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BEFORE THE
CALIFORNIA STATE WATER RESOURCES CONTROL BOARD

CALIFORNIA WATERFIX WATER)
RIGHT CHANGE PETITION)
HEARING)

JOE SERNA, JR. BUILDING
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
BYRON SHER AUDITORIUM
1001 I STREET
SECOND FLOOR
SACRAMENTO CALIFORNIA

PART 1B

Friday, November 4, 2016
9:30 A.M.

VOLUME 27

Pages 1 - 243

Reported By: Deborah Fuqua, CSR No. 1248

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1 APPEARANCES:
2 CALIFORNIA WATER RESOURCES BOARD
3 Division of Water Rights
4 Board Members Present
5 Tam Doduc, Co-Hearing Officer:
6 Felicia Marcus, Chair and Co-Hearing Officer:
7 Dorene D'Adamo, Board Member
8 Staff Present
9 Diane Riddle, Environmental Program Manager
10 Dana Heinrich, Senior Staff Attorney
11 Samantha Olson, Senior Staff Attorney
12 Kyle Ochenduszk, Senior Water Resources Control Engr.
13 Jean McCue
14 Kevin Long
15
16 For California Department of Water Resources
17 James (Tripp) Mizell, Senior Attorney
18 Duane Morris, LLP
19 By: Thomas Martin Berliner, Attorney at Law
20 Jolie-Anne Ansley, Attorney at Law
21
22 U.S. Department of the Interior, Bureau Reclamation,
23 and Fish and Wildlife Service
24 Amy Aufdemberge, Assistant Regional Solicitor
25
26 State Water Contractors
27
28 Stefanie Morris
29 Adam Kear
30 Becky Sheehan
31
32
33
34
35 (Continued)

- 1 APPEARANCES (continued)
- 2 Central Delta Water Agency, South Delta Water Agency,
3 Lafayette Ranch, Heritage Lands Inc., Mark Bachetti
4 Farms and Rudy Mussi Investments L.P.
5 John Herrick
- 6 Islands, Inc. And Local Agencies of the North Delta;
7 Bogle Vineyards/Delta Watershed Landowner Coalition;
8 Diablo Vineyards and Brad Lange; Stillwater Orchards;
9 Daniel Wilson
10 Osha Meserve
11 Michael Van Zandt
- 12 Sacramento Regional County Sanitation District and
13 Placer County Water Agency
14 Kelley Taber
- 15 San Luis and Delta-Mendota Water Agency
16 Hanspeter Walter
- 17 California Sportfishing Protection Alliance
18 Michael Jackson
- 19 County of San Joaquin
20 Thomas Keeling
- 21 Pacific Coast Federation of Fishermen's Associations
22 Benjamin Eichenberg
- 23 Deirdre Des Jardins
24 Deirdre Des Jardins
- 25 Snug Harbor Resorts LLC
Nikki Suard

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1 Friday, November 4, 2016 9:35 a.m.

2 PROCEEDINGS

3 ---000---

4 CO-HEARING OFFICER DODUC: Good morning,
5 everyone. Welcome back. Apologize for starting a
6 little late, but you gave us a lot to think about and
7 discuss yesterday.

8 I am Tam Doduc. With me here today are, to my
9 right, Board Chair Felicia Marcus, to the Chair's
10 right, Board Member DeeDee D'Adamo. To my left are
11 Dana Heinrich and Diane Riddle, and Mr. Ochenduzko is
12 manning the documents today. Ms. McCue is also here
13 today with us.

14 Quickly through the three announcements. I
15 don't see Mr. Hitchings here to pick upon, so we'll go
16 ahead and let you know to identify the exits closest to
17 you. In the event of an alarm, please evacuate. Take
18 the stairs down to the first floor, and we will meet up
19 in the park across the street. If you're not able to
20 use the stairs, flag one of us, and we'll direct you to
21 a protected area.

22 As always, please come up into the microphone
23 when I call upon you to provide your comments because
24 this meeting is being Webcasted and recorded. Begin by
25 stating your name and affiliation.

1 The court reporter as always is here, and
2 please make arrangements with her if you would like to
3 have the transcript sooner than when we will make it
4 available on our website, which is at the end of
5 Part 1B.

6 And finally and most importantly, always take
7 a moment and check and make sure that your noise-making
8 devices are on silent, vibrate, do not disturb.

9 Okay. With that, then, there are a couple of
10 things that I need to go over before we resume with
11 cross-examination of Panel 1 for Land, et al.

12 So, first, a reminder to all the attorneys
13 representing all the parties that you do not need to
14 bring up and repeat objections that you have already
15 filed and have been submitted to us in writing. We
16 have them. All those objections are under
17 consideration. We will issue a written ruling to all
18 the submitted written objections prior to rebuttal
19 testimony.

20 So I notice that we started yesterday to get
21 quite a bit of back-and-forth about objections that
22 have already been submitted in writing. Let's not do
23 that again.

24 Moving on to the matter of South Delta,
25 Central Delta, and the testimony by Mr. Nomellini, we

1 have reviewed the testimony submitted by Mr. Nomellini.
2 And thank you for at least removing some of the text
3 that was more appropriately addressed in Part 2.

4 We've also reviewed the response filed by
5 Mr. Herrick and Mr. Ruiz to the objections noted by the
6 Department of Water Resources. And what we will do is
7 we will strike as irrelevant from Mr. Nomellini's
8 testimony, which is SDWA 151, we will strike Section --
9 we will strike starting from Page 2, Line 6, through
10 Page 13, Line 12. Those are CEQA NEPA arguments that
11 are not appropriately addressed in this hearing.

12 We did notice that there were other sections
13 remaining in Mr. Nomellini's testimony that does
14 include Fish and Wildlife-related discussions.
15 However, there is some -- that argument, I believe, is
16 intertwined with the petitioner's obligation --
17 intertwined -- sorry -- with the argument that
18 petitioner's obligation should not be shifted to Delta
19 users. So for that reasoning, we are allowing that
20 portion of Mr. Nomellini's testimony to remain.

21 Next, we move on to the objections yesterday
22 concerning Mr. -- sorry. I'm trying to look through my
23 notes here.

24 First of all, in respect to the two additional
25 objections that DWR filed with respect to testimony

1 from Dr. Richard Elliot and Russell van Loben Sels,
2 we've looked at both documents, and we're going to
3 overrule the objections that pertains to scope. These
4 testimony discuss construction impacts related to Delta
5 ag. They're closely related to testimony on how use of
6 user water will be impacted, so we are going to allow
7 that to remain.

8 However, we are going to sustain the objection
9 with respect to the direct testimony by Mr. Ringelberg
10 to authenticate the maps which Ms. Meserve conducted
11 yesterday. It is beyond the scope of his testimony.
12 We are striking that.

13 We're also striking Ms. Meserve's declaration.
14 She and her witnesses are not allowed to provide
15 surprise testimony at this late date.

16 We're also sustaining the various objections
17 regarding -- I'm sorry. Hold on a second.

18 Before I get to that, Ms. Meserve, we do have
19 several options for you with respect to these
20 documents. And this also pertains to the objections
21 regarding the Contra Costa documents as well. You may
22 submit them as exhibits anyway, and we'll rule later as
23 to their admissibility. You may submit them on
24 rebuttal with proper authentication, or you may submit
25 them now and provide authentication later.

1 However, I would strongly encourage the
2 Department and Ms. Meserve to work out a stipulation of
3 fact as to their authentication so that we may not have
4 to revisit this issue again.

5 I think that's all I had. Let me look to my
6 counsel. Was there anything else?

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

8 CO-HEARING OFFICER DODUC: Okay. All right.
9 With that, then, we will move on to much more
10 complicated matter today, and that is the issue of
11 scheduling.

12 By my estimate, Ms. Meserve, I think we will
13 get to your Panel 2 today but unlikely Panel 3.

14 Is that your guess as well?

15 MS. MESERVE: (Nods head affirmatively)

16 CO-HEARING OFFICER DODUC: Okay. Which means
17 that we will begin next Thursday, the 10th, with
18 Panel 3.

19 Now, yesterday -- I don't see her here.
20 Yesterday the City of Stockton -- Ms. Taber, are you
21 here?

22 Mr. Herrick is here, though.

23 Mr. Herrick, let me ask you. Yesterday, if I
24 remember correctly, Ms. Taber had requested to switch
25 places with you because we had projected that you would

1 be up next Thursday, and she would like to present her
2 case in chief before you at the beginning of the day.
3 Now it looks like we will still be spending some time
4 on Ms. Meserve's Panel 3.

5 Do you know or can you -- did you have a
6 discussion with her regarding whether or not that
7 request remains?

8 MR. HERRICK: Yes. I -- yes. Thank you.
9 John Herrick for South Delta parties. Excuse me.

10 I talked it over with her. We don't have any
11 problem if she comes ahead of us even if that means,
12 you know, something starts fairly late on the 10th. I
13 don't think it will, but that's fine with us.

14 CO-HEARING OFFICER DODUC: All right. So
15 looking at the schedule again, we will likely -- again,
16 this is all subject to change. We will likely get to
17 Ms. Meserve's Panel 3 first, and then followed by the
18 City of Stockton, followed by Central Delta Water
19 Agencies and South Delta Water Agency, et al.

20 Now, Mr. Herrick, you walked back to your seat
21 too soon. How much time do you anticipate needing? In
22 other words, are we likely to -- and I'm going to
23 ask -- yes, Mr. Berliner is in position. Are we likely
24 to move into November 17th with your panel?

25 MR. HERRICK: Yes. My estimate for our first

1 panel, we've asked for -- instead of having a panel
2 with, what is it, seven, eight people, we'll put the
3 experts on first, the three technical experts. And I
4 believe we recently said we think that will take about
5 an hour, hour and 40 minutes for the direct. So I
6 assume with the cross, that's a half a day right there,
7 but that's my initial estimate. The other panels are
8 much smaller. In fact --

9 CO-HEARING OFFICER DODUC: Okay.

10 Mr. Berliner, estimate on cross for Central Delta,
11 et al.?

12 MR. BERLINER: So we've gotten the letter that
13 came in on November 2nd regarding the scheduling for
14 South Delta, which is all fine. But there were a
15 couple of changes that Ms. Turkatte and Mr. Ringelberg
16 are not going to be testifying for them.

17 CO-HEARING OFFICER DODUC: That is correct.

18 MR. BERLINER: But what we don't know is in
19 the case of Mr. Ringelberg, he's on four panels, total.
20 So we could find out how often he's going to be
21 testifying because that determines how often we're
22 going to be cross-examining him. If he's only going to
23 actually appear once, which would be through yesterday
24 and today, but just offering the same testimony, that's
25 one thing, but if it's going to be multiple

1 appearances, we're trying to gauge our
2 cross-examination based on how many times he's going to
3 be here. And we know he has two subjects. He's
4 testifying on salinity as well as microcystis, so we're
5 assuming two cross-examinations to begin with on that.
6 But now we don't have to cross him on South Delta,
7 right?

8 MR. HERRICK: Yes. He will not be appearing
9 for South Delta. There was no separate testimony for
10 South Delta either. He and Ms. Turkatte will not be
11 appearing on behalf of South Delta.

12 CO-HEARING OFFICER DODUC: So, Mr. Herrick,
13 along that topic, will any relevant exhibits used by
14 Mr. Ringelberg that were submitted as South Delta
15 documents, will that now be submitted by Mr. Meserve?

16 MR. HERRICK: To my knowledge, any document
17 referenced in either of those two people's testimony
18 will be submitted then by someone else -- offered by
19 someone else.

20 CO-HEARING OFFICER DODUC: Okay.

21 MR. KEELING: Mr. Ringelberg's testimony in
22 Panel 3 is separate and discrete from his testimony in
23 other panels. So, yes, he will be coming on for
24 Panel 3.

25 CO-HEARING OFFICER DODUC: And that would be

1 Panel 3 for Land, et al.?

2 MR. KEELING: For County of San Joaquin, and
3 Land is --

4 CO-HEARING OFFICER DODUC: Correct.

5 MR. KEELING: -- coordinated with us on that.

6 CO-HEARING OFFICER DODUC: And he will not be
7 returning as part of South Delta?

8 MR. KEELING: No.

9 MS. MORRIS: Stefanie Morris, State Water
10 contractors.

11 Mr. Ringelberg, he's also listed and has
12 separate testimony for Save the California Delta
13 Alliance, Mr. Brodsky's client. So for purposes of
14 efficiency because the testimony -- although there is
15 four separate pieces of testimony, some of which are
16 identical but marked separately and others which are
17 similar but not identical, I would prefer for
18 efficiency purposes just to do my cross-examination of
19 Mr. Ringelberg at the last time he's going to appear
20 after he's already given all his testimony so I don't
21 have to do it over and over and over again.

22 So could we get -- one, is that okay with the
23 Hearing Officers? And, two, can we get confirmation
24 that the last time he would be appearing would be for
25 Mr. Brodsky on Save the California Delta -- Save the

1 California Delta Alliance?

2 CO-HEARING OFFICER DODUC: Let's hear first
3 from Mr. Brodsky.

4 Is -- can you confirm that Mr. Ringelberg's
5 last appearance before us will be as part of your
6 panel?

7 MR. BRODSKY: Well, I don't know if anybody
8 else is calling him after us.

9 CO-HEARING OFFICER DODUC: Okay.

10 MR. BRODSKY: Is this on?

11 And as far as appearing for us, it is my
12 intent to have him appear. Right now, we have a
13 scheduling conflict, so I'm going to have to go back
14 and twist some arms. But what I was going to ask -- I
15 don't know if I'm getting too far ahead here.

16 CO-HEARING OFFICER DODUC: Too far ahead. I
17 can only handle one issue at a time, Mr. Brodsky.

18 MR. BRODSKY: So it's my intent to have him
19 testify if we can resolve the schedule conflict. And I
20 don't know if any other groups who are after us are
21 calling him or not.

22 CO-HEARING OFFICER DODUC: You know what?
23 This is getting to be way too complicated. While I
24 appreciate your effort to be efficient, Ms. Morris,
25 we're just going to stick with the order of

1 presentation and the cross-examination of the witnesses
2 as originally structured. This means, yes, you will be
3 cross-examining Mr. Ringelberg several times, but it
4 will be specific to the subject matter in which he
5 provided his direct.

6 MS. MORRIS: That's acceptable.

7 CO-HEARING OFFICER DODUC: Thank you so much.

8 MS. MORRIS: But I do want to put on the
9 record that, because his testimony is substantially
10 similar, if I ask questions of Mr. Ringelberg, I'm
11 going to be frustrated or I'm concerned that --
12 basically that people are going to object to my
13 questioning, even though the testimony is substantially
14 similar.

15 It's just very difficult for me to
16 cross-examine him on similar testimony four different
17 times. And I'm fine with going in order. I just want
18 to make sure there's not going to be objections to my
19 cross-examination the last time by other parties
20 saying, "He didn't say this in this particular direct
21 testimony."

22 CO-HEARING OFFICER DODUC: Ms. Morris, it's
23 been my standard practice to not encourage or strongly
24 discourage repetition of testimony in
25 cross-examination. That has not changed.

1 All right. Now we're back to -- I believe, my
2 original question was, Mr. Berliner, your estimated
3 time for cross-examining Central Delta, et al. What
4 I'm trying to do now is to just project out a potential
5 -- a tentative schedule to take us through November.

6 MR. MIZELL: I would expect that South Delta
7 Water Agency cross-examination will be approximately
8 two hours.

9 CO-HEARING OFFICER DODUC: All right. So it
10 is likely that we will be finished with you on November
11 17th.

12 MR. HERRICK: (Nods head affirmatively)

13 CO-HEARING OFFICER DODUC: And then after
14 that, will Mr. Brodsky's group.

15 So, Mr. Brodsky, it's possible that you might
16 be up as early as the 17th; more likely the 18th.

17 MR. BRODSKY: Thank you. So we had originally
18 requested, along with a number of other groups, to go
19 in January when all schedule conflicts would be
20 resolved. That would apply to Groups 30, 31, 32, 38,
21 39, 41, and 43. So our suggestion was to take an
22 earlier winter break and then let those groups resume
23 in January, and there would be no schedule conflicts
24 with anybody.

25 If that's not possible for us, what I had

1 requested was not to be called before November 30th.
2 And, I mean, it's possible; I'll twist some arms and
3 probably have to lop off one or two witnesses. But if
4 it's November 30th, December 1, I can do it. I really
5 can't do it on November 18th.

6 CO-HEARING OFFICER DODUC: Now, the only
7 parties that we have deferred until later in the order
8 were for very substantive reasoning and not just a
9 scheduling conflict.

10 We moved the San Joaquin River Exchange
11 Contractors Water Authority back because of a motion
12 that they filed; well, actually, a motion that the
13 Department filed with us for a protective order
14 regarding some of the witnesses that they wanted to
15 call.

16 And the other parties that we moved back were
17 the City of Brentwood and Antioch because they're in
18 the midst of some settlement discussions. Those are
19 the only legitimate reasons so far for a massive change
20 in the ordering.

21 With the others, I've very firmly directed
22 them, including Ms. Meserve, who rose to the occasion,
23 to be responsible for presenting their case in chief
24 when their time is up -- when their time is up before
25 us in the order of proceedings, or to make sure that

1 there is another party that is willing, capable and
2 ready to present in their slot.

3 Have you contacted anyone else to see if the
4 they might be ready to present?

5 MR. BRODSKY: Well, I have not because the
6 prior direction was -- from you at the end of the
7 hearing last Friday was that we were to be available to
8 come here to discuss our presentation during the week
9 after Thanksgiving.

10 So I took it that we were either going to be
11 -- if my request to go in January is refused, we were
12 going to be in the week after Thanksgiving. I had no
13 idea that you were thinking about calling us as soon as
14 the 17th or 18th.

15 I certainly can talk to the other groups. And
16 so to go from -- I think you're -- already you're into
17 the 18th now, I think, with what you've talked about.
18 So to go from the 18th to the 30th, for us, is a matter
19 of a few hours. I mean -- it's not that much, there
20 are no hearing dates between the 18th and the 30th.

21 CO-HEARING OFFICER DODUC: That is correct,
22 but I also don't want a lot of time on the calendar
23 that is not used. So the onus is on you to find --
24 well, Mr. -- actually, I think Group 38 is here. Maybe
25 you can persuade them.

1 Would Group 38 be available, if necessary, on
2 the 17th or 18th to present this case in chief?

3 And Mr. Jackson is also here, Group 32.

4 You need to find someone else to step up.

5 Anyone willing to do Mr. Brodsky a favor?

6 MR. EICHENBERG: I don't think that we'd be
7 available. We're in the middle of an office move, so
8 we're trying to -- we would like to also join
9 Mr. Brodsky's request to move to January. But if
10 that's not possible, then we'll have to figure
11 something else out.

12 CO-HEARING OFFICER DODUC: Now, you too have
13 not been here the past few weeks, but we've had
14 discussion at least yesterday regarding some of the
15 four off dates in January. They're on their calendar
16 as needed, but we need to wrap up the cases in chief so
17 that we may issue -- we need to issue some of the
18 rulings with respect to the objections prior to giving
19 you some time to pull together your rebuttal testimony
20 and exhibits so that we will resume with -- rebuttal,
21 if I need to remind you, is also a part of 1B. So some
22 of those dates in January will be needed for rebuttals.

23 And so we're not going to be just holding open
24 the cases-in-chief time just so -- you know, we'll get
25 jammed at the end because you will be clamoring for

1 time to prepare for rebuttals.

2 MR. BRODSKY: Okay. So we accept that that's
3 the decision, that we're not going to go into January.
4 So now we're talking about the difference between the
5 18th and the 30th which is a matter of a few hours for
6 us to be able to put on in our case. And we have in
7 the past accommodated that kind of thing.

8 I mean, it's very, very difficult, Madam
9 Hearing Officer, to hold all your witnesses available.
10 I mean, this thing goes over a span of months, and I
11 think it's -- so I accept you've made a decision we
12 can't go in January, but I think it's reasonable for us
13 to be able to expect a shift of a few hours. I mean,
14 that's our request.

15 CO-HEARING OFFICER DODUC: Hold on.

16 Ms. Des Jardins is Group No. 37. Will Ms. Des
17 Jardins possibly be ready to go on the 17th or 18th?

18 MS. DES JARDINS: I was requesting to go after
19 Pacific Coast Federation of Fishermen's Association.

20 CO-HEARING OFFICER DODUC: That's right
21 because you're one of their witnesses.

22 MS. DES JARDINS: Yeah. And also I have an
23 outstanding motion. There's a minor bobble with things
24 getting on the website, but that isn't cleared up
25 either, and I've been trying to address it. Thank you.

1 CO-HEARING OFFICER DODUC: All right.

2 MR. EICHENBERG: If I may point out that
3 petitioner's witnesses were given leeway due to
4 scheduling concerns and --

5 CO-HEARING OFFICER DODUC: Yes, but we were
6 talking two parties versus how many in Part 1B?

7 MR. EICHENBERG: That makes it much more
8 difficult for us to schedule than it was for them.

9 CO-HEARING OFFICER MARCUS: And more difficult
10 for us.

11 CO-HEARING OFFICER DODUC: And more difficult
12 for us, exactly.

13 Mr. Mizell, did you have something to add?

14 And then Mr. Jackson.

15 MR. MIZELL: Tripp Mizell, DWR. Just to that
16 last point, I would like to point out that the Board
17 asked to recall all of our witnesses, and we
18 accommodated that request with only about 36 hours'
19 notice. So I would like to recognize the Department
20 has gone through great lengths, and it believes that
21 witnesses can go through great lengths.

22 CO-HEARING OFFICER DODUC: All right. That's
23 not helpful, Mr. Mizell.

24 Mr. Jackson.

25 MR. JACKSON: Normally since most of my

1 witnesses are from an area around -- you know, within
2 100 miles of Sacramento, I would be able to accommodate
3 Mr. Brodsky on the 18th.

4 My problem is that, in order to expedite
5 testimony -- I have three clients. I set them up as
6 one organization, one panel, because that was the
7 instructions, and it made sense. However, one of them
8 is Aqua Alliance, who is having their biannual meeting,
9 conference, people coming from all over the United
10 States, some speaking, some just attending, on the 17th
11 and 18th.

12 I've been sitting in the audience every day,
13 and until the Brentwood/Antioch kind of thing, I was
14 not at all worried. I would go whenever you said. But
15 slipping them out and whatever happened with the San
16 Joaquin Exchange Contractors, all of a sudden it became
17 clear to me that I was essentially dead. I would lose
18 five witnesses of my nine if I was forced to go on that
19 day.

20 CO-HEARING OFFICER DODUC: All right.

21 MR. JACKSON: So what I can suggest that might
22 be helpful is that I can arrange to fill any particular
23 spot after the 30th and have my witnesses here, with
24 one exception, who is a professor at the University of
25 Oregon. And the December dates -- he's a professor of

1 economics, and the December dates fall into finals and
2 working with his post-docs.

3 So I did bring this up to DWR's contract
4 lawyers, the ones doing the cross-examination. And I
5 believe it's all right with them if I call him out of
6 order at your convenience, with two days' notice, any
7 time in January.

8 CO-HEARING OFFICER MARCUS: Can't do that.

9 MR. JACKSON: Can't do that? Well, I'll work
10 on him.

11 But there are presently scheduled on this
12 schedule from now on, I think I -- I think I counted
13 20-some-odd dates that are here. The 17th and 18th are
14 just -- I mean, I would beg, but it doesn't work, so I
15 won't embarrass myself.

16 But it just seems to me that to request, as
17 Mr. Brodsky's requesting, if we could end at South and
18 Central, that would seem to be the main part of the
19 injured parties in the Central Delta and South Delta.
20 If we have to break early on the 18th, then that would
21 solve pretty much the problem, right?

22 MR. BRODSKY: As far as I know. I mean, I'm
23 teaching this quarter also, and it's in finals, but
24 I'll get somebody to cover for me.

25 And also I'd just like to know -- and I do

1 appreciate that petitioner has produced their witnesses
2 in rapid order, and they've done a good job of that.
3 We're representing ordinary people. For instance,
4 Captain Morgan operates a tour boat. He's booked the
5 boat for that day. I can't ask him.

6 CO-HEARING OFFICER DODUC: Okay. Let me stop
7 you before we spend the next two hours discussing
8 scheduling. Enough is enough.

9 All right, Mr. Brodsky. I expect you to be
10 ready on November 30th. I expect your witnesses to be
11 here. I expect to have no glitches whatsoever.

12 And then, Mr. Jackson, I expect you to follow
13 at the end of Mr. Brodsky's case in chief and the
14 cross-examination of his witnesses.

15 So speaking of that, Mr. Brodsky, how much
16 time do we anticipate needing for your direct? Be
17 efficient.

18 MR. BRODSKY: From my recollection, I believe
19 it was about three to four hours.

20 CO-HEARING OFFICER DODUC: For five witnesses?

21 MR. BRODSKY: I don't have that in front of me
22 right now, but that is -- so, myself, McCleery,
23 Guzzardo --

24 CO-HEARING OFFICER DODUC: Six witnesses.

25 MR. BRODSKY: -- Morgan.

1 CO-HEARING OFFICER DODUC: Including
2 Mr. Ringelberg.

3 MR. BRODSKY: Six, yeah. So I think it was
4 about four hours for six witnesses.

5 CO-HEARING OFFICER DODUC: I need you to work
6 hard to be more efficient than that.

7 Mr. Berliner, what is your anticipated
8 cross-exam?

9 MR. BRODSKY: Can I just ask for a
10 clarification on one point? We'll be ready to go on
11 November 30th.

12 CO-HEARING OFFICER DODUC: You had better.

13 MR. BRODSKY: We will. And if we're -- if I'm
14 unable to have one of the witnesses there, then I just
15 lose that witness, right? In other words, that
16 testimony would just be stricken and won't go into the
17 record if I can't force them to show up. Is that a
18 correct understanding?

19 CO-HEARING OFFICER DODUC: As long as -- I
20 don't know how long your testimony is going to take. I
21 mean, if it goes into the next day and they're
22 available the next day, that's fine.

23 MR. BRODSKY: All right. But if they're not,
24 then that's my problem, and I just lose that witness,
25 right? There's not a -- I'm not going to be penalized

1 beyond that testimony not going into the record?

2 CO-HEARING OFFICER DODUC: It depends on how
3 long of a delay we're talking about, what the
4 substantive nature is, what the objections might be.
5 You're asking me to make a commitment that I cannot at
6 this time.

7 MR. BRODSKY: Okay. Thank you.

8 CO-HEARING OFFICER DODUC: Hold on. Let's get
9 Mr. Berliner's answer to my question first.

10 MR. BERLINER: Tom Berliner, Department of
11 Water Resources.

12 We're estimating three to four hours. It
13 somewhat depends. Mr. Ringelberg is one of those
14 witnesses, so if we're going to need to cross him on
15 any additional points, hopefully that would probably
16 push us closer to four.

17 CO-HEARING OFFICER DODUC: So it's likely that
18 we will need at least the entire day of November 30th
19 for Group No. 30, if not, even a little bit more time
20 on December 1st as well.

21 MR. BRODSKY: Okay. Let me put the question
22 another way. You're asking us to be efficient, which
23 we've always tried to be. Let's say in the next few
24 days I decide that I can get by with fewer witnesses to
25 be efficient and I let you know and I let Mr. Berliner

1 know so that he can plan his cross-examination, we have
2 a shorter, more compact, efficient case; is that okay?

3 CO-HEARING OFFICER DODUC: That would be most
4 appreciated.

5 MR. BRODSKY: All right. Is that okay with
6 you?

7 MR. BERLINER: That's great for us but with
8 just one caveat. If, for example, Mr. Ringelberg is
9 dropped because it's duplicative testimony -- and I'm
10 not suggesting it is. I'm just saying if that's the
11 case -- and we have additional cross for him, we want
12 to reserve the right to call him for cross because
13 we're assuming he's going to testify. So if we find
14 out last minute he's not, we would --

15 MR. BRODSKY: He wouldn't be last minute.

16 CO-HEARING OFFICER DODUC: Hold on. Hold on.

17 I expect he'll be back on Panel 3, which will
18 be next Thursday.

19 And, Mr. Brodsky, you will share this
20 efficient solution with all of us by, say, noon on
21 Tuesday?

22 MR. BRODSKY: Yes, ma'am.

23 CO-HEARING OFFICER DODUC: And then so you
24 will know by noon on Tuesday. All right?

25 MR. BERLINER: (Nods head affirmatively)

1 CO-HEARING OFFICER DODUC: Ms. Meserve?

2 MS. MESERVE: Good morning. Osha Meserve for
3 local agencies of the North Delta and other parties.

4 Just on the -- since we're on the scheduling
5 issue, I think one thing that maybe hadn't been made
6 clear is that, you know, I did agree to bring forward
7 Panel No. 2 today, which is the physical
8 injury/groundwater focus panel. And I am missing one
9 of my witnesses, Mr. Richard Elliot. He was not able
10 to be here today. I agreed to go forward without him.
11 I am hoping that I can bring him forward on the next
12 day.

13 CO-HEARING OFFICER DODUC: Thursday.

14 MS. MESERVE: I believe it will be relatively
15 short, and I can splice him in, and I would ask for
16 your flexibility.

17 CO-HEARING OFFICER DODUC: That will be fine,
18 Ms. Meserve.

19 MS. MESERVE: I promise not to make too much
20 time.

21 CO-HEARING OFFICER DODUC: Okay. That will be
22 fine. We will still be on your group next Thursday, so
23 bring him in then.

24 So, Mr. Jackson, that means we will get to
25 Group 31 December 1st, 2nd, around that time.

1 MR. JACKSON: Thank you. And we would also
2 offer, because we think that you -- we've gone
3 relatively quickly. I understand the rebuttal
4 argument. January's out.

5 But we will make available any of some of the
6 time that we have for anybody's -- other parties'
7 witness with your permission during December 1st or
8 2nd. We'll find a way to wedge them in if -- rather
9 than lose people who are -- who believe, anyway, that
10 they're injured.

11 I think we're reaching the stage now where --
12 when we're through with Central --

13 CO-HEARING OFFICER DODUC: Mr. Jackson?

14 MR. JACKSON: Yeah, okay.

15 CO-HEARING OFFICER DODUC: The only question I
16 have for you right now is --

17 MR. JACKSON: Yes, we will be here.

18 CO-HEARING OFFICER DODUC: All right. And to
19 the extent that you want to work and negotiate
20 something with Mr. Brodsky, for example, to accommodate
21 his witness, you do that and make a proposal to us.

22 MR. JACKSON: Thank you very much.

23 CO-HEARING OFFICER DODUC: I don't need to
24 hear about it right now, which means that on December
25 8th -- that will get us to December 8th and 9th, and we

1 have Restore the Delta, which coincidentally is the
2 dates that they requested yesterday. I love it when
3 things work out.

4 And I think on that note, I think I'm done
5 with scheduling for now. That should get us through
6 December 8th and 9th with then Group No. 8 -- I'm sorry
7 -- 38 tentatively for now targeted at December 13th or
8 14th, but that of course might change.

9 Is that all right, Mr. Eichenberg?

10 MR. EICHENBERG: Yes, I understand. Thank
11 you.

12 CO-HEARING OFFICER DODUC: That means that,
13 Ms. Des Jardins, you will also be up probably around
14 that time frame.

15 MS. DES JARDINS: Thank you. That was my next
16 question.

17 CO-HEARING OFFICER DODUC: That means that
18 North Delta CARES, Snug Harbor, Clifton, we'll either
19 get to you that last week, the week of December 13th,
20 which is my hope that we will get to you that last
21 week, December 13, 14, 15. If not, then our next
22 hearing date would be January 5th.

23 Okay. I'm exhausted. Can we call it a day?

24 Anything else? Any other housekeeping issue
25 before -- Ms. Des Jardins?

1 MS. DES JARDINS: Yeah, I did -- have made
2 requests. The hearing team did inform me that the
3 appropriate method of serving multiple large documents
4 in Part 1B is to serve a list of exhibits on the
5 website as the petitioners and other parties have been
6 doing.

7 I'm just requesting a clarification if that's
8 the correct procedure? This is exhibits used in
9 cross-examination.

10 MS. HEINRICH: Ms. Des Jardins, I'm not quite
11 sure why you're asking at this point because I thought
12 that you have already uploaded all of your exhibits for
13 1B, and we have posted on the website all the exhibits
14 that you identified during cross-examination.

15 So at this point, there should be no need to
16 be serving large documents on anyone.

17 MS. DES JARDINS: There's a difference between
18 putting things on the website and actually serving them
19 on the parties. I've been trying to clarify because
20 Department of Water Resources raised issues of service
21 about documents I submitted directly to the Board in
22 the pre-hearing but did not serve directly on the
23 parties. I've been trying to clarify that.

24 There wasn't really a clear procedure in
25 Part 1A. People have been submitting notices of

1 availability and saying they're on the website. I'm
2 just clarifying that that's an approved method of
3 service now in hearing for those exhibits.

4 MS. HEINRICH: I believe that either in a
5 letter or in an e-mail we confirmed that, for exhibits
6 that were identified during cross-examination and
7 posted on the website, it wasn't necessary to then
8 formally serve them on the other parties.

9 MS. DES JARDINS: That was for Part 1A. Thank
10 you.

11 CO-HEARING OFFICER DODUC: All right. Take it
12 off site if you need to. All right.

13 I have one -- oh, Ms. Suard?

14 MS. SUARD: Thank you. Nikki Suard.

15 CO-HEARING OFFICER DODUC: It's been a long
16 time. It's good to see you again.

17 MS. SUARD: I've been listening online. But I
18 have two procedural questions. One is both Snug Harbor
19 and North Delta CARES, we do have brief videos to
20 locate where we are, but we didn't submit those as
21 evidence online.

