

## MINUTES

### DEPARTMENT OF WATER SUPPLY COUNTY OF HAWAI'I WATER BOARD MEETING

February 27, 2018

West Hawai'i Civic Center, Building G, 74-5044 Ane Keohokalole Highway, Kailua-Kona, Hawai'i

MEMBERS PRESENT: Mr. Craig Takamine, Chairperson  
Mr. William Boswell, Jr., Vice-Chairperson  
Mr. Russell Arikawa  
Mr. Nestorio Domingo  
Mr. Eric Scicchitano  
Mr. Bryant Balog  
Mr. Leningrad Elarionoff  
Mr. Keith K. Okamoto, Manager-Chief Engineer, Department of Water Supply (ex-officio member)

ABSENT: Ms. Kanoe Wilson, Water Board Member  
Director, Planning Department (ex-officio member)  
Director, Department of Public Works (ex-officio member)

OTHERS PRESENT: Ms. Jessica Yeh, Deputy Corporation Counsel  
Mr. Craig Masuda, Deputy Corporation Counsel  
Mr. Ryan Koyanagi  
Ms. Maile-Lei Koyanagi  
Mr. Max Dible

#### Department of Water Supply Staff

Mr. Kawika Uyehara, Deputy  
Ms. Kaiulani Matsumoto, Information and Education Specialist  
Mr. Kurt Inaba, Engineering Division Head  
Mr. Richard Sumada, Waterworks Controller  
Ms. Candace Gray, Assistant Waterworks Controller  
Mr. Calvin Uemura, Water Service Program Supervisor  
Mr. Daryl Ikeda, Operations Division Head  
Mr. Clyde Young, Operations Division  
Mr. Eric Takamoto, Operations Division  
Mr. Warren Ching, Energy Management Analyst

- 1) CALL TO ORDER – Chairperson Takamine called the meeting to order at 10:00 a.m.
- 2) STATEMENTS FROM THE PUBLIC - None
- 3) APPROVAL OF MINUTES

ACTION: Mr. Arikawa moved for approval of the Minutes of the January 23, 2018, Water Board Meeting; seconded by Mr. Boswell and carried unanimously by voice vote.

- 4) APPROVAL OF ADDENDUM AND/OR SUPPLEMENTAL AGENDA - None
- 5) CONTESTED CASE HEARING:

Chairperson Takamine reviewed that this Agenda item is for Water Service Account No. 9000360-10. The Contested Case Hearing is to take place in accordance with Chapter 91 of the Hawai‘i Revised Statutes and Rule 2-5 of the Rules and Regulations of the Department of Water Supply.

The issues involved in the above-referenced hearing will be Maile and Ryan Koyanagi’s appeal of the amounts shown due and owing on Account No. 9000360-10, which are associated with the meter reading date of December 27, 2016, and consequently, the appeal of any proposed shut off resulting from failure to pay said amount.

This hearing is being set pursuant to Mr. and Ms. Koyanagi’s letter request on June 25, 2017, for the hearing to be held at the August 22, 2017, Water Board Meeting, and subsequent emails of November 10 and 13 for postponement to February 27, 2018. (Contested Case proceeding is transcribed Verbatim.)

C. Masuda: Thank you Mr. Chairman. For the record, I am Craig Masuda, acting as Counsel for the Board for the purposes of this Contested Case Hearing. At this time, you can call the parties forward, Mr. Chairman. (Chairperson Takamine called the parties to come forward.) Can we have the appellants please state your name and address?

R. Koyanagi: Ryan Koyanagi. Address is 81-887 Haleki‘i Street, Kealakekua.

M. Koyanagi: Maile-Lei Koyanagi. Address is 81-887 Haleki‘i Street, Kealakekua.

C. Masuda: Counsel?

J. Yeh: Jessica Yeh, Deputy Corporation Counsel, representing the Department of Water Supply.

K. Okamoto: Keith Okamoto, Manager-Chief Engineer, Department of Water Supply.

C. Masuda: Mr. Chairman, this is a contested case hearing. As such, the Koyanagis are the Appellants and have the right to go first as well as the Appellee, represented by Ms. Yeh, will proceed after the Koyanagis’ case is over. At this time, there is the opening statement. Both parties can have opening statements. It is not testimony. It is just a preview of what they intend to show. The parties do not have to make an opening statement if they choose not to do so and can proceed to their testimony. If they choose to proceed to their testimony straight, without opening statements, let us know. All witnesses will be sworn as this is a recorded session. Both sides will have the chance to provide their witnesses, which they may do themselves. Any person testifying is subject to cross-examination and there is also a right of rebuttal. After the presentation of the case, the testimony of witnesses, and the cross-examination, the Board may ask questions of that witness. We will proceed on until all sides’ presentations have been exhausted. Once each side is completely done with their case, the Water Board can allow closing statements. It is not testimony. It is a summary of what the parties feel they have proved. After that, the Board will rule in front of all parties. In this case, we will need to have a Findings of Facts. The Conclusions of Law, I can take care of as long as it is not bringing up some other part of the law that is not contained within the Rules of the Department of Water Supply. Mr. Chairman, you may proceed.

Chairperson Takamine: Okay, would you like to make your opening statement?

R. Koyanagi: What we will hopefully try to do is give you facts that show that at the time of reading, the meter was not accurate--instead of what the meter read, then we are getting charged for. That's basically what it is. The question on the amount.

C. Masuda: Mr. Koyanagi has indicated he has concluded his opening statement. Now for the Department.

J. Yeh: I believe the facts will indicate that there are no questions as to the accuracy of the meter. It was tested. The figures that were read are pretty plausible within the known timeframe from which the leak occurred; that any pressure problems, if any were experienced by the Department after the petitioners experienced their leak; and that the Department has been pretty cooperative in granting the petitioners all of the relief they are legally entitled to.

C. Masuda: Does that conclude your opening statement?

J. Yeh: Yes.

C. Masuda: Mr. Koyanagi, you may call your first witness. Are you going to question your wife or make statements?

R. Koyanagi: No. It's just me. I don't want to get scolding later. (laughter)

(Mr. Koyanagi was sworn in.)

C. Masuda: Mr. Koyanagi you can begin your testimony.

R. Koyanagi: The day we were called from the Water Department, they said we had a leak. They couldn't get in touch with me so they got in touch with my wife. What happened was I guess the meter readers called it in and they actually turned off the water because it was leaking and then they left. I went down to check and turned the valve on and I could tell pretty much where the leak was. So I went up and called up my friend to help. We dug it up and repaired the leak. A few days after that, we had air in our lines. So I went back down to check. What we found was when I did the work, it's just a habit because when I install the meter, I keep it face up so the person reading the meter has an easy time. But what I noticed when I went back down was the meter was facing on its side. And then there was a leak from the Union downstream of the valve, which was under the sidewalk. So we had to re-dig the sidewalk, replace and fix that leak; and to me, it was a little odd that the meter was not in the same position that we left it at the time of the first repair. After that, I didn't think anything about it until we got the bill for \$5,330.26. I told Maile to go to the Water Department and ask them why or what was the reason. When she went, she was told that our meter was running at 31 gallons every 2 seconds. I don't know...this was from the meter reader? (Ms. Koyanagi confirmed it was). What happened was they even had a video of it, which I thought was pretty smart because if something happened and it's way out of the norm like this, it's good to have a video of it. I mean, that's to cover your butt. So now we don't have the video. I don't know where the video is. They don't have one. What happened after that was I got the pipe that was replaced, and that's the one out in the trunk outside if anybody wants to see it. What was found was a 1-inch crack in the Drisco pipe. I tested it with the existing meter from the DWS in...I made a non-regulated line. I have another meter that I use for my farm that I put it in series with that meter to check how much water comes out of that leak. I got 8 gallons out of the leak out of my meter and 8½ out of the Water Department's. So I cannot see how the amount that the Water Department said we used was from that small leak. Because it's a 1-inch crack in the Drisco. From my experiences with Drisco and water--not wastewater, but water piping, the crack does not get any better. Wastewater, there's sediment and it will plug the crack and it will get slower and slower and eventually stop too. But for water pipes, I've only

seen water cracks or breaks get worse. So that is the question part “how accurate was that meter at the time?” So the meter was tested. They said it tested within specs, right? (Ms. Koyanagi confirmed.) But my request was can you test it in the conditions that the meter was in at the time of reading, which was the same PSI and according to the video, the water was running on the meter. It wasn’t under water but it was running on the meter, so I don’t know if moisture on the meter has something to do with it. Another thing is the manufacturer says the maximum working pressure for that meter is 150 psi. In 8 years, we had to change our pressure regulator four times. After the second change, I kept checking the line pressure and the line pressure read--it varies--it varied from 153 to 158. I’m thinking over an 8-year period of time, it will do something to that meter. And that is not including the pressure surges that come into that line. Also, what we found was throughout the years, there’s air in our lines. So, every so often, we would have to go and bleed the whole house and everything. From what I read, air in the line going through a meter will also give it a false reading. It is a digital meter--the readout anyway--on the meter that we have; and I have seen moisture get into digital components and it will give you a weird reading. So I’m not sure if that was the case. I’m not the one that tested the meter so I cannot tell you how it was. The reason that I didn’t go, because they said I could be at the bench testing; but the reason I didn’t go, I told my wife I’m pretty sure it’s gonna test good because from what I saw, I thought that they changed the internal components of that meter not too long after this problem came about. They tested the pressure; and anyway, they have a standard in testing. It was tested at 94 psi at 1/4 gallon per minute, 2 gallons per minute, and 15 gallons per minute. But down at our house at the bottom of Haleki‘i, it is a pretty steep hill. That’s why I think the pressure in our lines has something to do with the accuracy of the meter.

C. Masuda: Mr. Chairman, oh, do you have any more? (Mr. Koyanagi replied no.) By agreement, both parties have stipulated that all exhibits that were submitted are going to be allowed into evidence. You have pictures from the Koyanagis, statements from the Koyanagis, as well as reports and statements from the Department within the Department’s file. Mr. Koyanagi, are there any particular exhibits you want the Board to focus on?

R. Koyanagi: I have that section of the pipe with the crack in it they can look at in my car outside.

C. Masuda: Do you want to have the Board go outside and look at it?

R. Koyanagi: I can bring it by the door. They don’t have to go in the rain.

C. Masuda: Do you want that to happen?

R. Koyanagi: Yeah. If can.

C. Masuda: At this time, Mr. Chairman, can we take recess in place while Mr. Koyanagi goes to get the pipe?

W. Boswell: I don’t think we need to see it. (Others agreed.)

Chairman Takamine: No. We’re fine. The pictures are okay.

C. Masuda: Okay. Mr. Koyanagi, does that conclude your testimony? (Mr. Koyanagi indicated yes.) Now is the time for cross-examination of Mr. Koyanagi.

J. Yeh: Mr. Koyanagi, you said you had to replace your PRV in the last 8 years. How many years total have you lived at this residence?

R. Koyanagi: 9 to 10 years.

J. Yeh: If I could refer you to your own petition, you mentioned you had a leak in October before the December leak. Is that correct?

R. Koyanagi: Yes.

J. Yeh: If I could have you examine Exhibit A of the Department's exhibits, which is a copy of the petitioner's usage from approximately August 2016 through October 2017 as well as your own petitioners exhibit of their claim for damage and additional information, what is listed as their account usage (exhibit not numbered) from about February 2015 through February 2017. Mr. Koyanagi, if you look at these figures, what would you say, prior to your October leak, what your average usage was over this period of time?

R. Koyanagi: Something like 18,000 gallons.

J. Yeh: If I look at October 2015 through August 2016, the figures range from 13,000 gallons to 16,000 gallons. Is that correct?

Chairperson Takamine: Sorry Jessica, which exhibit?

J. Yeh: If you go to the petitioner's exhibit, if you look at additional info. Tab 3-30. Sorry, the pages are not numbered. It would be about eight pages in. Okay, so we know your average usage, you think, is about 18,000 gallons. You fixed your leak in December on what date?

R. Koyanagi: The day that the Department called. December 27, 2016.

J. Yeh: Okay. And you mentioned that you requested to have the meter read or tested. On what date was the meter pulled to be tested?

