STATE WATER RESOURCES CONTROL BOARD

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VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY

PETITION FOR CHANGE

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HELD AT

PAUL BONDERSON BUILDING
SACRAMENTO, CALIFORNIA

TUESDAY, DECEMBER 5, 2000
10:00 A.M.

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Reported by: ESTHER F. WIATRE
CSR NO. 1564

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SACRAMENTO, CALIFORNIA

TUESDAY, DECEMBER 5, 2000, 10:00 A.M.

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HEARING OFFICER BAGGETT: Good morning. This is the time and place for a hearing on Victor Valley Wastewater Reclamation Authority's petition for change.

I am Art Baggett, Acting Chair of State Board and Hearing Officer in this matter. This is the time and place for the hearing on Victor Valley Wastewater Reclamation Authority's petition for change filed pursuant to Water Code Section 1210, et seq. This hearing is being held in accordance with the Notice of Public Hearing dated October 6, 2000, and my November 2nd, 2000 ruling on procedural matters and notice of change in the hearing scheduled.

Today I will be assisted by staff members Dana Differding, staff counsel; Ernest Mona, staff engineer; Melinda Dorin, staff environmental specialist. We also have Tom Peltier, staff geologist.

The purpose of this hearing is to receive information to assist the State Board in determining whether to approve an order regarding Victor Valley's petition for change. This hearing will afford the parties who have filed a notice of intent to appear an opportunity to present relevant oral testimony, studies and other evidence to address key issues in the notice of public hearing. The hearing will result in

an order being issued by State Board regarding the petition change.

After the hearing record is closed, there will not be an opportunity to present additional evidence. State Board order will be based on the record developed at this hearing. After the hearing record has been compiled and staff recommendations are completed, the full membership of the State Board will make a decision. After the State Board adopts an order, any person who believes that order is in error will have 30 days within which to submit a written petition with supporting evidence for reconsideration by the Board.

At this time I will ask Dana Differding to cover procedural items and introduce staff exhibits for the hearing.

MS. DIFFERDING: Just one procedural item which is that we have arranged for a Court Reporter to take a transcript of this proceeding and anyone who would like a copy of the transcript should make separate arrangements with the Court Reporter, Esther Wiatre.

At this point I would like to offer the staff exhibits into evidence. They're listed on Page 6 of the hearing notice, and unless anyone would like me to read them, I will not go through reading the whole list.

H.O. BAGGETT: Any objection to entering the staff

exhibits?

If not, they are entered.

Before we begin with policy statements, if you are making comments it helps our Court Reporter if you have a business card, you can just pass it to her. It makes her job a lot easier and would be appreciated.

Before we get into the evidentiary presentations, we will hear from any speaker who wishes to make a nonevidentiary policy statement. Policy statements may include views of the speaker as well as nonexpert comments on evidence that has been submitted for the record. Policy statements are subject to the following provisions:

First, the person making a nonevidentiary policy statement will not be sworn or asked to affirm the truth of their statement.

Second, the person making policy statements must not attempt to use their statement to present factual evidence, either orally or by introducing written exhibits.

Third, at the discretion of the Hearing Officer questions may be addressed to persons making policy statements for the purpose of clarifying those statements. However, persons making policy statements are not subject to cross-examination.

And fourth, policy statements should be limited to ten minutes or less. I would prefer if you can keep them short

and to the point. A lot of you have submitted written policy statements. They will be read, I can assure you, by the Board Members and the Hearing Officer as well as our staff.

If you wish to make a policy statement, I think we have blue cards here, fill one out. First we will hear from -- I don't think there are any elected officials, are there, noticed here? We will begin with the elected officials. It says city of.

Is there an elected official who wishes to make a policy statement?

MR. SAGONA: Good morning, Mr. Chairman. I am Bob Sagona, mayor pro tem of the town of Apple Valley. It is a municipality, but it is a town. I also hold the title as Chairman of the Victor Valley Wastewater Reclamation Authority.

We are a town of some 57,000 population. Our water service in Apple Valley is provided by a combination of public utilities and private purveyors, each of whom are responsible for and independently working on their own respective management plans.

Some seven years ago the town of Apple Valley anticipating construction of subregional treatment plants, adopted such in our master plan, our sewer master plan. And these treatment facilities were intended for the sole

purpose of making available highly treated reclaimed water for reuse purposes. In Apple Valley, like at least one other local community, a member of VVWRA, the reclaimed supplies may provide for irrigation of parks, golf courses, school yards, and streetscapes, et cetera.

And in 1999 the town entered into an agreement with the town's largest water purveyor; that is the Apple Valley Ranchos Water Company, which states in part that the purveyor must provide reclaimed water for reuse purposes upon notice that reclaimed water is available or the town may also enter their service area for the same purpose.

The application for change in point of discharge and use is consistent with the town's sewer master plan and goals in providing highly treated reclaimed water use in irrigating areas will otherwise be irrigated with high quality drinkable or potable water. That plan is consistent with the goals of the VVWRA sewer facilities plan for the same reasons. It will provide a new source of available revenue to offset future increases associated with the operation and maintenance of a regional treatment plant, which in turn will reduce the cost of sewer service provided to the town's customers. That is, the revenues generated would be applied against and credited to the fees generated and paid for by the member communities.

Most important, the plan is consistent with the

California Water Code, which requires the use of reclaimed water over high quality potable water for obvious reasons, to conserve drinkable water, and as well, when reclaimed water is available. It constitutes a waste of and unreasonable use of water if we were to overuse drinkable water.

The town of Apple Valley wishes to make clear that the town endorses and supports fully VVWRA in its efforts to provide reclaimed water within its service area and ask that the State Water Resources Control Board approve the application for change in point of discharge and use and deny any protest of the action as unreasonable.

That is all I have, Mr. Chairman.

H.O. BAGGETT: Any questions, staff?

Thank you.

MR. SAGONA: My pleasure.

H.O. BAGGETT: Any other elected officials?

MR. CABRIALES: Good morning. My name is Rudy Cabriales. I am a former vice president of the Victor Valley Water District. I currently serve on the City Council of the City of Victorville, and I am also the vice chair of Victor Valley Wastewater Reclamation Authority Board.

The Victor Valley Wastewater Reclamation Authority has adopted a sewage facility plan that includes proposals for

reclaimed water projects such as the one before you. This project fits in with the City's facilities plant, as well as the City of Victorville's policies and plans for the use of recycling water on its golf courses and other recreational facilities that we are proposing. This project will utilize low cost, nonpotable recyclable water to offset the use of high quality potable water that is currently being applied for nonpotable uses and obviously for irrigation at one of our golf courses at the airport.

The Water Code contains numerous legislative declarations that the policy as stated is to support local agencies in their efforts to use reclaimed water. We support that and we are working to that end. Recently also the state Legislature adopted SB 2095, and clearly it states that the use of potable domestic water for landscape areas is considered a waste of unreasonable use of water within the meaning of Section 2, Article X of the California Constitution, and if recycled water is available that meets the conditions described in Section 13550 of the Water Code.

This project has unanimously been supported by Victor Valley Wastewater Reclamation Authority Board and also in addition the project has also been unanimously supported by the city of Victorville City Council. This project would eliminate the need to pump clean drinking water from the

aquifer. Instead we would use reclaimed water from the regional authority. We believe this is in accordance with the state legislative intent, and we would ask that the Board give our project consideration and act favorably on our behalf.

Thank you.

H.O. BAGGETT: Thank you.

We have Tom Sutton.

MR. SUTTON: Thank you. Good morning. My name is Tom Sutton. I am with the County of San Bernardino Special Districts Department.

Today I am here on behalf of two special districts that are part of the Victor Valley Regional Wastewater Authority. Those are County Service Areas 64 and 42. And I also am the alternate board member appointed by the Board of Supervisors to the Victor Valley Regional Wastewater Authority. I am currently an alternate member and the treasurer, and I'm also the past president of the California Water Environmental Association, and I bring that up because I would just like to make a statement regarding -- I am not here representing the California Water Environmental Association. However, I would like to say that the association does strongly support recycling projects throughout the State of California and the association is working very closely with water associations and reuse to

bring about water recycling projects.

The hat that I wear on behalf of those two districts is, in fact, a responsibility that we take -- that I take very seriously. This recycling in itself is part of the main fiber of water use throughout the state of California. It's a significant piece of the CalFed Bay-Delta program and the County Board of Supervisors to that end supports that program, and they have adopted a resolution in favor of the program which includes recycling projects. So, generally speaking, as the two speakers before me have talked about, statewide recycling fits in with a lot of areas and is always a positive way to reuse water to save potable water.

Specifically on this project, I think it is important to understand that this project has been in the process for over two years. There has been a lot of time and a lot of effort and a lot of money expended by the authority to bring this project to pass. And I would hope that this Board would take all of the testimony that is about to be brought forward into consideration for their final decision.

A couple items that I think are important to point out also is the fact that this is a project that is a multi-beneficial project. There is -- the outcome will include continued flow of water into the Mojave River to enable habitat to continue, water being reused in a responsible manner to help offset the cost and the

production of potable water. Those are very multiple purpose issues. The two districts that I represent have two -- they're active customers of VVWRA, and we also provide water service to them as well. Today you will receive testimony from other water purveyors in opposition to this project, and that is all well and good.

In our particular case the uniqueness is our customers -- we have customers both that are members or are served by VVWRA and other purveyors who are not. We also provide the water service to them. So a comparison of equity, I think, is important to take into consideration, and that being that ultimately I feel personally very strongly and I believe the law supports that and that is the fact that VVWRA does, in fact, own the water and are, in fact, doing everything they can to offset the negative impacts of the concerns and, therefore, the customers of VVWRA should not continue to be held responsible for what I believe to be a subsidy in regards to the reclaimed water going directly to the river without the authority receiving, in fact, credit and/or value for that product. This project will ultimately accommodate that, and that is all I have to say.

Thank you.

H.O. BAGGETT: Thank you.

Joseph Vail.

MR. VAIL: Thank you for the opportunity to be here. I

appreciate you letting me get in the last minute to be able to participate in this. Not being an attorney, you don't know all the legal ramifications for some of these things. I was a little bit lost in some of the paperwork.

The gentleman said before he feels very strongly. I do too. I have lived in the Victorville area since late 1965 and owned property there since 1967. I remember the percolation ponds located on southwestern part of cement property. This is now what they produce. I ran for a seat on the sewer board in the late 1970s after several conversations with a gentleman by the name of Pete Sarter, and was almost elected. In late 1977 we purchased property across the river from the cement plant and the sewer ponds and well remember the smell that went with you.

I ran for a seat on the board because I believe in developing the sewer treatment plant and taking care of the environment by doing so, not the least of which was my breathing space. The plan that exists today is proof that the will of the people of Victor Valley, and I know for personal experience that I can speak for at least 40 percent of those people when I say that at no time do we the people envision the treatment plant deciding to sell treated water for some other use then putting it back into the river.

The entire beginning of the plant was, as sold to the general population, was returning of better water to the

river for reuse by the people along the Mojave River basin. The word reclamation was in the name to reclaim the water for use by the water users along the river basin, not for VVWRA to take the treated water, plainly marketing and selling it to some of the consumers. I can guarantee you that this interpretation of attempting to be applied to this term would not have passed the vote of the people then and am equally certain it would not pass if submitted to the voters today.

As I said, I am a resident of Victorville and have been there many, many years. I have seen things happen in the city that do make me as a common ordinary citizen very happy, not the least of which is what is currently called the Green Tree Golf Course as an example. I was told by a golf course employee at the desk one day when I went to play golf that some of the big shots of the city of Victorville played golf for either next to nothing or possibly even free. The citizens of Victorville own the golf course, and the average citizen pays about $20 to play 18 holes. The golf course is also subsidized by city tax dollars which come from the citizens of Victorville. Some of whom don't even play golf.

Now we have a golf course on the old George Air Force Base that the city wants to water using cheap water while the citizens of Victorville will be paying considerably

more. When I say cheap water, I'm talking $35 an acre-foot. According to papers, people of Victorville are paying Victor Valley Water Agency water $365 an acre-foot. The amount of cost for replacement water, makeup water, is $200 an acre-foot, approximately.

If, I say if, what the VVWRA and their lawyers claim is true, in this entire basin is one interrelated big pond, three or four more ponds, and each depth area is responsible for the lower areas for the amount of the water that flows to connect. Why would the City of Victorville want to get water from the treatment plant? Follow the money. City gets cheap water. The citizens must buy expensive water. Sounds like a good deal to me, and I have to play golf on the golf courses for free.

I have talked with citizens of Victorville, and not one of them that I have talked to yet are in favor of selling water and doing this type of program. So I ask the State Water Resources Board to tell the Victor Valley Water Agency to do the job for which it was formed in the beginning, and that is not to try to sell water to somebody else but to put the water back in the river for use by the people downstream.

H.O. BAGGETT: Thank you.

Gary Ledford.

MR. LEDFORD: I won't have a policy statement.

H.O. BAGGETT: Jack Beinschroth. You are also a witness.

MR. BEINSCHROTH: I am Jack Beinschroth, civil engineer, resident of Apple Valley for 40 years and an agricultural producer.

Some of these previous speakers addressed the fact that they would be reutilizing water that would appear would be wasted if they didn't reutilize it. Actually, the way the water is placed in from the treatment plant at the present time it was a hundred percent utilized. It percolates into the porous river basin and a hundred percent return to natural.

If they take this water and use it in a golf course for irrigation, 50 percent of it will be lost by evaporation or transpiration. So that only 50 percent would actually return to the basin. So its present use is its best use. Anything other than that would lose a portion of it. And I think they are comparing the situation or making it appear that we have something similar to Los Angeles in the Iperian water, if you don't utilize it it goes to the ocean and it is totally lost.

In our case the way it is being used it is a hundred percent returned and anything other than that would deter from the amount that would be utilized.

On the economic point, I think you are well aware that

we are obligated to supply 23,000 acre-feet to the sub area that is below Alto, and as part of that we now utilize the effluent from the treatment plant. If this is transferred and, say, with the pipeline that they have developed, the entire amount, which is roughly 9,000 gallons -- I mean 9,000 acre-feet per year could be transferred and not utilized as percolation water. It would affect the people who have to make payment on makeup water to the Barstow area by threefold.

For instance, in my operations we have -- we make payment of $10,000 in the last year as makeup water. If they utilize this entire amount our payments would be something like 30- or $35,000. So it economically affects the producers and is a detriment because it is not utilized at a hundred percent. So I feel that there should not be any consideration given to making the transfer to the location placing of this water.

Thank you.

H.O. BAGGETT: Thank you.

Any other parties wishing to make policy statements?

We have two submitted in writing, which is Fish and Wildlife Service and WateReuse Council.

MS. MURRAY: The Fish and Wildlife Service asked me, the Department, to submit their comments, public comments from the public in writing, and I have given eight copies to

you and just want to make sure that the other parties got copies.

H.O. BAGGETT: Ray Miller, Executive Director of WateReuse submitted comments, and they will be entered into the record.

MR. HITCHINGS: Mr. Baggett, Andrew Hitchings on behalf of VVWRA. My understanding was also CASA, California Association of Sanitation Agencies, had submitted a written policy statement, but I am not certain whether they are going to be here today or not.

H.O. BAGGETT: I haven't seen it.

MR. MONA: I have a copy of that right here.

H.O. BAGGETT: We do have a copy. It will be submitted.

MR. HITCHINGS: Thank you.

H.O. BAGGETT: Any other ones?

If not, we will go to the main order of the proceedings and then take a short recess to allow the first case in chief to set up.

So, move the evidentiary portion of this proceeding. The order of proceeding will be to receive testimony from participants in the following order: Victor Valley Wastewater Reclamation Authority, followed by the California Department of Fish and Game, Jess Ranch Water Company, Southern California Water Company, Apple Valley Ranchos

Water Company and Joe Vail. He has no case in chief. So we have five cases.

All participants who present evidence in this hearing will have the opportunity to make an opening statement explaining the objectives of your case, the major points to be made, the relationship between major points and the key issues. All opening statements will be limited to 20 minutes for each party. Each participant will then present one case in chief on key issues listed in the hearing notice, including all written testimony, exhibits and oral summaries of written testimony. Oral presentation of direct testimony of each witness shall be limited to a maximum of 20 minutes and not to exceed a total of two hours for all witnesses presented by the party. I may extend the time allowed for presentation of case in chief if there is a showing of good cause.

Each participant's witnesses will be subject to cross-examination by the other participants presenting evidence, the State Board staff and the Hearing Officer immediately following the presentation of the case in chief. Cross-examination will be limited to 20 minutes per witness or per panel of witnesses. I will extend the time allowed, again, if there is a showing of good cause. Participants will also have the opportunity to present rebuttal evidence subject to cross-examination.

At the end of the hearing we will determine if we will have closing briefs, deadlines and so on. I think we will wait until the wrap-up, hopefully tomorrow afternoon. We will determine the specifics.

With that in mind I would invite appearances by the participants. When you take a break, I think this might be an easier way also, if you can give Esther your card so you avoid all the back and forth. When you take a break just give her the card so she can keep the information so it is real clear on the record.

I think -- are there any other parties? We've established the five parties. If not, then I will administer the oath. So will those persons planning to testify in these proceedings, please stand and raise your right hand.

(Oath administered by H.O. Baggett.)

H.O. BAGGETT: Thank you. You may be seated.

And we would like to ask the parties at the close of your case in chief if you can offer your exhibits at that time. So we don't again waste. I think it is a little more efficient.

With that, we will we come back. We will take a five-minute recess and come back with Victor Valley Wastewater Reclamation Authority's case in chief.

MR. HITCHINGS: Mr. Baggett, just a procedural point.

I think this makes sense to bring it up here. What I was hoping to do, because of the one-time constraint that we have with one of our witnesses. Randy Hill needs to leave because he has a board meeting back down in Victor Valley this evening and he has a flight that is going to depart that requires him to leave here at about 2:15. Given the timing here, I think we will probably have time to present his testimony and provide for cross.

What I would propose doing, I would like to have Mr. Hill, Mr. Gallagher and Mr. Patterson testify essentially as a panel. Present their direct testimony each in a row and then have cross-examination done of those witnesses as they are seated as the panel with whatever questions need to be presented to them, similar to what --

H.O. BAGGETT: As a panel, that is what I prefer to do, as panel of witnesses, and it is more efficient.

MR. HITCHINGS: I would also propose to do after we have that panel of three witnesses, to have Mr. Dodson, Mr. Carlson, Ms. Kegarice and Mr. MacLaggan as a panel for the other group.

H.O. BAGGETT: Unless there is an objection by the parties.

MS. MURRAY: So we will have a panel of witnesses for cross-examination and the second panel?

MR. HITCHINGS: Correct.

MS. MURRAY: I have no objection.

H.O. BAGGETT: With that let's take five minutes to allow Victor Valley to set up.

Recess.

(Break taken.)

H.O. BAGGETT: We are reconvened.

Mr. Hitchings.

MR. HITCHINGS: Thank you. Good morning, Mr. Bagget and Board staff. Just another point of proceeding. I do have an opening statement to present before we present our direct case in chief, and I assume this is the time to do this.

H.O. BAGGETT: This is the time.

MR. HITCHINGS: Thank you.

As I stated earlier, my name is Andrew Hitchings on behalf of Victor Valley Wastewater Reclamation Authority which we will probably refer to as VVWRA to avoid saying that mouthful every time.

This proceeding involves VVWRA's petition to change the place of use, purpose of use and point of discharge pursuant to Water Code 1211. The petition seeks to change the point of discharge of up to 1,680 acre-feet annually of VVWRA's treated wastewater from an outfall on Mojave River in order to irrigate a golf course and other landscaped areas at the former George Air Force Base, which is now known as Southern

California Logistics Airport.

The reclaimed water will be used there in lieu of high quality potable water that is currently used for those nonpotable irrigation uses at SCLA. The project will come on line in such a gradual basis that any reduced discharges to the Mojave River would be offset by increased flows that are treated and discharged by VVWRA, given the projected growth that will occur and growth in flows that will be collected by, delivered to and treated by VVWRA.

The project is entirely consistent with the state's policy to use nonpotable water for nonpotable uses in order to reduce groundwater overdraft and prevent the waste and unreasonable use of water that would involve using potable water for nonpotable uses.

The dispute in this proceeding can really be summarized as follows: The water user protestants are seeking to ensure that they can continue to receive the economic benefit of VVWRA's discharge flows without paying for this benefit. And Department of Fish and Game is seeking to transfer the obligation to VVWRA to essentially be a guarantor of flows through the Transition Zone, which is the riparian habitat downstream of the discharge point. Even though Department of Fish and Game and other parties are obligated to ensure that these flows occur under the Mojave Adjudication to which VVWRA is not a party.

What the State Board must find in this proceeding, this is a proceeding under Water Code Section 1211, which requires the Board to review VVWRA's petition pursuant to Water Code Sections 1700 through 1707. The only finding that the Board must make under Water Code Section 1700 to 1707 is that the change will not operate to the injury of any legal user of the water involved.

While the Board is obviously required to comply with CEQA, there is nothing in 1211 or in Section 1700, et seq., that requires the Board to make any findings regarding any potential impacts to fish, wildlife or other instream beneficial uses.

What the evidence is going to show in this proceeding, there is no legal injury or no injury to a legal user of the water involved in this case. The protestants are not legal users of the water involved. They have no right to use VVWRA's treated recycled water and cannot compel VVWRA to continue its discharges at its current levels or at any levels.

VVWRA is not a party to the Mojave Adjudication, and there is nothing in the Adjudication that compels VVWRA's discharge of recycled water at any amounts.

The water user protestants do not actually divert and use the water discharged by VVWRA, but instead rely on its flow to offset their costs of complying with their

downstream flow obligations under the Adjudication. The protestants will not experience any injury that is protected under Water Code Section 1702.

The petition for change has no potential to interfere with their ability to divert and use water. The only potential injury to the water user protestants is economic, and that is not within the scope of injury protected under 1702.

As to environmental considerations, even if VVWRA's project was fully implemented today, there would still be sufficient flows remaining in the river to ensure that surface flows continue through the Transition Zone. As a result, there will be no adverse effect on fish, wildlife or other public trust resources. This is particularly true given the way that this project will not be fully implemented immediately. It won't immediately take 1,680 acre-feet of water annually from the discharge point. This is going to happen on a gradual basis. And as stated earlier, that is going to be more than offset, that gradual increase in deliveries up to SCLA by the increase in flows that are expected to be treated at the treatment plant.

Moreover, VVWRA has offered in this proceeding and at the outset in trying to resolve the protest in this proceeding to dedicate a minimum baseline discharge flow of 2,000 acre-feet annually through the Transition Zone,

subject to certain conditions, and they've also offered Fish and Game a right of first refusal to purchase an additional 2,000 acre-feet, which Fish and Game happened, the biological resources assessment fund under the Mojave Adjudication to purchase that water.

The Fish and Game's assertion in this proceeding in their testimony that a take permit would be required is really a red herring. While VVWRA disputes that any take permit would be required, the Board can, like it often does, approve the VVWRA's petition subject to compliance with any take permit that may be legal or required. That is an issue that is the subject of another proceeding; it's not an issue that needs to be dealt with by the Board here.

In conclusion, this decision will have a particular importance to future recycled water use in the State of California, especially within the context of the greatly overdrafted basin where potable water supplies are currently being used for nonpotable uses and recycled water is available for those needs.

All of the protestants are parties to the Mojave Adjudication, while VVWRA is neither a party to nor bound by the Adjudication. When you strip the parties' protests down to their essence, they're essentially asking this Board to:

One, require that VVWRA guarantee the obligations that others must bear under the Adjudication.

And two, provide an excuse for the protestants not diligently enforcing their rights and availing themselves of their remedies under the Adjudication. This Board shouldn't contingent to those requests.

Because the project will not operate to the injury of any legal user of the water involved because there will be no significant environmental impacts caused by the project, and because this project further states laws and policy mandating the use of recycled water, VVWRA submits that the Board must approve its petition for change herein.

That concludes my opening statement.

H.O. BAGGETT: Thank you. Proceed.

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DIRECT EXAMINATION OF FIRST PANEL

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY

BY MR. HITCHINGS

MR. HITCHINGS: As I mentioned, we have a panel of witnesses that their testimony is somewhat interrelated so it makes sense to break it down this way.

The first witness will be Dan Gallagher, and I'd ask Mr. Gallagher to state your name for the record.

MR. GALLAGHER: My name is Dan Gallagher. I am the general manager of Victor Valley Wastewater Reclamation Authority. I've worked for Victor Valley now for about four and a half years. I am a certified, Grade V wastewater

treatment plant operator in the State of California. I am a registered professional engineer in the state of Illinois, and I, of course, serve as their general manager and I have a Bachelor's degree in environmental science from Bradley University.

MR. HITCHINGS: Mr. Gallagher, I am going to direct you to VVWRA Exhibit 1B, and I would like you to confirm whether or not, for the record, this is a true and correct copy of your resume?

MR. GALLAGHER: Yes, it is.

MR. HITCHINGS: Does that accurately state your experience and qualifications for this matter?

MR. GALLAGHER: Yes, it does.

MR. HITCHINGS: I would like to direct your attention to VVWRA Exhibit 1A, and ask you whether this is a true and correct copy of your written testimony that you prepared and submitted for this proceeding.

MR. GALLAGHER: Yes, it is.

MR. HITCHINGS: Do you have any changes or corrections you would like to make to that written testimony?

MR. GALLAGHER: No, not at this time.

MR. HITCHINGS: Then I'd ask that you summarize your testimony in accordance with the Chair's instructions earlier.

MR. GALLAGHER: Thank you.

First, I would like to start with a brief history of VVWRA. Prior to the 1970s, the City of Victorville operated a wastewater treatment facility, and a portion of the city of Victorville was sewered. With the advent of the Clean Water Act in 1972, the elected officials in the Victor Valley began looking at a regional solution for wastewater treatment. In the 1970s the Mojave Water Agency was selected to be the lead agency to attempt to secure clean water grant funding to build a regional wastewater treatment facility and a collection system to serve the entire Victor Valley.

And in 1977 a Joint Powers agreement was executed with the member entities of VVWRA, and that is found as Exhibit 1E in each of your packages. The Joint Powers authority included the City of Victorville; the City of Adelanto, the town of Apple Valley, actually at the time it was the Apple Valley Water District; the City of Hesperia, and at that time it was the Hesperia Water District; and the County of San Bernardino two county service areas, that being County Service Area 64, which is Spring Valley Lake, and County Service Area 42, which was Oro Grande. If I may, I will point those out on the map which is also Exhibit 1C in each of your packages.

The Apple Valley Water District is north and east in this map. The Hesperia Water District is on the southern

edge, the city of Adelanto on the western, and the city of Victorville in the center. County Service Area 64, Spring Valley Lake is found along the Mojave River at this location. County Service Area 42, Oral Braun, is located along the Mojave River up at this location.

The treatment plant was constructed in the late '70s and into 1980 and actually began operating in February of 1981. The original design for the treatment facility was four and a half million gallons per day. That capacity originally was intended to be discharged entirely to percolation ponds. There was not to be a river discharge, but as the plant was getting ready to go under construction an archeological survey found evidence of early human habitation on part of the property that was to become percolation ponds, an archeological dig began, and those evidence of human habitation was over 4,000 years old.