22 Would we be allowed to play those? Each one
23 is three or four minutes.

24 CO-HEARING OFFICER DODUC: Any objections to
25 that?

1 (No response)

2 CO-HEARING OFFICER DODUC: All right. We will
3 look forward to seeing them.

4 MS. SUARD: Okay. Procedurally, how do I do
5 that? Do -- just bring the disks or --

6 CO-HEARING OFFICER DODUC: Why don't you talk
7 to Ms. McCue --

8 MS. SUARD: Okay. I'll do that.

9 CO-HEARING OFFICER DODUC: -- and
10 Mr. Ochenduszko.

11 MS. SUARD: Okay. So then another procedural
12 thing is that, back when DWR did submissions of
13 objections to testimony or witnesses, they had objected
14 to my documents. And it was a letter that said, "See
15 Attachment A." So I never got an Attachment A.

16 I tried to look around online to see if maybe
17 they posted it somewhere there. So as far as I know,
18 there is no objection to any of my documents. If
19 there's something that I'm missing, I would appreciate
20 knowing about that and knowing when it was served
21 because I haven't received anything.

22 CO-HEARING OFFICER DODUC: Mr. Berliner?

23 MR. BERLINER: Just one request. If we could
24 -- since we know the videos are coming, if we could get
25 those now, that would be much appreciated.

1 CO-HEARING OFFICER DODUC: Yes, thank you. I
2 was going to remind everyone that PowerPoint videos, et
3 cetera, should be submitted in advance.

4 MS. SUARD: Could I -- I don't have them with
5 me. I can't give them to you now.

6 CO-HEARING OFFICER DODUC: You won't be up
7 until December. So --

8 MS. SUARD: Okay.

9 CO-HEARING OFFICER DODUC: -- get it to us
10 before.

11 MS. SUARD: Okay.

12 MR. BERLINER: That would be great.

13 MS. SUARD: Okay.

14 CO-HEARING OFFICER DODUC: And regarding the
15 question Ms. Suard has about objections?

16 MR. MIZELL: Yes. It's our belief that we
17 served everyone correctly, but we will certainly verify
18 that that was the case and inform the Hearing Officers
19 if it is not.

20 MS. SUARD: Specifically, there is no
21 Attachment A, so I have no information about whatever
22 they would object to.

23 CO-HEARING OFFICER DODUC: All right. They
24 will get back to you on that.

25 MS. SUARD: Thank you.

1 CO-HEARING OFFICER DODUC: Then one other
2 thing that I forgot to mention, and this is specific to
3 the Department, or Petitioners. We need to get an
4 update from you regarding CEQA ESA as that impacts
5 Part 2 of these proceedings and the timing of Part 2.

6 MR. MIZELL: Tripp Mizell, DWR. As you might
7 imagine, the CEQA process is separate and is being
8 headed up by Mr. Bogdan, who has appeared before you
9 before for updates. I will certainly let him know, and
10 I believe he's watching the webcam right now.

11 If we can get an update later today, we will
12 attempt to do that; otherwise, it will probably be at
13 the next hearing date.

14 CO-HEARING OFFICER DODUC: All right. Thank
15 you. All right.

16 MS. DES JARDINS: I just had one other
17 question about documents introduced in part -- in
18 cross-examination, about authentication. And you -- so
19 I'd been under the impression that we would be
20 submitting them at the end of Part 1A and
21 authenticating them when we submitted them.

22 So I'm wondering -- because I'd been planning
23 on doing declarations, "if this is a true and correct
24 copy," when I served the documents. So I'm just
25 clarifying, would be I able to do those in rebuttal as

1 you offered to Ms. Meserve?

2 CO-HEARING OFFICER DODUC: If you have
3 documents that you'd intend to use as part of your
4 rebuttal, you may submit them as part of your rebuttal.

5 MS. DES JARDINS: This is just -- I've
6 introduced a significant number of documents in
7 cross-examination. I did serve some of them directly
8 on parties with a declaration. Some of them, I've
9 submitted afterwards. But it -- yeah, the procedure
10 for service hasn't been clear and --

11 CO-HEARING OFFICER DODUC: It's been clear to
12 everyone else. I suggest you take it offline with
13 Mr. Ochenduszko. Thank you.

14 MS. DES JARDINS: All right.

15 CO-HEARING OFFICER DODUC: Okay. Now we're
16 ready, I think, for cross-examination.

17 Let's take a short break so that everyone can
18 get themselves situated. I believe the Department has
19 about two hours of cross-examination. That is
20 Department of Water Resources, the first panel
21 presented by Mr. Van Zandt and Ms. Meserve.

22 So let's take a break -- on that wall clock
23 there -- until 10:30 for everyone to get situated, and
24 we will begin at 10:30.

25 (Recess taken)

1 CO-HEARING OFFICER DODUC: All right. We are
2 back in session.

3 Mr. Berliner, Mr. Mizell, you may begin your
4 cross-examination.

5 MR. MIZELL: Thank you very much. I'll be
6 conducting cross-examination.

7 CO-HEARING OFFICER DODUC: Actually, before I
8 forget, please, a rundown of your topic areas that
9 you'll be exploring.

10 MR. MIZELL: Certainly. For Mr. Hester and
11 Mr. Lange, I'll be exploring statements about the North
12 Delta Water Agency contract with the Department as well
13 as performance they have encountered over the course of
14 the recent drought.

15 CO-HEARING OFFICER DODUC: Performance of the
16 contract?

17 MR. MIZELL: Of the agricultural practices
18 that they have.

19 CO-HEARING OFFICER DODUC: Okay.

20 MR. MIZELL: And with Mr. Grant, we'll be
21 covering just generally the salinity effects on crops.
22 And with Ms. -- is it Leinfelder-Miles? Okay. We'll
23 be going over the soil salinity aspects of her
24 testimony. And for Mr. Ringelberg, that
25 cross-examination will be conducted by Mr. Berliner.

1 MR. BERLINER: Thank you. For Mr. Ringelberg,
2 we're anticipating a little over a half an hour of
3 cross-examination. It could be slightly longer,
4 depending -- some background, qualifications,
5 experience, that type of thing.

6 And then the -- his testimony is focused on
7 the salinity issues, so we're going to be asking about
8 flow-related analysis that he conducted and how he came
9 to his conclusions regarding impacts on salinity.

10 And that will be it.

11 CO-HEARING OFFICER DODUC: All right. Thank
12 you.

13 TOM HESTER, BRADLEY LANGE, STAN GRANT,
14 MICHELLE LEINFELDER-MILES, ERIK RINGELBERG,
15 called as Joint Panel 1 by Protestant
16 Groups 19 and 20, having been previously
17 duly sworn, were examined and testified
18 Further as hereinafter set forth:

19 CROSS-EXAMINATION BY MR. MIZELL

20 MR. MIZELL: So this first question will be
21 for Mr. Hester.

22 Mr. Hester, yesterday we heard about some
23 concerns you had with the 1981 contract between the
24 Department and the North Delta Water Agency.

25 I'd just like to ask, are you aware that the

1 1981 contract is protective of water levels and water
2 quality within the North Delta Water Agency in all
3 years and not just in drought years?

4 WITNESS HESTER: Yes, but there's a provision
5 in there for during drought situations that has a --
6 that actually has a claims procedure, and those --
7 during drought situations are because there's not
8 enough natural flow through the system.

9 MR. MIZELL: Yes. Thank you.

10 Mr. Lange, are you aware that the 1981
11 contract between the North Delta Water Agency and the
12 Department does not distinguish between riparian 314
13 pre '14 and post '14 water rights?

14 WITNESS LANGE: I can only say my
15 understanding of the North Delta Water Agency contract
16 does not -- does not address pre-1914 riparian water
17 rights.

18 MR. MIZELL: Thank you for that clarification.

19 So, Mr. Lange, would you agree that in the
20 past five years, the State has experienced a severe
21 drought?

22 WITNESS LANGE: Yes.

23 MR. MIZELL: And is it your testimony that
24 you've had very few situations of localized salinity
25 buildup that has led to burnt leaves or crop loss?

1 WITNESS LANGE: That's correct.

2 MR. MIZELL: Is it also your testimony that,
3 during the course of the drought, you have not seen
4 significant damage to your vineyards from salt?

5 WITNESS LANGE: We've been fortunate to be
6 able to use our drip irrigation system to full effect.

7 I would like to address my deficit irrigation
8 regime for the vineyard as it relates to wine grape
9 quality and wine quality.

10 Madam Hearing Officer, may I do that?

11 CO-HEARING OFFICER DODUC: Briefly, please.

12 WITNESS LANGE: Quality in wine depends -- it
13 starts in the vineyard, and it comes down to farming
14 practices, cultural practices to maximize that wine
15 grape quality. That then goes to the winery, and the
16 winemaker takes over, but it begins in the vineyard.

17 We practice deficit irrigation. By that I
18 mean we allow the natural water resources to bring the
19 -- to be used up to bring the vine down. We limit
20 canopy by doing that, and we also limit the berry size,
21 keeping it as small as possible because that's where
22 the quality begins.

23 Deficit irrigation, i.e., we don't irrigate
24 just to irrigate. We don't drip to leach. We
25 absolutely depend on the following winter season and

1 the rain that comes down to help with the leaching
2 because a drip irrigation system does not do that.

3 We also depend on clean Sacramento River water
4 coming through our sloughs so that, when I do pump,
5 which is very little, when I do pump, I will be using
6 water that is clean or as low in salt as possible so
7 when I introduce it into the area immediately
8 surrounding the vine, that I'm just not laying on more
9 salt.

10 CO-HEARING OFFICER DODUC: So it's part of
11 your management system?

12 WITNESS LANGE: Yes.

13 CO-HEARING OFFICER DODUC: Thank you.

14 Mr. Mizell, next question.

15 MR. MIZELL: Yeah. I'd just like to follow up
16 very briefly with that.

17 So recognizing the statements you've just
18 made, it is still true, though, that over the course of
19 a five-year drought with limited rainfall in the
20 region, you did not experience any crop damage?

21 WITNESS LANGE: We did not experience crop
22 damage because some of the years we had enough rain to
23 do some leaching in the late spring.

24 MR. MIZELL: Okay. And are you aware that
25 during the course of 2015 there were curtailments in

1 effect in large portions of the State?

2 MR. VAN ZANDT: That's outside the scope of
3 his testimony.

4 CO-HEARING OFFICER DODUC: He may answer if he
5 is aware or not.

6 WITNESS LANGE: I didn't understand the
7 question.

8 MR. MIZELL: May I rephrase?

9 CO-HEARING OFFICER DODUC: Please.

10 MR. MIZELL: Are you aware that curtailments
11 were issued by the State Water Resources Control Board
12 to limit diversions of water during the drought year of
13 2015?

14 MR. LANGE: I am aware that there were some
15 curtailments. I don't know how that affected me with
16 my operation.

17 MR. MIZELL: Is it the case, then, that you're
18 not aware of what statements of diversion and use you
19 filed for your operations in North Delta Water Agency
20 in 2015?

21 MR. LANGE: Could you restate that, please.

22 MR. MIZELL: Certainly. So we just heard that
23 you weren't aware of curtailments, if they affected
24 your operations, correct?

25 WITNESS LANGE: I do not believe that I was

1 ordered to curtail my irrigations practices.

2 MR. MIZELL: I'll move on.

3 Mr. Hester, similar question. Are you aware
4 that curtailments were in place in 2015?

5 WITNESS HESTER: Yes. They didn't reach to
6 our level of water rights.

7 MR. MIZELL: Thank you.

8 I'd like to move on to Mr. Grant.

9 Mr. Grant, did you draft your testimony which
10 I believe is marked as Islands, Inc. II-2?

11 WITNESS GRANT: Yes, I did.

12 MR. MIZELL: Did anyone assist you in drafting
13 your testimony?

14 WITNESS GRANT: I did put it out to other
15 people in my panel to review, but the content was
16 entirely my own.

17 MR. MIZELL: Are you aware that the Department
18 and Bureau of Reclamation operate reservoirs upstream
19 of the Delta?

20 WITNESS GRANT: Yes, I am.

21 MR. MIZELL: Are you also aware that the
22 Department and the Bureau of Reclamation release
23 previously stored water when necessary to meet water
24 quality requirements of their existing water rights
25 permits?

1 WITNESS GRANT: I do understand they release
2 water, but as to what criteria they use, I'm not
3 familiar with that.

4 MR. MIZELL: Thank you. In your testimony,
5 you mentioned that you work on Grand Island and Ryer
6 Island and in locations in between.

7 Is your testimony limited to that region of
8 the Delta?

9 WITNESS GRANT: It focused on that region of
10 the Delta. Well, yes. My testimony dealt with the
11 North Delta, which is part of the Clarksburg AVA. It's
12 also defined Crush District 17 by the State of
13 California.

14 MR. MIZELL: In your testimony, what evidence
15 are you relying upon to determine that seawater
16 intrusion will occur as a result of the proposed
17 project?

18 WITNESS GRANT: Well, I relied in large part
19 on the testimony of others. I'm also familiar with --
20 well, my -- what is it? -- it is II-11, which includes
21 a map that shows the extent of saltwater intrusion over
22 a period of time, 1920 through 1977. And I've also
23 seen it in water analysis results.

24 I have one client in eastern Contra Costa
25 County who tracks water -- he has water analysis,

1 collects water samples every two weeks over the course
2 of the growing season, and I have seen in some seasons
3 that, indeed, salinity increases.

4 MR. MIZELL: Did you perform any of your own
5 analysis?

6 WITNESS GRANT: No. I don't have a
7 laboratory. I don't do analyses. I rely on commercial
8 laboratories that are certified.

9 MR. MIZELL: Isn't it true that DWR and the
10 Bureau of Reclamation are not seeking changes to the
11 water quality control plan standards assigned to it
12 under D1641?

13 WITNESS GRANT: That is outside the scope of
14 my testimony, which was focused upon the effects of
15 salinity on crops.

16 CO-HEARING OFFICER DODUC: Mr. Grant, in our
17 proceedings, cross-examination is allowed to go outside
18 a scope of direct to the extent that you have the
19 expertise to answer his questions.

20 MR. GRANT: Again, that's beyond the scope of
21 what I do.

22 CO-HEARING OFFICER DODUC: Is there anything
23 beyond that? If you don't know, just answer you don't
24 know.

25 WITNESS GRANT: I don't know.

1 CO-HEARING OFFICER DODUC: But he is allowed
2 to ask outside the scope.

3 WITNESS GRANT: Okay. Thank you.

4 MR. MIZELL: So in preparing for your
5 testimony, did you review the petition submitted by the
6 Department and the Bureau of Reclamation?

7 WITNESS GRANT: No. Again, that's beyond the
8 scope of what I was asked to speak about, so I did not.

9 MR. MIZELL: Thank you very much.

10 I have a moment. I might be able to skip a
11 couple of questions based on that.

12 CO-HEARING OFFICER DODUC: Take a few.

13 Ms. Daly, is that you?

14 MS. DALY: Yes. I had it on mute.

15 MR. MIZELL: Okay. Mr. Grant, just one final
16 question, please.

17 You cite several studies with elevated
18 chloride and sodium levels. You cited these studies as
19 examples of the effects of high salinity; is that
20 correct?

21 WITNESS GRANT: That's correct.

22 MR. MIZELL: So is it your testimony that the
23 high chloride and sodium levels referenced in these
24 studies are what will actually be experienced in the
25 North Delta if the proposed project is constructed?

1 WITNESS GRANT: I believe that it will happen
2 at some period in time; just where and when, that
3 depends on many factors which are beyond, you know, my
4 ability to predict. But, yeah, quite likely that's --
5 well, I should say yes, it will happen, depending on
6 the degree that salt, sodium, and chloride are loaded.

7 MR. MIZELL: Maybe just briefly. So "many
8 factors," that would be many factors beyond the
9 construction of the proposed project?

10 WITNESS GRANT: Some of the factors are beyond
11 that, yes. It depends -- yeah, some of the factors
12 would be beyond that, but certainly reducing the amount
13 of flow in the Sacramento River, which would
14 correspondingly allow deeper inland penetration of
15 tidal waters, is going to be a tremendous factor.

16 MR. MIZELL: Previously when explaining the
17 basis of your statement that increased salinity would
18 occur, you cited to, just now, II-11.

19 Can you tell me where in your testimony you
20 laid out the basis for that statement and cited to
21 II-11?

22 WITNESS GRANT: I'm sorry. I didn't
23 understand the question.

24 MR. MIZELL: I'll try and rephrase it.

25 In one of my previous questions to you, I

1 asked what evidence you were relying upon to determine
2 seawater intrusion will occur as a result of the
3 proposed project. Do you recall that question?

4 WITNESS GRANT: Yes, I do.

5 MR. MIZELL: And I believe you answered that
6 part of what you based that determination on was
7 Exhibit II-11?

8 WITNESS GRANT: That's correct.

9 MR. MIZELL: Is II-11 contained within your
10 written testimony?

11 WITNESS GRANT: No, I did not reference it
12 directly in my written testimony.

13 MR. MIZELL: Thank you very much, Mr. Grant.

14 Ms. Leinfelder-Miles, how are you today?

15 WITNESS LEINFELDER-MILES: I'm fine, thank
16 you.

17 MR. MIZELL: Excellent. Did you draft what
18 has been marked as Exhibit II-13?

19 WITNESS LEINFELDER-MILES: Yes, I did.

20 MR. MIZELL: Did anyone assist you in drafting
21 II-13?

22 WITNESS LEINFELDER-MILES: No. I drafted it
23 all on my own, and then counsel reviewed it.

24 MR. MIZELL: Is the purpose of your testimony
25 to describe the relationship between soil salinity and

1 the crops of grapes, pears, tomatoes and alfalfa?

2 WITNESS LEINFELDER-MILES: It is in part to
3 describe that but also to describe how current water
4 conditions, namely salinity, are impacting soil
5 salinity.

6 MR. MIZELL: Is it your testimony that crops
7 respond to average soil salinity conditions?

8 MR. VAN ZANDT: Question is vague.

9 WITNESS LEINFELDER-MILES: I can answer.

10 CO-HEARING OFFICER DODUC: Then please do.

11 WITNESS LEINFELDER-MILES: Scientific
12 references for crop tolerance, the equations that I
13 used in my testimony use average root-zone salinity to
14 determine the leaching fraction that is achievable in a
15 soil, based on water and soil conditions.

16 MR. MIZELL: So just to clarify, is your
17 answer that average soil salinity is merely being used
18 in an academic sense, or do you believe in your
19 testimony that crops respond to average soil salinity?

20 CO-HEARING OFFICER DODUC: Do you need
21 clarification?

22 WITNESS LEINFELDER-MILES: I think I
23 understand the question.

24 There are -- soils will have salt loading that
25 varies based on soil conditions. Plants are going to

1 be growing differently based on all the different soil
2 conditions, climate conditions, management decisions.

3 I can't ask a plant whether its responding to
4 average root-zone salinity. So I guess in some sense
5 yes, we are using it in an academic sense, but it's --
6 those equations in the scientific literature was
7 derived from years and years of experimentation looking
8 at crop tolerance.

9 MR. MIZELL: Mr. Long, can we bring up II-13.
10 When it comes up, I'll be looking for Page 3, Line 27.

11 MR. LONG: While the projector is warming up,
12 you can see II-13 on your monitor.

13 CO-HEARING OFFICER DODUC: I think you have
14 it. It's the testimony, right?

15 MR. MIZELL: It's the last full sentence on
16 Page 3.

17 And I do appreciate your answers to my
18 questions, Ms. Leinfelder-Miles. I'm not trying to put
19 you in a box here; I'm trying to understand what you
20 meant with the sentence when you stated that crops
21 respond to the average soil salinity.

22 So maybe if I could just ask it this way.
23 Based on the answers that I've heard so far, is it
24 correct to say that this statement was your
25 understanding of the sort of the academic work that you

1 reviewed but may not be applicable in the circumstances
2 of your studies that you conducted in the Delta?

3 WITNESS LEINFELDER-MILES: I wouldn't say that
4 that is not applicable to the studies that I've
5 conducted in the Delta. And in the sentence that
6 follows, the one that you're referring to, it says,
7 "For these reasons, crops salinity tolerances are
8 expressed," and then it goes on to say "as both
9 seasonal average water salinity and soil root-zone
10 salinity." So it goes on to reinforce what I've said,
11 that our leaching fraction and leaching requirement
12 calculations are expressed in these ways.

13 CO-HEARING OFFICER DODUC: Mr. Long, could you
14 move up the document? Thank you.

15 MR. MIZELL: Okay. So it's your opinion that
16 crops do respond to average soil salinity in the
17 studies that you conducted for your testimony?

18 WITNESS LEINFELDER-MILES: Can you rephrase
19 the question, please, or repeat the question? I guess
20 what I'm looking for is what does he mean by "crops
21 respond"? Can I get clarification on that?

22 MR. MIZELL: Okay. What did you mean when you
23 wrote, "Crops respond to the average soil salinity in
24 the root zone"?

25 WITNESS LEINFELDER-MILES: Crop growth or crop

1 yield.

2 MR. MIZELL: Okay.

3 WITNESS LEINFELDER-MILES: Is that what you
4 also mean?

5 MR. MIZELL: Using the term in that same
6 manner, is it your testimony that the crops in the
7 studies you conducted respond to average soil salinity
8 in the root zone?

9 WITNESS LEINFELDER-MILES: In some
10 circumstances, yes.

11 MR. MIZELL: And what do they respond to in
12 the other circumstances?

13 WITNESS LEINFELDER-MILES: There are different
14 ways of looking at crop -- crop tolerance of soils.
15 Others have expressed it as a 40, 30, 20, 10 model
16 where they look at the salinity of 40 percent in the
17 top part of the root zone, 30 percent in the next
18 quarter of the root zone.

19 There are other models that are looking at how
20 crops respond to salinity, but in my testimony, I
21 referred to this one. So in that case, because
22 scientific literature has different ways of looking at
23 it, I say in some situations yes. In other situations,
24 some people may use a different model to look at crop
25 tolerance.

1 MR. MIZELL: That was very helpful. Thank you
2 very much for clarifying that.

3 Isn't it true that in most agricultural
4 studies the results vary from year to year based upon
5 many different variables?

6 WITNESS LEINFELDER-MILES: In agricultural
7 studies, we try to control over factors so that we're
8 looking at the variable of interest.

9 CO-HEARING OFFICER DODUC: But the answer to
10 his question is?

11 WITNESS LEINFELDER-MILES: I would say in
12 experiments, no.

13 MR. MIZELL: So if I understand that
14 correctly, in controlled circumstances, so in
15 controlled experiments, no, they would not show
16 different results. Is that what -- is that what you
17 just answered?

18 WITNESS LEINFELDER-MILES: My understanding of
19 your question was crops would be responding to many
20 different variables, and my answer is in a controlled
21 experiment, we're trying to isolate one variable of
22 interest and make all else similar.

23 So in that case, we would expect running
24 statistics that any differences in crop performance
25 would be related to the variable that we have varied

1 and not to other things that we've tried to keep
2 constant.

3 MR. MIZELL: So in your studies and your
4 testimony, particularly focusing on the three-year
5 alfalfa/tomato study, were you able to hold all other
6 variables constant besides the soil salinity?

7 WITNESS LEINFELDER-MILES: Those were survey
8 projects where I was looking at how irrigation water
9 was affecting soil salinity. They were not controlled
10 experiments.

11 MR. MIZELL: So the tomato/alfalfa study you
12 referenced in your testimony, that was a three-year
13 study, correct?

14 WITNESS LEINFELDER-MILES: They were two
15 different studies, and yes, they were both three years,
16 occurring over the same three years, approximately.

17 MR. MIZELL: Thank you for that correction.
18 I'll refer to them separately in the future.

19 So for the tomato study, what years were
20 studied?

21 WITNESS LEINFELDER-MILES: We started the
22 experiment in 2013 in the spring, and we concluded the
23 experiment in 2015 in the fall.

24 MR. MIZELL: Were the same years considered
25 for the alfalfa study?

1 WITNESS LEINFELDER-MILES: In the alfalfa
2 study, we began the study in the spring of 2013, and we
3 concluded the study in the spring of 2015.

4 MR. MIZELL: All of the years within both the
5 tomato and the alfalfa study were drought years; is
6 that correct?

7 WITNESS LEINFELDER-MILES: As I understand
8 them to be, yes.

9 MR. MIZELL: Is it your opinion that, by only
10 studying drought years, you would produce study results
11 that are not generally applicable to other water year
12 types?

13 WITNESS LEINFELDER-MILES: The purpose was to
14 look at how the conditions were -- the water conditions
15 were affecting the soil conditions. I didn't develop
16 the studies because it was a drought.

17 MR. MIZELL: So maybe if I could follow up.
18 Because the study years were only drought years, does
19 that limit the utility of your study?

20 WITNESS LEINFELDER-MILES: I don't believe so,
21 because during those years the growers were still
22 applying water as they usually would.

23 MR. MIZELL: Previously, I believe it was
24 testimony by Mr. Lange, he indicated that he relies
25 upon good rainfall in order to assist with the leaching

1 of his soils.

2 And, Mr. Lange, please correct me if I'm
3 mistaken in anything I'm saying. I don't mean to
4 mis-quote you in any way, but that was my
5 understanding.

6 If that's the case, wouldn't a study that
7 focuses on only years where there is little to no
8 rainfall would produce a study result that is limited
9 in its utility?

10 WITNESS LEINFELDER-MILES: I disagree. The
11 growers during those three years were still applying
12 water to meet the crop evapotranspiration. And what we
13 were interested in learning was whether we were finding
14 -- whether the growers were also able to apply water
15 that met crop evapotranspiration and provided leaching.

16 MR. MIZELL: Focusing now on the other set of
17 studies that you conducted for your testimony, were the
18 grape and pear studies separate studies as well,
19 similar to how the alfalfa and the tomato studies were
20 separate studies?

21 WITNESS LEINFELDER-MILES: Those were one-time
22 soil samplings. They were conducted on the same day,
23 but as stated, they were conducted in different -- we
24 collected soils from different sites.

25 MR. MIZELL: So the grape and the pear soil

1 samples were one-day samples?

2 WITNESS LEINFELDER-MILES: That is correct.

3 MR. MIZELL: And what's the purpose of these
4 two soil samples, to assess the soil salinity in a pear
5 orchard and a vineyard on Ryer Island in the North
6 Delta?

7 WITNESS LEINFELDER-MILES: Yes.

8 MR. MIZELL: And isn't it true the intent of
9 those soil samples was not to assess irrigation
10 practices?

11 WITNESS LEINFELDER-MILES: Not to assess the
12 irrigation practices, no.

13 MR. MIZELL: So in those studies -- sorry --
14 in those soil samples, you did not collect any
15 information on the electrical conductivity of water
16 used to irrigate either the pear orchard or the
17 vineyard, correct?

18 WITNESS LEINFELDER-MILES: That is correct.
19 At the time of sampling, the vineyard had already been
20 harvested, and water had been shut off for the season.
21 As Mr. Lange has expressed, he uses a deficit
22 irrigation program in order to optimize fruit quality.

23 The pear orchard, I'm not exactly clear on
24 whether it was the end of the irrigation season for
25 that orchard yet. But no, I was not collecting water

1 as part of that.

2 MR. MIZELL: And the timing of those soil
3 collections -- well, specifically for the vineyard, the
4 timing of that soil collection would have been before
5 any significant off-season leaching would have
6 occurred?

7 WITNESS LEINFELDER-MILES: Yes, because the
8 sampling took place in August, and we didn't receive
9 any rainfall yet.

10 MR. MIZELL: In the course of assembling your
11 testimony and assessing the importance of the soil
12 sample for both the pear and the vineyard soil samples,
13 did you investigate what the root-zone salinity was at
14 the beginning of the irrigation season?

15 WITNESS LEINFELDER-MILES: No, I did not.

16 MR. MIZELL: Do you know if the pear orchard
17 had a drainage system installed?

18 WITNESS LEINFELDER-MILES: I'm not clear if
19 they had -- if they have drainage tiles in that
20 particular orchard, but in the Delta, it is common
21 practice to have drainage. It's the only way that
22 agriculture is successful in Delta islands that are
23 below sea level.

24 Drainage can occur in many different ways
25 which Mr. Grant has already described. Drainage tiles

1 can be a very costly investment, but another way that
2 growers will have drainage is just to dig ditches, and
3 water will drain to those ditches, which is then pumped
4 off the island.

5 MR. MIZELL: Are you aware of how old the pear
6 orchard was in your pear soil sample?

7 WITNESS LEINFELDER-MILES: How old that
8 orchard is?

9 MR. MIZELL: That's correct.

10 WITNESS LEINFELDER-MILES: I do not know how
11 old that pear orchard is.

12 MR. MIZELL: Do you know what type of pear it
13 is in the orchard?

14 WITNESS LEINFELDER-MILES: I do not know, but
15 Mr. Hester probably knows the answers to these
16 questions.

17 MR. MIZELL: Mr. Hester, how old and what type
18 of pear orchard was the soil sample taken in?

19 WITNESS HESTER: It has both Bartlett and Bosc
20 pears, and the orchard was planted, I believe, in '79.

21 MR. MIZELL: 1979? Thank you.

22 WITNESS HESTER: That's correct.

23 MR. MIZELL: Mr. Hester, do you own the
24 vineyard that the soil sample was taken in?

25 WITNESS HESTER: No. Mr. Lange does.

1 MR. MIZELL: Mr. Lange, how old is the
2 vineyard?

3 WITNESS LANGE: The vineyard's approximately
4 -- without looking at my maps, but it's approximately
5 14 years.

6 MR. MIZELL: And I'm assuming you have a
7 variety of grapes planted across the acreage, but at
8 the specific point where the soil sample was taken, do
9 you recall what varietal was planted there?

10 WITNESS LANGE: Pinot noir.

11 MR. MIZELL: Pinot noir. thank you.

12 Ms. Leinfelder-Mills -- sorry -- Miles --

13 MR. VAN ZANDT: It's Dr. Leinfelder-Miles,
14 please.

15 MR. MIZELL: My apologies,
16 Dr. Leinfelder-Miles.

17 Isn't it true that the largest contributor to
18 leaching fraction, particularly in an efficiently
19 irrigated system, is precipitation?

20 WITNESS LEINFELDER-MILES: I expressed in my
21 testimony that leaching can occur whenever rain occurs
22 or whenever any irrigation event occurs.

23 MR. MIZELL: So specifically in an efficiently
24 irrigated system such as a drip-irrigated vineyard,
25 would it be your opinion that precipitation plays a

1 larger or smaller role than irrigation?

2 WITNESS LEINFELDER-MILES: It would depend on
3 the choice of the grower and how he was choosing to
4 manage his vineyard. If he chose to, say, use the
5 irrigation system in leaching after the grapes had been
6 harvested, applying water, then it could be that he's
7 using his irrigation system for leaching. But as
8 Mr. Lange has expressed, during the season, when he's
9 worried about fruit quality and quality of his eventual
10 wine, then he's using deficit irrigation.

11 MR. MIZELL: So if I understand your answer
12 correctly, in the particular circumstance of where you
13 took your soil sample in that vineyard, the larger
14 contributor would be precipitation?

15 WITNESS LEINFELDER-MILES: That wasn't my
16 answer. My answer is it depends on management. It
17 depends on the decisions of the manager. Irrigation
18 can be used for leaching if the manager chooses to do
19 that.

20 MR. MIZELL: I recognize that's the general
21 answer. You indicated that Mr. Lange uses deficit
22 irrigation, so let's assume deficit irrigation on a
23 drip system vineyard during the growing season.

24 Would precipitation or irrigation likely play
25 a larger role in the leaching fraction?

1 WITNESS LEINFELDER-MILES: During the growing
2 season?

3 MR. MIZELL: That's correct.

4 WITNESS LEINFELDER-MILES: During the growing
5 season, we typically don't have precipitation in
6 California.

7 MR. MIZELL: Okay. So your answer would be
8 the irrigation plays a larger role?

9 WITNESS LEINFELDER-MILES: Yes, I guess that's
10 what I'm saying.

11 MR. MIZELL: Okay. Thank you.

12 If we look at the non-growing season, would
13 that answer change?

14 WITNESS LEINFELDER-MILES: Yeah, that answer
15 would change, and it would change to "it depends." If
16 we receive a lot of precipitation, then a grower
17 probably wouldn't have to actively manage his
18 irrigation system for leaching.

19 However, if we don't get precipitation, or in
20 some of these winter seasons that we've had recently,
21 we had some precipitation early and then we went dry, a
22 grower may choose to use his irrigation system later on
23 in the winter months to help in leaching. So again, it
24 would depend on the decisions of the manager.

25 MR. MIZELL: Mr. Lange, recognizing that you

1 hold substantial properties, I don't want to imply that
2 you may be out there turning the knobs yourself. Maybe
3 you do; maybe you don't.

4 But in your experience with vines on drip,
5 would you utilize a drip irrigation system to leach
6 your field?

7 WITNESS LANGE: Depending on the year and
8 depending on the precipitation, I could augment -- I
9 would augment with rainfall and have drip irrigation
10 systems. We apply very little water through it. It's
11 a very uniform application of water throughout the
12 vineyard, but we're putting on roughly a gallon an
13 hour. And part of the economics of growing wine grapes
14 in our area is to control costs. If I'm pumping, I'm
15 spending money.

16 MR. MIZELL: Would a gallon an hour be enough
17 to leach a field?

18 WITNESS LANGE: It would be marginal. That's
19 why I would do it in conjunction with rain, for
20 instance, the four or five inches that we've gotten
21 over the last couple weeks.

