

County of Maui Water  
Supply

BOARD OF WATER SUPPLY

COUNTY OF MAUI

COMMITTEE OF THE WHOLE MEETING

Held at the Kahului Shopping Center, Kaahumanu Avenue,  
Kahului, Maui, Hawaii, commencing at 9:00 a.m. on  
April 23rd, 2002.

REPORTED BY: LYNANN NICELY, RPR/RMR/CSR #354

IWADO COURT REPORTERS, INC.

A P P E A R A N C E S

COMMITTEE MEMBERS:

Peter Rice, Chairman

Kent Hiranaga

Jonathan Starr

Michael Victorino

Ginnie Parsons

Howard Nakamura

STAFF PRESENT:

David Craddick, Director

Ed Kushi, Corporation Counsel

Mike Quinn

Herb Kogasaka

Ellen Kraftsow

Fran Nago, Board Secretary

CHAIRMAN RICE: Call to order the Committee of the Whole of the Board of Water Supply, Maui County. We are in the Kahului Shopping Center. It's 9 AM on Tuesday, April 23rd, and present -- I would like to introduce new board member Virginia Parsons, welcome. Howard Nakamura, Kent Hiranaga, Jonathan Starr and myself, Peter Rice.

Okay. We are here today to discuss -- to have a discussion regarding Central Maui source

availability. And I would like us to spend the next two hours talking about it. I don't know that we need to -- we're not here necessarily to make a decision today and I anticipate we may need more meetings of the Committee of the Whole as we discuss this issue. It's an important issue.

Mr. Craddick, at our last meeting -- welcome, Mr. Victorino. Let me take a minute and introduce Mr. Victorino, our other new member of the Board of Water Supply.

MR. VICTORINO: Thank you, Mr. Rice.

CHAIRMAN RICE: At the last meeting, we spoke to the director about notice that he had given regarding information sessions and I believe the director would like to provide to the board some information that he thought was appropriate for those sessions, so we will hear that later in the meeting.

At this time I would like to ask the members of the public if there is any testimony regarding this issue at this time. And if so, we can start from the

right to the left. And Mr. Williamson, I think you're first.

MR. SHEPHERD: Mr. Chairman, as a matter of procedure, don't you think you might have this thing backwards? The proponents of this particular meeting should make their presentation and then we, the public out here, should have their time to say something. Because we don't know what they're up to.

CHAIRMAN RICE: This is a general discussion meeting. We'll give you a chance to say something again, if you would like, after Mr. Craddick makes his presentation.

MR. SHEPHERD: I still think you've got it ass backwards.

CHAIRMAN RICE: Well, normally at our meetings in our normal procedure is to have testimony from the public first. So there may be some people who want to give testimony and leave, so we will continue with

that procedure. Like I said, we will give you a chance to speak later. We're not here to stifle anybody's opinion. We want a good discussion.

Mr. Williamson?

MR. WILLIAMSON: Good morning. My name is Jim Williamson. I hope you can hear me. I represent the Maui Meadows Homeowners Association. As you know, we are the petitioner to the State Water Commission to designate the Iao Aquifer as a state water management area. We agree with the United States Geological Survey that there is a serious overdrafting of the Iao Aquifer. All the observation wells in the aquifer show depleting water levels since 1990. At the same time, the altitude of the transition zone between the saltwater and the fresh water lenses continue to rise at a rate of about 8 to 10 feet per year. This aquifer is in trouble and the only solution is to reduce the demand on it by immediately developing an independent water source.

We are not privy to the details of Director Craddick's plan for the development of new sources for

the water supply of Central and South Maui. However, if the immediate plan is to continue drilling wells in the immediate area of the North Waihee wells, including [inaudible], it's a bummer. It has not and will not relieve the Iao Aquifer.

There is enough evidence that North Waihee and Iao are closely hydraulically connected and the new wells are simply an extension of the Iao well system. They cannot be counted on to reduce the sustainable yield deficit. If production wells are to be drilled in the North Waihee aquifer, they must be located as close to Kahakuloa as possible, at least two to three miles from the [inaudible] wellfield. This is a potential short-term solution.

A specific plan should be prepared by the water department for developing long-term solutions. What comes to mind is the East Maui water source and potentially building wells in the C. Brewer land which is up for sale. Also, of course there is always the alternative, desalinization.

The point is that the water department never

has, but must, come to grips with this prime job of planning for its resources. It can't continue the procrastination of the past while at the same time water meters are being issued at break neck speed. It has to stop.

With respect to water quality in the Iao Aquifer wells, Mokuahu and Waiehu Heights have high chloride concentrations. The Department of Health allowable limit for chlorides is 250 milligrams per liter. The concentration in pump number 2 at Mokuahu reached 450 milligrams per liter and it has been shut down for some time. Chloride levels in pumps 1 and 3 have occasionally reached 240 to 250 milligrams per liter. Saltwater intrusion at Waiehu pump 1 has increased to 193 milligrams per liter, according to the latest USGS data report.

Although these wellfields have abnormally high chloride levels, the water department supplies water to its customers by diluting the more salty water with the fresher sources, to result in a very acceptable water quality product. However, this dilution procedure is considered to be a questionable water

supply practice. What has to be done is to stop overpumping the aquifer so that the [inaudible] at Mokuahau and Waiehu Heights is eliminated. Otherwise pretty soon other wells will also suffer saltwater intrusion. Thank you.

MR. RICE: Thank you, Mr. Williamson.

Are there any questions by board members of Mr. Williamson? Mr. Nakamura.

MR. NAKAMURA: One question, Mr. Williamson. Thank you for your interest. I got a little distracted when you had recommendation for a short-term solution. I'm sorry, what was that?

MR. WILLIAMSON: Short-term solution was that if we have a drill in the North Waihee aquifer area with the well to be removed some two to three miles from the present wellfield so the influence of those wells would not be felt at Iao.

MR. NAKAMURA: Thank you.

CHAIRMAN RICE: Thank you, Mr. Williamson. Mr. Sturtz?

MR. STURTZ: My name is Ron Sturtz and I'm president of Maui Tomorrow and we consider ourselves a resource to the board as a community and we're here to help you make informed and responsible decisions about managing water resources.

Consistent with that, I would like to hand out to the board members a couple maps that I just received myself moments ago. As you know, we have our Ka Waiola water research project going on and it's constantly producing updated information which we provide to everybody that's involved. And so I have here two sets of maps. This will give you a better visual feel for precisely the wells that we're talking about and the most current information on withdrawal from those wells. You can keep these.

