STATE WATER RESOURCES CONTROL BOARD

PUBLIC HEARING

CALIFORNIA DEPARTMENT OF FISH AND GAME'S
LOWER YUBA RIVER FISHERIES MANAGEMENT PLAN
AND A COMPLAINT BY
THE UNITED GROUP AGAINST YUBA COUNTY WATER AGENCY
AND OTHER DIVERTERS OF WATER FROM THE LOWER YUBA RIVER
IN YUBA COUNTY

WEDNESDAY, MAY 17, 2000
PAUL R. BONDERSON BUILDING
SACRAMENTO, CALIFORNIA
9:00 A.M.

REPORTED BY: ESTHER F. WIATRE
CSR NO. 1564

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INDEX



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SACRAMENTO, CALIFORNIA

WEDNESDAY, MAY 17, 2000, 9:00 A.M.

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HEARING OFFICER BROWN: Come to order.

Mr. Lilly.

MR. LILLY: Thank you, Mr. Brown. We have a report that Mr. Minasian is stuck in traffic due to an accident on the highway he drives in on. So, I think, the best procedure is for us to go back to our witnesses and then he can go back to his exhibits when he gets here, if that is acceptable to you.

H.O. BROWN: Proceed.

MR. LILLY: We have just two remaining rebuttal witnesses, and it us up to you whether you want to have them as a panel or separate. There is no overlap between their testimony. They are both very short witnesses. This might be just more efficient and quicker if you have them testify on direct and both be subject to cross.

H.O. BROWN: That will be fine.

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DIRECT EXAMINATION OF YUBA COUNTY WATER AGENCY

BY MR. LILLY

MR. LILLY: We will start with you, Mr. Robertson. First of all, Mr. Robertson, have you taken an oath in this hearing already?

MR. ROBERTSON: Yes, I have.

MR. LILLY: You understand you are still subject to that oath that you took earlier in this hearing?

MR. ROBERTSON: Yes, I am.

MR. LILLY: During the hearing, I know it's been quite some time since we had our direct testimony, the staff asked Mr. Grinnell and you several questions regarding the historical and future demands for water from the Yuba River. I am now going to ask you some follow-up questions.

After the staff asked you questions regarding the relationship between historical diversions and future demands, did you investigate the recent trends of irrigated acreage in Yuba County?

MR. ROBERTSON: Yes, I did.

MR. LILLY: Specifically, did you investigate?

MR. ROBERTSON: I reviewed the Agriculture Commissioner's reports and the data that came out of those for irrigated acreage.

MR. LILLY: Go ahead.

MR. ROBERTSON: Those reports include all the irrigated acreage in Yuba County. Both irrigated from the groundwater and surface water.

MR. LILLY: Do those reports accurately describe all of the irrigated acreage in Yuba County?

MR. ROBERTSON: They are not a direct survey of lands.

What they are, they collect voluntary information from the landowners and then use statistical tests to make sure they are on track. It is not a direct survey of the irrigated land.

MR. LILLY: It is not like the U.S. census, then, for an analogy to population?

MR. ROBERTSON: I would say it's not like that, no. And it is not like the land use surveys that were done by DWR and Bookmen-Edmonston back in the early '90s.

MR. LILLY: Are the county Ag Commissioner's irrigated acreage figures, nevertheless, useful to determine trends regarding irrigated acreage in Yuba County?

MR. ROBERTSON: Yes. Because the data's collected on a consistent basis over a long period of time, they provide a good reference in which to gauge other studies.

MR. LILLY: If you could please put S-YCWA Exhibit 29 up on the overhead projector, and this exhibit was distributed at the hearing approximately two weeks ago.

Please tell us what this exhibit is.

MR. ROBERTSON: This exhibit displays the irrigated acreage in Yuba County over -- since 1984 when the South Yuba Canal came into operation. The dots show the actual data, and then the line indicates the trend of that data throughout the historical period projected out into the future.

MR. LILLY: Just so we are clear, when you say dots, are you referring to the squares?

MR. ROBERTSON: The little squares.

MR. LILLY: What does the trend line show?

MR. ROBERTSON: The trend line shows that irrigated acreage increasing on the order of a thousand to 1,100 acres per year on a whole with an ultimate irrigated acreage at year 2020 of about 11- -- about 111,000 acres.

MR. LILLY: Just for reference purposes, how does that compare to the total number of acres that are potentially irrigable within Yuba County?

MR. ROBERTSON: There is over 200,000 acres that are available that are irrigable in Yuba County. Some of that may not be irrigated because of economics, but it is still irrigable land.

MR. LILLY: So, basically, even with the 2020 prediction, you are still in the neighborhood of 50 percent or slightly over 50 percent of potentially irrigable lands within Yuba County?

MR. ROBERTSON: That's correct.

MR. LILLY: Could you please put up S-YCWA-30 on the projector and tell us what that is.

MR. ROBERTSON: This chart displays the irrigation demand developed from the irrigated acreage using standard applied water rates, and it also shows the historical water

use, the use from diversions from the Yuba River and compares those with our projections we used for the operations simulations.

MR. LILLY: You probably need to just go over, for the uninitiated like me, a little more information. If we look at the top bars and the sloped line that goes from about 330 on the left up to about 600 on the right, what is that line showing and what are the tops of those bars that that line goes through showing?

MR. ROBERTSON: The tops of the bars show the total irrigation demand for the irrigated acreage over the historical period.

MR. LILLY: Just to clarify, that is total irrigated acreage within Yuba County?

MR. ROBERTSON: Yes. That is irrigated acreage within Yuba County. The tops of the bars show the total irrigation demand year by year as you go out to the present. And then the line is a fit through those points projected out into the future.

MR. LILLY: Now go forward and tell us what the shaded bars which are down lower than the total bars show.

MR. ROBERTSON: Those show the historical diversion demand from the Yuba River and how they have changed over time. You will note that the demand starts out in the order of 150,000 acre-feet up until about 1984; then after that

this is still a trend line increasing after which the demands have averaged in the order of 250,000 acre-feet, but the trend is still on the increase.

MR. LILLY: Finally, you have two darker bars shown for what looks like about the year 2001, 2002, and then again for 2020. What are those?

MR. ROBERTSON: Those are our projected Yuba River demands or demands for diversion from the Yuba River for irrigation in Yuba County.

MR. LILLY: Are those the numbers that you previously testified to?

MR. ROBERTSON: Those are the numbers that were developed from the planned irrigated acreage served by the districts taking surface water from the Yuba River, and those were the ones -- those are the demands that are the basis for the simulation studies performed by Bookmen-Edmonston.

H.O. BROWN: The difference between those two bars is groundwater?

MR. ROBERTSON: Yes. Groundwater and other small surface water diversions from what accrue from the creeks. Principally groundwater.

MR. LILLY: Just to clarify, Mr. Robertson, when you say the difference between the two bars, that is the top part of each bar that is outlined, but then is not shaded in

for each of the years.

MR. ROBERTSON: Correct. The lower portions of these curves down in here are all surface water diversions. The residual demand up here are supplies that were derived from either surface water or groundwater. Principally groundwater.

MR. LILLY: When you say up here or down here, our record is not clear. The ones you say principally from groundwater, that is what is depicted on the graph with a key, alternative supplies and reuse?

MR. ROBERTSON: Correct. Also there is demand along the Feather River and the Bear that are within Yuba County. So some of those demands that are met from other than Yuba County water demands are from the Feather River and the Bear.

MR. LILLY: Those are included within the bars that say alternative supplies and reuse?

MR. ROBERTSON: That is correct.

MR. LILLY: Now, based on the information presented in Exhibit S-YCWA-30 and your prior analyses, what is your opinion regarding the accuracy of your estimates that you previously prepared for the present level of demands and future levels of demands for irrigation water from the Lower Yuba River?

MR. ROBERTSON: Comparing the historical diversions

with the present level demands indicates that our demand for the present or near term are equal to, if not slightly below, what the demand will be in the near term. If we look out into the future, the trend line is for increased use of other sources as compared to what we have termed full diversion demand. So the demands that have been used in the simulation studies are sufficient, if not lower, than they might actually be in the future.

MR. LILLY: You are saying that the actual demand for surface water supplies from the Yuba River might go higher than those that you have estimated?

MR. ROBERTSON: Correct. What we have used in our studies are what we have termed for full development are for economically developable lands that are served within the existing districts. Some of those areas may, in fact, as different crop types come in be economically developable that were not included.

MR. LILLY: There may be additional economically developable acres?

MR. ROBERTSON: That's correct.

MR. LILLY: Just to put this all in the big picture. Do any of the numbers depicted in Exhibit S-YCWA-30 contain any demands for municipal or industrial uses of water?

MR. ROBERTSON: No, they do not. They are only irrigation demands.

MR. LILLY: What types of municipal or industrial demands for Yuba River water may occur in the future?

MR. ROBERTSON: There are some poor groundwater quality problems in the Linda area and Wheatland area where they are going to need to develop surface supplies for their municipal uses and the growth of municipal use there. Additionally, in the foothill areas much of the development is starting to occur up in those areas because of flood threats. And as a result, the demands are projected to increase in that area for municipal uses.

MR. LILLY: What is the groundwater supply situation in the foothill areas?

MR. ROBERTSON: There are no groundwater supplies in the foothill areas. Very limited groundwater supplies.

MR. LILLY: So the logical supplies for that potential future development is surface water from the Yuba River?

MR. ROBERTSON: That's correct.

MR. LILLY: I have no further questions for you, Mr. Robertson. I will shift over to you, Mr. Wilson.

Just to remind you, did you previously take the oath in this hearing?

MR. WILSON: Yes, I did.

MR. LILLY: Just to remind you, you are still subject to that oath for these questions today.

Mr. Wilson, there were some questions asked of several

witnesses during the direct evidence part of this case regarding the migration of adult salmon up in the Yuba Goldfields, and I am just going to ask you follow-up questions on that testimony.

What is the resources agency's present policy regarding allowing or encouraging migration of adult salmon into the Yuba Goldfields?

MR. CUNNINGHAM: I am sorry, Mr. Wilson. As much as I respect his credentials, is not qualified to make statements about resource agency's policies. He has not been qualified as a member of the resources agency. If he wants to opine as to his own knowledge, but, I am sorry, this goes beyond the current qualification of this witness. If Mr. Lilly wants to lay a foundation -- I object to at present, there is a lack of foundation.

MR. LILLY: I will lay a foundation. I am trying to move things along. If counsel wants me to, I will.

H.O. BROWN: Today we are in no hurry. We are going to finish up today, I think.

MR. LILLY: Mr. Wilson, have you ever had any conversations with representatives of the Department of Fish and Game, United States Fish and Wildlife Service or the National Marine Fishery Service regarding those agencies' policy on migration of salmon into the Yuba Goldfields?

MR. WILSON: Been a number of discussions, not sure

it's -- classifying them as statements of policy. But statements of their intent and practices.

MR. LILLY: Have you personally participated in those discussions as far as hearing what they have said?

MR. WILSON: Yes.

MR. LILLY: Rather than going through every single conversation, can you make a general statement regarding what the representatives of the resource agencies have said to you regarding migration of adult salmon in the Yuba Goldfields?

MR. WILSON: In recent years it's been the consensus from my observations that they would like to exclude adult salmonids from entering the Goldfields.

MR. LILLY: That is specifically from migrating up from the Yuba River up the discharge stream that discharge out of the Goldfields?

MR. WILSON: Correct.

MR. LILLY: What actions are presently being taken to prevent adult salmonids from migrating into the Yuba River from the Goldfields?

MR. WILSON: There are two major return points to the Yuba River from the Goldfields. There is a number of minor returns and seepage from banks. The major surface returns, the lowest one is a channel that passes through an individual by the name of Bud Plant's property. And last

year at the outlet to that he installed a bar screen over the outlet on a discharge into the culvert.

It is my understanding that Department of Fish and Game is currently working I believe with the Department of Water Resources for the design of a barrier on the primary outlet back to the Yuba River which is about approximately a mile or three-quarters of a mile below Daguerre Point Dam.

MR. LILLY: That would be a barrier that would allow the water to flow out, but not allow fish to swim in?

MR. WILSON: That is my understanding.

MR. LILLY: There were questions regarding the amounts of water that flow through and out of the Goldfields. Do the flows in the Yuba River affect the amounts of water that discharge from the Goldfields back into the river?

MR. WILSON: Yes, they do. The Goldfields are adjacent to the river. Material's generally fairly porous, high permeability and the levels in the Goldfields generally rise and fall with the levels of the river. As the river comes up, more water is flowing through the Goldfields and finds it way back to the river.

MR. LILLY: When you say the levels in the Goldfields, you are talking about the levels of water?

MR. WILSON: The surface, the exposed ponds or flows of water going through the Goldfields. The surface elevations rise and fall in close correlation to the level of the --

surface level of the river.

MR. LILLY: Now, questions have also been asked regarding affect of diversions of water from the Goldfields into the South Yuba Canal. How do those diversions affect the amounts of water that discharge from the Goldfields?

MR. WILSON: They reduce the amount of water returning to the river. Generally, the conveyance system that crosses north to south through the Goldfields intercepts with -- first it crosses the Goldfields. In so doing, it intercepts the various flows that are coming down from upstream and utilizes a portion of that water for the irrigation supply to the south. And depending on the level of the river, generally, between a hundred and 200 cfs can be intercepted and diverted out of the Goldfields without opening any gates to the river. This amount through the irrigation season usually amounts to somewhere in the 30,000 acre-feet range.

MR. LILLY: Just to clarify, except for the actual diversions at Daguerre Point Dam, is the general flow of water in the Goldfields that seeps out of the river and back into the river, is that east to west flow through the Goldfields?

MR. WILSON: Generally so, yes.

MR. LILLY: Mr. Wilson, there were also questions regarding the uses of Yuba River water by the Dry Creek Mutual Water Company. What water conservation measures are

being taken with respect to this water?

MR. WILSON: The bulk of the acreage in Dry Creek Mutual Water Company is in walnuts. Historically, the owner groves have been on low sprinklers and the newer orchards that are going in are being put in with micro sprinklers, so it is pretty efficient utilization of water.

MR. LILLY: Is there also rice being produced in the service area of Dry Creek?

MR. WILSON: There is some. There is a portion north of Dry Creek that is generally in rice and that then is traditional practices in regards to rice.

MR. LILLY: Where does the tailwater from the rice fields go?

MR. WILSON: That comes back into the natural channels that traverse the district and is picked up for reuse, generally.

MR. LILLY: So it is basically diverted and reused again?

MR. WILSON: Yes, the bulk of it.

MR. LILLY: During the south Yuba River Citizens League testimony there was some discussion about flow fluctuations in the Lower Yuba River that occurred as the result of outages at the Narrows 2 Powerhouse. I am going to ask you about some specific dates. I think there were four dates mentioned in the South Yuba River Citizens testimony and

just ask you to go through those.