R. Koyanagi: I'm not sure. The Department would have that because I cannot touch the meter.

J. Yeh: Do you recall the time you made the request?

R. Koyanagi: It was sometime after we had that really big bill.

J. Yeh: That would make sense. If I could refer you to Exhibit B of our exhibits, which is a copy of the comments on the petitioner's account. It appears that the meter was not pulled until about April 2017.

R. Koyanagi: Okay.

J. Yeh: So after you guys received your high bill, the next bill you received was when?

R. Koyanagi: Which high bill?

J. Yeh: Your December...

R. Koyanagi: I don't know. She pays the bills. (He asked Ms. Koyanagi what month was after the high one.) Okay, it's February.

J. Yeh: Okay. You had a bill of February 22, 2017. What was the usage amount on that bill?

R. Koyanagi: 11,000.

J. Yeh: And, again, the meter was not pulled until April to be tested, correct?

R. Koyanagi: Yes.

J. Yeh: In your 9 years at this residence, approximately how many water leaks would you say that you've had?

R. Koyanagi: Two big ones, not including little drips here and there.

J. Yeh: Have you made all repairs yourself?

R. Koyanagi: Yes.

J. Yeh: And I can't remember if you stated earlier, but do you have any type of plumbing experience or is that what you do by trade?

R. Koyanagi: I'm a Water/Wastewater Operator. That has been my profession for over 20 years.

J. Yeh: And you said you did the repair yourself, with a friend, in December.

R. Koyanagi: The friend that I called was the plumber that actually did my house.

J. Yeh: Okay. And you noticed air in your line a few days after you made the repairs. Is it at all possible that air got into the line while you did the repair in December?

R. Koyanagi: There was air in the line in December, but what I do is I go to each port and I bleed it for about 15-20 minutes to get the air out because that's not good for the fixtures in the house. But air in the lines has been, throughout the years, we have been having air in the lines. Also, on different businesses up the street, there has been air in their lines that has broken their fixtures. So, it has happened before, it will happen again. It's just one of those that we just deal with. You know, air is air. We'll just get it out.

J. Yeh: You mentioned earlier that you ran your own independent test of the cracked line against your own meter that you have.

R. Koyanagi: In series with the Department's meter, yes.

J. Yeh: Can you walk us through how you tested that?

R. Koyanagi: Okay, the section of pipe, which is in the truck, you'll see; one end is closed off; the section that has the crack in it is there, and then I hooked up a fitting so I can put it to an unregulated line. And then what I did was I just turned that line off and I'll have it run and then I check the readings on both meters as it's running.

J. Yeh: So you hooked it up to both the Department's meter...?

R. Koyanagi: It's already hooked up through our house.

J. Yeh: Okay. As well as your own independent meter.

R. Koyanagi: Yes. So it was the Department's one comes to our house, piping, and then it's my farm meter, and then the pipe.

J. Yeh: And do you run this test before or after you noticed air in the line?

R. Koyanagi: This was after because the air that we had in the line was a few days after we did the repair. So this testing came about after we got the bill.

J. Yeh: Okay. Are you aware that when you sign up for an application for water service that you have to abide by the Department's Rules and Regulations, and do you understand that pursuant to Rule 3-3, you are responsible for protecting your own line by installing a pressure relief valve?

R. Koyanagi: Yes. That's another question I had.

J. Yeh: Well, technically, I'm asking the questions now.

R. Koyanagi: Oh, sorry.

J. Yeh: And you understand the Department is not liable for damage due to pressure?

R. Koyanagi: Yes, that's what they said.

J. Yeh: You mentioned you have had pressure regulating valves on your line and you're on your 4<sup>th</sup> one. At the time of this break, this most recently, did your PRV break?

R. Koyanagi: No. The pipe broke.

J. Yeh: Where, in relation to the line break is the PRV? Is it by the meter box?

R. Koyanagi: On my house? The meter's on street level. I have a stone wall about a foot away from the meter box, and it's about 7 feet. So it goes up 7 feet and then it goes in another 20 to 25 feet and that's where my PRV is.

J. Yeh: So the PRV is beyond where the break occurred?

R. Koyanagi: Well, it's downstream of the meter and the break was about a foot away from the meter box.

J. Yeh: Okay. So the leak occurred between the meter and your PRV?

R. Koyanagi: Yes.

J. Yeh: Since you are on your 4<sup>th</sup> PRV, you are aware you live in an area where one is required or you should have one?

R. Koyanagi: Yes.

J. Yeh: After your initial one broke, at any time, did you change the type of PRV you purchase?

R. Koyanagi: Yes. Different brand but same width. It's soldered in so if not, then I would have to cut the pipe and then redo the pipe, so it's the same length so it will fit in.

J. Yeh: Do you set your regulating valve to a certain value?

R. Koyanagi: Well, yes, on the downstream side to the house because the line pressure is in the 150's; and if you put that through the house, it will blow up everything--your icemakers, your toilets, everything will go. I set mine at about 55 psi.

J. Yeh: Okay. So I notice on your pictures that the regulating valve is set to 200 psi. I mean, the range; it's the maximum range--it says 200 psi.

R. Koyanagi: No, that is just the pressure gauge. It's reading what the pressure is in the line.

J. Yeh: Okay. So at any point have you purchased a regulating valve which might be able to intake a higher pressure than 150 psi...say 200?

R. Koyanagi: No. The working rated pressure on a pressure regulating valve is 300 psi. That's the one that I have in now. And that's been going.

J. Yeh: Okay. So that's 300 psi.

R. Koyanagi: Yes. See, what happens is if you are looking at the line pressure and it's 150 psi, that's just at static. If you have a valve downstream that opens quickly, one up here that closes slowly, if you have the surge in that line, it will throw pressure well into the high 200's on just that surge going back and forth until those valves can close. Yes, it goes up to 300, but am I sure that somewhere down the line, there wasn't the pressure that exceeded that? I cannot tell you because I don't have anything hooked up to continuously monitor that pressure.

J. Yeh: Okay. But at the time the leak occurred, you were regulating the pressure to the...?

R. Koyanagi: To that house, yes.

J. Yeh: And what was the...50 psi?

R. Koyanagi: I have it set at 55. And I also have...since I had so many fail, I have a pressure gauge that is permanently hooked up to the inside downstream of that, a pressure regulator, so I can see it. If the pressure regulator starts to leak, you'll see that pressure slowly climb up so I know it's starting to go so I don't break anything in the house.

J. Yeh: Okay. And so prior to this, most recently, you guys used Drisco piping, correct?

R. Koyanagi: For just that short section.

J. Yeh: And then you recently switched to copper in the belief that it would be less likely to be more susceptible to leaks, correct?

R. Koyanagi: Yeah.

J. Yeh: And so you also understand that pursuant to the Department's Rules, you are responsible for any of the line beyond the meter?

R. Koyanagi: Yes.

J. Yeh: And the break in December occurred approximately one foot beyond the meter, correct?

R. Koyanagi: Yes.

J. Yeh: Okay. No further questions at this time.

C. Masuda: Mr. Koyanagi, you have the right of rebuttal.

R. Koyanagi: Okay, if we are talking about pressure, what I was wondering was if my PRV, and majority of them are rated at 300 psi, if the line pressure surges past that and damages that, is there any pressure limit to the Department's side? We put in the device but if it's not within the specs of the pressure that comes in, we cannot protect ourselves. Did you guys understand that kind of...? That's why the hand motions came in.

R. Arikawa: No. You would have to ask the engineers.

C. Masuda: Yeah. You will have an opportunity to cross-examine them later. Board Members?

Chairperson Takamine: Anyone from the Board have questions?

L. Elarionoff: Is the video available to us?

M. Koyanagi: It was a video that was taken by the DWS meter reader. She had the video and showed it to me, but she no longer has it.

L. Elarionoff: What kind of material is under the meter or in that area where the leak was?

R. Koyanagi: What I did was I put the trench in and my waterline is sleeved in a 6-inch conduit so it doesn't have to rub on anything. It's not exposed to the sun or anything. The trench itself is #4 compacted sand. I water pack and compact it down.

L. Elarionoff: Below the leak?

R. Koyanagi: Right below the leak. It's sleeved in a pipe, so the leak was here and then you got a pipe and then it's #4 sand around the pipe.

L. Elarionoff: What is under the #4 sand?

R. Koyanagi: I sanded it up to about 4 inches. Under there, it's just general fill—dirt and rocks.

L. Elarionoff: What is your meter box made of, plastic or concrete?

R. Koyanagi: Concrete.

L. Elarionoff: With a steel cover?

R. Koyanagi: Yes. It's inside of the sidewalk.

L. Elarionoff: When you found the leak, how did you find the leak?

R. Koyanagi: I didn't find it. The meter reader found it. Oh...for me?

L. Elarionoff: The 1-inch.

R. Koyanagi: Oh, I turned on the valve that was turned off in the box and I could see water shooting, you know get that little puka on that...the pipe go inside on that...yeah, so water was shooting through that, but it was like...

L. Elarionoff: Into the meter box?

R. Koyanagi: Yeah. It was misting inside.

L. Elarionoff: But not coming out?

R. Koyanagi: It wasn't coming out of the box. It wasn't overflowing. It wasn't even over the top of the meter. She said she saw the video. So, for it to be a high amount, I say it cannot. That's the one reason why I say cannot.

L. Elarionoff: You were billed for how many gallons total?

M. Koyanagi: 926,000.

Chairperson Takamine: In your mind, is there any way that leak could cause 31 gallons of water going through the pipe in 2 seconds?

R. Koyanagi: No. No.

Chairperson Takamine: Because, honestly, I don't believe that's possible. That's a 1-inch line or 3/4-inch line?

R. Koyanagi: It's a 1-inch line but it's a 1-inch crack in the line.

Chairperson Takamine: I just wanted to ask that question.

W. Boswell: So there was no visible water, debris, and dirt coming out on the sidewalk and going down the gutter?

M. Koyanagi: No. Nothing spraying out. The ground was dry. That's why the neighbors couldn't believe it. There was nothing visible.

W. Boswell: I would expect you would see it running down the road.

N. Domingo: Mr. Koyanagi, I'm looking at this Exhibit J – your schematic showing the location of your water meter and the sidewalk and the house. I assume this is your house, correct?

R. Koyanagi: Yes.

N. Domingo: And this is a wall is right here?

R. Koyanagi: Yes.

N. Domingo: And the Department's water meter is right over here, right, along the sidewalk?

R. Koyanagi: Yes.

N. Domingo: And the break occurred about a foot from the box of the water meter?

R. Koyanagi: Yes. Right before the wall.

N. Domingo: I assume that the water meter is on street level, correct?

R. Koyanagi: The meter is on grade. It is about 8 inches below finished grade of the sidewalk.

N. Domingo: Right on the street?

R. Koyanagi: Yes. Street level.

N. Domingo: And you say your house is about...

R. Koyanagi: 7 feet.

N. Domingo: The wall is about 7 feet and then your grade would be in level with that wall, correct?

R. Koyanagi: Correct. Is it okay if I show him this? Okay. This might make it easier to see.

N. Domingo: Oh, yeah, I'm looking at that, yeah.

R. Koyanagi: This is the meter and then that's the sidewalk.

N. Domingo: The concrete that you repaired?

R. Koyanagi: Repaired, it's right there. You can see where had to crack.

N. Domingo: Yeah, I see it. It's right at the toe, the corner of the wall.

R. Koyanagi: Yes.

N. Domingo: Where's your driveway relative to...?

C. Masuda: Mr. Koyanagi. Mr. Domingo. Can you please hold up the picture so everyone knows what you are talking about?

M. Koyanagi: I believe it's Exhibit E.

R. Arikawa: And it shows it's street level.

N. Domingo: Okay, it's Exhibit E "echo." And I'm looking at this picture on the bottom is the Department's water box and right here, he claims that it broke open and then he repaired it afterwards. So...and here's the wall to his property and I say it is about 7 foot high.

Chairperson Takamine: Nestorio, what is your question?