Because of that find a portion of the percolation ponds were abandoned. The plant or a portion of the plant was redesigned for a direct river discharge. So to this day we have a combination of discharge directly to the river and to percolation ponds.

In 1988 the capacity of the treatment plant was expanded to nine and a half million gallons per day. And also in 1988 the City of Adelanto withdrew from our Joint Powers Authority after they constructed their own wastewater

treatment plant, became permitted and started operating that plant on September 15th of 1988.

We are currently or we recently finished improvements to our treatment facility to meet requirements of our NPDES permit through the LaHontan Regional Water Quality Control Board, and those requirements included a zero toxicity standard for discharge to the Mojave River as well dechlorination for our effluent that has been fully disinfected.

In 2000, just a few months ago, we started construction of another expansion. We are currently expanding the capacity of the treatment plant to 11 mgd. That will help us meet the continuing growth of the area.

I put an overhead up that shows the history of flows for our treatment facility. The first year that we have data for was 1982-83, and these are fiscal years. At that time our flow was just a little over 3,000,000 gallons per day and our discharge in acre-feet was about 3,400 acre-feet. Our predicted flow for this fiscal year, which will end in June, would be about 8.63 million gallons per day, and that will be a total discharge of almost 9,700 acre-feet.

Our Board recently adopted a sewage facility's plan, a 20-year plan, that addresses population growth, our flows, what improvements we are going to need to complete so that

we can accommodate that growth. And currently our service population, the population of the area, is approximately 192,000 people. Of that population, approximately 94,000 people are served by sewers, and our flow is predicted this year to average about 8.63 million gallons her day. By the year 2020 our population of our service area should approach 300,000. We expect to have about 183,000 people sewered and our flows should be well in excess of 18,000,000 gallons per day.

So, over the next years we are predicting that the size of our facility and our flows will more than double.

The source of all the water that comes to VVWRA is all from produced groundwater. There is no surface water that is utilized for water in the Victor Valley, and likewise there is no State Project water that is utilized in Victor Valley, although the aqueduct does pass through Victor Valley on its way to Lake Silver Wood. No one currently in Victor Valley uses that water.

The policies and goals of the Reclamation Authority are very clearly including reclamation since its early inception. Again, Exhibit 1E is a copy of our Joint Powers agreement. The Joint Powers agreement includes a number of references to beneficial uses of reclamation, and probably even more importantly are the 30-year service agreements that each of our member entities signed in 1977, in which

they agreed to remain a part of the Authority for 30 years. And that those utility service agreements include a formula for how to utilize revenue that was generated from the sale of reclaimed water. That was to be used to offset the cost of operations and maintenance for the sewer users of Wastewater Authority.

This is a copy of our mission statement. Our mission statement is included as Exhibit 1F, and this was adopted by our Board of Commissioners. I think it very clearly states in its major bulleted item that professional wastewater treatment reclamation and reuse and recycling is a very integral part of what our Authority has selected to do as our goal.

In 1998 a memo of understanding was signed with the City of Victorville to provide reclaimed water to the former George Air Force Base, and that is included as Exhibit 1G in your package. Later that year a formal agreement for the service of reclaimed water was executed with the City of Victorville for the service of reclaimed water for SCLA. That is also found in your packet as Exhibit 1H.

Now, our Board also executed a resolution. That is Resolution 9811. Resolution 9811 was a very important resolution for our Board because it was attempting to resolve once and for all that VVWRA would take the lead role in our service area for wastewater reclamation and

beneficial reuse. There are several bulleted items on this resolution that I pointed out, and if I may read it for the Board.

> The Authority shall service as a principal entity providing regional wastewater treatment and reclamation for the entire area served by the Authority, and VVWRA authority will provide reclaimed wastewater for beneficial uses. If the Board of Commissioners determines that the use is in the best interest of the Authority.
> (Reading.)

Just in September our Board held a workshop, and there is a copy of the agenda from that workshop included as Exhibit 1K. At that workshop our Board began to consider a possibility of our selling portions of our effluent to purveyors for them to satisfy their makeup obligation under the terms of the Adjudication. This actually came at the request of several of the purveyors in the Victor Valley. And following that workshop our Board directed us to draft a policy. We are currently reviewing a draft policy, that has yet to be adopted. But our Board is working on that and we feel that that is a very instrumental part of our overall plan for reclamation.

Now the project involves irrigation of landscaped

areas and a golf course at the former George Air Force Base. And just a bit of history, if I may.

George Air Force Base, I believe, was established in the 1940s and continued operating up until 1990. George Air Force Base originally had its own wastewater treatment plant. And the golf course at George Air Force Base, which was a nine hole golf course, was irrigated by the Air Force using treated wastewater from their facility, their wastewater treatment facility.

In 1981 when VVWRA began operating, the sewage from the Air Force Base was redirected to VVWRA. The Air Force shut down their old treatment plant, and at that time they began irrigating their golf course with potable drinking water. At that time reclaimed water was not available to them. This map shows the proposal to build a pipeline between our treatment plant and the nine hole golf course at SCLA, which is the new name of it, and that is the Southern California Logistics Airport.

The pipeline is approximately three to four miles long. It will be probably in the neighborhood of 16 to 18 inches in diameter. There is a fairly significant vertical lift that has to be made by pumps to get up to that location, so our pumps are fairly large. But the proposal is to pump a maximum of 1.5 million gallons per day or 1,680 acre-feet per year for irrigation of landscaped areas and

the golf course at the Air Force Base former Air Force Base.

If I may, if the Chair doesn't object, I have an aerial photo of the area which I think is very clearly an easy way to depict the area. It is not one of my exhibits, but I would like to use it if I may?

H.O. BAGGETT: Any objection by anyone?

MS. MURRAY: Is this a talking point? What is the purpose of the aerial photo?

MR. GALLAGHER: Because it very clearly shows the treatment plant, the size of the golf course and the Air Force Base and how it's related to the river. The river is very clearly shown in the photo.

H.O. BAGGETT: You aren't proposing to enter it as an exhibit?

MR. GALLAGHER: No, I was not.

MS. MURRAY: Put it up and we will see.

MR. HITCHINGS: I might add that to the extent that the Board finds it helpful, the Board certainly can take this as an exhibit in preparing its decision. Its own regulations state that copies of general vicinity maps or large nontechnical photographs generally will not be required to be presubmitted. So if the Board thinks this is a helpful tool, then we can have copies made and have them marked and entered as exhibits later.

MR. GALLAGHER: This photo is approximately ten years old, but it is a very interesting photo in that it very clearly depicts a portion of our service area. The wastewater treatment plant is located here, along the Mojave River. Of course, you can clearly see the path of the Mojave River through this part of Victor Valley. This is the former George Air Force Base, which is now the Southern California Logistics Airport, and the nine hole golf course is this small area that you see in this location. There are other landscaped areas at the Air Force Base, the former Air Force Base I should say, that in the proposal the city would begin to irrigate over time as they would install new piping so that those areas could be irrigated using reclaimed water. That would be phased in over time.

But essentially the pipeline would extend from our treatment plant up to a small reservoir at the golf course, and from there it would be used for irrigation of the golf course.

As part of our environmental review of this project we prepared environmental review, and the LaHontan Regional Board commented on that review. At that time requested an antidegradation study. And that was a study to look at the possible degradation of groundwater underneath the golf course when we or if we were to begin using reclaimed water

for irrigation on the golf course.

That antidegradation study is included in your packet as Exhibit 1L. The degradation study was specifically requested to include a look at TDS, total dissolved solids. That study did, and the study found that there would be no significant impacts, adverse impacts, if we were to begin using reclaimed water for irrigation of the golf course. The agency also prepared a Title 22 engineering study, and that is included as Exhibit 1M. The engineering study was to address everything from treatment to the actual use of water for a reclaimed water project, and that is required by the Department of Environmental Health in the State of California. And that report was prepared and found that VVWRA effluent meets all the requirements for direct reuse of our effluent and also included how the water would be applied and utilized for irrigation.

Now, it is important to know and I try to state this, and this data hopefully supports that, that with gradual implementation of this project and our continuing growth in flows the discharge to the river will continue to increase over time. This chart is actually included as Exhibit 1N in your packet. Our current flow in the year 2000 is approximately 8.69 million gallons. If our project begins and we begin irrigating the golf course in the year 2001, the golf course currently uses about 400 acre-feet a year

for irrigation. The city of Victorville estimates that it would take approximately ten years to repipe the former George Air Force Base to use reclaimed water for all of the other landscaped areas, and those would include athletic fields, ball diamonds, soccer fields and things like that.

So that the full implementation of the project would take until approximately the year 2011, at which time the usage up there would approach the 1,680 acre-feet as included in our proposal. During that time, our flow would increase from its current 8.69 million gallons per day up to about 13 and a half million gallons per day. Our discharge to the river would continually increase during this time even with the implementation of reclamation at the former George Air Force Base, to where by the year 2011 we would be discharging somewhere in the neighborhood of 15,000 acre-feet a year as opposed to this year we project a discharge of 9,600 acre-feet.

The Mojave Adjudication, I am sure will be talked about quite a bit today. The Mojave Adjudication is included as our Exhibit 1J in our package, and I think it is important to note that VVWRA is not a party to that Adjudication. We are not stipulated, we were not required to discharge any flow to the Mojave River. The lawsuit was actually -- I should say the Adjudication resulted from a lawsuit filed by the City of Barstow and Southern California Water in 1990.

And probably an important thing to note is that at the time of the agreement for the stipulation, VVWRA's discharge to the river was approximately 7,600 acre-feet. That was in about 1993. That number may come up today during other discussions. Since that time our flow has continued to grow because of the growing population.

Now the Mojave Adjudication recognized that there is riparian habitat along the Mojave River. And certainly the aerial photo that we have shows a portion of that habitat. That habitat is historical and dates from at least the 1920s. The source of water for that habitat historically came from groundwater discharges and from the natural flow of the Mojave River.

This is a copy of the Mojave Basin Plan. This is published in the Sixth Annual Mojave Water Agency Water Map Report, and this shows the various basins in the Mojave Basin. VVWRA is actually located in a Transition Zone. Our discharge to the -- our discharge is actually going to the Transition Zone. And under the terms of the Adjudication becomes included or incorporated into the amount of water that is headed downstream for the City of Barstow.

Even though VVWRA does not have an obligation to discharge to the Mojave River, in an attempt to try to resolve this issue VVWRA would like to offer the possibility that we would be willing to consider a guaranteed discharge

of 2000 acre-feet to the river and possibly we would also be willing to consider the opportunity to offer right of first refusal to the Department of Fish and Game to purchase an additional 2,000 acre-feet of water if the Department feels that that is necessary to sustain the habitat. And we certainly believe that over time our flows will continue to grow and that with the population of the Victor Valley we will continue to discharge more and more water as time goes by.

With that, I think that is the end of my testimony.

MR. HITCHINGS: Thanks, Mr. Gallagher.

Moving on through the panel, the next witness would be Guy Patterson from the City of Victorville.

Guy, I ask that you state your name for the record.

MR. PATTERSON: Guy Patterson.

MR. HITCHINGS: Could you just briefly state your current title and position with the city.

MR. PATTERSON: Public Works Director. I have been Public Works Director for the City for 11 years. I've also served on Victor Valley Wastewater Authority Technical Advisory Committee for approximately nine years.

MR. HITCHINGS: Is VVWRA Exhibit, I believe it is, 2B a true and correct copy of your resume?

MR. PATTERSON: Yes, it is.

MR. HITCHINGS: Could you briefly state your experience

and qualifications.

MR. PATTERSON: Again, I have been the Director of Public Works for the City of Victorville for approximately 11 years. I have worked in the municipal government for the various cities involved with water, wastewater and public works projects for approximately 21 years. And finally, again, I have been involved with this project from the outset.

MR. HITCHINGS: I would also like to ask you whether Exhibit 2A is a true and correct copy of the written testimony that you prepared and submitted for this proceeding?

MR. PATTERSON: There is one correction.

MR. HITCHINGS: So you do have some corrections to make to that?

MR. PATTERSON: Yes, one correction on the last page, second sentence, where it indicated these water rights will would not be sold. "Would" should be scratched.

MR. HITCHINGS: Okay. Other than that, do you have any other corrections to make to that written testimony?

MR. PATTERSON: No, I don't.

MR. HITCHINGS: With that done, could you briefly summarize your testimony for the Board.

MR. PATTERSON: I think Dan did an outstanding job of reviewing the perspective from the Authority's standpoint.

What my goal is is to try to provide the Board with the City of Victorville's perspective towards this project and why the City Council unanimously supports it.

Having said that, the City will also address some questions that were raised in the documents. One -- the questions being, if treated wastewater is supplied to the West Winds Golf Course and Southern California Logistics Airport, will the right to pump potable groundwater to serve those bases of use remain unexercised or will the right be sold or otherwise transferred?

MR. HITCHINGS: I am sorry, Mr. Patterson, you're referring to one of the key hearing issues from the notice of hearing.

MR. PATTERSON: Yes, I am.

If the right is transferred, for what purposes will the water be used, and will the consumptive use increase as a result?

The water rights will be used on Southern California Logistics Airport for the redevelopment and reuse of the airport. The rights will not be sold or transferred, and consumptive use will not increase as a result of the project.

A brief history for the Board on how the City of Victorville became involved in this project. In 1992 George Air Force Base was part of the Base Closure Act, and was

closed in '92. And it was the most economically devastating event in the Victor Valley. The project is over 5,000 acres. It was the largest employer in the Victor Valley. Through direct jobs and indirect jobs, it's anticipated that we lost approximately 8,000 jobs in the Victor Valley.

And the council was basically faced with a vacant city with no revenue on how to redevelop or reinstitute the project. There was a Joint Powers Authority formed with the communities in the Victor Valley, and that authority subsequently delegated the duties of the operation and reuse of the base to the City of Victorville.

In addition to the airport and military facilities on the site, the base included two elementary schools, parks, baseball fields, a golf course and other landscaped areas. The council direction was to put the recreational and educational facilities back in operation as soon as practical. They were deteriorating, trees were dying, turf areas were going dormant.

So we embarked on the process to do that, and the infrastructure on the site was in very poor condition. The tanks and water system had to be operated manually. We made some investments in the system, and we are currently contracting with the City of Adelanto to purchase potable drinking water from them for the irrigated surfaces.

The council at that time then began dialogue with the

Wastewater Authority on how we can jointly move together on a project to provide reclaimed water to the site. One of the reasons that the council was very concerned with buying the water from Adelanto, which was drinking water, was that during the mid 1990s our municipal golf course was being watered and still is being watered with domestic water. The water districts, and rightly so, were very vocal about restricting the use of water, cutting back watering times, not watering or washing vehicles in a driveway to preserve the water that we had.

At the same time our city council in the middle of the community was pumping drinking water out of the ground to maintain the golf course. So politically it becomes very uncomfortable for the city council. They don't want to be put back into the same position the next time that we have a drought condition in the high desert.

This has gone on for about -- the discussions have gone on for about two years. In the process we have lost the opportunity to use an EPA grant to construct the pipeline. We are still committed to funding the project. And again, I think both Dan and Andy mentioned that the initial project is to provide water to the golf course. The ball fields will require retrofitting of the irrigation system. We are going to be doing that, but the point being that we are initially going to be using approximately 200 acre-feet per

year. And it will be quite some time before the irrigation systems will be extended to the other areas for irrigation purposes. The maximum 1,680 acre-feet is years down the road, like Dan mentioned.

This implementation and as we move forward will be offset by the increased flows due to growth at the regional wastewater authority. Finally, the City of Victorville, the City Council has considered the overriding public interest, the intent to comply with state legislation and the social benefit of using reclaimed water rather than drinking water in a desert climate. The project clearly is in the public interest. And the city council's -- the City of Victorville unanimously supports VVWRA's petition to change discharge.

Thank you.

H.O. BAGGETT: Thank you.

MR. HITCHINGS: Our next witness is Randal Hill from Victor Valley Water District, and can you state your full name for the record.

MR. HILL: Randal Dwayne Hill. I typically go by Randy.

MR. HITCHINGS: If you could just identify your current title and position.

MR. HILL: I have a Bachelor's degree in civil engineering, and I am a registered civil engineer in the State of California. And I am currently the general manager of the Victor Valley Water District where I have been for

just under two years.

MR. HITCHINGS: Is VVWRA Exhibit 3B a true and correct copy of your resume and statement of qualifications?

MR. HILL: Yes, it is.

MR. HITCHINGS: Directing your attention to VVWRA Exhibit 3A, is that a true and correct copy of your written testimony that you prepared for this proceeding?

MR. HILL: It is correct, but I think there is some additions or corrections that should be made to that testimony.

MR. HITCHINGS: If we could go through those, then, I would appreciate it.

MR. HILL: When I prepared this testimony and signed it on November 10th, since that time there has been some substantial developments related to the costs that are documented in particular in two paragraphs, in Paragraph Number 15 and in Paragraph Number 17.

Currently makeup water cost assessed by producers in the Alta subarea is at $191 per acre-foot. However, water master is considering and has agendized for their December 6th meeting, tomorrow night, a discussion about increasing the makeup obligation for Alto producers to $227 an acre-foot. There's also been discussion at a workshop meeting on November the 20th, wherein the Board in general agreed that ultimately that cost would go to $267 an

acre-foot if they were to review existing subsidies.

Those substantial changes would change the following way. Within my testimony at that time $191 an acre-foot, the total cost to the Alto subarea producers I estimated to be about $320,000, just maybe under 321,000.

MR. HITCHINGS: You're pointing to Paragraph 17 in your testimony?

MR. HILL: Yes, Paragraph 17.

At $227 an acre-foot, that cost to the Alto subarea would go to $381,000 and that $267 an acre-foot, it would go to approximately $449,000, based on 1,680 acre-feet a year. And when I get into my testimony I say what the implication is to my specific agency as a result of that change.

MR. HITCHINGS: So the specific changes to the text of your testimony, then, would be in Paragraph 15 where the rate for 2000-2001 is currently noted at $191 per acre-foot, that should be changed to $227 per acre-foot.

MR. HILL: In my opinion, that is the more likely number.

MR. HITCHINGS: At this point that number, though, is a number that is going to be considered at a meeting of the water master's board tomorrow night?

MR. HILL: That is correct. That will be my next fun thing to do after this.

MR. HITCHINGS: To the extent -- for today's purposes

$191 is an accurate number. This is just to inform the Board and the other parties here there is that nuance that was not necessarily present at the time you signed your testimony?

MR. HILL: That is correct.

MR. HITCHINGS: Corresponding changes would also be contemplated at least within Paragraph 17 as you indicated, correct?

MR. HILL: That's correct.

MR. HITCHINGS: Are there any other changes that you would note to your written testimony?

MR. HILL: No, there is not.

MR. HITCHINGS: Then if you could briefly summarize the testimony that has been presented and noting the key hearing issues which it is intended to address, please go forward.

MR. HILL: I know this is a formal meeting, but I thought it would be interesting to note that the clock is behind me, and, therefore, I have no idea how much time I am about to use up.

H.O. BAGGETT: You're doing fine.

MR. HILL: You will have to flag me when I go long.

I was asked to testify by the Reclamation Authority and agreed to, wondering why now, but I agreed to testify as to the Mojave Adjudication and my understanding of it. Basically, my testimony will cover the mechanics of the

Adjudication, specifically with regard to replacement obligation and makeup obligation and most particularly to what I believe are the costs, increased cost, to producers in Alto subarea as a result of the proposed project.

Some background on the Victor Valley Water District. We were formed in 1931, a long time ago. As a county water district. We have grown from that time to just under 16,000 connections, 15,800 service connections. We serve 55 square miles, and we have about 60,000 people that we deliver retail water to within our service area. We are the largest pumper in the Alto subarea. We do have the greatest amount of base annual production or production right within the Alto subarea.

We are, as I stated earlier, an independent special district. As such we have a Board of Directors which are elected from within the community that we serve. So we are an independent governmental agency. We are not a member of the Victor Valley Wastewater Reclamation Authority because we do not have sewer service. We just deliver retail water. But probably, in my opinion, the largest portion of water which ends up in the treatment plant comes from our groundwater production. The only other relationship between ourselves and the Reclamation Authority is that we have been in discussions with them hoping that we will be able to negotiate a purchase of recycled water for our makeup

obligations, and it would be our intent to leave that water in the river.

Our area and the Mojave River in general is in severe state of groundwater overdraft. It is a very serious problem. Our top priorities as a water agency are all focused on water supply. We are in the midst of a treatment plant feasibility study to provide State Water Project to our community, 50,000,000 gallon a day plant; that's a joint plant under study right now by the Adelanto, Baldy Mesa Water District and the county service areas.

We are also in the midst of looking at taking that State Water Project and percolating it into the ground, trying to get some recharge to our groundwater basin. And we are also looking at two separate ways of treating water and directly injecting it into the ground because of the water supply situation.

With respect to recycled water, we recognize that it is a very important component of our overall water supply in the future. We have developed some draft recycled water standards, and we are in discussions in just general terms with the City of Victorville about possibly being the retail agency for recycled water to the areas within our community that are not publicly owned. And we have had some discussions with the city with respect to a recycled water master plan that they currently have underway.

The Victor Valley Water District is a stipulating party to the Adjudication, and as such we are quite familiar with the terms and conditions of the adjudication. Within -- the attachments I am going to put up are within my testimony.

The Mojave Adjudication established a number of hydrologic areas which they refer to as subareas. We are right here in the Alto subarea.

MR. HITCHINGS: If I could just interrupt, just for the record, Randy, you are referring to Attachment 1 to your testimony?

MR. HILL: Yes, Attachment 1.

MR. HITCHINGS: That is entitled Average Annual Obligations of Subareas?

MR. HILL: Yes, it is.

MR. HITCHINGS: Thank you.

MR. HILL: There are a variety of basins. The Alto subarea, Este, Oeste, Centro, and Baja. What the Adjudication establishes is that each of these areas are interrelated and have obligations to each other. The specific number of concerns to us is the Alto subarea has an average annual obligation of 23,000 acre-foot, which is measured at the beginning of the Transition Zone, and that is that area's obligation as a whole to downstream parties in the adjudication.

There are two basic types of obligations under the

Adjudication. The first I will talk about is replacement water. Under the Adjudication each of the parties within the adjudication were given a basic production quantity of water. This is referred to as the base annual production. It was based upon a five-year period of historic flow, and each producer was given the maximum amount of their production in that five-year period, and that was known as the base annual production.

There is a mechanism within the Adjudication of adjusting that base annual production downward until the basin comes into safe yield or hydrologic balance. The amount that is ramped down to is called preproduction allowance. And what happens is each party or producer has a certain amount of preproduction allowance. If you produce more water than that preproduction allowance, the difference between the amount that you produce and your preproduction allowance, that difference becomes an obligation to you called a replacement obligation. It's specific to each party, each producer. And they then become responsible to put that same quantity of water back into the basin by either purchasing imported water or negotiating an exchange of water with other producers.

The makeup obligation is different. The makeup obligation is that 23,000 acre-feet a year, which is owed as a group of producers to downstream interests. After that

obligation is established it is then divvied out amongst the producers to determine how much they will pay.

The next exhibit which I will put up is Attachment 2 to my testimony, and it is entitled the Alto Subarea Obligation. This is a spreadsheet which I developed in helping myself understand the historic perspective on the obligation.

The first is the obligation which is shown at the top of this spreadsheet. This is the cumulative obligation, on average 23,000 a year. You can see it accumulates across the top. As a credit against that are certain flows that occur in the basin. Base flow is one of the two major flows. This is the amount of water which is naturally occurring in the river, but is separated from storm flows. These are flows other than storm flows. They refer to base flows.

You can see on average that those storm flows or -- excuse me, those nonstorm flows, base flows, have varied from about 7,800 acre-foot to 9,300 acre-foot per year, with a calculated average -- I read the wrong number.

7,400 acre -- 6,500, excuse me, 6,500 acre-foot to about 10,700 with an average of just under 8,000 acre-foot per year is the base flow. The credit also includes the water from the Reclamation Authority. Both the water that they put into the river and the water that they put into

percolation ponds then becomes a credit here. You can see that it is varied from 7,700 acre-foot up to 9,300, with an average of about 8,600 in the last five years.

Those are the two major sources of credit against the obligation. The obligation is 23,000 acre-feet per year on average, but it's more complicated than that application. There is a base requirement of 18,400. You add to that one-third of the cumulative debt from the previous year and then you can see that if this number here, the cumulative debit, ever exceeds 23,000, then the obligation also includes the total amount to reduce that net to 23,000 acre-feet. A little bit complicated, but on average it should come out to 23,000 acre-foot per year which is owed downstream.

The Victor Valley Water District's obligation -- excuse me, the Alto Subarea Obligation has varied from 1,800 acre-foot a year to 3,400 acre-foot a year on average, just over 2,000 acre-foot per year. Our total as Victor Valley Wastewater District has varied from about 325 to just under 700, an average of about 350 acre-foot per year. Our total obligation currently is about 20 percent of the total. My agency picks up the tab for 20 percent of the makeup obligation.

MR. HITCHINGS: Randy, if I could just ask for clarification on the section of your spreadsheet that talks

about flow during the year, and you've got the base flows, subsurface flows, VVWRA river discharge, and under that you've got VVWRA percentage of total flow. That's the total flow, the three components above, and it does not include storm flows; is that right?

MR. HILL: That's correct.

MR. HITCHINGS: Thank you.

MR. HILL: The net result of the project is that when water is taken out of the river for reclamation, there is an obligation still on the parties to the Adjudication to have at least 23,000 acre-foot per year on average in the river. So that when water is taken out it becomes the party's obligation to put it back in. And that is where the costs come from to the producers in the Alto subarea.

As I stated earlier, originally the makeup water for this year's $191 an acre-foot, which this project would result in $320,000 per year of which my customers would play $64,000 of that amount, which is about $4.00 per customer per year. In the future should the rate be set at $227 an acre-foot, the worst case of diverting 1,680 acre-feet per year would be a total cost of $381,000, or our share of that from my customers would be $76,000 every year or $4.80, roughly, per customer per year at the highest rate currently anticipated. The total cost would be $448,000 per year, 89,700 for my customer or roughly $5.70 roughly per customer

per year.

Those costs that I just gave you, it is possible to get a lower cost than that because that is the cost of purchasing imported water from outside the basin. Currently it is possible to go to downstream users, specifically the Centro subarea, and under the Adjudication we are permitted to buy water in that subarea to meet our makeup obligation. We do that at a two-to-one. If I have a one acre-foot obligation under makeup, I can go to Centro subarea and buy two acre-feet of water and meet my obligation under the adjudication. Currently that can be done for about 30 percent to 33 percent less than the cost of imported water. In the long term I think that that margin will close.

In conclusion, it seems strange that I am sitting here telling you about some very substantial cost impacts to my customers and yet myself and my Board of Directors are in support of this project. And that's caused some difficulty between myself and my fellow producers, some of which feel I am a traitor. That is not really the case; I just have a different perspective. We don't have a problem with low cost water in the desert. We have a problem with a lack of quantity of water. We are in severe state of overdraft.

If you look at our costs on a Southern California basis average, our water is much, much lower than average. I did an evaluation recently using a Black & Veatch study at 1,600

cubic-foot per customer. The average in Southern California is $28 for that quantity of water. My customers are paying $16 for that same quantity. So our cost is substantially lower than other parts of Southern California.

