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1 Public Hearing  
2 STATE WATER RESOURCES CONTROL BOARD  
3 DIVISION OF WATER RIGHTS  
4 STATE OF CALIFORNIA

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8 Subject: Amendment of City of Los Angeles'  
9 Water Rights Licenses for Division of Water  
10 from Streams that are Tributary to Mono Lake

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13 Held in  
14 Resources Building  
15 Sacramento, California

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18  
19 Wednesday, October 20, 1993

20 9:00 a.m.

21 VOLUME III

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1 WEDNESDAY, OCTOBER 20, 1992, 9:00 A.M.

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3 MR. DEL PIERO: Good morning, ladies and gentlemen. My  
4 name is Marc Del Piero. I am Vice-Chair of the State Water  
5 Resources Control Board, and this is the time and place for  
6 the hearing regarding the Amendment of the City of Los  
7 Angeles' Water Rights Licenses for the Diversion of Streams  
8 that are tributary to Mono Lake.

9 This hearing is being held in accordance with the Notice  
10 of Hearing dated June 20, 1993, and Supplemental Notice dated  
11 September 2, 1993.

12 I am going to be reading a prepared statement for the  
13 record in order to ensure that I have the opportunity to  
14 address all the issues that I want to address prior to the  
15 beginning of the evidentiary phase of this hearing. However,  
16 I would like to point out today that although I am acting in  
17 the capacity of the hearing officer for the State Water  
18 Resources Control Board, all five members of the Board are  
19 present.

20 To my immediate left is the Chairman of the State Water  
21 Resources Control Board, Mr. John Caffrey. To his left is my  
22 good friend and a partner in most of the water rights hearings  
23 in the last several months, Mr. Jim Stubchaer. Mr. John Brown  
24 is to his immediate left, and Ms. Mary Jane Forster is to his  
25 immediate left. Additionally today, I am going to be

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1 assisted, and will be for the balance of the hearing by a  
2 number of staff individuals from the State Water Resources  
3 Control Board. Our two staff engineers are Richard Satkowski  
4 and Mr. Hugh Smith. Additionally assisting me will be our  
5 staff environmental specialists, Steve Herrera, and my good  
6 friend, Jim Canady; and then, finally, the individual who is  
7 serving in the capacity as staff counsel for this hearing and  
8 someone who has provided the Board with a tremendous amount of  
9 assistance, Mr. Dan Frink. And I would also like to introduce  
10 an individual without whom this hearing would not be conducted  
11 in any way, shape, or form, Alice Book, our court reporter.

12 And just so everyone knows up front, I will say in terms  
13 of presentation of evidence, presentation of testimony, and  
14 identification of witnesses, as well as identification of  
15 counsel, if you talk too fast, and Ms. Book can't get it down,  
16 it wasn't said.

17 The hearing today is the third day of hearings that this  
18 Board has held on water diversions in the Mono Basin. The  
19 Board has already had two days of hearings for receipt of non-  
20 evidentiary policy statements in Los Angeles and Mammoth  
21 Lakes. The October 22 hearing session in this building also  
22 has been set aside expressly for the purpose of receiving non-

23 evidentiary policy statements.

24 Today marks the start of the evidentiary hearing process  
25 in which this Board will receive evidence to assist it in

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1 developing amendments to the water rights licenses 10191 and  
2 10192, by the City of Los Angeles. The water rights licenses  
3 authorized the diversion of water from Rush Creek, Lee Vining  
4 Creek, Parker Creek, and Walker Creek for municipal use and  
5 for power generation. In accordance with the decisions of the  
6 California Court of Appeal, the water right licenses were  
7 amended in 1990 to require the City of Los Angeles to release  
8 sufficient water to reestablish and maintain the fisheries  
9 that existed in the streams prior to the diversion of water by  
10 the City of Los Angeles.

11 One purpose for this hearing is to receive evidence to  
12 enable the State Board to further amend the licenses to  
13 establish specific flow requirements needed for the  
14 reestablishment and maintenance of fisheries.

15 The Board's actions in this matter will also be governed  
16 by the 1983 decision of the California Supreme Court in the  
17 National Audubon Society case. That decision. requires the  
18 Board to consider the effects of water diversions on the  
19 public trust resources of the Mono Basin and to protect those  
20 resources where feasible.

21 This task involves the difficult job of balancing the  
22 public interest served by the City of Los Angeles water  
23 diversions against the effects which those diversions have on  
24 public trust resources in the Mono Basin.

25 In accordance with the procedures specified in the June

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1 80th hearing Notice, the parties intending to participate in  
2 the evidentiary hearings were required to submit a Notice of  
3 Intent to Appear by August 23 of 1993. Parties were also  
4 required to submit proposed written testimony and exhibits by  
5 September 22.

6 The parties who desired to submit written opening  
7 statements were directed to do so by October 6th. The oral  
8 presentations of the parties' cases in chief may consist of a  
9 brief oral opening statement and an opportunity for each  
10 witness to briefly summarize their written testimony prior to  
11 becoming available for cross-examination.

12 As explained in the hearing Notice, the Board asks the  
13 witnesses to keep their oral summaries of testimony to 20  
14 minutes or less and the parties to keep their total  
15 presentation of the witnesses' oral testimony on direct  
16 examination to two hours or less. Extension of these time  
17 limits will be granted upon a showing of good cause.

18 Now, let me reemphasize for everyone's benefit, this day  
19 invariably is the most difficult for Miss Book in terms of  
20 making sure that the spellings of names are correct and the  
21 record is complete. I would ask the indulgence of all of the  
22 varies parties when identifying themselves on behalf of their  
23 parties to spell their name and to do it slowly and distinctly  
24 so we have a good record and we aren't having to clean up  
25 after the fact.

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1 In the October 15 letter that was distributed to the  
2 parties, we suggested an order of presentation. We anticipate  
3 the presentations would be made in the following order.

4 The State Water Resources Control Board staff.  
5 The City of Los Angeles and the City of Los Angeles  
6 Department of Water and Power.

7 Thirdly, the Department of Fish and Game.  
8 Fourth, the Audubon Society and the Mono Lake Committee.

9 Fifth, California Trout, Inc.

10 Sixth, California State Lands Commission.

11 Seventh, U. S. Forest Service.

12 Eighth, U. S. Fish and Wildlife Service.

13 Ninth, Haselton Associates and Arcularius Ranch.

14 Tenth, Sierra Club.

15 Eleventh, Metropolitan Water District of Southern

16 California.

17 Twelfth, Regional Water Quality Control Board for the

18 Lahontan Region.

19 Thirteenth, U. S. Environmental Protection Agency.

20 Fourteenth, The California Air Resources Board.  
 21 Fifteenth, the Great Basin Air Pollution Control  
 22 District.  
 23 I want to mention that we had intended originally to  
 24 hear the Department of Fish and Game immediately after the  
 25 introductory staff presentation. At the request, however, of  
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1 the Department of Fish and Game and the City of Los Angeles,  
 2 we, instead, will hear the City's presentation directly after  
 3 the staff presentation.

4 The witnesses presented by each party will be subject to  
 5 cross-examination by other participating parties, Board staff,  
 6 and finally, by Board members and me.

7 If anyone has a scheduling conflict with the proposed  
 8 order of presentations, we will try to accommodate you the  
 9 very best we can. I believe it is most efficient, without  
 10 hearing anything else, for us to proceed in the fashion which  
 11 I have just outlined.

12 Prior to proceeding with the presentation of evidence, we  
 13 would like to hear brief opening statements and identification  
 14 of representatives from the parties in the order that I  
 15 mentioned previously. I request that your opening statements  
 16 be kept to approximately five minutes or less. Are there any  
 17 questions on the part of any parties in terms of what I have  
 18 outlined this morning?

19 MR. DODGE: My name is Bruce Dodge, representing the  
 20 National Audubon Society and the Mono Lake Committee. I have  
 21 a question as to when you want to hear about scheduling. You  
 22 mentioned the accommodations of witnesses. Do you want to  
 23 hear about witness problems now or later?

24 MR. DEL PIERO: Actually, what I would like to do at this  
 25 point is allow for the opening statements and administration  
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1 of the oath. and then if you have problems in terms of  
 2 witnesses, we will take that up before any evidence is  
 3 presented. Any other questions?

4 MR. STEVENS: My name is Dan Stevens, Assistant Attorney  
 5 General representing the Lands Commission and the Department  
 6 of Parks and Recreation. The October 15 letter did not refer  
 7 to the Department of Parks and Recreation, and your statement  
 8 just made did not refer to them either, but I assume that that  
 9 was for the purpose of economy and that we will continue to  
 10 represent and present evidence on behalf of both those  
 11 agencies together.

12 MR. DEL PIERO: It is my understanding that is correct.  
 13 Any other questions? Okay.

14 Then, we will begin with the opening statement. Let me  
 15 point out before we begin that, some of the parties that  
 16 intend to present evidence during the course of this  
 17 evidentiary hearing indicated they will not be here for the  
 18 opening today. That, however, does not imply, nor does it  
 19 indicate, that they do not intend to present evidence during  
 20 the course of this hearing, but were simply unavailable for  
 21 opening statements.

22 I would ask the staff to save any opening comments that  
 23 they might have until the opening statements of the parties  
 24 are completed, and with that, hearing no other questions, we  
 25 will begin with opening statements.  
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1 The first party I would like to call is the City of Los  
 2 Angeles. Good morning, sir.

3 MR. BIRMINGHAM: Good morning, Chairman and members of  
 4 the Board. My name is Thomas Birmingham. I am with the law  
 5 firm of Kronick, Moskovitz, Tiedemann, and Girard, a  
 6 professional corporation, appearing on behalf of the City of  
 7 Los Angeles and the Department of Water and Power of the City  
 8 of Los Angeles.

9 With me today are Jan Goldsmith and Andy Pollock, also  
 10 attorneys with the firm of Kronick, Moskovitz, Tiedemann, and  
 11 Girard; and Kenneth Downey, Assistant City Attorney for the  
 12 City of Los Angeles is also present today and may appear on  
 13 behalf of the City.

14 At the outset, I want to say Los Angeles DWP, like all of  
 15 the parties to this proceeding, is committed to preserving  
 16 Mono Lake and the Mono Basin as a healthy, functioning

17 ecosystem. LADWP has formally recognized its responsibility  
 18 to protect Mono Lake, and it realizes that as a result of that  
 19 responsibility, its diversions out of the Mono Basin will be  
 20 diminished.

21 Five years ago, the Board of Water and Power  
 22 commissioners adopted the policy declaring that Mono Lake, and  
 23 I will quote, is a unique environmental resource of  
 24 significant value and that the Los Angeles Department of Water  
 25 and Power acknowledges its responsibility to do what it  
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1 reasonably can to maintain the lake in an environmentally  
 2 healthy condition. Therefore, the issue in this proceeding is  
 3 not whether Mono Lake will be saved. The principal issue is  
 4 how Mono Basin will be managed to protect the public trust  
 5 values of the lake environment without needlessly depriving  
 6 the people of the City of Los Angeles of the water that they  
 7 have come to rely upon under the City's long established water  
 8 rights licenses.

9 The other primary issue is what tributary stream flows  
 10 are necessary to reestablish and maintain in good condition  
 11 the fisheries that existed in the streams prior to the  
 12 commencement of the City's diversions in 1941.

13 LADWP's evidence will show that Mono Lake, perhaps the  
 14 most studied saline lake in the world, has remained healthy  
 15 and productive within the range of lake levels experienced in  
 16 the last fourteen years, a period that included the historical  
 17 low level of 6372.1 feet above sea level.

18 The City will also present a proposed Mono Lake  
 19 Management Plan containing lake level and stream flow criteria  
 20 that will assure both the continued health and productivity of  
 21 the lake environment and the restoration and maintenance of a  
 22 healthy fishery in the tributary streams. LADWP is committed  
 23 to no less.

24 However, LADWP will vigorously oppose the higher lake  
 25 levels and stream flows proposed by the Mono Lake Draft  
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1 Environmental Impact Report and by other parties.

2 These higher levels and flows are unnecessary to assure  
 3 a healthy lake and healthy streams. Moreover, the evidence  
 4 will show that these higher flows would harm public trust  
 5 values by toppling and inundating tufa formations, eliminating  
 6 Caspian tern nesting areas, and eliminating wetlands that are  
 7 formed around the lake at existing lake levels.

8 Adopting a higher lake level would unnecessarily deprive  
 9 the City of Los Angeles of a water supply from the Mono Basin,  
 10 a water supply the people the City of Los Angeles and  
 11 indirectly the people of Southern California have come to rely  
 12 on and may not be able to replace.

13 LADWP's evidence will consist of testimony of expert  
 14 witnesses, most of whom are the most preeminent scientists in  
 15 their respective fields. Their testimony is divided into  
 16 three primary groups: First, stream issues; second, lake  
 17 issues; and third, downstream issues which consist of subjects  
 18 ranging from operational models to the LADWP system, public  
 19 trust benefits valuation, water supply benefits, and economic  
 20 risks, and LADWP's proposed Mono Lake Management Plan.

21 LADWP's commitment to protect the Mono Lake ecosystem is  
 22 a cornerstone of a policy of the Board of Water and Power  
 23 Commissioners of the City of Los Angeles, and LADWP's proposed  
 24 Management Plan is consistent with those policies.

25 The Plan would preserve and protect the lake's ecosystem,  
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1 including algae, brine shrimp [Artemia Monica], the alkali  
 2 flies, and the habitat of migratory birds, including the  
 3 nesting habitat of California gulls.

4 And it would preserve and protect tufa formations that,  
 5 along with the birds, are the most highly prized public trust  
 6 benefits at the lake. Further, it would preserve and protect  
 7 the fisheries and their habitats even along the tributary  
 8 streams.

9 The key elements of the Management Plan are as follows:  
 10 First, there would be no diversions from Walker or Parker  
 11 Creeks.

12 Second, in Rush Creek, average monthly flows would range  
 13 from 82 to 106 cubic feet per second; and in Lee Vining, the

14 average monthly flows would range from 15 to 25 cubic feet  
15 per second. Prescribed minimum flows would be 10 to 30 cfs in  
16 Rush Creek and 15 to 25 cfs for Lee Vining Creek, depending  
17 upon the month of the year.

3 In addition, there would be periodic spring and summer  
9 flushing flows in both streams. No diversions would be  
20 allowed from Rush or Lee Vining Creek when the lake was below  
21 a specific criteria or buffer level ranging from elevations  
22 6376.3 to 6377 feet.

23 The effect of these restrictions, based upon the  
24 historical pattern of precipitation and runoff would be that  
25 except for very infrequent dry and wet periods, the level of

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1 Mono Lake would remain between 6375 and 6379 feet. These  
2 levels are equal to or higher than lake levels that have  
3 existed for the past five years, a period in which Mono Lake  
4 has remained healthy, vibrant and productive.

5 In extremely dry periods, the lake would fall to a  
6 minimum of 6374.6 feet, which is 2.5 feet above the historic  
7 minimum level of the lake, 6372.1 feet.

8 And in extremely wet periods, the lake would rise to a  
9 maximum elevation of 6385.3 feet. The City believes its  
10 Management Plan would achieve the most beneficial balance  
11 protection of the Mono Lake ecosystem and its tributary  
12 streams, while preserving for the people of the City of Los  
13 Angeles the benefit of exporting water that is not needed for  
14 these environmental purposes.

15 LADWP will urge that its proposed Management Plan be  
16 adopted.

17 Thank you very much.

18 MR. DEL PIERO: Thank you very much, sir.

19 The California Department of Fish and Game.

20 MR. THOMAS: My name is Al Thomas. I am staff counsel  
21 for the Department of Fish and Game, and I would propose to  
22 split the opening statement.

23 MR. DEL PIERO: That's fine.

24 MR. THOMAS: And Virginia Cahill.

25 MS. CAHILL: C-a-h-i-l-l, of the firm of McDonough,

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1 Holland and Allen. We are acting as special counsel to the  
2 Department.

3 MR. DEL PIERO: Good morning.

4 MR. THOMAS: I have noticed in the past when appearing  
5 in front of boards and commissions on Fish and Game matters  
6 that when the Department of Fish and Game stands up to speak  
7 on complex evidentiary matters, that ones out in the audience  
8 can quickly flag and be absorbed in the minutiae of biology.  
9 So, in this proceeding, I thought I would try a couple of  
10 innovations to prolong attention and encourage a proper  
11 result. We brought our private counsel in the person of  
12 Virginia Cahill who will ably summarize our case and act as  
13 co-counsel. So, if the government lawyers draw a 9, we have  
14 a choice of private counsel.

15 Secondly, I thought I would look for an inspirational  
16 speech to start this proceeding. I looked at Chief Seattle.  
17 I thought no, we always hear Chief Seattle, so I looked a bit  
18 further, and I came to a good story.

19 MR. DEL PIERO: As long as it is not Aldo Leopold.

20 MR. THOMAS: No, it's not Leopold. I have appealed to a  
21 higher authority, I think. I appealed to a higher authority  
22 today. The story has a beginning, but I am going to skip  
23 three days to the fourth day:

24 And there was an evening and then there was a morning on  
25 the fourth day, and God said let the waters spring forth with

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1 swarms of living creatures. Let the birds fly above the earth  
2 across the firmament. God created every living creature that  
3 moves, with which the waters swarm, according to their kind,  
4 and every winging bird according to its kind, and God saw that  
5 it was good.

MR. DEL PIERO: The best seller.

MR. THOMAS: It was a good year, and so we will leave the  
8 case in those good hands and Ms. Cahill.

9 MS. CAHILL: That is a hard act to follow. Basically,  
10 you are faced, as I think you recognize, with at least a two-

11 step process here.

12 The first is under the mandate of the Cal Trout case to  
13 determine the stream flows that are necessary in the tributary  
14 streams. Then, you will look to see what that does for the  
15 lake level, and determine whether additional water is needed  
16 to protect the public resources in Mono Lake.

17 The Department of Fish and Game case will focus first on  
18 the answer to your first issue in your hearing Notice, what  
19 instream flows are needed to reestablish and maintain the  
20 conditions that benefitted the fisheries that existed in Rush  
21 Creek, Lee Vining Creek, Parker Creek, and Walker Creek prior  
22 to the diversion of water from the Mono Lake Basin by the City  
23 of Los Angeles.

24 As an introduction, we will present Department Biologist  
25 Daryl Long, who has been active in the Eastern Sierra since

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1 1968 and he will testify that the conditions required to keep  
2 fish in good condition involves all aspects of habitat and  
3 stream ecosystems.

4 We will explore with joint witnesses with other parties  
5 what the historical conditions were and two of the major  
6 witnesses on this will be former Department of Biologist Elden  
7 Vestal, who was in the Basin in early times, and Dr. Scott  
8 Stine, who is perhaps the most knowledgeable person about the  
9 various lake levels, the various changes in the geomorphology  
10 of the streams and the riparian vegetation. Then we will  
11 present studies that were conducted by the Department, in some  
12 cases, in cooperation with the City of Los Angeles, and in all  
13 cases, with input from the other parties, and these were  
14 stream investigations on each of the tributary streams.

15 On Rush and Lee Vining Creeks, the streams were conducted  
16 using the incremental flow instream methodology which is the  
17 Department's standard approach for evaluating streams. On  
18 Walker and Parker, because the streams had been so recently  
19 rewatered, that methodology was not applicable and other  
20 methods were used.

21 We will present the Department's environmental  
22 specialist, Gary Smith, who oversaw those studies, and we will  
23 present witnesses from each of the three consultants who were  
24 involved in the studies. Beak Consultants did the study on  
25 Rush Creek. Aquatic Systems researched on Lee Vining, and

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1 EBASCO on Walker and Parker. We will give you the Department's  
2 requirements for stream flows in those streams.

3 Then, as you have recognized in your own hearing issues,  
4 number 18, you will look to see whether those stream flows  
5 alone will result in enough water flowing into Mono Lake to  
6 protect the other public resources associated with the lake or  
7 whether additional water will be required.

8 We expect other parties to present testimony on the brine  
9 shrimp, the alkali fly, and the gull nesting. The Department  
10 is concerned with all of those issues, but we are not going to  
11 repetitively present testimony in those areas.

12 Our testimony on public trust resources will focus  
13 primarily on habitat for ducks, which was extensive in the  
14 pre-diversion period and which has been largely lost.

15 Then, once you have determined what it takes to maintain  
16 all the public resources, public trust resources in the Mono  
17 Basin, if there is additional water that can be exported. it  
18 can benefit the Owens River if handled properly and we will  
19 present testimony on what that would take.

20 We are eager to participate in this. We will be pleased  
21 to present the results of our studies and we thank you for  
22 this opportunity.

23 MR. DEL PIERO: National Audubon Society and Mono Lake  
24 Committee.

25 BRUCE DODGE: Bruce Dodge, as I said before. With me is

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1 Patrick Flinn, Morrison and Forester, representing the  
2 National Audubon Society and the Mono Lake Committee.

3 I have a tendency to abbreviate Audubon.

4 I started this 15 years ago, brought the initial

5 complaint filed in May of 1979 in Alpine County. Mr.

6 Downey and I are the only two remaining lawyers that have been  
7 with it the whole time.

8 At that time, we expected a trial in about a year, and  
9 here we are where we can see the end of this process, I think.  
10 It's been 15 years.

11 DWP was right on one thing. A week before we filed the  
12 complaint, we told our client we were ready, and they said,  
13 so, go down to Los Angeles and ask them to stop voluntarily,  
14 which I thought was kind of a curious request, but we did it.  
15 And we had, a very nice genteel meeting with a man named Paul  
16 Lane, and we explained the problems we saw, and we asked them  
17 to stop and he said he didn't see the problems, and he said he  
18 couldn't stop.

19 We said, well, we would have to sue you, then. He said  
20 he understood and he waited just a couple of seconds and his  
21 timing was very good and he said, the last one we had like  
22 this took 43 years. So, he was right on one thing. We are  
23 pretty much on Mr. Lane's schedule, but we are pleased to be  
24 able to present evidence to you.

25 MR. DEL PIERO: Mr. Dodge, in the interest of reducing  
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1 mortality of attorneys, we are finally going on this.

2 MR. DODGE: There have been some changes since 1979, and  
3 one change is exemplified by Mr. Birmingham's opening  
4 statement.

5 Prior to 1983, DWP repeatedly referred to Mono Lake as a  
6 saline sink in its briefs. The implication being it wasn't  
7 worth saving at all, and it could go right down to the remnant  
8 level of approximately 6340, and that would be fine.

9 After the Supreme Court decision, those references  
10 stopped. There was no more talk about saline sink, and now as  
11 Mr. Birmingham correctly states, all parties purport to want  
12 to save Mono Lake and the dispute is over the level at which  
13 Mono Lake has to be in order to accomplish that.

14 In 1990, at the preliminary injunction before Judge  
15 Finney, DWP took the position that 6872 feet would do it. You  
16 heard Mr. Birmingham today say that under his Management Plan,  
17 6377 would do it. That's movement in the right direction over  
18 the past 15 Years, but we think the evidence will prove that  
19 substantially higher levels are necessary.

20 Another change since 1979 is that we have here a lot of  
21 parties -- I think you listed 15, who are going to appear  
22 and a lot of them are supporting higher lake levels right now  
23 and that we have seen recently. That's a change, too, because  
24 for a long time it was a pretty lonely process for a lot of  
25 us. We went to the California Supreme Court alone in 1982.  
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1 We went to Judge Finney to get a preliminary injunction alone  
2 in 1989. We went to Judge Finney again in 1990 to get a  
3 second preliminary injunction with the help of the State Lands  
4 Commission. So we do welcome these recent converts, who, I  
5 think, also see the end of the line and also see a successful  
6 protection of Mono Lake.

