

GARY KRAHMER

TAPE 7, Side 1

January 17, 1996

M.O'R.: This is Michael O'Rourke for the Washington County Historical Society continuing the interview with Gary Krahmer at his home on January 17th, I guess we decided it was.

G.K.: Right.

M.O'R.: Okay. We've talked a little bit about Hagg Lake, I think maybe just a few references earlier, and then you just referred to it just a few minutes ago about the anticipation of mixing the Rock Creek output, or the effluence, with water from Hagg Lake and keeping the oxygen levels up, thwarted, however, by new development.

G.K.: Yes.

M.O'R.: But Hagg Lake itself, of course, is a major factor in terms of the history of the Tualatin, because it solved some problems and maybe created some problems, but why don't you tell me what you know about the history of that?

G.K.: Sure. Sure. Actually, it was back in the 1950's that substantial irrigation started on the Tualatin, and the agricultural community, with appropriate water rights, were removing so much water from that river that in some areas it would literally dry up in the summertime. And the agricultural community recognized that if they were going to be able to progress in the valley that they needed to have additional water.

M.O'R.: The river, I guess, would even flow backwards sometimes?

G.K.: Yes, in fact because of the topography of the river with high areas and low areas, in the bottom of the river there was backflow, some of the wastewater from the Hillsboro plant being discharged in the Jackson Bottom area would actually flow back to one of the irrigation pumps that the farmer had in the river. And the river was so low that in certain areas, there's evidence of this, you could step across the river and not get your foot wet. So it was recognized by the agricultural community that they needed to have additional water, and obviously the standard process to acquire additional water is through the construction of a dam and provide that water during the dry weather periods.

So the ag. community were the initial group that approached our Congressmen - this included Palmer Torvin, who was the County Agent, Henry and Oscar Hagg, the older fellows in the community - not so old at that time, but old now. They approached our Congressmen, one or two of them at that time and asked about the possibility of Bureau of Reclamation looking into the feasibility of constructing a dam on the Tualatin or one of its tributaries in order to provide this water. So I think Senator Hatfield was in office at that time; if not, it was whoever was in office prior to Senator Hatfield - was able to provide the funding to the Bureau of Reclamation, and I think the Corps of Engineers was also involved in doing this feasibility study.

So that proceeded, and that study - I expect that took at least two or three years. That would be normal for the time frame required. And the results of that study indicated that a dam could be placed on the - on Scoggins Creek, which is a tributary of the Tualatin River, a dam could be placed on the Tualatin River main

stem in the Gaston area, a dam could be placed on Dairy Creek, which is a tributary of the Tualatin River, and also a dam could be placed on Rock Creek, again a tributary of the Tualatin River.

So this group of individuals then asked the Bureau of Reclamation to proceed with the next step and identify which would be the most cost-effective and most feasible facility. And as I recall the Bureau came back and prioritized, if you will, these facilities, identifying Scoggins Creek as the priority number one facility because it would serve the most area and it would be the most cost effective.

The dam on the main stem of the Tualatin River was priority number two, again serving a large area, but not as cost effective as the Scoggins Dam. And then the third priority was Rock Creek, interestingly, to construct a facility north of Highway 26 and then provide that water to the valley. And then the fourth alternative was - or priority was a dam on Dairy Creek.

M.O'R.: Now, would all of these have been collecting water from the watershed in the Coast Range? Probably not the Rock Creek one.

G.K.: Not the Rock Creek one. The Rock Creek one would collect water from what is called the Tualatin Hills in the north side of Washington County. The other three would collect from the Coast Range, yes. Right.

It was - at that point, then, the ag. community, pursuant to the Bureau of Reclamation, had to go out and talk to the farm community and get the community to make a commitment to the water. In other words, "We commit to participate in paying for this

facility and maintaining this facility, and we get so much water for our agricultural lands."

So they spent a number of years, as I recall, going around and talking and convincing the individual landowners that they should sign up, if you will, for the project - projects. They were looking at the Rock Creek facility, they were looking at the Scoggins facility, primarily. They were going to do those two facilities, although they also kept the facility on the main stem Tualatin. In the long term they felt that it would be necessary to build that facility.