David has some [inaudible]. I can't speak to the actual data gathering aspects here. This is being done by our staff. And so if you want to get into

specific numbers. My goal again is to provide you with resource that can help you conceptualize what we're talking about here.

The question seemed to be whether or not drilling in the Waihee aquifer impacts on the Iao Aquifer and the specific locations of the wells as they're currently contemplated, whether they draw upon a separate distinct aquifer or whether they be drawn out from the Iao Aquifer. The other questions are how much water is it realistic to withdraw from Waihee aquifer? What is its actual sustainable capacity? Are we exceeding that or not already? These are all questions which you have to ask yourselves as we go through this process because they will influence [inaudible] your decision as well as whether we actually provide optimal resource distribution here or whether we end up overdrawing it.

There appears to be -- there has been testimony from John Mink, who this board relies on, ostensibly, at the Board of Water Supply meeting in October that based upon the current configuration of

the wells in the Waihee aquifer, he felt that anything more than 4 million gallons a day was unwise, congregating all the areas of drawing so close to the Iao Aquifer.

At present I believe that the numbers of current draw exceed 5 million gallons a day, closer to 5.3 million gallons a day. So we're already overdrawing this particular area.

Mr. Williamson suggested the possibility that it would be more prudent to spread out the pumping much more to the north. This aquifer on the map spreads out over six miles and a suggestion that you spread pumping out over one area [inaudible] access to the water resources that are there. And I think that may be a prudent thing to consider.

There is also the question of how much interrelationship there is between the aquifers and there is differing opinions about that. Mr. Craddick points out that this is cap rock and there is different levels of filtration and seepage that goes on. I don't know if we have an exact number, but it's pretty basic common sense that the closer you are to

another location, the more there will be a connection; and the further away you are, the lesser will be that connection. So it doesn't take a rocket scientist to figure out if you put all your wells right on the edge of the Iao, you're probably drawing water from the Iao.

The questions which I guess come up are what's going to be the request of the board for financing the resources to fund further development and the logical question is will these resources be used to improve transmission lines between these aquifers or will they be used to drill new wells or will they be used to bring existing wells on line [inaudible] produce more water or will they facilitate the existing water where it is now.

We're suggesting that you look carefully at whether or not it's possible to prudently take more water from the Waihee aquifer at this point in time. And we suggest there is a lot of information that indicates perhaps it's not. And if you look at John Mink on perhaps one side and Bill Meyer on the other in terms of the optimist and pessimist, they both

basically agree more than 4 million gallons is unwise right now the way things are currently structured. And we're already exceeding that.

So these are all important questions to look at and these maps will help you to visualize where these are and what we're talking about and I'm sure Mr. Craddick will have some numbers which might or might not alter these numbers. I think these are pretty accurate overall and suggest that you [inaudible] to look at. So I look forward to listening to what else you have to say this morning and [inaudible].

CHAIRMAN RICE: Thank you, Ron. Are there any questions? Yes, Ginnie.

MS. PARSONS: Mr. Sturtz, thank you very much, could you qualify for the record your educational background and your professional history?

MR. STURTZ: I can. I've been practicing law for 30 years. The last several years it's been in the

area of environmental law. I'm the president of Maui Tomorrow. We are involved in land use planning, community design, responsible growth. One of the factors that is taken into consideration is water resources because it affects almost everything.

I've been on the water board tours of the various facilities. I've met individually with board members. I've worked with Ka Waiola project group. And my job as president is sort of to know a little bit about everything that's going on and water is a big part of the everything. So I've been educating myself through the years, meeting with the board, meeting with -- being out on the field and educating myself about what the issues are and how best to approach them.

I view myself as a resource. I'm not a hydrologist per se. [Inaudible] basic information. Most of you aren't either. So we often put on our thinking caps and try to assess what makes sense. Most of these things can be clarified and in fact our Ka Waiola project is here to clarify the numbers. We

have a whole -- we've had decades of history where nobody knows really how much water is being taken from where. There is all these independent resources and certain people report and certain companies that don't report. So we've been trying to gather the information for your benefit, for the public's benefit, for the developer's benefit, for everyone's benefit to see just what we have and then so we can make intelligent choices as to what to do with it.

MS. PARSONS: Where have you practiced environmental law?

MR. STURTZ: Here in the sense that --

MS. PARSONS: You're licensed in the state of --

MR. STURTZ: No, I'm not licensed in the state, so --

MS. PARSONS: Where are you licensed?

MR. STURTZ: I'm licensed in the state of

California and I practice all over the world since I practice international law.

MS. PARSONS: Okay.

MR. STURTZ: I'm not relying on my legal credentials to provide this information to you. I'm relying on my background, my information, my intelligence, my sincere concern for these issues and the indications I've received in this process over the years.

MS. PARSONS: Environmental law is a vast subject. That's why when you said you were an environmental --

MR. STURTZ: It is. I don't claim special expertise in the area of water other than I've given a great deal of attention to it on this island.

MS. PARSONS: It has to do a lot with the environment.

MR. STURTZ: It truly does. Thank you for your questions.

CHAIRMAN RICE: Any other questions for

Mr. Sturtz? Thank you, Ron. Oh, Mr. Starr?

MR. STARR: I want to have you search back your recollection of the meetings where Mr. Mink and I believe Mr. Meyer and I think USGS also commented on the North Waihee aquifer. And I know the sustainable yield of the entire aquifer is set at 8 million gallons. But you mentioned that we were told to limit our take to 4 million gallons or less in the area that's been developed. Do you recollect about that? I believe there is a stream, a deep gulch called Makamakaole and I'm wondering if you have any other recollections about their testimony on that.

MR. STURTZ: My recollection is merged both public testimony and private discussions I've had with them over lunch and other meetings. There is a question of optimal use and functional capacity. The

consensus as I heard it [inaudible] was that both John and Bill agreed that if you're going to aggregate all of the well heads over on the south end of the aquifer, 4 million gallons was sort of a maximum figure that should be looked at. It was remarkable to me they both agreed on something and that was the number they chose.

The 8 million gallons for the entire aquifer was also by an older request analysis process -- I forget the exact term.

MR. STARR: RAM, I believe.

MR. STURTZ: Yeah, and the RAM process. And I understand there are better mathematical models available now and perhaps the board might want to look at that. I believe the USGS is offering to do a mathematical model for the board at a cost of somewhere between \$672,000 which could provide -- if you're talking about investing four or five million in developing this area, that's not a lot of money to get

more accurate information. So, you know, I look at that as a possible additional resource of clear information. Did I answer your question?

MR. STARR: Yes.

CHAIRMAN RICE: Any other questions for Mr. Sturtz? Thank you, Ron. Anyone else? Glenn, do you want to testify now or you want to wait?