7 John F. Kennedy said, after the Bay of Pigs, that defeat  
8 is an orphan and success has many fathers, so while we welcome  
9 the support of all these people now, we hope they don't claim  
10 parentage.

11 I can't possibly talk about all the issues that we are  
12 going to present at the hearing. We did file an opening  
13 statement which we worked very hard on and I think we will  
14 give you a good road map of our position on the legal and  
15 factual issues that you are going to be looking at, and if you  
16 only read one document that we filed, I hope you read this.

17 But I can give you a brief introduction to the witnesses  
18 we are going to call. Ms. Cahill mentioned Elden Vestal as  
19 an historical witness, and he is a very valuable witness. We  
20 will call other historical witnesses also, but I am not going  
21 to list those for you.

22 The ones I want to talk to you about are the expert  
23 witnesses, the scientists --

24 MR. BIRMINGHAM: Mr. Del Piero, I wonder if Mr. Dodge  
25 could have the chart put near the easel so we could see it.  
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1 MR. DODGE: Sure. I will just go through briefly the  
2 scientists and other experts that we are going to call, to a  
3 large extent, but not entirely, but to a large extent to  
4 supplement the expertise of the Department of Fish and Game

5 and the Great Basin Air District on air issues, like I say,  
6 the Department of Fish and Game on fish and duck issues. And,  
7 of course, to supplement the work that Jones and Stokes has so  
8 ably done.

9 The witnesses, and I hope all the Board members can see  
10 this, are Fritz Reid of Ducks Unlimited on water fowl; Woody  
11 Trihey, Jean Baldrige, and Carl Mesick on fish flows and  
12 stream administration. Woody Trihey is the consultant to the  
13 RTC, the Restoration Technical Committee under Judge Finney,  
14 and Jean Baldrige and Carl Mesick are two fish biologists who  
15 are on Mr. Trihey's planning team.

16 We will call David Winkler, Professor at Cornell, who, by  
17 the way, beats my record. He first studied Mono Lake in 1976.  
18 He is a morphologist from Cornell and David Shuford from the  
19 Point Reyes Bird Observatory. They are going to talk about  
20 California gull issues.

21 Next is David Herbst on aquatic productivity; Peter  
22 Vorster, who you see standing there, on hydrology. And I will  
23 tell you now, because Peter will work it into his testimony  
24 anyway, he was also in there in 1979, the Great Basin Unified  
25 Air Pollution District on air quality; and four gentlemen on  
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1 economics and water supply; and then Scott Stine on  
2 geomorphology. I put Dr. Stine last for a reason and that is  
3 -- let me say first that geomorphology means land forms and  
4 climate. And Ms. Cahill said that he was perhaps the world's  
5 foremost expert on land forms in the Mono Basin. I would  
6 submit that by the end of this hearing, you will be convinced  
7 there is no perhaps. He is the world's foremost expert.

8 He has studied stream related issues such as channels,  
9 vegetation, and the deltas, how they evolve naturally, and how  
10 they were changed by the DWP. He has studied lake-oriented  
11 issues at various elevations, things that you will be hearing  
12 a lot of testimony on about formation of lagoons at higher  
13 lake levels, the various tufa growths and how they are  
14 inundated at various elevations, the islands, Negit Island,  
15 and Paoha Island and what sort of water barrier there is at  
16 various elevations. And I am convinced you will find Dr.  
17 Stine a tremendous asset to this process.

18 I think that's really all I had to say. Again, we  
19 welcome the opportunity to present our case to the Board, and  
20 we trust that the Board understands the importance of this  
21 proceeding.

22 Thank you.

23 MR. DEL PIERO: Thank you, Mr. Dodge.

24 Cal Trout, Inc. Good morning.

25 MR. ROOS-COLLINS: Good morning, Mr. Chairman, members  
of  
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1 the Board, and staff. I am Richard Roos-Collins. I am an  
2 attorney representing California Trout. California Trout will  
3 also be represented in this proceeding by my colleague,  
4 Cynthia Koehler.

5 This proceeding will result in a remedy for wrongs that  
6 began 53 years ago in the predecessor to this Board. In June  
7 of 1940, your predecessor issued permits to the City of Los  
8 Angeles which did not comply with the Fish and Game Code  
9 Section 5937 and which did not take into consideration the  
10 public trust.

11 For 53 years the people of the City of Los Angeles have  
12 benefitted from those water rights. They have also caused  
13 extraordinary damage to the tributaries of Mono Lake and to  
14 Mono Lake itself.

15 California Trout is here with one purpose in mind, to  
16 assist the Board in amending Los Angeles' water rights to  
17 comply with the law. We want not a drop of water more and not  
18 a drop of water less than is necessary to comply with the law.

19 Unlike the parties which preceded me in their opening  
20 statements, California Trout's interest is primarily in the  
21 tributaries and the fisheries that reside in those  
22 tributaries. We will not present evidence directly regarding  
23 Mono Lake. We will, instead, focus our testimony and our  
24 examination on the tributaries.

25 Let me spend a few minutes explaining what California  
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1 Trout believes this proceeding is not about. This proceeding  
 2 is not as convoluted as it appears. In the last two years,  
 3 our office files in the El Dorado Superior Court case and this  
 4 proceeding now would reach from the floor to the ceiling.  
 5 Your Environmental Impact Report is a mammoth, almost  
 6 encyclopedic-effort to understand how these water rights have  
 7 affected the tributaries, the lake, and other values and  
 8 people. And there is no question that for purposes of your  
 9 public trust remedy, you have to consider all interrelated  
 10 factors.  
 11 I am reminded of the environmental community's favorite  
 12 author, John Muir, who said everything is connected to  
 13 everything else. That may be true for the purposes of public  
 14 trust, but for purposes of the Fish and Game Code Section 5937  
 15 remedy, you have a much more straightforward responsibility.  
 16 You must under California Trout II determine what flow regime  
 17 and what additional remedy, if any, are necessary to  
 18 reestablish and maintain the fisheries which existed before  
 19 Los Angeles began diversions in 1941.  
 20 Impacts on gulls or brine shrimp or Owens River, or even  
 21 the people of Los Angeles, while important to all of us, are  
 22 irrelevant to that remedy. We request, as does the California  
 23 Department of Fish and Game, that you organize this  
 24 proceeding, or at least your understanding of this proceeding  
 25 first to establish a Section 5739 remedy that will protect the

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1 fisheries that existed before Los Angeles began diversions.  
 2 And then secondly, determine what additional remedy may  
 3 be necessary to protect public trust. If you take that  
 4 approach, we believe that the convoluted evidence which all  
 5 parties have submitted will become much better organized and  
 6 somewhat less daunting.  
 7 Secondly, this proceeding is not generally about serving  
 8 the public interest, and it is not even about maintaining its  
 9 fishery in good condition. There is a much more specific  
 10 objective here, at least under Section 5937 of the Fish and  
 11 Game Code. There, under Cal Trout II which is the case  
 12 involving this proceeding, you must reestablish and maintain  
 13 the fishery that existed before Los Angeles began diversions  
 14 in 1941.  
 15 This is a very specific objective. You will satisfy your  
 16 responsibility in this proceeding, we respectfully submit,  
 17 only if the remedy which you choose has that specific effect.  
 18 Third, Cal Trout is not attempting to turn the clock  
 19 back. At one memorable moment before the El Dorado Superior  
 20 Court, the plaintiffs were accused of wanting to drive 1941  
 21 cars and otherwise return to the status quo which existed 53  
 22 years ago. We can't do that. We aren't seeking to do that.  
 23 We are seeking to comply with the law in 1993, given 1993  
 24 conditions.  
 25 We believe that the evidence will show that there are

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1 practical remedies which should be adopted by this Board as  
 2 licensed amendments that will comply with Section 5937, that  
 3 will comply with the Public Trust Doctrine, and that will also  
 4 serve the people of the City of Los Angeles.  
 5 Fourth and finally, this proceeding is not about  
 6 punishment of the City of Los Angeles for whatever wrongs have  
 7 been committed since 1941. No party, including Cal Trout, is  
 8 seeking to take the water back that Los Angeles has diverted  
 9 in violation of the law since 1941. Quite the contrary, we  
 10 are seeking instead that the law be complied with starting  
 11 with the day that you issue the license amendment that  
 12 specifies the flow regime to comply with 5937 and with the  
 13 Public Trust Doctrine.  
 14 We are confident that the remedy you choose in this  
 15 proceeding can protect the tributaries, can protect the lake,  
 16 and will not impose significant or unreasonable hardship on  
 17 the people of the City of Los Angeles.  
 18 Finally, I would like to congratulate the Board for the  
 19 accomplishment of the staff to date in preparing what I  
 20 consider to be a mammoth encyclopedic Environmental Impact  
 21 Report that gives you an excellent start in determining the  
 22 remedy in this proceeding, and we wish you the best of luck as  
 23 you wade through the evidence that you hear.

24 Thank you.  
 25 MR. DEL PIERO: Thank you very much.

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1 State Lands Commission and the Department of Parks and  
 2 Recreation.  
 3 MR. STEVENS: Mr. Chairman and members of the Board and  
 4 staff, I am Jan Stevens, Assistant Attorney General  
 5 representing the two agencies you just referred to.  
 6 With me are Deputy Attorney General Mary Schoonover and  
 7 State Lands Commission Staff Counsel, Mike Valentine. Mr.  
 8 Valentine participated with me in the preliminary injunction  
 9 proceedings on behalf of the Commission, and will be a  
 10 valuable adjunct here.  
 11 I concur with several of the remarks made by Mr. Roos-  
 12 Collins, particularly congratulating the staff on its effort  
 13 in preparing the environmental impact report and in doing the  
 14 groundwork which we think will make the Board's decision much  
 15 easier.  
 16 Second, I concur with the suggestion that once the fish  
 17 flows are established under mandate of the Cal Trout decision  
 18 and Section 5937, this Board's job of balancing public trust  
 19 values, hopefully, will be much, much easier than it otherwise  
 20 might have been.  
 21 We are delighted that this case has finally come to the  
 22 Board full circle since 1940. Our office spent considerable  
 23 effort in attempting to get it to the Board throughout its  
 24 procedural history to date. And, of course the Superior Court  
 25 now ensures that this complex question will get the kind of

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1 consideration that we think it deserves.  
 2 Our scripture in this case is not quite as high as that  
 3 previously cited. It basically relies upon the Cal Trout  
 4 decisions, upon National Audubon and upon this Board's  
 5 constitutional reasonable use doctrine which it has exercised  
 6 in the past and will have to apply in this case as well.  
 7 The agencies which we represent here have several  
 8 interests in the matter. The State Lands Commission, of  
 9 course, is charged with the management and administration of  
 10 the public trust in the State's navigable waters and their  
 11 beds. This is particularly significant because the bed of  
 12 Mono Lake, of course, has been subject to considerable yanking  
 13 to and from as the waters have relicted and risen in the past.  
 14 This might not have been the legal issue that we find  
 15 before us today had it not been for the fact that a Federal  
 16 court has held that where the Federal government is the upland  
 17 owner and the waters at Mono Lake have relicted, title to  
 18 those relicted lands go to the Federal government and are lost  
 19 to the State.  
 20 This becomes significant for two reasons. One is that  
 21 the Federal government does not recognize the public trust in  
 22 the beds of water which it owns and possesses. The U. S.  
 23 Department of Justice supported the Lands Commission in its  
 24 argument in the Superior Court on this subject and recognized  
 25 the fact that the public trust imposes safeguards and

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1 strictures upon the uses of these lands that would not  
 2 otherwise exist. Now, today the Forest Service and the Parks  
 3 and Recreation work happily together in administering the Tufa  
 4 State Reserve.  
 5 There is no assurance this kind of situation will always  
 6 exist, so to the extent that relicted land has passed to the  
 7 Federal government, which owns 70 percent of the upland,  
 8 roughly, around the lake, we have a severe problem, and Dr.  
 9 Stine's testimony on which we also rely as an authority, will  
 10 show that from 12,000 to perhaps as much as 17,000 acres are  
 11 jeopardized by loss as a result of this reliction.  
 12 The second thing is that this exposure, this reliction,  
 13 has resulted in very bad things in terms of public trust  
 14 values, and I think many of the parties will present evidence  
 15 on that.  
 16 Not only is the visual quality of the lake and its  
 17 resources impaired, the health of the organisms that live in  
 18 the lake is impaired, but the exposed playa, some of which  
 19 does and will belong to the State, will result in severe air  
 20 quality problems which will have to come up and clean up

21 behind. We will present testimony on that as well.  
22 The last Commission was given another statutory  
23 responsibility to designate significantly valuable lands from  
24 an environmental point of view, lands which are covered by  
25 water and lands which are lake beds. It has done so and it

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1 has designated Mono Lake. There is a real public trust  
2 interest which we will demonstrate, and there is danger of  
3 loss by the lake's continued reliction.

4 Secondly, we will offer evidence with respect to the tufa  
5 reserve and the tufa values for which the legislature  
6 established a reserve, and Dr. Stine will testify on behalf of  
7 several parties, I think, of the incision that can result by  
8 declining lake levels and the effect of the toppling on these  
9 towers.

10 Now, the Department of Parks and Recreation has several  
11 statutory responsibilities. Primarily, it is charged with  
12 administering the Tufa State Reserve which was set up by  
13 statute to encompass the lands between 6,417 feet, the  
14 original 1940 level of the lake before it started to decline  
15 and become relicted, and the water itself. And its mandate  
16 includes the reservation of the area as a healthy system with  
17 a minimum of artificial influences. In that connection, a  
18 ranger, Dave Carl, who has been at the lake for approximately  
19 12 years, will testify to the significance world-wide that Mono  
20 Lake has attained, the number of visitors who reach the lake,  
21 their enjoyment of the lake, and the extent to which access  
22 can be balanced with sufficient water to provide both a visual  
23 experience, a healthy experience from the point of view of air  
24 pollution and an experience which ensures that the lake is  
25 going to be healthy for living things as well as for tufa

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1 towers.

2 Those are the principal interests and testimony which the  
3 agencies intend to present. Unless there are questions, that  
4 completes my statement.

5 MR. DEL PIERO: Thank you very much, sir.

6 U. S. Forest Service.

7 MR. GIPSMAN: Good morning. Mr. Chairman and members of  
8 the Board and staff, my name is Jack Gipsman, Office of the  
9 General Counsel, U. S. Department of Agriculture, and I am an  
10 attorney representing the U. S. Forest Service here today.

11 The Forest Service appears before you today to present  
12 evidence regarding the protection of the public trust  
13 resources in the Mono Basin. We believe that for you to hear  
14 this evidence is very important because as the owner of  
15 approximately 70 percent of the relicted land in the basin and  
16 the agency responsible for managing the vast majority of land  
17 in the basin, the Forest Service brings a special perspective  
18 and distinct expertise to what the public trust resources are  
19 and how they should be protected.

20 In recognition of the uniqueness of Mono Lake, Congress  
21 established the Mono Basin National Forest Scenic Area by the  
22 California Wilderness Act of 1984. The Legislation instructs  
23 the Forest Service to manage the scenic area in such a way as  
24 to protect the geologic, ecologic and cultural resources of  
25 the basin.

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1 Protection of these resources falls squarely within the  
2 public trust values as enumerated by the California Supreme  
3 Court in its 1982 decision, National Audubon Society versus  
4 Superior Court, and the very same public trust values which  
5 this Board must consider today. The Board is charged with  
6 determining what amount of water must be reserved to protect  
7 public trust values in the Mono Basin. To assist in this  
8 regard, the Forest Service will offer testimony and exhibits  
9 that will make the following points:

10 Air quality is an important public trust resource that  
11 must be protected in Mono Basin. The 6390 foot offers the  
12 best balance of resource protection while meeting the minimum  
13 requirements of the Clean Air Act.

14 Dust storms from relicted land which are the events that  
15 cause the air quality violations are a continuing problem in  
16 the Mono Basin. Public sentiment strongly favors maintenance  
17 of natural conditions in the Mono Basin.

18 Mitigation measures to meet air quality standards, other  
19 than raising the lake level, are inconsistent with the  
20 congressional mandate for management of the scenic area as  
21 well as protection of the public trust resources.

22 We will show that raising the lake level in accordance  
23 with the 6390 foot alternative will not have a significant  
24 adverse impact on the visual resource and may enhance the  
25 visual resource, although lithoid tufa and sand tufa in the

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1 south tufa area will be somewhat affected.

2 We will also show that near natural conditions seem  
3 likely to exist for riparian lake fringing vegetation under  
4 lake levels of 6390 and above.

5 We will demonstrate to the Board that the manner in which  
6 the 6390-foot elevation protects the fish resources is  
7 consistent with the Inyo National Forest Plan and the  
8 Comprehensive Management Plan for the scenic area.

9 Finally, we will introduce facts that would tend to show  
10 that the 6390-foot alternative does not appear likely to  
11 adversely impact the snowy plover.

12 The Forest Service will briefly discuss its future in-  
13 basin consumptive water need and the various petitions that we  
14 have filed with the Board regarding the same.

15 Now, since the filing of those petitions, the Forest  
16 Service has drilled a well which will fulfill those needs, so  
17 it is questionable whether the Board still has jurisdiction  
18 over this matter. However, that issue has not been resolved.

19 In the event the Board believes that it does have  
20 jurisdiction, the Board should consider those water needs in  
21 determining the amount of water necessary to be reserved for  
22 public trust values.

23 Finally, the Forest Service believes that it has  
24 significant littoral water rights around Mono Lake. However,  
25 we will not be presenting any evidence on this subject, as it

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1 is our understanding from discussions with Board staff that it  
2 is outside the scope of this proceeding.

3 Thank you very much.

4 MR. DEL PIERO: Thank you very much.

5 U. S. Fish and Wildlife Service.

6 MS. NIEBAUER: Erica Niebauer, Assistant Regional  
7 Solicitor for the Office of the Solicitor, Pacific Southwest  
8 Region here in Sacramento, representing the U. S. Fish and  
9 Wildlife Service.

10 Our testimony is very short and very direct. I have no  
11 opening statement this morning. Thank you.

12 MR. DEL PIERO: Nice to see you, Ms. Niebauer.

13 Haselton and Associates and Arcularius Ranch. Good  
14 morning.

15 MR. HASELTON: Good morning. My name is Frank Haselton.  
16 I own my own firm, Haselton and Associates, and I am an  
17 attorney.

18 I have been working with John Arcularius for the past  
19 three years. Mr. Arcularius owns a ranch of approximately  
20 1,080 acres along the upper Owens River that his family  
21 purchased in 1919, along with other properties in Long Valley.

22 Mr. Arcularius has the unique standing and position that  
23 he is one of the few private landowners in Mono County, in a  
24 county where approximately 5 or 6 percent of the land is  
25 privately held.

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1 In addition, East Portal brings water from the basin and  
2 empties that onto the Upper Owens River which at that point is  
3 crossing his ranch. Approximately six miles of the river goes  
4 through his ranch. These portals intercept there at about  
5 midpoint.

6 We don't have extensive experts and testimony. We  
7 basically have some questions and concerns that we will raise  
8 during these hearings.

9 We, too, appreciate the work that staff has done and what  
10 the EIR has shown us. We have learned a great deal and can  
11 perhaps use a little bit more.

12 Our basic concern is just this, the protection and the  
13 preservation of the Upper Owens River and its existing  
14 habitat. This concern is consistent with the legislation, as

15 we understand CEQA and the Water Code, that is, the protection  
16 of an existing resource when considering projects, regardless  
17 of the nature of these projects.

18 We don't necessarily debate a lake level. We are not  
19 going to debate how much water should or shouldn't be in Rush  
20 and Lee Vining Creeks, but we do debate and we do protest  
21 creation of an environment or a habitat at the expense of an  
22 existing resource, namely the Upper Owens River.

23 We will testify on the Upper Owens River as being spring-  
24 fed, very sensitive, Yet depending on a very stable  
25 environment.

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1 It has been and currently is recognized as one of the  
2 primary trout fishing habitats in the Western United States.  
3 This has been demonstrated both by daily angling experience  
4 and fish surveys sponsored by the Department of Fish and Game.

5 I say with a lot of confidence there is really no debate  
6 over the quality of the trout habitat in the Upper Owens  
7 River. For approximately 50 years, the Upper Owens River has  
8 absorbed water from the Mono Basin.

9 It is suggested through these conditions that as late as  
10 1990 when EBASCO performed its survey, that the trout habitat  
11 and the quality of this habitat remains quite high and,  
12 therefore, warrants protection. The impact has been felt from  
13 imported water. Mr. Arcularius has lost approximately 43  
14 percent of his river frontage from East Portal to his  
15 downstream property line, which is about three miles he has  
16 lost, about 43 percent of the river.

17 But again, the existing conditions of the river have  
18 indicated that the river has adjusted and has accommodated to  
19 this flow.

20 Our understanding is that one of the primary objectives  
21 is to reestablish the fisheries that occurred in the 1940  
22 conditions in Rush and Lee Vining Creeks, and in reading a  
23 considerable amount of testimony, there seems to be a debate  
24 or disagreement at least on the success of the restoration  
25 effort and the ability to actually reestablish fisheries.

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1 We believe that this attempt in doing so might be  
2 hampered by two issues, one, the ability to reverse natural  
3 dynamics of a stream and environmental habitat. One cannot go  
4 back to pre-1940 and create something that may or may not have  
5 happened, that perhaps depends on recollections and  
6 photographs and notes in log books and say, this is the pre-  
7 1940 conditions that we must replicate. Attempting to create  
8 a presupposed condition is very difficult, if not impossible.

9 The second issue is that in all my reading I have not  
10 come across a recommendation to dismantle Grant Lake Dam. I  
11 believe that's a very important element if you want to create  
12 pre-1940 conditions.

13 Upcoming testimony from other groups indicates that the  
14 dam blocks sediment transport, things that are critical for  
15 any type of stream habitat. Therefore, there will be a need  
16 to artificially restore the stream.

17 No one can disagree with the attempt to create a trout  
18 habitat. This is a very different objective, however, from  
19 creating a pre-1940 condition. To establish a trout habitat  
20 is a worthy goal. We support that. How can one not support  
21 establishing a trout habitat, but we believe it shouldn't be  
22 done at the expense of an existing and verifiable high-quality  
23 habitat, namely the Upper Owens River.

24 There have been many statements in the testimony and even  
25 in the opening statements that Upper Owens River can be

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1 restored once the work on Rush and Lee Vining Creeks is  
2 completed.

3 We are not asking for restoration, we are asking for  
4 protection. We are not asking for enhancement, we are asking  
5 for maintenance of the status quo, and we are not asking for  
6 improvement. We are just asking for preservation for what is  
7 truly a sound and valuable habitat.

8 In closing, Section 2100, the legislative intent of the  
9 public Resources Code, that is CEQA, states that it is in the  
10 intent of the Legislature that all agencies of State  
11 government which regulate activities of private individuals,

12 corporations, and public agencies which are found to affect  
13 the quality of the environment, regulate such activities so  
14 that major consideration is given to preventing environmental  
15 damage.

16 In the evidence we will present and testify to, we will  
17 show that all work being done will essentially have damage on  
18 the Upper Owens River. We will ask again and again that the  
19 Upper Owens River have a higher profile and a higher priority  
20 in these hearings.

21 As I said, our testimony will be very limited. You will  
22 have the opportunity, and I might add, the pleasure to meet  
23 Mr. Arcularius and to hear his personal day-to-day testimony  
24 about the Upper Owens River. I believe he truly is an expert  
25 from an empirical standpoint.

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1 I thank you for this opportunity.