So these guys - and I recall we lived out in the Helvetia area, and we were approached one day, with our small acreage, three acres, by an individual who was working for the Bureau of Reclamation, and I signed up for water, thinking I was going to get water out of this Rock Creek Dam, see, which never was constructed, of course.

So they got enough farmers to sign up that it made this project feasible. During this process, we were all aware of what was going on, and the City of Hillsboro, the City of Forest Grove, and USA said, "We'd like to be involved in this project," because Hillsboro and Forest Grove wanted water for domestic use - in other words, they would take the water, treat it through a water treatment plant and provide it to homes and businesses. USA said, "We'd like water in order that we can provide dilution water for the Tualatin River." And the Bureau said, "Fine. We'll just make the project larger."

So everything was pretty much in order. The County Commissioners blessed the construction of the Hagg Lake project, and then

our old-time farmers went back to Washington D.C. again and said, "Senator Hatfield, we are ready to go with this project. We have commitments for the project. Now all we need you to do is get the Bureau of Reclamation enough money to build this thing, and then we'll pay you back over the next 50 years."

M.O'R.: And this is what these commitments to take the water were all about?

G.K.: Yes. That's right. Everybody that receives water today in the ag. community pays a certain amount of money per acre, and then that money is used to operate and pay back the federal government for the project.

M.O'R.: Now, when people signed up for this were they signing up for irrigation water that would be comparable in cost to what they were - to the amounts they were then receiving or ...

G.K.: If they had water out of the Tualatin River at those times, their cost of water would be greater, because they weren't paying for any water out of the Tualatin River. Those were natural flow water rights, and the only cost they had was the cost of pumping and delivering the water to their lands.

So the guys - so the farmers that lived along the river, they had some difficulty convincing those fellows - or property owners; could be ladies, too - to sign up, although there was a convincing argument that, "Hey, the State is going to establish minimum stream flows for the Tualatin River, and it could impact your water right. It may be that you won't get the amount of water that you have a right for because of these minimum flow requirements." So that was a fairly convincing argument. And the price was not all that severe. As I recall the original price was \$10 per acre per year

for the Scoggins water, which is not a tremendous burden, for the most part anyway, if they're a good farmer.

So Senator Hatfield was able to acquire the appropriation for the Bureau of Reclamation to proceed with construction of the project. The project construction started in 1973 or '74, and interestingly it was placed into operation the same year that USA's treatment plants were placed into operation. And obviously it has served the ~~Wago~~ community very well. There's a tremendous amount of water for their uses. There's an adequate amount of water for the City's uses, and USA, as I mentioned, has a right for almost 17,000 acre-feet that it uses each summer to enhance the flow of the river. And there's still enough water remaining for a lot of recreational use. So it's been really a good project for Washington County as a whole, for the region, as far as that goes.

There was an effort that was somewhat led by USA in about 1989 to construct the second facility on the main stem of the Tualatin River. We are - we were at USA of the opinion, and remain of the opinion today, that the ultimate improvement of water quality in the Tualatin River, given all of the sources of pollutants - rainwater, runoff, agricultural activities, the fact that a wastewater treatment plant can't remove 100 percent of pollutants, so there's still a minor amount of pollutants discharged there, the river simply needs more flow. So we made an effort in the early - late 1980's to determine the feasibility of constructing a dam on the main stem of the Tualatin River. The board wanted to make a decision one way or the other, and we spent about six months looking into the feasibility of that. It had a tremendous price, as I recall about \$250 million to build that facility, and we encoun-

tered tremendous politics, if you will, because of the folks that live in Cherry Grove, which is a little community west of Gaston, and the property owners who would have to be moved because of this inundation that would result from this dam.

M.O'R.: So it would wipe out Cherry Grove?

G.K.: Wipe out Cherry Grove entirely. Now, some people would say, "Gee, that's good, because it's a big junkyard," you know, but it's people's homes. And there's probably 6- or 700 people that live in the valley up there that would have had to have been relocated.

The board started - my board, the Board of County Commissioners, started getting phone calls and - oh. So that item came before the board at one of their meetings, and they voted to eliminate and abandon all further interest in the so-called Tualatin Phase Two Project. So whether that will ever be resurrected in the future certainly remains to be seen. There was a lot of preliminary work that was done on that, but I would guess that unless this area becomes totally thirsty, water dependent, and there's no source, other source. It may occur, but I don't expect to see it for a hundred years, quite frankly.