So I think the difference between myself and other producers is that we see the critical, more critical component of water supply in our region to be just that, the quantity of water, not the cost of water. We recognize that this project will increase our cost to our customers. Yet we also recognize that it increases available water supply to the Victor Valley area, and we consider that to be more important than the cost impacts. That is why we are basically in support of the project.

MR. HITCHINGS: Thank you. I think that concludes the testimony on direct for these three witnesses.

H.O. BAGGETT: You would like to do cross-examination now of this panel so they can --

MR.HITCHINGS: That might be best. Given Mr. Hill's time constraint, depending upon what the estimated length of cross cumulatively for a party may be, it may be that we want to make him available so that we possibly can complete any cross-examination of him today, and at least get that out of the way or we can take estimates.

H.O. BAGGETT: You have an estimate?

MS. MURRAY: I am perfectly amenable to do Mr. Hill

first by all parties. I don't have an estimate of time, but it may -- I don't want to rush through Mr. Gallagher in order to -- and hold up Mr. Hill.

MR. KIDMAN: Thank you, Mr. Baggett.

I would remind the Board that when the Department of Fish and Game wanted to have a little slack relative to the procedures here because their witnesses who had been involved in the Adjudication process, heavily involved for maybe upwards of 30 years on the system, had a heart attack, Mr. Hitchings didn't want to cut any slack whatsoever.

Now when we have the opportunity, hopefully, to fully cross-examine all of these witnesses and do it in the order presented so that we can follow along in the way that written testimony and the oral testimony has been presented, we are being asked, so that he can attend a board meeting, that I presume he has known about for months and could --

H.O. BAGGETT: So I presume your answer, you object?

MR. KIDMAN: My answer is that I believe that we should -- I don't have objections to taking this panel for cross-examination first, but I do have objections to rushing along so that Mr. Hill can get out the door.

MR. HITCHINGS: Can I respond to that, please, Mr. Chair?

H.O. BAGGETT: Yes.

MR. HITCHINGS: Mr. Hill will be available tomorrow.

He will be back here. And I have to take issue with counsel's statement about me pressing this along. That was not my decision. My clients --

H.O. BAGGETT: Determination by the Hearing Officer, not by anybody else. I made that determination. I didn't want to wait three and a half more months.

MR. HITCHINGS: Correct. And I also want to note, given the amount of time it's taken to get to hearing on this, that weighed into my client's decision as to whether we were going to object to a continuance of the hearing for a few more months.

H.O. BAGGETT: Other parties, let's just take -- let's just do it in order. We will do this panel, go one through three, and see where we get. If he is coming back tomorrow we can think about that.

MR. HITCHINGS: Thank you.

H.O. BAGGETT: With that, Department of Fish and Game.

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CROSS-EXAMINATION OF FIRST PANEL

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY

BY DEPARTMENT OF FISH AND GAME

BY MS. MURRAY

MS. MURRAY: Mr. Gallagher, start with you.

In your testimony at Page 10 you acknowledge that a significant riparian habitat exists in the Transition Zone

of the Mojave River now, and that habitat has historically existed; is that correct?

MS. GALLAGHER: Yes.

MS. MURRAY: You state that original source of water for the habitat was primarily groundwater that discharged to the river; is that correct?

MR. GALLAGHER: Groundwater that discharged to the river and that was also forced to the surface of the river by the geology of the area.

MS. MURRAY: So it is your testimony that at least historically groundwater was flowed to the river and provided water for the significant riparian habitat?

MR. GALLAGHER: Yes.

MS. MURRAY: On Page 11 of your testimony you make a reference to the Biological Resources Trust Fund created by the judgment, correct?

MR. GALLAGHER: What paragraph are we in?

MS. MURRAY: Thirty.

MR. GALLAGHER: Yes.

MS. MURRAY: And you state in part that DFG can ensure via the terms of the judgment in the Mojave Adjudication that any environmental concerns related to the Transition Zone are addressed; is that correct?

MR. GALLAGHER: That is my understanding. I'm certainly not an expert on the Mojave Adjudication, but that

is my understanding, yes.

MS. MURRAY: And under the judgment do you know how much money is paid to the Biological Resources Trust Fund?

MR. GALLAGHER: My understanding is that it is 50 cents per acre-foot.

MS. MURRAY: That's correct.

Do the assessments stop being collected when the Biological Resources Trust Fund hits a certain amount?

MR. GALLAGHER: My understanding, when it hits a million dollars it will stop.

MS. MURRAY: Correct.

Are there any other limitations upon collection of the assessment for the Biological Resources Trust Fund?

MR. GALLAGHER: If there are, I am not aware of them.

MS. MURRAY: Do you know what the current balance of the trust fund is?

MR. GALLAGHER: My understanding is somewhere in the neighborhood of $600,000.

MS. MURRAY: Just a second.

So your understanding is that in the neighborhood of 600,000?

MR. GALLAGHER: Again, I am not expert. I heard that secondhand. I haven't seen it in writing myself.

MS. MURRAY: If I told you it was much closer to 500,000, would that seem like it's in the ballpark?

MR. GALLAGHER: I wouldn't have a problem with it.

MS. MURRAY: Is the Biological Resources Trust Fund held by water master who must approve any expenditure out of the fund before DFG can, in fact, expend any of the money?

MR. GALLAGHER: I do not know.

MS. MURRAY: Mr. Hill, do you know?

MR. HILL: That's my understanding.

MS. MURRAY: So it is not just DFG deciding what it wants to do concerning the environmental concerns in the Transition Zone; it must be approved by the water master and spent according to judgment; is that correct, Mr. Hill?

MR. HILL: It is my understanding that there is an obligation to produce a public report that would specify how the moneys would be spent, and that report has not yet been prepared.

MS. MURRAY: That the Department of Fish and Game makes that report and the water master is actually the one that holds the funds and doles out any money from those funds?

MR. HILL: That is correct.

MS. MURRAY: Back to you, Mr. Gallagher. If you could please turn to VVWRA Exhibit 1H, the rate schedule at the back of the exhibit. This is the rate schedule included in the agreement between VVWRA and the City of Victorville for the purchase of treated wastewater?

MR. GALLAGHER: It is going to take me a few minutes.

MS. MURRAY: I know it is hard with those dividers, yes.

Looking at the rate schedule, the highest amount of the 140 feet, $65.21?

MR. GALLAGHER: That's correct.

MS. MURRAY: Now assuming that VVWRA dedicates 2,000 acre-feet annually to the Mojave River and DFG desires to purchase 6,500 acre-feet to make it 8,5000 feet we assert is needed to maintain significant riparian habitat that you referred to in your testimony, let's walk through what it would cost according to your rate schedule in VVWRA Exhibit 1H for 6,500 acre-feet times $65.21 per acre-feet.

Does it seem reasonable? I don't know if you have a calculator.

MR. GALLAGHER: One thing that is important here that this figure for the unit cost includes a cost of pumping to SCLA. SCLA is hydraulically approximately 250 or 300 feet higher than our treatment plant. It takes a significant amount of energy to pump that water all the way up to the golf course. For our discharge to the Mojave River, obviously, we don't have to pump that. There would not be a cost of pumping associated with deliveries to the river.

MS. MURRAY: Even though we have not heard an amount, what you are saying today is it would be lower than 65.20?

MR. GALLAGHER: If you'll notice on this exhibit the

rate shown includes $35 per acre-foot for revenue for the water. The rest of this rate includes the electricity to pump it there and also maintenance on the pumping system. So in the absence of those costs the cost for this water would be $35 an acre-foot.

MS. MURRAY: And if -- are you aware of the cost of buying State Water Project water?

MR. GALLAGHER: Yes.

MS. MURRAY: The cost currently at Rock Spring is to be approximately $171 an acre-foot. Does that sound correct?

MR. GALLAGHER: Apparently, yes.

MS. MURRAY: In buying 6,500 acre-feet at $171 per acre-foot, roughly $1,105,00 per year, does that sound about correct?

MR. GALLAGHER: If you say so.

MS. MURRAY: And in your testimony you say that you might be willing to sell to the Department of Fish and Game 2,000 acre-feet. And are you now saying that some of that would be $35 an acre-foot?

MR. GALLAGHER: It is important to know that this cost of $35 per acre-foot is subject to review by our Board of Commissioners on an annual basis. That rate was established based on the value of water today or at the time this was written in the Victor Valley; and I think it is important to note that at the time this was written preproduction

allowance was still available in the Victor Valley on lease for less than $50 an acre-foot.

Certainly, we could not establish a value for reclaimed water that was greater than what preproduction allowance was available for. Now the cost of preproduction allowances continue to increase. I understand now it is in the neighborhood of about $75 an acre-foot, maybe less. I am not -- I don't buy water, unlike Randy, and I hear a lot of these things secondhand.

Our Board would consider the value of water based on the value of potable drinking water as an alternate source in the Victor Valley.

MS. MURRAY: It is basically your testimony that you think the cost would possibly be higher than $35 an acre-foot, given the fact that the FPA has increased?

MR. GALLAGHER: That would be a decision by my Board of Commissioners based on reviewing a lot of evidence, and I can't comment on that without my Board deciding.

MS. MURRAY: Exhibit 1L is the CH2MHill report, at Page 12.

MR. GALLAGHER: This one I found. Okay.

MS. MURRAY: At Page 12 of the CH2MHill report concludes that the use of reclaimed water may increase the TDS concentration in the groundwater in the upper aquifer by 16 to 82 milligrams per liter depending on, and I am

quoting, a blend of groundwater and return flow used; is that correct?

MR. GALLAGHER: Yes. The important thing, though, is that this report also looked at the time we were anticipating the City of Adelanto leaving our Joint Powers Authority agreement. The City of Adelanto's flow contains significantly high TDS values than the sewage we were obtaining from the other member entities. Since the time the City of Adelanto has left our Joint Powers Authority, our 12 month average TDS is now less than 300 milligrams per liter.

At the time we were preparing this document, our TDS was approximately 440 milligrams per liter. We have seen a significant drop in TDS since 1998 when the City of Adelanto left. If that would impact this, certainly the amount of TDS in the water that would be applied to the golf course at SCLA would be far less than what was he even evaluated in this report.

MS. MURRAY: Have you received anything in writing from the LaHontan Regional Water Quality Control Board after submitting this report to the Regional Board about compliance with State Water Resources Control Board antidegradation reuse issue?

MR. GALLAGHER: I received correspondence just this past week, and I don't have a copy of it. At the time we

submitted this, we did not receive a reply from them.

MS. MURRAY: Have you received a permit from the LaHontan Board?

MR. GALLAGHER: The permitting process we would have to apply for waste discharge requirements from the LaHontan Regional Board. We were waiting to finish this proceeding to obtain permission for our petition before we proceeded with the application for waste discharge requirements.

MS. MURRAY: Does VVWRA expect the golf course to use all return flow or, in fact, a blend of groundwater and return flow?

MR. GALLAGHER: Well, I think the question was on golf courses. My understanding is sometimes the greenskeepers like to use potable water for the greens because the grass sometimes is more sensitive to high salt concentration. I am not aware for sure of exactly whether they would continue to use potable water for the greens and reclaimed for the fairways or if they would use reclaimed water for the entire golf course. I don't know the answer to that question.

MS. MURRAY: Do you expect that VVWRA will be delivering more water to the golf course in the summer than in the winter?

MR. GALLAGHER: Certainly transpiration losses are greater in the summer, yes. Generally the demand for water is more in the summer months.

MS. MURRAY: More water to the golf courses in the summer than in fall or spring?

MR. GALLAGHER: Dependent on the weather. It all depends on what Mother Nature brings us.

MS. MURRAY: Do you have any idea how much more water in the summer than in the other seasons of the year?

MR. GALLAGHER: I do have some values that the city provided to us, but, again, that was based on an average of about 3- to 400 acre-feet per year. During the summer months the quantities were greater. I don't have that information with me today.

MS. MURRAY: You're planning for water deliveries in the summer to increase vis-a-vis seasons of the year?

MR. GALLAGHER: That would be true, yes.

MS. MURRAY: Mr. Hill, in your testimony you briefly described the makeup water obligation of the Alto sub area where VVWRA is located and the makeup water obligation to the downstream subareas, Centro and Baja. You mentioned the 2001 ration for buying unused FPA Centro for that obligation. Do you recall that?

MR. HILL: Yes.

MS. MURRAY: If a producer in Alto buys unused FPA Centro to help make his or her obligation, under the judgment does the producer actually receive real water or a credit?

MR. HILL: He receives a credit. The water is not physically transferred from the Centro basin to the Alto basin.

MS. MURRAY: A credit is given for real water in the river or in the Transition Zone, correct?

MR. HILL: That's correct.

MS. MURRAY: Is there a turnout from the State Water Project or water master real delivery, real water delivery point in the Transition Zone?

MR. HILL: There is one proposed and being discussed. There is not one at this time. Historically there was going to be construction of a Transition Zone discharge point, but that project was scuttled.

MS. MURRAY: In your testimony you give amounts for cost of buying makeup water. You revised them for this year. Has the water master, in fact, indicated what the cost for the makeup water would be for the next year?

MR. HILL: It's speculative because the water master has not yet made a decision. In their December 6th agenda they are suggesting that the Alto subarea makeup obligation be set equal to the Hodge recharge basin cost, which has already been approved by Mojave Water Agency as $227 an acre-foot. That was by action of their board on 11/29.

MS. MURRAY: Is it fair to say that the cost of both real water and makeup water obligation will increase every

year?

MR. HILL: I suspect you will see a state of increase of water rights in Alto subarea.

MS. MURRAY: No further questions of this panel.

H.O. BAGGETT: Thank you.

Jess Ranch Water Company, Mr. Ledford.

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CROSS-EXAMINATION OF FIRST PANEL

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY

BY JESS RANCH WATER COMPANY

BY MR. LEDFORD

MR. LEDFORD: Good morning.

Mr. Patterson, can you explain to me the composition of your Board of Commissioners?

MR. GALLAGHER: For me? Okay.

My Board of Commissioners --

MR. LEDFORD: Mr. Gallagher.

MR. GALLAGHER: That's okay.

My Board of Commissioners is comprised of representatives from member entities. Right now that includes the town of Apple Valley, the City of Victorville, the City of Hesperia, the County of San Bernardino Service Areas 42 and 64.

MR. LEDFORD: Can you tell me are each of those member entities stipulating parties to the judgment?

MR. GALLAGHER: I believe at least one of them is, yes.

MR. LEDFORD: Which one is that?

MR. GALLAGHER: I know the County of San Bernardino is a stipulated party. So is City of Hesperia.

MR. LEDFORD: That is two.

Mr. Hill, do you know if the City of Victorville is?

MR. HILL: The City of Victorville is a stipulated party.

MR. LEDFORD: The town of Apple Valley?

MR. HILL: That one I don't know.

MR. LEDFORD: Mr. Patterson, do you know?

MR. PATTERSON: No, I don't.

MR. LEDFORD: I'll represent to you that all of your commissioners who sit on your board are stipulating parties to the judgment.

MR. HITCHINGS: I am going to object to this. Mr. Ledford is not a witness. He is asking questions.

H.O. BAGGETT: I would sustain that. You will have an opportunity shortly to make that.

MR. LEDFORD: One of your exhibits is the judgment. You stated you're knowledgeable about that. Can you tell me where in the judgment that it states that the Victor Valley Wastewater Reclamation authority has the right to transfer or sell water?

MR. GALLAGHER: I think I should clarify. I also said I am not an expert on the Mojave Adjudication, and I do not know the entire content of that document.

MR. LEDFORD: You submitted it as one of your exhibits that you are here to testify about?

MR. GALLAGHER: That's correct.

MR. LEDFORD: Can you tell me, to your knowledge, is there any place in that document where it provides that VVWRA has the right to transfer or sell any water?

MR. GALLAGHER: To my knowledge, there is no place in the document that stipulates us to do anything.

MR. LEDFORD: Are you a resident of the Victor Valley?

MR. GALLAGHER: Yes, I am.

MR. LEDFORD: As a resident of the Victor Valley, if you had a piece of property you wanted to drill a well on to begin producing water, would you become a party to the judgment?

MR. GALLAGHER: To my knowledge, that would depend on whether I was going to be a minimal producer or an actual producer of more than ten acre-feet a year.

MR. LEDFORD: Nevertheless, whether you are a minimal producer or more than a minimal producer, would you not be bound by the terms of the judgment if you began producing water?

MR. GALLAGHER: My assumption is the judgment would

apply to anyone producing water in the basin, so I suppose that, yes, I would.

MR. LEDFORD: Isn't it also true that the judgment was a stipulated judgment, it was in essence a contract among the parties, for the most part?

MR. GALLAGHER: My understanding, yes.

MR. LEDFORD: That the parties envisioned that water production and use would, under the terms of this document, would eventually balance the basin?

MR. GALLAGHER: I can't answer that question. I don't know.

MR. LEDFORD: Mr. Hill, can you answer that.

MR. LILLY: Yes, there was the concept that return flow would eventually heal the basin.

MR. LEDFORD: And is the water that is discharged from the VVWRA considered return flow?

MR. HILL: Not the type of return flow that would heal the basin. The solution to healing the basin was from return or imported water or new water supplies, not necessarily from the benefit of return flow of groundwater.

MR. LEDFORD: I believe it is in your testimony, but I could be wrong, but wasn't the adjudication based on an average of 50 percent consumptive use?

MR. HILL: There is an assumption within the adjudication that municipal and industrial and agricultural

groundwater production will see 50 percent of the produced water return to the basin through direct return flow, deep water percolation or through sewage return flow.

MR. LEDFORD: You have talked about -- back to Mr. Gallagher. You have talked about the reason, one of the reasons that you're developing this plan is to generate revenue to reduce or perhaps not reduce, not increase the user rate to your customers; is that correct?

MR. GALLAGHER: That's correct. Any revenue that we generate from the sale of reclaimed water would be used to offset the cost of sewage treatment for the sewage customers of the Valley.

MR. LEDFORD: Is there any other reason that you would be doing this, any other reason other than to reduce the rate to your customers?

MR. GALLAGHER: I believe our Board of Commissioners feels that this is a beneficial reuse if we use it to offset the use of potable water for nonpotable uses.

MR. LEDFORD: You state that you're offsetting the use of potable water. You discharge water immediately to the river; is that correct?

MR. GALLAGHER: Can you define immediately?

MR. LEDFORD: Immediately outside, you have a discharge point that is outside of the treatment plant that is immediately to the river. Does that go through another

process?

MR. GALLAGHER: Through another process? I don't understand your question.

MR. LEDFORD: My question: You process, the VVWRA processes the sewage flow and treats it to a level that is discharged to the river in accordance with water quality standards. Is that your statement?

MR. GALLAGHER: That's correct.

MR. LEDFORD: If I happen to own the next piece of property down the river from that discharge point and I had a well and I produce water from that well, would my water quality be affected by your discharge water?

MR. GALLAGHER: My assumption would be yes.

MR. LEDFORD: Would it be a positive benefit or negative benefit?

MR. GALLAGHER: I am very proud of the quality of water that we produce and that we discharge to the river.

MR. LEDFORD: If I owned the very next piece of property down river from your treatment plant and I pumped the water and I put it into my sink, would it be drinking water?

MR. GALLAGHER: Our effluent is not intended to be drinking water.

MR. LEDFORD: If I had the very next piece of property downstream and I produced it from my well -- I have a well

that is the very next piece of property down river from your discharge point and I pump water from my well, is it going to be drinking water quality?

MR. GALLAGHER: A lot of that would depend on the construction of your well, how far down you were pumping water. Obviously if you were pumping water that is contiguous with the river it would be more heavily influenced to the river, it would be more heavily influenced by the river than it would be if you were pumping water from several hundred feet down. A lot of that depends on how far away from the river your well is.

MR. LEDFORD: Given that set of circumstances, how far down the river would I have to be before the water that infiltrates into the river basin becomes drinking water?

MR. GALLAGHER: I don't have an answer to that question.

MR. LEDFORD: More than a half mile?

MR. GALLAGHER: I don't know.

MR. LEDFORD: You don't know.

At some point would the water that is being discharged from your plant into the river become drinking water? Through infiltration, a combination of river flow and infiltration does it then become groundwater and thus produce water that is drinking water standards?

MR. GALLAGHER: I would agree with that.

MR. LEDFORD: Would you agreed with me that the water that is being discharged to the river is beneficial use of the water?

MR. GALLAGHER: Certainly beneficial use.

MR. LEDFORD: At some point all of that water being discharged to the river becomes water that can be produced for drinking water?

MR. GALLAGHER: Possibly, yes.

MR. LEDFORD: So in reality the fact that you would like to be able to transfer the water to George Air Force Base to water a golf course because that water is not necessarily drinking water standard at the very point of discharge, is not a good argument because the total amount of water that is discharged becomes drinking water at some point?

MR. HITCHINGS: Objection. That is argumentative. Doesn't necessarily state a question.

H.O. BAGGETT: Sustained.

MR. LEDFORD: Would you agree with me that -- I'll forget that question.

MS. MURRAY: I think it a very good question. If Mr. Ledford needs another minute to rephrase the question --

H.O. BAGGETT: Fish and Game already had their chance.

MR. LEDFORD: Thank you for the coaching.

H.O. BAGGETT: Mr. Ledford.

MR. LEDFORD: I am working on it.

Back to the dollars and cents. Based on your contract with the City of Victorville, which I understand is a ten-year contract, my understanding from reading the contract it establishes, I believe, in the first five years of the contract a $35 acre-foot number cannot be changed; is that true?

MR. GALLAGHER: I believe that is correct. The $35 per acre-foot is the amount per acre-foot that is revenue. We would adjust or could adjust the cost of pumping, which, of course, would vary with electric rates.

MR. LEDFORD: At $35 an acre-foot if you were to produce 1,600 acre-feet of water, how much revenue does that generate for the VVWRA?

MR. GALLAGHER: I don't have a calculator with me.

MR. LEDFORD: About?

MR. GALLAGHER: I don't -- without a calculator I don't know. Actually, a thousand acre-feet that $35 would be $35,000 revenue.

MR. LEDFORD: Maybe $50,000?

MR. GALLAGHER: That is correct.

MR. LEDFORD: How much would you reduce your sewer rate to your customers based on that amount of revenue?

MR. GALLAGHER: I don't have an answer for that question because we have not increased our rates for eight

years. Even though the cost of inflation has greatly increased our cost of operation, we have been able to maximize efficiency of the treatment plant by putting in computer controls and things like that, and cutting cost everywhere that we can.

But, certainly, over time without any other change one of these days we are going to have to raise our rates. One thing our Board has looked at is if we generate a source of revenue, such as the sale of reclaimed water, we can potentially delay or eliminate the need to increase rates in the future. Whether that could possibly be substantial enough to cause a decrease in the rate would depend on how much water we were able to market and what the value of that water would be.

MR. LEDFORD: Is your answer you simply don't know the answer to that question, you don't know what the affect on -- we have roughly a thousand connections in the Jess Ranch. We have some 1,400 senior households at Jess Ranch. We certainly would be interested in whether or not you generate revenue, whether or not that would reduce the rates, sewer rates, for them or prevent them from going up, because we have at least Mr. Hill's testimony that it is going to cost $4.00 a year to his customers.

MR. HITCHINGS: I am going to move to strike that. There is no question.

H.O. BAGGETT: There is no question. You will get an opportunity in your case in chief momentarily. This is cross-examination of testimony given.

MR. LEDFORD: I will get it. I am not a lawyer.

Would you agree with Mr. Hill that it is going to cost his customers more money in the event that you take water out of the river?

MR. GALLAGHER: Mr. Hill presented testimony to that effect, yes.

MR. LEDFORD: You are not prepared to give any testimony as to how much it would either reduce the sewer rate or prevent the sewer rate from going up at this time?

MR. GALLAGHER: We have in our adopted budget for the next year a certain amount of revenue that we will be collecting from the sale of reclaimed water, but that is a very limited amount. We have not budgeted for this project because we didn't know for sure if the project would be approved or when it would be approved.

So I don't have a handle on how much revenue that is going to generate or how that is going to impact our rates. I don't know years in advance. I don't have a crystal ball to tell me what my costs are going to be in the next five years or what my revenues are going to be.

MR. LEDFORD: What was your O&M cost for the last fiscal year?

MR. GALLAGHER: My cost for $2.8 million for general O&M. We also spent about a half a million dollars on repair and replacement of existing equipment, and then we had a capital improvement budget because of our construction.

MR. LEDFORD: Just a straight O&M, if you were to get a credit toward the O&M, that would be a very -- that is assuming that you're going to sell the entire 1,600 acre-feet, $35 an acre-feet. It seems a very small amount of money.

MR. HITCHINGS: Move to strike. Again, I don't hear a question there. And Mr. Ledford again is testifying. I understand that this isn't something he does all the time.

H.O. BAGGETT: I wasn't until recently, until a few minutes ago. The purpose here is to ask questions. You will get an opportunity later to make your comments and to do just closing and argue where you want to go with this. At this point if you can --

MR. LEDFORD: I have a question. My question is: How much is it possible to affect your rate?

MR. GALLAGHER: Every little bit counts. We conserve spending money as much as we possibly can. I may save $20,000 this year in chlorine addition by optimizing that within the computer system. That is a real savings to us. Every little bit that we can put together to hold down sewage increases is very important to our Authority.

MR. LEDFORD: $50,000 was -- $35 was pretty much our maximum number; is that correct?

MR. GALLAGHER: For the SCLA project.

MR. LEDFORD: Have you purchased the pump for this project?

MR. GALLAGHER: No, not yet.

MR. LEDFORD: Have you budgeted money to purchase the pumps?

MR. GALLAGHER: We have it shown in our budget, yes.

MR. LEDFORD: How much?

MR. GALLAGHER: About $200,000 to buy the pump and the controls?

MR. LEDFORD: No, part of the pipeline?

MR. GALLAGHER: Just the pumping system.

MR. LEDFORD: Can you tell me what the maximum capacity of those pumps are?

MR. GALLAGHER: The pumps were sized to pump the one and a half million gallons between 11 p.m. and 6 a.m., which are the off-peak hours for Edison Electric who are our utility. What we intended to do was all of our pumping during off-peak hours, that was also going to coincide with the application of water on the golf course during off-peak hours so they could likewise save money.

MR. LEDFORD: The size of the pump?

MR. GALLAGHER: It was a 250 horsepower pump.

MR. LEDFORD: How many?

MR. GALLAGHER: Two.

MR. LEDFORD: Can you tell me what the rate of capacity of each of those pumps is in gallons per minute?

MR. GALLAGHER: I believe they're about 5,000 gallons a minute.

MR. LEDFORD: Two of them would be 10,000?

MR. GALLAGHER: We put in two pumps for redundancy purposes. Because if I have one pump down for maintenance, I want to be able to provide water for the golf course.

MR. LEDFORD: What size pipeline?

MR. GALLAGHER: The exhibit we had showed an 18-inch pipeline, and it may actually be 16-inch.

MR. LEDFORD: It has not been designed yet?

MR. GALLAGHER: It's been designed, and actually that question should probably be posed to Mr. Patterson because the city is planning on designing and capitalizing the pipeline itself.