N. Domingo: And the top of the wall is about the same elevation as the grade of his house?

R. Koyanagi: Yes. Pretty much.

N. Domingo: Okay, so I assume this is for the breakage that occurred also, right over here and that is why you fixed it?

R. Koyanagi: Yes.

N. Domingo: And it's about a foot from the water meter?

R. Koyanagi: Yes. It's right about at the edge of this, where it was.

Chairperson Takamine: Nestorio, I'm sorry, what was your question of Mr. Koyanagi?

N. Domingo: I'm sorry, I'm just trying to clarify, that's my question is how high the wall is from the road, the exact location of the water meter, and where the break occurred. That's what I'm trying to understand.

Chairperson Takamine: Thank you. Anybody else?

N. Domingo: Oh, one more thing...relative to your driveway, where is your driveway located?

R. Koyanagi: Totally on the opposite side of the house. (He pointed it out on the exhibit.)

N. Domingo: Oh, I see. Thank you.

Chairperson Takamine: Any other questions?

R. Arikawa: You're going through a lot of stress with this, yeah?

R. Koyanagi: Oh, she is. I'm just...

R. Arikawa: I used to farm, too, so I understand. Question on the bill, when you had the first leak in October, it more than doubled your bill. Did you call Water Supply at that time?

M. Koyanagi: Can I say?

(Mr. Masuda asked that Ms. Koyanagi be sworn in. Ms. Koyanagi was sworn in by the Secretary.)

M. Koyanagi: They called to tell us we had a high usage and to double check our meter if we had leaks. So we checked it and he found a leak that was consistent with the same type of leak that happened in December. We had a 1-inch crack. Same type.

R. Arikawa: Right after the meter, same area?

R. Koyanagi: No.

M. Koyanagi: On the top of that, like the grade level but it was on that same piece of pipe, I mean, that same area, same breakage, 1-inch crack. We didn't keep it because we didn't think we had to, until we got the big bill and that's why we kept the second one.

R. Arikawa: And you repaired that one?

M. Koyanagi: The same day that they called.

R. Arikawa: And you did the same, with sand and everything underneath, the material?

R. Koyanagi: Yes.

R. Arikawa: So then, a couple months later, you get another call on this high usage one, on that second one. I cannot see that amount of water coming out. Like what Mr. Boswell said.

C. Masuda: Mr. Chairman...this is just a time to ask questions and you can make comments later.

R. Arikawa: Okay. Thank you.

C. Masuda: Any further questions? Mr. Koyanagi, any other witnesses?

R. Koyanagi: No.

C. Masuda: Okay, this is the time for the Department to put on their case.

J. Yeh: I call up Calvin Uemura as witness. (Mr. Uemura was sworn in.) Mr. Uemura, can you tell the Board what your title is?

C. Uemura: Water Service Program Supervisor.

J. Yeh: How long have you worked with the Department?

C. Uemura: 16 years.

J. Yeh: What are your duties?

C. Uemura: Primarily, I am responsible for the billing of the Department, the meter readings, processing bills, and handling customer inquiries, problems, and complaints.

J. Yeh: You would say you have a pretty good understanding of the meter reading and billing process?

C. Uemura: Yes.

J. Yeh: Okay. I'd like to refer you back to the Department's Exhibit A. Can you identify this document?

C. Uemura: This is what is called a meter reading history.

J. Yeh: And does it appear to be the meter reading history for the petitioners?

C. Uemura: Yes.

J. Yeh: Is it something that is kept in the ordinary course of business?

C. Uemura: Yes. It is part of our billing system so it is kept in our software.

J. Yeh: And next is Exhibit B which appears to be account comments on the petitioners account. Sorry, can you identify the document?

C. Uemura: Also part of our billing system. Each account has what is called "account comments." Usually, we log any kind of calls or situations that may arise with that particular account. So each account will have a unique history of its actions about the account or interactions with the customer.

J. Yeh: Can you explain to the Board, the meter reading process?

C. Uemura: For this area, South Kona, we employ automatic meters, or drive-by units. All of the meters have electronic transmitters. Very weak signal, so our meter readers go with a recording device and have to drive by each meter and it picks up a reading. In this case it doesn't do anything else except pick up basically the 4-digit number, the reading, for each meter. We then have to take it back to our office and upload that into our billing system which then can create a report for our meter readers that filters out the anomalies. In this case, we read the meter on the 27<sup>th</sup>, went back and uploaded it, and then in the morning of the 28<sup>th</sup> when they were viewing the report, the report flagged the high reading for this account.

J. Yeh: So you are familiar with the current claim by the Koyanagis?

C. Uemura: Yes.

J. Yeh: Okay. First, let's clarify this. Does the Department routinely measure gallons per seconds or is it gallons per minute?

C. Uemura: Gallons per minute.

J. Yeh: And the account comments indicate, was this 32 gallons per minute or 32 gallons per second?

C. Uemura: We have it logged on December 28<sup>th</sup> by our office supervisor of our Kona office that at 8:10, per Andie, recheck was 1549 at 32 gpm, gallons per minute.

J. Yeh: Are gallons per minute manually counted or how is that read? Can you explain what the output of the meter is?

C. Uemura: On this particular meter, there are two types of readouts that flash back and forth. For an easier explanation, it is a 9-digit odometer readout that constantly records whatever flow. So if water is not flowing, it doesn't move. Then it flashes to a flow rate that records basically gpm's. However, the flow rate memory goes back an hour. So usually, our meter readers, when they are standing at any meter, not just this one, but a mechanical meter, will simply take a point in time and use their watch to record the meter. The difference between the first number and the second number is the gpm.

J. Yeh: But the actual output is not manual. It is generated. It is nothing that is timed?

C. Uemura: Correct.

J. Yeh: Okay. So back to the account comments, it appears that the petitioners applied for a leak adjustment in October.

C. Uemura: Correct.

J. Yeh: Did the Koyanagis subsequently apply for a leak adjustment for the October leak?

C. Uemura: Yes.

J. Yeh: Can you explain how you process that leak adjustment request?

C. Uemura: So the original request...original, meaning a request was put in November 18<sup>th</sup> for the 42,000 gallons. We did a recheck on November 25<sup>th</sup> which passed. At that point, our field person got a reading so that leak adjustment was in the process of being signed off on and granted in the system. I guess, luckily, it didn't go through; and because it didn't and the new leak was discovered, at that point, the customer had the option of choosing the larger leak, at which point we granted it.

J. Yeh: So the Department went and did a meter recheck on November 25<sup>th</sup>. Is that a common practice?

C. Uemura: Yes.

J. Yeh: To determine what?

C. Uemura: Whether or not the leak has been repaired. So in other words, in order for the leak adjustment to be granted, when our meter readers go out to check the meter, there cannot be any dial movement. Dial movement would indicate water is still flowing through the meter. So on November 26<sup>th</sup>, it passed for that initial adjustment.

J. Yeh: So based on November 25<sup>th</sup>, what would you say the maximum duration of this leak is, having read the meter on 12/27 seeing there was a leak and knowing it was repaired on November 25<sup>th</sup>?

C. Uemura: So this is unique where..., normally we would have a two-month snapshot from one reading to the next. In this case, we had, I believe it was 31 days from our recheck on November 25<sup>th</sup> to our reading on December 27<sup>th</sup> that generated 900 plus thousand gallons. In other words, in a 31-day span, 900,000 went through the meter.

J. Yeh: How many leaks of this magnitude would you say that you see throughout the year?

C. Uemura: Throughout the year? Again, generally, we only have the two-month window. But using the two-month window, about one every month, or 10 to 12 a year.

R. Arikawa: What size?

C. Uemura: 5/8-inch meter, a million gallons. 900,000 to a million two.

J. Yeh: Would you say they are pretty common?

C. Uemura: We have 42,000 accounts that we read. Twelve in a year. But once a month we get these.

J. Yeh: For the leak that occurred in December, again, what date did you notify the Koyanagis that there was a leak?

C. Uemura: We're showing that they were notified on the 28<sup>th</sup>.

J. Yeh: What was your process for notifying them?

C. Uemura: The Kona Clerk Meter Reader called the customer.

J. Yeh: Is that normal. Do you usually call them?

C. Uemura: In this size of a leak, yes.

J. Yeh: Are pressure readings done at the meter?

C. Uemura: No. Not by the meter readers.

J. Yeh: How familiar are you with the type of meters that are involved in this?

C. Uemura: We have had these in service about 6 years.

J. Yeh: What percentage of the Department's meters are of this type?

C. Uemura: This type – 10%. To clarify that, the Department has two types of automated meters. 10% are with a digital readout and there is an equal amount that are mechanical readout, still transmitting to our meter readers automatically.

J. Yeh: If the meter was in water at the time it was read, could that be something could cause accuracy issues with the way that it reads?

C. Uemura: No.

J. Yeh: How do you know that?

C. Uemura: I had the fortune of visiting the factory. I have seen them test it where they had it submerged. Number two is the reading element is a sealed element. In other words, the whole recording section is completely sealed to be waterproof; and the only possible entry of moisture would be at the antenna part which then would be not be able to receive signals. But it does not affect the odometer or the reading section.

J. Yeh: In your experience, have you ever seen these meters read fast or in an accelerated manner?

C. Uemura: No.

J. Yeh: If there are errors with the meters, what happens to them?

C. Uemura: Generally speaking, meters will actually slow down and they will stop recording water flow. Water still flows through the meter, but it does not record on the odometer.

J. Yeh: If I could refer you to Exhibit E, 3-3(3) Rules and Regulations, what is your understanding of that rule?

C. Uemura: The Department is not responsible for fluctuations in pressure. The customer is.

J. Yeh: Does the Department ever advise the customer as to whether a pressure regulating device is required?

C. Uemura: Generally only in the course of a conversation with a customer, in terms of pressure itself, our Customer Service Representatives are not engineers. Pressure is different from customer to customer. From our customers here, to some who may only have 20 pounds of pressure. Generally, unless asked, we do not mention the pressure regulator. If they do ask, it will be their responsibility to protect their fixtures.

J. Yeh: Does the Department ever advise the customer as to what type of piping to use beyond the meter?

C. Uemura: No.

J. Yeh: Back to the December leak, after they received notice of the leak, did they apply for a leak adjustment?

C. Uemura: Yes.

J. Yeh: Was that leak adjustment request granted?

C. Uemura: Yes.

J. Yeh: On approximately what date?

C. Uemura: April 17, 2017.

J. Yeh: Have you met with them at any time?

C. Uemura: We met...just prior to that.

J. Yeh: Are you aware of the claim they filed against the Department with the County?

C. Uemura: Yes.

J. Yeh: In that claim, what were they seeking?

C. Uemura: I believe it is relief of the remaining balance of the high bill.

J. Yeh: Do you know the outcome of that request?

C. Uemura: No, but I believe it was denied.

J. Yeh: If I could refer you to Exhibit A, kind of to reiterate, the meter they requested to be tested was not pulled until what point in time?

C. Uemura: The meter was pulled April 11.

J. Yeh: Did the Department touch the meter at any time before that, between the December leak and the April testing?

C. Uemura: No. Not that is recorded anywhere, no.

J. Yeh: And it appears we had a reading in February which was in their normal range, correct?

C. Uemura: Correct.

J. Yeh: So in general, have you ever seen water meters fix themselves if there was an error with them?

C. Uemura: No.

J. Yeh: Okay. No further questions at this time.

C. Masuda: Mr. Koyanagi, if you want to cross-examine?

R. Koyanagi: You said you got to go to the factory and see how they test and what they do. What psi do they test the meters at?

C. Uemura: Actually, this was a static test so it wasn't for the internal. It was for the external. It was an element test, meaning they wanted to see how the meters do in water, in the dessert heat, etc. I didn't see any pressure testing.

R. Koyanagi: Pressure could play a role. I mean, recommended is 150 from factory. I mean, it's written.

C. Uemura: Yes, but that's actually straight out of the Neptune....

R. Koyanagi: I tried to get in touch with the manufacturer and it was really hard. But that is one thing and that's why I wanted to know if you could test using the actual pressure that the meter is under in the exact conditions to duplicate if anything will go wrong. It's like if you're testing your own car to see if it's going to overheat, you drive it up Mauna Kea. If you can get into as close as you can to its actual place, then...