M.O'R.: Just because of the political problems associated with those communities up there?

G.K.: That plus there is adequate water. The Barney Reservoir project is being expanded currently, which is Hillsboro's primary source of water. It's being expanded by, gee, threefold, and that's under construction, so that will ...

M.O'R.: That's way up in the Coast Range?

G.K.: That's way up in the Coast Range. That actually transfers water from the north fork of the Trask River which flows to the Coast over into the Tualatin Valley.

So based on a recent water study that was conducted by the City of Portland with participants from all of the regional water districts and cities, that shows that there's an adequate supply of water for the metro region until the year 2025, and it also shows that it would be feasible to increase the amount of water take from the Bull Run Reservoir, which of course is the City of Portland's primarily source of water. So I don't see the area becoming in great need of water for a long time in the future.

M.O'R.: But you said that USA thought, though, in terms of the water quality of the Tualatin that ...

G.K.: Right.

M.O'R.: ... would be a desirable project?

G.K.: That is still an issue with USA from USA's perspective, and USA has and continues to look at the possibility of seeking other sources of water. As an example, the expansion of the Barney Reservoir that I just mentioned, USA is a participant in that project in order to acquire some of the water from that enlarged facility to enhance the flow of the river. So it's doing things in order to try to improve the flow of the river.

M.O'R.: Just as an aside, on the Barney Reservoir expansion or project, are there political issues regarding the need for the folks west of the mountains for the Trask River water?

G.K.: Yeah, there was an issue there, not so much in terms of need for water for human use but rather a need to maintain flow in the north fork of the Trask River for fish and aquatic life.

Hillsboro has been doing that ever since they built the original project, they have been releasing water all summer long in order to maintain a flow in the Trask. The issue was that the leaders in Tillamook County wanted them to release additional flow beyond what they had been, and they did agree to do that. The State Department of Fish and Game were concerned about that, because if you get too much flow, then that can be a detriment to small fry and developing salmon eggs. So they did ultimately agree to increase the dry season flow by a few cubic feet per second.

But the major concern on behalf of Tillamook County for this increased project, the Barney Project, was advanced warning should there be a failure of this dam, and they wanted some fairly elaborate electronics that would immediately transmit a warning to them should there be any evidence of a failure of the dam, and I think that's all been worked out, but I'm not real sure at this point in time. But that was the biggest issue, as I recall.

I'm not involved with the Barney Project to any great extent, but I am a very good friend and do a lot of fishing with the individual they have on contract to oversee the project, the ex City Manager of Hillsboro, so that's how I keep informed on what's going on there.

M.O'R.: Is this Mr. Mills?

G.K.: Yes, Mr. Mills.

M.O'R.: Okay. So he would be a source, then, to talk about this project?

G.K.: Oh, yes, he would be an excellent source to talk about that project, and he's a very knowledgeable individual, been here since 1950-something, so he would have a lot of good knowledge,

also. And I think you might want to rely on his knowledge in terms of providing water for domestic and industrial uses.

M.O'R.: He's already on my list, but I haven't gotten around to starting anything with him yet.

G.K.: Right.

M.O'R.: And just another footnote on the Scoggins Creek story, and then we will call it a day, here, but the kind of issue that you - that USA was facing with respect this plan to develop the main stem dam on the Tualatin, was that any kind of an issue on Scoggins Creek in terms of condemnation of property and the impact it had on the local area there?

G.K.: Not to my knowledge. There were - most of the property was owned by a timber company. There were not a lot of individual property owners. There were some. But the majority of the property was owned by a timber company, and I can't remember it's name, but they were willing sellers of their property for this project. They recognized the benefit of the project. There wasn't a great deal of difficulty, as I recall, acquiring the property for the project.

M.O'R.: And of course it's made a big difference in terms of, like you say, providing water and also to some extent, I guess, controlling the flow of the Tualatin?

G.K.: Oh, that's right. It is also used for flood control, and it's been a real asset. Having lived here as long as I have, I have seen the benefit of flood control, because before that facility was constructed, flooding would occur up some of the tributaries. And a friend of my - matter of fact the ex Police Chief of Hillsboro - lived on the Rock Creek tributary, and he

experienced flooding in his home on three or four occasions. But after the dam was constructed and put in operation, that flooding stopped because of the control that was applied.

