	<b>anywhere</b> 57:5,24
54:10 55:4	<b>actual</b> 48:9	<b>afloat</b> 89:11	56:3,5,18	60:2 72:10	<b>apparently</b> 56:21 73:2
55:14,17	76:14	<b>aforesaid</b> 99:8	58:10 59:21	72:14 73:1	<b>appeal</b> 19:5
62:6 65:18	<b>actually</b> 7:9	<b>after</b> 6:2	60:2 72:10	73:7 86:17	60:12
66:24 68:11	9:20 21:24	10:12 75:2	72:14 73:1	86:24 87:3	<b>appear</b> 32:23
69:6 72:15	35:6 48:10	88:15	73:7 86:17	88:21 89:19	64:8
72:15,16,19	76:24 81:15	<b>afternoon</b> 7:7 76:19	86:24 87:3	92:3,17	<b>appeared</b> 61:14
73:3 75:4	87:5	<b>again</b> 4:13	88:21 89:19	94:7,9	<b>Appearing</b> 2:19
78:22 86:20	<b>add</b> 91:12	15:9 89:24	92:3,17	<b>Andrea</b> 2:9	<b>appears</b> 24:19 81:4
86:21,24	89:24	98:19	94:7,9	4:13	99:11
87:4,9,9	40:19 64:7	<b>agencies</b> 43:10 44:18	<b>alternative</b> 10:9	<b>and/or</b> 72:1	<b>apples</b> 38:8
90:10,11	73:10 78:20	<b>agency</b> 2:12	<b>although</b> 30:18	93:14	<b>application</b> 63:7,10
93:2,4,19	91:10	43:1,8	<b>Amendme...</b> 1:8 4:7	<b>annual</b> 41:22	<b>applied</b> 33:11 37:15
95:14	<b>addition</b> 16:2	78:18 79:9	<b>American</b> 5:14 76:11	42:10 43:3	65:21
<b>above</b> 1:14	40:19 64:7	84:3	78:2	68:4	<b>appointed</b> 4:2
63:16 75:3	73:10 78:20	<b>agent</b> 9:23	<b>ammonia</b> 8:20 9:13	<b>annually</b> 37:17 40:9	<b>appropriate</b> 23:3 79:19
75:8 89:6	91:10	<b>ages</b> 67:16	9:21 10:23	41:15 42:20	80:7 83:11
<b>ABS</b> 70:3	<b>additional</b> 20:5 36:6	<b>agree</b> 66:4	12:9,10,22	68:10 93:21	
<b>Absolutely</b> 90:7	46:13 73:10	67:1 72:6	<b>among</b> 25:18	<b>another</b> 10:19 13:2	
<b>abundance</b> 37:8 38:17	89:19,23	73:12	25:22,22	21:21 24:14	
39:3	<b>addressed</b> 78:21 81:1	<b>agricultural</b> 13:17 17:16	30:1,2	28:23 62:7	
<b>accepting</b> 14:2	<b>adequate</b> 28:15	<b>agriculture</b> 16:21	<b>amount</b> 19:15 23:15	89:15 91:10	
<b>according</b> 13:8	<b>adjacencies</b> 23:6 24:12	<b>ah</b> 4:15	23:18,21	<b>answer</b> 14:3	
<b>accurate</b> 39:1		<b>ahead</b> 12:10	24:2,3,4,10	19:2 24:7	
39:12			25:24 28:6	24:15 25:20	
			30:20 41:21	26:22 29:1	



21:4,8,11	<b>bring</b> 28:16	44:11 61:18	88:11	68:14,18	<b>characterize</b>
21:11,13,16	<b>bringing</b>	61:20 75:10	<b>carries</b> 82:19	70:3,9,12	25:13 30:12
21:17 27:15	85:13	78:7	<b>case</b> 51:7	70:15,16,20	<b>characteriz...</b>
27:21	<b>broadcast</b>	<b>canals</b> 19:24	53:10,17,18	70:21 71:3	30:10
<b>bit</b> 15:7 19:7	31:4	<b>capacity</b>	66:17 93:6	71:21 72:2	<b>chart</b> 33:19
36:6 46:17	<b>broader</b>	51:13	<b>catch</b> 35:3	73:24 75:3	<b>check</b> 61:21
66:17	21:11	<b>capture</b> 23:1	36:18 37:3	<b>cease</b> 69:15	<b>chemical</b>
<b>Blankenship</b>	<b>bubble</b> 90:22	<b>captured</b>	46:19,22	<b>Center</b> 3:3	3:11 9:4,11
2:10 5:2	<b>bubbly</b> 57:21	33:16	<b>catching</b> 37:7	5:11	9:15,15
<b>blind</b> 49:18	58:4,4	<b>capturing</b>	<b>category</b>	<b>certain</b> 9:19	82:7,21
<b>bluntner</b> 8:6	<b>bucket</b> 96:15	65:23	21:11	23:3 25:22	<b>Chicago</b> 1:6
<b>Board</b> 1:2,16	<b>budget</b> 38:14	<b>care</b> 76:19	<b>catfish</b> 24:16	25:23 31:12	1:18 2:18
4:3,12,13	<b>build</b> 6:8	<b>cargoes</b>	32:17,21	31:13,16	2:23 3:5,9
4:19,24 5:1	<b>Building</b>	82:19,20,21	70:13	32:15 46:14	3:17,21 4:5
5:21 6:8	1:17	<b>carp</b> 5:3,4	<b>cats</b> 25:21	48:14 63:22	5:10 19:17
54:2 60:15	<b>bumping</b>	11:2 12:23	<b>caught</b> 34:6,8	65:10 74:11	19:23 33:23
74:17 79:2	92:13	13:4,16	34:10,14	81:7	49:16 59:6
79:7 81:21	<b>bus</b> 32:2	14:6,19,21	38:24 61:7	<b>certainly</b>	59:7,20
82:16 86:14	<b>business</b> 94:5	15:13,14	70:15	26:13 29:3	61:18 93:20
86:22	<b>buying</b> 9:14	20:6,18,22	<b>cause</b> 1:14	30:17 79:14	95:8 99:14
<b>Board's</b> 6:9	<b>byproducts</b>	21:21 29:2	33:15 89:5	79:15	<b>chlorinating</b>
87:1	9:6	29:3 30:15	89:17	<b>Certificate</b>	9:24 10:4
<b>boat</b> 89:13		30:18 31:4	<b>caused</b> 38:4	99:20	10:12,13
92:1	<b>C</b>	34:21,23	<b>causing</b> 51:6	<b>Certified</b>	<b>chlorine</b> 8:22
<b>boats</b> 83:2	C 2:1 3:1	35:3 38:4	51:18	99:5,18	9:5,7 10:6
86:7 92:5	4:10 78:23	38:10 39:8	<b>cavity</b> 25:2	<b>certify</b> 99:7	<b>chlorophyll</b>
<b>bodies</b> 19:10	79:21,22,23	40:7 43:5	<b>CAWS</b> 8:21	<b>cetera</b> 65:13	17:21,22
<b>borrow</b> 16:5	79:23 80:9	44:19 48:10	20:23 21:20	<b>cfs</b> 50:23	19:8,9,12
16:12	<b>cable</b> 88:18	48:16 49:7	21:24 22:1	57:2	19:13,17,18
<b>both</b> 60:20	<b>cables</b> 92:10	49:12 51:7	22:7,9,13	<b>Chairman</b>	19:23 20:2
63:17 79:13	<b>Cal</b> 42:15,19	52:4 53:6,7	22:22,22,24	2:6 4:11	20:4
85:19 94:21	42:20	56:22 61:2	23:2,13,20	<b>challenge</b>	<b>Cicero</b> 42:19
95:19	<b>call</b> 14:5	62:8,13	25:4 26:2,6	94:24	<b>cited</b> 69:5
<b>bottled</b> 8:10	<b>called</b> 1:15	65:1,9,14	26:7,10,20	<b>chance</b> 89:9	<b>Citgo</b> 3:7
<b>bottom</b> 32:8	4:18 7:20	66:8,15,19	27:10,11,22	<b>change</b> 52:20	93:1
97:7	77:22 91:6	67:8,9,16	28:2 29:15	66:16	<b>citing</b> 14:8,9
<b>bottoms</b> 31:7	95:18	67:20 71:4	31:5,8,9	<b>changed</b>	<b>city</b> 95:2
<b>Boulevard</b>	<b>Calumet</b>	73:23 74:5	32:1,10	35:23 36:16	<b>clarification</b>
2:22	25:11 37:11	83:13 86:15	38:18,22,24	73:6	8:1
<b>Box</b> 2:14	37:15 41:9	86:21 87:3	39:2,8,11	<b>changes</b> 8:15	<b>clarify</b> 11:21
<b>Branch</b>	41:15,17,21	90:3 93:4,6	42:22 43:6	73:7 88:22	11:23 18:21
46:21	41:24 42:7	95:17 96:8	43:13,20	<b>channel</b>	26:19,23
<b>Brandon</b>	42:15,22	96:10	44:2,3,6,8	24:16 25:21	32:14 44:24
30:17,19	46:9	<b>carps</b> 49:3	44:10 46:5	26:9 32:16	45:9 51:20
61:2	<b>came</b> 83:1	61:6	47:7 49:2	36:4 42:20	54:13 55:12
<b>break</b> 5:20	95:21	<b>Carriage</b>	49:11,17	46:17,20	72:14,16
62:18	<b>canal</b> 19:23	78:5	50:2 52:13	54:22 55:14	<b>clarifying</b>
<b>breeding</b>	20:1 24:17	<b>Carrie</b> 2:8	60:22 61:21	55:18 56:11	45:8
54:21 59:24	33:23 34:20	4:12	62:7 67:21	58:8,12	<b>Clean</b> 96:22
<b>brief</b> 74:13	36:9 43:21	<b>Carriers</b>	68:2,5,8,10	70:13	97:23

<b>clear</b> 13:13 17:21 30:7 32:16 <b>clearly</b> 66:7 <b>Clerk's</b> 76:18 <b>close</b> 81:22 93:23 <b>closed</b> 5:21 93:16 <b>closely</b> 88:12 95:15 <b>closer</b> 90:4 <b>closest</b> 37:16 <b>closing</b> 81:21 <b>closure</b> 93:9 94:20,23 <b>Club</b> 2:21 10:16 <b>Coast</b> 82:12 82:19 84:2 84:9 86:6,8 87:9 90:6 95:15 <b>Code</b> 1:9 4:7 <b>coherent</b> 86:3 <b>Coho</b> 25:11 <b>colleagues</b> 84:2 94:23 <b>collect</b> 75:10 <b>collected</b> 7:9 33:10,12,13 33:22 64:2 64:4,10,14 <b>collection</b> 61:23 <b>Colorado</b> 97:20,21 <b>column</b> 19:16 <b>combined</b> 48:24 <b>come</b> 28:24 40:21 70:18 94:13 96:4 <b>comfortable</b> 90:8 91:17 91:18 <b>coming</b> 44:15 51:10 68:21 <b>commencing</b>	1:20 <b>comment</b> 76:18 77:7 80:1,2 81:5 81:14,22 <b>comments</b> 79:13,18 80:6,9 81:15,17 <b>commercial</b> 38:11 40:20 40:21 47:12 68:20 87:18 <b>commitment</b> 44:20 <b>committee</b> 11:2,3 72:21 <b>commodities</b> 85:3 95:10 <b>common</b> 23:13 34:21 35:3 61:6 <b>community</b> 44:3 47:18 72:1 <b>companies</b> 85:21 <b>company</b> 78:6,8 93:18,22 <b>comparable</b> 64:13 <b>comparativ...</b> 23:24 <b>compare</b> 37:21 <b>compared</b> 33:13 64:2 <b>comparison</b> 36:21 37:24 38:9 <b>complete</b> 6:9 10:20 99:9 <b>completely</b> 48:23 91:3 <b>concentrate</b> 64:24 65:16 66:23 <b>concern</b>	82:24 83:23 93:13 <b>concerns</b> 85:2 87:15 88:20,23 90:1,16 <b>conclude</b> 5:13 21:19 <b>conclusion</b> 35:11 <b>conclusions</b> 30:2 <b>conditions</b> 52:12,24 54:1,15 55:17 57:5 57:13,15 58:2 59:1,5 59:20 63:11 70:9 <b>conducive</b> 65:1 <b>conduit</b> 85:5 <b>conference</b> 5:6 35:8 51:21 54:4 77:1 <b>configurati...</b> 92:8 <b>confine</b> 64:24 65:16 <b>confined</b> 66:23 <b>confused</b> 21:17 51:5 <b>connected</b> 92:18,22 <b>connecting</b> 92:9 <b>connection</b> 28:1 <b>consent</b> 52:1 52:3,17 57:1 <b>consequen...</b> 94:21 <b>consider</b> 12:19 13:16 21:4,6 79:19 81:21	90:19 <b>considerati...</b> 14:20 <b>considered</b> 8:20,22 9:3 22:8 29:16 79:7,22,24 <b>considering</b> 46:6 <b>consists</b> 87:5 <b>constitutes</b> 30:19 <b>construct</b> 50:5 <b>contemplat...</b> 72:21 73:8 <b>context</b> 65:23 <b>continue</b> 5:17 57:18 <b>continued</b> 3:1 <b>continuing</b> 5:2 <b>continuous</b> 68:17 <b>contract</b> 56:15 <b>contracts</b> 40:20 <b>control</b> 1:2 1:15 5:4 15:13 50:10 73:22 86:14 86:22 89:16 <b>controlled</b> 50:21,24 <b>controlling</b> 13:3 14:21 59:8 <b>controls</b> 59:13,16 <b>convention</b> 35:24 <b>coordinate</b> 85:18 <b>coordinating</b> 11:3 72:21 <b>copies</b> 78:9 <b>copper</b> 92:11 <b>copy</b> 6:19,21	6:22 16:11 18:21,24 77:10 <b>Corps</b> 34:18 53:11 65:6 83:23 84:5 84:20 88:12 91:8,13 95:14,16 <b>correct</b> 10:10 12:19 40:13 41:12 43:19 45:2 56:7 71:9 99:9 <b>corrected</b> 7:6 <b>correctly</b> 47:10 72:19 <b>correlate</b> 13:7 <b>correlation</b> 17:8 <b>correlations</b> 13:11 <b>corridor</b> 83:20 88:8 <b>cost</b> 9:21 40:8 <b>costs</b> 9:19 <b>cost-effective</b> 9:14 <b>council</b> 3:11 13:10 17:16 82:7 <b>counsel</b> 17:6 51:22 54:5 63:1 <b>count</b> 8:13 39:14 40:16 <b>counting</b> 97:14,15 <b>country</b> 86:9 95:9,11 <b>COUNTY</b> 99:3 <b>couple</b> 8:1 74:24 82:4 <b>course</b> 68:20 73:9 <b>court</b> 6:5 53:10,17,18	53:19,20 54:14 74:11 <b>cover</b> 66:17 80:24 <b>covered</b> 60:18 62:5 <b>covers</b> 80:2 <b>crappie</b> 32:7 <b>create</b> 31:11 88:14 <b>creek</b> 58:4 <b>creeks</b> 57:21 <b>crevice</b> 96:11 <b>crew</b> 35:10 84:15 <b>critical</b> 49:21 <b>crossed</b> 5:19 <b>cross-exam...</b> 79:18 <b>CRR</b> 3:24 <b>CSR</b> 1:16 3:24 <b>CSSC</b> 44:6 44:15 <b>cumulative</b> 38:23 <b>current</b> 44:1 50:6 68:5,7 84:6 89:4 <b>currently</b> 68:1 85:23 95:16 <b>cut</b> 70:3 <b>cuts</b> 70:16 <b>C-FAR</b> 17:16 <b>C.S.R</b> 99:20
					<b>D</b>
					<b>D</b> 4:10 44:4 78:24 <b>damage</b> 61:5 <b>damaged</b> 61:9,10 96:4 <b>dams</b> 65:12 <b>Daniel</b> 2:10 5:1 <b>Darren</b> 77:19 77:24 95:19 <b>data</b> 17:18

