Q Are these the ones you turned over to me?

A Yes sir, those are the same, Joseph Frampton and J. Poulson.

Q Those were furnished you by Mr. Wentz?

A I got the figures from Mr. Stratton, Frampton and Poulson. Mr. Wentz didn't furnish those.

Q I mean he furnished the typewritten computation, didn't he?

A He figured out to me what it amounted to in second feet and I got it tabulated.

Q Are you familiar with the land along the west rim of the Provo Bench and back to the east for some distance?

A Yes sir, quite familiar.

Q State what the depth of soil and its character along there is?

A Well, the depth of soil there varies considerably. Along near the brow of the hill the soil is inclined to be shallow, and it is gravelly sandy loam. Along from there east it is more of a sandy loam and inclined to be a little deeper.

Q Give the depth so that we may know.

A I don't know as I could give those exact, but I would say it would run on that whole tract from six inches to three feet.

Q Are you able to state, Mr. Knight, how much more water you would have required since June 20th to properly irrigate your farm?

A Well, I would say twenty per cent more anyway.

Q And would that be true of last year, or would it be a different quantity.

A I think that would be practically true of last year.

Q When you say twenty per cent more in '15, you mean after the cut?

A Yes sir, after the commissioner cut our stream down.

CROSS EXAMINATION by Mr. Corfman.

Q You say you irrigated lands on Provo Bench and vicinity of Riverton? A. Yes sir.

Q Under what system do you irrigate at Riverton?

A Last year I irrigated some out of the Utah Lake Irrigation

Canal.

Q What crops did you raise?

A We raised oats and wheat and sowed lucern with it in the spring.

Q How many bushels of oats did you raise on that land?

A I don't remember just the number of bushels.

Q What would be your judgment?

A About two hundred bushels, as I remember.

Q On how many acres?

A On fifteen acres.

Q And did you raise any other crops, any wheat, anything of that kind?

A Yes sir, we had some wheat.

Q Did you have sufficient water for the irrigation of your land at Riverton?

A Yes sir, we had plenty of water.

Q And about what kind of a wheat crop do you raise on Provo Bench?

A Well, it depends on what kind of ground you plant it in and how it is planted. This year I raised forty bushels of wheat to the acre on a small piece on Provo bench.

Q Ordinarily what do you raise?

A I would say from twenty-five to forty bushels ordinarily.

Q And then that is about the average yield of the soil you have been farming? A. Yes sir.

Q Under your system of irrigation when you speak of the supply of water you get the water according to the number of shares of stock you hold in the corporation?

A Yes sir.

Q People who have a large number of shares of stock would have more water? A, Yes sir.

Q And many of your neighbors there have used considerably more by reason of their owing greater number of shares?

A Yes, there may be some that owns more shares for their land than I do.

Q And their crops are larger than you raise on your land by reason of their having more water, is that it?

A Now, I wouldn't exactly say that, if they tended to their crops with more water they would get more crops.

Q They raise larger crops than you, do they not, those that have more water?

A Why yes, I guess some of them do.

Q Now, when you visited Provo you testified that you thought you ought to have about twenty per cent more water than you did have to properly mature your crops and get the best results?

A Yes sir.

Q Were you short of water during those visits that you made to Provo?

A Yes sir, if we could have had a crop of fruit this year, we could not have properly matured it with the water we have had in the last six weeks.

Q You understood the several water users had stipulated?

A Yes sir,

Q In case of the water users being short of water and other water users were -- had more than sufficient, that you could call upon them, call upon the commissioner for more water, didn't you?

A Yes sir.

Q Did you notify Provo City or the water commissioner there was sixty-two second feet of water going to waste in this city?

A No.

Q Did you call on the commissioner for any part of that sixty-two second feet of water under this stipulation when you were suffering?

A We asked the commissioner for more water.

Q Right at that time? A. Yes.

Q Go to him, tell him there was sixty-two second feet of water going to waste in this city?

A No sir, we didn't go to him and tell him there was any water going to waste in Provo City.

Q Didn't say anything to him about that? A. No sir.

Q Didn't explain to him about it?

A Didn't say anything to him about the water going to waste in

Provo City.

Q Did you make any observations as to whether or not immediately preceding your visits here to Provo there had been some rainfall?

A There might have been some little showers just before our trip on some of the occasions; I don't remember whether there were just before or not.

Q You visited Provo on the 29th? A. Yes sir.

Q You remember that two days previous there was a heavy rain-fall here in the city?

A No, I don't remember that there was.

Q You don't remember anything about any rainfall?

A Yes, I remember we had two or three little showers this summer, but I don't remember the date of either of them.

Q You re mber on the 28th a heavy rainfall here in this city?

A No sir, I wasn't in the city on the 29th, might have had a rain-storm.

Q Remember on the 24th there was a rainfall in Provo City?

A I was in this city early in the morning, morning of the 24th, it was not raining when y was here.

Q Do you remember whether or not on the 21st, there was a rainfall?

A No sir, I don't remember the date of any rainfall.

Q Don't xxx remember concerning any rainfall at all during the months of June, July or August, during the time you made these visits?

A Yes, I remember there was two or three little rain showers this summer, but out home there wasn't enough to help in the way of irrigation.

Q Now, during the time that you made these visits you spoke of several streams of water that was running through the city, through the platted portion of the city?

A Yes sir.

Q And about what was your estimate of the water that was going to waste from that source?

A About five second feet between Academy Avenue and Sixth East.

Q Sixth South you mean, do you not?

A No, I mean the five streets between Academy Avenue and Sixth East, all running south past Sixth South.

Q Did you go below Sixth South to ascertain whether this water was used at all?

A Yes sir, we went below.

Q How far below did you go?

A We went across on the street running from First Ward pasture, along the south side of the cemetery, then we came back across the town on Sixth South, just at the top, brow of the hill, right here.

Q Did you find streams of water running there on that cemetery road?

A Yes sir, there was some running along the north side of the cemetery, running west, coming out of the East Union.

Q Do you know whether it was the same water that was running through the laterals between Fifth and Sixth East here in Provo?

A No, I know it wasn't the same water. We went up to the East Union canal just on the south side of the cemetery.

Q Will you undertake to say that there was no water running through the platted portion of the city, through the city, into the mill race at any time you made your observation?

A I didn't say it was running into the Mill race. I said it was running straight south between Academy Avenue and Sixth East, still south of Sixth South, going --

Q You don't say thatwater was not used for irrigation purposes after it left that point, Sixth South?

A Yes, I will say that it was not used.

Q Where did it go?

A It went right off into the swamp right south of the city, and joined with the water --

Q What water do you refer to?

A What is that?

Q What water do you refer to?

A At the outlet of the Big East Drain, runs out of the city down

into the First Ward pasture, along past Robert Boardman's place and east of there.

Q Are you acquainted with Robert Boardman's place?

A Somewhat, yes sir.

Q It is right on the brow of the hill where that hill breaks off into the swamp, isn't it?

A Yes sir.

Q At the foot of that hill, there are several streams of water rising that would run farther south, is there not?

A Yes sir.

Q Are you willing to say it was not that water?

A It wasn't that water, it was five streams going right out of this city, right over that hill.

Q Did you follow all of that water that came from the brow of the hill through the city to see where it went to?

A We drove along in our car right on Sixth South and stopped several streets and looked down over the hill and saw the water going right on over the hill.

Q Yes, it went over the hill, but where did it go after it went over the hill?

A Into the swamps, into the marsh land below the city.

Q Do you know below that swamp the water is taken out and used for irrigation on considerable area of land?

A I should say very small area.

Q On small areas?

A In crossing from the West Ward pasture to the cemetery we crossed as I remember four different ditches that had been made and water was running in those ditches, some of them every morning when we went across.

Q Now, speaking of the cemetery, don't you know that the cemetery is right on the brow of the hill, isn't it?

A Yes sir.

Q And immediately below the brow of that hill there are streams of water running continuously?

A Yes sir.

Q And that could not be used for irrigation?

A We did not charge any of those streams down in there because we estimated that is seepage water. There is one big stream as we took it that was seepage water.

Q Now, your estimates or measurements did not agree with your companions as to the quantity of water or did you form your own judgment?

A I formed my own judgment and in most cases the other two estimated it a little less than I did, and we called it the lowest of the three each time we estimated it.

Q At the time you made these estimates did you take down on your book, enter on your book what your estimate was ?

A Yes sir.

Q Your experience in measuring water has been that of a practical irrigator?

A Yes sir, and from observations, I have watched Mr. Deming measure a number of streams, Mr. Wentz and also Mr. Jacobs, and the water I used over at Riverton was measured out to me by Mr. Jacobs and Mr. Nelson, the watermaster, and I believe I have a pretty good idea of what a second foot of water means.

Q Did you over the Provo Bench Canal & Irrigation system about the same time you made those visits to provo to ascertain whether there was any water being wasted there?

A I thought I was familiar with that without going over it.

Q Did you go over it?

A No sir, only where I had occasion to go about my work.

Q You complain now of there being -- not having an adequate supply of water for the irrigation of your land, do you not?

A Yes sir.

Q Think you lacked about twenty per cent what you ought to have had? A. Yes sir.

Q How much water has been wasted from your canal by reason of your neglect and failure to properly maintain your canal during the past few years?

A I don't know of any.

MR. RAY: Object to that as irrelevant and immaterial.

THE COURT: Objection is overruled.

MR. RAY: Exception.

Q You don't know of any water at all?

A Will you read that last question, I don't understand it.

(Question read)

A I don't know of any.

Q Do you know of Mr. Tanner going in there and cementing considerable portion of your canal and saving several second feet of water?

A I don't know.

Q Never heard of that?

A I don't know he saved any.

Q Never heard of the canal being cemented?

A Yes sir.

Q DO you know what thatwas done for?

A Yes, I know what that was done for.

Q What was it done for?

A It was done because of a suit Mr. Tanner and Mr. Sixon brought against the Provo Bench Canal Company to dondemn a right of way to bring water through our ditch, and when the court ruled on that his decision was to the effect that as soon as the mandate came back from washington it was up to us and Mr. Tanner and Dixon to get together and agree on how they would enlarge our canal, and in case we could not agree then the court prescribed they should take all the soil from the upper bank and place it on the lower bank. Now, we as a company stipulated that far with Mr. Dixon and Tanner with a written agreement to the effect they were to cement the canal to increase its carrying capacity to bring the amount of water they proposed to bring in the ditch.

Q You say there was no water went to waste where this canal was cemented from your canal?

A I didn't say that. I said that we hadn't lost no amount of

water from our neglect.

Q Isn't it a fact that a large quantity of water where you done this cement work in the last year went to waste right at this point?

A I would say some seepage goes from our canal in the latter part of the season, just how much, would not be able to say.

Q Have you ever heard your officers speak of it?

A Yes, Mr. Park, our superintendent, spoke of some water being at the bottom of the hill below our canal, but he didn't know whether it came from our canal or whether it came from seepage from irrigation on the bench above.

Q Well, since you have cemented your canal has it run there?

A We only have six or seven hundred feet of our canal cemented at this time.

Q Since you have done this cement work has that water been running there?

A I have not been over there this season at all, I don't know.

Q You don't know that several second feet of water was claimed, been claimed by reason of that cement work being done there?

A I know Mr. Tanner made application to the State Engineer and we protested against it, and I have not heard any more about it.

CROSS EXAMINATION by Mr. A. C. Hatch.

Q Mr. Knight, do you not have a rule of your company when a turn is nn the owner must used the water or pay any damage caused by his failure to use it?

A We make out ticket and if anybody fails or neglects to take his water I take it he is liable for whatever damage might be done.

Q Isn't that a ruleof your corporation?

A No sir, I don't know that our corporation has such a rule.

Q And do you not know of stockholders of your company having arranged with other neighbors to run the water down during their turn upon the neighbors land and sink it so as to avoid liability for damage?

A We have a little arrangement on our little lateral for Wilkinson Brothers proposed to us a few years ago if we would allow them to use what waste water there was, if there was any, they would see that a ditch was opened from the end of our ditch to their farm. Since that time that ditch has been kept open.

Q And the water has been going down to their farm, has it not, continuously ever since that ditch was built?

A No sir, I don't think so.

Q During the high water season that is true, is it not of the entire high water season?

A I haven't heard of any going down there to injure or damage anybody.

Q Not to injury anyone, but to be used by them in so far as they can use it and the balance to be sunk upon a sink hole upon their farm?

A I suppose they sink it on their farm if there is a surplus, but I don't know what they do with it.

Q They could sink all the water of your canal on their farm?

A What is that?

Q They could sink all the water of your canal on their farm if it were to flow down there, couldn't they?

A I don't know whether they could or not, there is only 84 shares in our ditch.

Q I spoke of the whole 140 second feet that you have in your canal when it is flowing its capacity?

A I am only speaking of the arrangement made by our own little company in the one little lateral.

Q That would be 84 shares? A. Yes sir.

Q Do you know of any arrangement the other little companies of your corporation irrigating from other laterals have by which they let the water run down on to other farms?

A No sir.

Q To be sunk?

A No sir, I don't know of any other arrangement.

Q Do you know that there are no other such arrangements?

A No, I couldn't swear there was not--

Q Under your system?

A But I don't know of any.

Q The South ditch, one of the laterals or one of the ditches of your corporation crosses the West Union, does it not?

A Not that I know of.

Q Goes over to the Morgan land?

A That may be true, I don't know whether that is true or not, that is, on the South ditch.

Q And water is there sunk when there is any surplus, isn't that tmue?

A I don't know that it is, I don't know that it is not.

RECROSS EXAMINATION by Mr. Corfman.

Q Do you know of any land that is irrigated from Provo Bench Canal & Irrigation Company system by land owners who don,t own stock in the company?

A There might be a few who rent some or use some water different seasons along, and use it in that way.

Q D^{o} you know of any that use water that don't rent it, use it after it runs to waste from your land?

A No sir.

Q Do you know of any at all?

A Unless the Wilkinson boys might make a little use of some of the water of ours in this little arrangement I just spoke of, W suppose they do.

Q Do you know of anyone on Provo Bench that is using wastewater where the water from the canal or shares of stock they own in the canal would not be at all adequate to supply them, and yet they have a supply of water by reason of taking waste from the other water owners?

A Must get it from the Reservoir Company, don't get it from us, I don't think.

Q You don't know of any?

A No sir, I don't know of any such land.

CROSS EXAMINATION by Mr. Thurman.

Q Mr. Knight, about how many acres will a share of water in those companies irrigate under normal conditions?

A I always contended that it took a share of water for each two acres, and I have always had practically that amount of water on my farm.

Q Share for two acres? A. Yes sir.

Q Since the decree was ren-dered have you had as much as you had before? A. No sir.

Q Ever since the decree was rendered, about 1901, you have been short as a rule?

A In the latter part of the season, yes sir.

Q About the same as you have been this year?

A Some seasons more worse than this year-- well, yes, I would say considerably worse in some years than this year.

Q The normal conditon then for the last fifteen or sixteen years you have been short of water latter part of the season since that decree was rendered? A. Yes sir.

Q You have 1500 shares, is it 1500 even?

A 1520, I believe.

Q 1520, and you irrigate, or attempt to irrigate about 4300.

Q 4332 acres.

Q That would make really over three acres you attempt to irrigate?

MR. RAY: No, it is under three.

A Little under three acres to a share in the whole system, but a good many of our stockholders haven't got water enough for their land. They came out there and bought farms with an insufficient amount of water to water them.

Q Have you generally had enough shares for your individual use?

A No sir, I have been short in the latter part of the season, particularly short ever since the decree of 1902.

Q I suppose even before that you, as a rule, were generally short

latter part of the season.

A Wasn't any rule, that is, if we had plenty we were satisfied, but if we didn't, we knew it.

Q That is what I mean, as a general rule you didn't have enough in the latter part of the season?

A In most seasons that is true.

Q That is what I mean, so that has been the normal condition of that ditch all, the time, to be short in the latter part of the season. A. Yes sir.

Q The same with you, the same with others on the bench?

A Yes sir, I think so.

Q You generally shared about alike, I suppose, those who handled the water about the same way it was distributed according to shares? A. Yes sir.

Q You sold some land and water, did you?

A Yes sir, I sold land and water.

Q How many shares have you owned, greatest number, at one time?

A Eighteen was the most I ever owned at one time, eighteen shares.

Q How much land?

A I had about forty-five acres at that time.

Q You sold some land and some shares, how much land and shares have you sold?

A I have bought and sold quite a number of pieces, but I gave my oldest boy ten acres and then I sold him five acres more out of my old farm.

Q That took fifteen acres of your land?

A Yes sir.

Q How much water did you give with it?

A I gave him four shares for ten acres.

Q About two and a half acres to the share?

A Yes sir.

Q And you have kept about the same proportion for your land?

A Yes sir.

REDIRECT EXAMINATION by Mr. Ray.

Q What is the value, market value of a share of the water of the

Provo Bench?

A I don't know what the market value is, but I know my son-in-law this spring sold a share for three hundred dollars.

Q Do you know of other sales around that price?

A Yes sir, two years ago I bought two shares myself at two hundred and seventy-five dollars.

Q Has there been any rains this season which have been sufficient to, in your locality, to render irrigation unnecessary?

A No sir.

Q prior to the rendition of the Morse decree you had you state a more ample supply of water than you had since, prior to '14, '15 and '16? A Yes sir.

Q Some of those seasons did you have an adequate supply, sufficient?

A Yes sir, once in a while was a year when we have got along first rate.

Q And had sufficient?

A Yes, got along very nicely.

Q Mr. Corfman called your attention to some seepage up near the head of the canal, do you know whether or not your company has diligently tried to prevent that seepage?

A Yes sir, we worked every year since the canal has been a canal trying to stop that seepage, but on account of the porous nature of the land it has been quite a job to stop all of that seepage.

Q Do you know whether anybody has now stopped it?

A I don't think they have, not entirely, and we think that whatever water does seep there goes back to the river and is used again. It is only half a mile from the river, from the river bed. Even if a little goes out I don't take it it is all wasted.

Q It goes back into the river?

A I think so.

Q You clean your canal regularly?

A Yes sir.

Q Keep it in good condition for a carrying channel?

A Yes sir, it is in good condition.

RECROSS EXAMINTION by Mr. A. C. Hatch.

Q You stated that your watermaster or superintendent, was instructed when it rained he should turn the water out of your canal back into the river. Do you know of that ever having been done? A. Yessir.

Q When?

A Almost every spring our superintendent turns the water off of the canal on as a good many occasions because of heavy rainfall. Last year and this year we didn,t have much rainfall.

REDIRECT EXAMINATION by Mr. Ray.

Q Just one question, someone called your attention which you had made with some man below for a ditch, what was the name of that man?

A Wilkinson Brothers.

Q Under normal conditions and in the absence of sudden and heavy rains, can you state whether or not you have missed a water turn in the last twenty years yourself?

A I have not missed any watering turn.

Q Do you know of any man on your ditch who in twenty years, except in case of an unusual rain has missed a watering turn?

A No sir, I don't know of such a man.

Q Under what circumstances would Wilkinson get water down that ditch?

A In case somebody neglected to cut off his water a little might get down for a few minutes until the next man took the water, or in case of a rain storm then he might get a little waste water.

Q Under normal conditions would that ditch get any water?

A No sir.

Q Do you know of its receiving any water under normal conditions during the irrigation season since its comstruction?

A No sir, I don't.

Q Do you know of it ever having been used as a place to sink water for the purpose of getting rid of water?

A I don't know of any such occasion.

CROSS EXAMINATION by Mr. Thomas.

Q Just one question, what action have you taken, or what action has the Provo Bench Company taken to obtain the same amount of water it had prior to the Morse decree?

A I don't know that they have taken any direct action along that line.

Q What action at all have you taken?

A We have complained continually at the water commissioner whose fault I take it was that the water was not properly distributed up until the last yaar or two.

Q Did the Morse decree give to the provo Bench as much water as you say it should have had prior to that time?

A Morse decree didn't have anything to do with the water, I take it, before it was rendered, before the decree was rendered.

Q Did the Morse decree give you as much water as you were using prior to the signing of that decree?

A No sir.

Q What have you done, or what action has been taken to restore to you, or to the company the amount of water which you claim to have had prior to the signing of that decree?

A We have continually asked all the past water commissioners to give us more water and we have never got any relief until the last three years, since we have been working under a stipulation, and water commissioner has been appointed by the court, and under the court's direction. Since that time I take it that the water has been more properly distributed and we have got a better supply than we did before since the Morse decree was rendered.

Q Isn't it true the commissioners that have been acting under the Morse decree have all been acting under the decree of the court?

A Not in the same way that they have in the last three years.

Q They were acting, however, under the court, were they not?

A No, I don't take it they were. The water users, as I remember, agreed among themselves, Mr. Thomas and Mr. Farrer, or whoever they agreed upon would be the commissioner. In the last three years the court has appointed him and directed his duties, as I understand.

Q But you have taken no action in court whatever to set aside the Morse decree and get the water which you said you should have had and did have prior to that time?

A Nothing that I know of, only complained all the time to the commissioner for more water.

REGROSS EXAMINATION by Mr. A. C. Hatch.

Q You understand, do you not, the Morse decree was entered upon a stipulation among the parties?

MR. RAY: I object to that as irrelevant and immaterial what his understanding is.

THE COURT: What is the object of it?

MR. A. C. HATCH: And their company agreed to it. It was with their consent that the amount of water was awarded them, was awarded them.

THE COURT: I think it is immaterial what his construction or knowledge of that is. If that be a fact --

Q I will ask you whether the Wilkinson's have any source of water supply for their land than what they get through that ditch?

A Yes sir, they own some Provo Bench Canal stock which they use on their lands, and I believe they also own some reservoir water, which they got from the Reservoir Company.

Q When was this ditch built, first built?

A Which ditch?

Q The one that -- the waste ditch that took the water from the 84 shares?

A As I remember that is about five years ago.

5:20 P. M. Recess to 9:30 A.M., August 29, 1916.

MR. RAY: With the consent of counsel and the court and in order to keep the record clear, I would ask to substitute for Exhibit 100, and let it be considered as the same with additions on it, the same exhibit with additions to it, showing soil conditions there and it will eliminate that from the record. I will identify it. It is an exact blue print of the same map.

JOSEPH F. FRAMPTON, called by the defendant Provo Bench Canal & Irrigation Company, being first duly sworn, testifies as follows:

DIRECT EXAMINATION by Mr. Ray.

Q State your name, age and residence?

A My name is Joseph F. Frampton, I reside on Provo Bench, that is my home.

Q How old are you?

A Forty-seven.

Q How long have you been a resident and land owner on Provo Bench?

A Ever since 1893.

Q Prior to that were you familiar at all with Provo Bench?

A Yes sir, my father farmed a part of the land in the '80's that I have now.

Q While your father was farming that land did you have anything to do with the irrigation of that land?

A Yes sir, I helped him water portions of it.

Q Since that period have you had further experience in the irrigation of lands on Provo Bench?

A I water my whole piece since then, since '93.

Q How many acres of land have you on Provo Bench?

A Twenty.

Q How long have you had that quantity of land?

A I had it ever since 1893.

Q Whereabouts is that land located on Exhibit 100?

A Right there.

Q Marked upon Exhibit 100, Joseph T. Frampton?

A That is a misprint, that should be "F".

Q Joseph F. Frampton, twenty acres, and lying in the northeast corner of -- northwest corner of Section 10. From what irrigation system do you take water for that land?

A I take it from the North Union irrigation system.

Q What if any connection have you, as an officer, with the North Union Irrigation Company?

A I was -- I have been in the North Union board altogether eighteen years. I was president during that eighteen years, five of it, five out of the eighteen, I was president of the North Union Company. I have also held one of the directors of the Provo Bench Canal about six or seven years.

Q The North Union, as I understand it, Mr. Frampton, owns stock in the Provo Bench Canal & Irrigation Company?

A Yes sir.

Q How many shares of stock?

A There is 540½ shares of the Provo Bench stock is owned by the North Union Corporation.

Q How many shares of stock are there in the North Union?

A 1022.

Q So that one share of the North Union represents slightly more than a half of a share on the Provo Bench?

A Yes sir.

MR. THURMAN: Let me get that again. Is that 540½ in the North Union?

MR. RAY: 540½ the North Union owns in the Provo Bench.

MR. A. C. HATCH: How many shares in the North Union Company?

A 1022.

Q What is the method of the distribution of the water under the North Union?

A It is in four districts, first, second, third and fourth, and there is a watermaster appointed over the stockholder from the superintendent , and they give a notice to each individual shareholder when the water starts and when ht stops, each turn, they have a written notice given by the watermaster.

Q Is the provision such that the water is on turn to somebody during the entire irrigation season?

A Yes sir, day and night.

Q Are there any waste ditches on the North Union?

A No sir.

Q What division is there made on the North Union for oulinary water, house water?

A They don't have any. When I went out on the bench I had the water on my turn, and when my turn was off I hauled it from the canal a mile .

Q Has that always been the case? A. Yes sir.

Q Are there any oulinary streams provided?

A No sir.

Q Either on the North Union or Provo Bench?

A Not that I know of. If I want any water to dip up, I have to go and ask my neighbor if he will allow me to have a little bit for wash day, have to get permission of a neighbor or I wouldn,t get any at all.

Q The oulinary water is mainly provided by wells, is it not?

A It is now, but takes work getting wells.

Q What do people with stock do who have no wells, at timeswhen their water turn is not on?

A They have to take it in the canal and the lateral.

Q To the nearest irrigating ditch?

A To the nearest irrigating ditch they could get to.

Q How many shares of water have you in the North Union for your twenty acres of land?

A Thirteen.

Q That would then be six and a half shares?

A About that, yes sir.

Q Between six and a half and seven shares for that twenty acres of Provo Bench?

A Yes sir.

Q How long have you had that quantity of water?

A Well, I have had the thirteen, I guess, best of my knowledge, six or seven years, then I bought one share along in about nine years ago, then when my father farmed out there we only had six. When the McKenzie stock was sold I got five shares of McKenzie stock. I had eleven at the time of 1893.

Q And you have since acquired two shares?

A Yes, I bought two shares since.

Q Of your twenty acres, how much is under cultivation?

A I try to farm it all as long as long as the freshet is on. I have it to hay and grain, and when the freshet, that is, the flush water goes down, I try and saturate my alfalfa, and as it is going down the stream, then I take it to the next crop and I slight my alfalfa.

Q That is not my question at all. How many acres do you crop, how many acres altogether do you haveunder cultivation.

A I try to farm the whole district. You mean, Mr. Ray, how many do I get the maximum crop?

Q I mean how many do you plow up one time or another, how many acres are in houses and buildings of your twenty?

A I couldn't make -- I have got a half an acre with my house and barn.

Q And all the rest you farm? A. Yes sir.

Q Were you personally irrigating those lands during the years '15 and the present year, '16? A. Yes sir.

Q Will you state first your experience as an irrigator during the year 1915, last year?

A I didn't have water enough.

Q Now, was that true all season?

A Yes sir.

Q What was the condition of the river supply in the month of May last year?

A It was short, could hardly get enough water to water my lucern in May.

Q And later was the supply more?

A Yes, it was enough that I got two waterings, I think two or three waterings on my wheat and lucern, but I didn't get no watering on my wheat afterthe 24th of June, I didn't have enough to water it after that time.

Q Did the lack of water on your wheat in the year '15 affect the quantity of the yield?

A Yes sir, '14 --

Q '15, I mean.

A I would compare the two crops if I may be allowed, '14 and '15.

Q Yes.

A '14 I had four acres of grain, and I got two hundred seventeen bushels of oats and wheat. '15 I had between six and seven acres and I got two hundred and fifteen in '15, and I had nearly an acre, or something close to an acre more grain in '15 than I did in '14.

Q And got a less yield?

A And got a less yield.

Q Do you know of any other cause contributing to that loss in yield than the scarcity of water?

A No sir, that was the sole cause that I charged it to.

Q What were you required to do in 1915 with your water in order to use it to the best advantage, did you abandon any of your crops? A. Yes sir.

Q What?

A I abandoned some of my lucern and some portions of my wheat.

Q Is there any weir placed in connection with your irrigation ditches, so that the quantity of water which you use may be measured? A. Yes sir.

Q During the year 1915 did you make any measurements of the quantity of water used?

A Yes sir, every time I had the water .

Q Who installed the weir.

A My recollection Mr. Hooley put the weir in.

Q Under whose direction?

A It was made and supposed to put it in by Mr. Wentz. We done just as they instructed. It was put in with a spirit level, perfectly level both ways.

Q After its installation did Mr. Wentz examine the weir?

A Not that I know of.

Q Has he ever been to the weir?

A Not that I know of.

Q Was it put in in accordance with his measurements?

A Yes sir.

Q What did you do in the way of preserving the data as to your measurements in '15?

A I took and measured the water. There is a foot brake in the water in the flume and I measured the stream above the foot, it is three feet wide, the weir is of the flume, then I measured the depth on top of that back in the flume.

Q As directed by Mr. Wentz? A. Yes sir.

Q To whom did you give those figures of your measurements?

A I gave it to Mr. Knight.

Q The figures which you gave Mr. Knight were the correct figures as to the measurement during the season?

A Yes sir, we put them down, I put them down the very day I measured them so they would not be forgot.

Q And they included the different irrigations which you made from May 5th to October 9th?

A Yes sir.

Q After they were taken down by Mr. Wentz, did you examine the tabulation which he made to see if it was correct as to the measrements? A. Yes sir.

MR. THURMAN: Was that N. J. Knight?

A Yes sir.

Q Is that the tabulation?

A Yes sir, thatis the tabulation as near as Iremember the depths over the sill.

Q What has been your experience upon your farm during the present season as to the sufficiency of the water supply ?

A I haven't had enough water.

Q Have you applied it as economically as you could in view of your experience as an irrigator?

A Yes sir.

Q Now, what have you done to determine the length of run which you should use upon your farm?

A Well, I have tried to scrape my knolls off, it is somewhat knolly, I have tried to scrape them and put them in the lower places as good as I can, I haven't got it all done. I make the ditch on top of the knoll and run it into the swale. It is not very much of a swale, it is pretty level. Then I make the next one and so on.

Q What is the average length of run on your place?

A I don't think there is any place it runs over twenty rods, maybe a little over, not much.

Q Have you made the cross ditches and main laterals so that they carry the water as economically as you think they can upon your farm?

A They carry it all.

Q Do they carry it economically?

A Oh, yes sir.

Q What is the fact as to whether or not you can scrape all of your knolls down and leave any soil?

A I would be right in the rock if I scraped it all off.

Q What is the depth of soil upon your farm there?

A Outside of about four knolls I thinkabout two feet of soil, of a sandy loam.

Q Beneath that what do you find?

A A gravel, and when you get a little -- kind of a fine gravel when you get below that it is cobble, very loose.

Q Have you a well upon your place? A. Yes sir.

Q How deep is that well.

A Forty-seven feet to the water.

Q To the water? A. Yes sir.

Q Do you raise any fruit? A. Yes sir.

Q What is the period between irrigations upon the fruit to get the best result?

A Well, in our water it runs twelve days and nine hours, and if any time that a stockholder wants to divide his water on his fruit, tomatoes, berries, potatoes, why, I am watermaster in the first district, he comes and I either change the time, let him divide his turn so that he gets it every six days so that he can keep this wet and growing, or changes with his neighbor. They do both.

Q So that you call that, do you not, splitting the xxt turn?

A That is splitting the turn.

Q You may either split the turn or arrange with your neighbors so that you get an irrigation upon the berry crop and fruit crop every six days?

A Six or seven, along that time, yes sir.

Q Has there been a crop of fruit upon the bench this year?

A I have none on mine.

Q Did you have one last year?

A I had a few apples.

Q What is the fact as to the requirement of fruit trees that are not bearing, do they require more water when they are bearing?

A You have got to have a good supply of water to get the color and flavor, and they are being stinted just once, stinted once the apple -- similarly the peach, and it is an inferior fruit. It is hard to sell.

Q Notwithstanding you had no fruit to that time your water supply was inadequate? A. Yes sir.

Q How much more water in your opinion, if you have an opinion upon it, would have been necessary to have properly irrigated your crops during the year '15 and year '16?

A About a fifth or twenty more, something like that, I believe I could get along.

Q A fifth or twenty per cent?

A Yes, twenty per cent.

Q D^{o} you know whether or not, as watermaster and controlling the water, you got the quantity to which you were entitled under the ditch?

A Turned out of the weir, we have a cement weir where we draw from the North Union,, and it is figured so much on the depth in the ditch, and it is set there and never moved for the summer, and draws out unless some moss catches.

Q You didn't constantly as watermaster take less than your share, did you?

A I just open the gate, just open that, look it and it runs right out.

Q What is the fact as to night water on the North Union?

A Why we take our lantern and gumboots and shovel and canvass dam and go out there and stay with it.

Q All night?

A All night.

Q How long has that been the practice?

A Ever since I watered on the bench. You can see a lantern here and there dotted around where the water is being used.

Q In your experience as an irrigator for twenty-three years, how frequently have you missed your turn unless it was an unusual rainstorm or some occurrence of that kind?

A I cannot call to mind but one.time I ever have missed any water. There was a heavy rain on and I didn't use all my turn, using part of it, put it on my grain, my lucern, and I got it wet and let the other fellow have, my neighbor above have some. That is the only time in the whole time I remember.

Q Now, what season of the year does the land out there in your experience require more water to get over it?

Q In the spring when we first start to water.

Q How do you account for that?

A Well, I believe it is account of the frost heaves the ground up, leaves it loose and water wont run, got to have a big stream,

just keep it bunched as close together as possible. Turn it out not over three places, just keep it in a close bunch and rush it or it will never get over; don't seem to me like.

Q In past years I will ask you whether or not the Provo Bench had not always taken its canal full in the early season?

A Yes sir.

Q And kept it full until it was cut down either by order of the court or by some protest of some other appropriator?

A Always held all the water we could get as long as we could get it.

Q When you have had the water in that quantity, do you know of any going down ditches to waste?

A No sir.

Q All been applied to the farms?

A Yes sir.

Q Upon turns?

A Yes sir. I will state right here, we water once before we -- before the canals is cleaned out in April. We always try to run a short turn around to the stockholders before the canal is cleaned. Then the lucern burns before we can get it back in the latter part of April after the canal is cleaned.

Q Do you have to irrigate out there for your fall plowing and spring plowing?

A I have never irrigated for spring plowing, but I have for fall plowing, you cannot plow.

Q The natural moisture in the spring from the snows enables you to do spring plowing? A. Yes sir.

Q The fact in the fall is if you don't water you can't plow at all?

A No sir.

Q The ground it too dry?

A The ground is too dry.

Q Did you hear Mr. Knight and Mr. Stratton testify as to certain trips made by you and them jointly to Provo City?

A Yes sir.

Q Did you hear the testimony as to the measurements and estimated

quantity of water carried in the different streams?

A Yes sir.

Q By those two men?

A Yes sir.

Q I will ask you whether or not those quantities as testified to, according to your best judgment were the correct quantities?

A Yes sir.

Q And whether the facts as testified to were the facts as you observed them? A. Yes sir.

Q What investigation did you make at that time to determine first whether that water was water coming through Provo City?

A Well, I don't believe I quite understand your meaning.

Q What did you do to determine whether it came from the Provo City supply and not from --

A It came right through the city. Come right, run right through the city and down in them ditches, I suppose.

Q And in the ditches which came from the city?

A Yes sir.

Q You are familiar with those ditches and know where they come from?

A Yessir,-- well, I don't know where they come from; I couldn't say where the heads of them ditches is. I am not acquainted with Provo.

Q But they were ditches passing through the city?

A Yes sir.

Q What investigation did you make to determine they went on to the lake?

A We followed them down until we could see into the bullrushes, right to the shore of the lake where they couldn't get it out.

Q Did you make any observation as to the conditions of the crops as you passed through provo City and these adjacent farm lands on those trips?

A Yes sir. I never saw a piece of land I thought needed any water, either been wet with water or water in the rows of beets, or else they were just drying up from irrigation within possibly just a

day or two before. They were not yet -- kind of a glaze coming over the ground, and shows may be two days from watering, and some of them was right wet.

Q Did you or not walk out into numerous fields in these expeditions of yours?

A We walked out in the beets.

Q And found them all right?

A Yes sir, they were moist, take your fingers and scratch down in any of the rows and there was moist wet dirt.

Q Did you make any observation as to whether or not on those early morning trips, four o'clock in the morning anybody was irrigating?

A We just saw one man packing a shovel.

Q You didn't know whether he was getting water or whether he was getting rid of it, but he had a shovel?

A Had a shovel in the field.

CROSS EXAMINATION by Mr. Corfman.

Q Mr. Frampton, you were with Mr. Knight and Mr. Stratton on July 10th? A. Yes sir.

Q You came at four o'clock in the morning?

A Yes sir, I left my home at three o'clock and we got down in there by Carter's at four o'clock or about that.

Q Did you visit, for the purpose of making investigations as to the use of the water any other time except in the early morning hour?

A Yes sir.

Q What day?

A We came down here on the 8th of July; the first time I came down was on the 8th, in the evening, on the 8th of July at six o'clock.

Q Where did you go at that time?

A We went down to the Carter farm over here and we took across that street running east to the Second Ward line, went down to the bottom of that range of the pasture. We then come up that and went across the road over to the Second Ward meadow; if I remember right, I am not right positive; I am not familiar

with these names, but this is as I have it in my mind.

MR. RAY: Mr. Corfman, might I interrupt?

MR. CORFMAN: Yes.

MR. RAY: I want to suggest if the witness did make notes of these trips, to refresh his recollection he may consult those to get the actual course, if you desire.

A I got some notes.

Q You may consult your notes, if you desire to; you made those at the time?

A No, Mr. Knight wrote the notes at that time, and I took this from Mr. Knight's.

Q They are not from your own recollection?

A These notes -- we estimated the amount of water.

Q Are you testifying when you speak of those notes from the knowledge that you obtained at that time?

A Yes sir.

Q Go ahead?

A We went along this road to the Second Ward pasture, then from Carter&s farm we went down to the bottom of that lane, then we came back up that lane xx to the first road that goes east, that goes down to the Second Ward Meadow; we went there and made an investigation of that water. We then went from there to the First Ward pasture, down below the depot here and then we went along that road running east out to the state road by the power house, went to the state road then went along the road to the power house to the end of the East Union. We then come back and went right across this city, clear across the bottom --

Q On what street?

A All I can say to you is what someone called Fifth West; we went just on top of the hill, ther e is a street running west there.

Q You are pointing now to the south portion of the city, aren't you.

A Yes sir; this is the south portion; we come back, there is a street run right along from here to Academy Avenue which Mr. Knight called Fifth South.

Q &Yes.

A We come along that street.

Q Going in what direction?

A Going west.

Q Then where did you go?

A When we got to Academy Avenue we went a block south and went across the city.

Q In which direction?

A When we come to Academy Avenue we went a block south and took the next street where Roylance's packing house is and went across the city.

MR. RAY: What?

A West.

Q That is the southern portion of the city?

A Yes.

Q Then where did you go?

A We went home.

Q And that is when you made observations of the conditions of the crop?

A We went down to see if there was any water--

Q It was on that trip you made these observations as to the conditions of the crops in the Provo City water system?

A We made observations of the crop every time we came down here.

Q Those are the observations you made were on that trip

A Yes sir, on that one trip, yes sir.

Q Now, did you find any water on the east side running through the platted portion of the city?

A On what date?

Q On any date?

A I would like to know which date you want me to testify to.

Q If you found any at all you can testify to it.

A On July 8th we found thirty second feet at six o'clock P.M.

Q Running through the platted portion of the city on the east side?

A There was thirty second feet of water in the First Ward pasture, went over that dam below or right at the place where they take the

water out on the west side. They take the water out on the west side of the stream there, then they flume back.

Q I am asking you concerning the east side of Provo City; did you see any water going through the city at any time when you made these visits to Provo?

MR. RAY: Mr. Corfman, by the east side you refer to east of Academy Avenue?

Q On the east side of Academy.

A We didn't find any water on the east side; on the 8th of July, just found that in the factory race.

Q Any other days did you find any water from the east side of Provp City?

A On July 10th, at five A. M.; I don't know, we got down to Carter's farm at four, and spent the time between Carter's farm and out here on the State road. About six, along in there, I got this at five, July 10th, at five A. M., at Carter's farm we found four second feet.

Q I am not asking you what you found in Carter's farm. I am asking you concerning whether you saw any water going through the laterals running through the platted portion on the east side of Provo City. Understand that?

A I told you on July 10th -- on July 8th, we found thirty second feet going through First Ward pasture, and none in the platted portion in the east of Academy Avenue, there was none in them little ditches that evening.

Q Did you find any any time on any occasion you visited Provo City going through the east side of Provo City in its platted portion?

A Yes sir.

Q What date was that?

A If you will just let me read this down, I will tell you when I come to it.

MR RAY: Mr. Frampton, don't tell about anything except the east side; that is what he wants.

A Yes sir, on the 10th of July there was five streams running through the east part of the city.

Q Where does those five streams go to.

A They went down over the hill.

Q What hill?

A There is a hill in there that pitches right down; them five streams you could see from where that road went down over that hill.

Q Where did they go after they went over the hill?

A There is four streams of water come from that road there at the First Ward pasture gate to the cemetery and running across that road; there is four streams across that road, and then streams went into them waste sects or streams.

Q I am not asking you what is crossing the road, but am asking you concerning these five streams you saw as you followed them up to see where the water went.

A We seen them going down over the hill.

Q That is the little hill right here on the north side of the railroad track? A. Yes sir.

Q And you didn't see them after that, did you?

A I didn't follow them; we could see they went down into that pasture.

Q You didn't follow them to see where the water went or what was done with it, did you?

A We didn't need to follow whem we could see it.

Q Where did the water go?

A It went into that pasture, went over the hill.

Q Was it used there for irrigation?

A I didn't see it turned on the grass when I went along the road. We didn't follow only the factory stream down.

Q Did you see any of those five streams going into the lake?

A We didn't follow them five streams down to the bullrushes. They were going down them ditches as fas as we could see from the road.

Q So far as you are able to testify they may have been used for irrigation, may they not?

A I don't think they were. If they were they were turned --

Q Did you investigate to ascertain the fact?

A We didn't follow them down to the lake, no sir.

Q You found then several streams of water below Provo City running off into the bullrushes and you assumed that was water coming through the city?

A Are you talking about them five streams?

Q No, those streams of water you testified were crossing the road running east and west, four streams there, you testified were running across the road and down the bullrushes below Provo City; did you investigate any one of those streams to ascertain where the water came from?

A Up this way?

Q No, from the south portion of the city where you were; did you investigate any one of those four streams crossing the road there to find where the water came from?

A I didn't find it where it came from; I know it went over the hill into them ditches.

Q You simply assumed because there were streams of water crossing the road there they run through Provo City?

MR. RAY: Object to that, there is no assumption and those four streams are not necessarily charged as waste water at Provo City, those streams down there in the drain section; that is the testimony.

Q Can you name any stream of water you observed on any of these visits that were running through Provo City and going to waste?

A Do you have reference, Mr. Corfman, to those five streams on this portion?

Q I have reference to not only those five streams, but any stream you saw?

A Oh yes.

Q What streams were they?

A The Second Ward pasture on July 8th.

Q Now, wait; Second Ward pasture on July 8th?

A July 10th.

Q Did you follow up that stream of water to ascertain whether it

was passing through Provo City?

A It come through the city, that is all I can say about it, and I followed that down until I saw it going into the bullrushes and swamps below where you could use it for irrigation.

Q You don't know whether it came from Provo River or not, do you?

A I am not acquainted with where the heads of the ditches are.

Q You didn,t a go to ascertain, did you?

A No sir.

Q What other streams?

A Second Ward meadow had eight second feet, we followed that down.

Q You followed it down, did you follow it up?

A No sir.

Q You don't know whether that water came from Provo City, as a fadt do you?

A I habe every reason to believe it was river water, it was not spring wat-er or well water.

Q Didn't go to see whether it came from Provo River, did you?

A There is a difference between river water --

Q Did you go to see whether it came fmm Provo River and was turned out by the commissioner as part of the supply of Provo City?

A No sir, I didn't go up there.

Q What other stream?

A First Ward pasture.

Q That is the Mill race?

A Yes sir, that is the Mill race.

Q On all of these occasions you found water going down that stream did you? A. Yes sir.

Q And on all these occasions did you -- where were your observations made?

A Where did we take notice of the water?

Q Yes.

A On which stream?

Q We are talking about the Mill race.

A Below where they take the water out.

Q What point was that?

A In the pasture, we took it down in the pasture and up the road,

Q At the pasture gate, close by?

A Yes sir, right by the pasture gate.

Q At the northwest corner of the land? A. Yes sir.

Q There is where you made your observation?

A There is where we estimated the amount of water.

Q Did you go down the pasture to see whether --

A Yes sir.

Q Any was being used there?

A Yes sir.

Q Didn,t find any being used?

A Not of this eight second feet, there wasn't; it went right into the bullrushes.

Q What other stream?

A Then the East Union ditch at James Gray's farm, there was six second feet coming off one of those farms. Mr. Knight called it Hames Gray farm.

Q Did you go to ascertain whether that water came from the West Union canal or been turned on the farm and was waste?

MR. JOHN E. BOOTH: You mean East Union.

Q East Union.

A It was coming off from the farm there, as I remember it, had been running on that all night.

Q Did you go to ascertain whether it had come from the East Union canal?

A There was a road runs east right from the south side of the cemetery and we went up to that East Union ditch and looked at it and this water -- there was a stream of water turned out and run right along the ditch and we took it to be that water, I did. It was turned on a piece of lucern there, ~~Exnigk~~ if I remember right, and waste water run right in that and off through that.

Q That is the East Union Canal you went to?

A Yes sir.

Q And you fonnd a stream of water had been turned out of the East Union Canal? A. Yes sir.

Q Did you follow it from the East Union Canal down through the fields there to ascertain whether it was the same water that was coming off of those farms?

A That stream of water was running right in below, just a ways below there on the west side, going right through that lucern patch.

Q Yes, there was a stream of water coming off the Bullock farm, but did you connect that water with the water that was turned in from the canal?

A I didn't wade through the lucern there to see whether it was the same water or not.

Q What other ditch?

A That was the amount for that visit, July 10th, forty -two second feet.

Q What other ditch?

A That was all we done on that morning of July 10th.

Q Now, did you on any occasion follow up any of these streams to ascertain where it was turned from Provo City water system?

A Why, we went down and seenthe Second Ward pasture, Second Ward meadow.

Q I understand you saw the water coming out below Provo City and you measured it there or estimated it, the quantity that was coming out below Provo City; did you follow any of those streams to see whether the water had been turned from provo River by the water commissioner and permitted to flow through the city and go to waste?

A We followed them down until we could see them --

Q You followem them down; did you follow any of them up?

A I never went up to see where they come from.

Q Why did you make these visits always at four o'clock in the morning?

A Because I have always heard and always understood that Provo City does not use their water at night.

Q And you made the visit below the city where none used the water and did not go upon the land or to the city lots or to any of the

places that water is used for irrigation to ascertain the fact did you?

A This water could have been used down below there on beets, plenty of places they could have turned it out if they wanted it.

Q Will you answer the question; you didn't go upon any of the farms above being irrigated or any of the city lots?

A We didn't go up in the city lots.

Q You didn,t go to the water users to ascertain whether they were using water at night at all, did you?

A We didn't need to when we saw it.

Q You saw it coming through the city, but you could not now say whether the water users were using water at night, didn't go to ascertain the fact?

A The fact the water is running there is sufficient to know they did not.

Q Now, do you know, as a matter of fact that all along the brow of the hill below the platted portion of Provo City there are numerous springs and seeps of water that are coming our from under the hill and forming streams and running into Utah Lake that are not available for irrigation?

A We never take ---

Q Will you answer the question; do you know whether that is a fact or not?

A I didn't understand you.

Q Read the question to him.

(Question read)

A I don't know; I am not acquainted.

Q You don't know that?

A I am not acquainted with the conditions in that part.

Q Now, when you were investigating on these occasions, the quantity of water that was going through the Mill race, did you make an observation here at the northwest corner of the First Ward pasture that there is an outlet for Provo City sewerage system?

A Yes sir, we saw that.

Q Did you observe the quantity of water flowing from that outlet.

A Yes sir.

Q About how much was there there?

A There is two places that water comes in into the -- as I remember it now.

Q Did you measure that?

A No sir, we never measured it.

Q What would be your best judgment of the quantity of water flowing out of the sewer pipe

A This amount of water being here is above that estimate, and I would say, to the best of my ability that come out of them two sewer pipes -- it is a pretty hard thing because it boils right out of there and mixes with the other water, it is hard to estimate second feet.

Q You didn't estimate it?

A We didn't talk about it, no.

Q These several streams were observed along about between five and six in the morning, were they?

A We generally got down to Carter's farm at four o'clock, I left my home at three.

Q Was it broad daylight at that time?

A When we got down there?

Q Yes.

A Yes sir.

Q And what was the condition of the water, the color of it; was it clear or somewhat discolored ?

A It was practically clear.

Q What do you mean by"practically clear?"

A There is a difference between clear water of the wekk than the clear water flowing in the river; the river water is a little bit muddier.

Q That season of the year, isn't it, as a general rule, Provo City is a very clear stream, Provo River is a clear stream of water?

A I don't hear you.

Q At that season of the year when you made these examinations, isn't it Provo River water is clear?

A It it not as clear as flowing well water, no sir.

Q What would you say the condition of the water was?

A It was not clear; it was not as clear as well water, flowing well water.

Q Somewhat discolored then? A. Yes sir.

CROSS EXAMINATION By Mr. John E, Booth.

Q Mr. Frampton, you say that you have twenty acres of ground?

A Yes sir.

Q And thirteen shares of the North Union water?

A Yes sir.

Q You lack about twenty per cent of having enough, did you say that?

A Yes sir, that is what I said.

Q So that if you would have, say about two and a half more shares, you would have enough, wouldn't you?

A Yes, help me a good deal.

Q Wouldn't it be enough?

A Well, to the best of my ability, my knowledge, if I had - - I am not quick enough in figures to say two and a half shares more-- I would have that amount.

Q You said 20 per cent, you lacked about one fifth of having enough, that is the testimony you give Mr. Ray.

A Yes sir, that is right.

Q If you would add 20 per cent to what you have got then you would have enough, wouldn't you?

A If two and a half shares more, Mr. Booth, would be one fifth, possibly I could water my ground.

Q It is about one fifth.

A All right, I will take you for that, I couldn't figure that.

Q Twelve and a half shares, two and a half would be one fifth of that. That is about right, isn't it?

A That is what you tell me, I am not quick enough in figures to go through my head that fast.

Q Lets see if we can find out what would be one fifth of ten?

MR. RAY: I object to that as mathematicall

MR. JOHN E. BOOTH: I have a right to find out what he means by twenty per cent.

THE COURT: I think so, objection is overruled.

Q What would be one fifth of ten, Mr. Frampton?

A One fifth of ten would be two.

Q Now then, one fifth of two and a half would be half?

A What was that?

Q One fifth of two and a half would be a half?

A I don't get that.

Q Well, how many halves are there in two and a half?

A There is one a half.

Q How many halves are there in two whole ones and a half?

A Be three halves.

Q Lets commence again, you are getting nearer, but you haven't got enough.

A I don't care to be put up here on an example.

Q There would be two halves in one, wouldn't there?

A yes sir.

Q"And be four halves in two? A. Yes sir.

Q And be five halves in two and a half? A. Yes sir.

Q Now then, so that if you had two and a half shares more, if you lacked a fifth you would have then about enough, wouldn't you?

A I guess I would.

Q Now, the fact is you haven't water enough for your land, have you?

A No sir, I have not.

Q Isn't that the condition of the Provo Bench Irrigation Canal system generally? A. Yes sir.

Q They have more land than they have water for?

A Yes sir.

Q And they want to get more water? A. Yes sir.

Q And don't care where they get it from?

A That, as I understand the record --

Q You may answer my question, you want more water because you have more land than you have water for?

A I will answer that, Mr. Booth, if you will allow me.

Q You did answer that, you said that was the fact, I think we all agree on it.

A I don't understand exactly what you want.

Q Well, you mean it is what you want, I might not know what I want, you want more water, don't you?

A Yes sir, we do.

Q Now, do you care where you get it from if you get it?

A Will you let me answer that as I want to?

Q I guess so, yes.

A I believe that we should have water in proportion to the others in the needs. I believe that Provo City is prior to us, but they should be put under the same restrictions that I am, and you, Provo City or anybody, shall not waste water when we need it up there, and let it go to waste and use constant every night and day. I don't want to take any right from anybody.

Q But you would like to have provo City and all the other people under the Provo River system put on the same theory as you are?

A Yes sir.

Q So that all of us then would lack twenty per cent of having enough.

A Well, if my investigations, they run one half, about one half of their water into the lake at night.

Q That is according to your investigation, that will come up later, but what you really want is to have all of the people under the Provo River syste, put under the same requirements for the land they have as you people?

A Yes sir, that is what I want.

Q Now, you people on Provo bench didn't settle as soon as they did in provo City, you understand that?

A I understand that part of it.

Q Suppose that Provo City got water enough for their use and there was plenty of it, and then later you people came and made a ditch,

took water out and didn't have enough, your theory is Provo City and the others, the old rights ought to share up with you to their own evil, don't you?

MR. RAY: I object to that as irrelevant and immaterial what his theory of the duty of owners of water is, that is matter of law.

MR. JOHN E. BOOTH: I am not asking of his theory of the duty.

THE COURT: Objection is sustained, the court is not particularly concerned inthe view the witness has what would be just in the matter.

MR. JOHN E. BOOTH: I think perhaps that is right. I wanted to get the theory whether they proposed we divide up.

THE COURT: We will get that from the pleadings, judge.

MR. JOHN E. BOOTH: That seems to be the theory, divide up, never divide down.

THE COURT: The court and pleadings will determine that.

Q Isn't it a fact you have been short of water on Provo Bench right from the first?

A We have been shorter of water since 1902 than we were before, when I first started to water in '93 to 1902 we had more water.

Q More actual water?

A Yes sir, late water. We do fine until the measuring time comes, then we just die, we lose half of our land, it don't revive again, it is brown as a berry.

Q When did you say, '92?

A Since (92.

MR. THOMAS: 1902.

A 1902, I mean.

Q Since that decree you have not had as much water in the late season as you had before?

A Not in my judgment, no.

Q I think that is right, for up to then you had been stealing

from us and we caught you.

MR. RAY: I move to strike that out.

MR. JOHN E. BOOTH: That may go out.

TE COURT: I didn't hear it.

MR. JOHN E. BOOTH: That was a side remark for the benefit of these people.

CROSS EXAMINATION by Mr. Thurman.

Q I will ask one question. The decree was 1902, was it?

A Yes sir.

Q When was that decree first put into operation, what year?

A The following year, as I remember it.

Q Did you notice a marked difference at that time?

A Yes sir.

Q Between what had existed bfore and that year?

A Yes sir.

Q Did it occur in the whole season or just in the late season?

A Just in the late season. We had all the water we wanted while the river was up. When the measuring time come we went short.

Q Did you notice who seemed to be getting the excess?

A I wasn't a board member that time and I don't know.

Q Did you at any time since 1902 ascertain, or try to ascertain who seemed to be getting the water you had lost?

A I couldn't answer that, Mr. Thurman, I don't know.

Q You stated in the beginning of your testimony that you didn't have separate culinary streams on the bench, did you not?

A No, we don't have no culinary water.

Q Just take your irrigation turn and use the water while you have that for culinary and then get your culinary water between turns in some other way?

A Best you can get it, any way you can, yes sir.

Q You say you had to get permission to get culinary water, to dip up a little water from somebody else, do you have to get permission to dip up a little water from one of the ditches there?

A My farm and my home, it isn't on any of the laterals, and I dug me a cistern,and once I had the misfortune to have some -- I had a pup get to playing and fell in that cistern, and had to dip my water out. I went to the old gentleman Salisbury, got some of his water, asked if I couldn't run the water into the cistern.

Q You got permission fromhim to run water in to fill your cistern?

A Yes sir.

Q But I got the idea from your testomony that you wanted to be understood as saying if you dipped up a little water out of a ditch for culinary purposes, you had to get permission?

A Oh no, if you lived by my stream you could dip up all the water, I never objected to anybody dipping any water, but I did object to them turnkng any out.

Q You didn't want to be understood as saying you had to be get permission to dip up a little water?

A No sir,, I don't wish that to go into the record that way.

Q Who furnishes the water up there for sprinkling state road?

A The farmers, anybody whose turn is on. They took it out of my water, they dropped their hose there and pumped it into the tank.

Q I suppose that is done without any special permission?

A Mr. Wentz come to the board of directors and asked if there was any objection. I was a board member, I took it up with out board in a stockholders meeting of the North Union Company, and they all agreed to let them take water to sprinkle.

CROSS EXAMINATION BY Mr. A. C. Hatch.

Q And who furnishes the water to fill the barrow pits along the State road?

A Sometimes people that are living on the east side of the State road. I have one that come to my knowledge -- there is a woman living there, she don't own any North Union water, but I thinkshe owns reservoir water, she rents one share of North Union and has some reservoir water and that runs into

the Mr. Hatch, it runs off into the in front of her place.

Q And that condition exists practically all the way across the Provo Bench, doesn't it.

A Not over our way It doesn't.

Q Along the county road?

A On the State road out there I never saw any water onlyt there.

REDIRECT EXAMINATION by Mr. Ray.

Q Mr. Frampton, in these streams which you measured on your different visits, did you measure any of the seeps or springs below the hill?

A No sir, we did not.

RECORSS EXAMINATION by Mr. Thomas.

Q Just one question. What have you done as an officer or individual to recover the excess water that you had prior to 1902?

A We have instructed our superintendent to ask the commissioner for more water.

Q Have you taken any action in court to set aside the decree or have it modified?

A Not that I know of.

Q If it had been done would you have known it?

A I think so.

F. W. DEMING, recalled by the defendant Provo Bench Canal & Irrigation Company, testifies as follows:

DIRECT EXAMINATION by Mr. Ray.

Q You have ben sworn, Mr. Deming?

A Yes sir.

Q Your initials are what?

A F. W.

Q You have stated into the record your experience and qualification as an engineer? A. Yes.

Q Calling your attention to Exhibit 100 on the board, ask you whether or not that map correctly delineates the location and course of the Provo Bench Canal and the North Union Canal?

A Yes.

Q Have you traversed that canal? A. Yes.

Q There appears upon the map the names and descriptions of different tracts beneath -- laying beneath the canal, did you place those tracts upon the map?

A Yes.

Q And are they correctly placed so far as you know?

A They are copied from tracings which were made of the records of Utah County; at least these tracings were given to me by Mr. Wentz, and I understand that he traced them from the county records in 1914, and they were used in placing the ownership upon the tracts.

MR. RAY: I will state to counsel those are the tracings Mr. Wentz made upon which the irrigated area was determined and testified to by Mr. Wentz, and if there is any question I will put Mr. Wentz on and ask as to their accuracy.

MR. JOHN E. BOOTH: May I ask a question. Is the map that is under that, and the one you have in view practically the same as the ownership of the ground?

MR. RAY: Exactly.

THE WITNESS: Exactly the same, they are prints of the same tracing.

MR. JACOB EVANS: These areas are the areas agreed upon between Mr. Wentz and Mr. Stewart at the time of the survey, making up the forty-three hundred--

MR. RAY: And thirty-three acres.