M.O'R.: Yeah, well you had described your farm in the old days, I guess a lot of the fields would be underwater in the winter time?

G.K.: Right. Right.

M.O'R.: Although there's still some there?

G.K.: There's still some there, but not nearly as severe as it was.

M.O'R.: Okay. Well, maybe this is a good place to call it a day.

G.K.: All right.

M.O'R.: Thank you again for a good interview.

G.K.: My pleasure. I don't know how many more we're going to have, but it don't make any difference. I'm not doing much of anything right now.

M.O'R.: Okay.

[end of tape]

GARY KRAHMER

TAPE 7, Side 2

February 21, 1996

M.O'R.: This is Michael O'Rourke for the Washington County Historical Society interviewing Gary Krahmer, continuing the oral history, and today's session on February 21st is taking place in his home.

Well, we were talking about the lawsuit - lawsuits, I guess, it would be - which was, in fact, the thing that I wanted to at least start off with today. So last time we talked a little bit about USA benefitting from the federal money that was available in the middle and late 70's and building all these new plants which, I guess, would have been state of the art at that time.

So you did all that, and here just not too many years after that you're in the soup again even with these new plants, in terms of the water quality of your discharges. I wonder if you could just tell me when all of this really started for you - when did you first hear - what was your first inkling that something like this was coming down the pike?

G.K.: Right. As I recall, it was like sometime in the early to mid 1980's, '83, '84, that I had heard through the grapevine, if you will, that the folks that lived in and around Lake Oswego, the lake itself as opposed to the city in general, were becoming more and more concerned about algae growth that was occurring in the lake during the summertime and alleging that the reason for the excessive algae growth was because our waste water treatment facilities were not removing phosphates and ammonia nitrogen to an

adequate level, and that was providing a food source for the algae growth, not only in the lake, but also in the river.

That was when I first became aware of their concerns down there.

M.O'R.: And as far as you could tell at that time was the focus strictly on USA, or was it just on nutrients coming from more than one source?

G.K.: The primary focus was on USA. However, there was also a focus made towards the agricultural community where they felt that certain agricultural practices were contributing to the problem, and I think that probably was an accurate analysis of the situation. Certainly there was no question based on all of the examinations that USA did of its wastewater treatment facilities and of the river that USA was a major contributor of these particular nutrients to the river.

Certainly there was some coming from the agricultural community, and some of that comes from natural sources, as was finally determined by the federal government, whom actually USA hired to do some examination of the geology in the Basin to try to make a determination what all the sources of the nutrients were, and it kind of boiled down to USA's treatment plants were the main contributor, the agriculture community was the second largest contributor, and then some natural nutrients coming from the soils within the Valley.

M.O'R.: What did you think when you first became aware of this perception?

G.K.: Well, we were concerned, of course, and we had an ongoing dialogue with the board of directors of the Lake Corpora-

tion, and it was a continuous item of discussion when we held our meetings with those folks. We offered to try to acquire additional water from the Scoggins Hagg Lake facility in order to try to dilute the river more during the low flow periods of the year to try to assist in resolving the problem.

And they were a reasonable group to work with; however, doing that we were unable to acquire enough additional water to really help the situation. So we just continued business as usual and didn't take aggressive steps, if you will, to address the problem such as they had hoped we would. And of course then that ultimately resulted in not the Lake Corporation itself, but some other environmental organizations filing a lawsuit against the Agency to try to get us to correct at least our part of the situation.

M.O'R.: In terms of this first contact with the Lake Corporation and the dialogue that started between you, who were the people that you remember from that interaction?

G.K.: I'm having difficulty with names. However, I did read one of the individual's names in the paper the other day regarding the Tualatin Conference, and perhaps you would remember.

M.O'R.: Well, let's see. The people that I'm aware of that were sort of in the middle of this were Jack Churchill, I believe was ...

G.K.: Yeah. Jack Churchill came into the picture later.

M.O'R.: Was it later?

G.K.: Yes. He was associated with one of the environmental organizations as opposed to the Lake Corporation. Unfortunately, I can't remember the names of the individuals with the Lake Corporation at that time.

M.O'R.: Jack Broome was later, then, too?