22 WITNESS LEINFELDER-MILES: Madam Hearing
23 Officer, may I add to that?

24 CO-HEARING OFFICER DODUC: Please.

25 WITNESS LEINFELDER-MILES: So growers will

1 oftentimes use their irrigation system to wet the soil
2 profile before a rain event so that if the soil is
3 already wet, the rain will help to carry the salts
4 down.

5 If the soil is dry at the time of the rain
6 event, sometimes that rain is not enough to actually
7 move the salts. It just maybe redistributes the salts
8 within a damp soil profile. But if the profile is
9 already wet, say, from using an irrigation system, then
10 the rain can be used -- the rain is more effective at
11 leaching the salts down because the soil profile is
12 already wet.

13 CO-HEARING OFFICER DODUC: Thank you.

14 WITNESS LEINFELDER-MILES: And if I may add
15 one more thing. I guess this further emphasizes the
16 point of having good quality water both during the
17 growing season and outside of the growing season.

18 CO-HEARING OFFICER DODUC: I never argue
19 against having good quality water.

20 MR. MIZELL: Going to that point about good
21 quality water, I'd like to circle back on the
22 statements previously made that over the course of the
23 drought there were no experienced crop losses.

24 Are you familiar with the water quality
25 requirements under the Water Quality Control Plan and

1 specifically integrated in D1641?

2 WITNESS LEINFELDER-MILES: I am somewhat
3 familiar, but I would say I am nowhere near an expert.

4 MR. MIZELL: Okay. Well, I'll skip that
5 question, then.

6 When you were assessing crop salinity
7 tolerances, what was the period of which you averaged
8 the soil salinity?

9 WITNESS LEINFELDER-MILES: I wasn't assessing
10 crop salinity tolerance.

11 MR. MIZELL: Was that the testimony of
12 Mr. Grant?

13 WITNESS LEINFELDER-MILES: I don't believe
14 either of us were assessing crop salinity tolerance.
15 We were using crop salinity tolerance references that
16 are established in peer-reviewed scientific literature.

17 MR. MIZELL: Okay. And using those references
18 on crop salinity tolerances, what was the period of
19 time over which the average soil salinity was assumed?

20 WITNESS LEINFELDER-MILES: To clarify, the
21 average soil salinity refers to the average down the
22 profile not an average over time. Hence, the averages
23 that I presented refer to the averages down the
24 profile, and that's why I illustrated them as I did.

25 CO-HEARING OFFICER DODUC: Thank you. Okay.

1 MR. MIZELL: That was very helpful. Thank
2 you. In your example in your testimony, it looked as
3 though you were calculating the leaching requirement
4 based upon accumulated salt buildup. And the numbers
5 that you used, you came up with 7 percent leaching
6 requirement; is that correct?

7 WITNESS LEINFELDER-MILES: I came up with the
8 7 percent leaching requirement for when I was using
9 2015 ECw water quality data from the California Data
10 Exchange Center.

11 MR. MIZELL: And in that example, you were
12 assuming diversions at Rio Vista due to the data you
13 were looking for?

14 WITNESS LEINFELDER-MILES: I was using data
15 from Rio Vista because my understanding of where data
16 -- water quality data is assessed, I believed that to
17 be the closest location to Ryer Island.

18 MR. MIZELL: And when you were looking at CDEC
19 at the Rio Vista station, during those low periods such
20 as in a drought, are you aware that the EC varies quite
21 a bit based on hourly and daily fluctuations due to
22 tide?

23 WITNESS LEINFELDER-MILES: Yes, I am aware of
24 that, and I believe that the average that I found -- I
25 used hourly data from April 1st to August 10th, and I

1 used hourly data across those dates to find my average
2 ECw that I used in my example. I feel like that ECw
3 was probably low compared to what a grower would
4 actually be applying onto his field, given the number
5 of data points that I was using in my average.

6 MR. MIZELL: So using -- in your opinion, is
7 using an average an appropriate way to evaluate
8 different scenarios?

9 MR. VAN ZANDT: That question is vague. Which
10 scenarios are you talking about?

11 MR. MIZELL: Generally speaking, in
12 scientific, if you were going to compare two scenarios,
13 would using the average salinity, in this case at Rio
14 Vista as you've calculated it, be an appropriate way to
15 compare two hypothetical scenarios?

16 WITNESS LEINFELDER-MILES: In this case, I --
17 I had to work with that data because I didn't collect
18 irrigation water salinity throughout the season. My
19 preference would have been to have had the foresight to
20 do that.

21 But then again, keep in mind that the
22 equations that we use that are -- that were developed
23 and have been peer reviewed, those equations ask for a
24 variable which is the average irrigation water that is
25 applied to the field. Not having had that number, I

1 used numbers that I had available to me.

2 MR. MIZELL: Thank you very much, Doctor.

3 That was very helpful and informative. I appreciate
4 you putting up with some of my clumsier questions.

5 That's the rest of my -- that's the extent of
6 my cross-examination at this time, and I'll turn the
7 microphone over to Mr. Berliner.

8 CO-HEARING OFFICER DODUC: All right. Thank
9 you.

10 Mr. Berliner, you're estimating about half an
11 hour or so, so that should take us to our lunch break,
12 then.

13 MR. BERLINER: We don't need a break.

14 CO-HEARING OFFICER DODUC: Let me ask the
15 court reporter.

16 Ms. Meserve?

17 MS. MESERVE: Madam, I'm just wondering, with
18 your permission, if I should contact my next panel and
19 let them know that they don't need to be available at
20 1:00. I don't know if we can estimate, but if I was to
21 say 2:00? Or I can make them come at 1:00 if you want.

22 CO-HEARING OFFICER DODUC: Let me ask.

23 Who else plans to have cross-examination for
24 this panel? I see lots of hands. I'm expecting more
25 likely -- well, let me guess -- let me not guess.

1 Ms. Morris, 30 minutes?

2 MS. MORRIS: Or less.

3 CO-HEARING OFFICER DODUC: Or less. Okay. I
4 think you're with San Luis Delta-Mendota?

5 MR. WALTER: Less than 30.

6 CO-HEARING OFFICER DODUC: Okay.

7 Mr. Herrick?

8 MR. HERRICK: Probably 30 minutes.

9 CO-HEARING OFFICER DODUC: Ms. Des Jardins?

10 MS. DES JARDINS: Thirty minutes.

11 CO-HEARING OFFICER DODUC: So we're looking at
12 about an hour or so.

13 Ms. Suard?

14 MS. SUARD: Thirty minutes.

15 CO-HEARING OFFICER DODUC: Or less. Okay.

16 And Mr. Jackson?

17 MR. JACKSON: Twenty minutes.

18 CO-HEARING OFFICER DODUC: I think it's safe
19 to say 2:00 o'clock, Ms. Meserve.

20 MS. MESERVE: Thank you.

21 CO-HEARING OFFICER DODUC: All right.

22 Mr. Berliner.

23 MR. BERLINER: Thank you very much.

24 CROSS-EXAMINATION BY MR. BERLINER

25 MR. BERLINER: Good morning. My name is Tom

1 Berliner. I'm an attorney for the Department of Water
2 Resources.

3 Just wanted to pick up Dr. Leinfelder-Miles,
4 if I could, with a question that you had expressed some
5 information about that was in your testimony on Page 3
6 and 4. You talked about crop salinity tolerances or
7 expressed both the seasonal average applied water
8 salinity and average root-zone soil salinity.

9 With regard to the seasonal average applied
10 water salinity, average over what period of time?

11 WITNESS LEINFELDER-MILES: It would be
12 averaged over the course of applying water.

13 MR. BERLINER: So during the growing season?

14 WITNESS LEINFELDER-MILES: Yes, but I -- I
15 suppose it depends on what range of time you're looking
16 at. The leaching fraction can be expressed over the
17 growing season, or it can be expressed over a longer
18 period of time, depending on when you're looking at --
19 when you're starting to collect data on the applied
20 water.

21 MR. BERLINER: Is there a minimum amount of
22 time that you would need?

23 WITNESS LEINFELDER-MILES: Well, I would say
24 in this case, a minimum amount of time would probably
25 be the growing season.

1 MR. BERLINER: So, roughly, you'd need at
2 least six months, then; is that a fair statement?

3 WITNESS LEINFELDER-MILES: You would need at
4 least as much time as a grower is applying water.

5 MR. BERLINER: Okay. And in California we
6 typically apply water roughly March to October, so is
7 that about the time frame we're talking about?

8 WITNESS LEINFELDER-MILES: Not necessarily so.
9 The alfalfa growers that I work with sometimes aren't
10 applying water until April and maybe aren't applying
11 water past September.

12 MR. BERLINER: So somewhere between five and
13 seven months, is that about a minimum?

14 WITNESS LEINFELDER-MILES: Sure.

15 MR. BERLINER: Okay. As opposed to, let's
16 say, a week; is that right?

17 WITNESS LEINFELDER-MILES: I'm sorry?

18 MR. BERLINER: In other words --

19 WITNESS LEINFELDER-MILES: Elaborate on that
20 question.

21 MR. BERLINER: Sure. You wouldn't look at
22 crop salinity tolerances for average applied water
23 salinity over just a week of time; is that right?

24 WITNESS LEINFELDER-MILES: Can I -- can I ask
25 a clarifying question? Do you mean a leaching

1 fraction, or do you mean crop salinity tolerance?

2 MR. BERLINER: I mean crop salinity tolerance.

3 WITNESS LEINFELDER-MILES: Crop salinity
4 tolerance is something that in my case I haven't
5 studied myself. I'm using scientific literature and
6 referring to crop salinity tolerances that are in the
7 scientific literature which have been established over
8 experimentation, years and years of experimentation.

9 MR. BERLINER: Okay. I understand that, but
10 I'm asking about the sentence that you have in your
11 testimony. So if you could please take a look at the
12 bottom of 3 and the top of 4, it's a sentence that
13 reads, "For these reasons, crop salinity tolerances are
14 expressed as both seasonal average applied water
15 salinity and average root-zone soil salinity."

16 All I'm trying to find out is, when you're
17 talking about the seasonal average applied water
18 salinity, is this the salinity of water that's applied
19 over a growing season of several months? Is it
20 salinity for a day? an hour? a week? What are you
21 referring to?

22 WITNESS LEINFELDER-MILES: The crop salinity
23 tolerances that I'm referring to are in Exhibit
24 No. II-15. Table 4 of that exhibit refers to crop
25 salinity tolerances and expresses them both as soil

1 salinity, the ECe, the extract, and the water salinity,
2 the ECw. That's -- that's what that means, is that for
3 crop salinity tolerances, we can think about the
4 tolerance of a crop related to the soil salinity, or we
5 can think about it in terms of the water salinity.

6 In some cases people aren't collecting soil
7 salinity when they're assessing salinity because it's
8 more challenging. It is easier to go out and take a
9 water sample. So in that case, we would want to
10 understand the average of the applied water use, that
11 crop salinity tolerance, that reference, and compare it
12 to the water data that we've collected over the season.

13 On the flip side, if you have gone out and
14 collected soil samples, you'll -- using the soil
15 saturated extract, you find a different number. The
16 soil and the water have different numbers for a
17 tolerance.

18 So if we're trying to achieve 100 percent
19 yield potential in alfalfa, for example, the soil
20 salinity tolerance level that we would -- where we
21 would expect to see yield declines is 2.0 decisiemens
22 per meter. The water salinity is 1.3 decisiemens per
23 meter. At those levels or lower, we would expect to
24 see 100 percent yield potential, but higher than those
25 levels, we would expect to see yield declines.

1 MR. BERLINER: And when you're talking about
2 the water salinity of 1.3 decisiemens, are you talking
3 about that as an average over a period of time or at an
4 instance in time -- instant in time?

5 WITNESS LEINFELDER-MILES: An average over a
6 period of time.

7 MR. BERLINER: And just to make sure we're
8 talking about the same thing, that average over a
9 period of time is at least the growing season; is that
10 correct?

11 WITNESS LEINFELDER-MILES: Yes, but if any
12 rain event occurred, then it would take that rain into
13 account.

14 MR. BERLINER: And if there's no rain event,
15 then it would only rely on applied water, right?

16 WITNESS LEINFELDER-MILES: That is correct.

17 MR. BERLINER: Okay. Thank you.

18 Mr. Ringelberg, I have some questions for you.
19 Are you testifying today as an expert?

20 WITNESS RINGELBERG: Yes, I am.

21 MR. BERLINER: As I understand it, you're not
22 here in your capacity with the Freshwater Trust; is
23 that right?

24 WITNESS RINGELBERG: That's correct.

25 MR. BERLINER: What capacity are you here as,

1 as a private individual or what?

2 WITNESS RINGELBERG: As a private individual.

3 MR. BERLINER: I understand you're a candidate
4 for a Ph.D.; is that right?

5 WITNESS RINGELBERG: Yes. I'm a Ph.D.
6 candidate. That process is in the middle of providing
7 a dissertation. That committee has dissolved, and so
8 I'm stuck in Ph.D. ABD status.

9 MR. BERLINER: I don't know what ABD means.

10 WITNESS RINGELBERG: "All but done."

11 MR. BERLINER: All but done. And how long
12 have you been stuck in this limbo position?

13 WITNESS RINGELBERG: A little over a decade.
14 the committees dissolved, my program chair left to
15 become a competitor consultant, and since then I have
16 not had an opportunity nor desire to reenter into that
17 process.

18 MR. BERLINER: So are you -- I don't know a
19 lot about Ph.D's. So does that mean you're not
20 currently pursuing the Ph.D.?

21 WITNESS RINGELBERG: That's correct.

22 MR. BERLINER: I'm sure that's a frustrating
23 experience for you.

24 Regarding your experience with the California
25 modeling, are you familiar with what's called CalSim?

1 WITNESS RINGELBERG: Yes, I am.

2 MR. BERLINER: What's your understanding as to
3 what CalSim is?

4 WITNESS RINGELBERG: CalSim is part of a suite
5 of models that the Department of Water Resources uses
6 to model the system under various scenarios.

7 MR. BERLINER: And are you generally familiar
8 with how CalSim operates?

9 WITNESS RINGELBERG: I'm generally familiar
10 with how CalSim operates, but I have not personally
11 operated that model.

12 MR. BERLINER: Are you also familiar with
13 DSM2?

14 WITNESS RINGELBERG: I am also familiar with
15 DSM2.

16 MR. BERLINER: And have you ever run DSM2?

17 WITNESS RINGELBERG: I have not operated DSM2.

18 MR. BERLINER: Do you understand that DSM2 and
19 CalSim are two different models?

20 WITNESS RINGELBERG: I do.

21 MR. BERLINER: Do you understand the
22 difference between the two?

23 WITNESS RINGELBERG: One is a 1D model, and
24 the other is a multi-parameter, multi-dimensional
25 model.

1 MR. BERLINER: Are you familiar with the time
2 frames that are used in CalSim?

3 WITNESS RINGELBERG: Not for CalSim but for
4 DSM2.

5 MR. BERLINER: And what's the time frame
6 that's used in DSM2?

7 WITNESS RINGELBERG: DSM2 can run up to a
8 15-minute interval.

9 MR. BERLINER: Have you ever been, prior to
10 this engagement, qualified as an expert in any court
11 proceeding?

12 WITNESS RINGELBERG: Administrative hearings
13 and -- yes, administrative hearings.

14 MR. BERLINER: Have you been qualified before
15 the State Water Board?

16 WITNESS RINGELBERG: I have not been.

17 MR. BERLINER: What administrative hearings
18 have you qualified as an expert in?

19 WITNESS RINGELBERG: State of New Mexico on a
20 radioactive contamination issue.

21 MR. BERLINER: What was the nature of your
22 expertise in that case?

23 WITNESS RINGELBERG: I was an advising
24 scientist for a local conservation group.

25 MR. BERLINER: And what were you testifying

1 about?

2 WITNESS RINGELBERG: I was testifying about
3 the interrelationship between federal laws and the
4 application of waste management in an area that was
5 subject to flooding.

6 MR. BERLINER: Was your particular testimony
7 concerning radioactivity or water? Or what was it
8 aimed at?

9 CO-HEARING OFFICER DODUC: Since Mr. Van Zandt
10 is not objecting, let me insert myself and ask what is
11 the relevancy of this line of questioning?

12 MR. BERLINER: I have a line of questioning to
13 understand better what Mr. Ringelberg's actual area of
14 expertise is since he's here offering an expert
15 opinion.

16 CO-HEARING OFFICER DODUC: Okay, but just a
17 little bit more. He's here. He's offered for an
18 expert opinion. He's offered exhibits and documents to
19 lay the foundation for his expert's opinion. So I
20 would encourage you to move quickly through this point.

21 MR. BERLINER: Yeah, I don't have a lot more
22 on this.

23 WITNESS RINGELBERG: Sure. So some background
24 information. Early in my career, I was an
25 environmental scientist working --

1 CO-HEARING OFFICER DODUC: Briefly.

2 WITNESS RINGELBERG: -- working as an
3 environmental scientist in petroleum-contaminated
4 sites, heavy metal-contaminated sites, RCRA, Research
5 Conservation Recovery Act sites, radioactive and mixed
6 hazardous waste sites.

7 And that, with my understanding of surface and
8 groundwater transport mechanisms, although I'm not a
9 licensed hydrogeologist in the State of California,
10 allowed me to have an understanding of what would
11 happen if you left radioactive materials on the surface
12 of an area that would be flooded. And, therefore, I
13 was a suitable expert for that analysis.

14 MR. BERLINER: Before this engagement, have
15 you otherwise qualified as an expert? I know not
16 before the Board or before courts, but have you ever
17 qualified as an expert to interpret model results from
18 either CalSim or DSM2?

19 WITNESS RINGELBERG: I have not.

20 MR. BERLINER: Have you taken classes in
21 hydrology?

22 WITNESS RINGELBERG: I have taken classes in
23 hydrology.

24 MR. BERLINER: Have you ever evaluated Delta
25 hydrodynamics before?

1 WITNESS RINGELBERG: Yes, in two different
2 situations. The first situation was in the context of
3 a BDCP. I sat down with Gwen Buchholz and her team to
4 deconstruct the effectiveness of this modeling approach
5 and understand the sensitivity of this model for the
6 application of -- the application of it in a specific
7 operational predictive sense versus its ability to
8 estimate differences for CEQA.

9 And in the second context, I took a look for a
10 presentation that I made to the Board about a year ago
11 as to the effectiveness of the information available to
12 the public to look at the operations of the Upper Rim
13 dams in relationship to hyperheic flows and in
14 relationship to water that actually passed through the
15 Delta. Through that research and use of other
16 additional experts in the model, I was unable to
17 identify the sensitivity of that model during low
18 flows.

19 Subsequent to that, I provided the testimony
20 from the chief of the modeling section, and that's part
21 of my testimony.

22 MR. BERLINER: Regarding your testimony in
23 this proceeding, is it a fair characterization to say
24 that your testimony regarding flow is the same for each
25 of the different clients that you'll be testifying for?

1 WITNESS RINGELBERG: That is not correct.

2 MR. BERLINER: Can you inform us as to how
3 your testimony differs?

4 WITNESS RINGELBERG: Sure. For my
5 presentation yesterday, the emphasis was on the
6 changing nature of a high river stage versus inflow and
7 outflow. For the harmful algal blooms testimony, it
8 will be focused more on the lacustrine or the lake
9 stage rather than the high inflow period. And then for
10 my testimony for Mr. Brodsky's group, I will be looking
11 at small-scale circulation.

12 MR. BERLINER: Is the small-scale circulation
13 in the context of flow or Microcystis?

14 WITNESS RINGELBERG: They're not independent.

15 CO-HEARING OFFICER DODUC: Mr. Brodsky?

16 MR. BRODSKY: I'm going to object to this line
17 of questioning. Delta Alliance isn't putting on its
18 case now. The time to cross-examine Delta Alliance's
19 direct testimony is when we put on our case, and
20 Mr. Berliner will have full opportunity to do so then.

21 CO-HEARING OFFICER DODUC: So noted. He's
22 asking generalities at the moment.

23 MR. VAN ZANDT: I have that same observation.
24 The relevance of this escapes me.

25 CO-HEARING OFFICER DODUC: I'm sorry,

1 Mr. Van Zandt. What was that?

2 MR. VAN ZANDT: The relevance of this escapes
3 me.

4 CO-HEARING OFFICER DODUC: I see the
5 relevance. I will give Mr. Berliner a little bit of
6 leeway, recognizing, however, the validity of
7 Mr. Brodsky's objection.

8 MR. BERLINER: Appreciate that, and I won't be
9 getting into any details regarding that later panel.

10 Regarding the testimony that you're offering
11 here this morning, Mr. Ringelberg, is the -- what
12 opinions -- opinion or opinions are you expressing
13 today?

14 WITNESS RINGELBERG: Today in cross or
15 yesterday in my presentation?

16 MR. BERLINER: In your testimony.

17 CO-HEARING OFFICER DODUC: Hopefully, they are
18 the same, Mr. Ringelberg.

19 WITNESS RINGELBERG: They're changing.

20 So can you ask the question again, please?

21 CO-HEARING OFFICER DODUC: Yes. Could you
22 please be more specific, Mr. Berliner? I don't want
23 him to repeat his entire testimony.

24 MR. BERLINER: Maybe this will help if you
25 refer you to File 24, Page 9, Lines 3 to 9. Maybe we

1 can pull that up.

2 My question's actually pretty simple. In
3 reviewing your testimony, you indicated on Page 9 that
4 you were expressing a specific opinion. And my,
5 really, only question for you is where you indicate
6 that you're expressing this particular opinion, is this
7 the only opinion that you're offering today as an
8 expert?

9 CO-HEARING OFFICER DODUC: Could you -- I'm
10 sorry, Mr. Berliner. What --

11 MR. BERLINER: Sure. Page 9, Lines 3 to 9,
12 starting with "It is my opinion."

13 CO-HEARING OFFICER DODUC: We must be on the
14 wrong page.

15 MR. BERLINER: Must be on the wrong --

16 MR. MIZELL: I don't believe the cover page is
17 numbered. So it might be PDF Page 10.

18 CO-HEARING OFFICER DODUC: Here it is. So
19 that one paragraph there.

20 WITNESS RINGELBERG: I guess as a scientist,
21 I'm unclear as to which definition of "opinion" you
22 intend to use here. The entire document is my opinion.
23 I've collected information from a variety of technical
24 sources, synthesized them, organized them, and
25 developed them into a series of, hopefully, coherent

1 topical areas for discussion that provided the
2 substance of my analysis. My opinion is simply a
3 summary opinion at the end of that analysis.

4 MR. BERLINER: So let me ask that again to
5 make sure I understood your response.

6 Is this paragraph the summary of your opinion
7 -- of the work that you did on the preceding eight
8 pages?

9 WITNESS RINGELBERG: That is correct.

10 MR. BERLINER: Okay. Thanks.

11 In your testimony, you indicated that you were
12 going to be providing scientific analysis and
13 conclusions about the likely project impacts on water
14 quantity and quality as it relates to the Sacramento
15 River downstream of the proposed intakes within the
16 Delta.

17 What project scenarios did you evaluate?

18 WITNESS RINGELBERG: I looked at H3, H4, and
19 the two boundary conditions, Boundary 1 and Boundary 2,
20 as well as the no action alternative.

21 MR. BERLINER: And you mentioned earlier that
22 you had done some work, some hydrologic work, looking
23 at the rim reservoirs.

24 What hydrologic experience do you have looking
25 at the Sacramento-San Joaquin Delta?

1 WITNESS RINGELBERG: Sure. To be clear, I
2 have looked at a variety of different individual areas
3 within the system. I practice restoration ecology,
4 focused my work on Cache Creek and Putah Creek, the two
5 primary drivers for this system on the west side of the
6 valley, and used a variety of different techniques as
7 both directing teams and within teams, predominantly
8 the HEC, hydroelectric engineering center, RES model.
9 I looked at the difference in flows and timings of
10 flows as a result of project operations from the Solano
11 Water Project specifically.

12 And then in a broader sense, I have looked at
13 the operations of the rim dams in order to ascertain
14 the prior question that I had described earlier.

15 I've used a variety of different experts to be
16 able to help me interpret it, and my conclusions came
17 out to be the same: that the system is operated in a
18 very complex manner; that that manner is not
19 transparent; and that, as a result of the methodology
20 that the model uses, the model is operated to
21 demonstrate compliance with D1641 but essentially
22 operates the entire upstream system to maintain that
23 point of compliance. It operates it in a manner that's
24 subject just to the model. It does not operate it in a
25 manner that the system would actually be operated or is

1 operated today.

2 MR. BERLINER: Are you drawing a distinction,
3 if I understand your response, between how the project
4 is modeled versus realtime operations?

5 WITNESS RINGELBERG: I made that distinction,
6 yes.

7 MR. BERLINER: Yes, okay. Thank you.

8 Did you do any independent analysis of any of
9 the alternatives?

10 WITNESS RINGELBERG: That's -- please describe
11 that in a different manner.

12 MR. BERLINER: Did you do any independent
13 analysis of the effects of H3, H4, Boundary 1, Boundary
14 2, or did you just review the data that had been
15 provided?

16 WITNESS RINGELBERG: I reviewed the data that
17 was provided, and I looked at information that was
18 available from other sources.

19 MR. BERLINER: By "other sources," what are
20 you referring to?

21 WITNESS RINGELBERG: Other private consultants
22 working in the same sphere.

23 MR. BERLINER: Is that evidence in this
24 proceeding, or it is not?

25 WITNESS RINGELBERG: It is not evidence in

1 this proceeding.

2 MR. BERLINER: Are you familiar with D1641?

3 WITNESS RINGELBERG: I am.

4 MR. BERLINER: Do you know what the D1641
5 salinity requirement is at Rio Vista?

6 WITNESS RINGELBERG: I do not, but I appended
7 it in the II-36, the Regional Water Quality Control
8 Board Water Quality Control Plan.

9 MR. BERLINER: Isn't it true, actually, that
10 there is no salinity requirement at Rio Vista under
11 D1641?

12 WITNESS RINGELBERG: That's correct. It's at
13 Emmanton.

14 MR. BERLINER: In your analysis, to the extent
15 you reviewed the material in the record and these other
16 private sources, did your testimony consider whether
17 the state and federal projects would be limited in
18 their ability to use the North Delta diversion by
19 requirements in the Water Quality Control Plan?

20 MR. VAN ZANDT: Calls for a legal conclusion.

21 CO-HEARING OFFICER DODUC: Mr. Ringelberg,
22 just answer to the best of your ability.

23 WITNESS RINGELBERG: Can he please re-ask the
24 question?

25 MR. BERLINER: Sure. And I'm not asking --

1 just to be clear, I'm asking from a flow perspective,
2 not from a legal obligation perspective.

3 In your analysis of flow in your testimony,
4 did you consider whether the projects would have
5 limitations imposed upon them for using the North Delta
6 diversion in order to meet requirements of the Water
7 Quality Control Plan?

8 WITNESS RINGELBERG: I did.

9 MR. BERLINER: And what consideration did you
10 make?

11 WITNESS RINGELBERG: I think my testimony is
12 very clear on this topic, that the regulatory drivers
13 for this system are in play constantly. D1641 is a
14 rolling average, a 14-day average, which I demonstrated
15 in my testimony dampens the actual salinity expression
16 at individual locations.

17 The modeling effort was not concluded for the
18 area that we're discussing here with Islands, Inc.;
19 that -- the operation of the Delta Cross Channel and
20 the positioning and timing of various proposals by the
21 Department of Water Resources for barriers in the North
22 Delta as well as the South Delta; and the actual
23 operational requirements from a host of permit
24 requirements which are not yet expressed.

25 Those are all bounds, some of which were not

1 studied in this analysis that was provided and some of
2 which were.

3 MR. BERLINER: Do you consider limitations on
4 the North Delta diversion by the operational criteria
5 that are included in H3 and H4?

6 WITNESS RINGELBERG: I did, and those are
7 identified in my testimony.

8 MR. BERLINER: And did you consider whether
9 the biological opinions would limit use of the North
10 Delta facility for the projects?

11 MR. VAN ZANDT: I think that's outside the
12 scope of these -- of Part 1B, isn't it?

13 MR. BERLINER: No. This is an operational
14 criteria that affects the way the projects operate, and
15 these are flow and water quality standards that they
16 have to meet.

17 CO-HEARING OFFICER DODUC: Please answer,
18 Mr. Ringelberg.

19 WITNESS RINGELBERG: Yes, I did consider them,
20 but other than the limitations for velocity and screen
21 impingement and flow in front of the face of the
22 screen, nothing else was apparent to me that would be
23 restrictive under the biological opinions at the North
24 Delta, I should say.

25 MR. BERLINER: Yeah, I appreciated by your

1 answer you're talking about the North Delta. I'm
2 talking about the biological opinions with regard to
3 flow and diversions at the North Delta.

4 Let me be a little bit clearer. Are you
5 familiar with the requirements that the biological
6 opinions impose on the projects today?

7 WITNESS RINGELBERG: I am aware of the rough
8 generalizations of the biological opinions. It's quite
9 an extensive document, and I am certain there are many
10 areas that I'm not aware of.

11 MR. BERLINER: Speaking generally, are you
12 aware that the biological opinions impose certain
13 obligations on the projects with regard to meeting
14 certain conditions in the Delta?

15 WITNESS RINGELBERG: I do, but it requires a
16 more expansive response than that.

17 The information provided to me by the BDCP
18 team is that their intent is with the change of point
19 of diversion and through the new alternative that would
20 be expressed in the fix, whichever is finally selected,
21 that the biological opinions would, therefore, be
22 modified for those new conditions and, therefore, the
23 extant biological opinion would no longer hold.

24 MR. BERLINER: In terms -- are you familiar
25 with the modeling that's been done that takes into

1 consideration restrictions on the ability to export
2 water that are included in the biological opinions?

3 MR. VAN ZANDT: I'm going to object to the
4 relevancy of this to the salinity panel. I don't know
5 where we're going with things that are outside of the
6 scope of the salinity issue.

7 CO-HEARING OFFICER DODUC: Mr. Berliner is
8 allowed to go outside the scope of direct as long as it
9 is relevant to the issues before us.

10 Mr. Ringelberg, just answer to the best of
11 your ability. If you do not know, say so. If you need
12 clarification, ask.

13 WITNESS RINGELBERG: Please clarify your
14 statement again -- or your question, I should say.

15 MR. BERLINER: Okay. Are you familiar, for
16 instance, with the export/inflow ratio?

17 WITNESS RINGELBERG: I am.

18 MR. BERLINER: Are you familiar with the -- on
19 the San Joaquin side, what's called the I/E ratio?

20 WITNESS RINGELBERG: I'm less familiar with
21 that.

22 MR. BERLINER: Are you aware that these
23 different export restrictions come from different
24 regulatory sources?

25 WITNESS RINGELBERG: I am familiar with that.

1 MR. BERLINER: So simply what I'm trying to
2 figure out -- what I'm trying to understand here is
3 that, when you were doing your analysis, there are
4 various restrictions on the project's operations that
5 are imposed by the biological opinions.

6 Did you take those restrictions into account
7 in doing your flow analysis?

8 WITNESS RINGELBERG: I did. And I believe
9 most, if not all, of those restrictions as they are
10 currently believed to be held were described in the
11 illustrations that I provided yesterday with the
12 various curves for the inter-operation of those
13 different regulations or requirements.

14 MR. BERLINER: Do you know -- are you familiar
15 about the term "unregulated flow"?

16 WITNESS RINGELBERG: I am.

17 MR. BERLINER: Do you understand what that is?

18 WITNESS RINGELBERG: I believe I do.

19 MR. BERLINER: And what's your understanding
20 of unregulated flow?

21 WITNESS RINGELBERG: It would be the flow that
22 would happen without the regulation of the projects --
23 sorry, the -- the operations of the various rim dams
24 and other facilities.

25 MR. BERLINER: Are you aware of the difference

1 between natural flow and unregulated flow?

2 WITNESS RINGELBERG: Natural flow is -- excuse
3 me. I may have misspoken a second ago. Let me
4 explain.

5 So the way the system has been viewed is, with
6 the current geography of the levee system, the river
7 configurations, the existing channelizations, and the
8 structural features of the system as they exist today.
9 So full natural flow or fully unregulated flow would be
10 a system that was in its historic condition without
11 those modifications. The regulated flows are happening
12 now in a different geographic context, and so that's
13 how it's expressed.

14 MR. BERLINER: What assumptions did you make
15 for reservoir releases in your analysis?

16 WITNESS RINGELBERG: I did not make any
17 independent assumptions of reservoir releases.

18 MR. BERLINER: Go to your testimony on Page 4,
19 please.

20 CO-HEARING OFFICER DODUC: How much longer do
21 you estimate, Mr. Berliner?

22 MR. BERLINER: I'd say ten minutes.

23 CO-HEARING OFFICER DODUC: All right. Let's
24 finish up. Ten more minutes for Mr. Berliner.

25 MR. BERLINER: Down at the bottom of the page

1 here, you have some flow data set forth, correct?

2 WITNESS RINGELBERG: That is correct. Those
3 are data derived from DWR-515.

4 MR. BERLINER: And DW-5 errata, correct?

5 WITNESS RINGELBERG: That is correct.

6 MR. BERLINER: If we could please pull up
7 DWR-5 errata at Page 25, please.

8 MR. LONG: Sorry. Which slide page number on
9 DWR-5 errata?

10 MR. BERLINER: Yes. I believe it would be 25.

11 MR. LONG: Thank you.

12 MR. BERLINER: Thank you. Yes, this is the
13 one. Thank you.

14 So do you understand that this slide is
15 just -- it is an example of how the bypass flow could
16 be calculated?

17 WITNESS RINGELBERG: All of DWR's
18 presentations so far, it's my understanding that
19 they're simply examples of possibilities of how they
20 might be operated. That's correct.