MR. LEDFORD: I guess my question to you is, 5,000 gallons per minute, how much water can you put through that pipeline during the off-peak hours? I believe that it is -- strike I believe.

H.O. BAGGETT: Thank you.

MR. LEDFORD: How many gallons of water can you put through that pipeline at off-peak hours?

MR. GALLAGHER: The intention was to move one and a half million gallons in about a seven-hour period.

MR. LEDFORD: So you are saying that is all, 5,000 gallons a minute, is that all the water that you can move through that pipeline during the off-peak period?

MR. GALLAGHER: I don't understand the question.

MR. LEDFORD: My question to you is: 5,000 gallons a minute during that seven-hour off-peak period. So the maximum amount of water that can be put through that pipeline is a maximum of one and a half --

MR. GALLAGHER: The maximum amount you can put -- well, if both pumps were used, more water could be pushed through the pipeline.

MR. LEDFORD: I am talking one --

MR. PATTERSON: The point is the agreement that the City of Victorville has with VVWRA is to provide up to 1.5 million, no more.

MR. LEDFORD: Mr. Patterson, I am going to ask you about surplus capacity.

H.O. BAGGETT: How much longer do you think you are going to be? I have something to --

MR. LEDFORD: I am going to be considerably longer with these witnesses. This is their case in chief. These target witnesses.

We can take a break for lunch if you like, sir.

H.O. BAGGETT: I would. Is 45 minutes long enough? I know we have some time constraints. Does that work for you? Does anybody object to that?

We will reconvene at 1:00.

(Break taken.)

AFTERNOON SESSION

---oOo---

H.O. BAGGETT: We are back in session. Let's continue where we left off.

MR. LEDFORD: As a sidetrack, I asked you a question earlier if you wanted to produce water as an individual and you were not a party to the judgment, could you do that?

MR. GALLAGHER: I don't know.

MR. LEDFORD: You don't know.

Would it be possible to refer you to your Exhibit 11, Figure 1? You actually had an overhead of that.

MR. GALLAGHER: Okay.

MR. LEDFORD: It would probably be helpful to others if you put it back up.

MR. GALLAGHER: Put it back up.

MR. LEDFORD: Could you explain to us the alignment of the pipeline and the location of the lake? Is this an accurate depiction of the pipeline?

MR. GALLAGHER: The only deviation that I know of that may be made, the pipeline as shown right now cutting through what used to be the residential area of the old Air Force Base. It may actually follow Nevada, which I think is this trace over here, before it comes down to the pond. But this is the pond at the golf course that the water would be pumped into and used for the irrigation.

MR. LEDFORD: Can you explain to us, to the extent that you know, what the existing pond configuration is and what it is intended to be when the pipeline is finished?

MR. GALLAGHER: The existing pond is about two acres or maybe three acres, just a round earthen pond. I don't even know how deep it is.

MR. LEDFORD: Is it lined?

MR. GALLAGHER: I don't know for sure.

MR. LEDFORD: Do you know when the pond is finished if it is intended to be lined?

MR. GALLAGHER: I -- can you answer that?

MR. PATTERSON: Yes. The pond as it exists today is something that we inherited from the Air Force. It will need to be improved.

MR. LEDFORD: The question is: Will it be lined when it is finished?

MR. PATTERSON: Yes.

MR. LEDFORD: Does -- I believe that somebody, one of you testified that there would be a waste discharge permit required for this point of discharge?

MR. GALLAGHER: That's correct. We would have to have waste discharge requirements, yes.

MR. LEDFORD: Now, are you familiar with a project called High Desert Power Project?

MR. GALLAGHER: Yes.

MR. LEDFORD: Can you show us where on this plan where that project is proposed to be built?

MR. GALLAGHER: I don't know.

MR. LEDFORD: Mr. Patterson, do you know the answer to that question?

MR. PATTERSON: I believe that project is somewhere in this location.

H.O. BAGGETT: Explain, so it is on the record, what you are pointing at, what area east of --

MR. PATTERSON: It is an area that would be to the east of the runways. It would be along the ridge line.

MR. LEDFORD: Could you stay up there for just a minute?

Are you familiar with a pipeline that is proposed to provide water service to that project?

MR. PATTERSON: I am not familiar with it. I know there is a pipeline, but it is a different project than this.

MR. LEDFORD: You have no knowledge whatsoever about that High Desert Power Project?

MR. PATTERSON: I didn't say that.

MR. LEDFORD: Do you have any knowledge that you can share with us about the water pipeline that will serve that project?

MR. PATTERSON: I know that there is a project that the

city is working with Mojave Water Agency on to provide water for the power project.

MR. LEDFORD: Are you aware of a pipeline that is going to service that project?

MR. PATTERSON: No, I am not.

MR. LEDFORD: You don't know the size of the line?

MR. PATTERSON: No.

MR. LEDFORD: You don't know the location of the line?

MR. PATTERSON: Not exactly, no.

MR. LEDFORD: Randy, are you familiar with that?

MR. HILL: Yes, I am.

MR. LEDFORD: Perhaps you could go up to the chart and tell --

MR. HILL: I will do it from here. I have the pointer.

MR. LEDFORD: Thank you.

Can you -- maybe you can explain where the 24-inch pipeline is in relation to this pipeline.

MR. HILL: It is my understanding that there will be a 24-inch pipeline constructed from the Mojave River pipeline, which is up here somewhere. The turnout would come down into this general area where there would be a water treatment plant, and then that would serve the power project.

MR. LEDFORD: Your understanding is that the line is a

24-inch pipeline?

MR. HILL: Yes, that is my understanding.

MR. LEDFORD: Would it run parallel to the proposed 18-inch pipeline that is part of the --

MR. HILL: It looks like it would be parallel, at least a portion.

MR. LEDFORD: Are you familiar with a new project that the Mojave Water Agency is now exploring to put an 18-inch pipeline connecting to that 24-inch pipeline?

MR. HILL: Yes. There are several alternatives that have been discussed at Mojave Water Agency that would extend that pipeline down to the Transition Zone.

MR. LEDFORD: The reason for extending the 24-inch pipeline with the 18-inch pipeline to the transition zone is?

MR. HILL: Would be to have an additional place to put water into the Transition Zone.

MR. LEDFORD: Is the Transition Zone in overdraft in that area?

MR. HILL: There is a pumping depression from existing groundwater, so I would say yes.

MR. LEDFORD: And that area is about how far above the VVWRA plant? Anybody that wants to answer.

MR. HILL: I don't know the answer.

MR. GALLAGHER: I know in discussions with Norm

Caouette from Mojave Water Agency there is a couple different locations that might be utilized for that. They've looked at locations below the Lower Narrows gauge, or I should say below the bridge at the Lower Narrows, extending a little bit farther north. Depends on exactly where it is put.

MR. LEDFORD: Mr. Gallagher, back to you.

Are you familiar with a 24-inch turnout of the Mojave River pipeline, the one that Mr. Hill just described as being on the northerly part of this exhibit?

MR. GALLAGHER: I am familiar with it only from the extent that talking to Mojave Water they were exploring the possibility of putting a turnout connected to the river.

MR. LEDFORD: Are you familiar with the fact that the Mojave Water Agency at one point in time had a pipeline designed to go into the Transition Zone very close to the VVWRA facility?

MR. GALLAGHER: I am very familiar with that.

MR. LEDFORD: Can you tell us what happened?

MR. GALLAGHER: Our agency filed a lawsuit against the Mojave Water Agency because we felt that we had some significant concerns. The pipeline was going to be constructed and put State Project water into the river between our downstream and upstream water quality monitoring stations. And we are required to have those two stations by

our permit, our NPDES permit with the LaHontan Regional Board. And essentially what we have to do, if there is any impact on the river as evidenced by an analysis from the upstream and downstream water quality stations, then we are responsible for that. The lawsuit that we filed was intended to examine further the impacts to our upstream and downstream water quality stations. That lawsuit was settled in 1996.

MR. LEDFORD: Specific reason that you were concerned about water quality was?

MR. GALLAGHER: Because the State Project water would be entering the river at a point between our upstream and downstream water quality stations.

MR. LEDFORD: Would it be a true statement that the water quality of the State Project water is of less quality than you discharge water?

MR. GALLAGHER: That was our concern.

MR. LEDFORD: Do you know that to be a factual statement?

MR. GALLAGHER: What I do know is that State Project water varies depending on the season, the water quality of that water.

MR. LEDFORD: Is State Project water considered to be potable water?

MR. GALLAGHER: No, but I know that there are agencies

that treat that water for potable uses.

MR. LEDFORD: Back to you, Randy.

Those two water lines are going to be running parallel, one 24-inch pipeline and one 18-inch pipeline. Is there surplus capacity, to your knowledge, in the 24-inch pipeline to the proposed use of High Desert Power Project?

MR. HILL: Possibly. It depends on many factors and how you define excess capacity, but possibly.

MR. LEDFORD: I would like to hand you what I have marked as Exhibit 2 to my testimony.

H.O. BAGGETT: This is to cross-examine on their testimony.

MR. LEDFORD: I understand that. This is an exhibit that is cross-examining them on their testimony relative to the pipeline that is proposed by Mojave Water District. He just testified to it. I would like to ask him if he recognizes that.

MR. HILL: I haven't reviewed it, but I am familiar with it in concept.

MR. LEDFORD: Is that document a document that Mojave Water Agency prepared as an overview of the 18-inch pipeline that we discussed earlier?

MR. HITCHINGS: I am going to object. I don't believe Mr. Hill has the ability to speculate on why Mojave Water Agency would have or would not have prepared a document.

H.O. BAGGETT: I would agree.

MR. LEDFORD: I'll lay some foundation. I am not counsel, but I think I can.

Mr. Hill, are you a member of the Alto Area Advisory Committee?

MR. HILL: I am.

MR. LEDFORD: Was this item a topic of conversation at the last Alto Area Advisory --

MR. HILL: It was.

MR. LEDFORD: -- meeting?

H.O. BAGGETT: Very good. Ask away.

MR. LEDFORD: The question -- I guess I will have to reformat the question. The question is: Is this the document that the Mojave Water Agency prepared as a preliminary analysis of where the pipeline would be routed to the Transition Zone?

MR. HILL: Yes, it is.

MR. LEDFORD: Does that document anticipate that there is surplus capacity in the 24-inch water line to handle this?

MR. HILL: It does. I should add a caveat that there has been further discussion since this was produced that has increased Mojave's understanding of that issue, and that is that their capacity is second in priority to the Victor Valley Water District's use of that pipeline.

MR. LEDFORD: Very good. Let's talk about that.

The 24-inch pipeline from the 48-inch pipeline that is the aqueduct -- the Mojave River pipeline, the 48-inch pipeline, correct?

MR. HILL: It is.

MR. LEDFORD: The 24-inch pipeline ties to the 48-inch pipeline.

MR. HILL: It does. Is proposed to.

MR. LEDFORD: That 24-inch pipeline provides -- is anticipated to provide water on an annual and uninterruptable basis to the High Desert Power Project; is that correct?

MR. HILL: Yes.

MR. LEDFORD: Is that project a higher priority than recharging the water basin?

MR. HILL: I don't understand the question.

MR. LEDFORD: I believe that your testimony was that the Victor Valley Water District had a higher priority in the 24-inch pipeline than the Mojave Water Agency may have in the 18-inch pipeline; is that correct?

MR. HILL: Maybe I should shed some light on this. The 24-inch pipeline that you are talking about is going to be constructed, paid for by the power project specifically to provide water for their project. The Mojave Water Agency is in discussions with the power project to see if their agency

may use capacity in the power project's pipeline.

However, Mojave is always considering constructing their own separate pipelines as one of the alternatives.

MR. LEDFORD: Maybe I should back up just a little.

Your testimony that the Mojave River Basin and the Alto Basin are overdrafted?

MR. HILL: Yes.

MR. LEDFORD: In order to correct the overdraft is it not going to be necessary to purchase water from the State Project Water Project?

MR. HILL: It will be absolutely.

MR. LEDFORD: Can you tell this Board what the entitlement to water of the VVWRA is at the present time?

MR. HILL: Mojave Water Agency's entitlement, including an original State Project and Brenda Mesa is approximately 75,800 acre-foot annually.

MR. LEDFORD: For planning purposes, sir, what is the Mojave Water Agency anticipating that their average annual deliveries can be out of that entitlement?

MR. HILL: Mojave Water Agency feels there is a 70 percent average reliability of that entitlement.

MR. LEDFORD: At 70 percent how much water could Mojave Water Agency on average deliver to the basin?

MR. HILL: I don't have a calculator. Take 75,800 times .75.

MR. LEDFORD: Would 52,000 be a close estimate?

MR. HILL: Probably.

MR. LEDFORD: As of the last water year that was reported to the Court, what was reported as the overdraft in the Mojave River Basin?

MR. HILL: Hang on a second. Per the sixth annual report of Mojave Basin Area Water Master, which covers water year 1998 to 1999, Appendix B, Summary of Obligations of the Subarea, the 1998-1999 verified production for Oeste, Este, Alto, the Transition Zone, Centro and Baja, the verified production was 163,218 acre-feet.

MR. LEDFORD: The average annual production, in order to reach a number that equates to the overdraft, there are other things that you can refer to such as the -- disregard the last question.

Are you familiar with a report called the Web Report?

MR. HILL: I think I know the report you are referring to.

MR. LEDFORD: Is that report presented to the Kaiser Court?

MR. HILL: It was. Yes, it was.

MR. LEDFORD: Do you know what his analysis of the overdraft in the report was? And it could be approximate.

MR. HILL: I don't recall. I do recall that his recommendation was that additional ramp down needs to occur

in each of the hydrologic basins to bring the basin into balance. Substantial additional ramp down.

MR. LEDFORD: Going back to the exhibit and considering the 24-inch pipeline and the 18-inch pipeline side by side, in your professional opinion as an expert, would you consider the water in the -- the reclaimed water of the State Project water to be higher water quality?

MR. HILL: That's highly variable. But water quality in the State Water Project is very variable. And it would be different constituents in each. Some would be better than others. There is not a clear answer to your question.

MR. LEDFORD: Assuming that the High Desert Power Project, that there was surplus capacity in the 24-inch line, could the City of Victorville run a, say, 12-inch line over to the golf course to provide irrigation water?

MR. HILL: Can you repeat the question?

MR. LEDFORD: Certainly.

Assuming there is surplus capacity in the 24-inch pipeline that is going to carry State Project water to the High Desert Power Plant, could the Victor Valley Water District then run a smaller pipeline to the golf course or to the greenbelt for irrigation water?

MR. HILL: The Victor Valley Water District wouldn't run that pipeline because the City of Victorville is currently serving that area.

MR. LEDFORD: Could the City of Victorville run that pipeline?

MR. HILL: Presumably they could.

MR. LEDFORD: Mr. Patterson, can you answer that?

MR. PATTERSON: It's possible.

MR. LEDFORD: When you were considering alternatives for nonpotable water for use on your golf course, did you ever consider using State Project water as an alternative?

MR. PATTERSON: The city council has looked at a multitude of alternatives to provide water for the airport, not only just for the golf course, but for the entire airport. The city council made a determination that they felt that it was more appropriate to use reclaimed water for irrigation on the golf course.

MR. LEDFORD: Mr. Gallagher, when you did your environmental impact analysis, which was a negative declaration, did you study in that analysis using the alternative State Project water on the golf course?

MR. GALLAGHER: To be honest, I don't remember.

MR. LEDFORD: Did your environmental analysis consider the cumulative impacts of the use of water on any of these other projects?

MR. GALLAGHER: Cumulative use of what water?

MR. LEDFORD: Cumulative use of any of this water that is now embodied in three separate projects?

MR. GALLAGHER: There were environmental impacts that were evaluated for the use of reclaimed water on the golf course, and then we further did the antidegradation study at the request of the LaHontan Regional Board.

MR. LEDFORD: The question to you, sir, is: Did you do a cumulative impact study?

MR. GALLAGHER: You'll have to define cumulative impact study for me.

MR. LEDFORD: What are the cumulative impacts of the use of water and the different types of water that is going to be used in this vicinity?

MR. GALLAGHER: We evaluated the use of reclaimed water.

MR. LEDFORD: Only?

MR. GALLAGHER: Like I say, I don't even remember if we even evaluated the use of project water.

MR. LEDFORD: Did you do a growth impact study?

MR. GALLAGHER: You would have to define a growth impact study.

MR. LEDFORD: A growth impact study is a study that would be included with your environmental analysis.

If you don't know, you can say you don't.

MR. GALLAGHER: I don't know 'cause I don't know what you mean.

MR. LEDFORD: Have you ever done a study to determine

what the impacts on the farming community would be relative to the cost of this water?

MR. GALLAGHER: Farming community?

MR. LEDFORD: Generally speaking, sir, in an environmental analysis there is something called a social and economic impact analysis.

Have you ever done economic impact analysis relative to how this would affect the farming community?

MR. GALLAGHER: I don't know.

MR. LEDFORD: Have you ever sought and received from the water master the approval for this change of use?

MR. GALLAGHER: We didn't apply for approval with the water master.

MR. LEDFORD: Are you familiar with the MWA management plan?

MR. GALLAGHER: I think I have a copy of it in my office. I don't even know that I've cracked it open to look at it.

MR. LEDFORD: Could I have a more definitive answer? Do you know if you have cracked it or you don't think you have cracked it? I have several questions, but I don't --

MR. GALLAGHER: I am not familiar with that document at all.

MR. LEDFORD: You did testify earlier that it was the Mojave Water Agency that originally provided the grant

funding to build this sewage treatment --

MR. GALLAGHER: They obtained the Clean Water Grant Act moneys to build the original plant, yes. They didn't provide them; they obtained them. There was a local match.

MR. LEDFORD: Are you familiar with who Chuck Wigler is?

MR. GALLAGHER: No.

MR. LEDFORD: I would like to show you a letter from Victor Valley Wastewater Reclamation Authority, dated December 29th, 1993. This letter is addressed to Mr. Larry Rowe, and it is signed by Chuck Wigler, General Manager.

MR. GALLAGHER: It is Chuck Wigle, Chuck Wigle is the general manager.

MR. LEDFORD: I'm sorry.

MR. GALLAGHER: You said Wigler. We didn't have a Wigler, but we did have a Wigle.

MR. LEDFORD: In that particular letter the one -- I don't have it in front of me.

MR. GALLAGHER: You want it back?

MR. LEDFORD: It states -- I am assuming that since he was -- was he your predecessor?

MR. GALLAGHER: Yes.

MR. LEDFORD: Immediate predecessor?

MR. GALLAGHER: There was a vacancy of about a year between when he left the agency and I started.

MR. LEDFORD: In that letter, somewhere on the first

page, it states that there is an immediate potential of approximately 6,150 acre-feet for irrigated golf courses, parks, cemeteries, freeway median strips. It goes on to say that this valuable resource can also be used to recharge the Alto subarea. It is, therefore, our collective responsibility to utilize reclaimed water in the maximum extent possible to minimize groundwater overdraft potential.

Will you review that letter to see if that language is consistent?

MR. GALLAGHER: You say on the first page someplace?

MR. LEDFORD: I believe it is.

Top of the second page.

MR. GALLAGHER: I will.

It appears that is what it says.

MR. LEDFORD: This letter was sent to Mojave Water Agency prior to the judgment going into effect; is that correct?

MR. GALLAGHER: Well, these were comments that were written on the draft water management plan. I don't see a reference to the adjudication here.

MR. LEDFORD: I understand.

The letter is comments relative to water management plan, but you are not specifically familiar with?

MR. GALLAGHER: Correct.

MR. LEDFORD: My question to you, sir: Has the policy changed at VVWRA in relation to the statement of the valuable resource and also can be used to recharge the Alto subarea?

MR. GALLAGHER: I don't know that this letter states policy. It certainly -- this letter states that there is a potential for irrigating golf courses, parks, cemeteries, schools and freeway strips, and it also addresses -- also addresses groundwater recharge.

I don't see a reference in here that reports that this is the policy of the Board of Commissioners of VVWRA.

MR. LEDFORD: The Board of Commissioners of VVWRA in 1996 when the judgment went into effect were then also stipulating parties; is that not correct?

MR. GALLAGHER: As we have discussed, some of them were.

MR. LEDFORD: At least some.

In Mr. Wigler's letter he states that it is the collective responsibility to use reclaimed water to the maximum extent possible to minimize groundwater overdraft. That was what he was suggesting that was VVWRA's position back in 1993 prior to the adjudication.

You don't disagree with that?

MR. GALLAGHER: Pardon me?

MR. LEDFORD: You don't disagree that is what he said

when he was in your position in 1993?

MR. GALLAGHER: There is a statement in this letter that says that.

MR. LEDFORD: I would hand you a letter written to Mr. Wigle on May 27th, 1994, from Mojave Water Agency from Mr. Norm Caouette.

Have you ever seen this letter before?

MR. GALLAGHER: To the best of my knowledge, no.

MR. LEDFORD: In that letter Mr. Caouette -- I am not going to ask that. It will take too long.

H.O. BAGGETT: You have used about 50 minutes, just to give you an idea.

MR. LEDFORD: What is my time limit?

H.O. BAGGETT: An hour.

MR. LEDFORD: I'm doing good.

To the best of your knowledge, is there any correspondence between the VVWRA and the MWA that would have changed that policy, any written correspondence between your two agencies?

MR. GALLAGHER: Like I say, I am not aware that that was a policy. A statement made in a letter.

MR. LEDFORD: At this time I will start with Randy. I am going to hand you a letter dated December 28, 1993. Actually start with Mr. Matt Patterson.

This letter was written to the Mojave Water Agency,

dated December 28, 1993. It was a joint letter that is signed by the town of Apple Valley, Baldy Mesa Water District, the Hesperia Water District, County Service areas, Victor Valley Water District, and the City of Victorville. And I believe, Mr. Patterson, is a signature with this letter.

Are you familiar with this letter, Mr. Patterson?

MR. PATTERSON: Been seven years. I would have to take some time to review it, but go ahead.

MR. LEDFORD: Is that your signature on the last page?

MR. PATTERSON: Yes, it is.

MR. LEDFORD: Would you agree with me that each of the member agencies took the position treated effluent from the wastewater plant is far more effective in recharging the river basin than the septic tanks scattered all over the basins, one of the positions collectively in 1993?

MR. PATTERSON: In 1993, that may have been the case, but the direction of the Victor Valley Wastewater Authority and the City of Victorville has substantially changed since 1993, given the fact that the reuse of George Air Force Base has become a critical issue, and we have many other projects including some adoptive policies by the Victor Valley Wastewater Authority Board.

MR. LEDFORD: I am handing you a letter from the Mojave Water Agency, and it is addressed to each of the

signatures to the prior letter, dated May 27th, 1994, signed by Mr. Caouette, and ask you if you are familiar with this letter.

H.O. BAGGETT: You have about four minutes. If you can point him to what you want, to expedite reading a ten-page letter. If there are certain key spots you want him to respond to, focus on those. It would help.

MR. LEDFORD: On Page 5, the last sentence, if you can read that.

H.O. BAGGETT: That is more helpful.

MR. PATTERSON: The last sentence?

MR. LEDFORD: The last sentence, and it goes to the top of the next page.

MR. PATTERSON: Okay.

MR. LEDFORD: Do you -- I would like you to read it out loud.

H.O. BAGGETT: Useful for us to hear?

MR. PATTERSON: It is not possible to estimate impact from reclaimed water use without knowing the place and time of use. Introduction of reclaimed water does not always assure that fresh water pumping for a specific use may be reduced, but instead may result in water uses which would never occur had treated effluent not been available.

(Reading.)

MR. LEDFORD: Do you agree with that statement?

MR. PATTERSON: I think on any project you would have to study the project, looking at the pluses and minuses. To agree with that planning statement I don't think it would be accurate. There is not enough information included.

MR. LEDFORD: Your testimony is that on any project you would have to study the alternate uses to be able to determine whether or not what use would be best?

MR. PATTERSON: Correct.

MR. LEDFORD: To the best of your knowledge and belief, has any alternate analysis ever been completed for this project using State Project water?

MR. PATTERSON: Not specifically using State Project water, but we have studied the use of other alternatives.

MR. LEDFORD: Such as?

MR. PATTERSON: Water purchased from the City of Adelanto, water purchased from Victor Valley Water District and the installation of our own wells.

MR. LEDFORD: The reason that you discarded those alternatives was?

MR. PATTERSON: The council's policy decision and the Victor Valley Wastewater Authority Board's decision to use reclaimed water for irrigation purposes.

MR. LEDFORD: Sir, if you were to use State Project

water as opposed to using reclaimed water, would it cost you more?

MR. PATTERSON: Yes.

MR. LEDFORD: If you were to put your own wells in, new wells in, would that cost you more?

MR. PATTERSON: Possibly. Again, our city council's direction was to use reclaimed water for irrigation of the golf course. The cost, in the city council's decision cost is a factor, but cost is not the overriding factor when they look at the social benefit of reusing reclaimed water.

MR. LEDFORD: What is my time?

H.O. BAGGETT: One minute.

MR. LEDFORD: I guess I used my time.

H.O. BAGGETT: We still have four more witnesses.

Who is next?

Art, Mr. Kidman, you are up.

MR. KIDMAN: Thank you, Mr. Baggett. I wonder if I can use the podium for cross-examination.

H.O. BAGGETT: I don't think that is a problem. You might get a little more room to spread out.

MR. KIDMAN: It's easier to keep the energy level up if I am standing up. I would also, before I start, like to make inquiry as to -- I don't think I am going to take that whole hour with this, but we had indication that Mr. Hill needs to be leaving, and I would rather do all the

cross-examination at once, even if that means coming back tomorrow, doing it tomorrow. So I don't know how soon they have to leave, or he has to leave.

H.O. BAGGETT: When is your flight? Three?

MR. HITCHINGS: 2:15, I think. He is flying out of Sac Exec.

H.O. BAGGETT: We have two other parties here. How long do you anticipate?

MR. YAMAMOTO: I have maybe five questions. If the answer is long-winded, you know.

H.O. BAGGETT: Any questions?

No questions.

Sounds like a half hour, 45 minutes.

MR. KIDMAN: If it is only half an hour, I would rather waive for now and come back tomorrow and do the cross-examination of this panel. It'd be awkward to break in the middle.

H.O. BAGGETT: I would agree with you.

We want to just skip over to the last party, see how that goes, see what the time is?

MR. KIDMAN: That would be fine with me.

H.O. BAGGETT: Let's take them out of order. Let's go with Apple Valley.

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CROSS-EXAMINATION OF FIRST PANEL

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY

BY APPLE VALLEY RANCHOS WATER COMPANY

BY MR. YAMAMOTO

MR. YAMAMOTO: My name is Andrew Yamamoto. I am here on behalf of Apple Valley Ranchos Water Company. I have a few questions. First, I would like to start with Mr. Gallagher.

Directing your attention to Exhibit 1J of your exhibits, which is the judgment. Now, Exhibit 1J has an Exhibit B, which lists all the parties to the judgment. Standing here today, do you have any question about whether any members of your agency, the Victor Valley Wastewater Reclamation Authority was a party to the judgment?

MR. GALLAGHER: I think we've discussed that already.

MR. YAMAMOTO: As I recall, your only question was about the town of Apple Valley; is that correct?