G.K.: Jack Broome was later, also. Yes. We had worked with the Lake Corporation prior to the lawsuit to try to assure that they would get the best quality water possible for lake augmentation during the dry weather periods. And in doing so, it caused us to change the way we had discharges made from the Scoggins project. In other words, we would discharge more water at certain times of the year, where prior to our meeting with them and finding out what their concerns were, we were discharging less water during that particular time of the year. So that was the purpose for our meetings with them prior to the lawsuit was to try to improve the quality of the water that they were taking into the lake.

M.O'R.: And Jack Smith was also somebody later, right?

G.K.: Jack Smith was also somebody later, right. Right. Jack Smith and Jack Churchill were the primary leaders, if you will, from my recollection, of the lawsuit that was ultimately filed, although it was - they were associated with the Northwest Environmental Defense Center, which was the primary party in the lawsuit, although there were a number of parties named as plaintiffs in the lawsuit.

M.O'R.: In fact, there were actually maybe three lawsuits that resulted from this, counting the insurance company. But the first lawsuit I think was filed against the Environmental Protection Agency.

G.K.: Yes.

M.O'R.: And then shortly after that, I guess, they filed a suit against USA?

G.K.: That's right. They filed suit against EPA because they felt that EPA was not enforcing the law. And of course the Department of Environmental Quality, the State, was managing the EPA rules and regulations in the state of Oregon, so therefore they were intimately entwined in that first lawsuit because they were the ones that were supposed to enforce the law, and the environmental groups felt that they were not doing that. So that was the first lawsuit.

And then the lawsuit against USA came shortly thereafter, and then the final lawsuit was USA, of course, filing to try to recover some of the money that it had paid out pursuant to the big lawsuit; I call it the big lawsuit because it was filed for \$175 million, initially is what they were asking for.

M.O'R.: From USA?

G.K.: Yes. Yes.

M.O'R.: Just backing the story up here a little bit, before we get into talking about the lawsuits themselves, in terms of the kinds of improvements that were sought by the people downstream who were worried about these phosphate levels or nutrient levels in the water, and in terms of - well, you just said that the dilution scheme to kind of make the situation better during periods of low flow was not really adequate even - I mean, you even realized that at the time, I guess?

G.K.: Yes, we did. We recognized that there just simply was not enough water being held in Scoggins that would be considered excess water to really meet the dilution requirement that would be necessary in order to resolve the situation.

In fact, given that the water is retained in the lake for several days before its ultimate discharge, there continues to be today a buildup of nutrients in the lake, simply because it serves as a settling or holding basin for waters that are entered into it from the Tualatin, and there are still nutrients in the Tualatin, always will be some nutrients in the Tualatin that will serve as a food source for algae. Hopefully it can be enough - or the least amount of food that it won't cause a serious degradation of the lake, or the river, as far as that goes, but it's very difficult given that you have a basin here that captures those nutrients, and given the holding time, are allowed to be assimilated by the plant growth or the algae.

M.O'R.: So it's the movement of the water in the river that also prevents the algae from multiplying rapidly?

G.K.: That's right. That's correct. If there was enough water to move the water through the lake in two or three days, the problem would be significantly less, as opposed to the water staying in there for 10 days, two weeks, whatever it is.

M.O'R.: So I guess from your point of view, then, at that early stage there wasn't really any action that USA could take beyond ...

G.K.: Just beyond flow manipulation, is the only action that we took, although we did increase some of the chemical treatment at our wastewater treatment plants in order to try to remove more of the nutrients than we had previously.

We were also concerned at that time that there wasn't tested technology in terms of removal of these particular nutrients, and we researched that. We finally found that there was one wastewater

treatment plant in the United States back in New York that had been doing nutrient removal using certain chemicals and processes that seemed to be fairly successful.

But we had a great concern initially that we would not be able to meet the new standards that were set by DEQ for these nutrients. Fortunately, you know, hindsight has proven that we could do it and did do it, but it was a significant concern initially. We had people, experts in the field, testify before the Department of Environmental Quality that this could not be done, simply because there was not technology to do it. They were proven to be wrong in the long term, but that was the view in the industry at that time, that you just simply couldn't reduce to the levels that were expected.

M.O'R.: Were these experts in the employ of USA as consultants?

G.K.: Some - well, they were consultants that were retained by USA to testify - and from very large firms throughout the United States, large engineering firms with Ph.D. types, if you will, in biology that we retained to give testimony.