MR. SHEPHERD: I'll wait.

CHAIRMAN NAKAMURA: Okay. Anyone else at this point, public testimony? Okay, Mr. Craddick, you were wanting to enlighten the board as to your feelings on educating the public, I believe.

MR. CRADDICK: Okay. We've listened to several speakers and -- about Iao Aquifer that have already been mentioned and subsequent reports indicated that the speakers may not have been in sync with each other. But even today here, I think finally

they're starting to realize that all the speakers are really saying the same thing. And after a short overview, I believe you'll be able to determine for yourself which is correct or whether they're all correct, just talking about different things.

When somebody says [inaudible], I don't know if it conjures up any image in your mind, but I have a little demonstration here that I hope gets this very clear in your mind.

Now, first of all, let me ask if everybody understands that when one object floats on another, it occurs because one item is liquid and the other is a solid which after displacing its weight there is still some of the solid volume above the level of the liquid. And to make this comment relevant to today's discussion, I'm going to take a piece of ice and stick it in here. It will crack when it goes in there. I don't know. We'll try it. Do you see what's going on there? Now, ice has a somewhat unique property from metals in that metal, when you cool it down, it contracts. Ice, when you cool it down, it expands.

So basically this ice ends up being less dense than the water that it's sitting in. You can see how much of it is below the water level there. I measured this before I put the ice in, it was one and three-quarter inches from the top here. It's now about one and a quarter inches from the top. So it came out about a half inch. And that half inch is equal to about 100 cubic inches. Now, that's the situation anyway with the ice there.

Now, if you get in your mind why fresh water, which is 62.4 pounds per cubic foot, will float on saltwater, which is 4 pounds per cubic foot. This is frozen, so it's solid. When you've got two liquids sitting on one another, they won't necessarily -- if you just poured fresh water on here, it would all blend in and have about the same salinity. So in the aquifer, is there somehow a container for what's even down in the aquifer. And I don't know how many of you are familiar with Big Springs in Nahiku. Does everybody know what that is, heard of that? Big Springs is a flow of water out in Nahiku that flows about 19 billion gallons a day out of a just out of a

wall of the mountain. It's out in this area out here, right around this area. All these wells that were drilled were trying to find that source of water.

They were never successful.

Now, what you do have down there is a lot of rock similar to this. I'll put this inside here. May not or may not float. It doesn't. Feel that air coming out of there. That's the water filling up that rock. Now, it's gone from about one and three-quarters to one and five-eighths, a quarter-inch difference in the water level. Not very much difference. And this a comparison of this rock to the block of ice, the rock is 268 cubic inches, the ice was 350. So there is about 100 cubic inches more than the ice than this. So it stands to reason the ice would raise it a little bit more. But on the same token, the displacement of this rock has not brought the water level up to where you would expect it to be if the rock didn't hold any water.

Now, the next thing is this just means that the water can go into the rock. But the rock has a

definite limit and that limit is our shoreline. Once you get out into the ocean, there is no rock anymore. So at that point the ocean level is what determines what the water level is going to be. Now, as water flows through pipelines, the more water that you flow through the pipeline, the more resistance there is to that flow occurring. It's not a whole lot different with the rocks. The more you try to move through there, the higher the head loss. And this friction, as I'll call it, serves to prevent the rain that soaks down through this rock from just immediately flowing right out into the ocean. That combined with the density difference between the fresh water and saltwater and the container being provided by the rocks, the water effectively floats on the saltwater.

And this is what [inaudible] theorized. The [inaudible] above and below sea level and the ever increasing thickness and farther away from the ocean where the water level is measured. The ratio of that fresh water to saltwater is about 1 to 40 feet. I didn't measure the ratio on that ice, but you see how much of it is below the water and it's the same with

density difference between saltwater and fresh water is very, very close.

Now, because these are both liquids, there is mixing down at the bottom. It's not a solid interface. There is a gradual transition. We see this change in the water quality as the state monitor well. You've seen what the chloride changes with depth. And the reason for that is because water is continually flowing to the ocean. We've got different processes. And the fact that rain is continually replenishing the groundwater and as everybody said the spacing of the wells and the pumps.

Without -- look at what happens vertically here with the water level when it's -- when you've got the rock saturated with water. But now let's try to look at what happens horizontally because horizontally is the connection between the aquifer. You can see all the aquifers that have been designated around the island and if you'll note -- another map here.

Actually mark on here, this is a relief map, the vertical height as a two-to-one exaggeration over what

it is naturally out there. And I've marked on here Iao and North Waihee. And what it does is it's following the ridge line between Waikapu and Waihee valley and it follows the ridge line between Iao and Waihee Valley. Now, those ridge lines, I've heard some people say they're politically decided, but I have a tough time figuring how politics put those ridges where they were, but that's a decision for you to make. I just point it out there for your information.

Now, let's take a closer look at what USGS and John Mink said. I actually have the minutes from the meeting here. This is Steve Anthony, says, "First it's important to distinguish between the regulatory level of sustainable yield and the amount of groundwater of acceptable quality that can be pumped on a long-term basis using an existing infrastructure."

John Mink says, "Let me say one more thing about the yield, the sustainable yields. They're based on an optimal development that is the best means of extraction."

Now, I don't have Meyer's comments from that meeting, but at the council meeting basically a similar presentation that was given to the board was given to the council and at that council meeting he says, "It would appear the current volume of 20 million gallons a day with the current distribution of wells does not work. The staff has been telling this to the board since 1991. And this is something that must be dealt with in all deliberations. The discussion provided, however, requires that the aquifer be managed well by well and the board is the only withdrawer of water from the Iao aquifer and they have lot a lot of options. As pumps fail, they can be replaced with lower pumping rates and more wells can be drilled. These are simple management techniques that can be implemented. The water available may be more or less than the State Water Commission stated numbers, depending on what you do. I believe the program presented in drilling the well in Waikapu, drilling a well between Waikapu and Iao, and drilling another well between the JV wells and the Waihee, as

well as providing additional monitor wells, are all things that need to be done to adequately protect the aquifer. All of these things can be modeled to look at the effects of different scenarios over time, but you do have to have the information to put in the model. To make the model with no information is not much help. And USGS, in their presentation to the board, also went through that part of it.

Anyways, any efforts you make to increase the recharge of existing sources and protect the watershed that collects a lot of water will also have a positive effect on the availability of water. But I'll leave it up to you to determine whether everything must be shut down in the interim while management items are implemented.