C. Uemura: Actually, I remember that conversation. I'm not sure whether it was you or related to the Kona Office, but I did ask that question to Owen Daimaru who is our main guy in the meter room if we could duplicate it, and basically, he told me they couldn't do that and they could only bench test for the accuracy part.

R. Koyanagi: That's what he told me too. When the meter gets old, and you asked if the meter ever speeds up or read higher, that's under normal conditions with solid water flow going through the meter. What you are saying is the impeller gets worn out and sticky sometimes and it won't read the actual flow that is going through. It will slow down and might even stop.

C. Uemura: All of our 5/8-inch meters are...these meters are positive displacement meters. I have seen, and although I am not part of Operations, I work closely with the meter room in the sense of customers ask that question. Usually, it will either be the nutating chamber breaking, we have had where the magnet actually snaps off on one side of...either on the nutating disc or on the recording section.

R. Koyanagi: So you have a nutating piece on it if you have a magnet.

C. Uemura: Yes, it's two magnets actually. One in the body and one in...

R. Koyanagi: And one is operated by the velocity of the water going through the meter, right?

C. Uemura: Right. Water going through, it spins, the magnet on the top spins equally. So from what I understand, the meter has a rating, not only for pressure but GPM's. Anything greater than that, because it cannot keep up, it actually doesn't record accurately or records less than what's going through.

R. Koyanagi: That's why if water goes through, it's operating that rotating assembly, if air goes through that, it will operate it a lot faster. There is no resistance in air as in water.

C. Uemura: I do know that the meter does record when air goes through.

R. Koyanagi: Was that checked? Cause I know we reported air in the lines also.

C. Uemura: I don't show any check for that in terms of your records. I do know that for an equal amount of air to go through, there still needs to be forward motion with a nutatingness to spin. Something has to be spinning. If it were a small amount of air, it could not record more than the number of times it could spin and each rotation is a fixed amount.

R. Koyanagi: On our records, and I don't know if this is going to make a difference; but we get December 27 is when you got ahold of us and the repairs were made and the re-read on that meter was on 12/28.

C. Uemura: Yeah, I'm showing it logged in our account comments section "notated on the 28<sup>th</sup> at 8:10," and, again, I'm just reading through it... "notified Maile, closed valve," and this is all on the same day, "Ryan called—fixed leak." At this point, this is what I have logged.

R. Koyanagi: Because we have...you want to show him that?

M. Koyanagi: Per our claim for damage, paperwork that we got from the Department, the read date was the 27<sup>th</sup> and re-check was the 28<sup>th</sup>.

C. Uemura: Correct.

M. Koyanagi: This is from them.

C. Uemura: Yes.

M. Koyanagi: Oh, I thought you said it was the 28<sup>th</sup>.

C. Uemura: No, we did read the meter on the 27<sup>th</sup>; but because it is automated, we picked up the reading on the 27<sup>th</sup>, but by the time we saw the data, it was the next day.

M. Koyanagi: No, they called us on the 27<sup>th</sup>.

C. Uemura: They did?

M. Koyanagi: We fixed it on the 27<sup>th</sup>.

C. Uemura: So, like I said, I have it logged; and, again, logged on the 28<sup>th</sup> at 8:10 so if it was the 27<sup>th</sup>, we wouldn't know, or should I say, we have to check with the Kona office for that.

M. Koyanagi: Because they rechecked it on the 28<sup>th</sup> to make sure the leak was done.

C. Uemura: Correct. That's what we have logged.

C. Masuda: Mr. Koyanagi, any further questions? Any rebuttal? (none) At this time, Water Board.

L. Elarionoff: What are your qualifications for the job you have? Are you an engineer?

C. Uemura: No.

L. Elarionoff: You came up through the ranks?

C. Uemura: Yes.

L. Elarionoff: You said the meter reading records gpm (gallons per minute); not gallons per second?

C. Uemura: No. Actually the meter reading is just a 4-digit readout. If you're talking about gpm's, the...

L. Elarionoff: I'm trying to get the accuracy of the meter reader. Is it really seconds she's talking about or is that a mistake?

C. Uemura: I believe it's a mistake.

L. Elarionoff: You believe it is a mistake. When you say "believe," you're not you sure?

C. Uemura: I wasn't there to see it. And unfortunately, I didn't see the video either. There was a problem from phone to email to get it to Hilo so I never saw that video.

L. Elarionoff: Is there anything on the meter that shows gallons per second?

C. Uemura: No. The odometer on the meter goes down to 100's of a gallon. Whether 32 gallons per minute or 32 gallons per second, it would record. You would see the digital readout continuously spinning.

L. Elarionoff: But not time element?

C. Uemura: The time element would be based on a watch. All of our gpm recordings are based on a watch.

L. Elarionoff: You said the 926,000 gallons was recorded in 31 days, not the normal billing cycle.

C. Uemura: Correct.

N. Domingo: On Exhibit A, there are two meters, serial number, two meters here. And I would assume that they are T-10 meters, the same type meters?

C. Uemura: Yes.

N. Domingo: And these were calibrated before being installed into the waterline to make sure that...

C. Uemura: Yes. Actually, to clarify that, this happened kind of a long time ago; but I believe, through our discussion, we actually changed when we put in the new meter, we put in a mechanical, you know, the digital...

R. Koyanagi: Right.

C. Uemura: Because of the initial one that read the high reading was a digital readout. We have the same meter reading capability with the register that actually is mechanical. Because there were issues with the accuracy of the digital, per our agreement, we moved to use the older model that has a mechanical readout.

N. Domingo: Why were there two meters? Did you replace it right after the leak was discovered?

C. Uemura: No, it was replaced because of the request to bench test the original meter. So we simply removed the original meter that had the high reading, replaced it with another meter, or the same type.

N. Domingo: And you said you can read the meter remotely just by passing by?

C. Uemura: Correct.

N. Domingo: So you drive by, you have your instrument, your monitor, and you can actually see the consumption...or the reading...I'm sorry.

C. Uemura: Just the reading.

N. Domingo: Do you do this regularly? How often do you drive around looking for, reading meters?

C. Uemura: Every area is set up on a regular cycle of approximately 60 days. The Koyanagis' readings are all on even and pretty much on the 18<sup>th</sup>, the 20<sup>th</sup>, or the 21<sup>st</sup> of any even month. That's their cycle for the reading.

C. Masuda: Any other questions? (none) Call your next witness.

J. Yeh: I call Daryl Ikeda. (Mr. Ikeda was sworn in.)

J. Yeh: Can you state your name and your occupation with the Department?

D. Ikeda: Daryl Ikeda. Chief of Operations.

J. Yeh: How long have you worked for the Department?

D. Ikeda: 21½ years.

J. Yeh: Given the fact that you have worked with the Department for 21½ years, are you familiar with the types of meters involved in this matter?

D. Ikeda: Yes.

J. Yeh: So there seems to be some thought by the petitioners that the 32 gallons per minute reading is not possible. Do you agree?

D. Ikeda: It is possible under that pressure. I have some calculations.

J. Yeh: At this time, I would like to have you look at the Department's Exhibit H. Can you identify this?

D. Ikeda: This is the Greeley formula, which is an industry standard where we can calculate theoretical flow through our pipe.

J. Yeh: Is this formula widely used in the engineering community?

D. Ikeda: Yes.

J. Yeh: I noticed you plugged some numbers in. Can you tell us what the fixed value is that you used in the calculations?

D. Ikeda: If you look at the first one, this is assuming that there is nothing blocking, it is just free flowing out, that will be the  $Q = 43767$  over 1440 times the area times the square root of the pressure. Assuming that, you know, we took the average pressure...out of a 5/8-inch pipe, the meter, and average pressure is about 148, if a pipe is flowing full without any restrictions at that pressure, the maximum that can go is 113.7 gpm.

R. Koyanagi: How much?

D. Ikeda: 113.7 gpm. So, I also did a couple more calculations, you know, based on their picture that is 1-inch long; and, like it's hard to tell how wide it is, but then say it was 1/32, you know, you think that formula would be like 8.7 gpm; but when I assumed it was a 1/16-inch wide crack, it goes up to double. It goes up to 17.4 gpm. And without being really able to look at the pipe, and under pressure, it will expand more. So what it is, measured to what it is under pressure would be a little more, so if it was like a 1/4-inch crack, or it expands to maybe 1/4 inch, it's possible to get the 32 gpm leak.

J. Yeh: With using these kind of fluid figures in terms of the size of the crack, approximately how many days would it take to leak 926,000 gallons with each crack?

D. Ikeda: If we just took that 1/16-inch crack, at that 17.4 gpm, it's gonna take about 37 days to get that 926,000 gallons.

J. Yeh: Does it seem consistent with the known maximum duration of the approximately 31 days?

D. Ikeda: So, it could very well be because if it expands more than the 1/16, it will be leaking at a greater rate than the 17.4. So I would say it is possible.

J. Yeh: Can you explain why there may be a discrepancy between the calculations that you arrived at versus the 32 gallons per minute that were read at the December 27<sup>th</sup> meter reading?

D. Ikeda: I'm not sure. This is just theoretical, and I think the meter reader just did their clock so, it could have been close to 32. It's just a theoretical, just guessing how wide the crack is.

J. Yeh: And the hole can expand.

D. Ikeda: Right. Under pressure, it will expand so more water will be coming out.

J. Yeh: Okay. Next, can you identify, still in Exhibit H, last page, what the document is?

D. Ikeda: That is the form that our meter reader section fills out when they do a bench test.

J. Yeh: Are you familiar with the bench testing procedures?

D. Ikeda: Yes.

J. Yeh: How frequently would you say meters are tested?

D. Ikeda: As requested. When they pull a meter, we test to see if it is still working; and if not, we overhaul it before putting it back out.

J. Yeh: Can you explain why we might not have been able to duplicate the PSI?

D. Ikeda: Our bench test is not equipped for that. We can just run what the pressure is at the baseyard.

J. Yeh: Can you go over the results of the bench test for the Board and the petitioners?

D. Ikeda: What we do is we test for three flows: 1/4 gpm, 2 gpm, and 15 gpm. Each one, we have AWWA standards where if it falls between the range, it is acceptable. We did 1/4 gpm and it came out 94%. Industry standard is between 90 and 101.5. The 2 gpm one came out at 100 and the standard is between 98.5 to 101.5. The 15 gpm one came out at 99.4, and the standard is between 98.5 to 101.5. So they all passed the three tests for the bench test.

J. Yeh: Does that indicate to you that there are no issues with the meter?

D. Ikeda: Correct.

C. Masuda: Mr. Chairman, there has been a request for a recess. (Chairman indicated it was okay.) I caution the Board not to discuss this matter during the recess. Recess will be five minutes.

(The Board recessed from 11:25 a.m. to 11:30 a.m. Ms. Yeh continued with witness, D. Ikeda.)

C. Masuda: We're back on the record? Continue with your questioning.

J. Yeh: Do you feel that the petitioner's live in an area where fluctuating pressure levels are normal?

D. Ikeda: Yes, because they live at the bottom where the pressure is high.

J. Yeh: What types of devices help, or what should one living in that area have to help with that?

D. Ikeda: A pressure regulator after the meter.

J. Yeh: Does DWS have its own pressure regulating valve on its own line servicing this?

D. Ikeda: Yes. We have it further up the road.

J. Yeh: If there are issues with the Department's pressure regulating valve, could that impact the pressure at the Koyanagi's residence?

D. Ikeda: Yes.

J. Yeh: But a pressure regulating valve should alleviate that if the petitioners have one, correct?

D. Ikeda: It should, at their home, yeah.

J. Yeh: What type of piping does the Department use prior to the meter box?

D. Ikeda: The lateral? Copper.

J. Yeh: Okay. And in your opinion, is copper less likely to be susceptible to pressure issues than Drisco piping?

D. Ikeda: Yes.

J. Yeh: It is possible at all that or how might air get into a line before a water meter on the water side of the meter?

D. Ikeda: There would have to be a break somewhere where air can enter. Otherwise, the waterline is under constant pressure so air can't get in.