2 MR. DEL PIERO: Thank you very much.

3 Sierra Club. No one here today from the Sierra Club.

4 Okay.

5 The Metropolitan Water District of Southern California.

6 Good morning.

7 MR. GLEASON: Members of the Board, my name is Victor  
8 Gleason. I am an attorney for the Metropolitan Water  
9 District. We have submitted a written statement earlier this  
10 month and we request that it be incorporated into the record  
11 at this point if possible. Our principal witness, and  
12 essentially our only witness at this point, would be Dr.

13 Timothy Quinn who will describe the kinds of actions that  
14 Metropolitan will have to undertake to obtain replacement  
15 water supplies to offset impacts that the decision in this  
16 matter may have on its service area in Southern California.

17 Thank you.

18 MR. DEL PIERO: Thank you very much. We are, in fact, in  
19 receipt of your presentation.

20 Do we have a representative here on behalf of the  
21 Lahontan Board? Okay.

22 U. S. EPA. A representative on behalf of U. S. EPA? No.  
23 The State Air Resources Board. Is someone here on behalf  
24 of the California Air Resources Board?

25 How about the Great Basin Air Pollution Control District?  
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1 MR. ONO: Duane Ono. I am here, but I would to ask to  
2 defer our opening statement because our District Counsel is  
3 not here today.

4 MR. DEL PIERO: Okay. A couple of administrative things  
5 I need to point out. For the record today, all five members  
6 of the State Water Resources Control Board are present for the  
7 beginning of this hearing, and I would like to indicate on  
8 behalf of all of the Board members, there's a very strong,  
9 very deep and very concerned interest in the ongoing  
10 evidentiary areas, as well as the policy statements that have  
11 taken place and will subsequently take place on this matter.

12 However, given the weight of business of the State Board  
13 on a variety of issues throughout the entire State of  
14 California, I want to take this opportunity to point out it  
15 cannot be expected, nor will it be the case, that all five  
16 members of the Board will be here on a regular basis. I will  
17 be here throughout the entirety of this process and other  
18 members of the Board will be here as frequently as they  
19 possibly can.

20 I want to point out also for the record I hope no one is  
21 offended, and no one should take offense at the fact that  
22 certain members of the Board may attend these hearings and  
23 then get up and leave during the course of the day in order to  
24 meet requirements of the Board in other locations in order to  
25 accommodate the needs of the rest of those folks in the State  
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1 of California that we are obliged to serve.

2 I point that out because the Board members are very  
3 concerned and are going to try to be here as frequently as  
4 possible. Some may join us later and some may leave early in  
5 the day and come back, so I wanted to be clear on the record  
6 that this is not because of absence of interest, but because  
7 of a great abiding interest on the part of all Board members  
8 in this matter.

9 At this point, during these proceedings, this is when we  
 10 administer the oath for those individuals who are interested  
 11 in presenting testimony before we begin with the formal  
 12 evidentiary portion of this hearing. I would like to  
 13 administer this oath to anyone who intends to present  
 14 testimony here today, so those of you who intend to present  
 15 testimony today, will you please rise and raise your right  
 16 hand. Do you promise to tell the truth during the course of  
 17 these proceedings? The answer is yes.  
 18 THE WITNESSES: Yes.  
 19 MR. DEL PIERO: Thank you very much, gentlemen. You can  
 20 sit down. The record will reflect that with prompting,  
 21 everyone said yes.  
 22 Before we begin, as I indicated before, we are going to  
 23 have a staff presentation, actually a presentation on the  
 24 Draft EIR, and before we take any testimony, I will start with  
 25 Mr. Frink.

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1 This appears to be an appropriate time to break. We will  
 2 be back in 15 minutes.  
 3 (Recess.)  
 4 MR. DEL PIERO: Ladies and gentlemen, this hearing will  
 5 again come to order.  
 6 I will point out that given the location of the speaker  
 7 next to the pillar, that the Board members up here have taken  
 8 odds whether it fall on Mr. Hutchinson or Ms. Cahill. At this  
 9 point, the money is on Ms. Cahill. I did check with Mr.  
 10 Hutchinson to make sure his presentation was written. So,  
 11 okay.  
 12 It is my understanding Mr. Larry Silver, on behalf of the  
 13 Sierra Club, has in fact joined us. Is that true?  
 14 MR. SILVER: Yes.  
 15 MR. DEL PIERO: Mr. Silver, do you wish to make your  
 16 opening statement at this time?  
 17 MR. SILVER: Yes. I am Larry Silver, Sierra Club, with  
 18 the Defense Fund, San Francisco, making an opening statement  
 19 on behalf of the Sierra Club.  
 20 I would like to state at the outset that the Sierra Club  
 21 has had a long history of involvement in the Mono Lake matter.  
 22 Some 16 years ago, in 1977, the Sierra Club filed a petition  
 23 with the Department of the Interior seeking at that time  
 24 action by the Bureau of Land Management with respect to  
 25 problems that were arising at the lake, particularly the land

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1 bridge that has risen at Negit Island.  
 2 The Sierra Club over the years has consistently and  
 3 persistently involved itself in any number of forums which  
 4 have been involved with Mono Lake. It filed a lawsuit against  
 5 the Secretary of Interior in 1979. It participated in the  
 6 lawsuit that has to do with the title to the relicted lands  
 7 which has been discussed already by Jan Stevens, and it has  
 8 participated in numerous actions with reference to or in  
 9 furtherance of its goal to restore the lake to an appropriate  
 10 level of functioning.  
 11 In these proceedings, the Sierra Club will be presenting  
 12 testimony with regard to the historic recreational and other  
 13 uses at the lake, emphasizing in particular the uses which  
 14 were taking place in the 1930s and 1940s.  
 15 The Club's testimony is being presented in the hope that  
 16 this Board will consider those historic recreation and  
 17 conservation uses of the lake with a view toward restoring the  
 18 lake's ecosystem, and to promoting an elevation of water at  
 19 the lake that would enhance and in fact restore some of those  
 20 historic recreation and conservation uses.  
 21 The Club will present testimony based on the historical  
 22 record relating to those recreational uses.  
 23 I just want to emphasize again that though the Club has  
 24 not been a party to the Audubon Society and Cal Trout  
 25 litigation with reference to the public trust, it has chosen

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1 to take a different path with regard to advancing its view of  
 2 what the Mono Lake ecosystem should be.  
 3 Long ago, there was a thought that there may be numerous  
 4 approaches to this problem. The Club is now participating in  
 5 this proceeding in the hope that this Board will establish an

6 elevation of the lake that will restore those historic uses.  
 7 The Club will recommend during the course of its  
 8 testimony that the lake level be at least 6390 feet.  
 9 So, thank you.  
 10 MR. DEL PIERO: Thank you very much, sir.  
 11 Mr. Frink, we're going to begin with the comments on the  
 12 EIR.  
 13 MR. FRINK: Yes, Mr. Del Piero and members of the Board,  
 14 as was mentioned previously, I am Dan Frink, Staff Attorney  
 15 for the State Water Board that's been assigned to assist in  
 16 the review of Mono Basin water diversions.  
 17 Before we have the presentation from the witnesses who  
 18 worked on the EIR, I had a couple of introductory remarks.  
 19 First of all, in 1989, the Board determined it would be  
 20 appropriate to prepare an Environmental Impact Report to  
 21 evaluate the effect of alternative approaches to regulating  
 22 water diversions from the Mono Basin. As holder of the water  
 23 rights involved, the City of Los Angeles has agreed to fund  
 24 the cost of preparing the Environmental Impact Report, and as  
 25 the lead agency for purposes of the Environmental Quality Act,

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1 staff of the State Board determined the scope of the work that  
 2 was required for the Environmental Impact Report. Request for  
 3 proposals was provided to numerous consulting firms.  
 4 Proposals were submitted and the firm of Jones and Stokes,  
 5 whose staff members are here today, was ultimately selected as  
 6 the primary EIR consultant.  
 7 After a lot of hard work by the consultants and  
 8 considerable cooperation by many of the parties to this  
 9 hearing, the Draft EIR was completed and distributed for a 90-  
 10 day public comment in May of this year.  
 11 At the outset of the process, Board staff certainly hoped  
 12 that it would serve to resolve many, if not most, of the  
 13 factual issues concerning the City of Los Angeles' water  
 14 diversions from the Mono Basin.  
 15 The amount of evidence submitted for this hearing would  
 16 indicate that a number of disputes still remain.  
 17 Nevertheless, we do believe it would be helpful to present an  
 18 overview of the Eir process, a description of the alternatives  
 19 that were examined, and a summary of the conclusions that were  
 20 reached in the Draft EIR.  
 21 To present this information, we have requested that Ken  
 22 Casady of Jones and Stokes Associates testify before you this  
 23 morning. Mr. Casady served as Jones and Stokes' project  
 24 manager in preparation of the Draft Eir.  
 25 In addition, a number of other witnesses who assisted in

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1 preparing the Draft EIR are available to identify their  
 2 previously submitted written statements and to respond to  
 3 questions on cross-examination.  
 4 Before proceeding with the testimony from the consultants  
 5 who worked on the EIR, there are three observations I wanted  
 6 to make.  
 7 First, the Board staff directed Jones and Stokes to  
 8 prepare a Draft EIR which would allow for comparison of the  
 9 various alternatives with conditions as they existed at the  
 10 start of the EIR process in 1989, and with pre-diversion  
 11 conditions. We believe that this was both the correct legal  
 12 approach and the most informative approach for the public and  
 13 the Board as the decision maker.  
 14 In any event, however, the decision to compare the  
 15 impacts of the various alternatives with both sets of  
 16 conditions, pre-diversion conditions and the conditions as  
 17 they existed in 1989, was made by Board staff and not the  
 18 consultant.  
 19 The second point I wanted to make was the suggestion of  
 20 several of the parties in their comments on the Draft EIR,  
 21 that the EIR alternatives should have included a lake level  
 22 elevation based on the quantity of water needed to meet the  
 23 Department of Fish and Game's recommended fishery flows.  
 24 As Mr. Casady will explain, that was not done because the  
 25 EIR alternatives had to be selected very early in the process,

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1 but the final Department of Fish and Game fishery flow  
 2 recommendations were not available until very recently.



3 The final point I wanted to address is that Jones and  
4 Stokes and various subcontractors who worked on the Draft EIR  
5 are testifying in this hearing on the information that they  
6 developed in preparing the Draft EIR. They have not been  
7 retained to appear in an adversarial capacity in the hearing  
8 and to review in detail the evidence submitted by other  
9 parties. In most cases, they have not reviewed much of the  
10 proposed testimony submitted for this hearing, but rather  
11 their purpose in being here is to testify regarding the Draft  
12 Eir.

13 The witnesses on the Draft EIR report are assisting in  
14 preparing comments on the Draft EIR as a part of the CEQA  
15 process. In some cases, the comments of the Draft EIR raise  
16 the same questions that are raised in proposed testimony which  
17 parties have submitted for this hearing.

18 Following further review and analysis of those comments  
19 on the Draft EIR, it is possible that some of the witnesses  
20 that staff has asked to appear this morning will appear again  
21 during the rebuttal phase of the hearing.

22 That concludes my opening remarks.

23 I would now like to call Ken Casady of Jones and Stokes  
24 as a witness. Mr. Casady prepared written testimony which has  
25 been designated as State Water Resources Control Board Exhibit

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1 Number 23. Maybe now is a good time to mention the staff's  
2 exhibit identification lists Exhibits 1 through 34. Exhibits  
3 1 through 17 on that list are various documents already in the  
4 State Board files which we have designated as exhibits by  
5 reference for purposes of this hearing. Exhibits 18 through  
6 84 are the new documents which we distributed to the parties  
7 in September in preparation for the hearing.

8 Before proceeding with the testimony concerning Exhibits -  
9 18 through 34, I would ask that the documents that were  
10 designated as Exhibits by reference, 1 through 17, be admitted  
11 into evidence.

12 MR. DEL PIERO: Thank you very much. Any objection to  
13 that?

14 MR. BIRMINGHAM: No objection.

15 MR. THOMAS: Will Mr. Casady's testimony, then, be of a  
16 summary nature and then we are to examine him on the  
17 conclusions of his experts?

18 MR. DEL PIERO: What we are going to do, we're going to  
19 have Mr. Casady's presentation and we are going to have  
20 identification of other individuals present once that has been  
21 done prior to their being entered into the record, possibly  
22 then I will ask if there are any further objections in terms  
23 of introduction of that into the record, and either order or  
24 not order them entered into the record. That is the way it  
25 will go for all of them.

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1 MR. THOMAS: Mr. Casady is not testifying as an expert on  
2 each of the subject matters he's opining about?

3 MR. FRINK: He will give an overview of the EIR as the  
4 project manager. We intend to present the witnesses from  
5 Jones and Stokes and various sub-consultants whom they  
6 retained in a very brief fashion and make them available for  
7 cross-examination in panels consisting of the groups of  
8 experts who worked on the EIR. Their staff is divided into  
9 four groups and because there was a good deal of overlap in  
10 those groups, it looked like it would be most efficient to put  
11 the individuals who participated in each group, make them  
12 available for cross-examination as a panel. But just to kind  
13 of give an overview of the whole process, Mr. Casady as  
14 project manager will testify first. That will be the purpose  
15 of his testimony. He will be available for cross-examination  
16 as a part of each of the groups.

17 MR. DEL PIERO: Does that satisfy you?

18 MR. THOMAS: I understand. Thank you.

19 MR. DEL PIERO: Mr. Casady, why don't you begin?

KENNETH CASADY,

1 having been sworn, testified as follows.

2 MR. CASADY: My name is Kenneth Casady. I am an  
23 Environmental Scientist employed by Jones and Stokes  
24 Associates of Sacramento for the past seven years, and I have  
25 been a practicing professional environmental scientist for the

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1 past 23 years.

2 MR. FRINK: May I interrupt for just a minute. One  
3 question I wanted to get before you continue. Have you been  
4 sworn as a witness this morning?

5 MR. CASADY: Yes, I have. I was Jones and Stokes  
6 Associates Project Manager for preparing the Draft EIR for the  
7 Board's review of the City of Los Angeles' water diversions  
8 from Mono Basin. I was also the team leader for directing the  
9 evaluation of the terrestrial resources. Because of the  
10 magnitude of this project, as was just mentioned, Jones and  
11 Stokes created four teams for preparing major divisions of the  
12 Impact Assessment, water resources, including hydrology,  
13 aqueduct operations, alternatives, modeling, water quality and  
14 Mono Lake aquatic productivity;

15 Second, fisheries;

16 Third, terrestrial resources, and that includes  
17 vegetation, wildlife, air quality, land use, and cultural  
18 resources;

19 And finally, social economics, including visual  
20 resources, recreation, Los Angeles water and power supply, and  
21 economic impacts.

22 Team leaders -- these four teams together with key  
23 members of the teams will appear before you as separate panels  
24 over the next few days.

25 I would like to first describe some of the process of

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1 preparing the Draft EIR, then describe the EIR alternatives  
2 and finally close with some of the major findings of the Draft  
3 EIR.

4 The purpose of preparing the EIR, of course, is to assist  
5 the Board's review of the City's existing water rights by  
6 providing information about the environmental impacts and  
7 possible mitigation measures for alternative stream diversion  
8 regimes and corresponding lake levels.

9 Prior to our involvement, the Board staff initiated the  
10 EIR preparation process. In September of 1989, the Board held  
11 a public scoping workshop in Sacramento to identify  
12 environmental issues to be addressed. In October, the staff  
13 established five technical advisory groups to assist the Board  
14 staff in identifying and evaluating technical information  
15 pertinent to each subject area needing evaluation.

16 In January of 1990, a Notice of Preparation was  
17 circulated to more than 500 agencies, groups, and individuals,  
18 and published very widely in newspapers.

19 In March, staff reviewed submitted comments, prepared a  
20 scope of work for the EIR, and requested proposals for  
21 preparation.

22 In June, Jones and Stokes Associates was selected as the  
23 Board's prime consultant.

24 A detailed work plan was initiated shortly thereafter and  
25 continued for various topic areas through March of 1991.

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1 Jones and Stokes maintains a full-time staff of over 100  
2 professionals that include biologists, other environmental  
3 specialists, planners, economists, attorneys and engineers.  
4 We prepared approximately 1700 environmental studies and  
5 planning documents throughout the Western United States since  
6 1970, many of them being EIRs and EISs.

7 Among our previous clients are several of the parties  
8 involved with the Mono Lake water resource issues, including  
9 the City of Los Angeles, Metropolitan Water District of  
10 Southern California, County of Inyo, California Department of  
11 Fish and Game, and Parks and Recreation, State Lands  
12 Commission, the U. S. Forest Service, U. S. Fish and Wildlife  
13 Service, and the U. S. Environmental Protection Agency.

14 We included 35 technical staff members and 15 production  
15 staff members in preparing this report. A total of over 4300  
16 hours of personnel were required for the in-house effort, and  
17 in addition, 18 Mono Basin researchers and professional  
18 subcontractors were directly involved in the EIR effort.  
19 These individuals are listed in my written testimony.

20 Well, if a wheelbarrow is needed to carry the Draft Eir,  
21 I think a 10-yard dump truck is probably needed to carry all  
22 the documents that we considered in preparing that report.

23 The EIR is a very large document, it has been  
 24 acknowledged, because it evaluates a wide range of impacts on  
 25 many resources about which a great deal is known.

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1 During the preparation of the report, our staff members  
 2 and subcontractors consulted relevant documents, visited Mono  
 3 Basin as frequently as needed, spoke to as many knowledgeable  
 4 individuals as possible in the Mono and Owens Basin and  
 5 throughout California.

6 Information sources eventually used in the Draft EIR  
 7 included over 600 printed references and about 150 personal  
 8 communications. These included, and certainly were not  
 9 limited to the California Department of Fish and Game's Stream  
 10 Evaluation Report, reports of the Restoration Technical  
 11 Committee charged by the court with restoring fish habitat  
 12 along the tributary streams, research reports from Sierra  
 13 Nevada Aquatic Research Laboratory investigating aquatic  
 14 productivity of Mono Lake, studies of Mono Lake bird  
 15 populations by the Point Reyes Bird Observatory, and the Hups  
 16 Marine Research Institute staffs, air quality studies prepared  
 17 by the Great Basin Unified Air Pollution Control District, and  
 18 historical research by the Mono Lake Committee.

19 Another wheelbarrow may possibly be needed to transport  
 20 the 28 auxiliary reports prepared by various persons to help  
 21 us provide the basis for some of the impact assessments in the  
 22 EIR. These particular reports are the product of individual  
 23 authors and reflect their conclusions alone, but the  
 24 information and conclusions in them were considered by our  
 25 staff in preparing our impact assessments.

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1 In sum a tremendous amount of information and research  
 2 is ongoing in the Mono Basin, and this body continues to  
 3 enlarge annually.

4 Jones and Stokes will consider new information in helping  
 5 the Board prepare the final EIR.

6 Our understanding of the Mono and Owens Basin ecosystems  
 7 is now substantial on an acre-foot basis. I think our  
 8 understanding is staggering, clearly in my opinion, and an  
 9 adequate basis for the Board's action.

10 Let me now turn to the project under consideration, the  
 11 review of the City's water rights in Mono Basin. Project  
 12 objectives were stated by the Chairman briefly. The  
 13 establishment and maintenance of instream flow requirements in  
 14 the Mono Lake tributaries from which the City diverts water is  
 15 necessary, to satisfy State law, Fish and Game Code law, and  
 16 the establishment of the maintenance of water elevation  
 17 requirements for Mono Lake to avoid unnecessary harm to public  
 18 trust resources.

19 Before describing project alternatives to meet these  
 20 objectives, may I briefly describe the City's aqueduct system.  
 21 The partial diversion of streams tributary to Mono Lake begins  
 22 with Lee Vining Creek near the road ascending to Yosemite's  
 23 Tioga Pass, shown in Figure 1-S in the EIR and is the second  
 24 graphic here. Lee Vining conduit carries the diverted waters  
 25 southward toward Rush Creek watershed adding diversions from

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1 two relatively small tributaries, Walker and Parker Creeks,  
 2 and the conduit discharges into Grant Lake Reservoir which is  
 3 an impoundment of Rush Creek, also a major tributary to Mono  
 4 Lake.

5 Across the reservoir, the waters from these four sources  
 6 are drawn into a tunnel and buried aqueduct directed towards  
 7 the West Portal of Mono Craters tunnel. However, Mono Gate  
 8 Number 1 flows to sustain Rush Creek are released via the  
 9 return ditch into the stream channel a short distance below  
 10 the Grant Lake Dam.

11 The Mono Craters tunnel carries the Mono Basin exports by  
 12 gravity flow into the upper portions of the Owens River  
 13 watershed, discharging at the East Portal to the Upper Owens  
 14 River as shown on Figure 1-4 in the Draft EIR, which is  
 15 reproduced across from me.

16 Here the exports begin to mingle with the many  
 17 tributaries of Owens River. These waters together pass  
 18 through a regulating reservoir, Lake Crowley, and descend  
 19 through power generating stations into the Owens Gorge,

20 through the gorge itself, and enter a second regulating  
 21 reservoir, Pleasant Valley.

22 As these waters continue to flow southward through the  
 23 Owens Valley, shown now on Figure 1-5 of the Draft EIR next to  
 24 Mr. Hutchison, waters not only from tributaries of the high  
 25 Sierra, but also from the City's pumping of groundwater in the

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1 Owens Basin join the river. Middle Owens River flows through  
 2 a third regulating reservoir, Tinemaha, and just downstream  
 3 enters the Los Angeles Aqueduct half way between the towns of  
 4 Big Pine and Independence.

5 The aqueduct bypasses the now dry lake bed of Owens Lake  
 6 which was originally a sink for all the flows in the Owens  
 7 River. It then discharges to a fourth reservoir, Haiwee, at  
 8 the Southern end of the Owens Basin.

9 From here the water enters an aqueduct once again and is  
 10 transported to distribution reservoirs in Los Angeles County.

11 Prior to the restriction of Mono Basin exports by the  
 12 court, the Mono Basin exports contributed about 20 percent of  
 13 the water taken by the Los Angeles aqueduct system on average.

14 Alternatives: Well, the EIR evaluates the full range of  
 15 possible water rights alternatives ranging from imposing no  
 16 new restrictions on diversion to ending all diversions.

17 The no restriction alternative, however, cannot meet the  
 18 project objectives and therefore is considered infeasible.

19 Five intermediate alternatives have been formulated based  
 20 on minimum lake level targets as shown on the EIR Figure S-1  
 21 and also Figure 2-1, which is reproduced next to me here.

22 Stream diversion rules are used that require specified  
 23 water releases to the lake based on the anticipated year type,  
 24 whether wet, dry, or normal, and also based on the elevation  
 25 of the lake in relation to the target minimum elevation of

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1 this alternative.

2 Associated with each alternative is a project average  
 3 volume of water exports listed on the top of the graphic in  
 4 thousands of acre-feet ranging from nothing to 85,000 acre-  
 5 feet a year long-term average.

6 The alternatives are listed along the bottom of the  
 7 graphic. These are the minimum target lake levels and the  
 8 vertical scale shows you the lake elevation. The bars  
 9 represent fluctuation of the lake level under that  
 10 alternative for three 50-year periods.

11 The relationship between lake level, export volume,  
 12 and tributary streamflows for each alternative were  
 13 determined through the development of a water balance model  
 14 for Mono Lake and an aqueduct operations model called LAAMP.  
 15 You will certainly hear more about these models as we  
 16 proceed.

17 Please note that these are not the static lake level  
 18 alternatives. Under each alternative the lake level will  
 19 fluctuate through a predictable range of lake levels in  
 20 response to the annual changes in precipitation indicated by  
 21 the range at the bars.

22 For both the higher and the lower lake level  
 23 alternatives, a transition period will be required for the  
 24 lake to attain the long-term dynamic equilibrium level, in  
 25 some cases several decades.