18:18,19	<b>Del</b> 78:7	<b>develop</b> 91:9	9:2 12:5	<b>DNA</b> 48:8,12	76:21
20:17 24:18	82:17 95:20	<b>developing</b>	35:5 78:20	<b>DNR</b> 43:12	<b>drag</b> 86:3
35:21 37:13	<b>delay</b> 90:10	87:15 91:8	82:9	<b>docket</b> 4:9	<b>Dresden</b>
37:19,20,24	<b>DELBERT</b>	<b>developme...</b>	<b>discussions</b>	79:5,8,13	16:22 17:1
46:3,4 72:2	77:21	74:16	11:1,15	79:16,21,22	30:14,21
<b>database</b>	<b>deliberative</b>	<b>Dexter</b> 3:3	34:18	79:23,23	<b>Drive</b> 2:17
38:20,22	5:22	62:3,4,16	<b>disinfection</b>	80:8,8,9	3:4,8
<b>date</b> 69:14	<b>deliver</b> 93:20	86:11,12,19	9:24	81:1,2,5,8	<b>due</b> 34:14
72:17 74:6	93:20	87:2,4	<b>disrupt</b> 67:9	81:17,21,24	35:19 40:16
<b>David</b> 18:14	<b>demonstrat...</b>	95:13 96:9	67:19	83:11	76:16
18:23	88:16	96:16	<b>dissolved</b>	<b>dockets</b> 4:10	<b>duly</b> 6:17
<b>day</b> 1:19 4:22	<b>denied</b> 53:15	<b>DIERS</b> 2:13	32:17,23	4:23 78:23	7:20 77:15
4:24 6:13	78:19	<b>differ</b> 89:1	33:3	81:9	77:22
77:1 99:14	<b>densities</b>	<b>differences</b>	<b>distinguish...</b>	<b>document</b>	<b>dump</b> 9:4
<b>days</b> 95:3,3,6	39:11	35:20	25:18	7:4,15 15:1	<b>dumping</b>
<b>day-to-day</b>	<b>Denton</b> 3:7	<b>different</b>	<b>distract</b>	15:16,23	9:15
5:17 21:14	93:1	35:16 39:5	14:23	16:1,3,4	<b>during</b> 19:2
<b>dead</b> 40:16	<b>denying</b>	50:20 94:20	<b>district</b> 2:20	34:3	33:4,24
60:20 61:12	31:15,22,24	94:21 96:14	5:9 9:23	<b>Documents</b>	35:6 45:22
61:13	<b>department</b>	<b>difficult</b> 24:7	10:20 12:19	80:15	49:16 60:24
<b>DEBORAH</b>	58:19	63:12,14	19:16 37:13	<b>doing</b> 43:1	61:7 63:24
2:12	<b>depending</b>	<b>dire</b> 54:10	39:6,13	68:17,21	69:19 82:24
<b>decades</b>	54:17	<b>direct</b> 90:14	43:4 52:11	79:19 95:16	83:3,18
40:10	<b>depends</b>	<b>direction</b>	53:11,19,20	<b>dollars</b> 40:2	85:14 96:1
<b>December</b>	25:16	99:12	54:14,20	94:2	<b>D-o-y-l-e</b>
33:7,11,15	<b>Des</b> 1:7 3:13	<b>disagree</b> 30:5	55:16,22	<b>dominate</b>	77:4
63:7	4:6 70:10	31:3	56:9 57:3	59:5	
<b>dechlorinate</b>	70:18 72:11	<b>disagreeing</b>	60:7 61:1	<b>done</b> 12:8	<b>E</b>
9:8	74:1 75:23	28:11 30:22	61:17 62:11	15:20 22:24	<b>E</b> 2:1,1 3:1,1
<b>dechlorina...</b>	76:1	<b>disc</b> 6:22	74:10,10	42:17 50:20	<b>each</b> 6:5 36:1
10:6	<b>describe</b> 49:9	<b>discharge</b>	76:22	82:12 84:20	77:9
<b>decide</b> 46:5	<b>described</b>	10:23 62:11	<b>District's</b>	90:2,8	<b>east</b> 2:13 3:4
74:20 90:14	54:16	<b>discharged</b>	11:24 12:2	<b>doubtful</b>	3:12 36:3
<b>decided</b> 36:4	<b>describing</b>	10:5	64:1 68:7	47:19	<b>echo</b> 87:21
<b>decision</b> 6:9	66:20	<b>discharges</b>	<b>diversion</b>	<b>down</b> 5:7	<b>economic</b>
<b>decks</b> 89:9	<b>design</b> 56:14	65:11 69:19	48:21 49:10	12:11 56:11	94:2
<b>decrease</b>	88:10	<b>discharging</b>	50:18,20,22	82:14 91:4	<b>EDNA</b> 46:3,7
13:15 18:1	<b>destination</b>	10:7	51:11,14	91:19 96:6	46:11,12
58:20 89:20	94:12	<b>disco</b> 91:6	52:18,21	<b>downstream</b>	48:5,14,15
<b>decreasing</b>	<b>destroy</b> 65:7	<b>discretion</b>	54:11 55:1	9:9 12:8	65:8
13:14	<b>detail</b> 29:5	50:17	55:10 57:9	19:24 20:3	<b>educated</b>
<b>decree</b> 52:1,4	<b>detailed</b> 29:1	<b>discretion...</b>	58:20,24	20:12 37:15	34:7,13
52:17 57:1	<b>deter</b> 67:16	50:8	59:13,16,18	37:18,23	<b>effect</b> 12:23
<b>defense</b> 91:5	<b>determinat...</b>	<b>discussed</b>	<b>diversions</b>	62:14 63:17	67:1,12
<b>defined</b>	34:8,13	8:19 11:17	50:8,12	70:4,5	71:19 84:7
82:20	<b>determine</b>	28:22 44:21	52:7 53:5,6	71:16	<b>effected</b>
<b>definitely</b>	12:22 34:22	67:4	55:16 57:2	<b>downtown</b>	88:22
38:20	38:16 65:9	<b>discussing</b>	58:7,12	59:20 60:15	<b>effecting</b>
<b>degradation</b>	<b>deterrent</b>	33:1	<b>diversity</b>	95:2	62:12
9:6	45:24	<b>discussion</b>	38:17	<b>Doyle</b> 76:20	<b>effective</b>



51:12 73:2 73:5 91:5 <b>effectiveness</b> 38:5 <b>effects</b> 44:12 69:7 <b>Efficacy</b> 15:13 <b>efficiency</b> 10:20 37:4 <b>efficient</b> 46:16 <b>effluent</b> 1:5 4:5 9:24 10:4,21 <b>effluents</b> 13:5 <b>effort</b> 35:2 38:9 41:1 68:12,23 <b>efforts</b> 38:4 63:23 68:21 69:14 72:22 <b>egg</b> 67:10 <b>eggs</b> 67:20,20 <b>eight</b> 7:8,10 7:11 33:13 34:9 63:6 64:3 68:9 <b>either</b> 79:8 <b>electric</b> 63:8 63:9 72:3,7 83:4,19 93:4 <b>electrical</b> 44:1 70:2 70:23,24 71:4 82:13 83:21 85:4 86:4,21,23 88:2,5,10 89:4 90:17 90:23 91:4 91:11 <b>electricity</b> 85:5 <b>electrofishi...</b> 24:18 34:24 35:13,18,23 36:17 37:1	46:15 68:17 69:7,10 <b>electroshoc...</b> 65:17 <b>elements</b> 17:10 <b>eliminate</b> 55:16 <b>ELPC</b> 10:17 62:1,4 86:12 <b>elsewhere</b> 57:16,20 <b>emerald</b> 8:7 <b>emergency</b> 49:23 76:16 <b>end</b> 17:18,19 37:18 63:9 63:11 64:24 67:8,10 68:3 85:6 91:16 <b>energy</b> 90:18 <b>Engineers</b> 34:19 53:11 65:6 83:23 84:5 88:13 91:8 <b>enough</b> 23:15 24:5,10 31:11 <b>ensured</b> 88:13 <b>enter</b> 77:11 <b>entered</b> 5:16 79:21 <b>entire</b> 26:9 26:11 28:17 34:24 44:12 68:18 <b>entitled</b> 1:14 4:4 <b>entrance</b> 78:19 <b>environme...</b> 2:4,5,12 3:3 3:15 5:11 25:9 41:7 48:8 <b>EPA</b> 18:24	<b>equal</b> 49:2 <b>equally</b> 74:3 <b>equipment</b> 95:8 <b>eradicate</b> 67:7 <b>erosion</b> 57:3 <b>error</b> 7:8 <b>escape</b> 61:16 <b>especially</b> 85:1 <b>established</b> 88:6,7 <b>estimate</b> 19:15 <b>et</b> 65:13 <b>Ettinger</b> 2:22 10:15,15 11:4,12,19 11:21,23 12:2,7,14 12:16,24 13:20,22 14:18,24 15:4,12,18 15:21 16:1 16:14,17,20 17:2 18:3,7 18:11,13 19:4 20:8 21:3,6,9 26:3,5,16 26:18 28:5 28:14 29:18 29:21 30:9 30:11 31:15 31:19,22 32:2 39:18 39:20,22 40:1,4,12 47:22 48:3 51:3,5,15 52:3,6,10 52:15,17,23 53:3,14,20 53:23 54:9 54:19 55:6 56:2,4,9,13 56:17,21 59:3,12,19	59:23 60:3 60:7,14 70:22 71:2 71:8,12 72:6,13 73:12,18 74:24 75:12 75:16,20,22 76:1,4 <b>evacuating</b> 60:15 <b>evaluate</b> 46:3 <b>even</b> 12:1 30:13 44:11 49:20 58:22 64:18 <b>event</b> 33:2 34:12,12,14 46:10 <b>events</b> 33:5 35:19,19 45:13,17 49:16 <b>Eventually</b> 49:24 <b>ever</b> 44:18 56:10 61:17 62:11 <b>every</b> 26:8 37:3 41:23 68:12,15 85:11 <b>everyone</b> 4:1 98:19 <b>everywhere</b> 30:3 <b>evidence</b> 37:10 46:14 90:3 <b>Ewing</b> 41:21 41:22 <b>exactly</b> 17:9 33:6 40:8 58:22 60:10 <b>EXAMIN...</b> 7:22 62:2 63:3 <b>examined</b> 7:21 77:23 <b>except</b> 48:23	68:9 <b>excessive</b> 49:16 <b>exchange</b> 51:17 <b>excuse</b> 5:12 70:22 <b>excused</b> 76:9 98:14 <b>executive</b> 11:2 12:6 <b>exhibit</b> 5:16 7:2,3,4,14 7:14,15 8:2 15:2 34:1,2 34:3 78:15 80:12,13 <b>Exhibits</b> 80:15 <b>existing</b> 17:17 50:1 52:1,3 57:11 <b>exiting</b> 49:19 <b>expect</b> 65:13 <b>expected</b> 13:14 18:1 34:15 37:3 <b>expects</b> 30:15 30:16 <b>expensive</b> 40:7 <b>experience</b> 38:3 <b>explain</b> 9:11 17:6 19:8 21:10 44:7 48:5 63:13 65:3 70:5 82:15 88:21 96:23 97:12 <b>explanation</b> 35:14 <b>explored</b> 49:14 67:9 <b>exposed</b> 84:16 <b>express</b> 4:14 4:18 6:10 <b>expressed</b>	44:19 <b>extensive</b> 38:22 43:14 43:18 46:18 69:11 <b>extent</b> 29:23 32:5,9,20 72:11 <b>extra</b> 5:20 <b>extreme</b> 41:1 <b>extremely</b> 39:5,10 72:8 <b>eyes</b> 61:10 <b>E-t-t-i-n-g...</b> 10:16 <hr/> <b>F</b> <hr/> <b>face</b> 88:17 <b>fact</b> 9:19 13:17 17:8 29:23 78:22 80:4,18 85:2 90:17 <b>factors</b> 24:8 <b>fading</b> 15:7 <b>fair</b> 34:7 60:11 74:2 <b>fall</b> 85:22 <b>falling</b> 89:9 <b>familiar</b> 25:10 27:8 27:16,24 <b>far</b> 4:19 12:20 <b>fear</b> 59:8 <b>feasibility</b> 11:18 <b>feasible</b> 39:17 <b>Federal</b> 51:17 53:10 53:18 74:10 <b>feed</b> 27:6 <b>feel</b> 53:23 <b>few</b> 13:9 28:14 35:12 35:15 36:14 56:16 <b>fewer</b> 64:13
--	--	--	---	--	---