Q Have you made any examination of the soil on the Provo Bench?

A Yes.

Q When did you make that examinaton?

A During August of this year principally, and at various tim es before.

Q I wish you would state to the court fully, and as briefly as you can, what was the extent of that examination?

A At my request a number of holes, about forty-six in number, were made over the irrigated area for the purpose of determining the depth of the soil and its character and the character of the subsoil. These holes are placed on the map as small orange colored circles with a number near them. The number is simply for reference. After these holes were completed by members of the Provo Bench Canal & Irrigation Company, they were examined by myself, and the depth and character of the soil determined at each place, and the character of the subsoil. After these were placed on the map then the map was taken into the field and the outlines of the different characters of soil were followed and sketched on the map as near as it was possible to determine them. I would like to state that the boundaries between the different characters of soil are not well defined as a rule, the one character of soil gradually grades into the other character but I have placed on here as nearly as I could determine the boundaries of the different characters of soil.

Q Now, Mr. Deming, in addition to the excavations which are marked with the orange colored circles and the numbers, did you have any other opportunity to examine the soil in cuts or excavations?

A Yes, I traversed the whole length of the Salt Lake & Utah Railroad from the Lakeview station which is some distance south of the irrigated tract, to the station at Linden, which is near the intersection of the Salt Lake and Utah Railroad with the State road in the northeast quarter of Section 33, 5 South, 2 East.

Q In placing your areas upon the map, did you take into consideration all of the exposed soil which you did examine and make the areas as colored conform as nearly as practical to the result

obtained by that examination? A. Yes.

Q Now, you have placed upon the map three different colors, one a brown, a pink and blue, I wish you would explain to the court first what the character of soil, subsoil and depth of surface soil you found in the brown area?

A The area tinted brown is what I have classed as a gravelly loam. It is composed of sand and clay and rocks in varying proportion. In some areas the sand predominates and in other areas there is more clay, and the percentage of gravel also varies. There are twenty-three holes and other excavations on the gravelly loam, that is twenty-three excavations which expose the subsoil. The average depth of the soil as shown by those excavations is 1.58 feet. There were five excavations at which no subsoil was exposed. However, they were all shallow except one, the deepest one being three and a half feet. The others were two feet, one foot 1.6 feet and 1.8 feet.

MR. RAY: For the benefit of counsel I will say that I have had Mr. Deming tabulate all of this information, and I will furnish counsel with a copy of it so they need make no notes.

MR. A. C HATCH: Just a moment there, if he didn't go down to the bottom of the surface soil in all the holes, I cannot understand how he could average the depth.

MR. RAY: You will if you will listen. He doesn't take the average where he doesn't go to the depth, he doesn't include that in his average at all. There are several holes of the twenty-three which are a foot or so deep. He examines the character of the soil there as to character alone. He takes those in which the depth is absolutely determined by the excavation and uses those for the determination of the average depth of soil.

THE WITNESS: I might say in connection, of these twenty-three holes which I have mentioned, all of them were through and into the subsoil. There are five addition holes

on that area which did not expose the subsoil, the deepest of which was three and a half feet. The others ranging from one to 1.8 feet.

Q Now, will you state, Mr. Deming, what the character of the sub soil was on the brown area, if you have not.

A In nearly every case the subsoil was composed of gravel and in some cases sand. There is one case where the subsoil was sand. In other cases it was gravel with ~~marks~~ varying quantities of sand and clay mixed with the rock.

Q Taking the area as a whole, what was the permeability of the subsoil ?

A Generally it is porous. As I say, there are some places where gravel carries a condiderable percentage of clay, and wouldn't be so pervious to water as other portions of it.

Q Is there any place upon that entire brown area where the soil is impervious enough to establish a water level anywhere near the water surface? A. No.

Q Now, have you any other data upon that brown area which you desire to give to the court?

A No, I think not.

Q Go next to the pink area.

A The area shaded pink is what I would class as a sandy loam. It is comparatively free from gravel except in places where it merges into the gravelly loam, and the soil particles are composed of sand and small percentage of clay. It is underlaid by the same character of subsoil generally as the gravelly loam, except the portion in the northwest where some of the excavations expose a subsoil of sand and pea gravel rather then the gravel which it exposed farther south. There were eleven holes and excavations on the sandy loam, as shown on the map. Eleven of them to subsoil, the average depth of which was 1.72. Two excavations did not expose the subsoil. One of these was 1.9 feet and the other 4.5 feet in depth.

Q Did you find any water level at any place in the pink area?

A No.

Q Is the character of the soil there such that there would be a water level anywhere within reasonable distance?

A I wouldjust like to explain that. There is places -- there are places along the edge of the bench below the brow of the hill where seepage water is flowing out of the bench, but it is not what I would call a standing sandy water level. It is return seepage from the irrigation up above, and that is in this loose sandy soil near the northwest corner of the tract. That is the only water which I observed below the surface of the ground.

Q Now, calling your attention to the blue area, will you describe to the court the character of the soil which you found there?

A The area shaded blue I have classed as a loam clay or sandy clay loam. Some parts of it is -- near the North Union canal along the east side is quite a heavy clay, while the south and west parts of it is lighter, carries a larger percentage of sand. This soil is fairly deep except for a very small area. I was unable to determine how extensive, it is in the southwest quarter of 34 and extends into the northwest quarter of Section 3. The soil is rather thin, but over the areas of the blue area it is comparatively deep.

Q Did you make a determination as to its average depth from the excavations which you examined? A. Yes.

Q What did you find it to be?

A Three excavations which expose the subsoil gave an average depth of 2.63 feet. There were two others which did not expose the subsoil.

Q What was their depth?

A One was 3.2 feet the other was 3.4 feet.

Q What did you find as to the subsoil on the blue area?

A It is of the same character where it was exposed generally as the subsoil farther south. There is a peculiar gray gravel that is found all over the area, that when the excavation is deep enough, in some cases there is a different character of

gravel over this gray gravel, and in other cases the gray gravel comes up to the soil.

Q Now what did you find as to thevariation in the depth of the soil as you traversed the excavations along the electric road?

A Well, they are about as I have -- as were shown by the other excavations over other parts of the area. Across the gravel area along the cuts and barrow pits the average depth of soil was about a foot and a half. In some cases it went as high as three feet.

Q As a matter of fact it shows along there that the variations are very marked and sudden, does it not?

A In some cases, but throughout the -- from about the center of Section 23 to the center of Section 10, on Township 6 South 2 East, the depth if soil is quite uniform.

Q And about what?

A About one and a half to two feet.

Q Have you, Mr. Deming, computed the areas in each of these tracts irrigated from the Provo Bench Canal and the North Union?

A Yes.

Q And have you tabulated those areas?

A Yes.

Q Will you state first what the area in the brown section is?

A The total area in the brown section irrigated by the Provo Bench Canal & Irrigation Company is 2787.92 acres. The area of sandy loam or pink area is 749.4 acres. The are of blue or clay loam is 794.46 acres.

Q So that you would have in the brown area, which is a gravelly loam, 64.4 per cent of the irrigated area?

A Yes.

Q And in the sandy loam 17.3 per cent ? A. Yes.

Q And in the clay loam 18.3 per cent? A. Yes sir.

Q In addition, Mr. Deming, have you made a table showing the location of the excavation upon whose farm it was and the depth of soil found? A. Yes.

Q I show you Exhibit 103 and ask you if that is the tabulation to which

you have made reference? A. Yes.

Q Does that correctly embody the result of your of your soil examinations there? A. Yes.

Q Does it agree with the map as marked Exhibit 100, as you have placed it upon the board? A. Yes.

MR. RAY: For the purpose of illustrating the testimony of Mr. Deming and for the convenience of counsel, I desire to offer in evidence Exhibits 100 and 103.

THE COURT: They may be received.

Q Did you during the year 1916 make any demonstration upon the farm of John Stratton or observe any irrigation there?

A I did on one occasion, yes.

Q Will you state to the court just what you did observe there?

A On August 1, 1916, I observed irrigation of an alfalfa field on the farm of John Stratton, measured the water flowing over a weir in the lateral neat the tract, and noted the time during which he used the stream of water.

Q What was the area?

A I would rather get this out of my notes. I didn't know you were going to ask me concerning it. I have not calculated the depth of water accurately and haven't worked up my notes fully.

Q You may do that later if the court will consent. This seepage water which you saw was below the break and entirely below the bench, was it not? A. Yes, near the bottom, about half way down the bench, that is, half way in elevation between the top of the bench and the bottom.

Q The drop there is rather sudden, isn't it?

A Yes, quite abrupt.

Q Now, how abrupt?

A 15 or 20 degrees.

Q So that it is not farming land?

A No, parts of it is farms, but parts of it that are not farmed.

Q Too steep?

A Yes, I would judge so.

CROSS EXAMINATION BY Mr. A. C. Hatch.

Q Did you make any other tests to determine the soil depth than the forty-eight holes which you mentiôned.

A I observed the -- have been more or less acquainted with the soil there for the last two years.

Q Did you use a soil auger during your investigation of the area on the map? A. No.

Q Not at all ? A. No.

Q Did you direct the parties who dug the holes as to where they should be dug?

A Yes, I gave them a list of the farms upon which I desired holes dug.

Q Did you tell them at what point upon the farm to dig the holes? A. N^{o} sir.

Q Or leave those places for them to select?

A No, I told them on whose farm I desired a hole, and I am not certain that I told them what portion of the farm I desired it on. I think I did in some cases. In other cases where the farm was comparatively small, I did not. I told them I wanted to examine the soil on that certain farm.

Q Did you make a determination as to where they were to dig the holes simply by looking at the map, or did you go over the area and direct?

A I took the map.

Q From the soil itself?

A How is that?

Q From observing the surface itself?

A No, I designated the point where I desired these holesfrom the map. My idea was to get the holes unfiormly distributed over ex the tract, and my original plan was to get a hole on each forty acre tract, but there are --

Q Without regard to the particular kind of surface exposed within a forty acre tract, is that right?

A I didn't hear.

Q Without regard to the particular kind of surface that was ex-

posed within a forty acre tract,

A Well, I figured that the larger number of holes I got the nearer I would get to the truth in regard to the soil and other soil conditions, I considered that one on a forty acre tract was rather plentiful.

Q Don't the conditions vary upon each forty acre tract?

A Not upon each forty acre tract. On some forty acre tracts the conditions vary.

Q Are there any farty acre tracts that you can name within entire area where the surface, depth of surface soil doesn't vary materially?

A I couldn't say.

Q Are there any 40's -- is there any forty acre tract upon the provo bench where the gravel in some places upon it is not exposed at the surface?

A I don't remember, I couldn't designate a certain legal subdivision where that is the case. I have walked over considerable areas, especially in the northeast where there isn't gravel exposed at the surface.

Q Do you know of any forty acre tract upon the Provo Bench within the area irrigated as shown by the map where there are not places within the forty acre tract in which the soil is of a depth of over two feet?

A I know of a tract where it is over that px depth. You say -- I didn't quite get the meaning of your question.

Q Does not contain an area with a depth of over two feet?

A I don't know, I have shown the location of the holes and depth of the soil as I observed.

Q Now, the holes that you made average about one hole to each one hundred acres of the area of the tract?

A Yes.

Q Do you know of any portion of that area where they are draining the lands to get rid of the surplus water?

A I don't.

Q Did you visit the norrhwest section of that area ?

A yes.

Q Illustrated there. Are they not now draining some portions of those lands?

A I don't know, there may be Portions in the extreme west part of the area shown in Section 33 that I am not familiar with, couldn't say.

Q Did you dig any hole or have any hole dug on that area to determine whether or not there was a clay subsoil at a depth of about three and a half feet.

A To which area do you refer?

Q Any part of the area shown on the map?

A There are two holes, as I stated, on the clay area which are over four feet in depth, that do not expose any subsoil.

Q Why did you not have all of the holes which were dug extend down to the subsoil?

A I so instructed the men who dug the holes, that they should dig them down to and into the subsoil, but it is rather difficult for a person to dig a hole more than four feet with an ordinary shovel and bar, impossible to get the material out without using a spoon.

Q Do you know the tract of land called the Pine tract in that area? A. Yes.

Q Mark it, will you?

MR. RAY: It is already marked on the map.

A It is marked with the name of John T. Pine in the south west quarter of Section 15.

Q Have you a lead pencil, just make a mark.

A I haven't a colored pencil.

Q In what part of that tract was the hole dug, if any, on that tract?

A There were three holes examined on the John T. Pine tract, exposing two different characters and depths of soil.

Q Where were they upon the plat, east or west?

A They are indicated on the map one near the center, one near the east end and one just west of the center of the tract.

Q How deep were those holes?

A One was 1.8 feet another was 2.1 feet, and one, which was a cellar, was 4.5 feet.

Q Where was the cellar?

A The cellar was under the barn near the -- hole marked No. 42, near the east end of the tract.

Q What was the condition of the subsoil, what was the subsoil.

A There was no subsoil exposed.

Q Sir?

A There was no subsoil exposed.

Q What was the surface soil?

A Sandy loam.

Q Did you dig any hole on the Pine tract or upon any of the lands lying immediately south within a mile of that, to a depth of three or three and a half feet?

A No, there is only one other hole south of that, that is on the land of Mary Ann Draper in the southeast quarter of Section 22.

Q How far is that from the Pine tract?

A About a mile.

Q Can you say whether or not there is impervious clay subsoil lying beneath the Pine tract west and south at a depth of about three and a half feet?

A At a point in the southwest quarter of Section 22--

Q Whose land?

A Well, it is on the road.

Q I am asking -- my question was as to the Pine tract.

MR. RAY: This may be an answer to it.

A You asked me on the land south and west of the Pine tract, as I understood you.

Q Within a mile.,

A This is within that area.

Q proceed, I didn't want to interrupt your answer.

A The soil is exposed in a ditch which runs into a hollow or depression which runs across the bench, I think they call it

Skinner's hollow. On the north side of that hollow there is a ditch which has cut the soil to a depth of about three to three and a half feet, and it has exposed the same character of grafelly loam about a foot and a half deep underlaid by the grav gravel.

Q Is there any clay there?

A Oh, there is some clay in the gravel, yes.

Q Isn't there on the north side of that Skinner Hollow a bed of clay about a foot thick under the surface soil?

A I didn't observe it.

Q There is an excavation there now, isn't there, gravel pit?

A Where?

Q At the Skinner place?

A I don't know, I don't know where Skinner lives.

Q Now, did you make any observation to determine whether or not the major portion of the area shown on the map was underlaid with a clay soil?

A I made the observations that I have reported here, and shown on the map.

Q Did you make no others, at a greater depth than those to which you have testified?

A No.

OTTO J. POULSON, called by the defendant Provo Bench Canal & Irrigation Company, being first duly sworn, testifies as follows:

DIRECT EXAMINATION by Mr. Ray.

Q Your name is Otto J. Poulson?

A Yes sir.

Q How old are you?

A Forty-four.

Q Where do you reside?

A Provo Bench.

Q How long have you resided on Provo Bench?

A I have owned a place there for twenty-two years. I have been away once or twice.

Q Whereabouts on provo Bench is your land located?

A Section 23.

Q Is it marked upon the map? A. Yes sir.

Q Do you own any other land than that marked Otto J, Poulson in Section 23, on Provo Bench? A. Yes sir.

Q Where are they located?

A Right here.

Q Well, still in section 23? A. Yes sir.

Q That would be in the northeast quarter, would it?

A Northwest quarter, right here-- northeast quarter, this way.

Q That is what I say; it is in the northeast quarter?

A Yes sir.

Q What is the area of land which you own there?

A Six acres.

Q Under what canal is that land irrigated?

A Provo Bench Canal & Irrigation Company.

Q How long have you irrigated it yourself under that canal?

A About ten years I think, this six acre tract.

Q Prior to that have you had experience as an irrigator upon Provo Bench? A. Yes sir.

Q Where?

A On the home place.

Q Where is the home place?

A Section 23.

Q How long have you irrigated the home place in Secton 23?

A Twenty-two years.

Q How many acres in the home place?

A Twenty acres.

Q And the home place is also irrigated from the Provo Bench Canal?

A Yes sir.

Q How many shares of water have you in the Provo Bench Canal?

A Thirteen shares and a quarter.

Q For twenty-six acres?

A No sir, I have other land.

Q For how many acres?

A About thirty-seven acres.

Q So you would have a little more than one share for three acres?

A Yes sir.

Q In what crops have your lands been planted during the past few years?

A Alfalfa, trees.

Q Fruit trees?

A Fruit trees, alfalfa, grain, potatoes.

Q Any small fruit?

A Not at present.

Q Have you had any small? A. Yes sir.

Q How often does alfalfa in your locality there require irrigation in order to secure the best result?

A To get the best result need it once every seven days.

Q How often do fruit trees require irrigation?

A Why, it is according to the crop and the time of the season.

Q How often do they need it when they are bearing a crop in the spring of the year?

A Early in the spring about once in two weeks.

Q And when the crop commences to mature how often do they need it?

A Why, on a soil we have on the bench, if you could get it once in six days it would make better fruit.

Q What effect does it have upon the fruit if you extend the period of irrigation beyond six days? say to two weeks?

A Fruit will wilt and drop.

Q Does it affect the color, flavor and size of the fruit any?

A Yes sir, very much.

Q What lateral do you take your water from?

A Lovelace ditch.

Q How many irrigators are there upon that ditch?

A I don't know.

Q Good many?

A Yes sir, about 160 shares.

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Q Do you irrigate on turns? A. Yes sir.

Q Is the water on turn all during the irrigation season?

A Yes sir.

Q Water night? A. Yes sir.

Q All through the irrigation season ? A. Yes sir.

Q Any culinary streams, house streams, on your ditch?

A None whatever.

Q How are the homes supplied with water?

A Why, at present most of them have wells.

Q And those who haven't wells, what provision do they have to make to water their stock and householduse?

A They drive their stock to the nearest lateral that has any water and carry the water from the ditch.

Q For how long a period has the irrigatuon been conducted on that plan on Provo Bench?

A Twenty-two years and longer.

Q To your knowledge?

A To my knowledge.

Q Did you use your full thirteen shares of water upon your place in the year '15? A. Yes sir.

Q Did you use your full thirteen and a half shares in the year 1916?

A Yes sir, and some more.

Q What other water?

A I rented one share of Provo Bench water in addition to that, and I have six shares of the Murdock water, Provo Reservoir water.

Q To be used upon this thirty-seven acres of land?

A Use it on forty-three acres.

Q You have additional land upon which you use the Murdock water?

A Yes sir.

Q Confining yourself to the land which you irrigated from the provo Bench in the year '15, state whether or not you had sufficient supply of water to properly irrigate your crops?

A I did not.

Q When did you first begin to notice shortage of water in 1915?

A Why, in 1915 the water supply was short when we first commenced

irrigating in May. She increased the latter part of May and latter part of June, why, diminished again.

Q Was your supply insufficient then after the latter part of June, during the remainder of the irrigation season?

A Yes sir.

Q Did you suffer any diminution in your yield of crops because of that? A. Yes sir.

Q About how much more water would have been necessary during the year 1915 to properly irrigate your lands and mature your crops?

A Why, about one-third more water.

Q Do you know whether or not you received the quantity of water to which you were entitled under your stock?

A I think I did.

Q Did you use the water on all occasions when it was your turn?

A Yes sir, always.

Q What is the average length of run upon your farm?

A My run is from five rods to twenty rods. Average would be about fifteen rods.

Q What determines the length of run upon your farm?

A The length from the top of the highest point to the hollow.

Q Are you able to make your farm absolutely level?

A No sir,

Q Why not?

A Why, if I should begin to scrape off the high places we would have nothing left but rocks and boulders.

Q So you put your ditch on the high place and water from the high place? A. Yes sir.

Q Could youirrigate your high places at all unless you did that?

A No sir, I could not.

Q Is that true generally in your neighborhood?

A Yes sir.

Q In the year 1915 did you make any measurements of the quantity of water which you used?

A I did on the home place.

Q Is there a weir at your home place? A. Yes sir.

Q Who installed that weir?

A I put it in.

Q Under whose direction?

A Mr. Frank Wentz.

Q Did he furnish you the measurements?

A He furnished the weir, had it made.

Q And you installed it?

A I put it in the ditch.

Q Now, during the year '15 did you keep a record of the quantity of water flowing over the weir at the different irrigations?

A Yes sir.

Q What did you do with that redord?

A Why, Mr. Knight and I took it to Mr. Frank Wentz.

Q Did he calculate from that the quantity of water which you had used in each irrigation?

A Yes sir.

Q I show you Exhibit 104, and ask you whether or not that is the tabulation which Mr. Wentz made?

A That is the one.

Q In the making of the irrigations which are set forth in that tabulation, did you use the water as economically as you knew how, consistent with your experience as an irrigator?

A Yes sir, I did.

Q Get the best results you could?

A I did.

Q You have irrigated, I understand, with water from the Provo Reservoir?

A Only this year.

Q You didn't irrigate last year?

A No sir.

Q Nor the year before?

A No sir.

Q Were your fruit trees bearing in 1915?

A No sir.

Q Or '16? A. No sir.

Q Would you have required a larger quantity of water in those years to mature your fruit if the trees had been bearing?

A Yes sir.

Q Would your shortage have been greater then if they had been bearing than it was?

A It would.

Q Have you a well upon your place?

A I have.

Q How deep is it to the water?

A It is forty-seven feet to the bottom of the well, and it has from two feet to six feet of water, it varies different seasons of the year.

Q Have you a basement?

A I have.

Q How deep is the soil, the surface soil in your well and in your basement?

A Surface soil is about six inches.

Q Have you fenced your place?

A I have.

Q Did you dig the post holes?

A Not all of them?

Q Did you dig some of them?

A I have.

Q In the digging of those post holes have you had occasion to observe the depth of the surface soil?

A I have.

Q How deep was it where you observed it in the post holes?

A From six inches and a half to a foot and a half.

Q Have you observed the digging of wells, basements, planting of trees and such upon adjoining soils? A. Yes sir.

Q In your vicinity? A. Yes sir.

Q What is the soil depth there?

A In the close vicinity it is about from six inches to eighteen inches.

Q Do you know of any water level upon your place which is available

to the plant life there? A. No sir.

Q Do you know of any impervious stratum of clay that holds the water?

A There isn't any.

Q D° you know of any in the vicinity at all?

A No, I don't.

MR. RAY: I desire now to offer in evidence Exhibits 101, 102 and 104. I think that these may be subject to the objection that Mr. Wentz has not testified to the correctness of the computation, but I will furnish counsel copies of them if they want, and they may check them and if they are not correct, they may be corrected.

MR. A. C. HATCH: What do they show?

MR. RAY: They are the records of the irrigation during '15, kept by Mr. Frampton, Mr. Poulson and Mr. Stratton, and they show the date of irrigation, the acres irrigated, the gauge height on the weir, the discharge in second feet, the acre feet, and the duty at the irrigation, and the average monthly duty during the season upon these three tracts of land as testified to.

MR. A. C. HATCH: Of course, we would object and do object to the introduction in evidence until we have had an opportunity to examine them, and until they are shown to be competent.

MR. RAY: I have admitted Mr. Wentz has not testified to the correctness of the computation, I am willing to put him on and have that done. Your engineers will check it anyway, no doubt.

MR. CORFMAN: Mr. Ray, what is the average duty of water shown by the tabulation?

MR. RAY: They show from -- just by my memory about 35 in the early part of the season up to a maximum monthly duty in September, I think, of about 56 measured at the land, varying somewhat on the different tracts.

THE COURT: Is that all with this witness?

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THE COURT: Is that all with this witness?

MR. RAY: That is all, I was just waiting for counsel to examine that.

THE COURT: Do you insist on your objection?

MR. A. C. HATCH: Yes, sir.

THE COURT: Objection will be sustained now.

CROSS EXAMINATION by Mr. Corfman.

Q Mr. Poulson, you say that you get the best result from the land you occupy and farm there it will take about an additional one third? A. Yes sir.

Q Of the quantity you now own? A. Yes sir.

Q If you had more shares of water, of course, you would have the water?

A If I had more shares of water I may have more than I could handle economically in the early part of the year, but not enough in the latter part.

Q Isn't it true that since 1902 considerable areas on Provo Bench have been irrigated that were not therefofore irrigated at all?

A I think there is some.

THE COURT: What year?

MR. CORFMAN: 1902.

Q Isn't it true that since 1902 some of the land owners on Provo Bench have sold many of their shares of water to other residents there on the Bench.

A Yes sir, some have been transferred.

Q And of course those lands are now getting along with less water and water is being applied to other lands?

A Yes sir.

Q That is particular true of Mr. James A. Lovelace on Provo Bench, is it not?

A I could not say, before he sold his water he was renting it to other parties, he didn't use the water on his land. He was renting a number of shares and later he has sold it.

Q And since that time he has sold and disposed of them and they are

applied to lands that theretofore have not had the water?

A Well, most of the amount he sold, they used to rent the water from before and use it on the same land.

Q There are some instances where new settlers have purchased-shares of water In Provo Bench Canal & Irrigation Company from the older users?

A Some have.

Q And broken up those lands and using it upon it now?

A Yes sir.

CROSS EXAMINATION by Mr. A. C. Hatch.

Q To about what time in the season do you have any excess of water

MR. RAY: You honor please, I object to that question upon ~~tm~~ the ground it assumes the witness testified he had an excess, which is not true.

MR. A. C. HATCH: He said we have more water thanwe can handle.

MR. RAY: He didn,t so testify.

THE COURT: I didn't so remember it.

A I I should buy more shares.

Q You testified in answer to Mr. Corfman the forepart of the season you had more water than you could handle economically?

A No sir, I did not.

Q Read the record, I may be mistaken.

(Testimony read)

Q Then you wouldn't have enough in the latter part of the season even though you had more shares, is that what you mean?

A ~~It~~ depends upon how many more shares I would have.

Q About how many more would you have to have in order to have sufficient water?

A I think about one third more.

Q And how much of this new land was brought under cultivation that you testified?

A Since when, what new land?

A Well, in the part four or five years?

A I couldn't say how much.

Q How many different persons that you know of who acquired shares and put new lands under cultivation in the past five years?

A I don't know of any.

Q When was the last that you knowledge of that was brought under cultivation, new land?

A Fifteen to twenty years ago.

Q You say you rented one share of Provo Bench Water ?

A Yes sir, this year.

Q This year? A. Yes sir.

Q From whom did you rent?

A From Henry Davis.

Q He had an excess of shares or an excess of water this year?

A I think he sold that land.

Q Sir?

A I think he sold that land.

Q Without the water?

A I think so.

Q But he had water for which he had no use this year, is that right?

A I think he did

Q Do you know the number of shares he had?

A He had one share.

Q That was all he had?

A That is all he has got.

Q If he had more would you have rented it?

A I don't know, I may have done, or somebody else.

MR. RAY: I cannot hear Judge Hatch's examination your honor.

Q Did I interrupt your answer.

A I say I might have done, I don't know what I would do. There was others that had water to rent if I wanted to ren t a share.

Q You rented from the Provo Reservoir Company?

A No sir.

Q When did you rent from them if at all?

A I don't remt any from them. I bought it.

Q You bought it ? A. Yes sir.

Q How many shares did you buy?

A Six shares.

Q That was in 1916?

A Yes sir, bought it last fall .

Q Except during the high water season, did you ever hade sufficient water to irrigate your land properly?

A No sir.

Q Not from the beginning?

A No sir.

Q Did you have sufficient to irrigate the home farm?

A When?

Q At any time? A. No sir.

Q Not from the beginning? A. No sir.

Q About what portion was you short when you first commenced irrigating the home farm?

A When I first commenced to irrigate I bought one share only and had twenty acres of land, and I have been buying more shares as I could get money enough to buy it. My land was dry land when I bought it.

Q And you have been buying shares of the Provo Bench stock and applying the water? A. Yes sir.

Q Upon that land? A. Yes sir.

Q And increasing your shares and water up to the present time?

A I haven't bought any late years.

Q You bought Provo Reservoir Company?

A That is not usedon this farm.

Q No part of it?

A Not any of it, I bought land with it.

Q Did you apply the one share that was rented upon the home farm? A. N° sir.

Q Do you know of anyone owning land under the provo bench Canal system who has had sufficient water to properly irrigate their

land since the decree testified to in this case?

A I don't recall anyone.

Q Do you know of anyone who had sufficient prior to that time to properly irrigate the land during the latter part of the season.

A There was parties that had water to rent. From that I should think they had enough on their land.

Q Other than those who ~~xxxtxt~~ renting and had water to rent, do you know of anyone?

A No, I don't.

Q So that the condition has always been that there was a shortage of water latter part of the season under the Provo Bench Canal system?

A I think so.

REDIRECT EXAMINATION by Mr. Ray.

Q Mr. Poulson, you spoke of Mr. Lovelace selling water ?

A Yes sir.

Q Prior to Mr. Lovelace selling his water, isn't it a fact that he was a very large stockholder in the company there and rented water to the same land which later -- whose owners later purchased the water? A. Yes sir.

Q And prior to his sale it was applied to the same class and character of land if was after the sale?

A Yes sir.

Q First under lease and then under purchase?

A Yes sir.

Q Were there others also doing that?

A I think there was.

Q The water was used whether it was under lease or under purchase each year? A. Yes sir.

T. F. WENTZ recalled.

DIRECT EXAMINATION by Mr. Ray.

Q Mr. Wentz, I call your attention to Exhibits 101, 102 and 104, and ask you whether or not you remember having furnished to you the data as to the irrigation of the farms of Mr. Frampton, Mr. Poulson and Mr. Stratton for the year 1915?

A Yes.

Q Did you have anything to do with the installation of the weirs at these respective farms?

A I did not direct the installation, I gave them the design of the weirs, and ordered the weirs made for them. Our standard design that we include in the '14 report, and use on the Provo river system.

Q And this is the same design you gave them?

A Yes, the same design.

Q And the measurement of the water over the weir enables you to tell the second feet?

A Yes.

Q When they reported to you the second feet and the hours that it was used and the acreage, did you then compute the duty of water upon it?

A Yes, they gave me the date, the time and the gauge heights. I computed the discharge in second feet, the acre feet and the duty.

Q And is that computation correctly set forth in the Exhibits 101, 102 and 104? A. Yes.

CROSS EXAMINATION by Mr. A. C. Hatch.

Q Did you ever see the weirs after they were placed?

A I have seen the one at Mr. Stratton's farm, and the one at Mr. Poulson's farm.

Q They were properly placed?

A Yes sir.

MR. RAY: I desire to reoffer Exhibits 101, 102 and 104, your honor.

THE COURT: They may be received.

WILLIAM JAMES CORDNER, called by the defendant, Provo Bench Canal & Irrigation Company, being first duly sworn, testifies as follows:

DIRECT EXAMINATION by Mr. Ray.

Q Your name is William James Cordner?

A William James or W. J.

Q Where do you reside?

A Provo Bench.

Q Howold are you?

A Forty-six.

Q How long have you resided on provo Bench?

A About thirty-eight years.

Q During that period have you owned land on Provo Bench?

A Why, I own some with my father, labored with my father until I was about twenty one or two years old. Since that I have had lands of my own, yes.

Q Where is your residence on Provo Bench now located?

A In Section 22 or 23.

Q Located in the very northwest corner of the northwest quarter of Section 23? A. Yes sir.

Q And marked upon the map James Cordner and J. W. Cordner. How many acres have you there, Mr. Cordner?

A About twentyone and a half, I think, or twentyone acres. Railroad runs through there.

Q How long have you owned that twenty-one and a fraction acres of land?

A Why, somewhere in the neighborhood between seventeen and twenty years.

Q Prior to that where did you reside on the bench?

A I resided in 13, Section 13.

Q That would be to the east?

A Right on the brow of the hill, where the canal comes out on the bench.

Q Did you farm in 13?

A Yes sir.

Q Did you ever have anything to do with the irrigation of lands in Section 13 and Section 23?

A Yes sir, I have worked there for thirty-eight years.

Q Have you personally attended during that period to a good deal of your irrigation as a farmer?

A Yes sir.

Q How many shares of the water, of the stock of the Provo Bench Canal do you now own for your twentyone and a fraction acres of land?

A Seven shares.

Q How much of your land is under cultivation.

A Well, practically all of it, with the exception on the -- I think on two sides there is a road taken from the land.

Q And then the interruban?

A Two rod street and fifty feet going through about seventy-five rods of that, runs about 75 at an angle through the place, the railroad.

Q And in addition to that your barnsand shed s and home?

A Yes sir.

Q So that you have substantially one share of water for three acres of land? A. Yes.

Q Do you own lands upon the bench than those referred to at your home place? A. Yes.

Q Where do they draw water from?

A Provo Bench.

Q Where ate they located?

A I think it is 14, I made a purchase of some in 14.

Q You own 54 acres, marked James Franklin Duffin, is it?

A Yes sir.

Q In the southeast quarter of Section 14, is that land irrigated from the Provo Bench?

A Well, mostly.

Q How many shares of water have youfor that piece of land ?

A I am using sixteen shares.

Q How lang have you irrigated that Duffin tract?

A I have irrigated part of it three years and part I just purchased last winter.

Q What is the Duffin tract planted to ?

A Alfalfa, grain, potatoes, pears.

Q What is your home place planted to?

A Alfalfa, apples and peaches.

Q What has been your observation as a practical irrigator as to the frequency of the irrigation up on alfalfa necessary to produce the best crop?

A In the different soils it will run from seven to nine days.

Q What is the effect upon the alfalfa if you extended the period of irrigation?

A Well, it will stop growing in between seven and nine days, and if it runs any over that, why, it will wilt.

Q And will the yield thereby be diminished?

A Yes sir.

Q What is the most beneficial period of irrigation upon fruit trees when they are bearing ?

A Well, I have always tried to give them plenty of water the whole season, but during the maturing of the fruit they must have it or we will stand a loss.

Q How frequently must they have it during that period?

A About seven days.

Q If they don't get it that frequently does it affect the quantity and quality of fruit produced?

A Yes sir.

Q What is the most beneficial period of irrigation for the small fuit, raspberries, dewberries, strawberries?

A They must have it during the wholeseason that they are blooming

and bearing.

Q With what frequency?

A Well, I used to — I have raised quite a lot of small fruit, while not very extensive now. I used to try to water it twice a week, used to change with some of our neighbors or have another turn.

Q Split your turn.

A Yes sir, so that I could water it twice a week. I always have to have it to get good results.

Q That gave you a better result than a seven day period ?

A Almost double.

Q Is the water ticketed upon your lateral?

A Yes sir.

Q Is it on turn during the entire irrigation season?

A Yes sir,

Q What is the practice upon your ditch and in your vicinity as to night irrigation ?

A We water all the time. When our turn is on, whether it be night or day.

Q Are there any waste ditches running from your lateral?

A No sir.

Q Are the ditches there, so far as you know, or are they not kept in a good state of repair?

A Yes sir, I am watermaster on the ditch I water in, and we run through it once or twice a year with a scraper while the water season is on to clean it and take the mosses from it.

Q Do you know of anybody on your ditch this year missed their turn because they didn't need the water?

A No sir.

Q Or last year? A. No sir.

Q Or the year before?

A Well no, I could not bring anything to mind the year before.

Q What is the practice there as to culinary or domestic streams, do you have house streams?

A No sir.

Q How are the homes supplied?

A The question.

Q How are the homes supplied with water.

A They are supplied by wells, or those that haven't wells carry it in buckets, drive their stock to the ditch.

Q Is there any well upon your place?

A Yes sir.

Q What is the depth to the water?

A The depth to the water?

Q Yes.

A I couldn't say, I should judge though about forty feet, the well is forty-seven feet.

Q And you have substantially seven feet of water?

A I think so.

Q Does it ever raise much higher than that?

A No.

Q What is the depth of soil in your well? Did you go to gravel?

A Well, I should judge about a foot where I dug the well.

Q Have you excavated any basement? A. Yes.

Q What is the depth of soil there if you observed?

A About the same.

Q Dug any post holes?

A Yes sir.

Q Fenced your place? A. Yes sir.

Q Have you been present at the time the holes were dug for the planting of the trees?

A Yes sir.

Q In those portions have you had an opportunity to observe the depth of soil upon your place? A. Yes sir.

Q About what is the average depth upon your home place?

A Why, I should judge about a foot.

Q As to the Duffin place, have you had a chance to observe the depth of soil there? A. Yes sir.

Q What is the average depth upon it?

A I think if any difference a little less, the soil is a little lighter.

Q What is the formation below the top soil on both of those farms?

A There is a rock, cobble rock, gravel and many places what I would call cement.

Q Is there any stratum under your farm within three and a half or four feet which is impervious to water and holds the water up near the plant root?

A I haven't found any.

Q Has your experience been to the contrary?

A Yes sir.

Q Now, did you use your seven shares of water upon your home place in '15? A. Yes sir.

Q Did you use it every turn?

A Yes, I used it every turn.

Q What is the average length of run upon your home farm?

A I should judge about fifteen rods.

Q Have you determined the length of run in what you considered as a practical irrigator, the most economical and efficient way?

A Yes sir.

Q Is your farm absolutely level?

A No sir.

Q What would happen to your farm if you tried to make it absolutely level?

A Why, I would say we wouldn't have any.

Q You would take all the top soil to fill the lower places?

A Yes sir.

Q Is it necessary for you to put your ditch on the high place in order for you to water it at all?

A Yes sir.

Q And running your ditch from the high place to the lower ground to determine your length of run? A. Yes sir.

Q During your experience as an irrigator for thirty-eight years there has it been to your interest to make a share of water irrigate as much land as possible? A. Yes sir.

Q Are you familiar at the present time with the market value of shares of stock in the Provo Bench Canal Company?

A Yes sir.

Q State what that is if you know?

A Why, they are ranging from two hundred seventy-five to three hundred dollars. Great deal in how bad the fellow wants to sell. Three hundred dollars is about the market price.

Q Now, take the year 1915, state what was your experience as to the sufficiency of your water supply?

A Well, I was very short, I don't know, I think that I could have used a third or better more water.

Q To advantage?

A To a good advantage, yes sir.

Q Do you know whether or not, as watermaster, you turned yourself your proper portion of water?

A We have tickets there so that the watermaster hasn't advantage what it ought to be.

Q But as watermaster, did you say you didn't have any disadvantage?

A I got all that was coming to me.

Q And with that you were short a third or half during the latter part of the season?

A Yes sir.

Q What was your experience in 1916?

A Well, it has been just a little better this year. That is, it has been up to about three weeks ago. and I have been very short since. Last three to four weeks.

Q Has that shortage of water affected your yield of crops?

A Well, I had my grain off, I had my grain off and had the lucern, about twelve acres of it, and have not been able to water it since.

Q Would it be beneficial to that lucern to irrigate it?

A Yes sir.

12:00 Noon, Recess to 2:00 P.M.

William James Cordner - - - -

DIRECT EXAMINATION by Mr. Ray continued.

Q Calling your attention, Mr. Cordner to the 54 acre piece to which I havereferred as the Duffin piece, as I understand you, you have sixteen shares of Provo Bench water for that, and also some Provo Reservoir?

A I am running twelve and a third shares, I think, of the reservoir water on that same piece.

Q And was your experience as to the sufficiency of water upon that piece comparable with that on the home place last year in 1916, about the same shortage?

A I didn't understand you.

Q Was the shortage about the same there as upon your home place this year as last?

A This year is a little better than last year.

Q That was true as to both places, was it?

A Yes.

Q Are you able to state wether the area irrigated on Provo Bench from the Provo Bench Canal is now substantially the same area that it was for the past ten or twelve years?

A Yes sir.

Q Do you know of any new lands? A. No sir.

Q Having been brought under irrigation?

A No sir, not under the old system.

Q There has been new lands brought under irrigation under the Provo Reservoir?

A Under the provo Reservoir, yes sir.

Q Have there been any years since you hafe irrigated upon Provo Bench when there has been a sufficient supply of water or substantially so?

A Yes sir, I remember a few years, different years that we had plenty of water.

Q Can you name any year?

A Well, as my mind serves me in 1907, '08 and '09, we were pretty well supplied with water.

Q Those were years of high water im the river, were they not?

A Yes sir.

Q Now, what has been your experience as to the quantity of water which ashare in the Provo Bench would irrigate during the years 1915 and '14?

A I have not been able to water with the Provo bench stock, probably a little better than two acres to a share, very little.

Q Two acres to a share, or two shares to the acre, which do you mean, Provo Reservoir?

A Provo Reservoir in 1915 I used about four shares of the reservoir of little stronger than four shares per acre. This year I am using about two shares or a little better.

Q What was your experience in 1914?

A In 1914 the reservoir was a little better than it was in 1915, that is, it served me better.

Q And how many shares were necessary to irrigate an acre during those years?

A I think, as I recollect, I used about somewhere in three.

Q And did you use that water economically?

A Yes sir.

Q Was that as much land as it would serve?

A That is as much as I could make it serve.

Q Did you ever irrigate on the Lake Bottom, River Bottom?

A Yes sir.

Q When?

A Well, I couldn't bring to mind just the year, but it is in the neighborhood I think, of about seventeen or eighteen years ago, as near as I can bring to mind.

Q. As I understood you, but Mr. Bagley has a different understanding, you stated that it took about four shares per acre, about three shares per acre in 1914 of the Provo Reservoir, about four in 1915 and about two this year?

A Yes sir.

CROSS EXAMINATION by Mr. Corfman.

Q How long have you owned the Duffin tract of land?

A I have owned part of it, I think this is the third season on a part, and first season on a part,

Q How long have you been acquainted with that tract?

A Well, I have been acquainted and over the ground for thirty-eight years.

Q How long since part of it was in sagebrush?

A Above the old system, you mean, or below?-- you mean the tract I own this year?

Q Yes.

A Oh, it is is -- I cannot bring just to mind.

Q What is your judgment?

A Twenty years.

Q About twenty years. Prior to that time it didn't have any water, did it?

A prior to the --

Q When it was in sagebrush it didn't have any water, did it?

A Well, I didn't own it, I couldn't say,

Q It wasn't irrigated at that time at all?

A I couldn't say for that.

Q When you purchased it how many shares of Provo Bench water did it have?

A I got --

MR. RAY: I don't understand that question at all, Mr. Corfman, and it may be my stupidity, but I don't understand that land owns any water. They might have owned water for it.

MR. CORFMAN: He just testified he doesn't know of any land using water now in the last ten or twelve years and recent years that has not theretofore owned water.

MR. RAY: I don't see this question applies to that.

Q You purchased it three or four years ago?

A Yes.

Q How many shares of provo Bench water did it then have?

A I purchased at two different times, that is, two different seasons, I made the purchases twice. I think there was fifteen shares that were served on the two pieces.

Q Did you buy the water with the land?

A I bought the water with the land, yes sir.

Q And do you know how long the water, Provo bench water had been used on that land prior to the time you bought it?

A Some of it for forty years, I guess.

Q On all of it?

A Well, I couldn't say whether it was all broke up, but I think it has been probably twenty or twenty-five years before the last was brought under cultivation.

Q Are you acquainted with the W. H. Ray tract, not far from this land?

A W. H. Ray has had so many tracts out there.

Q The one that he improved and planted to orchard?

A Not personally acquainted, no, that is a mile, I guess, must be a mile or better north of where I am.

Q That would be in the northeast quarter of Section 10, would it not -- you have known that land for sometime in the northeast quarter of Section 10?

A I have not been over that, that is the upper part of it.

Q Ten or twelve years ago the greater portion of that land was in sagebrush?

A That is above the old system.

Q What do you mean by the old system?

A The North Union Canal which run down there.

Q It runs right through?

A Yes, it runs right through.

Q And on the west side of the North Union Canal there was considerable of an area there, in sagebrush, isn't that true?

MR. RAY: What period.

A Quite a while.

Q Ten or twelve years ago?

A I would say longer than that.

Q And that land is now under cultivation and planted in trees, isn,t it?

A I couldn't say.

Q And do you know whether or not they are using Provo Bench water?

A I couldn't say.

Q Shares they have purchased?

A I couldn't say.

Q The place you speak of, the home place, is that on the State road? A. Yes sir.

Q How long have you owned that?

A Seventeen or eighteen years, along in there.

Q Irrigated land when you purchased it? and

A Had been for a number of years before I purchased it.

Q When you purchased it was it irrigated land?

A I say it had been before I purchased it.

Q At the time you purchased it?

A At the time I purchased it had not been used the year that I purchased, or the year before I purchased.

Q Did you purchase any water with that land?

A No sir.

Q Has it a water right now? A. Yes sir.

Q From Provo Bench Canal and Irrigation Company?

A Yes sir.

Q You purchased those shares and supplied these lands?

A Yes sir.

Q Isn't that pretty generally true though out the fruit district there particularly that considerable areas have been in recent years purchased that was formerly sagebrush land, and the water for those lands are now taken from the Provo Bench Canal and Irrigation Company?

A Why, I could only say that was the best watered piece of ground there was on the bench.

Q I am asking if it is not true that there are many, many cases here in recent years where fruit lands that had not theretofore been irrigated are now being irrigated from the Provo Bench Canal & Irrigation Company?

A Why, I don't think so, I think that we have always, as long as I can remember, tried to irrigate under this system and have

irrigated.

Q Do you know the University lands out there?

A Yes sir.

Q They were in sage brush for many years?

A Yes sir.

Q Do you know some of the owners are now using water from the Provo Bench Canal & Irrigation Company for those lands?

A Well, they have done that by making outs into the North Union Canal Company and taking the water out of new laterals that it was never taken out before.

Q And some of them are now owners of shares of stock in the North Union Canal Company?

A The most of it is watered with reservoir water.

Q Well, some?

A Most of it.

Q Some is watered from the Provo Bench Canal & Irrigation Company?

A I don't think so through these laterals.

Q None at all, North Union is part of the --

A Yes sir.

Q Provo Bench Canal & Irrigation Company?

A But up until we come to the point of the canyon road we never had any laterals.

Q You irrigate from those laterals now? running from the North Union?

A These laterals the reservoir company is putting in some second feet of water in the Provo Bench canal and is taking it out through these laterals.

Q How many second feet of water are the Provo Reservoir Company turning into the Provo Bench Canal?

A I couldn't tell you the portion.

Q Was it ever turned in from that source bfore last summer, Provo Reservoir Company ever take any water from the Provo Bench Canal before last season?

A I don't think so.

Q It was irrigated prior to that time, wasn't it, these lands?

A We run flumes and flumed it over the North Union Canal from the Upper Canal, the Reservoir system run flumes across the canal and carried the water over in flumes, and the change on the system was to put the water in the big canal and take it at these points, and in doing so they cut and made more laterals through the North Union Canal.

Q You had some laterals cut through the North Union Canal before last year, didn't you for the irrigation of those lands?

A There may have been on the lower part toward the canyon road there, I am not posted on that, I couldn't say.

CROSS EXAMINATION By Mr. A. C. Hatch.

Q Except the years 1907, '08 and '09, can you now recall another year when you had sufficient water after the flood season for the irrigation of the lands under the Provo Bench Canal system?

A I cannot recall the years any more than I can recall a time that we had, but being connected with systems at those dates.

Q Now, in 1907, you say you had plenty of water during the entire year?

A Sir?

Q In 1907 you had plenty of water during the entire year, as I understand you?

A Well, we had a great deal better than we have in other years.

Q Youhad all that you wanted to use, didn't you, in 1907?

A People that had good, fair water rights, Some were real short in those years, but they were people that probably didn't have.

Q But you had your canal full of water during those years, didn't you?

A I think so. It wasn't full, but had it at compromise so that there was no trouble with water.

Q Can you say whether or not there was water running through the Provo River xxx to Utah Lake during the entire season of 1907?

A I couldn't say, it may have been running under the bridge where I crossed between here and my home, and yet not go into the

lake, I couldn't state.

Q If you didn't have all the water you needed in 1907, it was because the capacity of your canal was not sufficient, was it not?

A I don't remember any scramble over water in those years at all.

Q What kind of crops did you raise in 1907, on the home place.

A Good ones.

Q What were they?

A Sir ?

Q What were the ~~character~~ classes of crops?

A Why, my home place at that time I had it pretty near -- pretty much in alfalfa.

Q How many times did you irrigate it during the season?

A We irrigated -- the system has always been about seven days and eight hours.

Q I am asking you only as to 1907, if you remember.

A I say about seven days and eight hours.

Q What amount of lucern and hay per acre did you raise in 1907?

A Well, I couldn't state, never paid any attention to the measurements, I only know I had a good, heavy crop of lucern.

Q Do you know whether the other users of water from the Provo Reservoir during the year 1907 had plenty of water?

A Why, I should say yes.

Q And Provo City, can you say as to Provo City in 1907?

A I think I would be safe in answering that yes.

Q Do you know of any canal, or any user of water from any of the canals taking water from the Provo River being short of water during the year 1907?

A Unless it was the Blue Cliff Canal, about the only one, they were fighting at that time, they were trying to shut us off then whether we had water or not.

Q You were using under the Blue Cliff, were you?

A Yes sir.

Q And they were representing you taking the water in your Blue Cliff canal and allow it to run on down into the river into the lake, did they not?

A

A Well, we didn't have much trouble in them years.

Q Only with your ditch?

A As I recollect, we had a new system there and we were not able to bring out a great deal of water. While we were putting in a good fair flow at the head, we did not bring a great deal out on the bench, but did not have a great deal of trouble.

Q Then the reason the Blue Cliff Canal did not supply its users with sufficient water was that the ditch andcapacity to carry it was not large enough, isn't that true?

A That is the forepart of the season, yes,

Q And up to the close of the irrigation season, isn,t that true, in 1907?

A Well, in 1907, as I stated, we didn,t have a great deal of trouble.

Q Did you have any trouble at all about the water --

A Yes, if my mind serves me we had some.

Q What was the nature of it?

A They would shut us off, the Provo People, in fact, they did not want us to establish any right.

Q That was the Blue Cliff canal? A. yes.

Q And that is the only one?

A That is the only one I know anything about having any trouble.

Q You cannot recall the other years when you had sufficient water under the provo bench system?

A No, I cannot. I wasn,t connected with the system, and when I wasn't connected, it was left to the other fellow.

Q Your recollection now tells you there was high water years, don't it?

A Yes sir, there was years there was -- that we had --

Q That were similar to 1907? A. Yes sir.

Q Extraordinarily high water? A. Yes sir.

Q During the entire season?

A (No audible response.)

Q Except those extraordinarily high water seasons you have always

been short of water under the Provo Bench system, haven't you, in the low water season?

A Well, personally?

Q Well generally the users of water under that system have been short, have they not?

A There is some people on the Provo Bench that has got -- has had only just years off and on, has had water sufficient to water their places. I have been speaking of myself personally, I have been short.

Q You didn't have shares in proportion to the acreage that you own sufficient to irrigate your land as others irrigated their's, did you?

A I didn't feel that it was profitable to keep the shares to water my place in the low water season. I could rent the water, person could rent the water and make more out of it than they could the surplus water.

Q Now, do you know of others who were in the same position that you were with regard to not feeling it was profitable to use their right upon their own land?

MR. RAY: Now, your honor please, that is an entirely voluntary assumption, not based upon any testimony of anybody.

MR. A. C. HATCH : Please read the last answer of the witness.

(Answer read)

Q What did you mean by that answer, Mr. Cordner.

A Why, I figured people that did have -- it has been brought up here there was a good deal of renting back and forth and pereon that had a water right to water their place in the low water season many of them, some of them do yet, rather than to run so much water to waste during the high water season, they rent a portion of their water and keep about what they could evenly run through on.

Q Then during the high water season, am I to understand that there is water that would run to waste if applied by the stockholders upon their own land according to their turns and shares?

A there might be probably a few, very few.

Q Now, has there been any time when you have rented any portion of your right to the use of the water under the Provo Bench canal?

A It has always been the reverse with me. I have always been renting a little.

Q And you have always been able to rent all that you wanted to rent, haven't you ? A. No sir.

Q Sir? A. No sir.

Q What year could you not rent?

A Many of them, I could not name them.

Q Since the Provo reservoir was built has there been any time that you could not have obtained sufficient water to properly irrigate your land through the Provo Reservoir Company?

A Through the Provo Reservoir?

Q Yes.

A Well, I have not been able to water the lands that I own and own water in the reservoir, have not been able to water all of them.

Q You could have acquired more right, could you not?

A Yes, but that costs money.

Q And the price you thought was prohibitive?

A The question?

Q The price you thought was prohibitive, that is, it would not pay to rent the water to apply upon your land?

A No sir, it would not.

Q You say you used four shares per acre of the provo Reservoir water in 1914, three shares in 1915 and two in 1916. I misstated that, It was three shares in 1914, four shares in '15 and two in '16?

A Little better than two.

Q Now, did that supply you ~~supply~~ sufficient water to irrigate the lands upon which you applied it?

A No sir.

Q You could have obtained more of that water for those years had

you wanted it, couldn't you?

A I could have had better results if I had had more water.

Q Why didn't you have more water?

A Sir?

Q Why didn't you have more water?

A I didn'tfeel it would pay me to purchase the water.

Q The difference in the crops would not pay for the little excess of water?

A Yes sir.

Q About what is the difference in your crops raised in 1916 per acre and your crops raised in 1907 per acre, if you know?

A 1916 and '07?

Q Yes.

A My alfalfa crop is half less.

Q In 1916?

A In 1916.

Q Do you attribute all of that shortage to the difference in the application of water upon the land?

A No sir.

Q You have what they call the weevil in 1916, hadn't you?

A Yes sir.

Q Now, how can you tell, or even guess at the difference in the effects of the application of the water on lucern crops in a year when there are no weevils and in a year when the weevil takes the first and best crop?

A I can tell by the second crop.

Q Well now, as between 1907 and 1916, what was the difference in the second crop?

A Well, I think that I was one third, pretty near one-third lighter.

Q Why do you think that?

A Well, in setting on the mowing machine, ~~mark~~ cutting it, looking at it, pitching it, hauling it, stacking it.

Q You can't in your mind now go back to 1907 and fix the condition of the crop as you cut it, can you?

A Yes sir.

Q The second crop is usually raised during what is known as the low water period, is it not?

A Well yes, the low water or intermediate.

Q And in 1907 there was no low water xxis period?

A We didn't figure any.

Q Now, as between 1907 and 1900, could you tell any difference in the crops raised?

A I don't think that I could, I don't think I could bring it to mind, I don't think I could go back and go over the ground in 1900, I wasn't doing as much farming as I was in 1907.

Q Do you remember the conditions as to the water in 1900, that is prior to the decree that is in evidence here?

A I think it was lower as I bring to mind, I think that the water was scarcer. I don't want to state anything but what is facts, but as I recollect it was lower, the water was lower.

Q In 1900? A. Yes sir.

Q Well, but you can't say anything with relation to the crops as compared with 1907 can you?

A As I state, I was doing verylittle farming at that time, that is, I wasn't -- my farm was smaller, and my acreage was mostly in small fruit and orchard.

Q Do you remember anything as to the condition in 1903, the year after the decree?

A I couldn't say.

Q But do you say that the general condition there since you first became acquainted with it has been there was a shortage of water for the lands under the Provo Bench Canal system?

A Well, different years, some years we have been, some years we have not been. I haven't the data on it.

Q All the years except the extreme high water priod, there has been a shortage, has there not?

A Well, I think in a general way when the river was very low we all suffered.

Q Now, do you remember a siggle year except 1907 when you had all

the water that you deemed necessary for the proper irrigation of your land?

A Well, as I could bring to mind that I can see in different years that the bench did have, yes, numbers of years fx good deal better than others.

Q That was not what I asked you, I asked you sufficient, whether or not there was sufficient to properly irrigate your land during any year except 1907?

A I could not speak in a general way for that at all.

CROSS EXAMINATION by Mr. John E. Booth.

Q How much land do you say you have on your home place, Mr. Cordner?

A At my home?

Q Yes.

A Twenty-one acres and a half, I think.

Q And seven shares of water you apply on it?

A Yes sir.

Q Now, to durnish you sufficient water in the low season, how many shares would be necessary to economically and profitably irrigate that twenty-one acres of land, not to waste, but have enough?

A About nine or ten shares, nine shares, I think, nine and a half.

Q practically a share would be ample then for two acres, that is about right, is it?

A That is --

Q Now, taking your amount that ten shares would give you out of the Provo Bench Canal & Irrigation system to supply you with ample during the low season, could you profitably and economically use all the water that would be to your share in the high water season on that same ground?

A I just didn't get your question, Judge.

Q If you had ten shares of water in this system, you would have a certain proportion or certain part of the whole of the system, wouldn't you ? A. Yes.

Q Now, I say, if you had sufficient water by this number of shares to profitably and economically irrigate your home farm in the lowwseason, then would that ratio to the whole -- could you use that much in the high water season on that land and not have any to spare.

A Well, for the first two or three turns, yes.

Q Well, take it during the whole high water season, could you profitably use ten shares in the high water season and economically use that ten shares on this piece of land that would have ample water out of these ten shares in the low water season?

A Why, our canal has been cut down these last few years. I think I could use it, it takes a great dealmore water to water the first few turns, get it over the ground, even in alfalfa, it will take almost double the water and I don't know, but fully double to get it over the first turn, and then not quite so much the next turn, and it takes great deal more, and we can use a great deal more water if we will cut down in the high water season as we are in the low water season, we never would get it.

Q If you had your ten shares on this piece of ground in low water season, you would have enough then, wouldn't you ?

A Yes.

Q You would have enough?

A If I am thoroughly watered during the high water season.

Q Well, I left out the high water season, leave that out first, maybe we will have to go back, I want to know how many shares you would require in this system to give you ample water in the lowest season, use that water profitably and economically?

A If my ground is throughly watered during the high water season?

Q I am not talking about that.

A Not talking about that at all?

Q Let's leave the high water season out.

A I could not answer it at all. The condition of the ground would be altogether how much water I would have to have. I could

not answer your question without knowing the condition of the ground.

Q You know the condition of the ground, don't you, take this year, let's take it this year then, You know the condition of the ground this year, don't you?

A I know the condition of the ground now, yes.

Q All right now then; now we are getting to it. How many shares in this system would you require this year under all the conditions, to profitably and economically irrigate your land in the low water season?

A Under the conditions of the ground at present?

Q Yes.

A I would say nine shares.

Q We have got that definite? A. Yes.

Q Fairly so? A. Yes.

Q Now then, that nine shares draws its ratio out of the whole system don't it? A. Yes sir.

Q Its part. Now if you had drawn that portion or ratio out of the system when your canal was full, or all you could get in the high water season when there was a vast amount running into the lake, you could get all your ditch would hold. Now then, could you use that nine shares, what the nine shares would call for, on your twenty-one acres during the high water season, profitably and economically?

A The way the water has been out --

Q Not the water being cut at all, I am not talking about that, take this year.

A This year?

Q Yes, with your canal full, because you could have it full, there was no plenty there?

A Yes, it would take it to get over the ground.

Q So there would not be, if your canal could be kept full, then there would not be any waste water on your system?

A Well, we would have to go back to the condition of the weather,

We could not state in case of storms or anything of that kind which would help the irrigation out some. We then probably would have more than we could use in the latter part of the season if the canal was -- but under the condition of the water presently, I think it would take our canal all it will hold to water the lands under it.

Q There is practically a thousand shares in your company?

MR. RAY: Fifteen hundred and twenty.

Q Fifteen hundred and twenty in the Provo Reservoir or Provo Bench Canal system itself?