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1 This is why we show the three bars for each  
 2 alternative. For each alternative the EIR considers the  
 3 impacts of the entire range of the predicted lake levels as  
 4 is appropriate for each particular resource topic area.

5 In my written testimony I have summarized the  
 6 predicted fluctuation of the lake level and export volume  
 7 for each alternative which is also summarized on the graph.

8 Because the instream flow requirements of the  
 9 California Department of Fish and Game were not available  
 10 when the EIR process began, as Dan Frink noted, the  
 11 formulation of alternatives was based on lake levels rather  
 12 than on streamflows needed to maintain the fisheries, but  
 13 nonetheless, whatever fishery flows are eventually  
 14 determined by the Board to be appropriate will be associated  
 15 with some net inflow to Mono Lake at a corresponding lake  
 16 level. Thus, the range of alternatives defined in the EIR

17 are sufficiently broad to cover any potential inflow that  
 18 would result from whatever fishery flows are finally  
 19 adopted.  
 20 Identifying the anticipated environmental effects of  
 1 the project requires establishing a point of reference from  
 22 which impacts will be measured. As Dan Frink noted, in this  
 23 instance water diversions by the City of Los Angeles were  
 24 initiated prior to the enactment of CEQA. Thus, the project  
 25 evaluated in the Draft EIR is not the initiation of water

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1 diversions by the City of Los Angeles, but the changes  
 2 needed in water diversion practices to accomplish the  
 3 project objectives.

4 As a point of reference for considering the impacts,  
 5 therefore, we used the environmental conditions of Mono Lake  
 6 and the tributary streams that were present before the  
 7 issuance of a preliminary injunction of the court in August  
 8 of 1989.

9 The water surface elevation at that time was  
 10 approximately 6376 feet shown by the dashed line, and  
 11 minimum flows were required at that time in Rush Creek and  
 12 Lee Vining Creek, but not in Parker or Walker Creeks.  
 13 That's the baseline condition for the EIR.

14 Well, CEQA also requires the examination of the  
 15 cumulative effects of a proposed project defined as  
 16 environmental changes resulting from closely related past,  
 17 present and reasonably foreseeable future projects. Past  
 18 diversions of Mono Lake tributary streams are closely  
 19 related to past projects. The environmental setting for  
 20 which most of the cumulative impacts of the alternatives  
 21 that can be measured, therefore, was considered to be the  
 22 conditions in Mono Basin after completion of the diversion  
 23 facilities but prior to diversion of water by the City.

24 But in some cases diversions by ranching operations  
 25 prior to the City of Los Angeles' diversions were also

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1 considered in the cumulative impact assessment.

2 CEQA also calls for the use of forecasting  
 3 environmental impacts, but not where such forecasting  
 4 becomes remote and speculative. Such limits are germane to  
 5 the analysis of impacts of the City's water supply.

6 In the Draft EIR alternative water supplies for  
 7 possible reductions in Mono Basin exports are examined  
 8 because these sources are generally known.

9 The physical environmental impacts of developing such  
 10 supplies, however, were not evaluated because the specific  
 11 alternatives to be taken by the City after the Board's  
 12 action are unknown. The city will have a responsibility  
 13 itself under CEQA to examine impacts of specific water  
 14 development actions once those are formulated.

15 Well, if I may continue, Mr. Chairman, I would like  
 16 to turn to some of the major conclusions of the Draft EIR.

17 Beginning on page 11 of my written testimony, you can  
 18 find summary statements of each of the major conclusions  
 19 of the Draft EIR. This goes for several pages. There are  
 20 some 56 conclusions which reflect conclusions stated in  
 21 tabular form in the Draft EIR.

22 Because the number of conclusions is so large, I will  
 23 only focus on a few of them this morning.

24 With regard to fisheries, we concluded that all  
 25 feasible alternatives would increase Mono Basin fish habitat

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1 over the point of reference condition, but the degree to  
 2 which the increases would approach the prediversion  
 3 condition cannot be estimated with reasonable accuracy.

4 Predicted increases in fish habitat for the point of  
 5 reference are similar but increasing for lake levels ranging  
 6 from the 6372-foot to 6390-foot alternatives.

7 Well, the benefits of increasing physical habitat  
 8 because of higher average streamflows would be countered to  
 9 various degrees by the impacts on the fishery caused by high  
 10 streamflows in unstable channels. Under the higher lake  
 11 level alternatives loss of habitat could be significant loss  
 12 of habitat, could be significant unless mitigated by the  
 13 distribution of high flows through overflow channel systems

14 or flood relief structures that are not in use today.

15 A flow regime balancing those two factors as  
 16 recommended by the California Department of Fish and Game in  
 17 the preliminary reports was approximated by Jones & Stokes  
 18 in the draft to be approximated by the 6383-foot  
 19 alternative.

20 Turning to the upper Owens River, the 6377-foot  
 21 alternative and higher lake level alternatives would result  
 22 in significant losses of trout habitat along the upper Owens  
 23 River because of the reduced exports from Mono Basin. 6383-  
 24 foot and higher alternatives would also entail significantly  
 25 higher stream temperatures and greater effects from water

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1 quality degradation from Hot Creek downstream a ways; but  
 2 some, and perhaps most of these effects were mitigable  
 3 depending on the operation of Grant Lake Reservoir, and in  
 4 regulating the export volumes.

5 Turning to vegetation, our staff concluded that  
 6 geomorphic changes resulting from past streamflow diversions  
 7 by the City, have caused an irreversible loss of riparian  
 8 habitat along the tributary streams, but nonetheless, some  
 9 habitat is still recoverable along these streams.

10 Lower lake level alternatives would involve a  
 11 significantly reduced potential for the presence of high  
 12 seasonal streamflows, flushing flows if you will, needed for  
 13 vegetation recovery. And the very lowest of those  
 14 alternatives would likely cause further channel incision and  
 15 erosion during spills in high runoff periods.

16 The highest lake level alternatives may also cause  
 17 some channel erosion and would inhibit the recovery of the  
 18 degraded aquatic riparian habitat along the tributary  
 19 streams during the frequent periods of high snowmelt runoff.  
 20 These streams are in a rather sensitive condition and will  
 21 be for a number of years.

22 Turning to vegetation around the lake, we concluded  
 23 that the acreage of vegetative wetlands that had developed  
 24 on the relicted lands as the lake has been drawn down would  
 25 be significantly reduced under the 6383-foot and all the

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1 higher lake level alternatives.

2 On the other hand, freshwater and brackish lagoons  
 3 around the lake, now a small fraction of the prediversion  
 4 amount, would begin to increase in number and acreage with  
 5 the 6380-foot alternative and would increase substantially  
 6 under the higher lake alternatives.

7 If I could turn to wildlife, considering emergence of  
 8 the islands in Mono Lake and the opportunity for predation  
 9 by coyotes or other terrestrial predators, we have concluded  
 10 that the gull nesting capacity at Mono Lake's islands has  
 11 diminished an estimated 60 percent during the diversion  
 12 period.

13 Under the 6372-foot and lower lake level  
 14 alternatives, this capacity would decrease significantly.  
 15 Under the 6377-foot alternative, capacity would generally be  
 16 well above the prediversion level, except that significant  
 17 predation would continue to occur during extreme drought  
 18 periods.

19 Secondly, a significant reduction in the invertebrate  
 20 food for water birds using Mono Lake's productivity as  
 21 reflected in a restricted foraging area would occur under  
 22 the 6372-foot and lower lake level alternatives.

23 And again, under the 6377-foot alternative, that  
 24 reduction would occur during drought periods.

25 Migratory duck populations decreased substantially

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1 during the diversion period from perhaps a million to on the  
 2 order of a few tens of thousands. Duck habitat would  
 3 increase under the 6383-foot alternative and would gradually  
 4 increase further for higher lake level alternatives as new  
 5 freshwater and brackish water habitat reformed around the  
 6 lake.

7 And finally, surplus habitat is available for the  
 8 snowy plover, a candidate for listing as an endangered  
 9 species, under all the intermediate lake level alternatives.

10 Turning to Mono Lake aquatic productivity, a

11 significant reduction in brine shrimp productivity from the  
12 point of reference would occur under the 6372-foot  
13 alternative and the lower lake level alternatives.

14 And also, under the 6377- and 6383-foot alternatives,  
15 productivity would remain significantly lower than the  
16 likely productivity during the prediversion period.

17 Alkali fly productivity, the second invertebrate that  
18 provides major food supplies for birds at the lake, is a  
19 maximum under the 6383-foot alternative. A significant  
20 reduction in alkali fly productivity would not occur under  
21 the feasible alternatives, however. Alkali fly productivity  
22 under prediversion times is uncertain and, therefore, we  
23 cannot reliably predict the effects at the highest lake  
24 level alternatives.

25 Let me turn to air quality, the dust storm problem at  
00064

1 Mono Lake. As you probably know, extensive salt deposits  
2 have formed on portions of the lakebed that were exposed by  
3 lake level lowering during the diversion period and these  
4 salt deposits are prone to episodes of significant wind  
5 erosion.

6 Measured particulate matter, PM-10 concentrations,  
7 have exceeded the federal standard by more than a factor of  
8 three, and have exceeded the State standard by a factor of  
9 nearly ten. Most of these violations have been recorded in  
10 the sparsely populated areas north and east of Mono Lake.

11 The federal RM standards would be met at all the  
12 major public use areas and monitoring stations under the  
13 6390 or higher lake level alternatives.

14 The more stringent State PM-10 standards would be met  
15 most of the time, but a few limited violations might still  
16 occur under the 6390 alternative.

17 Coming down to the 6383-foot alternative, the  
18 severity and extent of dust storms would decrease  
19 significantly from the point of reference, and the frequency  
20 of such events would decrease modestly. The frequency of  
21 such events would be very close to the federal standards,  
22 but occasional violations of the more stringent State PM-10  
23 threshold would be expected.

24 Under the 6377-foot and lower lake level  
25 alternatives, 10 to 15 or more dust storms per average year  
00065

1 would occur with PM-10 concentrations exceeding State and  
2 federal standards over extensive areas.

3 Visual resources of the lake -- primarily I will  
4 focus on the tufa -- restoring the lake to the 6383-foot or  
5 higher lake level alternatives would diminish the tufa  
6 resources of Mono Lake. Under the 6383 and higher lake  
7 level alternatives, sand tufa formations which are less well  
8 known than the other tufa formations, would be destroyed.  
9 For the 6390 and higher lake level alternatives, significant  
10 toppling of tufa towers from wave action and significant  
11 inundation of other tufa formations would occur increasing  
12 in magnitude with lake levels.

13 Recreation opportunity at Mono Lake itself would  
14 decline significantly at least with the 6410 and higher lake  
15 level alternatives because of the loss of visible tufa.  
16 Recreation use would increase the most for the 6383-foot  
17 alternative.

18 These conclusions were based on surveys and other  
19 assessments, user surveys.

20 For lake levels corresponding to 6377 and higher,  
21 Grant Lake Reservoir and Crowley Lake Reservoir boating  
22 facilities, some of them would become unusable significantly  
23 more often, but these effects could be mitigated through  
24 reconstruction of those facilities.

25 A significant reduction in the use of Crowley Lake  
00066

1 Reservoir, which is heavily used, would occur only under the  
2 6410 and any higher alternatives.

3 Well, turning to the City's water supply, which is,  
4 of course, of major importance, we concluded that decrease  
5 in the water supply for the City would be significant for  
6 the 6383 and higher lake level alternatives because of the  
7 estimated replacement cost for that water, some 15 to 25

8 percent of the cost of the City's total water supply.

9 These potential cost increases could be mitigated,  
10 however, if the City developed water reclamation projects,  
11 pursues water transfers from agricultural users, develops  
12 reclaimed water with congressional funding or other sources,  
13 participates fully in Metropolitan Water District's  
14 rebatement programs, continues to develop demand-side  
15 reductions and increases conservation of local runoff.

16 The City's power supply was also considered. Most of  
17 the alternatives would result in a slight decrease in power  
18 generated by the City at the aqueduct hydroelectric power  
19 plants, result in no more than one to two percent higher  
20 fuel costs for replacement power. This is not considered  
21 significant.

22 And finally, the economic cost and benefits of the  
23 alternatives were studied. We concluded that by considering  
24 the replacement costs of water supply and power generation,  
25 and also, the public's estimated willingness to pay for

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1 recreational opportunities and preservation of the Mono Lake  
2 ecosystem, positive net economic benefits compared to the  
3 point of reference would accrue under the three mid-lake  
4 level alternatives with the highest of those, the 6390  
5 alternative, having the highest net benefit.

6 Well, contrary to some reports, the Draft EIR does  
7 not contain a recommended alternative. Identification of  
8 the environmentally superior alternative, however, is  
9 required by CEQA. This identification that we have made  
10 does not entail balancing of public trust values with the  
11 water needs for other purposes. It only identifies an  
12 alternative that would have the least impact on the physical  
13 environment as that term is defined by CEQA.

14 Well, considering the point of reference baseline  
15 condition, the 6388-foot alternative appears to be the  
16 environmentally superior alternative and it comes closest,  
17 we believe, to satisfying preliminary Fish and Game  
18 recommendations developed to optimize recovery of the  
19 prediversion fishery conditions.

20 If one considers the baseline as the prediversion  
21 condition, the higher 6390-foot alternative appears to be  
22 the environmentally superior alternative, not the middle  
23 diversion or even the 6410, but the 6390 alternative.

24 Well, my understanding is that the Board now intends  
25 to consider these environmental impacts together with the

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1 City's needs for water and power to choose an alternative  
2 that satisfies the law and avoids harm to the public trust  
3 values, and the key resources in this balancing appear to me  
4 to be fish productivity in the diverted Mono Basin streams  
5 in the upper Owens River, lake invertebrate productivity,  
6 and water bird food supply, California gull nesting,  
7 riparian habitat along the diverted streams, dust storms,  
8 tufa persistence and visibility, recreation use levels, and  
9 the City's water and power supply.

10 Even if the lake were restored to the 6383-foot  
11 alternative, dust storms exceeding State air quality  
12 standards would continue to occur, although less frequently  
13 and over a considerably smaller area than currently.

14 Sand tufa would be destroyed. The City would need to  
15 implement additional water supply development programs to  
16 avoid a significant cost increase.

17 And additional restoration efforts to prevent adverse  
18 effects of high streamflows on fisheries would probably be  
19 required.

20 But at the higher lake level alternatives loss of  
21 tufa would be substantial and at lower lake level  
22 alternatives dust storms would become more intense, frequent  
23 and widespread, and biological impacts would begin to  
24 materialize.

25 Adoption of the 6383-foot alternative will also be  
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1 consistent with the lake management regime recommended in  
2 the East Service comprehensive management plan for the Mono  
3 Basin National Forest scenic area.

4 That is my summary. Thank you very much.

5 MR. DEL PIERO: Thank you very much, sir.  
6 MR. FRINK: Q Mr. Casaday, just a couple of  
7 questions so we are sure our record is complete.  
8 State Water Resources Control Board Exhibit 23 is  
9 titled Written Testimony of Ken Casaday for the Mono Basin  
10 Water Rights Hearing, October, 1993.

11 Is this a true and accurate statement of your  
12 testimony in this proceeding here today?

13 MR. CASADAY: A Yes, it is.

14 Q And Attachment A to State Water Resources Control  
15 Board Exhibit 23 appears to be your resume'. Is that a true  
16 and accurate statement of your qualifications as it relates  
17 to the subject of your testimony today?

18 A Yes, it is.

19 MR. FRINK: Okay. Thank you very much.

20 Mr. Chairman, I would suggest saving the cross-  
21 examination of Mr. Casaday until we are ready to proceed  
22 with the cross-examination of the first group or panel of  
23 witnesses from Jones & Stokes. He may have some answers to  
24 questions given to that group, and as was apparent from his  
25 statement as Project Manager, he did not assume the role of

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1 expertise over the whole thing, but rather, as a Manager.

2 MR. DEL PIERO: That's fine.

3 I am assuming at this point in time that the other  
4 individuals who are here today and who are going to be  
5 available for cross-examination are going to identify  
6 themselves now and identify their testimony.

7 MR. FRINK: Yes, that's the case. We are going to  
8 keep it as brief as we can.

9 Mr. Casaday gave an overview of the entire process  
10 and actually what we had in mind is that the other experts  
11 who participated in preparing the EIR would essentially  
12 identify the written testimony, the areas that they worked  
13 on in the EIR, their statement of qualifications, and become  
14 available for cross-examination.

15 MR. DEL PIERO: That's fine. Why don't we proceed  
16 with that.

17 MR. FRINK: The next witness is Dr. Russell Brown.

18 RUSSELL T. BROWN,

19 having been sworn, testified as follows:

20 DIRECT EXAMINATION

21 by MR. FRINK:

22 Q Please state your name and place of employment, and  
23 your position in that employment for the record, Mr. Brown.

24 A My name is Russell T. Brown and I do work at Jones &  
25 Stokes Associates, and my job title there is a Senior

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1 Environmental Scientist.

2 Q Have you been sworn as a witness?

3 A Yes, I have.

4 Q And did you prepare a document entitled Written  
5 Testimony of Russell Brown for the Mono Basin Water Right  
6 Hearing?

7 A Yes, I did.

8 Q Is that document the one that has been designated as  
9 State Water Resources Control Board Exhibit 18 in this  
10 hearing?

11 A Yes.

12 Q Your written testimony indicates that you assisted in  
13 preparing the Draft EIR for the review of the City of Los  
14 Angeles water diversions in the Mono Lake Basin. You are  
15 the Team Leader responsible for the Water Balance Aquatic  
16 Simulation model and other topics regarding water resources.

17 Could you briefly summarize without repeating the  
18 entire content of your resume', your education and  
19 qualifications relevant to that area?

20 A As my resume' attached describes, I have a Civil  
21 Engineering Degree from the University of California at  
22 Irvine, and then later a Ph.D. from Massachusetts Institute  
23 of Technology, also in Civil Engineering in Water Resources.

24 My career has been filled with developing water  
25 resource related models for environmental assessments such

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1 as those developed for the Mono EIR.

2 Q Is Attachment A to your written testimony, which is  
3 designated as Exhibit 18, a true and accurate summary of  
4 your professional education and experience as it relates to  
5 the subject matter of your testimony?

6 A Yes, it is.

7 Q What portion of the Draft EIR did you assist in  
8 preparing, Dr. Brown?

9 A Okay. I worked on helping with the model of the  
10 aqueduct system called the LAAMP model, the hydrology of the  
11 system which appears as Chapter 3-A in developing some of  
12 the details of each of the lake level target alternatives,  
13 which is described pretty much in Chapter 2.

14 Also, the water quality chapter which I believe is 3-  
15 B, the aquatic productivity chapter, and several of the  
16 appendices, one in particular on the water budget for Mono  
17 Lake itself, and then some of auxiliary reports that  
18 describe some of the modeling techniques that were used in  
19 the environmental assessments.

20 Q Is State Water Resources Control Board Exhibit 18 a  
21 true and accurate statement of your testimony in this  
22 proceeding?

23 A Yes, it is.

24 MR. FRINK: At this point, I would like to offer  
25 Exhibit 18 into evidence.

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1 MR. DEL PIERO: I will take that following cross-  
2 examination.

3 MR. FRINK: Okay, fine.

4 And in the interest of time, we will move on to the  
5 next witness, who assisted with the water resources in the  
6 Draft EIR, and that is Dr. Philip Unger, and then we will  
7 make all these witnesses available for cross-examination as  
8 a group.

9 PHILIP A. UNGER,

10 having been sworn, testified as follows:

11 DIRECT EXAMINATION.

12 by MR. FRINK:

13 Q Dr. Unger, could you please state your full name,  
14 place of employment and your position, for the record?

15 A My name is Philip A. Unger. I am an Environmental  
16 Specialist at Jones & Stokes.

17 Q Dr. Unger, have you been sworn as a witness in this  
18 proceeding?

19 A Yes, I have.

20 Q Did you prepare a document entitled Written Testimony  
21 of Philip Unger for Mono Basin Water Rights Hearing, 1993?

22 A Yes, I did.

23 Q And is that the document that has been designated as  
24 Water Resources Control Board Exhibit 19 in this proceeding?

25 A Yes.

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1 Q Do you believe that to be a true and accurate  
2 statement of your testimony in this proceeding?

3 A Yes.

4 Q Your written testimony indicates that you helped  
5 prepare the evaluation of the impact on Mono Lake aquatic  
6 productivity of various alternatives examined in the Draft  
7 EIR.

8 Would you please briefly summarize your education and  
9 professional qualifications relevant to that area of work.

10 A I have a Ph.D. from the University of Colorado,  
11 Boulder, in Aquatic Ecology, and I earned that about ten  
12 years ago, and since then I have spent a lot of time working  
13 in large lake systems looking at relationships of the  
14 different organisms and production in each system.

15 Q Is Attachment A to your written testimony a true and  
16 accurate summary of your professional education and  
17 experience as it relates to the subject matter of your  
18 testimony?

19 A Yes, it is.

20 Q And could you describe briefly the portions of the  
21 Draft EIR you assisted in preparing?

22 A Yes, I assisted in the Aquatic Productivity chapter,  
23 Chapter 3-A. I helped to evaluate the information that we  
24 received on the brine shrimp and alkali fly, and helped to

25 develop a model for the alkali fly in both those sections,

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1 and also, the appendices that were related to alkali fly and  
2 brine shrimp.

3 MR. FRINK: Thank you, Dr. Unger. I appreciate your  
4 testimony.

5 Our next witness, who also participated as a part of  
6 what is viewed as the Water Resource Team, who worked on the  
7 Draft EIR, is William Hutchison.

8 WILLIAM HUTCHISON,  
9 having been sworn, testified as follows:

10 DIRECT EXAMINATION

11 by MR. FRINK:

12 Q Mr. Hutchison, would you please state your name and  
13 place of employment, and the role you played in preparing  
14 the Draft EIR, the work concerning the Draft EIR.

15 A My name is William Hutchison. I am employed with the  
16 Woodward Clyde Consultants, Santa Ana, California, and I  
17 acted as a subcontractor specifically in the preparation of  
18 LAAMP, the Aqueduct Simulation Model.

19 Q Have you been sworn as a witness in this proceeding,  
20 Mr. Hutchison?

21 A Yes, I have.

22 Q Did you prepare a document entitled Written Testimony  
23 of William Hutchison for the Mono Basin Water Rights Hearing,  
24 dated 1993?

25 A Yes.

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1 Q And is that the document that has been designated as  
2 WRCB Exhibit 20 in this proceeding?

3 A As far as I know, yes.

4 Q Your written testimony indicates that you prepared  
5 what is titled as the Los Angeles Aqueduct Monthly Program  
6 Model, LAAMP Model, that was used in preparing the Draft EIR  
7 for review of the City of Los Angeles water diversions.

8 Would you briefly summarize your education and  
9 professional qualifications and experience that are relevant  
10 to the subject of the hydrologic model?

11 A Yes. I have a Bachelor of Science Degree from the  
12 University California at Davis in Soil and Water Science. I  
13 hold a Master's Degree from the University of Arizona in  
14 Hydrology.

15 And since February of 1985, I have been involved in  
16 Eastern Sierra water management issues through consultations  
17 with Inyo County and as a subconsultant on this project  
18 along with various other contracts I have fulfilled in this  
19 time period.

20 Q Okay. Is Attachment A to your written testimony a  
21 true and accurate summary of your professional education and  
22 experience as it relates to the subject matter of your  
23 testimony?

24 A Yes, it is.

25 Q Could you describe briefly the portions of the Draft

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1 EIR, or the auxiliary reports, in which the LAAMP model is  
2 discussed?

3 A I prepared Auxiliary Report No. 5, which is the LAAMP  
4 documentation. I did not assist in any way in the  
5 preparation of the EIR.