86:4 89:5	41:13,16	<b>Floor</b> 3:16	<b>Fourth</b> 3:16	69:20 70:4	77:8 80:5
<b>filed</b> 78:18	43:12 44:2	<b>flow</b> 48:24	<b>four-year</b>	70:17 71:15	80:19,24
79:13 81:4	44:3,12,14	49:21 56:11	42:11,19,21	72:8 75:20	82:8 87:14
81:14,15,17	45:1 46:15	57:3 59:7	68:8	75:22 76:1	98:8
<b>fill</b> 28:10	47:2,17,18	<b>fluctuation</b>	<b>framework</b>	76:12,17	<b>Geological</b>
<b>final</b> 74:19	47:23 60:20	93:14	14:19 15:4	79:2 82:10	69:5
<b>finch</b> 8:7	60:22 61:5	<b>fluid</b> 62:11	15:13	88:18 90:5	<b>GERARD</b>
<b>find</b> 13:11	61:7,13,16	<b>focus</b> 10:22	<b>frankly</b> 9:13	91:14 92:24	76:20,22
25:4 31:9	61:23 63:12	58:7,11	87:7	94:12,13,14	77:3,5
36:24 47:19	63:15,16,18	85:12	<b>Franzetti</b>	95:2,8,10	<b>gets</b> 20:12
52:8 65:14	63:22,24	<b>fold</b> 94:6	3:19 17:3,5	97:12,14	93:7,8
67:15,17	64:1,2,3,4,9	<b>follows</b> 7:21	17:5 18:2	98:17 99:11	<b>getting</b> 21:17
74:5 90:20	64:9,18	77:23	46:24 47:9	<b>fully</b> 73:2,5	31:19 32:3
<b>finding</b> 48:10	65:2,16	<b>follow-up</b>	47:14 62:24	<b>further</b> 17:7	36:14 49:3
<b>fine</b> 16:19	66:5,6,7,8	5:23 13:23	63:1,4	52:2 61:24	49:7 51:18
58:7 92:12	67:3,13,19	19:6 25:7	71:23 73:19	72:22 73:7	57:19 71:13
<b>fingers</b> 5:19	67:20 68:3	28:5 42:24	74:22 75:1	74:15,22	71:13,15
<b>finish</b> 26:22	68:4 69:3,8	46:24 80:21	<b>Fred</b> 45:4	83:24 84:6	<b>GIARD</b> 6:12
<b>finished</b>	69:10 70:4	<b>follow-ups</b>	<b>Frede</b> 3:11	84:19 88:9	<b>Girard</b> 2:6
74:19	70:5,8,11	10:18 16:19	82:4,6,6,23	95:12 96:17	4:11 6:11
<b>finishing</b>	70:17,21	75:1	84:9,22	98:6	90:13
5:11	71:3,6,13	<b>food</b> 13:15	85:7,20	<b>furthermore</b>	<b>give</b> 77:10
<b>first</b> 7:20	71:22 72:1	15:14 20:6	86:6	30:16	<b>given</b> 63:8
28:22,23	72:18 73:24	20:20,22,22	<b>FREDRIC</b>	<b>future</b> 36:15	68:3 74:9
31:2 77:22	74:4 75:2	21:23 24:12	2:17	45:16 72:20	90:16
78:11 88:1	75:11,12,17	24:13	<b>frequencies</b>	87:17	<b>gizzard</b> 64:5
<b>fish</b> 8:9,10	<b>fisheries</b>	<b>Force</b> 3:15	67:15	<b>fyke</b> 61:4	64:12
10:14 17:19	44:17	25:9 41:7	<b>frequently</b>		<b>glad</b> 18:24
21:3,4,11	<b>fishermen</b>	<b>forced</b> 54:24	42:16	<b>G</b>	19:3
21:13,13,16	38:11 40:20	55:15	<b>from</b> 4:20,24	<b>G</b> 4:11	<b>go</b> 12:10 24:9
22:8,9,21	40:21 68:21	<b>foregoing</b>	5:8,10,14	<b>game</b> 47:17	26:21 51:4
23:1,10,11	<b>fishery</b> 27:21	99:9	5:17 7:18	47:23	62:1 83:17
24:6,11,13	<b>fit</b> 55:10	<b>forget</b> 95:9	8:5,10,15	<b>Gary</b> 2:10	94:10,13,15
25:16,19,23	<b>fits</b> 55:10	<b>form</b> 33:20	13:4 19:13	5:2	95:3 98:15
26:24 27:4	<b>five</b> 38:2	<b>forth</b> 92:14	24:18,19	<b>gates</b> 49:6,14	<b>goal</b> 38:12,16
27:10 28:9	67:23 68:14	96:6	26:8 28:8	50:4	<b>goals</b> 38:20
28:16 29:16	95:2,3,6	<b>forward</b>	29:13 32:4	<b>gave</b> 74:13	39:4
30:4,24	<b>fixed</b> 68:14	90:23	35:22 36:15	83:23	<b>goes</b> 38:15
33:10,12,16	<b>flag</b> 82:16,17	<b>found</b> 7:8	37:14,18	<b>gear</b> 89:7	94:1
33:22 34:12	82:18	17:21 19:22	40:21 43:14	<b>general</b> 22:13	<b>going</b> 5:8,13
34:14 35:12	<b>flags</b> 90:5,12	22:22 24:20	46:22 48:24	90:13	5:18 16:7
35:21 36:13	<b>flammable</b>	32:20 33:5	49:1,17,19	<b>Generally</b>	16:14,18,20
36:14 37:3	82:22 85:3	61:17,20,21	50:23 55:23	27:2	20:21 21:21
37:7,13,19	<b>flashing</b>	61:22 71:3	57:19 59:7	<b>Generation</b>	22:3 25:24
37:20 38:5	84:22,23	91:21	60:20,23	3:19 5:12	34:21 38:10
38:15,20,22	85:1	<b>four</b> 33:9	61:11,11	17:6 43:17	47:5 50:5
38:23 39:7	<b>flexing</b> 91:24	37:5,6,17	62:12,20	62:19 63:2	62:5 65:8
39:10,14,19	<b>flip</b> 16:18	37:23 41:23	63:16,17,18	<b>Generation's</b>	66:16,19
40:3,9,11	<b>flooding</b>	67:5 89:23	66:2,11	62:23	67:14,18
40:16 41:8	49:15	91:15	67:20 69:8	<b>gentlemen</b>	68:12,13

80:5 82:14	<b>Greg</b> 24:24	99:14	87:1 98:23	39:9 48:11	10:14
83:5,9,14	24:24 38:7	<b>handed</b>	99:8,10	67:15	<b>inch</b> 89:24
83:15 84:20	<b>ground</b> 54:21	33:21	<b>Hearings</b>	<b>IDNR</b> 24:20	91:16
84:23 85:21	59:24	<b>Hanson</b>	19:3 29:5	28:20,22	<b>inches</b> 88:19
87:6,6 89:7	<b>group</b> 35:8	77:24	<b>held</b> 1:13	29:1,17,22	<b>include</b> 8:10
89:8 90:18	45:20 69:22	<b>happen</b>	<b>help</b> 6:8	32:21,21	35:21
90:19 91:14	85:7,11,24	54:10,16	<b>helpful</b> 33:20	40:15	<b>included</b>
92:15 93:10	95:19	56:21 57:23	<b>hemorrhages</b>	<b>IEPA</b> 5:10	65:4
93:13 94:3	<b>groups</b> 85:16	58:23 59:9	61:10	7:18 18:18	<b>includes</b> 6:23
94:4	85:17	59:12	<b>her</b> 6:19,22	<b>Ill</b> 1:9 4:7	<b>increased</b>
<b>gone</b> 5:7	<b>group's</b>	<b>happening</b>	6:22 29:12	<b>Illinois</b> 1:2	20:4
36:24 43:18	85:12	10:10	29:13 35:10	1:15,17,19	<b>incredibly</b>
68:4 91:13	<b>growing</b> 44:3	<b>hard</b> 31:7	59:22 60:2	2:12,14,18	68:23
<b>good</b> 4:1 6:12	<b>growth</b> 17:11	91:22	75:6 76:20	2:23 3:5,9	<b>independe...</b>
7:24 9:7	62:13	<b>harder</b> 32:8	<b>herd</b> 66:15	3:11,13,17	59:14
36:21 37:24	<b>Guard</b> 82:12	<b>hardwired</b>	67:2	3:21 12:11	<b>Indiana</b>
62:24	82:20 84:2	92:1,1	<b>herded</b> 65:19	13:8,18,20	93:24
<b>goods</b> 95:10	84:9 86:6,8	<b>Harley</b> 3:15	<b>herding</b>	17:14,18,22	<b>indicate</b>
<b>gotten</b> 8:9	90:7 95:15	25:6,8,8,13	65:18 66:18	18:19,23,23	64:22 67:6
36:20	<b>Guard's</b> 87:9	25:18 26:1	<b>hereunto</b>	19:11,19	<b>indicator</b>
<b>Government</b>	<b>guess</b> 16:7	27:1,8,15	99:13	20:1,4	69:7
51:17	24:7,14	27:20,24	<b>high</b> 25:14	40:22 53:19	<b>individual</b>
<b>grab</b> 86:3	25:20 26:23	28:4 41:4,6	33:7 91:16	70:10 78:5	46:20
92:12	27:1 35:16	41:6,11,16	<b>higher</b> 20:5	82:7 88:11	<b>industry</b> 3:11
<b>gradual</b>	42:6 75:3	41:19 42:9	20:13 68:23	93:17 99:1	82:7 84:10
20:10	79:1 93:2	42:13,16,23	<b>hire</b> 89:12	99:6,14	90:19
<b>Grand</b> 2:13	<b>guessing</b> 40:6	<b>harm</b> 73:24	<b>hired</b> 40:19	<b>imagine</b> 33:7	<b>information</b>
<b>grant</b> 53:24	<b>guys</b> 93:3	74:4 87:18	<b>hit</b> 48:14	<b>immediate</b>	38:3 81:20
54:7,14		<b>having</b> 7:20	65:15	4:11,19,20	<b>informing</b>
<b>granted</b>	<b>H</b>	70:16 77:22	<b>hits</b> 48:15	55:3 59:17	74:17
53:15 54:18	<b>habit</b> 28:6	84:17 92:11	<b>hour</b> 1:20	<b>immediately</b>	<b>infrequent</b>
54:23 55:15	<b>habitat</b> 19:2	<b>hazard</b> 49:15	<b>hours</b> 60:21	31:1 56:1,2	32:11
56:19 59:9	22:7,13	<b>hazardous</b>	<b>household</b>	56:22	<b>infringe</b> 95:7
59:18 60:13	23:3,7,15	82:19,20	92:12	<b>impact</b> 5:4	<b>inhibit</b> 49:19
70:7	23:17,21	85:3	<b>how's</b> 93:10	20:17 21:21	<b>initial</b> 83:19
<b>granting</b>	24:3,5,10	<b>head</b> 76:22	<b>huge</b> 49:19	37:11 44:6	<b>initially</b>
54:2	24:12 25:14	89:11	<b>hybrid</b> 8:13	67:18,22	84:19
<b>graph</b> 33:21	26:10,11,13	<b>health</b> 69:7	<b>hydrologic</b>	70:19 71:20	<b>initiated</b>
<b>graphic</b>	26:14 27:3	<b>hear</b> 5:3	28:1	72:17,23	74:11
33:20	28:7 29:5	15:10 42:5		<b>impacts</b> 66:6	<b>initiative</b>
<b>grates</b> 49:13	29:15 31:6	<b>heard</b> 28:7	<b>I</b>	<b>impede</b> 63:19	91:19
49:18	32:15 36:6	30:19 44:21	<b>idea</b> 11:24	<b>implemented</b>	<b>injunction</b>
<b>gravelly</b> 32:8	70:9	46:6,8	12:3	73:22 93:9	53:2,9,13
<b>gravity</b> 50:3	<b>habitats</b> 32:9	74:18,21	<b>identificati...</b>	<b>important</b>	53:15,21,24
<b>great</b> 27:23	<b>half-hour</b>	87:4 95:1	7:5,16 34:4	82:10	54:3,8,15
48:2 74:11	5:20	97:19	80:17	<b>impression</b>	54:23 55:15
83:23	<b>Halsted</b>	<b>hearing</b> 1:14	<b>identified</b>	86:13	56:5 59:9
<b>greater</b> 5:9	37:17 41:12	2:3 4:3,22	8:11 46:3	<b>improved</b>	59:17 60:8
95:11	42:8	5:13 6:12	<b>identify</b> 8:4	36:18 59:1	60:11,12
<b>green</b> 64:5,12	<b>hand</b> 6:1	78:17,21	13:12 17:4	<b>improveme...</b>	74:20