MR. RAY: Yes.

MR. JOHN E. BOOTH: Outside of the North Union?

MR. RAY: The North Union is part of it.

Q Well, take it on that theory then, let's see, do you know how much your canal will hold, Mr. Cordner?

A I don't, but I should judge about between 140 and 50 second feet.

Q Between a hundred and forty and fifty second feet?

A Somewhere in there, I am not positive, I don't know.

Q That would be not quite, but nearly a second foot to a share, wouldn't it? to the ten shares, if there were fourteen hundred shares and a hundred and forty second feet in your canal, that would be just a second foot to ten shares, wouldn't it?

A If there was a hundred and forty?

Q Yes.

A 1520 shares.

Q Yes, I say, and you have about a hundred and fifty second feet capacity in your canal, you say?

A I don't know?

Q That is what you said, wasn't it?

A I said I thought.

Q Now, assuming, we will assume you are right in your though for the purpose of this illustration, that would give you a second foot for ten shares, wouldn't it?

A I don't know, I haven't figured it.

Q Well, let's see --

MR. RAY: Your honor please, I can't see the value of that hypothesis. The fact is the canal has a capacity of a hundred and forty, and there are 1520 shares; the fact can be stated, and it is a mathematical calculation, the hypothesis is endless.

MR. JOHN E. BOOTH: I thought he would comprehend it easier by taking whole numbers, that is all.

Q Now, 1520 shares, that is as you understand it, and we have 149 second feet ?

A I don't know the capacity of the canal exactly.

Q That is practically a second foot for nine shares?

A Somewhere around there, yes.

Q And this nine shares you say could be -- would be what you would be entitled to for your -- under this system for your twenty-one acres?

A Nine shares that I figured for water.

Q Yes, nine shares, that is what I was getting at. That would require then a duty of twenty acres to the second foot, twenty-one acres to the second foot, that is what I was getting at. That is all.

REDIRECT EXAMINATION by Mr. Ray.

Q Mr. Cordner, to follow Judge Booth's ingenious system of mathematics, if everybody bought ten shares of water for twenty acres of land there would be thrown out of irrigation up there immediately 1300 acres of land, wouldn't there?

A That is the way it looks.

Q Couldn't have any water at all?

MR. JOHN E. BOOTH: Any water at all, how do you get that? 140 second feet and no water at all?

MR RAY: I will explain it to you out of court, Judge, and save the record.

MR. JOHN E. BOOTH: That will need some explanation.

Q As a matter of fact, there have been and are now land owners on the bench who have more than their proportion of the stock of the company for their land holdings, are there not, Mr. Cordner, that is, I mean there are men who have a share for an acre and a half or two ares? A. Yes sir.

Q And during the high water season when the canal is full you stated those men would have an excess of water, as I understood you? A. Yes sir.

CHARLES G. JOHNSON, called by the defendant Provo Bench Canal & Irrigation Company, being first duly sworn, testifies as follows:

DIRECT EXAMINATION by Mr. Ray.

Q Your name is Charles G. Johnson? A. Yes sir.

Q Where do you reside?

A At Linden.

Q How old are you ?

A Thirty-four.

Q Are you thirty-four?

A Forty-four.

Q Are you a member of the board of directors of the Provo Bench Canal Company ? A. Yes sir.

Q How long have you been a member of that board?

A About six or seven years at this present time.

Q What connection have you particularly with the North Union?

A Board member on the North Union.

Q Where is your home located upon Provo Bench?

A In Section 3.

Q Your home is marked C. G. Johnson, Number 38, six acres and Andrew G. Johnson-- just state where your's is there?

A Tract of land I own is marked Andrew G. Johnson, the deed not having been recorded until just recently in my own name. I have

held it ten years since I bought it from father and have owned it personally since that time, but haven't had the deed, so it is still in father's name. This tract of six acres is owned by him.

Q How long have you resided upon the piece of land which you last designated?

A I first resided there in '78.

Q Andhave you been familiar with that piece of land during all your life time? A. Yes sir.

Q How many acres do you own there?

A Forty-two and three-fourths.

Q How many shares of water in the North Union have you?

A I have twenty-eight.

Q Which would be 14 shares of stock or more than 14 shares of the Provo Bench? A. Yes sir.

Q A little more than one share of water for each acre of land?

A Yes sir.

Q For each three acres?

A Three acres.

Q Have you had occasion to assist ever in the cleaning of the North Union Canal?

A Yes sir, I helped with the enlargement of it in '78, while I was just a little boy at that time, but I well remember the time, and lived on, many a day we only had some bread and molasses for dinner and I carried water to those that did work, did what little I could to assist.

Q My question was have you assisted in cleaning it out?

A Yes sir, ever since that time.

Q Has it been kept in a good state of repair? A. Yes sir.

Q So that the water runs through it well?

A As far as my memory serves me, yes sir.

Q During the past few years has it been kept mowed? that is, the moss out of it, if such forms there, and the bank clean and clear?

A Yes sir, we use a spring tooth harrow and other means and

scythe and also mowing machines for cleaning, cutting the moss out each season.

Q What are you able to state as to the bringing under cultivation of new land under the North Union in the last ten or fifteen years if there is any?

A I know of no new lands that has been brought in under cultivation under the North Union Canak, that is, and irrigated by the North Union water.

Q There are some lands, I take it, are there not, which recently have been brought under cultivation and irrigated through the Provo Reservoir?

A Yes sir.

Q Do you know of the waters of the North Union serving any new quantities of land in the last few years?

A I don't.

Q What is the custom as to the transfer, purchase and sale of water out there, it is transferred, is it not ?

A Yes sir, there is some that buy and sell, that is buying and selling of land and water together mostly.

QBut water is salable without land?

A Water is salable withoutland where there is some that probably in a few instances where they have had to sell because they could not get along.

Q And land is salable without water?

A Land is salable without water.

Q How long have you had experience as an irrigator upon those lands?

A Ever since I was a boy.

Q Have you personally attended to the irrigation?

A I have personally for the last twenty-five years.

Q What is the practice on the North Union as to watering at night ?

A We take care of our water all night long.

Q BY the daytime and night? A. Yes sir.

Q During the entire irrigation season?

A From April until irrigation season is over until snows and frost flies in the fall.

Q Are there any waste ditches on the North Union that you know of?

A No sir, not to my knowledge.

Q Do you permit oulinary or domestic streams to run when people are not irrigating to the houses of the residents there.

A No sir, we never have had.

Q How are the homes supplied in your vicinity ?

A Most of them from wells.

Q Have you ever dug any wells out there?

A Quite a number.

Q How far i s it as a rule from the surface to the water level in the wells which you have dug and observed?

A Ranging from forty to sixty-five feet.

Q What is the depth of soil upon your farm?

A On my farm it will range from ten inches to two feet.

Q What is the character of the soil?

A My soil is -- surface soil is a clay loam, that is, part of it is a clay loam, part of it is sand and clay loam and the subsoil is a gravelly, rocky formation.

Q Is there any stratum close beneath the surface of the soil to retain the water?

A No sir, ~~fxmmnttxknowxitx~~ there is not.

Q Do you know any water plane there that is available to plant life? A. No sir.

Q What is your experience as to how frequently alfalfa crops, for instance, need irrigation upon your farm?

A About nine or ten days.

Q Is it detsimental to alfalfa crops to prolong the period of irrigation beyond that? A. Yes sir.

Q Is it your opinion that a maximum yield will be received by applying it within the priod of ten days?

A Yes sir. I want to state here that there is quite a difference in soil. Just west of me and south of me the soil is quite

different, Just a very few rods from my ground it is a sandy and gravelly formation, while mine, as I stated, most of it is a clay surface soil. Some of it is sand.

Q And actually a better soil than some of your neighbors for the retention of water, is it not?

A Yes sir.

Q During the year 1915 did you use your entire twenty-eight shares upon your farm?

A I did.

Q Did you during 1916? A. Yes sir.

Q Did you irrigate yourself during those years?

A Yes sir.

Q What determines upon your farm the length of runs for the irrigation water?

A From five to twenty rods.

Q Why do you vary the length of runs?

A Some of my land is little more flat, and some of it has a good fall. The west part of ~~mx~~ my farm has a good fall, and that I can run it a longer distance.

Q In the fixing of the length of runs upon your farm, have you taken into consideration your experience as a practical irrigator? A. Yes sir.

Q Have you applied that for the purpose of securing the maximum result in the use of your water?

A Yes sir, I have.

Q And do you have -- is it or is it not your opinion now that your farm is in a practical condition as to runs for the efficient application for water?

A I hardly think that I could better it, I have tried to apply the water at the proper time and for the best results obtained. I have made a special practice along that line to see what conditions -- or what the different plants would require to get the maximum yield.

Q What crops do you grow on your farm, Mr. Johnson?

A Alfalfa, sugar beets, some grain, not very much, however.

Q Calling your attention particularly to the season of 1915, what was the fact as to the water supply being sufficient or insufficient?

A It was insufficient after the water went down, and even in the early part of the season in May it was very short, and some of my ground that I didn't get throughly irrigated that season at all.

Q Did you receive your full proportion of water during that season? A. Yes sir.

Q Did you apply it in every instance when your turn came ?

A Yes sir, every instance.

Q How much more water, in your opinion, would have been necessary in 1915 to have given you a sufficient supply when economically applied to have secured the maximum result upon your farm?

A Oh, I should judge probably eighteen or twenty per cent.

Q How was during the year 1916 as compared with the year 1915?

A 1916 has been -- was a little better, especially the forepart of the season we got along very nicely.

Q How has it been during the past month?

A During the past six weeks we have been short.

Q Have all of your crops wanted for water during that period?

A Yes sir.

Q To what extent?

A I had to miss part of my alfalfa and my last irrigation on wheat I didn't get it through thoroughly.

Q Were those failures to irrigate detrimental to your crop in your opinion? A. Yes sir.

Q Have you ever irrigated any place other than upon the Provo Bench? A. Yes sir.

Q Where?

A I also have a tract of land just under the benchwest, south and west of my place, my home place.

Q Just describe that tract of land?

A As I stated, it lays just under the bench and it is supplied with water from a spring under the foot of the bench, and part of it is pasture, and about fourteen acres of it is to alfalfa.

This alfalfa ground is of a light sand, almost a blow sand. In fact, it is a blow sand, but it underlies -- that is, the subsoil of it is a clay.

Q Tight clay?

A Tight clay, and if I apply two irrigations in a season I can grow very good crops of alfalfa.

Q Is that all you do apply ?

A That is all I do apply.

Q So that it has not been your practice to apply water merely for the sake of applying it?

A No sir, I wouldn't apply it oftener because it would be detrimental. Still I had plenty of water there to apply.

Q Are any of the University lands referred to by Mr. Corfman now irrigated from the North Union?

A I think not.

Q The original water of the North Union?

A I think not, no sir.

Q Have they been at any time?

A No sir.

Q As a member of the board are you familiar with an agreement whereby under a decree of the court Mr. Caleb Tanner secured the right to enlarge your canal?

A Yes sir.

Q And did enlarge it? A. Yes sir.

Q And have any of the waters placed in the canal by Mr. Tanner been used upon these University lands?

A Yes sir.

Q Through laterals going out of the North Union?

A They have opened three different laterals, that is a year ago. Up until that time there had not been any water taken out of the North Union canal south of the Canyon road.

Q Do you now irrigate any lands south of the Canyon road from the --

A Not from the North Union proper.

Q From its water? A. No sir.

CROSS EXAMINATION by Mr. Corfman.

Q North of the Canyon road are you acquainted with the tract of land there that has been put out to fruit by W. H. Ray?

A I know of the tract.

Q Do you know whether that land is receiving water from the North Union Canal?

A I don't know that it is.

Q Do you say it is not?

A I could not say that it is or is not.

Q Who has control of your books ?

A The books of the --

Q Showing the shares of the stock?

A The corporation or secretary.

Q Who is your secretary?

A David B. Thorne.

Q Will you produce the book of your company showing to whom the shares are issued?

MR. RAY: We will understake to produce that for counsel if he wants to examine it. This man cannot because he is not the custodian of it, of course.

Q Are you acquainted with the land, tract of land owned by Sam Swab? A. Yes sir.

Q Does it draw water from the North Union canal?

A No sir, it does not.

Q None at all?

A None at all.

Q You say none of the lands in that laclity are drawing water from the North Union?

A Not to my knowledge, but what has drawn it for a good many years.

CROSS EXAMINATION by Mr. Thomas.

Q When you say you have had to dig wells forty to sixty-five feet to get water, do we understand you reach no water at all

until youget a depth of forty feet?

A Yes sir, that is the condition when I dug those wells. Of course, the water has raised some little since that period.

Q You don't then strike what is sometimes called a surface water before you get to the drinking water?

A No sir.

Q Your first water that you find is at the depth of from forty to sixty-five feet? A. Yes sir.

CROSS EXAMINATION by Mr. A. C. Hatch.

Q Have you been short of water during each and every year since you have been irrigating there in the low water season?

A No, personally I cannot say that I have been short every year. We had some years when we had a pretty fair supply of water.

Q Has there been any year when you have had all that you could have profitably and economically used and beneficially used upon your land ?

A As I remember in 1907, '08 and '09, I got along very nicely xxx personally.

Q You have got along nicely personally every year, haven't you?

A I could have done with more water if I had had it most of the time.

Q I am asking of the necessity and beneficial use of the water upon your land, did you have all that you needed in those years, 1907, 1908 and 1909?

A Yes sir, I practically had all that I needed economically, got along very nicely.

Q And for the raising of the best quality of crops?

A Pretty fari.

Q D. you know of any other years --

A But it must be understood I have an exceptional surface soil there. It does not require as much water as my next door neighbor.

Q If the soil were a different quality it would have required

more water than you had even in 1907 and '08 and '09, would it?

A Yes sir.

Q You had none to waste during any of those three years, had you?

A I have never had any water to waste, no sir.

Q You used all that you got in 1907 upon the lands,

A Yes sir.

Q Your own lands?

A Yes sir, for this reason that the surface soil is shallow, the the frost practically gets down to the bottom of the surface soil, and of course it heaves it up, loosens it up until it makes a condition where the first two or three irrigations requires considerable water before it is settled.

Q In the latter part of the year doesn't require so much water?

A Not quite so much.

Q You had more water during the entire year 1907 than you had during any other year since you have been farming there, didn't you?

A I think so.

Q You used it all upon your lands?

A Used it all, yes sir.

Q Now, didn't the lands require as much water in 1908 and 1909 as they did in 1907?

A I think so.

Q But you didn't have as much water to put upon your lands in those years as you had in 1907, had you ?

A The early part of the season of course we had about as much. I think we had about as much. We had the carrying capacity of our canal and personally I got along very nicely those three years.

Q Latter part of the season you didn't have so much as 1907?

A Each season of course we go down in the latter part of the season, but of course we have some grain.

Q I asked you as to 1908 and '09 as compared with 1907, latter part of the irrigation season. You didn,t have as much water,

did you, in 1908 or '09?

A Hardly.

Q As you had in 1907?

A Hardly as much.

Q And there has been no other year before or since 1907 when you have had as much water as you had in 1907 in the latter part of the season?

A I think not.

Q Now, you say you didn't use any more than you needed in 1907?

A No sir.

Q Then how do you reconcile that with the statement that you had sufficient in 1908 and 1909, when there was less water?

MR. RAY: I don't understand he so testified, your honor. I think he said he got along very well, or pretty well.

A That was my statement, I could have done with more water.

Q My first question was had there been any years when you had all of the water that you needed, and you answered, as I understand it, yes, in 1907, 1908 and 1909?

A I don't think I stated I had all that I wanted in those three years.

Q All you needed?

A Not all that I needed.

Q So that in 1908 and '09 you did need more water ?

A Could have used more water, yes sir.

Q Did you need more? A. Yes sir.

Q Then since 1907, or except 1907, you have never had all the water that you needed since you have been irrigating there, is that right?

A That is about right, not quite sufficient, although those three years I got along.

Q And your land is exceptionally good as compared with the other bench land to retain water?

A That is my judgment.

Q What do you know as to whether or not your neighbors had

sufficient to irrigate their land, those having the sand loam soil and gravelly loam soil, during any year?

A Well, there is a great many that never did have sufficient water to irrigate their land.

Q Not even in 1907 when the canal was full?

A I think not.

Q And they never will have unless they increase the shares or increase the capacity of the canal, will they?

A That would depend on the season of the year, and the conditions. We have some seasons that we have a great deal of percipitation, other years we have none, and those conditions enter greatly into the requirements of irrigation and what the ground requires to produce the maximum crop.

Q You don't know of a year when your neighbors having a sandy or gravelly loam soil had sufficient water for their land?

A Well, in those three years there was very little complaint.

F. W. DEMING - - - - - - -

DIRECT EXAMINATION by Mr. Ray.

Q When you were upon the stand this morning, I called your attention to an experiement or irrigation which you observed upon John Stratton's farm, about August 1, 1916, will you kindly state to the court the result of your observation there?

A I measured the water which was applied to the land, measured the area of land irrigated and computed the depth of water applied at the irrigation. The measurements of the discharge were made over a four foot suppressed weir, installed in the lateral a short distance from the tract of land irrigated. The diversion of the water from the lateral to this particular tract of land backed the water up in the lateral to the weir until it did not have free fall, consequently it was necessary to measure the discharge before the water was diverted and after

the water was diverted on account of this back water interfering with the proper free flow of the weir. Therefore two measurements of the discharge were made, one at 8:23 A. M. and one at 11:15 A. M. In the first instance the head was 7 inches, giving a discharge of 6.42 second feet. In the second instance the head was 6 3/4 inches, giving a discharge of 6.06 second feet, making an average discharge of 6.24 second feet. This was applied to the land for a period of three hours from 8:40 A. M. to 11:40 A. M. giving a quantity of water equal to 18.72 acre inches. The tract of land was 546 feet long and of trapizoidal shape, the width at one end was 107 feet, at the other end 277 feet. In xttx addition to this there was a small detach tract which was irrigated from the water, which it was impossible to divert from the lateral at that point, was allowed to run down the lateral a short distance and diverted on to another small tract of alfalfa 30 by 400 feet. The total area irrigated was 2.68 acres, giving a depth of 7 inches, or .583 feet.

Q What was the length of run upon that alfalfa field?

A The maxmum was, on the side end of the tract, 277 feet. The supply ditch ran along the east dide of the tract, and the runs varied from 107 to 277 feet.

Q Now, Mr. Deming, you are familiar with the weir table upon weir, are you not?

A Yes sir.

Q A flow of seven and a half inches over that weir would give a discharge of how many second feet?

A I haven't the weir table with me, my memory of it is it is 7.12 second feet.

Q That is the fact, and I will furnish the weir table. Mr. Wentz wanted the calculation. Seven and a half inches ofer this weir would give 7.12 second feet of water ?

A I think so, that is my memory of it, I remember calculating it.

Q Will you look that up when you leave the xx stand, and if you are in error return and correct it? A. Yes.

Q Taking 7.12 second feet of water flowing upon eight acres for ten and a half hours, would give a depth of 9.34 acre inches, would it not?

A 9.31 acre inches per acre.

MR. RAY: That is merely making the calculation in advance of some testimony upon that, your honor. That is all, Mr. Deming.

CROSS EXAMINATION by Mr. John E. Booth.

Q Mr. Deming, I understood you to make the expression of 18.72 square feet.

A Square inches.

Q Oh, inches. A. Yes.

Q 18 inches that is, another place 7.5 inches or 7.23 inches, I didn't quite get the relevancy of those two statements.

Q The total quantity of water applied to the land was 18.72 acre inches, the area of the tract is 2.68 acres, consequently the water applied in acre inches per acre is 7 inches, or 18.72 divided by x 2.68.

Q That is all right, I understand.

A The depth of one acre is 7 inches or fifty-eight hundredths of a foot.

Q You are acquainted with the character of land on which this was applied to, I suppose? A. Yes.

Q How often would you say that such an irrigation should be required?

MR. RAY: I object to that as incompetent, irrelevant and immaterial, not proper cross examination. As to the frequency of irrigation, Mr. Deming has not been examined as to that.

MR. JOHN E. BOOTH: I believe we have it in another place, I wanted to see whether he answers now same as he did before. It is cross examination and we have the right to it.

MR. RAY: He has not testified to that at all in

this examination. He may have done it in the city's case, I don't know what he did for them.

THE COURT: I think the objection should be sustained. He has been put upon the stand to testify to the correctness of this computation.

MR. JOHN E. BOOTH: Yes, strictly speaking I think your honor is right about it. I will try and hold the rule against some of the others.

CROSS EXAMINATION by Mr. Thurman.

Q Did you make just one measurement ?

A One measurement of discharge?

Q Yes.

A I made two.

Q What is the first, I missed one.

MR. RAY: Judge, I have given you a table of everything.

MR. THURMAN: Nevermind then.

CROSS EXAMINATION by Mr. A. C. Hatch.

Q Do you know whether any of the water ran off of the land during the time?

A It did not, it could not.

Q It could not? A. No.

Q Why.

A Because at the lower side of the tract is a ditch with a high bank, which would not allow the water to flow off. The tract is located in the northeast corner of the southeast quarter of Section 15, just west of the State road.

Q How ms high was that bank?

A Oh, it varied from a few inches to possibly two feet above the surrounding land.

Q About the surrounding land?

A I didn't hear you ,Judge.

Q About the tract irrigated?

A Above the land immediately adjoining it.

Q The land being irrigated? A. Yes.

Q How deep did the water, how deep was the water at the lower end on the surface?

A In the extreme lower part of it, there was several inches of water standing before the irrigation was completed.

Q Formed a little pond?

A How is that?

Q In the form of a little pond?

A Water standing there on the ground.

Q By reason of the dam at the lower end? A. Yes.

Q Did you take any measurements to determine the depth that was saturated? A. No.

Q Or did you make any experiment to determine the amount of water that was held in the soil after the irrigation?

A No.

Q You simply measured the quantity that was put upon the land by the farmer at that irrigation? A. Yes.

Q And determined the quantity that he used upon it at that particular time?

A Yes, I assumed that he was irrigating it as he always irrigated it, I don't know. Mr. Stratton, I don't think he would apply the water just to apply it.

Q Sir?

A I say I relied on Mr. Stratton's judgment as to the irrigation of the tract and assumed he would not apply water just to apply it.

Q He was making a test in order to obtain testimony for this trial ?

MR. RAY: Your honor please, I object to that as incompetent what Mr. Stratton was doing it for.

THE COURT: Objection is overruled.

MR. RAY: I will admit it, of course.

THE COURT: It is admitted that was the purpose, and you may ask another question.

Q It was after the trial was commenced you made the measurements?

A It was on the first of August, this year.

Q Was it the same tract of land upon which you made the test in 1914? A. No.

Q Was it within the same enclosure?

A No.

Q Was it similar land? A. No.

Q What kind of land was it?

A Gravelly loam.

Q Do you know the depth of the soil with reference to the soil, gravelly loam?

A Not at that point.

Q Anywhere upon that tract, do you know of land -- I am not asking for some other point, Mr. Deming, that particular tract.

A No, I don't know.

REDIRECT EXAMINATION by Mr. Ray.

Q Mr. Deming, was or was not the water turned off at the head when it had reached the lower end of the tract being irrigated?

A It had reached the lower end at one or two points before it was turned of, some little time before it was turned off at the head. The tract was rather uneven, the surface of it, making the regulation of the water at the upper side rather difficult, or, I should say, almost impossible to regulate it so that it would reach the lower side at two points at the same time.

Q And it was turned off before it did reach the lower end on all points, was it not? A. Yes.

MR. RAY: I desire to offer in evidence as illustrating the testimony of Mr. Deming and for convenience of counsel, Exhibit 105.

RECROSS EXAMINATION by Mr, A. C. Hatch.

Q There is one other question I would like to ask. Do you know how long the water remained upon the surface at the lower end after the stream was turned off?

A No, I don't, I don't know that I have been back to the tract of land since.

Q What kind of crop was growing upon the land?

A Alfalfa.

Q Will you mark the tract with a pencil on the Exhibit 100.

A I am not certain whether it is in Section 14 or 15. My judgment is that it is a small trapezoidal tract in the notthwest corner of the southwest quarter of Section 14. I said 15 a moment ago, I wish to correct that. It is in the northwest corner of the southwest quarter of Section 14, immediately west of the State road, marked 38, the outline of it marked in red.

MR. RAY: That mrk mark is sufficient, is it, Judge Hatch?

MR. A. C. HATCH: Yes, so that we can get at it.

JOHN H. STRATTON recalled.

DIRECT EXAMINATION by Mr. Ray.

Q Mr. Stratton, Mr. Deming testified to the irrigation of a tract of land on August 1, 1916, which is marked here in red, do you remember the occasion of that irrigation?

A Yes sir.

Q What is that land planted to?

A Alfalfa.

Q Did you personally attend to the irrigation of that land?

A Yes sir.

Q Did the period of irrigation as stated by Mr. Deming -- was that period necessary in your opinion for the proper covering of that land? A. Yes sir.

Q Was there any more water put upon that land in your opinion and in your experience as a practical irrigator than was necessary for its proper saturation?

A Not a bit. I put the same amount of water on there I would

have done if Mr. Deming had not been there. In fact, there was spots on the land Mr. Deming thought did not get covered with water.

Q Is it practicable in your experience, to have the water upon a tract of that sort all go to the end of the run at the same time?

A Why, whenever any amount of water reaches the end of the run if there is any place else in the piece that has got a spot on that is a little bit hard to cover and it would take fifteen or twenty minutes longer, I turn it off and let that piece go.

Q And that has been your practice as an irrigator?

A Yes sir. And there was three of those kind of spots still left on that land this same irrigation.

Q Now, the testimony of Mr. Deming also had reference to another irrigation which you made where you measured the amount over the weir. Did you make any notes of the time upon that irrigation? A. Yes sir.

Q Will you state to the court how many acres there were in that tract?

A There was eight acres.

Q How long did you turn the water to the land?

A Ten hours and thirty minutes.

Q What was the depth of water over the weir?

A Seven inches and a half.

Q Who attended to the irrigation ?

A I attended to it myself.

Q You did?

A Yes sir.

Q What was the length of run upon that piece of land?

A Well, there are several lengths there. It ranges from five to fifteen rods.

Q Were those runs in your opinion practical runs and efficient runs for the irrigation of that land?

A Yes sir, necessary in order to irrigate it at all.

Q Did you put any more water upon the land in either of these irrigations than in your opinion was necessary to properly irrigate it? A. No sir.

Q Was there any unnecessary waste in the application of the water to either of those tracts of land so far as you are able to determine ?

A No sir, there was no water run off of them at all. only as Mr. Deming stated, the little bit of water that went across this land and lodged against a levy there, a ditch made running down there, of course, there was a little left there, probably might have run a few minutes after it run there, and would run off, that would naturally drain off.

Q Was that a small or large proportion of the amount of water applied?

A Oh, just a small portion.

Q Now, Mr. Stratton, in cross examination here by Mr. Corfman, I think reference has been made to the irrigation of new lands under the Provo Bench and North Union. Are you able to state whether or not the quantity of landsnow irrigated are substantially the same as those which have been irrigated during the past ten or fifteen years?

A They are.

Q How as to the stock ownership, has it changed any way during that period?

A In my early recollection of Provo Bench there was large stockholders there that had large blocks of stock and they didn't do much farming. Some of them they rented it around to people that farmed it and by -- from year to year some of that has been disposed of from those large stockholders and applied on to lands. Of course, when they rented it they shifted it from one place, one place to another, be used in one place one season and rented to somebody else the next season, and that would be irrigated, and there has always been some land under the canal there that never was irrigated and it is a fact today,

and about the same amount irrigated according to the stream of water that is on as there always was before.

Q But instead of being irrigated now with rented water it is more irrigated water it is more irrigated nowwith owned water?

A Yes, great deal more. There is some little rented, but very few shares.

Q Are the same areas of land being now irrigated by owned water by the man who owns the land as were originally irrigated by rented water? A. Yes sir.

CROSS EXAMINATION by Mr. A. C. Hatch.

Q Did you make any investigation to determine the depth to which the land was saturated at the time Mr. Deming made the measurements?

A No sir, I was busy, I went right on with my irrigation and kept right on.

Q Do you know how deep the soil of that tract is, surface soil?

A I dug post holes all the way around it, I never failed to find pure gravel in the bottom of an eighteen inch post hole, ranging from about six inches to eighteen knches.

Q Soil?

A Soil, yes. Also a well there on the corner of it. There is about, I should judge, about fourteen inches of soil and rock.

Q Is there any hardpan at any portion of the well?

A No sir, there isn't any such a thing on provo bench, with the exception of maybe a rod in a place.

Q Is there any clay strata?

A No sir, that is a thing that we don't have.

Q On your land? A. No sir.

Q What do you find in the bottom of your wells, the strata ?

A I found rocks about the size of this spitoonthere and larger, with a little fine gravel mixed with them in the bottom of the wells that we dug.

Q There was nothing in the shape of a hardpan or clay strata?

A No sir.

Q At the bottom of the well?

A No sir, you could turn a stream in there and it could run all winter and it wouldn't fill the well.

Q I mean at the very bottom where you quit digging?

A Nothing there.

Q Still gravel?

A Yes, still gravel with large boulders, cobble rocks or boulders mixed with it.

Q When you say there was no unnecessary waste of water, what do you mean by that?

A I mean that I could not irrigate the farm, the place, with any less water during those four hours, three hours rather, I changed that water three times.

Q What size stream did you have, how many second feet?

A Some over six second feet.

Q You spread it over a third of the length of the land? each time, is that right?

A Yes sir, it runs crossways of the land in short runs with a heavy, run on short runs with a steep fall, and on those ridges, there is a couple little ridges running down. I run the ditch right on the ridge and it spilled over, and that one run a couple rods, and it was into a swale, shot it out into those two different times and then I watered at the other end where there wasn't any ditch, runs out into the alfalfa.

Q As soon as the major portion of it reached the lower end you shut it off? A. Yes sir.

CROSS EXAMINATION by Mr. John E. Booth.

Q Mr. Stratton, how often would that ground need such an irrigation as you give it on the occasion you describe ?

A Well, the crop would keep on growing for about eight or nine days.

Q How often should it be irrigated?

A To get the maximum?

Q Get the best result?

A About every seven days.

Q About every seven days? A. Yes.

Q And for what period, commencing when and ending when?

A Well, that land ought to be watered in April.

Q In April, along about early in Aprill, the first.

A No, I would say the fifteenth of April.

Q And the last when?

A About along the first of October.

Q That would be five months and a half.

A You would have to water it as long as you had any crop or fall pasture there. That land, when you quite irrigating, unless it keeps on storming, whatever is growing on it dies down, gets dry.

Q Have you calculated, Mr. Stratton, about how much acre feet that would be, or how much acre inch that would be in the season?

A It would be considerable.

Q It would be what?

A It would be considerable.

Q I say do you know how much?

A No, I haven't figured it out. I should say it would be about six or more acre feet.

Q Six?

A Six or more.

Q That would be an inch a day would be required for that ground, wouldn,t it?

A It would if you watered it every week.

Q You said that is what it required?

A To get the maximum crop it would, it would be necessary to irrigate shallow soil like that every week, but we don't irrigate it only every two weeks .

Q I am asking what it would require to get the best results? that would be an inch a day that would be required, I mean every seven days ?

A That is the way you have figured out.

T. F. WENTZ recalled.

DIRECT EXAMINATION by Mr. Ray.

Q Mr. Wentz, in your report for 1914, as I remember it, there was contained a schedule of the river flow since 1905?

A Yes.

Q Are you able to refer me to that in the report? In that report there was contained a river schedule, have you that schedule now Mr. wentz? A. Yes.

Q What does that schedule show?

A This is table No. 3 of the Wentz report, 1914, that shows the discharge of the provo River for each day from 1905 to 1914 inclusive from the first day of April until the 30th day of September.

Q Is that the actual measured flow?

A This is based on a discharge flow at the United States Geological Survey station at Vivian Park, Provo Canyon, with 40 second feet added as the assumed inflow between that point and the several points of measurement of the canals in Utah Lake Valley.

Q Has that been the actual inflow?

A No, that inflow has varied in these years.

Q Are you able to give the actual inflow?

A Yes sir.

Q Will you give the actual measured inflow during that period ?

1905, June 27th, 39 second feet,

June 30th, 1905, a loss of 6 second feet.

July 10th, 1905, loss of 27 second feet.

July 25th, 1905, loss 25 second feet,

August 22, 1905, gain of 36 second feet.

1906:

July 13th, a gain of 169 second feet.

No measurements in 1907, '08 or '09.

June 23, 1910 a gain of 91 second feet.

July 6, 1910, a gain of 114 second feet.

July 11, 1911, a gain of 127 second feet.

July 25, 1912, a gain of 69 second feet.

July 9, 1912 a gain of 62 second feet.

June 17, 1913, 47 second feet.

July 12, 1913, gain of 92 second feet.

August 8, 1913, gain of 86 second feet.

August 28, 1913, gain of 69 second feet.

June 25, 1914, a gain of 40 second feet.

July 8, 1914, a gain of 50 second feet.

July 18, 1914, a gain of 99 second feet.

August 11, 1914, a gain of 90 second feet.

August 14, 1914 a gain of 107 second feet.

August 25, 1914, a gain of 101 second feet.

June 8, 1915, 20 second feet, gain.

June 21, 1915, 37 second feet.

June 25, 1915, 75 second feet.

June 29, 1915, 39 second feet.

July 8, 1915, 37 second feet.

July 15, gain of 45 second feet.

July 29, gain of 56 second feet.

August 11, 1915, a gain of 74 second feet.

May 18, 1916, a gain of 41 second feet.

May 21, 1916, a gain of 35 second feet.

June 24, gain of 101 second feet.

July 3, gain of 81 second feet.

July 5th, gain of 90 second feet.

July 10th, gain of 88 second feet.

July 25th, gain of 97 second feet.

August 2nd, gain of 89 second feet.

August 14th, gain of 79 second feet.

August 26th, gain of 93 second feet.

Q Have you at any time, Mr. Wentz, computed the mean inflow based upon those figures?

A I have begun the mean river including the twelve year period, 1905 to 1916 inclusive, but that is in the course of preparation

now.

Q You had heretofore prepared the mean river up to the end of 1915, had you not?

A Up to the end of 1914, assuming the 40 second foot inflow.

Q But your proposition will now show the aggregate and more accurate mean river, will it not?

A Yes, it will show the actual mean river, with the actual measured quantities of inflow, or will give the amount the mean river to the several points of measurements in the Utah Lake Valley.

MR. RAY: I desire, at this time, your honor please, to offer in evidence the table there of the 1914 reports referred to by Mr. Wentz, and to ask the consent of counsel that Mr. Wentz's computation as to the mean river, when completed this season, may be introduced, and of course, Mr. Wentz will be subject to examinationas to it, if the case is not concluded.

THE COURT: When will it be completed?

A About October 15th.

MR. THURMAN: Between what points is this inflow?

A That will give the mean at the points of measurements in Utah Lake Valley.

MR. RAY: He said between what points is the inflow to which you have been making reference?

MR. THURMAN: Is it in the whole river?

A Between the station at Vivian Park.

Q Where is that?

A The South Fork of Provo Canyon, and several points of measurements in this valley.

MR. A. C. HATCH: Including those points, the lowest down on the river from which water is diverted for irrigation?

A Yes sir.

MR A. L. BOOTH: Mr. Wentz, does that include the water works?

A Yes.

MR. RAY: Now, if your honor please, I think that concludes the case of the Provo Bench, with the reservation of

the privilege to introduce the mean river tabulation of Mr. Wentz, if it shall be completed in time, and with the further reservation, which I take it would not be denied, that if we have overlooked some detail we will be permitted to put it in at the time of rebuttal, and Judge Hatch called my attention our answer did not make -- our answer to Provo City did not make sense, because we had left out some words, I had not observed that, but I will ask the privilege to correct any typeographical error and amend out prayer as heretofore suggested, and with that understanding we will close.

MR. A. C. HATCH: You misunderstood me, if you understood me to say it didn't make sense, I said there was some places in which it seemed to need correction to make it complete.

MR. THOMAS: Before counsel closes, I would like to cross examine Mr. Wentz. I thought probably you were going to recall him again -- a short cross examination.

THE COURT: Very well.

CROSS EXAMINATION by Mr. Thomas.

Q Mr. Wentz, directing your attention to your testimony with reference to the uses of water by the municipality Provo City, what experience have you had in reference to the uses of water by municipalities for municipal purposes?

A Only the one instance I stated yesterday. I have taken that from the standard authorities, the opinion I gave here, I have only the one experience of an actual measurement and that is on Pleasant Grove city. I am commissioner over that city. They have a population of 1800 with a maximum draw of one and a third hundredths second feet. At the time of my visit there we have been only using about half that amount, about sixty-seven hundredths of a second foot to the eighteen hundred people.

Q You took into consideration, did you not, Mr. Wentz, that in the larger cities, such as Buffalo, for instance, the city which you cited, the amount of water necessary for the flushing of sewers, for instance, would be greatly reduced as compared with

a city like Provo, would it not?

A No, the amount of consumption per capitia in the larger cities is greater than in the smaller cities, the increase consumption per capitia increases with the population.

Q And that answers the same thing I was suggesting, does it not, for instance, in the flushing of sewers there would not be as much use for the specific purpose of flushing sewers as they would be in a city like Provo for the reason -- not wishing to argue with you -- but for the reason the per capitia use would in itself constitute a flush of the sewers.

A I don't understand your question.

Q In the city of Provo there is a certain amount specified as necessary for the flushing of sewers, specifically for cleaning the sewers alone. In a large city there is not that immediate necessity, is there, because of the fact that so many -- so much water is used by the residents constantly?

A No, I don't see that difference in the larger cities, the amount of pavement is greater in proportion to the city than the city of Provo.

Q That you would refer to as the amount of water necessary flushing for streets, isn't that true?

A I evidently considered that in my calculation, and for that quantity I have doubled the amount used.

Q What leak did you provide, or waste by leaks and pipes, did you provide for?

A Fifteen gallons per capitia.

Q Was that in the leaks in main lines?

A That is all of the leaks, that is about fifteen gallons out of a hundred and five, practically 15 per cent.

Q Do you recognize as an authority Troutwine ?

A Yes.

Q You are familiar with his chapter on water supply on page 649, aren't you? A. Yes sir.

Q DO you recall there under the different sources of waste that there is a larger waste provided for than you have given?

A No sir.

Q Isn't it true that in that subdivision reference is made to leaks in mains as ten to fifteen gallons per capitia per day, leaks and service pipe ten to fifteen gallons per day, leaks in defective plumbing twenty to twenty-five gallons per day, careless and wilfull waste from fourteen to seventeen gallons per day.

A In that paragraph the maximum use for that particular city, that particular case is 116 gallons per day and all of these leaks and all these losses are included in that 116 gallons per day. With that same amount, using the 116 gallons, a city with ten thousand people would only require, counting all these losses, 1.79 second feet.

Q What have you allowed in Provo?

A Three hundred fifty.

Q Gallons?

A Per capitia, or 5.35 second feet as against the 1.79 second feet as outlined in Troutwine.

Q Do you in every instance allow as liberal an amount for waste as Troutwine has?

A I didn't take my items from Troutwine, but I have allowed the maximum in every case from the authorities that I have taken, and in the one instance, that of pipe mss public use, I have doubled the highest amount given, and that amoint after including all those items and all those allowances only amount to 250 gallons per capitia.

Q Directing your attention now to the figures which you prepared and gave on direct examination to Mr. Ray, you fix the duty of water based upon a constant flow of 15 feet in the Mill race? A. Yes.

Q You recall that, just why did you select the figure 15?

A That was the assumption given to me by Mr. Ray, basing the amount as 2100 minute feet for twelve hours a day of the six working days of the week, as 2100 minute feet is equal to 35 second feet for six days of the week equal to a constant

stream of 15 second feet.

Q Basing your testimony upon a constant flow of nineteen and a fraction feet, according to the testimony heretofore produced, what would be the duty of water?

MR. RAY: I don't understand that question, it is Greek to me, the duty of water in a factory.

MR. THOMAS: I am not talking about the duty of water in a factory. My brother Ray was very careful to have these figures preparde upon a basis of 15 feet. The testimony adduced by Provo City, by the mill owhers is they were using when they could ~~mx~~ get the water beneficially a flow of something over nineteen and a fraction feet.

THE COURT: If Mr. Wentz understands what you are asking for -- the court does not, I don't just understand what you are asking for -- I understand the part of it you are explaining now, but you are asking for a duty of water or quantity of land it will irrigate.

MR. THOMAS: The duty of water to the land based upon a constant flow in that stream of nineteen and a fraction second feet.

THE COURT: Then I understand it.

MR. THOMAS: I have tried to make it plain.

THE COURT: If Mr. Wentz understands the land you have reference to so that he may know the character.

MR. THOMAS: The same land and same divisions Mr. Ray prepared.

THE COURT: I don't have in mind that, is it the table that was presented here?

MR. THOMAS: Yes, your honor.

THE COURT: If Mr. Wentz understands the question.

Q Do you understand the question now?

A Yes, I understand what you refer to, the table prepared with the total tabulation of amounts and duties under the Morse decree exclusive of Section 15. In this table 15 second feet is held

for the Factory Race and the balance of the amount under that decree is allotted to Provo City. Assuming that the Factory race amount was greater than 15 second feet, the duties in this table would be a small p-rcentage higher.

Q What would be the small percentage reduced to figures?

A In the first column under 300 second feet under the Provo City, the amount in the table as 30 second feet would be 32 second feet.

THE COURT: You mean duty of 32, do you not?

A Yes, the duty would be 32 second feet instead of 30.

MR. A. C. HATCH: Thirtytwo acres to the second foot?

MR. THOMAS: Yes.

THE WITNESS: Be 32 acre duty, yes,

MR. A. C. HATCH: Mr. Wentz, I didn't understand that yet, the duty would be 32 acres to the second foot instead of thirty acres to the second foot?

A Yes, by giving a larger amount, allowing a larger amount to the Factory Race, reducing the quantity to the city. Under columa 250 second feet with this assumption of an increase to the Factory race would increase the amount marked 38 acre duty to approximately 40 acre duty. Under the column marked 249.9 second feet, the amount 34 acre duty would be increased to approximately 36 acre duty. Under the column 199.9 second feet the duty that is designated 42 acre duty would be increased to approximately 45 acre duty.

Q That completes it? A. Yes sir.

Q In the distribution of water under your term as commissioner, you did not always follow the proportion set apart for each particular company as designated in the Morse decree, did you?

A No.

Q What standard of measurement did you follow in distributing water to the Provo Bench?

A During 1914, we gave all the companies with the acreage I have the same amount per acre to each system on the Provo River and

reserved for the Factory race 19.3 second feet and for the city and platted portion and the waterworks I reserved 24 second feet.

Q That was irrespective of the exact proportion as designated by the Morse decree? A. Yes.

Q And under that distribution you gave more to the Provo Bench than had been allotted to them under the Morse decree?

MR. RAY: I object to that as calling upon the witness to interpret the Morse decree. He may state what he gave and that is a question of law.

MR. THOMAS: I will submit the question.

THE COURT: I don't understand it is a question of law.

MR. RAY: Question of fact.

THE COURT: I take it all it needs is reference to the decree.

MR. THOMAS: Just read the question.

(Question read)

THE COURT: If Mr. Wentz knows he may answer the question. Objection is overruled. I think the question has been answered a great many times since we commenced this trial. He may answer it again.

A I gave more to the Provo Bench, assuming that the decree was based on the tabulated sections of the decree.

REDIRECT EXAMINATION by Mr Ray.

Q Just one question did I not ask you on your former examination to tabulate for the record the exact quantities of water distributed to provo Bench during the years 1914, '15 and '16?

A No, I think not.

Q And those have not been specifically put into the record then?

A The 1915 areincluded in the 1915 report.

Q And in detail? A. Yes.

Q And can you tell me at what page -- I will reserve the right

to offer that part of the report later -- and will you pepare a tabulation of the quantities distributed to the Provo Bench during the year 1916, Mr. Wentz?

A Yes.

Q So that I may introduce that later and reserve the right to introduce the specific quantities for 1914. That is all, Mr. Wentz.

CROSS EXAMINATION by Mr. John E. Booth.

Q Did you intend to use the same ration in all the calaculations that you have given to Mr. Thomas?

A I don't understand your question.

Q I say, did you intend to use the same ratio in your calculations that you give to Mr. Thomas when you first started out, you said where you had 30 it would be increased to 32.

A No, I didn't use the same ratio. I took the ratios in the different stages of the riveras given in the Morse decree.

Q Well now, you had 30 and then you said the next under that calculation be 32 ? A. Yes.

Q Now, in the next calculation did you intent to use the same ratio? A. Yes.

Q Well, is the ratio of 30 to 32 the same as 38 to 40?

A I have taken just the nearest acre.

Q Wouldn't it be a few more?

A Well, I can figure that out for you exactly, if you like it?

Q I just wanted to call your attention to it, you couldn't be right in both cases.

A I have taken the nearest number to the acre.

Q That is what I wanted to find out whether you meant to use the same ratio in all.

A Yes, I have not used the fractions in the acre duties.

CROSS EXAMINATION by Mr. Corfman.

Q Mr. Wentz, in making your estimates for municipal use in Provo City, have you made any allowance by reason of Provo City being

constructed in an arid region?

A Yes, this covers all uses, and as I stated I took the highest amount, that is, Buffalo, New York, of 271 gallons per capitia, that is the highest amount used by any city in the United States.

Q Buffalo, New York, is not situated in an arid region?

A I have added to that 271 gallons 25 per cent which makes 341 gallons per capitia, and then an additional nine gallons, making 350 gallons per capitia.

Q From your source of information did you ascertain whether Buffalo, New York, quantity of water was used for lawn sprinkling and gardens?

A Yes, sprinkling.

Q How much water is used for municipal supply for sprinkling lawns?

A I haven't it itemized that way with the sprinkling of lawns in.

Q Didn't take that into consideration, did you?

A I have added 25 per cent, 50 per cent and 60 per cent and 10 per cent and then I only get to 250 gallons.

Q Did you do that arbitrarily or was it based on some caloulation and judgment as to the needs of provo City?

A I used in every case the highest amount given and high-st percentages given for allowance except in the one case of public use I doubled the highest amount.

Q Did you take into the consideration that the quantity of water for city street sprinkling would be considerably more in an arid region than it would in a city like Buffalo?

A I have doubled that amount in the case.

Q Did you take into consideration that the fire risk would be greater in a city that was built in an arid region than it would where there was considerable rainfall?

A I have used the standard formula for fire risk. This amount, using as I state, using all these amounts and these percentages, I reached 250 gallons per capitia, or 100 gallons per capitia under the amount given in the testimony.

Q The formula you used wasn't one prepared from the use of water

for municipal uses in an arid city, was it, where the city is built in an arid region?

A It is a standard formula and gives --

Q Was any one of the cities that you made your estimate of Provo City's needs based on their supply, was any one of those cities built in the arid region.

A I have only used in the one city in the one case, that of Buffalo, New York, 271. In the other calculations I have used the items and have added on to the 250 gallons per capitia, I have added an additional 100 gallons.

Q And you have done that arbitrarily without ascertaining the needs of the city, simply added that to what was required in a city like Buffalo?

A No, I have taken the highest amount. My estimate of this quantity is not made to determine the actual needs of provo City. I was only attempting to get at an amount that was absolutely safe and was unquestionable.

Q Now, in arriving at that amount did you investigate the needs of this city for lawn purposes, the amount that the city is actually consuming for its lawns and gardens and flowers and trees?

A No, the amount of water that is actually consumed by the city or by the irrigator is not any criterion to go by upon what they actually need.

RECROSS EXAMINATION by Mr. A. C. Hatch.

Q Mr. Wentz, was was the city of Denver included in the list?

A I don't remember.

Q Colorado Springs?

A I don't remember the cities. I was looking for the highest amount and took the highest amount.

Q Can you say whether Los Angeles --

A No, I could not enumerate any of the cities.

Q Santa Barbara, any of those dry Coast towns?

A No, I cowld not enumerate any of the cities; I was simply looking

for the greatest amount used and took that amount for the calculation.

MR. THURMAN: Trying to favor the city all you could?

A I was not looking for the necessary amount but sufficient amount.

Q You stated the amount of water used by a city, or by an individual was no criterion to go by as to the necessity or what was necessary for the purposes for which it was used, now, I will ask you if that would apply to irrigation purposes as well as cities?

A Yes, I will illustrate that.

Q Just a moment, one other question. You took a number of measurements, made computations rather, tabulations and measurements taken by individual irrigators on the Provo Bench: Mr. Knight, Mr. Frampton and Mr. Stratton. Would the measurements given by them to you be any guide to their necessities and use of the water upon the several tracts of land irrigated by them?

MR. RAY: Your honor please I object to that as incompetent, opinion of the value of that testimony, he may give an opinion.

THE COURT: I think it is proper cross examination on the suggestion made by Mr. Wentz as to what would be a proper criterion to determine the necessities of water.

Q Now, you may illustrate.

A I will give two illustrations on that, and I believe that will answer the question. I will first give the illustration on a deep clay soil, similar to that situated under the East Union, what we commonly call the East Union clay type. That is a very deep soil exposed in some places sixteen feet other places ten, twelve and eight. On an application of three-tenths of a foot of water on that soil it will irrigate, make a sufficient irrigation, if, for example, one foot of water was placed on this East Union soil, the seven-tenths of a foot of water is not used, xxx only the three-tenths is used, the other seven-tenths of a foot of water passes through that soil into the country xx drainage and is unused, and it is not any different going through that soil to the country drainage than if it went over

the surface in irrigating ditches to the country drainage or to the lake or whether it went down the natural channel of Provo River to the lake. The same on the looser soils, shallower soils two feet in depth. All those soils will hold is one inch per foot, an application of two inches would bring them to their full capillary capacity. These irrigations can be made with five inches and suppose that an irrigation of 18 inches was placed upon these soils, the 13 inches is unused water and goes to the country drainage, just the same as though it passed down the natural channel of Provo river.

Q Then you would say that where anything over five inches was used in irrigating the lands on Provo Bench, that the excess over and above five inches was unnecessary and waste, is that right?

A Is unnecessary and waste, and is unused. There is no use there at all of that extra amount.

Q Where the soil does not exceed the -- the surface soil does not exceed one foot in depth would it -- could it be properly irrigated with less than four -- less than five acre inches of water?

A No, I think the application of five inches it is practically all right for the loose and shallow types of soils.

REDIRECT EXAMINATION by Mr. Ray,

Q Mr. Wentz, you mean to say arbitrarily there are no soils on Provo Bench that require more than five inches to go over them efficiently?

A Yes, five inches is sufficient.

Q Have you ever irrigated in your life the tract referred to by Mr. Stratton, triangular tract surrounded with red on the map there? A. No.

Q Ever observed its irrigation? A. No.

Q Is a run varying from 107 feet to 250 feet an excessive and impractical run?

MR. A. C. HATCH: 277 feet.

Q 277 feet?

A On those shallow loose soils 200 feet is the limit.

Q Is it not sometimes impracticable to cut a farm all up into ditches ?

A Yes sir.

Q Don't you think a hundred foot run all over the farm would make it rather inefficient and inconvenient?

MR. A. C. HATCH: The witness said 200 feet.

MR. RAY: I am asking him what he thinks about a hundred.

A One hundred feet would be too short.

Q Entirely, wouldn't it? A. Yes.

Q And is it not a fact a farmer would work out the most efficient run, say a 200 foot run taking into consideration the other elements in addition to the water saving, element of application, drainage, lay of the land and all, might it not be possible that the only practical run was the 270 foot run?

A It may be on one particular tract, of course, The 200 foot run I said is for the general adoption. There may be some praticular tracts like this small three cornered tract, little area of 277 feet would not need to be segregated in this assumption of 200 feet and in the assumption that -- in the statement five inch application is sufficient on those soils, I don't mean to intend that there would not be one little piece in that whole area that that amount would be ample, but for the whole area, taking it as a body, the five inch application is sufficient.

Q How many acres of land have you on Provo bench?

A I havetwenty.

Q How many shares of water have you?

A Nine shares.

Q When did you buy the last of your shares there?

A About 1907.

Q What did you pay for them?

A About two hundred dollars.

Q How many shares did you have prior to the purchase of those?

A Seven shares.

Q Did you buy them because you thought they were necessary to properly irrigate your ground?

A I bought them to supply the amount in the low period of the year, in August.

Q And you have used all of that water upon those lands?

A In the low period usually, yes.

Q What is the length of run upon your farm, the longest?

A It varies from 200 to 240, and I think one run possibly as long as 300.

5:00 P. M. Recess to 9:30 A.M., August 30, 1916.

THE COURT: Judge Booth, are you ready to proceed.

MR. JOHN E. BOOTH: My parties are not here, but I can state the stipulation as I understand it, and gentlemen will say if I am wrong about this.

MR. RAY: This is the Lake Bottom?

MR. JOHN E. BOOTH: Lake Bottom Canal Company. Your honor will have noticed that during this trial I have taken very little part in it for the reason that my interests were not usually involved very heavily. Of course, sometimes I have thought it might be well to throw an atom or two of sense in these great tubs of sediment we have been listening to, but I have not even offered very much sense. The Lake Bottom Canal Company's water system is at the very lower end and ordinarily get their water below everybody else, consequently it doesn't interfere with other people's right and other people don't interfere very much with their rights for the reason that the seepage water is sufficient for their necessities and we have agreed, as I understand it, with the plaintiff, and no one else has, so far as I know, questioned that agreement, that the Morse

decree, as it is called, in 1902 shall be taken as the basis of the settlement between the plaintiff and the defendant, the Lake Bottoms Canal Company; and if that is a fact, as I understand it to be -- we had a meeting with the people, our board and the officers of the plaintiff and agreed on that, and we set that forth in our answer. Now, it might be, if my witnesses were here I thought all I would offer was to show their necessities are the same now as they have been, that there has been no increase in their requirements, there has been no land abandoned, and the facts now are exactly as they were in 1902 when that decree was rendered, and we ask therefore that that if necessary be reaffirmed as to our parties.

MR. RAY: Judge Booth, will you permit a question?

MR. JOHN E. BOOTH: Yes.

MR. RAY: As I understand the testimony of the commisioner in this case, your point of diversion is below the point of diversion of any of the other appropriators involved in this case?

MR. JOHN E. BOOTH: I understand so.

MR. RAY: And during the administration of the Morse decree your requirements have been taken care off almost in toto by return water to the river?

MR. JOHN E. BOOTH: Yes sir.

MR. RAY: So that irrespecitve of any evidence or allegations upon the part of the officers of the Provo Bench there could be no way whereby they could diminish your supply or your requirement, would not affect them if you used a duty of ten

MR. JOHN E. BOOTH: That is my understanding.

MR. RAY: That is, your honor, one of the reasons why the Provo Bench has not been interested in the Lake Bottom, not conceding its necessities or anything else, but not being able to share their good fortune.

THE COURT: My understanding is the situation as you outline it now is the same as existed at the time of the Morse

decree?

MR. JOHN E. BOOTH: Yes.

THE COURT: My recollection was the Lake Bottoms has always been full regardless of the condition of the river?

MR. JOHN E. BOOTH: That has been my understanding. Mr. Wentz said yesterday, and I was rather surprised at it, that some water was turned in from the river, but wasn't that rather to supply the people above, rather than the lake bottom canal?

MR. WENTZ: No.

THE COURT: Mr. Wentz probably had better go to the witness stand so that the reporter can hear him better.

T. F. WENTZ, recalled by the Lake Bottoms Canal Company, testifies as follows:

DIRECT EXAMINATION by Mr JOhn E. Booth.

Q Mr. Wentz, you are the T. F. Wentz, commissioner?

A Yes.

Q Are you acquainted with the irrigation system of the Lake Bottoms canal company?

A Yes.

Q Now, during the time that you have been commissioner where has the water furnished to these Lake Bottoms, this Lake Bottoms Canal Company, come from mostly?

A Part of it is from Spring Creek and part from Provo River.

Q About what part from the river? That is, for the Lake Bottoms Canal Company?

A I will give you just a few instances exact figures. On the 26th of May the Lake Bottom canal --

MR. A. E. BOOTH: Is that this year?

A 26th of May, 1916, the Lake Bottom canal was diverting through its rating flume at Carey's point, 17.32 second feet. The total diverted from Spring Creek and the river on this same

date was 25.37, and the amount diverted from the river on this date was 10.8 .

Q Let me ask a question before you go on. That was May what?

A May 26th.

Q Was that before the heavy seepage water was coming back from the irrigation above?

A On this date, May 26th, there was 15.07 second feet rising in Spring Creek. On the 24th of June, practically a month later, there was 15.43 second feet arising in Spring Creek, and on the 14th day of August there was 16.96 second feet arising in Spring Creek, a little increase. On the 26th day of August, that was last Saturday, there was 17.95 second feet arising in Spring Creek.

Q Now, were you taking any out of the river on the last date you named?

A Yes, six second feet.

Q So that the fact is that the later in the season the more water in Spring Creek?

A Yes, the increase on the 26th of August over the 26th of May is 2.88 second feet.

Q What is the capacity of the Lake Bottom canal company?

A The maximum recorded ~~capacity~~ capacity is 27.27 second feet, taken on July 2, 1904.

Q You have been acquainted with that system for the last fifteen years? A. Yes sir.

Q Was the capacity of that canal increased any since, during that fifteen years?

A No, the capacity is not larger than that at present.

Q Now, from your knowledge of the conditions down there, do you say that the necessities for irrigation are practically the same now as they were last -- during the last fifteen years?

A Yes, practically the same.

Q No increase d necessity that you know of?

A No.

MR. JOHN E. BOOTH: I believe that is all we need,

if your honor please.

MR. RAY: Just an observation. The stipulation here is not acceded to by the defendant Provo Bench Canal & Irrigation Company, and I don't know that it makes much difference whether it is, but there is evidence in the record both as to the acreage and duty upon these lands, and we reserve the right to take such advantage of that testimony as may be to our advantage.

THE COURT: Any further cross examination.

MR. JOHN E. BOOTH: Just a moment, counsel suggests I ask another question.

Q Have the necessities of the people under this system diminished in the last fifteen years?

A No, I think not, conditions are practically the same under that canal.

MR. JOHN E. BOOTH: Now, in reply to counsel for the Provo Bench people, I will say this: That so far as I am informed they have never raised any question in any of their pleadings between them and the Lake Bottoms Canal Company. Now, I suspected yesterday for the first time that they had perhaps filed a cross complaint or counterclaim in this case, I don't know, I never have been served with a copy of it, and I never have heard anything about it, so I understand there isn't any issue between them and us on the pleadings unless it were raised.

MR. RAY: My advise is that I may be mistaken about that, that Mr. Bagley for the Timpanogos has in his cross complaint --

MR. JOHN E. BOOTH: That is just recently, I have just received a copy a few days ago, but he doesn't question the Lake Bottoms Canal in that.

MR. RAY: I understood he did.

MR. JOHN E. BOOTH: No, I was looking at it this morning, gx he doesn't question.

THE COURT: Very well then, is that all the evidence?

MR. JOHN E. BOOTH: I believe that is all, your honor please.

CROSS EXAMINATION by Mr. Jacob Evans.

Q May I ask a question. Mr. Wentz, you testified in the former hearing, did you not, concerning the duty of water under the Lake Bottom Canal? A. Yes sir.