J. Yeh: And do we have any records of water main breaks or repairs on or about the time the leak was reported?

D. Ikeda: No.

J. Yeh: No further questions.

C. Masuda: Mr. Koyanagi.

R. Koyanagi: Okay, you were talking about the air in the lines. I know that can happen if you shut down for repairs.

D. Ikeda: Yes, a main break.

R. Koyanagi: Also, you can get air in the lines, not common, but through a pressure regulating valve. If you throttle it too much, it will cause turbulence?

D. Ikeda: Right.

R. Koyanagi: And then it will send it downstream also. Can that be happening if you're trying to throttle it down so we don't have that high of a pressure at our location?

D. Ikeda: Throttle it down?

R. Koyanagi: You decrease it so we don't have as much pressure coming down.

D. Ikeda: What we do is at our PRV, water is coming from our Haleki'i Tank. At that elevation, where we put our PRV, the pressure is at like 138 psi. That is the pressure there, so we cut it down from there. We release it at 50 psi. I think, where you live, from where the elevation of the PRV to your house is about 218 feet difference in elevation. Your house pressure, using the formula of .43 psi per foot, should leave your pressure at about 143 to 145 psi, normally.

R. Koyanagi: Now it is. Since this, it has gone down to below 150. It swings 143 to 142.

D. Ikeda: Yeah, that's about right. At that elevation, when it's working correctly.

R. Koyanagi: Right.

D. Ikeda: So at the maximum, say our PRV runs away, something breaks or it just runs, you would get that 138 plus that 93 so about 230 pounds at the most if everything just runs accordingly.

R. Koyanagi: Does that line feed the tank right below our house, right across from the park?

D. Ikeda: Yes.

R. Koyanagi: It does. So if that valve is open, the tank level goes down, the valve is open, right, so it's feeding this tank. And if it's a high flow time...

D. Ikeda: What tank are you talking about? Sorry.

R. Koyanagi: Right below the Kona Scenic Park, there's a water tank. And then below that, in Hokulia, there is a water tank also. Does that line that goes down our street feed those tanks?

D. Ikeda: Is that our line?

K. Okamoto: Yes.

D. Ikeda: Yeah, it's probably going to that tank too.

R. Koyanagi: So if the timing of your valves, too, is not correct, and you got surge in the line that will come up from the tank all the way up past this air leak...

D. Ikeda: It is possible if it slams.

R. Koyanagi: Right. Or if it doesn't close in time because you're taking the surge from the whole line as this is trying to close, and I've seen...

D. Ikeda: Yeah. It is possible.

R. Koyanagi: I've seen pressure go up in the high 200's/300's. So that is one other thing I'm thinking is that why my pressure regulating valve goes? Is that slamming in the pipe causing my side to fail?

D. Ikeda: I can't say can or cannot.

R. Koyanagi: You say we are responsible for pressure-related issues, but is it only to a certain pressure or it can go up to 500 and break my things and I still gotta fix it?

D. Ikeda: As far as I know, from what the Rules and Regulations say, it doesn't define a pressure.

R. Koyanagi: It doesn't... (He asked Ms. Koyanagi to read something.)

M. Koyanagi: According to the last page, Exhibit DD in the folder, we found on the internet, some common problems that can lead to erroneous meter readings. It had to do with air valve problems. According to this, it says "...Air pressure in piping system can lead to major water meter issues such as erroneous water metering and damage to the internal components of the water meter. An air valve prevents air from travelling through the piping system and passing through the water meter. When public or private water supply is irregular or inconsistent, water channels through from upper levels of the distribution system and gathers in the lower levels. Air replaces the water drained from the upper levels.

As soon as the water supply is restored, water refills the pipeline, moves the air, forcing air through the water meter, rotating the impeller and gears very quickly. Air flowing through the meter causes damage to its internal components and escalates its readings.” So, we know we had air in our line that we knew from just listening to the air sputtering out, the water sputtering out. My question to you is if air could have possibly caused an erroneous meter reading at that time, can it come back to normal readings after that because it was just during the time when the air passed through?

D. Ikeda: After the air goes through?

M. Koyanagi: Yes. After the really high meter reading of 926,000 gallons. That’s what the meter read.

D. Ikeda: Right.

M. Koyanagi: So we’re thinking that air might have caused the erroneous meter reading through what we found, also.

R. Koyanagi: That is one reason.

M. Koyanagi: One reason. So our question to you is after that erroneous meter reading because of that air pressure problem, can the meter come back to normal readings after that? Like, the next bill we had was 11,000 gallons.

D. Ikeda: No. The air would go through.

R. Koyanagi: So any air that passes through any meter, then they’re no good?

D. Ikeda: No, it’s just, it’s still working.

R. Koyanagi: That’s what she’s asking.

M. Koyanagi: So it will, it can come back to normal meter readings, because at that point, there’s no air?

D. Ikeda: Once the water starts going through, it will just read normal.

M. Koyanagi: Okay.

R. Koyanagi: And the pressure you were talking about in the pipe and the 1/32 crack to 1/16 crack to 1 inch and you need to see the pipe...I have the pipe outside if you need to see the pipe.

D. Ikeda: We cannot duplicate the 148 psi.

R. Koyanagi: I did that. I did it at 154.

D. Ikeda: How much did it open?

R. Koyanagi: It did not open much. Because what I did was I put it in a pipe because it will spray all over. What I was looking for was the gallons per minute coming out of that crack at that time. I didn’t care how much the thing opened, how long it was, how high it shot. All I wanted to know was what the meter read. And that’s why I put the meter in a series so I could read an actual pressure that it was in, what the gallons coming out of that crack was.

D. Ikeda: So what's the question?

R. Koyanagi: So you were saying it can go 30 gallons a minute.

D. Ikeda: It's possible.

R. Koyanagi: But not through that crack.

C. Masuda: Mr. Koyanagi, sorry to interrupt, but this is not the time for arguments. You can ask questions. (Mr. Koyanagi concluded his questions.) Rebuttal?

J. Yeh: Okay, so if air conceivably did get into the meter, how might that affect the accuracy of the reading?

D. Ikeda: It would have just recorded the amount of air that went through, like maybe a gallon, five gallons, I'm not sure. Unless the water starts going through again, it will start reading the water.

J. Yeh: In this scenario, is it likely that air was coming through the water side of the line and passing through the meter?

D. Ikeda: I don't know how, but it's unlikely. I'm not denying that they saw air so I'm not sure how the air got in.

J. Yeh: Is it possible that air could have gotten in through their line when they did the repair in December?

D. Ikeda: Yes. When they did the repair. When they cut their line, yeah.

J. Yeh: No further questions.

C. Masuda: Members of the Board?

N. Domingo: Are you aware of any pressure fluctuations in that area? Does the pressure fluctuate much?

D. Ikeda: Depending on the usage in the area. It will fluctuate up and down.

N. Domingo: So your equation, it's just a model, it's not representative of the actual conditions out there? And so there would be a fluctuation in the flow rate as well? Could be less could be more?

D. Ikeda: Yeah. 148 was just like an average.

N. Domingo: What is the variability...what's the difference between the low and the high pressure in that area?

D. Ikeda: Between 140 to 160... I mean, it's small. I don't know the exact number, but it would not be that much more.

N. Domingo: Okay, and that would...if you apply that Greeley question, that would affect your flow rate?

D. Ikeda: Yeah.

N. Domingo: Could be less; could be more.

D. Ikeda: Yeah.

N. Domingo: Okay.

L. Elarionoff: You mention “theoretically” a number of times. You said theoretically, it’s possible to have 926,000 in 37 days. Why didn’t you say emphatically, “yes it is possible”?

D. Ikeda: It is possible, according to the numbers, it’s possible.

L. Elarionoff: And in the second time he questioned you, you mentioned gallons of air. How can you measure gallons of air? You cannot measure air by gallons.

D. Ikeda: If air goes through the meter, it will just record it as gallons--not gallons of air but just gallons of water.

L. Elarionoff: Okay. Thank you. And you also mentioned they live at the bottom of the hill where the pressure is high. Are you talking about water pressure?

D. Ikeda: The water pressure, yes.

L. Elarionoff: Okay thank you. Thank you, Mr. Chairman.

Chairperson Takamine: Any other questions? Bill.

W. Boswell: In your experience, if 29,870 gallons per day was travelling through the meter, away from...which is down at grade level, less than a foot below the sidewalk, would you expect to be able to see something noticeable?

D. Ikeda: Depends on the ground underneath. It could just go straight down and nobody would see it.

W. Boswell: Right, so if it was up in the yard, I could understand, it is on fill...

D. Ikeda: Yeah.

W. Boswell: So it would be the soil conditions.

D. Ikeda: Yeah.

Chairperson Takamine: Any other questions?

B. Balog: With a cut in the pipe, you can get water coming out, air going in, right?

D. Ikeda: No.

B. Balog: I was just curious whether that was possible.

D. Ikeda: Just water coming out.

Chairperson Takamine: Maybe a follow-up to Bill's question, but say the leak was actually outside of the meter box, right, near where the wall was.

R. Koyanagi: Yes.

Chairperson Takamine: So I'm assuming...maybe if it was in the meter box...sorry, that's not a question.

W. Boswell: If the person reading the meter that day showed up, would you expect water to be flowing out of the top of the box? Would that be an alarm signal for them?

D. Ikeda: Yes.

W. Boswell: They would note it on the ...

D. Ikeda: If there was a leak, they would notify them.

W. Boswell: But physically, they didn't note any water...the sidewalk wasn't flooding or anything like that?

D. Ikeda: I guess they just reported high reading.

W. Boswell: And that wasn't done by taking the cover off. It was just done by reading. That was my understanding. Only because it was a digital meter.

D. Ikeda: Yes. A drive-by reading.

Chairman Takamine: Based on the existing field conditions, do you believe there was any chance that particular water meter was faulty? That there was anything wrong with that based on field conditions?

D. Ikeda: Based on our testing and it seems like it read normally, the next billing cycle, so I'm tending to believe it was working correctly.

Chairperson Takamine: So there's no doubt in your mind, there was no failure of the meter?

D. Ikeda: Yes.

Chairperson Takamine: Any other questions? (none)

C. Masuda: Any other testifiers?

J. Yeh: No further witnesses.

C. Masuda: Okay, it's time for closing statements. Mr. Koyanagi, you go first.

R. Koyanagi: With the evidence that we found and the testing we have done, I think it shows there was something wrong at the time with the meter. Air in the line...she asked if our break can cause air in the line. To the question about air in our line, yes, because of our repair, there was air in the line; but it doesn't go through the meter because our responsibility is the valve past the meter, I was told. So that's the valve that we use so the pressure goes through the valve up until the meter and there's downstream of that meter, is that valve and that's where it was closed off. So there was no air going back into the meter. In our pipe, yes, but not into the meter when we repaired the leak. The meter read good, the bench test

was good, it tested good...a while after. That is why I talk about moisture on the meter having something to do with it. After it's dried up and it goes in, and that PSI testing, it came out okay. That's all I have.

C. Masuda: Thank you Mr. Koyanagi. Department?

J. Yeh: You have heard testimony about whether or not the meter was accurate. I don't believe the petitioners have shown it was more likely than not that there was an error with the meter. We found out they had a normal reading without the meter pulled and tested. There was testimony from Mr. Uemura saying that leaks of that magnitude happen almost once a month. It's not implausible for a leak of this size to happen. And it's also unlikely that or there is nothing to indicate air in the meter on the Department's side of the line which would cause it to fluctuate. The Rules indicate that the petitioners are responsible for their line beyond the meter. That's where the leak occurred. They are also responsible for regulating their pressure which they have been doing diligently. But at the same time, the Department has been very cooperative. In this instance, they have granted them the leak adjustment, and notified them as soon as possible about the leak. And they have been extremely cooperative and have granted all of the relief the petitioners are legally entitled to.