And I've got also here a slightly different report than the one we put out to the board. The one we put out to the board, I can tell you what I use it for and I use it to watch what the electricity usage is and what water is pumped out of the hole. And if there is something wrong in there, I can pick it up relatively quickly.

It also, by doing some math, will tell you what the percentage use of the aquifer is. Now, you've heard from the council that they don't like getting that information without the numbers being calculated and presented for them and Ellen has prepared a form here that does that. It only looks back from three months and is comparing and the reason why we look back three months is because the rule that we have for management of the Iao Aquifer looks back three months to look at the chloride levels. In Mokuahau, the rules says 160. The highest is 120. And that's 503, [inaudible] 501 [inaudible] 53 parts per million. The Waiehu Heights wells are 160. The [inaudible] and 515 is 91. The Waiehu Heights is 576. The Joint Venture wells, the caution number is 80. The [inaudible] in 578 is 37. [Inaudible] is 21. And I guess we don't have information for 557. We've had off there for a couple of month.

The regulatory level for Wailuku shaft is 80. The number in there is 53. Those are current numbers as of April this year. And the pumping from the

groundwater is currently at 83 percent of the sustainable yield and 16.65 million gallons a day on the 12-month moving average. So if you have those --. Anyways, my point in this presentation is that yes, there are things that we need to do. I'll leave it up to you whether you feel it's necessary to close everything down while we do those things. But this is -- in my estimation, people are not really saying different things. Everyone is saying the same thing. And it's just how you go about the management process of doing the things that need to be done to protect the water sources. So that's it. Thank you. Is there any questions?

CHAIRMAN RICE: Questions of Mr. Craddick from the board?

Okay. As I promised, anyone who would now from the public like to give testimony after hearing what Mr. Craddick said. Glenn, do you want to speak at this point?

MR. SHEPHERD: And for Ginnie Parsons'

interest, since you're new here and also for the new

member here, I live in Wailuku Heights. I'm a geologist. I've been a geologist for -- since 1949. I've learned a lot and am learning a lot here today, too. But what I'm learning is that we are not adhering to geologic principles and this is going to lead you astray in making a decision if you don't understand the geology involved.

There is a lot of pressure on this board because of this issue. And I know that you all don't understand all aspects of hydrogeology, hydraulics, how it interplays with geology, and how it controls what we have.

In a lot of cases here in the past number of years, there has been a lot of pressure drawdown on the reservoir. And the degree of coning, which is the -- if you don't understand coning, come and see me after the meeting. But it's simply that the fresh water is being displaced by the saltwater. And as a well penetrates into that aquifer which contains fresh water floating on top of saltwater, the saltwater level rises up. At the same time, the water level,

fresh water, gets lowered. And those are two facts that you've got to deal with. That's what's happening to the Iao Aquifer. The water level of the fresh water is going down and the saltwater is going up. And that should tell you that you are getting to the point where it's going to be detrimental to the entire aquifer if you continue pumping at the same rate.

Water flows. It flows through the rocks, as David has shown you. And I want to digress here a little bit about David. He's a damn good engineer, but somewhere along the line he didn't get the geologic aspects to understand what's going on with our aquifer. He is the best water director we've ever had since I came here in 1970. But I part company with him when his interpretations of the geology is involved.

Now, one thing that he has promoted in the past that we have to spread out the pumping in Iao Aquifer. Iao aquifer is getting saltier and the water levels are going down. It should tell you something. Irrefutable fact that something is not in equilibrium. But he says we need to spread out our pumping of the Iao Aquifer. But if you take a look at that map and

where he's got the wells, they're all clustered. That doesn't spread out the pumping very well. I think it should be spread out. At the same time in that the water levels are going down and the saltwater increasing in a given well, that there should be a restriction on the amount of water that comes out of those wells which are being produced.

I don't know what the reason for this particular meeting is with the objective, but I could probably focus in on things a little bit better.

There is a map of the geology of Maui. It was done by Stern and McDonald back in the '40s. It's the definitive map showing the geology from a surface standpoint. And he draws these aquifers boundaries here for reasons which I simply don't understand. It just like, well, let's throw it this way, let's draw it that way. There is no basis in fact for putting that particular line along there -- those boundaries. Now, David has said in the past that, oh, there is a ridge that comes down there so we're going to call it the aquifer on that side of the ridge one aquifer and

the other side we're going to call it -- as far as the subsurface is concerned, it's completely irrelevant what's on the surface. It's all the same aquifer. He shows a Waihee aquifer with Iao Aquifer here. How he got those lines on there or how those administrative lines were put on there is completely beyond me and nobody has been able to explain it in terms of the principles of geology. He says all right, the water goes down this side of the ridge to over here and then it goes into that aquifer. Or the surface water goes off here into that aquifer. It's still the same aquifer at depth underneath those ridges, those mountains and everything. It's one big aquifer. And it has to be looked at in that sense if you're going to develop your water resources in a sensible manner. But to invoke ridges which are we call geomorphic features, which are just a surface feature, as one side of an aquifer is fallacious.

Now, if you don't believe that particular map up there, which you can draw if you will imaginary lines around it and say okay, this is the Iao aquifer. I want you to -- this board to go out and get a

geologist and send him out in the field and tell him we want to know where the boundary is between the Waihee and the Iao Aquifer. This will help you immensely in how to administer and develop your water resources. I know three on this island can do it. I'm not -- I take myself out, although I've done many years of field geology. There is three guys here on this island, one doctorate and two with master's degrees in geology who can do this for you. And I'll make damn sure that they get out there and do the job, too. But we're just looking at things through rose-colored glasses when you think that we were not damaging the Iao Aquifer.

When a reservoir of water, oil, or whatever it is is over pumped, it takes many, many years for it to come back to its original status. It takes many years. So if we continue to overdraft on the Iao Aquifer, we are sitting here and allowing that -- you are allowing that reservoir to be screwed up for the future and that's something that we don't want to do. I'm open to questions. Yes, ma'am.

MS. PARSONS: Are you suggesting that we hire a geophysicist and have him do an independent study?

MR. SHEPHERD: Well, I think that you should.

But I don't think that -- you see, the water department doesn't have a hydrologist. It doesn't have a groundwater geologist. He has to go out on the outside to get that information. And I spent, oh, maybe nine years in the consulting side of geology with international concerns and I know that a client likes to hear something that goes along with their pre-ideas, if you will. They like to have that told to them by a consultant. And that's what David has done. He's gone to the outside and he's told David what he would like to hear, that the Iao Aquifer is healthy, it's not being damaged and is not under the gun and -- that's not right.