MR. GALLAGHER: Yes, I wasn't aware Apple Valley had water rights and if they were a stipulated party. But I think we've since established that.

MR. YAMAMOTO: So is it your testimony now that all four members of the Victor Valley Wastewater Reclamation Authority are parties to the stipulated judgment? Is that correct?

MR. GALLAGHER: Well, my understanding is. I wouldn't

say that is my testimony.

MR. YAMAMOTO: Do you have any reason to question that?

MR. GALLAGHER: Only that I am not all that familiar with who all holds water rights.

MR. YAMAMOTO: I direct your attention to Exhibit B to the stipulated judgment which lists the parties in the Alto area who have stipulated to the judgment.

Do you see that? It is listed as Page 7 of 26. And the town of Apple Valley is listed as one of the parties?

MR. GALLAGHER: Okay.

MR. YAMAMOTO: Do you see that?

MR. GALLAGHER: Yes.

MR. YAMAMOTO: Do you have any question now whether or not the town of Apple Valley was a party that stipulated to the judgment?

MR. GALLAGHER: No, I sure don't.

MR. YAMAMOTO: Previously you testified that your authority projects that the wastewater flows from the authority to the river will increase in the future; is that correct?

MR. GALLAGHER: Yes, with growth, yes.

MR. YAMAMOTO: You expect that growth, correct?

MR. GALLAGHER: Yes. We are planning for it right now.

MR. YAMAMOTO: And the net flow, even including

diversion or water reclamation projects, will still be increasing; is that correct?

MR. GALLAGHER: With the gradual implementation of the SCLA project and the growth of our flow discharge to the river would continue to increase.

MR. YAMAMOTO: Is your Authority willing to guarantee that the level of flow to the Transition Zone stay the same or increase over time?

MR. GALLAGHER: Are we willing to guarantee that? What I think we offered is that we would guarantee 2,000 acre-feet with an option to buy some additional water.

MR. YAMAMOTO: 2,000 acre-feet is a small portion of your current discharge into the river?

MR. GALLAGHER: That's correct.

MR. YAMAMOTO: Your agency is not willing to guarantee any more than 2,000 acre-feet?

MR. GALLAGHER: I didn't say that.

MR. YAMAMOTO: How much more than 2,000 acre-feet is your agency willing to guarantee?

MR. GALLAGHER: I don't know.

MR. YAMAMOTO: Do you know that your agency is willing to guarantee any amount over 2,000 acre-feet to the river?

MR. GALLAGHER: I don't know that either.

MR. YAMAMOTO: Previously you testified that the cost of water you would sell to the Fish and Game folks would be

approximately 35 or $50 an acre-foot?

MR. GALLAGHER: That was the value for water in the agreement with the City of Victorville for the sale of water to SCLA. We used that for example purposes.

MR. YAMAMOTO: In fact, in the future if you sold water to the Department of Fish and Game, you would sell it at market rates, correct?

MR. GALLAGHER: Our Board would determine the rate on a periodic basis. We assume that to be annually.

MR. YAMAMOTO: Do you have any reason to believe that rate would not be market rate?

MR. GALLAGHER: When you say market, what establishes market?

MR. YAMAMOTO: Well, you previously testified that the cost of buying preproduction allowance in the Valley, in the area, would be a basis for determining the rate you would charge Fish and Game; is that correct?

MR. GALLAGHER: That would be correct.

MR. YAMAMOTO: Other market factors would include the cost of water that you would import into the area, correct?

MR. GALLAGHER: Certainly. If there is no FPA left to buy up, the cost would be based on project water.

MR. YAMAMOTO: Would your Authority charge any rate other than that which it could get for its water from other agencies or parties?

MR. GALLAGHER: Well, the answer to that question is that our Board would determine the rate. What all they use for criteria would be up to our Board of Commissioners.

MR. YAMAMOTO: The Board could determine to charge Fish and Game the market rate; is that correct, whatever that number may be?

MR. GALLAGHER: I am not prepared to answer that question. I don't know. I don't have an answer.

MR. YAMAMOTO: There is nothing in your offer to Fish and Game or your possible offer to Fish and Game that would restrict the Authority from charging the rate which is similar to or close to the rate charged for imported water; is that correct?

MR. GALLAGHER: There was no price included or suggested in our offer.

MR. YAMAMOTO: So the price is whatever your board chooses; is that correct?

MR. GALLAGHER: Our Board would establish the price, yes.

MR. YAMAMOTO: Mr. Hill, you have testified that your water district would like to buy the reclaimed water from VVWRA; is that correct?

MR. HILL: Yes. We've actually made an offer to do that to the Reclamation Authority, and that triggered an internal discussion with the Reclamation Authority that --

MR. YAMAMOTO: It was a yes or no question. If you'd like to talk, that is fine.

H.O. BAGGETT: Just answer the question.

MR. HILL: Yes.

MR. YAMAMOTO: I'm trying to get it --

MR. HILL: You are trying to save me time. I appreciate that.

MR. YAMAMOTO: Get you to the airport, yes.

Where in the stipulated judgment does it say that a purchase of reclaimed water by your agency from VVWRA could be used to satisfy your agency's makeup obligation?

MR. HILL: As I understand it, it is not covered in the Adjudication. It would require an analysis by the water master to make that transfer.

MR. YAMAMOTO: Can you point to any part of the judgment that would allow your district to take credit for water purchased from VVWRA as against the makeup obligation of the district?

MR. HILL: No, because the Reclamation Authority's contribution to the river is not specifically named in the Adjudication.

MR. YAMAMOTO: I would like to direct your attention to Paragraph 22 of the judgment, which is Exhibit 1J of the VVWRA exhibits.

MR. HILL: Okay.

MR. YAMAMOTO: It says at Line 22:

To the extent that any subarea incurs a makeup obligation, water master will provide supplemental water to satisfy such makeup obligation according to the methods set forth herein. (Reading.)

Do you see that?

MR. HILL: I do.

MR. YAMAMOTO: Do you know of any provision in the judgment which indicates that reclaimed water produced by VVWRA would constitute supplemental water?

MR. HILL: No. Reclaimed water would not be considered supplemental water under the Adjudication.

MR. YAMAMOTO: Were you involved in the negotiations that led to the stipulated judgment?

MR. HILL: I was not.

MR. YAMAMOTO: Now, previously you have estimated the cost to your customers if the State Board were to grant the VVWRA petition.

Do you recall that?

MR. HILL: Can you repeat the question?

MR. YAMAMOTO: Previously you estimated that it would cost approximately $4 per customer if the State Board grants the petition.

Do you recall that?

MR. HILL: I actually gave a range depending upon the rate charged for makeup water. But, yes, the lowest number would be $4.00 per acre-foot based upon 1,680 acre-feet per year.

MR. YAMAMOTO: What do you expect the cost to be if VVWRA sold all of its reclaimed water to places like the golf course instead of just discharging the water into the river?

MR. HILL: I think if you refer back to my attachment you will see their contribution to the river over the last five years on average has been 8,000 acre-feet roughly. So if you took that amount, the Alto producers would have to recharge an additional 8,000 acre-feet into the river if they were to divert all water.

MR. YAMAMOTO: Is the answer that it would cost several times more to your customers if the VVWRA were able to get permission to divert its entire stream of wastewater from the river?

MR. HILL: You're assuming an action subsequent to this one to take more than 1,680 acre-feet?

MR. YAMAMOTO: Correct.

MR. HILL: Under that condition there would be a greater economic impact.

MR. YAMAMOTO: And it would be several times greater, correct?

MR. HILL: Yeah. If I had a calculator I could tell you but it would be significantly more.

MR. YAMAMOTO: Now, if you used the cost of --

MR. HILL: Now, by the way, your question eight.

MR. YAMAMOTO: The last question, though.

If you used the cost figures you used when you amended your written testimony, talking about the cost of imported water perhaps being $271 per acre-feet or $220 some-odd per acre-feet --

MR. HILL: It was 267 or 227.

MR. YAMAMOTO: Sorry. That would proportionately increase the $4.00 figure as well, correct?

MR. HILL: Absolutely.

MR. YAMAMOTO: Thank you.

H.O. BAGGETT: You need to leave in an hour, 3:00? Ten till? Five till?

Mr. Kidman, do you want to start or should we do the next panel and then you come back and do them all tomorrow?

MR. KIDMAN: I don't know. Taking the batting order, Mr. Vail still gets a shot.

H.O. BAGGETT: I asked him.

You didn't have any a minute ago.

MR. VAIL: I thought I might ask a couple of questions.

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CROSS-EXAMINATION OF FIRST PANEL

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY

BY MR. VAIL

MR. VAIL: One of the things I would like to know is you guys talked about how this will impact the people in the cities that are on sewers. What about all the other people who are not on sewers who are on their own wells? The sewer system you have, did you consider the impact it is going to have on those people? I haven't seen any suggestion, hadn't heard anybody talk about that.

MR. GALLAGHER: Essentially what is happening is that the sewer users are subsidizing the water users in the Victor Valley. Only about a third of the population of the Victor Valley are on sewers. So those folks pay for the treatment of that water that currently is discharged to the river, but yet three times that many people get benefit from that water without paying for it.

MR. VAIL: The people that are getting benefit from water are people who are being serviced by water companies.

MR. GALLAGHER: Or even that have private wells, if they're a stipulated party.

MR. VAIL: How do they get a benefit from that? How do the people who have their own wells, how are they being benefited by the sewer treatment plant putting this water into the river after it's already been taken out of the

river?

MR. GALLAGHER: Because if they purchase water from a purveyor, the rate for their water reflects the fact that our discharge to the river was credited to the purveyors in the Alto basin, and thereby reduce their downstream obligation.

MR. VAIL: If the water had never been taken out of the ground in the first place, you get to the sanitation treatment plant in the second place, there would be no reason for the water to be put back into the river to continue the flow in the third place.

So how can you say that you are talking about a benefit that isn't really there? You are saying you are benefiting somebody, in reality the water's being taken out of the ground by water companies, is being sent down the system to the sewage treatment plant that you are processing, putting back in. How can you say that is a benefit?

MR. HITCHINGS: Do I need to make an objection?

H.O. BAGGETT: No.

MR. HITCHINGS: That is testimony and should be stricken.

H.O. BAGGETT: You are going to get a chance.

MR. VAIL: How can you say it is beneficial? You keep talking about the benefit process, and how can you say that is benefiting the individual well owners or other water

companies in the area because if the water had not been pumped out in the first place, you wouldn't be treating --

H.O. BAGGETT: I think he's got it.

MR. HILL: I think just as an example, the City of Adelanto currently has their own treatment plant. All the water that they produce that ends up in their sewer system goes to their treatment plant and never makes it back to the river. It is discharged into the desert, does not recharge the river. However, the City of Adelanto gets a credit for the water which is put in through Dan's treatment plant. They receive a substantial credit for that water against their downstream obligation, even though they don't contribute any water at all to the river.

MR. VAIL: If I am not mistaken --

H.O. BAGGETT: No testimony, please.

MR. VAIL: I am asking a question.

In the Adjudication, you're familiar with the adjudication agreement?

H.O. BAGGETT: It's been established.

MR. VAIL: Isn't it referred or, how can I say it, all of that it is one big water table, so if Adelanto is putting it, is that water not going back in the ground in Adelanto?

MR. HILL: As far as the Adjudication and the water master is concerned, they do not credit water that is

discharged over the regional aquifer against the makeup obligation. It is not credited.

MR. VAIL: I understand that.

Thank you. I'll wait for my turn.

H.O. BAGGETT: What is your pleasure, Mr. Kidman, you want to wait till tomorrow?

MR. KIDMAN: I think it would be -- we'd have a lot more continuity if I got a chance to take my time and go through all three of these together.

H.O. BAGGETT: Let's do the next panel of witnesses and tomorrow morning at 9:00 we will pick up and do all the Victor Valley's if that is agreeable.

MR. KIDMAN: I'm personally happy to do whatever cross-examination I have of the other panel.

H.O. BAGGETT: It won't count against you.

With that, let's move to your second panel. You have four more?

MR. HITCHINGS: Yes.

H.O. BAGGETT: Five-minute recess.

(Break taken.)

H.O. BAGGETT: We are back.

Carry on.

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DIRECT EXAMINATION OF SECOND PANEL

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY

BY MR. HITCHINGS

MR. HITCHINGS: Thank you, Mr. Chair. Our next panel is made up of Fritz Carlson, Lisa Kegarice, Tom Dodson and Peter MacLaggan. We are going to have them present their direct testimony in order, so I would like to start with:

Fritz, if you would state your full name for the record.

MR. CARLSON: My name is Fritz Carlson.

MR. HITCHINGS: Could you identify your current title and position.

MR. CARLSON: I am a senior hydrogeologist with CH2MHill in the Redding, California, office.

MR. HITCHINGS: I would like to refer you to VVWRA Exhibit 4B and ask you whether that is a true and correct copy of your resume and statement of qualifications?

MR. CARLSON: Yes, it is.

MR. HITCHINGS: Could you briefly summarize your experience and qualifications.

MR. CARLSON: I have a Bachelor's degree in geology from Berkeley, a Master's in hydrology for Arizona in '74. I have worked as a hydrogeologist for 29 years, all but two of those with CH2MHill, actually three at Bechtel I'll say for that, early on. I am a registered geologist in

California and certified hydrogeologist in California.

MR. HITCHINGS: Is VVWRA Exhibit 4A a true and correct copy of the written testimony that you prepared for this proceeding?

MR. CARLSON: Yes, it is.

MR. HITCHINGS: Are there any corrections that you would like to make to that at this time?

MR. CARLSON: No, there is not.

MR. HITCHINGS: Then I would ask if you would please go ahead and summarize your written testimony.

MR. CARLSON: Okay, I'd be glad to do that.

The testimony submitted here is arranged according to the key hearing issues. So I am going to go through the key hearing issues and speak to each of those that I was asked to respond to.

The first is does hydrologic continuity exist between the Mojave River and any surface or any groundwaters that are the source of wastewater supplied to and treated by VVWRA?

The first part of the testimony is that the source of the water that eventually arrives at VVWRA is, to my knowledge, entirely pumped groundwater from wells in the area.

The second part of that question speaks to the hydrologic continuity between the surface water and the

Mojave River and the groundwater, and we evaluated the reach primarily between the Lower Narrows and Helendale. VVWRA discharged point is about four miles downstream from the Lower Narrows.

Hydrologic continuity can be several different things. I just want to digress a little bit and just talk about the relationship between surface water and groundwater in the stream. There are several different possibilities. One possibility is that the groundwater level is actually above the water level in the stream. Under those conditions, groundwater would move from the water table into the stream in a -- it would be a groundwater discharge that would feed the surface flow in the stream. To my knowledge, that condition occurred in the historic past before the advent of groundwater pumping.

Now, another condition that could occur is that the groundwater level is below the stage of water in the river, in which case groundwater would actually be recharged by seepage from the stream. And there is actually two conditions that can occur there. If the groundwater level is below the river stage, but not by very much, it's still coupled to the stream through saturated flow, in that case the rate of groundwater or rate of seepage from the stream is a function of the elevation of the groundwater. As the groundwater levels fall, the rate of seepage from the stream

increases. Now, if the groundwater level falls so far as to cause the appearance of an unsaturated zone below the streambed, that would actually cause a decoupling of the water table, in which case the groundwater -- if the groundwater level is, say, a hundred feet below a stream, it doesn't matter it is a hundred feet below or 200 feet, the amount of leakage is controlled by the amount or the properties of the streambed itself and not by the groundwater level itself.

So there is three conditions: groundwater discharging to the stream, or groundwater recharging from the stream into the aquifer and coupled or decoupled fashion.

To evaluate the conditions that exist in the reach between the Lower Narrows in Helendale, we evaluated several items. See if I can speak to that.

MR. HITCHINGS: Before you go on, Fritz, I want to clarify. It looks as though right now you are referring to Exhibit 4D of your testimony; is that correct?

MR. CARLSON: The graph on the -- the graph that I am pointing to with the laser, where the line is, is 4D. There is a map on the easel over here that is Exhibit 4C, I believe. And that map I am pointing now to the Lower Narrows and the Mojave River moving up towards Helendale at the top. The wastewater treatment plant is here. Bryman Road is here.

The graph on the screen, on the Y axis is elevation above sea level, and on the X axis is the distance along the Mojave River from the Lower Narrows stream gauge measured in miles. The solid line on this chart represents the elevation of the Mojave riverbed as we determined from the USGS topographic maps. That is basically the elevation of the stream.

The triangles that at least I can see, most people can, represent the water levels measured in wells, series of monitoring wells that exist in the stream. We got this data from the U.S. Geological Survey. You can see that throughout most of the reach the groundwater levels are below the level of the stream, except for this area around Bryman Road where it appears that the groundwater level may be above the stream. It may be discharging. The squares are the top and bottom of the perforated zone of monitoring wells.

We did this because some wells are deeper than other wells. In this particular case right by the treated plant, even though this well is fairly shallow, this one is deeper, but the water levels are pretty much the same.

So, what do we conclude from a chart like that? One thing is that throughout most of the area here the groundwater level is below the streambed. And that means that the surface flow from the stream is actually recharging

into the groundwater along this entire reach, except possibly the area around Bryman Road.

Another suggestion, indication, that we can get from a diagram like this, the scale here, these little squares are ten feet. This suggests that the depth to groundwater along parts of these areas are maybe ten feet below the level of the stream. Again, this is from the USGS database. This suggests that the groundwater level is deep enough to actually be decoupled to the stream itself.

This means that the stream is leaking about as fast as it can, given the infiltration characteristics of the streambed itself. So, that is our conclusion from this chart.

Tom, could you move that over just a little bit to the right so I can read the Y axis?

This chart, which is Exhibit 4E in our testimony, shows on the Y axis the extent of river flow downgradient of the plant measured in miles on X axis. The Victor Valley -- the VVWRA discharge to the Mojave River measured in the cfs. What we did here, what these points are, are the location of the extent of flow below VVWRA as we gleaned from examination of aerial photographs taken in different years in the past. We obtain these aerial photographs from the Mojave Water Agency.

What you can see is in the early years, 1987 and 1989,

the discharge was about 6 cfs and the flow extended about two and a half miles from the wastewater treatment plant. However, as the flow increased, the extent of flow, the extent of moving water in the stream, also increased. This is an example point. In 1995 here we have ten cfs and 5.1 miles. Just to clarify where 5.1 miles is, this solid line here represents Bryman Road, which is about three and three-quarters miles downstream. I am pointing to it on the -- I think that is Bryman.

MR. DODSON: It is.

MR. CARLSON: Eye test up here.

So, the main purpose of doing a chart like this is to see, well, okay, we know that the more water you put in the river the farther downstream the flow is going to go. The question is how much, how much extension of flow do we get for a given increase in discharge. That's why we fit this straight line to this data. That is what this is. Y equals .66x minus 1.63.

Basically, what this means is that you get for 1 cfs of discharge, increase in discharge, extends the flow by about .66 miles. That is that ratio there. Stated another way, looking at it, we do the reciprocal of that .66; one mile of flow takes about one and a half cfs, to extend the flow one and a half -- extending the flow about one mile takes about an additional one and a half cfs.

There is two solid lines here. These lines were -- I am not exactly sure those are exactly correct now, but for the purposes of illustration this is one way of looking at this curve. The current discharge to the Mojave River, as I understand it, is around 11 cfs. This is surface discharge only. This does not count the percolation pond discharge. With the percolation ponds it is up at about 13.

Now the proposed project or idea, the concept, is to remove 1,680 acre-feet per year which equates to about 2.3 cfs. If you took this, moved it to here, you could use this curve here to compute the distance of flow under those rates. And you could see that from a -- from a distance of flow here, it would go down to here.

It would still even at that amount of reduction in flow, it would still extend beyond Bryman Road. That was one of our conclusions.

Another key hearing issue we were asked to respond to is: Will approval of the VVWRA change petitions affect groundwater levels in the Alto, Baja, Centro, Este, Oeste subareas? And our response to that is that, as we understand it, the diversion of this water, use of this reclaimed water at this golf course will replace existing groundwater supply. There will be no net increase in consumptive use. It will be merely a change. So as far as the basin is concerned, there will be no change in

consumptive use.

This, the reduction in groundwater pumping because of the reduction in the demands of this golf course, will cause a rise in groundwater level. Where this rise occurs will be highest near the wells that are going to be pumped less. We did not do a detailed computation of where that rise would occur, nor did we do computation on the exact amount of rise. We did look at the possibility that reduction in that groundwater pumping would cause a large enough rise in groundwater levels so that discharge -- so that the groundwater levels will rise high enough to actually cause discharge again into the streambed.

We concluded, based upon a simplified analysis, that the rise would not be great enough to actually cause an increase in groundwater discharge or cause a reversal, induce groundwater discharge as it was in the past.

That is the end of my testimony.

MR. HITCHINGS: If I could just ask you, Fritz, to clarify something that is on your graph, which was 4E, I believe. You had just referred to the dotted line. You've got a label at the top of that that says Proposed Discharge to the Mojave River.

Do you see that?

MR. CARLSON: Yes, I do.

MR. HITCHINGS: In using the term "Proposed discharge,"

what that really reflects, and I want to clarify this, according to you what you just said is that that is really the line representing the discharge level if the project was fully implemented at 1,680 acre-feet delivered to the golf course; is that correct?

MR. CARLSON: That is correct, and if it were implemented essentially based on current conditions. Like if it were implemented tomorrow.

MR. HITCHINGS: Thank you.

The next witness is Lisa Kegarice.

And, Lisa, if I could ask you to state your full name for the record.

MS. KEGARICE: Lisa Kegarice.

MR. HITCHINGS: Could you identify your current title and position.

MS. KEGARICE: Regulatory specialist ecologist at Tom Dodson & Associates.

MR. HITCHINGS: I would like to direct your attention to Exhibit, I believe it is, 6B, and ask you whether that is a true and correct copy of your resume?

MS. KEGARICE: Yes, it is.

MR. HITCHINGS: Could you briefly state your qualifications for the record.

MS. KEGARICE: Yes. I have a Bachelor's of Science in biology, and I have been working in the field of

consultation and as a regulator with the Army Corps of Engineers for the past 12 years.

MR. HITCHINGS: I would like to direct your attention to Exhibit 4 -- I am sorry, 6A, and ask you whether that is a true and correct copy of the testimony you prepared for this hearing?

MS. KEGARICE: It is, only one correction.

MR. HITCHINGS: Can you tell us what that correction is?

MS. KEGARICE: Under Section 6, No. 16, the very last sentence it has nine acres of habitat due to pipeline construction. That needs to be changed to 6.7 acres.

MR. HITCHINGS: Other than that change, do you have any other corrections that you want to make to that testimony?

MS. KEGARICE: No, I don't.

MR. HITCHINGS: Thank you.

If you could briefly summarize your written testimony.

MS. KEGARICE: I conducted a focused desert tortoise survey along the proposed pipeline alignment. Prior to conducting that survey, I completed a literature review of other surveys done in the vicinity of VVWRA. The result of that survey was that tortoises do, in fact, occur within the vicinity of VVWRA.

I then conducted a hundred percent coverage survey of the proposed pipeline alignment. And the result of that

survey was that the vast majority of the project area is disturbed and unsuitable for tortoise, but there is a segment which I have on this -- this is actually a map out of the initial assessment study. And it shows Area A as native desert habitat. So that would be the segment that is suitable for desert tortoise. However, I did not find any tortoise, tortoise sign or burrows within the pipeline, proposed pipeline alignment.

I then recommended several best management practices to ensure avoidance of tortoise during construction in the event a tortoise would move into the area during construction.

That's the summary of my testimony.

MR. HITCHINGS: Did you reach any conclusions about potential impacts, if any, on desert tortoise?

MS. KEGARICE: The direct take of tortoise to be avoided by implementing best management practices such as monitoring and constructing during the time when tortoises were inactive during winter.

MR. HITCHINGS: Is there any reason why your surveying work was limited regarding this project to desert tortoise rather than other species or additional species?

MS. KEGARICE: I focused on desert tortoise for doing a focus survey because at the time of the survey the Mojave ground squirrel, which also occurs in this area, there was a

break in whether or not you completed field trapping surveys versus a habitat evaluations study and the proposed impacts were temporary and could likely avoid those impacts, so we didn't do any focus surveys for the Mojave ground squirrel.

MR. HITCHINGS: Have you been consulting or at least discussing your survey work with Fish and Game throughout the process of why you have been doing this?

MS. KEGARICE: Yes, I have.

MR. HITCHINGS: During any of those discussions did any concerns -- were any concerns brought up by Fish and Game regarding other species that might be impacted, particularly in the riparian habitat areas downstream of the treatment plant?

MS. KEGARICE: In fact, the Department of Fish and Game responded to the initial study with concerns about the Mojave ground squirrel and riparian habitat, and the Mojave ground squirrel and tortoise were -- VVWRA entered into processing a 2081 take permit for the Mojave ground squirrel and desert tortoise for this project and others, and up until the 1st of December we had not been given then any indication of impacts to riparian species.

The riparian species in the area was surveyed by Frank Hovor & Associates about a year before I did my focus survey.

MR. HITCHINGS: That is one of the attachments to the

VVWRA's petition; is that correct?

MS. KEGARICE: Yes.

MR. HITCHINGS: The other witnesses on this panel or one of the other witnesses I should say is Tom Dodson.

And, Tom, if you could state your full name for the record.

MR. DODSON: Thomas Melvin Dodson.

MR. HITCHINGS: If you could identify your current title and position, please.

MR. DODSON: I am the president of my -- of Tom Dodson & Associates, and I manage all of the environmental projects that come through our office.

MR. HITCHINGS: Is VVWRA Exhibit 5B a true and correct copy of your resume?

MR. DODSON: Yes, it is.

MR. HITCHINGS: Would you briefly summarize your experience and qualifications particularly with regard to your work in the Mojave River Basin area?

MR. DODSON: I have 30 years of experience in preparing environmental documentation to comply with the California Environmental Quality Act, and I will use the acronym CEQA from now, C-E-Q-A, if that is okay, and National Environmental Policy Act, and if we need to refer to that I will use the term NEPA, N-E-P-A, as the acronym.

In addition to the -- in the context of that 30 years

of experience for the last ten years I have been working within the Mojave River Basin on a variety of projects, many of them directly with Mojave Water Agency, many of them directly with the Victor Valley Wastewater Reclamation Authority, and many of them with a large number of the water purveyors.

Examples: We prepared the water master plans for three separate water agencies within the basin. We have done environmental impact reports with the Mojave Water Agency, environmental documents, let me correct that, for the Mojave Water Agency on both pipelines. The Morongo Basin pipeline and the Mojave River pipeline.

MR. HITCHINGS: And VVWRA Exhibit 5A, is that a true and correct copy of the written testimony that you prepared in this proceeding?

MR. DODSON: Yes.

MR. HITCHINGS: Do you have any corrections or changes you would like to make to that?

MR. DODSON: I have one correction. In Item No. 6, first line, there is a list of the riparian and preatophytic plant habitat that exists within the Transition Zone. It is identified as 2,070 acres. In fact, that is a misprint, and it should be 2,605.2 acres.

MR. HITCHINGS: Is that change still derived from the source material that you referred to in Paragraph 6 of your

testimony, which is Table 2, the Lines Bilhorn Report?

