

GARY KRAHMER

TAPE 3, Side 1

December 20, 1995

M.O'R.: It's - what is the date today? Must be the ...

G.K.: I've got the 20th.

M.O'R.: 20th, that's right. Yeah, that sounds exactly right.

G.K.: Okay.

M.O'R.: So it's December 20th. This is the continuation of the oral history with Gary Krahmer, and today's interview is taking place at his home in Hillsboro.

Well, where we left off last time you had just - after telling me, you know, this wonderful story about growing up on the farm there on the Tualatin, I think you had just taken the job with the Hillsboro wastewater treatment. Can you tell me a little bit about specifically your job there and just in general what the operation was of the Hillsboro wastewater treatment plant in those days?

G.K.: Sure. The - that treatment plant is located on the south end of First Street in the city of Hillsboro. It was one of the first, if not the first, what we call secondary wastewater treatment plant constructed in the state of Oregon, put in operation in 1936.

There are three stages of treatment. The first stage is called primary treatment, and basically what you do there is you remove any floating material and remove any material that will settle in a tank to the bottom of the tank, of course, and then you remove that material. That's called primary treatment.

Secondary treatment is a process whereby there are natural bacteria in wastewater, and you develop facilities to cultivate and use those natural bacteria to literally eat up the pollutants in the water. And this is the type plant that was constructed at that location in 1936. I fortunately had the opportunity to go to work for the City of Hillsboro at the wastewater treatment plant in 1957 - I believe is what I said. I don't have my notes, either.

Anyway, my job was to assist the head operator at the treatment plant to make sure that the plant's mechanical equipment was functioning properly, to assure that we were maintaining a proper biological process in order that these bacteria could do the best job possible, and just general maintenance of the facility. There are a lot of pumps and electric motors and other operating equipment in these treatment plants, and all of that needs fairly continuous maintenance. Obviously in a treatment plant such as that or any of them, there's a lot of water, and you get a lot of activity on the metal, rusting, and deterioration of concrete and those sorts of things, and we spent a fair amount of time cleaning and repainting equipment, changing oil in the various pieces of equipment to make sure that they had clean oil for operation. Just general maintenance and housekeeping in the facility.

Also, at that particular facility during the summertime, because there was so little water in the Tualatin River, not enough to assimilate the wastes that were not removed in the treatment process, we would take that water and irrigate it in an area called Jackson Bottom. Jackson Bottom consists of about 600 acres of bottom land that floods usually every winter, but in the summer of course there's no water there, so we use that land to spray irri-

gate this treated wastewater onto in order to prevent pollution in the Tualatin River.

So in the summertime I would spend a great deal of time moving irrigation pipe. We would cut the grass that would grow in the area, and during my time, which of course no longer happens, we would burn this grass. We would cut it and wind row it, and then when it dried up we'd set a match to it, and my word, I've never seen smoke clouds as large as the ones we created when we burned that grass in that bottom, because we would burn, oh, up to a hundred acres at one time, and it was just a huge mass of black smoke that covered the city of Hillsboro. But ...

[interruption]

M.O'R.: So this grass, then, you would cut it and let it dry a bit before you torched it; is that right?

G.K.: Yes. Yes. That's right. Yeah.

M.O'R.: So it would just be lying on the field, then?

G.K.: Yes. Yeah. That's right. And it was a pretty crude way to do things, quite frankly, because there was a lot of bird life in the bottom, pheasants and other bird life, and I'm sure that some of them met their demise when we were doing those operations down there. Of course, that's no longer being done today because it's been developed into a true wetlands where they still remove some of the grasses, but that's all used for a variety of purposes: cattle field or bedding for horses and cattle, things like that. And it's quite well developed into various ponds now where the wastewater goes into those ponds and those ponds are being used by waterfowl year 'round.

M.O'R.: So the wastewater facility still does discharge to the bottom?

G.K.: Yes. That's correct. The treatment facility is still there. Obviously it has been upgraded a number of times. I was involved in several of those when I was at USA. But the water is still used in the bottom for irrigation purposes and maintaining water in these water facilities for the wildlife.

M.O'R.: And it's - but the water that's discharged to it now is presumably a lot cleaner than it used to be?

G.K.: Oh, yes. Much, much cleaner than what it was when I first started at the City, yes. I would say today 95 to 97 percent of the pollutants are removed through the treatment process, which comes out then really quite clear.

We argued and continue to argue today that the treated wastewater out of all the USA facilities is cleaner in many respects than the Tualatin River itself, and we've proven that through a lot of testing.