Now, he can go to the university or he can go to these three other geologists on the island here that I know of and have them do a job on this particular problem to help you make that particular

decision. But as I've said, David is a damn good engineer. But when it comes to understanding geology and geologic principles involved, he was behind the door. And he may say well, I understand, I've been drilling wells for umpteen years. Great. That's all part of the act to understand those sorts of things.

But I think this board should go to the outside and get an independent position and not go to the consultant that David has been leaning on for years. Now, the guy that he's been leaning on, he's a nice guy, I like him, he's one of us [inaudible]. But he's been giving him the wrong information necessary to develop and keep the Iao Aquifer healthy.

CHAIRMAN RICE: Mr. Starr?

MR. STARR: First of all, where did you get this map?

MR. SHEPHERD: I got that from one of the authors, Gordon McDonald. When I told him I was going to Maui, he said, "Here."

MR. STARR: Did that come out of a book? Is that from the Stearns and McDonald book?

MR. SHEPHERD: That's from the Stearns and McDonald book. Where is it?

MR. STARR: I just wanted people to see this because this is a whole --

MR. SHEPHERD: I shouldn't be so loose with it. I'll sell it to you for about a thousand bucks. It's coming apart at the seams. But there is the issue. I don't know whether David has a copy or not, do you? Read it.

MR. STARR: Okay. Another question here. And my interest -- I think everyone agrees that Iao aquifer, we cannot extract more water from it than we already are. Whether it should be less or not, that's -- I don't really want to get into that discussion today. But I think that that's something that just

about everyone from USGS and John Mink and all of us agree is that we can't really pull more than say the 18 million gallons we're pulling out of Iao Aquifer.

I think that what the point of interest is is that for the Central and South Maui system, the only other source in addition to the boundaries of Iao that we have to extract water from is the North Waihee aquifer. And we've heard that we've only exploited a portion, a small portion of the North Waihee aquifer, that area south of Makamakaole Gulch between Waihee and Makamakaole. And we've also heard from John Mink and others that from that area that we've currently exploited, we should not be taking more than 4 million gallons a day.

Now, I see by the charts -- David just gave us a new -- a new kind of chart that I believe he said he's giving to the county council. Unfortunately, the board has never seen this. And it doesn't agree with the one that he gives us every month. So say for the month of March, I have two figures, the one from his new chart which says the -- it was 4.63 million

gallons a day, and then the normal one that the board gets where if I add it up and I subtract the Iao tunnel, I get 5.12 million gallons a day. This is all coming from --

MS. PARSONS: In all fairness, the March was given to us before the end of March and this is just the beginning of April. So if those numbers don't jive -- I look at February and January to make my assumptions.

MR. STARR: Okay. But they don't -- between the one we get --

MS. PARSONS: I'm just saying if you're going to make assumptions on anything, look at January and February, not at March or April -- is too close.

MR. STARR: They also don't get up.

CHAIRMAN RICE: Let's let Jonathan go first.

MR. STARR: But anyway. The question is since

-- if we take either the 4.6 or 5.1 million gallons a day, you feel that we can extract more water than that from this southern portion of North Waihee than we already are?

MR. SHEPHERD: Oh, sure, you can take more water out. But you're damaging your reservoir, too. You stand that chance of damaging your reservoir. And they take a long time to heal.

Now, when you flash this map up there, where are all the wells? Hell, they're all alongside roads, places that you can get to. There is no spreading out of taking the water from the Iao Aquifer. And that's something that should be looked at.

There may be -- this is a flat ass statement. There may be more water available on Maui than we can possibly use, but we don't know it because there have been no studies on it. There may be a lot less than the amounts that I'm alluding to. But we don't know. We simply haven't got the information.

What David should do is go get a competent

geological consulting firm or group of geologists to come up with a study to tell the board -- and I say the board -- what are their findings about the position of water on this island?

I don't agree with you that we couldn't find more water up there on West Maui. Easy. Hell, I've got some ideas, too. But again, it takes some nitpicking studies to come up with a decision to do that. Sure, I'd drill a tunnel clear into the head waters of Iao. I would be building filtration ponds alongside Iao Stream so that the waters can be percolating down into the Iao Aquifer instead of being channeled off into the ocean along concreted channels. Boy, that's really stupid. I mean, you took all the water and shot it out there in the ocean that should be going in the ground.

David could start a project of putting infiltration ponds above the concreted area of Iao Aquifer. One day I went by down at Happy Valley and I said geez, there is a lot of water going down that place. I went down to the USGS and said how much water is going down that channel today. Oh, about 52

million gallons a day. Right out to the ocean. No chance to get into the underground. And that's a crime.

The Corps of Engineers that built that thing, it was a porky deal back in the '70s. Today, no, they made a huge mistake. You talk to any Corps of Engineers engineer from their headquarters back in Vicksburg, Mississippi, yeah, that was a big mistake, they didn't do us a favor at all. Sure, it brought some money into the community by construction, but we shot ourselves in the foot doing it.

There's a lot of other things that could be done. But the focus has been just those few wells right in there and those few wells are telling you something that the aquifer is not healthy. And if you continue doing it the way you're doing it today, then we're all going to be in bad straits in the future.

MR. STARR: Okay, just to clarify, my question is regarding the current infrastructure, the current wells, and I believe there is another well planned

also on the south side of Makamakaole. How much water do you feel is safe to extract out of our current infrastructure? I know there is possible ways of getting more from further north and from other creative ways. I'm talking about from what we've got right now.

MR. SHEPHERD: If I told you that figure, I wouldn't believe it myself because I don't know. And I don't know anybody that does know. Because there hasn't been adequate studies to do it. Remember, David doesn't have a hydrologist, a groundwater geologist, anybody of that particular flair working in his department. He needs that input badly.

MR. STARR: Thank you.

CHAIRMAN RICE: Any other questions of Mr. Shepherd?

MR. KOGASAKA: On the map that you produced over there on the wall, what does the red indicate on the profile? Can you give us a demonstration how the

aquifer works within that area?

MR. SHEPHERD: That's the central caldera aspect of where the intrusions came up alongside say Haleakala and West Maui, the two red areas that you see. And all the green are the lava flows that came out of those eruptive centers.

MR. KOGASAKA: How does the hydrology work within that area?

MR. SHEPHERD: What?

MR. KOGASAKA: The hydrology and the geology work within the area. Is that part of the Iao aquifer, how does that relate --

MR. SHEPHERD: Listen, I don't know where the limits of the Iao Aquifer are. They put lines on here, but they're fictitious lines. And they say well, one well on this side of the line is drawing from the Iao Aquifer and the one just a stone's throw

away is drawing from the Waihee Aquifer. But there is no structural or stratographic reason for that line to be in that particular place.