C. Masuda: Mr. Chairman, that concludes the testimony and the closing. It is time for the Board to deliberate. To start off for the deliberation, you can ask for any repeat of any testimony that the recorder will provide--not the parties. Prior to the discussion, someone has to make a Motion as to either find in favor of the Koyanagis, based upon "XXX" or find in favor of the Department based upon "XXX" and can set amounts in it. Recognize also that just because you make the Motion, or you second the Motion, doesn't mean you have to vote for it. In either case, we will ask that later on after the Motion is done, that there be a specific findings of what the Board believes occurred.

Chairperson Takamine: Shall I call for Motion? (Mr. Masuda replied yes.) I'd like to call for a Motion.

**MOTION**: N. Domingo: I'd like to make a Motion. I'd like to move that we grant the petitioners' request.

L. Elarionoff: Second.

Chairperson Takamine: Do we have to state a certain amount?

C. Masuda: No, we're not even there yet.

Chairperson Takamine: Discussion?

M. Masuda: Mr. Domingo, why and what amount?

N. Domingo: Why...I looked up the usage data for the last ten years and it was very consistent until October to December timeframe when they had the high usage reading. And I also looked up the location of the damage and it is just impossible that they could see what was going on with the damage. So that is why I am not convinced that they are liable for the water use, and I am convinced that they didn't use the water resulting from the high reading.

C. Masuda: Okay, if I can clarify, and correct me if I'm misstating anything you're saying, I'm just trying to get the facts correct..., when you said you looked at the damage, are you speaking to the Exhibits of the photos?

N. Domingo: That's correct.

C. Masuda: And are you saying that the photos do not show the damage that you would find consistent with 926,000 gallons?

N. Domingo: I have doubts. I'm not really convinced.

C. Masuda: And are you saying you do not believe that the water... when you said they didn't use the water, are you saying that you believe the water meter to be in error? The 926,000 gallons did not go through that meter? (Mr. Domingo asked for a repeat of the question.) That 920...there was something wrong with the meter and that 926,000 gallons was not expelled?

N. Domingo: It was expelled, but there is no...I believe that they were not able to see that physically until... and they were only made aware after the reading from the Department of Water Supply that they had this high reading...this high usage rate.

C. Masuda: So the water meter is correct but they did not have notice of the leak?

N. Domingo: I believe that the water meters were properly calibrated and were putting out the right reading.

C. Masuda: Okay. That is the Motion on the floor that the Board find in favor of the Koya...and so this is a complete...so you're saying that they're not responsible for any of the overage?

N. Domingo: That's correct.

C. Masuda: Okay. So, then, they are not responsible for any of the overage, that based upon a 10-year look-back, that their usage has been consistent until this event occurred, that looking at the photographs, that the Board determines that the damage...well, the photographs did not show any damage, that the Koyanagis should not be liable for this overage; however, that the water of 926,000 gallons did go through the meter but that the Koyanagis are not responsible for it because they had no notice until the leak occurred. Is that correct?

N. Domingo: That's correct.

W. Boswell: I'd like to amend the Motion.

L. Elarionoff: Wait wait. I seconded his Motion in the beginning, but I will not second what he just said.

W. Boswell: And myself, too.

C. Masuda: Okay.

L. Elarionoff: I have a different idea of the whole thing. I thought we were going to discuss...everybody have a discussion, after which time, we vote. That's what I thought.

W. Boswell: He's just recording what Nestorio said.

C. Masuda: I'm just trying to record what I believe that he said, to make it clear.

Chairperson Takamine: So we can continue with discussion.

L. Elarionoff: Okay, my turn?

Chairperson Takamine: Go ahead, Leningrad.

L. Elarionoff: Okay. You know, as far as I'm concerned, the first mistake came up when they used that gallons per second. It is totally impossible. And I wrote that down. The reason I say that is if you were using 31 gallons per second, that means you fill up a 55-gallon drum in 4 seconds or in one-minute time, you would fill up eighteen 55-gallon drums. It cannot happen--not using a 5/8's ...not coming from a crack in the line. Just the meter...5/8 inch, that's the tip of my finger. That's 5/8's, it's barely 5/8's. You cannot have that much water coming out. Then you go to 32 gallons per minute. That would be about 30,000 gallons per day. He said the whole place is covered with #4 sand. Those who do work in construction know that #4 sand, you fill 'em up, it's going, unless there is a huge vacuum below the pipe and water goes down only, the water would be all over the road, back up at the meter box and all that. It would pop off the cover from the meter box. That's how much water is coming out. 30,000 gallons a day. That's too much. As far as I am concerned, what I'm saying is that the Water Department has not proven their case. Whatever happened, I don't know; but as far as I'm concerned, they didn't prove their case.

Chairperson Takamine: Thank you Leningrad. Anybody else?

W. Boswell: I back up what he just said, absolutely. We weren't able to prove that the water was used. We see a meter reading that shows the anomaly, but there is no evidence at the home, especially at that elevation, and how close the break was to the ground that that water came out of that hole. Not at that volume.

Chairperson Takamine: I'm gonna side also with Leningrad. Using common sense, I don't believe that was possible.

R. Arikawa: Mr. Chairman, for the record, that's the same notes I have on here. What Leningrad and Bill said, there are a lot of gray areas and nothing conclusive. I would have to go with this.

Chairperson Takamine: Can I call for another Motion?

C. Masuda: We already have a Motion and a Second; but it's been moved to modify. It's a little loose on the rules. So at this point, let me see if I can get the Motion correct; and if any Board Member disagrees, let me know. After that, I will try to see if we can take a vote. If you disagree with how it's being restated, you can tell me, because, Mr. Domingo, from what your position is and your Motion is different from the Motion being forwarded at this time. But no sense we keep on going...Motion...Motion. Mr. Domingo?

N. Domingo: Can I just say something about that error, the mistaken calculations made? To me, that is irrelevant. What I'm looking at is the actual physical data and that's what I'm basing on, my...

C. Masuda: Okay, but your Motion, just to clarify, is inherently different from the other modifications to the Motion and that they are saying that the 926,000 gallons was not expelled and that it must be due to some kind of error, where you are saying, no, it was expelled but the Koyanagis had no notice.

N. Domingo: That's my position, and that includes also...you know, there's a lot of variability to think of. That's why I asked Mr. Ikeda about the pressure fluctuations and I asked Mr. Koyanagi about the location of the damage relative to the house and all of that.

C. Masuda: Okay. Since the Motions are diametrically opposed...

L. Elarionoff: Huh? It's not diametrically opposed. My...

C. Masuda: I'm sorry...the findings.

L. Elarionoff: My statement was that I don't know what happened to the 926,000 gallons. I'm not drawing any conclusion.

C. Masuda: Okay, so you're not saying the 926,000 gallons was leaked?

L. Elarionoff: No, I'm not saying...I don't know what happened. I have no idea what happened to that. All I know is that the Water Department did not prove their case that they in fact caused that much water to come out.

C. Masuda: Okay. Understand this, is that the Koyanagis have the burden of proof. They have to prove their case by a preponderance of evidence, meaning that what they are saying is more likely than not, that there was no 926,000 gallons expelled.

W. Boswell: And that would be as evidenced in their documents?

C. Masuda: Yes.

L. Elarionoff: Okay, if that's the only option I have, I would go along with that.

C. Masuda: Okay. So given that's the case, when you say "I will go along with that," I don't understand...I want to be clear on what your intent is.

Chairperson Takamine: Can I help clarify? I think what, and correct me if I'm wrong, I think what Mr. Elarionoff is saying is that the 926,000 gallons were not expended through that meter after the meter, is that what you are trying to get at?

L. Elarionoff: All I'm saying is I don't know what happened to it. I don't know if the meter is faulty, or air...or all the options that could have been. I don't know what.

Chairperson Takamine: But are you saying it is highly unlikely that the leak expended...the leak that they had past the meter expended 926,000 gallons, that that it's highly unlikely, based on the information?

L. Elarionoff: Yeah.

Chairperson Takamine: I think that's what he's trying to get at.

C. Masuda: Okay. So, the base Motion is to find in favor of the Koyanagis, that they are not responsible for the overage, correct?

L. Elarionoff: Yes.

C. Masuda: As far as findings, though, is it the majority's findings that the 926,000 gallons recorded by the meter is not accurate and where the water went to is not determined but you believe that meter reading not to be accurate?

W. Boswell: Based on the evidence provided by the Koyanagis.

R. Arikawa: I'd like to say that they didn't use the water, they are not liable for the water use, and therefore not obligated to pay.

ACTION: A vote was taken on the Motion to find in favor of the Koyanagis. Motion was carried unanimously by voice vote.

C. Masuda: With that, that concludes...

R. Arikawa: Do we have to point out what they're gonna pay then?

Chairperson Takamine: No. That was part of the Motion.

C. Masuda: No, that's part of the Motion is that they're not responsible.

W. Boswell: For the overage.

R. Arikawa: They just pay their average bill, or...?

C. Masuda: No. All that was appealed was the overage.

R. Arikawa: Okay.

C. Masuda: So, at this point, for the parties, a Findings of Fact and Conclusions of Law is not necessarily strictly provided for by rule because they found in favor of the customer. All that needs to be found is that a decision and order was made. If it was found in favor of the Department, because the Koyanagis would have the right to appeal, as does the Department, still yet, it requires a more formal Findings of Fact and Conclusions of Law. At this time, all that is required is a Decision of Order. I will ask Ms. Yeh to prepare the Decision of Order and send it to the Koyanagis. Under the notice of submission requirement or rule, once you receive it, you have ten days to object and you can submit your own form of the Order. If you do not respond within ten days, or the Department within ten days, we will submit that Order either with your signature or without your signature. So watch for that in the mail. Hopefully we will get that proposed Order out to you before March 27. If you change your address, please notify the Department as soon as possible.

Chairperson Takamine: Thank you for your time.

(Mr. and Ms. Koyanagi thanked the Board and left the meeting at 12:10 p.m.)

6) **PRESENTATION OF AUDITED FINANCIAL STATEMENTS – JUNE 30, 2017**

Copies of the Department's Audited Financial Statements for the fiscal year ended June 30, 2017, have been distributed to Board Members. Representatives of N&K CPAs, Inc., the Department's independent auditors, Mr. Chad Funasaki and Mr. Ryan Iwane, were present to review the report and took questions.

Mr. Iwane directed the Board's attention to Pages 11 and 12, Statement of Net Position. The net pension liability of \$29,247,607 is up approximately \$10.3 million from last year's \$18,940,000. This is a number that is estimated by the Department and the County of Hawai'i and the State agencies. The reason for the increase is due to two things. One is the estimated rate on return of investments of the State Employees Retirement System (ERS), down from 7.65% to 7%. The other is an increase in assumed mortality rates.

This means the State's money is not going to grow as initially thought and that people are living longer. On Page 13, Statement of Revenue and Expenses, some administrative expenses increased in part because of the pension expense.

In response to Mr. Elarionoff's question of whether this is a "loss loss," Mr. Funasaki replied that water sales were \$46.4 million and operating expenses were \$53.5 million. That is a loss of \$7 million.

Mr. Elarionoff asked how the Department can continue absorbing this loss.

Mr. Iwane replied that in addition to statement of revenues and expenses, there are other statements included in the basic financial statements that collectively, you can look at and draw your own conclusions. The question of whether this is a loss loss, it is a paper loss rather than a cash flow loss.

Mr. Funasaki added that if you look at operating expenses, you have depreciation which is what you are depreciating your assets at over a period of time. It is not a cash item. If you take out that \$14 million depreciation from operating expenses, it would be a \$7 million in operating income. The cash flow statement will show that add-back.

Mr. Iwane pointed out Page 14, Statement of Cash Flows, and this is designed to show users the net inflows and outflows in cash related to operating, financing, and investing activities, and paints a different picture from the Statement of Revenues, Expenses, and Changes in Net Position.

Mr. Arikawa noted on the bottom of Page 14, it shows a decrease from \$33 million at the beginning of fiscal year to \$24.5 million end of fiscal year.

Mr. Iwane stated that some of the cash is going from cash into investments and is reinvested into the water system.