Q Have you since your testimony changed your mind as to the duty of water under that canal?

A No.

CROSS EXAMINATION by Mr. Coleman.

Q I want to ask a question. I think you stated that in May, on May 26th, that the quantity flowing in Spring Creek was supplemented by a diversion from the river of 10.8 second feet?

A That is correct.

Q How long does that, how long is it necessary to supplement from the river for the Lake Bottoms?

A Well, almost all of the year. We are still turning water from the river to the Lake Bottoms.

Q At what point is that diversion made?

A That is near the Tanner Farm about half a mile north of the brick yard.

Q Then that is above a number of the other companies that are parties to this suit?

A Yes, it is above the diversion to the brick yards, of the city, above the Tanner race diversion and above Little Dry Creek diversion and above Fort Field diversion.

MR. COBEMAN: So those parties no doubt would be interested in this matter if this water -- if water is diverted from the river above where these three or four companies divert their water why, they no doubt would be interested in this matter

MR. JOHN E. BOOTH: Perhaps so, but they ought to say so if they are.

THE COURT: The court will not wait for them if they don't come, if they don't care to examine the witnesses.

MR. JOHN E. BOOTH: Perhaps if I ask another question it will avoid the difficulty.

REDIRECT EXAMINATION by Mr. John E. Booth.

Q In your opinion what is sufficient amount of water for Lake Bottoms Canal Company's necessities?

A I have stated that in the former hearing, do you wish it re-stated?

Q I think I wasn't in, I didn't know about you stating that.

MR. THOMAS: Pardon an interruption, wasn't that in the diagram you prepared?

A Yes, it was on the table I placed on the board.

MR. JOHN E. BOOTH: I was not served with a copy of that.

MR. THOMAS: It was on the board.

MR. JOHN E. BOOTH: If it is in the record, that will answer the purpose. That is all.

MR. A. C. HATCH: I would like to ask if the Lake Bottom Canal Company claims any right to go above its intake on the river and take water other than seepage, or a right to have the water divi ded with that company by Provo City at any time. In other words, if the Lake Bottom Canal Company claims the right to any of the water of provo River at or above the dam diverting water to Provo City?

MR. JOHN E. BOOTH: No, as long as we get there what we are entitled to with that seepage, we don't go above that.

MR. A. C. HATCH: Wait a minute, suppose there isn't sufficient seepage entering into the river below the Provo City dam, do you then claim the right to go to that dam and divide your the water until you get your quantity under the decree?

MR. JOHN E. BOOTH: We claim the right to the water that was awarded to us in the Morse decree in 1902, and that provides that whenever the seepage is not sufficient, if anything could happen-- now, for illustration, while it is not likely to occur, but this will illustrate is; suppose now that provo Bench, the Upper East Union Canal Company or Timpanogos

Canal should get all the water they want, just assuming that then there would be no Spring creek, there would be no seepage, then we would have to go to the river for water, that is, if they left any in there to supply our necessities, but under ordinary conditions, the way it had been running all the time now for forty years, that I have been acquainted with it, we have never had to go to the river for any great amount of water, no necessity for it.

MR. THURMAN: The supposition you make, however, will not happen, because those canals will never get all the water they want, no matter how much they get.

MR. JOHN E. BOOTH: Then put it on another ground and say, they get all there is.

MR A. C. HATCH: I understand there is one diversion below the point of diversion of the Lake Bottom canal.

MR. JOHN E. BOOTH: From the river?

MR. A. C. HATCH: From the river.

MR. JOHN E. BOOTH: Oh yes, there is two or three there, Little Dry Creek and Tanner's race.

MR. A. C. HATCH: Then as to the stipulation stated as having been entered into between your company and the plaintiff, I will say that I don't understand it to have been agreed to by the plaintiff at this time, and until I have a different understanding I would insist that you put on your proof as against the plaintiff.

MR. JOHN E. BOOTH: If that's it, I suppose we had better do that then. I will state again, our board met with your people and agreed on it that the Morse decree should govern in this case and of course we did not prepare them for anything else, because it was not necessary, we were satisfied with that and so were they.

THE COURT: Including the provision in Paragraph 9 of that decree which provides what shall be done is the seepage water is not sufficient?

MR. JOHN E. BOOTH: Yes sir.

MR. A. C. HATCH: Of course, the Morse decree as to the plaintiff is not binding, and we will insist they have nothing except what is necessary when economically used for their purposes.

MR JOHN E. BOOTH: I am inclined to think if they will consult with the president of the Provo Reservoir Company, they will have no difficulty about that, certainly it was agreeable with the people here and we made a record of it in our minutes and they made a record, I understand, in their minutes, and the difference between us is really so slight -

MR. A. C. HATCH: The only question I have is as to the necessity of the use of the quantity decreed in the Morse decree to their company. I don't question Judge Booth's statement, but I have not received the information from my client as to this stipulation.

THE COURT: Have you made any calculations which would enable you to determine whether the evidence given by Mr. Wentz as to the necessities of the Lake Bottom Canal, and included in the table that he transcribed from the one on the board differs from the award made in the Morse decree?

MR. A. C. HATCH: I think it does materially.

MR. RAY: Yes, very materially.

MR. COREMAN: As I remember it cuts down.

MR. A. C. HATCH: How about that, Mr. Wentz?

A I have not figured those.

MR. A. C. HATCH: You need not go into it, if you remembered it you could state it.

A No, I haven't figured the quantity.

MR. JACOB EVANS: Could you state whether ir does reduce it or not.

A No.

MR. JACOB EVANS: You could not state whether it does or not?

A No.

MR. A. C. HATCH: You might at this time, if you can,

refer to it.

MR. RAY: Mr. Wentz, if your honor will permit an interruption, has made two tabulations, which, I think, are rather conclusive upon this. One is the tabulation placed upon the board as to the requirements of the Lake Bottoms and the other is a tabulation introduced in the Provo Bench case as to what the duties would be under the schedule of acreages given, and the two show the relative amount which would be received on the different bases.

THE COURT: Mr. Wentz is now making a calculation from those two tabulations, as I understand it.

A Under the Morse decree excluding Section 15 and using the tabulations at the 300 second foot stage the Lake Bottom Canal Company would receive 16.35 second feet.

CROSS EXAMINATION by Mr. A. C. Hatch.

Q Would that be at the intake of its canal?

A That would be at Carey's point, its rating station.

Q How far above the laterals of their canal?

A It is about three quarters of a mile above the first lateral.

Q And do you have any information showing the increase by seepage in the canal itself between that point of measurement and the points of use ? A. No.

Q Do you know whether or not there is a considerable quantity of increase or inflow and seepage below that point?

A Yes.

Q Which adds to the supply? A. Yes.

Q There is? A. Yes.

Q But you don't know the amount? A. No.

MR. A. C. HATCH: I think Mr. Tanner testified to that as being approximately ten second feet.

THE COURT: Now, if you will complete your statement.

A Under the table placed upon the blackboard May 10th to June 20th, the Lake Bottom Canal Company would receive on an 80 acre duty and using the 1275 acres, they would receive approxi-

mately 16 second feet at their land.

THE COURT: That would be of the water diverted from the river and seepage?

A And seepage, yes.

THE COURT: And your table gives the land an 80 acre duty?

A Yes.

MR. RAY: And the Morse decree gives it 78, according to Mr. Wentz's figures.

Q Now, what would they get under the Morse decree.

A 78 acre duty.

Q Under the Morse decree?

A Yes. At the 250 foot stage the Lake Bottom Canal Company would receive at its station 13.62 second feet and during the period of June 20th to July 20th, under the table that I placed upon the blackboard, the Lake Bottom Canal Company would receive a 90 acre duty, and using the 1275 acres they would receive 14.2 second feet at their land.

MR. A. C. HATCH: That is what you are asking for?

MR. JOHN E. BOOTH: That is what we are asking for now.

MR. A. C. HATCH: We have no objection to that, regardless of the stipulation.

CROSS EXAMINATION by Mr. Thurman.

Q Mr. Wentz, just one question for information. You say under your blackboard schedule May 20th to June 10th the duty would be 80? A. Yes.

Q Under the Morse decree for the same period it would be 78?

A Yes.

Q The 80 was at the land, is that the same as the Morse decree?

A No, I stated that the 80 is at the land, but under the Morse decree the amount is measured at their station at Carey's point.

Q Be substantially the same then, wouldn't it?

MR. COLEMAN: I understand below Carey's point, below

the station, according to Mr. Tanner's testimony, there is an inflow of ten second feet. Now, that would make considerable difference.

A Yes.

MR. JOHN E. BOOTH: If the court please, the difficulty with us is in the early stage. After this increase from the Provo Bench seepage and the West Union Canal seepage comes along later in the fall why, of course, then we are well supplied, but during the early part of the season before irrigation commences then if we don't get this we are very short in the early part just when other people have plenty is when out shortage is.

MR. COBEMAN: Mr. Wentz has testified during the entire year water is diverted from Provo River to supplement the seepage water.

MR. JOHN E. BOOTH: Appears to have been this year, that was to give them their amount, however, that they were entitled to.

A Yes, we usually run water from the river to the Lake Bottom until about the 15th of September and then I cut it off, all but enough to supply the one ditch on the east side of Spring creek, that doesn't draw from Spring Creek proper.

MR. JOHN E. BOOTH: I understand now the plaintiff in open court agrees that the Morse decree shall be the basis of our part, and Mr. Ray?

MR. RAY: We are making no contention.

THE COURT: Then you don't desire to introduce any further testimony?

MR. JOHN E. BOOTH: No, I don't care to introduce anything further, that will be all.

THE COURT: Now, what defendant comes next. I haven't before me the list.

MR. COLEMAN: Little Dry Creek.

THE COURT: Mr. Corfman, you represent Little Dry Creek?

MR. CORFMAN: Yes.

MR. A. C. HATCH: If the court please, my client seems to be not satisfied with the statement made by me that we had no objection to the matter just having come in -- the president of the company, and that being true I will ask temporarily at least until they can confer with Judge Booth that my statement may be, and acceptance may be revoked.

THE COURT: Very well.

MR. JOHN E. BOOTH: That will be all right.

THE COURT: You may proceed with the Little Dry Creek.

MR. CORFMAN: In this case and also in the case of the Fort Field Irrigation Company we ask leave at this time to amend xxx the answer and counter claim by the addition of one paragraph pleading the decree of the court in Cause No. 718, commonly known as the Morse decree. That allegation was unintentionally omitted at the time the answer was prepared, and we ask that amendment may be made at this time.

THE COURT: It may be made. Have you prepared it.

MR. CORFMAN: Yes, the amendment is prepared.

CHESTER L. JOHNSON, called by the defendant, Little Dry Creek Irrigation Company, being first duly sworn, testifies as follows:

DIRECT EXAMINATION By Mr. Corfman.

Q What is your name?

A Chester L. Johnson.

Q How old are you?

A Fifty years.

Q Where do you reside?

A Provo.

Q And how long have you lived in Provo?

A Eight years.

Q Are you in any way acquainted with the Little Dry Creek Irriga-

tion Company? A. Yes sir.

Q As what?

A President of it.

Q How long have you been president of that company?

A The last two years and a half.

Q How.

A Two years.

Q And how many acres -- first, where does your canal divert the water from Provo River, what point?

A Why, at the point up there, I don't know just how to explain it, but it is by Hickman's, the old Dalby plade where it is taken out of the river.

Q Immediately northwest of the platted portion of the city?

A Yes sir.

Q About what length is your canal?

A Now, I could not answer that, maybe Mr. Farrer could, but I could not.

Q In the use of the water after it is diverted from Provo River, is your canal divided? A. Yes sir.

Q Into two main laterals?

A Yes sir.

Q What kind of a diversion dam have you kept and maintained at your point of diversion?

A Why, we have a cement head gate, that is divided.

Q Under whose supervision was this headgate installed?

A Why, it was installed under Little Dry Creek.

Q Under whose direction?

A It was the board, Little Dry Creek board.

Q How long has it been installed?

A Why, the one was put in a year ago this last spring, the last one, the other being old, and wasn't just what it should be, it was taken out, and put in a new one year ago last spring.

Q And the new gate is installed under whose direction?

A That was under the action of the Board of Little DRy Creek.

Q Did you consult anyone as to what kind of a gateyou ought to

put in there, was Mr. Wentz, the court commissioner, consulted

A Not to my knowledge, I don't know that he was.

Q Now, do you know the quantity of water that was diverted from the river in your canal?

A No, I don't.

Q You have never measured it? A. No sir.

Q And that water has been served or distributed to you by the several court commissioners since the entering of the Morse decree in 1902?

A Well, I have only used water there seven years.

Q I am speaking now about your main canal?

A Yes sir.

Q You have taken the water, can you tell the court how you have distributed it among your several users, by what method.

A It has been scheduled, and schedule got out in the spring of the year and then they have taken it according to their schedule during the season.

Q Have you issued tickets, time tickets?

A No, just -- yes, I guess it has, the schedule, you see, we have had, each one has a ticket, yes, for their time; they get that in the spring, lasts them all summer.

Q Have you had each year a water superintendent and master to supervise? A. Yes sir.

Q And control the ditch? A. Yes sir.

Q And distribute the water? A. Yes sir.

Q According to the schedule? A. Yes sir.

Q And this schedule --

MR. JACOB EVANS: Now, if the court please, we object to this as leading, putting all of the words in the mouth of the witness, let the witness tell the story, how the distribution is made.

MR. CORFMAN: It is perhaps leading.

Q Will you proceed to tell how you distribute the water?

A How we distribute it?

Q To the water users, yes.

A Why, itis distributed in the two canals, it is divided half in the north ditch and half in the south, and then it is distributed equally to the amount of shares each party has got.

Q According to the number of shares thdy own in the corporation?

A Yes sir.

Q Do you know how much water, or how much land one share of water will serve?

A Why, it is supposed, one share of water is supposed to water an acre of ground.

Q How many acres of land have you got under your irrigation system?

A I believe it is 465 acres, if I remember right.

Q And how many shares are there issued from your corporation?

A It is some less, I could not give that definite,

Q Do you know the number of shares in your corporation?

A I think it is 365, if I remember right, but I would not be positive now.

Q Lands under your system, what kind of crops are raised?

A Why, we raise a good deal of garden stuff, cabbage and onions and tomatoes and berries and beets and little grain, potatoes.

Q What are the principal crops that are grown throughout the district?

A Why, I guess the principal crop would be berries mostly, yes.

Q That kind of berries?

A That is, there is strawberries, and I don't know whether their principal crop would be the berries or the beets. There are a good many beets, but still there is lots of garden stuff.

Q Grow any grain?

A Some grain, yes sir.

Q Is that one of the principal crops?

A No sir.

Q For what reason mainly do you grow grain throughout the district there?

A Well, I don't know, I think mostly they raise a little grain just for their own use, I don't know, I haven't raised any at all

this year, I don't raise but very little, just enough to get straw for bedding is all that I have raised grain for.

Q Would these lands be productive without irrigation?

A No sir,

Q What is the character of the soil generally through the district?

A Well, it is broken up, pretty good some places. There is a great deal of gravel in it; in fact, there is gravel, I believe, almost in spots all through the field. Some comes right to the top of the surface and some is covered over with a little soil. Some places requires much more water than others.

Q During the past two seasons, 1915 and 1916, what do you say as to having sufficient supply of water?

A Well, the water has been scarce.

Q What effect, if any, has it had upon the crops in the district?

A Why, I think it has cut the crops down some.

Q As compared with former years, would you say that the crops have been less than formerly? A. Yes sir.

CROSS EXAMINATION BY Mr. Thurman.

Q You say you are president of the company ?

A Yes sir.

Q At the present time? A. Yes sir.

Q How many acres of land do you irrigate, the company?

A The company, I guess they must irrigate about, I couldn't say exactly the amount of land they irrigate.

Q Do you irrigate an acre to a share?

A No, I don't think so. I know I haven't on my farm.

Q How much land have you?

A I have twenty-two acres.

THE COURT: Pardon an interruption, I understood you to say Mr. Johnson, you had 465 acres?

A That is the company, I think 465.

THE COURT: That is what he is asking. I understood you to say in respect to the corporation you had 465 acres.

A This was how much was irrigated, I understood.

THE COURT: That is what I understood you to say to Mr. Corfman.

A No.

THE COURT: What did you mean?

A That there was that much land in the company.

THE COURT: Itis not all irrigated?

A No, it is not all irrigated.

Q You say there are 365 shares in the company?

A I would not be positive, but it is something right close there.

Q How many farms are there in the company?

A How many what?

Q How many are farming in the company?

A I could not say.

Q You say the crops were less than formerly?

A I think so, yes.

Q You irrigatetwenty-two acres yourself?

A Why, practically that outside of my yards.

Q What do you raise, what kind of crops?

A Why, I raise berries and cabbage and onions, garden stuff, tomatoes and such as that, and little alfalfa.

Q How much alfalfa do you raise?

A About six acres.

Q How much do you ordinarily make during the season in hay alfalfa do you know?

A No, I haven't kept track.

Q How much difference was there in your alfalfa crop in 1913 and 1914, if any?

A Well, I will tell you, the weevil here has worked on our alfalfa, you could not tell so much about that.

Q Can't tell as to alfalfa?

A No, they have cut our first crop off, almost entirely.

Q How much area do you cultivate in onions?

A Why, I usually have from half up to an acre.

Q Now, did you notice any difference in your onion crop between

1913 and 1914?

A No, not a great deal.

Q What crops did you note a difference in those two years?

A I will tell you my onion crop and berries I didn't have water sufficient for them, and I drove an artesian well that helped me out with those things.

Q When did you drive your well?

A I drove it three years ago.

Q What year did you drive it?

A I guess I drove it '13.

Q In 1913? A. Yes.

Q There wasn't any particular difference then in your crop of onions and berries in 1913 and 1914 that you recall?

A No, about the same.

Q What crops if any, did you notice a difference in between those two years.

A They were difference in the beet crops?

Q In your beet crop? A. Yes sir.

Q How many acres of beets do you raise?

A Why, of course, it differs a little, I am raising six acres this year.

Q Did you raise six acres in 1913?

A I don't remember what I raised then.

Q Do you remember the tonnage you got in the acre?

A No, I don't.

Q Do you remember the tonnage you got in 1914?

A No.

Q Do you remember whether ther e was any particular difference in the tonnage between those two years?

A Why, it wasless, I know.

Q But you don't know how much less?

A No, I don't. If I remember right it is right around thirteen ton, but I wouldn't be positive.

Q Which year, '14 or '13?

A In 1913.

Q And what 1914?

A 1914 I didn't have but very few beets in that year, very few.

Q You cannot state specifically and give us the quantity of difference between the last two years and the former years, can you?

A No, I could not.

Q Are you confident as to the number of acres you have in the company?

A No, I told you I was not, no, I am not right sure as to that.

Q I call your attention --

A We can get that from the secretary here.

Q I call your attention to the former statement made by Mr. Scott Stewart, and I speak of that because that was kind of accepted without question in which your company was represented as having 506 acres, I supposed there was that much irrigated. Do you think you have that much?

A No, I don't think so.

Q Don't think so. Who in your company knows the fact about how much you do irrigate?

A Why, I don't know, I believe Mr. Farrer.

Q You have a water master that has distributed this water according to schedule? A. Yes sir.

Q Who is your watermaster?

A Mr. Jensen.

Q Is he here? A. Yes, sir.

Q He can be obtained, can he? A. Yes sir.

CROSS EXAMINATION by Mr. Ray.

Q What period of the irrigation season do your lands require most water?

A Why, the after part. It don't require as much the forepart as it does along about July we need more than we do before then.

Q Until what season do you need more, until what period of the season?

A Well, until about the middle of September.

Q Your berries are off?

A The berries we need more in the forepart, right early.

Q And your land is largely devoted to berries, isn't it?

A Well no, there is considerable of it to berries and garden stuff, as I stated.

Q And they are all early crops?

A No, cabbage is not early, nor onions is not early, tomatoes is not early.

DANIEL VINCENT, called by the defendant Little Dry Creek Irrigation Company, being first duly sworn, testifies as follows:

DIRECT EXAMINATION by Mr. Corfman.

Q Your full name, Mr. Vincent?

A Daniel Vincent.

Q How old are you?

A Do you own lands that are irrigated from the Little Dry Creek Irrigation system? A. Yes sir.

Q How long have you owned those lands?

A Well, I have owned them, that is, myself, about twenty or thirty years.

Q Have you been familiar with the Little Dry Creek canal since it was built?

A I have been acquainted with it ever since '52.

Q It was then one of the first canals that were taken out from Provo River? A. Yes sir.

Q Did you have anything to do with the construction of the canal?

A Yes sir.

Q Has the canal been maintained since that time?

A Yes.

Q And used for irrigation? A. Yes sir.

Q And what is the present capacity -- about what it was at that

early date?

A Well no, I couldn't state that, not exactly. Water was plentiful then in the early days.

Q And has it been used for the irrigation of the same lands that are now under this canal?

A Yes sir.

Q How much land do you own and water from Little Dry Creek?

A Farming lands?

Q Yes.

A Thirty acres.

Q Have you attended to the irrigation of these thirty acres yourself? A. Yes sir.

Q Have you observed the use of the water upon the lands during the seasons of 1915 and '16?

A Used it on the whole of the land.

Q On your lands? A. Yes sir.

Q What would you say as to the supply of water during the last two seasons as compared with former years?

A It has been a little shy, that is, my portion of it.

Q What effect, if any, had that had upon crop production?

A I had some burn up, wheat.

Q What year?

A Last year.

Q How many shares of water did you have last year?

A I own twenty-fove shares.

Q And with that water you irrigated how many acres?

A I could not irrigate it all with it, I did not have enough .

Q In former years did you have sufficient?

A Sir?

Q In former years did you have sufficient water in your twenty-five shares?

A I hada little more than I had this last two seasons.

Q Have you at any time been watermaster for Little Dry Creek Irrigation Company? A. Yes sir.

Q During what years?

A Now, I could not exactly tell you the years, three or four years back I was watermaster for about six years.

Q Three or four years ago?

A Four or five years back.

Q What was your method then in the distribution of the water to the water users?

A I generally had schedules, tickets.

Q And how much time did you give to a share?

A A share to water an acre of ground.

Q How did you distribute the water, how long --

A I had twenty-five shares and I had twenty hours.

Q And how much time did you give to the share?

A Be an hour and a half.

Q Has that been the usual custom in the distribution of the water?

A Yes sir.

Q That same custom followed in 1915 and 1916?

A Yes sir.

Q What kind of crops do you grow on the land, Mr. Vincent?

A Beets and alfalfa, potatoes, apples and some garden stuff, little garden stuff.

Q Are you familiar in a general way with the lands throughout the district?

A Well, pretty well.

Q Did you take notice during the time, the six years you were watermaster, as to the use of the water, how it was applied?

A How was that?

Q Did you take notice how the water was applied during the six years you were water master, on the lands?

A Supplied -- any person has got a ticket and his time was on it every time his turn comes to use it.

Q During the low water stage when the several users of water from Provo River take the water through the court commissioner --

A Yes.

Q Distributed to them --

A Yes.

Q What would you say as to --

A Through the Morse provision, I believe.

Q What would you say as to their having sufficient water for the irrigation of the lands in that district?

A Well, it all has to be watered and didn't have enough water to water it all.

Q During the low stage, normal stage of the river, have you at any time had any more water than you could beneficially use?

A No sir.

Q How?

A No, never have any more water than we could use.

Q And in the use of the water have you permitted any water to waste? A. No sir.

Q Have you any waste ditches connected with your system.

A Yes, got waste ditches, but ain't got no waste water.

Q What is the character of the soil throughout the district there generally?

A Why, gravlly in patches and kind of a light soil on top, some placesgravel is near the rop and otherplaces a foot or something like that, but varies different pbaces.

Q How deep is the surface generally would you say throughout the district?

A Well, it varies, quite a difference, some places it is three feet deep without any gravel other places it is not two inches, other places right on top.

Q And what is the character of the soil underlying this surface soil?

A Underlying?

Q Underlying, beneath it.

A Oh, it is kind of a dandy, gritty and gravelly. It is kind of a river made land, about what it is.

Q River wash? A. Yes.

Q And this river wash consists of what?

A Gravel, different kind of soil.

Q Any rocks in it?

A Plenty of them.

Q Are there any surface wells in the ditches?

A yes sir, I have got two myself.

Q About how far did you have to dig from the surface to get to the water line in these wells?

A I dug one180 feet deep, and the other 184.

Q Those are flowing wells, are they not, those are not surface wells?

A No sir, I haven't any.

Q Do you know of any surface wells in the district?

A I know of one.

Q Where is that?

A John Walkins.

Q Do you know about how far that well was dug before you struck the water line?

A It looks to me like abouttwenty feet.

Q Now, how often do the farmers in that district take their water turn?

A About every twelve days.

Q Has that been the usual custom?

A Yes sir.

Q You spoke of the crops being mxxx largely garden prôducts?

A Some of them garden, cabbage and cÆrrots, such like as that.

Q Do those garden crops require a turn of water oftene r than that?

A Yes sir, it does.

Q How often?

A It should be watered about every eight days.

Q And what arrangement do the farmers make throughout the district there in accomodate their gardens with more frequent turns of the water?

A I don't know, I guess they are about all good deal like I am, I start when my turn comes, if it burns ir burns.

Q Do you make any arrangement for shortening the turn?

A No sir.

Q But under theregulation of the company you take the water how frequently?

A How often?

Q Yes.

A About every twelve days.

Q Do you know the number of acres in the district?

A I don't know as I could state positively, about 490, somewheres along in that.

Q Are all those lands irigarjed? A. No sir.

Q Why?

A There isn't water enough to irrigate them.

MR. THURMAN: How many acres arewatered.

MR. CORFMAN: I thihk we claim, according to our schedule, 497.

MR. THURMAN: Irrigated?

MR. CORFMAN: Yes.

Q During the time you were watermaster how did you maintain the ditches with respect to their being repaired and kept clean?

A Why, cleaned them out about in April , and then during the summer mowed the weeds off to keep them clean that way.

Q What method was adopted by the water users in taking the water for from the laterals, have they gates?

A Had headgates.

Q All the water users maintain these head gates?

A Yes, only just on the head of the main ditches every man turns the water out has to fix his own gate.

CROSS EXAMINATION by Mr. Thurman.

Q Mr. Vincent, do you know how many take water in that company?

A No, I don't; I don't know the number.

Q Now, you say there is about 490 acres? A. Yes.

Q But not all irrigated? A. No.

Q About how much is irrigated?

A About 360 acres.

Q Three hundred and sixty ?

A Sixty-five, I think, I am not positive, though.

Q Then there is about a fourth of it that is not irrigated or a fifth of the land you have?

A No.

Q Do you know how many shares are in your company?

A 365, I believe.

Q Then you irrigate about as many acres as you have shares?

A Yes.

Q What difference did you note in the use of the water in the last two years from that formerly.

A The people using it?

Q What differance did you notice?

A No difference in the time, but the water was not as before.

Q Did you have difference in your crops?

A Difference in mine, grain.

Q I think you said your wheat?

A Wheat.

Q Burned up?

A Burned up.

Q Last year, how late do you -- did you answer the last question?

A Yes sir.

Q you said your wheat burned up last year ?

A Yes sir.

Q Did you raise any wheat at all?

A Did I raise any wheat at all?

Q Last year? A. Yes sir.

Q How many acres did you have last year?

A About thirteen acres.

Q Thirteen acres of wheat? A. Yes.

Q How much did you harvest ?

A How much did I harvest, I harvested thirteen acres.

Q How many bushels?

A About four hundred bushels.

Q Four hundred bushels? A. Yes.

Q Do you remember how much wheat you had in 1913, how many acres?

A 1913?

Q Yes.

A No sir, I don't.

Q Do you remember how much you thrashed to the acre in 1913?

A No, I don't, I never kept no account of it.

Q Do you remeber what difference, if any, there was per acre in yield in 1913 and 1915, last year?

A There was a difference.

Q How ?

A There was a difference, I didn't get as much in 1915 as I did before, the year before.

Q Do you remember about what the difference was?

A No, I couldn't say what the difference was, the crop wasn't near as heavy.

Q About what do you call a good fair crop of wheat on your land?

A Thirty-five to forty bushels or fifty, along in there.

Q Well, twenty-five -- oh, thirty-five.

A Generally about forty-five bushel.

Q Last year you had about three--

A Had from twenty-five to thirty bushels, that is what I had last year.

Q You had four hundred bushels for thirteen acres?

A Yes.

Q A little over thirty bushel; now, you say your wheat burned up, what did you mean by that, did you lose some area that you didn't harvest at all, or was it a general injury to the whole crop?

A Naturally burned up for want of water.

Q How?

A It dried up for the want of water. In patches, didn't have enough water to water it all.

Q Did you notice if your neighbors su-ffered about the same as you did?

A I wasn't looking around for the neighbors, I only looked for myself.

Q I was just asking you if you noticed?

A No, I didn't.

Q Did you suffer any other loss of any other crop than wheat last year?

A Well, I suffered a little on potatoes last year.

Q Was that from want of water.

A Yes sir.

Q When do you irrigate your wheat crop the last time ordinarily in normal seasons, about how late in the season?

A Well, about July, about the 15th, along in there.

Q Water usually keeps up pretty well to that time, don't it?

A Sometimes it don't, didn't last year.

CROSS EXAMINATION by Mr. Bagley.

Q You spoke of having waste ditches?

A How is that?

Q You spoke of having some waste ditches, counsel asked you if you had waste ditches, you say you do have the waste ditches?

A Yes sir, we do have waste ditches.

Q They were built to carry off the surplus water from the land, were they?

A Yes, when we had any.

Q When you had any? A Yes.

Q Where do these waste ditches dicharge, where do they lead to, where do they carry the water to?

A Into the lake

Q Into any particular channel before it gets to the lake?

A No, just natural channel the country, is all.

Q Does Little Dry Creek Canal run right into the lake?

A Yes sir.

Q Open channel from the river right to the lake?

A Yes sir.

Q Does that run near Carter's place? A. Yes sir.

Q Frank Carter's place? A. Yes sir.

Q When the water is not diverted from this stream onto the farm for irrigation, it runs right through the canal to the lake?

A If I know what you are hitting at, there is waste water there sir that cannot be used, spring water, goes right in Carter's, Frank Carter's.

Q Spring water by Carter's? A. Yes.

Q Where are the springs?

A They cannot use it, it ain't river water at all.

Q Where are those springs that supply that water?

A It comes out of the ground along the canal.

Q At different points along the canal?

A yes sir.

Q Are any of those springs above Sixth South?

A Sixth South?

Q yes, A. yes sir.

Q How many of them?

A Right up into Scott's farm there.

Q Are any of them as far north as Center Street?

A Yes sir.

Q The springs as far north as Center Street that run into your canal.

A Sometimes there is there, springs from up in there.

Q Well, there is land watered from your canal south from Sixth South street, isn't there?

A No sir. I don't water any there.

Q No, but stockholders in the Little Dry Creek Company?

A yes, they water below there.

Q And stockholders in the Little Dry Creek company water south of Center street, between Center and Sixth.

A Between Center and Sixhh South?

Q yes.

A There is a few waters there at Scott's.

Q Now, you have been taking your water on turns of twelve day periods, for how many years have you been doing that, Mr. Vincent?

A Well, I couldn't tell you. I have been here for a good many years.

Q Did you always take it on these twelve day turns?

A Yes.

Q In the beginning—

A Early days we just give it out to one another, watermaster give it out.

Q You had a watermaster? A Yes sir.

Q You didn't take it on turn? A. No sir.

Q And there wasn't any regularity how often you would irrigate in those early days?

A Generally go about twelve days.

Q But ever since you began taking it on turn you have taken it in twelve day periods? A. Yes.

Q And could you say whether you began that practice or custom of taking it in twelve day turns before 1890?

A No, I couldn't answer that, never kept no account of it.

Q You think that this twelve day period has been put in force on your canal since 1890, or before.

A I couldn't say.

Q You don't know? A. No.

Q There are not any physical conditions of the canal which would prevent you from having your water oftener than twelve day periods if you wanted it, was there?

A No sir, couldn't have it, not until your turn come.

Q Why couldn't you make the period shorter?

A Couldn't make it shorter because somebody would go short of water, it wouldn't go out.

Q Couldn't you take, say two thirds of that water every eight days?

A Two thirds less?

Q Take two thirds of what you get for twelve day period every eight days, wouldn't that accomplish the same thing?

A I wouldn't get water, people wouldn't get watered up at all if they take less water.

FRED A. THURGOOD, called by the defendant Little Dry Creek Irrigation Company, being first duly sworn, testifies as follows;

DIRECT EXAMINATION by Mr. Corfman.

Q What is your name?

A Fred A. Thurgood.

Q You are secretary of the Little Dry Creek Irrigation Company?

A Yes sir.

Q How many shares of stock are issued in your corporation?

A Three hundred and sixty-five.

Q And how many acres of land are there under your irrigation system?

A Four hundred and ninety-seven.

Q Do you know what the method of distributing the water from your canal is?

A Distributed by schedules made out by George Folsom, handed over th the watermaster. He distributes them to the stockholders and they take it in their regular turn.

Q When are these schedules made out?

A Made out and delivered on the 24th day of May.

Q And in the distribution of the water, do you know whether those schedules are followed throughout the season?

A They are as far as my knowledge.

Q And with what frequency do the water users take the water in the district?

A What do you mean by that?

Q How often do they take the water?

A Every twelve days.

Q Do you own land within the district? A. Yes sir.

Q What land do you own?

A City lots.

Q What is the size of your city lots?

A Three by twelve.

Q How long have you been irrigating this lot?

A Fourteen years.

Q What do you grow on it ?

A Small garden stuff.

Q Have you noticed whether or not during the years 1915 and '16 the quantity of water you have had for the irrigation of the lot has compared with former years?

A Last two years been much shy to what it was in former years.

Q Have you done anything -- what effect did that have on your garden crop?

A It would affect that -- I had to drive a flowing well in order to save my crops, because twelve days was too far apart, they would not mature at all, buth right up.

Q You dug a well for that purpose? A. Yes sir.

Q Do you know whether the 497 acres of land of which you speak are all irrigated?

A I couldnot state positive whether it is.

Q What?

A I couldnet say positive whether all of that is watered or not.

Q Is water claimed by the land owners for all of the 497 acres?

MR. JACOB EVANS: Object to that as immaterial and incompetent what they claim. He says he doesn,t know how many acres they irrigate.

THE COURT: Objection is sustained.

CROSS EXAMINATION by Mr. A. C. Hatch.

Q You say you couldn't raise your garden last two years, is that right.

A What is that, what do you say ?

Q That you could not raise a garden during the past few years?

A Two years, I said.

Q Because the twelve day period or turn was too long a time?

A Yes sir.

Q Has the climatic conditions been any different during the past two years than formerly?

A There has been little drier season, but not enough water to water my ground sufficiently to last through that period of time. Last two years water has been shy.

Q Prior to the last two years was the twelve day period sufficient?

A We had more water that would soak it up quicker in the amouht of time I had to water my lot, have to have more water in that part of the couhtryto flush it over beccause it is a gravelly formation. If you have a small stream of water absolutely no good to youl have to have a large stream to force it over.

Q Did you raise good gardens prior to two years ago?

A Yes sir.

Q Every year?

A Some years different from others, according to the season.

Q What years were different?

A I couldn't say just what.

Q Can you say how many of the years you didn't raise good garden crops prior to two years, past two years?

A I couldn't say just the exact date or the years, but I know these last two years I have been shy.

Q Would it be half the time prior to two years ago that you didn't raise good crops?

A What years?

Q All the years that you haveowned this land except the last two?

A I couldn't say just which year it was, but I know these last two years, as I stated before, they are not as good as they have been previous years, on account of the shortage of water.

Q Therewas some years, I understood you, prior to the last two years when you didn't raise good crops, was that correct?

A Different years, various, yes, what I said.

Q Now, about what proportion of the former years were your crops not good?

A About a third.

Q Does that apply to all the time since you have owned this lot?

A Not all the time, no.

Q About a third of the time since you owned the lot you could not raise good crops? A. Oh no.

Q Account of shortage of water?

A Yes.

Q Andwer so the reporter can get it? A. Yes.

Q Have you been a watermaster any of the time? A. Yes.

Q DO you know whether you got your crop -- or portion of the water that was in your canal?

A I could not state positively to the portion I got. I got all that was in the ditch that was turned down for us. Whether we had out amount of water out of the river, I don't know.

Q Do you know whether you had your amount of water out of your canal coming into your ditch?

A No sir, I don't.

Q Now, do you have a system where some of the people under the canal use half of the quantity of the water and take it every six days? A No sir.

Q It is uniform twelve day periods for all under the entire system? A. Yes sir.

Q How many laterals are there in your canal ?

A I could not state that.

Q How many streams are used under your canal?

A Just divided into two ditches is all that I know, north and south ditch is all.

Q Are there no divisions to those two ditches?

A pivisions to go below, division line to the north and south, where they divided in the north and south ditch. There is different ditches running to different persons, farms.

Q poes one man use half of the water in thecanal or all the water in each of these north and south ditches?

A One man uses the amount that is in each one of the ditches, yes sir.

Q He has the whole of that stream during his turn of irrigating?

A Yes sir.

Q Do you know how much in second feet of water there is in the ditch from which you irrigate? A. No sir.

Q How long a time do you have the water each turn for your three by twelve rods?

A Forty-five minutes.

Q Forty-five minutes? A. Yes sir.

Q DO you have the whole stream for that length of time?

A Yes sir.

Q You said you didn't know a second feet of water in the stream?

A No sir.

Q About how wide is your ditch?

A Mean on the street or canal?

Q Yes.

A I should judge about two feet wide, maybe foot and a half or two feet deep.

Q Full of water? A. No sir.

Q How deep is the water?

A I haven't measured it, I couldn't say.

Q Have no idea of the depth of the water?

A I couldn't say positive.

Q Half full?

A I couldn't say definite to that, I don't know, never measured it. I wouldn't say until I measured it how much was in it.

Q Now, in 1914 did you raise a good crop.

A 1914?

Q Yes.

A I couldn't say for sure, not extra good, fair.

Q In 1915, that was last year, your crop was poor, was it?

A Very poor, yes sir.

Q Did you raise half a crop?

A Not from the water out of Little Dry Cork Irrigation Company. I drove my well last year for that purpose to save my crop.

Q Flowing well? A. Yes.

Q You have with that addition this year you have plenty of water, haven,t you?

A With the two, yes.

Q So that if your crop is short this year it is not by reason of insufficient supply of water?

A It would be if I didn,t turn my well on, short of water from Dry Creek.

Q You have a well and have plenty of water, haven't you?

A Yes sir.

Q Then your crop this year is good, is it not?

A Yessir.

Q Answer. A. Yes sir.

Q And in 1914, you say you don't remember whether your crop was good or not?

A I said not very good.

Q That is, it wasn't an extra crop?

A No sir.

CROSS EXAMINATION by Mr. Bagley.

Q Mr. Thurgood, if you have all the water that you need and apply it the way you have been accustomed to apply it down there, then every twelve days is sufficiently often to water, ,isn,t it?

A Now on small garden stuff, no.

Q Is it sufficient on the field?

A On some lands, yes.

Q Has your company every endeavored to make any other distribution than the twelve day period distribution?

A Not that I know of.

DUDLEY L. COOK, called by the defendant, Little Dry Creek Irrigation Company, being first duly sworn, testifies as follows:

DIRECT EXAMINATION by Mr. Corfman.

Q Mr. Cook, you live in Provo?

A I do.

Q Own your own home?

A I do.

Q Take water from the Little Dry Creek Irrigation Company for irrigation of your city lot?

A I do.

Q How large is your city lot ?

A Two city lots.

Q Do you own any land other than your city lots at the present time under the Little Dry Creek Irrigation?

A I don't.

Q Have you in former years?

A I have rented.

Q How large is your city lot?

A Six by twelve.

Q Have you at any time been watermaster of Little Dry Creek Irrigation Company's canal?

A I have.

Q What years?

A 1914 and '15.

Q And I take it that during those years you have had supervision of the disribution of the water?

A I had supervision of the water that came into the ditch.

Q And from was this water -- who turned the water out to you?

A Mr. Wentz.

Q During the years 1914 and '13, at any time did you have any difficulty with getting the water?

A I had nothing to do with it in 1913.

Q '14 and '15?

A '14 and '15 I did have.

Q What was the difficulty?

A I could not get the water.

Q Do you know why?

A Because it wasn,t in the river.

Q Do you know whether, if you got your share of the water under the decree during those years?

A Mr. Wentz said we didn,t get our share.

Q Do you know what effect that had on the crops?

A Well, the crops were not as good as they would have been, as if they had plenty of water.

Q How long have you been familiar with that district and the land under it?

A Oh, about fifteen years.

Q And what would you say as to the crops of 1915, how did they compare with former years?

A Why, they were poorer.

Q What was your method of distributing the water in 1915?

A By time cards.

Q When were they issued?

A In the spring, I ~~am~~ forget the day, I don,t recollect the date when they were handed to me.

Q In the distribution of the water did you have a schedule to guide you?

A I did, I had a schedule I copied and then I gave them the ticket . Had a duplicate, I kept a duplicate.

Q Just what did you do in distributing the water that year, how did you handle it?

A Well, it was turned into the ditch and when any difficulty came up I had to go around and see and settle it so that the people kept out of a fight, kept them from fighting.

Q Was there some difficulty there during 1915?

A On yes, some.

Q What did it grow out of?

A Sometimes they would, one party think it was their time when it was not.

Q Now, you spoke about being scarcity of water in 1915, do you remember particularly any lands there upon which the crops

suffered that season? A. Yes.

Q Whose lands were they?

A Why, Joe Smith had some grain that was short, didn't get water and Jack Vincent had some that did not.

Q Was the water served to them as they were entitled to it?

A It was as far as I could get it.

Q And during the irrigation season you were watermaster, what do you say as to having used the water economically?

A I don,t understand your question.

Q What do you say as to having used the water that was turned to your canal economically?

A Why, I believe everyone used it as saving as they could, they had to.

Q Did any water go to waste?

A I don't think it did; if it did I never saw it.

Q What crops were grown generally throughout those --

A Most everything, hay, grain, beets, carrots.

Q What are the principal crops grown?

A Hay and beets, some grain.

Q Now, you are speaking of agricultural crops?

A Yes, that is what they raise on the ma farms.

Q What other crops are grown there?

A Oh, some cabbage, tomatoes.

Q Any berries?

A Berries, yes.

Q Onions.

A Oninns.

Q Potatoes?

A Potatoes.

CROSS EXAMINTION by Mr. Thurman.

Q Mr. Cook, how many acres of land did you distribute water to by schedule?

A All that the papers called for.

Q That is no answer at all, how many acres?

A I couldn't tell you.

Q Didn't you have any idea how many acres?

A No, I didn't, I never measured it.

Q Was it over three hundred?

A I couldn't say.

Q Was it under five hundred?

A I couldn't tell you, I never measured it, I have no means of knowing.

Q Did the schedule state how much each man had?

A Stated how many shares they had and how long they were to have it, didn't say anything about the acreage.

Q Nothing about acreage?

A Nothing about acreage.

Q Do you know what size stream was distributed to a person to use measured in second feet?

A No, I don't.

Q No idea about that?

A No, sometimes more and sometimes less, depends what was in the river.

DANIEL R. PEAY, called by the defendant Little Dry Creek Irrigation, being first duly sworn, testified as follows:

DIRECT EXAMINATION by Mr. Corfman.

Q Your name is Peay?

A Daniel R. Peay.

Q Where do you live?

A Provo.

Q Do you own land under the Little Dry Creek Irrigation System?

A Yes sir.

Q How long have you owned the land?

A Oh, twelve or fifteen years, I don't remember just exactly how

long.

Q Have you farmed it during the past twelve or fifteen years?

A Yes sir.

Q How many acres are there in the tract?

A About nine acres, nine acres and a half.

Q What crops have you grown upon it?

A Principally potatoes, sugar beets, some garden truck of different varities, little fruit, and different berries, and little hay. Sort of mixed crop.

Q How many shares of water have you had for the irrigation of these nine acres?

A Had nine shares originally.

Q Have you used all the water that nine shares called for for these nine acres? A. Yes sir.

Q In doing so what would you say as to the sufficiency of the water that you had?

A Why, I believe that I have used it very economically, running it through as quick as I could, letting it soak just as long as I could consider it necessary and passing it on to get it across the field.

Q Did you have more than you needed at any time?

A No, I understand this necessary means during the low water season. I used it all.

Q As a farmer there did you, during the years that you farmed, have you observed crops grown by your neighbors there and their use of the water?

A Yes. Well, being a farmer myself, of course, I naturally observe what is going on around me as much as I possibly can.

Q Are you familiar with the lands throughout the district?

A Yes sir.

Q Do you know of any season during the last twelve or fifteen years any of the farms there have had more water in the low water season than was necessary to mature their crops?

A No sir, none went to waste during the low water season.

Q Has that ever been true with respect to the use of water in

that district, there was any waste in the low water season.

A It has always been true since I have been there.

Q Has there been any waste during the low water season?

A No sir, absolutely none.

Q What is the character of the soil generally throughout the district there?

A The soil is very irregular. Some spots the soil is very deep, other spots, probably within a few feet gravelly, in fact, won't be any soil, simply come to the surface and other places of course the soil is overlaid with a light covering of soil.

Q And this surface soil is underlaid by what?

A Gravel and rock.

Q Did you farm your nine acres in the summer of 1915 and '16?

A Yes sir.

Q What do you say as to the supply of water you had this season as compared with former years?

A The supply the last two or three irrigation turns, as I remember it, has been very shy.

Q Did you notice the effect it had upon your crop?

A Not for this reason I haven't noticed a particular difference. I got up here to tell the truth and I am going to tell it, I haven't noticed a difference on my crops for this reason, that my ground has been in hay-- or not hay, excuse me, I meant grain, consequently these last two or three waterings I have been able to water what little truck I had, because I did not water the balance of the grain and had I had it in beets, as I had formerly, I would probably got fifty per cent of it watered. Remainder would have to stay until the next turn. It would have been a visa versa proposition, and in place of watering it once in twelve days, some of it would have had to have went to the twenty-four and I would have had a failure.

Q Then, I take it you would not have sufficient if you had been raising the ordinary crop there?

A No sir, that is correct.

Q Is that pretty generally true throughout the district?

A I know that is absolutely true in case of some of my neighbors.

Q What neighbors have you in mind?

A Some on the west.

Q What are their names?

A Mr. Richmond, Joseph Richmond, I think his name is.

Q Have you observed his crop in '15 and '16.

A Yes.

Q What would you say as to their having had sufficient supply of water?

A Crops, I believe, has been watered practically sufficient, that is with the variety of crops they have got they have got along probably.

Q What kind of crops has he been growing in 1915?

A Principally grain, some potatoes and some beets.

Q Do you know what crops are generally raised throughout the district there?

A It is variety of crops, sugar beets is the main crop, I believe.

Q What other crops are principally grown?

A Well, potatoes, onions, hay and grain, cabbage, most all fruit, small fruit, apples.

Q Growing of grain, what is generally the purpose of putting those lands to grain?

A Purpose of putting those lands into grainis to furnish a change, preparation of soil for other crops? that pay better,

Q And grain is not grown -- grain grown principally for that purpose, is it?

A Serves two purposes of course, it is a change and producing at the same time, it is a rotation of crops and giving our soil a rest, change for our soil so that it will be capable of producing some other crops.

Q Have you ever been water master in the district?

A No sir.

Q Do you know why the custom has been adopted there of using the water every twelve days instead of greater freqnency?

A The reason, As I understand it, that has been the system adopted by making the turns at that period it helps to put the water over a bigger acreage. If we cut the time in two, it would cut the amount of acreage irrigated in two.

Q What is that due to, you have to have a larger stream to go over the land?

A That is one thing that makes that necessary and that is the condition of the soil, kind of soil we have there, great deal of it, and we cannot water those fields and make any success in irrigating if our stream becomes too small, for this reason, that there is gravel patches and places where the soil is very shallow, and we must of necessity have a fairly good size stream or it don't go -- simply run it into your gravel beds and there sinks. Takes stream enough to force it over those places. That is true with parts of the soil.

Q Is there any method adopted by the growers there of garden products, to secure greater frequenty in the use of the water.

A The only thing I know of, some, in some cases, few isolated cases, I don't know whether that is general or not, I know of some of them working a system, where they had probably a small patch of onions or small patch of garden, making change with a neighbor so that the period would not be quite so long, but I don't know that is general. I know it has been done.

Q You know it is done some?

A It has been done, but I don't know to what extent.

CROSS EXAMINATION by Mr. Thurman.

QM Mr. Peay, does the Dry Creek area of land include, if you know, the old Westphall farm of twenty acres? Fulton apple orchard is on it at the present time?

A I don't know what proportion, I don't know howmuch stock.

Q What I want to know is is that part of the Dry Creek land?

A That is under the Dry Creek system, yes sir.

Q That land does not require a great amount of water, does it?

A Not as much as some above does.

Q Is that about an average of the Dry Creek land?

A No sir.

Q Requires less water?

A That is a question that I can't answer. That is, and be profitable, depends upon the crop and condition of the season amount of water that is used there.

Q You consider those Dry Creek lands require more or less than the average lands in the system here?

A As to that I cannot say, I am not familiar with the average lands in the district.

Q They did raise crops on that Westphall farm many years ago without irrigating it at all, didn't they, that is running water upon the crops?

A Well now -- they have used water there ever since I have been a land owner where I am now, and when I moved there there was a ditch there running onto the Fulton farm, and they have used water there since.

CROSS EXAMINATION by Mr. A. C. Hatch.

Q I understood you to say that they raised grain, wheat, as a rotation crop, and in order to rest the land and make it fit for the raising of other crops, is that right?

A Well, I speak in a general way, speak of my own experience and some of my neighbors I am familiar with. I would not say that is conclusive.

Q Well, you know, do you not, as a farmer, that wheat is the most exhaustive crop, that exhausts the land more than any other crop grown in this section?

A I beg pardon, in a way that may be true, but I also know some other things as a farmer too.

Q In this connection what are they, connected with the question I asked you?

A Very good, the difference of the crops, for instance we will take and go to raising sugar beets probably say that a sugar beet would draw more from the soil than the wheat and

probably does but here is the question--you will find it to be a question if you are a farmer, is this, you continue to raise your sugar beets for a length of time, they won't grow any more, and you can put all the mamure on the ground and water you like, and it makes it absolutely necessary those changes must be made if you are going to farm subcessfully; either in grain or something else.

Q If you had raised a crop usually raised, you would be short of water this year, is that right?

A Yes sir.

Q Why?

A Because it requires more water, that is, requires later water to produce those other crops.

Q There is plenty of water in the Provo River right now, isn't there?

A I don't know about it, all I know is this, that I don,t think we have got our stream, I don't think today.

Q Do you know whether you have or not?

A Well, I looked at the ditch when I come across this morning, I knew then, I don't know what might have happened since.

Q Do you know of anyone who has been short of water this year whose crops havesuffered underyour system who had sufficient shates of the stock to ordinarily irrigate their land?

A Yes, I do.

Q Who?

A I know ome particular case, man who informed me different times, a neighbor.

Q Who is the man?

A Man by the name of Chris Anderson informed me the stream had been too low and he had not been able to get the water over all his crops.

Q How many acres is he cultivating?

A I don't know exactly, something in the neighborhood of ten acres.

Q D° you know how many shares of stock he has?

A I suppose he had an equal share with the other land, I don't

know, it is right in the heart of the Dry Creek system.

Q Do you know whether he got his proportion of the water that was going into your canal?

A Yes sir, that is, the water is divided, shared, and divided to each ditch and each man gets his stream from each ditch.

Q Do you know whether that particular time the water was equally divided?

A What do you say?

Q Do you know whether at that particular time the water was equally divided?

A Divided right?

Q Yes, divided equally between the two streams?

A I am not positive on that, only I am positive I know the man well enough to know he would go up there and observe whether it was or not.

Q But you didn,t do that, did you to determine whether or not this particular party was getting his quantity of the water,did you?

A No,I didn,t, it wasn,t my turn then.

Q You say ~~you~~ he didn,t get it over his entire xrop?

A I know from his personal statement he was shy of water?

Q Pardon, I am asking what you know about it?

A I don't know anything about it, any more than I have stated.

Q Then of your own knowledge do you know of anyone under your canal who was shortof water with the crops he had at any time during this year of your own knowledge, not what somebody ~~has~~ told you?

A Well, this light you are putting it, of course, I will simply answer that the only way would have beenfor me to have found out to have enabled me to answer your question intelligently, would be to go there and help do his irrigating, watch his stream until he quit. People made the statement that they have been shy on water, and have not been able to irrigate their farms sufficiently in some instances, and the water has come from them to me, and I knew there was a deficiency of water as far as I was concenned on my own place.

Q You had plenty of water for the crops you had this year, hadn't you?

A I got along with the crops I had this year owing to the kind of crops I had.

Q You had sufficient last year for the crops you raised, hadn't you?

A Yes, my crops was the same last year, practically, as this.

Q Has there been any year since you have been farming this land that you have personally been short of water sufficient to irrigate the crops you raised upon the lands.

A No, I think I have been able to -- that is -- well, there has been times, there has been porbably one watering turn that I have not been able to get it over.

Q That might be owing to inequality in the division of the water from the Provo river, or inequality of the division of stream in your canal, might it not? That is all.

CROSS EXAMINATION by Mr. Bagley.

Q Where is your nine acres situated, Mr. Peay?

A It is northwest of Provo, the city platted portion.

Q It is south of Center Street or north?

A North.

Q North of Center Street? A. Yes sir.

Q Have you got a surface well? A. Yes sir.

Q And how close --

A No, beg pardon, no, I haven't got a surface well.

Q Have an artesian well? A. Yes.

Q You haven't any surface well?

A No, not at present.

Q Are there any springs on your ground? A. No sir.

Q Do you know how far it is from the surface of the ground down to the water on your land?

A No, some parts probably I do, I have not tested it out, all of it.

DOMINICUS SNOW, called by the defendant, Little Dry Creek Irrigation Company, being first duly sworn, testifies as follows:

DIRECT EXAMINTION By Mr. Corfman.

Q Mr. Snow, give your full name?

THE COURT: Is this along the same line as the other?

MR. CORFMAN: Yes.

THE COURT: Will this character of evidence be disputed they have ben introducing?

MR. THURMAN: Same kind they have been having?

THE COURT: Yes.

MR THURMAN: No, I was asking if they had some witness that could give some idea of the size of their irrigating stream.

THE COURT: Reason I made the suggestion I thought if it wasn,t going to be disputed you had all the evidence you needed along those lines.

MR. RAY: I think ProvoBench will not attempt to rebut the testimony that had been introduced, and will admit this witness would testify similarly to the preceding witnesses.

MR. CORFMAN: Also testify in the seasons of '15 and '16 he has had shortageof crops by not having sufficient water.

Q MR. RAY: Make no admission to that.

MR. THURMAN: As far as they have testified to it. The analysis of the testimony has not born it out.

MR. A. C. HATCH: Last witness said he had had sufficient water.

THE COURT: Probably you had better ask the witness.

Q Give your full name?

A Dominicus Snow.

Q How long have you lived in Provo?

A About sixty-three years.

Q Do you own farming lands under the Little Dry Creek Irrigation system? A. Yes sir.

Q How long have you owned them?

A Well, about something over forty years.

Q How large an acreage have you ?

A Just a small piece, three and three fourths acres.

Q Have you personally attended to the irrigation of these lands?

A Yes sir.

Q Did you do so in 1915 and 1916 ? A. Yes sir.

Q And previous years? A. Yes sir.

Q What would you say as to the supply of water that you had in 1915 and '16 as compared with former years?

A Well, it has been short.

Q What effect has that had upon your crops?

A Last year my wheat did not turn out only just a little over thirty bushels to the acre.

Q What do you ordinarily raise?

A Well, ought to produce, that land ought to produce forty and fifty bushels.

Q Do you ordinarily raise that amount?

A In other years I have raised that amount.

Q Did you notice this effect on any other crops you were growing in '15 and '16?

A No, not particularly. I had strawberries and of course they would require water a little oftener than the turn came, and I would sometimes get a little water from Mr. Johnson, just a little bit once in a while, just water the upper end where it is the most gravelly.

Q Did you have the same number of shares of stock and entitled to the same quantity of water? A. Yes sir.

Q To the share as in former years?

A Yes sir.

CROSS EXAMINATION by Mr. A. C. Hatch.

Q How many shares of water fo you own?

A How many shares -- I have six and three-fourths sharesfor that

land, I have to buy some more shares.

Q What?

A I had to buy three more shares on account of the nature of the soil, the gravelly nature and coarse nature of part of my land.

Q And requires about double the quantity?

A Almost double, yes.

Q To irrigate it that other lands require?

A That some lands do.

Q Now, have you prior to buying these extra three shares, did you have -- you have always been short of water, haven't you?

A I beg your pardon?

Q You were always short of water until you got these extra shares?

A Formerly years ago, when there wasn't so much water used in the river we had -- we got the water out ourselves before it came under an organization, then of course we had plenty of water then.

Q Well say how long has Little Dry Creek Company existed?

A If I remember rightly, something like twenty-three or four years since it was organized.

Q Since it was organized you have been short then, haven't you?

A Soon after it was organized I purchased these three shares.

Q And have been using them ever since?

A Yes sir.

Q Now, was 1915 the first year in which you had a shortage?

A Well, 1914, I noticed that we were a little short sometimes, but more particularly in 1915.

Q 1914 did you raise a wheat crop? A. No sir.

Q 1915?

A 1915.

Q 1914 what crops did you raise?

A I had hay, I had formerly planted to lucern, and made a mistake, put a little orchard grass into it, and finally the orchard grass took the crop, the lucern crop.

Q For your hay crop you require irrigating later in the season than the wheat crop? A. Yes.

Q And how late did you irrigate your hay crop in 1914?

A Oh, we irrigated it sometime way into October, but usually not longer than the middle of September, sometimes irrigate later than that on account of pasturing it.

Q How late do you irrigate the wheat crop such as you raised in 1915?

A That ceases along about the middle of July, perhaps a little --

Q In ordinary seasons there is an abundance of water in July in your canal, is there not?

A Well no, there isn't. I" the forepart of the season we have plenty, of course.

Q What time in July, about what time is your last irrigation of wheat?

A What time in July, I beg your pardon.

Q About what time in July is your last irrigation of wheat?

A Oh, along about the middle or perhaps a little later.

Q You say you raised thirty bushels last year?

A Yes, a little better than that.

Q But you have raised forty-five and fifty?

A Yes, on the same land years ago.

Q The crops of wheat varies, do they not from other causes than irrigation, different years?

A I didn't cathh what you said, I am a little bit --

Q The crops of wheat vary in different years, that is, the yield per acre, from other causes than irrigation, do they not?

A Well, I think so.

Q Now, do you know of any reason other than lack of water for the variation in your wheat crop in 1915?

A No, I don't know of any other reason. This year there would be a reason.

Q What would it be.

A Very dry season we didn't have any rain.

Q Did you have any frost here?

A Yes.

Q On your wheat?

A We had frost here this year.

Q You had no rain last year, did you?

A Yes, we had some rain last year, more than we have had this.

Q Then that ought to have helped the wheat crop last year?

A I beg your pardon?

Q That ought to have helped the wheat crop last year, hadn't it, the rain last year?