As I understand it -- and I've questioned many people, how did you determine that line? You get the fuzziest answers. Oh, there is a ridge that goes along -- oh, there is a sand dune there. Those are surface features that don't have a damn thing to do with the underground.

MR. KOGASAKA: I'm talking about the red section, how does that influence the aquifer?

MR. SHEPHERD: Well, if you -- if I'm going to do some arm waving geology, as we call it, that means you don't have your hard facts that you can prove it, but it's theoretical. I would say that you could go into Iao Valley and get lots of water. It's trapped behind dikes. And that's the rainiest part of the island. It gets what, 250 inches per year up there. And if you wanted -- the surface waters that come down that stream are simply from aquifers that have been

topped out that are flowing out on the ground.

I don't know whether I answered your question or not. Did I? You focused on the red points --

MR. KOGASAKA: Yes.

MR. SHEPHERD: Those are just diagrammatic things to indicate that that was a center of eruptions that built up the two mountain masses in East Maui and West Maui.

MR. KOGASAKA: [Inaudible] or constraints within the underground features that you're alluding to?

MR. SHEPHERD: Excuse me, I've been around too many 8-inch cannons and I'm 80 years old. Your question now was what?

MR. KOGASAKA: Whether that red dikes and things are other dikes, are they geographical -- geophysical boundaries within the aquifer.

MR. SHEPHERD: They can be. If they're long and linear and keep going. But usually dikes are interwoven bunch of things. Dike here, dike there. You take a drive up to Iao Stream and you can see those dikes in the out crops there. Maybe we ought to chat later.

CHAIRMAN RICE: Good idea. Thank you, Glenn.  
Any other questions for Glenn Shepherd?

MR. SHEPHERD: Oh, Ms. Parsons, I've got a doctorate in geology and geophysics.

MS. PARSONS: Good. From where?

MR. RICE: Well, I did my BA and MA at UCLA and I got my doctorate in the University of Hawaii, but it happened to be in marine aspects of geology.

MS. PARSONS: Who did you work for?

MR. SHEPHERD: Who did I work for?

MS. PARSONS: In the past.

MR. SHEPHERD: That's rather embarrassing,  
I've worked for so damn many people.

MS. PARSONS: That's a good thing.

MR. SHEPHERD: I worked for a Honolulu oil  
corporation that was bought out by Phillips. I left  
and I went to work with another outfit in South  
America -- two outfits in South America. I ended up  
working for Occidental in China at the time -- I hung  
it up in 1992. Oh, and the international firms were  
called Petro Consultants.

CHAIRMAN RICE: Ellen, did you have something  
you wanted to wanted to ask Mr. Shepherd?

MS. KRAFTSOW: No, it was a comment in general, if I may.

CHAIRMAN RICE: You want to make a comment in general?

MR. CRADDICK: I think she was just going to clarify that discrepancy between what Jonathan is saying --

MS. KRAFTSOW: Actually, that's not just what I wanted to say. That's not what I wanted to talk about.

CHAIRMAN RICE: All right. Go ahead.

MR. SHEPHERD: You'll find that when you get a group of geologists together, seldom that you'll have unanimity in the decisions that are brought out unless it's so crystal clear that you can't -- when you're playing something like this where you don't have all the information, it gets dicey making a decision.

I've been with geological groups that have been discussed and fought and chewed on for months, trying to find an answer.

Now, if I tell David, hey, you're all wet,

that doesn't mean that I don't accept some of his things that he says. It gets into the matrix of things to arrive at the truth or the closest you can get to truth as possible. So we get some down right hot arguments going at times. But it's good. We're all trying to seek the truth. And if I raise some hackles around here, tough luck.

CHAIRMAN RICE: Thank you, Glenn. Ellen was going to say something. Thank you, appreciate your input.

MR. CRADDICK: Okay. Herb, basically you were asking what's this red area here?

MR. KOGASAKA: No, the profile on the bottom.

MR. CRADDICK: Yeah, but that translates to this area up here. You're talking about this right here? Over here?

MR. KOGASAKA: Yeah.

MR. CRADDICK: Those are what are known as dike areas here. That is basically the cool magnum. It's very, very dense rock. It's not like the rock you see over there with all the holes in it. Water has a hard time flowing through it. So in these areas between those dikes, what happened, as Glenn Shepherd said, you will get water forming in there and if you penetrate those, you can drain water out. But that is water that normally would drain to a stream, anywhere where the stream or valley floor cuts through those dikes.

The point I wanted to make is what is this here because it's a very common feature over the area of the Iao. And that's this area right down here. When you look up here, it says "consolidated [inaudible] chiefly older alluvium, consisting of [inaudible] red, deeply weathered, poorly sorted, nearly impermeable, friable conglomerates usually forming conspicuous terraces along the principle streams." That is a real wordy definition of cap

rock. That's the difference -- a lot of the difference between Iao and North Waihee. Iao has this cap rock like Pearl Harbor does. Waihee does not. There is a difference in the water level between these two and that's why functionally they manage them as two different aquifers.

Granted, there may be some -- there is no question there is some connection between them because we had a break in one of the Waiehu Heights wells pipeline in 1991. They were pumping about 3 million gallons a day for about three months. When that well was shut off, six days later when there was no pumping going on in Iao, the water level started to rise. Now, you can see from that there is a connection there. But it's not a direct one, the minute the pump stopped, it started to rise. And it wasn't a rise over here of one foot and a rise over there of one foot. It was a rise here of one foot and a rise over there of about half an inch. But still a measurable rise, something you can distinguish.

And the other thing that the board may not

know is that we have put up to personnel -- I changed the description of the training officer to one of a geologist. We do have a person on island that was part of the crew or team that did the Fortran programming for the monitor flow program for the USGS and there is a high probability that person would apply for the job.

CHAIRMAN RICE: Ellen?

MS. KRAFTSOW: I guess it's just I've been hearing a lot of statements about [inaudible]. I for one, I don't think that we really contest that the Iao Aquifer has problems and concerns. And I think that the issue is what are we doing about it. And given a situation like that, there are a few obvious things one should do about it. You want to move the pumpage away from that aquifer, you want to distribute the pumpage better within and around that aquifer, and you want to upgrade your monitoring and your watershed protection and other protective measures you can do, and you want to possibly negotiate with planning or

something for some managed growth.

As far as what we're doing, there is the East Maui development plan. Anybody who looks at an aquifer, a regulatory aquifer map -- I'm not going to argue the correctness of it, but anybody who looks at an aquifer map of the island will know that most of the water is in the northeast and that's eventually where we have to go to get it.

There is an East Maui effort ongoing, as you know, it's waiting for the EIS.