Mr. Funasaki reviewed Pages 38 and 39. Note I: This was newly adopted by the Department in 2017. It pertains to what Mr. Iwane mentioned about the pension liabilities and the way that number is computed. The net effect of this new accounting principle is a dollar amount of \$414 thousand for implementation. Lately there has been a lot of guidance coming out with respect to how to account for pensions; and hopefully, this is the tail end of it. Note J: This was a prior period adjustment of \$450 thousand made to the 2016 financial statements, and this will be covered more under the Findings.

Second report is on Pages 44 and 45. This Report on Internal Control over Financial Reporting is a government auditing standard and is a required report. It defines what a deficiency is; and on Page 45, there were three things they considered to be significant deficiencies. During the 2017 audit, Pages 46 through 48, the first two revolve around revenue recognition as timing of when you recognize revenue. The first finding on Page 46 pertains to grants. Normally, to consider yourself earning revenue from these grants, you have to incur expenditures. You will not recognize an award up front without incurring expenditures. You recognize revenue as you expend funds. What happened was there was an award amount that was recorded as revenue but there were no expenditures incurred. What needed to be done was to take the revenue and the receivable off the books. That is the net impact of this finding. They are working with the Department to improve on recognizing it in the correct periods. The second one also has to do with revenue recognition but this one is where revenue should have been picked up. You have these service connection, deposits were made, and once that deposit is made, a liability is booked because until such time that connection is made, you will not recognize revenue. It will just sit on your balance sheet like an unearned item, but management went back and researched some of these connections and found that these were made in previous years; therefore, revenue should have been picked up in a previous year. It is actually recognizing revenue so it is going the other way now. The third relates to internal control

and logical access controls, who has certain administrator rights to the accounting system. It is just to align if you do not really need that access, perhaps you should not necessarily have them, and grant access to the people that make the most sense. Management's response to these notes is at the end of the report. The Department did a great job of implementing some of these changes. Hopefully these accomplishments will be seen in next year's audit report.

Mr. Arikawa stated they did a good job in finding the discrepancies and acknowledged the Manager-Chief Engineer and Mr. Sumada for finding ways to comply.

There being no further questions, Messrs. Funasaki and Iwane thanked the Board and left the meeting at 12:28 p.m.

7) SOUTH HILO:

A. **JOB NO. 2018-1081, PI'IHONUA #1 DEEPWELL C REPAIR:**

This project consists of furnishing all labor, materials, tools and equipment necessary for the replacement of the existing submersible pump and motor, column assembly, sounding tubes, and all appurtenant materials; electrical work; chlorinate the well and pumping assembly; and complete an efficiency test; in accordance with the specifications. Bids for this project were opened on February 15, 2018, at 1:30 p.m., and the following are the bid results:

<b>Bidder</b>	<b>Bid Amount</b>
Derrick's Well Drilling and Pump Services, LLC	\$389,952.00
Beylik Drilling and Pump Service, Inc.	\$593,840.00

Project Costs:

1) Low Bidder (Derrick's Well Drilling and Pump Services, LLC)	\$ 389,952.00
2) Contingencies (9.9%)	\$ 38,948.00
<b>Total Cost:</b>	<b><u>\$ 428,900.00</u></b>

Funding for this project will be from DWS's CIP Budget under Deepwell Pump Replacement. The contractor will have 120 calendar days to complete this project. The Engineering estimate for this project was \$395,000.00.

The Manager-Chief Engineer recommended that the Board award the contract for JOB NO. 2018-1081, PI'IHONUA #1 DEEPWELL C REPAIR, to the lowest responsible bidder, Derrick's Well Drilling and Pump Services, LLC., for their bid amount of \$389,952.00, plus \$38,948.00 for contingencies, for a total contract amount of \$428,900.00. It is further recommended that either the Chairperson or the Vice-Chairperson be authorized to sign the contract, subject to review as to form and legality by Corporation Counsel.

MOTION: Mr. Arikawa moved for approval of the recommendation; seconded by Mr. Boswell.

In response to Mr. Boswell's question about the large difference in bid prices, the Manager-Chief Engineer replied that most of the line items in their bid were higher. Mr. Boswell noted it was good to see the engineering estimate so close to the lower bidder's price.

ACTION: Motion was carried unanimously by voice vote.

B. **CANCELLATION OF WATERLINE AGREEMENT AND EASEMENT ON**

**TAX MAP KEY 2-7-020:016:**

Construction of the Paukaa Waterline Relocation project is complete and the new waterlines are in service. Accordingly, the Department no longer requires access to the waterline running through the above-named parcel granted by the Waterline Agreement and easement. The Cancellation of Agreement and Petition for Cancellation of Easement documents will be executed and filed with the Bureau of Conveyances and Land Court, respectively, subsequent and subject to the Board’s approval.

The Manager-Chief Engineer recommended that the Water Board authorize the cancellation of the Waterline Agreement and easement over Tax Map Key 2-7-020:016 and approve the Cancellation of Agreement document and that either the Chairperson or the Vice-Chairperson be authorized to sign the documents subject to review and approval as to form and legality by Corporation Counsel.

ACTION: Mr. Arikawa moved for approval of the recommendation; seconded by Mr. Boswell and carried unanimously by voice vote.

**C. CANCELLATION OF WATERLINE EASEMENT ON TAX MAP KEY 2-7-020:014:**

Construction of the Paukaa Waterline Relocation project is complete and the new waterlines are in service. Accordingly, the Department no longer requires access to the waterline granted by the easement running through the subject parcel. A petition for cancellation of the easement will be filed with Land Court subsequent and subject to the Board’s Approval.

The Manager-Chief Engineer recommended that the Water Board authorize the cancellation of the easement over Tax Map Key 2-7-020:014 and that either the Chairperson or the Vice-Chairperson be authorized to sign the documents, subject to the review and approval as to form and legality by Corporation Counsel.

ACTION: Mr. Arikawa moved for approval of the recommendation; seconded by Mr. Boswell and carried unanimously by voice vote.

8) NORTH KONA:

**A. JOB NO. 2017-1060, HUALĀLAI DEEPWELL REPAIR – CHANGE ORDER NO. 2:**

The contractor, Derrick’s Well Drilling and Pump Services, LLC, is requesting a contract change order for the additional work associated with the well extraction and submersible motor teardown. The description of additional work and associated fees are as follows:

<b>ITEM</b>	<b>DESCRIPTION</b>	<b>AMOUNT</b>
1.	Eliminate “Additional Work”	-\$ 4,000.00
2.	Eliminate” Part “D”, Item 12, Installation of (2) 10” x 20’ D.I. pipe and related fittings.	-\$ 500.00
3.	Labor for extraction of Hualalai Deepwell.	\$ 35,000.00
4.	Teardown and inspection of submersible motor.	\$ 2,500.00
	<b>TOTAL</b>	<b>\$ 33,000.00</b>

Original Contract Amount: \$ 327,000.00  
Original Contingency amount: \$ 32,700.00  
1<sup>st</sup> Additional Contingency request: \$ 31,380.10

Change Order #1: \$ 64,080.10

2<sup>nd</sup> Additional Contingency request: \$ 33,000.00

Change Order #2: \$ 33,000.00

**Total Revised Contract Amount: \$ 424,080.10**

The Manager-Chief Engineer recommended that the Board approve an increase in contingency of \$33,000.00 to Derrick's Well Drilling and Pump Services, LLC, for JOB NO. 2017-1060, HUALĀLAI DEEPWELL REPAIR. If approved, the total revised contract amount shall be \$424,080.10.

MOTION: Mr. Scicchitano moved for approval of the recommendation; seconded by Mr. Boswell.

The Manager-Chief Engineer explained that this was because of the work to extract the pump and motor from the hole. It was not a warranty issue. The contractor is due payment for the work performed.

Mr. Arikawa asked if the \$35,000.00 for extraction was thought at one time to be a warranty issue.

The Manager-Chief Engineer replied that was correct. It is the accumulation of the four items in the table.

Mr. Arikawa asked how the project is coming along.

The Manager-Chief Engineer replied that for this project, Job No. 2017-1060, the contractor has fulfilled his contractual obligations; but the well is not operational. The Department has to do another contract to make it operational.

Mr. Boswell stated this brings up the uncomfortable issue of horizontal storage of pumps and motors.

The Manager-Chief Engineer stated that the Department, in its ongoing work for long-term solutions, we are still contemplating storage options.

Mr. Elarionoff asked about the final conclusion for the well failure.

The Manager-Chief Engineer stated that it is not 100% certain if it was due to warranty.

Mr. Elarionoff asked if there was no final conclusion in that case.

Mr. Boswell stated that the correspondence from Derrick's Well Drilling kind of goes through several different people's opinions.

Mr. Elarionoff stated that it is all opinions but nothing conclusive.

Mr. Boswell stated the Department owned the equipment and asked the contractor to put it in. It was stored by the Department.

Mr. Elarionoff asked if there was anything being done to prohibit it from happening again.

Mr. Arikawa interjected that the Board was getting off the subject.

The Manager-Chief Engineer noted he would try to respond under his report later.

Mr. Domingo stated that he had a problem with this second contingency.

The Manager-Chief Engineer stated that the scope of repair was to mobilize the rig, extract the pipe, pump, and motor, and put in a new pump, motor, and pipe back down. They did that but it did not work. Therefore, they had to pull it out again, which was not covered in the original scope of work; but it was the Department that had directed them to pull it out because the initial assumption was warranty. That lead to this additional work.

ACTION: Motion was carried unanimously by voice vote.

**B. RIGHT-OF-ENTRY FOR KALOKO TANK NO. 2 (TAX MAP KEY 7-3-009:030) FOR SURVEYING AND SUBSEQUENT CONSTRUCTION OF A DEEP MONITOR WELL:**

The State of Hawai‘i, Department of Land and Natural Resources (DLNR), is requesting a temporary Right-of-Entry (ROE) in order to conduct a topographic survey and install a deep monitor well on the DWS Kaloko Tank No. 2 site to continue to increase monitoring efforts and to better understand the groundwater resources in North Kona. DLNR will be responsible for all costs associated with their work within the property.

The Manager-Chief Engineer recommended that the Board approve the ROE Agreement and authorize either the Chairperson or the Vice-Chairperson be authorized to sign the Agreement, subject to the review and approval as to form and legality by Corporation Counsel.

MOTION: Mr. Arikawa moved for approval of the recommendation; seconded by Mr. Boswell.

In response to Mr. Boswell’s question of whether this would be a deep well and whether it was just to monitor, Mr. Inaba replied it is a deep well, and there will not be any production from this well. It is just to monitor.

ACTION: Motion was carried unanimously by voice vote.

9) MISCELLANEOUS:

A. DEDICATIONS:

The Department received the following documents for action by the Water Board. The water system has been constructed in accordance with the Department’s standards and is in acceptable condition for dedication.

1. GRANT OF EASEMENT  
Grantor: Henry F. Hills, Ishmail R. Hills and Ishail K. Hills  
Tax Map Key: (3) 7-3-007:100
2. BILL OF SALE  
Seel Subdivision SUB. No. 2014-00001335  
Seller: Jeffery W. Seel and Carol Seel  
Tax Map Key: (3) 7-3-007:007  
Facilities Charge: \$5,500.00     Date Paid: 2/16/2018

Final Inspection Date: 2/14/2018  
Water System Cost: \$97,000.00

3. **BILL OF SALE**  
SUB. No. 2016-1643  
Grantor: Francis H. Rodillas and Martha A. Rodillas  
Tax Map Key: (3) 2-5-040:042  
Facilities Charge: \$5,500.00 Date Paid: 1/18/2018  
Final Inspection Date: 12/14/2017  
Water System Cost: \$23,000.00

The Manager-Chief Engineer recommended that the Water Board accept these documents subject to the approval of the Corporation Counsel and that either the Chairperson or the Vice-Chairperson be authorized to sign the documents.

ACTION: Mr. Arikawa moved for approval of the recommendation; seconded by Mr. Boswell and carried unanimously by voice vote.

**B. MONTHLY PROGRESS REPORT:**

Mr. Boswell asked about the Papaikou Transite and G.I. Pipeline Replacement project:

- Is the GI an acronym for galvanized iron? Correct
- We are splitting the funding so the USDA is a participant in that? Yes
- Is transite pipe prevalent in our systems? Not prevalent but still in some areas.