A Yes, it ought to have helped it, and I presume it did in germinating the seeds.

Q Had you any rain during the growing of the crop later in the season last year?

A Well, I am not clear on that, there was a long spell ~~if~~ of dry weather last year, but of course we had some irrigation water.

Q It was last year your crop was short, was it not?

A Yes, last year that my crop -- I hadn't had any grain in on that ground before for a long while before last year.

Q What had been on the land, what crop, preceding years?

A The grain?

Q What crop had you raised?

A Well, alfalfa, and as I stated, it run mostly to grass, and of-course I plowed it up.

Q Was the sod, was it well sodded with grass when you plowed it?

A Pretty well sodded.

Q Did you plow it in thefall of spring?

A Plowed it in the fall.

Q And as to preparing it for your wheat crop?

A We prepared it well, we tore the soil to pieces, went over it a good many times, and made a good bed, as good as I could.

Q But you are aware, are you not, that sod land when first plowed up, cannot be prepared the first year so as to be in the best condition for the raising of grain?

A Yes sir, that is very true in some respects.

Q And that last year being the first year of grain ~~grs~~ crop after ~~the~~ plowing up the sod, that you could not expect to raise as much per acre as you would even this year, upon the same land?

A That is very true to a certain extend, but I did a great amount

of labor on it to prepare it for this.

Q But as a matter of fact, you didn't expect a yield such as you would get, or such as you would expect to get this year, did you?

A Not quite so much, but I expected more than what I did get.

Q Can you say, Mr. Snow, with confidence that the shortage of your wheat crop of fifteen bushels per acre last year was attributable wholly to the lack of water?

A Not entirely, I don't claim that, but I claim that it was to a certain extent, because it burned in some places.

Q And can you with any confidence fix the approxmiate amount of shortage that was caused by the lack of water ?

A No sir, I can't do it.

Q Just be a guess on your part?

A The grain burned in places because you could not get it over, the amount.

Q You find in irrigating land of that kind that has recently been broken up, that it requires during the entire first season after breaking, a greater quantity of water to cover the land than it would, say this season?

A It might require a little more.

Q Considerably more, would it not?

A No, I think not.

Q It has been suggested to me that any land of that kind recently broken up, that it always contains or has high spots, and that it never is wholly covered with water during the first season, is that true?

A There may be a few, but I used a leveler on this, and the spring tooth and small harrow, and put it in good, fair shape.

Q best you could? A. Yes.

Q Until the sod had rotted?

A Yes, very little but what I could run the water over if I had had it. Of course, it didn't reach these spots and they burned.

Q Not any question but you could have gotten it over if you had had the water in sufficient quantities. That is all.

W. K. FARRER, called by the defendent, Little Dry Creek Irrigation Company, being first duly sworn, testifies as follows:

DIRECT EXAMINATION by Mr. Corfman.

Q How long have you lived in Provo, Mr. Farrer.

A About sixty-five years.

Q Do you own lands under the Little Dry Creek Irrigation Company's canal? A. Yes sir.

Q How long have you owned these lands ?

A I have owned some of them about fifteen years.

Q Do you own stock in the company? A. Yes sir.

Q How many shares of stock have you got ?

A Twelve shares.

Q For the irrigation of the fifteen acres, is that right, speak out loud? A. Yes sir.

Q Have you personally farmed and irrigated these lands during these last fifteen years? A. Yes sir.

Q What kind of crops have you raised?

A My main crop is sugar beets and I rotate the crops because I could not water all my land under sugar beets.

Q How long has that condition been, could not water all of your lands when in sugar beets, how long has that --

A Well, it has been more or less all the time, little closer run of late years than it was before.

Q Have you compared the years of 1915 and '16 with former years?

A Yes sir.

Q What would you say as to the water supply of those years compared with former years?

A I have had a harder time to water my ground.

Q Why?

A On account of not being very much water.

Q Have your crops suffered by reason of there being less water in those years, '15 and '16?

A Well, I could not say they have suffered altogether because of that, because I have changed my lands and handle grain on

part of it in order to do away with the late watering on that class of ground.

Q What would have been the result if you had not made that change in your crop?

A I could not have watered, nor no other man.

Q Are you familiar with the lands throughout the district there?

A Pretty fair.

Q What would you say the general condition of the crops have been in '15 and '16 as compared with former years?

A Well, I think they are a little light.

Q You say that after observing them?

A I have not been -- I have not had time to go around through the different fields very much.

Q Have you noticed any fields?

A No sir, I have not noticed any fields.

Q At all, except your own?

A Only my own.

Q Are you familiar with the use of water throughout the district there, how the peopletake the water and use it?

A Yes sir.

Q Do you know whether or not they have allowed any water in the last ten or fifteen years to waste?

A No sir, I don't know of any, unless it would be during a rainy spell, something of that kind.

Q And then some water --

A Go to waste.

Q Have you ever been watermaster on this canal?

A No sir.

CROSS EXAMINATION by Mr. A. C. Hatch.

Q You have twelve shares ~~fsf~~ for fifteen acres?

A Yes sir.

Q In ordinary years you could not irrigate the whole of your land with the twelve shares, could you?

A If I had to water all my land with that water I could not water

part of it in order to do away with the late watering on that class of ground.

Q What would have been the result if you had not made that change in your crop?

A I could not have watered, nor no other man.

Q Are you familiar with the lands throughout the district there?

A Pretty fair.

Q What would you say the general condition of the crops have been in '15 and '16 as compared with former years?

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A I have not been -- I have not had time to go around through the different fields very much.

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Q And then some water --

A Go to waste.

Q Have you ever been watermaster on this canal?

A No sir.

CROSS EXAMINATION by Mr. A. C. Hatch.

Q You have twelve shares ~~for~~ for fifteen acres?

A Yes sir.

Q In ordinary years you could not irrigate the whole of your land with the twelve shares, could you?

A If I had to water all my land with that water I could not water

it at all, the fifteen acres. I have a piece, one piece of my ground is down towards Carter's, Frank Carter's country, and the lower half of the field is irrigate, sub irrigated by the upper lands above.

Q How much of the fifteen acres do you irrigate with your twelve shares?

A Why, I irrigate less than twelve acres. Then I have a well, two wells to help me out.

Q How is your land compared with the land of Mr. Snow, who just testified as to quality of soil?

A I am tending some land that is practically the same as Mr. Snow's parallels alongside of some of my land. I have a piece of beets down there we are watering now, my turn is on right now, and the lower end of that piece of ground is sub irrigated. It ~~is~~ has a little meadow land on the lower end of it, justa very small piece, and there is two acres of beets on the upper end and six shares of water, and I don't think there is a man living can water that six -- that two acres of ground, or three acres, I should say, with the six shares the way the water is now.

Q The way it is today?

A The way it is ordinarily in our canal, I will put it that way, in low water season.

Q Has it always been that way?

A It is getting worse all the time.

Q Has it ever been so that you could have irrigated it?

A I couldn't say that, because I haven't irrigated that country in there farther back than about six or seven years.

Q During the time that you have been irrigating it has it ever been in the low water season so that you could have irrigated it with the water you had or were entitled to?

A Could not have irrigated it.

Q That you could have irrigated it in ~~last~~ late water season with the water to which you were entitled?

A No sir, not that four acres. Only way we could do it is by using water that we figured on wheat land, and double up on the

time.

Q you know, do you not Provo River system for many years?

A Yes sir.

Q When the water was originally appropriated it was appropriated for grain crops principally?

A Of course, when it was first appropriated we raised sugar beets.

Q And that in those years the grain crop was harvested about the first of August? A. Yes sir.

Q And the late water was not used at all by the farmers except for small crops of potatoes and corn?

A I will say this, that I have practically been raised on a farm, and great deal of the time I have worked on a farm, and as far back as I can remember, we have used the same method as I speak. We used to raise quite large patches of corn and some small patches of potatoes and sme hay, and usually alfalfa hay, and we have handled the water, as I tell you, we have put it on, we have curtailed the land by rotating the wheat and putting it on late crops what we had left.

Q You remember when alfalfa was first introduced in the Utah territory, don't you ? A. Yes sir.

Q That was long after the first appropriation of this water, wasn't is? A. Yes sir.

Q And the beets came long after that ?

A Yes sir, quite awhile after.

Q How many years have they been raising beets in this vicinity, sugar beets, as a crop?

A I could not say exactly, but it must be fifteen or sixteen years, probably little more.

Q And the beet crop requires more late water than any other crop?

A Yes sir, it does, my experience. I believe our Little Dry Creek Irrigation Company raises fifty per cent more sugar beets according to the amount of water they use than any other canal on Provo River.

Q Do you mean by that that they produce more per acre, or that

they plant more acres?

A More acres.

Q More acreage?

A More acreage according to the amount of water they have in their canal.

Q And how would that compare according to the acreageof land that they cultivate?

A That varies considerably different years.

Q Well, comparing it with the other districts in this vicinity, you say they raise fifty per cent more beets than any other area for irrigation?

A I am not talking about irrigation surface.

Q Yes, you mean by that there would be fifty per cent more land in beets than there was in any other of the irrigation systems?

A That would be my judgment on it.

Q And since when has that condition existed, how far back?

A I could not tell you, numberof years.

Q Four or five years?

A Yes, I think so, probably longer.

Q Now, you have raised your crops, and good crops every year, haven't you, upon your land?

A Oh, I have some crops different years, it is not a full crop, like everybody else.

Q Did you have a crop last year that was not a full crop?

A Oh, I had a small piece of barley we thrashed out here once before

Q How much?

A That was under Provo City.

Q I am speaking of the Little Dry Creek only.

A No sir.

Q You haven't had good crops under the Little Dry Creek?

A I had some crops that were part failures. Most of my crops were pretty good.

Q Last year did you have any crop failure then?

A Not, what we call a failure.

Q Now, are you acquainted with the streams used for irrigating

under the Little Dry Creek system?

A Yes sir.

Q And you have knowledge of the measurement of water?

A Well, partially.

Q What, in your judgment, is the amount of water in the Little Creek canal?

A At the present time, do you mean, or any time ?

Q Yes, now.

A I think it is just two minute feet, two hundred minute feet, that is the only way I understand water.

Q TWo hundred minute feet, that would be three and a third second feet, that is the entire stream?

A No sir, that is a half of it.

Q I was asking as to the whole of it?

A I have not seen the other half of it.

Q If it was equaly divided there would be --

A I am supposed to have half of the water, but I am giving you what I seen, and I believe it is divided equally.

Q Your half of the stream then that you are now irrigating with would be about three and a third second feet?

A Yes sir.

Q Now, how long a time would you have it, eighteen hours for your twelve shares? A. Yes sir.

Q And are you applying it all upon that three acres?

A No sir, I have six acres of sugar beets in the field.

Q That would be half of it, then that would be nine hours to the three acres that you would have this three and a half second feet?

A probably I had better explain a little further, I am tending sixteen acres in one square piece there, but doesn't all belong to me, and I use the water wherever it is needed, that is so I take it off the grain crop and put it on the beet crop, or whatever it is.

Q What I was asking you about was the three acres that you are now irrigating with three and a third second feet of water that

you are using to irrigate, you say that that three acres cannot be irrigated with that water in nine hours?

A There is only -- for that one piece there is only six shares of water for it.

Q That is half of your water? A. Yes.

Q You have an hour and a half per share? A. Yes sir.

Q You would have eighteen hours for your twelve shares, that would be nine hours for the six shares you are applying upon this little beet patch. Now, as a farmer, do you mean to say that you could not irrigate that three acres in nine hours with three and a third second feet of water?

A No, I wouldn't say that, I said it could not be, I didn't believe it could be irrigated in six hours.

Q But if you apply your turn on it you would have nine hours?

A Yes, but I don't apply all that turn on it.

Q Well, under your system it would be proper to apply it for nine hours, wouldn't it?

A No, only six hours of water for four shares, I guess I have given you that wrong.

Q I knew you had, but I am trying to call your attention to it.

A I gave that wrong, it is four shares of water and six hours, I got mixed on that.

REDIRECT EXAMINATION by Mr. Corfman.

Q Mr. Farrer, what has been the custom there in the district all the time with respect to using the water at night?

A They have to use it.

Q Use the water in the night time as well as day?

A Yes sir, use that on such land as we can use it to the best advantage.

Q That is the custom throughout the district. A. Yes sir.

12:15 P.M., Recess to 2:00 P. M.

RECROSS EXAMINATION by Mr. A. C. Hatch.

Q Mr. Farrer, what do you use the water there during the time that you are applying it upon your land?

A At this time, you mean, this time of year now, or all season?

Q All the season when you are irrigating?

A I had alfalfa.

Q No, you gave your crops before as to the use, as to the turn you give us, but as to your manner of applying it.

A Why, I have -- it is rowed stuff, cultivated stuff, it is rowed stuff, beets, potatoes.

Q How long are the runs?

A From five to fifteen rods, I think fifteen rods would be the limit, the longest run I have.

Q What is the general rule under that system or that canal if you know?

A I think the most of it is short runs, I don't know of any long runs.

Q And in using the water do you use it continuously day and night ? A. Yes sir.

Q And stay with it in the night? A. yes sir,

Q What is the condition as to your neighbors and other users under the canal as to staying up matx with the water nights?

A Of course, I have never stayed up with them to see what they do, but they keep the water going all night.

Q It would keep going whether they were with it or not, if they turn it over the farm, wouldn't it ?

A Yes sir.

Q But do they stay with it and direct its course and apply it to the best advantage, do you know whether or not that is done?

A Yes sir,, they do.

Q Night and day? A. Yes sir.

Q You do, do you know whether the others do?

A They do, as far as I know.

Q As a matter of fact, you don't know whether they do or not?

A No, I don't know by my seeing them.

Q Do you stay with it at night during the high water season?

A Why, I am up and down all the time.

Q You goto bed, turn the water then go to bed, and when you wake up again go out and look at it, is that it?

A Sometimes.

Q And sometimes you don't wake up during the entire night?

A Yes, I do, I attend my water. I would like to invite some of you down there and look and you cannot find a waste ditch runs off my land, and I haven,t got any land that is flooded.

Q Can we find any ponds in the road at the lower end of your land?

A No sir, you cannot.

Q That is an exception, isn't it, throughout this whol e irrigated area?

A It is impossible under all conditions to keep from flooding outside of your field occasionally, I understand that.

Q The general condition is, there are ponds on the roadways foot of all the farms, isn't it ? A. Yes sir.

Q Where the don't have waste ditches?

A Yes sir.

Q And you don't have any waste ditches in that section, is that true?

A We do have some waste ditches.

Q But you don't have any?

A I haven,t got a waste ditch.

Q You have to run some water off your land in order to irrigate all of it at the lower end, don't you?

A Very seldom any of it runs off.

Q When it does run off, does it run on the roadway or on your neighbors? A. No sir.

Q Where does it go to?

A Very little of it runs off at all. You go down there today, you wouldn't see any water that had run off my land.

Q In the next rotations, or turns do you take the water at the same hour

of the day or night each turn?

A My time varies. It is made in three periods, that is, there is one turn that will come at four o'clock in the morning, there is another turn comes at twelve, probably next turn will be twelve o'clock noon, and next turn comes back at eight o'clock at night, and next turn comes at four o'clock. It goes around, there is that much difference in the time.

T. F. WENTZ: recalled by the Little Dry Creek Irrigation Company, testifies as follows:

DIRECT EXAMINATION by Mr. Corfman.

Q Mr. Wentz, as court commissioner, you have tabulated from the records of the water commissioners appointed by ~~the~~ this court since 1902, the rendition of the Morse decree, the amount of water that was distributed under that decree to the Little Dry Creek Irrigation Company.

A Yes.

Q Now, I hand you defendant's Exhibit 106, and ask you to state if that is the tabulation which you made from the records of the several water commissioners during that period?

A Yes, this is the record during the period of 1902 to 1916 inclusive, except the year 1915, that is not indluded in this tabulation, that is included in the 1915 report of the commissioner

Q It has been offered here in evidence?

A Yes.

Q And is this tabulation correct as you prepared them from the several reports of the commissioners?

A Yes, that is the tabulation from the original records.

CROSS EXAMINATION by Mr. Ray.

Q None of that is in your report, Mr. Wentz, except the 1914, is it, or '15?

A The 1915 is in the report, but is not included in this tabulation.

Q But the rest of that tabulation is not in the report, is it?

A No, it is not in the report.

THE COURT: Is there any objection to this offer?

MR. A. C. HATCH: Just a moment, your honor, untilwe look at it.

MR. THURMAN: No objection.

THE COURT: It may be receoved.

Q During the year 1913, Mr. Wentz, you distributed the water according to the decree, commonly known as the Morse decree, as water commissioner? A. Yes.

Q And that year you distributed the water to Little Dry Creek, their proportion? A. Yes sir.

CROSS EXAMINATION by Mr. Thurman.

Q What year is that?

A 1913.

Q You distributed 1914, you distributed water to them in 1914?

A Yes.

Q What was the difference distributed in those two years?

A In 1913 the measurements were 4.89 second feet on the 17th of June;

On the 2nd of June, 13.61 second feet;

On the 12th of July, 8.53;

On the 4th of August, 9.37;

On the 8th of August 10.12;

On the 29th of August 6.86.

MR. A. C. HATCH: That was in 1913?

A That was in 1913, yes. In 1914:

25th of June, 11.35;

30th of June, 7.04;

14th of July, 6.86;

18th of July, 8.14;

22nd of July, 7.40;

25th of July, 8.30;

28th of July, 8.30

3rd of August, 10.

14th of August, 6.86;

11th of August, 5.80;

15th of August, 5.80;

19th of August 5.80;

25th of August, 4.90;

On the 1st of September, 7

7th of Spetember, 7

On the 12th of September, 4.89.

Q I ask you for the difference , you need not give it, however, in detail. Which year was the most distributed, taking it throughout?

A Very little difference in the two years.

Q Very little difference? A. Yes.

Q Well, have you '15 there?

A '15 is included in the report.

Q Can you tell, makin make a comparison with '15, while we are on this subject, with '13?

A There is very little difference in the years, the amount ranges on the mean from seven to eight second feet during the low water stage.

Q Is that the same in 1915, do you know?

A Yes, 1915 we began with 60 acre duty, the last of June, and raised to a 65 in the first part of July, and on the 28th of July we raised to a 70 acre duty out there counting 506 acres, and gave to Little Dry Creek 7.2 second feet during theremainder of the season.

Q You yourself don't know the number of acres that were irrigated, do you? A. No.

HYRUM F. THOMAS, called by the defendant, Little Dry Creek Irrigation, testifies as follows:

DIRECT EXAMINATION by Mr. Corfman.

Q Mr. Thomas, you were the court commissioner for the distribution of the water under what is commonly known as the Morse decree?

A Yes sir.

Q What years were you such commissioner?

A In 1902 to 1911.

Q During that period did you distribute the water under the decree to the several water users including the Little Dry Creek irrigation Company, that took water from Provo River in accordance with the provisions of the decree?

A Yes sir.

CROSS EXAMINATION by Mr. Jacob Evans.

Q What portion of the decrees did you follow, the written portion or tabulated portion of the Morse decree?

A Both, I guess.

Q Was the tabulated and written portion of the decree then such as to be the same?

A I presume so, as far as proportions were concerned, that is what I was basing my divisions on.

Q You never attempted to determine the necessity of water, did you on any of these lands? A. No sir.

Q Merely distributed under the tabulated portion of the decree then, did you? A. Yes sir.

CROSS EXAMINATION by Mr. Bagley.

Q In determining the amount of water in the river to be distributed what streams did you measure, that is what channels, what canals?

A Generally commenced at the lower and proceeded on up the river until we got to the last, usually commencing at what we call the Lake Bottom canal, Little Dry Creek, several streams of provo City, Upper East Union, the River Bottoms, Provo Bench, West Union, Timpanogos, to get the total.

Q Did you distribute any of the river bottoms water as you call it on the west side of the river? A. Yes sir.

Q To whom?

A Mr. David Park, and I think Park & Nuttall were using one ditch. Then I think Mr. Young, formerly Mr. Sam Roberts was the owner of the land Mr. Young acquired after.

Q That is what they call the Barton & Young Ditch?

A Yes sir.

Q Outside of those Park & Nuttall ditches, and Barton & Young ditches, you distributed none of the River Bottom water on the west side of the river?

A That is correct.

Q And you measured no diversion on the west side of the river, other than the Lake Bottom diversion?

A Lake Bottom canal.

Q Lake Bottom diversion and West Union, the Park & Nuttal ditch and Barton & Young ditch and Provo Bench canal?

A That is right.

MR. CORFMAN: We have nothing further.

THE COURT: The Upper East Union, I think, is the next one. Who represents that?

MR. CORFMAN: I represent the Upper east Union; I wish to have this Exhibit 47 placed upon the board.

MR. RAY: While that is being done, may it please your honor, under my reservation of right to introduce the schedule for 1914, distribution to Provo Bench, Mr. Wentz has now furnished me with xt that tabulation, and I have compared it with the office files on it, and state it is a correct copy of that, and I ask, with the consent of counsel to introduce it, subject to their right to cross examine on it.

(Exhibit 107)

ERASTUS KOFFORD, called by the defendant, Upper East Union Canal Company, being first duly sworn, testifies as follows:

DIRECT EXAMINATION by Mr. Corfman.

Q What is your full name, Mr. Kofford.

A Erastus Kofford.

Q You live at Provo? A. Yes sir.

Q How long have you lived at Provo?

A Ten years.

Q Farmer by occupation?

A Yes sir, partly so.

Q Do you own lands under the Upper East Union Canal Company?

A Yes sir.

Q Farm them ? A. Yes sir.

Q Use water from that canal for irrigation?

A Yes sir.

Q Are you an officer of the company?

A Yes sir.

Q What officer?

A One of the directors.

Q Do you know the number of shares of stock that are issued in your company?

A I think it is 1720 .

Q Do you know the number of acres of land that are irrigated under the Upper East Union system?

A Why, not exactly.

Q Do you know approximately?

A About nine hundred, I think, as near as I --

Q This canal takes water directly from provo River?

A It takes in connection with the City Creek that comes out from Provo River and runs down a short distance and then it goes directly from there.

Q Your point of diversion then is from city creek?

A Yes sir.

Q That is about --

A That is the way I understand City creek.

Q How far is that below the mouth of Provo Canyon.

A I should judge half a mile.

Q And from thence the canal runs west?

A It runs down through the river bottom until it gets into, along

along above Judge Booth's farm, and then goes on the side hill, and follows all the way down, and continued until the bottom of little tunnel.

Q That is southeast of Provo?

A That is southeast of Provo, yes sir.

Q And about what distance or length id the canal?

A Why, the incorporated limits, I think, is about nine miles. There is some stockholders in the canal that had land beyond that, that would be somewheres about twelve miles, ten to twelve miles.

Q Throughout its course are the lands about the same character of soil, or do the lands differ?

A Differ some.

Q In what locality do the lands differ?

A Why, the land at the upper end that is watered out here by the Pleasant View meeting house is more of a clay soil, and then when it strikes the hill and comes this way, it is nearly all gravelly from there on down, nearly all gravel base from there on clear down to a point by Boardman Lime Kiln, or down in that way, I am not so well acquainted with the land down there.

Q About what proportion of the canal runs through land you speak of as being gravelly?

A I think about half of it.

Q Would be about half in acreage? A. Yes sir.

Q Do those lands as a rule require greater quantity of water for irrigation than the lands above?

A I would think so. I have not watered any of the clay land so that I could not tell.

Q Where is your land situated?

A Northeast of town.

Q About how far east of provo?

A About half a mile.

Q How many acres do you own there?

A Eight acres.

Q How many shares of water have you for the eight acres?

A Twenty.

Q Twenty shares for the eight acres? A. Yes sir.

Q Do you know how many shares of water ordinarily serve an acre of land, it takes to serve an acre of land under this system?

A Why, the most of them have from two and a half to three acres to the share or shares to the acre, I will say.

Q Since 1902, the rendition of the decree known as the Morse decree in this court, have you been having the water distributed to you by the several court commissioners that have served in the distribution of the water under the order of the court?

A We have, as far as I am concerned, we have. I owned my farm ten years ago, about 1906, until the last two years.

Q Before that time you were not familiar?

A No, I lived on Provo Bench before that, owned land on Provo Bench before that.

Q About time do you commence the use of the water in the spring?

A About the 1st of May.

Q And what is your mthod of distributing the water under the system?

A Since I have been watering there it has been on a card system, dividing it out, gave it to us seven days and six hours, or seven days and nine hours, according to the rule, and we divided the stream in three streams, have done.

Q Now, how are these several streams diverted from the main stream?

A Why, just get that water, one stream at the upper end and one little further down and another one farther down.

Q You have three main laterals? A. Yes sir.

Q From the main canal? A. Yes sir.

Q In the operation of those laterals, what do you do in the way of maintaining gates?

A We have --

Q Diversion gates?

A The company put in new gates some few years ago, and since then we have been fixing them up as well as we could with what means

we had to do it with.

Q And do the several water users,-- are they kept then maintained?

A Sir?

Q Has the several water users kept and maintained gates for the diversion of the water, do you know?

A No, I believe the company has maintained the gates since I have been an owner in there.

Q Well, they have been maintained for that purpose, have they?

A Yes sir.

Q Now, since you have been irrigating your lands, during the last ten years, as I understand it.

A About that.

Q Have you had occasion to observe, and have you observed the use of the water that has been distributed to you by the several commissioners?

A Yes sir, some.

Q What do you say as to their being a sufficiency during the low water stage of the river?

A The last two years we have not had sufficient.

Q Did you have previous to that time?

A Yes sir, as far as I know. While the water was distributed according to the decree of the court, we had sufficient water, as far as I know, but since then we have not had.

Q Do you know of using any water to waste?

A No sir.

Q During the ten years you have been connected with the system?

A No.

Q During the year -- what years have you not had sufficiency of water for the proper irrigation of the lands under the system?

A 1915 and 1916.

Q What was the effect upon the crop there?

A Well, there are several crops burned up.

Q Do you call to mind any names of the owners where crops suffered?

A Why, Mr. Burnett was one that complained very severely.

Q What kind of a crop was it?

A Hay crop, and Mr. Crowther, J. F. Browther, both hay and beet crop have not been sufficiently watered this year.

Q Did you experience any difficulty with your own crop?

A No sir, not a great deal, I tend the water very close, stay with it night and day every hour that I have had the water, I have been right awake with it, and walking up and down the furrows and so forth, and I have generally watered my crops.

Q DO you know what has been the custom of the water users under the system with respect to watering of nights?

A Yes sir.

Q What has it been?

A Been they have been right with the water with their lanterns, those that have been close by me that I have seen.

Q What crops do you raise on your ten acres, how many acres did you say you had?

A I have about eight acres.

Q What crops have you been growing on these eight acres?

A Been growing some hay and some berries, sugar beets, mangoes and carrots, corn, I have got about two acres in fruit trees.

Q Is that in general the class of crops that have been raised under this system?

A Why, it is in the locality xhexhe where I am located, mostly so. Some that raises more hay than I have.

Q All classes agricultural crops have been grown?

A Yes.

Q Do you know during the ten years you have been connected with the system any time you have had more water during the low stage of the river than was needed for to supply the crops in the district?

A In the low stage of the river?

Q Yes.

A No sir, I don't, we have had complaints -- I have been an officer of the company for five years, and we have had complaints from the lower end all the time that they didn't water their

crops down there in the low stage of the river.

Q Did you observe yourself to see whether they had cause to complain?

A No sir, I have not been down there.

Q During the high stage of the river and down to the time when a division is made under the decree what has been the -- how much water have you had in your canal?

A I think somewheres about thirty-five second feet, from that to forty, it has varied some on account of the Faucett Field being in with us.

Q Do you during that stage have in your canal its full carrying capacity? A Yes sir.

Q What do you say the carrying capacity of the canal is?

A About 40 second feet, I think it is, I am not sure.

Q Have you used that quantity of water beneficially and economically on the lands for the raising of crops?

A Not always, I don't think.

Q You don't think you have used all of that?

Q The stockholders probably have not used altogether, but Mr. Boardman being at thelower end of the canal has had quite a lot of land down there and he has used the water. When we haven't used it up here we have let it go down to him.

Q Now, at the present time do you know of any lands under the system that the quantity of water that was beingserved by the court commissioner that cannot be successfully irrigated?

A Yes.

Q What land?

A I think Mr. Carl Peterson has a piece that has not been successfully irrigated this year, and Mr. Crowther and two or three others.

Q for want of water? A. Yes sir.

Q Do you know of any stockholders in the company at the present time that are unable by reason of the scarcity of the water to get the water to the land?

A That they don't get the water to the land?

Q yes, that are unable to get water to their land by reason of the scarcity at the present time?

A Well, those have been the ones that have made the complaints.

Q Do you know of any others at the lower end of the system?

A No sir, I have not been down there this year.

Q The lands through which this canals runes and to which water is taken would not produce crops unless irrigated?

A No sir.

CROSS EXAMINATION by Mr. A. C. Hatch.

Q You say there is about nine hundred acres of land and 1720 shares of ~~sefk~~ stock?

A I believe that is what there is.

Q And that the irrigators have two and a half to three shares of stock to the adre of land?

A Yes sir.

Q How do you reconcile that?

A How do we reckon it?

Q Yes, two acres to the share would give you eighteen hundred shares, and you have only seventeen hundred and twenty?

A Ther e is some that don't have sufficient stock in the canal to water all their land.

Q Is Carl Peterson one of them?

A No sir, I think not.

Q Is Mr. Burnett one of them?

A I am not sure how much stock he has.

Q Is Mr. Crowther one of them?

A My Crowther has thirty-two shares to fourteen acres.

Q To fourteen acres? A. Yes sir.

Q Do you know whether he uses all of his shares, all of his water upon his fourteen acres every year?

A Yes sir, he has done while I watered out there.

Q Did you see Mr. Crowther's crop this year?

A Yes sir.

Q And in what way was it suffering?

A It suffered for want of water, he has not had the water to run it over.

Q What?

A He has not had sufficient water to run it over.

Q Where is his land situated?

A Northeast here.

Q Under which lateral?

A He has a lateral of his own, the canal just cuts through the upper end of his land, and he waters, takes the water right out of the canal onto his land.

Q Who distributes the water to him?

A Sir?

Q Who distributes the water to him, who turns the water to him?

A The watermaster.

Q Sir?

A The watermaster.

Q You have a system of turns? A. Yes sir.

Q By irrigation? A. Yes sir.

Q How much time do you have per acre.

A We have the time allotted by shares.

Q How much per share?

A Eighteen minutes,

Q How much.

A Eighteen minutes.

Q To a share? A. Yes sir.

Q How often do you irrigate?

A Seven days and nine hours.

Q And what quantity of waterdo you have in the stream with which you irrigate?

A What is it?

Q What quantity of water do you have in the stream with which you do your irrigating?

A We have one third of it, we divide the main canal in three streams and they should be divided equally.

Q How do you do it ?

A The watermaster is hired for that purpose to go and see that

each man has his proportion.

Q Do you have measuring gates?

A We haven,t any accurate measurement, no sir.

Q Have you any measuring gates?

A No sir, not below the canal.

Q How did he determine the quantity of water in dividing it?

A Why, he does, it, I suppose by looking at the stream and so on?

Q How does he divide it into thirds, does he divide and give to the uppr user one third of the stream at the upper point of diversion?

A Yes sir, he gives one third to the upper users and then --

Q How far is it from that point down to the next lateral or point of diversion?

A The canal covers such a long strip of land and sometimes one person takes it right out of the canal, and turns it back into the canal, and the next one takes it out of the canal.

Q So you have practically as mahy points of diversion as you have irrigators, haven't you?

A Yes sir, petty near.

Q D° those irrigators -- is there gates, measuring x? device of any kind at each point of diversion?

A No sir, I don't believe there is.

Q Then if a half a dozen men are watering, how many streams do you divide the water in the canal into?

A We generally water with three streams in the first part of the season, but last year we put it into two. This year, I believe, up to the present we still have got it in three streams.

Q When you have forty second feet of water in your canal, xx do you turn twelve second feet out of each of the divisions?

A I don't know.

Q For each irrigator?

A I don't know, if we don't want to use the one third of the forty second feet, or thirty-five, whatever there has been-- I am not positive to the forty second feet, but if we don't want to use it all, we take what we want to use and let the rest go by.

Q Do you take it as the watermaster gives it to you?

A We take it, if it is in the night we go and take it and he comes down in the morning, early morning, horseback along the canal and looks at our stream and tells us whether we have got too much or too little.

Q Regulates it? A. Yes sir.

Q Does he regulate it?

A He does at times, when he thinks it needs it.

Q Whenever the irrigator takes the water at night he takes it himself?

A Yes sir, good deall of the time.

Q He takes what he judges is his portion of the stream?

A Yes sir.

Q Now, how do you determine what is your portion of the stream?

A Well --

Q When it is your turn to irrigate in the night?

A We determine it a good deal -- we turn out a stream, then go and look at what is going by and see that we have about what it what.

Q You always caloulate upon having your full quantity, don't you?

A Well, depends on whether we are --

Q Whether your ditch will carry it or not, that is what it depends upon, isn't it?

A Well, we don,t get what the ditch would carry, not near, all the time. In the spring of the year we do, but later on when measurements is on the river and so forth, why, we don't, We don,t get out ditches full, not by any long shot.

Q Now, what part of the system are you under, the second or third stream?

A I am on the third stream generally.

Q I don't understand that "generall", don't you take it from the same stream all the time?

A No, there is part of the season that we water in two sections, the canal being such a long distance that the water does not-- we cannot get a third stream down to the lower man hence we

have to take all the water and put it down the canal in order to get it down to them at all. The canal is so porous and rocky bottom and so forth, that a third of the stream would never reach the lower man at all.

Q A great deal of the water is lost in the canal by seepage?

A Yes sir, good deal of it is, and we have to take all the water down to the lower end and then water back up again.

Q D° you know of anyone up in the first division who has been short of water?

A What?

Q Do you know of any irrigator in the upper division of your canal that has been short of water during the past two years?

A In the second part I do.

Q I am asking you --

A In the upper I don't, I am not familiar up there.

Q Well, about how far down the canal does the upper division extend?

A The upper division?

Q Yes, what point on your canal?

A I think it extends down, I am not sure how far down it goes, it goes down from Pleasant View here some wheres then the second from there on down, and so on.

Q Do you know whether or not the watermaster divides the stream as between the upper division and second division?

A Yes, I believe he is on his job.

Q I say, do you know whether he does?

A Well, I don't know only--

Q Who is the watermaster?

A Thomas Ashton is our watermaster.

Q D° you know whether he divides the water between the second and third division?

A He divides it this way, as I said before, that water users whenever their water turn comes they take it and he goes up and down he is employed to ride the ditch nearly all the time, and he goes up and down and tells us whether we have too much or too little.

Q How often each day does he come?

A Oh, he doesn't come, I wouldn't say he came more than once, and sometimes he doesn't go to the lower stream then. I don't know how he is above there, how often he goes to the upper stream but me watering on the lower stream, I don't see him down there as often as once a day.

Q I understood you watered on the second division?

A No sir, I water on the last division generally.

Q Now, do you know of your own knowledge of the watermaster ever having divided the water?

A pivided the water?

Q Yes. A. Yes sir.

Q Where and when, and who were the users?

A The last time I watered he divided the water with the man that watered with me, him taking the second stream and I took the third and watermaster was there.

Q How did he do it at that point?

A I wasn't there to see it, but he told me.

Q How do you know he did it?

A He told me he did and the man that used the water told me he did. Two men told me that he did.

Q You only know by hearsay that he did it at all?

A Yes sir.

Q You have no gate at the point where you take your water out?

A Yes sir.

Q Have you? A. Yes sir.

Q A gate in the canal and gate in your ditch?

A No sir, none in my ditch, I have one in the canal.

Q Gate in the canal? A. Yes sir.

Q Have you been along the ditch from its intake to the lower end of it? A. Yes sir.

Q This season?

A Yes sir, I have been this season.

Q When?

A I was along with Mr. Hyrum Thomas when court was in session

bfore, in May or June.

Q Now, did you find one gate along that canal that was tight, that would hold water?

A Did I find one?

Q That would not leak, and was in good condition?

A Yes, I found several of them.

Q At that time.

A Several of them.

Q What did you mean when you said that the company was continually fixing up the gates, they put them in sometime ago and were continually fixing them ?

A Sometimes the gofers cut the bank around the gate down in under, we have to go there and fix them up.

Q About how often does that occur?

A Oh, it occurs every summer.

Q What kind of structures are they?

A Some of them are cement gates and some of them boards, most of them are board gates.

Q What are the others?

A Cement.

Q How many cement gates are there ?

A I couldn't say.

Q How many gates have you all told in your canal?

A I don,t know.

Q Can you give approximately the number?

A The gates, no, I could not, I have never counted them all the way through.

Q Did you see Mr. peterson's crop this year ?

A No sir.

Q How do you know that it suffered then?

A I heard other men talking about it.

Q You know nothing about it yourself?

A No sir, I have never been over there myself.

Q Don,t know what kind of crops he has, do you?

A Not exactly, no.

Q And he is at the lower end of the ditch?

A No sir.

Q At the upper end?

A He is up here, right straight north of the Mesa, memorial building northeast.

Q Don't know how many shares he has, do you?

A No sir.

Q Or how many acres he has in?

A No sir.

Q Did you see Mr. Burnett's crop? A. Yes sir.

Q When?

A About a month ago, I think, something like that.

Q How did it suffer?

A He didn't get the water over it. He had cut his hay and was trying to water it up again.

Q Have you seen the crop since? A. No sir.

Q Then how do you know it suffered?

A It suffered at that time.

Q Sir?

A It suffered at that time, he didn't get the water over it.

Q For how long did you see it ?

A How long did I see it?

Q Yes.

A I was there and saw that he didn't get it watered.

Q When was it.

A Right after he cut his first crop.

Q But when?

A Oh, I could not recall the date.

Q Can you give us the month?

A It was in July.

Q It was in July? A. Yes sir.

Q Forepart or latter part?

A Latter part, I think it was.

Q Don't you cut your first crop of lucern here in June always?

A I think it was the first crop he was watering there.

Q It was out in June, wasn't it?

A No, it wasn't in June, it was July.

Q Then it would be the very forepart of July, wouldn't it?

A I don't recall the date at all.

Q Your knowledge of the time of cutting crops in that vicinity will allow you to fix approximately?

A I should judgeit was about the middle of July.

Q Plenty of water in the river at that time, wasn't there?

A I believe there was.

Q Why didn't he have sufficient to irrigate his crops?

A Because the commissioner didn't turn out -- turn any more in.

Q Did you notify him you needed more?

A The president of the company and water master did.

Q I say were you present when they did it?

A No sir, I was not present.

Q I say were you present when they did notify him?

A No sir.

Q Then how do you know they notified him?

A They told me they did.

Q The commissioner told you?

A Yes sir, the watermaster and president both told me they did.

Q Did they say when they had?

A Not exactly when, I don't recall the date when. They have made several complaints during the summer to him that we have not been getting our water.

Q Might have been a year before then they notified him?

A No sir.

Q If they didn't tell you how can you say that?

A They didn't tell me?

Q Yes, when they notified him, how can you say whether it was last year or this year.

A They told me they had called him up during the day and talked, something like that, made several complaints last year.

Q You say last year and this year you suffered for water ?

A Yes sir, I think we have.

Q Do you know whether you have?

A Why, I only know by persons that tells me. I have seen some crops myself that I know, but others told me.

Q You have mentioned three.

A They have come to me as an officer of the company saying they are short of water and they could not water their crops.

Q How long have you been an officer?

A Little over four years.

Q And has not that condition existed every year someone come to you and complaining he was short of water?

A No sir, not so much, it has not existed until we entered into the stipulation two years ago.

Q But every year you have had complaint from some stockholder of a shortage of water, haven't you?

A We have had from the ~~him~~ lower end, yes sir.

Q Every year?

A Ever since I was an officer of the company, yes.

Q And prior to your being an officer of the company you heard of the complaints of shortage?

A I didn't know anything about it.

Q Now, how is the land as to quantity above and below your point of diversion, relative to the quantity of land?

A Quality of land?

Q Yes, irrigated from the canal?

A Below mine and also above mine, my next neighbors have very rocky land.

Q I am not asking you as to quality, the quantity of land irrigated above and the quantity below in the first division, approximately how many acres are irrigated?

A I don't know, I stated before.

Q In the second division approximately how many acres are irrigated?

A We have divided the water according to shares and not according to acres.

Q I know --

A And I could not tell the acreage.

Q You have so testified, you don't know as to the acres that are irrigated in either division?

A No sir, I don't.

Q Do you know as to the shares represented by the land owners in the upper division?

A The watermaster —

Q Approximately. A. I[n] which division?

Q Practically.

A We have about one third of the shares represented in each division until we come down below the aslyum. From the aslyum and down we take another division and take all the stream down to them.

Q Making the third division?

A No, we have a separate division for them down there.

Q Then there are four divisions?

A In one sense there is. We take it down there for two days or something like that, two days and a half, and give them the full stream down at that end and then after that why we divide it in three divisions.

Q So thtt when you irrigate you have only one third of the stream?

A Yes sir.

Q And none of the people in the first three divisions, upper three divisions, have more than one third?

A No sir.

Q Now, under your system do the people at the lower end have to bear the loss of the canal by seepage, or does the company distribute to each share holder the same quantity of water?

A I think they give them according to the shares or amount of minutes according to the shares.

Q They divide it by minutes, but do they divide it by quantities of water also?

A They divide by minutes, I think.

Q Without regard to the quantity of water?

A Yes sir.

Q Or the proportion?

A That is the way I think the system is run.

Q The man in the upper division would always have plenty of water if it was in the canal, while one in the lower division might never have plenty, that is true, isn't it?

A Well, the upper end certainly has the advantage, I think so, yes sir.

Q It is the rule under that canal that the man at the upper end of the ditch is always well served, isn't it?

A Why, the watermaster is supposed to keep them down to his proportion.

Q As to time?

A Yes sir, his time is the same as the one below.

Q But not as to quantity of water, I understood you?

A The quantity of water?

Q Yes.

A Well, the watermaster is supposed to look after that part of it.

Q I understood you the upper lands there are clay lands?

A There are some clay lands.

Q And don't require the quantity of water for their irrigation that the lands in the lower division require?

A They may not, I don't know anything about it, I have never watered any of them.

Q That was your testimony, wasn't it?

A No sir, I said I didn't know anything about it, I have not watered them.

Q Now, if that be true the same quantity of water distributed at the same time per share would be sufficient to supply the upper user when it would be insufficient for the lower user, wouldn't it, under your system?

A Probably would, those that have that kind of land.

Q Do you know whether you have had the same relative quantities of water in your canal during the past two years that you had during the former years?

A We had the same quantity, no sir, we have had less.

Q Relative quantity?

A We have had a good deal less.

Q Now, how do you know that?

A Why, by the stream.

Q The stream at the head?

A And also by the records of the watermaster.

Q The stream at the head?

A No, by my stream. Yes sir, stream at the head too at times. I have been at the upper gate and seen the stream.

Q How much water did you have at the head of your canal in your canal in July 1913?

A 1913 I don't know.

Q How much did you have in July, 1916?

A I have not kept any record myself.

Q Well, approximately?

A I don't know, we have left that to the watermaster.

CROSS EXAMINATION by Mr. Jacob Evans.

Q I would like to ask a question or two to get it clean in my mind. As I understand it the stream in the canal is divided into, that is theoretically divided into three streams?

A Yes sir, generally it is, yes sir; last year we had to put it in two.

Q You issue tickets to three irrigators out of this canal of water

A Yes sir.

Q And those irrigators that have those tickets go to the canal and take what they regard as one third of the stream, each.

A Well, one third at the top and one half of the second.

Q One third at the top, one half at the second and the others take what is left? A. yes sir.

Q And everybody on the canal takes the water out of the main canal? A. Yes sir.

Q And he guesses the quantity of water that hetakes, there is no measuring device at all, is there?

A No, I don't believe we have any.

Q You haven't a signle measuring device on the whole system, have

you?

A I don,t think so.

Q Where persons take water out on their own land?

A I don't think so.

Q And the person using the water goes to the stream, makes his own guess, takes what he regards as one third of the water?

A Yes sir, and the watermaster follows him up.

Q And the watermaster later on comes along and he determines whether he thinks it is his proper quantity?

A Yes sir.

Q And without any means of knowing except to see the water and look at it?

A That is all.

MR. A. C. HATCH: There is one other thing, the witness said the whole stream was sent down to the lower users.

THE COURT: Two days or two and a half.

MR. A. C. HATCH: Yes, may I ask, is that the whole flow of the canal, or is it the lower two divisions?

THE WITNESS: It is the whole of the canal generally.

MR. A. C. HATCH: From the head, that comes in at the head?

THE WITNESS: Yes sir, as far as I know.

THOMAS ASHTON, called by the defendant, Upper East Union Canal Company being first duly sworn, testifies as follows:

DIRECT EXAMINATION by Mr. Corfman.

Q Your full name.

A Thomas Ashton.

Q How old are you?

A Thirty-six years.

Q Where do you live.

A I live in Pleasant View, just north of Provo City.

Q Do you own lands under the Upper East Union canal system?

A Yes sir.

Q How long have you owned?

A Seven years.

Q How many acres do you own?

A I own three acres and threequarters under the canal.

Q Have you farmed other lands besides these?

A Yes sir.

Q What lands do you farm besides?

A I farm my father's land, seventeen acres and a half.

Q For how many years?

A I have helped and managed it, and overse'ed it for about fifteen years.

Q Are these lands irrigated from the Upper East Union Canal?

A Yes sir.

Q Are you the water master under that canal?

A Yes sir.

Q How long have you been?

A Six seasons.

Q Last past? A. Yes sir.

Q What are your duties as water master under the canal?

A I am to keep the water in the canal, keep the canal in repair and I ride the canal and see how the water is distributed.

Q You water is distributed in turn?

A Yes sir.

Q According to the number of shares? A. Yes sir.

Q The water users own. Now, have you as watermaster, ascertained whether or not the quantity of water under the decrees of this court have been turned to you by the court commissioner?

A They have not the last two years.

Q Have you been present when the water was divided and distributed to your system? A. Yes sir.

Q In previous years? A. Yes sir.

Q And did you see to it that you got the proper proportion of the water? A. Yes sir.

Q At the several stages of the river? A. Yes sir.

Q Now you say in the last two years you have not been getting that proportion?

A That is, not the proportion that belonged to us according to the old decree, not the proportion of the river.

Q And have you noticed -- was it more or less than in previous years?

A It was less.

Q By being less what effect did it have upon the crops there throughout the district?

A Last year being a very dry year it was very disastrous, damaging to a good many crops.

Q Do you recall any in particular that suffered for the want of water? A. Yes sir.

Q Who?

A William H. Gray estate, Tom Boardman, James M. Crowther and George Barnett, William Brinton property, I believe it belongs now to A. B. Christensen.

Q. That is immediately at the Brigham Young University land?

A Yes sir.

Q North and east of Provo? A. Yes sir.

Q Did you, as watermaster, make complaint to the commissioner?

A Yes sir.

Q In 1915 was that?

A Yes sir, also in 1916.

Q You were not present in court when Mr. Wentz, the court commissioner, testified as to conditions of your gates at that time?

A No sir.

Q What were the conditions of your gates when the water users were short of water and you complained to the commissioner?

A They were in a fair condition, I asked the commissioner to go over the system with me and compare them with other canals, and he said he would go, but he never did.

Q Were the gates leaking at that time any quantity of water?

A No sir.

Q From your experience as watermaster and irrigator, would you say the loss of water and the crops was occasioned by leaky gates ?

A No sir.

Q You had three main channels or laterals from the canal, have you?

A No sir, I wouldn't express it that way.

Q How would you express it?

A I would say that the ground under the canal is watered in three different sections.

Q By what method, how do you handle the water and give the water to these different sections?

A There is 1733 shares of stock in the canal, there is 577 2/3 shares, one third of the stock, that is divided into three sections that is 577 shares in a section .

Q Commencing at the top and going to the bottom of the canal, is that it?

A No, I commence at the lower end of the canal and water up until the three sections are watered and then the water is run back to the lower end of the canal and start watering on the lower end and water up again.

Q Have you found that more practical and efficient in service by watering fom the lower end of the canal?

A Yes sir.

Q Now, when you water what is the lower division called, first division?

A Third.

Q When you water at the lower or third division is the stream divided while the irrigators are using the water there?

A It is certain time of the year, as long as the canal is full capacity, thirty to forty second feet, it is divided.

Q And during the normal stage of the river, or low water stage, is the stream divided from the head of the canal?

A No sir.

Q Then they get all the water that is turned into the canal at the head?

A All that is possible to get to them.

Q And is that same mthod adopted when you distribute the water to the second division?

A When it gets to the second division, that is, up noxth of the State Mental Hospital, the loss is not so great, for that reason the water is divided.

Q Between the two divisions?

A Between the two divisions.

Q

Q First and second? A. Yes sir.

Q Have you any judgment as to the loss of water in quantity in running from the head of the canal to the third division about what proportion you would lose?

A Well, in different seasons of the year we lose different amounts, the evapotation is great in hotter months.

Q During the months of July and August what would you say?

A Why, I would say we lose around twenty per cent?

Q By evaporation?

A By evaporation and seepage.

Q How do you maintain your canal?

A Why, it is earth canal made right in the ground, there is no dement about it.

Q And it runs over the foot hills or benches?

A Yes sir, rough ground, there isn't one mile in the whole canal but what the bottom of the canal is gravelly.

Q That is the condition of the country through which it runs?

A Yes sir.

Q Character of the formation ? A. Yes sir.

Q Now, during the high water stage of the river and down to x xxjx the time when a division is made among the several users taking water at the mouth of the canyon what quantity of water have you had in your canal for the irrigation of the lands under the system?

A Why the highest flow has been 40.61 second feet.

Q Ordinarily what flow do you have during that stage of the river?

A We have an average, it was about 37 feet.

Q And is that water during that season utilized for irrigation?

A Yes sir.

Q Do you use any of it to waste?

A No sir, I wouldn't call it waste, if it is not required on the land it is turned back in the river, we don't carry it in the canal.

Q What do you say about the requirements of the land under the system as to their needing more water in the early stages in order to grow the crops than during the latter season?

A There is crops that will mature earlier than others, take the grain crop, you can mature that by the fifteenth of July.

Q And grasses?

A Grasses are very hard to mture, they need a great amount of water.

Q During that early season?

A The early season and also the late, to make a good pasture.

Q And by using that early water on beets -- you use it on wheat fields, do you?

A No sir, that is not any earlier than the fifteenth of May.

Q Where do you use the water then?

A After the fifteenth of May?

Q No, along about that season?

A Why, the grain, start to wäter the grain about the fifteenth of May.

Q And you continue up to the time a division is made of the river?

A Yes sir, as a general thing, somtimes later.

Q By that use are you able to mature crops you otherwise would not be able to mture?

A We certainly are.

Q How does the wheat crops and grain in general, raised along those benches, do they mature at an earlier date as a rule than they do throughout the valley here generally?

A Well, I wouldn't put it more than ten days earlier, they are a little earlier.

Q What crops are generally raised during the -- with the water during the low water season?

A Why, they raise what hay they can and potatoes, beets and fruit.

Q Do you patrol the canal during the low water season?

A Yes sir.

Q How often?

A Sometimes as often as five times a day.

Q And you have occasion, and do you observe the crops growing along the canal? A. Yes sir.

Q Under the system? A. Yes sir.

Q During that low water stage of the river have you ever observed any of the water users using water to waste or unnecessarily?

A No sir, I never have.

Q Have you had during that stage of the river any waste ditches carrying water that is not used by the farmers under the system?

A No sir.

Q Do you consume it all? A. Yes sir, that is, any irrigator will have a little run-off water.

CROSS EXAMINATON by Mr. A. C. Hatch.

Q Do you know how many acres are irrigated under that system?

A Why, I couldn't tell you the exact acreage.

Q Can you approximately?

A I got a list of the stockholders and found out the acreage they claimed to water. I took their word for it, I didn't see their deeds.

Q What did they give you?

A The acreage I got was 823 acres.

Q How much is irrigated by non stockholders like Boardman?

A Boardman is a heavy stockholder.

Q At the end of the ditch, those at the tail end of the ditch who are not stockholders?

A I don't know of a man on the ditch that is not a stockholder that irrigates any.

Q Have you any idea how much water in depth the figures you gave to Mr. Corfman, the depth it would be upon the land?

A No, I have not.

Q You think it would be as much as two feet per month?

A Well now, you must understand that in running that water over the ground it don't all stay on the ground.

Q If it did all stay on top of the ground how deep would the water be upon the land?

A Well now, if it did -- that is impossible to hold it on the ground.

Q But have you ever estimated or tried to estimate the quantity of water in acre feet that you put upon the land?

A No sir.

Q About seven inches per week, wouldn't it?

A I never figured that.

Q Can you figure it?

A I could, yes sir.

Q I wish you would do so?

A Shall I do it right now?

A Yes, if you can do it quickly. Did you make that computation?

A I figure it seven and a fraction inches in seven days -- no, that would make it in twenty-four hours, seven and a fraction inches.

Q That is too much, isn't it, too much water for any land?

A No, lots of crops that would thrive on that much water.

Q I am speaking of the lands under the East Union Irrigation Company system. What crops do you raise under that system that would thrive on seven and a quarter inches of water per day?

A You must understand it takes about three feet straight up on a fifteen rod run to put three inches on the lower end.

Q I am covering the whole tract of land.

A Yes, but we don't get out there and cover it with a bucket.

Q You say it would take three feet at the upper end?

A To put three inches on the lower end on 15 rod runs.

Q Under the East Union Canal?

A There is ground of that class, but it isn't all that way, there is a third of it.

Q Is half of it that way?

A No sir, there isn't have of it, I will say a third of it.

Q You say a third of it is that class of land?

A Yes sir.

Q Then an economical use of the water on the tract requires you to cut your run down to about five rod runs, wouldn't it?

A Well, if a fellow has to maintain a cross ditch every five rods he loses four to six feet of ground every cross ditch, his ground wouldn't be very valuable, better not water it.

Q Then in order to irrigate the lands up there under your system it would require a waste of about thirty-three inches of water on the upper end in order to get a proper quantity on the lower end, is that right?

A Well, I wouldn't say it was thirty-three inches, but it takes a greater amount on the upper end to put the amount that it does require on the lower end. If we had a sprinkling wagon to put it over even it would probably save a few inches of water.

THE COURT: Let me ask you, when you said it took thirty- six inches, three feet, was that merely a statement indicating it took a larger quantity, or was that from some computation?

A It was just a larger quantity.

THE COURT: I thought you intended to be accurate it took that quantity?

A No.

Q I was just going to ask that question, you said I was to understand that it took three feet of water on top of the land at the upper end in order to get three inches onto the land at the bottom end with a 15 rod run, am I to understand that as a fact, or how am I to understand it, that is what I was going to ask you .

A I wouldn't put it right to that figure but there is a great different.

Q Do you know anything about the quantity.

A No sir.

Q Just guessing at it? A. Yes sir.

Q Then why do you tell me to understand it as a fact?

A A man that will stand there and watch the stream of water run on to the top end of the ground for three or four hours at a time before it will run off at the other end, he knows there is more on this upper end than there is on the other end and none run off.

Q That is what you wish me to understand? A. Yes sir.

Q When you say it takes three feet at the top, is it?

A Probably not three feet, but then it takes a whole lot more on the top than it does on the bottom.

Q Where is your waste ditch on your canal.

A We maintain a waste ditch along the county road from the north side of the infirmary fence down to Little Spring Creek.

Q You have what is called a waste gate on your canal below its intake, haven't you?

A Yes sir.

Q Where is that?

A That is in the old Rock Canyon wash, north of Provo.

Q How far is it below the intake of your canal?

A It is three miles and a half approximately.

Q How far is it above the first diversion for irrigation purposes?

A Why, there is three diversions for irrigation purposes above the waste ditch.

Q How far is it above the first diversion below the waste gate?

A It is about fifty feet, the first diversion below the waste gate you say?

Q Yes.

A About fifty feet.

Q How often do you visit that waste gate?

A Well, I have visited twice now in the last twenty-four hours.

Q During the irrigation season do you visit it daily?

A I would put it twice a week.

Q At what periods of the year do you have water running through that waste gate?

A Why sometimes from the first of April until the 15th of May, it is according to the weather and the climate.

Q Never after the 5th of May?

A Not unless there is an emergency call for it.

Q What do you mean by emergency call?

A There has been such a thing as the gopher dug a hole through the bank and let the bank out, and that is where we turn the water out until we get to the head and can shut it off there.

Q How many of those emergency calls did you have during 1915?

A Not one.

Q How many times were there breaks in your canal above your waste ditch?

A In 1915?

Q In 1915?

A I don't think there was one.

Q About Judge Booth's farm, where it overflowed by the break in your canal?

A& That was in 1914.

Q You say there was not any break in your canal at all during the irrigation period of 1915? A. No sir.

Q Anywhere along its course? A. No sir.

Q You say there was not? A. No sir.

Q Then what do you say. I understand you —

A I said there wasn't a break in the canal in 1915.

Q You say you start to water grain under that system about May 15th, is that right?

A Why, we started early than that this year, I would put it May 15th as an average.

Q Of every year? A. Yes sir.

Q The capacity or highest flow you have had was 40.61 second feet?

A Yes sir, this year.

Q What is the cap acity of your canal?

A You say what is the capacity?

Q Yes.

A It will pack 40.61, that is the capacity of the canal.

Q You stated there wasn't a mile on the whole canal but what the

bottom is gravelly? A. Yes sir.

Q Do you mean by that there is not a continuous mile in which gravel does not appear, or do you mean that taking all the length of the ~~xxxx~~ canal there isn't a mile?

A That is what I mean, the whole length of the canal, take the pieces out and put them together there isn't a mile but what the bottom is gravelly.

Q Have you ever gone along the bottom of the canal to see whether there was a deposit on top of the gravel of mud or silt, such as usually is found in the bottom of canals?

A Yes sir.

Q Isn't that the condition of your canal, Upper East Union, is it a mud and silt deposit in the bottom covering the gravel?

A Where I say there is no rock in the bottom, there is no rock in the bottom, and if there is any silt and dediment in there it is covering clay.

Q But on the course of your canal where the original bottom was gravelly, there is no deposit or dirt or silt, that what you mean to say?

A Well, there may be exceptions to the rule, there may be deposits somewhere on top of the gravel.

Q What is the grade of your canal?

A Well, I couldn't tell you the grade of it.

Q Do you know approximately the grade?

A Let me see, not over one per cent, I think that is a little high!

Q You don't know ?

A No sir, I don't know.

Q Now, how do you distribute the water to the users under the system?

A Well, not an accurate way of distributing it, it is done by guess.

Q How do you do it ?

A By guess.

Q Yes, I know, but then when you guess, how do you guess?

A Well —

Q What do you actually do by way of turning the water, if at all, to the users of the water, you yourself?

A Now, if you are guessing at two things, and one is going one direction and one mother, there you have got it, one stream goes one way and one the other.

Q Do you use any physical effort any way in connection with the distributing of the water, you yourself?

A I have many a time, yes sir.

Q That is what I am asking you about?

A Yes sir, there is a board to raise, not much of a physical effort either.

Q And you raise the board? A. Yes sir.