The first was April 9, 1998, and if you can tell me what caused the outage on that date.

MR. WILSON: This was a trip, which means that at our Narrows 2 hydroplant, which means that the unit was separated from the system, and then by the automatic safeguards the unit was shut down. This was caused -- there are a number of safeguards in the methods to separate the unit from the transmission system.

MR. LILLY: Excuse me, could you just clarify. When you say "separated," are you talking about an electrical separation?

MR. WILSON: By the opening of the switch or circuit breaker. And the reason for this is, is that the unit is working very hard trying to produce energy and supply it to the system, and all of a sudden the system -- there is no place to put that energy. The unit wants to accelerate in speed. And if you don't separate it and get the load off of it, the unit will accelerate and eventually destroy itself.

MR. LILLY: By accelerate, the turbine will spin faster and faster?

MR. WILSON: Unless the safeguards kick in fast enough and you separate the load fast enough, you potentially will accelerate to a point where you destroy the unit.

MR. LILLY: What happened on April 9th?

MR. WILSON: Regarding April 9th, as part of the safeguards there is a transfer trip, which means it remotely -- if the transmission line gets separated or it goes down, for whatever reason or incurs a disturbance, by microwave the unit can be separated from the transmission system. And in this case it appears that there was a interference on the microwave system which was interpreted by the devices at the plant as a trip signal, and so it tripped the unit and shut it down.

Since then to ensure that we reduce the chance of this happening again, we have changed the system so it takes, instead of a single system to shut it down, it takes two separate signals to this.

MR. LILLY: Two separate microwave signals?

MR. WILSON: It takes two separate signals, two different tone signals over the microwave.

MR. LILLY: The next one that was mentioned by South Yuba River Citizens League was April 14, 1998.

What happened on that date?

MR. WILSON: This case the PG&E transmission system was taken out by lightening, so in the -- our unit tripped off the line once the transmission line was lost.

MR. LILLY: Did the Yuba County Water Agency cause the lightning strike?

MR. WILSON: Not that I am aware of.

MR. LILLY: The next one referred to by South Yuba Citizens League was an event on August, they said, on August 12th, 1998.

Could you elaborate on what really happened there?

MR. WILSON: By our records it was August 7th. But in that case, again, it was a problem with the PG&E transmission line. A hawk got -- crossed two lines and took the transmission system out again.

MR. LILLY: Tripped the circuit breaker?

MR. WILSON: Correct.

MR. LILLY: That caused the automatic shutdown of the turbine to avoid mechanical failure?

MR. WILSON: Correct.

MR. LILLY: Finally, there was reference in the South Yuba River Citizens League testimony to a similar flow fluctuation on November 11, 1998.

What do you have to say about that?

MR. WILSON: That one I don't recall.

MR. LILLY: Your records do not show any major flow fluctuation on that date?

MR. WILSON: Correct.

MR. LILLY: You have mentioned the microwave signaling. Have you taken measures to avoid getting false signals? Obviously, the lightning is something beyond your control. Could you just describe what the agency or PG&E has done

regarding that incident, like the hawk incident, to try to reduce the probability of such similar events in the future?

MR. WILSON: PG&E has had an ongoing program to try and retroproof their transmission line for the protection of the rafters, but also to reduce the incidence of failure in the area where they've experienced -- this latest incident with the hawk. They did additional work to rafter proof their transmission lines.

Some of the things that we have done in the plant, there are two levels of shutdown. If the unit can be slowed down soon enough and doesn't sense a major overspeed, it will go to a speed no-load condition, which is the unit will continue to -- it drops the load, but it will continue to run and bypass some water, a lesser amount of water, but not go into full shutdown. If it goes to that mode of shutdown, it can be remotely started once it's determined what the problem is in a very short order.

The other method of shutdown, it goes into a full lockout shutdown and in that case it cannot be restarted until somebody is at the plant; and in that case the gates, the reservoir, also close. So they have to be reopened. That is usually an hour-plus process to get it restarted.

To try and limit the number of times when it goes to full shutdown and try and -- if we do get tripped off line and get it to stay in a same mode basis, we have changed out

the speed sensing mechanism over to a mechanical mechanism and have gone to a laser scanning speed sensing method that supposedly will -- so far by our experience has limited the number of times of full shutdown.

MR. LILLY: Now I am going to shift to another topic. During other party's testimony during this hearing there was some discussion about the effect of the agency's 1991 water transfer on redds in the Lower Yuba River. I just want to make sure our record is clear on this.

When the Agency originally prepared the -- made the preparation for that transfer, what month was that transfer going to occur?

MR. WILSON: Well, we originally scheduled the transfer to take place during July and August.

MR. LILLY: What months did the transfer ultimately take place?

MR. WILSON: It ended up in September and October. We started first in September and terminated the transfer on the 15th of October.

MR. LILLY: Why was the timing of that transfer changed from the July/August period to the September/October?

MR. WILSON: This was at the request of Department of Fish and Game. It is my understanding that there was some concern by some of their biologists with the impacts on the Delta in regard to striped bass.

MR. LILLY: Since 1991, has the Yuba County Water Agency made any out-of-county transfers during September or October?

MR. WILSON: No.

MR. LILLY: Finally, during other party's testimony for this hearing, there was some discussions of comparisons between the American River watershed and the Yuba River watershed. I am just going to ask you whether there, in fact, are some significant differences between those two watersheds.

First of all, is there a difference regarding the location of the largest reservoir in each watershed?

H.O. BROWN: Mr. Cunningham.

MR. CUNNINGHAM: Mr. Brown, I am not sure, I don't remember this witness ever being qualified as a hydrologist or watershed hydrologist. It is my understanding that Mr. Wilson is part of the management scenario for Yuba County Water Agency. And is there a foundation to be laid that he has personal knowledge of hydrologies of other watersheds in California?

H.O. BROWN: Thank you, Mr. Cunningham.

Mr. Lilly.

MR. LILLY: Mr. Wilson's resume was submitted. He is a civil engineer with numerous, I can't even count how many, years of experience in water project operations. Obviously,

he is very familiar with the Yuba River watershed. And I think by asking the question he can answer whether or not he has any familiarity with the American River watershed. These are general questions to show that the prior testimony, I believe from Felix Smith, ignores some very significant factors. It is almost common knowledge about where the locations of Folsom Reservoir are and, obviously, Mr. Wilson has extensive knowledge regarding the location of New Bullards Bar Reservoir.

If you want to satisfy Mr. Cunningham's objection, I will be glad to ask the foundational question, whether this witness knows anything about the facilities in the American River watershed.

H.O. BROWN: Mr. Cunningham.

MR. CUNNINGHAM: Mr. Brown, I don't appreciate the cheap shots when I make a legitimate objection. This witness has never testified in prior direct testimony about his knowledge of any other watershed other than Yuba River and Yuba County Water Agency associated district. I do think it's appropriate that a foundation be laid. If this is of common knowledge, fine. If they are going to attempt to qualify Mr. Wilson now as an expert in hydrology of other watersheds, I would like to see something more.

H.O. BROWN: Thank you, Mr. Cunningham.

Mr. Wilson, if you have an opinion, you can offer that

opinion to the question. If you have an expert answer to it, then you may qualify it or Mr. Lilly may set the foundation for your qualifications depending upon your answer.

Reask the question, whether it is an opinion or expert civil engineer responding to your question, Mr. Lilly.

MR. LILLY: Mr. Wilson, first of all, are you familiar with the location of largest -- let me ask it this way:

Are you familiar with the major water project facilities in the American River watershed?

MR. WILSON: Yes.

MR. LILLY: Are you familiar with the location of Folsom Reservoir?

MR. WILSON: Yes.

MR. LILLY: Where is Folsom Reservoir located if it is in the American River watershed, in general terms?

MR. WILSON: It's downstream of all of -- the main stems of the American River have come together and it is the lowest major storage reservoir. There is a regulating, small regulating, reservoir downstream from Folsom, but Folsom is the lowest major storage reservoir on the American River.

MR. LILLY: Due to that location, does a very large percentage of total unimpaired flow from the American River flow through Folsom Reservoir?

MR. WILSON: Correct.

MR. LILLY: Are you familiar with the location of New Bullards Bar Reservoir in the Yuba River watershed?

MR. WILSON: Yes.

MR. LILLY: If you could, just by way of comparison, describe in general terms the percentage of unimpaired flow from the Yuba River watershed that flows through New Bullards Bar Reservoir.

MR. WILSON: New Bullards Bar is on the North Yuba. There are two additional stems of the main stems of the Yuba River that flow in below Bullards. The North Yuba produces approximately 50 percent of the unimpaired runoff of the Yuba River system.

MR. LILLY: What are the two other forks in the Yuba River system?

MR. WILSON: The two stems are the Middle Yuba and the South Yuba.

MR. LILLY: Does any water from the South Yuba flow into New Bullards Bar Reservoir?

MR. WILSON: No.

MR. LILLY: Does any water from the Middle Fork of the Yuba River flow into New Bullards Bar Reservoir?

MR. WILSON: Yes. Yuba County Water Agency has a diversion dam on the Middle Yuba and does divert water from the Middle Yuba into New Bullards Bar.

MR. LILLY: But does that diversion dam and the related diversion tunnel allow the Agency to divert the entire flow of the Middle Fork of the Yuba River into New Bullards Bar Reservoir?

MR. WILSON: No, it does not.

MR. LILLY: Why is that?

MR. WILSON: There are fish flow requirements downstream which have to be met before any diversion is made. And in addition to that, in the wetter years a large portion of the flow is in excess of the tunnel capacity.

MR. LILLY: The other -- another significant difference I would like to discuss with you is the out-of-basin exports.

First of all, are you familiar with the amounts of water that are exported out of the Upper Yuba River watershed before that water can flow down to either New Bullards Bar Reservoir or Englebright Reservoir?

MR. WILSON: Yes.

MR. LILLY: In rough terms, what is the approximate number of acre-feet per year that is exported out of the Yuba River watershed?

MR. WILSON: On the average, in the range of 600,000 acre-feet.

MR. LILLY: Are you familiar with whether or not there is exports of that magnitude going out of the Upper American

River watershed?

MR. WILSON: I am not aware of any of that magnitude.

MR. LILLY: In fact, does some of the Yuba River water that is exported out of the Upper Yuba River watershed go into the American River watershed?

MR. WILSON: Yes. Waters diverted principally out of South Yuba approximately on the average of around a hundred thousand acre-feet a year enter the American River.

MR. LILLY: Finally, just going to ask you about fish hatcheries.

Do you have knowledge as to whether or not there is a fish hatchery on the American River?

MR. WILSON: Yes, there is. At Nimbus, I believe.

MR. LILLY: Where is Nimbus Dam located?

MR. WILSON: It's downstream of Folsom.

MR. LILLY: Is it basically the lowest dam on the American River?

MR. WILSON: Correct.

MR. LILLY: Is there any fish hatchery on the Yuba River?

MR. WILSON: There is none.

H.O. BROWN: Question on that hundred thousand that is diverted into the American River. Is that PCWA contract or PG&E?

MR. WILSON: It is a combination of several. Part is

PG&E and part of it is PCWA. It comes across through the drum system, principally.

H.O. BROWN: Thank you.

MR. LILLY: Just -- I know both of you know this, but just so our record is clear.

What is PCWA?

MR. WILSON: Placer County Water Agency.

MR. LILLY: What is PG&E?

MR. WILSON: Pacific Gas and Electric Company.

MR. LILLY: Thank you, Mr. Wilson.

I have no further questions. These two witnesses are available for cross-examination.

H.O. BROWN: Thank you, Mr. Lilly.

Mr. Gee.

MR. GEE: Mr. Brown.

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CROSS-EXAMINATION OF YUBA COUNTY WATER AGENCY

BY DEPARTMENT OF THE INTERIOR &

U.S. FISH AND WILDLIFE SERVICE

BY MR. GEE

MR. GEE: Mr. Robertson, Mr. Wilson, good morning, I am Edmund Gee. I am an attorney for the U.S. Department of the Interior. I have a few questions for both of you. I will start with Mr. Robertson, first.

Mr. Robertson, you testified that Yuba County's

projected irrigation demand is increasing; is that correct?

MR. ROBERTSON: That's correct.

MR. GEE: This is what Exhibit S-YCWA 30 referred to?

MR. ROBERTSON: Yes.

MR. GEE: You say this increased future demand is based on the data and projection of irrigated acreage from the county Ag Commissioner; is that correct?

MR. ROBERTSON: That's correct.

MR. GEE: Do you know what assumptions regarding population growth, types and quantity of crops that are included in the commissioner's projection?

MR. ROBERTSON: The commissioner did not project irrigated acreage and water use. They report what is submitted voluntarily by growers.

MR. GEE: Do you have any information as to population growth and types and quantities of crops?

MR. ROBERTSON: We have provided the types and quantities of crops in our prior testimony. And then they are in the 1992 hearing. We provided information on projected population growth.

MR. GEE: Again, I want to refer to your Exhibit YCWA-30, and I am looking at the bars and I'm looking at the light portions of the bars.

It refers to alternative supplies and reuse; is that correct?

MR. ROBERTSON: Yes.

MR. GEE: Can you define what alternative supplies and reuse is? What is that comprised of?

MR. ROBERTSON: That is comprised of diversions from other tributary streams, reuse from rediversion of tailwater, groundwater supplies. I include that -- when I say diversion from other streams, I'm including the Feather River and the Bear.

MR. GEE: I am a bit confused at this point. I am looking at your prior exhibit, YCWA-15A, and Table 10. That table refers to the historical diversions and there is also a column for groundwater pumped and there is, for a number of years, listed there, 1991 and 1994, there is no number listed for groundwater. And I am wondering where do you get these numbers now in YCWA-30?

MR. LILLY: I am going to object on the grounds that the other exhibit was testified to by Mr. Grinnell. If Mr. Robertson has knowledge about that exhibit, that is fine. He doesn't have the exhibit in front of him, and it was previously testified about by Mr. Grinnell. So I think to find out whether this witness knows anything about that exhibit and give him a chance to look at it.

H.O. BROWN: Thank you, Mr. Lilly.

MR. GEE: I have the exhibit. I can give it to him to look at. Mr. Robertson is here testifying to actual

demands, and these numbers, if I am correct, as to the historical Yuba River diversion are based upon what was previously given in Exhibit YCWA-15A. If he prepared this graph and has knowledge of it, I am sure he has knowledge of the other graph as well.

H.O. BROWN: Mr. Lilly.

MR. LILLY: If he does, fine. If he doesn't, not fine. I think we need to find out.

H.O. BROWN: Show him the graph, Mr. Gee. If he has knowledge of it, he can answer the question. You may do so.

MR. GEE: Do you have YCWA-15 in front of you?

MR. ROBERTSON: Yes.

MR. GEE: Do you recognize that to be a true and correct copy of Exhibit YCWA-15A?

MR. ROBERTSON: It appears to be.