Waihee, going further in Waihee, whether that amounts to distributing the withdrawals better or whether that amounts to moving out of Iao is still something that we have to do.

Now, that Mink recommendation that we use only 4 million gallons and one half of that aquifer, that is something that we are going to try to follow. But to get there, to get to the other half of that aquifer involves building a transmission to utilize that, which you do as you move outward. We are using more than four, but we're not using that much more than

four and I would need to check Mink's document, I'm not even sure that he's referring to the south half of the aquifer when he says that, but to the half maybe that we haven't gotten to yet. But I'm not sure. I would have to check on that.

So we are making efforts to distribute the withdrawal, whether it be in Waihee or East Maui, better. Also, even within the Iao Aquifer, the Waikapu tank site well -- the Waikapu well and the Iao tank site well.

We do contract and continue to contract for monitoring. We're looking on purchasing watersheds. We have watershed protection efforts that we've been paying for for years. We have a wellhead protection effort ongoing that many of the very people who are criticizing us have been invited to consistently and they have never shown up for.

And I'm not saying that we're perfect; I think there is a lot of improvement. But I just would like to point out that there are plans and they are ongoing and there are efforts to protect the aquifer and I don't think that this has come out clearly yet. Thank

you.

CHAIRMAN RICE: Mr. Starr?

MR. STARR: First of all, I would like to say that I agree with everything you said and I think it was very well said and I appreciate all of the actions in all of these directions.

My question for you, though, is with the existing infrastructure or perhaps adding another well -- the next well, which is, you know, in that same southern portion of North Waihee, how much more water do you think we should be taking from that southern portion of North Waihee?

MS. KRAFTSOW: Jonathan, I'm not going to suggest that we take any more than we're taking. But I believe we have plans this year to work on the Maluhia well which is in the north half.

MR. STARR: I believe that it was in the south

half and there is plans to move it to the north half, which I would like to see. I do feel we need to go forward with moving up. That's what I'm trying to get at.

My concern, though, is with what we've got now, you know, how many more hundreds or thousands of water meters we can issue before we get new sources on line. And that's my point of concern. I think you share that.

CHAIRMAN RICE: Thank you. Any other questions for Ellen? We're going to take a quick one-minute recess.

(Brief recess.)

CHAIRMAN RICE: I'll call the meeting back to order. Mr. Starr?

MR. STARR: Yes, Mr. Chairman, I want to thank you for calling this meeting. And I think that right now we're getting at the very, very heart of what our duties are. And I can't stress enough how important this subject is. This is the water supply for the

present and the future for most of the population of Maui County, for all of Central and South Maui as far as Paia and as far as Wailea, Makena, Maalaea, Kahului, Wailuku and all the other fast-growing communities.

So I think it's very important that we take a good look at this and not just a cursory glance because if we don't deal with it properly, it will come back to haunt us over and over again. I think there are a number of issues here. And one is where we -- to try to understand honestly where we're at right now, what supplies of water we have developed and what our usage is and how those two fit together.

But equally and probably more important is where we're going. And I feel that, you know, if we decide that we're at the limit of what we have right now, we have to be relentless in trying to find additional sources and directions. And I know we're moving in certain directions, but we're not there yet. And I think that we have to look at a number of different directions so that if one doesn't pan out or

gets delayed for a long period of time, and we have been waiting on East Maui for 10 years -- it might be another year, it might be another 10 years, we should look for other alternates. And maybe those should include surface water. Maybe we should be looking at some surface water from East Maui of a million or two gallons a day possibly at Kamole where we do have the rights to some more water. I don't know if that's a solution, but it's something we should look into.

Glenn Shepherd suggested other things. There are many roads we can take. I think we should try to look at as many ways as possible so we do find a road that's open to us and will provide future needs because I think just about everyone is agreed that it doesn't lie in the Iao area. We've got what we've got, but expansion won't come from there.

The other very important point is -- and we've had some discussion today on that -- is adequate understanding of the resources. And not just understanding of the Iao and Waihee, but understanding of our global water resources for our island. And there has been talk about hiring a geologist to do it

in-house or whatever. My belief is that we should take advantage of something that is available to us and that is the USGS which is there for that purpose. And I'm hoping that at a meeting soon, we can get to have a presentation by the USGS people on current water modeling techniques.

I flew over to Honolulu about two months ago and I got a presentation on water models that have been done for Honolulu and for other places. And it's incredible what they show and the depth of information. I know we'll have to gather a lot more information before we can develop a model that will really work, but USGS is the world leader in doing these models. They have a unit in Virginia and then also they have a unit at Stanford University and, you know, as well as the people in Honolulu. Just about any place on earth where state-of-the-art water modeling is being done, it's being done with the help of USGS. They have the best computers and the best analysts in the world. There is one gentleman, I forget his name, who actually created the science of

it and is still with them as a consultant.

So I would like to ask that we get a presentation on it and see the possibility and -- I know that when budget time comes, I for one will be asking to see if we can put up some funds that we can get matched by USGS federal funds so it doesn't even all come out of our pocket. I've heard that it might be possible to get some funds from the regular county budget because I know council members and the administration are also concerned. And that will move us away from this how much can we take from one particular pie slice versus the next pie slice, but rather look at what we're using, what all of the water inputs are, and get some real information.

So you know, I look to you, Mr. Chair, for leadership. You've been showing it in this in a very fair and honorable way and I thank you for bringing us this far and bringing us further ahead.

CHAIRMAN RICE: Thank you, Mr. Starr. Anybody else? What I would like to do at this point is try to get some consensus. We're not going to solve all the

problems today, but if we can get some consensus on some important issues and we can decide how we're going to move forward.

And I guess the primary issue here is and there appears to be consensus on the fact that Iao is basically being pumped at its maximum at this point.

Yes? No? Indifferent?

MR. SHEPHERD: I vote for that.

MR. STARR: I believe you're correct.

CHAIRMAN RICE: I knew you would. Because I mean, as we -- I mean, if we don't think that's the case, then we should discuss it. If we think that's the case, then we need to decide what plan are we going to put forth, both short term and long term. Because -- and as Glenn referred, there is a lot of pressure being put on this board. We are not in the business of making planning decisions; they're made by somebody else. We're in the business of providing

water. And if that particular source of water is at its capacity or over, then we need to create a plan to manage that resource correctly and devise other sources.

So I don't see any heads nodding or shaking, but I'm assuming by not saying anything you're in agreement with the Chair that our position on the Iao Aquifer is that we are, what, currently at its maximum and ideally we would want to reduce pumping? Am I saying something -- I'm doing all the talking here.