M.O'R.: Now, in the days when you first went to work for the wastewater treatment plant, there apparently was a sewer system in Hillsboro then that discharged water to your plant, or brought the water to your plant?

G.K.: Yes.

M.O'R.: But I assume - some folks were on septic tanks in those days, too?

G.K.: Yes. That's true. The treatment plant that I went to work in served what I would describe as the west side of the city of Hillsboro, which included all of the old downtown area, which is obviously still here. But the sewer system itself did not go



beyond Tenth Street, which is the Tualatin Valley Highway going past Shute Park. There was no sewer system east of there.

During my employment at Hillsboro, they were starting to put sewers in that area. Given it was all septic tanks, most people out there had wells at that time also, and of course wells and septic tanks can tend to cause water quality problems, especially, you know, if you've got a drain field with a septic tank and a well adjacent; that can create some real problems. So they were starting at that time to put sewers in in the east side of Hillsboro.

Also during that time I was involved with overseeing the construction of a second wastewater treatment plant for the city, which was located in the southeast part of the city of Hillsboro. That plant was finished at the City of Hillsboro, and I spent about a year working at that plant before I moved to Walla Walla. It was probably one of the most modern treatment plants to be built at that time, which was about 1960.

M.O'R.: So you worked for the Hillsboro waste plant for, what, four years?

G.K.: About three-and-a-half years.

M.O'R.: Three-and-a-half?

G.K.: Yeah.

M.O'R.: How did you get into the wastewater business?

G.K.: Well, it - as I indicated in the last interview, I was working at A.B. Smith Chevrolet Company reconditioning used cars. And my neighbor - at that time I was living in the Witch Hazel area, which is now a part of the eastern part of the city of Hillsboro, and my neighbor, who was a very good friend of mine, his sister was married to the Head Operator of the Hillsboro wastewater

treatment facility, and he had told me one day that the fellow that had been the assistant to the head operator had left and gone to another job in another location, and that they would probably be filling that position.

So I decided to go visit the City, and lo and behold, they decided to hire me to fill that position. That's how I got involved with wastewater.

M.O'R.: And was that just simply a better job for you, a little closer to home, or was it because you were specifically interested in water treatment at that point - or maybe both?

G.K.: Yeah. Frankly, it started - well, I spent about four hours with the head operator before he ever offered the job to me and before I ever decided to take the job.

My initial - before I met with him, my initial views of it was, "Oh, it's a lot closer to home, and I don't have so much travel." The salary was a little less than I was earning at A.B. Smith, but because of the lesser amount of travel I should be able to handle this financially.

However, after having met with him for four hours and him describing this business, I became very interested in the business and I could see that there probably could be quite a future there.

So it was a combination of being closer to home and also an interest in the business.

M.O'R.: Now, would the waste that came into that plant, was that all just from households, or were there some industrial or agricultural operations that also put their waste into the sewer lines?

G.K.: The waste was a combination of business, industry and residential. We had the Birdseye cannery operating here at the time in the city, and their wastewater came to the treatment plant in a separate system. The reason for that is if that had been combined with the business and residential wastewater, the treatment plant was not nearly large enough to handle that much waste.

So we took their waste separately, and the only treatment that was provided to that waste - and I'm just talking cannery waste, not the human waste that comes out of the cannery, but the cannery waste - we would take that water and pass it over screens and screen out the chunks of vegetables that would have come down the system, and then we took the water and irrigated it in Jackson Bottom. So it was dealt with separately from the other waste.

M.O'R.: So it had sort of a primary treatment but not the secondary, then?

G.K.: Yes. And really not even primary in the sense that the term is used in the business. Just screening and irrigating. Didn't even go through a settling process.

M.O'R.: And what would you do with the solid wastes, then, that came out of this operation?

G.K.: The solid waste from the cannery process, as I recall we would load that into a truck that the City provided, and we would bury that material in a pit that we would dig in Jackson Bottom.

The solid material that is generated - was generated through the other process that dealt with residential and commercial wastewater, that is called sludge in the business, and it goes through a treatment process also, not unlike a septic tank, but we create

an environment where it can be stabilized much more rapidly than a septic tank.

And we would take, then, that material and apply it to farmland, and it serves as a very good humus. Also they get nutrient benefit from the material. So it was just primarily in the farm community.

We had no agricultural waste coming into the facility, other than from the food processing plants.

M.O'R.: Now, you said that you - obviously there was some consciousness, I guess, about the quality of water discharged to the river?

G.K.: Yes.

M.O'R.: You said that you dumped the water in Jackson Bottom during the summertime when the flow was low?

G.K.: That's right.