MR. GEE: My question is, in S-YCWA-30 in the alternative supplies and use the quantities reflected there on the bars seem to be greater than what was previously the information given in Exhibit 15A. I was wondering if you can describe what the difference is.

MR. ROBERTSON: The amount shown in Table 10 of 15A are groundwater transfers for exchange purposes. There is other groundwater that is used within the district that is not reported in -- because they did not directly impact the

diversions from the Yuba River.

MR. GEE: But as I understand YCWA-15A, the purpose of that graph is to reflect historical demand; is that correct?

MR. ROBERTSON: It was to reflect historical use of the Yuba River, not demand.

MR. GEE: Again, looking at YCWA-30, are water transfers included in the future Yuba River diversions? Are they reflected there?

MR. ROBERTSON: No. These are diversions. These are demands for irrigated acreage within Yuba County.

MR. GEE: If the exhibit doesn't show future water transfers, do you have any knowledge as to what the future projected water transfers would be as planned by Yuba County Water Agency?

MR. ROBERTSON: No, I don't.

MR. GEE: Thank you, Mr. Roberts.

Mr. Wilson, you made a comment that in regards to Narrows 2 that Yuba County Water Agency didn't cause the lightning strike; is that correct?

MR. WILSON: Correct.

MR. GEE: Didn't cause the hawk to fly into the, I guess, the generator to cause the system to trip?

MR. WILSON: Correct.

MR. GEE: But isn't it true that Yuba County Water

Agency and PG&E are responsible for what happens with generators at Narrows 2 as to flows in the Yuba River regardless of what the circumstances are that cause the system to go off line?

MR. LILLY: Objection. This question calls for a legal conclusion.

H.O. BROWN: Mr. Gee.

MR. GEE: I am asking for his opinion as to whether he believes that Yuba County Water Agency may be responsible for what happens to the generators.

H.O. BROWN: Mr. Lilly.

MR. LILLY: I am not sure that his opinion is relevant to this proceeding. The law is whatever the law is. This witness is not obviously a lawyer. So if that is the question as restated, I object on the grounds of relevance.

H.O. BROWN: I will allow the question if you have an opinion or any knowledge relative to that.

MR. WILSON: The agency has responsibility to try, to the degree it has control, to comply with flow requirements of the river. Each of the incidents, when we've had a trip such as this and if there are deviations from the flow requirements, we report these to the Federal Energy Regulatory Commission.

In the past when there were incidents of this nature, the Federal Regulatory Energy Commission has deemed that

these were incidents beyond our control and the actions that we had taken were appropriate.

MR. GEE: Mr. Wilson, you mentioned degree of control. Is there a bypass at Narrows 2?

MR. WILSON: There is. It is not a full-flow bypass.

MR. GEE: Would a full flow bypass eliminate the problems, for instance, of a lightning strike or a hawk?

MR. WILSON: It would substantially reduce it.

MR. GEE: Thank you, Mr. Wilson.

H.O. BROWN: Mr. Robertson, I have one final question for you. In regards to S-YCWA-30, you described assumptions regarding future demands, and you didn't mention water conservation. Is that correct?

MR. ROBERTSON: That's correct, I did not mention water conservation.

MR. GEE: Thank you, Mr. Robertson.

H.O. BROWN: Thank you, Mr. Gee.

Mr. Cunningham.

MR. CUNNINGHAM: Thank you, sir.

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CROSS-EXAMINATION OF YUBA COUNTY WATER AGENCY

BY DEPARTMENT OF FISH AND GAME

BY MR. CUNNINGHAM

MR. CUNNINGHAM: Morning, Mr. Wilson, Mr. Robertson.

Mr. Wilson, just a couple of real quick questions for

you. Mr. Gee also asked about the existence of a bypass at Englebright Dam as part of Yuba County Water Agency's power generation system, and you indicated there was a bypass, but it is not a full flow bypass.

Is that correct?

MR. WILSON: That is correct.

MR. CUNNINGHAM: How much is the bypass at that facility capable of?

MR. WILSON: 650 cfs.

MR. CUNNINGHAM: Is there any reason, to your knowledge, that a full flow bypass is not built at that facility?

MR. WILSON: At the time the project was built, there was not apparently -- the main concern was to be able to meet the minimum flow requirements, and there was apparently not the concern with the ramping impacts of the trip.

MR. CUNNINGHAM: Would a full flow bypass also be useful in providing additional protection to your own generation equipment at the Narrows Powerhouse?

MR. WILSON: It would give us a lot more flexibility in being able to maintain the equipment at the time it needed to be maintained.

MR. CUNNINGHAM: My question is: How do you maintain the generator without some kind of full flow bypass?

MR. WILSON: Up until the listing of the species

recently, it hadn't been that much of a problem. It is becoming a very, very major problem. It's -- in recent times it is more difficult to schedule. Last year to be able to meet the flow requirement, we had to put in some temporary siphons over the top of Englebright to accomplish the needed maintenance.

MR. CUNNINGHAM: Do you contemplate that the Agency may actually modify your facility to include a new full flow bypass?

MR. WILSON: Last year we spent about a little over $100,000 on a preliminary design to determine the best approach to accomplishing a full flow bypass and to give us an idea of the cost involved. And we currently have a CalFed grant request in to do a complete final design and plans for a full flow bypass.

MR. CUNNINGHAM: An additional question I had for you about the Yuba River watershed. I do understand that New Bullards Bar Reservoir is only on the North Fork. But correct me if I am wrong, isn't it true that your actual control and regulation of flows in the Yuba River takes place at Englebright and not on New Bullards Bar?

MR. WILSON: We regulate; we don't control at that point. A lot of times it is beyond our control at that point. We do regulate it at Englebright.

MR. CUNNINGHAM: Is it safe to say that in part, only

in part, that Englebright serves essentially as an afterbay to New Bullards Bar?

MR. WILSON: That is correct.

MR. CUNNINGHAM: Does anybody else have the ability to regulate or control water flows at Englebright Dam other than Yuba County Water Agency?

MR. WILSON: Pacific Gas & Electric Company.

MR. CUNNINGHAM: That is their own power generation facility?

MR. WILSON: That's correct. They also have a plant downstream.

MR. CUNNINGHAM: Does anybody other than Yuba County Water Agency and Pacific Gas & Electric Company have the ability to regulate flows at Englebright Dam?

MR. WILSON: No.

MR. CUNNINGHAM: Mr. Robertson, just a couple of real quick questions.

Could I have you look at Exhibit -- South Yuba County Water Agency 30 again, perhaps even put it up on the overhead?

MR. LILLY: Excuse me, I think Mr. Cunningham misspoke. I assume he means S-YCWA-30. This is not a South Yuba County Water Agency exhibit.

MR. CUNNINGHAM: I do apologize. S-YCWA-30.

Mr. Robertson, in looking at the darker colored

portions of the bars for each of the years that have been identified as historical Yuba River diversions, are these actual measured diversions, to your knowledge?

MR. ROBERTSON: Yes.

MR. CUNNINGHAM: Can you tell me where the diversion measuring points were for these historical flows?

MR. ROBERTSON: They are data collected by the Yuba County Water Agency at the north -- at the principal canal diversion points or for the diversion canal points.

MR. CUNNINGHAM: Mr. Wilson, I think you also have a comment?

MR. WILSON: Just if there was clarification needed.

MR. CUNNINGHAM: Could you tell me in looking at this graph, again, only looking at the historical Yuba River diversion portions of the columns, what -- and perhaps I will ask this question of both of you gentlemen.

What happened in approximately 1987? I find it interesting in looking at this graph that the historical -- the historical flows from 1975 to about 1986 with a certain amount of variation reflect a constant level of diversion somewhere between 100- and about 210,000; and then in 1987 there is a significant increase that again seems to then reflect an almost constant level of diversions from that point on.

Do either of you gentlemen know what happened in about

1987?

MR. WILSON: Prior to '87 starting, and if you will look at the significant drop, 1984 there was a significant change in the rice allocation program.

MR. CUNNINGHAM: So to the best of your -- is it safe to say that your best understanding of what happened to the actual historical uses is additional rice flows were being -- or rice irrigation was taking place from 1987 on and that reflects the increase in historical uses?

MR. WILSON: There was a dramatic decrease in 1983 and it started again in 1987. They went back closer to the historical levels of planting.

MR. ROBERTSON: In addition the South Yuba Canal demands were -- the South Yuba Canal supplies were -- diversions from that canal became a major factor.

MR. CUNNINGHAM: Essentially, the South Yuba Canal was making full usage of their diversion capabilities?

MR. WILSON: They were increasing substantially.

MR. CUNNINGHAM: I question to you, then, Mr. Robertson, you are the person -- did you actually prepare this graph that I am looking at in Exhibit 30?

MR. ROBERTSON: Yes, I did.

MR. CUNNINGHAM: It is my understanding, and a question I have for you, to the extent in 1986-87 some significant changes both in the kinds of crops being irrigated and the

facilities in use taking water through the Yuba County Water Agency project, all kind of arrived at a new plateau.

Have you projected or did you project or does any of your numbers here indicate a projection of what historical and what actual uses will take place based only on the changes and circumstances from 1987 to the present?

MR. LILLY: I am going to object. That question is compound and ambiguous. I think he needs to split it up into parts.

MR. CUNNINGHAM: I will try.

H.O. BROWN: All right.

MR. CUNNINGHAM: Mr. Robertson, I see the one line you have drawn which is used to project flows all the way out -- irrigation demands supplied all the way to the year 2020. As I understand it, it consists -- the numbers used to arrive at that line consists of two elements, historical and projected Yuba County irrigation demands. It also includes the alternative supply and reuse.

So the line you drew all the way up to 2020 comes out to almost 600,000 acre-feet. But part of how I assume you drew that line was by looking at the entire spectrum of years you have available from 1975 to 19-, I guess, -99. My question to you is, did you make such a projection using only information from 1987 and on?

MR. ROBERTSON: No, I didn't. Demands typically grow

in blocks. And if you take any one block you are going to get a different projection. The best way to do a projection is to use the majority of your data unless there is anomalies that have reason to exclude it. In this case there were no anomalies.

MR. CUNNINGHAM: Mr. Robertson, do you have any reason to believe that there will be other dramatic changes in either crop type or facilities in use between now and the year 2020?

MR. ROBERTSON: As I stated earlier, there is demand that is going to be increasing in the foothills and so, as a result, there will be -- there could be facility extension into the foothills to serve those areas additionally as crops become -- there are different opportunities for cropping patterns that may, and I haven't investigated that, but may bring in additional acreage that could be developed for other higher value crops.

Wheatland Water District is yet another one that has not taken its -- what its allocation would be from the Yuba County Water Agency. Those demands are included within the darkest bars shown as projection beyond 2000.

MR. CUNNINGHAM: To the extent you then say that these irrigation demands and supplies have a tendency to jump in blocks, you presuppose, I guess, there will be another block jump between the present and the year 2020.

Is that what I understand?

MR. ROBERTSON: The projection is what it is. It is not a presupposition of particular blocks. Those blocks could occur, but that is not part of the projection.

MR. CUNNINGHAM: Thank you, both, gentlemen.

H.O. BROWN: Thank you, Mr. Cunningham.

Mr. Sanders.

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CROSS-EXAMINATION OF YUBA COUNTY WATER AGENCY

BY SOUTH YUBA RIVER CITIZENS LEAGUE

BY MR. SANDERS

MR. SANDERS: Good morning, gentlemen.

MR. WILSON: Morning.

MR. SANDERS: I just have a few questions. I guess we will start with Mr. Wilson.

I just want to talk a little bit about the flow fluctuation events. All of the events that you talked about can be characterized as beyond your control; is that correct?

MR. WILSON: Yes.

MR. SANDERS: No matter how well you maintain the power plant, sometimes the unit will trip off line?

MR. WILSON: That is correct.

MR. SANDERS: Have there been other flow fluctuation events since August 1998?

MR. WILSON: When you say flow fluctuations, we regulate the flows through the season and change them --

MR. SANDERS: Unscheduled flow fluctuation events due to the unit tripping off line?

MR. LILLY: Objection. This goes beyond the scope of the direct examination. It just focused on the rebuttal -- it focused on events that South Yuba Citizens have brought up before, and now we are expanding the scope of the testimony beyond the rebuttal testimony.

H.O. BROWN: Mr. Sanders.

MR. SANDERS: Well, I perceive this to be discussion of the operation of Narrows 2 which has led in the past to these three specific events that Mr. Wilson testified about. I did not expect to be limited merely to discussion of those three events. I just have a few questions about the operations which other people have already asked some questions about on cross-examination.

H.O. BROWN: Mr. Lilly.

MR. LILLY: I stand by my objection.

H.O. BROWN: Overrule. Answer the question if you can.

MR. WILSON: There have been several other incidents, yes.

MR. SANDERS: If Englebright is not spilling, then the entire flow of the Yuba River comes through the two

powerhouses; is that correct?

MR. WILSON: That is kind of a tough question.

MR. SANDERS: Let me rephrase. The entire flow might be throwing you off a little bit because there are definitely other sources.

But let's say the majority of the flow in the river comes through the powerhouses; is that correct?

MR. WILSON: If Englebright is not spilling, any releases made from Englebright goes through the two power plants.

MR. SANDERS: I have a hypothetical. Let's say Narrows 2 is releasing 2500 cfs and Narrows 1 is releasing nothing. And there is no spill from Englebright. Is this a realistic scenario, first of all?

MR. WILSON: Yes.

MR. SANDERS: And then if Narrows 2 trips off line at that moment, how much water passes into the river?

MR. WILSON: If we were under this operating scenario and we incurred a trip, with the operating procedures we have PG&E would open their Narrows 1 bypass which has approximately 600 cfs. We would open the Narrows 2 bypass, which has approximately 650 cfs, or you would end up with about 1300 cfs.

MR. SANDERS: So then, there would be a virtually instantaneous drop from 2,500 to 1,300?

MR. WILSON: At the plants it would be instantaneous. As you move down the stream, the effects are attenuated somewhat.

MR. SANDERS: What are the flow fluctuation requirements in Yuba County Water Agency's FERC permits?

MR. WILSON: 500 cfs per hour.

MR. SANDERS: Does the permit have any provisions for an unusual shutdown such as the one we are discussing?

MR. WILSON: It does not. But any time we have an event we report it to FERC. And up until this date, when we have had these kinds of events, they have deemed that they were beyond our control and our actions were appropriate.

MR. SANDERS: I believe that is it.

Mr. Robertson, I have a couple questions about your Exhibit 30.

If I understand how you -- YCWA's expert did their modeling, you predicted demand and then gave your information to Mr. Grinnell and he did the modeling based on your estimate; is that correct?

MR. ROBERTSON: That's correct.

MR. SANDERS: And you testified that the projected level of demand that you gave to Mr. Grinnell may have actually underestimated what the future demand will be? Am I saying that correctly?