MR. HIRANAGA: I guess I'm not prepared to take a position at this time. I feel that there is concern and whatever -- there is concern regarding the sustainable yield of the Iao Aquifer. But I just need to I guess learn more before I can make a determination for myself. So at this point I'm not for or against your statement.

CHAIRMAN RICE: What would you like to see?

MR. HIRANAGA: Well, I've been on the board now for almost one year -- I guess over a year now and

a statement, like Mr. Shepherd said, that you put a bunch of geologists in a room, they all come up with different positions. It's just a very difficult issue.

MR. SHEPHERD: [Inaudible]?

CHAIRMAN RICE: Okay. Virginia?

MS. PARSONS: The adequacy of that USGS study is pretty significant, don't you agree? And maybe that's something we need to look into and see what kind of data we can get, if we can institute that study.

MR. STARR: Mr. Chairman, may I make a suggestion that perhaps in the next month we call another meeting and we ask to join us, first of all, I think John Mink should be here because he's the one who set the sustainable yield numbers and he's generally been the board consultant. I would also like to ask USGS to come and as part of their

presentation, I would like to request a presentation on their numerical modeling and we'll actually get to see some models they have done for other places so we can experience that and any other people who want to give input on the aquifers and sustainable yield and water usage and any other topics. And even invite people who might have ideas in directions we can move -- I'm sorry, ideas of ways we can move forward. You know, some of them may be crazy, some of them may be good. And let's have a meeting and put all this on the table.

Some of the board members haven't had a chance to see these presentations before. Some of the presentations, none of us have seen before. So let's go ahead and try to educate ourselves a bit further.

CHAIRMAN RICE: Yes, Ginnie.

MS. PARSONS: Can we do the entire county?

Can they give us a budget where they do the whole entire county? We could make it a budget where they do sectionals as we go?

MR. STARR: Yeah, I believe for the numerical modeling, what's being talked about is what's known as a head and shoulders model which would give if not all of the island, at least from say here in.

CHAIRMAN RICE: Did you exclude West Maui again?

MR. STARR: Yes. I would love to do the whole island. It's a -- there was one done for Molokai which was a -- it was done some years ago and it was kind of a previous generation of thing, so we don't -- Molokai, you know, wouldn't be doing the whole county. But I think the whole island would probably be the way to go, if we can afford that.

CHAIRMAN RICE: I think what Mr. Starr is recommending is that they come in and do a presentation on the kind of modeling they can do and then from that if we found that it was something we're interested in, we would get a proposal from them. But

the idea being to see what kind of a resource this modeling would provide for us. I think that was the intent of the presentation.

MR. STARR: I'm not at this point suggesting we go ahead with it, but that we look at what's available to us and at what cost.

CHAIRMAN RICE: Kent?

MR. HIRANAGA: I agree with Jonathan's suggestion. I think we should at the immediate point though focus on Iao Aquifer versus expanding the scope.

I think we had a similar session last year, several parties came and testified. Personally myself, after being on the board for a year, I'm more capable of absorbing the information than I was at that previous meeting.

CHAIRMAN RICE: I would like to look at it as an education meeting, not necessarily as testifying.

I think we're taking a position that we need to do something about Iao. We're not arguing about that.

So let's move on to the next stage as to what we need to do and start to gather information. I think that's the proper --

MR. STARR: Just one comment, which is I think some of our problem lies in the fact that the old system, which was to carve it up into these aquifer areas, creates a lot of problems and confusion. We get to argue whether it's Iao versus Waihee.

There is about 40 million gallons a day worth of pumps within a couple of miles of the boundary of Iao over here and no one knows how much water they're pumping. There are no pumping records or reports. So, you know, since they're outside of the borders of Iao, they don't go on to any of our charts. It's very possible that the fact that Iao is not able to provide as much water as was once thought is due to the fact that there are all these other pumps from -- whether they're plantation pumps, Maui Electric, Keapulani

Park, Maui Lani, many many other entities have big million gallon a day or more pumps just outside of Iao.

So what happens, if you look at one area under a microscope, you don't see what's next to it.

Whereas the -- and that was the old way of doing it.

It was politically expedient. But currently the tendency is to look larger and you just get rid of those lines on the map, the boundaries, and you look at what's really available where.

And then you're able to do what-if situations.

You're able to say if we have these existing wells but we add a new well there, how will it affect the existing wells? And, you know, that's -- that makes a much more useful -- anyway, I think we should have the presentation and then make a decision.

CHAIRMAN RICE: So I guess I'm hearing and everybody seems to be in favor of scheduling another Committee of the Whole meeting and we're going to ask for the attendance of USGS people to present us with this modeling thing. Okay.

MR. STARR: Could we also ask for John Mink also?

CHAIRMAN RICE: Oh, sure, and John Mink,  
absolutely. Does that sound appropriate to everyone?  
Nodding of heads. We don't need a motion to do that?  
We'll just proceed? Then if there is no other  
business --

MR. STARR: Mr. Chair, on a similar matter,  
I'm hoping we can also get an update from John Mink on  
the EIS. It seems to be dragging a bit again and, you  
know, I feel that that's of utmost importance, so.

CHAIRMAN RICE: Okay. Very good. If there is  
no other business. Howard?

MR. NAKAMURA: One quick question relative to  
this issue of spreading the pumping, the board in the  
past has appropriated funds to bring the Waikapu well  
into the system. What's the status of that, David?

MR. CRADDICK: Herb, did you get that question? The status of the contract on the Waikapu well, getting the pump and the well there.

MR. KOGASAKA: I think we are trying to determine, Mr. Chairman, what the developer's participation portion would be and we need to kind of -- we need to determine what they would do and how we would proceed with this factor in there to evaluate that further, award a contract to design or award a contract to install a pump.

MR. NAKAMURA: I guess, Mr. Chairman, my concern -- just a quick comment -- is I think that's the same response we've been getting for quite a while. If there is a problem in trying to resolve a policy direction in terms of participation with other entities, whatever that may be, perhaps the board chairman or somebody on the board designates these to be involved in trying to bring it to some resolution. Because it seems like an important enough issue that it shouldn't be just sitting there.

CHAIRMAN RICE: I agree. Mr. Craddick, can you prepare something for us -- a report of the status and speak to me about it? So if we need to take some action, we can do that.

I'm sorry, Carl, you wanted to say something.

MR. FREEDMAN: I'm going to write a letter.

CHAIRMAN RICE: Sure? I didn't mean to -- you're fine? Anything else before we adjourn?

Meeting is adjourned. Thank you.

(Whereupon, the meeting was adjourned at 10:45 a.m.)

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