M.O'R.: Does that mean you dumped it straight to the river during the winter?

G.K.: That is correct. That is correct. As soon as the fall rains came, then we would redirect the treated sewage directly to the Tualatin River. The theory is that the flow in the Tualatin River would increase significantly, or at least to a point to where it could assimilate the waste products remaining in the treated sewage.

M.O'R.: So you'd have sufficient dilution then?

G.K.: Yeah. Exactly. Right.

M.O'R.: And the bottom presumably was a lot fuller - had a lot more water in it during the winter months, anyway?

G.K.: Yes. Yes, that's true.

M.O'R.: Because it seems like you could continue to discharge it to the bottom during the winter, but would that have flooded it or something?

G.K.: It would have flooded it earlier than through the natural run-off process, and the operation was such that the water that we irrigated on the bottom had to go into a large basin, and then from there we would pump it into the bottom. So there wasn't a direct discharge to the bottom itself.

M.O'R.: So it involved an extra step?

G.K.: That's right. Yeah.

M.O'R.: So you could bypass that in the winter time?

G.K.: Right. Right.

M.O'R.: Of course, now I guess Jackson Bottom, like you say, has been turned into a wetland, a true wetland, and I guess even has some nature trails and other recreational aspects associated with it?

G.K.: Yes.

M.O'R.: Did - how did the general community interact with the bottom in those days? Was it just a waste place that you stayed away from?

G.K.: It truly was, yes. There was very little human activity down there other than ourselves that were working down there, although in the winter time there was a fair amount of duck hunting that occurred in Jackson Bottom, city folks going down there and hunting ducks, but that was the only recreational activity that occurred during those times.

But now, as you say, it's been developed into quite a bird watching recreational facility. I currently sit on the Jackson Bottom steering committee and am involved in the development of it.

M.O'R.: Okay. Well, we might want to talk about that a little more, too, later one.

G.K.: Right.

M.O'R.: Okay. And what - during that period right around 19 - you know, late 50's, 1960, then, when you were working for the wastewater plant in Hillsboro, what was the consciousness around water quality issues in the Tualatin? Were people even aware of it as an issue or ...

G.K.: No. In my opinion and recalling those days, people were not concerned about the quality of water in the Tualatin River.

The primary concern came from the agricultural community who were concerned about quantity. They wanted water for irrigation purposes. And there was - I recall no concern about quality, just quantity.

M.O'R.: There was - probably roughly about this time, maybe even a year or two earlier, before you went to work for the wastewater plant - I don't have my chronology totally straight here - but there was an Army Corps of Engineers plan to kind of straighten out the Tualatin ...

G.K.: Yes. Yes.

M.O'R.: ... and maybe even build a couple of dams on it to control the flow?

G.K.: Yeah.

M.O'R.: Was that during the time that you were there?

G.K.: Actually, my understanding is that that study was conducted in the 1940's.

M.O'R.: Okay.

G.K.: And you are correct. They had determined through this study that they could improve the flow - I think that was the primary concern was that the water was not moving out of the basin rapidly enough, therefore it was causing fairly continuous flooding at certain times of the year. And they had proposed to do a lot of straightening of the river, making sub-channels, if you will, in order that the water could flow through much more rapidly.

I never had the opportunity to see that study as such, but I suspect you're correct where you mentioned that they probably had a few dams proposed in that particular study. I'm sure they had one on the main stem of the Tualatin, and very likely there was one proposed on Dairy Creek, which is the largest tributary coming into the Tualatin.

M.O'R.: And was that something that you were aware of either on the farm or in your job at Hillsboro? I mean, was it any kind of an issue?

G.K.: Quite frankly, I did not become aware of that study until after I returned from Walla Walla. I was not - at least I cannot consciously recall having been aware of the study prior to coming back from Walla Walla.

M.O'R.: Okay. It never got too far, I guess, but ...

G.K.: No, it really didn't, I was going to mention also as I recall the study was recommending that all of the snags and stumps be removed from the river in order to obviously improve the flow, and of course that's contrary to all of the theory nowadays

that those things need to stay there, which I'm sure is correct, in order to enhance aquatic life.

M.O'R.: Right. Beaver dams and like that, huh?

G.K.: Right.

M.O'R.: Okay. And let's see, even back in those days, I guess - you mentioned that people were concerned about the quantity of water in the river.

G.K.: Yes.

M.O'R.: And I guess that was a real problem in summertime?

G.K.: Oh, yes.