M.O'R.: Were any of the experts giving a more hopeful picture at that point in time?

G.K.: Well, interestingly, the environmental groups did not bring in, if you will, experts from the outside. Jack Smith testified that in his research and study he felt that it could be done, but also one of the engineers with the DEQ at that time had done quite a lot of research on nutrient removal, and it was his very strong opinion that we could do this and could do it within the limits of the standards that had been set.

But those were the only two folks that really felt strongly that it could be done, which was interesting to me because I thought that, given the experts USA had retained and the experts that are known to exist by DEQ and the environmental groups, there would have been more folks testifying that it could be done. But there wasn't at that time.

M.O'R.: So your impression was probably influenced at that time by that?

G.K.: Oh, sure.

M.O'R.: I guess it looked like a pretty tough problem if the most high-powered experts available thought that there was some question as to whether you could do it?

G.K.: That's true, and of course I was very concerned at that time that if we're going to make these huge investments and then find that we can't meet these standards, that was an issue of great concern to me, as well as the Board of Commissioners. Gosh, if we're going to go out here and spend \$150 and then find that we can't meet these standards, this is not a good way to spend public money.

M.O'R.: And that was approximately the price tag you were looking at?

G.K.: \$150 to \$200 million, in that range. Part of that - the reason I say \$200 million, USA took over the responsibility for storm drainage at that same time, and storm drainage is a contributor of nutrients: street runoff, runoff from roofs and back yards and what-have-you. And there's a contribution of nutrients from those sources, so USA assumed responsibility for those facilities

and did make and continues to make investments today to try to reduce the nutrients coming from those sources.

So USA has spent over \$200 million in terms of wastewater and storm water treatment.

M.O'R.: Targeting the phosphorus and the phosphate levels, et cetera?

G.K.: Right.

M.O'R.: What kind of reductions in the levels of those nutrients were you looking at?

G.K.: To put it in percentage terms, we were looking - well, let me say it this way: Normal wastewater when it's discharged will contain approximately five parts per million of phosphates. We were asked to reduce that to .07 parts per million of phosphates, which is a tremendous reduction, percentage-wise.

M.O'R.: Almost 10 times.

G.K.: Yeah, right.

M.O'R.: No, almost a hundred times.

G.K.: Yeah, almost a hundred times. Yes. And that was the kind of reductions we were looking at, and obviously we were very concerned that we would not be able to do that.

M.O'R.: And the .07, is that the standard that USA's currently making, then?

G.K.: Yes, it is. And that is a standard that is actually set for the river itself. In other words, the DEQ has said the river shall not exceed .07 parts per million of phosphates. So given that, then you have to take into consideration the other sources; in other words, the wastewater treatment plants actually have to treat to something below .07 because of the other nutrients

that are coming into the river, like from the ag. community, from natural sources, street runoff. So the USA plants are actually looking at reducing and have met this goal of getting down into the .04, .03 area. And they've been able to do that.

M.O'R.: Okay. So that's more or less where it's at right now?

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

M.O'R.: So you're typically down under .04 or something like that?

G.K.: Right. Mm-hmm.

M.O'R.: That makes sense, because there was some conversation at this conference last weekend about how the river's level, I guess, is something around .08 now, I think.

G.K.: Yes. I think the river is close to the .07 figure, but I know it fluctuates and is above that periodically.

M.O'R.: Right. And also I was thinking that if USA's effluent was in that .07 range, then you must have been making the major contribution down the river, and maybe that's still true, but there are other sources, obviously, that make up part of the burden as well.

G.K.: Right.

M.O'R.: That was one thing, actually, that did come up at the conference was that somebody said that apparently there's even some completely natural sources from the soils that are unavoidable that contribute to it. So there's been some question as to whether or not that .07 standard for the river is maybe too stringent.

G.K.: Yeah. That was an issue that was in discussion when I was at USA is that given all of the work that has been done to try

and identify all of the sources in finding these natural sources, is the .07 figure realistic? Should we go back to the State and ask them to reconsider and perhaps raise that a point or two because of the natural contributions to the river, and that I hear is still an ongoing discussion.

M.O'R.: That's right; it seems like it's still a live issue.

G.K.: Right.