6 Q Is it your understanding that the model that you  
7 prepared and described in Auxiliary Report No. 5 was then  
8 used in preparing the EIR?

9 A Yes. In my cursory review of the EIR, I noticed  
10 LAAMP was used quite a bit.

11 Q Could you affirm that the statements made in State  
12 Water Resources Control Board Exhibit 20, Written Testimony  
13 of William Hutchison for the Mono Basin Water Rights Hearing  
14 is a true and accurate summary of your testimony in this  
15 proceeding?

16 A Yes.

17 MR. FRINK: Okay. That, really, will complete our  
18 direct examination of the witnesses who participated as part  
19 of the Water Resources Team in preparing the Draft EIR, as  
20 well as the overview that Mr. Casaday gave of the EIR  
21 process, Mr. Chairman.

22 MR. DEL PIERO: Thank you very much, Mr. Frink.

23 Mr. Birmingham, it is my inclination not to start.

24 your cross-examination at this point. It is my inclination

25 to break for lunch, and rather than come back at 1:30, which

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1 is what we normally do, come back at 1:15.

2 Do you have any objection to that?

3 MR. BIRMINGHAM: No, I do not.

4 MR. DEL PIERO: I would hate to interrupt your cross-  
5 examination unless you have some objection.

6 MR. BIRMINGHAM: I have no objection. In fact, I  
7 appreciate your concern about interrupting the cross-  
8 examination.

9 There is one issue I would like to raise, if I may  
10 take a few moments, and that relates to the order of cross-  
11 examination.

12 The October 15, 1993, letter that was sent by the  
13 staff with Mr. Pettit's signature for you, indicated the  
14 order of cross-examination would be as outlined in I  
15 believe the fifth page of the letter.

16 Although with respect to some of the witnesses of the  
17 parties it would make sense, with respect to other parties, I  
18 wonder if we may be able to deviate from that order, and  
19 principally, what I had in mind was that with respect to the  
20 cross-examination of witnesses called by the parties, that  
21 the cross-examination by other parties with a community of  
22 interest or a common interest occur prior to cross-  
23 examination by adverse parties.

24 For instance, on the cross-examination of the Audubon  
25 Society and Mono Lake Committee witnesses, it may be more

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1 appropriate for Cal Trout, Department of Fish and Game or  
2 the State Lands Commission to cross-examine before the  
3 Department of Water and Power.

4 On the other hand, with respect to Metropolitan Water  
5 District, it may be more appropriate for the Department of  
6 Water and Power to cross-examine first because it is likely  
7 that because of communities of interest, cross-examination  
8 may raise questions that other parties might want to  
9 address.

10 MR. DEL PIERO: Mr. Birmingham, I appreciate your  
11 request. However, I don't think I am going to grant it and  
12 the reasons are several.

13 First of all, the notice of the procedure that the  
14 Board is going to be following at this hearing has been made  
15 very clear since the beginning, and I don't think there has  
16 been any expectation that any modification of that procedure  
17 was going to take place.

18 Moreover, rather than having to render a decision on  
19 every panel or every witness that is brought forward by  
20 every party, it seems to me to be much more appropriate,  
21 both from a procedural standpoint and from the standpoint of  
22 the public, a number of whom are participating in this,  
23 keeping track of what is actually going on here, and  
24 understanding the process this Board is attempting to  
25 pursue, that the order that was outlined in the notice, in

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1 fact, be followed, so although I appreciate your concern,  
2 and in a perfect world we might do it that way, we are going  
3 to do it in the way we have it laid out.

4 Let me point out that Ms. Forster advises me she has  
5 to make a speech and can't be back until 1:30. I am going  
6 to modify what I just said. We are going to come back at  
7 1:30. We have all five Board members here today and as long  
8 as we have the potential of having five Board members here,  
9 I am going to make sure all of them have the maximum  
10 opportunity to participate.

11 (Noon recess)

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1 WEDNESDAY, OCTOBER 20, 1993, 1:30 P.M.

2 --oOo--

3 MR. DEL PIERO: Ladies and gentlemen, this hearing  
4 will again come to order.

5 As is apparent, Board Member Forster has not returned  
6 yet from the speech she had to deliver, so I will offer her  
7 apologies.

8 When last we left this episode, Mr. Birmingham was  
9 preparing himself to cross-examine the individuals at the  
10 table.

11 Without further ado, why don't you join us.

12 MR. BIRMINGHAM: Mr. del Piero, I'm not sure how the  
13 Hearing Officer would like us to proceed. What I would  
14 propose is that I cross-examine Mr. Casaday as an individual  
15 witness and then other parties cross-examine that witness,  
16 or shall we cross-examine the entire panel?

17 MR. DEL PIERO: I want you to cross-examine the  
18 entire panel.

19 CROSS-EXAMINATION

20 by MR. BIRMINGHAM:

21 Q First, I will begin with Mr. Casaday.

22 Mr. Casaday, my name is Tom Birmingham. I am the  
23 attorney representing the Department of Water and Power in  
24 these proceedings. I believe we have met before; is that  
25 correct?

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1 MR. CASADAY: A That's correct.

2 Q I believe, Mr. Casaday, that in your oral summary of  
3 your written testimony you expressed the opinion that the  
4 Draft EIR is an adequate basis for the Board's action; is  
5 that correct?

6 A That's correct.

7 Q Is it your opinion that as it currently exists, the  
8 Draft EIR is an adequate environmental impact report for  
9 purposes of the Board's decision?

10 A No, I believe we need to have a final impact report  
11 before we act.

12 May I correct my previous answer? I believe I said  
13 in my testimony that the body of knowledge of the Mono Lake  
14 is sufficient for the Board's decision. I don't believe I  
15 said the EIR in its present form is adequate for that  
16 decision.

17 Q I believe that Mr. Frink indicated that a contract  
18 existed between the Department of Water and Power and Jones  
19 & Stokes Associates for the preparation of the EIR prepared  
20 in connection with these proceedings; is that correct?

21 A Yes.

22 Q And is it correct that the original contract with the  
23 Department of Water and Power was a contract for 1.8 million  
24 dollars?

25 A I'm not certain of that.

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1 Q Are you aware that the contract was subsequently  
2 amended to make the total contract amount 3.2 million  
3 dollars?

4 A I'm not certain of these exact numbers, but that  
5 could be in the right realm.

6 Q Ultimately the third contract amendment was in  
7 December of 1992, and that amendment increased the total  
8 contract amount to 3.817 million dollars; is that correct?

9 A Again, I should point out that I have not been  
10 directly involved with the finances of this operation, but  
11 those numbers sound like they may be right.

12 Q Is it correct that you are currently negotiating with  
13 the DWP to increase the total contract amount by  
14 approximately an additional \$500,000?

15 A I believe so, four to five hundred thousand dollars.

16 Q The original scope of work included the preparation  
17 of a Lake Crowley Reservoir mixing model; is that correct?

18 A Yes.

19 Q And was that work funded by the original contract  
20 with the Department of Water and Power?

21 A I believe that was in the original scope of work,  
22 yes.

23 Q Was that model completed?

24 A My understanding is no.

25 Q That model would have provided a basis to analyze the

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1 potential eutrophication of Lake Crowley resulting from  
2 reduced inflow from the Mono Basin; is that correct?

3 A I believe that was the intent of the model.

4 Q Is it also correct that since the reduction of flows,  
5 or the elimination of flows from the Mono Basin into the  
6 Owens Valley at Lake Crowley, there has been increased  
7 growth of rooted macrophytes and blue-green algae?

8 A I'm not aware of that.

9 Q If there were increased growth of rooted macrophytes  
10 and blue-green algae, would that be evidence of  
11 eutrophication?

12 A In my understanding of eutrophication, it would be,  
13 yes. However, that is not an area that I consider myself an  
14 expert in.

15 Q I would like to refer for a moment, if I may, to the  
16 chart, figure 2-1, that you referred to in your summary of  
17 your written testimony. You indicated it contains bars  
18 which show the fluctuation of the lake at different  
19 alternatives; is that correct?

20 A Yes.

21 Q Before we discuss figure 2-1 specifically, I would  
22 like to ask, how did you select the labels for each  
23 alternative?

24 A The labels for the alternatives are the target  
25 minimum lake levels associated with our triggers that would

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1 cause releases of different amounts of runoff to the lake.

2 Q Isn't it correct that, in fact, the triggers at which  
3 the City would cease diversions or reduce diversions is  
4 actually one foot higher than each labeled lake alternative?

5 A I believe that's correct.

6 Q Isn't it correct that the labeled lake alternatives  
7 do not describe the low level of the lake associated with  
8 the management criteria described in the alternative?

9 A Could you repeat that?

10 Q Yes. Isn't it correct that the label for each  
11 alternative does not identify the low level of the lake  
12 associated with the management criteria established for each  
13 alternative?

14 A I believe the answer is yes, correct.

15 Q Does it describe the average lake level for each  
16 alternative?

17 A No, it doesn't.

18 Q Again, referring to the bars that are depicted in  
19 figure 2-1, isn't it correct that the low point on each bar  
20 was determined through the use of a drought analysis  
21 prepared in connection with the Draft EIR?

22 A Yes, the lower part of the dotted bar.

23 Q Now there are several dotted bars on figure 2-1.

24 Which dotted bar are you referring to or are you referring  
25 to all of them?

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1 A All of them.

2 Q The bottom of each dotted bar on figure 2-1 is too  
3 low for each of the alternatives; isn't that correct?

4 A Could you explain too low to me?

5 Q Well, perhaps I can explain it through some  
6 questions. Isn't it correct that the drought analysis that  
7 was prepared in connection with the Draft EIR failed to  
8 consider minimum fish flows during periods of drought?

9 A I believe in the first year of those drought  
10 simulations, that is true.

11 Q So that in the first year of each drought simulation  
12 it was assumed there would be no minimum fish flows?

13 A The effect of our calculation was that, yes.  
 14 Q But, in fact, there will be minimum fish flows in the  
 15 first year of each drought; isn't that correct?  
 16 A Yes, that would be true.  
 17 Q And that presumes that the State Board will comply  
 18 with the mandate that was established by Cal Trout II, that  
 19 it establish minimum flows for the restoration and  
 20 maintenance of fish in good condition?  
 21 A Yes.  
 22 Q Now, looking at the 6377 alternative --  
 23 MR. DEL PIERO: Pardon me for interrupting. I need  
 24 to ask you a question.  
 25 In the event, other members of the panel are more

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1 capable of answering some of the questions you are asking of  
 2 the current witness that you are cross-examining, would you  
 3 prefer they respond to your questions, or would you prefer  
 4 to get a response only from him at this time?

5 MR. BIRMINGHAM: I was asking Mr. Canaday (sic) these  
 6 questions because the information is set out in his written  
 7 testimony. However, if other members of the panel have  
 8 information that would assist Mr. -- did I say Canaday?  
 9 Excuse me. They both wear glasses and have a beard.

10 If other members of the panel have information that  
 11 would be helpful to the Board in response to my questions, I  
 12 would appreciate it if they would respond to the questions.

13 MR. DEL PIERO: The witnesses are do directed.

14 MR. CASADAY: This would apply to the questions you  
 15 just asked me about the fish flows. Dr. Russell Brown on  
 16 the drought analysis fish flows may be able to shed more  
 17 light on that.

18 Do you have any comments?

19 DR. BROWN: I guess I have an answer. The trout  
 20 analysis as presented is attempting to add information to  
 21 the bottom of these bars to give the Board and readers of  
 22 the EIR a full appreciation of what might occur if there  
 23 were to be a repeat of the observed drought sequences that  
 24 occurred in the thirties and again just recently in the  
 25 and into the nineties.

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1 This data is an analysis that attempts to describe  
 2 what would happen each year of a sequence of years and the  
 3 point that you are making is in the first years of each of  
 4 those, the lake level trigger that would be affected at  
 5 the median lake level, which is the cross on each of the  
 6 bars, was used for the lake level trigger the first year.

7 And it is true, as commenters have pointed out, that  
 8 for 72-77, 6383.5 and perhaps 6390, the lake level trigger  
 9 in a drought year is not 100 percent of the runoff to the  
 10 lake. So, for those alternatives for the first of a  
 11 sequence of seven years, the drop that was calculated is too  
 12 much of a drop in the first of the sequence of seven years.

13 The other six years have the properly calculated drops.  
 14 Q Under the 6377-foot alternative, failure to include  
 15 minimum fish flows in the drought analysis reduced the first  
 16 year's drop in lake level by .87 feet; is that correct?

17 DR. BROWN: A That could be correct. That's the  
 18 right order of magnitude. It would be similar to one more  
 19 year in a drought sequence which, of course, could also be  
 20 uncertain.

21 Q So, that suggests that the bottom bar or bars as  
 22 depicted on figure 2-1 are too low for each one of the  
 23 alternatives?

24 A Given the calculations that the lake had been at the  
 25 median lake level and proceeded through a seven-year

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1 sequence, it is off by one foot of what that seven-year  
 2 sequence would do, but, for example, it might be an eight-  
 3 year sequence, and then the bars as shown would become more  
 4 accurate.

5 Q But as described in the Draft EIR, the bars as  
 6 depicted on figure 2-1 are too low by approximately one  
 7 foot; is that correct?

8 A That's correct.

9 MR. STUBCHAER: Could I ask some questions for

10 clarification?

11 MR. DEL PIERO: Sure.

12 MR. STUBCHAER: The cross bar on each vertical bar  
 13 shows the median level and I think that's the average up  
 14 there; is it not?

15 DR. BROWN: A The way we calculate the average  
 16 mathematically is the median. It is the numerical sum and  
 17 then divided by the number of measurements.

18 MR. STUBCHAER: That's the average, not the median?

19 A It is the average.

20 MR. BIRMINGHAM: Q I would like to turn, if I may,  
 21 given the limited time I have, to the physical effects which  
 22 Mr. Casaday describes in his testimony.

23 MR. DEL PIERO: Just so you know, whenever a Board  
 24 member or I, as the Hearing Officer, interrupt the  
 25 questioning, the clock also stops, so it is not credited

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1 against your time in terms of cross-examination.

2 MR. BIRMINGHAM: I appreciate that very much.

3 MR. DEL PIERO: That applies to everyone.

4 MR. BIRMINGHAM: Q I believe, Mr. Casaday, that  
 5 you stated in your oral summary of your written testimony,  
 6 and it is in your written testimony, that the Department of  
 7 Fish and Game recommended flows result in a lake level which  
 8 approximates the 6383.5 feet alternative.

9 Is that correct?

10 MR. CASADAY: A Yes.

11 Q the Department of Fish and Game recommended flows  
 12 were not flows recommended to keep in good condition fish  
 13 that exist below the Department of Water and Power's  
 14 diversion facilities; is that correct?

15 MR. DODGE: Objection, calls for speculation as to  
 16 what the Department of Fish and Game intended.

17 MR. DEL PIERO: I think that is correct. I think you  
 18 may be able to get to the point you are looking for by  
 19 another form of question.

20 MR. BIRMINGHAM: Q As described in the Fish and Game  
 21 reports, isn't it correct, Mr. Casaday, that the Department  
 22 of Fish and Game recommended flows are flows that are  
 23 intended to optimize fish habitat?

24 MR. CASADAY: A I can't answer that question. I'm  
 25 sorry, I don't know the answer.

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1 MR. FRINK: Mr. Birmingham, just a clarification. I  
 2 believe that the lake level of 6383.5, he said, roughly  
 3 equated to the recommended flows from the Department of Fish  
 4 and Game. He stated that that equated with the preliminary  
 5 flow recommendations and I don't know that it necessarily  
 6 equates with the flow recommendations that they have finally  
 7 submitted in their final reports.

8 MR. BIRMINGHAM: Q For clarification, I believe you  
 9 were referring, Mr. Casaday, to the flow recommendations  
 10 from the Department of Fish and Game that were available at  
 11 the time the Draft EIR was prepared?

12 A The preliminary recommendations, and in answer to your  
 13 question about optimizing the fishery, my understanding is  
 14 that these are recommendations to optimize recovery to the  
 15 prediversion condition of the fishery.

16 So, in that sense, I guess, the answer would be yes.

17 I did not perform the fish studies and shouldn't be  
 18 considered the expert on this issue.

19 Q Of whom should these questions be asked?

20 A The Department of Fish and Game most appropriately, I  
 21 think, or Phil Dunn in our fishery panel that will be next.

22 Q Then, I would like to turn to vegetation. You stated  
 23 in your written testimony and in your oral summary that  
 24 diversions by the Los Angeles Department of Water and Power  
 25 have resulted in irreversible loss of riparian vegetation?

00092

1 A Yes.

2 Q Isn't it correct that the riparian vegetation along  
 3 Rush and Lee Vining Creeks is recovering at a dramatic rate?

4 A Some of the loss is recovering. It's not a large  
 5 percentage of the total loss.

6 Q Is it correct that the riparian vegetation is



7 recovering at a rate faster than anticipated by the Draft  
 8 EIR?  
 9 A We did not address rate of recovery in the report.  
 10 Q I believe you stated in your testimony that at the  
 11 6383.5 feet and higher alternatives, wetlands that have  
 12 formed around Mono Lake at its existing elevation would be  
 13 inundated; is that correct?  
 14 A Yes.  
 15 Q Under the 6377-foot alternative, these wetlands would  
 16 be preserved; is that correct?  
 17 A Off the top of my head, I can't recall whether all of  
 18 them would be preserved or not.  
 19 Q The wetlands that currently exist around Mono Lake at  
 20 the current elevation are valuable wildlife habitat; is that  
 21 correct?  
 22 A That question should probably be addressed to our  
 23 Wildlife and terrestrial Resources Panel. My understanding  
 24 is that the value of the vegetative wetlands around the lake  
 25 are relatively low wildlife habitat values.

00093

1 The wildlife values of the aquatic habitats around  
 2 the lake, or at least the previous ones, were probably of a  
 3 higher wildlife value.  
 4 Q Under the 6373, the correct person to ask about that  
 5 on your staff would be?  
 6 A Dr. Edward Beedy.  
 7 Q Under the 6373-foot alternative gull-nesting capacity  
 8 is above prediversion levels; is that correct?  
 9 A I believe that's what I said.  
 10 Q And you said in years of severe drought or periods of  
 11 severe drought, the lake level would fall and the gull-  
 12 nesting capacity would be reduced below prediversion levels;  
 13 isn't that correct?  
 14 A I believe we said that there would be significant  
 15 predation during drought periods. I'm not sure of the  
 16 relationship to the prediversion conditions.  
 17 Again, that question should be addressed to Dr.  
 18 Beedy.  
 19 Q The assumption that there would be significant  
 20 predation at the 6377 alternative is based upon the drought  
 21 analysis that is depicted in figure 2-1; isn't that correct?  
 22 A That's correct.  
 23 Q And we now know those barred lines are one foot too  
 24 low?  
 25 A That's correct.

00094

1 Q With respect to Caspian terns, can you tell me where  
 2 the Draft EIR describes the effect the various lake  
 3 alternatives would have on the nesting capacity of the  
 4 Caspian terns?  
 5 MR. FRINK: I wonder if you could save the questions  
 6 on specific subject areas that are not within the expertise  
 7 of Mr. Casaday until we get the witnesses of who did address  
 8 those issues in their testimony.  
 9 He did give an overview, but I think he acknowledged  
 10 he was giving an overview of work that other staff had done,  
 11 and although he is familiar with a lot of it, to a great  
 12 extent, he certainly is not the expert and cannot give you  
 13 the answers that those experts could give you in many of the  
 14 areas.  
 15 MR. BIRMINGHAM: Again, Mr. del Piero, I am referring  
 16 to the written testimony that was submitted by Mr. Casaday  
 17 in connection with my cross-examination. If I am being  
 18 informed by Mr. Frink that Mr. Casaday isn't the appropriate  
 19 person to ask these questions, I will defer those.  
 20 MR. DEL PIERO: Mr. Frink is pointing out something  
 21 that probably needs to be pointed out and that is that  
 22 everyone is allotted 20 minutes unless there is a showing of  
 23 necessity that is approved by the Hearing Officer,  
 24 In the interest of being sure that your time is used  
 25 in the most expeditious fashion possible --

00095

1 MR. CASADAY: A I could answer the question to say  
 2 in my testimony I did not mention Caspian terns, and my  
 3 recollection is that they may not have been addressed in the

4 Draft EIR.  
 5 You should ask Dr. Beedy that question.  
 6 MR. BIRMINGHAM: Q Questions related to air quality,  
 7 to whom should those be directed?  
 8 A Mr. Robert Sculley, who would be on the Terrestrial  
 9 Biology and Miscellaneous Topics Team.  
 10 Q The last area that I would like to ask you about then  
 11 relates to recreation and visual resources. I believe it  
 12 was your testimony that a 6383.5 or under the 6383.5-foot  
 13 alternative sand tufa at the lake will be destroyed; is that  
 14 correct?  
 15 A That's correct. My understanding is it will be  
 16 completely lost.  
 17 Q Now that is a conclusion that is different than the  
 18 conclusion stated in the Draft EIR.  
 19 A That's correct. I was going to say this is  
 20 information that came to our attention after the preparation  
 21 of the report.  
 22 Q And that was brought to your attention by Dr. Stine?  
 23 A Yes, it was.  
 24 Q Now, isn't it correct that the contingent evaluation  
 25 that was performed in connection with the environmental EIR

00096

1 identified tufa as one of the more valued public trust values  
 2 to be protected at Mono Lake?  
 3 A I believe insofar as lithoid tufa, I believe -- I'm  
 4 not sure there was a distinction made between sand tufa and  
 5 lithoid tufa.  
 6 MR. BIRMINGHAM: I wonder if I might ask Ms.  
 7 Goldsmith to cross-examine Dr. Unger?  
 8 MR. DEL PIERO: That's fine so long as you understand  
 9 the way this works. Each party is afforded 20 minutes per  
 10 witness when there is a single witness, or 20 minutes per  
 11 panel when there is a panel, so you and Ms. Goldsmith share  
 12 that 20 minutes, and there's four minutes left.  
 13 MR. BIRMINGHAM: I understand that was what was  
 14 provided in the notice.  
 15 I believe, Mr. del Piero, that we will be able to  
 16 make a showing of good cause.  
 17 MR. DEL PIERO: That's fine. Let's proceed then.  
 18 MS. GOLDSMITH: Janet Goldsmith, representing the  
 19 Department of Water and Power.  
 20 CROSS-EXAMINATION  
 21 by MS. GOLDSMITH:  
 22 Q Dr. Unger, what is your background in producing  
 23 computer modeling of population dynamics?  
 24 DR. UNGER: A I didn't actually produce either  
 25 computer model in the EIR, but I have done a lot of work in

00097

1 population dynamics. My thesis work was on population  
 2 dynamics of fish populations.  
 3 Q Did that involve computer modeling?  
 4 A Yes, it did.  
 5 Q And did you develop that computer model?  
 6 A Yes, I did.  
 7 Q Now, you are familiar with Dr. John Melack, I  
 8 presume?  
 9 A Yes.  
 10 Q And are you aware of the length of his studies at the  
 11 lake?  
 12 A Yes.  
 13 Q And that he has been studying the limnology and brine  
 14 shrimp productivity of the lake for some 12 to 14 years?  
 15 A Yes.  
 16 Q Now, Dr. Melack -- most of the data relating to brine  
 17 shrimp on which the DEIR relied is data which has been  
 18 collected by Dr. Melack or under his supervision; isn't that  
 19 true?  
 20 A Yes, that's true.  
 21 Q And of the records listed in the DEIR concerning the  
 22 brine shrimp analogy many many, if not most of them, are  
 23 studies done either by him or under his supervision; is that  
 24 true?  
 25 A Yes.