MR. DODSON: Yes, sir, it is, and I will be explaining that in just a little bit. It does not change any of the other conclusions contained within my testimony.

MR. HITCHINGS: Are there any other corrections other than that?

MR. DODSON: No, sir.

MR. HITCHINGS: Thank you.

If you could then summarize your testimony for the Board.

MR. DODSON: My office, Tom Dodson & Associates prepared the initial study and managed the California Environmental Quality Act process for the Victor Valley Wastewater Reclamation Authority, VVWRA, to relocate the discharge of recycled water from the Mojave River to the SCLA, which has been referred to before. This evaluation process ultimately culminated in VVWRA adopting a mitigated negative declaration as the CEQA environmental determination for the project that is being discussed here today, which is the relocation of the recycled water discharge, and that was not legally challenged.

A couple of things, some of the information that is contained in my testimony is slightly different from that which you have heard from other people today, and there is a reason for that. An environmental document, in this case

the initial study and the negative declaration that flowed from it is a snapshot in time. It represents the data that we had in our hand at that particular point in time to make decisions.

Examples would be when we were making this decision Adelanto was pulling their wastewater recollection, wastewater flows, out of VVWRA's plant. The wastewater flows went down some. But since that time in the two years, year and a half, since that time, flows have recuperated back up to approximately the same level of 9,000 acre-feet per year. The point being is that if you see differences in numbers, most of them are different because we are looking at different sets of data, and they don't change the conclusions, in my opinion.

Another thing that's important is that when you prepare an initial study and an environmental document to reach an environmental determination, you have to make a judgment of what type of database you are going to use. There are two ways of approaching this type of evaluation. One is to conduct original surveys on your own or studies to define the particular characteristics of a problem. And those typically begin for me in a three-step logical process.

One, what is the existing physical environment. Two, what are -- what is the project and how will it change or alter the physical environment. And then last, evaluating

or applying some significance in terms of an evaluation to those previous two sets of data: the existing, the change in impact -- the change in the physical environment, and then evaluating it to determine if it is significant or not, and then using some criteria to do that.

In this particular case what we did is we went through an evaluation of a variety of different issues. But the ones that are germane to the issue here today are the biological resource issues and the water quality issues. Very simply, where did we get the data that we utilized in this biological assessment in the initial study? What we found is that with one exception the data was already available for us to do a full evaluation of the biological resource issues.

Example, Lisa just gave you her report that told you how we had to do a site-specific desert tortoise survey to see if we had desert tortoises along the alignment that could be impacted by the project. The answer was no. We used a report prepared by Frank Hovor and others; and that is Attachment 6 to our petition. And it defined what the biological resources are within the general area and also in the adjacent area, the riparian habitat.

The conclusion drawn from that and which was acknowledged in the initial study, there are significant resources values in the adjacent riparian habitat, and there

were some species of concern, one being the tortoise again that needed to be evaluated on a site-specific basis, which we did.

Finally, there was a USGS report. Their report is titled Riparian Vegetation and its Water Use During 1995 Along the Mojave River, Southern California. That report is shown here. It is also identified as Exhibit 5C; and that report I will refer to from now on as USGS Report 96-4241. There are some important information I'd like to share first, if I may.

This table is Table 7 that is shown on the large panel that we have over here. That was not contained within the exhibit that was submitted, but it was a table that was referenced in it contains the tables that identify the riparian habitat, their consumptive use based upon specific evaluations of the type of habitat that occurs. I am going to be talking about that in more detail here in just a moment.

MR. HITCHINGS: Before you talk about that, we should clarify that that oversized map or schematic that you are talking about, that was plate one to the Lines Bilhorn or 96- --

MR. DODSON: It's Exhibit 5.

MR. HITCHINGS: 4241.

MR. DODSON: That's correct.

MR. HITCHINGS: It is Exhibit 5 to that.

MR. DODSON: No. It is plate one, you are correct. It is shown -- that document is contained as Exhibit 5C in our material.

MR. HITCHINGS: The large schematic is the plate that is part of that exhibit; is that correct?

MR. DODSON: That's correct.

MR. HITCHINGS: The Department of Fish and Game is actually one of the authors of that or sponsor, or their name is on that report; is that correct?

MR. DODSON: Yes, it is. Mr. Lines, Mr. Bilhorn. Mr. Bilhorn is a DFG consultant, and he was one of the authors.

MR. HITCHINGS: Thank you.

What you have on the overhead right now is Table 7 which is an exact duplicate of Table 7 that appears on that large oversized plate that was an attachment to that Lines Bilhorn report, correct?

MR. DODSON: Yes, it is.

MR. HITCHINGS: The other overheads that you are going to be putting up there are similar tables that are taken directly from that plate; is that correct?

MR. DODSON: Yes, that is correct.

MR. HITCHINGS: Thank you.

MR. DODSON: I just want to use this table which is Table 7 in that document and simply refer to the area or

subarea, estimated consumptive use of groundwater and surface water by riparian vegetation along the Mojave River during 1995; Transition Zone, the annual consumptive use, the estimated use, is 6,000 acre-feet.

Now, let's come back to how that was derived. This is very important in understanding how that 6,000 acre-feet value is developed. What is done is this is the table that identifies area and acres of health stressed riparian plant communities which specific aerial densities along the Mojave River in 1995, and the Transition Zone of the Alto subarea. Area stressed plants is shown in parentheses. That is this area in here. Those are the numbers that were inadvertently left out of the original calculation in my testimony.

What you have is aerial density is 1 to 10 percent, 11 to 40 percent, 41 to 70, 71 to a hundred. This identifies the total number of acres that are contained within each one of those categories. Then you have a series of plant communities: cottonwoods and willows and baccharis, cottonwoods alone, mesquite, salt cedar and hydrophytes, which are associated with open water.

MR. HITCHINGS: Can you note which table number that was from the plate?

MR. DODSON: It's Table 2.

MR. HITCHINGS: Thank you.

MR. DODSON: This is Table 6. It is the estimated

average annual water use for specified aerial densities of healthy riparian vegetation along the Mojave River. This is water use in feet or acre-feet per acre. What is important here is by taking these plant communities and multiplying out the total amount of acreage in each category, you end up with the value that is shown on Table 7, which is the annual water use, consumptive water use of 6,000 acre-feet. It is an important number we will be dealing with as we go along.

MR. HITCHINGS: What I would like to do, Mr. Chair, is to at least mark these at this time. I think it would be helpful to be able to use those rather than having to look at a large oversized map since these are exact replicas of the tables. We've marked those in order that they were just reviewed, Table 7, Table 2 and Table 6, as exhibits within Tom's testimony, so they could be VVWRA Exhibit 5E, F and G in order.

H.O. BAGGETT: Great.

MR. HITCHINGS: Thank you.

MR. DODSON: The next component of the environment that is critical to our discussions today was the water resource issue. And again when you do a CEQA analysis what you do is you say, "Was there an adequate set of information from which to work?" Or you have to go back out and develop that data. We had the benefit of starting this project in 1998 when the Mojave River Adjudication had been completed, the

stipulated judgment had been completed. And so we had a wealth of data in front of us to utilize and rely upon.

A good portion of that data comes out of this document which is Groundwater and Surface Water Relations Along the Mojave River, Southern California. That is USGS report 95-4189. It is Exhibit 5D in our testimony.

We had identified that there are three primary sources of water supplied to the Alto Transition Zone. Storm flows, there are 63 years of records; 39,000 acre-feet of average annual recharge in the middle stem of the Mojave River, which includes the ATZ. On this map the middle stem goes also all the way from the Lower Narrows here, up here to -- all the way to Barstow. It does not stop at Helendale. That 39,000 acre-feet affects an area. It goes approximately 40 miles of distance.

Base flow, the 57-year average for base flow is approximately 19,684 acre-feet. Again, these numbers are derived from this report that I have just referenced, which is U.S. Geological Survey Report 95-4589. The base flow has been declining. So to make sure that we didn't create and average that was -- extended too far back in time, we went back to the period of record that we had available to us at that point in time, which was 1981 to 1994. During that period of time, the average base flow, and that is the flow of rising groundwater that goes through the weir that is

measured at the Lower Narrows, was 15,285 acre-feet. During the period of record, that whole period, the lowest flow was 4,000 acre-feet that crossed over as base flow at the Lower Narrows.

The defined water demand which we have just -- which I just went through for riparian habitat was 6,000 acre-feet based on the USGS report that I just referenced. That is the first report, 96-4241, Exhibit 5C.

To meet this demand in combined flow, extracting out the floods, storm flows, you have a range as follows: you have 9,000 acre-feet of VVWRA discharge, which is current. You have approximately 15,285 acre-feet on the average across the Lower Narrows for the period of time, the 13 years from '81 to '94. That adds up to 24,000 acre-feet of water.

The low volume, the lowest volume that would have occurred, making the assumption that you hit another low, would be 9,000 acre-feet plus the 4,000 acre-feet that is the historic low flow that occurred in 1992, by the way, and that flow would be 13,000 acre-feet.

Based upon those combined flows, you have additional water beyond the demand by the plant community that ranges from 7- to 13,000 feet, of acre-feet of water per year, which means that is water above and beyond what would be the cumulative demand by all the habitat identified between the

Lower Narrows and the end of that Alto Transition Zone, which is at Helendale.

Worst case, if you subtracted the habitat demand solely from the VVWRA discharge, which is 9,000 feet, you'd still have 3,000 acre-feet of excess water beyond what the plant community would require. The conclusion that was reached by the Victor Valley Wastewater Recollection Authority Board was that there was adequate water available within the system after extracting the 1,680 acre-feet that would be transferred to be able to support the fish and wildlife resources and the public trust values that occur within those areas.

Based upon that, the Board concluded that the initial study and environmental evaluation was adequate and they issued a mitigated negative declaration. The mitigation measures being those that were necessary, for instance, to implement and make sure there were no direct damage to tortoises.

That concludes my testimony.

MR. HITCHINGS: Thank you.

The last witness on this panel is Peter MacLaggan.

Peter, if you could state your full name for the record.

MR. MACLAGGAN: My name is Peter Michael MacLaggan.

MR. HITCHINGS: If you could identify your current

title and position.

MR. MACLAGGAN: I am an independent water resources consultant among other things pertinent to this proceeding. I serve as the legislative and regulatory director for WateReuse Association.

MR. HITCHINGS: And I would like to direct your attention to Exhibit 7B and ask you whether that is a true and correct copy of your resume.

MR. MACLAGGAN: That's correct.

MR. HITCHINGS: Could you then briefly summarize your experience and qualifications.

MR. MACLAGGAN: I would be happy to do so. I have 21 years' experience in the water resources area. Bachelor of Science in civil engineering and Juris Doctorate in law. I am a registered civil engineer in the state of California and admitted to practice law in the state of California. I have -- my entire 21 years of professional experience has been focused on the subject matter of water recycling. First seven years were in the private sector, working as a project engineer of two different manufacturers of water recycling equipment, doing project development work. I have spent 12 years as water reclamation director for the San Diego County Water Authority and their planning director. And the last three years I have been working as an independent consultant serving as staff to the WateReuse

Association.

MR. HITCHINGS: I would like to direct your attention to VVWRA 7A and ask you whether that is a true and correct copy of the written testimony you have prepared in this matter?

MR. MACLAGGAN: Yes, it is.

MR. HITCHINGS: Are there any changes or corrections that you would like to make to that?

MR. MACLAGGAN: None at this time.

MR. HITCHINGS: Would you summarize your testimony?

MR. MACLAGGAN: I would be happy to do so. The purpose of my testimony is to address key hearing issue number three. That issue is: Will the approval of VVWRA's petition further the policy of Water Code Section 13550.

Tom, if you can put the first slide up.

Use of potable water for nonpotable uses constitutes a waste and unreasonable use of water. Recycled water in adequate quantities available to meet certain conditions.

I wanted to just touch upon the history of the statute, the purpose of it and how it's been applied, and then go into the specific application of the conditions to the project that is before you under the petition.

The first enactment of Section 13550 was following the historic drought in '76-77, and the purpose was to provide a mechanism to require the use of recycled water, to make sure

that if those resources were available they were, indeed, being used. There were several amendments to the statute and subsequent sections were enacted by the Legislature, most recently after the recent drought that took place between '86 and '92, and in '92 the Legislature came back at the request of WateReuse Association and amended these statutes.

There are now several statutes in addition to Section 13550. 551 addresses essentially the same requirements, that it prohibits the use of sources of potable water if recycled water is available in meeting the conditions of 13550. And the subsequent statutes through Section 554 address key applications of recycled water and declare them to be nonpotable applications for which, if recycled water is available, that it shall be used in lieu of potable water. That includes virtually all types of irrigation, agricultural and residential, landscape irrigation, irrigation within new housing communities, industrial uses such as cooling tower makeup water and air-conditioning, et cetera, and flushing of toilets in nonresidential structures.

The use of this statute has been primarily a vehicle where at the local levels the agencies can adopt ordinances mandating the use of recycled water to assure when the projects are built and operable that there will be a viable

market for that water, and that that water will be put to beneficial use. This provides the basis for a number of local ordinances that have been adopted throughout the state.

At this point in time there is no petition before the Board with respect to the VVWRA project. However, if there were such a petition being considered by the Board at this time it would be my opinion that this is exactly the type of project that was contemplated when the Legislature passed these statutes.

Section 13550 is one of more than a hundred statutes that have been adopted by State Legislature addressing recycled water. They began passing laws in this area in late '60s, contemplating the need for expanded water supplies and have been aggressively expanding this body of law for the last ten years, and 40 statutes have been passed by the Legislature, suggesting that there is a significant public policy issue at stake here.

We also have adopted specific recycling goals. CalFed, the Bay-Delta program, the framework agreement, Record of Decision that was passed earlier this year, was approved earlier this year, has an extensive water recycling program. State Board has adopted a policy and action plan for water reclamation. And the State Water Resource Control Board, the WateReuse Association and six other state and federal

entities have adopted a statement of support for recycled water.

With this sort of policy background, we need to just analyze what is the purpose and why are we doing this. The focus and the policy that is clearly articulated in this body of statutes, regulations and so on is that the development of recycled water is being encouraged and promoted throughout the state, and specifically to supplement existing water supplies and do so in a fashion that encourages the beneficial use of those resources.

CalFed in the framework agreement adopted in July and the ROD approved in August of this year define recycled water as an indispensable component of the CalFed solution of multiple benefits accruing to the Bay-Delta systems, specifically enhancement of water supply reliability, improvement of ecosystem restoration programs because you are now taking water and using it twice instead of diverting another acre-foot of water from the Delta. Therefore, lessening the impacts to fisheries through diversions across the Delta.

Lastly, there is water quality improvements accruing to the Delta because, again, you have control of additional higher quality water in the system, and it stays in the system instead of being diverted out of Delta uses. CalFed, based upon an attempt to increase these benefits, to address

growing needs in the urban sector, agricultural sector and environmental water uses, has adopted specific goals for recycling statewide.

In the next seven years the so-called Stage I Implementation Program that was begun in August of this year, there is 225,000 to 310,000 acre-feet of new water to be developed per CalFed's goals. Over the long haul, between now and 2020 CalFed would like to see 1.6 to 2.1 million acre-feet of recycled water being additionally used from the State of California.

What does this mean in the context of where we are with reuse today? We are reusing roughly a half million acre-feet in the state of California, so there is a 50-percent increase to be accomplished in the next seven years, three- to fourfold increase in recycling production the next 20 years, significant objective.

Past experience has shown that the goals in California for recycling will not be met without significant commitment from the State Board and the rest of the CalFed agencies. What we have seen is that the Legislature adopted a goal for recycling in '91, a year 2000 goal of 700,000 acre-feet and came up 200 short. There is a million acre-feet to be on line by the year 2010. If we do not do everything possible before us to remove all the impediments to recycling, we won't achieve that goal as well.

What I would like to do in the remainder of my testimony is just focus on the specific criteria in Section 13550, and, Tom, you can put the next slide up.

How the VVWRA project either conforms or does not conform to these criteria?

There are essentially four key criteria within the statute. First of all, for the use of potable water to be prohibited, if and when recycled water is available, each of these criteria must be met. Recycled water must be available and it must be of adequate quality to the end user. It must be available to that user at a reasonable cost. Recycled water use must not be detrimental to public health. And lastly, the use of recycled water will not adversely affect downstream water rights and will not degrade water quality and will not be injurious to plants, fish and wildlife.

Tom, next slide, please.

With respect to the water quality criteria. Again that criteria being the source of recycled water must be of adequate quality. The VVWRA recycled water has a TDS on average of less than 300 milligrams per liter. Typical recycled water quality being used throughout Southern California today is a thousand milligrams or less is deemed generally acceptable. Depending on what you're irrigating, a thousand may or may not be adequate. But, certainly, just

about any crop known in ornamental, horticulture arena should be able to get by just fine with 300 TDS. The conclusion I would draw from this information is that water quality from the VVWRA facility is, from a horticulture standpoint, is adequate quality for the intended uses. Furthermore, from a public health criteria, microbial quality of that water is also deemed suitable simply by complying with the requirements of the State Health Department.

Next slide, please, Tom.

The State Water Control Board has rendered two formal decisions on Section 13550 and its application to proposed uses of recycled water. In both cases the first two criteria were the most hotly contested issues, the quality question and the cost question. For the cost question the cost incurred by the individual user of the recycled water must be comparable to or less than the cost of supplying potable domestic water current in the objective.

In those two decisions rendered by the State Board they determined that this cost is to include all costs to that user to get it to the property, to use it on site, any associated costs incurred by the user to make use of that water once they receive it. What I've provided by way of a comparison, which is not necessarily an all end number, but gives you a pretty good indication of where we stand on this

criteria is that the current potable water used at SCLA costs the City of Victorville $267 per acre-feet.

Recycled water is proposed to be purveyed to the city in lieu of the use of potable water today at somewhere between 75 and $85 per acre-feet. That is assuming that the additional cost to take that water on the golf course and put it to beneficial use is less than $180 per acre-feet. We find that the cost of the recycled water is comparable to of less than the cost of supplying potable domestic water.

Go back to Slide 2, please, Tom.

The next criteria is the issue about public health. The use of recycled water will not be detrimental to public health. And here we have Mr. Gallagher's testimony that provides that they are in the process of permitting the project; they have committed to comply with the Department of Health Services water recycling water criteria contained in Title 22 of the California Code of Regulations. Thus the reclamation reuse to take place at SCLA will provide adequate treatment, treatment plant reliability and effluent quality to ensure that the use will not impact public health. Therefore, we did conclude from that that this project will not be detrimental to public health.

The remaining criteria or set of criteria -- here I will just briefly summarize where we stand on each of those. The impact to downstream water rights. First of

all, I am not aware of any legal user located downstream from the point of discharge whose ability to divert water or exercise their water right will be affected by the proposed project.

Secondly, as proposed by Mr. Gallagher's testimony, the implementation of water reclamation at SCLA will probably increase gradually at a rate that is slower than that of the increased discharge from the treatment plant. Therefore, we can conclude that there is going to be a consistent amount of water that will remain in the stream under this petition.

Lastly, the SCLA is substituting one source of water for another. There is no net increase in water use. They are simply going to go off the potable water supply being extracted from the ground and use an equivalent amount of recycled water. So, I would find that the use of the recycled water would not adversely affect downstream water rights.

With respect to the degradation of water quality, we are now talking about, when you apply the recycled water to the golf course and the other landscaped areas around the air park, what happens to the underlying ground basin and the quality downstream is that return flow migrates back into the system.

And here we heard from Mr. Gallagher. VVWRA Exhibit 1L

concluded that the use of recycled water at SCLA would accomplish three things. First and foremost, it would be consistent with the State Board's antidegradation policy, Policy No. 6816. Secondly, it would comply with the basin plan objectives contained in the Mojave Basin Plan. And lastly, it would not adversely affect the beneficial uses of groundwater in the upper or lower aquifers.

So from this we can conclude that the use of recycled water will not adversely affect groundwater quality. With respect to the plants, fish and wildlife, we just heard testimony from Mr. Dodson and his Exhibit 5, VVWRA 5, the charge in the point of use, purpose of use and point of discharge of 1,680 acre-feet of recycled water will have no potential to adversely affect fish, wildlife and plant materials or public trust resources in the Transition Zone. This coupled with Mr. Gallery's testimony about the gradual increase in diversions from the river, coupled with the increase in discharge from the plant should conclude that there will be no net impact to -- that will be injurious to fish, wildlife or plant resources.

In summary, I would conclude that the project is consistent with the terms and conditions of Section 13550. Furthermore, granting the permit would further state policy, including the State Board's policies with respect to recycled water development and the need to encourage and

promote those activities, and lastly, would remove impediment for the proposed project that would provide a meaningful contribution to the State's resources.

That would conclude my testimony, Mr. Hitchings.

MR. HITCHINGS: Thank you.

That is it for the direct testimony for this panel.

H.O. BAGGETT: Any other witnesses.

MR. HITCHINGS: That's it for our direct case in chief.

H.O. BAGGETT: I guess I will assume all parties would cross-examine. How long should -- should we take a break?

Let's take five minutes and then we will come back with cross-examination.

(Break taken.)

H.O. BAGGETT: Continue.

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CROSS-EXAMINATION OF SECOND PANEL

VICTOR VALLEY WATER RECLAMATION AUTHORITY

BY DEPARTMENT OF FISH AND GAME

BY MS. MURRAY

MS. MURRAY: Nancee Murray, counsel for Department of Fish and Game. My first series of questions is going to be for Mr. Carlson.

Is your testimony at Paragraph 9 in Exhibit 4D that is derived from -- refer to Paragraph 9, focuses on water year

1998.

Why 1998 only?

MR. CARLSON: We did this work in the spring and summer of '99. It was the latest data that we have access to.

MS. MURRAY: Did you do any analysis for any other water year?

MR. CARLSON: No, we did not.

MS. MURRAY: Did you create Figure 2, VVWRA Exhibit 4D?

MR. CARLSON: I personally did not. My assistant, Dave Brown, did. I reviewed it.

MS. MURRAY: How far away from the river were the wells used to generate the data for Figure 2?

MR. CARLSON: The map I have shows the location of the wells that were used to generate Figure 2.

MS. MURRAY: Is this a VVWRA exhibit?

MR. CARLSON: No, it is not.

MR. KIDMAN: I wonder if that can be put up so everyone can see it.

H.O. BAGGETT: Do you have an overhead or --

MR. HITCHINGS: It's VVWRA Exhibit 4C.

MR. CARLSON: It is Exhibit 4C, but what are added to it are the location of the wells that were used to generate the cross-section.

MS. MURRAY: That is very important information as to

where the wells are.

H.O. BAGGETT: I would concur. If you can show us.

MS. MURRAY: Can we all get copies of that?

MR. HITCHINGS: Yes, we can. We have no objections providing that map. The base map itself is what is Exhibit 4C now of VVWRA's testimony and exhibits. That is the same base map, but on top of that the actual locations of the wells used for VVWRA Exhibit 4D are plotted on that map.

H.O. BAGGETT: That would be useful.

MS. MURRAY: This is -- there is another -- this is really important information where the wells are, so I want to just -- while I am going forward, do you have another one to give?

H.O. BAGGETT: Do you have additional copies or just the one?

MS. MURRAY: That is one that has the wells plotted?

MR. CARLSON: No. There is only one that exists.

H.O. BAGGETT: You can continue and --

MS. MURRAY: In order to not slow us down as much as possible. I don't know if you recall now that we have it away from you, but do you recall how many production wells are in the study area referred to in your Paragraph 9?

MR. CARLSON: To my knowledge, there were no production wells that were used to generate that cross-section. I don't know the answer to how many production wells are in

the area. That was on Exhibit 4C.

MS. MURRAY: In Paragraph 11 of your testimony you refer to the amount of water needed to maintain surface flows from the VVWRA treatment plant to Bryman Road. Why does your analysis of surface water stop at Bryman Road?

MR. CARLSON: Our analysis of surface water did not stop at Bryman Road. That merely is a sentence that describes how much water would be needed to maintain flow at Bryman Road.

MS. MURRAY: In other parts of your testimony you again refer to maintain habitat as far as Bryman Road. Is there a reason why you chose to refer to Bryman Road as far as assuming that was as far as habitat was located?

MR. CARLSON: I was told, I can't recall by whom, that Bryman Road was an important demarcation point, but I don't believe it was the absolute boundary of anything.

MS. MURRAY: Could you please turn to Figure 3 of your testimony, VVWRA Exhibit 4E? And is Bryman Road indicated on Figure 3 by the bold horizontal line?

MR. CARLSON: Yes, it is.

MS. MURRAY: Does that, as you testified earlier, Bryman Road is about three and three-quarters miles downstream of the treatment plant?

MR. CARLSON: That's right.

MS. MURRAY: Does Figure 3 indicate surface water past

Bryman Road in any water years?

MR. CARLSON: Yes, it does.

MS. MURRAY: Which water years?

MR. CARLSON: It would be all the water years marked on the map, except for 1987 and 1989. So it would be -- do you want me to read off all the numbers?

MS. MURRAY: No. So your testimony is there is surface water past Bryman Road in at least a number of years as indicated on your figure?

MR. CARLSON: That is what we saw on the aerial photos, yes.

MS. MURRAY: Mr. Dodson, I would like to just briefly turn to a portion of your testimony at this time.

Is it true that your written testimony at Page 4, Paragraph 10, reads:

> From VVWRA's discharge points to approximately five miles downstream surface flows now persist all year round within the Mojave River channel. (Reading.)

Is that correct, Paragraph 10?

MR. DODSON: Bear with me. I was in the wrong spot.

That is correct. It is also consistent with that graph.

MS. MURRAY: Mr. Carlson, let's return to Figure 3, your VVWRA Exhibit 4E, using 1995, would you agree that the

figure indicates that the extent of river flow downgradient of the VVWRA plant is approximately 5.2 miles with a discharge to the Mojave River of approximately 10 cfs?

MR. CARLSON: That is what the figure shows. That would have been at a particular time in 1995. I don't remember the exact data we used, basically summer low flow conditions.

MS. MURRAY: I don't know if you have a calculator handy, but isn't it true converting cfs to acre-feet, using 724 acre-feet per year, is 1 cfs; and then going the 10.1 miles, approximately ten miles, would be 7,312 acre-feet?

MR. CARLSON: Repeat the -- I've got my crib sheet of conversion factors.

MS. MURRAY: Converting that cfs, so we have approximately 5.2 miles with a discharge to the river of approximately 10 cfs, converting the 724 acre-feet per year is 1 cfs and times the 10.1 miles would be approximately 7,312 acre-feet per year.

MR. CARLSON: I don't follow your calculation. Let's go through one step at a time.

MS. MURRAY: So we are at your point for 1995?

MR. CARLSON: Correct.

MS. MURRAY: And we have -- we are going to convert acre-feet to cfs there, 10 cfs into acre-feet.

MR. CARLSON: Okay.

MS. MURRAY: We have 724 acre-feet per year equals 1 cfs.

MR. CARLSON: I get 714, but that is close.

MS. MURRAY: 714 times the 10.1 cfs is approximately, I have, 7,312, but maybe 7,300 or so acre-feet?

MR. CARLSON: Close.

MS. MURRAY: To maintain the habitat or to maintain the surface flow that far at your point in 1995 would be 7,300 acre-feet a year?