M.O'R.: Lake Oswego, I guess, was dependent on the Tualatin in those days as well as today. Were there - in what ways, if any, did the Hillsboro waste treatment plant have to modify its procedures to take that into account? Was there anything you did, apart from the fact that you told me already, of course, that the flow was too low in the summertime to assimilate the waste, but was there any idea that you should be dumping water certain times of the year?

G.K.: Dumping water so they had water to irrigate with? During my tenure there there was never any pressure to do that. Lake Oswego has the first water right on the Tualatin River, and - although they were not receiving their quantity of water for that first right, they were getting enough water to keep their lake full during those times, so therefore they did very little complaining, as I recall.

The farm community, as I recall, never asked us at Hillsboro to discharge into the river in order to give them more water. That changed later on, although it wasn't the Hillsboro plant. In fact



we had an incident about eight or nine years ago where the Banks wastewater treatment plant, which is operated by USA, and is also under a permit, like all treatment plants, and is disallowed to discharge in the summertime into what is called Dairy Creek, and Dairy Creek literally dried up at that location eight or nine years ago. And we then were directed by DEQ, the State Department of Environmental Quality, to start discharging into the creek in order that the farmers would have water for irrigation. We found that rather interesting, because that violated our permit, but ...

M.O'R.: Right.

G.K.: So, you know, it depends on where the pressure and the politics are.

But during the 50's and early 60's there was not pressure from the farm community for discharge into these - from these various treatment plants. The farmers' efforts during those times were more directed toward creating the Hagg Lake facility, which of course was finished in 1976, and that's where their efforts were going as opposed to ...

M.O'R.: So Hagg Lake was kind of on the planning boards even as early as the time when you were working for USA?

G.K.: Oh, yes. Yes, that's true. My understanding, as a matter of fact from Oscar Hagg, who unfortunately passed away about a year ago, they had worked on that facility for 20 years before it ever got underway.

M.O'R.: Yeah, that's right. I talked to Lucille, I guess is - Lucille Hagg, his widow. I think it's Lucille. But I guess she mentioned that Oscar and - what was his father's name ...

G.K.: Henry.

M.O'R.: Maybe Henry. Was he - he was more the prime mover for that?

G.K.: Yeah, that's true. And it was Henry for whom they named the lake, the Henry Hagg Lake, yeah. We all call it Hagg Lake, of course.

M.O'R.: Right. I think she said that the first - maybe the first attempts to - it might have even involved a trip to Washington ...

G.K.: Oh, yes.

M.O'R.: ... were in the late 40's, so that would be about right in terms of your 20-year timetable.

G.K.: Yeah, that doesn't surprise me, because I know a number of these farm community folks, as well as some of the officials from Hillsboro, made a number of trips to Washington D.C. in order to get Congressional contribution or participation in the project, yeah.

M.O'R.: Well, we'll talk about that a little bit more later on. But actually just as a completely out of chronology aside here, though, as long as we're on the topic today, I was just talking to Judge Panner, Owen Panner, yesterday about his observation that the Tualatin is now extremely high. It's been that way, he said, for just the past few days. And he said he had heard a rumor that they were dumping a lot of water out at Hagg Lake because they were afraid the dam might burst up there or something. Is that something that you know anything about?

G.K.: The only thing I know there is that about two years ago they were experiencing some - what the Bureau of Reclamation considered to be excess leakage from the dam, and they went into the

dam and did some core drilling. I actually observed their rigs up there doing core drilling up there in certain locations on the dam because of the excess amount of water that was seeping through the facility.

They did some correction work at that time. Whether they solved the problem entirely or not, I don't know, but it's possible that they're still having some excess leakage and they are concerned about if it's too full that there could be some problems with the dam itself.

Also, of course, as I understand it they need to discharge fairly heavy volumes of water in order to maintain a certain level in the reservoir in order to capture the next runoff from the next storm, whenever that might occur. I know its operation, especially in the spring, is very critically observed by the Corps of Engineers, the Bureau of Reclamation and the Tualatin Valley Irrigation District, who actually do the physical operation of the facility, but all three of those are watching it very closely during the spring, in order to maintain enough capacity to hold spring runoff but yet don't discharge too much that you aren't full when it stops raining, and I know that's kind of a chess game because it's so hard to predict that weather.

M.O'R.: Right.

G.K.: But I know the operator of the dam, and he talks about that quite often, about how they're juggling in order to try to have a full facility but yet have enough capacity to prevent flooding downstream.

M.O'R.: And who is the operator of the dam?

G.K.: Wally Otto is the individual's name, and he works for the Tualatin Valley Irrigation District.