<b>injured</b> 60:20 61:14	<b>IPA</b> 7:7	21:24 22:12	82:1 87:20	<b>L</b> 1:16 3:24	94:15
<b>injuries</b> 61:8	<b>IPCB</b> 7:4,15	24:2,23	91:6,21	99:3,3,5	<b>less</b> 9:20,21
<b>inputs</b> 13:17	34:3 80:15	26:5,6,16	93:22 94:8	<b>lab</b> 8:11	51:13
<b>inside</b> 96:8	<b>Island</b> 16:22	26:18,19	94:11 95:18	<b>lack</b> 93:15	<b>let</b> 13:23
<b>install</b> 91:9	30:21	27:6 28:5	96:19 97:1	<b>laid</b> 60:10	18:17 19:6
<b>installation</b>	<b>isolated</b> 31:9	32:14,16,24	97:9,16,19	<b>lake</b> 25:10,13	51:20 54:13
88:10,15	<b>issue</b> 5:3	36:16,24	98:1,3,11	27:9,12,17	63:5 72:10
89:22	28:19 29:3	37:6 42:24	<b>Kindra's</b>	27:18 28:1	72:14 83:13
<b>installing</b>	29:11 58:5	44:24 45:6	80:13	46:22 49:1	94:18
49:24	58:6 72:16	46:12,23,24	<b>kinds</b> 46:1	49:3,11,17	<b>letting</b> 56:11
<b>instance</b>	79:6 84:10	48:6 53:3	<b>kneejerk</b>	49:20 55:2	90:8
65:10	84:23 86:18	54:6,9,11	90:2	59:7 78:4	<b>let's</b> 6:13
<b>instead</b> 46:12	<b>issues</b> 9:5	55:12 57:24	<b>knew</b> 16:2	<b>lakes</b> 18:4	8:18 11:6,6
46:18 48:9	78:20 79:5	61:14 64:10	<b>knocked</b>	27:6,6,23	30:7 62:1
48:10	81:1 85:13	66:17,23	47:20	48:2 74:12	62:17 72:15
<b>institutions</b>	87:24 88:14	67:4 68:16	<b>know</b> 11:4,12	<b>land</b> 89:17	98:15
17:15	89:20	68:22 69:8	12:5,15,20	<b>lane</b> 4:15,18	<b>level</b> 12:6
<b>intended</b> 6:8	<b>it'd</b> 50:20	71:5,17,21	13:6 14:24	<b>language</b>	18:1 57:9
<b>intention</b>	56:18	73:11 74:24	21:23 22:23	65:7	69:23
52:10		77:13 78:5	23:12 24:10	<b>large</b> 10:13	<b>levels</b> 12:22
<b>interested</b>	<b>J</b>	81:19 83:14	24:23 25:3	18:5 30:18	13:4,7,7,15
74:17	<b>J</b> 2:12	84:13 91:24	33:3 37:2	34:11	17:21,23
<b>interim</b> 84:4	<b>jacket</b> 89:10	93:2,18	38:1,10,12	<b>largemouth</b>	20:24 21:19
<b>intermittent</b>	<b>Jackson</b> 2:22	95:8,11	38:18,21	23:5 32:7	33:4 84:6
94:19,23	<b>Jennifer</b> 1:16	96:23 97:11	39:4,6,9	64:6,14	<b>life</b> 70:19
95:7	3:24 5:8 7:1	98:16	40:8,8,24	70:13	71:21 89:10
<b>intermitten...</b>	7:19 99:5	<b>juvenile</b> 23:1	43:12 44:11	<b>larger</b> 18:12	<b>lights</b> 91:7
93:9	<b>Jessica</b> 3:3	24:13	44:22 45:16	18:16 28:10	<b>like</b> 12:4,4
<b>interrupt</b>	62:4 86:12	<b>K</b>	46:1,22,23	<b>larvae</b> 96:5	16:5,12
26:4,5	<b>job</b> 21:14	<b>kaboom</b> 85:6	47:18,22	<b>larval</b> 23:1	17:19 20:11
42:10	<b>jobs</b> 94:1	<b>keep</b> 5:19	55:3,21	24:13	24:1,11
<b>intolerant</b>	<b>John</b> 77:6,20	15:6 57:7,8	57:22,23	<b>LaSalle</b> 1:18	32:5,6
25:22	78:3 92:7	57:19 89:11	58:16 61:9	3:20	36:14 41:2
<b>introduce</b>	<b>Johnson</b> 2:7	93:5	61:20 69:16	<b>last</b> 66:17	44:4 46:13
7:11 28:20	4:20	<b>Keith</b> 3:15	69:16 70:12	74:9 82:11	46:15,16
77:9,17	<b>John's</b> 92:9	25:8 41:6	78:18 81:2	85:14 95:20	57:6,21
85:4	<b>Joliet</b> 94:15	<b>Kelly</b> 34:18	81:14,20	96:20 97:13	64:12,15
<b>invasive</b> 44:5	<b>jolt</b> 92:15	<b>kill</b> 12:10	85:14,19	<b>lasts</b> 56:6	65:20 70:15
50:10 96:21	<b>judge</b> 74:19	39:14,19	86:1 87:2	<b>later</b> 8:8	75:15 78:16
97:22	<b>July</b> 33:10,17	45:1 73:23	87:16 90:21	88:16	92:10 97:11
<b>investigated</b>	34:19 35:10	<b>kills</b> 66:8	93:12,15	<b>laterally</b> 92:5	<b>likelihood</b>
49:10	64:1	<b>kind</b> 43:2	94:16 95:1	<b>latter</b> 97:15	45:13 67:11
<b>investigating</b>	<b>jumped</b>	55:7 68:11	97:14	<b>Law</b> 3:3 5:11	<b>likely</b> 23:2
67:7	88:19	68:13 69:18	<b>knowledge</b>	<b>leaky</b> 72:8	33:15 47:16
<b>invoke</b> 97:21	<b>just</b> 4:17,18	71:14	56:10 69:8	73:13	48:14 54:2
<b>involve</b> 9:14	8:1 9:16	<b>Kindra</b> 77:13	95:1	<b>least</b> 28:16	56:16 58:22
9:18 49:2	11:21,22,23	77:20 78:3	<b>known</b> 24:19	32:24	64:17 67:17
<b>involved</b>	12:10,21	78:3,4 81:4	88:16	<b>left</b> 4:11,12	68:2 69:3
18:10 95:19	16:2,20	81:15,18	<b>L</b>	<b>legal</b> 86:17	74:21 94:10
	18:9 20:19			<b>Lemont</b>	<b>liken</b> 94:24

<b>limit</b> 44:1	37:16 49:22	49:7 63:11	84:18	<b>measured</b>	49:2,3,11
<b>Limitations</b>	63:18 75:8	74:1 75:3	<b>mark</b> 7:1,13	95:21,22,23	49:18,20
1:5 4:5	75:10,19,20	75:23	18:14,23	<b>measures</b> 5:4	<b>micrograms</b>
<b>limited</b> 23:2	75:21,22	<b>lowest</b> 20:13	34:1 77:11	19:16 50:10	20:2
25:24 31:5	93:23,23	<b>lunch</b> 5:20	78:12 80:12	91:2	<b>middle</b> 91:17
31:6,9	94:1,3,4,5	<b>lunchtime</b>	<b>marked</b> 5:15	<b>meet</b> 85:8	<b>Midwest</b>
32:11,14,15	<b>Lockport</b>	5:21	7:4,15	<b>meeting</b>	3:19 5:12
32:15	20:10 33:10		16:11 34:3	11:17 84:14	17:6 43:17
<b>limiting</b>	33:23 35:1	<b>M</b>	80:15	<b>meetings</b>	62:19,23
21:24	36:4,10	<b>M</b> 3:19	<b>market</b> 47:12	85:15	63:1
<b>limits</b> 44:2	61:2 63:8	<b>Mackey</b> 23:7	<b>massive</b>	<b>meets</b> 85:11	<b>might</b> 12:22
<b>limnologist</b>	64:1 75:8	<b>macroinve...</b>	73:14	<b>Melvin</b> 77:19	23:2 28:10
21:7	75:10,21,22	17:20	<b>Material</b>	77:24,24	<b>migration</b>
<b>line</b> 28:19	94:15	<b>macroinve...</b>	78:1	78:11 81:11	73:15,23
86:2,2,3	<b>locks</b> 63:10	24:14	<b>MATTER</b>	85:10,10,23	<b>mile</b> 37:14
87:10 91:5	65:12 93:13	<b>Madam</b>	1:3	86:8 89:21	48:22 59:6
92:17	93:16	78:17	<b>maximum</b>	91:1 92:8	<b>miles</b> 37:17
<b>Lisa</b> 3:11	<b>long</b> 52:7	<b>made</b> 35:11	91:15	92:20 93:12	37:23
82:6 85:10	56:5 64:17	91:1,3	<b>may</b> 5:23	96:13 98:12	<b>military</b> 65:7
<b>list</b> 97:6	75:1 87:9	<b>main</b> 38:13	15:5 17:3	<b>Melvin's</b>	<b>millions</b> 40:2
<b>liter</b> 20:3	92:11,17	57:22,23	23:8 25:1,3	78:14 80:12	<b>mills</b> 94:14
<b>literature</b>	<b>longer</b> 10:5	58:6,8,12	31:8 36:20	<b>member</b> 4:12	<b>mimic</b> 41:2
11:22 12:21	46:7	60:1 89:14	39:7 43:13	4:13,19 5:2	47:6
<b>litigation</b>	<b>long-term</b>	<b>mainly</b> 8:20	46:10 48:15	6:8	<b>mini</b> 14:6
74:11,14,16	10:19 50:10	10:22	53:24 66:10	<b>members</b>	61:4
<b>little</b> 15:7	<b>look</b> 17:17	<b>mainstream</b>	74:7,16	84:15	<b>minimal</b> 25:1
17:7 19:7	37:24 60:9	59:6	80:8,20	<b>mention</b> 70:2	<b>minnow</b> 8:7
21:17 22:7	<b>looked</b> 18:15	<b>maintenance</b>	83:16 87:17	<b>mentioned</b>	96:14
22:13 26:11	61:5 75:5	45:22 58:19	90:3 94:12	35:2,7 37:2	<b>minute</b> 55:12
26:12,15	<b>looking</b> 39:9	<b>major</b> 16:21	94:13,14	58:20 68:8	<b>mischaract...</b>
28:6 29:15	72:1,2 74:3	<b>make</b> 55:13	<b>maybe</b> 24:1	69:21 84:22	30:12
36:6 41:15	74:5	63:11 76:16	70:14	85:2 91:14	<b>mission</b>
41:24 42:7	<b>looks</b> 64:12	80:6 81:7	<b>mean</b> 9:12	<b>met</b> 32:24	38:13
42:14 46:9	64:15	84:13 90:21	10:8 12:17	<b>meter</b> 36:17	<b>moderately</b>
46:17 51:5	<b>lose</b> 51:7	96:10	14:2 15:3	<b>meters</b> 36:1,2	32:19
66:16	89:14,14	<b>makes</b> 9:22	16:10 23:5	36:5	<b>modest</b> 38:14
<b>Liu</b> 2:4 4:21	<b>loss</b> 93:9	<b>malarial</b>	25:16 26:7	<b>method</b>	<b>moment</b>
<b>live</b> 27:5 55:6	<b>lot</b> 21:13 23:4	52:12 54:1	31:21 37:7	40:18	98:16
<b>living</b> 27:11	24:8 27:4	59:19,21	38:7 47:16	<b>methods</b> 49:9	<b>money</b> 9:20
<b>LLP</b> 2:16	31:7 35:2	<b>man</b> 85:22	47:23 57:21	67:8 74:6	51:18
<b>located</b> 41:11	35:16 53:4	<b>management</b>	58:4,14,18	<b>Metra</b> 95:2	<b>monitor</b>
41:19 63:9	55:8 61:5	44:18	66:7,10,12	<b>metrics</b> 17:20	37:16 38:10
63:10	70:7 71:13	<b>many</b> 40:4	71:18,24	<b>Metropolit...</b>	68:10
<b>location</b>	82:8 83:15	74:3	86:20 87:8	2:19 5:9	<b>monitoring</b>
35:23 36:13	94:12	<b>map</b> 41:20	92:3 97:5	52:11 60:4	34:23 35:8
36:16 41:22	<b>low</b> 21:1,2,20	<b>March</b> 69:23	<b>means</b> 11:16	62:10	38:15,19
89:7	36:20 39:10	<b>Marie</b> 1:14	14:20 20:5	<b>Michael</b> 1:17	39:1,8 40:3
<b>locations</b>	<b>lower</b> 1:7 4:6	2:3 4:2	86:15	<b>Michigan</b>	40:7 41:8
19:19 41:14	19:24 22:1	<b>marina</b> 65:12	<b>measure</b>	25:14 27:9	41:14,17
<b>lock</b> 35:1	37:21 43:20	<b>mariners</b>	19:12,13,18	27:19 28:2	42:10,17

43:2,5,6,12	49:1 55:23	24:19 36:21	<b>nothing</b> 56:6	<b>obviously</b>	6:4 8:19
43:15,18	63:19,21	44:9 47:5,8	<b>noticed</b> 83:20	10:1 30:18	14:4,12
45:19 46:4	64:16,21	50:24 52:19	<b>notion</b> 6:10	38:13 55:4	15:21 16:5
46:15,18	66:13 67:5	55:5	<b>November</b>	94:22	19:6 21:20
61:2 68:1,4	67:23 69:13	<b>necessary</b>	1:19 81:23	<b>occupying</b>	24:14,23
68:5,7,11	70:1,18	5:16	99:15	92:4	29:8 30:2
68:15 69:2	91:24 95:8	<b>need</b> 5:24	<b>NPGS</b> 51:16	<b>occur</b> 50:23	35:19 40:18
69:12,14,17	96:6	51:13 60:14	<b>nuisance</b>	57:7 92:2	41:13,14
69:21,23	<b>much</b> 15:10	<b>needs</b> 49:17	52:12 54:22	<b>occurred</b>	42:24 43:5
<b>monitors</b>	28:10 40:5	<b>negative</b>	60:1	82:24 85:14	45:22 59:4
39:6	78:22 81:3	67:18 70:19	<b>number</b> 4:9	<b>occurring</b>	63:6 64:22
<b>Monroe</b> 3:16	88:24 98:9	71:20	7:8 8:18	27:9,16,22	72:16 80:4
<b>month</b> 85:12	<b>multiagency</b>	<b>negatively</b>	33:22 38:18	<b>October</b>	87:10 91:15
<b>months</b> 34:11	38:9 61:1	67:22	63:6 64:7,9	74:15	91:21 92:1
64:17	68:12	<b>neither</b> 53:16	97:2,2	<b>off</b> 70:3,16	92:11 93:5
<b>Moore</b> 2:9	<b>multiple</b>	<b>nest</b> 32:9	<b>numbers</b>	98:15	93:8 95:13
4:13,16	38:11	<b>net</b> 66:11	30:18 33:19	<b>Office</b> 76:18	96:18 98:16
<b>more</b> 16:7	<b>MWRDGC</b>	<b>nets</b> 60:21,23	36:20	<b>officer</b> 1:14	<b>one's</b> 44:24
26:14,15	13:5 33:16	61:4,4,7,11	<b>nursery</b> 23:6	2:3 4:3	<b>ongoing</b> 38:5
36:14 40:9	50:7	61:15	23:11	78:17	<b>online</b> 51:10
40:10 49:20	<b>MWRDGC's</b>	<b>netting</b> 40:23	<b>nutrient</b> 13:4	<b>Officer's</b>	51:10
51:12,12	38:5	46:16 65:3	13:6,14	78:21	<b>only</b> 8:16
63:11,14	<b>M&amp;O</b> 58:19	65:21,22,22	14:20 15:14	<b>offices</b> 60:15	33:12,16
65:3,20	<hr/>	66:5,9	17:14,23	<b>Oh</b> 52:5 55:6	34:13 35:2
72:4 83:15	<b>N</b>	68:22 69:9	<b>nutrients</b>	59:23	35:15 43:5
87:4 88:24	N 2:1,13 3:1	<b>never</b> 79:19	13:11,18	<b>okay</b> 6:15,24	43:8 45:21
93:2	<b>name</b> 4:2 6:3	<b>new</b> 90:1	14:23 16:17	8:3,14 12:7	60:21 61:6
<b>morning</b> 4:1	62:24 76:20	94:13,14	16:22 17:10	15:8,11,18	64:1 80:10
5:18 6:12	82:6	<b>next</b> 59:4	17:17,18,24	16:9,10,13	86:9,20
7:24 62:24	<b>named</b> 64:10	98:21	20:21	22:2,3 24:4	93:13
<b>mosquitoes</b>	<b>native</b> 44:20	<b>nine</b> 60:18	<b>N-502</b> 1:18	26:21 33:8	<b>open</b> 49:22
54:20,21	47:1,10,24	<b>noise</b> 15:10	<hr/>	36:11 38:1	83:15 89:8
59:24	66:6,9,10	<b>nonconduc...</b>	<b>O</b>	40:12 42:13	<b>opened</b> 95:23
<b>most</b> 38:21	67:18,21	86:2	<b>object</b> 25:3	48:8 51:15	<b>operate</b>
62:5 73:20	70:4,5 74:4	<b>none</b> 7:2,14	78:18 83:5	51:24 52:6	91:16,17
92:4 94:10	<b>natural</b>	34:1	83:9 87:6	52:10 55:6	<b>operating</b>
<b>motion</b> 53:23	22:20 35:17	<b>normally</b>	<b>objected</b>	55:8,9,21	89:3 92:21
53:24 54:3	64:15	89:3	87:10	56:17 58:3	<b>operation</b>
<b>motions</b>	<b>naturally</b>	<b>North</b> 1:18	<b>objecting</b>	60:3,16	88:22 93:16
86:24	47:6,7	2:13,17	45:5 87:12	64:16 66:4	<b>operations</b>
<b>move</b> 20:3,12	<b>navigation</b>	26:8 46:16	<b>objection</b>	68:19 80:23	39:7 40:23
21:22 22:3	84:5,21	46:20,21	6:24 7:13	82:1,2,5	58:19 69:9
33:8 62:18	87:19 88:7	48:22 54:22	33:24 78:11	83:14,15,18	72:17 73:6
70:12 75:18	<b>navigational</b>	55:14,18	78:17,18	87:23 97:9	<b>operators</b>
76:10,17	82:9 93:15	58:8,12	80:11	97:16,18,24	5:14 76:11
77:7 94:4	<b>near</b> 36:4	<b>Nos</b> 80:16	<b>obtain</b> 47:11	98:5,8	78:2 95:16
95:6 96:5	75:9	<b>note</b> 6:7	<b>obtained</b>	<b>once</b> 4:12	<b>opinion</b>
<b>movement</b>	<b>nearby</b> 31:1	63:24 79:12	38:3	41:23 72:6	20:16 24:21
20:17 34:22	<b>necessarily</b>	80:24	<b>obvious</b>	89:3 90:6	44:5,7 69:1
<b>moving</b> 27:18	20:21 23:5	<b>notes</b> 99:11	69:11	<b>one</b> 2:17 5:22	<b>option</b> 9:4,7