MR. CARLSON: That is where that line intersects those points, yes.

MS. MURRAY: Taking that 7,300, divided by the 5.2 miles that we are, it is about 1,406 acre-feet per mile to get it there?

MR. CARLSON: You've divided the 5.2 miles and the --

MS. MURRAY: 7,300 acre-feet we just got.

MR. CARLSON: Correct. That is what I get, 1,400.

MS. MURRAY: 1,400 acre-feet per mile to get that amount of water --

MR. CARLSON: That is when you correlate between the 5.2 and the zero.

MS. MURRAY: In your Paragraph 12 you indicate a seepage rate of approximately 1,100 acre-feet per mile. We just went through a calculation that got us closer to 1,400 acre-feet per mile; isn't that correct?

MR. CARLSON: That's correct. The 1,100 acre-feet per mile refers to the part of the stream represented by the straight line in that chart.

MS. MURRAY: Let's talk about that straight line.

MR. CARLSON: What it suggests is that the infiltration rate is higher closer to the plant, which you'd expect because there is more flow and probably more width of stream in the area closer to the plant.

MS. MURRAY: The 1,100 acre-feet per mile does not apply near the treatment plant?

MR. CARLSON: The 1,100 acre-feet per mile applies to the area between -- the area depicted by that black line on that chart which would be two and a half miles to 5.8 miles. That's the area that we fit to the curve.

MS. MURRAY: Looking at that line and with the equation that you have of up here in the top left part of your exhibit, in your Figure 3, what if X is 0, which is VVWRA discharge to the river, what would your Y, which is the extent of river flow downgradient, be?

MR. CARLSON: It would intersect -- it would be at 1.63.

MS. MURRAY: Your equation of Y equals .66X minus 1.63, wouldn't your Y be a negative number?

MR. CARLSON: Well, the fitting of those data is only appropriate within the zone in which you have data. I can't say anything about the continuation of that solid or that

best fit line to the -- basically to the left of the X axis, to the left of 6 cfs number. I can't say anything about that.

MS. MURRAY: You wouldn't continue the line on because as you continue this line, when you have zero discharge, you do, in fact, get a negative number?

MR. CARLSON: Well, when you continue -- well, if you continue the line. But as I say, I don't think that is appropriate.

MS. MURRAY: Because your analysis of 1,100 acre-feet per mile applies only between river mile two and a half to a little less than six?

MR. CARLSON: That's -- yes, that's correct.

MS. MURRAY: You clarified earlier about this vertical line in Figure 3 at -- sorry, vertical line that's dashed, proposed discharge to the Mojave River in around nine?

MR. CARLSON: Correct. That's a proposal that may or may not be current. It is as if they were to all happen today. Sort of a maximum impact.

MS. MURRAY: Isn't the current proposal actually closer -- actually two? That is what VVWRA has currently proposed to discharge, to guarantee the discharge to the river?

MR. CARLSON: I don't know that that is the proposal.

MR. HITCHINGS: I am going to object as misstating the testimony. I think the proposed discharge to Mojave River,

that was clarified during the direct.

H.O. BAGGETT: Rephrase.

MS. MURRAY: Is it -- have you -- did you read Mr. Gallagher's testimony?

MR. CARLSON: Yes, I read it. Most of it.

MS. MURRAY: Do you recall the part of his testimony in which he offers to guarantee a discharge of 2,000 acre-feet to the river?

MR. CARLSON: No, I did not.

MS. MURRAY: You don't recall that part of his testimony?

MR. CARLSON: I don't remember reading that part of his testimony.

MS. MURRAY: Well, actually I do have one more question about the 2,000 acre-feet. Assuming Mr. Gallagher has testimony in which he says that he will -- VVWRA would offer to put 2,000, discharge 2,000 acre-feet. Using your seepage rate or using your graph, how far downstream would that 2,000 acre-feet go?

MR. CARLSON: I haven't done that calculation.

MS. MURRAY: You can't tell that from your graph because your graph seepage rate doesn't apply until you get to past two miles?

MR. CARLSON: That's correct.

MS. MURRAY: So you don't know the answer?

MR. CARLSON: If the discharge were only 2,000, it would be less than what we are showing on this graph. So I can't speak to what that computation, what the exact number would be because I don't have any data upon which to base an opinion.

MS. MURRAY: Mr. Carlson, at Paragraph 13 of the testimony you state:

> It is understood that there will be -- it is understood that there will be an approximately equal, offsetting reduction of groundwater pumping at the golf course and other areas of up to 16,080 acre-feet per year. (Reading.)

In other words, there will be no increase in the consumptive use of water. Do you recall that testimony?

MR. CARLSON: Yes, although it was 1,680.

MS. MURRAY: Is it possible for the groundwater wells that were used to bring water for the golf course to be used for other purposes?

MR. CARLSON: Yes.

MS. MURRAY: Do you recall me earlier asking Mr. Gallagher about the statement in the CH2MHill report, which is VVWRA Exhibit 1L at Page 12 that refers to a blend of groundwater and return flow?

MR. CARLSON: I recall you asking the question.

MS. MURRAY: Would your conclusion that there will be no increase in the consumptive use of water change if the wells continue to be pumped and were used for other purposes?

MR. CARLSON: There would be no change in consumptive use at the point of application of the water. If you separate out the -- what is going on at the golf course itself, which is currently irrigated with groundwater, to be replaced about reclaimed water. This is all against a backdrop of a groundwater basin in overdraft where growth is occurring, but that is not what we are talking about here. We are talking about the replacement of one water use from one -- derived from one source to the same amount of use from another source. So, in my opinion, there would be no increase in consumptive use.

MS. MURRAY: Even if those same production wells were then used for something else, another use at that --

MR. CARLSON: Pumping a well is not a consumptive use. The consumptive use is the evaporation of the water that is applied to that point of use.

MS. MURRAY: Would your conclusion that there would be no increase in the consumptive use of water change if the golf course uses a blend of groundwater and water from the VVWRA in order to increase the TDS?

MR. CARLSON: I can't speak to the use of a blend of

water. If there were a blend of surface -- of groundwater and reclaimed water and the same amount of water applied, there would be no increase in consumptive use when we are talking about the same area.

MS. MURRAY: At your Paragraph 5, you testify that there is, hydrologic continuity exists between the Mojave River and the groundwater in the area; is that correct?

MR. CARLSON: That is correct.

MS. MURRAY: And then in your oral statement you went through Figure 2 and you mentioned that somewhere around, and correct me if I am wrong, ten feet the system becomes decoupled. Is that your demarcation line, 10 feet?

MR. CARLSON: No, it is not. I actually didn't say that it becomes decoupled at ten feet. What I said, it suggests or indicates that if the groundwater level is that far below the streambed it may be decoupled. I don't know for a fact that it is decoupled. But the fact is ten feet is a fairly deep and discernible depth below the streambed.

MS. MURRAY: Could you point out on the map you are using, our exhibit or yours, where you believe the stream is coupled and where you believe it decoupled. In your testimony you say that in some areas it is coupled and in some areas it is decoupled. We are not clear as to where you think it is coupled and where you think it is decoupled.

MR. CARLSON: The best way would be to look at Figure 2 where the groundwater level is above or at or near the ground surface. One place would be right near the treatment plant itself.

H.O. BAGGETT: Can you put it up for us. I think this is a fairly critical issue.

MR. CARLSON: Certainly up near the Narrows. Near the Narrows it is coupled. The groundwater level is very close to the surface and even above. At the wastewater treatment plant itself it appears to be very close to the surface. This area here around Bryman Road, although we are not sure about this because of the question marks that are attached. These other areas it appears these areas where the ground level is deep, it appears not to be coupled or at least below the -- significantly below the streambed, based on our review of the USGS data.

In all areas, though, except right near the Narrows, the groundwater level, at all areas except the Narrows and Bryman Road, the groundwater level appears to be below the streambed, so the streambed is leaking into the groundwater in those areas.

MS. MURRAY: And what is the significance in your words of areas of this concept of coupling and decoupling?

MR. CARLSON: In areas where the groundwater is decoupled from the surface water it means that the leakage

rate from the streambed is independent of the groundwater levels. That is to say the stream is leaking as fast as it can. In areas where it is coupled, if you lower the groundwater level to some degree you will increase the leakage. But eventually if the groundwater level falls far enough, it will become decoupled and the stream will basically leak as far as it can, but it can't keep up with the groundwater.

MS. MURRAY: Keeping on this figure, actually, first assuming you are correct and that there are certain decoupled and coupled areas, I have a series of questions.

Do you think recharge to groundwater is different in decoupled and coupled areas?

MR. CARLSON: I don't know what you mean by different.

MS. MURRAY: Is there a different rate?

MR. CARLSON: The rate -- there is different mathematics that describes the rate of -- I would use the term infiltration from the stream as opposed to recharge. There are different rates of infiltration. The infiltration in a decoupled area is controlled by the properties of the streambed itself.

In an area where it is coupled, it is controlled by the properties of the streambed and the difference in water levels between the stream and the groundwater. So there is an additional component that you need to take into account.

MS. MURRAY: So the infiltration rates are different?

MR. CARLSON: That's correct.

MS. MURRAY: Which infiltration rate would be greater and why?

MR. CARLSON: Well, you can't say which infiltration would be greater from place to place, whether it is coupled or decoupled. As I said, it is a product of several components. For example, in an area of very high permeability, streambeds, you can get a rapid rate of infiltration even though the stream still may be coupled.

On the other hand if the streambed permeability were low and the groundwater level were deep, you can have a lower infiltration rate. As I say, to compute the infiltration rate you need to take into account the properties of the streambed and, if needed, the elevation of the water levels, the relative water levels between the stream and the groundwater.

MS. MURRAY: And if you were to reduce the flow to 2,000 acre-feet, would you think that would increase the amount of the decoupled area? Again, assuming the coupled-decoupled concept is true.

MR. CARLSON: Well, it really would have that tendency. Whether or not it would I can't say.

MS. MURRAY: It would have that tendency, though. Would that tend to eventually tend to lower the water

table?

MR. CARLSON: If that were the only component that we're changing, then it would.

MS. MURRAY: Then, again assuming your seepage rate of 1,100 acre-feet per mile, a decrease in the VVWRA discharge of 1,680 acre-feet would decrease the amount of wetted river by over a mile; is that correct?

MR. CARLSON: A decrease of 1,680 would reduce the full extent of river flow by over a mile, correct. I think it is about one and a half or something like that.

MS. MURRAY: You're very close at one and a half.

Mr. Dodson or Mr. Carlson, are you aware of the Army Corps of Engineers' policy of no net loss of wetlands?

MR. DODSON: Yes, we are.

MS. MURRAY: Are you aware of the Regional Board's policy of no net loss of wetlands?

MR. DODSON: Yes.

MS. MURRAY: Is it your testimony that a loss of over one mile of wetted river is in accordance with those policies?

MR. DODSON: I don't think those two equate to one another. They are apples and oranges, because you're making the assumption that the stream, surface stream itself, is creating the riparian habitat. We don't agree with that. That is one of the conclusions that Mr. Carlson's presented.

He believes that most of the riparian area, specifically the areas that you have identified as decoupled, but below the surface, the riparian habitat is using the groundwater.

MS. MURRAY: It does not need surface flow?

MR. DODSON: It does not require surface water.

MS. MURRAY: By decreasing the amount 2,000, that would not have an effect on the plants because they can use the groundwater?

MR. DODSON: No, ma'am. That's a different question than you asked before.

MS. MURRAY: So if we decrease the amount by 2,000 is it your testimony, Mr. Dodson, that that will not have a significant impact on the riparian area?

MR. DODSON: I am going to beg the question in the following way. That is not what is being proposed. What is being proposed is an allocation of a constant 2,000 acre-feet from VVWRA discharges. It has nothing to do with how much additional water they might discharge, and, therefore, I can't answer your question because I haven't evaluated it. But I don't think it applies.

MS. MURRAY: A different question is: Is it your testimony that the loss of over one mile of wetted river would not have a significant effect on the riparian area?

MR. DODSON: I don't necessarily believe that, no. Again, because I think it is -- I believe from what we have

looked at the majority of the habitat that is downstream, based upon these data, is relying upon groundwater. And that groundwater component is not dependent upon just that stream flow. It is dependent on base flow and to quote a section out of your person's comments, it is also dependent on recharge by the storm flows each year.

And so to say that change in what VVWRA might do would consequently change the level of groundwater and, therefore, affect riparian habitat, I can't draw that conclusion.

MS. MURRAY: You draw the reverse conclusion, that they will have no impact?

MR. DODSON: No. I think that we are approaching the area where you are reaching the limits of the riparian habitat at the distances that were shown on here. And my sense right now is that there is no way to predict exactly what will happen with the data we have, but, again, there is sufficient groundwater there and there is sufficient water flowing through the system to maintain that groundwater, those groundwater levels, at this point in time, in my opinion, based upon data that I have reviewed.

MS. MURRAY: I want to make sure I understand. So we are talking about a loss of approximately 1.5 miles of wetted river. And is it your opinion that you don't know because there is not enough data to tell you whether or not that will have any impact on the riparian area? That is

what I heard you say.

MR. DODSON: Wait just a moment. Lisa wants to add a comment here. She is letting me know. Lisa is an expert with the Corps, and I think she should be allowed to make a comment on this particular case.

MS. KEGARICE: Your comment or question about the no-net loss policy of the Army Corps of Engineers and the Regional Water Quality Control Board as it pertains to Section 401 of the Clean Water Act is a policy that the Corps utilizes when issuing permits for discharge of fill material into waters of the United States and doesn't really have anything to do with what VVWRA is proposing.

MS. MURRAY: Thank you for that clarification. And your testimony --

Could you answer my question, Mr. Dodson? I believe from what I heard you testify to, you're saying, you're acknowledging 1.5 miles loss of wetted river, you are saying you don't know?

MR. DODSON: I'm saying that I don't believe the groundwater table would necessarily be lowered and would cause riparian habitat to decline or be stressed.

MS. MURRAY: So you're saying the loss of 1.5 miles of wetted river would not stress that riparian habitat in those 1.5 miles, losing the surface flow?

MR. DODSON: You're making some assumptions in here

which I don't necessarily agree with. First, I don't agree that there is riparian habitat along that whole 1.5 miles after we get down past the four miles at which the water would remain above the surface.

MS. MURRAY: I think you testified to five miles.

MR. DODSON: Yes, I did. But if you asked me past the five mile mark, my conclusion is still the same because the distance that this remains at is approximately -- may I have the --

This distance right in here, past, is approximately five miles, is approximately five miles to the point where you see that, that line would be, and that is based upon 1998 data, no additions of water, VVWRA flows, which are occurring and raising that value. So what I am telling you is I do not think that by relocating the discharge to the 1,680 acre-feet that we are going to have an adverse impact on that riparian habitat, significant adverse impact. That means measurable.

MS. MURRAY: Back to Mr. Carson. I am going to give you a -- hand you a piece of paper. It is a table from a USGS report that is referenced in DFG Exhibit 2, and this goes to the production wells. This is Page 55 of the regional water table, 1998 and groundwater level changes in the Mojave River and the Morongo groundwater basins, San Bernardino, California, Water Resources Investigations

Report 00-4090, referenced in DFG Exhibit 4. What we have verified once we got you well production -- let's first --

We have here highlighted two wells that are in an identical location, 13H1 and 13H2.

Do you want me to -- I can get you clarification of that.

MR. CARLSON: Sure. I would like to know where they are.

MR. DODSON: If you will bring the view graph, I will put it up also, please.

MS. MURRAY: We believe from your well 3H1 and 2 is higher up. It is nine miles or so down, bull's-eye.

Mr. Carlson?

MR. CARLSON: Yes.

H.O. BAGGETT: What are we looking at?

MS. MURRAY: We are looking at -- these were wells that were used to generate this Figure 2.

H.O. BAGGETT: I understand that, but where are they? Both of them?

MS. MURRAY: We're getting to the point where only one well was used. Here we have two wells that are in the same location, approximately nine miles below or nine miles downstream of the Lower Narrows. 13H1 as indicated here in the USGS report has screener perforated interval 90 to a hundred feet, with a 1998 depth to water of 14 feet and the

well at the identical location, screener perforated interval at 15 to 25 feet, with a 1998 depth to water of 1.62 feet.

Between the two wells which one would you think is more appropriate based on the USGS table? Which one is most appropriate as a measure of the shallow water table, 13H1 or 13H2?

MR. CARLSON: It would be the shallower well.

MS. MURRAY: So that would be 13H2 on the chart.

Now, according to our review of your map, you used 13H1 which was 90 to a hundred feet at the same location which then on your Figure 2 does drop down your groundwater elevation along the groundwater surface?

MR. CARLSON: That is true.

MS. MURRAY: Why did you use it for the same location when you had a choice of a 15-foot well or a 90-foot well?

MR. CARLSON: All I can say is for some reason we did not get the data for 13H2; that is all I can say. It is not on the chart.

MS. MURRAY: Would you agree that using Figure 2, which is a very important part of your testimony, using data from a 90-foot well versus a 15-foot well would then change the results of the line in Figure 2?

MR. CARLSON: It would tend to move the line up a bit, and, of course, we are getting near Helendale where there is a fault and the groundwater barrier actually would

explain a little bit of the anomaly, that we saw as we get towards the Helendale Fault I am told that the groundwater dam that should back up groundwater and cause groundwater to basically back up right there. So the data from 13H2 that you supplied me would tend to support that.

So in that area the groundwater level would not be as deep, but it is still below the river level, still below the ground surface, apparently.

MS. MURRAY: One foot, 1.62 feet, approximately, based on the USGS tables, and there are some less than a foot and some, some dates in '98, but it ranges far less than the --

H.O. BAGGETT: Is that a question for the witness?

MR. CARLSON: We didn't include 3H2 and indeed had we included one of those triangles that had 3H2 that triangle would be closer to the surface.

MS. MURRAY: Would you say significantly closer to the surface?

MR. CARLSON: Yeah, I would say so.

MS. MURRAY: Thank you. That is all about that figure.

Question for Mr. Dodson. The figure, I guess it is now the reverse -- no, it's down on the floor, from the Lines Bilhorn Report that you used and the mapping shown on that, isn't it true that that Lines Bilhorn Report map shows that the riparian, wetted riparian area extends seven miles

from the VVWRA plant?

MR. DODSON: I need a ruler.

I would say it is more about like six.

MS. MURRAY: A rough estimate?

MR. DODSON: Yes, ma'am.

MS. MURRAY: One question for Ms. Kegarice.

MS. KEGARICE: Kegarice.

MS. MURRAY: You mentioned that DFG responded and had concerns about the Mojave ground squirrel riparian habitat?

MS. KEGARICE: Yes.

MS. MURRAY: When VVWRA submitted its 2081 application to the Department, was the MOU signed at that time? Are you aware of -- was there an MOU between VVWRA and the Department regarding --

MS. KEGARICE: The 2081 is in process. I was told by a Julie Brown at the Department of Fish and Game in Sacramento on Friday, December 1st, that somebody who prior to the date, named Nancee Murray, had held up the 2081 pending investigation.

MS. MURRAY: My question is: At the time the application was submitted, it was the Department's belief that 8,500 acre-feet would -- was it the Department's belief based on the MOU there would be 8,500 acre-feet?

MS. KEGARICE: I don't know what MOU you are referring to.

MR. HITCHINGS: I am going to object as lacking foundation as to her being able to testify as to what the Department's belief was.

H.O. BAGGETT: Sustained.

MS. MURRAY: So you do not know whether when the VVWRA submitted its 2081 whether or not the MOU was in place at that time?

MS. KEGARICE: I do not know what the MOU is.

MS. MURRAY: An MOU --

MS. KEGARICE: No. The MOU. I know what an MOU is, but I don't know what the MOU is.

MS. MURRAY: The MOU I am referring to is an MOU Department of Fish and Game and VVWRA regarding this wastewater change petition.

MS. KEGARICE: Then would you repeat the question.

MS. MURRAY: Do you know when the VVWRA submitted its 2081 application if the MOU which I just referred to, explained to you, was in place?

MS. KEGARICE: I do not.

MS. MURRAY: I have a few questions for Mr. Dodson.

In your testimony at Paragraph 8 you mention a Section 7 consultation with the U.S. Fish and Wildlife Service.

MR. DODSON: Yes.

MS. MURRAY: And VVWRA has submitted what appears to be a Section 7 consultation as VVWRA Exhibit 6C?

MR. DODSON: Yes.

MS. MURRAY: Is that Exhibit 6C the U.S. Fish and Wildlife Service consultation you referred to in Paragraph 8?

MR. DODSON: Yes. By the way, VVWRA did not submit that. VVWRA submitted it through the Environmental Protection Agency for another project.

MS. MURRAY: The project description in VVWRA Exhibit 6C seems to cover only the physical expansion of the treatment plant for the increase in volume of the plant; is that correct?

MR. DODSON: Yes, but I need to amplify that answer. It was submitted with the total set of all the area that would be impacted by the pipeline and the percolation ponds associated with the expansion and a proposed compost facility. The federal EPA made a determination with the Fish and Wildlife Service to delete the other two, excluding those projects that were not consistent with the EPA grant, which was only for the water, for the water plant -- the reclamation plant expansion.

The significance of that is that we submitted it in that fashion so that it wouldn't be caught as piecemeal submittal through us submitting a 10A permit. The federal agencies determined that we should be splitting them because EPA didn't want to include those projects which were not

within its jurisdiction.

MS. MURRAY: The consultation is with EPA only for the plant expansion and does not at this time cover the pipeline or diversion of water from the riparian area?

MR. DODSON: Lisa is going to answer that. She has been in close contact with the Fish and Wildlife Service.

MS. KEGARICE: The consultation with Fish and Wildlife Service included a 72.1 acre parcel to be fenced and clear of tortoises. Of that 72.1 acres, 2.4 acres of the pipeline would be within that area. Once that area was clear and fenced for desert tortoise as part of the EPA funded project, then tortoise would no longer be taken in any subsequent projects.

MS. MURRAY: Mr. Dodson, in Paragraph 9 of your testimony you say:

> Approximately three miles upstream of the VVWRA discharge points granitic bedrock approaches the ground surface and forces the subsurface flows along the Mojave River Channel to rise to the surface at a location called the Lower Narrows. (Reading.)

Does that sentence mean that three miles upstream of the VVWRA plant surface flows begin and then persist? As you testified in Paragraph 10, five miles further downstream of the VVWRA treatment plant?

MR. DODSON: No. And I think the operative there is the last sentence in that same paragraph. It says from this point at least some volume of flow persists even during the summer months. The answer to you is no. Apparently it does not flow for certain periods of time between the Lower Narrows and the VVWRA discharge points.

MS. MURRAY: You are not sure that the Mojave River now goes subsurface three miles upstream and it historically had continuous surface flows past where the VVWRA plant is now located?

MR. DODSON: I can answer the first portion of your question in the affirmative, yes. The second portion I am not sure because I don't have hard data on exactly how long surface flows have been going below subsurface. I don't know if it's been two years, ten years, 15 years. So I can't answer the latter part. I can only say that, yes, that has happened for a period of time.

MS. MURRAY: We will get to that in our case in chief, the aerial photos.

In Paragraph 15 you testify that surface flows do not percolate below the ground surface until about river mile 27 is passed.

Do you recall that?

MR. DODSON: Yes.

MS. MURRAY: And that is approximately five miles?

MR. DODSON: Yes, approximately five miles, just past Bryman Road. When looked at the data here, though, they show surface flows down a little bit further. So it is in that range, approximately five miles.

MS. MURRAY: As you referred to before, the Lines Bilhorn Report is approximately six to seven miles. I guess your six miles?

MR. DODSON: That is what I measured.

MS. MURRAY: Let's now talk about Paragraph 16 of your testimony. As you indicated in your oral testimony, this is an important paragraph because you said it is an important number, which is the 6,000 acre-feet that you will be dealing with all along.

Isn't it true that your ultimate conclusion in Paragraph 23 is based in large part on Paragraph 16?

MR. DODSON: As one component of that conclusion, yes, and a major component, not the only component.

MS. MURRAY: Major component. Okay.

In Paragraph 16 you state:

> According to the Lines Bilhorn Report consumptive water use (evapotranspiration) by the riparian and preatophytic vegetation in the Transition Zone is estimated to be 6,000 acre-feet annually. (Reading.)

So what you are talking about here with the 6,000

acre-feet in your Paragraph 16 is evapotranspiration or the amount of water that the plant withdraws from the soil; is that correct?

MR. DODSON: The riparian habitat as defined in the tables that I referenced earlier.

MS. MURRAY: What you are talking about here is evapotranspiration, correct?

MR. DODSON: From those plants, yes. And we are talking about Table 2 and Table 6 and Table 7 as being the basis for those estimates.

MS. MURRAY: The estimate on evapotranspiration?

MR. DODSON: Consumptive water use. Don't use my term all the time. That is what I equated them to be right then. It is consumptive water use, and that is the term that is used up there. If you don't like the way I use the word evapotranspiration then so be it.

MS. MURRAY: No, I like your use of evapotranspiration because that is, in fact, what this 6,000 acre-feet means. And does the riparian area need any additional amount of water to sustain the plants in the area around those plants other than that needed for evapotranspiration?

MR. DODSON: It's a complicated question. First let's use again the term consumptive water use for a moment.

MS. MURRAY: Feel free to stick with evapotranspiration. I like it.

MR. DODSON: I am sure. Consumptive water use in this particular case means to me that all the habitat that is within the whole of the transition area, Alto transition area or zone, from the Lower Narrows to Helendale consumes, consumed, 6,000 acre-feet. Is additional water required? Only in those areas where, in my opinion, only in those areas where you have preatophytic vegetation which is not riparian now. We are talking about those things that are aquatic, that have to live actually in water on the surface. Those specific areas which constitute 200 acres within that whole area are the only areas that require, in my opinion, additional surface water because it has to be there.

MS. MURRAY: And that is in your opinion, and your opinion is based on the Lines Bilhorn report, correct, giving the figure of 6,000 acre-feet of evapotranspiration?

MR. DODSON: The 6,000 acre-feet value comes from that. The opinion that you had just asked me for was just formed based upon the question you asked, which was do you need more than 6,000 acre-feet.

And I'm saying if you consume 6,000 acre-feet you are going to need a couple acre-feet more to be able to sustain surface water if it is not there already.

MS. MURRAY: In addition to evapotranspiration would the plants need water to carry it to the area and carry it past the carriage water?

MR. DODSON: I think you're again mixing apples and oranges. Let me answer it in two ways. Mr. Carlson has shown that surface water is needed to carry flows a certain distance downstream, and that is already in the record and I don't need to go through that again. The other question you're asking is: Does the riparian vegetation need the surface flows to do that? In my opinion, no, there is a groundwater flow that is a component of what is going in in the alluvial channel, and that has the ability to also be able to make up water downstream. So my answer is I don't agree with the conclusion it has to be surface flow to be able to sustain the habitat.

MS. MURRAY: Do you agree that in addition to evapotranspiration the plants need some amount of water, surface or groundwater, to move the water to them, to get them? They can't -- the 6,000 isn't going to drop on them; is that correct?

MR. DODSON: No.

MS. MURRAY: It has to move to them, correct?

MR. DODSON: It has no flow I think is the proper term.

MS. MURRAY: It has to flow to them and it has to flow past them; isn't that correct?