[end of side one]

GARY KRAHMER

TAPE 3, Side 2

December 20, 1995

M.O'R.: ... that you spent the rest of your life in the wastewater business, that your original sense that this was something you'd be interested in turned out to be confirmed during those three-and-a-half years?

G.K.: Yes, that's really true, Michael, although I spent about eight years in the operation of treatment facilities and collection systems, and then the remainder of my career was spent in the management area. Now, I had not anticipated that when I first went into the business. I always felt that I would be in charge of an operation.

But as things turn out, you know, why, sometimes you never know about those things. But the opportunity presented itself where I could get into management somewhat in Walla Walla, but much more so when I returned to the Aloha Sanitary District, where I was the general manager of the total business there. So there was a lot of good luck involved.

M.O'R.: Now, let's talk about Walla Walla here in just a minute, but let me ask you first of all who were your other two colleagues there at Hillsboro?

G.K.: At Hillsboro the Head Operator was Jim Burns, and Jim is still - still lives in the city of Hillsboro. Unfortunately his wife just passed away here recently, but Jim's still around, and I see Jim every once in a while, and we have a good time.

The other individual, the mechanic's name was Vince Heinrich, and they lived in Hillsboro, lifetime residents in Hillsboro. And he worked for - he was a mechanic, as I indicated, and he worked for Coomer Meat Company for a number of years, and we talked about them during the last interview about their discharge of raw products coming out of a meat processing facility being directly discharged into the river. But he worked there for a number of years, and then he came to the city about a year after I had gone to the city. And then he continued at the city until he retired, which - I suppose he worked there for eight or ten years, something like that.

That was the three of us that operated that facility.

M.O'R.: And you mentioned that you were involved somewhat in maintenance, but I take it Vince Heinrich was also involved in the maintenance, then?

G.K.: Yes. We would work together frequently on the maintenance of equipment and so forth. I primarily did all of the laboratory work. Mr. Burns would help me in some cases, but once I learned all of the tests that were necessary and the process for doing the testing, I would do all of the laboratory testing work and record keeping. All of the - well, oversight of all the wastewater treatment plants comes through the State Department of Environmental Quality, and we were required to keep track of all of the data of the operation and send monthly reports to the State. And then if there was anything that they observed through these records that needed improvement, they'd let us know and we'd go forth and make whatever improvements were necessary. So I did most of that work.

M.O'R.: And the lab work involved measuring bacteria levels and ...

G.K.: Oh, yeah. Bacteria levels, pH, or degree of acidity, alkalinity levels, dissolved oxygen levels in the water. Quite a variety - bacteria.

M.O'R.: And you said that the secondary treatment involved ensuring that conditions were right so that the bacteria that naturally occurred in the waste could do their job to break it down further?

G.K.: Yes.

M.O'R.: Was that controlling temperature and pH primarily or what?

G.K.: Not temperature. Controlling pH, controlling the dissolved oxygen, because these are oxygen-requiring bacteria, and also controlling the number of those bacteria in the process. They continuously divide and grow, the bacteria, and therefore you have to waste some of them. Otherwise, if you get too many of them, they become cannibalistic, and they start eating each other, and then that creates an upset in the treatment process.

So it's a matter of controlling basically those three things: dissolved oxygen, pH, and the number of bacteria.

M.O'R.: And you would, what, add a little base or something or acid to control pH?

G.K.: Generally, they can withstand a pH range that - where for the most part we never had to add anything. It was pretty unusual that we would have to add anything in order to maintain an environment pH-wise that they could survive in.

But where we had to add chemicals for pH balance would be in the solids that were removed from the waste stream, would go into what we call a digester, and as I explained that's a big septic tank only enhanced because we heat it, heat it up to about 95 degrees Fahrenheit, which enhances the activity of the bacteria, and the waste bacteria from the secondary process would be put in there as well as anything that would settle out in the primary treatment, and floating material.

And oftentimes if you were unable to maintain a fairly constant temperature, or mixing - you had to mix this material and maintain a consistency throughout these large tanks, and if you were unable to do that, oftentimes we would have to add lime in order to increase the pH. Otherwise, it would turn sour, and it would be a terrible mess, just terrible. It would start foaming, and the foam would come up over the sides and - yeah, those were some interesting times.

They still use digesters in waste treatment plants, but the process is - it's not different, but managing it is a lot easier nowadays than it was back then, because mixing has improved, heating has improved, and therefore they use chemicals very infrequently in the digestion process.

M.O'R.: So I imagine it would get a little messy considering what you're dealing with?