MR. ROBERTSON: Given the information from the

Agricultural Commissioner's report, it would indicate that the demand for irrigation would increase faster than what we have projected.

MR. SANDERS: Mr. Grinnell modeled one number and that number is actually less than what you have here on YCWA-30, say, for the year 2020; is that right?

MR. LILLY: Objection. That misstates the prior testimony. I don't think it's intentional. There clearly were two different demands modeled by Mr. Grinnell, both present level demand and 2020 projected future level demand. So to say Mr. Grinnell modeled one number is incorrect. There are actually two different numbers modeled with different scenarios.

MR. SANDERS: I stand corrected. I was talking about the projected future level of demand and not on the current level of demand modeled.

MR. ROBERTSON: The future level of demand modeled by Bookmen-Edmonston was the full development level, which included the irrigation demand shown on S-YCWA-30, plus some municipal industrial demand.

MR. SANDERS: So, YCWA-30, though, for 2020 shows a projected level of demand that was higher than what was modeled as the future level of demand?

MR. ROBERTSON: No. The dark bar shows what was -- shows the irrigation demand. The top portion of the bar

shows the total irrigation demand. Not shown on this chart is the -- is any allowance for municipal and industrial demand.

MR. SANDERS: I guess what I am concerned about is if Mr. -- if you're now testifying now that the actual demand may be greater than what Mr. Grinnell modeled, what does that do to the models?

MR. ROBERTSON: It doesn't do anything. It indicates that any shortages that were -- it would indicate that if there was a demand greater than that, then it was simulated that diversion shortages wouldn't be increased.

MR. SANDERS: Exactly. You understand that YCWA's fisheries experts made conclusions based on the model that Mr. Grinnell gave them?

MR. ROBERTSON: Yes.

MR. SANDERS: And they concluded that under the projected level of demand the fishery would be maintained in good condition. Is that your understanding?

MR. LILLY: I have to object now. This is clearly beyond the scope of this witness' rebuttal testimony. He is asking what other witnesses testified to earlier in the hearing.

H.O. BROWN: Got a good point, Mr. Sanders.

MR. SANDERS: Withdraw the question.

I think I have had enough.

Thank you, Mr. Brown.

H.O. BROWN: Thank you, Mr. Sanders.

Mr. Cook.

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CROSS-EXAMINATION OF YUBA COUNTY WATER AGENCY

BY MR. COOK

MR. COOK: Mr. Robertson, could you briefly list the assumptions that you used in determining future water requirements for Yuba County?

MR. LILLY: Mr. Brown, I am going to object unless -- this question appears to relate to Mr. Robertson's testimony back on the original phase of this hearing, where his Exhibit 15 did go into length on those future water requirements and the assumptions he made to develop those estimates. But the question as currently stated is not related to either of these exhibits or the testimony that has been given this morning and, therefore, is beyond the scope of the rebuttal.

H.O. BROWN: Thank you, Mr. Lilly.

Mr. Cook.

MR. COOK: My recollection of his testimony today is in substantial part he has drawn a conclusion as to the future needs of water from the Yuba River. Perhaps he didn't specifically say Yuba County, but I think that applies. But I can withdraw that portion and ask him on what assumptions

he used in determining the chart for the overhead and his opinion of what future water needs from the Yuba River would be. I think that is his basic testimony today.

H.O. BROWN: Let's try that question, Mr. Cook, and see how that goes.

MR. COOK: Mr. Robertson, you made some assumptions or you made an opinion today concerning the future needs of water from the Yuba River; is that correct?

MR. ROBERTSON: Yes.

MR. COOK: That was relating to lands within the county of Yuba; is that correct?

MR. ROBERTSON: Correct.

MR. COOK: And would you briefly list the assumptions you used in making your conclusion as to the future needs of water from the Yuba River in Yuba County?

MR. LILLY: I am going to -- excuse me, Mr. Brown. I am going to make the same objection. All he's testified to this morning on Exhibit S-YCWA-30, which I assume is the one Mr. Cook is asking about, is the overall county trends and then he plotted the historical diversions from the Yuba River and he plotted the two bars from his prior testimony. He did not rehash or go over again that prior testimony. He just said here are the two bars from my prior testimony. Here is how it fits into that.

So I think Mr. Cook is still asking him to go back over

the testimony that we went through at length earlier in this hearing.

H.O. BROWN: Mr. Cook.

MR. COOK: If all he testified today about are bars that are have no meaning, then of course Mr. Lilly is correct. But if these bars represent future needs in Yuba County for waters from the Yuba River, then I think it is very proper to ask on what basis he arrived at the conclusion and the data that he provided for the model to prepare these bars.

H.O. BROWN: Last shot, Mr. Lilly.

MR. LILLY: Clearly we are not saying that these bars have no meaning. I stand by my prior characterization. I think Mr. Cook is asking very general questions that clearly go back to what was covered at length earlier in the hearing. I think he needs to narrow his questions to what was specifically discussed today or he is going beyond the scope of our rebuttal testimony.

H.O. BROWN: I agree with Mr. Cook. Answer the question if you can.

MR. ROBERTSON: Restate the question.

MR. COOK: Yes. I believe I asked you if you would briefly state the assumptions you used in arriving at the document entitled Yuba County Water Agency 30.

MR. ROBERTSON: I used the Agricultural Land

Commissioner's acreage, projected that acreage based on the historical trend and then applied the recent unit applied water use of Yuba County to come up with the projected total irrigation demand in Yuba County.

MR. COOK: Is it correct then that you used the past information on agricultural usage of land in Yuba County to establish a trend to determine the future use or the future probable use of Yuba County land for agriculture?

MR. ROBERTSON: Not precisely. The acreage projection is based on the historical trend. The applied water use is based on recent applied water use records.

MR. COOK: Now, did you or have you considered for future use of future needs of Yuba River water the cost that is paid by the users of that water in Yuba County?

MR. ROBERTSON: Those costs are reflected in the full development demand and is shown in the darker bars. When the projection was made in -- when the demands were developed in 1990 and then adjusted here recently, the irrigable acreage for these districts was determined based on economically developable acreage based on cost that they are occurring done by an agronomist at the time.

MR. COOK: Are you familiar with what the users of Yuba River in Yuba County are paying the Yuba County Water Agency for that water?

MR. ROBERTSON: Not specifically.

MR. COOK: Are you familiar with what the Yuba County Water Agency is providing its water to state agencies and the cost of such water?

MR. LILLY: Objection. Again, this clearly goes beyond the scope of rebuttal. There has been no discussion this morning so far regarding the out-out-county water transfers or the price associated with those.

MR. COOK: I will lay a foundation, Mr. Brown.

H.O. BROWN: We have not talked about economics or costs of water this morning.

MR. COOK: My point is he discussed, I think, it has been discussed at length here on this examination the question of conservation, the question of water conservation, and of characterizing it, as it seems to me, subsidized water to users in Yuba County is contrary to water conservation of Yuba River water. As a result, you have to determine that, in fact, Yuba River water users are receiving water for, I believe it is, $1.45 a minimum per acre-foot, whereas the state has paid as much as $125 an acre-foot for the same water. With such a disparity in cost I believe that that is an anti-conservation measure which -- the conservation issue was brought up on redirect, and I think I am entitled to ask it.

H.O. BROWN: That may be, Mr. Cook. The economics was not discussed on water this morning and this is rebuttal.

MR. COOK: Can I ask the witness then a question about conservation and economics of conservation?

H.O. BROWN: You ask the question and let's see where it goes.

MR. COOK: Very well.

This is either for Mr. Robertson or Mr. Wilson.

Have either of you considered the fact or have either of you considered whether or not increasing the cost of water to Yuba County users would act as a conservation measure for Yuba River water?

MR. LILLY: Objection. Goes beyond the scope of rebuttal testimony.

MR. COOK: I think I have presented my argument, Mr. Brown. Whatever your ruling is.

H.O. BROWN: I am going to sustain the objection, Mr. Cook.

MR. COOK: Thank you.

Well, Mr. Robertson, I will ask another one. I believe that your chart shows groundwater use and surface water use from the Yuba River. Have you considered the potential lack of availability for groundwater in Yuba County in your assumptions?

MR. ROBERTSON: These projections are based solely on irrigation demand and projected acreage that were put forward here in the rebuttal testimony.

MR. COOK: I am asking about the groundwater specifically. On the groundwater have you considered the possibility or the potential for reduction in availability of groundwater in the future?

MR. ROBERTSON: Not in these projections.

MR. COOK: In other words, if water should become less available, your projections would not apply?

MR. ROBERTSON: No.

MR. COOK: They would apply?

MR. ROBERTSON: If projections -- the demand is -- the demand for water is the demand for water. If there is a shortage, that is different than what the demand for water is.

MR. COOK: So the availability is not part of your study; is that correct?

MR. ROBERTSON: That's correct.

MR. COOK: Thank you.

Now you did testify about economically developable land. I think you used that particular phrase in your testimony, did you not?

MR. ROBERTSON: Correct.

MR. COOK: Let me ask it this way: What assumptions did you make in determining whether land was economically developable in the future?

MR. ROBERTSON: I did not make those findings. Those

were made by an agronomist earlier, prior to the previous hearing.

MR. COOK: So, on your chart what did you use to determine economically developable land for the future?

MR. ROBERTSON: The economically developable land was presented in a 1990, I believe a 1990, report by Bookmen-Edmonston that outlined all the developable lands within Yuba County for irrigation. Those lands were then adjusted for this testimony to account for shifts in acreage, so that we could properly come up with a revised full development demand and an estimate of present development demand.

MR. COOK: Excluding the demand and going to what you testified to about economically developable, on what did you base that?

MR. ROBERTSON: That was determined by the agronomist. He categorized all of the land before 1990 and that was the basis of what went into the full development demand. I did not recategorize what was economically developable or not. We used the irrigation and water districts developable acreage developed in 1990, adjusted those for shifts in acreage and shifts in cropping patterns, and then used those for the simulations in this round of hearings.

MR. COOK: When you testified about economically developable land, you are basing it on someone else's report

that occurred in 1990 and you are projecting that into the year 2020; is that correct?

MR. LILLY: I am going to object again. We are now getting back to asking questions about both what Mr. Robertson testified earlier in this hearing and what he and his colleagues testified during the 1992 hearing. Therefore, I object on the grounds this is going beyond the very limited rebuttal that was offered this morning.

H.O. BROWN: Mr. Cook.

MR. COOK: I will merely state, Mr. Brown, that he specifically used the phrase "economically developable land" in determining his chart of future needs for water. And it would seem to me that that is within the scope of what his testimony was today. There again, whatever your ruling is.

H.O. BROWN: Anything more?

MR. LILLY: Yes. If Mr. Cook was to ask Mr. Robertson about the methods he used and the assumptions he made in developing these two exhibits, that is fine. But his questions that I objected to go way beyond that.

H.O. BROWN: Mr. Cook, how much more time do you need?

MR. COOK: I haven't asked Mr. Wilson questions. I have a few with him.

H.O. BROWN: We are having a brief reception for Fran Vittuli who was our information officer for years, out in the courtyard. It is going on right now. I think there is

coffee over there. Some of you may wish to stop by and wish Fran her very best.

We will take a -- let's take a 20-minute break this morning and do that and come back and decide the answer to your question.

MR. COOK: Thank you. I will try to speed it up as much as I can.

(Break taken.)

H.O. BROWN: Back to order.

Mr. Cook, you are up. Mr. Cook, why don't you ask the question again, and let's see if it goes by Mr. Lilly.

MR. COOK: I will try to remember what it was.

H.O. BROWN: I kind of lost track of it also.

MR. COOK: I do believe, Mr. Robertson, that you did consider future municipal needs for Yuba River water; is that correct?

MR. LILLY: Objection. The question is unclear about consider when he is talking about doing what. There are so many different things discussed in this hearing. The question needs to be more specific. It is ambiguous.

H.O. BROWN: I don't understand the question.

MR. ROBERTSON: In this rebuttal testimony I only considered irrigated land. In prior testimony I considered municipal and industrial demand.

MR. COOK: Did you, in fact, consider municipal demands

in the foothills today?

MR. LILLY: Same objection.

H.O. BROWN: Proceed.

MR. ROBERTSON: We did discuss that in that they are not included in these demands, but there are demands that are expected to occur within the foothills as that is the most likely place for future development of municipal areas in Yuba County.

MR. COOK: Are you familiar with the area known as the Plumas Lake Specific Plan?

MR. ROBERTSON: No, I am not.

MR. COOK: Mr. Wilson, you testified that there are two main outlets from the Yuba Goldfields into the Yuba River; is that correct?

MR. WILSON: Correct.

MR. COOK: The lower one, I think you said, came through the Plant --

MR. WILSON: It is Bud Plant's property.

MR. COOK: There is another one upstream from that about three-quarters of a mile down from Daguerre Point Dam?

MR. WILSON: That is correct.

MR. COOK: The one about three-quarters of a mile from Daguerre Point Dam, did you say that was the main one of the two?

MR. WILSON: It generally -- the configuration has

changed over the years depending on what the operation is in the Goldfields. And that lower outlet has, over the years, has changed in its -- there is another outlet further upstream from that that in some years has been utilized. But currently with current configuration that most upstream of the main outlets carries the predominant amount of the outflow.

MR. COOK: Would you know the approximate cubic feet per second rate of flow in that main outlet?

MR. WILSON: It varies greatly depending on what the flows in the Yuba River are.

MR. COOK: That empties out of a channel that comes from the South Yuba Canal, does it not?

MR. WILSON: There are really no channels that come from the South Yuba Canal.

MR. COOK: Downstream of the South Yuba Canal, approximately half to three-quarters of a mile, isn't there what is referred to as a flashboard dam?

MR. WILSON: We refer to it in a little different nomenclature. I understand what you are talking about.

MR. COOK: I will use the term "flashboard" for convenience. This dam has boards in it which either can be added or removed; isn't that correct?

MR. WILSON: That is correct.

MR. COOK: By adding boards to this particular dam that

is right on the south canal, you can either raise or lower the water elevation in the south canal?

MR. WILSON: You can influence the level of it.

MR. COOK: Is it accurate to say, then, that the water coming out of this dam is used to manage the elevation in the south canal?

MR. WILSON: Not necessarily. In wintertime there is no management of it.

MR. COOK: During the summer period when the water is being transferred to the south canal for irrigation purposes, is it used for managing that water?

MR. WILSON: It is used to hold the head up to push more water through the system.

MR. COOK: That water then extends downstream and returns to the Yuba. That is one of the channels --

MR. WILSON: To the degree that there is water bypassing that structure, yes. It is one of the contributors. There is many other contributors to the downstream flow.

MR. COOK: In any event, that water would return -- the water coming through that flashboard dam out of the south canal would return to the Yuba River?

MR. WILSON: If it wasn't utilized downstream by the mining interests.