21 MR. BERLINER: So this slide specifically was
22 to demonstrate an example of how the bypass flow
23 concept would operate, correct?

24 WITNESS RINGELBERG: Could you restate that?

25 MR. BERLINER: Sure. This chart essentially

1 is just a mathematical equation, correct? It's just
2 saying if there's so much bypass flow and the flow in
3 the river is X and we subtract the bypass flow, a
4 certain amount of flow will be left?

5 WITNESS RINGELBERG: This table is a synthesis
6 of the series of underlying studies and the information
7 provided in the following slides. It's a more simple
8 but in some ways more clear example of what the bypass
9 might look like. Yes.

10 MR. BERLINER: Do you understand that this is
11 an example but it's not meant to be actual flow data?

12 WITNESS RINGELBERG: It has been used to
13 illustrate how the project would take the water off of
14 at various flows. The bypass flows, if they're the
15 controlling feature for this, these would in fact be
16 the operational curves based on information provided in
17 the change of point of diversion application and fix.

18 CO-HEARING OFFICER DODUC: But it is an
19 example. There's the word "example" right there on the
20 slide, right?

21 WITNESS RINGELBERG: It is, indeed, an
22 example, and as I said earlier, no other information
23 has been provided that would demonstrate what the
24 actual predictive would be. So it would have to be an
25 example, yes.

1 CO-HEARING OFFICER DODUC: Okay.

2 MR. BERLINER: And do you understand that the
3 various factors that I asked you about earlier -- the
4 Water Quality Control Plan, the biological opinion, et
5 cetera -- would have an effect on what flow would be
6 allowed in terms of flow that had to remain in the
7 river due to any bypass -- due to any diversion at the
8 North Delta facility?

9 WITNESS RINGELBERG: And that is the reason
10 for the three different levels identified as different
11 colors in this. And as I said earlier, it does not
12 reflect a variety of different other project
13 operations, including Delta Cross Channel and salinity
14 barriers.

15 MR. BERLINER: Do you understand that the
16 bypass criteria is but one of several criteria
17 regarding how much flow is going to have to be left in
18 the river?

19 WITNESS RINGELBERG: I do understand that.

20 MR. BERLINER: And you understand, for
21 instance, that salinity control is going to be one of
22 the dictating factors?

23 WITNESS RINGELBERG: I understand that D1641
24 compliance at Emmanton is one of the factors.

25 MR. BERLINER: Do you understand, for

1 instance, whether X2 will be a factor?

2 WITNESS RINGELBERG: X2 could certainly be a
3 factor, but it's my understanding from the fix process
4 that there is a concerted attempt to remove X2 as a
5 qualifying criteria.

6 MR. BERLINER: That will be up to the Water
7 Board, right?

8 WITNESS RINGELBERG: That's correct.

9 MR. BERLINER: And you understand that the
10 biological opinions are also another factor?

11 WITNESS RINGELBERG: They are always another
12 factor.

13 MR. BERLINER: So as you look at this slide as
14 an example, this slide does not factor in those other
15 requirements, correct?

16 WITNESS RINGELBERG: As I identified, Level 1,
17 Level 2 and Level 3 are intended to provide some degree
18 of ecological function and, therefore, those factors
19 are included.

20 CO-HEARING OFFICER DODUC: But not all factors
21 are included?

22 WITNESS RINGELBERG: That is correct.

23 CO-HEARING OFFICER DODUC: I'm nudging you
24 along here, Mr. Berliner.

25 MR. BERLINER: I appreciate it. Thank you.

1 So you indicate in your testimony that the
2 reduction to 5700 cfs -- reduction of 5700 cfs to
3 13,000 cfs would be the flow regime for the vast
4 majority of time, correct?

5 WITNESS RINGELBERG: Thank you. I have no way
6 of actually knowing what the vast majority of time is
7 in this context. From the data that was provided to
8 me, that remaining flow seemed like a logical
9 consequence of those rules.

10 MR. BERLINER: Could we scroll down to the top
11 of the next page, please.

12 So based on your looking at the chart that we
13 just had up from DWR-5 errata, Page 25 --

14 Now if we could flip back to the testimony.

15 You've come to a conclusion that these flow
16 rules represent a flow reduction of up to 41 percent,
17 right?

18 WITNESS RINGELBERG: Yeah. In some cases
19 greater, but certainly 41 percent based on what we
20 know.

21 MR. BERLINER: And that 41 percent is based on
22 simply the mathematical computation of the ratio
23 between 22,000 cfs and 9,000 cfs, leaving 13,000 cfs in
24 the river, under your bullet No. 3 on the prior page,
25 right?

1 WITNESS RINGELBERG: That's correct, with the
2 inclusion of the different flow levels.

3 MR. BERLINER: What do you mean by that?

4 WITNESS RINGELBERG: When you look at the
5 figure before, so you can see that there are
6 differences at different flows, depending on which of
7 the flow levels -- and in fact the figure's missing a
8 zero -- but Level 0, Level 1, Level 2, Level 3.

9 MR. BERLINER: Okay. I understand.

10 In other words, there would be a different
11 percentage applied to the different levels?

12 WITNESS RINGELBERG: That's correct.

13 MR. BERLINER: Yes. Okay. But the 41 percent
14 is referring to Level 3, correct?

15 WITNESS RINGELBERG: It's a simple
16 straight-line analysis.

17 MR. BERLINER: And it's a simple calculation
18 of the ratio between 9,000 and 22,000 cfs, correct?

19 WITNESS RINGELBERG: That's correct.

20 MR. BERLINER: And it doesn't take into
21 account any of the other factors that we've discussed
22 such as the application of D1641 or any successor there
23 to biological opinions, et cetera?

24 MR. VAN ZANDT: Asked and answered.

25 CO-HEARING OFFICER DODUC: Just answer it one

1 more time.

2 WITNESS RINGELBERG: DWR didn't provide those
3 information. What was provided was this, so this is
4 what I relied on.

5 CO-HEARING OFFICER DODUC: Thank you.

6 MR. BERLINER: And if we could go back to the
7 testimony, please.

8 And you indicate that -- in the next sentence
9 you say -- I had asked you earlier about the flows, the
10 reductions to the 13,000 cfs, and you indicate these
11 flows would be in place the vast majority of the time,
12 correct?

13 WITNESS RINGELBERG: I did.

14 MR. BERLINER: What's your basis for saying
15 that?

16 WITNESS RINGELBERG: Looking at the total
17 flows that would be available in this system, the
18 average flows would then constitute the vast majority
19 of the time, and within those operational criteria,
20 that was the majority of flow that I could ascertain
21 from that.

22 MR. BERLINER: When you talked about
23 41 percent, you're essentially assuming a diversion
24 that would be at the Level 3 bypass requirements,
25 right?

1 WITNESS RINGELBERG: Right. That would be the
2 flow reduction up to 41 percent. That's correct.

3 MR. BERLINER: And as you were making your
4 consideration, did you take a look at the biological
5 assessment?

6 MR. VAN ZANDT: Vague as to which biological
7 assessment we're talking about.

8 MR. BERLINER: The biological assessment for
9 the California WaterFix.

10 WITNESS RINGELBERG: Actually, if I could have
11 just one second. I want to ensure that my response to
12 your last question was as accurate as possible.

13 So in response to your question, the
14 43 percent flow reduction would be the straight-line
15 calculation between the 14,000 --

16 MR. BERLINER: I'm sorry, Mr. Ringelberg.
17 Could you speak up a little bit? Thank you.

18 WITNESS RINGELBERG: Sorry. Why don't we just
19 go ahead, and could you please re-ask your question.

20 MR. BERLINER: Did you consider the biological
21 opinion when making your analysis?

22 CO-HEARING OFFICER DODUC: I think he meant
23 the question before that.

24 WITNESS RINGELBERG: The opinion or
25 assessment?

1 MR. BERLINER: I'm sorry. Biological
2 assessment.

3 WITNESS RINGELBERG: Thank you. I reviewed
4 the biological assessment. I am not certain how the
5 biological assessment actually interplays with the
6 biological opinion. Those are a matter of considerable
7 exchange.

8 MR. BERLINER: Well, are you familiar with the
9 section of the biological assessment that deals with
10 North Delta diversions?

11 WITNESS RINGELBERG: Yes. I reviewed that
12 section.

13 MR. BERLINER: Does that sound familiar that
14 it would be Section 3.3.3.1?

15 WITNESS RINGELBERG: I cannot answer that
16 question.

17 MR. BERLINER: Are you aware that under that
18 section there are some specific criteria for exceeding
19 -- for going above Level 1 diversions?

20 WITNESS RINGELBERG: I'm familiar with the
21 general sense about that criteria for those levels, but
22 I want to point out that the biological assessment is
23 simply a request to the agency for its concurrence on
24 the analysis, and very rarely does the agency leave
25 those things intact. So I did not put any weight on

1 the particulars of that.

2 MR. BERLINER: In your experience, does it
3 usually get better for the permit requester under the
4 biological assessment as compared to the biological
5 opinion?

6 MR. VAN ZANDT: Calls for speculation.

7 MR. BERLINER: No. I'm asking for his
8 experience.

9 CO-HEARING OFFICER DODUC: His opinion.

10 Mr. Ringelberg, do you have an opinion?

11 WITNESS RINGELBERG: Sure. I have completed a
12 series of biological opinions subject to review by both
13 the U.S. Fish and Wildlife Service and occasionally by
14 NOAA Marines Fishery, and the terms and conditions are
15 often accepted in whole. And where they have debate,
16 there is a negotiation over what the ecological
17 meanings of the particular flows of the requirements
18 are, and I can't provide a gross generalization of
19 those.

20 CO-HEARING OFFICER DODUC: Fair enough.

21 MR. BERLINER: Okay. That's fine.

22 Based on your review of the biological
23 assessment, is it your understanding that there are
24 going to be set forth specific criteria for
25 transitioning between Level 1, 2 and 3?

1 WITNESS RINGELBERG: I believe that would be
2 correct. Yes.

3 MR. BERLINER: And those transitions are going
4 to be based on realtime fish monitoring and hydrologic
5 and behavioral cues?

6 WITNESS RINGELBERG: That's a more complex
7 question than a yes-or-no question.

8 CO-HEARING OFFICER DODUC: How would you
9 answer?

10 MR. BERLINER: I'm reading it right out of the
11 biological assessment.

12 WITNESS RINGELBERG: Absolutely. So that --
13 again, that's the request by the project applicant for
14 concurrence with that approach. And working on the
15 Bay-Delta conservation plan and raising that very
16 specific issue myself personally is that there are
17 essentially almost no practical means of
18 high-resolution discernment of the fish migration and
19 effect through there. They're all simply inferential.
20 The best tools available don't provide a high degree of
21 resolution and, therefore, that approach would not
22 necessarily be protective of those fish.

23 MR. VAN ZANDT: Madam Hearing Officer, a
24 question. We don't see the biological assessment that
25 Mr. Berliner is reading from in the list of exhibits

1 for DWR. So it's not in evidence, and I don't know if
2 it's actually been introduced. But I think it's
3 improper for him to be asking questions for an exhibit
4 that is not actually in evidence.

5 CO-HEARING OFFICER DODUC: Ms. Morris.

6 MS. MORRIS: Exhibit II-29 cited by this
7 witness is what Mr. Berliner is referring to.

8 CO-HEARING OFFICER DODUC: Thank you.

9 Let's allow Mr. Berliner to wrap up.

10 MR. BERLINER: Great. Thanks.

11 WITNESS RINGELBERG: Excuse me. I disagree.
12 That's not the evidence that I provided for in II-29.

13 MR. VAN ZANDT: II-29 is not the biological
14 assessment.

15 CO-HEARING OFFICER DODUC: Ms. Morris, do you
16 want to state that on the record? If so, you'll have
17 to come up to the microphone.

18 MS. MORRIS: I am sorry. I stand corrected.
19 II-29 is a memo on the biological assessment
20 specifically on the questions that Mr. Berliner is
21 asking -- Level 1, Level 2, and Level 3 -- but is not
22 the biological assessment.

23 CO-HEARING OFFICER DODUC: Thank you. We have
24 it on the record that Ms. Morris is not infallible.

25 MS. MORRIS: Thank you.

1 MR. BERLINER: Well, let's refer to II-29,
2 then. Let's go to Pages 2 and 3, please. And just for
3 the record, this is a discussion of bypass flow
4 criteria, correct?

5 WITNESS RINGELBERG: That is correct.

6 MR. BERLINER: And in the comparison that
7 you're making, I should probably also point out for the
8 record that the biological assessment is one of the
9 Water Board documents, No. 104.

10 CO-HEARING OFFICER DODUC: Yes. We've
11 referred to it numerous times.

12 MR. BERLINER: Yes. But referring back to the
13 bypass flows, isn't it correct that you're comparing
14 the daily bypass flow estimate based on the Level 3
15 criteria to the average annual flow in making your
16 determination about drought equivalent conditions in
17 your testimony?

18 WITNESS RINGELBERG: No, that's not correct.

19 MR. BERLINER: Well, your testimony, if I
20 understand it correctly, says that the 13,000 cfs would
21 be directly equivalent to the range of flows at
22 Freeport during critically dry years; is that right?

23 WITNESS RINGELBERG: The flow value and the
24 criteria for that value are shown on the following
25 slides -- well, from this source, and on those

1 following slides. So the year period is a modeled year
2 period for that particular dry modeled year and that
3 particular modeled above-average year.

4 So to be clear, those are DWR's model bases
5 not future projections of water years.

6 MR. BERLINER: All right. So can we go to
7 Figure 3 in this exhibit, please.

8 CO-HEARING OFFICER DODUC: Let me check in.
9 How is the court reporter doing?

10 THE REPORTER: I'm fine, thank you.

11 MR. BERLINER: On Page 7. I'm just about
12 done. PDF 7 of 16. Yes.

13 So looking at this Figure 3, do you see that
14 it shows that the North Delta diversion is less than 10
15 percent of the Freeport flow for 1924, which was a
16 critical year, and not the 41 percent you mentioned in
17 your testimony?

18 WITNESS RINGELBERG: Yeah, the 41 percent was
19 not for critically dry year. During operational
20 periods, critically dry year is basically encumbered by
21 a whole host of restrictions and the flows and
22 withdrawals from the system and, therefore, the
23 remaining bypass flows are typically much higher.

24 MR. BERLINER: The remaining bypass flows are
25 typically?

1 WITNESS RINGELBERG: Higher proportionally.

2 MR. BERLINER: I don't have any other
3 questions. Thank you.

4 CO-HEARING OFFICER DODUC: Thank you, Mr. --

5 MR. BERLINER: I'm sorry. I take that back.

6 CO-HEARING OFFICER DODUC: You got me all
7 excited.

8 MR. BERLINER: I knew we were close.

9 CO-HEARING OFFICER DODUC: Okay.

10 MR. BERLINER: I just want to check one other
11 thing.

12 CO-HEARING OFFICER DODUC: Well, the other
13 parties who are planning on conducting
14 cross-examination of this panel, just curious.

15 Just to check, do you anticipate asking
16 questions for all of the witnesses or just one or two
17 witnesses in particular? I'm trying to determine if we
18 can allow some of the witnesses to go.

19 Ms. Morris?

20 Whoever else is planning to cross-exam this
21 panel, please come up.

22 MS. MORRIS: Stefanie Morris, State Water
23 Contractors.

24 I think my questions would be limited to
25 Mr. Ringelberg.

1 CO-HEARING OFFICER DODUC: Okay. Mr. Herrick?

2 MR. HERRICK: I have questions for

3 Mr. Ringelberg, Dr. Leinfelder-Miles, and Dan --

4 Mr. Grant.

5 CO-HEARING OFFICER DODUC: All right. Does

6 anyone have questions for Mr. Hester and Mr. Lange?

7 MR. WALTER: I do, Madam Chair.

8 CO-HEARING OFFICER DODUC: For both?

9 MR. WALTER: Yes.

10 CO-HEARING OFFICER DODUC: All right. Sorry,

11 guys. You're all coming back.

12 MR. BERLINER: And I'm finished.

13 CO-HEARING OFFICER DODUC: You're finished.

14 With that, we will take a one-hour lunch

15 break, and we will return at 1:15.

16 (Whereupon, the luncheon recess was taken

17 at 12:13 p.m.)

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1 AFTERNOON SESSION

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3 (Whereupon, all parties having been
4 duly noted for the record, the
5 proceedings resumed at 1:15 p.m.)

6 CO-HEARING OFFICER DODUC: All right. Please
7 take your seats, everyone. It is 1:15, and we are
8 resuming with cross-examination.

9 I don't see Department of Interior here. I
10 will assume they do not have cross-examination. We
11 will next go to Ms. Morris.

12 MR. VAN ZANDT: And Madam Hearing Officer,
13 before that cross-examination -- Michael Van Zandt for
14 Islands -- Mr. Ringelberg has one correction to his
15 prior testimony he would like to make.

16 CO-HEARING OFFICER DODUC: All right. Let's
17 see if that affects the Department's cross.
18 Mr. Ringelberg, what is your correction?

19 WITNESS RINGELBERG: Yes, in 2000- -- I had
20 forgotten, when I had been a prior expert, in 2009 in
21 the drilling matter in front of Sacramento Superior
22 Court, I was found to be an expert on hydro-acoustics,
23 fisheries impacts, and water quality.

24 CO-HEARING OFFICER DODUC: All right. I don't
25 think that affects the Department's cross-examination,

1 and I see shaking heads from Mr. Mizell. All right.

2 So with that, we'll now move to Ms. Morris.

3 Oh, I'm sorry. Did you have a question?

4 MR. WALTER: Madam Chair, Ms. Meserve and I
5 spoke. And since it appears -- and I guess for anybody
6 else in the room, it appears I'm the only one asking
7 Mr. Lange and Hester questions. Ms. Morris and I
8 agreed that I would go first so they could leave
9 earlier because I guess I'm the only one asking them
10 questions -- unless that's not true.

11 CO-HEARING OFFICER DODUC: Ms. Des Jardins?

12 MS. DES JARDINS: I did have some questions
13 for Mr. Lange and Mr. Hester.

14 CO-HEARING OFFICER DODUC: But I think we can
15 go ahead and do that. So why don't we go ahead and
16 focus on questions for Mr. Hester and Mr. Lange first
17 so that they may be dismissed.

18 MR. WALTER: Okay. So I'm Group 4, San Luis
19 and Delta-Mendota Water Authority.

20 CO-HEARING OFFICER DODUC: Go ahead.

21 MR. WALTER: And I'll just present everything.
22 It's mostly Lange and Hester, and I shouldn't take very
23 long.

24 CO-HEARING OFFICER DODUC: All right.

25 And Ms. Des Jardins, do you have questions for

1 other witnesses besides Mr. Hester and Mr. Lange?

2 MS. DES JARDINS: Yes.

3 CO-HEARING OFFICER DODUC: How much time do
4 you anticipate needing?

5 MS. DES JARDINS: Half an hour, 40 minutes.

6 CO-HEARING OFFICER DODUC: How much time for
7 just Mr. Hester and Mr. Lange?

8 MS. DES JARDINS: Not a great deal.

9 CO-HEARING OFFICER DODUC: Why don't we do
10 this. After the conclusion of San Luis, Delta-Mendota
11 cross-examination, we will allow Ms. Des Jardins to ask
12 her questions of Mr. Hester and Mr. Lange.

13 Ms. Suard?

14 MS. SUARD: I do have questions of Mr. Hester
15 as well.

16 CO-HEARING OFFICER DODUC: Time estimate?

17 MS. SUARD: Two minutes.

18 CO-HEARING OFFICER DODUC: All right.

19 MS.SUARD: On him. I have more for everybody
20 else.

21 CO-HEARING OFFICER DODUC: But no questions
22 for Mr. Hester, Mr. Lange? I'm focusing on them right
23 now.

24 MS. SUARD: Yes, Mr. Hester.

25 CO-HEARING OFFICER DODUC: All right. We will

1 take, then, Ms. Des Jardins -- I'm sorry. Ms. Suard,
2 are you after Ms. Des Jardins in the order? I can't
3 remember now.

4 MS. SUARD: I'm after.

5 CO-HEARING OFFICER DODUC: Okay. So we'll go
6 in that order with the hope of being able to dismiss
7 Mr. Hester and Mr. Lange quickly.

8 MR. WALTER: Like anything, a simple procedure
9 became a little more complicated.

10 CO-HEARING OFFICER DODUC: But that was a very
11 good suggestion. See what happens when you guys work
12 together and cooperate? Makes the hearing officer very
13 happy.

14 CROSS-EXAMINATION BY MR. WALTER

15 MR. WALTER: Well, very quickly, I just had
16 one question for Mr. Ringelberg. You just clari- --
17 thank you.

18 Could we bring up Exhibit II-22, which is
19 Mr. Ringelberg's statement of qualifications? He just
20 added something to some added testimony a moment ago.

21 Is it 23? Okay. The testimony I'm looking at
22 was II-22, but it was the -- if it's 23, it's 23. It's
23 essentially the CV/resume.

24 So Mr. Ringelberg, while that's getting
25 brought up, maybe I can just ask my question. When you

1 were being cross-examined by Mr. Berliner, he asked
2 about your Ph.D. endeavors at the University of
3 Montana. And your response indicated that you're no
4 longer seeking a Ph.D. there, or it had been a decade
5 or more since you'd been at the University of Montana;
6 is that correct?

7 WITNESS RINGELBERG: Yes, it's my
8 understanding I'm essentially a permanent candidate.

9 MR. WALTER: A permanent candidate? When did
10 you beginning your studies at University of Montana for
11 your doctoral studies?

12 WITNESS RINGELBERG: That's a great question.
13 I believe it was 1996, but I'm not a hundred percent
14 certain.

15 MR. WALTER: So 20 years ago. Are you aware
16 of a time limit for the completion of doctoral programs
17 at the University of Montana, as with many other
18 universities, of about seven years?

19 WITNESS RINGELBERG: No, I have not received
20 any information from the University of Montana
21 regarding my status.

22 MR. WALTER: So if I were to cite to you
23 Doctoral Policy, University of Montana D2.301 that
24 reads, "Time Limits. All requirements for the
25 doctorate must be completed within seven years of

1 commencing graduate course work at the University of
2 Montana, (ten years for doctoral students in the school
3 of education)," you have no knowledge of that time
4 limit?

5 WITNESS RINGELBERG: I have no knowledge of
6 that time limit.

7 MR. WALTER: Is it true or did I correctly
8 hear you answer to Mr. Berliner that you have no
9 intention of pursuing a Ph.D. from the University of
10 Montana anymore, the one you started 20 years ago?

11 MR. VAN ZANDT: I'm going to object to this
12 line of questioning. It's not relevant to anything.

13 CO-HEARING OFFICER DODUC: Yes, I was
14 wondering where you're going with this.

15 MR. WALTER: Well, we can wrap this up very
16 quickly if we can get an answer to that question. It
17 goes to credibility because, if you look at the
18 statement of qualifications that was submitted,
19 Mr. Ringelberg has presented himself as a Ph.D.
20 candidate at the University of Montana.

21 And quite honestly, he's not. I don't think
22 the University of Montana considers him a candidate. I
23 think the plain English meaning of the word "candidate"
24 means you're eligible for or pursuing something. And
25 it's a pretty serious thing to -- well, let me retract

1 that. When I --

2 CO-HEARING OFFICER DODUC: Enough. Enough.

3 MR. WALTER: -- prepare a statement of
4 qualifications, I put accurate information on it.

5 CO-HEARING OFFICER DODUC: Enough, Mr. Walter.

6 Just answer the question, and then we will
7 move on from this point.

8 WITNESS RINGELBERG: I don't understand
9 there's a pending question.

10 MR. WALTER: Can we reread my last question?

11 CO-HEARING OFFICER DODUC: No, just ask your
12 question, please.

13 MR. WALTER: Okay. To do you think it's a
14 fair and accurate statement of your current position or
15 status at the University of Montana to call yourself a
16 Ph.D. candidate at the University of Montana?

17 MR. VAN ZANDT: Same objection.

18 CO-HEARING OFFICER DODUC: It's on your
19 statement of qualifications. I'm assuming that you
20 believe it's a fair representation of your
21 qualifications. If not, then you may --

22 MR. WALTER: Well, the question --

23 CO-HEARING OFFICER DODUC: -- strike it from
24 your statement of qualifications, Mr. Ringelberg.

25 WITNESS RINGELBERG: I personally believe it

1 to be a fair and accurate representation of my
2 qualifications. And if I may add, this is not my --

3 CO-HEARING OFFICER DODUC: That's good enough.

4 Move on.

5 MR. WALTER: Okay. That's it. If you believe
6 that's accurate, that goes to my point on credibility,
7 I suppose.

8 Let's turn to Mr. --

9 MR. VAN ZANDT: Move to strike that.

10 CO-HEARING OFFICER DODUC: Strike -- it's
11 stricken. Move on.

12 MR. WALTER: Let's go to --

13 CO-HEARING OFFICER DODUC: I do not appreciate
14 snide commentary. This is for everybody's benefit.

15 MR. WALTER: I apologize. Let's go to
16 Mr. Lange's written testimony, II-43, please.

17 So, Mr. Lange, at Page 1 of this testimony and
18 in your direct testimony, you referenced water rights
19 that you profess to hold. I think they were riparian,
20 maybe pre-1914; is that correct?

21 WITNESS LANGE: Correct.

22 MR. WALTER: If we look at Page 1, Lines 9
23 through 11 on your testimony, you reference
24 documentation of your water rights. It's here, 9
25 through 11, "Documentation of our riparian and pre-1914

1 water rights for our North Delta diversions" as well as
2 other diversions associated with your family's farming
3 operations are on file with the State Water Board. And
4 you cite Land -- Exhibit Land 54 and Land 4.

5 Let's pull up Exhibit Land 54 if we can. I've
6 got some hard copies, too.

7 For your benefit, I'll hand that out. I've
8 got some copies here, and I think we should mark it as
9 SLDMWA -- I'm informed the next in order is 6.

10 (Protestant's Exhibit SLDMWA-6 marked for
11 identification)

12 MR. WALTER: I wasn't sure if we'd be able to
13 pull that up. It's the protest, or at least one of
14 them.

15 MR. VAN ZANDT: Mr. Walter, can we see a copy,
16 please?

17 MR. LONG: The protests are on a different
18 page, so we could pull those up if you could be
19 specific.

20 MS. MESERVE: This will be found at Land 6.

21 MR. WALTER: I have more copies here. It's
22 the protest that Ms. Meserve filed, I think, on behalf
23 of numerous parties. How many copies do I need for the
24 Board or the Hearing Officers in case we --

25 CO-HEARING OFFICER DODUC: Two.

1 MR. WALTER: I think it's referred to as
2 Land 54 in that, Mr. Lange's testimony.

3 MS. MESERVE: Madam Chair, I can explain if
4 that will be helpful.

5 CO-HEARING OFFICER DODUC: Yes, please.

6 MS. MESERVE: You can see above Land 50 in
7 the -- in the index there, I have stated that there is
8 certain evidence that I'm incorporating pursuant to
9 23 CCR Section 648.3, which I can't find my copy of the
10 Regs which I've been carrying around dutifully for a
11 long time but is not with me right at this moment. But
12 what that provision allows to you do is to incorporate
13 by reference materials that are within the possession
14 of the Water Board.

15 So rather than trying to provide all that data
16 for purposes of this hearing, where Mr. Lange's water
17 rights are not at issue, I have incorporated them by
18 reference in this manner, and that's why there is no
19 exhibit.

20 CO-HEARING OFFICER DODUC: Okay. So what is
21 your question, Mr. Walter?

22 MR. WALTER: Well, this line of questioning, I
23 didn't preface my line with basically explaining that
24 we are going to delve into the water rights a little
25 bit here because there's a claim of injury by an

1 alleged legal user of water. So that's fair game.

2 I'm not -- I've been to your file rooms, and
3 you have a lot of materials on file. I'm not sure
4 exactly what Ms. Meserve is referencing in terms of
5 incorporating. But I'm just following the testimony,
6 and this exhibit was cited as documentation of the
7 water right, and I'd like to ask some questions about
8 it.

9 CO-HEARING OFFICER DODUC: Did you provide
10 that? I think Mr. Long is --

11 MS. MESERVE: All of the S numbers appear on
12 the map, which is Land 6, and also I believe they
13 appear in Exhibit A of the protest.

14 CO-HEARING OFFICER DODUC: Which is up?

15 MR. OCHENDUSZKO: What we've brought up on the
16 screen is the protest for Diablo; is that correct,
17 Mr. Walter?

18 MR. WALTER: What I'm looking at, which we
19 marked as San Luis Delta-Mendota Water Authority 6 is a
20 protest petition. Says, "Local agencies of the North
21 Delta has carefully read the notice of petition." It's
22 filed by Osha Meserve.

23 I'm not sure where -- this may be an omnibus
24 protest. I'm not sure where a particular party --

25 CO-HEARING OFFICER DODUC: If you provided

1 that file to Mr. Long, then perhaps we could just go to
2 that file.

3 MR. WALTER: Yeah, and I've got more copies
4 here. It wasn't my intent to take --

5 CO-HEARING OFFICER DODUC: Did you provide an
6 electronic copy to Mr. Long?

7 MR. WALTER: No, I did not. Apologies. It's
8 a protest filed in this proceeding. Again, I have more
9 copies of it. And -- if anybody needs one. It's a
10 minor, minor point in terms of how much time we're
11 going to spend on it. It definitely wasn't my intent
12 to -- that looks like it there.

13 Okay. So now up on the screen is --

14 CO-HEARING OFFICER DODUC: So before you
15 answer that, I will repeat my request. When you are
16 using a document for cross-examination, provide it to
17 the staff ahead of time electronically as well as make
18 copies available for all the witnesses and their
19 counsels. If you can provide it ahead of time so that
20 we can post it and share it with people, even better.
21 But at a minimum, make the electronic copies available
22 to Ms. McCue and Mr. Long.

23 MR. WALTER: Apologies. I accept full
24 responsibility for that.

25 MS. MESERVE: Madam Chair, may I just

1 interject one thing that may clarify for purposes of
2 Mr. Walter's questions?

3 I believe that in this testimony, Mr. Lange
4 should have cited Land 6, which was the map of his
5 diversions. Land 4 is a protest filed by a coalition
6 of water districts and reclamation districts. And the
7 map that I attached to Land 4 is a map of all the water
8 rights in the northern Delta, and then it also relates
9 to the list of water rights that was provided as part
10 of the amended application submitted by DWR after I
11 noted that they had listed no affected water rights in
12 their petition.

13 CO-HEARING OFFICER DODUC: Okay. We'll let
14 Mr. Walter ask his question now.

15 MR. WALTER: Yes, thank you.

16 Okay. So this protest, some of the materials
17 Ms. Meserve just referenced, make reference to water
18 rights and in fact water use.

19 Can we look at Exhibit B of this protest,
20 which is -- actually, before we do that -- well, before
21 we do that, can we look at Page 4?

22 Okay. So on Page 4, the protest references a
23 description of Land-affiliated water rights in
24 Exhibit B.

25 That's in the bold -- the bold text in the

1 middle of that page says the petition would cause
2 injury to the water rights in Exhibit B and Exhibit C.
3 Says "see description" of those. So let's look at
4 Exhibit B, please, of this document.

5 Are you following me, Mr. Lange?

6 WITNESS LANGE: Barely.

7 MR. WALTER: Okay. And, Mr. Hester, this same
8 line of questioning is going to come up to you, so in
9 the interest of time, if you could follow along also.

10 So there, if we can enlarge a little, there's
11 bold face that says, "Permit or License or Statement of
12 Diversion and use numbers, which cover the water use.
13 And there's a paragraph there, "Land member agencies
14 and respective individual participants cover" --

15 (Reporter interruption)

16 MR. WALTER: Apologies. I'm reading -- "Land
17 member agencies and their respective individual
18 participants cover an approximately 118,000-acre area
19 of the Delta." I'll skip some of that text.

20 And skip to the sentence that says -- well,
21 let me ask you something -- I'll skip to that last
22 sentence, "Note that due to time constraints the
23 description of water rights within the land area may be
24 supplemented with additional information."

25 Is there anything this that paragraph,

1 Mr. Lange, that describes your -- or identifies your
2 riparian or pre-1914 water rights?

3 MS. MESERVE: Objection, I've already
4 explained that this was an ad cite.

5 CO-HEARING OFFICER DODUC: So the answer is
6 no?

7 WITNESS LANGE: It's not clear to me at all.

8 MR. WALTER: Okay. And the correct cite,
9 Ms. Meserve, was?

10 MS. MESERVE: It would be to Brad Lange's
11 protest and the materials with it, as well as to
12 Land 6 is the map that shows the actual S numbers and
13 their location in relation to the proposed project.

14 MR. WALTER: Is it possible to bring up,
15 Land 6?

16 Is this Land 6?

17 MR. LONG: Yes, it is.

18 MR. WALTER: So, Mr. Lange, is it your opinion
19 that this demonstrates your water rights for Diablo
20 Vineyards and other properties you own and are
21 testifying about?

22 WITNESS LANGE: That's the point of
23 diversions, yes.

24 MR. WALTER: That's interesting, what you say.
25 This, in fact, is just a map of the point of diversions

1 where you use water that you claim a right to; is that
2 correct?