9:11 10:19 11:17 12:19 47:8 66:23 <b>options</b> 55:22 74:3 <b>oranges</b> 38:8 <b>order</b> 23:9 37:5 47:12 55:3 78:21 <b>original</b> 8:5,9 8:15 46:8 <b>originally</b> 35:21 <b>Orleans</b> 94:13,14 <b>other</b> 6:5 8:15 13:7 19:6,10 24:8,12 32:5 40:23 41:16 43:1 44:6,14 46:1 67:3 67:12 68:15 68:22 71:15 74:23 76:5 77:1 80:11 81:9 84:14 85:11 90:20 90:22 91:2 95:13 <b>others</b> 18:14 26:14 61:13 <b>otherwise</b> 73:24 79:10 80:22 <b>out</b> 8:12 12:9 19:14 34:19 35:10,12 36:7,12 40:24 43:1 47:20 50:7 50:13 52:8 60:10 83:1 86:4,5 91:21 92:15 93:5,12 94:5 95:21 <b>outcome</b> 50:9 <b>outfalls</b>	65:11 <b>outfitted</b> 96:2 <b>outlined</b> 53:12 <b>outranks</b> 96:22 <b>outside</b> 15:9 44:6 <b>over</b> 6:5 13:8 30:15 38:17 38:17,21 44:10 50:1 68:18 73:6 96:22 97:22 <b>overall</b> 4:24 50:16,21 52:19 <b>overboard</b> 85:22 89:9 <b>overflows</b> 48:24 <b>overview</b> 74:13 <b>owner</b> 78:3 <b>oxygen</b> 32:23 33:3 95:24 <b>oxygenation</b> 32:18 <b>O'Brien</b> 76:15,24 93:23,23 94:1,3,4,5 <b>O'Brien's</b> 76:17 <b>o'clock</b> 5:22	<b>pages</b> 63:6 <b>panel</b> 90:14 <b>paper</b> 6:21 6:22 <b>parked</b> 36:3 <b>part</b> 9:2 11:14 12:5 12:21 28:21 29:2,3 34:22 46:5 48:12 52:15 61:1 <b>particular</b> 14:7 17:23 22:12 28:9 30:6,7 52:21 75:6 <b>particularly</b> 40:15 <b>parties</b> 74:17 <b>parts</b> 1:9 19:11 44:6 <b>party</b> 74:10 <b>pass</b> 90:9 <b>passage</b> 8:21 49:12 85:18 <b>passing</b> 84:14 <b>past</b> 13:9 44:21 64:14 68:4,24 71:3 96:10 <b>patrolling</b> 86:15 <b>pending</b> 53:10 74:10 <b>people</b> 87:9 95:3 <b>Peoria</b> 20:13 <b>per</b> 20:2 89:24 91:15 91:20 <b>percent</b> 37:6 37:6 62:9 79:2,3 <b>percentage</b> 62:7 <b>perfect</b> 4:15 <b>period</b> 81:22 <b>permanent</b>	19:5 87:22 94:19,22 <b>permanently</b> 93:10 <b>permit</b> 51:16 <b>permits</b> 56:18 <b>person</b> 86:3 <b>personal</b> 69:8 99:12 <b>personally</b> 60:20,22 <b>personnel</b> 89:7,8 <b>Peru</b> 12:11 <b>phase</b> 50:7 <b>phased</b> 50:13 <b>phenomena</b> 27:10 <b>physical</b> 67:8 70:8 <b>phytoplankton</b> 19:15 <b>pick</b> 20:9 <b>piece</b> 92:11 <b>pieces</b> 92:13 <b>place</b> 25:10 68:2 71:8 73:15 88:2 88:11 <b>placed</b> 62:8 <b>places</b> 57:20 <b>placing</b> 88:17 <b>Plaines</b> 1:7 3:13 4:6 70:10,18 72:12 74:1 75:23 76:2 <b>plan</b> 45:21 52:15 69:22 <b>planned</b> 10:21 52:7 <b>planning</b> 45:23 49:24 96:1 <b>plans</b> 45:17 <b>plant</b> 13:5 38:13 41:2 55:2 65:11 <b>plants</b> 62:12	<b>please</b> 6:3,4,7 13:23 17:4 63:13 82:15 82:23 86:11 96:24 97:9 <b>pleasure</b> 76:7 <b>pockets</b> 26:15 <b>point</b> 17:24 44:22 51:20 53:16 55:24 76:2 84:11 84:12,19 <b>pointed</b> 8:12 <b>points</b> 17:19 17:19 81:7 <b>poison</b> 62:8 <b>poisoned</b> 40:16 <b>poisoning</b> 34:12 <b>policing</b> 84:3 <b>policy</b> 3:3 5:11 39:13 <b>Pollution</b> 1:2 1:15 86:14 <b>pool</b> 16:23 20:13 30:14 30:17,19,21 33:11 63:8 <b>Pools</b> 61:3 <b>poor</b> 17:8 <b>population</b> 10:14 14:21 23:16 24:6 24:11 31:12 62:13 63:12 63:24 64:18 66:15 68:3 69:4,12 72:18 <b>populations</b> 66:10,20 70:4,5 73:24 74:4 <b>Port</b> 93:24 <b>portion</b> 42:7 42:22 <b>position</b> 52:21 56:24	90:24 <b>positioned</b> 92:5 <b>positive</b> 46:11 48:14 48:15 65:15 <b>possibility</b> 45:13 87:16 <b>possible</b> 27:13 31:12 49:1 50:19 52:20 54:7 54:17,19 <b>possibly</b> 40:10 79:6 93:14 <b>post</b> 72:3 <b>potential</b> 14:5,13 22:8 29:16 57:8 87:18 96:10,12,13 96:14 <b>potentially</b> 13:3 67:22 <b>power</b> 86:14 <b>PPE</b> 84:16,17 <b>Prairie</b> 2:21 10:17 <b>preconceived</b> 6:10 <b>predominant</b> 13:18 <b>prefer</b> 32:7 <b>prehearing</b> 5:6 76:24 <b>preliminar...</b> 6:15 <b>preliminary</b> 53:1,8,13 53:15,21,24 54:2,8,15 59:9,17 60:11,12 74:20 <b>prepared</b> 18:22 28:24 29:4 <b>presence</b> 32:1 39:10
	<b>P</b>				
	<b>P</b> 2:1,1,17 3:1 3:1 <b>page</b> 7:7 8:19 15:12,17 16:18 22:5 33:9 43:22 48:19 59:4 60:19 63:21 64:21 66:13 67:5,23 70:1 96:20 97:7,12				

48:12,16	99:10	<b>provide</b>	30:4,22	<b>R</b> 2:1 3:1	<b>recently</b>
<b>present</b> 31:21	<b>produce</b> 8:20	18:21,24	33:9 38:2,5	<b>raft</b> 36:7	15:17 88:24
31:23 36:16	8:22 10:21	23:3 52:2	41:5 43:22	<b>rail</b> 94:12,14	<b>recess</b> 62:20
39:2,10	20:21	<b>provided</b> 7:7	45:3,8 47:1	<b>rain</b> 35:19	76:12 98:17
65:10 69:13	<b>product</b>	<b>provisions</b>	48:19 57:16	49:16	<b>reclamation</b>
88:1	93:20	82:20 97:22	58:15,16	<b>raise</b> 6:1	2:20 5:9
<b>president</b>	<b>productive</b>	97:23	59:3 60:18	28:19 78:16	43:4 52:11
78:4	39:15	<b>pro-abate</b>	63:5,21	78:22 90:2	54:20 55:2
<b>presumably</b>	<b>products</b> 9:6	47:23	64:16,21	<b>raised</b> 88:19	60:5 62:10
65:17	94:13	<b>public</b> 43:1	66:13,21	<b>raises</b> 59:3	65:11
<b>pretty</b> 25:1	<b>profession...</b>	52:12 54:22	67:5,23	<b>range</b> 91:17	<b>recognize</b>
32:10 93:6	98:20	59:24 76:18	70:1 71:18	<b>ranks</b> 19:10	83:24
<b>prevent</b> 8:21	<b>Professor</b>	77:7 79:18	73:20 74:9	<b>Rao</b> 2:5 4:21	<b>recommen...</b>
57:4 73:22	18:23	80:1,2	75:7 78:22	87:24	14:19 85:23
<b>preventative</b>	<b>program</b>	81:14	83:6,10,13	<b>rapid</b> 35:8	91:3
91:2	38:15 39:15	<b>publication</b>	83:16 86:11	38:4 44:19	<b>recommen...</b>
<b>previous</b>	39:23 40:9	69:6	87:14 90:13	45:19 69:21	15:22 91:1
19:20 37:2	40:11,14	<b>pull</b> 86:4	93:2 94:18	<b>rare</b> 31:6	<b>recommen...</b>
<b>previously</b>	43:18	<b>pulling</b> 82:21	94:19 95:13	<b>rarely</b> 61:23	64:23 73:21
30:19 67:4	<b>programs</b>	<b>pump</b> 49:6	96:18 97:2	70:15	<b>record</b> 6:7,9
<b>pre-filed</b>	38:6	50:3	97:2,10	<b>rather</b> 15:3	8:2 18:22
6:20 7:1	<b>progress</b>	<b>pumping</b>	<b>questioning</b>	41:1 50:20	19:1 48:4
8:18 22:6	63:20	48:21 50:9	6:4 28:20	90:22	83:7 98:15
48:20 74:12	<b>progression</b>	56:10	87:11	<b>ratio</b> 48:15	<b>records</b> 61:6
74:14 78:10	58:21	<b>purchase</b> 9:4	<b>questions</b>	<b>reaction</b> 90:2	61:22
81:16	<b>progressiv...</b>	9:11	5:10,24 6:6	<b>read</b> 5:16	<b>recover</b>
<b>pre-telecon...</b>	20:12	<b>purposes</b>	6:7 7:18 8:1	15:16,17	34:15 63:12
35:7	<b>prohibited</b>	25:14 48:7	16:8 19:1	16:1 80:1	75:2,12,14
<b>prior</b> 43:4	55:23 90:4	<b>pursue</b> 39:13	29:1,11	83:7	<b>recovers</b>
88:5	<b>project</b> 34:20	<b>pushing</b> 11:4	62:6,23	<b>readjust</b>	64:19
<b>priority</b>	<b>projects</b> 39:5	11:9,15	74:22,23	62:18	<b>recovery</b>
96:22	<b>promised</b>	<b>put</b> 49:5,14	76:5 79:3,3	<b>ready</b> 62:22	85:16 86:1
<b>probably</b>	51:17	59:13 60:7	79:9 80:5	<b>realized</b> 8:8	<b>recreational</b>
5:18 39:15	<b>promulgate</b>	70:23 84:1	80:19,21	89:5	80:7 81:7
64:20 70:11	17:13	85:17,17	82:3,4 87:8	<b>really</b> 13:13	83:2,10
71:15 79:3	<b>promulgati...</b>	86:6 93:19	97:6	24:15 28:24	<b>recruitment</b>
<b>problem</b> 8:17	17:13	<b>putting</b> 90:23	<b>quickly</b>	37:23 72:2	32:4 63:15
89:5 93:6	<b>proper</b> 84:16	<b>P.O</b> 2:14	34:16	95:7	63:15 71:6
<b>problems</b>	84:17		<b>quite</b> 21:2	<b>rearranging</b>	<b>red</b> 82:16,17
93:14	<b>proposed</b> 1:8	<b>Q</b>	33:7 46:16	77:14	82:18 90:5
<b>procedural</b>	4:6 5:5 93:8	<b>quality</b> 1:4	61:22	<b>reason</b> 34:13	90:11
78:20	<b>proposing</b>	4:4 24:12	<b>quote</b> 22:6	35:20 36:19	<b>reduce</b> 17:24
<b>procedure</b>	11:12	25:14	29:13 33:9	89:15	50:18,19,22
92:22	<b>propulsion</b>	<b>question</b> 5:23	43:22,23	<b>reasonable</b>	51:11 55:16
<b>proceed</b>	89:15	8:18 10:18	48:20 60:19	39:17,22	66:15,19
79:10	<b>PROTECT...</b>	13:2 14:4	64:24,24	<b>reasons</b>	<b>reduced</b>
<b>proceeding</b>	2:12	19:7 20:19	67:7,8,9,10	35:17 39:6	50:13 52:19
4:4 86:16	<b>protocol</b>	22:5 24:8	67:24 68:3	<b>receive</b> 95:10	64:8,11
<b>proceedings</b>	84:17	27:1 28:13		<b>recent</b> 13:8	<b>reduces</b>
1:13 99:8	<b>prove</b> 67:11	29:8,14,22	<b>R</b>	69:20	71:21