MR. COOK: Talking again about the channel, I think

what you referred to as the main channel flowing into the Yuba River, you said that there are plans for or I believe maybe last year there was a screen installed there?

MR. WILSON: No. The screen -- there was a bar screen installed at the outlet, at Bud Plant's property, the lower return to the river. There has been various structures at the outlet that I believe you have been discussing or questioning. And currently I believe there is a cobble or gravel barrier that has been pushed up.

There has been various devices at that location over the years, and most of these have gotten washed out. It is my understanding that the Department of Fish and Game is pursuing a design of a permanent structure at that point which would exclude -- it would allow the water to go out but would exclude adult fish from coming up into the Goldfields at that location.

MR. COOK: Do you have any idea what the permanent structure would be?

MR. WILSON: There has been several proposals. It is my understanding that the current structure is something of a gabion-type overstructure, stepped.

MR. COOK: You testified about the Dry Creek Mutual Water Company this morning, I believe.

MR. WILSON: Yes, I did.

MR. COOK: You talked about the conservation measures

connected with Yuba County Water Agency's sale of water to this Dry Creek Mutual Water Company?

MR. WILSON: I mentioned some of their application practices in regard to how they were applying their water.

MR. COOK: In fact, I believe you talked about microsprinklers?

MR. WILSON: Yes.

MR. COOK: Were there other methods used for conservation of that water?

MR. WILSON: The Dry Creek system is a new system. It is just coming on line. Historically this area has been irrigated by groundwater. They are experiencing some quality problems and have elected to go to surface water.

The historic practice has -- on the walnuts has been low rate sprinklers. And the newer orchards that are going in, they are developing with newer technology which are lower rate application sprinklers than what they previously used.

MR. COOK: What are some of the problems you mentioned about the groundwater?

MR. WILSON: Primarily nitrites and nitrates.

MR. COOK: I think you also mentioned reuse of the water?

MR. WILSON: For the portion of the system that is rice which is flood irrigation. The drainage of these ponds,

fields, go to natural channels and some of that gets picked up by other diverters downstream or contributes to water for wetlands and natural habitat.

MR. COOK: Is it then your testimony that the water used for the rice crops that in effect is surplus after it is no longer needed returns to the Yuba River?

MR. WILSON: It would go to the Bear River.

MR. COOK: To the Bear River?

MR. WILSON: Correct.

MR. COOK: And the Bear River would then go into the Feather River?

MR. WILSON: Correct.

MR. COOK: Well then, in effect Yuba River water is being transferred via the rice fields to the Bear River; is that correct?

MR. LILLY: I am going to object. I think that misstates prior testimony. It is a small fraction of applied water. If he is implying that it is all transported, he is misstating prior testimony.

MR. COOK: I am talking about the portion -- I am sorry.

H.O. BROWN: Go ahead, Mr. Cook.

MR. COOK: I am talking about the portion that goes through the rice fields and is needed for the rice fields but that returns, as Mr. Wilson says, to the Bear River.

H.O. BROWN: You understand the question?

MR. WILSON: I do. In this case it enters very low in the Bear River, short distance upstream from the Feather. Virtually any runoff water, discharged water, from the fields that isn't used, picked up and reused, any of the water coming down to the Agency project all ends up in the Feather River.

MR. COOK: Do you know if the Yuba County Water Agency has a transfer, out-of-basin transfer, permit for that particular water we have been discussing?

MR. WILSON: The Agency, to my knowledge, does not.

MR. COOK: Thank you.

Mr. Brown, the conservation measures for Dry Creek Mutual Water Company were, I think, a fairly substantial portion of the witness' testimony this morning. I would like to go into price again, but I will defer that to depending on whether Mr. Lilly objects and your ruling. It is similar to what we discussed before. Before I ask the question -- or would you like me to ask the question?

H.O. BROWN: Ask the question, we'll see what it is.

MR. COOK: Very well.

H.O. BROWN: Again, I caution you we did not talk about economics this morning.

MR. COOK: That was my question, whether price constitutes a conservation measure or not. I don't want to ask the question if I am violating what your previous ruling

was. I just was unclear of that because on the Dry Creek -- Yuba County Water Agency --

H.O. BROWN: You may go ahead and ask the question and we'll see if there is an objection to it.

MR. COOK: Very well.

With respect to conservation measures at Dry Creek Mutual Water Company, was price of the water considered as a conservation measure?

MR. LILLY: I am going to object. Mr. Wilson just talked about the physical facilities this morning. So this goes beyond the scope of his rebuttal testimony.

H.O. BROWN: Was price of the water considered as a conversation measure?

I will allow the question.

MR. WILSON: It was not considered as a conservation measure. However, the surface water is costing them more than their groundwater did.

MR. COOK: Well, you said it is costing more. How much is it costing?

MR. WILSON: They are incurring the repayment of the distribution system, plus pumping costs, plus conveyance costs. They are -- I am not sure what the exact ultimate dollar is. It is in the range of $30 an acre-foot.

MR. COOK: In comparing the Yuba River to the American River you testified about that earlier today, did you not?

MR. WILSON: Yes.

MR. COOK: And you pointed out that Folsom Dam is downstream of all the major branches of the American River; isn't that correct?

MR. WILSON: That's correct.

MR. COOK: You testified that Bullards Bar is on the North Fork. It is not downstream of the South Fork of the Yuba River and also portions of the water from the Middle and Oregon Creek, portions of the Yuba River; is that correct?

MR. WILSON: It is on the north stem of the Yuba, right.

MR. COOK: You testified then that the Nimbus Dam is the lowest downstream dam on the American River?

MR. WILSON: To my knowledge, yes.

MR. COOK: You did not testify, however, to the fact that in comparing these two systems that the Englebright Dam is downstream of all the major branches of the Yuba River; is that correct?

MR. WILSON: I did not say that.

MR. COOK: I am sorry if I did not ask the question.

MR. WILSON: My presentation was in reference to Bullards Bar Dam, which is the facility that we have that we have storage rights in, and that is only on the north stem.

MR. COOK: Anadromous fish cannot proceed upstream past

Englebright Dam; is that correct?

MR. WILSON: Not without man's assistance.

MR. COOK: At the present time there is no -- unless you truck them up there is no way?

MR. WILSON: Truck, backpack or something.

MR. COOK: At Nimbus Dam there is no way for fish to go above Nimbus Dam, anadromous fish?

MR. WILSON: I don't believe there is a ladder at Nimbus.

MR. COOK: At any event, certainly they cannot go upstream from Folsom Dam?

MR. WILSON: That is my understanding.

MR. COOK: I am not sure I asked this. Isn't Englebright Dam basically downstream of all the major branches of the Yuba River?

MR. WILSON: Correct.

MR. COOK: You testified to the fact that there was a hundred thousand acre-feet from the headwaters of the Yuba River being diverted to the American River watershed. Did you testify to that?

MR. WILSON: There is actually more than that to the American River watershed. There is approximately a hundred thousand acre-feet a year gets physically into the American River.

MR. COOK: Isn't it a fact that there is also diversion

of water from the upper Yuba River watershed into the Bear River?

MR. WILSON: That's correct.

MR. COOK: In comparing diversions -- what is the status of the proposal for a Waldo Dam?

MR. LILLY: Objection. Goes beyond the scope of the rebuttal.

MR. COOK: It may be, Mr. Brown. It is related to the comparison of the two watersheds, and part of the comparison was the diversion of water from both streams. And actually the Waldo Dam, it is my understanding, would divert water at Englebright Dam through tunnels over to the Dry Creek watershed, which then would go into, I think, the Bear River. So I believe it is just another diversion.

H.O. BROWN: I'm not familiar with your question. Maybe you can lay a foundation and bring us all up to speed here which way you are heading.

MR. COOK: Is the Yuba County Water Agency considering diverting additional Yuba River water from the Englebright Dam?

MR. LILLY: I object on the ground this goes beyond the scope of rebuttal. If there is a project for a future reservoir that will be considered in the future, obviously, the State Water Board will have to have a proceeding to address that project. The questions we asked this morning

comparing the two watersheds had to do with their present condition which was the rebuttal to the prior testimony which had to do with present conditions.

To talk about future projects is going beyond the scope of rebuttal. Frankly, it is going beyond the scope of relevance for this hearing.

H.O. BROWN: Mr. Lilly has a good point, Mr. Cook.

MR. COOK: I believe that the main point is that there was testimony specifically relating to the differences in the operation of the American River, the facilities on the American River, and Yuba River. And as far as the fact -- and that included diversion very specifically. And as a matter of fact, if there is something contemplated, which I think the studies have been conducted for the Waldo Dam and diversions out of the Englebright Dam, I would think that would be appropriate cross on the basis of this morning's testimony. I again would await your order.

H.O. BROWN: I have been pretty liberal this morning in tying things into the rebuttal testimony, which is our rules, what we have been playing by, and I'm having trouble making this one reach, Mr. Cook.

MR. COOK: Very well. I will withdraw the question.

H.O. BROWN: Thank you.

MR. COOK: In fact, that is all I have.

H.O. BROWN: Thank you, Mr. Cook.

Mr. Minasian.

MR. MINASIAN: No questions, Mr. Brown.

H.O. BROWN: Mr. Bezerra.

MR. BEZERRA: No questions, Mr. Brown.

H.O. BROWN: Mr. Morris.

MR. MORRIS: No questions, Mr. Brown.

H.O. BROWN: Staff.

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CROSS-EXAMINATION OF YUBA COUNTY WATER AGENCY

BY STAFF

MR. MONA: Good morning.

MR. WILSON: Morning.

MR. MONA: Mr. Robertson, you first. Let's refer to your Exhibit S-YCWA-30, please. I believe you testified earlier today you personally developed this graph, correct?

MR. ROBERTSON: Correct.

MR. MONA: The X axis, I presume those are water years; is that correct?

MR. ROBERTSON: Yes.

MR. MONA: Let's go to the bars identified as historic Yuba River diversions for the years 1975 through 1986. Would you please identify for the record the source of data for those bars, please.

MR. ROBERTSON: My recollection is that that was from

the corrected data that we provided earlier on in the hearing.

MR. MONA: Do you know the specific exhibit number you referred to?

MR. ROBERTSON: I believe -- I don't recall exhibit numbers.

MR. MONA: Would you refer to Exhibit S-YCWA-15A.

MR. LILLY: I am going to object. If Mr. Mona is going to ask this witness questions about exhibits, he has to give the witness copies of the exhibits so the witness has a fair chance to know what he is talking about. We don't have 15A in front of the witness right now.

MR. MONA: I have a copy.

Just for the record, we are dealing with the period 1975 through 1986?

MR. ROBERTSON: All right.

MR. MONA: Are those data that support these graphs identified anywhere in Exhibit 15A?

MR. ROBERTSON: No.

MR. MONA: You can't recall where you got the data for those years?

MR. ROBERTSON: Those were from data that were prepared for the Yuba County Water Agency by Bookmen-Edmonston in a 1990 groundwater report that was previously submitted.

MR. MONA: Let's move on to the period 1987 to 1999.

Could you identify the source of data that was used to generate the bar graphs for the historic Yuba River diversion?

I can help you out. Would that be Table 10 of Exhibit 15A?

MR. ROBERTSON: I believe it was.

MR. MONA: That data came from the historic, total historic diversion demand in that column in that table?

MR. ROBERTSON: That is my recollection.

MR. MONA: For the two data sets for year 2001 and 2020 what is the source of data for those two bars?

MR. ROBERTSON: These are stacked bars. The lower bar for 2000, what appears to be 2001 and 2002, is the projected irrigation demand used in the simulation study.

MR. MONA: Would they be Table 1 and Table 2 of S-YCWA-15?

MR. LILLY: Again, we are getting back to the prior testimony, so we need to have exhibits for the witness to be able to answer these questions.

MR. MONA: Here you go.

MR. ROBERTSON: Yes. The M&I demand is not included within the bars for the 2020 demand.

MR. MONA: Thank you.

I notice that you identify the graph as the Historic and Projected Yuba County Irrigation Demand and Supply.

Isn't it true that the data set for 1987 through 1999 includes two components, those components being actual irrigation demand and waterfowl flooding?

MR. ROBERTSON: That's correct.

MR. MONA: So it is not just an irrigation demand graph that you are depicting, correct?

MR. ROBERTSON: That's correct.

MR. MONA: If it was, those bar groups would be somewhat lower than what they are on this graph?

MR. LILLY: I am going to object. The question is unclear as to what Mr. Mona is asking would be relevant. Obviously, the point of this graph is to look at historical diversions to the Agency service area. To ask would the bars be smaller if we only looked at part of the historical diversions is an irrelevant question.

H.O. BROWN: Ernie.

MR. MONA: Well, Mr. Brown, he identifies a graph as an irrigation demand and supply graph. I am just asking do the bar graphs, in fact, reflect just irrigation demand or does it include two components, irrigation demand and waterfowl habitat.

H.O. BROWN: Good question.

MR. ROBERTSON: The bars include water for rice double D composition which also serves as waterfowl habitat. To the extent the land can -- it is not a consumptive use

demand in the sense that irrigation water is consumed and evapotranspiration occurs. But it does allow the land to be irrigated when you can use the water for rice double D composition.

MR. MONA: Would you happen to know what the average historic irrigation demand is for 1987 through 1999?

MR. ROBERTSON: The average historical --

MR. MONA: Irrigation demands.

MR. ROBERTSON: I don't have the amounts separated versus the water for rice double D composition.

MR. MONA: Let's move on. Let's move on to the bars identified in alternative supply and reuse. Let's move back. The historic Yuba River and estimated future Yuba River diversion, those are diversions that have occurred within the Agency's service areas; is that correct?

MR. ROBERTSON: In the Lower Yuba River. There are also some diversions that occur upstream that are not accounted in this.

MR. MONA: But that identified irrigation demand that you have shown here on irrigation demands that have been met from diversions from the Yuba River for use within the Agency's service area?

MR. ROBERTSON: The total irrigation demand depicted by the sum of the two bars includes all irrigation demand. The shaded bars, the lower bars, indicate the demands from the

Lower Yuba River.

MR. MONA: For use within the service area?

MR. ROBERTSON: Correct.

MR. MONA: The alternative supply and reuse bars then, as you have identified, are principally identified groundwater use. Is that groundwater use within the service area of Yuba County Water Agency?

MR. ROBERTSON: They are from all other sources, including Bear River, Feather River, groundwater, any other local stream diversions and reuse. It's the remainder.

MR. MONA: Am I correct in concluding then that you are using this graph to identify some maximum limit here where on one hand you are just showing irrigation uses within the service area and on top of that you are adding to it groundwater used principally and other supplies reused within the entire Yuba County, not only just within the Yuba County Water Agency service area?

MR. LILLY: I am going to object that that question is compound and ambiguous. I think he needs to split it up into parts so we can really understand what the question is.

H.O. BROWN: The graph as described earlier I thought was pretty clear, that the bars are separated into surface diversion and groundwater extractions and reclamation water.