G.K.: Yes, right. One of the very first things in a treatment process, and I did this at Hillsboro, is that you take the waste flow as it comes into the treatment plant, and you run it through a channel, and you slow it down, the flow, slow it down enough that sand, gravel, coffee grounds, and a few other things



will settle out in this channel. And then, when I first went to work, we would - this channel would fill up with this settled material, and we would have to divert the flow into a bypass line that would go into the treatment plant, and then I would have to get into that channel and shovel that stuff out. [laughs]

M.O'R.: That must have been a lot of fun!

G.K.: Yeah, that was a lot of fun. That was a good introduction to the business. Nowadays that's all taken care of mechanically, so you don't have manual labor throwing this grit, as we called it, out of the channel.

M.O'R.: Somewhat stinky grit, I'll bet?

G.K.: Yeah, at times, especially in the summertime. Yeah, it got pretty odorous.

M.O'R.: Are there any particular disasters or messy situations during your three-and-a-half years that you remember that stand out as examples of the kind of extraordinary problems that you had to deal with?

G.K.: The only thing I recall is that we had to clean out one of these digesters - once, fortunately, when I was at Hillsboro, and that was - oh, it smelled horrible. We had to go inside of the tank and clean it out, and that was a very unpleasant experience to say the least, because you're wading around in this material, you know, in hip boots and - not pleasant at all.

M.O'R.: Would you do that by yourself, or with the other ...

G.K.: No, always two people.

M.O'R.: Always two people?

G.K.: Yeah, it could be somewhat dangerous because during the digestion process, you're creating methane gas.

M.O'R.: Oh, yeah.

G.K.: That's one thing in a treatment - even in sewer systems, you have to be very careful about gas buildup in those systems. So nowadays they have these devices that can detect any gas in the sewer system or in the treatment plant process, and if gas levels are at a certain level, then all of the employees that may be subjected to that wear masks, oxygen masks, or they just don't enter those facilities.

Now, back when I was in there, you know, we went in the tank, and if we got to feeling like we might be overcome, we'd crawl out, you know. We just didn't have the testing equipment for determining gas levels.

M.O'R.: Is there an explosive hazard there, too?

G.K.: Yeah, there is with the methane. Yes, definitely. When I was at Aloha, we experienced an explosion in one of our digesters there, and that was a concrete tank with a concrete roof, solid concrete roof, and that explosion literally cracked that concrete roof all the way from one side of the tank to the other which was probably 40 feet in diameter, and just literally broke that thing. So yeah, it can get quite explosive. Have to be very careful with fire, open flame, or sparks even.

The gas is used primarily to operate boilers that are used to heat the digesters, and also the gas is used for heating buildings and those sorts of things. In fact, generally a well-operated treatment facility will generate more gas than can be reused, and therefore it's either flamed off, or in some rare cases the gas is actually piped back into the natural gas systems and used wherever natural gas is used.

M.O'R.: Is its composition, then, pretty similar to natural gas?

G.K.: About 70 percent methane, and I think natural gas is higher than that in terms of methane. But it is used in a commercial system, and even in the treatment plants it has to be filtered before it can be used, apparently because of these other inner-type things that are in there. I'm not real sure about that.

M.O'R.: Well, tell me about Walla Walla.

G.K.: Walla Walla, right.

M.O'R.: Did you - you became aware of an opportunity there, or how did that come about?

G.K.: Yes. When the second Hillsboro treatment plant out in the southeast part of the city was being constructed, the City engaged an engineering firm locally - well, from Portland - to design and oversee the construction of that treatment facility, and I became acquainted with one of the young engineers that was working for that engineering firm. That firm also represented and did a lot of work for the City of Walla Walla, as well as many other municipalities in the Northwest. And it was this individual that informed me that the Head Operator - Manager, or whatever the title was at that time - had left the City of Walla Walla, and they were looking for someone to take that position.

So I somehow received a job advertisement for that particular position, and it appeared as though it was a good step for me, up, if you will, in the business from Assistant Operator here at Hillsboro to Chief Operator at the City of Walla Walla. It was a larger facility serving more people, serving three food processors, which turned out to be a real difficult situation, and - but I saw that.

I applied for the position, and I was called for an interview. That was my first time driving to Walla Walla, and it was an interesting experience, because that seemed like an awful long way to go back in 1959 or '60, whenever it was - '61 - because the I-84 was not finished at that time. They were working on it at that time, but it was a two-lane road most of the way up there.

But in any event, I went to Walla Walla, and I interviewed with Paul Myer, who was the Director of Utilities, and for whatever reason he saw fit to me for the position. Of course, I had the recommendation of the longstanding engineering firm, and I'm sure that helped in his decision to hire me for that position.