<b>reducing</b> 14:23 15:14 20:20,21 58:24	<b>regulations</b> 5:5	83:8 99:6 99:18	<b>restocked</b> 45:2	41:21,24 42:7 59:6,7 70:10,10 72:12 74:1 78:5 88:11 96:7	<b>R08-09</b> 1:4 <b>R08-9</b> 4:9
<b>reduction</b> 13:4 14:20 50:23 51:19 52:6 53:4,5 57:1,6	<b>relate</b> 52:4 53:5 54:12	<b>represent</b> 6:3 10:16,17	<b>restocking</b> 44:20 45:14 47:1,5,7,14	72:12 74:1 78:5 88:11 96:7	<b>S</b>
<b>reductions</b> 50:14,16 51:6 63:23	<b>related</b> 14:22 83:10	<b>representing</b> 78:1,6,8 93:1	<b>restrict</b> 84:4	<b>riverine</b> 70:8 70:17	<b>S</b> 2:1 3:1
<b>red-flag</b> 82:14 83:19 85:2 89:12	<b>relates</b> 83:12 86:20	<b>represents</b> 94:1	<b>restricted</b> 82:9 88:7	<b>rivers</b> 2:21 10:17 18:12 27:5,18	<b>safe</b> 85:18 <b>safely</b> 85:12 89:13
<b>reference</b> 20:19 63:22 79:4	<b>relationship</b> 13:13 17:22 27:9	<b>require</b> 23:16 32:7 46:12 56:18 57:2	<b>restriction</b> 85:20	<b>road</b> 61:3 93:19	<b>safety</b> 82:12 82:24 83:1 83:3 84:17 84:21 85:7 85:8,24 87:15,24 88:6,14,19 88:23 89:4 89:6 90:1,1 90:8,16
<b>referencing</b> 17:8	<b>relative</b> 19:9 19:10 22:16 23:18 38:16 39:3	<b>required</b> 50:7 51:6 89:12	<b>restrictions</b> 84:1 89:6	<b>Robertson</b> 2:10 5:1	<b>Sal</b> 42:15,19 42:20
<b>referred</b> 29:23,24 75:9 77:12	<b>relatively</b> 18:8,9 21:20 23:14 23:18,20,22 28:6 30:20	<b>requirement</b> 52:22 84:12 84:13,18	<b>result</b> 50:14 54:2,11,23 55:18 57:16 59:13,16,20 87:15	<b>Romeoville</b> 93:17	<b>salmon</b> 25:11 <b>same</b> 67:19 69:23 80:2 87:13 92:15 95:5
<b>referring</b> 17:7,11 22:10 29:22 30:8 43:24 53:3,9 61:4 66:16 70:6 75:7 98:3	<b>relevance</b> 20:17	<b>requireme...</b> 24:24 25:2 32:23 53:12 83:1 84:10 84:15	<b>resuming</b> 69:22	<b>Room</b> 1:18	<b>Sag</b> 42:15,19 42:20
<b>refers</b> 43:22	<b>relevant</b> 72:4 78:23 79:23 81:8,9	<b>requires</b> 24:6	<b>retire</b> 94:6 49:17	<b>rotating</b> 41:23 42:18 42:21	<b>sample</b> 19:14 41:14
<b>reflection</b> 39:1	<b>relief</b> 54:18	<b>requiring</b> 51:16 57:1	<b>reversed</b> 49:17	<b>rotational</b> 43:12 61:1 68:9	<b>sampled</b> 20:14
<b>regard</b> 96:11	<b>remember</b> 71:17	<b>rescue</b> 85:16 86:10	<b>revised</b> 7:10 7:13	<b>rotenone</b> 33:2,5,11 33:15 34:11 34:14 37:11 37:15,18,21 40:17 45:13 45:17,21,23 46:1,5,10 46:19,21 47:21 62:7 63:7 65:20 75:3,4,8	<b>samples</b> 46:11 48:9 48:11
<b>regarding</b> 63:7 80:7 82:9,13 85:8	<b>removal</b> 15:15 65:2	<b>research</b> 17:17	<b>riff</b> 36:6	<b>rotenoning</b> 46:7 75:2	<b>sampling</b> 33:17 36:16 38:6 46:7 68:13,16 95:19
<b>regardless</b> 50:9	<b>remove</b> 60:23 66:11	<b>researchers</b> 67:14	<b>right</b> 4:19,20 4:21 7:12 10:9,11 12:20 16:11 17:12 22:20 25:20 31:20 37:9 41:10 45:21 47:13 47:15,16 50:21 53:22 55:5,20 56:4 62:17 66:1,3 72:23,24 75:9 76:10 77:6 80:20 80:23 81:13 89:21 94:10	<b>round</b> 90:1	<b>Sanitary</b> 19:23 24:17 33:23 34:20 61:18
<b>regards</b> 95:17	<b>removed</b> 12:13 60:20 61:9	<b>researching</b> 13:10	<b>risk</b> 49:2,7	<b>rounding</b> 65:17	<b>sauger</b> 61:17 70:15
<b>region</b> 37:14	<b>removing</b> 66:2	<b>reserve</b> 80:20 18:5 51:10 51:12 58:21	<b>river</b> 1:8 4:6 12:11 18:19 28:9 37:15 41:9,15,17	<b>Route</b> 42:20	<b>save</b> 19:4
<b>Regional</b> 11:3	<b>repeat</b> 28:12 83:6 97:9 97:17	<b>reservoirs</b> 18:5 51:10 51:12 58:21	<b>restock</b> 44:23 47:2,11,17	<b>Roy</b> 8:12	<b>saying</b> 15:20 22:1 26:10 26:12,19 55:14 71:6 71:24 92:9
<b>regularly</b> 43:5	<b>rephrase</b> 11:8 94:18	<b>resident</b> 68:3 69:3 73:24		<b>RPR</b> 3:24	<b>says</b> 60:2
	<b>report</b> 1:13 18:22 19:1 28:21,22 29:20	<b>respect</b> 47:1 66:18		<b>ruled</b> 53:21	
	<b>reported</b> 3:24 37:5 99:7	<b>respectively</b> 33:14		<b>Rulemaking</b> 1:5	
	<b>reporter</b> 6:6	<b>response</b> 35:8 38:4 44:19 45:20 69:21		<b>ruling</b> 79:2,6	
		<b>restock</b> 44:23 47:2,11,17		<b>runs</b> 95:2	
				<b>Ryan</b> 37:16	

<b>scale</b> 34:11	50:11	<b>shocking</b>	35:3 43:22	20:8 25:22	30:3,14,17
<b>scales</b> 61:9	<b>selectively</b>	36:13	70:1	26:3 28:12	30:24 31:10
<b>scaling</b> 69:17	22:24	<b>Shore</b> 26:8	<b>six-mile</b>	29:21 42:2	31:18 32:12
<b>scenario</b>	<b>sell</b> 94:6	46:17,20	34:11	42:4,9	32:15,22
92:16 93:6	<b>Senior</b> 2:5	54:22 55:14	<b>slightly</b> 35:23	51:24 53:17	67:10 96:2
<b>scenarios</b>	<b>sense</b> 9:22	55:18 58:8	<b>slows</b> 71:6	54:6 58:15	<b>speak</b> 6:4
94:20	94:24	58:12	<b>small</b> 18:8,9	59:23,23	47:12
<b>schedule</b> 5:6	<b>sentence</b>	<b>short</b> 62:17	23:14,18,20	76:21,23	<b>speaking</b> 6:5
44:22 50:6	96:20 97:12	<b>shorthand</b>	23:24 24:2	77:1 97:1	72:19 82:18
51:11 77:14	97:13	99:6,7,18	24:3,4,10	<b>sort</b> 25:3	<b>speaks</b> 37:8
<b>scheduled</b>	<b>sentences</b>	<b>short-term</b>	28:6 30:20	54:18 61:10	<b>special</b> 89:10
5:22 29:6	59:4	64:23 65:5	31:12 93:18	70:14	<b>species</b> 7:9
45:22	<b>separate</b> 58:5	<b>showed</b>	<b>SNR</b> 3:7 93:1	<b>sorts</b> 54:10	8:4,9,12
<b>Scientist</b> 2:4	58:6,11	63:23	<b>soft</b> 86:2	<b>sound</b> 67:15	22:9,12,19
2:5	<b>September</b>	<b>shown</b> 10:12	<b>solicit</b> 79:1	67:17 91:7	22:21 23:4
<b>scientists</b>	35:9,10	<b>shows</b> 33:19	<b>solution</b> 9:14	<b>source</b> 13:15	23:16 24:6
13:10	69:20	<b>shut</b> 82:14	<b>solutions</b>	13:18 15:14	24:23 25:17
<b>screen</b> 50:4	<b>septic</b> 59:5	91:3,19	93:8	16:22 20:6	25:19,23
<b>screens</b> 49:5	<b>series</b> 29:10	<b>side</b> 36:1,3,5	<b>some</b> 19:24	20:20,22	26:24 27:3
49:13 50:1	92:22	36:7,8,9,15	23:16 24:6	21:24 24:13	27:4,10
50:6	<b>serve</b> 4:3	48:23 94:22	25:3 27:3	44:1,12	28:16,17
<b>Scudder</b> 23:7	21:20	<b>Sierra</b> 2:21	28:16 31:5	70:11,20	31:5,8,13
<b>se</b> 91:20	<b>Service</b> 78:1	10:16	31:6,8 32:4	71:22 72:12	31:16 32:1
<b>search</b> 11:22	<b>session</b> 5:22	<b>signage</b>	35:17 36:3	<b>sources</b> 44:14	32:6,16
12:21	<b>set</b> 5:7 19:10	85:17	43:18 61:13	71:15	33:12,16,22
<b>season</b> 96:2	60:21 61:3	<b>significance</b>	62:6 68:13	<b>South</b> 3:8,20	34:7 35:15
<b>second</b> 4:22	69:14 84:10	19:8	68:16 70:11	<b>Southeast</b>	36:23 38:17
26:4 96:20	85:8 99:13	<b>significant</b>	70:14,20	3:15 25:9	38:23 39:1
<b>see</b> 18:17	<b>seven</b> 34:10	63:23	80:2 81:2	41:7	39:2 44:5
31:7 37:23	37:6 48:19	<b>significantly</b>	84:1 85:15	<b>southern</b>	44:20 47:10
39:7 54:11	73:20 95:6	64:8	87:24 89:15	40:21 42:7	47:18,20
60:10 61:15	<b>several</b> 17:15	<b>silver</b> 48:16	90:3,7,20	<b>space</b> 92:4	50:10 60:22
61:22 80:8	19:19 40:22	62:13	90:22 93:9	<b>sparking</b>	64:2,3,4,7,9
96:4 97:16	53:12 91:23	<b>similar</b> 35:11	<b>something</b>	83:21,21,22	67:3,13,19
98:20	<b>sewage</b> 62:12	35:11 66:22	23:7 24:1	85:4 92:2	67:21 70:8
<b>Seegert</b> 24:24	<b>sewer</b> 48:24	<b>since</b> 13:6	29:4 41:2	<b>spawn</b> 22:22	70:12,14,17
28:8 30:23	<b>shad</b> 64:5,12	19:21 34:8	51:16 53:6	25:5 27:5	96:21 97:22
31:3	<b>shallow</b> 32:8	46:11 55:22	55:4 56:1	31:9	<b>specific</b>
<b>Seegert's</b>	<b>shallower</b>	63:16 71:9	91:6	<b>spawners</b>	14:18,24
29:24 30:12	46:17	71:11,16,19	<b>somewhat</b>	31:4	66:9 71:18
<b>seeing</b> 7:2,14	<b>shallows</b> 31:7	73:16 74:14	73:13	<b>spawning</b>	74:5 79:11
34:1 69:9	<b>shiner</b> 8:7	78:10 79:20	<b>somewhere</b>	22:8,14,24	<b>specifically</b>
<b>seek</b> 65:7	<b>ship</b> 19:23	85:14 88:1	37:5 46:20	23:3,9,15	14:22 21:12
<b>seemed</b> 36:14	20:1 24:17	<b>sir</b> 88:3	48:6	23:21 24:3	22:23 27:18
<b>seems</b> 41:3	33:23 34:20	<b>situation</b>	<b>sonication</b>	24:5,17,22	65:4 85:8
72:5 87:12	36:9 43:21	23:10	67:19	25:10,15,24	<b>specifics</b>
<b>seen</b> 9:7 72:8	44:11 61:18	<b>situations</b>	<b>soon</b> 4:13	27:3,11,17	97:20
<b>seismic</b> 67:7	61:19 75:10	88:24	<b>sorry</b> 4:16	27:18 28:7	<b>spend</b> 40:3,9
<b>select</b> 86:14	93:17	<b>six</b> 19:19	13:22 16:14	28:8,14	<b>spent</b> 40:10
<b>selected</b>	<b>shock</b> 36:1,5	20:2,11	17:5 18:6	29:11,16	<b>splits</b> 65:13