Mr. Arikawa asked about the Waimea Treatment Plant Upgrades, if the training has been completed.

Mr. Uyehara replied that training has been ongoing for the past two weeks, and staff is receiving training from the contractor and subcontractors as well as Department of Health approvals, moving toward final completion of the project.

Mr. Arikawa asked about the Queen Ka‘ahumanu project. It says the MOU is being routed for additional funds and if that affects the Department.

Mr. Inaba replied the MOU was sent back with the funds. The money is really owed to the contractor. Manager-Chief Engineer added that was brought before the Board a while ago for the escalation cost. They have not come in since then for any additional overage.

Mr. Boswell asked about the Wai‘aha Transmission that ties into the Department’s new system that goes down to Queen Kaahumanu but the source is still tied up in development of the Wai‘aha well. That means the transmission line could be ready but getting the well development to catch up would be after.

Mr. Inaba replied that was correct. There is an existing well that was the main source.

Mr. Boswell noted that was the reason for the transmission project. Its source’s current condition is what it is. He asked about the extraction of the Wai‘aha Well. The Manager-Chief Engineer replied he would cover it under his report.

**C. REVIEW OF MONTHLY FINANCIAL STATEMENTS:**

No questions.

**D. DEPARTMENT OF WATER SUPPLY PROPOSED OPERATING AND 5-YEAR CAPITAL IMPROVEMENT PROJECTS (C.I.P.) BUDGETS FOR FISCAL YEAR 2019:**

The Department's Fiscal Year 2019 Operating Budget, totaling \$53,864,000, and 5-Year C.I.P. Budget for Fiscal Year 2019-2023, totaling \$96,200,000, have been distributed for the Board's review.

The Manager-Chief Engineer recommended that the Board approve a public hearing to be held on Tuesday, March 27, 2018, at 9:30 a.m., prior to the Water Board's regular meeting, to accept public testimony regarding the Department's Fiscal Year 2019 Operating and C.I.P. Budgets.

ACTION: Mr. Boswell moved for approval of the recommendation; seconded by Mr. Arikawa and carried unanimously by voice vote.

**E. POWER COST CHARGE:**

Departmental power costs have increased as a result of Hawai'i Electric Light Company, Inc. (HELCO), billings. The Department proposes to increase the Power Cost Charge from \$1.62 to \$1.88 per thousand gallons to reflect this increase. In order to accept public testimony on this change, a Public Hearing should be scheduled before the Power Cost Charge is increased.

The Manager-Chief Engineer recommended that the Board approve holding a Public Hearing on March 27, 2018, at 9:45 a.m., to receive testimony on increasing the Power Cost Charge from \$1.62 to **\$1.88**, effective April 1, 2018.

ACTION: Mr. Arikawa moved for approval of the recommendation; seconded by Mr. Balog.

The Manager-Chief Engineer stated this is the Department's ongoing evaluation of its power cost charge. The Department's Energy Analyst, Mr. Warren Ching, is available to answer questions.

Mr. Elarionoff stated that it seems like when a public hearing comes up, it is going to be up another 10 cents. He asked if there was any way it could be done to keep up with it rather than the lag.

The Manager-Chief Engineer replied that is something the Board could discuss; however, there is always going to be a lag because of the due process time involved from when the calculations are done up to presentation to the Board, and then scheduling a public hearing.

Mr. Scicchitano noted it does not always go up. Sometimes it goes down. The Manager-Chief Engineer noted the last power cost change was an 11-cent decrease.

The Board asked Mr. Ching to comment.

Mr. Ching explained that there were fluctuations in the power cost charge from HELCO and had to do with fuel costs. HELCO charges the Department and how it affects the fuel as oil prices rise. They pass on that fuel cost to the customer, in this case, our Department. That affects the Department's cost per kilowatt-hour. As fuel costs goes up, the Department's per kilowatt-hour cost goes up as well and goes up across all of the Department's accounts.

Mr. Boswell asked if HELCO also has a process that creates a lag time.

Mr. Ching replied they do it pretty fast. All they have to do is bring it to the Public Utilities Commission. In answer to Boswell's question of whether it requires public testimony, Mr. Ching replied that the public can attend, but it does not necessarily need public vote.

Mr. Scicchitano asked if it would be possible for the Department to provide a chart showing the history of how the power cost charge fluctuated over the past years.

The Manager-Chief Engineer asked Mr. Ching to go over how even though the Department's consumption has decreased, it does not necessarily have a proportional decrease.

Mr. Ching reviewed that the Department reduced consumption over the past year. This PCC is based on cost per 1,000 gallons. As the Department's consumption goes down, its kilowatt hours also goes down, so it is kind of proportional. It kind of follows each other but does not necessarily or is not directly proportional because of a cost the Department has to pay HELCO, which are the demand charges. The Department has to pay for the maximum power it uses, which is in kilowatts. The power used to run a well, may it be for one hour or for 24 hours, does not change so that charge does not change. While kilowatt-hours may go down as consumption goes down, the total costs to HELCO may not go down as fast as directly proportional.

Mr. Domingo asked if is there a trigger point for determining when we might lower the costs.

The Manager-Chief Engineer replied it is subject to the costs that HELCO charges passes on to us as the customer.

ACTION: Motion was carried by voice vote.

F. **MANAGER-CHIEF ENGINEER'S REPORT:**

The Manager-Chief Engineer to provide an update on the following:

1. North Kona Wells – As of January 9, 2018, the water restriction was downgraded to a voluntary 10% Conservation because at that time, ten out of thirteen wells were operational. Currently, eleven out of thirteen wells are operational, leaving the Department with Hualālai and Wai'aha wells out of service. Hualālai will be repaired under another competitive bid process, mentioned earlier. The latest on Wai'aha is that the contractor has videotaped the well and has begun the extraction of the pipe, pump, motor, and cable. The hard part about this one is there is no set timeframe on how long it will take to extract the pipe, pump, motor, and power cable. Will continue to update the Board on the progress. The hopes are after extraction, the well will still be usable. If they get everything out of the hole, they will need to videotape it again to verify that the casing is still good so another pump and motor can be placed down the hole. In response to Mr. Boswell's question of whether vertical alignment would be verified, he replied yes. If certain types of damage are found, the Department would need to consult with some hydrogeologists to see if there is any remediation that can be taken. The main priority is to retain the source. In response to Mr. Elarionoff's question of who pays for the damage if there is damage to it, he replied at this time, the Department's position is that it is on the contractor because it was their rig that failed, unless something comes up that indicates otherwise. In response to Mr. Boswell's question of whether the contractor is proceeding at his own cost right now and who the contractor is, he replied they are proceeding at their own cost and it is Derrick's Well Drilling. In response to Mr. Elarionoff's question of how far the Department would go if it comes to the point where the well is not usable--if it would mean digging a new well and purchasing the equipment needed for it also, he replied if it comes to that, the Department would probably need have a discussion with Corporation Counsel and involve

litigation at that point. Mr. Boswell asked if the Department is still moving forward with the new well source/site, he replied that is correct. The Department is in a professional services contract for that. A site has not been identified yet, the where it needs to be in general and what elevation is. It is going to be a separate site. The Department continue to look at having redundancy in wells, meaning two 700-gpm wells versus one 1,400-gpm well. The downside is the property needed, and another challenge is that up in that area, there are a lot of archaeological challenges.

2. Hawaiian Ocean View Well – Mr. Young provided an update on the progress. Since last month’s report to the Board, the well was repaired; however, on February 9, after four subsequent start-ups, the motor tripped off on phase loss. That means right after it tripped off, a meg test was done, which is an electrical resistance test of the well. The higher the number, the better. This one megged “0” which indicates there is probably a short circuit somewhere. Power is going somewhere but not to the motor, or it might have gone to the motor and burned the motor. The contractor is obligated to pull it out and is expected to begin by early next week. They are on the Hāwī job right now. Mr. Boswell asked what the cost efficiency would be to haul water and shut down that well. The Manager-Chief Engineer replied that is the dilemma the Department faces; one is the obligation to the community to at least provide water to the spigots for the general public and the other to do with the water hauler accounts, which have been suspended during this repair because they can still go to Wai‘ōhinu or Ho‘okena to fill up. Once this well equipment is extracted, the Department will have to determine the extent of the scope and the next steps. It may look similar to what is happening with Hualālai Well. In response to Mr. Boswell’s question of whether this was a new contractor-supplied pump and motor; and if so, what brand, Mr. Young replied it is new, and it is an SME motor and Centrilift pump. In response to Mr. Domingo’s question of whether staff feels this is a downside problem, Mr. Young replied yes. The exact problem will not be known until it is pulled out, however. The Manager-Chief Engineer added that this well is similar to the Kona wells in that it is a deep well (2,200 feet). The only difference is it is a much lower horsepower and water quality is not the greatest. Incoming power quality is also an issue because HELCO does not have a robust system out there. In response to Mr. Boswell’s question of whether a third party is being engaged to look into this one, he replied that the Department is unofficially utilizing information that is being gained from the Kona situation to this well and if certain things are applicable to HOVE, they will be applied. In response to Mr. Domingo’s question of whether that was the only option, he replied there is a study being done, through State Legislative funds, by Tom Nance Water Resource Engineering under a professional services contract for possible locations for a second well. The area being looked at is more towards Ho‘okena/Manukaa and not in the same place as the first well. He confirmed Mr. Boswell’s question of whether it would also be for haulers and spigots and not distribution.
3. American Water Works Association (AWWA) National Conference – June 11-14, 2018 – the Department has budget for four Water Board Members to attend. This should be another interesting conference. If interested, please let the Department know. Conference to be held in Las Vegas.

#### **G. CHAIRPERSON’S REPORT:**

1. Chairperson to report on matters of interest to the Board – Chairperson Takamine noted that he, Mr. Domingo, and Mr. Scicchitano attended the Pacific Water Conference on Oahu earlier this month. For him, it is a good continuation of his water education and networking with other water industry people throughout the State. He asked if Mr. Domingo and Mr. Scicchitano if they wanted to add anything. Mr. Scicchitano stated he thought the conference was very good. Being his first time, he gained exposure to the different types of equipment and felt the classes were very informative, the networking beneficial and he would like to attend the next one.

Mr. Domingo stated that he learned a lot from the conference on water policies, and it helps him understand the water industry. Chairperson Takamine encouraged Board Members to attend and network, especially new Board Members. He also asked that the Department and the Board help lobby the Mayor's Office to fill the Board's two vacancies, Districts 3 and 6.

2. North Kona Water Permitted Interaction Group Update – Chairperson Takamine reported that the Permitted Interaction Group met since last month's meeting and has given itself a deadline of March 20 to come up with a final report. They are working through what has been a lot of technical data and information and is making sure that the report that is given to the Board is not something that will be over everyone's heads but will be in a manner where people can easily understand it. The goal is to have this ready for the March 27, 2018, Water Board Meeting.
3. Mr. Elarionoff asked for an update to the item mentioned last month under the Chairperson's Report regarding the Environmental Management Commission being asked for assistance from the Council regarding water research management.

The Manager-Chief Engineer reported that there was a presentation by a member of the Environmental Management Commission to the Council Committee on Environmental Management in which he basically expressed his personal views on ways to conserve water. This was on February 20, which he and the Deputy attended. In the meantime, the Department had provided all of the council members information on the various efforts this Department is undertaking regarding conservation, and copy provided to the Board by email. Council did not have any further questions. His understanding is that the Communication was filed by the Committee, and there is no follow-up required unless a council person decides to initiate another effort.

Mr. Elarionoff thanked him for the report. It is dormant then, and that was all he needed to know.

10) ANNOUNCEMENTS:

1. **Next Regular Meeting:**

The next meeting of the Water Board will be March 27, 2018, 10:00 a.m., at the Department of Water Supply, Hilo Operations Conference Room, 889 Leilani Street, Hilo, Hawai'i

2. **Following Meeting:**

The following meeting of the Water Board will be April 24, 2018, 10:00 a.m., at the Department of Water Supply, Hilo Operations Conference Room, 889 Leilani Street, Hilo, Hawai'i

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Recording Secretary