M.O'R.: Now, we can talk a little bit about Walla Walla in just a minute, but I want to make a quick aside here.

G.K.: Sure.

M.O'R.: Just in terms of your - just a couple little details about your personal life at that point. Now, you had - at this point were married, right?

G.K.: Yes.

M.O'R.: To Shirley?

G.K.: Yes.

M.O'R.: And did you - when did you marry?

G.K.: We were married - as I recall it was June of 1956.

M.O'R.: Okay. So just - almost at the time you went to work for - well, maybe a year or so earlier ...

G.K.: Yeah, a little earlier than when I went to Hillsboro.

M.O'R.: So - now, what was her background? Did she come from another family that was farming here in the area or ...

G.K.: No. They lived in the Witch Hazel area, and her father was a builder, and he built a number of homes throughout the Tualatin Valley during that time.

As a matter of fact, I would work with him from time to time to help him on the construction of homes. And she was - she and I were in high school together, and that's how I got to know her.

M.O'R.: So you have some skills in the construction trade, too?

G.K.: Oh, I enjoy doing that, yes. I can do some of the rough work, if you will.

M.O'R.: And so Shirley was a housewife, then, during that ...

G.K.: Yes, she was a housewife, but she also worked during our marriage here. She was a secretary in a lumber brokerage firm in Portland, and she continued to work.

Then we had a girl. When was she born? I can't remember my oldest daughter's birthday, unfortunately. Well, in any event, we had the daughter first, and then a son was born just like three months before we went to Walla Walla.

M.O'R.: What were their names, your daughter and son?

G.K.: Wendy is the daughter, and Gary - or Gar, as I call him - is the son.

M.O'R.: And do they live with their mother or - well, they probably are moved away from home by now?

G.K.: Yeah, they're both moved away from home, but they still live in the general area, in the Stockton, California area.

M.O'R.: Well, when you decided to go to Walla Walla, what kind of a decision was that within your family, then? Was that something that Shirley was excited about or ...

G.K.: Well, I think that she was excited about it, because frankly the salary was substantially greater than what I was getting here at the City of Hillsboro.

M.O'R.: Well, that will always cause a little excitement.

M.O'R.: Yeah, that causes some excitement. As a matter of fact, for history it might be interesting to note that I went to work for the City of Hillsboro for \$260 a month. And nowadays, that's nothing. Back then it - okay, this is enough. With her salary we can do okay, and I was helping her father out from time to time in construction and he would pay me for that, so okay, we can make all this work.

Well, the Walla Walla position was starting out at \$500 a month. They provided a house, no charge, water, utilities, all at no charge. And it was an offer I could not refuse because of the monetary provisions of it. They also provided a pickup truck that I could use in my work up there, so I didn't have to drive to work or drive home, because the house that we lived in was like a block from the wastewater treatment plant, and owned by the City, provided as a benefit, and they wanted their - they wanted somebody close to the plant all the time.

So it was an offer I couldn't refuse because of the financial arrangements.

M.O'R.: And so you moved up there, took that job. It must have been a little bit different to be the head of the operation?

G.K.: It was, indeed, and somewhat frightening, because it was a large facility. I knew how it was intended to operate, but its original construction occurred in 1927, and I can assure you there were some old, old equipment and facilities in that opera-

tion. They did add on to it in about 1952, so we had both new and old that we were operating there.

And as I indicated, there were three canneries associated with that operation. Well, these canneries would only operate, of course, during the processing season, and they would discharge huge, huge volumes of wastewater that was highly contaminated in terms of waste cannery products.

They processed a lot of green peas, and the strength of the waste coming from those facilities was ten, twelve, fifteen times greater than all of the waste coming from the balance of the city. So it put a tremendous strain on the treatment plant to try to adequately treat that wastewater, and the plant would generate so much bacteria that it would start to deteriorate. And the odor coming out of that treatment plant was atrocious when they were doing pea processing. I mean, you could smell that treatment plant for a half a mile. It was just horrible!

We did our best to try to remove as much pollution from those waters as we could, but here again, Walla Walla is very dry in the summertime, and the treatment plant was located on Mill Creek, which is a tributary of the Walla Walla River. And downstream from the treatment plant - and actually the treatment plant was located in an agricultural community, so the waters in Mill Creek were being used by the ag community for irrigation purposes.

I had one of the old Italian onion growers - you've heard of Walla Walla onions, I'm sure - come to me one day, and he said, "We don't care what the quality of that water is as long as its wet." They needed irrigation water. So there was little concern. We were discharging tremendous amounts of polluted wastewater from

those treatment plants during the cannery processing, because the plant wasn't large enough to handle the load, simply.