3 WITNESS LANGE: As I understand it, yes.

4 MR. WALTER: Have you presented any other
5 documentation of your claimed riparian or pre-1914
6 water rights?

7 WITNESS LANGE: No.

8 MS. MESERVE: Excuse me, Madam Chair. It's
9 within his protest.

10 CO-HEARING OFFICER DODUC: I'm sorry. Are you
11 answering for him?

12 MS. MESERVE: I'm trying to direct the
13 questioner to the information that he will -- I think
14 that Mr. Lange may not understand all the different
15 documents, so I'm trying to assist him if he's trying
16 to get to the issue. But anyway. Go ahead.

17 CO-HEARING OFFICER DODUC: Ms. Meserve, you
18 will have the opportunity to redirect. Let's allow
19 Mr. Walter to ask his question and the witness may
20 answer to the best of his ability.

21 MR. WALTER: Mr. Lange, is it -- is it your
22 understanding that there are people who use water under
23 a claim of a riparian or 1914 right that really don't
24 have an actual water right under California water law?

25 MR. VAN ZANDT: Objection, that calls for

1 complete speculation.

2 CO-HEARING OFFICER DODUC: Rephrase your
3 question, Mr. Walter.

4 MR. VAN ZANDT: And that's not relevant.

5 MR. WALTER: Do you have any understanding,
6 Mr. Lange about the principles of California water law
7 and the regulations of this State Board with regard to
8 establishing and proving up a claim for a riparian or
9 pre 1914 water right?

10 WITNESS LANGE: I have no background to be
11 able to make that determination.

12 MR. WALTER: But you claim you have a riparian
13 and pre 19- -- and/or -- is it one or both, actually?

14 WITNESS LANGE: I believe I have a pre-1914
15 riparian claim on the properties that I own and manage.

16 MR. WALTER: -- to multiple properties in the
17 Delta that you own and manage?

18 WITNESS LANGE: Correct.

19 MR. WALTER: Are you aware of anything other
20 than the document we've looked at and I guess the
21 protest that Ms. Meserve has referenced that would
22 substantiate these claimed riparian or pre-1914 water
23 rights?

24 WITNESS LANGE: I'm not aware of any.

25 OTHER COUNSEL: Okay. Thank you.

1 I'll turn to Mr. Hester, kind of the same line
2 of questioning Mr. Hester.

3 Can we pull up Exhibit II-40, which is
4 Mr. Hester's written testimony.

5 And Mr. Hester, at Page 1 of your testimony,
6 you essentially make a similar statement that
7 Islands Inc. owns riparian water rights from the
8 Sacramento River established as early as 1868. Do you
9 recall that testimony?

10 WITNESS HESTER: Correct.

11 MR. LONG: I pulled up II-40 errata.

12 MR. WALTER: Correct, correct.

13 Let's look at that. You've got to scroll down
14 a little more. Islands' water rights, cite Exhibit
15 II-37. Can we pull up II-37?

16 Okay. So this document appears to list 14
17 different diversions and uses of water. Is it your
18 testimony, Mr. Hester, that this is the documentation
19 proving up these water rights for Islands Inc.?

20 WITNESS HESTER: I don't know if that proves
21 them up. There's other documentation that you -- to
22 get to that. That's just a spreadsheet that shows the
23 statement numbers.

24 MR. WALTER: Correct. This is just a list of
25 statements of diversion and use for water you used

1 under your claims of right.

2 WITNESS HESTER: That's right.

3 MR. WALTER: But you'll agree with me that
4 this doesn't prove that you actually have any of
5 thought water rights you claim?

6 WITNESS HESTER: Not that document, no. But
7 there are other documents that do prove that.

8 MR. WALTER: Can you point me to the other
9 documents that prove up these 1868 --

10 WITNESS HESTER: We didn't submit those
11 documents. But if you would like us to submit those,
12 we could probably submit those too. We went through
13 and had to go through the exercise last year to
14 research those. And we went through and sent those to
15 the State of California to prove our water rights. So
16 those documents are available.

17 MR. WALTER: You did not submit any of those
18 during your direct testimony though; is that correct?

19 WITNESS HESTER: That's correct.

20 MS. RIDDLE: Mr. Hester, can you get closer to
21 the microphone, too, please?

22 WITNESS HESTER: I'm sorry.

23 CO-HEARING OFFICER DODUC: Mr. Jackson?

24 MR. JACKSON: This line of questioning is
25 going to substantially change this hearing if every

1 single person has to go through a legal proof of water
2 rights before DWR and the contractors can injure their
3 land.

4 CO-HEARING OFFICER DODUC: So noted,
5 Mr. Jackson.

6 MR. WALTER: That finishes my line of
7 questioning on -- actually for the panel, thank you.

8 CO-HEARING OFFICER DODUC: Thank you. Is
9 Ms. Akroyd okay?

10 MR. WALTER: She is. She is. There is a lot
11 of things in the water world other than WaterFix,
12 contrary to the opinions in this room. And so we just
13 alternated.

14 And actually, Madam Chair and Hearing
15 Officers, I apologize because Ms. Akroyd did give me a
16 flash drive with those materials and informed me of
17 your procedures. I had it in my suit yesterday, but I
18 wore a different suit today -- which I was told not to
19 wear suits on Fridays, so also apologies for that. And
20 that's the reason, and that's why I take full
21 responsibility for not having followed the procedure.

22 But do not blame Ms. Akroyd and Mr. O'Hanlon
23 for that.

24 CO-HEARING OFFICER DODUC: Just wanted to make
25 sure Ms. Akroyd is okay.

1 MR. WALTER: She's doing well. She's doing
2 well.

3 CO-HEARING OFFICER DODUC: Ms. Des Jardins,
4 you're up. And from what I understand earlier, you
5 planned or at least you would like to have a pretty
6 lengthy cross-examination.

7 I'm going to direct you to focus for now just
8 on questions to Mr. Hester and Mr. Lange.

9 If there's a problem, then I will ask
10 Ms. Suard to come up.

11 Ms. Suard, why don't you come up since it
12 seems like you have just one or two questions.

13 MS. SUARD: If I can -- you mean for just the
14 two of them? Should --

15 CO-HEARING OFFICER DODUC: For just the two of
16 them, yes. I think you promised me two minutes.

17 MS. SUARD: I'm going to try. I need them to
18 bring up a map.

19 CO-HEARING OFFICER DODUC: Oh, okay.

20 Well, everyone relax for a little bit.

21 As we're still waiting, Ms. Meserve and
22 Mr. Van Zandt, have you decided whether you will have
23 redirect for Mr. Hester or Mr. Lange?

24 MR. VAN ZANDT: Not from anything that we've
25 heard so far, no.

1 CO-HEARING OFFICER DODUC: Okay.

2 I see a map. Is that your map, Ms. Suard?

3 MS. SUARD: All right.

4 CO-HEARING OFFICER DODUC: Please ask your
5 questions.

6 MS. SUARD: Just to be clear, I'm just
7 supposed to talk to Mr. Hester and --

8 CO-HEARING OFFICER DODUC: Yes. I will call
9 you back for the remainder of your cross-examination.

10 CROSS-EXAMINATION BY MS. SUARD

11 MS. SUARD: This is my HSR-17. And actually
12 there's a couple maps in here. And this is from the
13 State Water Rights Control Board. And Ms. Marcus's
14 photo's up there. You can see that. And it locates
15 the water rights, the diversions.

16 CO-HEARING OFFICER DODUC: You can say it's
17 been authenticated.

18 MS. SUARD: Excuse me?

19 CO-HEARING OFFICER DODUC: It's authenticated.

20 MS. SUARD: It's authenticated. Okay.

21 So that locates all the water rights of
22 different -- the farmers and actually the businesses.
23 If you keep going down, there's another map. And it's
24 also our drinking water wells, which is going to be a
25 big issue for me.

1 So -- but let's go back up. Let's go back to
2 the map before that. So if you click on these dots,
3 you can see the information about each of our water
4 rights and our diversions, those that have to, you
5 know, report that. And there's a long history of
6 everybody's water rights that the State has put online.

7 So I wanted to use this map. Can we enlarge
8 it so we can get to Ryer Island? I thought that might
9 be a helpful thing to do because I just have to ask
10 Mr. Hester a couple questions.

11 How are you doing, Mr. Hester?

12 WITNESS HESTER: I'm still here.

13 MS. SUARD: You're still here. It's -- do you
14 remember me from Snug Harbor?

15 WITNESS HESTER: Absolutely.

16 MS. SUARD: You do. Okay. So for reference
17 for other people, where would you say Snug Harbor is?
18 Is it attached to Ryer Island or next to it?

19 WITNESS HESTER: Yeah, it's to the east, say,
20 southeast of Ryer Island.

21 MS. SUARD: Okay. So you'd say we're on the
22 water side of the levee, right?

23 WITNESS HESTER: Yeah, you're outside of our
24 levee, yes.

25 MS. SUARD: So the water side of Ryer Island.

1 Would you say that, in your opinion -- because you've
2 been at Ryer Island for a long, long time -- what
3 happens with Ryer Island water quality might also
4 happen on the water side?

5 WITNESS HESTER: Absolutely. I mean, that's
6 where the water quality comes from.

7 MS. SUARD: Okay. That was going to be one of
8 my questions for you. When you're -- when you are --
9 when there is an issue of salinity within the island,
10 is that because of water rising?

11 And this actually could be a question I could
12 ask somebody else, too, but because of your personal
13 experience and long-term experience, if there's a water
14 issue, is it because of water rising in the island, or
15 is it from water being pumped in?

16 WITNESS HESTER: It's from outside the island,
17 from the water surrounding the island.

18 MS. SUARD: What's -- could you tell me what
19 the water table is for Ryer Island?

20 WITNESS HESTER: Oh, it varies depending on
21 where you are. It's going to be higher in the middle
22 of the island than it is on the outside of the island

23 MS. SUARD: Could you explain what that means?

24 WITNESS HESTER: Well, most of these islands
25 are like bowls, so they slope towards the center. So

1 as you get to the center of the island, you'll have a
2 higher water table because of the slope. And that's
3 why you see most of your permanent crops planted around
4 the outside because you have a lower water table in
5 that area.

6 MS. SUARD: By "higher water table," do you
7 mean, if you dig a hole how many feet do you go down
8 before you hit water?

9 WITNESS HESTER: Oh, you might find two feet.
10 And then you get to the outside, closer to the levee,
11 and you could find, you know, four, five, six feet in
12 places.

13 MS. SUARD: Okay. So it's not very deep
14 before you hit water?

15 WITNESS HESTER: No, most islands are pretty
16 shallow.

17 MS. SUARD: Do you have any understanding,
18 from your experience for all those years on Ryer
19 Island, what happens when you get extra water in the
20 system, like, for example, when Yolo Bypass does extra
21 flows?

22 WITNESS HESTER: Oh, you get -- if you get
23 high -- I mean, from the extra flows, usually you have
24 high water, and you have the seepage issues.

25 MS. SUARD: Okay. Do you ever get extra

1 salinity coming down the Yolo Bypass from all the
2 farming activity north of us?

3 WITNESS HESTER: Not to the extent that you'd
4 get it coming up during high tide, during low-water
5 events.

6 MS. SUARD: So the salinity -- there is higher
7 salinity water, but it's in a high flow time?

8 WITNESS HESTER: No, I -- usually, that's a
9 flushing. So you're usually getting clean water at
10 that time, or relatively clean water.

11 MS. SUARD: Okay. Let's see. I think I just
12 had one more.

13 So is there -- do you notice a difference
14 between the water quality pump from -- so you pump --
15 your testimony was that you pump from different places
16 all over the island.

17 Is the water quality higher off of Sutter
18 Slough than Steamboat Slough, for example? Like, the
19 south end of Steamboat Slough versus by the confluence
20 of Sutter and Miner?

21 WITNESS HESTER: You're going to have worse
22 quality water at the lower end of the island than the
23 upper end of the island.

24 MS. SUARD: Why?

25 WITNESS HESTER: Just because you're closer to

1 the ocean.

2 MS. SUARD: Okay, okay. That makes just
3 perfect common sense.

4 There was some testimony about barriers and
5 that there have been a lot of discussion about
6 barriers. What is your concern about a barrier at the
7 top end of Steamboat Slough or Sutter Slough?

8 WITNESS HESTER: It will cut off our
9 freshwater supply.

10 MS. SUARD: Does it matter if it's a physical
11 barrier or if it's a matter of such low flow that
12 there's no water flow? Does it make a difference how
13 it's done?

14 WITNESS HESTER: No, a barrier cuts off flow.

15 MS. SUARD: What I mean, what I'm asking, does
16 it have to be a physical barrier or would a substantial
17 reduction of flow into Steamboat Slough and Sutter
18 Slough have the same negative effect?

19 WITNESS HESTER: Yeah, it would. I mean, any
20 lower flows are going to keep freshwater from coming
21 in, yeah.

22 CO-HEARING OFFICER DODUC: All right. Hold on
23 a second, please.

24 Mr. Mizell?

25 MR. MIZELL: I'd like to object as an

1 irrelevant line of questioning that explores some
2 hypothetical barriers; speculative, and not part of
3 this project.

4 MS. SUARD: I am asking --

5 CO-HEARING OFFICER DODUC: I will note his
6 objection, but I will allow you to finish, Ms. Suard.

7 MS. SUARD: I had actually just finished with
8 Mr. Hester.

9 CO-HEARING OFFICER DODUC: Thank you, perfect.

10 Ms. Des Jardins, your questions for Mr. Hester
11 and Mr. Lange.

12 CROSS-EXAMINATION BY MS. DES JARDINS

13 MS. DES JARDINS: Islands' cross.

14 And Mr. Lange --

15 Can we open up Exhibit DDJ-126?

16 MR. LONG: Ms. Des Jardins, would you please
17 get a little bit closer to the microphone.

18 MS. DES JARDINS: Oh, I apologize. It's not
19 on.

20 MR. LONG: Thank you so much.

21 MS. DES JARDINS: Here we go.

22 You opened up DDJ-126. So, Mr. Lange, I
23 understand that you report diversion and use to the
24 State Water Resources Control Board; is that correct?

25 WITNESS LANGE: That's correct.

1 MS. DES JARDINS: Is this -- this statement
2 that you provided to the --

3 CO-HEARING OFFICER DODUC: The microphone is
4 off, Ms. Des Jardins.

5 MS. DES JARDINS: I'm not sure. I didn't
6 touch it.

7 Okay. Is this the statement that you provided
8 to the State Water Resources Control Board on -- I'm
9 not sure of the date. Let me -- let's scroll down --
10 on one of your riparian rights? And it shows it's
11 2006, and there's a statement number.

12 States that you're using drip irrigation,
13 State S0214- -- you scrolled past the number.

14 S021435?

15 WITNESS LANGE: I'm not familiar with that
16 number. I did file reports outlining the diversion
17 points.

18 MS. DES JARDINS: Okay. Let's go to DDJ-127,
19 please. Thank you.

20 And this is a second statement of diversion
21 and use filed with the State Water Resources Control
22 Board for a second point of diversion. Do you recall?

23 WITNESS LANGE: I -- on that particular site,
24 I recall one.

25 MS. DES JARDINS: Okay. Thank you.

1 Let's go to DDJ-128, please.

2 CO-HEARING OFFICER DODUC: Do you have a
3 specific question with respect to all these documents?

4 MS. DES JARDINS: I'm just -- it was a
5 question about their water rights.

6 Mr. Hester?

7 WITNESS HESTER: Yes?

8 CO-HEARING OFFICER DODUC: I think this is
9 what is known as friendly cross.

10 MS. DES JARDINS: Is this a statement of
11 diversion and use on Steamboat Slough --

12 WITNESS HESTER: Yes.

13 MS. DES JARDINS: -- and riparian claim?

14 And let's go to DDJ- --

15 CO-HEARING OFFICER DODUC: Let's not.

16 MS. DES JARDINS: Okay. Thank you.

17 CO-HEARING OFFICER DODUC: Are you done?

18 MS. DES JARDINS: That's that for those. So
19 let's close -- we can close that. Yeah.

20 And then let's go to DDJ-134. And can we
21 scroll out so we can see the entire map? This is for
22 Mr. Hester and Mr. Lange.

23 The -- so this is a map of the average annual
24 precipitation in California. I was just wanting to
25 know if you had -- if -- how much water comparatively

1 do you need for irrigation in your area as opposed to,
2 perhaps, areas further -- further south?

3 MR. VAN ZANDT: Lacks foundation. I don't
4 know if it's within the knowledge of these witnesses.

5 CO-HEARING OFFICER DODUC: Can you even answer
6 that question, without any sort of reference?

7 MS. DES JARDINS: I'm just wondering, like, as
8 far as how well suited their crops are to that climate.
9 And it's basically an adaptation question, and in terms
10 of -- and water efficiency question.

11 CO-HEARING OFFICER DODUC: And the relevance?

12 MS. DES JARDINS: If you had to -- if you feel
13 it's not relevant, I'll move on.

14 CO-HEARING OFFICER DODUC: I'm asking you.

15 MS. DES JARDINS: I believe the relevance is
16 that, to the extent that the Water Board is trying to
17 promote water use efficiency, having -- promoting --

18 CO-HEARING OFFICER DODUC: They're here to
19 testify what they believe to be injury --

20 MS. DES JARDINS: Yeah.

21 CO-HEARING OFFICER DODUC: -- to their water
22 use. So please direct your question to them on that.

23 MS. DES JARDINS: Yeah.

24 If you have to relocate, would it be
25 potentially to an area where there was higher water

1 use? I know it would be very expensive and difficult
2 as well.

3 WITNESS LANGE: I don't know who you're
4 directing that question to.

5 MS. DES JARDINS: Either one of you.

6 WITNESS LANGE: I'm there for a reason. The
7 crops that I grow, the wine grapes that I grow there,
8 we like the characteristic of those. So I would not
9 willingly relocate anywhere. I want to stay there.

10 MS. DES JARDINS: And it's not just the soil;
11 it's the rainfall and other climate characteristics?

12 WITNESS LANGE: All the factors of growing
13 that make the North Delta unique.

14 MS. DES JARDINS: And same to you, Mr. Hester?

15 WITNESS HESTER: Yeah, and some of though
16 crops, like pears, they adapt well to that area. And
17 growing them in other regions, they wouldn't be as
18 successful.

19 MS. DES JARDINS: That's all.

20 CO-HEARING OFFICER DODUC: Any other questions
21 for Mr. Hester and Mr. Lange?

22 (No response)

23 CO-HEARING OFFICER DODUC: Any redirect for
24 Mr. Hester and Mr. Lange?

25 MS. MESERVE: I just have one quick question

1 for Mr. Lange.

2 REDIRECT EXAMINATION BY MS. MESERVE

3 MS. MESERVE: Mr. Lange, have you ever been
4 contacted by the Water Board or the Water Master
5 regarding any issue or problem with your water rights
6 since you filed your statements of diversion and use?

7 WITNESS LANGE: No, I have not.

8 MS. MESERVE: Thank you.

9 CO-HEARING OFFICER DODUC: Thank you.

10 Any recross?

11 (No response)

12 CO-HEARING OFFICER DODUC: All right. Thank
13 you, Mr. Hester. Thank you, Mr. Lange.

14 WITNESS LANGE: Thank you.

15 CO-HEARING OFFICER DODUC: Ms. Morris, you are
16 up. Let me do some quick time checks, since I know
17 Ms. Meserve's Panel 2 witnesses are probably here.

18 Ms. Morris, are we still anticipating 30
19 minutes?

20 MS. MORRIS: I think it will be 15.

21 CO-HEARING OFFICER DODUC: All right. And
22 Mr. Walter has already completed his, so that leaves
23 Ms. Des Jardins, Ms. Suard and -- oh, and
24 Mr. Brodsky as well?

25 MR. BRODSKY: Yeah, ten minutes.

1 CO-HEARING OFFICER DODUC: Ten minutes for
2 Brodsky.

3 Hold on.

4 Herrick?

5 MR. HERRICK: My time, less than 20 minutes.

6 CO-HEARING OFFICER DODUC: You sound so
7 confident about that.

8 Ms. Des Jardins?

9 MS. DES JARDINS: The questions for Erik could
10 take 20 to 25 minutes, max.

11 CO-HEARING OFFICER DODUC: All right. I
12 expect everyone to be efficient.

13 Ms. Suard?

14 MS. SUARD: Maximum 20 minutes.

15 CO-HEARING OFFICER DODUC: Okay. So we will
16 definitely get to Panel 2, Ms. Meserve, today. And I
17 will hold people to as close as possible to their time
18 estimates.

19 Ms. Morris.

20 CROSS-EXAMINATION BY MS. MORRIS

21 MS. MORRIS: Thank you. Good afternoon.

22 My questions are for Mr. Ringelberg.

23 I wanted to direct you -- I'll just say,
24 looking at your testimony II-24, Page 5, Lines 4 to 5,
25 you state that your opinion is -- and I'm quoting, "In

1 plain language, the project rules create a
2 drought-equivalent conditions on the Sacramento River";
3 is that correct?

4 WITNESS RINGELBERG: Let me catch up with you
5 here.

6 MR. LONG: Sorry. Which one?

7 MS. MORRIS: Lines 4 to 5.

8 WITNESS RINGELBERG: Yes, that is correct.

9 MS. MORRIS: Thank you. Again, and looking at
10 the same page in your testimony, you state that, "These
11 flow rules represent a flow reduction up to 41 percent,
12 and under these rules, the flow for the vast majority
13 of the time would be constrained from 5700 to 3,000
14 cfs."

15 And my question is that this information that
16 you state is based off the DWR Errata 5, Page 25,
17 correct?

18 WITNESS RINGELBERG: It includes that as a
19 source, as well as the -- one second, please -- II-29.

20 MS. MORRIS: Okay. But I asked you
21 specifically -- okay. Thanks. That's fine.

22 And that was my next question is that you
23 actually then go on to state that, "These flows are
24 directly equivalent to the range of flows at Freeport
25 during a critically dry year mean 9,345 cfs to a dry

1 year mean 16,003 cfs in 1989"; is that correct?

2 WITNESS RINGELBERG: That's correct.

3 MS. MORRIS: And that actually is a cite to
4 II-29, correct?

5 WITNESS RINGELBERG: That is correct.

6 MS. MORRIS: And in order to make that
7 assertion, you are comparing the mean annual flow at
8 Freeport in those years to the flow rules that you
9 claim represent a 41 percent reduction, correct?

10 WITNESS RINGELBERG: Let me quick reference
11 the primary document to make sure.

12 Could you please pull up II-29, Pages 2 and 3.

13 We can see the criteria at the very bottom of
14 the page, so the answer is yes, it's based on the mean
15 Freeport flow as identified by ICF for the independent
16 science report.

17 MS. MORRIS: You mean the annual Freeport
18 flow, correct?

19 WITNESS RINGELBERG: Well, in this particular
20 case, I believe the mean Freeport flow was based on the
21 model run for the 1924 year.

22 MS. MORRIS: Right? So it's the annual, the
23 mean annual, correct?

24 WITNESS RINGELBERG: I believe that's the
25 case.

1 MS. MORRIS: Okay. And then looking at the
2 DWR Errata 5, Page 25, that example is a daily bypass
3 flow example, correct?

4 WITNESS RINGELBERG: Yes, I believe that's the
5 case.

6 MS. MORRIS: Okay. So your opinion that the
7 project creates a drought equivalent condition is based
8 on the comparison of the DWR Errata 5, Page 25 example
9 to the mean average annual flow at Freeport as shown in
10 Exhibit II-29, correct?

11 WITNESS RINGELBERG: Yes.

12 MS. MORRIS: But earlier in your testimony you
13 acknowledged that the 41 percent reduction is a simple
14 -- simply an example of the bypass flow criteria and
15 does not take into consideration other flow factors
16 such as D1641 and regulations under the existing
17 biological opinions, correct?

18 WITNESS RINGELBERG: That's not a simple
19 yes-or-no answer.

20 So that was my response. If you look at
21 DWR-515, there's a whole series of tables that are
22 associated with those particular flows and their
23 criteria.

24 MS. MORRIS: But you didn't cite to those, did
25 you?

1 WITNESS RINGELBERG: I believe I did,
2 actually.

3 MS. MORRIS: In this example on Page 5 of your
4 testimony, did you cite to DWR-515?

5 WITNESS RINGELBERG: No, I did not.

6 MS. MORRIS: Thank you. And then to validate
7 your opinion about the project creating drought
8 conditions, you cite to DWR Errata 5, Page 26, correct?
9 And if you need to look at your testimony, it's
10 specifically on Page 5 as Lines 15 through 20.

11 WITNESS RINGELBERG: Yes, that's correct.

12 MS. MORRIS: Okay. And if we could pull up
13 DWR Errata 5, Page 26.

14 Isn't it true that the 1987 modeled example
15 you cite to validate your opinion is for a condition of
16 14,000 cfs flow and a 6,000 cfs diversion that only
17 occurs for a period that lasts no more than a week in
18 October of 1987?

19 WITNESS RINGELBERG: That was not the basis of
20 my conclusion. When you look at the red line in this
21 figure, that shows the bypass requirement. Anything
22 else above that bypass requirement is not necessarily
23 outflow. That's just simply described as outflow in
24 this figure.

25 MS. MORRIS: Okay. Mr. Ringelberg, I'm going

1 to direct you to your testimony, Page 5, Line 15. "As
2 validation of my conclusions regarding diversion flow
3 rules, the scenarios that were provided as illustration
4 of the project modeling analysis" -- I think that might
5 be a typo -- "is archive" or "achieve" -- I think it's
6 "achieve to the same diversion rates as the maximum
7 diversion rules," and then you say "1978," which I
8 believe is a typo and should be 1987, "which was also
9 classified as a dry year is modeled with a flow in the
10 river of 14,000 cfs."

11 Can you please show me on DWR Errata 5 other
12 than the very first week or sometime in early October
13 where there is a flow of 14,000 cfs and a diversion of
14 6,000 cfs?

15 WITNESS RINGELBERG: Can you say your question
16 again? I want to make sure I'm addressing it
17 correctly.

18 MS. MORRIS: On this graphic, can you show me
19 a time period other than in that very first beginning
20 period of October of 1986 where you have a flow of
21 14,000 cfs and a diversion of 6,000 cfs of the North
22 Delta facility?

23 WITNESS RINGELBERG: That is the correct
24 period.

25 MS. MORRIS: So your example and the basis of

1 your validation is based on a one-week period in this
2 1987 modeled example, correct?

3 WITNESS RINGELBERG: My analysis of the
4 modeled data presented, which was the only thing that I
5 had the basis of, does illustrate that in that specific
6 period of time; that is correct.

7 MS. MORRIS: Two weeks -- or one week? Sorry.

8 WITNESS RINGELBERG: So to be clear -- I've
9 mentioned this several times; I don't want to belabor
10 it. The modeling is not a reflection of future
11 operations. It's not intended to be. The modeling
12 shows very clearly here a period of time that matches
13 my conclusions.

14 MS. MORRIS: Right. But I'm asking you
15 questions. And you -- this is the basis of your
16 opinion and the validation of your opinion. And it's a
17 one week-time period, correct?

18 WITNESS RINGELBERG: So the model shows that,
19 in a dry year example, that that is the percentage of
20 flow being taken as illustrated in your model.

21 MS. MORRIS: I have no further questions.

22 CO-HEARING OFFICER DODUC: Thank you,
23 Ms. Morris.

24 I think next on my list is No. Group 21,
25 Mr. Herrick fold by Mr. Brodsky, Group 30, for

1 cross-exam. If I'm missing anyone in between, let me
2 know.

3 MR. HERRICK. Thank you, Madam Chair, Hearing
4 Officers. John Herrick for South Delta parties.

5 As I begin questioning, can we bring up DWR-5
6 Errata, please.

7 Mr. Ringelberg, I'm going to start with you,
8 please.

9 CO-HEARING OFFICER DODUC: Hold on a second.

10 Ms. Morris?

11 MS. MORRIS: Yes, I object to Mr. Herrick
12 cross-examining his own witness who is listed on his
13 NOI and who he also submitted testimony for. Same
14 objection Mr. Brodsky if he's going to be
15 cross-examining his own witness that he is going to put
16 on direct.

17 CO-HEARING OFFICER DODUC: Okay. Mr. Van
18 Zandt?

19 MR. VAN ZANDT: Well, I think, you know,
20 Mr. Ringelberg is being offered in the salinity panel
21 for a specific purpose by clients other than the ones
22 that are prepared by Mr. Herrick or Mr. Brodsky, so it
23 is entirely appropriate for this cross-examination.

24 CO-HEARING OFFICER DODUC: Mr. Berliner?

25 MR. BERLINER: Mr. Ringelberg's testimony is

1 very similar from party to party. He cites the same
2 examples. Under these rules, cross-examination can go
3 beyond the scope of the direct. It's highly improper
4 to allow a lawyer to cross-examine his own witness
5 under the guise of, "Oh, this is a different panel,"
6 when the expert is testifying in the same area of
7 expertise basically on the same subject.

8 So in essence, what questioner's getting is
9 both direct and cross from the same party.

10 CO-HEARING OFFICER DODUC: Okay. I believe we
11 are going to take a break to discuss this. But before
12 we do, I want to hear from Mr. Brodsky and anyone else
13 would wish to chime in.

14 MR. BRODSKY: I can't speak to the other
15 parties, but as far as Delta Alliance is concerned, I'm
16 only going to stay with within the scope of direct, and
17 that is not a part of his testimony for Delta Alliance.

18 CO-HEARING OFFICER DODUC: Oh, okay.

19 MR. BRODSKY: You know, the chart there, where
20 they're applying how many cfs and all that? He doesn't
21 go into that at all in his testimony for us.

22 CO-HEARING OFFICER DODUC: Okay. Actually,
23 that's a really excellent point.

24 MR. BRODSKY: And I'll be only ten minutes.

25 CO-HEARING OFFICER DODUC: That's an excellent

1 point.

2 Mr. Herrick, do you intend to stay within the
3 stop of these witnesses' direct as presented by
4 Mr. Van Zandt and Ms. Meserve?

5 MR. BRODSKY: Excuse me. I misspoke.

6 CO-HEARING OFFICER DODUC: Oh, but

7 Mr. Brodsky, I liked what you said.

8 MR. BRODSKY: What I meant to say was stay
9 within the scope of clarifying where Mr. Berliner and
10 Ms. Morris went on cross.

11 CO-HEARING OFFICER DODUC: You are supposed to
12 direct your cross-examination to the direct testimony
13 provided by these witnesses.

14 MR. BRODSKY: Okay. Well, all right. It goes
15 to that, and also it's not in any way --

16 CO-HEARING OFFICER DODUC: You should have
17 stopped while you were ahead, Mr. Brodsky.

18 MR. BRODSKY: Well, I don't want to
19 misrepresent what I intend to do, ma'am. I mean, I'm
20 always straight with you.

21 CO-HEARING OFFICER DODUC: All right.

22 MR. BRODSKY: And it's not included in Delta
23 Alliance's direct testimony at all. We don't go into
24 that.

25 CO-HEARING OFFICER DODUC: All right. We will

1 do realtime management yet again.

2 Mr. Herrick, what is your -- what are or is
3 your topic areas that you will be exploring?

4 MR. HERRICK: For Mr. Ringelberg, I wanted to
5 ask him questions about the information that's been
6 provided by DWR that's similar to what he has
7 presented. And from that, then, I ask questions to
8 Dr. Leinfelder-Miles about what that information allows
9 someone to do or what conclusions could be drawn with
10 regard to injury. And I was going to ask --

11 CO-HEARING OFFICER DODUC: Specifically as to
12 the studies that she conducted on salinity?

13 MR. HERRICK: Absolutely.

14 CO-HEARING OFFICER DODUC: Okay.

15 MR. HERRICK: And then I was going to ask
16 Mr. Grant a few questions about the effects of what he
17 was talking about, changes in chloride and sodium.

18 CO-HEARING OFFICER DODUC: All right. Let's
19 go ahead and allow you to proceed, Mr. Herrick.

20 CROSS-EXAMINATION BY MR. HERRICK

21 MR. HERRICK: Mr. Ringelberg, you had an
22 exhibit that showed fingerprinting analysis of water at
23 a certain point in the Delta, correct?

24 WITNESS RINGELBERG: That is correct.

25 MR. HERRICK: And that was from DWR? The

1 original chart was from DWR?

2 WITNESS RINGELBERG: I'm not certain that is
3 actually the case. DWR provides them as well, but I
4 think this came from the California Data Exchange. Let
5 me verify, please.

6 MR. HERRICK: That's all right.

7 WITNESS RINGELBERG: Yes, it's the 2015 DWR
8 2014-2015 Rock Slough fingerprint. Comes from the
9 WaterCalifornia.gov website

10 MR. HERRICK: And the purpose of that was to
11 indicate that the Department of Water Resources can
12 produce documentation that shows modeling predicting --
13 or modeling that indicates what the different
14 constituents of the water -- or the sources of the
15 water might be at any particular point in the Delta; is
16 that correct?

17 WITNESS RINGELBERG: That is correct. They
18 can also use realtime data to generate the same figures
19 so that you can have an actual understanding of what's
20 happening in that particular prism of water.

21 MR. HERRICK: And you stated that you were
22 familiar with the DSM2 model; is that correct?

23 MR. RINGELBERG: Right, I am.

24 MR. HERRICK: And are you aware that the DSM2
25 consists of a number of nodes or discrete areas that

1 the model then generates information from one and then
2 that pours into another to produce another result; is
3 that correct?

4 WITNESS RINGELBERG: That's correct.

5 Although, there are a limited number of nodes. And
6 therefore, traditionally, DWR has only looked at the
7 areas that are critical for its water supply export
8 projects.