Q To each user when his turn comes, do you?

A Not always.

Q About how often do you do this?

A I am on the canal, and if I see that the canal, the water in the canal is lower than I think it ought to be for the amount of water that should be flowing past a given point, why then, I go and either raise that main gate or lower it a little.

Q In the first instance the user diverts water himself, does he?

A Yes sir.

Q And when you come along, if you think he is getting more than his share, you regulate it?

A Yes sir.

Q And what do you have as a basis for determining whether the individual is getting more water than he is entitled to?

A Well, I admit I am a little handicapped on that, but what I go by is figuring the flowing stream over the weir.

Q To begin with do you know the quantity of water that is coming into your canal at the head on any given day?

A Yes sir.

Q Do you have any record on that? A. Yes sir.

Q Where is it?

A It is here in my pocket.

Q How much water was coming into your canal at its head on May 15th

this year?

A I haven't the record of May 15th. The 12th and 19th is the nearest record I have of that date.

Q Well, what was it on the 12th?

A I just have the gauge height over the weir. I can figure that out in just a minute and tell you what feet there is.

Q Over what weir?

A Over the weir in our measuring flume at the head of the canal.

Q How much, if any, was going over your waste gate on that day?

A 12th of May this year?

Q Yes.

A Therewas none.

Q And was there any going over your waste gate at any time after the 12th of May this year?

A There probably was, but I could not tell you just the day.

Q Can you tell approximately the day?

A I could not with the account I have here now.

Q How many streams are taken out of the canal above the waste gate?

A Above the waste gate?

Q Yes.

A Well now, you understand that the Upper East Union and the Faucett Field Irrigation Company diverting point is at the same place, and do you mean out from the diverting point from the river or from --

Q Where does your canal and Faucett Field separate?

A It is about on the north line of Judge Booth's farm, if you know where that is.

Q Do you convey any water below that point , or does the Faucett field water -- is the Faucett Field water all diverted above that point?

A The Faucett Field water is all diverted above that point unless it is such a time they don't use it and it is turned into the Upper East Union.

Q What have you by way of a measuring device to determine the dividing of water between your company and the Faucett Field

Company?

A Why, we have a weir in above the Faucett Field first diversion point, measured the whole flow there. Below the Faucett Field last diversion point we have another rating flume and weir.

Q How do you divide the water between yourself and the Faucett Field?

A We have a certain point or amount that is allotted to the Upper East Union and gauge put in there and they take it down to that gauge.

Q The quantity to which you are both entitled is distributed in one stream from the river?

A Yes sir.

Q And do you beam equally the losses from that point, or do you get your full quantity at your measuring gate?

A Well, we get what the commissioner says is our full quantity at our measuring gate.

Q So that the loss, if any, is born by all of the users of water on the Provo River? A. Yes sir.

Q The manner of distribution is by looking at the water and guessing all along your system, isn't it?

A That is right.

Q How many diverting channels?

A There is ninety-five.

Q Along that system how many?

A Ninety-five.

Q And has any one of them a measuring gate?

A No sir.

Q Have you a measuring gate at any point where water is diverted for irrigation?

A No sir.

Q Now, under that kind of a system, under your system, I will say, do you not often find it necessary to regulate the water?

A Yes sir.

Q How often?

A Well, I had very little trouble there, they are very fair, I think.

Q About what proportion of regulations do you have to make in comparison with the number of diversions during the season?

A Now, I don:t hardly understand that question.

Q Read it to him.

(Question read)

A Oh, I would say ten per cent.

Q About ten per cent? A. Yes sir.

Q And then you can estimate the exdess quantity that is taken by the irrigator of that ten per cent?

A It will vary from one eighth to a third.

Q And of course when you regulate it it is always to turn a little more water to the user below, isn,t it ?

A Not always.

Q Have you in all of your experience as a watermaster ever found it necessary to give to an irrigator a little more water than he was using when he took it himself?

A Why, I have found it many instances where he didn't take really what belonged to him.

Q According to your judgment.

A According to my judgment.

Q You say you know of them? A. Yes sir.

Q Give us the names of a few of those fellows, will you?

A Why, Brother Sinclift is one, and man by the name of James Long that lives on the Canyon Road is another, and Carl M. Peterson is another.

Q That is the man whose crop suffered last year, is it?

A Yes sir.

Q Any others?

A Man by the name of Harris out here.

Q What time of year was it when you found it?

A In June.

Q The canal was carrying its capacity?

A Well no.

Q High water season, isn't it, June?

A Yes, an ordnary year. Last year it was not.

Q Was last year the year when you found it necessary to give --

A I have found them last year and also this year.

Q The ones you have mentioned, was that last year?

A I found them in the same condition last year as I have this year.

Q Now, except the month of June, did you ever find it necessary to add to the quantity the man had taken in order to give him his share?

A Well, I have found many instances where they did not have their one third of the canal, they had all they required at that certain time.

Q At a time during a shortage of water, I will ask you, in your canal did you ever find one instance where you found it necessary to give to the man who took the water more than he had taken during the period of shortage of water?

A Why, it would have been necessary to give it to him if he had gotten his full share of water.

Q Who was it?

A Well, it is on the A. B. Christensen place, Mr. Slack watered it, Harris L. Slack.

Q The owner in that instance was not irrigating his own land?

A No.

Q That account for it. Did you give us the distribution of the stock in the several divisions of your canal,

The different points of the divisions?

A Why, I can give you the distribution. One third, of course there may be a share one way or the other.

Q Where does the first district begin and where does it end?

A First distribution begins at W. H. --

Q First district, I believe.

A Begins at -- well, I will say they start irrigating on the University ground and irrigate to W. H. Baum on Capital Hill, or Temple Hill, whatever you call it.

Q That is the first division?

A Yes.

Q Where does the second division begin and end?

A The second division begins at Thomas Dugdale's, north of the State Mental Hospital and ends at the University ground.

Q That is adjoining the Baum land, is it?

A Why no, it is adjoining the Christensen ground on Capital Hill up here.

Q And the third division is all that land lying south and west of the State Mental Hospital?

A Yes sir.

Q How many shares are there in the upper division?

A Well, there is about 782 shares.

Q And you distribute to them one third of the water only?

A Well, I give them eighteen minute to a share.

Q I am asking you as to the water distributed to them.

A Yes, I distribute them one third of the water as long as it takes to water them.

Q And to the second division how many acres are there?

A I could not tell you just how many acres the re are?

Q How many shares?

A There are 776 shares, if I am right.

Q And to them what proportion of the water is distributed?

A One third.

Q And the lower division, how many shares are there?

A There is the remainder of the shares out of the 1733.

Q How many?

A I give you 782, that is a mistake, it is 582.

Q 582 in the first division?

A First division, 576 in the second division.

Q And the remainder in the lower division?

A The remainder in the lower division.

Q How many in the third division, give us the total?

A I divided the stock in the third -- I will have to figure it over again and see how many shares I have got.

Q Mr. Ashton, just there, haven't you a book showing the --

A Yes sir, but I don't happen to have it in my pocket.

Q Where is it?

A It is home.

Q I would prefer to postpone this until you get the book and then we will know what the facts are, you are just guessing now at it, aren't you?

A No, I am not guessing, I can figure it just as well as if I had the book here, I know what my figures are, but I can get the book.

Q If you can do it without the book very well, I didn't want to asl the witness —

MR. BAGLEY: I submit the witness said he put in the remainder and it is a matter of computation, anybody can figure it.

MR. A. C. HATCH: I am asking that he make his computation he is the man who has been making the computations and distributing this water, it is to determine how he did it that this cross examination is made. I will admit that Mr. Bagley could do it probably, if he was watermaster.

MR. BAGLEY: I believe you could figure it out too, Judge Hatch.

MR. A. C. HATCH: I couldn but I am not doing it.

MR. THURMAN: On behalf of the Timpanogos Irrigation Company I don't join in the admission made.

THE COURT: The admission Judge Hatch can figure it?

MR. THURMAN: He is making that on the part of the plaintiff I take it.

THE COURT: Have you the computation, Mr. Ashton?

A Yes sir.

THE COURT: What was it you wanted to know, Judge Hatch?

Q The shares of stock represented in the lower division?

A 575 shares.

Q Do you know the number of acres irrigated in the lower division?

A No sir.

Q Now, in dividing the water between the three divisions and guess-

ing at it, how do you do that? I will ask you if you take first one third of the water in the canal at the upper division and distribute to those users, is that right, do you do it that way?

A Well, I try to distribute it a little shy of one third, so as that the upper man will stand the loss with the lower man. There is a certain amount of seepage and evaporation that cannot be avoided.

Q Would you fix it about twenty per cent?

A Yes sir.

Q In the lower division? A. Yes sir.

Q And what seepage and evaporation do you fix for the middle division?

A Well, I would fix it at about twelve per cent.

Q And how much in the upper division?

A It is about eight.

Q Middle division is principally the clay land, is it not?

A No sir.

Q What is it, the nature of it?

A principally gravel.

Q You way the lower division is all gravelly, isn't it?

A Well, It is graveely ground, I would call it.

Q And the upper division is all gravelly, is it not?

A No sir.

Q What part of it is not gravelly soil?

A Well, I would put it at one third the upper division is not gravelly soil.

Q How many complaints did you have last year all told of shortage of water?

A You mean how many parties complained, or how many different times the parties complained.

Q How many parties first?

A Why, I would say fifty.

Q And did the same party complain more than once?

A Yes sir.

Q Now, can you say in what divisions of the canal those parties were?

A They lived in all three.

Q In all three? A. Yes sir.

Q And were the complaints approximately alike from each of the divisions? A. Yes sir.

Q The upper users complained just as strongly and just as often as the lower division?

A Yes sir.

Q You say you don't know anything about the number of acres irrigated except what the irrigators told you?

A That is all I know.

Q Did you ask each irrigator in getting that amount ?

A Yes sir.

Q And they fixed it at 823 acres as the total irrigated?

A Yes sir.

REDIRECT EXAMINTION by Mr. Corfman.

Q Mr. Ashton, do you know the number of second feet of water that the canal has been carrying the last ten days?

A Why, I cannot tell you the feet just now, I can tell you in a few minutes. On the 23rd, 24th, 27th and 29th and 30th.

Q How many second feet was distributed to them on those days?

MR. A. C. HATCH: This year or last year?

Q This year.

A I will have to figure that out.

MR. A. C. HATCH: Do you refer to the agricultural bulletin there to make your computation?

A No sir.

MR. A. C. HATCH: What is it you refer to.

A Bulletin of the State School of Mines.

MR. A. C. HATCH: Utah.?

A Yes sir.

MR. A. C. HATCH: Where is it published?

Q Have you a record showing the second feet of water that the commisioner is turning to your canal at the present time?

A I have a record of the gauge height, I figure it just the same

as the commissioner does, but I have not figured the second feet out and put it down here.

MR. JACOB EVANS: That is all in the record anyway, isn't it, Mr. Corfman?

Q Do you know what the conditions now are in the third district, as to whether or not all the land owners there are able to get the water to their land ?

A They are not able to get their land watered.

Q To get over it with the quantity of water that you now have?

A Yes sir.

Q How long has that condition prevailed there?

A It has prevailed practically since the 10th of July.

CROSS EXAMINATION by Mr. Jacob Evans.

Q I would like to ask one question. Mr. Ashton, in dividing these stream- in making these three divisions do people irrigate at the same time from each of the divisions?

A Yes sir.

Q And do they use more than one stream in each of these divisions?

A Well yes, they do.

Q Take for instance, the first division while they are irrigating in the first, second and third divisions at the same time, are there more than one person irrigating in the first division, that is, one third of the whole stream?

A Yes sir.

Q How about the second?

A There is in the second.

Q In the second you have two streams, do you?

A Yes sir.

Q And how about the third?

A The third, part of it has one and part of it has two.

Q Is that uniform throughout the entire irrigation season?

A No sir.

RECROSS EXAMINATION by Mr. A. C. Hatch.

Q How many streams are used at the same time under your system?

A At different times in different localities of irrigation there is a different number of streams.

Q Explain that, will you, for the seasoy.

A While --

Q How many streams are used and under what division during the season beginning May 15th.

A Beginning May 15th they will water with three streams until such a time as we have less than 25 feet, second feet.

Q When it is up to thirty-five sedond feet you have three streams of a little over eleven second feet each?

A Yes sir.

Q To each stream? A. Yes sir.

Q Then when it gets down to 25 second feet, how do you divide it?

A Why, I take it down to the lower end of the canal and their crops down there are different variety of crops from what they raise above. They can handle a larger amount of water and get it over more ground, for the simple reason they raise hay and grain, and you have got to have a big stream to send it ower there. They will use that 25 second feet in two streams until it--

Q To what time?

A I will put it until 25th of July, that is, or until we get down from 20 to 15 second feet.

Q So that from the time the water is down to 25 second feet you put the whole stream in the lower division?

A Yes sir.

Q Then when you come to the second division, how do you divide it?

A I divide it two streams in the middle division as long as we have the 25 second feet, one streamm in the upper division.

Q So that there would be three streams being used at one time?

A Yes sir.

Q And being used in the two -- two in the lower division and one in the upper division?

A yes sir.

Q Then when it comes to the upper division how do you divide it, or does that one stream --

A That one stream --

Q Satisfy the upper division?

A That one stream waters the upper division, yes sir.

Q While the two streams are watering the middle division?

A You understand there is two streams in the middle division while there is one stream in the upper division.

Q Yes, but there is nostream in either the middle or upper division while there are two streams in the lower division?

A No sir.

Q Then the lower division gets the greater quantity of water than either the middle division or the upper division, doesn,t it?

A No sir.

Q How do you regulate that?

A When they have one stream in, or two streams in the lower division and two streams in the middle division and one stream in the upper division continually, they get eighteen minutes to the share. When they get two streams in the lower division they get twelve minutes to the share.

Q So that the division is made by time?

A By time and shares.

Q When you increase the water you cut down the time?

A Yes sir, increase the flow of the water, cut down the time.

Q How long is it,or what time in the year do you change from the last mentioned distribution?

A Last year I think we changed on thefirst of July, other years ordinarily it has went from the 24th of July to the 1st of August.

Q Then what is the change made then?

A It is watering the lower divisioj with two streams.

Q You have just repeated that, but do you make that change from that manner of distribution later in the season, or do you have the same quantity of water, the 25 second feet to the end of the season?

A Oh no, I say after we get down to 18, from 15 to 18 second feet they water with one stream in the lower division, two streams in the second and upper division.

Q One in each? A. Yes sir.

Q There is one stream in the division when the water recedes to 18 second feet.

A Well, I say from 18 to 15.

Q Then you have one stream in each division continuously, do you?

A No sir, not at that.

Q How is it?

A I water the lower end with one streamm while there is no stream at all in the middle division or the upper division, after the lower division is watered.

Q You put the entire flow on the lower division?

A Yes sir, after the lower division is watered I put one stream on the middle division and one stream on the upper division.

JAMES F. CROWTHER, called by the defendant Upper East Union Canal Company, being first duly sworn, testifies as follows:

DIRECT EXAMINATION by Mr. Corfman.

Q Your full name?

A James F. Crowther.

Q You own lands under the Upper East Union Canal?

A Yes sir.

Q How long have you owned these lands?

A Seven years.

Q What is the acreage?

A Beg pardon.

Q How many acres?

A I have fourteen acres under the Upper East Union.

Q And during the last seventeen years have you personally attended to the farming of these lands and irrigation of them?

A Last seven years.

Q Last seven. How much experience have you had as a farmer in irrigation of lands?

A About forty-five years.

Q Is the last seven years the only experience you have had under this system?

A Under the Upper East Union, yes sir.

Q What kind of crops do you grow?

A Well, it is various, there is alfalfa, some fruit, some strawberries, raspberries, garden truck.

Q Is the entire seven acres under cultivation?

A Fourteen acres.

Q Fourteen acres under cultivation?

A Yes sir.

Q How many shares of water do you own in the Upper East Union Canal for irrigation?

A Thirty-two shares.

Q You use all these shares of water on the fourteen acres?

A Yes sir.

Q During the low water stage of the river prior to 1915 and 1916 was that sufficient supply of water for the irrigation of these lands?

A Yes, I believe we have.

Q Since 1915 and '16 how did you get along?

A Well, part of the crps burned last two years, 1915 and '16.

Q What crops did burn?

A Well, some clover and alfalfa, lower part of the field, and beets and mangoes.

Q Did you use the twenty-eight shares the same as you had the previous years?

A Thirty-two shares, yes sir.

Q Is that true of both years, 1915 and 1916 your crops burned?

A Yes sir.

Q Did you investigate to see whether you were get your proper share of the water? A. Yes sir.

Q And were you getting it?

A I believe I was, it looked like it.

Q What was the character of the land you used the water on, gravelly or loam?

A Well, it is -- I think there is a little over half of it is gravelly, the other is a clay.

Q Did you during the years 1915 and 1916 observe any other crops in the district that were suffering for water?

A Yes sir.

Q What season of the year?

A Well, it was latter part of the season, from last part of July on.

Q Whose crops were they?

A There was neighbors there, some land that belonged to the Lewis people and Elliotts had it in charge, some of the Elliott land.

Q And do you know whether they had sufficient supply of water or not?

A I would think not, because the crops were burning.

Q Was that what they needed, more water?

A Yes sir.

Q Do you know the number of shares of water they had per acre for watering their land?

A No sir, I don't.

Q Did you observe that condition in previous years?

A No sir.

CROSS EXAMINATION by Mr. A. C. Hatch.

Q You say your crops suffered in 1915 and 1916?

A Beg pardon.

Q Did you say your crops suffered in 1915 and 1916?

A Yes sir.

Q How many acres were you irrigating in 1915?

A I was irrigating the fourteen acres.

Q How many shares ofstock have you -- had you in the company?

A Thirty-two shares.

Q And what division are you in?

A I am about the center of the ditch, I would think.

Q Do you know whether you are the first, second or third division?

A Starting from the lower end?

Q Starting from either end, there are three divisions, I understand on that canal?

A It would be in the second division.

Q It would be in the second division starting from either end?

A Yes sir.

Q Now, where is your land situated?

A It is situated right under the canal.

Q From the Mental Hospital about how far north?

A I think about half or threequarters of a mile north and little west.

Q What is the nature of the soil?

A Why, it is a little over half, possibly two thirds that is gravelly. The balance is clay and clay loam.

Q What crops did you raise in 1915?

A Alfalfa, clover, mangoes, raspberries, strawberries and garden truck, tomatoes, and melons, some fruit trees.

Q What portion of the season was it when you were short of water?

A It was the last part of the season.

Q What month?

A In the last part of July and August.

Q Does the season end, irrigation season end in August with you?

A No sir.

Q How was the water in September and October?

A Well, it was low then, but I hadn't crops so that I could use the water on others.

Q What crops suffered in July and August?

A Well, I left my strawberries suffer and alfalfa suffer the lower end of it, and mangoes suffered, couldn't get the water through.

Q During the time that the water was allotted to you you could

not irrigate the crops?

A No, the gravelly soil, it takes a long while for the water to go over it.

Q How often do you irrigate your land?

A Why, we have it about every seven days and nine hours.

Q You say about ?

A About once a week.

Q Don't you have a regular turn? A. Yes sir.

Q Do you have it printed? A. Yes sir.

Q And do you get the water yourself? A. Yes sir.

Q From the main ~~xaixa~~ canal? A. Yes sir.

Q And is there anyone there to direct you what portion of it you shall take?

A I get the last stream so that I take it all, last stream in that division.

Q That is, in July, you get the last stream?

A Yes sir.

Q The lower stream?

A The lower stream.

Q Have you ever gone up to your neighbor above using the other stream to see whether he had more than his shares of the water?

A Yes sir.

Q How did you find it?

A I generally find they are about ~~xuq~~ equal.

Q That they were about equal? A. Yes sir.

Q And still you hadn,t sufficient?

A I hadn't sufficient to water the ground.

Q At any time when you were short of water did you go to your neighbor above? A. Yes sir.

Q You found he had only what you thought was his portion of the water?

A As a rule that was it.

Q Did he manage to get over his crops?

A Not all the time.

Q Did his crops suffer? A. Yes sir.

Q What crops did he have suffer?

A They were alfalfa and fruit.

Q Do you know how many tons to the acre you got off from your alfalfa crop last year, second crop?

A Second crop, why it didn't average quite a ton to the acre.

Q It didn't average what?

A Didn't average a ton to the acre.

Q The second crop?

A The second crop.

Q And the third crop do you know how much?

A Well, the third crop was about the same.

Q Do you attribute that shortage of your alfalfa crop wholly to the lack of sufficient water?

A Yes sir.

Q Are there no bare stpos in your land?

A Only where it had burned for the lack of water.

Q That is lack of water during the first, raising of the first crop?

A No, the second and third.

Q You say part of the crop, part of it didn't go to a second crop because of being dried out?

A There was places at the lower end of the field where it didn't grow more than three or four inches high for want of water.

Q Did any of your first crop grow up more than three or four inches high?

A Frist crop?

Q Yes, last year. A. Yes sir.

Q What about the weevil on your land?

A Well, they bothered it but that was later.

Q Later, you say?

A No, I say after it had grown, it got ten or twelve inches high before they bothered it.

Q And you were short on your first crop in irrigating last year?

A Well not so much so. The first part of the season it was low.

Q Did you water it in May last year?

A Yes sir.

Q Had plenty of water in May, hadn't you?

A Well, not so plenty --

Q Covered your entire crop, irrigated it, didn't you?

A No.

Q How much of it was not irrigated in May?

A Well, I think it was probably two acres that didn't get watered.

Q How much did you have in alfalfa?

A I had about between five and six acres in alfalfa.

Q How many acres have you in strawberries?

A About one acre in strawberries.

Q What portion of the strawberries were not irrigated?

A I irrigated all them in the early part of the season.

Q Until the crop was off? A: Yes sir.

Q Did the strawberries, any of the vines die for lack of irrigation?

A Yes sir.

Q Last year, about how large an area?

A Beg pardon?

Q About how large an area?

A Well, there was vines all through the patch that died, wouldn't all die, some seemed to be more hardy than others.

Q How do you account for that?

A Well, I account for it some plants are more hardy than others. and roots go deeper.

Q You irrigated the entire tract, didn't you, sometime during the month of July?

A No, I don't think I irrigated them not all in July.

Q You had four turns of irrigating in July?

A Yessir.

Q And you say that there was part of your strawberry crop that you didn't irrigate during those four turns?

A Yes sir.

Q Why didn't you?

A I didn't have sufficient water.

Q As a matter of fact, you had other crops upon which you preferred to apply such water as you had? A. Yes sir.

Q And you thought, at the time that the strawberries would suffer the least, or that you would suffer least damage by not irrigating the strawberries and applying the water upon the other crops?

A Yes sir.

Q And still there was only here and there a plant covering the entire patch that died for want of irrigation, is that right?

A Well, there would be some places, possibly a rod or two that would die, and then in other places that seemed to be more moist held the moisture better and some plants would be more hardy than others,

Q Did you lose any other crop except lucern and strawberries in 1915? A. Yes sir.

Q What crop?

A My peach trees.

Q Did you have a crop of peaches in 1915?

A No, sir, I didn't have any peaches.

Q Then you didn't lose any peach crop by reason of irrigation, did you?

A I think I lost a crop this year.

Q Haven't you a peach crop this year? A. No sir.

Q Then you didn't lose any crop this year, did you?

A I attribute it partly to the lack of water in that year.

Q Then you don't attribute the loss of the crop this year to the frost that killed the frops generally throughout the state?

A Well, there is a few trees where I had water, the ditch run right by that had peaches on.

Q This year? A. Yes sir.

Q And they had water on at the time the frost came, hadn't they?

A They were advanced, yes.

Q You think if you had had water on all your trees at the time the frost came you would have had a crop on all of them this year?

A No, there wasn't the peach buds on the trees, those trees that I didn't water, that there was on the others.

Q I didn't understand that.

A They were not the number of peach buds, fruit buds on the trees where it suffered for water that there were on those that were by the water, that had the water.

Q But the peach crop generally in this section was killed by the frost, was it not this year and last year too?

A Well, it was last year. There is places up near my farm that had a full crop of peaches.

Q Do You attribute that to the irrigation?

A Well, not altogether.

Q Or to the course of the prevailing winds, or was it by reason of smudging?

A No, it wasn't smudging, the frost seemed to come in streaks.

Q And where the crop was produced was one of those streaks that the frost didn't get, is that right.

A Well, yes, to some extent.

Q And the water had nothing to do with it, had it?

A I think the water had something to do with mine, because the fruit buds was not on the trees that they should have been.

Q You examined your trees before the frost came to determine that fact, did you? A. yes sir.

Q You think you would not have had a crop even though there had been no frost?

A I don't suppose I would have had a full crop, I think I would have had some, though

CROSS EXAMINATION by Mr. John E. Booth.

Q I would like to ask one question. How close to your peach orchard were those that had blossoms on this year, I understood you to say some of your neighbors had quite a peach crop this year? A. Yes sir.

Q How close to your orchard were those?

A Well, possibly twenty-five or thirty rods.

Q Are they watered from the Upper East Union?

A No sir.

Q Are they above or below?

A Above.

Q They are above?

A They are watered from Timpanogos.

Q Do you know whether they had more water than you did last year for their peaches?

A I think they did, yes, yes sir.

Q Whose were they?

A Howe.

Q Who?

A William J. Howe.

5:00 P.M., Recess to 9:30 A.M., August 31, 1916.

MR. JONN E. BOOTH: If your honor please, until recently I anticipated all that I represent which are a great many of those individual names, would be settled by stipulation without any question, but an amended answer, counterclaim and cross complaint filed by the Timpanogos coming in, I scarcely know just where we are at.

MR. BAGLEY: I might say, Judge, so far as the West Union and Smith Ditch that are complained against in that cross complaint, we don't make any contention, you got more water than you want. Only people that we complain about is the river bottoms.

MR. JOHN E. BOOTH: Well, that will eliminate considerable then. And the West Union then will practically be out of the way because I anticipate we will settle that before the evening closes today.

MR. MCDONALD: And as to the people designated as users of Spring Creek, do you claim anything against them, their water rights?

MR. BAGLEY: No, we don't only we claim that the water that they use ought to be measured as a part of the river

and counted as a part of the river in the distribution, and that they are a part of the river bottoms who is awarded a certain amount of water under the decree, but instead of that all the water is kept in two small ditches they put on the east side of the river and the people along the Spring Creek on the west side of the river have been counted out in the measurement. We don't want any of the water, but want the water measured and counted as part of the river as it increases the river for distribution.

MR. MCDONALD: So that will be the only question between the clients you represent and the Spring Creek users, whether or not the water they use shall be counted as part of the river water.

MR. JOHN E. BOOTH: That won't make any difference to you.

MR. MCDONALD: Well, it may.

MR. JOHN E. BOOTH: I don't see where it will as you don't get any from the river anyway.

MR. JACOB EVANS: They don't want to pay any portion of the expense and cost.

MR. MCDONALD: There may be that one point that will require a little evidence.

OMISSION.

Application by Mr. Willis to amend as to parties in Wasatch County and discussion as to order of procedure and introduction of exhibits pertaining to Heber Light and Power Company, and statement as to controversy Island Ditch and Midway Irrigation Company.

JACOB A. YOUNG, called by the defendant, Upper East Union Canal Company, first being duly sworn, testifies as follows:

DIRECT EXAMINATION by Mr Corfman.

Q You live at Provo, Mr. Young? A. Yes.

Q What are your initials?

A Jacob.

Q Your full name is Jacob A. Young?

A Jacob A. Young.

Q You live at Provo? A. Yes sir.

Q How long have you lived at Provo?

A Well, practically all my life.

Q How old a man are you?

A Fifty-three.

Q Farmer by occupation? A. Yes sir.

Q Where have you farmed, Mr. Young?

A In different localities.

Q What locality?

A I have farmed some in Uinta County, some down in Millard County.

Q Where had your farming been principally?

A Provo.

Q Under what irrigation system?

A Well, principally under the Upper East Union.

Q You own land under the Upper East Union?

A Yes sir.

Q How many acres?

A Ten and about a half.

Q How long have you owned it?

A Twenty years.

Q During the last twenty years? A. Yes sir.

Q Have you farmed it personally?

A Yes sir.

Q And irrigated from the Upper East Union canal?

A yes sir.

Q How many shares of water have you for your tract of land in the Upper East Union?

A I have thirty-four.

Q Have you used it all on your ten acres of land?

A Yes sir.

Q What is the character as to soil of your ten acre tract?

A Well, there is about seven what would be called clay, about three and a half I would call this mountain slip gravel.

Q Gravelly nature? A. Yes sir.

Q You speak of it as a clay soil , you mean loam, clay loam?

A Clay loam, yes.

Q And what character of crops have you been growing on the land?

A I have been raising, sugar beets, wheat, strawberries, raspberries, tomatoes, about two acres and a half of orchard.

Q Peach or apple orchard?

A Mixed.

Q All of the land in under cultivation?

A Yes sir.

Q Now, have you at any time during the past twenty years had more water for your land than you could use beneficially when economically applied? A. No sir.

Q What has been your experience in the last two years, have you had as much water as you had in previous years?

A No sir.

Q Have you had a sufficiency during 1915 and 1916 to properly irrigate your land and keep your crops growing?

A Well, by taking the water off of the orchard in 1915 I kept the berries and beets growing; then used it a little later on the orchard. I think I would have been short on a crop if the frost had not killed it in the spring.

Q Were you growing in 1915 any fruit in your orchard?

A No fruit to speak of in 1915.

Q Is that why you took the water from the orchrd?

A Yes sir.

Q Without going that what would you say as to having sufficient supply in 1915 and '16?

A I would have been short on water toward a full crop.

Q And had you a fruit crop growing on the trees in '15 and '16, would you have had sufficient to irrigate all your crops?

A No sir, I would not.

Q Are you acquainted with the lands generally throughout the district of the Upper East Union Canal?

A Pretty well acquainted with them.

Q What do you say as to the crops that were grown on those lands in 1915 and '16, having sufficientwater for them?

A Well, there was quite a lot that I don't think had enough water.

Q Well, from your experience as a farmer and man who has irrigated lands, would you say they did not have sufficient supply of water? A. Yes sir.

Q Do you have in mind any particular person whose crop failed partially failed that year?

A Well, I was only over what would be known as the W. H. Brerton property.

Q What was its condition in 1915 and '16?

A In 1915 it was bad.

Q Why was it bad?

A Lack of water.

Q Where is the Brerton tract?

A It lays right north of town here.

Q North and east of Provo?

A North and east of Provo.

Q That is what is known now as the University land?

A Yes.

Q And what character of crops were growing on that land in 1915 and '16?

A Well, it was principally all in hay and lucern.

Q Are you familiar with the way the canal has been kept up and maintained?

A Well only what I have seen just in my own ditch.

Q You have not been over it?

A Only this summer in 1916 or '15, I should say.

Q You spoke about one-third of your land being gravelly soil, and the other two thirds clay loam?

A Yes.

Q Will you say about what propprtion of the water you used on those two classes of land, what the requirements are?

A Well, in the spring time, forepart of the season, I think I use more water on that three acres and a half than I would on the seven.

Q How about during the later months?

A After it gets settled down, I wouldn't think there was much difference.

Q Wouldn't make so much difference?

A No, not so much difference.

CROSS EXAMINATION by Mr. A. C. Hatch.

Q Who was tending the Brerton tract in 1915?

A In 1915 I think the name was Beard, two brothers.

Q Rented or employed by the month?

A I think they had it rented.

Q Do you know?-

A Well, only from what I have just heard, I am sure though they had it rented.

Q How many times were you over that tract?

A I was up there a couple times.

Q What months?

A Well, I would think in July and August.

Q And you say the crop was short at that time?

A Yes.

Q You know the crop?

A Yes sir, about five acres, I think, of that tract in peaches that was not watered at all, as I understood it all summer.

Q It had probably been dried up in June or May before you saw it?

A I couldn't say in regard to that. It was in bad shape, I know when I was up there.

Q I understood you to say it was for want of water?

A I would judge it, yes.

Q You don't know whether they had water and might have applied it if they had chosen to do so, do you?

A Well, they have pretty good water right there.

Q They could have irrigated it some time?

A There had been part of it irrigated.

Q Sir?

A There had been a part of it irrigated.

Q Yes, but these five acres that was dried up?

A I understood they took that off the peach orchard to put onto the hay.

Q Well, was it ~~that~~ the lucern crop that was dried up, the five acres?

A Yes.

Q And you say they had a good water right as you understand?

A yes sir, they have a good water right.

Q Did you lose any crops in 1915? A. No sir.

Q Other than by the frost?

A Just frost.

Q Other than by the frost in 1915? A. N° sir.

Q Do you know whether they ~~shares~~ have same ratio of shares of stock per acre, or had in 1915, that you had?

A Well, I don't hink they have as much.

Q Do you know anything about it, whether they have or not?

A I wouldn't want to say, Judge, in regards to that for I don't know.

Q You said that you thought some of your crop needed more water in one of these years, which year was it.

A If I had had a fruit crop I say I don't think I could have matured a full crop, but by taking the water off of the fruit where I didn't have no crop and putting it on to the beets and other stuff I didn't think I was anyways short.

Q You got along very nicely with your crop?

A Yes, by taking it off of the orchard.

CROSS EXAMINATION by Mr. John E, Booth.

Q Mr. Young, you say the two years you were short of water, was that beause you didn't have stock enough in the canal, or was it because the canal didn't ~~xx~~ furnish sufficient water for the system?

A The canal didn't have the water -- got along very nicely before.

Q Isn't there a great waste in your canal from seepage?

A Well, I think there is.

Q Do you know where ~~dx~~ Will Baum lives, do you?

A Yes.

Q And George James? A. Yes sir.

Q And do you know that in the last about two years or so there have been three large breaks in your canal in that little over quarter of a mile?

A I have understood there was.

Q You have been along there and seen it, haven't you?

A I have not been along there in the last two years, Judge.

Q Haven't been along there the last two years?

A Not along the uppr end, I have not.

Q DO you remember me meeting you here about two weeks ago, just there by ~~dx~~ Will Baum's or what I mean is from Will Baum's on up where those breaks were.

A I met you there by the forks of the road.

Q Yes, I went off through the bottoms there.

A Up that way.

Q Do you know where the place is, called the Hylet place?

A Yes.

Q Did you notice that place at all as you passed?

A Only Mr. Baum's corner.

Q You could see over there, didn't you notice it was flooded out?

A No.

Q Practically ruined by an excess of water there?

A I don't know anything in regards to that corner where that water come from.

Q Could you tell why those breaks occurred?

A Only from what I would judge from seeing myself.

Q I didn't quite understand that.

A I have my opinion of what made them, that is all.

Q You have been there and seen it, now is it your opinion it comes from the leak s in your canal or excessive irrigation above your canal?

A I think it is excessive irrigation above.

Q Are you one of the directors?

A In this term, yes.

Q You have considered that question, have you not, in your board meetings?

A No, I don't know that has come up in out board meetings since I have been a member.

Q But you know there has been difficulty for the past two or three years?

A There has been difficulty there a number of years.

Q In flodding out that land below there and breaks in the canal?

A Yes sir.

Q Now, you have talked it over with other people, have you not?

A Yes sir.

Q What now has been your conclusion whether you are responsible for that damage and those breaks, or is on account of excessive irrigation from the canal above?

MR. BAGLEY: I objeot to that as calling for a conclusion of the witness, he is now shown to be qualkfied as to give an opinion on.

MR. JOHN E. BOOTH: Maybe that is a fact, your honor please, I just happen to be where I am flooded out and would like to know if I can who is responsible for it.

THE COURT: It does not appear this witness has sufficient knowlege.

MR. JOHN E. BOOTH: I suppose he has not. That has

been a quarrel between these two people who is drowning me out and I want to find out if I can. Just one thing further.

MR. RAY: I didn't know anybody around Judge Booth had so much water they were being drowned. I thought they were always athirst.

MR. JOHN E. BOOTH: These people are asking for more water, I don't want them to have too much.

Q Mr. Young, how long are your rows where you water your beets?

A I think about twenty-eight rods.

Q Have you any way of stopping the water from running off when it gets through? A. No sir.

Q Don't you know there is a large amount of water runs off your land? A. Yes sir.

Q DOwn the road into the Upper East Union?

A Yes sir.

Q Isn't there some way of stopping that, avoiding that waste of water?

A I would hate to undertake to raise beets on there and hold the water on there.

Q But you know there is a great quantity runs off?

A Oh, yes.

ALFRED D. CLARK, called by the defendant, Upper East Union Canal Company, being first duly sworn, testifies as follows:

DIRECT EXAMINTTION by MR. Corfman.

Q Your full name, Mr. Clark?

A Alfred D. Clark.

Q You live at Provo? A. Yes sir.

Q How long have you lived at Provo?

A Between ten and eleven years.

Q Are you a farmer by occupation? A. Yes sir.

Q How long have you been a farmer?

A Forty years.

Q During that time have you been farming irrigated lands?

A Yes sir.

Q Have you any land under the Provo River water system?

A Yes sir.

Q And have you farmed that? A. Yes sir.

Q What lands have you farmed under that system?

A Farmed under Provo Bench system? and the city, our lower East Union.

Q How many acres of land did you farm on the Provo Bench and how long did you farm it?

A Farmed five years sixty acres and one year eighty acres.

Q What part of the bench was your land situated on?

A Pretty well towards the south.

Q How many acres was there in it?

A Sixty acres in my own farm.

Q How many shares of Provo Bench water did you have to irrigate with?

A Twenty shares.

Q For the entire tract? A. Yes sir.

Q Have you ever been over the Upper East Union Canal system?

A Part of it.

Q When were you over it?

A I think it was about ten days ago I was over it.

Q What part of the system were you over?

A I commenced at the lower end and went as far north as the Peterson land joining the University.

Q That is north and east of Provo?

A Yes sir.

Q Did you observe the conditions of the crops through that portion? A. Yes sir.

Q How did you find them?

A Well, there was none of them particularly suffering, but three pieces, two pieces that were suffering.

Q For what?

A Twp pthers had been suffering for the want of water.

Q Now, did you observe the character of the soil generally, as to what kind of soil it is through the district?

A Yes sir.

Q What kind of soil is it?

A Great deal of it was gravelly and sand. There was some clay loam.

Q In your experience as a farmer, what would you say the necessity of that class of land would be for water?

A The duty?

Q Well, could crops be grown upon it without irrigation?

A They were irrigated crops that were growing.

Q Could you successfully grow crops on that class of land without irrigation?

A No sir, I don't think so, not on the gravel.

Q Could you on any of the land you saw there in the district?

A There might be some of it you could raise dry land grain on, the clay loam.

Q What are the requirements of that loose gravelly soil that you found predominating there in the district?

A It takes more water than the clay loam.

Q Did you obseve the condition in which the gates and canals were being maintained?

A Some of them.

Q What you say whether they were properly maintained?

A Good shape, those that I saw.

Q You own no land in this district?

A No sir, I own no land in this district.

CROSS EXAMINATION by Mr. A. C. Hatch.

Q What part of the district were these three tracts that were su-ffering?

A Peterson's land, Dugdale's land and Ellison's land and the lower part of Crowther's land.

Q What part of the district?

A Petereon it the upper piece that I examined, Ellison's about

half way down, Crowther's a little above Ellison's, Dugdale's is still farther down, just above the Mental Hospital.

Q Your examination was all north of the Mental Hospital, was it?

A No sir, Gray's is below the mental hospital.

Q Where was Gray's land?

A Gray's land was to the right of the road as we went from the state road to the canal.

Q About how far south from the Mental Hospital?

A Why , I think it was probably three quarters of a mile, I couldn't state positively the distance.

Q It would be down toward the lower end of that system?

A Down to the Boardman land.

Q Where was the Peterson land?

A Peterson land is the upper piece that I saw.

Q Where is that?

A Joins the University land on the north, the way I remember.

Q And the Crowther land?

A Crowther land is about half way between there and the Boardman land.

Q Boardman?

A Yes, Boardman is as far down as I went.

Q Is that the extreme lower end of the system?

A I am not certain as to that, there might be land below it, I could not say as to that.

Q About how much of the Boardman crop was suffering?

A I don't think there was any of it suffering.

Q The Gray crop?

A The grain crop had been harvested.

Q The Gray land?

A It was just in streaks, there was none of it suffering then.

Q You say it had been suffering ?

A Yes.

Q Been too long without water?

A I would judge so, that would be my judgment.

Q What was there about the crop that would indicate --

A Part of it was higher than the other, looks like part of it might have been watered recently and started up.

Q That might have occurred also by reason of the crop not having come up even in the spring, might it not?

A Well, hardly, I don't think, that kind of a crop, lucern crop.

Q It was a lucern crop? A. Yes sir.

Q Part of it might have been killed off last season?

A Of course, it was all fresh growing crop when I saw it, but some of it higher than others, that was all the difference I could tell in the crop.

Q Now, as to the Crowther crop, what portion of it was injured?

A It was the orchard part, that did not appear to have been irrigated.

Q No fruit growing on it, was there?

A I think not.

Q And it is not the custom to irrigate the orchards regularly?

A No sir, I don't think it is.

Q When they are not growing?

A No sir, I don't think it is the custom where it is that kind of a crop.

Q I didn't hear your answer, by reason of the irrigation passing along.

A I say I don't think it is the custom to water where there was a scarcity of water, anyway where there was no crop.

Q His orchard did not appear to have been recently irrigated?

A No sir.

Q Would you say that it was suffering by reason of lack of irrigation?

A I don't think it had been irrigated at all this season from the looks of it, still it might have been, the grass was dead.

Q I asked you if it was suffering for want of irrigation?

A I don't think xx the trees were particularly suffering.

Q The Peterson tract, what portion of that?

A The corn.

Q About how many acres?

A Well, it looked like the entire crop had suffered, the lower leaves were dead on the corn and then it had started up fresh.

Q About how many acres?

A Well, I would think there was -- I couldn't tell exactly, probably an acre and a half or two acres there, might have been a little more.

Q And that was what portion of his crop that you noticed that was suffering?

A Probably the balance of the land there had been grain taken off of it, and I couldn't tell whether that had suffered or not.

Q The grain was not standing there in the shocks on the land?

A No sir.

Q About two acres of the corn crop?

A There might be more, I couldn't say as to that. I didn't notice particularly as to the size.

Q Do you know whether or not he had the -- that peterson had a full water right for the acres?

A No, I couldn't say as to that, I don't know how much water he had.

Q About ten days ago when you were over the land?

A It is about that, I couldn't say positive.

Q The crop wasn't suffering for water at the time you saw it?

A No sir.

Q It had been recently irrigated?

A Yes sir.

Q Was there any of the crops that you saw when you went over the land that were at the time suffering for want of water?

A One.

Q Whose was that?

A On the Elertson land.

Q Elertson? A. Yes.

Q What kind of crop was it?

A It is being pastured this year, it was hay crop last year, but it is pastured this.

Q About how much of it was there?

A There is four acres.

Q And what portion of the four acres are dry?

A I could not say positive, close to half of it.

Q Was there water on the other half?

A It had been watered.

Q When you saw it?

A No sir, no water on the other half.

Q Had been recently? A. Yes sir.

Q Where is that tract situated?

A It is pretty well down on the --

Q Lower end?

A No, not at the lower end, it is on 8th North, I think.

Q Is it a level tract of land?

A Not very level, inclined to be a little steep.

Q Is it a tract that the water turned in a flood would cover all parts?

A It would by turning.

Q Have to dig little trenches to convey it on to the high places, wouldn't you?

A Well, it was the high places that had the water on ~~them~~ last.

Q The high places that had the water on last?

A Yes sir, the ditches are made on the higher part of the ground.

Q You saw where the water had been in the ditches recently?

A Yes sir.

Q At whose instance did you make this examination?

A Mr. Cluff was the man that spoke to me, I forget the the other man was that was along with him.

Q Did he go with you?

A Both of them went with me.

Q And showed you ~~px~~ these particular spots in the district, did they?

A They showed me two of them. The other one, I have noticed all summer, because it joins ~~mmk~~ my land.

Q Which one was that?

A That is the Ellertson.

Q Do you farm in that district also?

A I farm joining that land on the south.

Q How was your crop this year?

A All right.

Q And last year?

A Beg pardon.

Q And last year?

A All right every year.

Q You had plenty of water for your crop?

A Yes sir, I did.

Q Do you irrigate, did you irrigate from the same system?

A No sir,

Q This was the --

A There is a canal joins that that separates the two.

Q Which system do you irrigate from?

A The lower East Union, or the City water.

THADDEUS CLUFF, called by the defendant, Upper East Union Canal Company being first duly sworn, testifies as follows:

DIRECT EXAMINATION by Mr. Corfman.

Q Your full name is Thaddeus?

A ThaddeusH. Cluff.

Q Live at provo? A. yes sir.

Q How long have you lived at Provo?

A Every since I was born, I was born here.

Q Farmer by occupation?

A For the last few years, yes sir.

Q Where are your lands?

A Lands located northeast of the Memorial Building on the second bench.

Q Under the Upper East Union canal?

A yes sir, borders on our place.

Q How many years have you farmed that?

A About twelve.

Q How many acres?

A About fifteen.

Q Are you familiar with the construction and maintenance of the Upper East Union Canal? A. Yes sir.

Q Do you know when that canal was first built?

A I could not give the date, neighborhood of forty years.

Q Since has it been kept and maintained and used the water from provo River? A. Yes sir.

Q You are now president of the company?

A Yes sir.

Q What crops do you raise on your land?

A Strawberries, blackberries, dewberries, currents, larger fruit, peaches and apples and other large fruits, some hay and some grain.

Q How many shares of water have you in the Upper East Union?

A We have twenty-eight shares.

Q Have you used all the water on this tract of land?

A We only put two shares to the acre. We are a little short under the best of circumstances.

Q You have used all your shares on this tract of land you own?

A Yes sir.

Q And what years were you short of water?

A I don't remember just the date, some two years back, six or seven years back there was a very scarcity of water, and we were pretty short in the last two years.

Q In recent years, up until 1915 and 1916, water has been turned to you by the court commissioner ? A. Yes sir.

Q And did you take and use the water as turned to you by the court commissioner? A. Yes sir.

Q Have you used any of the water to waste?

A No sir.

Q Do you know during the particular -- during the low water season have you had any water run to waste from any part of the system?

A No sir.

Q During the year 1915 you say you were short?

A Yes sir.

Q Did you then apply to the water commissioner?

A Yes sir.

Q Was there any complaint made by him that you were not properly maintaining your gates?

A Not to me.

Q Was there to the company?

A Not that I know of.

Q What was the condition of your gates throughout that season?

A They were somewhat as they always have been.

Q How have they always been?

A Our gates have never been in good condition so that but what the water can be put out in any part of the system when it is not being used.

Q Keep them tight? A. Yes sir.

Q Good repair? A Yes sir.

Q And during the late season/ A. Yes sir.

Q Was that true also of 1916? A. Yes sir.

Q Have you any gates under the system that are leaking and wasting water?

A No sir, not unless they would be permitted to be, any gate would be liable to be except it was fastened.

Q Have you been over the system and observed the crops in the year 1915? A. Yes sir.

Q How would they compare with the preceding years?

A They were extra short last year.

Q What crops did you say last year that were short?

A There weren't many places on the system, being a low water season but what were short, especially where they didn't have at last three shares to the acre of water. I have been over more especially this year.

Q And that was by reason of your being unable to get a sufficient

supply of water? A. Yes sir.

Q Some years ago, as I understand , some fruit grown in this district, orchard fruit?

A Up to right lately it has been considered as a fruit district.

Q How long have these orchards been out?

A Some were taken out, considerable were taken out two years ago, and some this year.

Q Not pulled out, but how long have they been planted?

A They have been planted from five to ten years.

Q What would you say as to the farming of orchard lands compared to agricultural land in general in the use of water?

A It needs more for the general agricultural purposes considerably than it did for the large fruit orchards.

In former years did you have sufficient for general agricultural purposes before the fruit was planted?

A Yes sir.

Q And what is the tendency at the present time to continue to ~~grwe~~ grow fruit orchard, fruit, or abandon it?

A Conditions are so discouraging they are abandoning their fruit whole blocks at a time.

Q What are they doing?

A Tearing them out and replacing with hay and grain.

Q And when they have replaced it with hay and grain what would be the requirements for water?

A During the time it would need water it takes more to the acre.

CROSS EXAMINATION by Mr. A. C. Hatch.

Q In the beginning of the cultivation of those lands, fruit trees were planted, were they not?

A For how far back?

Q Twenty-five years.

A Very few.

Q And for fifteen years back that has been one of the principal fruit districts of the Provo river system, hasn't it?

A I think next to provo Bench, yes sir. Not quite so far back

as fifteen years, however.

Q You say that the fruit requires less water than the grain crops generally?

A Yes sir, during the season that grain would need water it would take more.

Q Higher duty of water?

A Yes sir, takes more to flood than run in the ditches.

Q You say that the orchards are being taken up in whole blocks, recently? A. Yes sir.

Q About what porportion of that land is in orchard?

A Heretofore?

Q Yes, ten years ago?

A From a third to a half.

Q What proportion is in orchard now?

A Gradually being reduced and it would be much less than formerly.

Q And when the orchard is destroyed what crops are raised?

A Hay and grain.

Q On the ground -- sugar beets?

A In some instances.

Q That requires much more water?

A There is very little land under that system that will produce sugar beets.

Q Hay and grain requires much more water during the season?

A Yes sir.

Q That is, a much greater duty of water?

A Yes sir.

Q And still you have plenty of water if you had sufficient shares ofstock except during the last two years?

A More particularly so, yes sir, there would have been nearer an excess of water previous to that two or three years back than there had been before that on would be now.

Q Now you are a little short of water or water right for the land you individually are cultivating, aren't you?

A I think it is generally the case more or less on the canal, yes.

Q Each one is trying to cultivate a little more land than there is water for?

A No sir, not if they have according to the Morse decree socalled.

Q Not if they have according to the Morse decree. What was the duty under the Morse decree?

A I don't know I could give the figures sufficient to distinguish a difference between last year and this.

Q You stated they were not short of water when they had the quantity distributed to them given by the Morse decree?

A& That was the system under whichwe have labored up until two years ago.

Q You don't know what the Morse decree provides, do you?

A Not technically. We would have to be governed by the commissioner's books.

Q Do you know of your own knowledge whether you got in 1915 the proportion of the river that was awarded to you under the Morse decree?

A Know that we did not.

Q How do you know it?

A Because the stipulation.

Q Sir?

A Because of the stipulation.

Q Did you see the water in the river.

A Yes sir.

Q And you saw the water in your canal?

A Yes sir.

Q Did you measure either?

A Measured the canal.

Q You measured the canal?

A Yes sir, we have instruments.

Q I ask you, Mr. Cluff, what you did, not what we did, but what you did.

A I took part in the measurements.

Q How much water did you have in your canal at its highest place?

A

A Highest stage?

Q Yes.

A I don't recall that. It was much less than ordinary, very low water season.

Q What does it ordinarily carry?

A About 40 second feet in the high water stage.

Q And in the low water stage?

A We have been as low as eleven second feet.

Q What year other than 1915?

A For a brief time a few days ago this year.

Q How long a time?

A Well, it has been down to about fourteen odd second feet.

Q Eleven feet I am asking.

A And eleven, I think, was just a very brief time, possibly something occurred that was out of the knowledge of the commissioner.

Q And probably something wrong with your canal?

A Could not have been that, because our measuring devices is at the head of the syster.

Q Do you know how long it was that you had only eleven feet?

A I heard the water master make the statement, but I don't know the time, he would know.

Q That was an extraordinary occurrence?

A yes sir, this year.

Q Might be account occasioned by break in the canal for half a day any time, if the canal would break, you would be short of water?

A If the canal breaks very apt to be short of water.

Q But it wasn't down to that stage for a period of time sufficient to seriously affect any of the crops, was it?

A Not for this year.

Q Now, in 1915, you said was a very low water season?

A Yes sir, so understood, yes.

Q Do you know of a season since you have been irrigating when the water was generally as scarce in the Provo River aw it was in 1915?

A I presume it would require the commissioner's books or records to show that, but between seven and ten years was a very low period, but I don't know of any that has occurred that was anything like to compare with 1915, especially in the very early part of the season.

Q And to what extent did your crops suffer in 1915, about what extent?

A Better than one third.

Q You think you lost one third of your crop by reason of the shortage of water?

A Not only that, but it ruined the condition for the following year.

Q In what way?

A If you don't care for fruit trees when the fruit is not on them, you do them pretty nearly as much injury as if it was in the fruit season.

Q Are you carying for them this year?

A Yes sir.

Q Are you raising any fruit this year?

A Some, the crpp is very light.

Q On your land? A. Yes sir.

Q You say that during the last two years there is no water run to waste in any part of your system, how do you know that?

A I don't think I made that answer.

Q If you did you didn't intend it?

A Do you mean running off of the land, or running to waste directly from the canal?

Q Running to waste from the land of the users, or running out of the canal following the roads.

A Not from the canal, possibly from some man's land they waste water for a few minutes. during his turn will run off waste water, that cannot be helped I know of.

Q Now, how can you say that at no time during the past two years has any water run to waste from the canal, and say it of your own

knowledge.

A I would recall that. In one instance, 1915, we discovered there was for a few days a leakage in the bottom of the canal. It was immediately repaired and has never leaked in that place since, on the Will Baum place.

Q You attend your farm yourself, do you not?

A Yes sir.

Q And it requires practically all your time, doesn't it?

A To a greater or less extent.

Q You have not been acting as watermaster along the ditch in the two years, have you ?

A Not in the last two years, formerly I was.

Q That is what I am asking you about, how you can say as to your own knowledge of the condition of that ditch during all the time, the two years, and not being constantly traveling along it and viewing it for the purpose --

A I have been back and forth on the canal on an average of twice a month of better in some instances, and that would give a person a general idea of the condition of the canal during all the last two years and any time when the watermaster called attention to anything of that nature I would go with him immediately and look after it.

Q What is your system of distributing the water?

A Why, what is known as the card system.

Q Yes, well now, how was it done?

A It is done by giving each man his pro portion of water in proportion to the amount that is in the canal according to the number of shares he has.

Q Have you one of those cards?

A At home I have.

Q Does it provide for the entire season, the turns that you shall have the water?

A Made out to that effect in the spring, early season. If anything occurs to break into that, like a break in the canal or

anything that would mx disrupt that, then it has to be redone, otherwise it would go through the season.

Q Now, as I understand the district is divided into three divisions? A. Yes sir.

Q And the water is distributed then in each of those divisions?

A As near as possible to each alike.

Q And the time of irrigation and quantity of water is governed by the quantity of water in the canal?

A Must be.

Q Then how was it possible to determine the time that each irrigator shall take the water, make the determination at the beginning of the season?

A That is done with the understanding that on the back of each card is written you take your water nine hours later each week. By firguring and watching for that point then you know the hour your next turn will come. That goes on uninterrupted unless something occurs to cause an interruption.

Q Sometimes in some of the divisions there are three streams issued and somtimes only two?

A Yes sir.

Q And sometimes only one, owing to the quantity of water in the canal. Now, how can you determine the quantity of water that will be in the canal in August, make the determination May the 20th?

A I don't know of any time when only one stream is used, but when there are two being used at one time if one man -- he would be given enough less hours to make up the difference on the same principle as if it was the third all the way through.

Q Then the next man would come on earlier instead of nine hours later, wouldn't he?

A No sir.

Q Sir? A. No sir.

Q How is that?

A He takes his time nine hours later again the next irrigator.

Q What becomes of the water between times?

A When he has two streams of water he would have more water for that length of time than he would have if he had one stream, so that it is figured to a certain section that he keeps that stream a less number of hours to make the difference between one stream instead of two. Now, the watermaster's explanation to that was given a day or two ago, and I am not just positive to the details of it.

Q He would finish irrigating in half the time that he would if he would take his regular turn, wouldn't he, if he had double the quantity of water?

A It would be expected that he would, yes.

Q That would bring the next man's turn on earlier, wouldn't it, instead of nine hours later, it would be only four and a half hours later?

A No, he wouldn't be really at the nine hours later the following week.

Q Who would use the water in the meantime?

A It would be used there and on the piece adjoining it, according to the amount of water that he had and according to his time.

Q Now, as I understand, the streams are issued an irrigating stream to each user, is that right?

A Yes sir.

Q You say sometimes two streams are given to one user?

A I understood the watermaster's testimony to that effect on a part on the lower canal, but I am not just positive as to the amount of the condition of that other than his testimony day or two ago.

Q Do you know how it is in the division in which your lands are located?

A Yes sir.

Q How is it there ?

A It is all under the three streams.

Q Which division are you in.

A The middle.

Q The middle division? A. Yes sir.

Q You heard the watermaster's testimony that sometimes there are two streams issued to the middle division, didn't you?

A Not to one individual.

Q Now, but two are ~~xxxx~~ issued at the same time to the middle division? A. Yes sir.

Q And doesn't that change the time of the irrigation of that district? A. No sir.

Q You irrigate the land in half the time that you would do it with one stream, wouldn't you?

A No, in the middle division it requires the time for two streams in order to complete each place every seven days and nine hours.

Q But there is part of the year you have only one stream?

A Not on that division.

Q On the middle division? A. No sir.

Q Sometimes you have three streams on that division, don't you?

A No sir.

Q Never?

A Not that I know of.

Q If the watermaster so testified yesterday he made a mistake?

A If he so testified I would be wrong.

Q Sir?

A If he so testified I wouldn't so understand it.

Q I wish you would bring one of those tickets or papers issued by your company, will you do so?

A Yes sir.

Q One that was issued last year and one that was used last year?

A His stub book would show them all. This is 18 minutes to a share.

Q I say if you will bring the ticket itself, like to examine it.

CROSS EXAMINATION by Mr. John E. Booth.

Q Mr. Cluff, you are quite familiar with the Upper East Union and its system, are you?

A Yes sir, in a general way.

Q And the lands under it?

A Yes sir, I think I know the nature of practically every piece of land under the system.

Q You have been the assessor, have you not, in that district, county assessor, for sometime? A. Yes sir.

Q Have examined the country so that you understand it?

A Yes sir.

Q As I understood you to say you were short of water in 1914 and 1915?

A 1915 and 1916.

Q 1915 and 1916? A. Yes sir.

Q Did you have sufficient in 1914?

A Except at intervals.

Q Except at what?

A Except very brief intervals because of our break in the canal, something that way, otherwise there was enough.

Q 1915 you were --

A Very short.

Q You spoke something about finding a leak in your ditch in 1915 at the Baum place? A. Yes.

Q Do you know how long that leak occurred?

A Well sir, I don't know.

Q Do you know that it was long enough to ruin William Baum's orchard?

A Long enough that he made complaint to that effect.

Q Don't you know his trees died, peach trees, there by his house?

A To some extent, yes sir.

Q Well, practically killed them out, didn't it, so that he dug them up this spring because they were dead?

A No, he dug he dug them up because the orchard was discarded, he had no use for orchard if it had been ever so good.

Q You know that the treeswere killed, lot of them, don't you?

A No, they were injured.

Q Very much? A. Yes sir.

Q So that occurred for quite a long time, didn't it?

A Well, I don't know just how long, I know that the moment we

discovered it it was rectified.

Q Well, you say you were along there every two weeks or so?

A About that.

Q Didn't you notice that for more than two weeks that leak in there?