MR. MONA: The point I am trying to make, Mr. Brown, is

that surface diversions here identified on this graph are surface diversions for use within the Agency as groundwater extractions. What I am trying to get to is whether these groundwater extractions are extractions made within the Agency as an alternative supply of water.

MR. LILLY: Wait until he asks a question.

H.O. BROWN: Where are you heading with it?

MR. MONA: Well, eventually I was going to ask, if, in fact, we should include that this graph represents a total supply of water, both surface and groundwater, that can be relied upon with the Agency service area, or does the alternative supply of groundwater here, in fact, reflect groundwater that may be available within the Yuba County Water Agency service area.

H.O. BROWN: Mr. Frink.

MR. FRINK: I am a little confused also. You want me to try to -- I think I can ask the questions that will break it up the way Mr. Mona wants, in the way that is clear.

H.O. BROWN: Try it.

MR. FRINK: Let's see how it goes, Mr. Robertson.

Now my reading of the graph shown in your Exhibit 30 is that the shaded bars represent historical deliveries by Yuba County Water Agency within its service area. We had that established before; is that correct?

MR. ROBERTSON: Correct.

MR. FRINK: The additional increment shown on top of that reflects additional water that was used within the entire Yuba County area for the years 1975 through 1999; is that correct?

MR. ROBERTSON: Correct.

MR. FRINK: Then you have some projected use for years 2000 and 2020; is that correct?

MR. ROBERTSON: Correct.

MR. FRINK: Looking at the upper portion of the bars there, am I correct in understanding that not all of that water use occurred within Yuba County Water Agency's service area?

MR. ROBERTSON: The service area of Yuba County, as I understand it, includes most of the county. Their water rights service area -- their water rights area may be different.

MR. FRINK: But does the or do the upper portions of the bar include areas that, in fact, Yuba County Water Agency has not been delivering water to?

MR. ROBERTSON: Correct.

MR. FRINK: How did you determine the quantities of water reflected in the upper portions of the bar shown on Exhibit 30?

MR. ROBERTSON: Those are determined by using the irrigated acreages developed from the Ag Commissioner, Yuba

County Ag Commissioner, and the current applied water rights of Yuba County.

MR. FRINK: Is it correct to say that the lower portion of the bars in Exhibit 30 reflects the district's information on historical diversions, and the upper portion of the bar reflects your estimates on other water use that occurred within the county?

MR. ROBERTSON: Correct.

MR. FRINK: So we have a combination of both the historical records on diversions plus estimates on other use that you believe occurred?

MR. ROBERTSON: Correct.

MR. FRINK: Mr. Mona has a couple more questions.

H.O. BROWN: Thank you, Mr. Frink.

MR. MONA: Let's go to Exhibit S-YCWA-29, please. The projected 111,000 acres that you estimated that will be irrigated in the year 2020, do you know how many of those acres actually lie within the service area of Yuba County Water Agency?

MR. ROBERTSON: Again, the Agency -- the Agency boundaries encompass all of Yuba County, but there may be a difference between where the water rights allow them to serve and where they're actual boundaries. The boundaries of the Agency encompass nearly all of the county, as I understand it.

MR. MONA: Do you know how many irrigation districts or water districts are served within the agency and by the agency or will be served by the agency?

MR. LILLY: Wait, wait, wait. Objection. Compound.

H.O. BROWN: Sustained.

MR. MONA: Is it true that the agency is serving Brophy Water District, Browns Valley Irrigation District, Cordua Irrigation District, Datoni area, the Dry Creek Mutual Water Company, Hallwood Irrigation District, Ramirez Irrigation District and the South Yuba Water District currently?

MR. ROBERTSON: And Dry Creek Mutual.

MR. MONA: In the future they will also be serving Western Water District and Western Water District attachments, Wheatland?

MR. ROBERTSON: Correct.

MR. MONA: And is it true that the agency has, in fact, already projected how much total acres will be served in order to derive their future estimated demand?

MR. ROBERTSON: We have made an estimate, yes.

MR. MONA: Would those estimates be located in Exhibit S-YCWA-15, Appendix A?

MR. ROBERTSON: Yes.

MR. MONA: If you total the net acreage irrigated, projected irrigated, would that total come out to around

69,000 acres total?

MR. LILLY: I object on the ground that this question apparently is referring to a specific page in that exhibit. The question would be clear if he would refer to the page. Then we can look at it and see if we are both talking about the same thing.

MR. MONA: I am referring to Exhibit 15, Appendix A, the tables wherein the district estimated projected net acres, how many net acres would ultimately be served and came up with some number that would ultimately be needed to serve the future acreage.

MR. ROBERTSON: Appendix A includes the derivation of the water demands based on projected acreage.

MR. MONA: In order to arrive at that projected total you would have to go to each one of the tables which are identified for each of the districts served to determine the total net acreage that would be served ultimately by the agency?

MR. ROBERTSON: That is within the Lower Yuba River service area. There are also demands that the agency may serve that are upstream of the Yuba River service area. We were dealing with Lower Yuba River, so these demands focus on the demands from the Lower Yuba River. They include both water districts and irrigation districts and mutual water companies.

MR. MONA: Those would be irrigated acreage in the upper Yuba River that you are referring to? Those demands on the Lower Yuba River are irrigation demands that would be served, correct?

MR. ROBERTSON: Correct.

MR. MONA: The upper demands that you refer to are what type of demands?

MR. ROBERTSON: They are both municipal demands and potential irrigation demands that are ongoing.

MR. MONA: Those demands would amount to 111,000 acres ultimately by the year 2020?

MR. ROBERTSON: If the past trend portends the future, that is correct.

MR. MONA: Thank you.

MR. FRINK: I guess I do have a follow-up question on the Exhibit S-YCWA-29. Of the 110,000 acres that are estimated as being irrigated in the year 2020, did you mean to imply that Yuba County Water Agency will be serving water to those 110,000 acres?

MR. ROBERTSON: No. It is land that will have an irrigation demand. To my knowledge, Yuba County hasn't made firm commitments, although the districts do work with the Agency in terms of supplementing their demands. So, to the extent that there are demands beyond the Lower Yuba River, those haven't -- no firm commitments, there are no firm

commitments that I am aware of except they are part of the Agency.

MR. FRINK: In making your projections for future water demand that Yuba County Water Agency would serve, is it correct that you relied upon the acreage numbers that Mr. Mona and you were discussing earlier shown in the appendix to your Exhibit 15?

MR. ROBERTSON: Yes.

H.O. BROWN: For the record, Mr. Frink, you meant 111,000 acres?

MR. FRINK: No. I wanted to clarify that I think there is a difference between the 111,000 acres shown in Exhibit 29 and the actual acreage that Mr. Robertson used in predicting the water demand that Yuba County Water Agency itself expects to serve.

Is that right, Mr. Robertson, there is a difference in those numbers?

MR. ROBERTSON: That's correct. The 111,000 acres shown on the chart also happens to coincide with the projections that were made by Bookmen-Edmonston in the 1990s' vintage report on projected full irrigation demands of the county.

The amounts that we have in the simulations, and they're depicted by the dark bars, are based on the acreages used in Appendix A of Exhibit 15.

MR. FRINK: Although Yuba County Water Agency includes most, if not all, of the county within its service area, you don't mean to represent that Yuba County Water Agency intends to meet all of the future water demands within Yuba County; is that correct?

MR. ROBERTSON: I can't make representations for Yuba County in terms of what they intend to do. For the simulations, all we relied upon was the projected acreages in the Lower Yuba River.

MR. FRINK: The Bookmen-Edmonston report that you referred to focused on irrigation demands throughout the county; is that correct?

MR. ROBERTSON: Throughout the county. The 111,000 acres refers to throughout the county. Exhibit 15 refers to areas within the Lower Yuba River service area.

MR. FRINK: I wonder if we can look at your Exhibit S-YCWA-30, which is entitled Historical and Projected Yuba County Irrigation Demand and Supply.

Looking at shaded portion of the bars shown for each of the water years, does that include any diversions that were made from the Yuba River under the water rights of other parties other than Yuba County Water Agency?

MR. ROBERTSON: It is my understanding that the Yuba County Water Agency backs up water rights as part of their settlements with the water rights holder on the Lower Yuba

River. Exactly how they work their accounting I am not intimately familiar with that.

MR. FRINK: Do you know if this includes diversions that were made under the separate rights of Browns Valley Irrigation District?

MR. ROBERTSON: There were diversions that were made from the Colgate penstock. These are for Browns Valley, but these are diversions from the Lower Yuba River to service those areas.

MR. FRINK: Are those diversions included within the shaded portions of your graph?

MR. ROBERTSON: Correct.

MR. FRINK: This is a question for either Mr. Robertson or Mr. Wilson. Do you know if there were other diversions made by Browns Valley Irrigation District that are not reflected in the shaded portion of the graph?

MR. WILSON: Correct, there were.

MR. FRINK: Would it be -- is it your understanding that Browns Valley Irrigation District reports those diversions separately on its report of water diversions that it submits to the State Board?

MR. WILSON: I would assume they do, I have no knowledge what they do.

MR. FRINK: Mr. Robertson, for the year 1999 it appears that the graph, Exhibit 30, shows that the use of water from

alternative sources other than the Yuba River was approximately 170,000 acre-feet; is that correct? Am I reading your graph correctly?

MR. ROBERTSON: As I see the graph, it shows just right about 300,000 for the shaded bar and then up about 470-. So I would -- the difference would be approximately as you say it.

MR. FRINK: Then if we go up to the year 2020, looking at the projected use, projected demands to be met from alternative supplies, it appears that you have projected about 230,000 acre-feet of the demand would be met by alternative supplies; is that correct?

MR. ROBERTSON: That's correct.

MR. FRINK: If we were to arrive at an estimate for the increase in the demand that you expect to be met from alternative supplies, could we subtract the 170,000 acre-feet in 1999 from the 230,000 acre-feet that you have projected for the year 2020?

MR. ROBERTSON: Could you restate that?

MR. FRINK: If we want to know the increase in water demand that you have projected to be met by alternative supplies, we can just subtract the alternative supply number for 2020 from the alternative supply number from 1999; is that correct?

MR. ROBERTSON: Not entirely. This is showing a demand

for water that would need to come from other sources. It is not a source -- they are not identified specifically sources of supply that are summed up to make the clear bar. So what this shows is a residual demand that we have not planned on meeting from the Lower Yuba River.

MR. FRINK: Going back to the years 1975 through 1999, now it is my understanding that that also is a residual demand that you have estimated exists, that you don't know the actual amount of water that was available to serve that demand; is that correct?

MR. ROBERTSON: The period up through 1990 is based on a water balance that was performed for the groundwater study for Yuba County in 1990. This is a water balance performed on those data.

MR. FRINK: On the groundwater portion?

MR. ROBERTSON: There was a water balance performed by Bookmen-Edmonston that evaluated the availability of surface water supplies and the change in groundwater elevation and the return flows to the river which derived the actual total water use within the area.

So the numbers prior to 1990 are very good estimates of what the demand was. Post-1990 are based on the recent water use, applied water rate.

MR. FRINK: In response to questions from Mr. Gee I believe you stated that a portion of the projected demand to

be met from alternative sources will be met from reuse of tailwater return flows; is that right?

MR. ROBERTSON: That is the present practice.

MR. FRINK: Do you have any estimate on the amount of the demand that is currently being met through reuse of tailwater return flow?

MR. ROBERTSON: Not with me, no.

MR. FRINK: Do you have an estimate on the amount of the future demand that you expect will be met from reuse of tailwater return flow?

MR. ROBERTSON: No, I don't.

MR. FRINK: Did you develop such an estimate in preparing Exhibit 30?

MR. ROBERTSON: No, I did not.

MR. FRINK: Mr. Wilson, I have just a couple of questions regarding the percentage of runoff in the Yuba River that is available for diversion into New Bullards Bar. I believe you testified approximately 50 percent of Yuba River runoff enters New Bullards Bar from the North Fork Feather River; is that correct?

MR. WILSON: North Fork Yuba River.

MR. FRINK: I'm sorry, North Fork Yuba River. I'm working on another project, and I am used to writing NFFR.

You also mentioned that water is diverted into New Bullards Bar from the Middle Fork of the Yuba River and from

Oregon Creek. Do you know the approximate quantity that is diverted into New Bullards Bar from the Middle Fork of the Yuba River in dry years?

MR. WILSON: Depends on how dry a year. Anywhere from zero to 50,000.

MR. FRINK: How about from Oregon Creek?

MR. WILSON: That is a combination of both of them.

MR. FRINK: When you mentioned your estimate of approximately 50 percent of the Yuba River that enters New Bullards Bar from the North Fork Feather River, did that include --

MR. WILSON: Let's try a different river again.

MR. FRANK: I am sorry. Cross out that acronym. I will restate the question.

Your estimate of approximately 50 percent of Yuba River runoff enters New Bullards Bar from the North Fork Yuba River, did that include any of the diversions from the Middle Fork Yuba River or Oregon Creek?

MR. WILSON: No, it did not.

MR. FRINK: Do you know the approximate percentage of the runoff of the Yuba River that is diverted into New Bullards Bar from all sources?

MR. WILSON: The average annual unimpaired runoff is about two million two, and on the average it would be about 10 percent. Excuse me, you would have -- on an average year

you would have a total -- well, that is not right either. On an average year you would have a lot of bypass flows that cannot divert.

MR. FRINK: Let me rephrase the question. Maybe I will give you -- if we more narrowly focus the question it might be easier to figure.

If we look at a relatively dry year, but there is substantial water available in the Middle Fork Yuba River and also in Oregon Creek, how much of the total runoff for the Yuba River is available for diversion into New Bullards Bar from all three sources, the North Fork Yuba River, Middle Fork Yuba River and Oregon Creek?

MR. WILSON: Percentagewise?

MR. FRINK: Yes.

MR. WILSON: Somewhere 55, 56 percent.

MR. FRINK: So much of the -- so not much of the water that goes into New Bullards Bar is from the Middle Fork Yuba River or Oregon Creek?

MR. WILSON: It varies, anywhere from zero to about 260,000 acre-feet depending on the water year type.

MR. FRINK: A couple more quick questions regarding bypass of flows at the Narrows 1 and Narrows 2 electrical plants or hydropower plants.

You mentioned that there is a bypass of 650 cfs at Narrows 2?

MR. WILSON: Correct.

MR. FRINK: And also a bypass of 650 at Narrows 1?

MR. WILSON: Yes.

MR. FRINK: If one of the power plants were down and one's objectives were to meet the bypass flow requirements, you would still have available the bypasses at each of the powerhouses; is that correct? I'll rephrase the question to take care of Mr. Lilly's objection.

Speaking from a physical standpoint if PG&E and County Water Agency were coordinating operations, and if one of the powerhouses were down, from a physical standpoint you could meet bypass flow requirements by using each of the bypasses of each of the power plants; is that correct?