9 MR. HERRICK: Right. But in fact, they could
10 produce information for every node throughout the
11 Delta, correct, as long as it's a node of the model?

12 WITNESS RINGELBERG: Yeah, as long as there's
13 an existing node, they can.

14 MR. HERRICK: If we could have DWR-5 put up,
15 errata, please.

16 MR. LONG: Could you let me know what page?

17 CO-HEARING OFFICER DODUC: Hold on.

18 Mr. Mizell?

19 MR. MIZELL: I'd like to object to the
20 statements that Mr. Ringelberg just made about what the
21 Department does or does not consider based upon his
22 assessment of what is on CDEC. There's no basis or
23 foundation laid for that statement, and I don't believe
24 the Department would agree with it.

25 CO-HEARING OFFICER DODUC: So noted.

1 MR. HERRICK: If we could go to Page 55,
2 please, of that DWR 5 Errata.

3 Mr. Ringelberg, are you familiar with this as
4 it's been presented previously in the hearings?

5 WITNESS RINGELBERG: Yes, I've seen this
6 before.

7 MR. HERRICK: Excuse me. I'm turning my
8 monitor on.

9 And is it your understanding that this shaded
10 area is the D1645 [sic] time frame when a water quality
11 requirement at Emmaton is in effect?

12 CO-HEARING OFFICER DODUC: Hold on.

13 Ms. Morris?

14 MS. MORRIS: I apologize. I thought you said
15 Mr. Herrick could proceed if his questions were in the
16 scope of the direct.

17 Mr. Ringelberg did not testify to this. This
18 is about DWR. It's outside the scope of the direct
19 testimony. Perhaps I misunderstood.

20 CO-HEARING OFFICER DODUC: Mr. Herrick?

21 MR. HERRICK: Mr. Ringelberg's testimony was
22 over a number of issues, including averages presented
23 and whether or not they showed the full picture and
24 whether or not compliance with D1641 dealt with injury
25 or the determination of injury.

1 I'm just trying to bring this up so I can walk
2 him through that to see if his opinion on those -- I'll
3 say shortcomings of presentation are highlighted in
4 these exhibits.

5 CO-HEARING OFFICER DODUC: So, Mr. Ringelberg,
6 did you have previous discussion with Mr. Herrick
7 regarding this matter?

8 WITNESS RINGELBERG: I've never seen this
9 figure in conversation, directly or indirectly, with
10 Mr. Herrick.

11 MR. HERRICK: Based on that question, I would
12 just like to say for the record that, although I'm
13 friendly and know all these people and we've had
14 numerous conversations in the last couple days, I have
15 specifically not addressed specific issues that I would
16 cover with them or anything like that.

17 MS. MORRIS: Okay. I'm going to renew my
18 objection. This is surprise testimony. This is a
19 back-door way for Mr. Herrick and others who have this
20 as their direct witness and have him listed and are
21 having him testify -- this is a surprise -- they're
22 creating surprise testimony that we now have no
23 opportunity to cross-examine Mr. Ringelberg on further.
24 And he hasn't provided these opinions or anything
25 having to do with these graphics in his direct

1 testimony.

2 CO-HEARING OFFICER DODUC: My understanding of
3 Mr. Herrick's request was that he's laying these
4 questions as foundation to then ask
5 Dr. With-the-long-name some questions with respect to
6 salinity effects, which is within the scope of the
7 direct presented by this panel.

8 Mr. Herrick, are you still intending to pursue
9 that line of questioning?

10 MR. HERRICK: Absolutely. If I may, any time
11 you have cross that's not limited to certain things --
12 I mean, you know, we can -- there are going to be
13 answers and questions that are a surprise to somebody.
14 This is not a plot. I understand.

15 But I'm just trying to make the point which I
16 made before, and I want to make with this panel, too,
17 of the issues associated with determining numbers,
18 determining the effect of those numbers and then
19 applying that to --

20 CO-HEARING OFFICER DODUC: Understood.

21 Mr. Mizell, I assume you are concurring with
22 Ms. Morris's objection?

23 MR. MIZELL: I would, but I was going to try
24 and make a helpful suggestion.

25 CO-HEARING OFFICER DODUC: Oh, please.

1 MR. MIZELL: To the extent that Mr. Herrick
2 does want to pursue laying the foundation, if he could
3 simply cite back to Mr. Ringelberg's written testimony
4 for each of the exhibits that he intends to ask him
5 questions on, it would make it clearer in our minds
6 that that line of questioning is within the scope of
7 Mr. Ringelberg's direct testimony rather than bringing
8 up exhibits that we were not made aware apply to his
9 written testimony.

10 CO-HEARING OFFICER DODUC: That is helpful.

11 But I will still allow Mr. Herrick to
12 continue.

13 I note your objection, Ms. Morris, and your
14 concurrence, Mr. Mizell. As you will -- as you have no
15 doubt ascertained by now, my primary objective in the
16 conduct of this hearing is to solicit information that
17 will be helpful to the Board in making our
18 determination.

19 So to the extent that we may not dot all the
20 I's and T's of all your legal procedural matters, as
21 long as it's within the Board's processes, as long as
22 it's adding value to the record and helping us in
23 making our decision, I'm going to allow it to continue.

24 So, Mr. Herrick, please continue.

25 MR. HERRICK: Thank you.

1 WITNESS RINGELBERG: That's the case.

2 CO-HEARING OFFICER DODUC: I'm sorry,
3 Mr. Ringelberg. Did you say something?

4 WITNESS RINGELBERG: He asked a question. I
5 responded, I believe, yes.

6 CO-HEARING OFFICER DODUC: I have forgotten
7 what the question was.

8 WITNESS RINGELBERG : Oh, okay. I'm sorry.

9 MR. HERRICK: I have, too.

10 Mr. Ringelberg, if we're looking at Page 55 of
11 DWR-5 Errata, you can see that in -- let's take May,
12 that Boundary 1 and Boundary 2 appear to be slightly
13 higher than the NAA, correct?

14 WITNESS RINGELBERG: Very slightly, that's
15 correct.

16 MR. HERRICK: But we don't know what the range
17 of actual numbers that go into that average are -- from
18 this chart anyway; is that correct?

19 WITNESS RINGELBERG: The actual range of
20 numbers means what in this particular context? The
21 modeling outputs is where these numbers came from.

22 MR. HERRICK: Right. But these are averages
23 over the 16-year period for each month; is that
24 correct?

25 WITNESS RINGELBERG: The 16 or the 82. At

1 this point, I've forgotten which one they're actually
2 using for this.

3 MR. HERRICK: Right. Maybe I was unclear. I
4 was just trying to say that, although the chart shows
5 very small differences -- in this case, small
6 increases -- we don't know what the range of those
7 differences are, so we don't know how high the high
8 would have been or how low the low would have been for,
9 say, Boundary 1; would that be correct?

10 WITNESS RINGELBERG: Oh, that's correct. When
11 you're comparing the aggregate of the years, this is
12 the number that you get. When you're actually looking
13 at the differences between years, you would get a
14 range. And that range is not represented on this
15 table.

16 MR. HERRICK: And if we go to July, we see the
17 same thing. Although the bars for Boundary 1, H3, H4,
18 and Boundary 2 are higher than the no action, we don't
19 though what the range of the highs and lows of the salt
20 for any of those bars are, correct?

21 WITNESS RINGELBERG: We do not. And I want to
22 give a caution when using modeling data in general,
23 and in particular using these modeling data is that
24 this is not an area where we have an error bar where
25 there's a degree of scientific certainty based on data.

1 This is a modeling run and is not -- does not
2 have the same strength of analytical power, therefore,
3 you cannot rely on those differences between model runs
4 they simply say that between these water years you get
5 this range. And that's all you can do with those data.

6 MR. HERRICK: So if you needed data to draw
7 conclusions about any effects of changes in water
8 quality, one would have to examine the actual numbers
9 not the average numbers; would that be correct?

10 WITNESS RINGELBERG: They have two different
11 kinds of utility. When you're looking at the average
12 numbers, it allows you to do a table like this, which
13 is quite simplified.

14 When you're looking at the effects, I believe
15 you have to break out those data for them to have any
16 meaning.

17 MR. HERRICK: And from that, let me turn to
18 Dr. Leinfelder-Miles.

19 And, Doctor, if somebody gives you a bar chart
20 that says there's a potential increase in -- I'm just
21 making a number up; this isn't from the chart. But if
22 there's a potential increase of 100 EC over a 16-year
23 average, does that allow you to determine the effects
24 on any particular crop from applying that water?

25 WITNESS LEINFELDER-MILES: Can I ask a

1 clarifying question? So your question is if there's an
2 increase over a certain amount of time of 100 EC, would
3 I be able to determine if there's an injury on a crop?

4 MR. HERRICK: Yes. In this example, I'm
5 saying if there's a level of EC increase that's an
6 average of 16 years, does that allow you to determine
7 whether or not there's effects on crops resulting from
8 that EC?

9 WITNESS LEINFELDER-MILES: No.

10 MR. HERRICK: So you would need more specific
11 information, such as yearly or seasonal EC data, in
12 order to use that; is that correct?

13 WITNESS LEINFELDER-MILES: Yeah, and I would
14 go a step further to say the water that's applied onto
15 the field and not just what exists in the waterways.

16 MR. HERRICK: So there are a number of
17 different parameters or conditions that you would have
18 to examine. And would you agree that those include the
19 soil type, the beginning soil salinity, the amount of
20 applied water, the EC of applied water, whether or not
21 there's rainfall, what type of crop it might be --
22 things like that; is that correct?

23 WITNESS LEINFELDER-MILES: Yes.

24 MR. HERRICK: Now, you did a study, a brief
25 study in -- excuse me.

1 You did a brief sampling program in the -- on
2 Ryer Island that you testified to. That was just sort
3 of a snapshot examination of whether or not the soil
4 salinity -- or what the soil salinity was; is that
5 correct?

6 WITNESS LEINFELDER-MILES: Yes.

7 MR. HERRICK: And from that, you then applied
8 to that sort of a standard threshold for certain crops
9 to see if the soil salinity might or might not be
10 affecting the crop; is that correct? Is that an
11 adequate summary?

12 WITNESS LEINFELDER-MILES: Yes, keeping in
13 mind that the -- so the two equations are the leaching
14 fraction and the leaching requirement. The leaching
15 requirement equation uses the crop tolerance and the
16 water salinity, which is data that I collected -- or
17 that I used from the California Data Exchange Center,
18 not water that I collected on site.

19 MR. HERRICK: And I believe you referenced
20 that the soil salinity level of 2 decisiemens was the
21 threshold for alfalfa; is that correct?

22 WITNESS LEINFELDER-MILES: Yes.

23 MR. HERRICK: And then I believe 1.3 was the
24 applied water threshold; is that correct?

25 WITNESS LEINFELDER-MILES: For alfalfa.

1 MR. HERRICK: For alfalfa, excuse me.

2 But those two numbers are dependent on other
3 factors, correct? That assumes some sort of leaching
4 fraction.

5 WITNESS LEINFELDER-MILES: Yeah, it assumes a
6 15 percent leaching fraction.

7 MR. HERRICK: And if the leaching fraction is
8 lower than that, then those numbers might be different?
9 You might have different numbers to indicate whether or
10 not there's an effect on the crop?

11 WITNESS LEINFELDER-MILES: Yes, those numbers
12 -- yeah, they he would be different. And they could be
13 lower, meaning that the crops would have less tolerance
14 of electrical conductivity, that level of salinity.

15 MR. HERRICK: In order to examine the Delta --
16 examine the effects of the additional salinity in the
17 applied water to the entire Delta, that would take, to
18 be complete, wouldn't that -- hundreds of thousands of
19 samples over time and a lot of information and
20 calculation, correct?

21 WITNESS LEINFELDER-MILES: Yes.

22 MR. HERRICK: In the alternative, one might do
23 a number of different studies in different areas and
24 come up with some general conclusions about whether or
25 not salt is building up in soil or salt is being

1 flushed out of the soil, correct?

2 WITNESS LEINFELDER-MILES: I'm sorry. Can you
3 repeat that question?

4 Yes. Since one can't take hundreds of
5 thousands or millions of samples over time, an
6 alternate approach might be to have a number of studies
7 of different areas to determine whether or not the
8 water being applied is increasing the salt in the soil
9 profile; is that correct?

10 WITNESS LEINFELDER-MILES: Yes.

11 MR. HERRICK: And if the salt is increasing in
12 soil profile, that might either result in harm to a
13 crop that year, or it might be an indication of a
14 build-up of harm in future years, correct?

15 WITNESS LEINFELDER-MILES: Yes.

16 MR. HERRICK: But until one does that sort of
17 analysis, one doesn't know whether, say, 100 EC
18 increase in applied water will or will not effect the
19 crops, correct?

20 WITNESS LEINFELDER-MILES: Yeah, correct.

21 MR. HERRICK: So in your study in the South
22 Delta, which South Delta paid you to do, the alfalfa
23 study referenced in your testimony, that determined
24 that there were areas where salt was building up in the
25 soil; is that correct?

1 WITNESS LEINFELDER-MILES: Yeah. And the
2 project was funded by both South Delta and the
3 California Institute for Water Resources.

4 MR. HERRICK: So whether or not the buildup of
5 salt in any particular place has, at any particular
6 moment, exceeded a threshold for any particular crop,
7 it is instructive information of whether or not there
8 is or may be a problem; is that correct?

9 WITNESS LEINFELDER-MILES: I'm sorry. Can you
10 repeat the question?

11 MR. HERRICK: Yes, I said that very poorly.

12 When you make your conclusions from the
13 alfalfa study, it shows you whether or not salt is
14 building up in the soil, correct?

15 WITNESS LEINFELDER-MILES: Yes.

16 MR. HERRICK: It may tell you, depending upon
17 the crop there, whether or not you've reached the
18 threshold in the soil and thus affecting the crop,
19 correct?

20 WITNESS LEINFELDER-MILES: Yes.

21 MR. HERRICK: But even if it hasn't reached
22 the threshold, it still might be an indication of
23 future problem if the continued accumulation of salt
24 might then affect the salt, correct?

25 WITNESS LEINFELDER-MILES: Yes, certainly.

1 MR. HERRICK: We've talked about average soil
2 salinities and thresholds. I just want to ask you a
3 few questions on that.

4 Your analysis, and I'd say the standard
5 analysis, is to examine the salinity in the soil over
6 some season to see whether or not it exceeds a
7 threshold; is that correct?

8 WITNESS LEINFELDER-MILES: Yeah, and how it
9 changes across the growing season.

10 MR. HERRICK: Yes. Does that mean that spikes
11 in the salinity in the soil profile are irrelevant, or
12 is it only the overage number that is important?

13 WITNESS LEINFELDER-MILES: Well, I'm not sure
14 I understand your question. The spikes in salinity at
15 a certain point in time?

16 MR. HERRICK: Yes. Let me start over. I'm
17 sorry.

18 Let's say in the first two months of
19 irrigating a crop, the soil salinity is higher than the
20 threshold, but in the remaining, say, six months of the
21 season, it's lower so that the average turns out to be
22 lower. I'm asking you if -- would that initial few
23 couple months of higher-than-threshold salinity, could
24 that cause a problem also?

25 WITNESS LEINFELDER-MILES: Yes, but I want to

1 clarify something that may have been misunderstood
2 earlier in the testimony. And that is, when I speak
3 about average root zone salinity, I'm speaking about
4 the average down the profile during -- down to the base
5 of the root zone. I'm not talking about an average
6 over time.

7 So in that point in time, when there might be
8 a high level of salinity in the soil, then, yes,
9 provided that it's a high average root zone salinity.

10 MR. HERRICK: And when you did your study in
11 the South Delta, did you chose those years because it
12 was drought?

13 WITNESS LEINFELDER-MILES: No, absolutely not.

14 MR. HERRICK: And whether or not rainfall
15 assists in leaching salt soils out -- excuse me.
16 Whether or not -- sorry. Tongue tied here.

17 The fact that there may or may not be
18 precipitation later in the year, that will affect the
19 final calculation some time about what actually
20 happened; is that correct?

21 MS. LEINFELDER-MILES: I'm sorry. Can you
22 repeat the question?

23 MR. HERRICK: I'm sorry. That wasn't any
24 better, was it. Is it Friday?

25 The leaching of salts from the soil may occur

1 from precipitation, correct?

2 WITNESS LEINFELDER-MILES: Yes.

3 MR. HERRICK: But one never knows if preci- --
4 parci- -- one never knows if rainfall will occur, does
5 one?

6 WITNESS LEINFELDER-MILES: No.

7 MR. HERRICK: So a farmer may have to change
8 his practices based upon whether or not there was
9 sufficient rainfall to leach his soils, correct?

10 WITNESS LEINFELDER-MILES: Yes.

11 MR. HERRICK: But farmers have a normal
12 standard, I'll say, approach so that, if they are aware
13 of it, they're trying to address that problem of the
14 leaching. And they either do something on their own,
15 or they take the benefit of rain or both, correct?

16 WITNESS LEINFELDER-MILES: Yes.

17 MR. HERRICK: Mr. Grant, let me just ask you a
18 couple of questions.

19 WITNESS GRANT: Okay.

20 MR. HERRICK: From your testimony, were you
21 saying that grapes in the Delta are more likely to be
22 damaged by salts in the applied water than other areas?

23 WITNESS GRANT: Can you be for specific about
24 what other areas?

25 MR. HERRICK: I'm sorry. I'm just thinking

1 that -- do the conditions in the Delta, I guess,
2 present a more difficult situation for grapes with
3 regard to salt or not?

4 WITNESS GRANT: Again, I need a reference for
5 comparison.

6 MR. HERRICK: Let's just take down in the
7 valley, maybe somewhere near Fresno?

8 WITNESS GRANT: Typically not for the Fresno
9 area, no. The water table creates a challenge because
10 there's a restriction to leaching. So, yeah, the Delta
11 has that challenge, and many other areas in Northern
12 California where wine grapes are growing do not have
13 that challenge.

14 MR. HERRICK: Besides being a barrier for
15 salts to leach out of the soil on Ryer Island, does the
16 tide affect that groundwater also?

17 WITNESS GRANT: That's beyond the topic of my
18 testimony.

19 MR. HERRICK: That's fine. Can you give us
20 any idea of the magnitude of the effects on wine
21 grapes -- excuse me.

22 Can you give us an idea of the magnitude of
23 wine that might be -- that doesn't work either, sorry.

24 Mr. Grant, you listened to Mr. Lange talk
25 about deficit irrigation, correct?

1 WITNESS GRANT: Yes, I did.

2 MR. HERRICK: And does deficit irrigation then
3 increase the potential for sodium and chloride problems
4 accumulating in the soil?

5 WITNESS GRANT: Yes, it certainly does.
6 Again, wine grapes are purposely deficit irrigated.
7 That is, they receive substantially less water than
8 they can use.

9 And that's done on purpose because, well, it
10 has a direct effect on the wine grape quality. It
11 increases the acidity. It lowers the pH, and it
12 increases what we call sensory compounds, secondary
13 metabolites, in particular phenolics. These are
14 especially important for red wines because they impart
15 astringency. The pigments, the red pigments,
16 anthocyanins, are phenolics.

17 So when we deficit irrigate, we end up with
18 more intense color, flavor, aroma potential in those
19 berries. So we do it on purposes. But of course, with
20 that, when there's less moisture in the system, less
21 moisture the ground, less moisture on the vine, salts
22 can become more concentrated. So, yes, we run a much
23 greater risk of salinity, sodium, and chloride problems
24 under deficit irrigation.

25 MR. HERRICK: So if the project that's

1 proposed through this petition runs the risk of
2 increasing the applied water salinity, do you believe
3 that increases the risk of salt building up in the soil
4 there?

5 WITNESS GRANT: Yes, it does.

6 MR. HERRICK: Those are all the questions I
7 have. I have one last thing if I may.

8 I didn't want to interrupt earlier or be
9 accused of providing testimony, but I would like to
10 request that the questions by San Luis Delta-Mendota
11 Water Authority to Mr. Lange and Mr. Hester be
12 stricken. I don't believe it's appropriate or germane
13 to this proceeding to ask a farmer to come in here and
14 pop the question on them, "Are there any other
15 documents that support your water rights claims?"

16 As we all know, that requires a huge title
17 search. There's hundreds of thousands of dollars,
18 potentially, of investigations. And the reason that's
19 germane here is he's now on the record as saying, "No,
20 I don't know of any other."

21 The State Board decisions and numerous
22 appellate court decision go over the criteria for being
23 a party or protestant, and they do not include the
24 proof by a percipient witness of his water rights.
25 That's been covered in many, many decisions. And so

1 that's my position. I would like that be stricken.

2 The Board can certainly deny that or rule
3 later, but I didn't think that was a very appropriate
4 line of questioning. Thank you.

5 CO-HEARING OFFICER DODUC: Thank you,
6 Mr. Herrick.

7 Mr. Jackson, you had previously commented on
8 this already. Do you have something new to add?

9 MR. JACKSON: Usually. But in this case, it
10 is simply that there has only been one set of water
11 rights noticed for this hearing. And that's whether or
12 not this is an application for a new water right by the
13 Bureau and DWR. So I think, again, the argument that
14 Mr. Herrick made was better made than I would make it.

15 CO-HEARING OFFICER DODUC: Kudos to
16 Mr. Herrick.

17 Ms. Des Jardins, briefly?

18 MS. DES JARDINS: Yeah, just briefly. There
19 is a procedure for protest of -- for, if someone feels
20 that a protest is sufficiently documented, to bring
21 that before the Board. And I believe that either
22 statute or regulation allows you to then request that
23 information from the protestant before dismissing the
24 protest.

25 I just wanted to suggest that perhaps that

1 procedure would have been appropriate to follow before
2 bringing it up on cross.

3 CO-HEARING OFFICER DODUC: All right.

4 Mr. Walter, your final comment on this before
5 we take it under consideration?

6 MR. VAN ZANDT: Ma'am Hearing Officer, may I
7 make a statement before Mr. Walter --

8 CO-HEARING OFFICER DODUC: Okay,
9 Mr. Van Zandt.

10 MR. VAN ZANDT: Under the professional rules
11 that guide practicing law in this state, Mr. Walters
12 has some basis to believe that Mr. Lange and Mr. Hester
13 do not in fact own water rights. He has the obligation
14 to bring that to our attention. If he does not have a
15 basis, then is a violation of our professional
16 standards of ethics for him to even ask those
17 questions.

18 CO-HEARING OFFICER DODUC: Mr. Walter, you
19 may --

20 MR. WALTER: Well, I disagree with
21 Mr. Van Zandt, you know, almost personal attack on my
22 professional ethics.

23 CO-HEARING OFFICER DODUC: All right.

24 MR. WALTER: I'll tell you that my clients in
25 other proceedings -- and instead of clients I'll say

1 member units of the San Luis and Delta-Mendota Water
2 Authority have had to go to the appellate courts to
3 prove that they were legal users of water. And that's
4 the Robie decision.

5 And what we're here talking about and what's
6 being alleged are injuries to legal users of water
7 under claims of water right. I quite honestly,
8 Mr. Van Zandt --

9 CO-HEARING OFFICER DODUC: No, you are not
10 going to respond to Mr. Van Zandt. Mr. Walter, you are
11 making your comments to me and to the Chair in terms of
12 considering this objection that has been noted by
13 Mr. Herrick, Mr. Jackson, and somewhat joined in by
14 Ms. Des Jardins.

15 MR. WALTER: I was asking questions to try to
16 establish what substantiation there are for the claimed
17 water rights that are being injured, which is the focus
18 of Part 1B, Part 1A also. And I think the Board is
19 aware, but there are many, many water practitioners,
20 and my clients and myself are among them, that have
21 very legitimate concerns about the claims of riparian
22 rights and pre-1914 rights in the Delta with regards to
23 the segmentation, subdivision of land in the Delta over
24 the course over time; the discontinuance of use over
25 time; et cetera.

1 And I think the Board and the Water Master and
2 everybody's been looking at that. So I'm on firm
3 ground asking the questions. If there are procedures
4 that we may invoke in the future, I was trying to
5 figure out what evidence has been submitted --

6 CO-HEARING OFFICER DODUC: All right.

7 MR. WALTER: -- to go to the standing question
8 of where the legal of water is, who they are.

9 CO-HEARING OFFICER DODUC: All right.

10 Mr. Herrick?

11 MR. HERRICK: I apologize. I just have to
12 correct that. Yes, there have been numerous cases and
13 appellate decisions based upon the determiner trying to
14 determine whether or not his clients have water rights.
15 That's because they were contractors.

16 CO-HEARING OFFICER DODUC: Enough. All right.

17 MR. HERRICK: But that's --

18 CO-HEARING OFFICER DODUC: Thank you. That's
19 all. I'm not entertaining any more comments on this
20 matter.

21 I need to give the court reporter and myself a
22 break. But before we do, let me just say that I think
23 there is at least another hour of cross-examination
24 from what I understand. And it's getting late. Would
25 there be any objections, Ms. Meserve, to dismissing

1 your Panel 2 and having them start fresh when we
2 reconvene next Thursday?

3 MS. MESERVE: I think I should probably take a
4 moment because I did not clear that date with everyone.
5 So I should run back and check.

6 CO-HEARING OFFICER DODUC: Actually, we'll
7 take a break for the court reporter. So that's a good
8 time for you to do that.

9 And why don't we reconvene at 3:00 o'clock.

10 MS. MESERVE: Thank you.

11 (Recess taken)

12 CO-HEARING OFFICER DODUC: All right. Let's
13 do a little bit of housekeeping before Mr. Brodsky
14 comes up for his cross-examination.

15 Ms. Meserve.

16 MS. MESERVE: Yes, thank you. We have
17 conferred with my panel, the second panel on physical
18 injuries to land and groundwater. And everyone can
19 come back on Thursday the 10th. I've asked them to
20 show up at 9:30 because City of Stockton has requested
21 to go at 9:00 a.m., which works fine for us.

22 CO-HEARING OFFICER DODUC: Thank you for
23 coordinating.

24 MS. MESERVE: Yes. And then we will proceed
25 in order after that to the San Joaquin County-led

1 harmful algal bloom panel.

2 CO-HEARING OFFICER DODUC: Okay. And you had
3 a request regarding a policy statement for your
4 Panel 2.

5 MS. MESERVE: Thank you for reminding me.

6 Yes, I have Mr. Warren Bogle here. And so
7 with your permission, I would go ahead and have him
8 present his policy statement for the panel that we will
9 present in full on next Thursday, as soon as we're done
10 with this panel.

11 CO-HEARING OFFICER DODUC: And just so
12 Mr. Keeling is assured that I did not just pick on him,
13 this would be a policy statement as part of your
14 opening statement for Panel 2?

15 MS. MESERVE: Yes.

16 CO-HEARING OFFICER DODUC: All right. Any
17 questions?

18 MS. TABER: Good afternoon, Chair Doduc.
19 Kelley Taber for the City of Stockton.

20 I'd just like to thank you and all the parties
21 for your flexibility in accommodating the City of
22 Stockton Stockton's schedule. And we'll be prepared to
23 go promptly at 9:00 a.m. next Thursday.

24 CO-HEARING OFFICER DODUC: Thank you.

25 Mr. Brodsky, you are up for your

1 cross-examination.

2 So, Mr. Brodsky, I'm going to have to ask
3 before you begin, did you confer with Mr. Ringelberg
4 regarding the subject matter of your cross-examination?

5 MR. BRODSKY: I did briefly as to part of it.

6 CO-HEARING OFFICER DODUC: Which part and in
7 which way?

8 MR. BRODSKY: The subject of our discussion
9 was that the label on DWR 5 Errata Page 25, is that
10 those rules applied between December and April and that
11 they don't apply year round.

12 CO-HEARING OFFICER DODUC: And in what manner
13 was your conversation with him regarding that aspect?
14 Did you coach him?

15 MR. BRODSKY: No, I asked him if that was his
16 understanding.

17 CO-HEARING OFFICER DODUC: And that is the
18 line of questioning you will be pursuing officially on
19 the record?

20 MR. BRODSKY: That's a small part of it.

21 CO-HEARING OFFICER DODUC: Okay.

22 Ms. Morris, I see you standing. You have a
23 standing objection, understand.

24 MS. MORRIS: And I understand your comments
25 earlier. But I think if I could -- I'll listen, but I

1 think it may be appropriate to allow us to do some
2 further re-cross based on some of the questions that
3 Mr. Brodsky may ask and some of the questions
4 Mr. Herrick asked, just in fairness because this really
5 is their witness's direct testimony. And we've already
6 completed our cross-examination of this witness.

7 CO-HEARING OFFICER DODUC: They are conducting
8 cross-examination of witnesses being presented by
9 Mr. Van Zandt and Ms. Meserve. There is as, I
10 understand it, no rule against surprises in
11 cross-examination. And unfortunately, there's also no
12 rule against friendly cross-examination.

13 So I will again say that, to the extent that I
14 find it valuable and that it helps the Board in terms
15 of providing information that is useful in our
16 determination without, obviously, violating any
17 procedural concerns, then I will allow it.

18 But your objection is noted.

19 Mr. Brodsky, how much time and what areas
20 specifically will be you covering?

21 MR. BRODSKY: I want to look at DWR 5, Page 25
22 and ask Mr. Ringelberg to explain what that graph
23 shows. And I want to look at the biological assessment
24 and what that says about bypass rules.

25 CO-HEARING OFFICER DODUC: That does not sound

1 like it will take too long.

2 MR. BRODSKY: I'm trying to go my cat out of
3 the vet before 5:00 o'clock, so I have a motive to get
4 out of here so he's not stuck there for the weekend.

5 CO-HEARING OFFICER DODUC: Oh, no.

6 MR. JACKSON: In terms of that, those are the
7 two areas I was going the ask about. So assuming that
8 Mr. Brodsky does his usual job, I won't have any cross.

9 CO-HEARING OFFICER DODUC: All right.

10 Mr. Brodsky, please do your usual job,
11 whatever that means.

12 MR. BRODSKY: Okay. Thank you.

13 CROSS-EXAMINATION BY MR. BRODSKY

14 MR. BRODSKY: For the record, Michael Brodsky
15 on behalf of Save the California Delta Alliance.

16 Good afternoon, Mr. Ringelberg.

17 If we could have DWR Errata 5, Page 25. Thank
18 you.

19 So, Mr. Ringelberg, is it your understanding
20 that this graph illustrates an example application of
21 proposed bypass flow rules for the North Delta
22 diversions?

23 WITNESS RINGELBERG: Yes, it is.

24 MR. BRODSKY: And if we could take a look for,
25 example, at the blue line there is illustrating Level 1

1 pumping. And so if Level 1 pumping were in effect,
2 they would not be able to divert 9,000 cfs until the
3 river flow reached approximately 30,000 cfs; is that
4 correct?

5 WITNESS RINGELBERG: That is correct.

6 MR. BRODSKY: Looks like slightly more than
7 30,000 there.

8 WITNESS RINGELBERG: Right, it's a touch.

9 MR. BRODSKY: A touch over so. So that's a
10 significant constraint on how much water they can
11 divert -- applying these rules is a significant
12 constraint on how much water they can divert at the
13 North Delta diversion point?

14 WITNESS RINGELBERG: I'm not sure I understand
15 what "severe" means in this context.

16 MR. BRODSKY: It constrains. It is a
17 constraint on how much water they can divert.

18 WITNESS RINGELBERG: It is. For the subject
19 period as they've proposed it from December to April,
20 that is a constraint.

21 MR. BRODSKY: That was my next question. But
22 it only applies between December and April?

23 WITNESS RINGELBERG: That's correct.

24 MR. BRODSKY: And not for the other six months
25 of the year, right?

1 WITNESS RINGELBERG: Yes.

2 MR. BRODSKY: Okay. And so looking at this
3 graph as a further example, if we look at the green
4 line, Level 3 pumping, and that reaches -- it looks
5 like that reaches 9,000 cfs diversion at about
6 22,000 cfs river flow, between 22-, 22,5- river flow;
7 is that the way you read it?

8 WITNESS RINGELBERG: Yes, it looks closer to
9 22,5-, but I believe that's correct.

10 MR. BRODSKY: By my calculator, that would be
11 about a 40 percent diversion rate?

12 WITNESS RINGELBERG: I believe that's correct,
13 yes.

14 MR. BRODSKY: So their own graph -- their own
15 example in their own graph is pretty consistent with
16 what your findings were?

17 WITNESS RINGELBERG: Yes.

18 MR. BRODSKY: Okay. Then I'd like to go to
19 SWRCB-104. And I believe we're referring to this
20 document as the submitted biological assessment.

21 And if we could go to Page 3-84. Thank you.
22 And so up at the top, the third hollow bullet point
23 under the first solid bullet point, if I may read that,
24 "July, August, September minimum flow of 5,000 cfs
25 required in river after diverting at the North Delta

1 intakes." Do you see that there?

2 WITNESS RINGELBERG: I'm sorry. Was it after
3 the first bullet or the second bullet?

4 MR. BRODSKY: It's -- there's the first dark
5 bullet point which says -- yes, "Bypass flow criteria."

6 And then under that, there are three hollow bullet
7 points. And the third one begins -- yes, right there.

8 Third one begins "July, August, September..."

9 WITNESS RINGELBERG: Yes, I see that.

10 MR. BRODSKY: And so is it your understanding
11 that the rule for July, August, and September is that
12 they must leave at least 5,000 cfs flowing in the
13 river?