<b>spot</b> 8:7	37:21 41:8	3:16,20	<b>suitable</b> 22:8	<b>sustainable</b>	68:11 72:14
<b>spread</b> 13:3	48:21 50:9	41:12,22,22	22:14 23:6	9:3 23:10	72:15,16
<b>spreadsheet</b>	75:9	<b>strengtheni...</b>	26:14 27:3	24:11 31:11	73:3 75:4
8:9	<b>stations</b>	73:3	29:16	<b>swim</b> 28:10	86:19,21
<b>spring</b> 50:4	19:17 38:18	<b>stress</b> 69:12	<b>Suite</b> 2:18	<b>sworn</b> 6:16	93:4
69:23	41:17 68:10	<b>stressed</b>	3:4,8,12,20	6:18 7:21	<b>talks</b> 69:6
<b>Springfield</b>	68:14	61:14 66:12	<b>suited</b> 67:16	77:9,16,23	<b>tanks</b> 95:23
2:14	<b>status</b> 74:13	<b>stressful</b>	<b>summer</b>	<b>system</b> 1:6	<b>Tanner</b> 2:6
<b>square</b> 89:24	<b>steel</b> 84:7	61:15 66:9	95:21	4:6 21:22	4:11
91:15	85:5 88:18	<b>stretch</b> 48:22	<b>sunfish</b> 32:6	26:11,13	<b>targeted</b> 65:2
<b>SS</b> 99:2	92:10 94:14	59:6	64:5,13	28:15,17	<b>targeting</b>
<b>staff</b> 4:21,24	<b>steering</b>	<b>strongly</b> 91:9	70:13	37:12 41:9	69:18
6:8	89:14	<b>structure</b>	<b>supplemen...</b>	41:17 42:22	<b>TARP</b> 51:9
<b>stagnant</b>	<b>stem</b> 57:22	50:24	57:3	44:9,13,15	51:18 59:1
48:23 55:1	57:23 58:6	<b>structures</b>	<b>support</b>	49:8 50:17	<b>TARPs</b> 58:21
55:8 57:4	58:8,13	50:21	23:15 24:5	57:5,14,20	<b>Task</b> 3:15
57:15,19	60:1	<b>studied</b> 18:15	44:3 91:9	57:24 58:2	25:9 41:7
58:2 59:5	<b>stenographic</b>	56:10 62:11	<b>suppose</b>	70:3 84:4	<b>technical</b>
93:15	99:11	<b>studies</b> 13:8	43:24	90:22	4:20
<b>stagnate</b> 57:4	<b>STEPHAN...</b>	18:4,8 87:9	<b>supposed</b>		<b>Technically</b>
58:9,13	2:13	<b>study</b> 10:21	50:22	<b>T</b>	49:5
<b>stagnation</b>	<b>steps</b> 91:14	11:18 15:13	<b>Supreme</b>	<b>table</b> 7:13	<b>technique</b>
50:15	94:17	15:19 22:24	53:17	<b>tag</b> 34:21	65:8
<b>stand</b> 90:20	<b>still</b> 30:15	29:1,22	<b>sure</b> 11:14	<b>tailwaters</b>	<b>techniques</b>
<b>standard</b>	45:12 66:12	40:15 93:23	12:1 15:10	65:12	38:11 65:3
92:21	81:23	<b>stuff</b> 94:6	16:24 17:9	<b>take</b> 5:20	65:21,23
<b>standards</b>	<b>stock</b> 47:19	<b>stupid</b> 58:15	18:20 24:15	12:9 40:5	66:6 68:22
1:4 4:4	47:23	<b>sub</b> 4:10,23	27:6,14,22	56:16 62:17	<b>technologies</b>
17:14	<b>stop</b> 54:24	78:23 79:5	30:8 31:10	64:17 68:2	66:14,18
<b>start</b> 20:9	56:22 63:18	79:8,13,16	31:14 33:6	69:3 75:2	<b>teleconfere...</b>
60:14 63:5	<b>stopped</b>	79:21,21,22	34:6 37:22	76:19 89:16	45:19 69:20
93:12	10:13 59:18	79:23 80:9	48:3 52:1,8	96:3,22	<b>telemetry</b>
<b>started</b> 72:3	<b>storage</b> 9:5	81:1,2,5,17	52:9 55:13	<b>taken</b> 1:16	34:20
<b>starts</b> 95:7	<b>storing</b> 9:15	81:21,24	58:22 61:20	19:14 30:15	<b>tell</b> 55:7
<b>startup</b> 88:15	<b>stormwater</b>	<b>subcommit...</b>	80:6 81:6	91:2 99:11	<b>temperature</b>
<b>state</b> 1:17 6:3	48:24	85:15	81:19 84:14	<b>takes</b> 25:10	95:24
13:9 17:12	<b>straight</b>	<b>subject</b> 79:5	87:8,11	<b>taking</b> 32:2	<b>ten</b> 8:12
22:6 29:14	36:17	<b>submit</b> 81:23	97:11	68:1 88:11	33:13 60:19
43:10,13	<b>strategies</b>	<b>submitted</b>	<b>survey</b> 63:23	90:20	64:2,21
48:20 60:19	14:5,15	32:21	64:1 69:6	<b>talk</b> 11:9	<b>terms</b> 25:2,2
67:24 97:19	64:23	<b>Subpart</b> 49:9	<b>survivability</b>	29:4 53:4	28:19 31:17
97:21 99:1	<b>strategy</b> 13:3	<b>successful</b>	96:7	82:23	32:17 39:5
99:6	15:13 34:23	31:10 67:12	<b>survivors</b>	<b>talked</b> 19:7	40:15 47:17
<b>statement</b>	65:5	74:7	66:11	23:8 65:18	50:18 88:23
14:7 30:6,7	<b>stream</b> 18:7	<b>suckers</b>	<b>Susan</b> 3:19	66:23 95:14	<b>Terri</b> 76:15
<b>statements</b>	18:13,16	70:13	17:5 63:1	<b>talking</b> 26:17	76:20
30:2	<b>streams</b>	<b>suggested</b>	<b>susceptible</b>	26:24 31:3	<b>territory</b>
<b>states</b> 74:12	17:22 18:4	13:2 14:4	65:20	31:4 40:13	80:2
<b>station</b> 36:2,4	18:6,8,10	<b>suggesting</b>	<b>suspended</b>	53:1,17,18	<b>Tesher</b> 3:7
36:10 37:16	<b>Street</b> 1:18	45:1 71:2	19:15	54:9 55:17	92:24,24

<b>testified</b> 7:21 24:24 25:1 32:11 77:23	40:12 42:23 48:17 55:11 56:17 59:2	55:9,9,24 58:10,18 59:21 60:11	<b>throughout</b> 19:17 26:13 38:18 39:11	74:15 76:16 77:14 78:5 79:6,10	<b>transcribed</b> 99:12
<b>testify</b> 33:9	60:3,15	60:18 62:4	43:13,20	80:5 87:12	<b>transcript</b> 48:7 99:10
<b>testifying</b> 45:4	62:16 72:13 73:18 76:4	63:19 65:13 68:9 69:10	57:12,14	<b>together</b> 85:17,18	<b>transfer</b> 95:17 96:15
<b>testimony</b> 5:3 5:13,15	76:6 77:14 78:10 82:1	69:17 71:10 71:20 73:12	<b>throw</b> 86:2	91:22 92:14	<b>transit</b> 84:14 90:10,12
6:20,22 7:1	97:18 98:5	73:17 74:2	<b>time</b> 6:4 10:4 28:23 33:4	<b>told</b> 4:17	<b>transiting</b> 83:4 85:12
8:5,19 16:6	98:8,10,19	74:4,7 75:6	38:17,24	<b>tolerant</b> 23:4 25:23 31:5	85:19 90:5
21:18 22:6	98:21	75:17 83:12	43:14,14,19	31:8,13,16	<b>trawling</b> 40:22 68:21
22:11 23:8	<b>Thanks</b> 55:8	94:17 95:20	44:10 45:12	32:1,6,16	<b>treatment</b> 9:19,19
23:20 24:20	98:12	95:22 98:7	46:4 55:8	32:17,19	33:15 38:13
25:19 28:21	<b>their</b> 24:21	<b>thinking</b> 51:11 58:23	58:23 61:3	70:11	38:14 41:1
29:13,14,24	24:23 34:22	51:11 58:23	64:17 68:18	<b>tolerate</b> 70:8	62:12
30:13 32:22	39:2 46:3,4	<b>thinning</b> 67:2	74:21 78:17	<b>toll</b> 68:2 69:3	<b>treatments</b> 37:11
33:14 35:22	47:3 61:10	<b>Thomas</b> 2:7	79:1 81:23	<b>tomorrow</b> 5:17	46:13
37:2 43:23	63:19 66:15	4:19	84:13,19	5:17	<b>triggered</b> 46:10
48:6,20	78:9 84:2	<b>THORNB...</b>	85:14	<b>tool</b> 48:13 65:8	<b>triggers</b> 46:2 94:10
53:4,13	86:7 89:11	2:16	<b>times</b> 19:19 19:20	<b>top</b> 26:8 33:22 56:11	<b>trucks</b> 93:19
54:14,16	94:23	<b>though</b> 44:11 57:14	<b>timing</b> 4:15 95:7	<b>total</b> 30:20 36:1	<b>true</b> 71:18
60:2,9 63:6	<b>themselves</b> 84:18	<b>thought</b> 33:19 90:4	<b>Tipsord</b> 1:15 2:3 4:1,2,17	<b>touch</b> 92:14	73:20 81:3
63:22 64:22	<b>thing</b> 14:3 26:8,9	<b>three</b> 19:20 22:5 29:14	6:14,19,24	<b>Touhy</b> 3:12	92:19 99:9
66:14 67:6	61:11 87:13	33:12,16	7:12,17	<b>tow</b> 89:16 92:8	<b>try</b> 41:2 65:16 67:15
67:24 69:6	91:21	34:6,10,14	15:6,9 16:4	<b>towards</b> 38:15	85:18 86:1
70:2 71:5	<b>things</b> 54:10	46:10 61:8	16:10 17:4	<b>towboat</b> 88:17,18	86:4 91:19
72:19 74:13	<b>think</b> 5:18 7:24 9:2	64:2,4,9	25:6 33:21	<b>tows</b> 84:15	<b>trying</b> 4:14 13:11 22:24
74:14 76:15	11:2,15,16	66:13	41:4 42:2,5	<b>toxic</b> 8:21,22 9:6,8,9	25:21 45:6
76:17,17	13:13 14:2	<b>thrive</b> 93:7	48:4,17	10:21	47:11 53:5
77:11 78:10	14:3 18:17	<b>through</b> 5:13 15:14 17:15	62:1,17,22	<b>toxicant</b> 66:8 65:2,20	54:11 61:11
78:14,19,23	18:18 19:4	17:20 20:13	74:23 76:5	66:5	61:16 71:17
79:7,22	20:12,20	21:22 33:24	76:10,14,21	<b>traditional</b> 46:15	74:5
80:9,12,13	23:12 24:2	34:9 36:22	76:23 77:4	<b>traffic</b> 4:13 93:24 94:9	<b>Tuesday</b> 1:19
80:14,24	24:16 29:7	38:3 49:20	77:6,17	94:9	<b>tunnels</b> 50:1
81:8,16	32:3,10,15	50:3 53:13	78:9,14	<b>trammel</b> 60:21 61:3	<b>turn</b> 5:24 8:18 44:4
87:1,5	32:19 33:6	59:7 60:24	79:12,16,20	61:4,7	<b>turned</b> 36:7 36:12 89:23
96:21 97:8	34:7,9,12	65:17 71:13	80:18,23		90:6
97:13	34:15,24	72:21 73:15	81:13,19		<b>turning</b>
<b>testing</b> 82:12	35:3 36:18	75:18,20,21	82:2,5		
82:24 83:1	36:19,20,23	75:22 82:14	83:12,16		
83:3,18	37:4,9 38:8	84:24 85:13	87:7,23		
84:1,6,20	38:12,19,21	85:21,24	88:4,9 89:2		
89:4 90:1,8	38:23 39:4	89:3,7,8,13	95:12 96:17		
91:18 96:7	39:16 43:11	90:9,18	97:4,7 98:6		
<b>thank</b> 6:14	44:8,8,10	91:13 94:1	98:8,15,19		
8:14 12:16	45:10 46:9	94:3,5	<b>today</b> 4:10,22 4:24 5:2,8		
12:24 17:2	47:17 48:5		5:19 21:18		
18:2 20:7					
21:9 28:4					
33:8 37:9					