MR. LILLY: I am going to object just to the term "bypass flow requirements" is ambiguous. That is an unclear term.

MR. FRINK: Mr. Lilly is correct. I will rephrase the question.

To meet the instream flow requirements downstream of Englebright Reservoir?

MR. WILSON: Depends on the type of trip on Narrows 2. We do coordinate and we do try to minimize impacts. If we get a trip on Narrows 1 or 2, we try and compensate with the other plant to the degree we can. In regard to bypass, if Narrows 2 goes into a full lockout, shutdown, we lose the

bypass capability because the gates of the reservoir are closed. We do -- if we were only operating with Narrows 2, and we went into a full lockout, shutdown on Narrows 2 and Narrows 1 was not operating, we would initiate through PG&E 650 cfs introduction to the river through the Narrows 1 bypass.

If we do not go into a full lockdown, shutdown on Narrows 2, we would have a capability of 1,300 cfs combined for bypass.

MR. FRINK: Are the power plants operated separately? Does Yuba County Water Agency operate Narrows 2 and PG&E operate Narrows 1?

MR. WILSON: Technically we do, but we coordinate the operation with them with current ownership. With the divestiture that is a concern to us.

MR. FRINK: Right now any increase or decrease in power revenue accrues to PG&E; is that correct?

MR. WILSON: That is correct.

MR. FRINK: As a matter of physical operations, is there one individual making the decisions at the time as to where to release water from, which of the powerhouses to release water from?

MR. WILSON: It is a coordinated decision.

MR. FRINK: Does Yuba County Water Agency itself have anything to do with the day-to-day operations of the

powerhouses?

MR. WILSON: Yes. On Narrows 1 we own and we operate -- excuse me, Narrows 2. I'm catching it from you.

We take our dispatch orders from PG&E.

MR. FRINK: And right now with the coordinated operation I assume if there were a breakdown in one of the power plants that required shutting off flows through that power plant, that you would attempt to meet the instant flow requirements for the other; is that correct?

MR. WILSON: Yes, we do that.

MR. FRINK: Thank you.

MS. LOW: I just have a few questions for Mr. Robertson. This relates back to Exhibit 30 again.

My question relates to the increased use in recent years for rice straw decomposition and wildlife habitat. Has there been an increase in use in recent years due to new uses for rice straw decomposition?

MR. LILLY: Mr. Brown, I am going to object. This goes beyond the scope of rebuttal testimony.

H.O. BROWN: Ms. Low.

MS. LOW: The reason I am asking, there is some numbers presented here from historical water use, and I am trying to understand the trend better here, and if there is new uses that may have influenced the trend in recent years.

H.O. BROWN: Mr. Frink, he did not get into the

breakdown of the uses on direct?

MR. FRINK: He didn't, and I think we can get information on trends and uses for water for waterfowl habitat from previous exhibits.

MS. LOW: That is fine. That is all my questions. Thank you.

H.O. BROWN: Mr. Lilly, do you have any redirect?

MR. LILLY: Yes.

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REDIRECT EXAMINATION OF YUBA COUNTY WATER AGENCY

BY MR. LILLY

MR. LILLY: Mr. Wilson, some questions have been asked about -- numerous questions have been asked to you about the Narrows 2 bypass facilities. Did the Federal Energy Regulatory Commission approve the specific design of the Narrows 2 power plant when the license was issued for that plant in the 1960s?

MR. WILSON: Yes, they did.

MR. LILLY: Did those plants include specifications for the 650 cubic foot per second bypass facility that you described?

MR. WILSON: Yes, they did.

MR. LILLY: Has the Federal Energy Regulatory Commission ever amended the license to require Yuba County Water Agency to construct a new bypass or to enlarge that

existing bypass to increase its capacity?

MR. WILSON: They have not.

MR. LILLY: Would Federal Energy Regulatory Commission approval be required before the Agency would be authorized to change the capacity of the Narrows 2 bypass?

MR. WILSON: Yes, it would.

MR. LILLY: That would be in the form of a license amendment that would be required?

MR. WILSON: I believe it would require a license amendment.

MR. LILLY: Has the Agency prepared any estimate of the cost of a full bypass facility at Narrows 2 Powerhouse?

MR. WILSON: Yes, it has.

MR. LILLY: Just in approximate numbers what would that cost estimated to be?

MR. WILSON: The physical cost is approximately $5,000,000. We tried to come up with a plan that would minimize the amount of time the plant would be out of use, and when the plant is out of use it not only results in loss of generation potentially, depending on water year type, but it also impacts ancillary service values of Colgate power plant. And in looking for a window that looked like we have the less fishery impact in trying to accomplish this, I discussed this with PG&E dispatchers. And they modeled if this would have been done in 1999, during that window which

is a 12-week window, the loss of generation at Narrows plus the ancillary services impact loss, Colgate would have amounted to $12,000,000. Had we built it in 1999 under that scenario, it would have been a $17,000,000 project.

MR. LILLY: When you talk about ancillary services, in general terms is that because Colgate could not be used as a peaking power plant as much as it currently is during that construction period?

MR. WILSON: Correct, and its capacity would be realized also.

MR. LILLY: There also were some questions regarding -- I think your testimony in response to questions was that Englebright Dam is a regulatory point but not a control point.

Do you recall those questions?

MR. WILSON: That's correct.

MR. LILLY: What is the active storage capacity of Englebright Reservoir?

MR. WILSON: The active storage capacity is 45,000 acre-feet.

MR. LILLY: During the times when the inflows into Englebright exceed the outflow capacities to Narrows 1 and Narrows 2, does the excess water just spill over the top of the dam?

MR. WILSON: Once you exceed your storage capacity,

yes.

MR. LILLY: Does that happen frequently or not?

MR. WILSON: In anything above a below average year we usually end up with substantial days of spill at Englebright.

MR. LILLY: Now, Mr. Robertson, I have a couple questions for you following up on your Exhibit S-YCWA-30.

I think staff asked a question about the projection of the increased demand for alternative supplies that would go from 170,000 acre-feet in 2001 to, I believe the number is, 230,000 acre-feet in 2020; is that correct?

MR. ROBERTSON: I recall the question.

MR. LILLY: I just want you to clarify what you meant when you said that's an increased demand and you have not looked at whether the supply would be available. Could you clarify what the distinction is in increase in demand and increase in supply in that scenario?

MR. ROBERTSON: The supplies shown through 1999 are the gray bars that are on the lower portion of the graph. Those are supplies. The white bars there and up through 1990 are calculated from the water balance. So there were supplies there. But the top of the white bars or the clear bars indicate a demand.

When we look at 2020 and just past 2000, the clear bar indicates a residual demand for water based on irrigated

acreage, and that residual demand is after projected service by Yuba County Water Agency from the Lower Yuba River.

MR. LILLY: Basically, your graph then shows an increase in that residual demand of 60,000 acre-feet per year between 2001 and 2020?

MR. ROBERTSON: That's correct.

MR. LILLY: Are you offering any testimony whether or not there are supplies outside of Yuba River that would be available to meet that increased demand?

MR. ROBERTSON: No, I am not.

MR. LILLY: If there were not supplies outside of the Yuba River to meet that demand would that -- would a potential of additional supply for that increased demand be from the Yuba River itself?

MR. ROBERTSON: It could be.

MR. LILLY: Thank you. I have no further questions of these witnesses.

H.O. BROWN: All right.

Any recross on redirect? Anyone?

Okay.

Staff?

MR. FRINK: No.

H.O. BROWN: You have some additional exhibits you would like to offer into evidence?

MR. LILLY: I think these are the last two, Mr. Brown.

I know it has been a long hearing. We offer at this point S-YCWA-29 and S-YCWA-30.

H.O. BROWN: Exhibits 29 and 30, are there any objections?

Seeing none, they are so accepted.

I think that completes this panel.

MR. LILLY: That is correct, and that completes the Yuba County Water Agency's rebuttal.

H.O. BROWN: Gentlemen, thank you very much. You have been very patient waiting for this.

Thank you.

Mr. Minasian, I believe you have an exhibit to offer into evidence.

MR. MINASIAN: I do. We have made copies of 4.18 and 4.19 for everybody. They were the overheads that were prepared by Dr. Brannon; I would offer, Board Member Brown:

4.0, which is the Curriculum Vitae for Ernest Brannon;

4.1, which is the attributes of chinook salmon.

4.2, which is the run classification chart.

I would not offer 4.3 because it was not referred to.

I would offer 4.4, which is the chinook salmon spawning time chart.

I would offer 4.5, which is the spawning time versus mean incubation temperature.

4.6, which is the days to yolk absorption with mean temperatures.

4.7, which is the compensation rate of development versus temperature.

I would not offer 4.8 because it was not referred to.

Not offer 4.10, but would propose 4.9 to be admitted, which is the temperature effects on chinook growth rate.

And then I would suggest that 4.18, which is the peak chart and 4.19, which is the demonstrative chart showing the difference between a peak spawn time and a bell curve or skewed curve based upon change in temperature, be offered.

H.O. BROWN: See if I have these, Mr. Minasian.

4.0, 4.1, 4.2, 4.4, 4.5, 4.6, 4.7 and 4.9 and then 4.18 and 4.19?

MR. MINASIAN: That's correct.

H.O. BROWN: Are there any objections to those exhibits?

Mr. Cunningham.

MR. CUNNINGHAM: If I might, Mr. Brown.

First, actually just a point of clarification. Mr. Minasian, your Exhibit 4.19, I think is reversed from the overhead that Dr. Brannon was drawing. At least that is what it appears to be. I think, it is actually reversed right to left or just flip-flopped.

H.O. BROWN: On the --

MR. CUNNINGHAM: I think when Dr. Brannon drew it, he drew the X axis to the left and Y axis to the right.

MR. MINASIAN: Thank you for pointing that out.

H.O. BROWN: You're right.

MR. CUNNINGHAM: I think it got flip-flopped.

Mr. Brown, I have a question to ask.

H.O. BROWN: Hold it up backwards. Good point. Good eye, Mr. Cunningham.

MR. CUNNINGHAM: And then, Mr. Brown, I do have a question, and perhaps Mr. Minasian can refresh my memory on Exhibit 4.6. I did not remember Dr. Brannon talking about the actual days to yolk absorption with mean temperature. So I do have an objection to foundation. If Mr. Minasian could refresh my memory.

MR. MINASIAN: My recollection was that he went to the diagram and said, "See, as the temperature increases, you basically decrease the number of days till the yolk is absorbed and emergence occurs."

H.O. BROWN: All right. There is no objections to the admission of those exhibits so named?

MR. LILLY: I assume that we can -- just procedurally I request that Mr. Minasian flip over the overhead and make a new copy of 4.19 and that he send it out to the parties so the record has the correct one so anyone doesn't have to hold it up to the light.

H.O. BROWN: Good point, Mr. Lilly.

Mr. Minasian, will you --

MR. MINASIAN: Be glad to do that.

H.O. BROWN: Any other comments on the exhibits?

Seeing none, they are so accepted into evidence.

MR. FRINK: Mr. Brown, I just wanted to clarify something that Mr. Minasian did. There are a few other exhibits attached at the end of your handout, proposed exhibits, 4.11 and 4.12, 4.13 and 4.14. I take it those are not offered?

MR. MINASIAN: They are not offered.

Thank you.

MR. FRINK: And 4.15 and -- 4.15 and 4.16?

MR. MINASIAN: That's correct.

I have what I would estimate to be five minutes of rebuttal on a foundational issue at the appropriate time.

H.O. BROWN: Now is the appropriate time, Mr. Minasian.

MR. MINASIAN: May I be sworn?

H.O. BROWN: You are making a rebuttal to what?

MR. MINASIAN: On the sole issue of the condition of the gabion pond prior to construction of the gabion. And to do that I will have to ask the Board to accept a copy of an official record of South Yuba Water District, which is an aerial photograph that shows the pond to be in existence and

isolated from the river before the gabion.

MR. SANDERS: I am going to object. It is highly unusual for an attorney to be a witness, in fact, violates the rules of professional ethics, and, therefore, I object.

H.O. BROWN: Thank you.

MR. MINASIAN: It is an interesting objection. Unfortunately, I also happen to be the acting secretary and depositor of the official records of this district. So I am basically the only one with the capacity to testify to the records of the district.

MR. SANDERS: In that case I withdraw my objection.

H.O. BROWN: You withdraw?

MR. SANDERS: I do. I think he is an appropriate witness.

H.O. BROWN: Any comment, Mr. Frink?

MR. FRINK: Since it is being offered as rebuttal, with evidence are you offering this to rebut?

MR. MINASIAN: Do you remember the testimony in regard to the great fear that juvenile salmon would be washed by floods into the pond? And it would certainly be relevant to show that the pond existed before the gabion, and there was no outlet to the river. We did not construct the pond. It existed before.

MR. FRINK: Mr. Brown, I am not disputing who constructed the pond or not, but I don't think anybody

stated that they did construct the pond, so I am not sure he is rebutting anything. It seems to be a new subject.

MR. MINASIAN: The issue was raised by Department of Fish and Game for the purposes of citing activities of the South Yuba Water District that rendered salmon in poor condition. Causation is always a proper subject of rebuttal.

We did not cause the existence of the pond and, as a matter of fact, it is very clear from the evidence that the condition of the fish is better after we built the gabion and opened the pond so fish can get out if they are washed in by flood.

H.O. BROWN: Mr. Cook.

MR. COOK: I believe the testimony both during this particular hearing, this period of hearings, as well as the 1992 hearing is that this pond is directly connected to the river; two, that the pond empties into the fish screens which have been there for many, many years. I couldn't tell you the date right at the moment. I think there has always been -- when I said fish screen, I meant the fish ladders at Daguerre Point Dam. I think there has always been an outlet. And also, number three, I don't believe testimony has been presented that fish going into the pond is a problem. I think the testimony has been that fish going through the gabion into the south canal is the problem.

Therefore, the existence of a pond, no matter how long it has been there, since Daguerre Point Dam was originally silted up, I don't think it has been in question during these proceedings.

H.O. BROWN: Mr. Cook is reflecting my thoughts on this, Mr. Minasian. What do you have to say about that?

MR. MINASIAN: I remember -- if it didn't register with the Board -- that there was a complaint that during flood periods juvenile fish were washed into the gabion structure behind or in front of the gabion. If it didn't register with the Board or staff that that was some sort of evil condition then certainly there would be no need for rebuttal testimony.

H.O. BROWN: That was part of the testimony during flood flows washing over the gabion. So you're giving rebuttal testimony to rebut what?

MR. MINASIAN: To rebut that the South Yuba or Brophy Water District created any condition that exposed fish to danger in flood conditions.

MR. FRINK: Could I ask a question, Mr. Brown?

H.O. BROWN: Sure.

MR. FRINK: Mr. Minasian, do you intend to introduce all the detailed maps you have rolled up into the record?