14 WITNESS RINGELBERG: Yes, that is correct.

15 MR. BRODSKY: Okay. And then if we could go
16 down to Page 393 -- and up a little bit. Yeah, there.

17 And then do you see there where it says, "July
18 to September" and then there are two lines under that?

19 WITNESS RINGELBERG: That's -- yes.

20 MR. BRODSKY: And then in the first column, it
21 says, "If Sacramento River flow is over," and then on
22 the second line it says "5,000 cfs."

23 WITNESS RINGELBERG: Yes.

24 MR. BRODSKY: And then, "But not over," and it
25 says on the second line, "No Limit"?

1 WITNESS RINGELBERG: Yes.

2 MR. BRODSKY: "The bypass is a minimum of
3 5,000 cfs." That's in the third column.

4 WITNESS RINGELBERG: Well, we've shifted from
5 the Level 2 post pulse operations to the Level 3. So
6 that's the difference between the two colored lines on
7 the prior figure. I'm not certain what your question
8 is.

9 MR. BRODSKY: The question is that -- well, I
10 haven't asked a question yet. I was just reading the
11 columns.

12 But this is representing that, in the month of
13 July, August, and September, if the Sacramento River
14 flow is over 5,000 cfs, then the required bypass is a
15 minimum of 5,000 cfs?

16 WITNESS RINGELBERG: It is minimum of
17 5,000 cfs if the prior conditions for the pulse flow
18 operations have been met.

19 MR. BRODSKY: Okay. Thank you. I'm going to
20 leave it at that. Thank you very much.

21 CO-HEARING OFFICER DODUC: Thank you,
22 Mr. Brodsky.

23 Mr. Jackson?

24 MR. BRODSKY: I didn't hear any objections.

25 CO-HEARING OFFICER DODUC: Mr. Jackson, that

1 was a no?

2 MR. JACKSON: It's a "no."

3 CO-HEARING OFFICER DODUC: Ms. Des Jardins?

4 MS. DES JARDINS: All right.

5 CO-HEARING OFFICER DODUC: Go rescue your cat,
6 Mr. Brodsky.

7 MR. BRODSKY: Thank you. Wish me no traffic
8 on Highway 5.

9 MS. DES JARDINS: Actually, can we go first to
10 DDJ-131. Jason is anticipating me.

11 CO-HEARING OFFICER DODUC: And
12 Ms. Des Jardins, the topics that you will be exploring?

13 MS. DES JARDINS: So first I'm going to look
14 at the biological opinion and when it might not apply
15 and the actual permit --

16 My name is Deride Des Jardins. I'm a
17 principle with California Water Research. I'm
18 proposing to look first at conditions in which the
19 biological opinions won't apply and the actual permits
20 that are being applied for.

21 And then I want to look at some of
22 Mr. Ringelberg's testimony about a scenario that he
23 requested. And then I wanted to ask him some about
24 Delta flows and some about his statements about the
25 DSM2 model.

1 CO-HEARING OFFICER DODUC: And so most of your
2 questions are directed at Mr. Ringelberg?

3 MS. DES JARDINS: They're all for
4 Mr. Ringelberg.

5 CO-HEARING OFFICER DODUC: Okay. Actually,
6 Ms. Suard, are you questions directed at Mr. Ringelberg
7 as well?

8 MS. DES JARDINS: No.

9 CO-HEARING OFFICER DODUC: Sorry, guys. I
10 tried to dismiss you. Sorry.

11 All right, Ms. Des Jardins, please go forth.

12 CROSS-EXAMINATION BY MS. DES JARDINS

13 MS. DES JARDINS: So, Mr. Ringelberg, this is
14 for you. Can we bring out DDJ-131?

15 So this is just to establish some foundation.
16 Mr. Ringelberg, as you you've been discussing the
17 bypass flow criteria, this is for the biological
18 opinion protecting salmon; is that not correct?

19 WITNESS RINGELBERG: The bypass flow criteria
20 have the ability to protect smelt at certain flows and
21 salmon escapement at certain flows.

22 MS. DES JARDINS: Okay. There is recent
23 years. This is from fiss.org [phonetic]. We can
24 scroll down.

25 But recent years have been very hard on

1 salmonids. And there is -- this document's --

2 CO-HEARING OFFICER DODUC: And is this
3 document --

4 MS. DES JARDINS: This is just one statement
5 about impacts on Chinook salmon migrating in the
6 Sacramento River. I'm looking at what happens if,
7 during the permit term, the salmon and smelt are
8 extinct and the biological -- the limits of the
9 biological opinion might not apply.

10 Is that a possible scenario, Mr. Ringelberg?
11 In --

12 CO-HEARING OFFICER DODUC: I don't even know
13 what that means.

14 MS. DES JARDINS: In the year 2040 or 2060?

15 CO-HEARING OFFICER DODUC: Hold on.

16 Mr. Berliner?

17 MR. BERLINER: Objection. This assumes facts
18 not in evidence. We don't have anything in the record
19 indicating that salmon will be extinct by 2040, 2060,
20 et cetera. So this hypothetical is not based on any
21 facts that we have in front of us.

22 CO-HEARING OFFICER DODUC: Granted it's a
23 hypothetical.

24 Ms. Des Jardins, what is your question again?
25 I did not understand it.

1 MS. DES JARDINS: My observation is --

2 CO-HEARING OFFICER DODUC: No, no,

3 Ms. Des Jardins. What is your question? Be as

4 succinct as possible. What is your question to

5 Mr. Ringelberg?

6 MS. DES JARDINS: Well, for the question, I

7 would like to go to the actual permit terms that are

8 being sought, which is on the hearing notice which

9 Jason brought up, Page 9 of the hearing notice.

10 So this is the actual point of rediversion.

11 It's 10,350 cfs. And then if we scroll down to

12 Table 2, I believe the Department of Water Resources is

13 asking for -- there's three permits on the Sacramento

14 River for a total of 18,000 cfs. And there are no --

15 Mr. Ringelberg, are you aware of any bypass flows that

16 are being proposed that would protect agricultural

17 uses, or is this just relying on the biological

18 opinions protecting these endangered fish?

19 CO-HEARING OFFICER DODUC: I'm sorry. You're

20 asking Mr. Ringelberg about the petitioner's requested

21 change?

22 MS. DES JARDINS: Well, there's potentially

23 quite a high diversion here in these -- it looks like

24 up to the physical capacity of the facilities.

25 CO-HEARING OFFICER DODUC: So what is your

1 question for Mr. Ringelberg?

2 MS. DES JARDINS: So Mr. Ringelberg, one, the
3 first question is is there any bypass criteria outside
4 of the biological opinions for bypass flows other than
5 the -- of course there's water quality requirements.

6 WITNESS RINGELBERG: Is the question that
7 there are -- are there other bypass flow requirements
8 that are not --

9 MS. DES JARDINS: --- related to the BiOps?

10 WITNESS RINGELBERG: BiOps or water quality?

11 MS. DES JARDINS: Yeah.

12 WITNESS RINGELBERG: I'm not aware of -- that
13 question, in the way it's posed, I don't have an answer
14 to that. I believe that there's additional information
15 that I'm not familiar with enough to be able to answer
16 that.

17 MS. DES JARDINS: Okay.

18 CO-HEARING OFFICER DODUC: Fair enough. Thank
19 you.

20 MS. DES JARDINS: I just considered this a
21 question that should be raised because there was a
22 question about the biological opinion, and it's not
23 clear that's --

24 CO-HEARING OFFICER DODUC: Ms. Des Jardins,
25 you are cross-examining Mr. Ringelberg, not the

1 petitioners.

2 MS. DES JARDINS: Okay.

3 Mr. Ringelberg, given if there's capacity to
4 divert up to the physical capacity of the pumps, could
5 that cause more injury than your analysis, if the
6 biological opinion is not enforced during the
7 operation?

8 CO-HEARING OFFICER DODUC: Are you able to
9 answer that, Mr. Ringelberg?

10 MR. VAN ZANDT: The question's vague.

11 MS. DES JARDINS: He had some very specific
12 analysis at critically dry years assuming bypass flows.

13 But if that constraint wasn't there, could be
14 potentially more injury than your analysis?

15 CO-HEARING OFFICER DODUC: If you're not able
16 to answer, Mr. Ringelberg, just say so.

17 WITNESS RINGELBERG: I think I was clear that
18 I was looking at critically dry through average years
19 because of the data available to us. What was missing
20 from that were Yolo Bypass spill and other potential
21 users -- reasonably foreseeable users of Sacramento
22 River water.

23 But during periods of high flow, the system
24 does not appear to be constrained in terms of the water
25 available for diversion at these rates. So I don't

1 honestly have an answer along the lines of your
2 question, but I think that that answers that the system
3 is more complex than that question can get to.

4 MS. DES JARDINS: Okay. Thank you.

5 CO-HEARING OFFICER DODUC: Feel free to just
6 answer "I do not know."

7 MS. DES JARDINS: Yeah. From there, I'd
8 actually like to go to DDJ-112. I'm sorry. It's in my
9 already introduced exhibits, yeah. Page 5.

10 This is DWR's statement. On the bottom of
11 Page 5 is highlighted, "Existing and proposed" -- this
12 is with respect to, "Existing and proposed diversion
13 release and return flow schedules," the petitioners
14 were required to provide it. And this is what they
15 stated they provided.

16 Did you -- did you find this information
17 helpful in your analysis? It seemed like you mostly
18 relied on the Exhibit DWR -- I believe it's 515 that
19 DWR-71 referred to.

20 WITNESS RINGELBERG: Did I find this
21 particular area of the --

22 MS. DES JARDINS: Yeah. So they're stating
23 that Exhibit DWR-71 and that's slide that you relied on
24 essentially provides existing and proposed diversion
25 and release of stored water schedules. Your testimony

1 seemed to indicate that there was a lack of clarity
2 about that.

3 WITNESS RINGELBERG: Yeah, I have two points,
4 I think, that relate to what you're describing.

5 The first is I think this section is a
6 tautology; it's self-referential. So, "We will meet
7 the requirements by meeting the requirements." So
8 there wasn't anything I could use as a scientist to be
9 able to get further than that.

10 So I had to dig into 515 and the associated --
11 sorry -- DWR-515 and associated documents to be able to
12 decipher using the model data that they did provide and
13 then came to the conclusions which are described in my
14 testimony.

15 MS. DES JARDINS: Okay. Thank you. And you
16 had some concerns --

17 I'd like to go to DDJ-103. That's also in my
18 exhibits, yeah. And then Page 10. Scroll up a minute.
19 I'm not seeing my quote I need to highlight.

20 WITNESS RINGELBERG: The quote I believe
21 you're looking for is at the bottom of the
22 documentation paragraph.

23 MS. DES JARDINS: Oh, thank you. Let me go
24 down there, scroll down. Yeah, there it is.

25 CalSim II -- it's under, "Testing Quality

1 Control, Quality Assurance."

2 "CalSim II work fails to adequately report
3 technical results that would give knowledgeable readers
4 some sense of the quality, accuracy, sensitivity, or
5 uncertainty present in the results."

6 Did you find that, in trying to analyze the
7 modeling -- you mentioned meeting with Gwen Buchholz
8 and trying to ascertain what the flows would be in
9 North Delta. I specifically wanted to ask, did you
10 have similar issues?

11 WITNESS RINGELBERG: I did not do a
12 deconstruction of the CalSim II model or the associated
13 WRIMS model structure. My questions to Ms. Buchholz
14 and her team were, under the scenarios that they had
15 developed, how would this modeling show differences of
16 impacts.

17 And I came away from that with the
18 understanding that CalSim II is useful for certain
19 circumstances, which have been well covered in these
20 hearings, but not useful for circumstances such as
21 site-specific impacts as a result of the project or
22 proposed point of diversion.

23 MS. DES JARDINS: So from those discussions,
24 did you get some sense of the uncertainty in the
25 modeling?

1 WITNESS RINGELBERG: I did not. And I did not
2 ask for, nor did I get answers about the uncertainty of
3 the modeling. I'm familiar enough with the modeling
4 structure that it doesn't actually derive outputs that
5 could determine uncertainty.

6 MS. DES JARDINS: Okay. Thank you. My next
7 question goes to Exhibit II-24, your testimony. And I
8 wanted to go to Page 8, Line 25.

9 So you asked specifically -- yeah, that -- you
10 just scrolled past it, so -- sorry. Page 7. There we
11 go, Page 7, Line 25. "The project could complete the
12 type of modeling...demonstrate predictive impacts..."

13 And you were looking for bounding of maximum
14 salinity impacts. And I'm going to scroll down,
15 Page 8, to the top of Page 8.

16 "Bounding scenario would be months of July to
17 November, king tide, dry and very dry water year, third
18 and fourth years of drought, Winter Salmon Run...
19 protection... These are not hyperbolic bounds but
20 exactly what occurred in the last two years in the
21 Delta."

22 So, Mr. Ringelberg, you know, were you
23 observing what kind of conditions actually occurred in
24 the Delta in the last two years, like, in terms of
25 like, you know, CDEC results, EC, et cetera?

1 WITNESS RINGELBERG: I did. And that was the
2 basis for the slides in my presentation.

3 MS. DES JARDINS: Okay. So I wanted to go to
4 DDJ-123, which is a copy of "SF Estuary News." That's
5 on there. Yeah, here we go.

6 So this is a copy of "San Francisco Estuary
7 News." I wanted to go to Page 8. Sorry. Let's --
8 yeah. It's there we go, Page 8, and then stop.

9 So John Burau -- are you familiar with John
10 Burau of the U.S. Geological Survey?

11 WITNESS RINGELBERG: I am.

12 MS. DES JARDINS: So I wanted to read -- this
13 seemed relevant to the kind of conditions. This was in
14 January 28th, when there were fairly extreme salinity
15 incursion. "...states, 'Another thing that happens in
16 dry years when rivers are running so low is that the
17 tides, always the dominant hydrodynamic force in this
18 estuary, have a much greater influence.' He states 'We
19 had a really low Sacramento flows, a king tide, the
20 Delta Cross Channel gates were closed, so the tides had
21 nowhere else to go but up river. These three things
22 created super reversing flows at our Freeport gauge,
23 5,000 cfs going upstream, something we've never
24 measured before on the Sacramento River.'"

25 So I was going to ask if you were aware of

1 that incident or a similar incident where you had
2 unprecedented salinity intrusion and reverse flows
3 upstream during that 2014?

4 WITNESS RINGELBERG: No. I'm in conversation
5 with USGS about water quality monitoring but not about
6 flow monitoring.

7 MS. DES JARDINS: Okay. Thank you. That
8 concludes that exhibit.

9 And then I wanted to go back to Page 7 of
10 II-24, and I believe -- just a sec. Scroll up, yeah.

11 So, yeah, so you've specifically talked about
12 impacts on salinity being difficult to ascertain. And
13 you mentioned weak calibration and known errors at low
14 flows cause some of the issues. And I wanted to ask
15 you if you could elaborate further on that.

16 WITNESS RINGELBERG: Yes. There's been a
17 series of, quote/unquote, calibration activities that
18 have been done. I think the most refinement happened
19 back in 2006. There was a series of small scale
20 iterative quote/unquote calibrations or refinements.

21 It's not -- I don't consider robust. The
22 calibration to known documented sites with actual water
23 quality data and a cross-comparison and development of
24 an R-squared, which is basically the understanding of
25 the strength of the relationship between electrical

1 conductivity in the model and the real-world
2 conditions, such as the USGS station that we provided
3 our data from, is -- has identified a significant
4 weakness in the DWR modeling module, DICU or Delta
5 consumptive use module.

6 And because these modules interact, the
7 reliance on the interaction between these models makes
8 it very difficult to actually know which part of the
9 model is driving the other parts of the model. But it
10 appears at this point that the reason for the large
11 differential between model DC and the real-world DC is
12 due to how the model is calibrated.

13 The known errors at low flows I think has been
14 brought up here before a couple times. And in my
15 testimony it was identified -- let's see. Excuse me.
16 On II-30, Dr. Smith's slide presentation.

17 MS. DES JARDINS: Can we go to that, please?
18 I was going to ask about that next. And I believe
19 it's...

20 I wanted to ask you about Page 19 of this
21 model. So I believe that this shows the observed
22 versus DSM2 modeling. And if you could explain this a
23 little more?

24 WITNESS RINGELBERG: Sure. This -- this is an
25 illustration of the challenges when they were looking

1 at the -- when "they" -- when the Department of Water
2 Resources was looking at the installation of barriers
3 in the North and Central Delta for the purposes of
4 controlling salinity flow.

5 They established -- they completed a series of
6 model runs with the establishment of those barriers
7 within the model run. And, then, these are the outputs
8 of the model showing the differences in electrical
9 conductivity using the two model years, '76 and '77.
10 And the benefits were the drawbacks of placing those
11 barriers within that system in those locations during
12 those model years.

13 MS. DES JARDINS: Is there a difference
14 between the observed and DSM2 model before the barriers
15 -- in this graph?

16 WITNESS RINGELBERG: I believe so. It is
17 impossible to say, since they overlaid all the lines.

18 MS. DES JARDINS: Okay. Thank you. That's it
19 for this exhibit.

20 I'd like to go to DDJ-106, please, and Page
21 24. I'm almost done.

22 So scroll up, please. Okay, stop. Page 2.1.
23 So this is the 2014 annual report to the State Water
24 Board on Bay-Delta modeling. I don't know if you're
25 familiar with this. They stated that they were going

1 to calibrate DSM2 in a quantitative manner with
2 mathematically based techniques.

3 I don't know if you were aware of this
4 quantitative calibration and how it -- how it differs
5 from the kind of calibration that you described before.

6 WITNESS RINGELBERG: This is along the lines
7 of the calibration that I was describing before, and
8 this is what I meant also by one of the iterative steps
9 that the State is taking to improve its modeling
10 efficiency.

11 MS. DES JARDINS: So it's sort of a continuing
12 process attempting to improve this model?

13 WITNESS RINGELBERG: It's my experience with
14 models that there's never a completed model and that,
15 as new information comes in or new techniques come in,
16 that the models get iteratively re-manipulated.

17 MS. DES JARDINS: Okay. Thank you. Can we go
18 to DDJ-104, please. I'd like to go to Page 5.

19 So this is the report. There was -- the Board
20 convened a panel on analytical tools for evaluating
21 water supply effects in the Delta. And this is their
22 report. And they had recommended some specific
23 information be provided.

24 I'm wondering, you know, when was -- point
25 observations of stage flow and salinity, and then there

1 was net flow splits.

2 Did you have any information available to you
3 on how well the model results, like, for example,
4 matched point observations or -- of salinity at the
5 particular points you were looking at?

6 WITNESS RINGELBERG: I do not. Those data --
7 I've not seen any data provided by the applicants for
8 the salinity at the locations that I was looking at.

9 MS. DES JARDINS: As far as matching the flow
10 splits within the Delta, do you have any idea how the
11 underlying -- how well the underlying model actually
12 matches the flow splits and different flow rates?

13 WITNESS RINGELBERG: No, I don't.

14 MS. DES JARDINS: As far as representing low
15 flow, high flow, and transition periods, do you have
16 any sense of how well the model represents that?

17 WITNESS RINGELBERG: I do not.

18 MS. DES JARDINS: Representing spring neap,
19 tidal variation appeared to be critical to your
20 analysis; is that not true, at the last bullet point?
21 That a king tide would tend to push flows more up the
22 river? It's the last bullet point.

23 WITNESS RINGELBERG: I'm following you. I
24 think the important part of that question is that the
25 interaction between the variables that I was describing

1 in my written testimony is that you have to look at, in
2 combination, the factors that happen in droughts.

3 So as I mentioned, in high water years, the
4 system can export without any apparent influence on
5 salinity at these locations. But when you have the
6 large tides with the Delta barriers, with the Delta
7 Cross Channel operations and then the project
8 operations all in concert along with the restrictions
9 established by D1641 and others, that's what you have
10 to look at in terms of understanding what this system
11 is going to look like under the worst-case salinity
12 scenario. And that is not what we saw.

13 MS. DES JARDINS: Do you have any sense of how
14 well the model might represent the tidal various under
15 those conditions?

16 WITNESS RINGELBERG: I know from my
17 conversations with the Department of Water Resources
18 staff during the barriers, the proposed barriers
19 project, that they were having significant difficulties
20 modeling the tidal variation.

21 And one of the questions I had for them was,
22 with the removal of the habitat -- the habitat was a
23 large expansive area at tide between -- as part of the
24 habitat conservation plan, with the removal of that
25 habitat, wouldn't that change some of the salinity

1 intrusion?

2 And their response was essentially that they
3 were having a very, very difficult time running the
4 model in a way that provided output that was useful at
5 low flows such as they were having at that time.

6 MS. DES JARDINS: Finally, I want to get to
7 representing Delta island consumptive use. I think you
8 referred to that previously as something that was a
9 source of error potentially?

10 WITNESS RINGELBERG: Yeah, I'm not sure that
11 "error" is the appropriate word for that. It is a part
12 of the model, a module of the model, that represents
13 the consumptive water use from agriculture in the
14 Delta.

15 But Delta consumptive use includes open water
16 features as well as riparian and wetland water losses
17 as well that are consumptive. And when we had -- in
18 sitting down and talking with folks while there were
19 complaints about the Delta water use being extreme
20 during the drought, we looked at their numbers briefly
21 and couldn't identify the order of magnitude that they
22 were really working with with that consumptive use.

23 And so it appeared to me -- and I believe
24 that's been proven up in Dr. Smith's work as well;
25 she's put out a couple papers since then -- that Delta

1 island consumptive use model needs significant
2 reworking in order to improve its accuracy for
3 consumptive use in droughts.

4 CO-HEARING OFFICER DODUC: Thank you.

5 Are you finished, Ms. Des Jardins?

6 MS. DES JARDINS: I just wanted to ask one
7 follow-up.

8 CO-HEARING OFFICER DODUC: Hold on a second.

9 Mr. Mizell?

10 MR. MIZELL: I'd just like it to be on the
11 record that the Department objects to Mr. Ringelberg
12 testifying as to what DWR staff believe or feel when it
13 comes to the topics of his testimony.

14 CO-HEARING OFFICER DODUC: So noted.

15 Your final question, Ms. Des Jardins?

16 MS. DES JARDINS: It's just a follow-up.

17 So you were saying that there are some issues
18 with Delta island consumptive use and that that may
19 propagate through some of the rest of -- is it of DSM2
20 model results? Or -- I just wanted to clarify that.

21 WITNESS RINGELBERG: Sure. When you look at
22 the aggregate of the models as an inflow-outflow model
23 -- so you have water coming into the system from the
24 reservoirs, a little bit of additional seepage, and
25 then you have losses in that system from agriculture

1 and urban withdrawals.

2 And Delta island consumptive use was the
3 black box in the middle that was supposed to
4 specifically analyze this quite complex internal
5 system. And so the outputs in the system are the
6 outflows and the diversions for export. And so if you
7 look at that system really simply, there's no real
8 complexity to that. There's really inflow. There is
9 processing, which is consumptive loss. And then
10 there's outflow, and there are only two routes for
11 outflow.

12 MS. DES JARDINS: Okay. So it's the black box
13 in the middle that is absorbing and releasing water
14 that's creating uncertainty in the model? Is that what
15 you're saying?

16 WITNESS RINGELBERG: It provides uncertainty
17 when it comes to meeting the water quality obligations
18 by the State. So when they put water into the system,
19 then it goes through the system, and then when it hits
20 the black box, there appears to be more losses in the
21 black box than they expected with their modeling.
22 Therefore, they have to struggle to maintain their
23 water quality at the point of compliance.

24 MS. DES JARDINS: Okay, thank you very much.

25 CO-HEARING OFFICER DODUC: Thank you.

1 Ms. Des Jardins, did you consult with
2 Mr. Ringelberg prior to today regarding the topics of
3 your cross-examination?

4 MS. DES JARDINS: No.

5 CO-HEARING OFFICER DODUC: Okay.

6 Ms. Suard? I think Mr. Ringelberg, going
7 forward, given the objections made earlier by
8 Ms. Morris and did the Department, you might expect me
9 to be asking everyone who cross-examines you whether
10 they've had outside discussions with you. So you might
11 want to keep that in mind if anyone approaches you.

12 WITNESS RINGELBERG: Absolutely. When I've
13 been approached, I've said simply that "we can't speak
14 about this subject matter."

15 CO-HEARING OFFICER DODUC: Very wise.

16 Ms. Suard?

17 MS. SUARD: One question for Mr. Ringelberg,
18 and then the other questions will be for Mr. Grant and
19 Dr. Leinfelder-Miles.

20 CO-HEARING OFFICER DODUC: Now I'm going to
21 have to learn your name.

22 CROSS-EXAMINATION BY MS. SUARD

23 MS. SUARD: So, Mr. Ringelberg, you mentioned
24 pulse flows. Could you explain what that is? I'm not
25 sure everybody understands what that is.

1 WITNESS RINGELBERG: There's a variety of
2 different kinds of pulse flows. In the traditional
3 sense, from a --

4 MS. SUARD: Sorry. Let me be really specific,
5 make it easier. Pulse flows in the North Delta on
6 Steamboat Slough and Sutter Slough specifically.

7 WITNESS RINGELBERG: So there aren't discrete
8 pulse flows for those two locations. There are pulse
9 flows from releases from the dam systems that would
10 have an influence on those locations, if that's what
11 you're talking about.

12 MS. SUARD: So would water be released from
13 the dams, go down the Sacramento River, and then what
14 happens?

15 WITNESS RINGELBERG: Well, let me be clear.
16 Because of the structure of water storage behind the
17 dams, the dams are actually capturing what would
18 normally be the pulse flow.

19 So in springtime, a large amount of water
20 would ramp up from melting snow pack or rain and snow
21 events and would go through the system, essentially, as
22 a very large pulse. And that's where the name comes
23 from.

24 And that pulse flow mobilizes trapped
25 sediments and organic material, large woody debris and

1 moves that material through the system. And the
2 ecosystems have been -- they are organized such that
3 they take advantage of those flows, either for growth
4 purposes during the flooding or for fisheries purposes
5 where it might be outflow or attraction flow. So it
6 provides a number of different ecosystem values.

7 MS. SUARD: And the flow then goes down the
8 different sloughs, comes down Sacramento River and
9 goes. And are there pulse flows on Yolo Bypass as
10 well?

11 WITNESS RINGELBERG: I'm not sure Yolo Bypass
12 would be characterized as a pulse flow at -- when the
13 Sacramento River reaches a river stage -- I believe
14 it's 27 feet ASL, it spills into a concrete raceway
15 that then floods the span of the Yolo Bypass. So it
16 fills the ditches first. So it might be a pulse flow
17 in the individual ditches, including the toe drain.
18 I'm not certain of that, but the flows definitely rise
19 quickly.

20 But across the whole span of the Yolo Bypass,
21 it would not be considered a pulse flow. It's more of
22 an even flood.

23 MS. SUARD: So in the pulse flows, you
24 mentioned sediment and woody debris and all that that
25 comes down. To your knowledge, is there extra sediment

1 that's ever inserted in the last ten years?

2 WITNESS RINGELBERG: Not to the best of my
3 knowledge. Where I've seen sediment -- and "sediment"
4 covers a whole lot of sins in terms of the size, class,
5 the material. For the purposes of salmonid
6 restoration, we place gravels into the river in the
7 appropriate locations to be mobilized by pulse or flood
8 events.

9 MS. SUARD: Okay. That's it.

10 I had asked for some slides for Mr. Grant and
11 Dr. Leinfelder-Miles.

12 That's II-3, Page 20 and 29. And then II-14,
13 Page 5. So was this Mr. Grant -- was this yours?

14 WITNESS GRANT: Yes.

15 MS. SUARD: Okay. So I guess I should ask you
16 the questions.

17 So your testimony was about the impacts of
18 sodium and chloride on the different vegetation. How
19 does that affect larger trees, the same concern for
20 salinity in soil and in water?

21 WITNESS GRANT: Are you asking about larger
22 crop trees?

23 MS. SUARD: Well, it could be fruit trees, but
24 it could also be like native trees in the Delta like
25 oaks or willows or things like that.

1 WITNESS GRANT: Well, I can't speak to them
2 specifically, but I can say that the potential effects
3 would be similar. Plants differ in their tolerance for
4 salinity. Not being an expert on native vegetation, I
5 couldn't comment specifically, but the risks are the
6 same.

7 MS. SUARD: Okay. What if there is not the
8 capability -- I think a slide further down, Slide
9 No. 29 on this one. It talks about drainage. What if
10 you don't have the capability to drain off the higher
11 salinity water? What happens to plants?

12 WITNESS GRANT: Well, what happens is, below
13 ground, because there is no removal of salts, they
14 accumulate over time. The problems for plants
15 intensify accordingly. So salt becomes higher.

16 If that salt water is laden with sodium and
17 chloride, which would be the case with intruding
18 waters, you would have intensified problems in terms of
19 salinity-induced water stress and specific ion toxicity
20 from sodium and chloride.

21 MS. SUARD: So going back to vines, because
22 you said that was your expertise, if you had vines that
23 were sitting in higher salinity water, maybe not sea
24 water but more than 2 PPT or something like that and it
25 was sitting there in that, how long would it take

1 before those roots would die?

2 WITNESS GRANT: Again, the question is a
3 little vague for me. The normal -- well --

4 CO-HEARING OFFICER DODUC: If you don't
5 know --

6 WITNESS GRANT: Can you reframe or restate
7 that question? I think I can answer part of it, but
8 the way it's stated, I would probable take a long time
9 to get to your answer.

10 MS. SUARD: For reference, I'm really
11 referring to impacts -- tidal impacts when there's salt
12 water intrusion into Steamboat Slough and how does that
13 affect waterfront properties.

14 And if you have 12 hours in a day of higher
15 salinity water and then the tide goes out and there's
16 no flow going out, and then another 12 hours, the tide
17 comes in and you have higher salinity and no fresh
18 water outflow, how long do you expect a grapevine to
19 last under that condition?

20 WITNESS GRANT: I can't say how long it will
21 last specifically. It depends in part on the grapevine
22 itself, how large it is, how extensive the root system
23 is, how it had been managed before, how much water it
24 might have been transpiring due to the size of the
25 canopy. There are a number of variables in there.

1 I can say this, though. And that is the vines
2 will respond very rapidly to salinity. Plants are
3 very, very responsive to their environment. They're
4 highly dynamic. Every day they go through a time
5 change in terms of how hydrated the tissue are and how
6 much water is passing through.

7 And salts are passing -- are moving into the
8 vine with that water, so they're going to respond to
9 that salinity quite rapidly.

10 As far as what the decline is, I can't speak
11 to that specifically because there's too many variables

12 MS. SUARD: By "quite rapidly," do you mean
13 same day?

14 WITNESS GRANT: Oh, yeah, same day.

15 MS. SUARD: In a 24 hour period.

16 Okay. Dr. Leinfelder-Miles, you had a graphic
17 that's II-14, Page 5. I thought it might be helpful to
18 show the roots there. When you were doing your
19 studies, did you have an understanding of what level of
20 EC or, you know, how much salinity could the plants on
21 Ryer Island tolerate?

22 WITNESS LEINFELDER-MILES: I have the
23 reference that I've mentioned before in my testimony
24 that names the crop tolerances expressed as soil
25 salinity, ECe, and water salinity, ECw.

1 MS. SUARD: Okay. And if the salinity was
2 higher than what you were testing at because of salt
3 water intrusion on the -- so we're talking about the
4 water side of the island instead of the inland side of
5 the island. What would you expect to happen to the
6 plants on the water side if the EC is higher?

7 WITNESS LEINFELDER-MILES: If the EC is higher
8 on the water side -- and, again, if I may ask a
9 clarifying question, this will be more for natural
10 vegetation?

11 MS. SUARD: Oak tree, oaks are natural there.
12 An oak tree.

13 WITNESS LEINFELDER-MILES: I don't feel like I
14 have the expertise to speak to oak trees, I'm afraid.
15 I don't know what the tolerance of oak trees is to
16 salinity.

17 MS. SUARD: Okay. Any large trees? Are you
18 familiar with any larger woody -- there was some
19 testimony about larger woody-type things. Pear trees
20 or peach trees?

21 WITNESS LEINFELDER-MILES: Pear trees? I
22 talked about pear trees in my testimony, and we would
23 expect -- we don't actually have a lot of tolerance
24 data for pear trees. It's not named in the reference
25 that I've been using in my testimony previously. But

1 in another reference, I found that we would expect
2 yield declines if soil salinity reached 2.5 decisiemens
3 per meter. That reference doesn't name a water
4 salinity for pear.

5 MS. SUARD: Okay. Going back to the idea of
6 being able to -- there was testimony about draining the
7 soils, not draining the soils.

8 If soils are doused with water about every 12
9 hours -- sorry. Get salinity water higher than 2 PPT
10 water every 12 hours and then don't have an opportunity
11 to -- I think you called it leaching or, you know, like
12 flush out the salts, what would you expect of the
13 quality of the plant life on that soil?

14 WITNESS LEINFELDER-MILES: I guess, if I may
15 just clarify, 2.0 -- I'm using the unit decisiemens per
16 meter, which is the one that I'm most familiar with.
17 If plants were irrigated exclusively with water that's
18 2.0 decisiemens per meter, I mean, it would depend on
19 the quantity of water that's being applied. And why
20 that's important is because leaching is the amount of
21 water that falls below the root zone. So it's the
22 water in excess of what's being used by the plant.

23 So if water is being applied in excess of what
24 the plant is using and it has that high salinity we
25 could be getting leaching of salts but has Mr. Lange

1 has pointed out, we're not always doing that. We're
2 often applying water only in the amount that the plant
3 needs in order to achieve certain characteristics in
4 the fruit.

5 So in that case, if we're applying water with
6 high salinity, like 2.0 decisiemens per meter, and
7 we're applying it very efficiently to meet crop
8 evapotranspiration then, yes, I would assume salts to
9 be building up in the soil.