A We didn't recognize it, no sir, the leak didn't appear in a way that we could recognize it.

Q You saw the results of it in his ordhard?

A Yes.

Q And 1915 didn't you miss the water, all that water running to waste, didn't you miss it?

A As a matter of course, what there waswould have been missed, but it was below the measuring flume and wasn't missed so readily as it would have been above.

Q Didn't you miss it in your applications of it on your land?

A As a matter of course.

Q Why wasn't there some investigation about it?

A Something occurred, if I remember, whether it was a break-- I think the break occurred because the water would be taken out of the canal and enough of it was left in the canal to discover that it was leaking and then we repaired it. It could not very well be discovered until this other occurremce brought it back.

Q Didn't you have more than one break in the canal in '15?

A I don't recall more than one, there might have been.

Q Don't recall more than one?

A No sir.

Q Just about Baum's place, between there and the Hickman place that there were two last year, two heavy breaks?

A One that was caused by the water coming over the hill at the north, nearly the north part of your place.

Q That was the year before, let me correct you?

A yes sir.

Q It is last year we are talking about now.

A Yes.

Q I say do you now recall there were two breaks?

A No sir, I don't recall there were two.

Q Do you know what caused those breaks?

A Seldom ever there has ever been a break except the water has either caused the side hill to slide above the canal and shut it off or else waste water coming over the bench from the others canal running down and washing the hill into the canal.

Q W asn't it because your canal was too full.

A Last year?

Q Yes.

A No, there wasn't nowhere nearly 40 second feet in the canal at that time.

Q But you know the canal broke?

A Yes, but it must have been an obstruction that caused it.

Q And you know the canal leaked enough to do a good deal of injury to Baum?

A At one place, yes sir.

Q To refresh your memory -- perhaps both of us were in error -- Mr. Wentz put this break that I am referring to in there in 1915. Do you recall whether it was --

A Yes sir, talking the matter over just now, find there was no break in 1915.

Q It was 1913, 1914 when those two breaks occurred?

A Yes sir.

Q I remember afterwards, and I didn't desire to mislead you. That is all.

MR. CORFMAN: That is all, your honor.

MR. BAGLEY: I guess the Timpanogos is the next?

THE COURT: I take it so.

MR. JOHN E. BOOTH: Your honor please, while I don't think we will spend much time on it, for the purpose of saving the question, the Timpanogos Canal Company has filed an amended answer, cross complaint and counterclaim and on behalf of the -- I first wrote it out for the West Union and Smith Ditch

people and Faucett Field, but I find the Faucett Field is not included and stipulation this morning entered into by us and Mr. Bagley the West Union is withdrawn, so we appear now for the East River Bottoms Water Company and Park and Nuttall ditch and file a general demurrer to this. I don't suppose your honor cares to take it up and have it argued.

THE COURT: If it is a general demurrer it can be argued at the close of the case. If it does not state facts sufficient to constitute a cause of action they will be entitled to no relief under it.

MR. JOHN E. BOOTH: Yes sir, that is the way I took it and I desire to save the question at this time.

MR. BAGLEY: I might state briefly the claim of the Timpanogos Canal Company and outline briefly what out proof will be. We expect to show that the Timpanogos Canal Company, that is the original company was organized in 1878, that is, the organization was begum and completed in 1879, that the canal was construcred between that date and the year 1882 when it was finished. The canal was taken from the river near the mouth of the Provo Canyon at a place called Olmstead now, and extends along the border of the bench until it reaches the top of what was formerly called the Pole Canyon Bench. It then extends in a southwesterly or easterly direction a distance of about five miles, to a point just east of Provo City, just north and east of Provo here. That the canal has a carrying capacity of 39 second feet. That this quantity ofwater has at times been diverted but we don't claim any such quantity of water as that for our land. The acreage under the canal is 950 acres. All of this, however, is not irrigated. There is 902 acres of irrigable land and 847 acres that are irrigated in the low water season. Some of this land is not irrigated for want of water in the later season of the year.

MR. A. C. HATCH: How much is irrigated in the low water?

MR. BAGLEY: 847 acres. Now, that in general is

a statement of our contention. We were parties to the Morse decree and plead that, but we will contend in the argument that it has not been, that the river has not been measured nor distributed in strict accordance with the Morse decree, and for that reason we have not received the supply which we should have received under that decree.

MR. JOHN E. BOOTH: May I ask, Mr. Bagley, before you put on the testimony, are you satisfied if you get what the Morse decree gives you?

MR. BAGLEY: We are satisfied, yes, if the Morse decree is applied in the way that we maintain that it should be applied, that is, that all the water is measured and that people are restricted to their necessities.

MR. JOHN E. BOOTH: In that case, I don't understand then you attack the decree itself, it is the method of the distribution.

MR. BAGLEY: That's it, we are not taking the position we can set aside the Morse decree, we were parties to it.

MR. JOHN E. BOOTH: I understood you were.

MR. BAGLEY: No, I have not taken that position in respect to this client, and I don't make any statement at this time in respect to the Provo Bench.

T. F. WENTZ, recalled by the defendant, Timpanogos Canal company, testifies as follows:

DIRECT EXAMINATION By Mr. Bagley.

Q Mr. Wentz, you have been sworn? A. Yes.

Q I will ask you if you are acquainted with the Timpanogog Canal in this action? A. Yes.

Q And have you made a surve of the canal and of the lands which are irrigated by that canal? A. Yes sir.

Q When did you make that survey?

A In 1913 and '14.

Q 1913 and '14, was it an actual survey on the ground?

A Yes,

Q And have you platted that survey? A. Yes.

Q And I call your attention to defendant's Exhibit 108, ask you if this plat is a plat of the survey made by you?

A Yes.

Q Will you explain to the court in detail what the plat represents?

A At the northwest corner of the plat, in the northwest quarter of Section 7, the provo River is shown in a white wide line in red ink. Leading from that marked "head works" is the head works of the Timpanogos Canal Company's canal. The red line running south through 7 and 18 then in a southeasterly course through 19, and south through 30, and southeast through 31 into 32 is the canal line, as found by an actual survey on the ground. The part of the map to the left of the canal line and colored in yellow is the Timpanogos Canal Company's irrigated land. At the left of the portion colored in yellow the green line marks the brow of the bench. Farther south in the southwest corner of Section 30 and leading from there to 31 in a southeast direction, the red line is the Upper East Union canal.

Q Will you mark on this map what will indicate the north by an arrow. Then, as I understand, Mr. Wentz, the lands irrigated under the Timpanogos Canal are represented on this plat by the yellow or orange color? A. Yes.

Q The canal itself by the red mark, and the green is the westerly border of the lands irrigated and corresponds with the brow of the bench of the hill of the Pole Canyon Bench?

A Yes.

Q Could you give the percentage of fall of this bench where it breaks off, is it steep?

A Very steep, about one and a half to one.

Q About one and a half to one? A. Yes.

Q And are those side hills irrigable or usable at all for

agricultural purposes? A. No.

Q It is toosteep to be used at all?

A Yes.

Q Now, in this survey did you determine the total area of land under the canal, Timpanogos Canal?

A es, total area of irrigable land.

Q This plat shows all the lands are either in Sections 19, 30, 31 or 32? A. Yes.

Q Could you give the numbers of acres of land that you found irrigated in Section 19?

A In Section 19 the area irrigated is 204.73 acres.

Q And what is the total number of acres under the canal in that section?

A 241. 79 acres.

Q The total number of acres of waste land in roads and places that is not subject to irrigation or use?

A 22.56 acres.

Q And the quantity of land in that section that is irrigated when water for that purpose is available in addition to the 204.73 already mentioned.

A 14½ acres.

Q Now, in Section 30 will you give the number of acres irrigated.

A 298.7.

Q And the number under the canal in that Section?

A 328.59.

Q The number of acres of waste land?

A 15.89 acres.

Q And the number of acres that are irrigated when water is available in addition to the other irrigated land?

A 14 acres.

Q Now, give the same information for Sections 31 and 32.

A Acres irrigated is 343.55 acres. Acres under the canal 379.87 acres; acres of waste land 9.04, and acres irrigated when supply is available 27.28 acres.

Q Now, under the whole system will you give the number of acres irrigated in the lowwater season?

A The total number of acres irrigated is 846.98. Acres under the canal 950.25. Acres of waste land is 47.49 and irrigable acres not irrigated throughout the whole season 55.78.

Q What is the total area of irrigable land under the system?

A 902.76 acres.

Q This information, as I understand it, Mr. Wentz, is obtained from an actual survey and inspection of the lands?

A Yes.

MR. BAGLEY: I will want to recall Mr. Wentz to give some measurements that are not yet computed.

GEORGE W. GEE recalled by the Timpanogos Canal Company, testifies as follows:

DIRECT EXAMINATION BY Mr. Bagley.

Q Your name is George W. Gee? A. Yes sir.

Q What is your age?

A I am seventy-four past.

Q How long have you lived in Provo?

A Ever since '58.

Q Did you participate in the organization of the Timpanogos Canal Company in this county? A. Yes sir.

Q When was the company organized?

A In 1878.

Q What was the object of the organization?

A To get the water out of provo River to irrigate the land under what is now -- what is called the Timpanogos Canal.

Q Can you state whether the construction of the canal was commenced shortly after that? A. Yes sir.

Q And did you assist in its construction?

A Yes sir.

Q Do you know when it was completed?

A If my memory serves me correctly it was completed in '81.

Q And do you know whether it took water into it that year?

A Yes sir.

Q Had it had water in the canal in a part of the system prior to that time? A. Yes sir.

Q Do you remember how far they ran the water the first year they had water in it?

A As I now remember it it was just brought on top of the bench to a piece of land Mr. Hdden owned at the time, and then the next year it went on to Mr. Conrad's place, and then the next year it was completed.

Q Completed down to the point where it ~~x~~ now is?

A Yes, down to the terminus.

Q Is your land somewhere hear the end of the canal?

A Yes sir, next to the last piece.

Q What would you say about the capacity of the canal at the time it was built as compared with its present capacity?

A Well, when it was first built, the understanding was to have it eight feet in the bottom of the canal, and they worked to that end so far as they were able to.

Q Now, since 1881, or when water was turned in before that has water been taken from the Provo River and used through this Timpanogos Canal since then, are you able to state?

A Every year? A. Yes sir.

Q What has the water been used for during these years?

A For irrigation and oulinary purposes.

Q People resort to this canal for oulinary water, do they?

A Yes sir.

CROSS EXAMINATION by Mr. Thomas.

Q Mr. Gee, what is the width of the canal at the present time?

A It is about the same as it was when they built it.

Q How much water did you take through the canal in 1881.

A That I couldn't say, I didn't measure the water.

Q Beg pardon.

A I didn't measure it and wasn't there when it was measured, and I couldn't say.

Q Now, what is your judgment as to the amount of water that was carried through at that time in '81, could you give it in minute feet or second feet.

A No, I don't know that I could because I didn't have anything to do with it at that time.

Q Well, compared with the quantity that is now running through the canal, what would you say?

A I would say there wasn't very much difference, be some difference, but I couldn't say how much.

Q Has the area of land under the canal increased since 1881, that is the amount irrigated under the canal?

A No, I don't recall to mind any piece that is brought in since then.

Q Has there ever been a time when the canal has not been full?

A Oh yes.

Q Your right was taken at the time you appropriated and the water, subject to the pre-existing rights on the river, was it not?

A Yes sir.

DAVID H. JONES, called by the defendant Timpanogos Canal Company, being first duly sworn, testifies as follows:

DIRECT EXAMINATION by Mr. Bagley.

Q Your name is David H. Jones? A Yes sir.

Q You reside in Provo City? A. Yes.

Q How old are you?

A Fifty-six.

Q And have you lived fifty-six years in Provo?

A Yes sir.

Q How long have you been acquainted with the Timpanogos Canal?

A I became interested in the Timpanogos Canal in 1881.

A In 1881 A. Yes sir.

Q Have you been connected with the canal as a stockholder since then?

A I have all the time except about four years.

Q Are you an officer of the company now?

A Yes sir.

Q What officer?

A I am president of the company.

Q Have you ever occupied any official position in this county?

A Yes sir.

Q What position?

A I have been deputy assessor for eight years.

Q In your work of assessment did you have the assessing of the lands in Pleasant View district where the Timpanogos Canal lands are?

A I did for three years.

Q You have assessed the lands then under the Timpanogos Canal?

A Yes sir. .

Q And in making that assessment have you had occasion to study and examine theplat of the land and the land itself?

A Yes sir, I have been over everyacre of ground in it.

Q The area irrigated by this canal is confined to parts of four sections, is it?

A Yes sir, 18, 19, 30 and 31; there is a little in 18, some in 32. I think it is in five sections, part of the Stewart land is in Section 18, if I remember correctly.

Q What class of crops are grown under the Timpanogos Canal and have been since you have been acquainted with it since '81?

A I don't know whether I can name them all or not.

Q In a general way.

A There is alfalfa, wheat, oats, corn, potatoes, barley, carrots, beets and practically everythkng that a person wants to use.

Q Any orchard lands?

A There is some orchard, that is fruit lands.

Q What class of fruit?

A There is peaches and berries of all kinds, apples, pears, apricots, variety of all kinds of fruit.

Q Have you an idea, from your acquaintance with the lands about what percentage of this area that is irrigated is in fruit orchards.

A I went over it this year, and as near as my judgment was, there was about one third of it in ordhard, one third in hay and one third in other crops.

Q In the ~~xxrigaxx~~ irrigable lands? A. Yes sir.

Q Since '81 would you say -- I guess we had better not go back that far. Since orchards were planted in this section has that been about the proportion?

A Well, it is not orchards -- orchards have increased some last few years.

Q Are those orchards cleaned, that is, are they cultivated the entire area so that nothing but the trees grow over the ground, or do they grow clover or other grass in the orchards?

A There is different kinds of crops grown between the trees where the trees are small enough for that, and others -- there is only one or two that has a clean cultivation. The balance is clover crops or some other crops in between the trees.

Q You say there is two orchards that you recall that are clean cultivation? A. Yes sir.

Q The other grow crops between the trees?

A Yes sir.

Q Now, have you gone over this ground, this area irrigated under the Timpanogos for the purpose of ascertainigg nearly as you could the character of the soil and surface soil and subsoil?

A Yes sir.

Q Will you just state to the court what you did, Mr. Jones?

A I started in at the lower end of the land, and I went over each man's land to see what kind of land that he had, and where there was gravelly land, why I marked down the amount of gravelly land.

I also stepped it and also seen the most of the men that owned the farm, and in my stepping and their calculation I underestimated in nearly every instance the amount of gravelly land that they had.

Q Did you make any excavation yourself?

A Yes sir.

Q How many excavations did you make throughout this area?

A There was sixteen, as I remember it.

Q I will ask you if the Utah Light & Power Company has built a pole line through this section?

A Yes sir, on the county road they have built a pole line in the last two months.

Q Did you examine the holes that were dug for those poles?

A Yes sir.

Q Are there any ditches or cuts through the bench which disclose the depth of soil and character of the soil ?

A Yes sir, there is a great many, quite a few of them.

Q Did you resort to those ro get information ?

A Yes sir.

Q Now, from your investigation explain to the court by reference to the section, about what the character of the soil is as you found it in Section 19 and in Section 30 and down in 31 and 32?

A I will have to re-fer a little to the notes I took at the time, I went over it. In Section 19 in gravelly land and porous, very porous land, there was 68.62 acres.

Q What do you mean by gravelly land, please explain.

A Where the top soil was just very little soil on, and underlaid with gravel such as in the river bed there, round porous gravel and very porpus, that will take the water readily. Here I found the soil all the way from 6 inches to 16 inches and then right under that layer would be the gravel and porous ground.

Q You found 68 acres, or a little better, of this character of ground in Section 19? A. Yes sir.

Q Does that gravel lie bear the brink of the bench?

A The greater portion of it lays on the west side of the county

road as you go to Olmstead.

Q What is the character of the land in Section 19, east of the road and that is not embraced within this gravelly area that you have mentioned.

A The greater portion of it is of a clay loam.

Q Clay loam? A. Yes sir.

Q Could you state about what its depth is as you found it?

A That will vary, the clay loam varies from two feet to three and a half feet.

Q And what did you find underlying that where you found the subsoil?

A Well, I didn't dig down more than three feet in any one place, and I suppose it was gravel under where it was shallower, but where it went three feet I didn't dig any farther.

Q It was clay as far as you went down?

A Yes sir.

Q You didn't find any subsoil? A. No sir.

Q That is, any change in the character of the soil?

A No sir, apparently it was the same all the way down.

Q Now then, going to Section 30.

MR. JACOB EVANS: How many acres was there of that?

MR. BAGLEY: He has not computed, but it is in the total he gave you, deducting the 68.62 from the other.

A In Section 30 there was 167.74 acres of gravel land, and balance was about the same kind of land as in Section 19, that is called good land .

Q That is all the gravelly land in Section 30?

A Yes sir.

Q What did you find of that same character of land or similar character in Sections 31 and 32?

A In 31 and 32 there were 165.89 acres, making a total area in the whole under the irrigation system of four hundred and two acres and a quarter.

Q Now, in Sections 30, 31 and 32, what is the character of the land which you found classed as gravelly?

A There is some of it is of the sandy loam, and some of it of a

clay loam and then underlaid with gravel, and then with streaks of sand and clay, and it is a very odd piece of land, Section 31 is especially. Mr. Wheelon, I think, gave some testimony about Paul Soulier and he gave it as near as I could find it the same. There is quite a lot of that land, of the same kind of land in Section 31.

Q Well now, could you give an estimate of the depth of the soil where you found this clay loam and sandy loam?

A On Paul Soulier's land there are two places there, one place I found the surface soil six inches deep and then in the other place it was 12 inches deep and then underlaid with cobble rock of very hard nature and then below that why I found some clay and then some sand and then cobble rock again.

Q Is there any land there that is what you might call sandy land?

A Yes sir.

Q Almost pure sand? A. Yes sir.

Q Could you give an estimte about what area there is of that?

A I xxx believe I can, I can give it on each man's property. Mr. J. E. Phillips has sandy piece of ground 9.50 acres and 7 acres of that 9.50 is of a sandy nature, it is very porous and underlaid with a very fine sand under the surface there. Then Mrs. Peterson, Carl Peterson's wife, she has 6.55 acres of the same nature; in fact, they have hauled a great deal of sand from there for building purposes.

Mr. Tom Thompson, he has some of the sandy loam and some gravel in his. That isabout all the sandy land that there is.

Q You say that sand is so pure it is used for commercial purposes?

A Yes sir, it has been, a great deal of it.

Q Now, is it suvh that the crops can be grown on it xxx when water is properly applied to it?

A Yes sir, the surface sand is very good for that purpose, if you can get a stream of water over the surface.

Q And do you know about what the character of crops they grow on that land is?

A The greater portion of it is strawberries and rapsberries.

Q does it appear to be adapted to that purpose?

A Yes sir.

Q The sandy land? A. Yes sir.

Q Now, do you know where the Rock Canyon is?

A Yes sir.

Q Is there a place called the Rock Canyon wash?

A Yes sir.

Q Where is that with relation to the lands irrigated by the Timpanogos Canal?

A Rock Canyon wast starts about eighty rods south of the north line of Section 30 and then it runs -- it is in fact scattered all over from the mouth of the canyon down nearly to the line of Section 32.

Q And, as I understand you then, this area of land cuts right across the mouth of the Rock Canyon?

A Yes sir, and then as it goes from the canyon it spreads out and gets wider at the lower end of it, that is the lower end -- what I mean the lower end, is where it goes to the lower end of our line that we irrigated from Timpanogos.

Q Do you find in the greater part of Section 30 the wash from Rock Canyon? A. Yes sir.

Q Underlaying all of that?

A Yes sir, all of it practically. There is a little on the east side of it near the foot hills where the Rock Canyon wash don't make a turn is very good land, it is of a clay nature.

Q Now, how much land do you own inder this canal, Mr. Jones?

A Individually I own about fifteen acres.

Q Have you leased and farmed other lands under it?

A Yes sir.

Q Have you owned greater areas at different times?

A Why, my wife and I own, we have a deed for about thirty-four acres altogether.

Q And you look after your wife's land in connection with your own, do you? A. Yes sir.

Q And have about the same experience on that land you have on your

owh land? A. Yes sir.

Q Altogether you say your wife and you have thirty-four acres?

A Yes sir.

Q And how many shares of stock do you own?

A Seventeen and a half shares.

Q Seventeen and a ~~hf~~ half shares, is all of this seventeen and a half shares used on this thirtyfour acres?

A Yes sir.

Q I might ask if you know the number of shares in the company?

A There is 330.

Q Are you familiar with the method of distribution on the canal?

A Yes sir.

Q Will you explain to the court just how the water is distributed?

A The water is divided during the higher water in two streams. Until the last two years we have divided in the center, one stream would go to the lower half and the other stream would be on the upper half of the canal, but the last two years we have run the water all to just one-fourth the distance from the bottom end and watered the lower half with the whole of it by dividing in two streams, and then would take it to the upper half, so as in case that one man would have a little more water than his share it would not be a great distance apart to go and adjust between the two men and then after it gets down to about fifteen second feet we put it all into one stream and each man has it all so as to browd the water over his land to get it irrigated.

Q Has your experience as an irrigator been that you can most economically handle the whole water in one stream?

A Yes sir.

Q Under the conditions as they exist on this canal?

A Yes sir.

Q That is after it gets down to 15 second feet?

A Yes sir, there is less waste in that way.

Q Now, how often do you get a turn?

A When there is two streams we get it once every seven days and four hours.

Q Seven days and four hours?

A Yes sir; when there is one stream it is every seven days and seven hours, as it takes a little longer to go through the canal. when it is up there than when it is part way.

Q What is the purpose, if you know, in making your turn seven days and four hours?

A Why, there was a great many strawberries and rapsberries raised and beets, and in that way we had to irrigate quite often or else our crops would not mature.

Q The berry crops and beets require water that often?

A Yes sir.

Q On this land? A. Yes sir.

Q Do you issue tickets?

A We issue a time ticket at the beginning of the season, just as soon as we commence to water.

Q Does that cover the whole period?

A Unless there is two streams and time is reissued as soon as it is put into one stream.

Q When you change to one stream you make a new schedule?

A Yes sir.

Q Is both day and night included in that schedule?

A Yes sir, every minute of the twentyfour hours.

Q The water is used continuously, night and day?

A Yes sir.

Q And the turns cover day and night periods?

A Yes sir.

Q What is the condition of the canal as to being in good repair or not?

A Why, it is in first class condition, and our watermaster is very particular to see that every man's headgate is closed and if it is not closed tight, why he makes a report and I go after the fellow that leaves his gate open.

Q Are the gates in good repair? A. Yes sir.

Q What are they constructed of?

A They are nearly all cement gates.

Q They are nearly all cement gates? A. Yes sir.

Q The gates that you refer to are the gates through which the water is diverted from the canal by the water users?

A Yes sir.

Q Is there any waste ditch leading from the canal to any point where the water is discharged, that is where any waste water would be discharged in connection with your system?

A No sir, we don't have any waste water in our canal.

Q Have you got any spillway at the Rock Canyon wash?

A No sir, we used to have, but Rock Canyon come down there and brought so much gravel we haven't had a spillway since.

Q From your observation and expetience on the canal what do you say about the use of the water, has it been used carefully or wastefully?

A It has been very carefully used.

Q Do you know whether the gates leak along the canal?

A No sir, they don't.

Q Have you seen at any time water in any quantity running off of the land?

A Very little. There is one or two irrigators the land lay so steep it will run off, if they don't provide among the neighbors to hold it, and have it a little longer hours.

Q What is the practice where there is any waste water resulting from the slope of the country there, do they make provision to take care of that on the lower ground?

A Yes sir.

Q Do you know of anyone who has missed using his turn when the water time came?

A Not that I know of unless a man happened to oversleep himself in the night and didn't get out to take it. That is the only way, just by accident.

Q Is it any common thing to find a turn missed?

A No sir.

Q It is an uncommon thing?

A It is very uncommon.

Q Now, I suppose you used the water on these thirty-four acres of yours during the years 1914, '15 and '16?

A Yes sir.

Q And did you find, Mr. Jones, the supply furnished to you in 1914?

A 1914 was very low, we didn't have sufficient water in 1914 nor '15. We got along by having a variety of crops that we could lay by. We got along so that we didn't suffer a great deal.

Q Well, what do you say about the quantity of water that was distributed to the Timpanogos Canal in '16?

A 1916 we have faired a little better.

Q Have you had more water than you needed?

A No sir, we have not.

Q Could you have used beneficially more water than you had this year?

A Yes, there are some pieces of land that could have been irrigated that were not irrigated that is burned on the little spots.

Q Do you think if you had an increased supply on your thirty-four acres this year to what you have had you would have had appreciably more or larger crops?

A I think I would in some of the wheat and also on my pasture. My pasture would have been in better shape than what it is.

Q Now, in the early season does the Timpanogos Canal divert more water than it does later? A. Yes sir.

Q In the ~~most~~ beginning of the irrigation season what do you do with this larger quantity of water?

A We soak up our land so that when it gets dry the moisture is in it, in the most of it, so that it don't need so much water during the season.

Q Do you find that it takes more water the first irrigation or first two or three irrigations than it does later?

A First two irrigations is the worst excepting in this gravelly land, This gravelly land will take probably the same the whole

season through.

Q Does this clay land, does it store water fairly well or not?

A No, it runs off unless you have a cover crop. Wherever there is a cover crop it willstore water pretty fair.

Q Just explain to the court what you mean by a cover crop?

A Cover crop is something you have to flood the land , such as clover and grass of different kinds that will hold the water from running so fast off of it, and moisture goes into the ground better.

Q Now, in some of these clay lands it is almost pure clay, isn't it? A. Yes sir.

Q Has very little of sand or soil to loosen?

A It is what we would call the gumbo clay.

Q Does it bog very readily? A Yes sir.

Q And turns water readily?

A And turns water readily.

Q Water will run right over the surface and very little be absorbed?

A In some instances you can run it thirty or forty rods and in that distance water wouldn't go down more than three or four inches into the ground.

Q How do you overcome that and get the water into the soil?

A It has to be cultivated and put into cover crops, and after it is put into cover crops it holds the moisture, and water doesn't run so fast over it.

Q The cover crop tends to ~~recover~~ retard the flow of the water and more is absorbed in the passage over it?

A Yes sir.

Q Is the land cultivated -- would cultivation increase its power to take more water?

A Yes sir, you take beets and all kind of crops where they can be cultivated, if it is cultivated every week it will take the water much more readily, than it will if you let it go without cultivation. You can take the beet crop, for instance when

you quit irrigating the beets, quit cultivating the beets the water simply runs over and don't go down very good.

Q Now, I will ask you if during the years '14, '15 and '16, in the months of June and May there was any of the water diverted by your company that was not applied on the lands beneficially?

A No sir.

Q As a practical farmer is it your judgment that the quantities of water that you applied on the lands during those months were necessary to the proper irrigation of the lands?

A Yes sir.

Q About what length of runs are the average on your farm?

A From ten to twenty-four rods.

Q And could you state about what they are on the adjoining farm in this section where you have observed it?

A They will average from about twelve rods, and one or two as high as forty rods, and one instance sixty I know of, but That is a piece of clay ground and water runs off very readily.

Q This sixty rod run is the one where you say the water runs over very rapidly and very little is absorbed? A. Yes sir.

Q Has that a good fall there?

A Has a good fall, I consider it is an inch to the rod or more.

Q Is there any artesian or surface wells in this section?

A Yes sir, there are several surface wells, but not artesian.

Q Do you know how deep they are?

A Vary from thirty-one feet to eighty feet.

Q As far as you have observed do you know how far it is down to the ground water outside of the well?

A How is that?

Q I say, do you know how far it is down to the ground water except as disclosed by those wells you speak of?

A No sir, only just by those wells.

Q No springs on any of this land? A No sir.

Q Could you tell about the number of homes that are built along this canal and depend on it for culinary water and for water

for stock?

A My judgment there is about forty. I could not without going over it, the section, and counting each one, I could not tell exactly.

Q What we call the Olmstead Bullevard runs through this section, doesn't it? A. Yes sir.

Q So you know how many years that bullevard has been sprinkled?

A I think it was since 1892, I wouldn't be sure. I think Mr. Nunn--

Q 1902?

A Or 1902.

Q And the water for sprinkling this highway has been taken out of the Timpanogos Canal?

A The greater portion of it has.

CROSS EXAMINATION By Mr. Corfman.

Q You say you have no waste ditches at all?

A No sir,

Q Just turned the waste water loose and let it go?

A Don't have any waste water to turn loose.

Q Isn't it a fact last four or five years you have washed out the Upper East Union Canal? A. No sir.

Q Some four or five different occasions?

A No sir.

Q From your water?

A That is Rock Canyon water running into our canal but not our water.

Q It broke from your canal?

A No, it didn't break from our canal, it was the water that come through the side hill from irrigation on the bench. Whether it was from our canal or whether it was from the Rock Canyon water we couldn't say.

Q It run out of your canal and washed out the Upper East Union, didn't it?

A Where?

Q Below the mouth of your canal?

A Not that I know of. It has run out the side hill, but where it come from I couldn't say.

Q You say you have not heard of anything of that kind?

A No sir, I have not. I have heard we have been accused of it, there was a suit at one time brought against me, but it was dismissed.

Q Was your attention called to it at the time that water was running from your system there, and on several occasions?

A There was one occasion where the water run over the hill. There was a new man watering for a widow woman up there and he run over the hill and broke the canal in Section 19.

Q That was waste water, wasn't it?

A He didn't shut off his water when his turn was up, he just let it go thinking somebody else would take the water, and that is the only instance I know of.

Q In arriving at the area of gravel land you havetestified to, how did you arrive at that and make your estimate of the area?

A I went over each man's land, looked at his soil, and saw what kind he had and then I dug holes in sixteen different places and tested it, and I stepped the ground, and then I generally went to the man and asked him what he had in the area.

Q And you took his word for it?

A No sir, my stepping and estimation was a little less than his every time.

Q You steppped the land?

A Yes sir, unless I knew the amount of rods there was in it.

CROSS EXAMINATION by Mr. Thomas.

Q How much water is taken from your canal for sprinkling purposes by the city ?

A There is an inch hole bored through.

Q By the country, rather?

A There is an inch hole bored through the headgate right by the county road and that runs continually to fill up the sumps.

Q Is that the only source of supply for the sumps?

A That is the only source of supply?

Q Isn't it true they get water from the city supply as well?

A There is three sumps they get from the city, and after they go down the dugway near Olmstead they take it out of our canal again.

Q Does the county get water from any other source of supply to your knowledge? A. I think they get some out of the Upper East Union ditch. I have seen them pump water for a short time out of there and also from the city down here.

MR. A. C. HATCH: I will ask Mr. Bagley which he depends upon, the testimony of this witness as to the amount of clay land and gravelly land or the testimony of the former witness Wentz?

MR. BAGLEY: I didn't ask Wentz about it, I depend upon the testimony of every witness.

MR. A. C. HATCH: About the acreage irrigated.

MR. BAGLEY: The acreage irrigated?

MR. A. C. HATCH: Which of the witnesses?

MR. BAGLEY: There is no controversy between them. I didn't ask this witness about the acreage irrigated.

MR. A. C. HATCH: I will say that I had understood that the acreage irrigated was agreed upon between the plaintiff and defendant.

MR. BAGLEY: Was agreed upon?

MR. A. C. HATCH: Checked over by the two engineers and agreed upon.

MR. BAGLEY: Yes, it was, that is the way I understand it.

MR. RAY: This is the same acreage.

MR. JACOB EVANS: 846.98 is the same acreage that was testified to by Mr. Stewart, but they have here 55.78 additional acres they would like to have some water for.

MR. BAGLEY: It is irrigable land under the canal just like the excess under the Provo Bench canal.

MR. A. C. HATCH: But has not heretofore been irrigated.

MR BAGLEY: Sometimes, there will be testimony on that.

CROSS EXAMINATION BY Mr. A. C Hatch.

Q Did I understand that you say the only time that you knew of the water running to waste by a user of water from the Timpanogos canal was on one occasion when a new man was irrigating for a widow woman?

A Yes sir, over the hill there to break the canal.

Q When was that?

A If I remember right it is three years.

Q Do you know whether he was looking after the water at the time?

A He had got through watering, expecting some other fellow to take the stream of water and he didn't come go and turn his water and it broke the canal and run onto Judge Booth's land.

Q Could you mark on that plat the places where you made the examination of the soil from which you determined the quality.

A I don't know, I haven't looked at this, there is no names on there, so that it would be a little hard to tell, but I can give you.

Q You arefamiliar with the sections? A. Yes sir.

Q And the sections are there and quarter sections, if you can put approximately the points where you dug the holes and where you examined cuts and holes already dug, or if you can do it during the noon hour, that will be satisfactory.

A I could not right off handed here without looking it up.

Q Can you during the noon hour?

A Yes sir.

Q Will you do it? A. Yes sir.

MR. RAY: Judge Hatch, I suppose Mr. Jones might take that map with the county plat, that will assist him during the noon hour?

MR. A. C. HATCH: Yes.

MR. BAGLEY: I have the detail of it here but it has not been put on here. I haven't got the detail of the hole,

however, I have a detail of the ownership.

Q I have forgotten the name of the man you testified to as having examined by another party?

A Mr. Wheelon testified that he had examined Paul Soulier's land.

Q How do you classify that as being underlaid with gravel or sand?

A The surface, right on the very surface was a little sand, then it is gravel, kind of a cobble rock gravel.

Q How much of the surface was sand?

A There is about six inches. That is, it is sandy, a black sand, and then there was a clay or a cobble rock, and then there is a streak of clay through it.

Q How much depth of cobble rock?

A Well, it varies -- I went to the same place Mr. Wheelon was there-- it was an excavation that Mr. Paul Soulier had made for a stable there and he said he had never seen that kind of land, and I cannot say I seen very much of it only in that district right where it is.

Q That is sand mixed with a gravel, or clay mixed with a gravel?

A No, it is clay mixed with gravel and little sand mixed with it, but a variation, it is a very peculiar variation.

Q Did you classify it as gravelly land in your estimate of the number of acres of gravelly land, or did you classify it as clay land?

A I classified it as gravelly land as it was very porous and underlaid with rock and gravel and sand.

Q How deep did you find the gravel?

A Dug about six feet there where Mr. Soulier dug --

Q Below that--

A I didn't go any below what he dug. Then I dug a little farther up on his land and found the soil was only about six inches deep, and another place here it was twelve inches deep.

Q What underlaid it where it was only six inches?

A I struck gravel just the same.

Q How depp did you dig there?

A I just dug down to where the rocks was and could not go any

farther without pick and shovel to go deeper with it, that is picking a big hole. I had a pick and shovel along with me, but only dug a small hole there and when I found the same surface was below I didn't try to go any deeper.

Q How far was it from the lower place?

A It wasn't more than ten or fifteen rods, and then the place where it was twelve inches deep was up to the upper end of his land, that is, to the north end of it.

Q Was there gravel underlaying that surface soil?

A Yes sir.

Q The gravel was so hard you could not dig it?

A Yes sir.

Q In the nature of a cement, was it?

A Well, --

Q Conglomerate like Rock Canyon?

A No, it wasn't like Rock Canyon wash, because Rock Canyon wash is looser than that is. This is a harder.

Q Tight hard substance?

A Next thing to cement.

Q Do you know whether or not it is porous?

A Well, down as far as I went it was porous, but pretty hard digging to loosen some of the rocks.

Q But not very porous?

A Well, it was porous enough it takes considerable water to get over the ground.

12:00 Noon, Recess to 2:00 P. M.

DAVID H. JONES - - - - - -

CROSS EXAMINATION by Mr. A. C. Hatch continued.

Q Mr. Jones, if you will indicate on Exhibit 108 now where you made the several excavations of which you have testified and name the place or section and whose land -- part of the section and whose land it was, beginning at the lower part of the map?

A This is not marked so that I could understand the corners.

Q Very well, go ahead as well as you can?

A Right here is Paul Soulier's.

Q Where is that?

A That is in Section 31, just above the Upper East Union ditch and at his residence.

MR. JACOB EVANS: Lower part of the map.

A Yes sir, lower part of the map.

Q Whose residence?

A Paul Soulier's.

Q Very well.

A He is living there and Mr. Mullersteins is a peach orchard just north of there, where I made an excavation.

Q How far?

A Just across the two rod lane, if I remember the width of the lane, just across the land, and I made two excavations on that ground, just across on the inside of the fence, and one farther up. Then Mr. Phillips, the wand bed over on the east of Mr. Mullersteins and Mr. Crowther's -- I should have said on the west of Mr. Mullersteinm, Mr. Phillips is west, Mr. Growthers is on the east and north of Mr. Mullersteisn, where I made an examination of a ditch that was running near the line north of Haas. Then Mr. Peterson lays due west of the Crowther land, and also south of the Haas piece, and there is an irrigation ditch that runs between Mr. Haas and Mr. Peterson southwest. I made the -- I took observations there of the kind of soil there. Then on the Rawlins piece, I should judge about 40 rods -- thirty rods north of Mr. Haas, made a test there, dug a hole there. Then on Mr. Daley's.

Q How far is that and what section?

A That is in Section 31 -- let's see, thirty, I suppose the line is there, that would be in thirty. Then Mr. Daley's would be nearer the northwest quarter of thirty. There is an irrigation ditch running on the north line of Mr. Daley's is where I made

an examination there. R. W. Bretton is just a little north from Mr. Daley's and just across in the southwest quarter of Section 30 where his well is, and also south of there is where I dug a hole. Then Mr. Roylance's land on the west side, that is in Section 30, in the northwest quarter, and my own, that is just south of the section line in Section 30 in the northwest quarter. There was three observations there, three holes.

Q Didn't you go north of that?

A I didn't dig any holes. The Utah Power & Light had run a pole line along the county road, that is all I took observations from.

Q In all pf the irrigation ditches that you examined, you found gravel in the bottom of the ditches, did you not?

A Yes sir.

Q Isn't that true of all the irrigation ditches in the Provo river irrigation area?

A No sir.

Q Where are there any ditches that don't have gravel at the bottom?

A There is one, it is about twenty rods south of the north line of section 30, on the Roylance farm. There is a ditch there hasn't got any gravel in.

Q Is that within the Timpanogos Area? A. Yes sir.

Q Is there any other ditch than that without a gravel bottom in that area?

A There are some pieces.

Q That is true over the clay area as well as over the gravelly area, isn't it?

A No sir, you take the clay area here, the gravel, unless it is wash --

Q That is what I mean, the gravel washes and covers the bottom of all your ditches?

A It would do that where there is any gravelwashes, it would cover

the bottom.

Q Did you make any excavation in the bottoms of any of these ditches? A No sir.

Q You examined to determine whether it was wash gravel or whether it was gravel in clay, in the soil?

A I think it is, Crowther property where the ditch is located on his farm, I farmed it for a year or two and during that time I had occasion to dig several holes thereand I found it just as it washes in the ditch.

Q At any place did you make an examination to determine the gravel in the ditch was wash gravel, or gravel in place?

A I never made any examination only where I have seen the ditches plowed out and then gravel in the bottom. Mr. Daley's, I saw that plowed out, and it was gravel from the surface.

Q About what is the average, if you can tell, of the stream of water flowing in your canal?

A The whole average taken through the piece, I should judge be about sixteen to eighteen second feet, that is, including high water and low water, make it an average.

Q What is the lowest average, taking it year by year, I mean in the low water season?

A I haven't kept any track particularly, only the last two years.

Q What is your judgment?

A My judgment in the last two years about twelve second feet in the lowest.

Q In the lowerst water season? A. Yes sir.

Q That would be your judgment as to the average for the last three years? A. Yes sir.

Q That is the lowest water stage?

A That is the lowest water stage. I think that the commissioner-- I had a talk with him, and I believe that he told me, was twelve second feet.

Q Then you are using his statement instead of your judgment in regard to it?

A Now, as far as my judgment is I take it from what he tell us

we have in the ditch, and the measurement that is in the flume. I have no way to determine how much a second foot of water is anymore than the measurements, and he calculates it and says there is so much to every inch in the flume.

Q In regard to the breaking of the canal, to which you testified, do you have an independent recollection of what year it was when the canal last broke?

A I think it is three years ago.

Q That would be in '13?

A Yes sir, it may have been 1914, but I think it was in the year 1913.

CROSS EXAMINATION by Mr. John E. Booth.

Q What is the capacity of your canal, Mr. Jones?

A 39 second feet of water.

Q 39? A. Yes sir.

Q Do you have it full sometimes? A. Yes sir.

Q Do you divide the water among the stockholders according to their acreage or according to the stock?

A According to the stock.

Q You say you have thirty-four acres? A. Yes sir.

Q Is this thirty-four acres all under the Timpanogos?

A Yes sir, it is all under it.

Q You have some to the east of the Timpanogos, have you not?

A No sir, it runs about forty rods east of my land. There may be a little under the Upper East Union there.

Q Sir?

A I say there may be a little under the Upper East Union.

Q So that you don't actually cultivate the thirty-four acres, do you?

A Well, there is a little of it we don't, we can't cultivate.

Q There is a little?

A That hill we can't cultivate.

Q How much from the brow of the hill down to your lower line?

A Well sir, I have never had it surveyed, I couldn't tell you Bishop.

Q Give us your best judgment about it?

A I couldn't --

Q How far do you run north and south?

A 40 rods.

Q 40 rods?

A Yes sir, about that.

Q And you get down to about the Upper East Union, do you not, with your west line? A. Yes sir.

Q Now, is there practically ten rods on that hillside?

A No sir, there is not, I don't think it is that wide, only as you run down the hill and some places be sixteen rods, I suppose.

Q Won't it average, across your forty rods, won't it average ten rods wide?

A Well, it maybe, I wouldn't say.

Q Well, give us--

A As I understand it it is about sixteen rods of the sectional corner, and I don't know just where the sectional corner is.

Q So that it would not be far from that, would it?

A No, I estimate about five or six acres.

MR. BAGLEY: If you want to know what that is I can tell you, Judge.

A Surveyor surveyed it, I couldn't tell you.

Q You remember talking to the assessor about that, do you ?

A Yes sir.

Q You remember that in that case you claimed there was seven acres of that that was waste?

A Yes, six or seven acres, that is counting the county road too.

Q That would be off the thirtyfour acres, wouldn't it?

A I don't know, now the deed that I have in the Turner estate don't say the amount of acres there is in it.

Q You made a calculation, didn't you?

A Yes, I have guessed at it.

Q You guessed it at thirtyfour acres? A, Yes.

Q Now, the county road comes out of that, don't it?

A I took it from the plat.

Q Then there is, in your deeds the county road comes out, don't it

A Yes.

Q And then about six acres of waste land comes out, don't it?

A Yes.

Q How wide is that county road?

A Four rods.

Q For the forty that would be an acre?

A Yes sir.

Q Then about six acres below that? A. Yes sir.

Q That would be seven acres our of your thirty-four?

A Close to it.

Q So you don't irrigate thirty-four acres, do you?

A Well, there is quite a little strip on the west side.

Q No, I say you don't irrigate thirtyfour acres do you?

A Certainly not, and some on the hill I don't irrigate.

Q It is about twenty-seven acres?

A About twenty-seven acres will cover it.

Q Now, when it gets down to 15 second feet -- I will withdraw that- what length of time do you allow to a share?

A Why, if they take the whole canal it is 30 minutes to a share, thirty-one minutes. If they take half of it, why, it is one hour and one minute.

Q Now, when you make out your tickets, or, by the way, who is the watermaster?

A Alfred Shipman.

Q When the tickets are made out are they made out for one share or half a share, whole stream or half stream?

Q I have had the entire stream this season.

Q During the whole season?

A Yes sir, except in the first watering.

Q And you have how many shares?

A Seventeen and a half.

Q That is one minute, or one hour and one minute to the share?

A Yes sir.

Q Every irrigator?

A Every irrigator -- no, that is thirty minutes, thirtyone minutes to the share.

Q That would be practically eight hours and a half, how much have you below the road, west of the road, I mean.

A I could not say.

Q Well --

A I should judge it would divide practically in the center.

Q That would leave about seventeen acres below the middle of the road? and seventeen above?

A No, it is about -- yes, well, there is more on the west side including the waste land than there is on the east. Th-ere is only fourteen on the east side altogether.

Q Now, can you handle a stream of 15 second feet on that ground?

A Easy.

Q And not run any off?

A Not run a drop off. That is, of course, what runs down below I can see where it goes to.

Q Near the west end of your land? A. Yes sir.

Q And little east of the brow of the hill, isn't there a swale in there, low place?

A Not more than four inches.

Q Is there any?

A There used to be when I first got the land but it has been leveled up.

Q You have been filling it up?

A Yes sir, I put in about thirty days work on that, leveled it up.

Q How recently is that?

A Why, it is, oh the last work upon it about two years ago.

Q That was after these breaks, wasn't it?

A No sir, before.

Q It was before the breaks?

A Yes sir, there is one small swale near the country road there water will, if I let it, pond, it will pond a foot deep.

Q On the west end there is about four inches fxxt deep, you say?

A Yes, well, the waterwill run and won't be over four inches when I am irrigating.

Q What becomes of that water?

A I don't know.

Q Never see it after that?

A No sir, not after it goes into the ground.

Q Have you ever seen the results of it after that?

A No sir, not to say I know it is mine.

Q You never followed it down in the ground?

A No sir.

Q But do you know after the water has stood there on your ground like that there have been hundreds of tons of rock and gravel slid down off the side of the hill short distance west of that?

A After all the people have been irrigating around me I have known of slides down the hill.

Q Hundreds of tons?

A I made an observation last year and if I put a drop of water on the west side of the road and Mr. Storrs and Mr. Foote and Mr. Faucett was watering over on the Green bench and three days after they irrigated on the Green bench right next to the mountain there, the water come out in that wash, run down the flume they have across the Upper East Union, so of course I dont claim it is my water, and before the Upper East Union was built there was a spring right there. I packed water when theywere building the canal, boy twelve years, I packed water to the men on the canal.

Q You believe then from your observation that watering up on the Green benches half a mile east, at least, isn't it, from there?

A Yes sir.

Q The water from those -- that irrigation on the Green bench will run under your ground and come out?

A Yes sir.

Q And the East Union Canal?

A Yes sir, I don

Q Now, from your observation where water stands on your ground with-

in a few rods of that, you don't know whether your water will run down there or not?

A I don't let it stand on there.

MR. BGLEY: Object to this as not proper cross examination.

MR. JOHN E. BOOTH: It is cross examination. He told about it in his direct examination that there never was any water run off.

MR. BAGLEY: You are attempting here to trace subterranean water, and I don't see it has any bearing upon the issues in this case.

MR. JOHN E. BOOTH: Of course not, you are not here to look for that.

MR. BAGLEY: I will take a ruling on it.

THE COURT: There is no question before the court now all questions have been answered.

Q Mr. Jones, have you recently cut a ditch from the -- at the southwest corner of your ground next to Roylance's?

A No sir, it has been there ever since I had the ground.

Q There is a ditch there? A. Yes sir.

Q Has it been recently cleaned out?

A No sir, not that I know of, it may have been since I have been working on the thrashing machine, I couldn't say.

Q What is that ditch for?

A In case any water runs off the orchard it will go under Roylance's.

Q Did you say it could not run off?

A Since I have owned that land the water has not run twenty rods down any land Mr. Roylance has got.

Q Has it run nineteen?

A I could not say nineteen. There may have been a little leak off.

Q There is some water runs off your ground, isn't there?

A I wouldn't say any runs off.

Q What did you make any ditch for?

A In case it should, so that it should not run into the East Union.

Q Whatever does run off runs into the East Union, don't it?

A No sir.

Q Where does it run?

A It just runs down a little piece on Mr. Roylance's while it is slackening off.

Q Where does it go then?

A It is always changed. I hardly let it get to the bottom of my ground before it is changed and put on another piece.

Q You don't let it stand there like you used to?

A I never did.

Q I thought you said before you filled it up there was a pond.

A I have never left my ground more than two hours since I have had it since '92, if I remember the date when I got it. I believe Mr. Roylance's man will verify that statement.

Q I believe you stated this morning that you had not been getting what the Morse decree allowed you?

A No, I didn't state that. If I did --

Q Well, the attorney stated it.

A The Morse decree in the way we interpret it says for beneficial use in that last sentence, and the commissioners have refused absolutely, until the last few years to look at that clause of it.

Q The last three years you have been getting more water, have you?

A Well, I haven't measured it, but I have been satisfied.

Q Satisfied you have received more water?

A Satisfied I had what I needed to water with.

Q Now, 1915 you received about what the Morse decree gave you, didn't you?

A In 1915 early part of the season we run short, right on the 8th of May.

Q Short time when everybody was short, wasn't there, that year?

A Yes.

Q Don't you understand that is a fact?

A Yes, I think so, all of them.

Q Now, you spoke about the Olmstead lawn, sprinkling up there, that comes out of the Timpanogos?

A I didn't say lawn, the road.

Q I understood you to say the lawn?

A From the bridge on the north of Olmstead and east, the water is all from the Timpanogos Ditch.

Q Has there been arrangements made with you people for that water?

A Just for the last two seasons. They just helped themselves before.

Q The last two seasons, I didn't understand whether you said there had been arrangements?

A These last two seasons.

Q Say somebody made arrangements with you for that much water?

A Yes sir.

Q Is there any of your stockholders that own Rock Canyon water?

A There is, but the land that is included in this map here has been deducted wherever they use Rock Canyon water, it has been deducted from this area.

Q Oh, is that so? A Yes.

Q Now, could you point out on the map there somebody that has Rock Ranyon water and his land has been left out of that calculation.

A There is the Brunard land, that is right in there, those two piecesright here belongs to him, they rent water occasionally whenver they can off of parties that will summer fallow the land in that way, and then there is --

Q Now then, while we are on that, was that land deducted from yuur calculation?

A Yes sir, it was made an estimate on the amount that was watered from Rock Canyon, and amount that was watered from the Timpanogos.

Q And that is not shown on this map as being left out?

A Oh yes, the calculation entire amount of acreage there is a portion of that left out, but I don't know just how much.

Q Anybody else?

A Yes sir, there is Mrs. Corbet , but I can't locate that unless this is the strip here, it is right here; and there is a piece of Penrods right in there that has been deducted. That is all the stockholdess that owns any water in the North Canyon.

Q Which is the piece you mention, Mr. Stewart's?

A Mr. Stewart's is here, he is on this side, water from Rock Canyon, that is different.

Q He don't run any here across your ditch?

A You take in the report of the surveyor, he has included all this land, this was an amount of shares that he has used from Rock Canyon, covers this land on this side.

Q Mr. Stewart don't run any across your ditch to water his land on the west?

A No sir, we don't have enough for the other side.

Q Now, you say in the flush season, your canal will carry about thirty-ninesecond feet? A. Yes sir.

Q And you fill it? A. Yes sir.

Q How is it about the intermediate stage?

A That intermediate stage I believe gets down to about 18 second feet.

Q And about how long will this -- about when will this cut commence?

A They generally begin to cut us in June and keep it up until the rest of the season, keep cutting.

Q Down until it gets as low as twelve? A. Yes sir.

Q Has it been as low as twelve this year?

A I think it has pretty close to it, I think the one day was less than twelve, but Mr. Wentz wasn't here so that he could regulate it.

Q About how long can you use or do you use the 39 second feet?

A Well, that is not always -- we don't always keep it full in the spring of the year.

Q Why?

A Generally the first irrigatibn we keep it full to the second irrigation.

Q When does the first irrigation begin?

A As soon as the land begins to want it, sometimes it is in May, and sometimes it is the latter part of April. We have watered as early as the latter part of April.

Q From the latter part of April, say about the first of May, there is where your heavy watering commences?

A Yes sir.

Q And that will last, the thirty-nine second feet, for about how long?

A Well, I haven't observed that close, so I couldn't tell you .

Q Can't you giveus some estimate about it, judgment?

A I don't like to guess.

Q You have been there now for a long time, good many years?

A Yes sir, I have.

Q Been connected with the system, about what would be the average time of the first cut?

A Well, about the 20th of June is when they begin to cut us. Of course, we don't always keep thatamount of water in the canal when we found the stockholders didn't want that much we would cut it down, turn it back in the river.

Q So you didn't actually need the 39 feet all the time, did you?

A Not all the time.

Q Now, after the second irrigation you need a little less water, do you not?

A On part of the land. You take that land, alluding to mine, on the west side of the road, if I have a small irrigation stream I never can get over the ground. I can take five second feet and not water that piece on the west side all summer, just keep changing it and never get over the whole of it, but by having a large stream you can push it over.

Q Take this system throughout, don't you need less water for the third irrigation that the first?

A Take it all through on that you would need less.

Q Don't you need less for the fourth than for the second?

A No, I don't think so, not until the wheat crop is gone. I don't think we need less water.

Q About when do you harvest up there your wheat?

A All the way from the 24th of July until the 12th of August.

Q After that is over then you need less?

A We don't need less, we need the water to put on the land to plow is for a future crop.

Q Have you plowed up there this year?

A Yes sir, I have.

Q You are plowing already? A. Yes.

Q And have irrigated the land to plow?

A Yes sir.

Q So when you take water for irrigation of land, crop of which is taken off, then you don't need it on the other, do you?

A I didn't understand.

Q When you take your water to irrigate land on which you have taken the crop off, you don't need it on the land you have taken the crop off?

A Well, maybe there is some pieces needs a little moisture to get it over, that has not been watered during the season.

Q Would you take, say in August, month of August, would you take your water that you need for your growing crops and put it on land that you harvested?

A I would to get ready for another crop.

Q And you deprive your growing crop of that water for the other, would you?

A I would skimp them.

Q Have you had to skimp any this year?

A I have let my beets take the biggest part of it this year, I don't know how hard they have skimped.

Q You are xxxxxxx there frequently, you are there every irrigation?

A Most every irrigation.

Q Have your crops been skimped this year?

A There is none only the pasture on the west side.

Q You water that every week, do you not, or about every week?

A We water thatevery week and try to catch a little waste water from the other fellow above.

Q Does this pasture include the uncultivated land?

A Part of it.

Q Of the seven acres, six or seven acres?

A No, not the whole of that pasture doesn't, there is a portion of it.

Q Mr. Jones, as an experienced irrigator, have you any judgment as to the duty of water on that land up there in the system?

A It takes --

MR. BAGLEY: I object to that as not cross examination, I never asked him about the duty.

MR. THURMAN: Your testimony is whether he needed it all, used it all, it is on the question of duty, you may not have used the word duty.

MR. BAGLEY: I take it, your honor please, it goes more to showing what the result of the application of the water was, rather than expressing any duty. It is only one element in determining duty when it is connected up with the measurement of the flow used. I don't think that would make this man subject to cross examination on the question of the duty of water.

THE COURT: I am inclined to think it would, I am inclined to think it is within the proper scope of cross examination. Objection is overruled. He is asked now --

MR. JOHN E. BOOTH: From his experience as an irrigator he can form a judgment what duty.

A Take that land on the bench there the west side, about a 40 acre duty, and on the east side of the road get along on a fifty for the first two irrigations.

Q 40 acres, now, you take the land west of there, the gravelly land down in the river bottoms, you know what that is, do you?

A Yes sir.

Q Been through there in your assessing?

A Yes sir.

Q Which would require more water, that gravelly land down such as you know, where Hyrum Baum lives?

A Yes sir.

Q Must a little west of yours, what would you say as to the relative requirements?

A He would require on there on an average 40 to 50 the whole

season through, second foot of water.

Q Hyrum Baum's land would require more than yours, do you think?

A Yes sir, on an average it would.

Q I think it would I believe that is all.

REDIRECT EXAMINATION by Mr. Bagley.

Q Judge Booth has asked you about some breaks, those breaks were not in the canal of the Timpanogos Company, were they?

A No sir, in the Upper East Union.

Q There were breaks in the Upper East Union?

A Slid from the side hill, or slides of gravel and rock into the canal from the side hill just above the Upper East Union and broke the Upper East Union canal.

Q Where the irrigated lands of the Timpanogos border on the east bank of the Timpanogos canal --

A Yes sir.

Q There has not been any breaks in the Timpanogos canal?

A No sir.

Q Within the last few years?

A I guess six or seven years since there has been any breaks up there.

Q You were asked about water running out of the Timpanogos canal and down into the Upper East Union by counsel for the city and Upper East Union; can you state where that water came from that ran down into the Timpanogos, or into the Upper East Union canal?

A Not very well, I couldn't see any on the surface and my observations last year and also the year before --

Q I am not talking about this water that Judge Booth asked about, I am talking about the water Mr. Corfman asked you about.

A That is the same place as I understood it, it is right where this slide has been on the side hill, and there is water every year runs out of that and runs into the Upper East Union.

Q That is the Brunard place?

A It is west of mine; it is on my property it comes out, if I am not mistaken --

Q I was not asking you about that, Mr. Jones, I asked you about water from Rock Canyon.

A Oh, there was -- it was on the Hogan place just north where that break was caused. Mr. Ivers, he watered for Mrs. Hogan and after his turn was through, in some way he didn't turn the water off, and it run right over the bank and washed into the Upper East Union .

Q I will ask you if there is every any flood waters come out of Rock Canyon? A. Yes sir.

Q Do those waters ever find their way into the Upper East Union Canal?

A Ye s sir, and also into Provo River.

Q Would they flow through the Timpanogos canal to get into the Upper East Union Canal?

A Yes sir, they would follow the Timpanogos Canal if it come near R. W. Bretton's farm, follow it and run over there, and there is three or four other places south of that that it runs in and follows our canal down to the lower end.

Q That Rock Canyon water is not a source of supply for the Timpanogos canal, is it? A. No sir.

Q It is merely some flood water that comes from a freshet or something of that kind?

A It is a detriment to the Timpanogos.

RECROSS EXAMINATION by Mr. A. C. Hatch.

Q You answered Judge Booth that your land required more water for irrigation the fourth time than it did the second time, or as much, did you mean that?

A I meant that after the second irrigation it will practically need the same on through the whole season.

Q But as no irrigation after the second does it require the same quantity of water that it does the first and second, does it?

A First will take a little more, but the second and rest of it
A is practically the same account of the porous condition underneath

Q Then you would make no difference between the second and fourth

or the tenth irrigation? A. No sir.

RECROSS EXAMINATION by Mr. John E. Booth.

Q In connection with that the 39 second feet that you refer to is sufficient for your first irrigation?

A Yes, it is more than sufficient.

Q Now, the second requires less?

A It will take a little less, take it through the whole system it will take less.

Q It takes less? A. Yes.

Q About how many second feet would you require for a complete irrigation the second time?

A Oh, we could get along on 28.

Q That would be eleven feet less than the first?

A After the first irrigation.

Q Then from that on you think you would want the 28 feet all the time?

A Now through the whole system. I thought the Judge meant on my own individual land.

Q No, speaking about the system now.

A On the whole system get along with a little less after the second irrigation.

EZRA WALKER called by the defendant, Timpanogos Canal Company, being first duly sworn, testifies as follows:

DIRECT EXAMINATION by Mr. Bagley.

Q State your name?

A Ezra Walker.

Q How old are you?

A Thirty-four.

Q Your business?

A Farming.

Q Are you farming under the Timpanogos at the present time?

A Yes sir.

Q How long have you beenfarming there?

A Six years.

Q Have you got a farm of your own? A. No sir.

Q On whose farm are you?

A I farm for William M. Roylance.