M.O'R.: Of course, people like Jack Smith would argue that at the present time that the algae growth in the Tualatin is actually sunlight-limited and not nutrient-limited, and he said that you had to actually drop below the - well, he said at about the .07, .08 rate was where it would begin to become nutrient-limited and so that any further reduction you made below that would actually cut algae growth, but that to just get down to that level you wouldn't see any appreciable reduction in algae growth.

G.K.: Perhaps so. We at USA recognize the importance of shading, not only the river but the tributaries to the Tualatin, and I know that's an ongoing program at USA is to try to encourage new development, especially where there might be a tributary flowing through it, to plant vegetation that will shade the streams. Of course, that's good because then that will - because the algae doesn't get the sunlight, it doesn't grow as profusely, and it's also good to cool the water, which is good for aquatic life. So I know that's an ongoing program at USA to try to generate as much shading of the waters as possible.

M.O'R.: Which to some extent would be returning it to a more natural condition because presumably the banks were well shaded before development occurred?

G.K.: Right. You can still see that quite well in certain stretches of the river. My brother and I did a float trip in the upper part of the river last fall, and there are some really nice natural shaded areas in the upper part of the river. Also, the lower part of the river there's good vegetation around a lot of the stretches of the river, but the river gets so wide down there that the vegetation just simply can't cover the entire thing, the canopy doesn't grow together. So there's going to be certain areas down there where it just simply can't be totally shaded because of the width of the river.

But there's quite a few areas in the upper river where the canopy comes clear over the stream, and that's certainly got to be good for aquatic life and algae production.

M.O'R.: What stretch of the river did you float?

G.K.: We floated from Gaston to Blooming, which is our home place out south of Cornelius. I'm not sure of the miles, but I know we spent about nine hours doing that because we had to cross a number of log jams.

M.O'R.: Yeah, I understand there are quite a few in certain stretches of the river.

G.K.: Yes, there are. As I recall, I think we crossed over nine log jams.

M.O'R.: What do you do there, just climb out on the bank and walk around it or ...

G.K.: Well, it depends on the situation. As I recall, we only climbed out on the bank on two occasions, but generally what we had was a 10-foot aluminum boat, and we were able to pull it over the top of the logs in a number of the situations. But where

you get a log jam that may have debris backed up for 50 yards or something like that, that's where we would pull it out and go around. It was a good day's work, but we really enjoyed it.

I took a number of samples, and we took a number of photographs. Our purpose there was to try to identify where agricultural activities were either improving or having an adverse impact on the river. And we found a whole variety of things as we went on down the stream: some bank activity. One situation we saw where cattle were allowed to get down into the river for watering, and of course that is prohibited, but you find those things, you know, in the outback, so to speak.

It was a good trip. We wanted to do the rest of the river ultimately, but I'm not sure we'll be able to now, given that my brother has had that stroke. But hopefully we'll be able to do that in the future sometime.

M.O'R.: Well, it sounds like a good trip.

G.K.: Yeah, it was. And it rained - oh, it rained! We got really wet.

M.O'R.: So you pulled out right on your property, then?

G.K.: Yeah, we pulled out at the old property.

M.O'R.: Well, back to the lawsuit. When did you first meet Jack Smith and these folks, and what was that ...

G.K.: I think I met Jack Smith - I know I met Jack Smith at certain Environmental Quality Commission meetings prior to the filing of the lawsuit, and I don't recall, however - yes, I did meet Jack Churchill prior to the filing of the lawsuit. As a matter of fact, Mr. Churchill, who was an adjunct professor at Portland State University actually brought a class out to our Rock

Creek facility maybe a year, year and a half prior to the filing of the lawsuit and spent an entire day out there with some of the USA employees giving talks about wastewater collection and treatment, giving them a tour of the plant and that. I did meet Mr. Churchill and Mr. Smith prior to the lawsuit.

I understand why they were involved in the lawsuit, and I don't know that there were ever any serious hard feelings that were developed among us, although Mr. Churchill is quite outgoing, shall we say, and did make certain attacks through the media of my staff, and that did not of course set well with me. But Mr. Smith was always very cooperative to work with. He is very opinionated, I think, but he was good to work with, and we actually had him under contract at times during - actually, after the lawsuit was filed he was under contract with USA for a period of time, using his services.

[end of tape]