MR. DODSON: Your question again is assuming that all water that is for sustaining the riparian habitat is coming from the surface flows. I don't buy into that argument.

Does -- to be able to get surface flows that far and to be able to provide some surface water habitat, yes, you have to have some surface flows. But that does not necessarily -- is not necessarily required to sustain all the remainder with the exception of, and Lisa has pointed out to me, we do need to have flows, base flow or storm flows, to be able to help certain of the plants that are within the riparian community to reproduce.

MS. MURRAY: So it is true that the 6,000 acre-feet is not all that the plants need? You just said that there is a certain amount for surface amount, a certain amount of groundwater or surface, they need it, to get it to them and pass them?

MR. DODSON: I think that the 6,000 acre-feet represents the maximum amount of consumptive use. Again, I think the question that we talked to is, do you need surface flows, was related to surface flows sustaining aquatic plants. And you've got to have surface water to do that. And I acknowledge that those surface water plants or aquatic plants require surface water to do that. The remainder does not.

MS. MURRAY: Is it true that you don't know if the 6,000 acre-feet is the total amount of water that that riparian area would need to sustain itself?

MR. DODSON: I don't think anybody really knows. The

best estimate is that one right there, and I believe that is a correct estimate. It is a good estimate, not a correct estimate.

MR. MURRAY: A good estimate of one component of what is needed to sustain the riparian area?

MR. DODSON: Of one component, yes, ma'am.

MS. MURRAY: And only one component.

MR. DODSON: Yes.

MS. MURRAY: Let's stop there.

Paragraph 20 of your testimony states the combined amount of the two primary surface water flow components, surface flow and VVWRA discharge, is approximately 24,000 acre-feet, correct?

MR. DODSON: If you take the last 13-year average plus the current VVWRA rate discharges, that is a correct value.

MS. MURRAY: Are you saying for the last 13 years?

MR. DODSON: Yes, ma'am, 1981 to 1994. That was the latest data I had when I was doing this evaluation.

MR. MURRAY: This is an overhead of Figure 10 from DFG Exhibit 3. According to this exhibit in the last 12 years -- you used 13, so we are close -- how many years does this figure show a combined surface and base flow amount over 20,000. You said 24-, over 20,000. Just count back bars from the end.

MR. DODSON: You are using a different set of records

than I used. As I said, my database was 1981 to 1994. And during that period of time, if you go back to 1981, there were one, two, three, four periods that exceeded 20,000 acre-feet.

MS. MURRAY: And using the last -- would you agree that this chart shows a downward trend in the base flow?

MR. DODSON: I've acknowledged that in my testimony, yes, ma'am.

MS. MURRAY: And according to this graph, Todd Engineers, in the last 12 years only one year is above 20,000 acres, in the combined, not just the base flow, but combined?

MR. DODSON: That is accurate.

MS. MURRAY: Lisa, again, in Paragraph 6, Subparagraph 16, you state VVWRA and the city will acquire and set aside 18 acres of the tortoise-ground squirrel habitat to compensate for disturbance and temporal loss of tortoise habitat along the pipeline route in an endowment of $10,000; is that correct?

MS. KEGARICE: Yes.

MS. MURRAY: Do you know if this offer has formally been transmitted to the Department of Fish and Game or the U.S. Fish and Wildlife Service?

MS. KEGARICE: I do not know.

MR. DODSON: I do. And the answer is no because it has

been superseded. As part of our application on the 2081, we have applied to cover all three of our projects, again trying to avoid piecemeal applications which consisted of the percolation ponds, the compost facility and the pipelines. And what we have proposed is a greater than the three to one mitigation ratio with an endowment, I believe, that is on the order of a hundred thousand dollars after talking with your DFG staff.

That project was subsumed in that and here's the rationale for it. As I indicated before and as Lisa indicated, there were no tortoises in the pipeline alignment. We believe that if we constructed during the winter that we would only have a temporal loss of habitat and could revegetate that habitat and bring it back, and we were looking at a two to one mitigation ratio with a low endowment at that particular point in time. When we combined all three, when you look at the whole of that area, we do have tortoises, we will have a take. We will have to handle the animals to move them. We offered to pull three to one mitigation with a different endowment which encompassed the pipeline acreage.

MS. MURRAY: Last question, I believe.

MR. DODSON: By the way, in fact it is a greater than three to one ratio. We are purchasing 320 acres and there is only 98 acres of total disturbance in what I just

mentioned to you, the three projects, which would be a three to one ratio of 294 acres.

MS. MURRAY: Mr. Dodson, in your oral testimony today you referred to Attachment 6 to your change petition prepared by Frank --

MR. DODSON: Hovor.

MS. MURRAY: Hovor & Associates, as part of the basis of your opinion and your testimony?

MR. DODSON: Yes, ma'am.

MS. MURRAY: On Page 20 of that report, isn't it true that Mr. Hovor concludes that changes in the amounts or chemistry of treatment plant outflows have the potential to result in impacts to aquatic invertebrates, fish and amphibians and to alter habitat and food chain relationships involving these organisms?

MR. DODSON: The answer is yes. He provided it at a generic level for Victor Valley Waste Water Reclamation Authority. That's what led us to carefully examine these issues to determine whether we thought there would be sufficient flows remaining in the river, not just be the VVWRA flows, but total flows to be able to sustain those habitats. With specific evaluation we came to the conclusion that has been presented here today on our behalf.

MS. MURRAY: You disagree with Mr. Hovor?

MR. DODSON: No, ma'am. Mr. Hovor was dealing with the

generic set of conditions. We had a specific project that deals with 1,680 acre-feet, and we concluded that those things will not happen.

MS. MURRAY: You say he was dealing with specific -- not dealing with specifics but he was evaluating the biological constraints for the Victor Valley water treatment plant?

MR. DODSON: That is correct. What I was saying to you was he is not dealing with the specific project that he was evaluating. He was looking at what were the types of issues that would confront the agency, the Authority in this case, if there was water that was removed. As we said, we evaluated that specific issue.

MS. MURRAY: Mr. Dodson, you testified that shallow groundwater occurring north of the plant near Bryman Road, you testified, is not supplied by surface water; is that correct?

MR. DODSON: No, ma'am, I did not. I said that is not the only supply to that groundwater because there is groundwater movement that also occurs and recharge that comes from storm flows as well as this surface flow that is annual, that is VVWRA flows, plus base flows, that during the -- many months of the year do actually pass all the way down through the VVWRA plant and beyond.

MS. MURRAY: Storm flows.

MR. DODSON: Base flows, storm flows, VVWRA flows, plus whatever groundwater is moving down the channel, down the alluvial aquifer are all contributing to groundwater in any given time at any given location.

MS. MURRAY: In addition to surface flow?

MR. DODSON: Well, surface flows I'm breaking into components. But surface flows plus the groundwater flows, yes, ma'am.

MS. MURRAY: Okay.

H.O. BAGGETT: Thank you.

Now it is 25 till five.

Mr. Ledford, how long do you think?

MR. LEDFORD: I am going to go to five.

H.O. BAGGETT: If you have a full hour or two, what I would do is ask the other parties if any of them think they can do it before five, just so we don't break midway through. That is my preference.

What do you think?

MR. LEDFORD: Would be longer.

H.O. BAGGETT: Mr. Kidman, you want to wait until tomorrow and do it all at once, I assume.

MR. KIDMAN: Well, I think that I have a chance in half an hour to do everything I need to do with this panel.

H.O. BAGGETT: If you do, I'd just as soon as -- that way give you full -- you think you are going to go longer?

Sure.

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CROSS-EXAMINATION OF SECOND PANEL

VICTOR VALLEY WATER RECLAMATION AUTHORITY

BY SOUTHERN CALIFORNIA WATER COMPANY & CITY OF BARSTOW

BY MR. KIDMAN

MR. KIDMAN: Thank you, Mr. Chairman. My name is Art Kidman. I am legal counsel for Southern California Water Company and the City of Barstow in these proceedings. My first questions are for Mr. Carlson.

Mr. Carlson, is it your opinion that in the area that you studied that there is a continuity between the surface water flows and the groundwater?

MR. CARLSON: Yes. That was in my testimony, that there is a continuity.

MR. KIDMAN: By that, that doesn't mean that they are touching in all places; is that right?

MR. CARLSON: It appears that they are not touching in all places. In some places they are touching, coupled and decoupled.

MR. KIDMAN: There is a relationship between the surface water flows and the groundwater in the area that you studied?

MR. CARLSON: Yes. Most of the area the surface water recharges the groundwater.

MR. KIDMAN: Now, are you familiar with the concept of the Alto subarea, you know what that is about?

MR. CARLSON: I know that there is an Alto subarea. I don't know the concept about -- there are probably concepts, but I know there is an Alto subarea.

MR. KIDMAN: Have you reviewed any of the literature relative to the hydrology of the Mojave Basin?

MR. CARLSON: I have reviewed some of the literature.

MR. KIDMAN: Some of it refers to the upper area and some refers to the Alto area and staff report referred to as the -- in the hearing report it is referred to as Alto area. Is that upstream or downstream from the VVWRA plant, the Alto subarea?

MR. CARLSON: The Alto subarea?

MR. KIDMAN: Yes.

MR. CARLSON: The Alto subarea is a larger area. The VVWRA plant I believe is in part of it and the lower part is, I think, referred to as a Transition Zone.

MR. KIDMAN: Thank you.

And the Centro subarea is upstream or downstream from the VVWRA plant?

MR. CARLSON: I believe it is downstream.

MR. KIDMAN: And the Transition Zone is that inbetween Alto and Centro?

MR. CARLSON: Yes, it is. I think that -- I believe

the transition is part of the Alto.

MR. KIDMAN: What is the boundary line between Alto and Centro?

MR. CARLSON: I believe it's the Helendale Fault.

MR. KIDMAN: I wonder if somebody can put up one of the maps, maybe refers to that. There was a map earlier.

MR. DODSON: One moment please.

MR. KIDMAN: Just for the purpose of reorienting because a lot of this seems like it's a gotten a little bit tedious.

Can you point to where the Helendale Fault is?

MR. CARLSON: Yes, I can. Right here.

MR. KIDMAN: That is generally the boundary between the Alto area and the Centro area; is that right?

MR. CARLSON: Well, as depicted on that map and as I understand it is, yes.

MR. KIDMAN: Do you know where the Lower Narrows is?

MR. CARLSON: Yes, I do.

MR. KIDMAN: Can you point to that on the map?

What is that, about ten or 12 miles in between the Helendale Fault and Lower Narrows?

MR. CARLSON: I think it is a little bit more than that, maybe 13, but I am not sure. I can't measure it right now.

MR. KIDMAN: The VVWRA plant is located how far

downstream from the Lower Narrows?

MR. CARLSON: It is located about four miles downstream, I believe.

MR. KIDMAN: It's about, what, a third of the way through the Transition Zone?

MR. CARLSON: I would have to check my maps. I would say --

MR. KIDMAN: It's four miles and you said it is about 13, so it is about a third of the way through; is that right?

MR. CARLSON: I think it is a longer reach between the Lower Narrows and Helendale. I think Helendale is 13 from the treatment plant. I would have to get out and measure these things.

MR. KIDMAN: So maybe it is a quarter of the way?

MR. CARLSON: Okay.

MR. KIDMAN: Now you've described this stream in a portion of the Transition Zone. You studied the stream in a portion of the Transition Zone; is that right?

MR. CARLSON: That's correct.

MR. KIDMAN: And the -- I understood your testimony in these terms, and let me just ask: The Mojave River surface flows in this area would be described as a losing stream rather than as a gaining stream in relationship to the groundwater?

MR. CARLSON: Throughout almost all of the reach it would be described as a losing stream in the sense that surface water would enter the groundwater.

MR. KIDMAN: Have you in your review of the literature and materials in preparation for your testimony ever heard of the concept of the water bridge?

MR. CARLSON: No, I have not.

MR. KIDMAN: Let's just suppose for a moment that there is a requirement in the judgment that a certain amount of water is delivered from the Alto subarea to the Centro subarea. Do you know where that water gets measured?

MR. CARLSON: No, I do not.

MR. KIDMAN: Let's assume then that water gets measured at the Lower Narrows, and let's assume that there is a requirement to deliver 23,000 acre-feet of base flow annually across the Helendale Fault, and assume that the concept of the water bridge means that there has to be enough water maintained in the groundwater in that area so that the surface and subsurface flow of the Mojave River delivers water across the Helendale Fault.

So with those assumptions in place, I want to ask you if the proposal to change the amount of water that is discharged from the VVWRA plant might have an affect on what I just described?

MR. CARLSON: It might have an affect, yes.

MR. KIDMAN: Is it possible, since this is a losing stream, that if less water is discharged by VVWRA in about a quarter of the way through the Transition Zone that that is going to have an affect on the amount of water that otherwise would reach the Helendale Fault?

MR. CARLSON: Unless that water were made up somewhere else, in a hydraulic connection.

MR. KIDMAN: Just answer the question. If under these assumptions you have a reduction in the amount of water that VVWRA is discharging and nothing else, is it going to reduce the water that gets to the Helendale Fault?

MR. CARLSON: If there are -- if that is that sole change in the component of the water budget, then that is true.

MR. KIDMAN: Now, can you point out on that map where Bryman Road is?

MR. CARLSON: Right about there.

MR. KIDMAN: That is roughly about halfway through the Transition Zone?

MR. CARLSON: I guess it is about halfway.

MR. KIDMAN: Did you study the reach of Transition Zone between Bryman Road and the Helendale Fault?

MR. CARLSON: We studied it only to the extent of collecting some water levels minus one water level that I saw today.

MR. KIDMAN: You did not form any opinion about whether or not this proposal to take water away from the river into this project is going to have an affect on the water that passes the Helendale Fault?

MR. CARLSON: We did not evaluate any water budget changes at the Helendale Fault, no.

MR. KIDMAN: You did not form any opinions about how much water it would take to maintain 23,000 acre-feet of base flow from the Alto area into the Centro area; is that right?

MR. CARLSON: I did not do an independent water budget evaluation of the effects at the Helendale Fault.

MR. KIDMAN: Thank you.

Now, you did testify, and I refer you to Paragraph 15 on Page 4 of your testimony, that there will be no increase in consumptive use of water as result of offsetting reduction of groundwater pumping at the golf course. I believe you already testified to that here orally today.

MR. CARLSON: That is correct.

MR. KIDMAN: You believe there is no consumptive use increase as a result of this project?

MR. CARLSON: That is correct, assuming it is a replacement of the existing irrigation use.

MR. KIDMAN: Did you do any study to determine or do you have any independent knowledge of whether or not the

water that is currently going to that golf course or which would go to the golf course in the absence of this project is actually going to remain in the ground? Do you know that?

MR. CARLSON: I believe that the location of those wells, I have been told, I have not investigated the exact connection, but I understand that the wells that supply the golf course are located in the city of Adelanto well field which is below the wells -- that is true, I don't have independent knowledge of that.

MR. KIDMAN: So you don't know if Adelanto is going to take the water that is saved out of those wells and use it for something else?

MR. CARLSON: They might, but they would if they are --

MR. KIDMAN: You either know it or you don't know.

MR. CARLSON: Rephrase the question.

MR. KIDMAN: Do you know whether Adelanto is going to turn off its wells and reduce its pumping as result of this project?

MR. CARLSON: If they are not supplying water to the golf course and instead using reclaimed water, then there will be a reduction of groundwater pumping.

MR. KIDMAN: Did you ask anybody at Adelanto what they might do with the water?

MR. CARLSON: That is a different question. The

question is, what I am looking at is the change for this particular project.

MR. KIDMAN: You are just making the assumption that if this water is replaced with water from VVWRA, that is if the well water that's currently going there from Adelanto to the golf course is replaced that there won't be a net increase in consumptive use?

MR. CARLSON: There is not going to be an increase in consumptive use at the golf course if one source of water is replaced by another.

MR. KIDMAN: Your testimony wasn't about consumptive use at the golf course; it was about there won't be any increase coming out of the system, meaning the whole Mojave Basin system. Is that not right? Tell me if it is not right and we will move on.

MR. CARLSON: You have to refer me to where I said of the whole system.

MR. KIDMAN: There would be no increase in consumptive use of waters as a result of offsetting reduction of groundwater pumping at the golf course is what you said. You don't know. I am just asking you that question. You don't know if this water that was being used at the golf course is going to be used somewhere else?

MR. CARLSON: It might be.

MR. KIDMAN: Okay, it might be.

But we do know that it won't be in the Transition Zone anymore, will it? We know that as a fact?

MR. CARLSON: I don't know.

MR. KIDMAN: If this water is diverted, water that is currently being discharged into the Transition Zone is diverted, so be used at this golf course, it is not going to be in the Transition Zone anymore, is it?

MR. CARLSON: That component would not be.

MR. KIDMAN: Every acre-foot that comes out of the stream at that point or doesn't go into that stream at that point is going to be used somewhere else. It is not going to be there anymore.

H.O. BAGGETT: Is that a question?

MR. KIDMAN: I am asking him that. Is that true or not?

MR. CARLSON: The removal of a quantity of water from the discharge at the treatment plant would result in a reduction in that component of groundwater recharge. However, I believe that that reduction in groundwater recharge would be offset by a reduction in pumping at wells that attribute water to part of the subsurface flow of groundwater in the transition, Transition Zone.

I believe it is a net of zero to the groundwater. It would be a change of location, but the net would be zero.

MR. KIDMAN: If you look at the whole water cycle of

the whole world, the net is zero, if you look at a big enough piece; isn't that right?

MR. CARLSON: Yes.

MR. KIDMAN: Okay. So as far as the water that is in the Transition Zone, where it's dealing with the obligations of the Alto subarea owes to the Centro subarea, there is a net decrease as a result of this project?

MR. CARLSON: I don't believe that that is true. I believe it is a net of zero.

MR. KIDMAN: You have 1,670 acre-feet per year being moved approximately three miles upstream and one mile laterally away from the stream. That water is no longer in the Transition Zone at that location?

MR. CARLSON: But the source of the previous or the origin of the previous source is in the city of Adelanto well field below the Lower Narrows that would not be pumped. So that would be a reduction in the discharge of groundwater there. So the net in that aquifer is going to be zero.

MR. KIDMAN: You don't have any idea how long it is going to take for that water that gets moved three miles up and one mile over, going to take to get back to the Transition Zone where it started?

MR. CARLSON: I don't know what you mean by one mile up and three miles over.

MR. KIDMAN: I said three miles upstream. Isn't that

about how far -- there was another map that they have that showed it.

MR. DODSON: Which maps?

MR. KIDMAN: It was a project location map.

MR. DODSON: Dan, you've got that in your package. We have one, too, somewhere.

H.O. BAGGETT: Talking about the location of the golf course?

MR. DODSON: Is this the one you are looking for, sir?

MR. KIDMAN: Thank you. That is good.

So the VVWRA plant is right next to the river; is that right?

MR. CARLSON: That's correct.

MR. KIDMAN: And the golf course at the other end is a mile or a mile and a half away from the river; is that right?

MR. CARLSON: That's correct.

MR. KIDMAN: And it is about three miles from the plant to the golf course?

MR. CARLSON: That's correct.

MR. KIDMAN: So we are going to be three miles upstream and one mile away from the stream.

MR. CARLSON: As I understand it, the source, the current source of water for that golf course is a well field that is down at this area.

MR. KIDMAN: Nevertheless, water that is in the

Transition Zone now or will be if this project is approved won't be in the stream at the location that it's at now if it is approved?

MR. CARLSON: It would be in a different location, that's true.

MR. KIDMAN: It would be roughly three miles south and one mile, a mile and a half, west of where it was before?

MR. CARLSON: No, that is not true. It would be in the city of Adelanto well field, which is not in the same location as the golf course.

MR. KIDMAN: Mr. Dodson, I would like you to go through your arithmetic at this time because I didn't quite follow this business about the worst year we ever had was 13,000 of base flow at some location.

MR. DODSON: No, sir.

MR. KIDMAN: I will ask the question and you get to answer it.

I understood 13,000, and I understood you to say that if there was a requirement of 4,000 for the riparian vegetation, that there was still plenty of water left in base flow and, therefore, this project wasn't going to have any impact whatsoever on the riparian vegetation.

Is that a rough approximation of what you said?

MR. DODSON: No, sir.

MR. KIDMAN: Let's just assume that it was. I want to

know how that -- let me ask you another question. It's foundation.

Would you consider cutting off the recharge of the groundwater basin to be an environmental impact? Let me ask it a different way.

MR. DODSON: As absurd as it sounds, yes, it would be.

MR. KIDMAN: If you're reducing the amount of water available to recharge in the groundwater basin, would that be an environmental impact?

MR. DODSON: Please repeat that question.

MR. KIDMAN: If the amount of water -- in the abstract, a groundwater basin gets a certain amount of recharge at time A. And time B if that recharge is reduced is that an environmental impact?

MR. DODSON: If there is net reduction, the answer would be yes.

MR. KIDMAN: Are you aware -- I am just going to ask you if you are aware -- there is a requirement in the Mojave River judgment to maintain 23,000 acre-feet of water available to crops in the Alto area and to the Centro area to Helendale Fault?

MR. DODSON: I am aware of it.

MR. KIDMAN: So if there was a reduction or if there was some project that made it more difficult or impossible to maintain at 23,000 acre-feet, would that be an

environmental impact, in the abstract?

MR. DODSON: I am not comfortable dealing with your hypothetical. I will answer it and say, yes, but I don't think it applies.

MR. KIDMAN: Thank you.

H.O. BAGGETT: He answered the question.

MR. KIDMAN: I appreciate that.

And if there is a 23,000 acre-feet per year base flow obligation at Helendale Fault and there is 4,000 acre-feet of riparian vegetation consumption and this is a losing stream, and the point of measurement for getting the water, a point of measurement for the water is at the Lower Narrows, that is why we call it the Transition Zone. I will give you that. Start over again.

If there is a 23,000 acre-feet requirement, 4,000 acre-feet annually of riparian vegetation consumption and there is some amount of loss in moving from the stream to the groundwater, isn't it likely that one of the -- there is going to be some impact on the groundwater recharge component of this if we take one acre-foot of water out of the Transition Zone at the VVWRA plant?

MR. DODSON: In my opinion, the way you structured the question, no.

MR. KIDMAN: What if it was 1,670 acre-feet that was being taken out?

MR. DODSON: My answer is still no.

MR. KIDMAN: What if it is 8,000 acre-feet being taken out annually?

MR. DODSON: As long as 8,000 acre-feet is left in the ground, no, not pumped.

MR. KIDMAN: I didn't ask that. You had a stream here that is losing, the surface stream that is feeding the groundwater. You've got riparian vegetation consumption, taking water out of that. There is a requirement to get 23,000 acre-feet of water annually through there.

MR. DODSON: You're asking me to give you a break point as to what would be --

MR. KIDMAN: I am asking you to answer the question.

H.O. BAGGETT: Yes or no. If you can't answer, say so.

MR. DODSON: I can't answer the question the way you structured, for the 8,000 acre-feet.

H.O. BAGGETT: Just answer.

MR. KIDMAN: And if it was 18,000 projected in the future, recycled water going to be available out of this plant. I don't know if it is 2,000 acre-feet per year that the riparian vegetation uses or if it is 4,000 or if it is 6,000 because I have heard all three numbers from you.

But let's just say that it is 2,000. So of the 18,000 that is projected to be used there some day in the future, if all of it but 2,000 is taken out, meaning that 16,000 of

it is taken and used somewhere else, away from the Transition Zone, is there going to be an environmental affect?

MR. DODSON: In the way you've characterized it, yes.

MR. KIDMAN: Thank you.

I just have a couple of questions for Mr. MacLaggan.

MR. MACLAGGAN: MacLaggan.

MR. KIDMAN: Then that will be done.

H.O. BAGGETT: Great.

MR. KIDMAN: Sorry for holding over a couple minutes here.

H.O. BAGGETT: No problem.

MR. KIDMAN: Would you -- there was some testimony earlier today, and I am just going to ask you since you know all about this 13550 section. Mr. Hill, I believe it was, testified that recharge of the Centro subarea from the Transition Zone is a beneficial use of water.

Do you believe that groundwater recharge is a beneficial use of water?

MR. MACLAGGAN: Assuming that the recharge water is going to go on to serve subsequent beneficial use, yes.

MR. KIDMAN: Let me ask basically the same question with respect to the growth and preservation of habitat. Is that a beneficial use of water?

MR. MACLAGGAN: Generally, yes.

MR. KIDMAN: In the abstract?

MR. MACLAGGAN: Generally, yes.

MR. KIDMAN: I'm going to ask you this. If all of the water that comes out of the VVWRA plant today goes to either recharge the groundwater, as Mr. Carlson said it is a losing stream so it is recharging in the Transition Zone, so if it is going there. Another second place that it is going is to grow riparian vegetation. And third place that hopefully it is going is spilling over the lip into the Centro Basin and providing recharge there.

If all that water today is doing one of those three things, I am going to ask you this, is there water available, is there recycled water available within the meaning of Water Code Section 13550?

MR. MACLAGGAN: The definition of availability of recycled water is that it has been -- is product as a result of the treatment of waste and is suitable to serve a beneficial use. That is the definition of Water Code Section 13505. And the treatment plant produces a product as a result of treatment of waste and is suitable to serve a subsequent beneficial use, I would say it is available.

MR. KIDMAN: Are you aware that the State Water Resources Control Board has declared the Mojave River to be a fully appropriated stream system?

MR. MACLAGGAN: I understand that.

MR. KIDMAN: And that means that there is no water available for appropriation here in that system; is that right?

MR. MACLAGGAN: I understand that.

MR. KIDMAN: So, this water that comes out of the VVWRA plant today is already being used, and if it's already being used is it available?

MR. MACLAGGAN: You are saying that the water that is coming out of the plant has been appropriated?

MR. KIDMAN: I am saying that the system is fully appropriated, and this water is being used by riparian vegetation, by recharge of the groundwater in Transition Zone and again hopefully spilling over the lip of the Helendale Fault in the Centro area. I don't know where else it is going today. All of those are beneficial uses.

If the water is already being beneficially used for those three purposes, is there any water available?

MR. MACLAGGAN: I think that is a question for this proceeding. I am not in a position to answer it, and that is why we are having this proceeding and the hearing.

It is ultimately the responsibility of the State Board to determine whether or not there is water available.

MR. KIDMAN: You don't have an opinion on that?

MR. MACLAGGAN: No, I do not.

MR. KIDMAN: That is all the questions I have.

H.O. BAGGETT: Thank you.

Mr. Hill will be here in the morning at nine?

MR. HITCHINGS: Yes, he will. He is flying up in the morning on a 5:30 flight. Hopefully, he won't be too far.

H.O. BAGGETT: Well, assuming he is here at nine and doesn't get delayed by the fog, we will begin and finish up with Mr. Kidman's cross-examination of your prior panel. Then we will come back and take up Mr. Ledford and Mr. Yamamoto.

With that we are recessed until tomorrow at 9:00.

(Hearing adjourned at 5:05 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 6 through 223 herein constitute a complete, true and correct record of the proceedings.

IN WITNESS WHEREOF, I have subscribed this certificate at Sacramento, California, on this 29th day of December 2000.

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ESTHER F. WIATRE
CSR NO. 1564