90:17 <b>turnovers</b> 92:23 <b>two</b> 13:2 39:5 64:21 66:21 88:15,24 90:11 92:13 94:17,20,20 97:7,12 <b>type</b> 89:10 90:22 <b>types</b> 91:2 <b>typical</b> 70:17 <b>T-e-r-r-i</b> 77:2	72:7 89:10 <b>unlikely</b> 74:8 <b>unprecede...</b> 67:24 68:6 69:2 <b>unquote</b> 22:9 <b>unreasona...</b> 41:3 <b>untangled</b> 61:11 <b>until</b> 5:17,24 12:11 36:15 76:13 81:22 90:7 <b>upgrading</b> 73:3 <b>upper</b> 12:11 16:22,24 30:14,21 63:9 76:1 <b>upstream</b> 63:17 70:18 <b>use</b> 10:22 18:19 23:24 46:18 48:13 50:17 57:18 65:2 66:4,5 66:7 80:7 81:7 <b>used</b> 18:17 18:18 23:22 35:24 40:19 40:19 59:22 66:19 87:17 <b>uses</b> 65:6 83:10 <b>USGS</b> 69:5 <b>using</b> 10:21 17:17 26:7 35:18 38:10 40:23 45:23 46:12 48:9 48:11 50:2 65:8 67:19 <b>usually</b> 71:21 <b>U.S</b> 34:18 69:5 82:12 82:19	<b>variability</b> 35:17 <b>variation</b> 64:15 <b>various</b> 17:18 47:18 56:18 67:16 <b>vary</b> 92:8 <b>version</b> 7:10 <b>versus</b> 39:8 94:19 <b>very</b> 22:7,12 29:15 35:12 40:7 46:23 67:17 82:10 97:13 98:9 <b>vessel</b> 86:5 89:15 <b>vessels</b> 85:19 90:9,10 <b>via</b> 93:18 <b>viability</b> 67:10 <b>viable</b> 9:3,10 47:8 <b>visible</b> 52:12 54:21 59:24 <b>vis-à-vis</b> 72:9 <b>voice</b> 15:6 <b>void</b> 96:12 <b>volatile</b> 82:21 <b>volt</b> 91:15 <b>voltage</b> 89:20 90:3,6 <b>volts</b> 89:23 91:15 <b>volume</b> 49:19 <b>voluminous</b> 6:23	<b>want</b> 8:13 11:8 16:19 26:6 28:18 30:11 32:16 44:24 55:13 79:17 81:6 81:19,20 98:19 <b>wanted</b> 26:18 26:19 77:13 <b>warm</b> 65:10 69:18,19 <b>Wasik</b> 5:8 6:16 7:2,19 7:24 15:6 17:3 19:7 42:2 48:4 56:24 63:5 76:6 <b>Wasik's</b> 28:21 <b>wasn't</b> 9:2,3 9:10 11:14 11:23 12:5 29:2,22 39:22 51:24 <b>wastewater</b> 38:12 41:1 <b>water</b> 1:4,6 2:19 4:4 5:9 19:10,13,16 38:13 43:4 48:9,11 49:1,6,8,11 49:16,19 50:2 52:11 54:19 55:2 55:19,23 56:10 60:4 62:10 65:11 65:11 69:18 69:19 87:10 93:14,15,15 95:18,22,24 96:3,4,23 97:23 <b>waters</b> 18:5 52:13 62:14 73:22 <b>waterway</b>	1:6 4:5 5:14 9:5,16 13:19 19:11 19:14,19 20:1,4 22:20 37:4 48:12 55:1 66:2 78:2 81:3 84:4 92:4 93:18 <b>waterways</b> 76:11 93:3 93:8,11 <b>wave</b> 67:15 <b>waves</b> 67:7 67:17 91:7 <b>way</b> 21:20 31:6 36:6 79:8 86:20 89:13 90:20 93:5 <b>ways</b> 49:1 <b>weather</b> 35:19 84:7 <b>weave</b> 7:10 <b>week</b> 68:13 68:15 90:10 95:3,4,6 <b>weekly</b> 40:24 <b>weeks</b> 90:11 <b>welcome</b> 6:12 98:11 <b>well</b> 9:13 10:2,7 12:2 13:7 15:2 15:18 17:12 18:12 23:19 27:4 28:14 29:10,12,19 30:9 31:2 31:15,19 39:21,24 42:15 44:8 46:4 47:22 49:13 55:6 56:3,5,9 60:6,24 65:6 66:10 67:2,14 68:7 69:5	69:10 70:7 71:4,18 72:10 73:10 79:12 81:2 85:15 87:7 94:11 95:20 <b>went</b> 34:19 88:2 <b>Wentworth</b> 42:1 <b>were</b> 4:17 10:11,23 11:18 16:2 16:14 17:8 17:11 18:19 26:17,19 33:4,4,5,7 33:12 34:21 34:24 35:2 35:15 36:2 36:3,13,14 53:12 54:6 54:14 55:15 59:13 60:21 61:6,9,12 61:13 64:2 64:3,4,10 64:10,13,13 66:20 67:20 72:19 75:4 77:15,23 87:8,24 88:1 89:2,6 89:19 93:16 93:22 98:13 <b>west</b> 2:22 3:16 36:5,7 36:8,9,18 <b>we'll</b> 4:23 5:10,20 7:13,17 19:4 29:4 40:15 59:19 62:18 77:9 77:11 79:10 80:11 98:20 <b>we're</b> 5:18 28:24 29:17 40:13 54:24 62:22 68:11
<b>U</b> U 18:23 UAA 73:22 <b>Uh-huh</b> 75:24 <b>ultimate</b> 94:11 <b>unable</b> 76:15 <b>uncertain</b> 46:23 <b>under</b> 8:6 25:3 82:19 86:13 99:12 <b>understand</b> 47:9 55:9 55:10,13 72:18 76:15 80:6 81:6 82:10 84:6 <b>understan...</b> 12:8,18 16:21 18:3 50:12 53:14 58:1 <b>understood</b> 29:21 <b>Unfortunat...</b> 15:1 <b>unimpeded</b> 49:21 <b>unit</b> 91:23 92:1 <b>universities</b> 17:15 <b>unless</b> 71:12	<b>unquote</b> 22:9 <b>unreasona...</b> 41:3 <b>untangled</b> 61:11 <b>until</b> 5:17,24 12:11 36:15 76:13 81:22 90:7 <b>upgrading</b> 73:3 <b>upper</b> 12:11 16:22,24 30:14,21 63:9 76:1 <b>upstream</b> 63:17 70:18 <b>use</b> 10:22 18:19 23:24 46:18 48:13 50:17 57:18 65:2 66:4,5 66:7 80:7 81:7 <b>used</b> 18:17 18:18 23:22 35:24 40:19 40:19 59:22 66:19 87:17 <b>uses</b> 65:6 83:10 <b>USGS</b> 69:5 <b>using</b> 10:21 17:17 26:7 35:18 38:10 40:23 45:23 46:12 48:9 48:11 50:2 65:8 67:19 <b>usually</b> 71:21 <b>U.S</b> 34:18 69:5 82:12 82:19	<b>variability</b> 35:17 <b>variation</b> 64:15 <b>various</b> 17:18 47:18 56:18 67:16 <b>vary</b> 92:8 <b>version</b> 7:10 <b>versus</b> 39:8 94:19 <b>very</b> 22:7,12 29:15 35:12 40:7 46:23 67:17 82:10 97:13 98:9 <b>vessel</b> 86:5 89:15 <b>vessels</b> 85:19 90:9,10 <b>via</b> 93:18 <b>viability</b> 67:10 <b>viable</b> 9:3,10 47:8 <b>visible</b> 52:12 54:21 59:24 <b>vis-à-vis</b> 72:9 <b>voice</b> 15:6 <b>void</b> 96:12 <b>volatile</b> 82:21 <b>volt</b> 91:15 <b>voltage</b> 89:20 90:3,6 <b>volts</b> 89:23 91:15 <b>volume</b> 49:19 <b>voluminous</b> 6:23	<b>want</b> 8:13 11:8 16:19 26:6 28:18 30:11 32:16 44:24 55:13 79:17 81:6 81:19,20 98:19 <b>wanted</b> 26:18 26:19 77:13 <b>warm</b> 65:10 69:18,19 <b>Wasik</b> 5:8 6:16 7:2,19 7:24 15:6 17:3 19:7 42:2 48:4 56:24 63:5 76:6 <b>Wasik's</b> 28:21 <b>wasn't</b> 9:2,3 9:10 11:14 11:23 12:5 29:2,22 39:22 51:24 <b>wastewater</b> 38:12 41:1 <b>water</b> 1:4,6 2:19 4:4 5:9 19:10,13,16 38:13 43:4 48:9,11 49:1,6,8,11 49:16,19 50:2 52:11 54:19 55:2 55:19,23 56:10 60:4 62:10 65:11 65:11 69:18 69:19 87:10 93:14,15,15 95:18,22,24 96:3,4,23 97:23 <b>waters</b> 18:5 52:13 62:14 73:22 <b>waterway</b>	1:6 4:5 5:14 9:5,16 13:19 19:11 19:14,19 20:1,4 22:20 37:4 48:12 55:1 66:2 78:2 81:3 84:4 92:4 93:18 <b>waterways</b> 76:11 93:3 93:8,11 <b>wave</b> 67:15 <b>waves</b> 67:7 67:17 91:7 <b>way</b> 21:20 31:6 36:6 79:8 86:20 89:13 90:20 93:5 <b>ways</b> 49:1 <b>weather</b> 35:19 84:7 <b>weave</b> 7:10 <b>week</b> 68:13 68:15 90:10 95:3,4,6 <b>weekly</b> 40:24 <b>weeks</b> 90:11 <b>welcome</b> 6:12 98:11 <b>well</b> 9:13 10:2,7 12:2 13:7 15:2 15:18 17:12 18:12 23:19 27:4 28:14 29:10,12,19 30:9 31:2 31:15,19 39:21,24 42:15 44:8 46:4 47:22 49:13 55:6 56:3,5,9 60:6,24 65:6 66:10 67:2,14 68:7 69:5	69:10 70:7 71:4,18 72:10 73:10 79:12 81:2 85:15 87:7 94:11 95:20 <b>went</b> 34:19 88:2 <b>Wentworth</b> 42:1 <b>were</b> 4:17 10:11,23 11:18 16:2 16:14 17:8 17:11 18:19 26:17,19 33:4,4,5,7 33:12 34:21 34:24 35:2 35:15 36:2 36:3,13,14 53:12 54:6 54:14 55:15 59:13 60:21 61:6,9,12 61:13 64:2 64:3,4,10 64:10,13,13 66:20 67:20 72:19 75:4 77:15,23 87:8,24 88:1 89:2,6 89:19 93:16 93:22 98:13 <b>west</b> 2:22 3:16 36:5,7 36:8,9,18 <b>we'll</b> 4:23 5:10,20 7:13,17 19:4 29:4 40:15 59:19 62:18 77:9 77:11 79:10 80:11 98:20 <b>we're</b> 5:18 28:24 29:17 40:13 54:24 62:22 68:11
<b>V</b>	<b>V</b>	<b>W</b> W 99:3 <b>Wacker</b> 2:17 3:4,8 <b>wait</b> 5:24 6:1 13:21 58:10 58:10,10 <b>wall</b> 89:17,18 <b>walleye</b> 70:15	<b>W</b> W 99:3 <b>Wacker</b> 2:17 3:4,8 <b>wait</b> 5:24 6:1 13:21 58:10 58:10,10 <b>wall</b> 89:17,18 <b>walleye</b> 70:15	<b>W</b> W 99:3 <b>Wacker</b> 2:17 3:4,8 <b>wait</b> 5:24 6:1 13:21 58:10 58:10,10 <b>wall</b> 89:17,18 <b>walleye</b> 70:15	<b>W</b> W 99:3 <b>Wacker</b> 2:17 3:4,8 <b>wait</b> 5:24 6:1 13:21 58:10 58:10,10 <b>wall</b> 89:17,18 <b>walleye</b> 70:15

72:15,16	60:17 61:24	43:11 45:11	55:4 58:1	1.5 59:6	89:2
73:2 86:19	78:13,16	47:4,13,16	58:13 73:4	1.9 94:2	2004 35:22
86:21 87:11	79:15,17	48:1,8 51:9	79:17,24	10 3:20	36:19 88:14
90:8,17	80:19,20	51:22,23	<b>written</b> 48:6	10:18 62:21	88:23 89:3
91:17 98:21	83:5,9,14	52:5,8,14	<b>wrong</b> 40:14	10:33 62:21	2005 34:9
<b>we've</b> 19:22	96:18 97:5	52:16,18,24	<b>wrote</b> 76:24	10:51 76:13	35:23 36:2
20:14 30:19	97:11,18,24	53:8,16,22	<b>WRP</b> 48:23	10:53 76:13	36:15,21
37:10 38:23	98:2,5,7	54:5,6,17		1021 2:13	60:24
38:24 60:18	<b>Wilmette</b>	54:24 55:20	<b>Y</b>	11 7:9 8:12	2007 33:13
62:5 72:8	48:21,22	55:24 56:8	<b>yeah</b> 11:10	8:19 34:9	64:3
87:4 91:1	49:21 50:2	56:12,14,20	21:2 26:5	62:9 66:13	2008 33:13
93:3	50:8,19	58:17 59:11	27:20 58:14	67:5	64:3 89:21
<b>whatsoever</b>	51:1 52:19	59:15 60:6	66:22 67:4	11:17 98:18	2009 7:9 8:6
79:8	52:20 55:17	60:9,16	71:11 75:16	11:21 98:18	19:20 33:12
<b>WHEREOF</b>	57:7,9,18	71:1,5,10	87:21	11:22 98:22	33:15 34:9
99:13	<b>winter</b> 69:17	71:17 72:11	<b>year</b> 8:16	110 3:12	37:20 63:7
<b>while</b> 39:13	69:19	72:24 73:4	19:20,20	12 88:19	82:11
45:12 63:18	<b>wire</b> 88:17	73:9,17	33:4 34:7	130th 41:21	2010 1:19
67:14	92:18	75:6,14,18	35:17,18	41:22	15:5 33:10
<b>whole</b> 26:7	<b>wired</b> 91:22	75:21,24	40:3 74:21	1300 3:4	33:17,24
28:19 47:18	91:23	76:3,8	93:19 98:21	136 50:23	34:10 36:22
57:19 71:13	<b>wires</b> 92:22	99:13	<b>years</b> 13:9	57:2,19	36:24 37:14
<b>Wiesch</b> 1:16	<b>wiring</b> 92:11	<b>witnesses</b>	36:15 41:23	14 22:5 33:9	37:20 63:22
3:24 99:5	<b>witness</b> 6:17	77:15,22	56:16 61:8	63:6,21	64:1 99:15
<b>Wilkins</b>	7:20 11:1,7	79:4,10	64:14,18	67:23	2011 50:5
77:21 78:7	11:10,14,20	80:21 98:13	73:6 88:15	1400 3:12	69:24 96:1
78:7 80:14	11:22 12:1	<b>Wonderful</b>	<b>yesterday</b> 7:7	15 43:23	2015 50:22
81:12 82:17	12:4,13,15	78:10	21:18 25:1	48:19 60:19	205 3:16
82:18 83:3	12:17,20	<b>wondering</b>	28:7,23	70:1	217 2:15
83:18 84:12	14:22 15:8	86:19	38:8 65:18	16 59:4	23 33:10
85:1 87:21	15:11,16,19	<b>word</b> 23:22	82:8 87:8	160 1:18	23rd 35:10
88:3,5	15:23 16:9	23:24 59:21	87:11	17,000 94:1	99:14
91:12 92:6	16:13,24	<b>work</b> 6:13	<b>young-of-t...</b>	170th 42:1	233 3:8
92:19,21	17:12 18:6	14:3 21:13	24:21 32:20	19276 2:14	24 60:21
94:17 98:10	18:9,12,16	35:8 45:20			24/7 95:6
<b>Williams</b>	19:12 20:10	69:22 85:24	<b>Z</b>	<b>2</b>	251-5250
2:12 7:23	21:2,5,8,12	93:3 95:3	<b>Zalewski</b> 2:8	2-A 45:24	3:21
13:1,21,23	25:12,16,20	<b>worked</b>	4:12	89:22	
14:1,9,11	26:2,12,17	17:14 88:12	<b>zone</b> 8:23 9:8	2-B 45:24	<b>3</b>
15:2,5	26:23 27:4	91:13	9:9,21	2.8 37:14	30s 12:12
16:16,18	27:13,17,21	<b>working</b> 84:2	37:18 63:10	20s 12:12	30th 35:9
20:15 21:15	28:3,12,23	91:18 95:14	75:8 88:6	2001 33:24	69:20 81:23
22:3,4 26:4	31:2,17,24	<b>works</b> 59:8	<b>zones</b> 8:21	35:15,22	301 1:9 4:7
26:21 29:7	32:4 34:5	<b>worse</b> 93:7	10:22	36:19	302 1:10 4:7
29:12,20	39:16,21,24	<b>worth</b> 74:16		2002 71:9,11	303 1:10 4:7
32:13 35:4	40:2,6,18	<b>wouldn't</b> 9:7	<b>1</b>	71:16,19	304 1:10 4:8
43:7,16	41:10,13,18	10:6,7	1 71:10 73:11	72:3,8	305 50:23
45:3,7,15	41:20 42:4	21:23 24:18	88:17	73:16 88:1	312 2:19 3:5
48:18 51:4	42:6,11,14	39:18 40:1	1-A 63:21	88:23 89:2	3:9,17,21
56:23 58:14	42:18 43:3	47:7 50:19	1-B 64:16	2003 60:24	35 1:9 3:4 4:7

<p><b>357-1313</b> 2:19 <b>3600</b> 3:20 <b>365</b> 95:6 <b>37</b> 15:12</p> <hr/> <p><b>4</b></p> <p><b>4.5</b> 48:22 <b>400</b> 36:1 <b>431</b> 7:2,3,5 <b>432</b> 7:14,14 7:16 8:2 <b>433</b> 34:1,2,4 <b>434</b> 78:15 80:12,16 <b>435</b> 80:13,16 <b>436</b> 80:14,16 <b>4400</b> 2:18 <b>45</b> 6:13 <b>45th</b> 4:24</p>	<hr/> <p><b>8</b></p> <p><b>8th</b> 74:15 <b>80s</b> 10:9,11 <b>80,000</b> 93:19 <b>800</b> 36:2,5,17 <b>818-4825</b> 2:23 <b>83</b> 42:20 <b>84-4528</b> 99:20 <b>847</b> 3:13 <b>876-2380</b> 3:9</p>				
<hr/> <p><b>5</b></p> <p><b>5-C</b> 69:13 <b>53</b> 2:22 <b>544-5995</b> 3:13 <b>59</b> 19:17</p>	<hr/> <p><b>9</b></p> <p><b>9th</b> 1:19 <b>9:00</b> 1:20 <b>90</b> 79:2 <b>95</b> 79:3</p>				
<hr/> <p><b>6</b></p> <p><b>60018</b> 3:13 <b>60601</b> 3:5 <b>60603</b> 3:21 <b>60604</b> 2:23 <b>60606</b> 3:9,17 <b>60606-2833</b> 2:18 <b>62794-9276</b> 2:14</p>					
<hr/> <p><b>7</b></p> <p><b>726-2938</b> 3:17 <b>75</b> 93:19 95:23 <b>773</b> 2:23 <b>7800</b> 3:8 <b>782-5544</b> 2:15 <b>795-3707</b> 3:5</p>					