00098

1 Q The limnological model, DYRESM, D-Y-R-E-S-M, used to  
 2 model the limnology of the lake was one which was run by Dr.  
 3 Melack's group at your request; is that right?  
 4 A Yes.  
 5 Q And the brine shrimp population model used in the EIR  
 6 was also developed by Bob Jellison under Dr. Melack's  
 7 supervision?  
 8 A Yes.  
 9 Q And all of the runs of that model were done by Mr.  
 10 Jellison and Dr. Melack; is that right?  
 11 A Yes, that is correct.  
 12 Q Would you agree with Dr. Melack that there's been no  
 13 downward trend in the brine shrimp population over the past  
 14 14 years?  
 15 A Yes.  
 16 Q And would you agree with Dr. Melack as to the  
 17 limitations of the brine shrimp model?  
 18 A I would like more specifics on that.  
 19 Q Did you ask Dr. Melack to run the model for lake  
 20 levels above 6390?  
 21 A I believe we did. I wasn't involved with those  
 22 discussions, but I believe so.  
 23 Q Isn't it true that he refused to do that because he  
 24 considered it unscientific for those purposes?  
 25 A I don't know if it was because he considered it

00099

1 unscientific, but I believe he was reluctant to do so, yes.  
 2 Q Now, Dr. Jellison and Dr. Melack provided you with a  
 3 sensitive analysis for the brine shrimp model; didn't they?  
 4 A Yes, they did.  
 5 Q And that sensitivity analysis would allow you to put  
 6 error bars or confidence intervals for the model's output;  
 7 isn't that right?  
 8 A Not necessarily. It depends on what kind of error  
 9 bars you are talking about. There are many different kinds  
 10 of error bars.  
 11 I'm not sure what you mean specifically.  
 12 Q The DEIR provides specific numbers rather than ranges  
 13 for various brine shrimp quality density, total lake number,  
 14 various attributes of brine shrimp which the model predicts  
 15 and it provides numbers; isn't that right?  
 16  
 17 A No, it does provide ranges. It provides our  
 18 assessment of ranges in which we consider there to be no  
 19 impact. We do provide a number, a median or mean number,  
 20 but we provide a range as well.  
 21 MR. DEL PIERO: Your four minutes are up.  
 22 MR. BIRMINGHAM: We would make application for an  
 23 additional 20 minutes.  
 24 MR. DEL PIERO: And your showing?  
 25 MR. BIRMINGHAM: The showing is that we are a party

00100

1 that must respond to every issue raised in these  
 2 proceedings, and we are attempting to cross-examine a panel  
 3 of four witnesses who have submitted evidence into the  
 4 record in the form of a document that consists of thousands  
 5 of pages, and their contribution consists of hundreds of  
 6 pages.  
 7 MR. DEL PIERO: Granted.  
 8 MR. BIRMINGHAM: Thank you very much.  
 9 MS. GOLDSMITH: Q The no-impact ranges that you  
 10 refer to were developed from specific numbers that the model  
 11 put out, as I understand it?  
 12 A Yes.  
 13 Q For example, looking at figure 3E -20 of the DEIR --  
 14 MR. DEL PIERO: Excuse me, Ms. Goldsmith, what page  
 15 is that?  
 16 MS. GOLDSMITH: I don't think it has a page number.  
 17 MR. CASADAY: All the tables and figures are at the  
 18 end of each chapter --  
 19 MS. GOLDSMITH: It's the first volume.  
 20 Q Looking at figure 3E -20 of the DEIR under the column  
 21 shown as point of reference scenario, there are two numbers  
 22 that are shown; is that right?  
 23 A Yes.

24 Q And I'm sure you could tell us specifically what  
 25 those numbers are?

00101

1 A No.  
 2 Q I believe they are taken from --  
 3 A Table 3 E-9.  
 4 Q Three E-9?  
 5 A Yes, that's 3 E-9.  
 6 Q So the first number would be -- where does that  
 7 number appear?  
 8 A Okay. There are two numbers, one representing the  
 9 monomictic conditions, the other meromictic, conditions. Look  
 10 under brine shrimp biomass, that's what that graph is for  
 11 predicted brine shrimp biomass, and if you look under the  
 12 point of reference conditions, No. 47 is for the monomictic  
 13 condition and the number for meromictic conditions is 46.  
 14 Q How did you go about calculating the shaded boxes  
 15 which purport to show a range for no impact?  
 16 A Okay. What I did with that, I wanted to represent  
 17 the natural variability in the system as well as possible,  
 18 and since we were using the simulated data for all of our  
 19 analysis, I took the period from 1983 to 1991, I believe it  
 20 is that Melack and his group simulated with the model, and  
 21 they came up with a range of means for the different years,  
 22 and so I used that to represent the natural variability in  
 23 the system, and these bars here represent 50 percent of that  
 24 natural variability, understanding that a value that was 50  
 25 percent of the extreme values in the natural variability was

00102

1 legitimate to consider it a significant change, a  
 2 substantial change.  
 3 Q So the 25 percent is 25 percent of a range of what's  
 4 determined to be natural variation?  
 5 A Yes, 25 above and 25 below. In other words, the  
 6 entire range is 50 percent, 25 above or 25 below what was  
 7 considered to best represent the natural variability of the  
 8 system.  
 9 Q Now, given the relative stability of the system for  
 10 the past 14 years, what justifies reducing the range of  
 11 natural variability that is considered acceptable rather  
 12 than using 100 percent?  
 13 A Well, I don't think that the system has been at all  
 14 stable over the last 14 years. There has been a tremendous  
 15 amount of variation during that period. There are periods,  
 16 though, where the values have come back to what they were  
 17 previously. There hasn't been any overall trend, in other  
 18 words, but there has been a tremendous amount of variation  
 19 among individuals years.  
 20 Q Isn't it true that the brine shrimp populations have  
 21 been the highest when the lake was the lowest?  
 22 A If I remember rightly, I know one of the years when  
 23 the lake was high the brine shrimp population was low, but  
 24 also, there was an earlier year when I believe the brine  
 25 shrimp population was very low when the lake was at about a

00103

1 median level, so I don't think I would generalize that way.  
 2 In other words, there have been some high years when  
 3 the brine shrimp population was low, yes, during the 14-year  
 4 period. However, during the period when the lake level was  
 5 the highest, the lake was also in a period of transition.  
 6 The lake was experiencing meromixis, which is something that  
 7 had not previously been recorded in Mono Lake.  
 8 So, in other words, the conditions were pretty unique  
 9 at the time.  
 10 Q Do you believe that the condition of meromixis has an  
 11 immediate effect on brine shrimp populations?  
 12 A I'm not sure. The data don't really indicate that it  
 13 did.  
 14 Q Now, turning to table S-1, page 8 of 15, of table S-1  
 15 is the first volume of the DEIR, there appears an  
 16 assessment of Mono Lake brine shrimp productivity with  
 17 respect to various lake levels, is that right?  
 18 A Yes.  
 19 Q And the numbers there are all single numbers, they  
 20 are not numbers with ranges?

21 A That's right.  
 22 Q Do you have any idea what the competence intervals  
 23 for those numbers are?  
 24 A No, I don't know what the confidence intervals --  
 5 statistic confidence intervals?

00104

1 Q Yes.  
 2 A No.  
 3 Q As far as the prediversion levels that are referred  
 4 to here, footnote E, for total thousands of metric tons of  
 5 nitrogen per lake, which is a surrogate for the brine shrimp  
 6 density; is that right?  
 7 A Brine shrimp production.  
 8 Q Is described as being similar to or greater than the  
 9 6390-foot alternative.  
 10 A Yes.  
 11 Q Upon what specific data is that judgment based?  
 12 A It's not based on any specific data. It's based on  
 13 the trend that we saw occurring for the other lake levels.  
 14 What we felt was the conservative way to treat it was not  
 15 to continue the trend up, but just to hold it constant at  
 16 that level.  
 17 Q Isn't it also possible that the level could drop at  
 18 higher elevations?  
 19 A Yes, it's possible.  
 20 Q And that there are other factors that may relate to  
 21 brine shrimp productivity other than salinity?  
 22 A Yes.  
 23 Q And among those would be the depth of water?  
 24 A Yes.  
 25 Q Temperature?

00105

1 A Yes.  
 2 Q And existence of competitors or predators?  
 3 A Yes.  
 4 Q Thank you. Now, the other category that is listed  
 5 under Mono Lake brine shrimp productivity is cysts, brine  
 6 shrimp cysts. What are they?  
 7 A These are sort of hibernating structures that allow  
 8 the shrimp to overwinter and they are like eggs.  
 9 Q And how long can they live?  
 10 A Nobody really knows, but probably for a number of  
 11 years.  
 12 Q And isn't it true that only a small, very small  
 13 portion of them hatch in any given year?  
 14 A Under current conditions, yes.  
 15 Q Do you have any idea what the general range of cysts  
 16 which hatch is in percentages?  
 17 A I can't remember what that is. It is very small.  
 18 Q Does less than 5 percent sound correct to you?  
 19 A It sounds reasonable.  
 20 Q Given that, do you think that the number of cysts is  
 21 a measurement that is very closely related to the health of  
 22 the brine shrimp population in Mono Lake?  
 23 A I believe they could be if there is a fixed  
 24 percentage under all these conditions, and more is produced,  
 25 then 5 percent of a lot is more than 5 percent of a

00106

1 little.  
 2 Q So, if the percentage remains constant, that might be  
 3 feasible. Do you have any idea as to whether or not that  
 4 percentage would or would not remain constant?  
 5 A The only thing I know is that at a very high salinity  
 6 the percentage becomes very low.  
 7 Q Other factors also affect shrimp hatching; isn't that  
 8 right?  
 9 A Yes.  
 10 Q And what are some of those?  
 11 A Oxygen, temperature.  
 12 Q And are those likely to change with lake depth?  
 13 A Yes, quite possibly, particularly if the probability  
 14 of meromixis is affected by lake level, which it could be.  
 15 Q Getting to the brine fly model, where did the brine  
 16 fly model come from?  
 17 A I think I should probably let Russ Brown answer this

18 since he did a lot of the developing.  
 19 DR. BROWN: A Thanks. The alkali fly model was  
 20 developed based on data that David Herbst collected as part  
 21 of some of the initial contractors for the Draft EIR, so he  
 22 launched data collection at the same time we launched a  
 23 general search into what makes the alkali fly work as a  
 24 population.  
 25 There was an additional consultant, Dr. Wim Kimmerer,

00107

1 who joined the project team at the State Board's request,  
 2 specifically to assist in both the brine shrimp and the  
 3 alkali fly models.  
 4 As progress developed, he actually spent almost all  
 5 of his time on the alkali fly, so the initial concept for  
 6 what should be in the alkali fly model was a collaboration  
 7 between David Herbst and Wim Kimmerer.  
 8 They delivered their information to the EIR Team and  
 9 we finalized the model in the way that it was used to  
 10 provide the range of predations that you have seen that  
 11 covers the entire range of lake levels under question and  
 12 predicts various response variables for the alkali fly  
 13 population at each of those lake levels.  
 14 Q Now, isn't it true, David Herbst and Wim Kimmerer  
 15 developed the model?  
 16 A David Herbst collected the field data that was used  
 17 to try to develop the model. Wim Kimmerer developed some of  
 18 the initial concepts of what should be modeled. Their  
 19 inputs, though, were then modified and enhanced for the  
 20 Draft EIR.  
 21 So we took their work product and built those into a  
 22 package.  
 23 Q What was added?  
 24 A The general things that were added were several  
 25 'specifics. One of the first was that the initial idea was

00108

1 that an overall population production that disregarded the  
 2 individual life stages was initially developed, whereas, we  
 3 changed that and tracked the individual life stage numbers.  
 4 This is in order to match the original field data which is  
 5 in terms of each of the life stages.  
 6 So, each life stage is counted in actual field data,  
 7 so the model was changed to the tracking of each of those  
 8 life stages.  
 9 The other, perhaps major change, was initially the  
 10 model jumped from measurement data to measurement data so  
 11 there was maybe 12 periods throughout the year and we simply  
 12 changed that and did the calculations on a daily time scale.  
 13 Q Now, is it true that you added a mortality  
 14 assumption, relating mortality to salinity in the model?  
 15 A Well, there was always a discussion of mortality.  
 16 There has to be mortality. As you track life stages you  
 17 have more eggs, numbers per square meters, than you have  
 18 first life stage. That means that some of the eggs have  
 19 died or disappeared. That is referred to in general as  
 20 mortality.  
 21 The same, if you are tracking the first life stage to  
 22 the second, if there are numbers missing, it can be  
 23 explained by mortality. So we do have a mortality term in  
 24 the final model, yes.  
 25 Q In the mortality term you are talking about, is that

00109

1 the one which is discussed on page L-10 where it says:  
 2 Mortality data are unavailable. Mortality was assumed to  
 3 increase from one percent per day at 50 grams per liter  
 4 salinity to ten percent per day at 150 grams per liter  
 5 salinity for larval life stages?  
 6 A That's right. That is the term.  
 7 Q What was the basis of that assumption?  
 8 A The basis for that assumption is general discussion  
 9 with David Herbst, his sort of not specific measurements of  
 10 mortality, but the general information from him of how the  
 11 salinity is likely to have affected mortality.  
 12 As you were saying, it is an assumption, modeling  
 13 assumption to complete the picture of the alkali fly.  
 14 Q Isn't it true, both Herbst and Dr. Kimmerer view that

15 assumption as arbitrary and unsupported by data?  
 16 MR. ROOS-COLLINS? Objection, calls for speculation.  
 17 MS. GOLDSMITH: Q Have you read Dr. Herbst's  
 18 testimony?  
 19 A No, I have reviewed comments on the EIR and not the  
 20 testimony.  
 21 Q Was any sensitivity analysis done with respect to the  
 22 results of the model?  
 23 A Yes, quite a lot of sensitivity analysis. The way  
 24 this model turned out, it works on a spreadsheet, which is  
 25 the vehicle that we use. And the intent of it was for the

00110

1 user to fill in these areas of uncertainty with their best  
 2 estimate of what each of these factors or coefficients would  
 3 be, and in this case, we are talking about the mortality  
 4 coefficient increasing from one percent to ten percent, and  
 5 literally in five minutes after the model runs, the  
 6 predictions of what would have occurred with this simulated  
 7 alkali fly population are visually displayed through the  
 8 graphics and can be compared to a previous case where a  
 9 different assumption had been made.

10 The major sensitivity that sort of completes this  
 11 discussion about mortality is to get the model predictions  
 12 for the seasonal life stage development, the numbers of  
 13 predicted organisms, to match the observed build-up and  
 14 fall-off of the measured populations at the six sites that  
 15 David Herbst sampled, so the major sort of working and  
 16 calibration was done, quite a lot of it.

17 Q Were the results of the model reviewed by Dr.  
 18 Kimmerer or Dr. Herbst before they were incorporated into  
 19 the EIR?

20 A I only know that I sent them copies of the finished  
 21 model.

22 Q And when did you send it to them with respect to  
 23 publication of the EIR?

24 A I don't recall the date, but it would have been just  
 25 early this year, so in the January-February time frame.

00111

1 MS. GOLDSMITH: Thank you.  
 2 MR. BIRMINGHAM: Mr. del Piero, we would like to make  
 3 another application for an additional 20 minutes based on  
 4 the same showing. What I would propose is that we postpone  
 5 the use of that additional 20 minutes, if the Hearing  
 6 Officer is inclined to grant our application, and that we  
 7 conduct the additional cross-examination of this panel at  
 8 the conclusion of the cross-examination by others. Others  
 9 may ask the same questions.

10 MR. DEL PIERO: I am inclined to grant you ten and I  
 11 would like you to take it now. Then, hopefully, we can  
 12 finish up.

13 CROSS-EXAMINATION  
 14 by MR. BIRMINGHAM:

15 Q This line of cross-examination relates primarily to  
 16 the LAAMP model. I presume it would be appropriately  
 17 directed to Mr. Hutchison, so I will direct my questions to  
 18 Mr. Hutchison.

19 Is it correct, Mr. Hutchison that LAAMP provides for  
 20 storage of up to 210,000 acre-feet at Crowley Lake  
 21 Reservoir?

22 MR. HUTCHISON: A Yes and no.

23 MR. DEL PIERO: Mr. Hutchison, you have to give a  
 24 more definitive answer than that. I have granted ten  
 25 minutes and with those kids of answers, he is going to need

00112

1 another twenty.

2 A The model is specifically constrained to have Crowley  
 3 elevations at, I think, 183,000, which is the actual level.  
 4 However, under certain circumstances we found that the model  
 5 will actually put more water into storage than it physically  
 6 can hold. This occurs because there's basically no other  
 7 place to put the water and this occurs when water is, in  
 8 essence, forced out of the Mono Basin under what I would  
 9 call normal operation circumstances, and water would be  
 10 spilled into Mono Basin.

11 In real wet years the Department historically has not

12 exported water out of Mono Basin. They had let it go into  
 13 Mono Lake. Certain runs of the model, in essence, took that  
 14 water and forced it into Mono Basin, thus allowing Crowley  
 15 Lake to build up to an unreasonably high level.

16 Q So, under the model, under certain circumstances, the  
 17 model, using your terms, would force water into storage at  
 18 Crowley Lake in excess of the reservoir storage capacity?

19 A That's correct.

20 MR. DEL PIERO: Is that physically possible?

21 A No, and basically, what it means is that the  
 22 operation scenario that is being run is unrealistic. In  
 23 other words, the model was not prepared in such a way that  
 24 it would make someone with little understanding of the  
 25 physical system able to run it with ease. It requires a fair

00113

1 amount of knowledge of the system itself, so, therefore, if  
 2 you see something that pops up like Crowley Lake goes over  
 3 180,000, that clues you into the alternative, or the  
 4 operational assumptions are unrealistic, because basically,  
 5 what would happen is if you are asking the model to take  
 6 water out of the Mono Basin and send it down into Owens  
 7 River Basin, something is going to happen.

8 Crowley is going to overtop and other constraints  
 9 like physical conduit capacities, are going to be exceeded.

10 Something is going to happen that isn't good in an  
 11 operational sense.

12 MR. DEL PIERO: Thank you.

13 MR. BIRMINGHAM: Q Have you prepared a flow chart  
 14 that shows an analysis to determine the reliability of a  
 15 groundwater model?

16 A I don't know. Could you be more specific?

17 Q Let me show you a document.

18 MR. DEL PIERO: I don't know what this is. Why don't  
 19 you see if you can establish some foundation for it.

20 MR. BIRMINGHAM: Q I have handed you a graphic, Mr.  
 21 Hutchison, and for purposes of identification, perhaps we  
 22 could mark it and you could mark the one I have handed you  
 23 as LADWP Exhibit 77, and at the top of it it says, The  
 24 Process Of Groundwater Modeling.

25 Have you ever seen this graphic that's been marked as

00114

1 LADWP 77?

2 A It looks familiar.

3 Q Did you prepare LADWP Exhibit 77?

4 A Like I said, it looks familiar.

5 Q Well, let's refer for a moment, if we can, to the  
 6 graphic. Would this flow chart be applicable to the  
 7 analysis of the reliability of a groundwater model?

8 A I'm sorry, could you say that again?

9 Q Yes. Would the process that is outlined in LADWP 77  
 10 be applicable to an analysis of the reliability of a  
 11 groundwater model?

12 A Yes.

13 Q Would the same kind of questions be applicable to a  
 14 model like LAAMP?

15 A To a certain extent, yes; and to a certain extent,  
 16 no.

17 Q Well, specifically, one of the questions asked on  
 18 LADWP 77 is, do the results of the model make sense? Is  
 19 that correct?

20 A That's correct.

21 Q That's listed as calibration?

22 A That is the first it is asked, yes.

23 Q Now, we have just established that the LAAMP model  
 24 when it is operated puts more water in Crowley Lake  
 25 Reservoir than the lake can hold by approximately 30,000

00115

1 acre-feet.

2 Now that doesn't make sense; does it?

3 A Operationally, it does not make sense.

4 Q Physically it doesn't make sense either?

5 A Physically it does not make sense. From a modeling  
 6 standpoint, it does make sense. The model gives you the  
 7 correct answer when you impose certain assumptions on it.  
 8 So, therefore, the model makes sense. The results don't

9 make sense. Therefore, you have to say the assumptions  
 10 don't make sense.  
 11 Q The assumptions in the model don't make sense?  
 12 A You must keep in mind there's two things at work  
 13 here. One is the model code and one is the input data.  
 14 Q So, under this flow chart marked as LADWP 77, when  
 15 the results of the model don't make sense, it is necessary  
 16 to go back up and change the conceptual understanding or  
 17 assumptions; is that correct?  
 18 A I think you are starting to get into the area --  
 19 remember I said when you asked us if this flow chart was  
 20 applicable to a model like LAAMP, or something to that  
 21 effect, I said in some cases yes and in some cases no; and I  
 22 think we are getting into the area where this is not  
 23 strictly applicable because, again, like I say, when you get  
 24 to the box, do the results make sense, you then have to go  
 25 back and decide whether it is due to your input data or due

00116

1 to your model code, in this sense the conceptual  
 2 understanding of the system.  
 3 The understanding of the aqueduct system is imbedded  
 4 in the code. You can abuse that understanding by putting in  
 5 incorrect information.  
 6 Q Now, is it your understanding that the loss of water  
 7 to the City of Los Angeles as described in the Draft EIR was  
 8 prepared upon a LAAMP model that you prepared?  
 9 A My understanding was that the model I delivered to  
 10 Jones & Stokes was used in their analysis of alternatives.  
 11 Q Now, if water is spilled out of Crowley Lake  
 12 Reservoir because more water is being forced into the  
 13 reservoir than it can actually hold, that would  
 14 underestimate the loss of water to the City of Los Angeles  
 15 from the aqueduct system; isn't that correct?  
 16 A Underestimate? It depends on how you view it.  
 17 Presumably if the water were really forced out of the Mono  
 18 Basin and into the Owens River Basin, and was in excess of  
 19 the aqueduct capacity, it would spill and technically be  
 20 lost to eventually Owens Lake or the Owens Valley floor.  
 21 In the alternative, the water would, in reality, be  
 22 put into Mono Lake which under the way the model was set up  
 23 with trigger mechanisms, it almost acts like a little  
 24 storage credit in the sense that the more water you put into  
 25 Mono Lake now, the less you have to put in at a later date

00117

1 because the lake would be raised to a certain extent.  
 2 Q Does LAAMP include evaporation factors for Haiwee and  
 3 Tinemaha Reservoirs?  
 4 A Currently it does not.  
 5 Q And as a result of that failure to include  
 6 evaporation rates for water out of Haiwee and Tinemaha  
 7 Reservoirs, isn't it correct that the Draft EIR under-  
 8 estimates the loss of water to the City of Los Angeles by  
 9 approximately 8,000 to 9,000 acre-feet per year?  
 10 A I don't think that that's exactly correct. I think  
 11 that basically you have to look at it in the sense that  
 12 evaporation is not included in any of the alternatives, and  
 13 since the losses are a comparative thing, you can't have it  
 14 in one scenario and not in the other the way I think you are  
 15 characterizing it.  
 16 The other thing you have to keep in mind, I think the  
 17 number you are quoting sounds familiar in the sense that  
 18 that's about the rate of a relatively full reservoir  
 19 condition for Haiwee and Tinemaha, and those are generally  
 20 not always full.  
 21 The third thing I would comment on is that the way  
 22 the model runs, if there were to be that sort of loss, there  
 23 are opportunities to, in essence, make that up. In other  
 24 words, there may be some alterations in the way the system  
 25 operates, in essence, to make up, because everything is tied

00118

1 to that export target.  
 2 So simply saying that there's a number, an acre-foot  
 3 number of evaporation, doesn't necessarily mean that that  
 4 directly translates to that same number decrease in exports,  
 5 because the idea is to hit that target as much as you can.