MR. MINASIAN: No. What I intended to do so you wouldn't have to carry these around was to explain that I

have made a copy of pages, and if anybody wanted to look at portions of the pages which are aerial photographs before construction of the South Yuba-Brophy Project, one can very clearly see the pond and see no outlet and no gabion across it.

Then one can compare the photograph of the gabion contained within Yuba County Water Agency and common sense at that point, I pray, would take over on that issue. So my sole purpose is to identify the document, identify the photographs and give everybody a copy of the excerpts.

H.O. BROWN: Mr. Frink.

MR. FRINK: I am still not sure it is within the proper scope of rebuttal here, but I think it would be quicker to let him do it then --

H.O. BROWN: Are there any objections to Mr. Minasian presenting this evidence in rebuttal?

All right. Seeing none, I will swear you in, Mr. Minasian.

(Oath administered by H.O. Brown.)

H.O. BROWN: Are you going to be represented by an attorney?

MR. MINASIAN: I would have a fool for an attorney.

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DIRECT TESTIMONY OF SOUTH YUBA WATER DISTRICT

BY MR. MINASIAN

MR. MINASIAN: Mr. Brown, Board Member staff, I serve as the acting secretary of the district and custodian of records at this time. That has been the case for approximately the period of 1982 to present time.

There was prepared in 1983 a set of plans and specifications, and the plans and specifications bear a date of 11/13/82. And this revision that we have here is 5/10/83. I of my own personal knowledge know that was before any construction was done either at the river or at the gabion or any other facility.

Sheet 3 and 4 are aerial photographs as engineers are apt to do. They will draw it out so a layman will understand where the facilities are going to be and what exists before the project.

I have made as Exhibit 7, and I'd ask it be marked as -- 6, I -- 7, the portion of the aerial from Sheet 3 and the second page is the study date, to give you the tab. That photograph shows the area where the gabion eventually was constructed. I also had the doubtful pleasure of going out there several times before the gabion was constructed. I can attest to you the pond with approximately its current dimensions existed before the gabion was constructed.

The gabion was installed in an east to west direction

across the center of the pond. I can also tell you that there was no natural outlet to the pond except when water conditions rose, flood waters or rising water levels would raise the level in the pond and it would then flow across the area between the river and the pond.

To the immediate south of the pond is a training levee which is a man-constructed facility. And it is through that training levee that pipes were constructed. Beyond the training levee there is a small weir structure that has been referred to by Mr. Cook as a dam. That was installed specifically at the suggestion of Department of Fish and Game as a way, when diversions started, to open the pipes, open the dam and let fish, if there were any washed into the pond in floods, wash down back into the river.

That is the end of our testimony.

H.O. BROWN: All right.

Cross-examination by anyone?

Mr. Cook.

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CROSS-EXAMINATION OF SOUTH YUBA WATER DISTRICT

BY MR. COOK

MR. COOK: Mr. Minasian, in addition to being keeper of the records, you also have personal knowledge of this particular area?

MR. MINASIAN: Yes, I do.

MR. COOK: I am looking at the copies that you distributed, and the one at the top which shows the Yuba River and Daguerre Point Dam. Daguerre Point Dam is shown sort of at the left-hand side?

MR. MINASIAN: That's correct.

MR. COOK: I believe that -- you said, I think, this aerial photograph was 1983?

MR. MINASIAN: The plans are dated 11/3/82. So we know the aerial plans were taken before that date. But I do not know where the original of these photos are.

MR. COOK: I think that I also see on this top photograph the south canal. Did it exist at that time?

MR. MINASIAN: Well, may I answer it in this way?

MR. COOK: Certainly.

MR. MINASIAN: The South Yuba-Brophy Canal, as we understand it, starts at the south end of the Goldfields near the town of Hammonton. The channels that you are seeing on this aerial photograph are basically created by a dredger in our understanding during the course of the development of the Goldfields.

MR. COOK: Let me ask this, then: What I see at the lower portion of this photograph is a rather straight line-type of canal with one bend in it on the lower right. But that doesn't appear to be consistent with the other dredger tailings in the Goldfields.

Was that constructed in order to provide an outlet of water from the Yuba River to the south?

MR. MINASIAN: I have no knowledge of that. All I can tell you is that this aerial photograph preexisted any sort of construction by South Yuba-Brophy of a water conveyance or regulatory project.

MR. COOK: I have another question. I'm having a hard time finding on the top photograph what you refer to as the pond. Am I just misreading this? Can you show me that?

MR. MINASIAN: Do you see the Daguerre Point Dam?

MR. COOK: Yes, I do.

MR. MINASIAN: This is the pond immediately to the left and lower, towards the bottom of the page, that is the gabion constructed across.

MR. COOK: That is north of the Yuba River; is that right?

MR. MINASIAN: No.

MR. COOK: I see. Are we looking downstream on the Yuba River rather than upstream?

MR. MINASIAN: We are looking as an eagle looks down on the Daguerre Point Dam.

MR. COOK: Well, perhaps I am looking at it in a wrong direction. So really the pond is at the lower left corner of the --

MR. MINASIAN: Yes.

MR. COOK: At that time, you're right, there is no south canal shown going out of that.

Can you tell from any photograph if there is no outlet specifically to that pond?

MR. MINASIAN: Well --

MR. COOK: I have a hard time telling.

MR. MINASIAN: I can tell you that I was out there before construction, and there was an outlet. There was a slight swale that led towards the Daguerre Point Dam that was dry during all but flood periods. I saw it dry.

MR. COOK: In flood periods the water went over the top into this pond?

MR. MINASIAN: Right. Or the water rose up in the pond.

MR. COOK: At the present time, if water would overtop the gabion, it would also have to overtop the area between the pond and the river?

MR. MINASIAN: That's correct.

MR. COOK: So, really other than the fact there is no south canal here, the water on high flood flows in the wintertime would go into that pond from the Yuba River?

MR. MINASIAN: Yes.

MR. COOK: And it would also at the present time, if high enough, go over the top of the gabion?

MR. MINASIAN: That is correct.

MR. COOK: Your position, if I may ask again, is that because the pond is there, that that obviates the problem from the flood waters passing over this sort of a center little island there and over the gabion? Does that make sense?

MR. MINASIAN: So I don't argue the case in the answer, Mr. Cook. If you would just -- my testimony would be, my observation would be from the condition before and the condition after construction, that if there was a flood and if fish were in the flood water and they went into the pond before the construction of the gabion, there would be no way for them when the flood flow subsided to swim out of the pond. But after the gabion was constructed, whether deposited in front of the gabion or behind, there was a way for them to swim out. That is the full extent of it.

MR. COOK: You are not talking, then, about the flood -- during the existence of the flood flow; you are talking about after the flood flows go down?

MR. MINASIAN: Right.

MR. COOK: That is all I have.

H.O. BROWN: Any other cross-examination?

Mr. Lilly.

MR. LILLY: I know we are a little out of order here. I think one question might make it a little clearer, if I can come in now. Otherwise I can do it later.

H.O. BROWN: Okay.

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CROSS-EXAMINATION OF SOUTH YUBA WATER DISTRICT

BY YUBA COUNTY WATER AGENCY

BY MR. LILLY

MR. LILLY: Mr. Minasian, just so we are oriented. In the kind of lower center of Exhibit S-SYWD-7 there is the phrase "Yuba" appears and then to the right it says "River."

Do you see that?

MR. MINASIAN: I do see that, Mr. Lilly.

MR. LILLY: The arrow just to the left of Yuba, is that pointing downstream?

MR. MINASIAN: It is. Thank you.

MR. LILLY: Thank you.

H.O. BROWN: Mr. Gee.

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CROSS-EXAMINATION OF SOUTH YUBA WATER DISTRICT

BY DEPARTMENT OF THE INTERIOR &

U.S. FISH AND WILDLIFE SERVICE

BY MR. GEE

MR. GEE: Mr. Minasian, I am looking at this exhibit, as yet to be marked, and looking at the second page. It refers to Associates Planners Lakeport; is that right?

MR. MINASIAN: Yes.

MR. GEE: Were you employed by this company when this

was undertaken?

MR. MINASIAN: No. Employed by the principal, South Yuba Water District.

MR. GEE: Did you take this photograph?

MR. MINASIAN: No.

MR. GEE: Thank you, Mr. Brown.

H.O. BROWN: Anyone else?

Any redirect?

MR. MINASIAN: No.

Thank you.

H.O. BROWN: Want to offer this into --

MR. MINASIAN: Yes, please, Exhibit 7.

H.O. BROWN: Exhibit 7. Are there any objections to the acceptance of this exhibit into evidence?

Mr. Gee.

MR. GEE: Mr. Minasian may be the custodian of record. He may testify this is in the records of the company that holds these records. He is not qualified to state that this is what -- this map is what it purports to be. Therefore, it lacks foundation.

H.O. BROWN: Thank you, Mr. Gee.

Mr. Lilly.

MR. LILLY: Maybe I will help Mr. Minasian out as both lawyer and witness at the same time. I believe Mr. Minasian has established an adequate foundation. Even in courts

where the rules of evidence are more stringent than they are before this Board, you don't have to have a photographer of an exhibit to testify to it. It just has to be somebody to testify that the exhibit is accurate.

Based on his personal knowledge of being out in the field, I believe he has established an adequate foundation for the accuracy of this exhibit.

H.O. BROWN: Thank you, Mr. Lilly.

Anyone else?

We will accept this into evidence.

The submission of closing statements for legal briefs. Mr. Frink, 30 days?

MR. FRINK: Probably from the time the transcript is expected to be available. If the parties had 30 days from that period. Does that --

H.O. BROWN: The transcripts will be available when?

MR. MONA: Takes about two weeks.

H.O. BROWN: Let's say six weeks.

Mr. Cook, you rise.

MR. COOK: I am asking that closing statements be deferred until a period of time after the transcripts are available on the Internet for those of us that --

H.O. BROWN: We will do that -- let's set a reasonable time.

MR. FRINK: Mr. Brown, I think our arrangement with the

Court Reporter that the Board is not to post the transcripts on the Internet until 90 days after -- 60 days after they become available. It is a prolonged period of time. So if we were to do that, it would extend the proceeding out.

H.O. BROWN: Let's do it different than that, Mr. Cook. How do we get Mr. Cook a copy of that and the rest of the participants as quickly as possible?

MR. MONA: We do have an original copy of transcripts available for anyone to come to the office and look at them if they need to. Otherwise they would have to purchase a copy.

(Discussion held off record.)

H.O. BROWN: We will give you three weeks, Esther.

Three weeks, they will be available from Capitol Reporters. And after that we will give you four weeks. Is that enough time?

MR. COOK: Yes. I think so. We already have on the Internet through April 4th, in any event. It is a matter of just the final transcript. I do have an additional question, if I may.

I intended to after the lunch period to ask Mr. Mona if it was possible to place the 1992 transcript on the Internet. That is part and parcel of this particular hearing. I don't know who has copies of the 1992 transcript. But if it is possible, I didn't intend to ask

this of Mr. Mona as part of this hearing. I don't think there will be time afterwards to ask if it is possible to get the 1992 transcripts on the Internet.

MR. MONA: It is possible if I can find an electronic version of those transcripts. I don't think there is one.

(Discussion held off the record.)

MR. FRINK: I believe that predated our procedure of getting the copies of the transcripts on disk.

H.O. BROWN: Do you have a copy of the written transcript?

MR. COOK: Of 1992? No, I do not, Mr. Brown. It would appear that the 1992 proceedings are, in fact, part and parcel of this particular hearing. Quite often we have referred back to testimony in the 1992 hearings. If it is possible, I would request that. If it is impossible, of course, or extremely difficult, then we will have to make use of some other way.

H.O. BROWN: Let's take care of this first, then we will take care of the schedule.

The transcripts from the 1992 hearing, are they available?

MR. MONA: We have an original copy of them. It is available for anyone to come in and look at them if they wish.

H.O. BROWN: Can they make a copy?

MR. MONA: We can also send our original copy to Brownies and charge them whatever the charges are to make a copy.

H.O. BROWN: Does that work?

MR. COOK: I believe the reporter indicated that they may have this on tape.

H.O. BROWN: No, it is not on tape.

MR. COOK: We can obtain copies if we have to.

H.O. BROWN: How many would like a copy of the 1992 transcripts that do not have them? Just two of them? Everybody else has some?

So, we can send out those and have at least two copies made, and then charge them for the copies of the transcript?

MR. MONA: They would have to make arrangement directly with the reproduction company. And if they are willing to pay the reproduction company, the company will make the copies for them. We will be cut out of the loop.

H.O. BROWN: We don't have one that -- we don't want to turn loose --

MR. FRINK: If you want to speak with Cathy Neise in the Division of Water Rights files room and identify the particular transcript that you would wish to have a copy made of, she can send it out to Brownies and a copy made for you.

H.O. BROWN: For the schedule for the written briefs,

seven weeks from Friday, give a date.

MR. FRINK: Mr. Lilly had a calendar.

MR. LILLY: My count is seven weeks from this Friday is July 7th. To make a double check, I believe that is seven weeks from this Friday.

H.O. BROWN: July 7th, that is on a Friday, at 5:00 p.m. That gives you three weeks, Esther, and four weeks for review.

MR. COOK: Could I make one additional question?

H.O. BROWN: Absolutely, Mr. Cook.

MR. COOK: I have often wondered why the requirement at the Water Board to submit documents is on Friday at 5:00 p.m., when really you are going into the weekend. I am not sure anybody is going to be examining them. I would think it would be more proper to allow one additional weekend, until the Monday. Just seems like it would be simpler and I don't think it would cause any inconvenience to the Water Board.

H.O. BROWN: Not at all, Mr. Cook.

Is July 9th on a Monday?

MR. LILLY: July 10th.

H.O. BROWN: That was a test.

July the 10th, Monday, at 5:00 p.m., this hearing will be closed.

At the conclusion, the State Board Water Resources

Control Board will take this matter under submission and the parties who participated in the hearing will be sent notice of State Water Board's proposed decision on this matter.

I would like to thank all of you for your professionalism and courtesy and attention that you have spent to this hearing. It has been long and hard for all of us. I think you all had a chance to say whatever you wanted to say, and that was the purpose.

Thank you very much and this hearing is adjourned.

(Hearing adjourned at 12:25 p.m. )

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REPORTER'S CERTIFICATE

STATE OF CALIFORNIA )
) ss.
COUNTY OF SACRAMENTO )

I, ESTHER F. WIATRE, certify that I was the official Court Reporter for the proceedings named herein, and that as such reporter, I reported in verbatim shorthand writing those proceedings;

That I thereafter caused my shorthand writing to be reduced to typewriting, and the pages numbered * through ** herein constitute a complete, true and correct record of the proceedings.

IN WITNESS WHEREOF, I have subscribed this certificate at Sacramento, California, on this 26th day of May 2000.

_____
ESTHER F. WIATRE
CSR NO. 1564