But essentially all of that water was being used for irrigation, and that presents a question - you know, are you really polluting this creek? And I think you are, quite frankly, because there was no aquatic life in that part of the Mill Creek, because they couldn't - there was no oxygen in the water.

But it was a real challenge. Walla Walla was a tremendous challenge. Truly enjoyable place to work, though.

I'm getting way ahead of where you want to be, I'm sure.

M.O'R.: No, no. You're doing fine. Now, we missed a little bit here. So you were discharging your waste to Mill Creek as well?

G.K.: Yes. Yes. Right. And that discharge up there occurred year 'round, summertime, wintertime. And of course in the wintertime we were able to operate really comfortably, and were doing a really good job with the facilities we had, because there was no cannery processing. In fact, there were essentially two treatment plants located in the same area, and we only operate one of those during the wintertime, because we didn't need the other one because the waste load coming in was so - not small, but we had enough facilities to treat it through one of the treatment plants.

But when the canneries went into operation, then we had to fire up the second treatment process, and yet we were still not large enough to treat that waste adequately.

That's all been changed today. Now all of the cannery waste, as we did in Hillsboro, is all taken from the treatment plant and



spray irrigated on lands adjacent to the facility. So none of it gets in the streams.

M.O'R.: Directly in the streams?

G.K.: Yeah.

M.O'R.: Well, you said, though, that actually they - during the summer at least they wanted you to discharge that waste to the creek anyway?

G.K.: Oh, yes. Yes. The fact of the matter is that the City had a very old, late 1800's, agreement with this irrigation district that, as I understand it, provided for the irrigation district to receive the waters out of the treatment plant for irrigation purposes.

When the City decided after I left to take the cannery wastewater and spray irrigate it, the irrigation district actually sued the City to try to prevent that from happening, or to require the City to replace that water so they would have irrigation water. I don't know how the lawsuit turned out. I do know that the City did have the option of providing more clean water to the irrigation district, because the City also takes its drinking water from Mill Creek, above the city, of course.

Matter of fact, the Walla Walla watershed, which is fairly notorious, is located in the state of Oregon, because Mill Creek is created out of the Blue Mountains in Oregon. And the city of Walla Walla has their water intake facilities in the state of Oregon, and then it's piped through a variety of piping down to the city. So I know the city has had water available that they could have provided to the irrigation district. Whether they did or not, I don't know, but I know they were actually sued because of that situation.

M.O'R.: Did they have adequate water, then? They had a big excess or ...

G.K.: I think that they had total water rights on Mill Creek at that - the intake location. So I'm reasonably certain that if there was enough water coming out of the watershed, and it's a huge watershed, that they would have had adequate rights, if you will, to the water to provide to the irrigation district. Whether they did, like I say, I'm not sure.

M.O'R.: Now, if they didn't pull that water out at the intake point, then it would just flow down the creek anyway?

G.K.: Just flow down Mill Creek, right.

M.O'R.: And then that water would be presumably available for irrigation anyway? Is that right or ...

G.K.: Yeah. You see, the intake is actually located about 25 miles from the city itself. They've got 25 miles of pipeline carrying their waters to the city. The City is also required to allow a certain volume of water to bypass into Mill Creek in order to maintain some water in the creek, because there are trout and other aquatic life living in the creek above the city. And I would suspect that there are a lot of water rights on that creek between where the City's intake is and the irrigation district. So it's possible that there might not have been an adequate supply of water to meet all the needs.

M.O'R.: Okay. Now, you said that the cannery operation just kind of overwhelmed you in the summertime. Was it a similar situation to Hillsboro where they had a similar system to bring that waste in?

G.K.: Yes, there was a separate system bringing the waste in, but the configuration of the treatment plant was such and the treatment process was such that we had - once we brought it in and we screened it, then our only alternative was to combine it with the other wastewater from the city, from the residential and commercial facilities, and then pass it through our treatment plant.

Well, the city of Walla Walla at that time, and today for the most part, there was 25,000 people lived in the city. When the cannery waste loads came onto the system, the waste load represented over 200,000 people, and here we've got this treatment facility that just simply is not large enough to treat that waste sufficiently.

M.O'R.: So it sounds like a real challenge, then?

G.K.: Oh, yeah. The secondary process that I described earlier, in the Hillsboro and more current treatment facilities is all conducted in an open tank full of liquid and the bacteria. Walla Walla and some of the older facilities used what they call a trickling filter, where you build concrete walls ...

[end of tape]