6 Q But the failure to include the evaporation rates  
 7 means that the water that's actually exported in specific  
 8 acre-feet to the City of Los Angeles is less under each  
 9 alternative than described in the Draft EIR.  
 10 A I don't think that's true.  
 11 Q Is it correct that Jones & Stokes has proposed  
 12 modifying LAAMP?  
 13 DR. BROWN: A Yes, there were a number of errors  
 14 pointed out, as you have mentioned. One of them is leaving  
 15 out evaporation, that we have sort of listed out and we have  
 16 approval to do this final level of correction and add some  
 17 ideas that have come out during the EIR process, and through  
 18 the comment letters, so we will be doing that during the  
 19 comment review period.  
 20 MR. BIRMINGHAM: I have no further questions.  
 21 MR. DEL PIERO: Thank you very much, Mr. Birmingham.  
 22 Mr. Thomas?  
 23 MR. THOMAS: Ms. Cahill will handle this one.  
 24 MR. DEL PIERO: Ms. Cahill.  
 25 CROSS-EXAMINATION

00119

1 by MS. CAHILL:  
 2 Q Mr. Casaday, I am Virginia Cahill representing the  
 3 Department of Fish and Game.  
 4 I would like to follow up a bit on the issue that was  
 5 just raised with regard to the comments that have come in on  
 6 the Draft EIR.  
 7 Can you identify changes that you already realize you  
 8 will be making prior to the issuing of the final EIR?  
 9 MR. CASADAY: A I can identify very few of those at  
 10 this time. I think we have mentioned most of them. I have  
 11 mentioned, I believe, two in my testimony. One was the  
 12 error with regard to the loss of sand tufa at the 6383-foot  
 13 alternative, that it would be lost there. Dr. Stine brought  
 14 that to our attention during the review period.  
 15 Another is an error Dr. Stine brought to our  
 16 attention during the review period that he had neglected to  
 17 describe a wetland in the Delta of either Lee Vining or Rush  
 18 Creek that was present earlier and is no longer there.  
 19 We have just mentioned, I guess, a few corrections to  
 20 the aqueduct model to improve its functioning. At least Dr.  
 21 Brown mentioned one. There may certainly be some other  
 22 changes when we prepare the final.  
 23 We have not as a firm had an opportunity to digest  
 24 all the comments, study thoroughly and begin to make those  
 25 responses.

00120

1 Q I know that in the documents several times there is a  
 2 reference to the Department of Fish and Game maximum flows  
 3 on Rush and Lee Vining Creeks. I know in the Department's  
 4 comments we indicated that those were not maximum flows.  
 5 Do you know if that has been taken into account at  
 6 this time?  
 7 A Well, again, we haven't prepared any responses to  
 8 those comments. I believe Phil Dunn, who will be on the  
 9 next panel, is aware of that comment and you can ask him his  
 10 feeling on that.  
 11 Q This question is for anyone on the panel who feels  
 12 most able to answer it. Has the LAAMP model been rerun now  
 13 that you do have final Department of Fish and Game  
 14 recommendations?  
 15 DR. BROWN: A The State Board staff, I believe, are  
 16 operating the LAAMP model with Fish and Game  
 17 recommendations.  
 18 Q And do you know what the results have been?  
 19 A No, I don't know.  
 20 Q In your comments, Mr. Casaday, you have a conclusion  
 21 on the environmentally superior alternative relative to the  
 22 point of reference that states that the 6383.5 alternative  
 23 comes closest to satisfying preliminary DFG recommendations.  
 24 And then, in the discussion of the environmentally  
 25 superior alternative compared to the prediversion

00121

1 conditions, the cumulative impact, there is a statement that  
 2 the 6390 alternative would result in flows closer to DFG

00124

3 recommendations.

4 Can you explain what appears to be a discrepancy?

5 MR. CASADAY: A Yes, perhaps poorly written. The  
6 second reference where it says would result in flows closer  
7 to, it was distinguishing 6390 from 6410.

8 Q So, between 6390 and 6383.5, is it your belief that  
9 the DFG flows fall somewhere between those two alternatives?

10 A The preliminary flows fell very close to the 6383-  
11 foot alternative, closer to that than the 6390, but I guess  
12 you would be correct in saying it was somewhere in between  
13 because I believe it was slightly higher than 6383. I may  
14 be incorrect on that.

15 Q With regard to the distinction that is made where  
16 there are different environmentally superior alternatives,  
17 one from the point of reference and one from the cumulative  
18 impact perspective, given the directives in Cal Trout with  
19 regard to streamflows, isn't the proper point of view the  
20 prediversion or cumulative point of view?

21 A I don't know the answer to that.

22 Q Where, with regard to figure 2-1, which is up here --  
23 each of those bars is a 50-year period; is that right?

24 A That's correct.

25 Q And so, the sweep of the three bars would cover 150

00122

1 years?

2 A Yes.

3 Q Is it realistic to be projecting that far out into  
4 the future?

5 A I don't see why not. You would have long-term  
6 climatic shifts which would --

7 Q In your summary of the testimony you stated that  
8 under the 6377-foot and higher lake level alternatives there  
9 would be losses of spawning gravels or erosion that would be  
10 significant absent mitigation.

11 Are you able to answer questions about that or should  
12 we defer those to Mr. Dunn?

13 A Defer them to Mr. Dunn.

14 Q I would like to direct people's attention to page 3A-  
15 7 of the EIR, and I brought some extra copies so people  
16 don't have to fumble for it.

17 Basically, I ask your assistance in helping me to  
18 understand this table, particularly as it relates to the  
19 streamflows that are shown. There's Lee Vining Creek flow,  
20 Walker Creek flow.

21 Can you explain to me sort of what was the chick and  
22 what was the egg? Which numbers were the input and how you  
23 got to those streamflows and what they represent?

24 DR. BROWN: A I will try. This was laid out as part  
25 of the alternatives, so it would be described in Chapter 2

00123

1 generally. As you are aware, Fish and Game recommended  
2 flows which are presently available but were not available  
3 at the time that we developed the EIR alternatives. What we  
4 chose to do was take a hydrologic basis for coming up with  
5 some streamflows to simulate along with the rest of the  
6 system operation, and what we chose for those was to take  
7 the hydrologic record from each of the four streams and  
8 aligning the monthly streamflows from the least to the most,  
9 look at the ten percentile which is on the low end of the  
10 monthly actual streamflows, and we use these as simply  
11 minimum flows.

12 There's no other adjective attached to them to  
13 simulate the water that would be needed for each of these  
14 lake levels so these flows reported on the table are a  
15 summary of the LAAMP results from each alternative.

16 The single number for each streamflow is simply the  
17 average streamflow in cubic feet per second simulated for  
18 each stream over the 50-year period. This streamflow would  
19 be a combination of these minimum hydrologic flows which are  
20 the ten percentile monthlies for each stream.

21 In addition, the water that was required because of  
22 the selected lake level control triggers where we might have  
23 specified that 50 percent of the runoff went to the lake or  
24 we might specify 80 percent. These are laid out in Chapter  
25 2 for each alternative, the combination of those two flows

1 or regulated flows for the lake, plus these minimum flows,  
2 and then, in addition, spills that occurred; that is,  
3 sometimes the flows down Lee Vining or Rush Creeks are more  
4 than can be handled with the L. A. system, either the  
5 conduit capacity at Lee Vining is insufficient or Grant is  
6 full, and, therefore, there's a third category of spills.

7 This is simply a long-term average of all of those  
8 simulated flows, the average across the 50 years.

9 Q So, this is a monthly average over 50 years?

10 A It is actually just the average for the whole thing.

11 We don't need to say it is monthly. It is simply an  
12 indicator of the volume of water, the average cubic feet per  
13 second, over the whole 50 years that went down that stream  
14 corridor, simply a single number summarizing how much water  
15 went down each stream.

16 Q So this number gives us no indication as to what the  
17 actual streamflow would be in any month of the year, even  
18 under the LAAMP Model?

19 A That is right. This is only meant to be an index of  
20 the total volume or average flow that went down that  
21 corridor.

22 So these numbers that correspond to the different  
23 alternatives wouldn't be useful as building blocks for fish  
24 habitat because it doesn't really represent the flow that  
25 would actually necessarily be present in any month?

00125

1 A That's right. We give many more numbers that could  
2 be used for that purpose.

3 Q Can you tell me what assumptions you made in the  
4 LAAMP model -- this is probably for Mr. Hutchison -- with  
5 respect to the operation of Grant Lake or Grant Reservoir?

6 MR. HUTCHISON: A What assumptions went into Grant  
7 Reservoir?

8 Q Yes, what kind of operation assumptions?

9 A That's kind of a broad question. There is a switch  
10 on it that allows the users to determine whether minimum  
11 flows on Rush Creek can only come from Rush Creek flows, or  
12 also from storage. In other words, if there is a minimum  
13 flow in Rush Creek, are you limited in meeting it by actual  
14 inflow to Grant Lake on the Rush Creek side, or are you  
15 allowed to take storage or conduit water and send it down?

16 That's one and there's an option there.

17 Grant Lake itself is managed in the model by  
18 specifying a minimum and maximum reservoir target level.

19 And basically, what happens is the water comes in --  
20 there's several options of how to get water into the conduit  
21 and put water in Grant lake. The water is then held there  
22 temporarily -- this is all after fish flows and irrigation  
23 requirements are met, and then at some point there's a  
24 decision, or later on in the process there is a decision  
25 whether to hold the water in storage or send it down to the

00126

1 tunnel into the Owens River Basin export.

2 And it's all based on various target levels.

3 Q And it's true; isn't it, that the target level for  
4 exports through the tunnel was 300 cubic feet per second?

5 A I think 300 cubic feet per second is the capacity of  
6 the conduit; isn't it?

7 DR. BROWN: A As Bill mentioned before, there is a  
8 blending between what is built into the code, what checks  
9 and balances the model makes, and how a user selects and  
10 specifies what should happen.

11 So, let me just build on that question.

12 Grant Reservoir was simulated for purposes of the EIR  
13 alternatives to have a minimum storage of 20,000 acre-feet  
14 and its maximum capacity is just shy of 50,000, so this  
15 gives approximately 30,000 acre-feet of usable storage space  
16 to regulate the runoff period, and the logic is that the  
17 streamflows that you specify have been met if it was  
18 available in the stream for that month. Excess water has  
19 come down the conduit and has filled Grant. If there is  
20 still a lake level release required, that is because of the  
21 lake level for that year there is additional water required  
22 to keep the lake at that level, then those flows have been

23 made immediately, which means that Grant Reservoir would not  
24 be building up storage. It would be releasing it down Rush  
25 unless you have specified one of the other inputs, which is

00127

1 the maximum Rush Creek flow that you are allowing to prevent  
2 channel erosion.

3 If that flow is not sufficient to pass this inflow,  
4 then Grant will store it and will be sending water down the  
5 Rush corridor as soon as possible, but within the maximum  
6 streamflow that you have specified.

7 Your last question then referred to an Owens  
8 specification of what would be the target minimums as well  
9 as there is a target maximum on the upper Owens. If there  
10 is water available for export, the Grant Reservoir tries to  
11 give enough water to bring upper Owens up to 300, but in  
12 this progression of logic there will not be exportable water  
13 until quite late in the year because the excess water that  
14 comes down from the mountains must first be used to meet the  
15 lake release which was specified according to the lake level  
16 triggers, so it is only after that additional lake release,  
17 which in some cases is 80 percent of the runoff, so only  
18 late in the year is there finally water for export.

19 Beginning at that month, it tries to export, to create  
20 300 cubic feet per second on the upper Owens, and only 300.  
21 It will not export more water than the maximum specified in  
22 the upper Owens.

23 Q In connection either with the changes that are being  
24 made to LAAMP, or perhaps this isn't a change in the model  
25 but change in input, will it be run again with perhaps some

00128

1 attempt to better manage, if I can use that expression, that  
2 reservoir to perhaps change that assumption that all the  
3 water goes to the lake early in the year, and perhaps to see  
4 what happens if you incorporate the Fish and Game's  
5 recommendations that flows in the upper Owens not exceed 200  
6 cubic feet per second below the fork?

7 A Yes, the changing of the maximum flow from the 300 to  
8 a 200, that could be made quite easily with the existing  
9 model. Some of the parties have asked that we change that  
10 last piece of logic that I described where exportable water  
11 only becomes available late in the year once the lake  
12 release has been made.

13 So, we are contemplating putting in another line of  
14 specifications where you would specify the monthly pattern  
15 of exports that you would like so the model knows at the  
16 beginning of the year how much water will be available for  
17 export, and the contemplated change would allow the user to  
18 divvy that water out perhaps evenly across all 12 months, or  
19 perhaps across nine of the non-runoff months, so this is one  
20 of the changes contemplated.

21 Q I wonder if I might ask whether you are anticipating  
22 having some of those results available prior to the end of  
23 these hearings?

24 MR. DEL PIERO: Let me ask a question and try to  
25 clarify this.

00129

1 Mr. Casaday, after the Department of Fish and Game  
2 had submitted their recommendations, did Jones & Stokes do a  
3 model run?

4 MR. CASADAY: After their final recommendation?

5 MR. DEL PIERO: Yes.

6 MR. CASADAY: No, I don't believe so.

7 MR. DEL PIERO: Why?

8 MR. CASADAY: It was after the Draft EIR was  
9 released.

10 MR. DEL PIERO: Do you have the capability of doing  
11 that now?

12 MR. CASADAY: Yes.

13 MR. DEL PIERO: Do you have the financial capability  
14 of doing that now?

15 MR. CASADAY: As I understand it, at the very moment  
16 we do not.

17 MR. DEL PIERO: Have you had that financial  
18 capability since the Department of Fish and Game submitted  
19 their final comments? In other words, has the money run out

20 and there is nothing to replace it to cause the subsequent  
21 run to be conducted?

22 MR. CASADAY: That is correct.

23 MR. DEL PIERO: I think everybody knows the answer.  
24 I just wanted to get it out on the record.

25 Now, in response to your question, Ms. Cahill,

00130

1 perhaps Mr. Canaday can respond to it, but I don't know that  
2 we have got the capability of running that model.

3 Is that true?

4 MR. CANADAY: We have already run the model.

5 MR. DEL PIERO: So we do have results then?

6 MR. CANADAY: Yes, and Jones & Stokes can run it  
7 themselves as well.

8 MR. FRINK: I think that Jones & Stokes intends to  
9 run the model again with the final fishery flow  
10 recommendations from the Department of Fish and Game.

11 The extent of additional work that Jones & Stokes is  
12 planning to do is still being negotiated, but they are  
13 planning to respond to comments on the Draft EIR. Some of  
14 the comments on the Draft EIR raise this point, and in  
15 responding to those comments, we would anticipate that they  
16 would do an additional model run.

17 MR. DEL PIERO: The problem that presents for the  
18 Board members, notwithstanding the parties, is that this is  
19 the time and place for this hearing to be conducted, and  
20 when, because of financial limitations there have not been  
21 adequate model runs to evaluate the comments made by the  
22 Department of Fish and Game, it significantly limits the  
23 information available to the Board in terms of coming forth  
24 with a decision that meets the requirements of the court,  
25 and I will just opine at this point that I think all five

00131

1 Board members are very interested in seeing the results of  
2 this model completed and submitted to this Board prior to  
3 the end of this evidentiary hearing.

4 MR. DODGE: Mr. del Piero, I would just, in advance  
5 of our testimony, say this run has been done in our Exhibit  
6 196.

7 MR. DEL PIERO: Using the LAAMP model?

8 MR. DODGE: Using the LAAMP model with the revised  
9 Lee Vining Creek flows and assuming a flushing flow in Rush  
10 Creek of approximately 200 cubic feet per second.

11 MR. DEL PIERO: Will Mr. Forster be available to  
12 testify on that?

13 MR. DODGE: Yes.

14 MS. CAHILL: I have no further questions of this  
15 panel.

16 MR. DEL PIERO: Thank you very much.

17 At this time, we are going to take a break for 15  
18 minutes.

19 (Recess)

20 MR. DEL PIERO: Ladies and gentlemen, this hearing  
21 will again come to order.

22 Mr. Dodge, if you would like to sit at the table,  
23 unless you prefer to stand.

24 MR. DODGE: I am going to address questions to Mr.  
25 Casaday, although if other members of the panel want to

00132

1 answer, that's invited.

2 I think, Dr. Unger, you can go to sleep during the  
3 questioning. I don't anticipate having any questions for  
4 you.

CROSS-EXAMINATION

5 by MR. DODGE:

6 Q Mr. Casaday, you mentioned historically approximately  
7 one million migratory ducks and now numbers of tens of  
8 thousands. Do you recall that testimony, sir

9 MR. CASADAY: A Yes, I believe I said that in my  
10 oral testimony.

11 Q And you referred to increased duck habitat at higher  
12 lake level alternatives. Can you expand on this testimony,  
13 please?

14 A In general, I can. Our planning was that as the lake  
15 levels decline, the number or extent of freshwater habitat

17 around the lake -- I should say fresh and brackish water as  
 18 opposed to the saline Mono Lake water, have declined  
 19 substantially. That would include not only ponds and  
 20 lagoons, but freshwater inflows from the tributary streams  
 21 certainly as those waters have been diverted.  
 22 Q The freshwater inflows into the lake from the  
 23 tributary streams, is that the so-called hypopycnal  
 24 layer?  
 25 A Now, you are beyond my expertise.

00133

1 Q If you recall that the Draft EIR concluded that at  
 2 6410, there are approximately 260 acres of brackish and  
 3 freshwater ponds that are recreated?  
 4 A I believe that's correct.  
 5 Q And is that your understanding of some of the  
 6 historical duck habitat?  
 7 A Yes.  
 8 Q And have you read the testimony of Dr. Stine to the  
 9 effect that this approximately 260 acres of ponds is  
 10 recreated, in fact, at elevations between 6400 and 6405?  
 11 A Testimony for the hearings?  
 12 Q Yes.  
 13 A No, I haven't seen that. Dr. Stine did, however,  
 14 provide us a lot of the data that we used in the EIR  
 15 addressing the same issue.  
 16 Q And you listed eight key resources. Would you agree  
 17 that duck habitat was a key resource?  
 18 A Well, I guess I didn't in that list of eight.  
 19 Q Well, as you sit here today, would you agree it is,  
 20 in fact, a key resource?  
 21 A In my opinion, it certainly is worth considering.  
 22 Q Now, you mentioned in regard to tufa that at 6390  
 23 feet there was a significant toppling of tufa. Do you  
 24 recall that testimony, sir?  
 25 A Yes.

00134

1 Q Now that's, in fact, true at only one tufa grove;  
 2 isn't that correct?  
 3 A Yes, that is right, the south tufa.  
 4 Q There are other tufa groves that are not toppling at  
 5 6390; isn't that correct?  
 6 A That's correct.  
 7 Q In fact, it is just the small tufa that are toppled;  
 8 isn't that correct?  
 9 A I cannot recollect whether that's true or not.  
 10 Q Is your tufa toppling information based on the work  
 11 done by Dr. Stine?  
 12 A Yes, it is, exclusively.  
 13 Q Now there's tufa at the County Park; isn't there,  
 14 too?  
 15 A Tufa at the County park, yes.  
 16 Q Isn't it true that today approximately 85 percent of  
 17 that tufa is land based?  
 18 A I don't know the number, but that seems right from my  
 19 recollection of it.  
 20 Q And at 6390 feet a substantially higher portion would  
 21 be water based; correct?  
 22 A Yes.  
 23 Q And in your view, would that improve the view of tufa  
 24 at the County park?  
 25 A I don't particularly have a view on that.

00135

1 Q Would you agree that in terms of the visual issues at  
 2 Mono Lake that tufa is an important issue, but only one  
 3 issue?  
 4 A In my opinion, the tufa issue is probably the most  
 5 important of the visual issues, but there are certainly  
 6 other visual issues.  
 7 Q And one of them is the visual benefit of bird life;  
 8 isn't that correct?  
 9 A I would think so, yes.  
 10 Q Would another one be the visual benefit of a fully  
 11 appearing lake?  
 12 A Yes, all three of these, I believe, were addressed in  
 13 our visual resource chapter.

14 Q Now, you have told us in your testimony that in terms  
 15 of the snowy plover, there was surplus habitat under all  
 16 intermediate levels. Do you recall that, sir?  
 17 A Yes, I do.  
 18 Q And that's true at 6410 feet, too; isn't that  
 19 correct?  
 20 A I would have to look back in the document to answer  
 21 that.  
 22 Q Well, try page 3F-82.  
 23 A Would you repeat the question?  
 24 Q Yes. At 6410 the effect on the snowy plover.  
 25 A The page you have referenced doesn't say that. There

00136

1 would be about 4800 acres of suitable habitat available so  
 2 that the impact would be similar to the 6377-foot  
 3 alternative.  
 4 Q So, the impact between 6377 and 6410 on the snowy  
 5 plover is pretty much the same; correct?  
 6 A I believe that's correct.  
 7 Q Now you mentioned that there was a survey on the  
 8 public's willingness to pay and the highest rated elevation  
 9 was 6390. Do you recall that testimony?  
 10 A That the highest survey was 6390? I believe that's  
 11 correct, yes.  
 12 Q And do you recall that when the public was asked to  
 13 comment on the 6410 alternative that the questions posed to  
 14 them contained a misrepresentation as to the snowy plover?  
 15 A No, I don't recall that. However, you could address  
 16 that question to the Social Economic Panel, Thomas Wegge, or  
 17 perhaps to Dr. Edward Beedy on the Terrestrial Resource  
 18 Panel.  
 19 Q Let me read to you what was said in the brochure,  
 20 sir, at 6410.  
 21 Most nesting habitat for snowy plovers, a  
 22 bird that is a candidate for federal listing as  
 23 threatened or endangered, would be covered with  
 24 water. Adult populations of this species of  
 25 lake would be expected to decline from three to

00137

1 four hundred to very low numbers.  
 2 Do you think that might have prejudiced the public  
 3 against the 6410 alternative?  
 4 A It is conceivable.  
 5 Q Isn't it likely, sir?  
 6 A I should point out that the survey instruments were  
 7 designed early in the process before we had thoroughly  
 8 analyzed wildlife impacts and it is entirely possible there  
 9 were those kinds of discrepancies, and again, I would  
 10 suggest you direct those questions to the two individuals I  
 11 noted. I think they can answer those better than I can.  
 12 Q But just so I am clear, the results of the survey  
 13 were not redone to reflect the DEIR conclusions as to the  
 14 habitat for the snowy plover at 6410?  
 15 A No, the surveys were not redone after the wildlife  
 16 studies were complete.  
 17 Q Now, let me change subjects, sir. You testified that  
 18 there was an irreversible loss of some riparian vegetation,  
 19 but some was recoverable?  
 20 A Yes.  
 21 Q Can you elaborate on that? What was irretrievably  
 22 lost?  
 23 A Areas of land that were supported by shallow water  
 24 tables are no longer supported by shallow water tables, so  
 25 our conclusion is that riparian vegetation that requires

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1 shallow water tables can no longer take hold in those areas.  
 2 That's because of the stream conditions that occurred at  
 3 lake level lowering.  
 4 Q Let me ask you; we, who have been in this litigation  
 5 for ages know all these terms, but let me ask you to look at  
 6 Rush creek below the narrows, from the narrows down to Mono  
 7 Lake?  
 8 A Yes.  
 9 Q Are you aware that historically Rush Creek below the  
 10 narrows consisted in many cases of multiple channels?