10 MS. SUARD: Okay. So I'm talking about a
11 different situation. I'm talking about when there's
12 king tides, tide comes in, waterfront property gets
13 flooded with high salinity water. So it's not just
14 gentle application of water. All the land is flooded,
15 and all the vegetation is flooded for a couple hours
16 with saltwater.

17 How long do you think it would take for the
18 plant roots to recuperate from that?

19 WITNESS LEINFELDER-MILES: I'm afraid it's a
20 system that's out of my expertise, and I don't have an
21 answer for your question. I'm more familiar with
22 irrigated agricultural systems.

23 MS. SUARD: Okay. That's it. Thank you.

24 CO-HEARING OFFICER DODUC: All right. Thank
25 you, Ms. Suard.

1 Any redirect, Mr. Van Zandt or Ms. Meserve?

2 MR. VAN ZANDT: I think we have a few
3 questions.

4 CO-HEARING OFFICER DODUC: Okay.

5 MS. MESERVE: Just a couple quick questions.

6 REDIRECT EXAMINATION BY MS. MESERVE

7 MS. MESERVE: For Mr. Grant, in cross, there
8 were questions about the effects on the plants from
9 sodium and chloride, and that was the subject of your
10 testimony.

11 Can you explain what happens to plant growth
12 and productivity when there's longer periods of higher
13 application of water with sodium and chloride than
14 would occur during a normal couple-year drought?

15 WITNESS GRANT: So prolonged exposure to
16 sodium and chloride based salinity. Well, as I
17 described in my presentations, there's a loss of leaf
18 surface as sodium and chloride accumulates in leaves,
19 that those tissues die due to toxicity.

20 And accordingly, the vine's capacities to
21 produce carbohydrates to photosynthesize diminished.

22 Within the vine, there's some internal
23 competition for those carbohydrates. There's sort of
24 sink relationships. And certain tissues, certain
25 organs are stronger sinks. And grape vines, during

1 fruit development, the primary sink is the fruit. So
2 whatever carbohydrates are being produced in a vine
3 whose leaves have been compromised due to sodium and
4 toxicity, those carbohydrates will mostly go into the
5 fruit to try to ripen, mature the fruit.

6 Normally, when vines are growing normally
7 without the persistence of sodium and chloride there's
8 an abundance of carbohydrates. And a portion of those
9 will be stored in woody vine tissues, primarily roots,
10 but to some extent, the trunks and the carbohydrates.

11 And those reserves of carbohydrates are
12 essential for woody crops like grapevines because they
13 will rely on them the following year for early season
14 growth. Essentially the shoots on a vine are dependant
15 on them until there's about four or five unfolded
16 leaves and there's enough solar panels on there to
17 actually fix the carbohydrates so the shoots can become
18 self-sufficient.

19 So what happens with prolonged exposure is you
20 get on kind of a declining situation because one year
21 you've had insufficient carbohydrates for the vines.
22 They leaf out next year. They struggle. Maybe they
23 make full canopy. Hopefully they do. But if they're
24 exposed again to those sorts of conditions, well, then
25 there's that much less carbohydrates to be stored away.

1 And quite likely the next year, there won't be enough
2 for the vines to survive.

3 I have seen vines depleted of carbohydrates
4 severely. And what they do is they break bud, one or
5 two leaves appear, and then the vine collapses.

6 MS. MESERVE: Have you looked at, Mr. Grant,
7 how much wine production would be at risk if there are
8 these kind of conditions that you just described over a
9 prolonged period of time in the Delta?

10 WITNESS GRANT: Yes, I have. I recently
11 looked at the crush report that the CDFA produces and
12 the acreage report. And I found that, for Crush
13 District 17, which represents the North Delta, there's
14 about 22,000 acres of grapes.

15 If we assume an average yield of 8 tons of
16 grapes per acre and wine yield of about 70 cases per
17 ton that would equate to about 12 million cases of
18 wine.

19 MS. MESERVE: And in your cross was also
20 discussed what levels of salts might occur under the
21 project. Are you aware in your work of places where
22 there are legal limits on salt levels for applications
23 to vines?

24 WITNESS GRANT: Yes, I am.

25 Again, in the course of -- in reviewing

1 information available to me, I came across a paper.
2 Actually, it's one that's cited here in the de Loryn
3 paper. It lists some sensory thresholds that tasters
4 are able to detect. But it also cited limits, legal
5 limits.

6 In Australia, the legal limit for chloride is
7 606 parts per million. And in South Africa, they have
8 a legal limit for sodium, 100 parts per million. And
9 in Switzerland, there's a legal limit on the amount of
10 sodium that's permissible in wine. And that is 60
11 parts per million.

12 And just it's interesting to note that that is
13 actually below the detection of most tasters. They
14 can't taste the sodium in the wine at those levels.
15 The exception might be the Australian thing, because
16 that's a little bit higher, 600 parts per million.

17 MS. MESERVE: And that report, de Loryn, is
18 II-7, correct?

19 WITNESS GRANT: That's correct thank you.

20 MS. MESERVE: Okay. And just a couple
21 questions for Mr. Ringelberg.

22 Mr. Berliner asked you about the other
23 constraints on the operation of the tunnels besides the
24 bypass flows shown in DWR-515 and elsewhere. Those
25 included D1641 compliance and the yet-to-be-developed

1 biological opinion for the proposed project.

2 With respect to the existing operation of the
3 projects by DWR and the Bureau, are you aware of
4 exceedances of the D1641 standards being allowed at
5 times?

6 WITNESS RINGELBERG: I am. The D1641 standard
7 is occasionally exceeded.

8 CO-HEARING OFFICER DODUC: Hold on.

9 MR. MIZELL: I'm going to object to this as
10 being beyond the scope of the cross-examination. At no
11 point has his direct or cross-examination discussed
12 violations of D1641.

13 CO-HEARING OFFICER DODUC: Fair enough.

14 Ms. Meserve.

15 MS. MESERVE: Mr. Berliner specifically talked
16 about other limits on -- we talked about 515, and that
17 that was the bypass flow limits. And then Mr. Berliner
18 specifically mentioned the two different other
19 constraints that might occur on operation of the
20 project. So I'm simply following up on that point.

21 CO-HEARING OFFICER DODUC: That point did not
22 include violations, however. So I am sustaining the
23 objection.

24 MS. MESERVE: I could use without violation.

25 CO-HEARING OFFICER DODUC: Then do it without

1 violation.

2 MS. MESERVE: Thank you very much.

3 Okay. So the question would be with respect
4 to the existing operations of the projects, are you
5 aware of times that exceedances of the D1641 standards
6 are allowed?

7 MS. MORRIS: Same objection.

8 CO-HEARING OFFICER DODUC: "Exceedances" means
9 violation, sort of.

10 MS. MESERVE: Well, I believe the position of
11 department and others is that, when they receive a TUCP
12 it's not a violation. That's what I heard in their
13 testimony, I believe. So I'm just clarifying -- asking
14 Mr. Ringelberg to clarify that, if you think it's --

15 CO-HEARING OFFICER DODUC: All right, hold on.
16 Hold on. Your objections are noted.

17 Let's let Mr. Ringelberg answer.

18 WITNESS RINGELBERG: Yes, the projects have
19 received TUCPs in the past for their -- in order to
20 change the requirements for their meeting D1641.

21 MS. MESERVE: And with respect to the existing
22 biological opinions, do you recall that, in 2015, Fish
23 and Wildlife Service approved an increase from 78 to
24 196 in take levels of Delta smelt under a reasonable
25 and prudent alternative of the biological opinion?

1 MR. BERLINER: Objection, never discussed that
2 in my cross-examination.

3 MS. MESERVE: He talked about a biological
4 opinion under existing operations, as well as a BA that
5 is in draft form. So I believe he brought this issue
6 up.

7 MR. BERLINER: We never discussed take limits.
8 We only talked about flow.

9 CO-HEARING OFFICER DODUC: All right. I'll
10 note your objection. I'll allow Ms. Meserve a little
11 bit of leeway.

12 WITNESS RINGELBERG: Ms. Meserve, could ask,
13 that question again?

14 MS. MESERVE: Do you recall, Mr. Ringelberg,
15 that in 2015 Fish and Wildlife approved an increase of
16 a more than doubling of take levels for Delta smelt
17 under the existing biological opinion?

18 MR. BERLINER: Objection, assumes facts not in
19 evidence.

20 CO-HEARING OFFICER DODUC: Mr. Ringelberg, do
21 you know?

22 WITNESS RINGELBERG: I do.

23 CO-HEARING OFFICER DODUC: Go ahead and
24 answer.

25 WITNESS RINGELBERG: I recollect that

1 scenario. I'm not quite sure of the question. Yes, I
2 do recollect that.

3 CO-HEARING OFFICER DODUC: So what is the
4 question?

5 MS. MESERVE: I just -- that's all I needed.
6 I just wanted to know if he acknowledged that that
7 happened.

8 Okay. Last question: Are the problems with
9 the modeling in the Delta consumptive use that you were
10 asked about in cross-examination a few minutes ago, are
11 those described in the Dr. Smith's PowerPoint that is
12 both Land 8 and Land 8 Errata?

13 WITNESS RINGELBERG: Yes, elements of the DICU
14 challenges DWR faces are described in that.

15 MS. MESERVE: Thank you.

16 CO-HEARING OFFICER DODUC: Thank you,
17 Ms. Meserve. Is there recross?

18 Hold on. Let's start with the Department.

19 Mr. Walter, I saw you standing up, but I
20 assume you have some recross.

21 MR. WALTER: Oh, no.

22 CO-HEARING OFFICER DODUC: The only one left
23 is Ms. Des Jardins. Recross?

24 Never mind. Go ahead, Mr. Mizell and
25 Mr. Berliner.

1 RECROSS-EXAMINATION BY MR. MIZELL

2 MR. MIZELL: This is a question for Mr. Grant.

3 So Ms. Meserve asked you a redirect question
4 about the sodium and chloride and toxicity and what
5 happens to plants during longer application of higher
6 EC water. And you, I believe, responded something --
7 and I'm paraphrasing here, not your words mine, but
8 toxicity and plant death.

9 What irrigation pattern were you assuming when
10 you made that answer?

11 WITNESS GRANT: I was assuming a normal
12 irrigation pattern.

13 MR. MIZELL: And what would a normal
14 irrigation pattern consist of?

15 WITNESS GRANT: It would consist of
16 irrigating, applying enough water to replace water lost
17 to the atmosphere as evapotranspiration early in the
18 season until full canopy is developed, followed by
19 deficit irrigation to enhance the quality of the
20 grapes.

21 MR. MIZELL: And what leaching pattern were
22 you assuming?

23 WITNESS GRANT: That's assuming no leaching
24 except for perhaps what's happening earlier in the
25 season with the irrigation and any measures that might

1 have been taken over the winter. Again, that's just
2 looking at season.

3 MR. MIZELL: And what sort of soil drainage
4 characteristics were you assuming?

5 WITNESS GRANT: Under that pattern, drainage
6 may not be as critical, actually. I didn't really stop
7 the think about that, but it certainly -- where you
8 have a high water table, the impact would be almost
9 immediate.

10 On better drained ground, you have a little
11 more attitude.

12 MR. MIZELL: So what sort of drainage
13 infrastructure were you assuming?

14 WITNESS GRANT: Again, I was thinking of
15 well-drained soil as I was speaking it. But you know,
16 if you want to frame it in the Delta, the sort of
17 scenario I described would happen quite rapidly in
18 terms of harm to the vines both in season and then the
19 corresponding decline over a couple of seasons.

20 MR. MIZELL: So you assume that agriculture in
21 the Delta do not have drainage facilities and they have
22 a high water table that would result in such a rapid
23 response?

24 WITNESS GRANT: Well, they do have a high
25 water table, and there is drainage, but it's drainage

1 that's typically restricted to some extent.

2 MR. MIZELL: And what precipitation pattern
3 were you assuming?

4 WITNESS GRANT: A normal year.

5 MR. MIZELL: And a normal year would consist
6 of how many inches of rainfall in your estimation?

7 WITNESS GRANT: In the Delta, it would
8 probably be in the neighborhood of 13 to 15 inches.

9 MR. MIZELL: Thank you very much.

10 WITNESS GRANT: You're welcome.

11 MR. BERLINER: I have a few additional
12 questions, please.

13 RE-CROSS-EXAMINATION BY MR. BERLINER

14 MR. BERLINER: My questions are just for
15 Mr. Grant. We have some questions for Mr. Ringelberg
16 after that.

17 Mr. Grant, when you were responding to
18 Ms. Meserve's question about the impact of salts, where
19 were you thinking of where that occurred?

20 WITNESS GRANT: I didn't have some place in
21 mind specifically. I'm just talking about the sorts of
22 normal things that happen with salinity. I've seen
23 that scenario actually on -- as we're reflecting on it,
24 I first witnessed that sort of scenario on very sandy
25 ground at Livingston when I worked at Gallo.

1 MR. BERLINER: But in responding to her
2 question, were you just answering generically, not with
3 respect to any particular area?

4 WITNESS GRANT: Yeah, that's a generic answer.
5 Yes.

6 MR. BERLINER: Also in response to a question,
7 which I guess was a hypothetical, you indicated that,
8 if there were higher salts in the Delta, that wine
9 production would be at risk. Did I paraphrase that
10 correctly?

11 WITNESS GRANT: Do you mean production in
12 terms of yield?

13 MR. BERLINER: Yes.

14 WITNESS GRANT: Yes.

15 MR. BERLINER: You mentioned District 17. Is
16 that the North Delta area?

17 WITNESS GRANT: That's correct. Crush
18 District 17 represents the North Delta.

19 MR. BERLINER: Did I understand that you to
20 said there were 2200 acres in production?

21 WITNESS GRANT: Yes. Actually, the most
22 current number is 21,900. That's from the 2015 acreage
23 report.

24 MR. BERLINER: So just under 22,000 are in
25 production?

1 WITNESS GRANT: That may include non-bearing
2 acres, but there are just under 22,000 acres of wine
3 grapes. So a portion of that may be non-bearing.

4 MR. BERLINER: How many were -- do you know
5 how many were in production about, let's say, ten years
6 ago?

7 WITNESS GRANT: No, I don't know what that
8 number would be off the top of my head.

9 MR. BERLINER: Do you have an estimate?

10 WITNESS GRANT: No, I don't. I know it's been
11 a moving target.

12 MR. BERLINER: Has it been increasing or
13 decreasing?

14 WITNESS GRANT: It has been increasing.

15 MR. BERLINER: Is it steadily increasing?

16 WITNESS GRANT: I don't know that it's been
17 steadily. I mean, there are market forces at work.
18 The trajectory has been upwards, but you know, whether
19 there was a -- you know, there's been boom periods and
20 then there's been periods where planting is slow.

21 MR. BERLINER: What about production? Has
22 production per acre increased?

23 WITNESS GRANT: I believe production per acre
24 has increased, and I think that has to do with a number
25 of factors, one being that the vintner designs that

1 we're using are designed for greater production on
2 these newer vineyards. The newer vineyards are higher
3 quality material. Some of the older vineyards were
4 affected by viruses. And I think just the general
5 skill level among growers has steadily improved. Over
6 my career I've seen grape growing improve dramatically
7 in a number of ways.

8 MR. BERLINER: In response to the question,
9 the hypothetical about the salts, I believe that
10 Ms. Meserve asked it in the context of higher salts
11 than during the drought. Do you recall that?

12 WITNESS GRANT: No, I don't.

13 MR. BERLINER: Do you know if salts increased
14 during the drought?

15 WITNESS GRANT: Increased where?

16 MR. BERLINER: In the North Delta area, in the
17 District 17 area.

18 WITNESS GRANT: In the vines, in the soils,
19 or --

20 MR. BERLINER: In the water.

21 WITNESS GRANT: I know there have just --
22 well --

23 MR. BERLINER: If you don't know, that's okay.
24 But if you know, then I'd appreciate your response.

25 WITNESS GRANT: Well, I have seen water

1 analysis that indicate that there have been periods of
2 times when salinity was elevated. As far as
3 directly -- a direct -- you know, in relationship to
4 the drought, I can't speak to that.

5 MR. BERLINER: And you indicated that there
6 are limits on salts in the wine in different places in
7 the world; is that right?

8 WITNESS GRANT: Yes, I did.

9 MR. BERLINER: Are there limits on salts in
10 the United States?

11 WITNESS GRANT: Not to my knowledge.

12 MR. BERLINER: Do you know what the range of
13 salt content is in wine in the United States?

14 WITNESS GRANT: No, I don't.

15 MR. BERLINER: Is the salt content of wine
16 affected by the salt content in the water that's
17 applied to the crop?

18 WITNESS GRANT: Yes.

19 MR. BERLINER: And did I understand right
20 that, in Australia, wine can have salt in it at about
21 600 parts per million; is that correct?

22 WITNESS GRANT: It can. It can have it higher
23 than that as well. That is the legal limit that is
24 acceptable in Australian wine for chloride, measured as
25 sodium chloride.

1 MR. BERLINER: All right. I have no further
2 questions. Thank you.

3 RE-CROSS-EXAMINATION BY MR. MIZELL

4 MR. MIZELL: So these questions are for
5 Mr. Ringelberg.

6 What is the basis, the factual basis for your
7 explanation just given to Ms. Meserve about the
8 existing biological opinion?

9 WITNESS RINGELBERG: My recollection was that
10 I read the article in the Bee, that I received
11 information by e-mail from a list serve, and that there
12 were multiple conversations within the fisheries
13 community.

14 MR. MIZELL: Where that in your written
15 testimony or your oral testimony or in your PowerPoint
16 presentation?

17 WITNESS RINGELBERG: It isn't in those places.

18 MR. MIZELL: Is it in anyplace in the record
19 to date?

20 WITNESS RINGELBERG: I'm not aware that it is.

21 MR. MIZELL: No more questions, thank you.

22 CO-HEARING OFFICER DODUC: Does that conclude
23 the Department's recross?

24 MR. MIZELL: (Nods head)

25 CO-HEARING OFFICER DODUC: Ms. Morris, does

1 the State Water Contractors have recross?

2 And then, Mr. Walter, you have recross? And I
3 think the only other person is Ms. Des Jardins.

4 Ms. Daly do you wish to have recross or
5 Ms. Suard?

6 MS. DALY: No, thank you.

7 CO-HEARING OFFICER DODUC: Okay.

8 RECROSS-EXAMINATION BY MS. MORRIS

9 MS. MORRIS: In response to Ms. Meserve's
10 question about the biological opinions, isn't it true
11 that the revision was just a calculation to the take
12 permit?

13 WITNESS RINGELBERG: I'm not sure I'd I
14 characterize it that way. It was a recalculation of
15 the statistical sample, I believe.

16 MS. MORRIS: So how they calculate the take,
17 correct?

18 WITNESS RINGELBERG: In how the take limit is
19 articulated.

20 MS. MORRIS: Did it change any of the other
21 requirements in the biological opinion?

22 WITNESS RINGELBERG: I'm not aware that it
23 did.

24 MS. MORRIS: So therefore, it wouldn't have
25 any impact on the flow requirements that Mr. Berliner

1 was asking you about?

2 WITNESS RINGELBERG: That -- well, so that I
3 don't believe to be true.

4 So when you -- there are take thresholds. And
5 so when you're over the take threshold, that changes
6 operational requirements.

7 MS. MORRIS: Okay. Well, let me go back then.

8 Did the change in the biological opinion that
9 you read about in the Sac Bee and heard about in
10 fisheries community, did it change the OMAR
11 restrictions?

12 WITNESS RINGELBERG: I'm not aware that it
13 did, no.

14 MS. MORRIS: Did it change any outflow
15 restrictions?

16 WITNESS RINGELBERG: Again, I don't know the
17 answer to that.

18 MS. MORRIS: So if it doesn't change the flow
19 restrictions in the permit, how are you basing any
20 claim that it's having a change on the flow?

21 WITNESS RINGELBERG: Let me be clear. It
22 didn't change those restrictions, to the best of my
23 knowledge. What it changed was the ability of the
24 project to take water over a take threshold of the
25 fish.

1 MS. MORRIS: So it changed exports?

2 WITNESS RINGELBERG: That's correct.

3 MS. MORRIS: Not flow?

4 WITNESS RINGELBERG: Well...

5 MS. MORRIS: I have no further questions.

6 CO-HEARING OFFICER DODUC: Thank you,

7 Ms. Morris.

8 Mr. Walter?

9 I'm going in the group order, Ms. Des Jardins.

10 MS. DES JARDINS: Sorry.

11 RECROSS-EXAMINATION BY MR. WALTER

12 MR. WALTER: Just a couple questions for you

13 Mr. Grant, since we talked about salinity on your

14 redirect.

15 In terms of your testimony about salinity and

16 the possible effects of salinity on crops, I just want

17 to make sure that I've heard correctly that those were

18 all general conclusions about what might happen given

19 certain levels of salt or increases in a crop; is that

20 true?

21 WITNESS GRANT: I'm not sure what you're

22 asking me. It's a little vague.

23 MS. SUARD: I guess I'm asking have you today,

24 in any of your testimony, presented any analysis you've

25 conducted of any incremental effects on salts in the

1 soils in the North Delta that might be caused by the
2 WaterFix project as you understand it?

3 WITNESS GRANT: I presented no data today.

4 MS. SUARD: So without any quantitative
5 estimate in any period of time, you know, average
6 amount of time of the incremental effect, if any, on
7 some of these constituents -- salt and EC, what have
8 you -- there's no way for you to -- well, you also
9 today have not offered any opinion on the impacts on
10 any crops in the North Delta that might be caused by
11 the North Delta diversions and the project, the
12 WaterFix project issue here?

13 WITNESS GRANT: Is there a question in there?

14 MR. WALTER: You haven't offered any -- let's
15 step back. You've offered no opinion today or any
16 analysis of any affects caused by the WaterFix project
17 on salts on the soils in the North Delta that you've
18 been talking about all day?

19 WITNESS GRANT: I'm a little confused because
20 I gave my testimony yesterday. That's when I presented
21 what I had to say. Today I've just been fielding
22 questions.

23 MR. WALTER: Well, fair enough. So blend the
24 two days together; it's happened in my head a little
25 bit myself. And I appreciate your testimony about

1 salts.

2 But the point is, that's all been general
3 testimony. You've presented no analysis, yesterday or
4 today, regarding the incremental impact, if any, that
5 the WaterFix project might cause on salt levels in the
6 North Delta?

7 WITNESS GRANT: That was beyond the scope of
8 my testimony. My testimony -- I was charged with
9 addressing the issues of salinity on crops. And that's
10 what I believe I did.

11 MR. WALTER: Okay. And so you prepared no
12 analysis of any effects of the WaterFix project on
13 crops vis-a-vis any causal relationship with salts?
14 That's just a part of your testimony?

15 I think it's a simple yes-no answer. I'm not
16 trying to trap you or anything. I'm just trying to
17 understand, and I think you've confirmed you gave a
18 very general presentation. And even in your discussion
19 with Ms. Meserve, which -- I thought I heard some
20 question estimating the impact of the project on the
21 wine production in the North Delta. I'm just trying to
22 be clear.

23 There's wine production in the North Delta --

24 CO-HEARING OFFICER DODUC: Mr. Walter, you
25 really should have quite while you were ahead.

1 Mr. Grant, I understand your answer, your last
2 answer to Mr. Walter was that you were charged with
3 providing a general analysis and general testimony with
4 respect to the impacts of salt.

5 WITNESS GRANT: Yes.

6 CO-HEARING OFFICER DODUC: Let's leave it at
7 that, Mr. Walter.

8 MR. WALTER: No further questions.

9 CO-HEARING OFFICER DODUC: Ms. Des Jardins.

10 RE-CROSS-EXAMINATION BY MS. DES JARDINS

11 MS. DES JARDINS: Thank you. I would like to
12 pull up Land 8 Revised, which referred to -- and then
13 go to Slide 13.

14 So -- and this question is for Mr. Ringelberg.
15 Mr. Ringelberg, first, for the record, did you testify
16 on possible increases in EC in the North Delta as a
17 result of the WaterFix?

18 WITNESS RINGELBERG: I did.

19 MS. DES JARDINS: Thank you. So I believe
20 your testimony on recross may have referred to this
21 slide. It appears to show different Delta consumptive
22 use. I wondered if you could comment the difference,
23 for example, between average and drought years.

24 CO-HEARING OFFICER DODUC: First of all,
25 Mr. Ringelberg, did your answer on recross refer to

1 this slide? Are you familiar with this slide?

2 MS. DES JARDINS: Yeah, are you familiar with
3 this slide? Thank you.

4 WITNESS RINGELBERG: So I am familiar with
5 this slide. My answer in cross is not dependant on
6 this.

7 MS. DES JARDINS: I thought there was a
8 reference to Land 8 Revised, which is why I went and
9 looked for something about Delta consumptive use in
10 that slide.

11 WITNESS RINGELBERG: I did explain that this
12 is the source of my comments in my written testimony
13 for the consumptive use question.

14 MS. DES JARDINS: Was this a particular -- was
15 this part of what you looked at?

16 WITNESS RINGELBERG: This was an element of
17 what I looked at, yes.

18 MS. DES JARDINS: Okay. I'm just wondering if
19 you could explain a little the conclusions that you do
20 from this slide.

21 WITNESS RINGELBERG: As they related to the
22 cross? Or as they related to the --

23 CO-HEARING OFFICER DODUC: As related to the
24 cross.

25 MS. DES JARDINS: As related to the Delta

1 consumptive use.

2 CO-HEARING OFFICER DODUC: Only to the cross.

3 And I --

4 MS. DES JARDINS: Yes.

5 CO-HEARING OFFICER DODUC: Well, I'll let you
6 answer, but...

7 MS. DES JARDINS: I think it was with respect
8 to Land 8 had some information on Delta island
9 consumptive use.

10 WITNESS RINGELBERG: I was speaking more in
11 terms of the model application rather than particular
12 model runs.

13 MS. DES JARDINS: Okay. I just wanted to ask
14 you, does this show that Delta island consumptive use
15 increases in drought years?

16 WITNESS RINGELBERG: Yes, very clearly shoals
17 the difference between the purple line, in many cases,
18 and then the two dashed lines, the blue and the greens
19 lines. There are portions where they essentially track
20 identically.

21 MS. DES JARDINS: It looks like -- is it peek
22 depletions in summer go up substantially?

23 WITNESS RINGELBERG: That's an inference that
24 can be drawn from this. And the difference between
25 drought years, average, and the other runs.

1 MS. DES JARDINS: And it looks like there
2 may be something earlier in the season as well, more
3 earlier, as I look in the spring and late winter
4 months.

5 WITNESS RINGELBERG: It's not clear to me that
6 that's actually a germane portion of the DICU. I think
7 that's an example of how the model doesn't actually
8 reflect conditions on the ground.

9 MS. DES JARDINS: Okay. Thank you very much.
10 That concludes my cross.

11 CO-HEARING OFFICER DODUC: All right. Not
12 seeing any other taker, that should conclude this
13 panel.

14 And I again will ask you to wait until one
15 week after the completion of your direct to submit --
16 or within one week to submit a list of your exhibits to
17 be moved into the record.

18 MS. MESERVE: So would that be noon next
19 Thursday or Friday?

20 CO-HEARING OFFICER DODUC: When ever we've
21 finished with your -- whenever we finish with your
22 entire case in chief.

23 MS. MESERVE: Okay.

24 CO-HEARING OFFICER DODUC: As a group.

25 MS. MESERVE: Oh, okay.

1 CO-HEARING OFFICER DODUC: Didn't we do all
2 three panels as a group?

3 MS. MESERVE: That would be better.

4 CO-HEARING OFFICER DODUC: You have 19, 20 and
5 24, I believe, all sort of organized together.

6 MS. MESERVE: We would appreciate the time to
7 get everything in order.

8 CO-HEARING OFFICER DODUC: Let's do that at
9 the end of your Panel 3. Okay?

10 With that, we're done with this panel unless
11 Mr. Mizell has something to say.

12 And now we need to hear a policy statement
13 from Panel 2.

14 MS. MESERVE: Which I will briefly introduce
15 Mr. Bogle is presenting a policy statement in support
16 of the second panel. He is a named protestant who has
17 joined with Mr. Lange and Mr. Elliot as well as the
18 local agencies of the North Delta.

19 And we thought it would be more convenient for
20 him to go today. I'm not sure. But if we could go
21 ahead and show a picture of his diversions and let him
22 state his brief policy statement. Thank you.

23 CO-HEARING OFFICER DODUC: Thank you for
24 staying with us.

25 MR. MIZELL: Just like to know if the maps

1 that he'll be referencing, these are not being
2 submitted as part of your evidence -- I'm sorry. I
3 shall be addressing this to the Board.

4 Hearing Officer Doduc, will these maps be part
5 of the written record as exhibits of Land?

6 CO-HEARING OFFICER DODUC: We'll find out
7 after they complete their case in chief. For now, all
8 we're viewing this is for in the context of a policy
9 statement, which is not part of the evidentiary record.

10 MR. MIZELL: That was our expectation. Thank
11 you.

12 CO-HEARING OFFICER DODUC: Okay. Please
13 begin.

14 MR. BOGLE: Thank you.

15 My name is Warren Bogle, and I'm president and
16 vineyard director at Bogle Vineyards in Clarksburg.

17 CO-HEARING OFFICER DODUC: I do enjoy your
18 wine.

19 MR. BOGLE: Thank you. I hope you guys have a
20 glass tonight, salt free for now.

21 So I take great interest in this tunnel
22 project as its massive water diversion will have a vast
23 impact on our vineyards, our winery, employees, and the
24 many families who live in the Delta area.

25 Our families have been farming the Delta since

1 the late 1800s. For more than a century, we have
2 relied on the Sacramento River and other Delta
3 waterways to grow everything from alfalfa, corn, sugar
4 beets, safflower, wheat, and now wine grapes.

5 Since planting roots in the Clarksburg area,
6 we're the sixth generation of Bogle to have grown these
7 crops to help feed the nation.

8 Today, we manage nearly 1600 acres of wine
9 grapes in the Delta. The proposed new tunnel
10 diversions will take high quality water from the
11 Sacramento River, which will dramatically impact our
12 ability to produce fruit on the lands which we have
13 farmed all these years.

14 Two of our diversions are directly across the
15 river from the proposed intakes and infrastructure.
16 Adverse changes with these intakes include decreased
17 water quality and lower water levels, which is in
18 direct conflict with our water rights.

19 Our quality grapes are important, but we also
20 believe firmly in operating a sustainable farm and
21 winery. We take great care in limiting water waste by
22 using drip irrigation on 90 percent of our vineyards
23 and eco-friendly and sustainable farming practices in
24 our fields and in our winery on Hamilton Road in
25 Reclamation District 999.

1 Even with these sustainable practices, water
2 remains a scarce resource, and diverting up to 9,000
3 cubic cfs out of the Sacramento River will undermine
4 our ability to continue as farmers in the Delta as we
5 know it today.

6 It is not just the crops that will suffer if
7 the tunnels are allowed to be built and operated. We
8 employ more than 100 full-time employees, many who have
9 lived in the Delta and a large number who have been
10 part of the Bogle family for more than 20 years.
11 Interfering with our ability to farm these lands can
12 result in loss of jobs.

13 We take pride in our land, in our wine, and we
14 greatly care for the people that help Bogle Vineyards.
15 The tunnels will threaten the very existence of Bogle
16 Vineyards, and for that reason, the entire Bogle
17 family, its employees, we oppose this plan and
18 respectfully request the petition be denied.

19 Thank you.

20 CO-HEARING OFFICER DODUC: Thank you very much
21 for joining us.

22 If that's all, Ms. Meserve -- is there
23 anything -- any other questions?

24 If not, Mr. Mizell?

25 MR. MIZELL: I don't have any questions or

1 comments about the panel. I have an update on the CEQA
2 and permitting process following from this morning when
3 you're ready.

4 CO-HEARING OFFICER DODUC: I'm ready right
5 now.

6 MR. MIZELL: The update on the biological
7 permitting process is that we estimate the completion
8 of the BiOp process by the end of April 2017. And we
9 would expect a Final EIR by the end of this year.

10 The SESA compliance, or the permitting with
11 the State Endangered Species Act, would follow the
12 issuance of the notice of determination, which will
13 coincide with the record of decision, which will likely
14 come out one week after the BiOps. So it looks, if I
15 were to wrap it up in a nutshell, that you would be
16 expecting the beginning of May of 2017 for all of those
17 processes to come together.

18 CO-HEARING OFFICER DODUC: Thank you. I
19 appreciate the update. With that, then, we will
20 adjourn and return here at 9:00 o'clock next Thursday,
21 when we'll begin with the City of Stockton. And then
22 we will ask Ms. Meserve and Mr. Van Zandt or whoever to
23 present Panel No. 2 from Land, et al.

24 Thank you all. Have a good weekend.

25 (The proceedings recessed at 4:34 p.m.)

1 STATE OF CALIFORNIA)
2 COUNTY OF MARIN) ss.

3 I, DEBORAH FUQUA, a Certified Shorthand
4 Reporter of the State of California, do hereby certify
5 that the foregoing proceedings were reported by me, a
6 disinterested person, and thereafter transcribed under
7 my direction into typewriting and is a true and correct
8 transcription of said proceedings.

9 I further certify that I am not of counsel or
10 attorney for either or any of the parties in the
11 foregoing proceeding and caption named, nor in any way
12 interested in the outcome of the cause named in said
13 caption.

14 Dated the 14th day of November, 2016.

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DEBORAH FUQUA
CSR NO. 12948