11 A Yes.  
 12 Q And now presently consists of a single channel?  
 13 A For the most part, yes.  
 14 Q For the most part. Now, hypothetically, if we had a restoration program on Rush Creek below the narrows where multiple channels were recreated, would that also help recreate riparian vegetation?  
 15 A That would help.  
 16 Q And explain how.  
 17 A Well, it would help in recruitment of riparian plants in areas that are underlain still today by shallow groundwater from which the vegetation died during the diversion period. The flows into overflow channels would help seedling establishment in those areas.  
 18 Q Are you aware that the Restoration Technical

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1 Committee under the direction of Judge Finney has undertaken some plantings of riparian vegetation in order to accelerate the process?  
 2 A Yes, I am aware of that.  
 3 Q And those plantings were assessed in the DEIR; correct?  
 4 A I believe there is some reference in there to them.  
 5 Q Well, at page 3C-93, sir, the DEIR says that plantings would be effective in Rush Creek. Is that something that you can support?  
 6 A Yes, I can support that.  
 7 Q And why would you support plantings as opposed to just waiting?  
 8 A Well, recruitment of riparian vegetation can take a decade because conditions need to be just right for seedling establishment. However, if one plants them and is willing to irrigate them for a short time, say, two to three years, then you can generally get that started at will.  
 9 Q You testified to certain areas where the groundwater is such that the riparian vegetation is not coming back. Are there also areas on Rush and Lee Vining Creeks right adjacent to the streams where the vegetation is not coming back?  
 10 A Yes, I think there are.  
 11 Q And do you have a view as to why?

00140

1 A I can speculate. I am not sure of exact sites now. In some cases you may have bank heights that are too high and so even though you are laterally near the stream, the elevation above the water table may be too high.  
 2 The other thing I think we need to recognize is that there is a lot of variability in water-table depths for many reasons, and so, it is entirely possible that there are local places where the water table is deeper than you would expect, being close to the stream. There are other places that may be lacking enough soil nutrient matter for re-establishment.  
 3 Q Now, you testified to some extent on prediversion wetlands. Was that, again, based on Dr. Stine's work?  
 4 A That was based on Dr. Stine's work and some work by Balanced Hydrologics and work by our own bodies.  
 5 Q And as I understand the DEIR, there were some 260 acres of ponds prediversion, some 356 acres of marsh, meadows and wetland scrub and zero acres of alkali dust lakebed?  
 6 A Yes.  
 7 Q Is that basically right?  
 8 A I think that is basically right.  
 9 Q And at present, there's approximately one acre of lagoons, some 2796 acres of marshes, meadows and wetland scrub, and some 5368, acres of alkali lakebed; is that

00141

1 correct?  
 2 A I believe those are correct.  
 3 Q And so, there's approximately 2440 acres again in marshes, meadows and wetland scrub, and that's addressed by the DEIR; correct?  
 4 A Yes.  
 5 Q And if I wanted to ask someone the comparative

6 habitat values of those 2440 acres, vis-a-vis the additional lagoons created, I should ask Mr. Beedy; correct?  
 7 A That's correct, Dr. Beedy.  
 8 Q Now, isn't it also true that in the creation of Crowley Lake there was approximately the same amount of acreage of wetlands lost, some 2400 acres?  
 9 A I will accept your numbers there. I don't know that off the top of my head.  
 10 Q My question to you is, was that considered in the DEIR?  
 11 A No, I don't believe it was. I believe, as I stated, the point of reference we used was that the diversion system was in place, and so that would have included Lake Crowley Reservoir. We did not assess the impacts of Crowley Reservoir.  
 12 Q So, whether 2400 acres of wetlands were lost or not, that simply wasn't considered?  
 13 A I don't believe it was.

00142

1 Q Okay. The last area of inquiry for you, sir, and then I will let you go, you indicated that at 6410 feet there were impacts caused by high streamflows in unstable channels. Do you recall that testimony?  
 2 A Yes.  
 3 Q Now, I want to be very specific. Are you talking about the stability of the channels or the stability of the banks?  
 4 A Well, I don't distinguish the two. The channel, to me, are the banks and the bottom of the channel.  
 5 Q When you talk about stability, are you relying on the work done by the Planning Team under Mr. Trihey?  
 6 A Exclusively on that particular analysis, we asked Mr. Trihey for his people's opinion as to what flows would cause instability. They had been doing quite a bit more work out there in the streams than we were able to do and we felt like we should defer to their judgment, and did that.  
 7 Q To the extent that the EIR raises a concern about stability at 6410 feet, it is solely based on your understanding of what Mr. Trihey's group told you?  
 8 A That's correct.  
 9 Q Now you said that this would be a problem.  
 10 A May I add to that?  
 11 Q Yes.  
 12 A Mr. Trihey provided the stream threshold. Our work

00143

1 then was to take our model out from LAAMP; that is, streamflows and see at what lake levels we would have streamflows that would seed those grasslands.  
 2 Q And the thresholds were 350 for Rush Creek and 250 for Lee Vining Creek?  
 3 A That's right.  
 4 Q And isn't it entirely possible, sir, to establish a lake level at 6410 feet where the maximum streamflow in Rush Creek is 350 and the maximum streamflow in Lee Vining Creek is 250?  
 5 A That may be possible. I can't answer that without seeing some more model outputs.  
 6 Q So, you can't say yes or no to that?  
 7 A No, I can't.  
 8 Q Now, you also told us that the problem would be only for a number of years, as you put it. Is that because the riparian vegetation in a number of years will come back and there won't be any stability problem?  
 9 A Well, that's generally correct. I mean, I wouldn't say there wouldn't be any, but it is a question of regrowth of the riparian community largely.  
 10 Q And if you get sufficient regrowth, you have channel stability; isn't that correct?  
 11 A The effect of roots on stabilizing banks is tremendous.

00144

1 Q In fact, prediversion in 1938, a tremendous amount of water went down Rush Creek and Lee Vining Creek without any stability problems; isn't that true?  
 2 A In 1938 -- well, relative to the destruction we saw

5 in 1967, I am presuming so. I'm not familiar with that  
6 runoff event.  
7 Q But in '67, you lost your riparian vegetation?  
8 A Yes.  
9 Q And in 1938, you had it?  
10 A That's right.  
11 Q Do you have an opinion as to how many years it will  
12 take to recreate stability to the extent it is a problem?  
13 A No, I don't.  
14 Q Now, you testified about the possibility of overflow  
15 channels. Is it possible to mitigate the problem of  
16 stability by using overflow channels?  
17 A Yes, I believe it is. It would take additional work  
18 to plan that.  
19 Q It would take work on a restoration program?  
20 A Yes.  
21 Q And, in fact, on Rush Creek a ditch is a potential  
22 overflow; isn't that correct?  
23 A That is right, yes. We describe that in the EIR as  
24 flood relief release.  
25 Q I have a few more questions for Mr. Brown and Mr.

00145

1 Hutchison. I don't honestly understand the precise  
2 demarcation between you, so either of you can answer them.  
3 MR. CASADAY: We generally work as teams on these  
4 issues.

5 Q Now, Mr. Casaday told us that the closest to the  
6 Fish and Game flows was the 6383.5 alternative. Now, let me  
7 ask you gentlemen, if you assume the revised Lee Vining  
8 Creek, the revised DFG recommendations on Lee Vining Creek,  
9 and you assume a flushing flow in Rush Creek of 200 cubic  
10 feet per second --

11 Mr. Chairman, I would make the same application as  
12 Mr. Birmingham for the same reasons.

13 MR. DEL PIERO: I will grant you another 20 minutes  
14 and see how that works out.

15 MR. DODGE: I think that will be sufficient.

16 Q The revised DFG flows on Lee Vining, 200 cfs flushing  
17 flow on Rush Creek; isn't it a fact that the DFG flows most  
18 closely mimic the 6390 alternative as opposed to the 6383.5

19 DR. BROWN: A If you just take the current  
20 recommended Fish and Game flows and calculate the amount of  
21 water that that requires on an average basis, it is  
22 something in excess of 90,000 acre-feet, so on that basis,  
23 that requirement for 90,000 is similar to the amount of  
24 water that's going to the lake under the 6390-foot level.

25 Their recommended flows, as you know, have increased  
00146

1 since the cases that we simulated which were two previous  
2 recommendations, and they are yet higher.

3 Q I am not meaning to be critical, sir. I am just  
4 saying under the current DFG recommendations if you have  
5 flushing flows in Rush Creek, it is closest to the 6390  
6 alternative than it is to the 6383.5.

7 A That may well be right.

8 Q Have you seen Mr. Vorster's calculations on that  
9 point?

10 A No, I have not.

11 Q Now, there was talk by Mr. Birmingham about drought  
12 conditions and, in fact, the EIR used an eight-year drought;  
13 isn't that right?

14 A Well, the EIR has a sequence of eight years and a  
15 discussion of what the likelihood of a sequence of one, two,  
16 three, four, up to eight.

17 Q And what data was used to come up with that eight-  
18 year drought?

19 A Generally, the available annual runoff sequence for  
20 the measurements which would include the four diverted  
21 streams that we are talking about plus Mill Creek.

22 Q For what period of time?

23 A Well, there is some data beginning in -- I'm not  
24 sure. It is close to 100 years. It seemed like it began  
25 just before the turn of the century, but 1905 comes into

00147

1 mind.

2 Q Basically, a hundred years of instrumented data;  
3 isn't it?  
4 A That's right at various sources and quality.  
5 Q And isn't it a fact, sir, that if you go back in time  
6 further than that, that there is information which suggests  
7 that the Mono Basin suffered droughts, many droughts well in  
8 excess of eight years?  
9 A I don't have any such information.  
10 Q Are you aware of any tree-ring data on that point?  
11 A I certainly know there is tree-ring data, but I have  
12 not looked at the drought sequence from tree-ring data.  
13 Q Did any of the Jones & Stokes team do that?  
14 MR. CASADAY: A Let me answer that. No, we did not  
15 undertake that analysis. We were aware that there is work  
16 not only on tree-ring work, but lake level recession work by  
17 Dr. Stine indicating in the distant past large long  
18 droughts. But we chose to use the more recent history in  
19 the period of instrumentation that you referred to.  
20 Q Dr. Stine's data, in fact, shows many droughts in  
21 excess of ten years in the Mono Basin; doesn't it?  
22 A I am not intimately familiar with his method and  
23 conclusions, so I really couldn't answer that.  
24 Q Let me ask you a hypothetical question. Talking  
25 about figure 2-1, assuming hypothetically that you used a

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1 ten-year drought instead an eight-year drought, in fact,  
2 these dotted lines would go down further; isn't that  
3 correct?

4 A That's correct.

5 Q So, for example, the low level of 6377 elevation  
6 which appears to be approximately 6373, would, in fact, be  
7 lower?

8 A Lower than that, yes.

9 Q Who knows about salinity of Mono Lake?

10 DR. BROWN: A I know some.

11 Q Now, in fact, salinity has just about doubled since  
12 diversions started; isn't that correct?

13 A For a real round number.

14 Q Round number, right. Are you familiar with the State  
15 water quality objectives for salinity at Mono Lake?

16 A Yes, I am.

17 Q And can you tell the Board what those objectives are?

18 A I can't say what the number was, but the numbers are  
19 based on the measurements of salinity in the lake at the  
20 time that the first basin water plan was described, so this  
21 would reflect salinities in the early seventies.

22 Q Does 76 grams per liter ring a bell with you?

23 A That might be the number.

24 Q It is in the EIR; correct?

25 A Yes. I just don't recall it.

00149

1 Q What is the federal antidegradation standard for  
2 salinity?

3 A Well, the federal antidegradation standard, as you  
4 are aware, is actually a clause, not a number. It says that  
5 the water quality of the water bodies that are in that  
6 category are not to be degraded beyond what they were. It  
7 is often applied at the date at which this was added to the  
8 law and the numbers corresponding to water quality at that  
9 point being mentioned as the equivalent standard, so in that  
10 case, we would look at the salinity on the lake on that  
11 date, and say that that would be the number corresponding to  
12 nondegradation from that date in history.

13 Q With respect to Mono Lake, the number is  
14 approximately 85 grams per liter; isn't that right?

15 A That's right.

16 Q Now, let me ask you on both these thresholds, the  
17 State and Federal thresholds, don't you need the 6390  
18 managed level to meet those criteria?

19 A If you had to take the lake to those levels, then you  
20 need to bring the lake up that height to provide the  
21 dilution back to those salinities.

22 Q Are you aware that Dr. Herbst's data suggests for a  
23 given lake elevation that the salinity is actually higher  
24 than what is in the DEIR?

25 A Yes, I know that he uses higher salinities.

00150

1 Q And how did he make his evaluations?  
 2 A I am not exactly sure. This was one of the  
 3 controversies that we attempted to resolve during the  
 4 process, but we really weren't able to. How to go from the  
 5 measurements which are made with an instrument, in his case,  
 6 the specific gravity meter that he takes with him, how far  
 7 this bob floats in the water, and how he converts that to  
 8 salinity requires that he do a special study relating to  
 9 specific gravity which he is actually measuring in the  
 10 field, and a laboratory determined total TDS.  
 11 That laboratory determination of TDS is very  
 12 difficult because as you are evaporating the water to get  
 13 the residue from this highly alkaline water, loss of the  
 14 carbon and bicarbonate escapes, so it is always difficult to  
 15 come out with what the actual dissolved solids in the lake  
 16 was. That's why there is a small amount of uncertainty in  
 17 the actual TDS value.  
 18 Q But, if you used Dr. Herbst's calculations you would  
 19 find violations of the State and Federal standards at lower  
 20 lake levels; correct?  
 21 A Well, I'm not saying that those violations -- having  
 22 salinity exceed those numbers would happen, yes, at a higher  
 23 lake level because he is using a higher assumed salinity at  
 24 each lake level.  
 25 Q In fact, you would have a higher salinity under Dr.

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1 Herbst's approach at a lower lake; wouldn't you?  
 2 A Well, it is not really an approach. It is an  
 3 assumption, how he ties in the dilution curve to an absolute  
 4 number.  
 5 Q Well, whatever it is, Dr. Herbst arrives at a higher  
 6 salinity for a given lake level than you do?  
 7 A That is right.  
 8 Q And did you make a conscious decision to reject Dr.  
 9 Herbst's approach for some reason?  
 10 A Conscious effort; I never was able to obtain this  
 11 special study that he must have done that relates has  
 12 specific gravity measurements to his TDS values.  
 13 Q I just have a couple more questions, I think for Dr.  
 14 Brown. You had a long colloquy with Mr. Birmingham about  
 15 the so-called excess water in Crowley Lake created by LAAMP.  
 16 Do you recall that?  
 17 DR. BROWN: A Yes.  
 18 Q Was that you that had that colloquy?  
 19 A Bill Hutchison was answering those questions.  
 20 Q Yes, Dr. Hutchison. I am not sure I understood all  
 21 of the answers. Do I understand that one of the ways to  
 22 deal with the proposition that more water would arrive at  
 23 Crowley Lake than Crowley Lake could hold, one of the ways  
 24 to deal with that is to alter the storage at Grant Lake?  
 25 DR. HUTCHISON: A There is a provision in the model

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1 that will balance Crowley and Grant a little bit. In other  
 2 words, if there is a lot of water in Grant prior to spilling  
 3 it into Mono Lake, if there is space available in Crowley,  
 4 then it will move water from Grant to Crowley.  
 5 Q But LAAMP has a maximum assumed storage for Grant  
 6 Lake; correct?  
 7 A That's correct.  
 8 Q That's 30,000; right?  
 9 A I believe it is 50,000 for Grant.  
 10 Q Total capacity of grant is 50,000; isn't that right?  
 11 A Yes. The total capacity of Grant is 50,000 but the  
 12 user is free to specify an operating range given a minimum  
 13 and maximum that may be independent of the physical  
 14 capacity.  
 15 Q But didn't LAAMP use a minimum of 20,000 and a  
 16 maximum of 30,000?  
 17 A The input data that Jones & Stokes put into it, but  
 18 like I said, that is input data. That is not the model  
 19 itself.  
 20 DR. BROWN: A Maybe I should take over to resolve  
 21 this. This is right, that the model itself knows it has the

22 volume of each of both Grant and Crowley, and it knows it  
 23 Crowley only holds 183,000. The user can overspecify the  
 24 conditions and cause the model to simulate higher than  
 25 possible storages. This occurred because of the assumption

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1 we made to develop this particular set of alternatives for  
 2 the Draft EIR.  
 3 What we attempted to do was minimize lake level  
 4 fluctuations in Mono Lake and at the same time to maximize  
 5 the available export to Los Angeles. It seemed like a good  
 6 operating assumption and it resulted in more water coming  
 7 into Crowley than would under actual historical operations.  
 8 In addition, we specified two other things that got  
 9 us into trouble here. We specified a relatively narrow  
 10 operating range for Grant. We held it at 20,000 as a  
 11 minimum to provide a recreation threshold. That's about  
 12 10,000 above where it is today, where it's been operated  
 13 during the drought.  
 14 In addition, we specified a very high, relative to  
 15 historical, threshold for Lake Crowley allowing it only to  
 16 go down to 120,000 acre-feet. This provides then only  
 17 60,000 of available storage in Crowley. That got the model  
 18 into trouble in the three or four years where there is more  
 19 runoff coming into the combination of Mono and Long Valley  
 20 to exceed that set of operations criteria.  
 21 That, of course, is not how they would actually  
 22 operate it. Getting rid of the 20,000 in those three  
 23 particular instances in actual operations is very easy to do  
 24 because they know the water is coming. The model is working  
 25 just month by month, so that's only an indication coming out

00154

1 of the model that you are absolutely overspecifying how the  
 2 system could actually work.  
 3 Q Well, the model, the LAAMP model can be refined to  
 4 take care of this problem; correct?  
 5 A That's right. The easiest would be to allow larger  
 6 storage; that is, have a minimum Lake Crowley start at  
 7 100,000, giving you that extra 20,000 for storage.  
 8 Q Are those refinements ongoing as we speak?  
 9 A Well, that actually doesn't require any refinement,  
 10 simply a different input specification.  
 11 MR. DODGE: That's all I have. Thank you very much.  
 12 MR. FLYNN: Mr. del Piero, we have a few more minutes  
 13 to talk to Dr. Unger about flies and shrimp. I will try to  
 14 use it as quickly as I can.

#### CROSS-EXAMINATION

15 by MR. FLINN:  
 16 Q First of all, Dr. Unger, your testimony and work for  
 17 Jones & Stokes involved, along with Dr. Brown, a modeling  
 18 analysis of the populations of brine shrimp and the alkali  
 19 flies at Mono Lake; is that right?  
 20 DR. UNGER: A We did the model for the alkali fly.  
 21 For the brine shrimp, it was done by Dr. Melack.  
 22 Q Let me first talk about modeling the flies. I take  
 23 it, one of the things that you emphasized in your report was  
 24 that the flies tend to want to live in what's referred to as

00155

1 a hard substrate under the water rather than the soft sand;  
 2 is that right?  
 3 A Yes, that's correct.  
 4 Q Now, in your analysis, did you assume that rock  
 5 itself comprised the entirety of the substrate?  
 6 A Will you repeat that.  
 7 Q Did you assume the hard substrate that the flies  
 8 attached themselves to in large numbers was rock?  
 9 A No, not entirely.  
 10 Q What else did you assume it was?  
 11 A Tufa.  
 12 Q Anything else?  
 13 A Mudstone, which is sort of in between.  
 14 Q More specifically, did you assume vegetation could  
 15 serve as a site for relatively dense collections of the  
 16 flies?  
 17 A No.  
 18 Q We have Mono Lake and National Audubon Society

19 Exhibits 49 and 50, which we will introduce when Dr. Herbst  
20 testifies. I am simply going to ask if you have seen these  
21 photos before and I will pass them to the members of the  
22 Water Board for identification. We will be getting more  
23 testimony about this, but these are photos of flies on  
24 vegetation.  
25 And my simple question to you, sir, is do you recall

00156

1 seeing those photos in your work before?  
2 A No, I haven't.  
3 Q Let me now ask you very briefly, also, if you assumed  
4 that the capacity of the rock-hard substrate stayed constant  
5 at all levels of salinity?  
6 A Yes, that's an assumption that we made.  
7 Q If, in fact, the evidence shows that as salinity  
8 decreases and it becomes easier for the flies to survive,  
9 they can exist more densely in hard substrate; if that  
10 assumption were correct, would that tend to increase the  
11 productivity of the flies at higher lake levels?  
12 A Yes, it would.  
13 Q Next, I want to turn briefly to the subject of  
14 nitrogen and nitrogen in the brine shrimp. With respect to  
15 nitrogen, are you aware of very recent studies done on  
16 nitrogen fixation in the lakes and the rates at which  
17 nitrogen fixation occurs?  
18 A I have heard of the work. I haven't had a chance to  
19 look at it.  
20 Q I take it, this work happened too late in the day for  
21 you to include it in the EIR?  
22 A That's right.  
23 Q Generally, you understand that nitrogen and  
24 availability of nitrogen is a limiting factor in the  
25 productivity of aquatic life in Mono Lake?

00157

1 A Yes, that's correct, at certain times of the year.  
2 Q Given the present time here, I will move on, but we  
3 will be submitting some testimony on this evidence on  
4 nitrogen fixation.  
5 Let me move very quickly to the brine shrimp and some  
6 of the questions Ms. Goldsmith asked you. She spent a fair  
7 amount of time with this observation of no trend, show no  
8 downward trend of brine shrimp populations when the lake was  
9 between 6372 or thereabouts and 6380.  
10 Do you recall that testimony?  
11 A Yes, I do.  
12 Q What was going on with the chemistry of the lake and  
13 the elevation and the relative mixtures of freshwater and  
14 saltwater during this period when Dr. Melack observed no  
15 trend?  
16 A Early in the period, I guess in about 1983, there was  
17 a large influx of freshwater inflows into the lake and this  
18 caused a period of meromixis, which means that the upper  
19 layer of water became isolated from the lower layer of  
20 water, and this was, as far as anyone knows, an  
21 unprecedented appearance in Mono Lake, and this occurred  
22 over a period, continued over a period of a number of years  
23 with sort of being regenerated in '86 with another influx of  
24 water, and then, it broke down in '89, and the lake returned  
25 to a monomictic condition, a complete mixing condition at

00158

1 that time.  
2 MR. DEL PIERO: The time is up.  
3 MR. FLYNN: Two more minutes, Mr. del Piero?  
4 MR. DEL PIERO: Yes.  
5 MR. FLYNN: Q Did these changes in chemistry  
6 confound the ability to understand the relationship between  
7 salinity and brine shrimp productivity?  
8 A Probably -- yes.  
9 Q And apart from Dr. Melack's measuring of trends or  
10 lack thereof, is there in the literature a very well  
11 established relationship between high salinity and lower  
12 productivity of brine shrimp at the ranges of lake levels we  
13 are talking about?  
14 A I wouldn't say productivity. I would certainly say  
15 growth, which affects productivity.

16 Q Is the absence of a trend that Dr. Melack noticed,  
17 would that allow you to conclude that you should reject all  
18 this other data that shows that there is, in fact, a  
19 relationship between growths of brine shrimp and increasing  
20 salinity?  
21 A No, I wouldn't conclude that.  
22 MR. FLYNN: Thank you. That's all my questions.  
23 MR. DEL PIERO: Thank you very much.  
24 Mr. Roos-Collins, how long do you anticipate, sir?  
25 MR. ROOS-COLLINS: Twenty minutes.

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1 MR. DEL PIERO: I've got some Board members that have  
2 to go to a meeting. I am going to leave it to you. Would  
3 you prefer to break for the day and begin again tomorrow  
4 morning, or do you mind going on with only a partial Board?  
5 MR. ROOS-COLLINS: My preference would be to break  
6 today and begin tomorrow morning.  
7 MR. DEL PIERO: Ladies and gentlemen, we will adjourn  
8 today and begin tomorrow morning at nine o'clock.  
9 Thank you.  
10 (Evening recess)

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