Q What is the size of the Roylance farm?

A Forty-seven acres.

Q How many shares of water.

A Eighteen.

Q What is the land planted to and has it been planted to?

A All trees, fruit trees.

Q All orchard?

A All orchard.

Q Is it bearing orchard? A. Yes sir.

Q What fruits?

A All apples and pears.

Q The entire fourty-four acres?

A Yes sir, there is forty-seven, but we have two acres waste.

Q Three acres waste hillside?

A Yes sir, fourty-four acres in trees.

Q Does that land lie on both sides of the county road, or the boulevard? A. Yes sir.

Q Where is it with respect to the Rock Canyon wash?

A It is a little north of the Rock Canyon wash.

Q What is the character of the soil?

A The soil east of the boulevard mentioned is of a very stiff clay, more particularly the lower end of it. The upper end is inclined to be a little sandy. The lower end is a very stiff, stubborn clay, and the west side of the boulevard mentioned is a gravelly soil all excepting a few acres on the east part, that is a clay, very stubborn clay . The west portion is a gravel formation. The nearer the hill you get the more gravel.

Q Is this orchard cultivated clean, or do you have a cover crop?

A It is planted to a cover crop of red clover.

Q Did the orchard bear last year?

A The apples bore some fruit, the pears did not.

Q How is it this year?

A Itis visa versa this year, the pears are bearing some, while the apples are hardly enough to be worth mentioning, just a light crop.

Q Call your attention to this what you call the hard, stiff clay have you observed the application of irrigation water on that clay? A. Yes sir.

Q Just state to the court what you have observed?

A We observed our trees were not getting sufficient water or something was wrong with them, and immediately after our irrigation turh was over, two of us with a shovel each, began to dig down near these trees that looked as though they were suffering, to ascertain why they looked this way. We found that the water had only soaked down about five or six inches, while the roots of the trees are much farther down, the feeders, and found this stubborn clay was glazed over so to speak, on the top so that the water ran over it rather than soaking into it in places.

Q Is the slope of the land little or much?

A The west orchard is, the pears is more flat than the east, the east has much better slope.

Q And the water runs through it freely?

A Yes sir, on the east, but not quite so freely on the west.

Q Did you find that the fact that the water was only being absorbed in the soil about four or five inches had any effect on the crop od fruit in the orchard ?

A Yes sir, it made it small and unsalable.

Q The apples were small?

A Yes sir, the pears I am speaking particularly of now. The apples, we overcome that to some extent by fertilizing it and this clover crop, but in some cases in the pears the clay was so stubborn we could not get even a clover crop to start and fertilized it in several places, several acres put sweet clover

in it and opened up the soil that way, so the water would follow the sweet clover roots and when they died it would help some.

Q This cover crop, does it tend to open the soil and let the water in? A. Yes sir.

Q The roots of the plant help to get the water into the ground?

A Yes sir.

Q Now, do you find that more water is required where you get this cover crop? A. Yes sir.

Q Than if you didn't have the cover crop?

A Yes sir.

Q I will ask you, Mr. Walker, under the eighteen shares of water which you used on the Roylance farm during the year 1915, that is last year, if it was sufficient water to properly and economically ittigate the orchard?

A No sir we did not.

Q What causes you to draw that conclusion, what did you observe?

A After July 1st, the shortage of water during the entire season our water was low, as has been stated here and when it became divided to one stream, or put it all into one stream, we did not have sufficient water to mature our crops properly, it suffered.

Q You mean by that that the water did not get over the land?

A Yes sir.

Q You have a means of catching the waste water from the land on the east side of the road and transferring it to the west side?

A Yes sir, we don't waste any water, the water that runs off when it is run off from the east, we get it on the other side, and use it there so we have no waste water.

Q Now, calling your attention to the quantity of water that you have had this year, and applied on the land, have you found you had sufficient this year?

A No sir, some of our apples have duffered this year for the lack of water.

Q Is that true, lack of water? A. Yes sir.

Q Now, have you observed the effect of that insufficiency of water on a non bearing season on a fruit crop or fruit trees?

A Just state that again, please.

Q Have you observed the effect on fruit trees of an insufficient supply of water? A. Yes sir.

Q During a non-bearing season? A Yes sir.

Q What is the effect?

A We found the trees did not make the proper wood growth they would have done as if we had had the water to spare for them.

Q Does that affect the on coming crop?

A Yes sir.

Q It is necessary a certain amount of wood growth each year to produce the buds, is that right?

A Yes sir.

Q And unless the water is supplied and such growth is made you don't get a crop the succeeding year?

A Yes sir.

Q State whether or not the water which you have used on the Moylance farm has been applied economically or otherwise?

A It has beenapplied economically.

Q Do you keep a man in attendance all the time or yourself attending?

A During the irrigation hours?

Q Yes, while you are applying it?

A Two of us during the irrigation hours.

Q Two with the water all the time? A. Yes sir.

Q Day or night? A. yes sir.

Q Until the turn is expired? A. Yes sir.

Q While you have been farming there have you ever missed a turn?

A Water turn?

Q Yes. A No sir.

Q How do you find the quantity of water required for the first irrigation as compared to the quantity required for the later irrigations.

A Very little difference, probably a little, requires a little more for the first irrigation than it would the next two or three.

Q Have you irrigated alfalfa?

A Not on that farm.

Q In any other places? A. Yes sir.

Q Would you say that this cover crop of red clover requires the same amount of water during the season that an alfalfa crop would? A. No sir.

Q What is the difference?

Q The roots of the clover are not nearly so -- don't go nearly so deep as the alfalfa roots, and in my experience it doesn't hold it back so.

Q So that it would take more water for the clover crops?

A For the alfalfa than for the clover crops.

Q Take more for the alfalfa?

A I think so.

Q I misunderstood you, I thought it was just the other way. About what crop would you think would compare with the clover crop?

A In the way --

Q In the needs of water, yes.

A You could compare it with alfalfa nearer than you could anything, because hay and grass you have to flood it because you don't aim to water particularly out in the center as much as we do by the trees. We have two furrows on each side of each tree row and we water down those furrows and try to get it to flood in the center because the roots are in the center of the tree rows as well as near them, so we aim to have it flood, to carry water out in the ex furrows . If it spreads out there all right, but try to make it go near the trees.

Q Is this clover crop essential to the production of marketable fruit crops?

A Yes sir, have had much better crop of fruit since we have planted this crop in the orchard.

Q I will ask you this, could you have used beneficially and observed increased results from your fruit crop this year or clover crop, more water than you did apply on the Roylance farm?

A Yes sir.

CROSS EXAMINATION by Mr. Corfman.

Q How many shares of water have you in your forty-seven acres?

A Have eighteen shares, irrigate forty-four.

CROSS EXAMINATION By Mr. Thurman.

Q Do you have an average ratio of supply with the other farmers up there? A. Yes sir.

Q Eighteen to forty-four?

A No, we have, if anything a little more than the average, I believe.

Q You have eighteen shares?

A Yes, some of the farmers don't have that much for a proportionate number of acres.

Q You have been operating there for six years?

A Yes sir.

Q Have you ever had plenty of water there?

A In the summer, early summer, we have had plenty of water, yes sir.

Q In the middle of the summer you have plenty?

A Plenty.

Q Generally always, don't you? A. Yes sir.

Q But how about the late season?

A We have never had enough in late season.

Q Never have had enough?

A No sir.

Q Not during the six years you have been there?

A Yes sir.

Q Did you have less last year than you had previous years?

A Yes sir.

Q Can you account for why you had less.

A There was less in the river.

Q There was less in the river generally, wasn't there?

A Generally.

Q There was what we call a dry year? A. Yes sir.

Q How has it been this year?

A It has been much better than it was last year.

Q Much better, have you got along pretty well this year?

A One portion of the apples we had to slight one whole month, which we feel has been detrimental to them.

Q How much, what portion?

A Three acres we left out for one month.

Q You have forty-four acres in fruit trees?

A Yes sir.

Q Was that because you didn't have water enough?

A Yes sir.

Q What effect did you notice thus far in respect to that three acres?

A The trees, some of them, are turning a little yellow, some of the leaves little bit pinched and shrivelled a little on the lower end of the field where that stiff clay is, ground is very hard.

Q The same results might occur from too much watering, mightn't it? A. No sir.

Q Coloring of the leaves?

A We never had anything like that happen on our orchard.

Q You never had too much water, did you? A. No sir.

Q It does have that effect, too much water, don't it?

A I have seen it in cases, yes sir.

Q On some crops?

A Yes sir, but we never had any to spare in that respect.

Q Have you a crop between the trees?

A We have a cover crop simply for the retaining of the moisture is all we use it for. We cut it several times and let it lie there to hold the water, keep it from running off so we wouldn't get any waste water.

Q What is it, clover?

A Red clover.

Q You leave it on the ground?

A Yes sir.

Q To protect against evaporation? A. Yes sir.

Q How often do you plow, or do you plow furrows along by your trees?

A Every spring we go with a Huge marker with four horses, and mark

fresh furrows near the trees so we are certain the water will go near the trees and flood it out to the center, and if we don't the center can go a little short .

Q Do you do that during the season?

A No sir, we don't have to do that during the season, just in the spring.

Q Wouldn't it facilitate the water reaching the roots of the trees if you stirred the ground occasionally?

A It probably would help some, we cannot afford to do it.

Q I understand that is one of the difficulties you have to contend with, that the water does not soak down to the fibers or roots of the trees?

A It does since we have this cover crop.

Q It does? A. Yes.

Q Does that cover crop you speak of cover right up to the trees?

A Yes sir, all but about a foot, we aim to keep a foot away, or fifteen inches, so the mice won't build nests around the trees.

Q We hoe it away a foot or fifteen inches.

Q This water you give to the space between, are the spaces between the trees furrowed off so the water will run?

A No sir.

Q How does the water find its way there, just flooding?

A Yes sir.

Q Does it cover the entire space between the trees?

A In most instances, most rows.

Q In effect, you use about as much water as you would for an alfalfa crop?

A Practically the same.

Q Watering trees alone, however, wouldn't require nearly so much water if you didn't have this crop between, would it?

A We figure it would require the same, because it is necessary, we figure, to water clear across the space if we can do it to feed all the small feeders a large fifteen year old tree will have.

Q Do those feeders you speak of branch out in the soil laterally?

A Yes sir.

Q To what extent, say fifteen year old tree?

A They will go twenty feet from the trunk of the tree.

Q Twenty feet? A. Yes sir.

Q So that when you are watering the space between you are practically putting the water to the roots of the trees?

A Yes sir.

Q How often do you irrigate your ntrees?

A Every two weeks.

Q The usual turn of water up there is about once a week?

A We only have enough water to water one half of it.wach week. We have it divided almost equally and in apples and pears; water the apples one week and pears the next. Find it gets a little dry before the turn is up.

Q You have the water every week, but only have it to a particular crop every two weeks? A. Yes sir.

CROSS EXAMINATION by Mr. John E. Booth.

Q Mr. Walker, how many shares would be necessary to properly irrigate that forty-four acres of ground from shares in the Timpanogos Irrigation Company?

A I judge we should have at least three more shares.

Q That would be twenty-one? A. Yes sir.

Q Would that be sufficient?

A That would insure us against burning on parts that have heretofore burned.

Q Well, would that bem furnish you sufficient water for successful irrigation as you call it?

A It would on a year like this year, three more shares of water.

Q As I understood you to say that it doesn,t require quite so much water where you don't use -- raise the cover crop?

A It won't take as much water, ground won't take as much water, you will have waste water.

Q Did you have waste water when you didn't have the cover crop?

A We had some waste water then, yes, we could not make it stay on there, glazed the surface almost as smooth as this and go over

the ground.

Q Where would it go?

A Go down on the orchard below.

Q Then where would it go?

A Into the ditch below that.

Q What ditch?

A Mr. Brereton ditch.

Q Where did it go then?

A Some of it went on Mr. Brereton's land.

Q So that he got that much extra over his share?

A Not a great deal, because we had weeds grow up that year and found they were more detrimental than the clover, and after the first watering we didn't have much going on his ground.

Q It requires more water, you say, for a cover crop to the trees than without? A. Yes sir.

Q So you put the cover crop because you are short of water?

A We put the cover crop on so that it will hold the water.

Q If you never have any run off, how does it get away?

A It doesn't get away now.

Q Then you have had?

A Yes, we have the water on the ground.

Q Now, you say you have so much water on the ground it stays on the ground? A. Yes sir.

Q You say it requires more water to go on with your cover crop than it would without? A. Yes.

Q Why do you want a cover crop then?

A Because it doesn't do any good to water without a cover crop, because it runs over and won't soak the ground.

Q I thought you said it didn't run off anywhere?

A It did before we had the cover crop, some, I told you.

Q Was anything besides the first watering?

A Wry little, cultivated it to make it hold the moisture.

Q I want to see if I can straighten out this apparent contradiction to me, that requires less water to not raise a cover crop, and

therefore you raise a cover crop because you are short of water; it looks me like that is rather contradictory.

MR. BAGLEY: I don't think the witness said that, Judge. That may be your conclusion from it, but I don't think the witness has made any such statement as that.

MR. JOHN E. BOOTH: I understood the witness to say they were short of water.

A Let me explain it this way.

Q Let me see if I have it right because I want to be corrected if I am wrong. See if we agree on this. I understood the witness to say they were short of water; do you agree with that?

MR. BAGLEY: He stated that this cover crop --

MR. JOHN E. BOOTH: I will state my position, he don't answer so we will let the old jade wince. I understood him to say they were short of water, said it requires less water where they don't raise a covercrop than where they do. Now, he said they raise purposely a cover crop for the purpose of saving water, if that is not a contradiction, I don't quite understand.

A We cultivated out ground after that, after we found it ran off, to make this water stay on the ground, and it did, and when the trees got so large we could not cultivate we put the cover crop on so that it would not get away from us.

Q Considering you never had any get away from you of course that is all right; that explanation is fine.

A We did not.

Q I believe that is all.

REDIRECT EXAMINATION by Mr. Bagley.

Q In addition to conserving the water the cover crop produces a crop of fruit, don't it, you were not getting before?

A Yes sir.

Q That is the purpose of the cover crop primarily, to get a crop of fruit, that is what you farm for, I take it?

A Crop of fruit for every two weeks watering, but if we attempted

to water it every week without cover crop it would not properly irrigate it. We might get some waste water, but would not get a proper irrigation

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RICHARD W. BRERETON called by the defendant, Timpanogos Canal Company, being first duly sworn, testifies as follows:

DIRECT EXAMINATION by Mr. Bagley.

Q Your name is Richard W. Brereton? A Yes sir.

Q How old are you, Mr. Brereton?

A Fifty-nine.

Q How long have you lived in Provo?

A Fifty-four years.

Q Do you own any land under Timpanogos Canal?

A I do.

QHow many acres?

A Sixtyfour acres and a fraction.

Q How many of that do you cultivate?

A About fifty acres.

Q How many shares of water have you?

A Twenty.

Q What kind of crops do you raise?

A I raise fruit, grain, sugar beets, hay.

Q Have you got very large orchard?

A Nineteen acres, I believe.

Q Peach orchard and apple?

A Peach, apple and pear.

Q You personally look after the irrigation?

A Well, I don't do it myself, but I am sure I have my son do it.

Q Have you done it in the years past?

A Oh yes, many years, I am there at the present time when it is done.

Q You have had experience in irrigation?

A Yes, I should say so.

Q How long have you been farming?

A All my life.

Q Have you ever occupied any official position in this county?

A Yes sir.

Q What?

A Board of director.

Q I don't mean in the company, I mean in the county.

A Yes sir, I have been county fruit tree inspector.

Q Are you now? A. No sir.

Q How often do you irrigate on your farm.

A Irrigate some parts of it every week.

Q What crops or those?

A Irrigate the sugar beets and potatoes now every week.

Q Have you ever tried going two weeks on those?

A Not at this time of year, you can do that in the early part of the season when you are cultivating.

Q What would be the effect of going two weeks?

A This timeof year?

Q Yes.

A They would wilt, they will wilt now sometimes in a week.

Q Wilt sometimes now in a week?

A Yes sir.

Q Do you have any crop that you do irrigate twice a week or every two weeks?

A Irrigate my alfalfa every two weeks, try to.

Q Alfalfa every two weeks?

A And my grain in the season.

Q Is it the custom on your canal to irrigate day and night, or do you just irrigate in the day time?

A We irrigate whenever our card tells us to do it, day or night.

Q Is the time put on the card to cover twenty-four hours of the day? A. Yes sir.

Q In the irrigation of your land do you have men looking after your water all the time you turn it on?

A Yes sir, and I am there myself too.

Q Is your land so arranged that you can turn it on and go in the house and let it run?

A Might be the case in sugar beets and potatoes where we wants to regulate it on the sugar beets or potatoes in rows, that is far as you need to trouble it--

Q Until it runs through?

A Until it runs through.

Q How long are those runs?

A About thirty rods.

Q Do you let it run through the rows and then go into the waste ditches?

A No, I catch it below on my hay.

Q What is that?

A I catch it below my sugar beets on the hay.

Q Do you in irrigation of your farm, do you allow any of this water, that is assigned to you under your shares to run to waste?

A No, not to run to waste, some little of it will go off the land, you cannot help yourself.

Q Is there any that you can practically prevent that gets away ffom you?

A Anything that we can prevent, we always take care of it.

Q I will ask you, Mr. Brereton, if the quantity of water which you had last year under your twenty shares furnished water which was sufficient to economically and beneficially irrigate your land?

A No sir.

Q That you irrigated? A. No sir.

Q If you had had an increased quantity of water over what you had last year could you have applied it beneficially ?

A Yes sir.

Q In the irrigation of your land?

A I could.

Q And would it have been such a benefit that you could have observed it in the increased production of the land?

Q Yes sir, I take that in one instance in raising hay.

Q Is there a portion of your land that you don't irrigate through the whole season?

A Yes sir, there is some of it in sixty-four acre plat.

Q Why don't you irrigate the whole of it?

A Well, the county road runs through some of it.

Q I am not referring to that, that is not zsubject; have you got land that is subject to irrigation that you don't irrigte through the whole season?

A Not what I irrigate some parts of it.

Q That is what I am referring to, do you irrigate that all the season? A. No sir.

Q Why don't you irrigate it all the season?

A Because I haven't got sufficient water.

Q Now then, if you had an increased allowance for the shares that you hold, could you irrigate through the entire season this land that you abandoned for a part of the year?

A I could.

Q And could you produce valuable crops on that land?

A Yes sir.

Q That would make it worth while irrigating it and looking after it?

A Yes sir.

Q Is that land of such a character that it would be a waste of the water to put it on?

A Oh no.

Q What kind of soil have you on your farm?

A I have some clay, some loam and lot of gravel.

Q Is your farm right opposite the mouth of Rock Canyon?

A Yes sir.

Q In the Rock Canyon wash?

A In the Rock Canyon wash.

Q What is the character of the subsoil there?

A I should say it was gravel.

Q Any boulders?

A Oh yes.

Q Oe rocks, do you know whether it receives water and conveys it down easily, is it porpus?

A Well, it is porous.

Q About how much surface soil have you as to thickness?

A Well, from six inches t oprobably two feet.

Q And it varies in different places?

A It varies in different places.

Q Are there pkces where ther gravel comes right up to the surface?

A Yes sir, right to the surface.

Q And other places where you have two feet of soil over the gravel?

A Yes.

Q Now, calling your attention to the supply of water that you had this year, have you found that it has been sufficient to mature your crops?

A No sir, not all of them.

Q What portion of your crop this year has been affected by lack --

A My alfalfa I sowed last spring hasn't had any water since I cut the grain.

Q The alfalfa that you sowed?

A Last spring.

Q You are reseeding an alfalfa field? A. Yes sir.

Q When did you cut your grain?

A Cur my grain first of August.

Q First of August. To bring that alfalfa stand up to what it ought to be should it have some water?

A Should have some water, it should have at least two waterings.

Q Why haven't you watered it?

A Because I haven't had the water.

Q Have you had your share of what was in the canal?

A Yes sir.

Q Is there any other crop that you have not had sufficient water for this year?

A I sowed a piece of clover last spring that has had no water since I cut it, cut the hay and oats off of it.

Q Have you wasted any water this year?

A No sir, I have not ,

Q You could then, as I understand it, apply beneficially in the production of crops on your farm more water than you have had this year? A. Yes sir.

Q Did you have a fruit crop last year?

A Very small.

Q Have you a fruit crop this year?

A Yes sir.

Q Peaches?

A Very few peaches, I have other fruit .

Q Pears and apples?

A Prunes.

Q These bearing orchards, when do they take water?

A Bearing orchards?

Q Yes.

A They take it this time of the year every week must have it.

Q It is essential, is it?

A Absolutely necessary.

Q What effect if you don't get it?

A Your fruit withers.

Q Does it mature and color properly?

A No sir, and you won't make fruit buds for another year.

Q And it is because of your present fruit crop that you keep your water there and let this on coming crop of alfalfa go this year.

A Let other parts of my farm go slight in order to protect the fruit crop and sugar beets.

Q What is the length of the runs on your farm on an average?

A I think the longest I have is forty rods.

Q What is the fall there?

A Well, I don't know what a surveyor would call that, it is a good fall.

Q Good fall so that the water runs freely.

A Runs very freely, rather too freely.

Q Have you a well on your place? A. Yes sir.

Q How deep is it?

A Eighty feet.

Q Eighty feet and is it eighty feet down there to the water?

A Eighty feet to the bottom of the water from the surface.

Q How far is it from the surface of the ground to the surface of the water ?

A Well, the water varies; sometimes there is fifteen feet in the well; sometimes there is only two. In the spring of the year there is about two feet in it. Now, I would judge there was possibly twelve feet in it, maybe a little more or a little less.

Q It would be sixty-eight feet down to the water now?

A Yes sir, on the average.

Q Are there any springs on your ground?

A No sir.

CROSS EXAMINATION By Mr. Corfman.

Q You have, as I understood you, sixteen acres you don't irrigate at the present time?

A No, I have more than that.

Q How many acres have you now you are not irrigating at all?

A About twenty acres.

Q When did you ever have the water for the irrigation of that entire tract?

A In the early part of the season.

Q I mean any previous year during the low season did you ever have water for it? A. No.

Q Never have had water for that land since you owned it?

A Not for the entire season.

Q Do you get any water from Rock Canyon?

A No sir.

CROSS EXAMINTON By Mr. Thurman.

Q Mr. Brerton, how does this season compare with former seasons, not including last year, for water?

A Well, I should sayJudge, at this time of the year we are a little

short.

Q How has it been early in the season this year as compared with your average former years?

A Early part of the season, that is, middle part of the season it was fair.

Q Last year I suppose was worse than this year?

A Yes sir.

Q Last year was generally dry?

A Every where.

Q Everywhere, you attribute that largely to the general shortage?

A Yes sir.

Q Have you an idea how much, if any less water has been distributed to you this year than in former years?

A No sir, I have not.

Q Has there been less would you say taking it an average through the season?

A No, I think not. For a year or two, I think the average has been this year little better than it was last year.

Q Leave out last year, we will call that an off year.

A I think in '13 it was possibly better than this year.

Q You don't know whether there was more water actually distributed, do you?

A No sir, I am not posted along those lines.

CROSS EXAMINATION by Mr. John E, Booth.

Q Have you any devices for measuring the water that you actually apply on your land?

A I have not.

Q Is there any of them along the canal so far as you know?

A None that I know of, only the weir.

Q You have how many acres you actually irrigate, you say?

A About fifty acres.

Q How many shares?

A Twenty shares.

Q That would be about two acres and a half to a shares, how many

shares would be necessary to economically and judicially and beneficially irrigate your fifty acres?

A Twenty-five shares.

Q Twenty-five shares?

A I think I could handle it very nicely.

Q So that is if you had five shares more you think you could get along all right?

A I think so.

Q The fact is --

A I have intended to get them too, but I have been unable to yet.

Q I suppose other people are short also? A. Yes sir.

Q Don't care to sell any water? A. No.

Q The fact is under the whole system you have always been short of water for the land you had under the system, haven't you?

A Well --

Q In the low season?

A In the low season.

Q Now, you have land in the city here, have you not?

A Yes sir, I have a home in the city.

Q You raise a garden?

A Little bit.

Q How are you supplied for your wants in the city compared to your wants up there?

A Well, we have the water once a week, of course, I don't water all my property in town, because I have a house and buggy shed on it, and only have just a little bit of a gardan spot.

Q You are better supplied then in the city than you are on your farm, according to your necessities?

A Oh yes, for that little bit that I have got.

Q Would you care to have part of your city water taken off and applied on your farm? A. No sir.

CROSS EXAMINATION by Mr. A. C. Hatch.

Q Mr. Brereton, you say that the fruit crop in this part of the

season must have water each week?

A Yes sir, on bench land.

Q Do you know of any fruit produced in the state on bench land without any irrigation at all?

A I do not.

Q What did you say would be the effect of the non irrigationof fruit trees at all upon the fruit?

A Well, you would have some scrubby trees, they would not produce any fruit buds, nor they would not make any growth.

Q What would be upon trees that were irrigated from the beginning?

A If you wanted to start them you would have to irrigate them or they would not live. Of course after a free gets a few years old it will possibly live without irrigation, won't make any growth without you have a very wet summer, wet season.

Q Now, have you ever been in the vicinity of Brigham City, this state?

A I have been there, yes sir.

Q Have you gone over the orchards there?

A I have not.

Q You don't know of your own knowledge of the orchards that are run there without any irrigation whatever?

A I don't know anything about that.

Q Or whether or not the quality of fruit is equal to that produced on your farm with irrigation?

A I am just speaking of this locality up here, through here.

Q You say you make thirty rod runs in irrigating your beets?

A About thirty rods.

Q How long do you leave the water running, if you go off and leave it running after starting it in the rows on the thirty rod runs?

A After we quit cultivating, water the first time, the water will follow down where it has been previous, possibly go away and leave it run two or two and a half hours and then take it off of there.

REDIRECT EXAMINATION by MR. Bagley.

QQ Now, Mr. Brereton, you testified in response to a question by

Mr. Coffman that you had twenty acres you didn't cultivate, do you mean twenty acres of this that you testified to?

A I don't think I made that statement.

Q If you did --

A I said twenty acres I was not irrigating.

Q What did you mean by that answer?

A I meant there was twenty acres I was not irrigating now, but someof it is in young alfalfa and clover.

Q That is what you meant?

A I tried to make that clear.

Q Thirty acres instead of fifty, as you testified before?

A I am irrigating through the season about fifty acres.

CROSS EXAMINATION by Mr. Jacob Evans.

Q Some of this twenty acres, have crops bem taken off of it?

A Crops been taken off it and some of it put into alfalfa.

Q How much have you taken the crops off from the twenty acres that is not now being irrigated?

A About twenty or twenty-five acres.

Q In other words, you have taken crops off of twenty to twenty-five acres of your land this year?

A Yes sir, some eight acres was sowed to alfalfa and clover last spring.

Q What I want to know is whether or not you have taken crops off of twenty or twenty-five acres this year that is now not being irrigated?

A Yes, and part of it is what I refer to has got clover and alfalfa I planted last spring about eight acres.

Q Now, how do you take your water out of the canal when there is more than one stream in the canal, how do you determine the quantity each party is to take?

A This year I have been watering with the lower stream, I took what was left.

Q Do you know how they determined above you how much of that water they should take.

A The rule is the man above you should take half.

Q Does he have any means of measuring it to determine whether or not he is taking half.

A I have none, no sir.

Q Is the water taken directly from the canal?

A Directly from the canal.

Q Do you know how many headgates there are taking water directly from the canal?

A Along the whole system?

Q Yes.

A I don't.

Q And where there is more than one stream does the party who takes the water above the lower party use his judgment as to taking one half of the stream?

A I believe so.

Q Does the watermaster turn it to him, or does he take it himself?

A I believe he takes it himself.

REDIRECT EXAMINATION by Mr. Bagley.

Q The watermaster supervises that division ?

A Yes sir, in case he is called on.

Q In case of any inequality that may be in the division as far as he is able to?

A In case of any disturbance, then the watermaster would make the division.

Q Do you find there is much complaint on the canal?

A I do not.

Q At the present time you are not watering under --

A We have it all now at the present time, have had it, I believe, for two waterings, two trips.

Q You are using the whole flow of the canal?

A The whole stream.

Q So that there isn't any division now? A. No sir.

Q Do you find the people about as well satisfied when they are

operating under the two stream system as one?

A When the water gets to a certain size stream, then we have to use it that way.

Q Have to divide it into two?

A There isn't anything to divide.

MR. JACOB EVANS: Approximately fifteen second feet?

A I could not say what there is in at the present time.

RECROSS EXAMINATION by Mr. John E. Booth.

Q There is one point I haven't got quite clear in my mind, how many acres did you say you had in your farm?

A Sixty-four acres and a fraction.

Q Do you cultivate all of that sixty-four acres?

A I don't.

Q You say the fifty acres is the extreme limit ?

A About fifty acres.

Q Of what you cultivate?

A Yes, might be a little more.

ALFRED R. CHIPMAN, called by the defendant, Timpanogos Canal Company, being first duly sworn, testifies as follows:

DIRECT EXAMINATION by Mr. Bagley.

Q Your name is Alfred R. Chipman?

A Yes sir.

Q How old are you?

A Forty.

Q What is your business?

A Farming.

Q Are you an officer of the Timpanogos Canal Company?

A Secretary.

Q How long have you been secretary?

A Last two years.

Q Have you ever served in the capacity of watermaster?

A yes sir.

Q Are you watermaster now? A. Yes sir.

Q Will you explain to the court the system of distribution that is adopted under your canal?

A Why, in the early part of the year we have sufficient water to run it in two streams when there is from 18 up, 18 to 24, 26, when it gets below 15, down along 14, somewheres along there, we put it in one stream.

Q What do you find the most satisfactory condition where you get the best results from the water, what is the quantity in the canal?

A From 18 to 24 when it is in two streams.

Q When you divide it into two streams of 10 to 12?

A 10 to 12 second feet a stream, yes sir.

Q When it gets to 14 and you have to make a 7 second foot stream out of it, has that been found satisfactory?

A No sir.

Q That is the reason you throw it all into one stream?

A Yes sir.

Q Now, I will ask you in the division of the water when you have been operating on a two stream basis, have you found much complaint between the upper and lower taker as to the division?

A Not very much, sometimes.

Q Do you control and regulate that?

A When there is a complaint, yes, I go and look at the division.

Q And the purpose is to divide it equally?

A Yes sir.

Q As nearly as can be. How many share holders are there in the corporation?

A Sixty-five.

Q Sixty-five share holders and there are three hundred and thirty shares of stock?

A Three hundred and thirty shares.

Q I suppose that there are as many homes on the canal as there

are share holders?

A No sir, I think not, not right on the canal.

Q About how many homes are there built along the canal that depend on the canal for water for culinary and domestic purposes, at least for their stock.

A Practically all depend on the canal for their stock, but since the city water was run over the bench, greater part of those that used to depend entirely on the canal now get it from there. Probably eight or ten that still depend on the canal for their culinary water.

Q Is there a flow of water through the canal the year around?

A We try to keep it there, yes sir.

Q Try to keep it running the year around?

A Yes sir.

Q Because of the supply for the livestock? A. Yes sir.

Q The quantity used in the non irrigating season, however, is much less than what you have when you are irrigating?

A Yes sir.

Q What has been your experience as water master as to water users wasting the water? Have you as watermaster discovered the users wasting it?

A No, I think everyone tries to take care of it and do take care of it. Of course, some waste water, but that is unavoidable in some instances.

Q Does water run out at the end of the canal?

A There may be some in the early part of the season goes on some of the city land I think down there.

Q After you are under regulation does water run out at the end of the canal?

A No sir, I think not.

Q You know whether many of the takers miss their turns?

A Very seldom a user misses his turn without he oversleeps himself or something, this time of the year.

Q They don't miss their turns? A. No sir.

Q Do they irrigate day and night? A. Yes sir.

Q What has been your experience as to the quantity of water which can be economically and beneficially used in the early part of the irrigation season as compared with the amount that would be used later on in the year?

A I don't hardly get the meaning of that.

Q Read the question, will you please?

(Question read)

A Oh, we would use a third more.

Q Can you use that beneficially?

A I think so, during the first irrigations anyway.

Q How do you account for that?

A I don't know, the soil seems to take more the first irrigation. After it getsso that you quit cultivating doesn't take so much to go over it, runs off more readily.

Q So that you do require and can beneficially use more water in the high water season in the first irrigation, first two irrigations than you do later on? A. Yes sir.

QAs I understand it the turns on the canal are every seven hours--seven days and four hours.

A When we have two streams, when we have one stream it is seven days and seven hours.

Q How long do you give, how many hours or minutes to a share?

A When there is two streams, one hour and one minute, one stream, thirty-one minutes.

Q Have you had experience in growing alfalfa? and hay crops generally? A. Yes sir.

Q From your observation-- was that on irrigated lands?

A Yes sir.

Q From your observation what would you say as to whether the amount of hay crop produced on land is dependent on the quantity of water that is put on the land?

A Yes sir, I think it is, plenty of water raise larger crops.

Q More water you put on more hay you get?

A In case it doesn,t stand on the land. If it drains off readily, good drainage, seems like there is no end to the amount of water that can be used beneficially.

Q That is, so long as you don't waterlog your ground?

A Yes.

Q Is there much alfalfa raised under the Timpanogos system?

A I should judge about a third—more than that, counting the cover crop they have on the orchards. In fact, they take the same amount of water.

CROSS EXAMINATION by Mr. Corfman.

Q In the distribution of the water to the land owners the streams are divided as a matter of course?

A Yes sir.

Q What kind of gates do the water users maintain?

A To divide it?

Q Yes.

A They have no gates dividing.

Q Have no gates at all?

A No, just judge the stream.

Q Guess at it?

A Guess at it.

Q That is a pretty universal practice among all irrigation companies through this district, isn't it?

A As far as I know, yes sir.

CROSS EXAMINATION by Mr. Thomas.

Q Mr. Chipman, are you familiar with the, or could you say what the duty of water would be to that land expressed in second feet?

A Clear through the season?

Q Well, with reference to that hay land you spoke of especially?

A The land could very easily use second foot to fifty acres right through the season.

Q As to the other land other than the hay lands?

A Well, some crops go off earlier, probably wouldn't require as

much. Those that water late would require that orvery nearly that.

CROSS EXAMINATION by Mr. John E. Booth.

Q I think you say, Mr. Chipman, there is practically no waste under your system?

A Very little.

Q Now, I would like to know what you mean by waste. Suppose if that you run this 15 second feet on a piece of ground until it has enough and then some runs off, you would call that waste, would you?

A Yes, that is waste, yes.

Q That is what you mean by not having any waste, is it not?

A Oh no, some that run off -- what I meant by waste-- wasted out of the canal direct.

Q I see, that is the canal itself don't waste?

A Yes sir.

Q Don't mean to say the stockholders don't waste it after they get it on their ground?

A They waste it in this way. They have some waste water that is unavoidable.

Q So they do have some waste? A. Yes sir.

Q Suppose a man puts water on his land and it doesn't run off, but after it has been sufficiently saturated then it stays on and runs on down through the gravel, would you call that waste?

A I don't know anyone that has got sufficient water to do that.

Q I am not talking about that, I am asking you if that would be waste, would you include that in waste?

A I would if he let it run there --

Q After it has enough, you would call that waste?

A Yes sir.

Q Do you know of a flume being across the upper East Union canal?

A Yes sir.

Q What was that flume put there for?

A To catch water that goes out of the hill, I suppose.

Q That goes out of the hill. A. Yes sir.

Q How does it get to that place, do you know?

A I suppose seeps around the country.

Q Isn't that what you call waste then?

A No, I think that is unavoidable, most of it.

Q It may be unavoidable, but isn't it waste, it is not used, is it, upon the Timpanogos land?

A It has been used.

Q Yes, it is used, but it was not retained there for any good that it would do, was it?

A The soil was so that it would not retain it.

Q After the soil got saturated then that run down through the gravel and run away?

A It would go whether -- just saturate it enough to be sufficient for the crop, minute it is turned that keeps percolating through the gravel where it is as close as it is there.

Q Wouldn't you call that waste?

A I suppose it is waste, yes.

Q That is what I thought, and you know there is quite a stream runs out there, don't you, across the canal?

A I haven't noticed much of a stream this year or last year.

Q How was it last year or year ~~xb~~ before?

A Well, I don't know much about it before last year.

Q You have seen water running across the canal there?

A Yes sir.

Q That ~~At~~ the Upper East Union there put there to keep their canal from being filled in through that water running there, didn't you?

A I suppose that was the object.

CROSS EXAMINATION By Mr. Jacob Evans.

Q Did I understand you to say there was no end to the use of water. That is, there was no end to water that could be used beneficially on a hay crop?

A Reasonable amount, yes.

Q

Q What did you mean when you said there would be no quantity which would be too great to be necessary.

A There can be too much water put on a hay crop I suppose within a reasonable amount.

Q Do you think it would be beneficial to a hay crop to irrigate it twice or three times a week?

A No sir, I don't.

Q Youthink better result would be obtained if the crop was irrigated once a week than twice a week, do you ?

A I think it would be fully as good if not better, yes.

JAMES F. CROWTHER, called by the defendant, Timpanogos Canal Company, being first duly sworn, testifies as follows:

DIRECT EXAMINATION by Mr. Bagley.

Q Your name is James F. Crowther?

A James F. Crowther.

Q And are you an officer of the Timpanogos Canal Company?

A Yes sir.

Q Do you own some land under the canal?

A Yes sir.

Q How much?

A Forty-eight acres.

Q Forty-eight acres? A. Yes.

Q Is it all irrigated?

A Yes sir, when I could get water enough.

Q When you can get the water to do it? How many shares have you, Mr. Crowther?

A Eighteen shares.

Q Are those eighteen shares used on these forty-eight acres?

A Yes sir.

Q Now, what crops do you raise?

A I raise principally alfalfa, some sugar beets, some grain.

Q What crop did you have last year?

A Some fruit.

Q That same crop? A. Yes.

Q You mentioned? A. Yes.

Q And do you know whether the quantity of water that you received for your eighteen shares was sufficient to economically and beneficially irrigate your fortyeight acres last year?

A Well, last year I had it rented to the boys and so as I could not say much positive, but I know some of the crop burned last year.

Q You know some of the crop burned last year?

A Yes sir.

Q Do you know why it burned?

A There was not sufficient water to run through.

Q Do you know whether the shares that you held received their proper proportion of what was in the canal?

A I could not say that. I know it last year because I wasn't there.

Q Calling attention to this year, you are farming it this year yourself? A. Yes sir.

Q Have you irrigated it this year yourself?

A Yes sir .

Q Has the supply which you have received for your eighteen shares this year been adequate for the economically and beneficial irrigation of your fortyeight acres?

A No sir.

Q It has not, I understand you?

A It has not.

MR. THOMAS: I did not get the witness's answer. You say it hasnot?

A It has not been sufficient.

Q Speak a little louder if you will, please. What causes you to conclude you have not had enough water?

A I was unable to run it to the lower end of my land during the time that it was allotted to me for the shares.

Q And did the crop at the lower end of your land suffer on that

account? A. Yes sir.

Q What was the length of the run?

A Well, runs from twenty to thirty rods.

Q Could you have shortened that run and accomplished the irrigation by changing your method?

A Well, I think not, not conveniently.

Q Your system of runs there to irrigate your farm are the best that you could devise, are they, or were they haphazardly devised.

A I think it is arranged most convenient, only way it could be account of the lay of the ground.

Q Laid out your runs to fit the lay of the ground?

A Yes sir.

Q And get the most you could out of the use of your water?

A Yes sir.

Q Do you think, Mr. Crowther, that if you had had assigned to you under your eighteen shares more water than you have had this year that you could have beneficially used thatwater on your farm, on your forty-eight acres?

A Yes sir.

Q And that its use would have resulted in an increased production from the land?

A It would.

Q Have you wasted any water this year in the application of it to the land?

A There has been some water that has run off, they call waste water, but very little.

Q Was it any that you could prevent and still irrigate the land?

A No sir.

Q Have you kept a man with it or been with yourself all the time the water was being applied?

A Yes sir, usually two of us.

Q Two men?

A One or two.

Q Two men looking after the water? A. Yes sir.

Q And after a run is finished is it turned into a new place?

A Yes sir.

Q Notwithstanding that care do you think you could use beneficially more water than you have this year on your land?

A Yes sir.

CROSS EXAMINATION by Mr. Corfman.

Q That is also true with respect t o the land you irrigated under the Upper East Union, you could have used more water beneficially if you could have got it this summer?

A Yes sir.

Q Now comparing your -- you have been irrigating this summer under both canals, haven't you? A. Yes sir.

Q Timpanogos and Upper East Union, comparing the quantity that you had this year under the Upper East Union and the quantiy that you had under the Timpanogos in former years, which one of those canals do you think suffered most by reason of not having water this season.

A Well, I don't know, they have both suffered, so I don't know I could tell which has suffered the most.

CROSS EXAMINATION by Mr. A. C. Hatch.

Q Does the Upper East Union Canal run through your land, this tract of forty-eight acres? A. No sir.

Q Is the land that you irrigate on the two canals adjoining lands?

A No sir.

Q How far apart are they?

A About forty rods nearest place.

Q Nearest corner? A. Yes sir.

Q Is the soil of the lands similar?

A I didn't catch the question.

Q Is the soil of the lands similar in quality?

A Part of it is, that that lays along the bench is gravelly, and that is similar.

Q What did you say was the length of the runs when you were irrigat-

ing under the Timpanogos?

A Some of them twenty rods, some possibly thirty, some from twenty to thirty rods.

Q And you say you make these runs most convenient according to the lay of the land, is that right?

A Yes sir .

Q And also so as to use the water in the most economical manner?

A Yes sir.

Q How can you do both of those things on your land?

A The land is on the west end of it is on a level, there is a ridge running through there so that I have to run the ditch on the ridge on the highest ground to get it on that, and running it from that ridge west possibly fifteen rods then it is level and I run it south. That catches the waste water off of that slope on the level ground and let it through on the more level piece.

Q What is the nature of the tract where you have the thirty rod runs?

A That is a clay loam.

Q Is it level land?

A It is practically level. It has some slope to it, more level than the other.

Q And do you think the thirty rods is the most economical length for the conservation of the water.

A It is for that soil, it would not be for the gravelly soil.

Q How much of that have you in the tract.

A Clay soil.

Q Yes, how much of that kind of land in the fortyeight acre tract?

A Why, I think there is somewhere about thirty-five acres of the clay soil.

Q And upon the thirtyfive acres you have the thirty rod runs?

A Yes sir.

Q That land requires much less water than the gravelly land, doesn't it? A. Yes sir.

Q About what proportion ~~do~~ of your water do you use; of your turn do you use upon the thirtyfive acres?

A Well, I possibly use two thirds of it on that. That will stand it two weeks, that hay, better than the other will stand it, or as good as the other will stand the one week. I would think somewhere about two thirds of the water would be applied on the thirty-five acres. I have never kept any account of it though.

Q You don't have any knowledge at this time as to the proportion you use upon the different kinds of land, do you?

A No sir, not exact.

Q What are your crops?

A It is principally hay, alfalfa, some grain, some sugar beets, some fruit.

Q How many acres in sugar beets?

A About four acres.

Q And in fruit?

A About four acres of fruit.

Q You have a cover crop with your orchard, in your orchard?

A No sir.

Q Cultivate it, do you? A. Yes sir.

Q Do you understand that under that system it requires about one share for each two acres of land, don't you, in order to properly irrigate, it, one share or more?

A Well, I think I have been getting along with the rest of them on shares for two acres?

Q Sir?

A We have got, other years got along with a little less than two acres for the share.

Q What years?

A In 1913 and 1914, 1912, those three years.

Q 1915 and '16 you have been short? A. Yes sir.

Q Now, prior to 1912 did you irrigate there?

A No, I had it rented to the boy in 1910 and 1911.

Q When you rent it how many shares did you have to the acre ?

A I had eighteen shares for the forty-eight acres.

Q So you rented the land with it, did you? A. Yes sir.

Q How much of the lower end of your land was not watered this year?

A It has been watered part of the time this year, but at present there is about -- oh, a strip three of four rods wide, possibly a little more than that across the bottom that is dry, have not been able to get the water through.

Q How long since that strip was irrigated?

A It has been about four weeks.

Q The crop is harvested on it, isn't it?

A Why, yes sir, we had it in hay, we run over it, it was very light though and at the present time you can see it is not growing like the other is.

Q How often do you irrigate that hay, that piece of land.

A When I can get the water, it is every two weeks.

Q Have you ever in any year, had sufficient water to irrigate all of your land in the latter part of the season?

A Yes sir.

Q What year?

A In 1912, 1913 and 1914.

Q Up to the very end of the cropping season you had sufficient water during those three years, had you?

A Yes sir.

Q And when you were ~~rented~~ renting the land and water how was it prior to 1912, did you have sufficient then to irrigate this land?

A I think she did, I didn't hear any complaint.

Q You owned the land?

A I owned the land, yes sir.

Q And rented it to others? A. Yes sir.

Q Have you prior to 1912 irrigated it yourself.

A No sir.

Q Do you know whether your neighbors under that canal have sufficient water for their land during the three years, 1912 '13 and '14?

A I don't know, I didn't hear any complaint from them.

Q But you did hear it during 1915, heard complaints, did you?

A 1915?

Q Yes, last year?

A Well, I wasn't up there much in 1915.

Q This year have you heard complaints?

A Yes sir.

Q From shortage of water? A. Yes sir.

Q When did those complaints first commence?

A I should say three or four weeks ago, something three or four or five weeks ago.

Q You had plenty until about four weeks ago this year, hadn't you?

A Not plenty, we got along reasonably well, until along the middle or latter part of July.

CROSS EXAMINATION by Mr. John E. Booth.

Q Mr. Crowther, whereabouts is your land, can you locate it on that map that is there, your forty-eight acres?

A This is it right here, thirty-one and thirty-two.

Q Your land is located south of the middle line of Section 31 and 32?

A Yes sir, part of it is in 32, this piece here.

Q Part of it is north then of that line?

A Part of it is north of that line.

Q How many shares in the Timpanogos Irrigation Company or canal company should you have to properly and economically irrigate your forty-eight acres. You have eighteen, you say now and you are short, how many more shares ought you to have to properly irrigate that land?

MR. BAGLEY: In the high water or low water?

MR. JOHN E. BOOTH: I mean when the water is short.

MR. BAGLEY: What kind of a year, high water or low water year?

MR. JOHN E. BOOTH: This year.

A Why, of course the first part of the season we got along reasonably well, but the last month we could have used beneficially,

I think a fifth more than what we have had.

Q A fifth more, that would be about three and a half shares more?

A Something three to four shares more.

Q Twenty-two shares then you think would be sufficient?

A I think we could have got along.

Q For your forty-eight acres such a year as this is?

A I think we could have got over the ground with that.

Q Do you think you have more water or less this year than in 1914?

A I think we have had less than we had in 1914.

Q And less than '12 and '13 also ?

A Yes sir.

Q Yourirrigated, I understand, yourself those years?

A Yes sir.

Q That is your judgment? A. Yes sir.

Q

CROSS EXAMINATION by Mr. Jacob Evans.

Q You made the same estimate, did you not with respect to your shortage in the Upper East Union canal that you now make with respect to your shortage in the Timpanogos? twenty per cent?

A No, I don't think I made any estimate that I remember.

Q Wasn,t you asked concerning that and said you were short about twenty per cent?

A I don't remember.

Q In the Upper East Union you say you don't remember?

A No sir, I don't remember.

Q You think that is about your shortage now, is twenty per cent in the Timpanogos?

A For the last month.

Q Do that you would regard twenty per cent more water in the Timpanogos to irrigate your land sufficient when the water was economically used?

A I think we could have used twenty per cent more to benefit.

Q What percentage would you say you would r equire under the Upper East Union to properly irrigate your lands?

A Well, possibly that much or a little more.

Q That much or a little more? A. Yes sir.

Q So then your shortage in the Upper East Union is a little greater than it is under the Timpanogos?

A I don't know but what it is, yes. I believe I have got over the ground on the Timpanogos a little better than I have on the Upper East Union.

Q But the truth is both of them are short? A. Yes sir.

T. F. WENTZ, recalled by the Timpanogos Canal Company, testifies as follows:

DIRECT EXAMINATION by Mr. Bagley.

Q Mr. Wentz, have you in your custody the records of the measurements of water distributed to the Timpanogos Canal Company from the Provo River during the year '14, '15 and '16?

A Yes.

Q Have you tabulated those measurements on the different dates in the different years? A. Yes.

Q Showing the quantity distributed in second feet?

A Yes.

Q Calling your attention to Exhibit 109, identified by the court reporter, is this tabulation a summary of those measurements?

A Yes.

Q Showing the date of measurement and the amount distributed to this canal in second feet on the respective dates?

A Yes.

Q For those three years? A. Yes.

MR. BAGLEY: Unless there is objection, I offer this exhibit as part of the defendants case. I do whether there is or not, as far as that is concerned.

THE COURT: If there be no objection to it, it may be received.

Q Mr. Wentz, have you measured the carrying capacity of the Timpanogos Canal?

A Not the maximum carrying capacity. I have the recorded carrying capacity.

Q What is itsrecorded carrying capacity maximum?

A The maximum recorded carrying capacity is 39.65 second feet, taken on June 2, 1913.

Q Where is the measuring weir or measuring gate of the Timpanogos Canal located?

A At the point where the canal gains the top of the bench eight thousand feet below its headworks.

Q Is the measuring device there adequate of accurate measurement?

A Yes.

Q And was it during the years 1914, '15 and '16?

A Yes.

Q These figures that you have given, were they taken at that rating flume, or that measuring device?

A Yes, they were taken at the rating flume.

Q What is the physical condition of the canal as to being in good repair or bad repair at the time that you went over these lands?

A The canal at the present time is in good shape. In fact, the rating curve last Saturday, that is August 26th, the point is on the same curve as it was last spring when the canal was cleaned. The canal is in just as good condition now as it was after being thoroughly cleaned last spring.

Q And are the diversion gates to the users, are they in good condition?

A Yes, what I have seen of them along the line.

Q How would you compare the Timpanogos Canal and its physical conditions with other canals on the Provo River system whether it is better or worse?

A I think the Timpanogos Canal is kept up better than any other canal on the system.

Q Now, in the survey which you made of the land in respect to which you gave testimony this forenoon, did you eliminate in figuring

the total area irrigated under the Timpanogos Canal all lands which were or had been irrigated with Rock Canyon water?

A Yes, they are all eliminated.

Q So that the area which you submitted this morning in your testimony is the area under this canal irrigated with water from the Timpanogos system? A. Yes.

Q Regardless of what land there may be in that same area irrigated by Rock Canyon water? A. Yes.

CROSS EXAMINATION by Mr. John E. Booth.

Q Mr. Wentz, I find in 1914 , you have in the fourth line from the top of the left hand corner, 7314, what do those figures mean?

A July 3, 1914.

Q You there had 31.5 feet? A. Yes sir.

Q Suppose half of that, which would be 15.75, wouldn't it?

A Yes.

Q Suppose that half should be applied, 15.75 feet should be applied on a ten acres tract for ten hours, would you consider that necessary?

MR. BAGLEY: I object to it as not cross examination. If Judge Booth wishes to make Mr. Wentz his witness I have no objection.

THE COURT: Yes, I think it is not cross examination.

MR. JOHN E. BOOTH: He has offered this as part of his case.

THE COURT: You may cross examine as to this exhibit, as to the correctness of it and sources from which it was obtained, but upon the duty of water, beneficial use of it --

MR. JOHN E. BOOTH: Yes, he didn't go into that part of it, I believe that is all then.

CROSS EXAMINATION by Mr. A. C. Hatch.

Q Have you determined fromthis exhibit whether or not there was more water distributed, maximum quantity, in one year than another of the years you have tabulated?

A No.

MR. BAGLEY: what is the purpose of the examination, it is a matter of computation.

MR. A. L. BOOTH: Not necessarily, because every day is not given here.

Q Do you know whether this tabulation gives the quantity of water distributed to this canal during any one of the years mentioned?

A This tabulation is a record on the observations made by me at the canal, discharge flowing through the canal at the time I made the observations.

Q You don't have any way of recording the water at all?

A No, there is no register on the canal.

Q And as to the times intervening between the dates given in the tabulation, you have no record. A. No.

REDIRECT EXAMINATION by Mr. Bagley.

Q I will ask you, Mr. Wentz, if in your observation of the flow of the river conditions surrounding the diverting works of the Timpanogos canal, if the quantities flowing between the dates at which the measurements were made would be comparatively the same as those indicated by the dates of measurement?

A During the low water season, yes.

Q What do you mean by that, low water season, you mean after the first of July?

A After the first of July.

Q Would there be much fluctuation prior to that?

A Well, there may be some changes prior to that.

Q Of any material difference?

A Yes, now, for instance, on the first two under 16, 1916, first x is 6.94 on the 16th of May and the other is 17, on the 16th, or on the 27th. First is on the 21st and the other is on the 27th. Now, the point or the date when this canal was increased 17, I don't know; that would be a record of the watermaster.

Q Do you know whether the watermaster has a record of the daily flow into the canal?

A He has kept a record of the trips that he is there this year. Previous to this I don't know if they have kept a record.

Q I will ask you as an engineer, if the mearuements which are recorded here are such as are accepted as indicating the flow of the canal during the season.

MR. A. C. HATCH: We object to that question, if the court please.

THE COURT: I hardly understand it.

MR. BAGLEY: Probably it is not very clear.

Q Would the average of these results be the average flow into that canal during the period they covered; that iswithin a reliable limit?

MR. THOMAS Object to that as being incompetent and undertain.

THE COURT: Objection is overruled.

A The only complete record I can give you would be the details of that canal as it is handled for the season. For instance, on the 1st day of July, 1916, the canal was at 22.40 and was out to 19.50 and those outs would have to be given in detail, and the time when they were cut to give the exact number of acre feet. This is a tabulation of relations.

Q Can you furnish the exact quantity of water that has flown into the Timpanogos Canal during the year 1916?

A Very closely, yes.

Q I will ask you to do that if you can, Mr. Wentz; I thought this was the best record you had. If you can furnish something that is more definite, I will ask you to do it and ask leave to submit it later.

RECROSS EXAMINATION by Mr. A. C. Hatch.

Q Mr. Wentz, you stated you could give very closely the quantity of water that flowed in the Timpahogos canal for the year 1915?

A 1916.

Q 1916?

A Since July 1st.

Q You are qualifying it now since July 1st?

A I have explained previous to that I haven't the dates of the changes that the watermaster has made, previous to July 1st, but since July 1st, I have made those changes myself.

Q Is there not a time during the irrigation season of each and every year when you have kept no record of the quantity flowing in the several canals, that is, during that period when there was sufficient water so that all could take all they wanted to? and there was no division or distribution?

A Yes, we have not a complete record even during this year, only for the one measurement weekly except on the one canal, that is the Provo Bench are eqipped with a register and that flow can be given at any time.

Q Then you are not -- you have not the datato give the information as to the acre feet of water that was flowed through the Timpanogos canal in 1916, from the beginning of the season to the present time, have you?

A No, only from July 1st to the present time.

MR. RAY: May it please your honor, in view of the examination made here, and it seems somewhat technical to me, I have submitted some measurements on the Provo Bench. We have a register which will give variations as to the canal per day, and I will ask leave to have those tabulated and submitted as a supplement to the measruements which I have put in. They are scientifically made.

MR. BAGLEY: Reserving the right to introduce anything that we have inadvertently overlooked, which we hope will be granted to us, we rest at this time.

THE COURT: The next defendant named is West Union Canal Company.

MR. JOHN E. BOOTH: That is the next. I will state, if your honor please, that I anticipated there would be no difficulty about that, just as we had with the Lake Bottom canal, but there seems to be very slight question of difference between us, and cannot get together to meet with the board until to-

morrow morning about eight o'clock.

THE COURT: I did not expect to proceed with any to-night. Just wanted to know who was ready.

MR. JOHN F. BOOTH: We will be ready, and will take but a few moments. We think the Faucett Field will be the same and East River Bottoms will be the same.

4:50 P. M. Recess to 9:30 A.M., September 1, 1916.

THE COURT: The West Union is the next.

MR. JOHN E. BOOTH: Yes. The West Union Canal Company, which in this stipulation that I refer to includes the Smith Ditch interest and the Carter Ditch, I will state that the board met with the plaintiff people this morning and have agreed upon a stipulation, but it is not written out yet, and we will ask to file that a little later, and I desire to put on a witness or two merely to show the conditions now and as they were before.

L. JOHN NUTTALL, called by the defendant, West Union Canal Company, being first duly sworn, testifies as follows:

DIRECT EXAMINATION by Mr. John E. Booth.

Q What is your name?

A L. John Nuttall.

Q Where do you reside?

A Lakeview.

Q How long have you resided there?

A About twenty-five or thirty years, twenty-eight years.

Q Do you know the West Union Canal Company.

A Yes sir.

Q Are you an officer in that company?

A Yes sir.

Q What is it?

A I am member of the board and secretary and treasurer.

Q How long have you been connected with the company?

A Why, I can't just tell, but something over twenty years, I think, in fact, ever since this company was incorporated.

Q Out of the two companies before that?

A Yes sir.

Q You are acquainted then with the circumstances over there, are you generally.

A Yes sir.

Q I will ask you if since 1902, the date of what is known as the Morse decree, that there has been any additional lands taken under that canal or cultivated or irrigated since then?

A Why, not that I know of.

Q You would be apt to know it if there was?

A Yes sir.

Q Been no new stock issued.

A No sir, been no new stock issued.

Q Now, I will ask you if the conditions with regard to the necessities of the people under that canal have decreased any since then?

A No sir, not to my knowledge.

Q What is the general character of the upper part of the lands under this canal?

A The upper part of the land is very gravelly condition, sand and heavy gravel, subsoil on provo bench and uses a great deal of water.

Q How is it toward the lower end?

A The lower end of course is much better and can water much more acreage with the same water than they can above.

Q Now, you have had experience in irrigation.

A Yes sir.

Q How many shares are there in this company?

A Nine hundred and twelve.

Q And you recall about how many acres there are -- we have it in the record?

A We have it in the record, I don't recall, something like about

nineteen hundred acres, I think.

Q You are about the middle, are you not, of this?

A Yes sir.

Q How near a share to an acre will supply your land where you are?

A Well, I have two pieces, one up on the bench on the upper gravelly land, and there it will take from a share and a half to two shares to the acre, and down what I call home, where I live, there I can water -- well, from two to two and a half acres with a share.

Q So that it makes a good deal of difference?

A Makes a difference where the ground is located on the canal.

Q But taking the whole system through how were you with regard to watering in 1915, as to sufficient?

A 1915 we were short. I was both places.

Q That was the general condition?

A General condition, I believe. There was a great many complaints.

Q How is it now?

A Right now we are very short. There is complaints beginning to come in in regard to water being low.

Q How long has this been?

A The last two or three weeks?

Q Two or three weeks? A. Yes sir.

ALBERT F. CARTER, called by the defendant, West Union Canal Company, being first duly sworn, testifies as follows:

DIRECT EXAMINATION by Mr. John E. Booth.

Q Your name is Albert F. Carter? A. Yes sir.

Q Where do you reside?

A Provo City.

Q Are you a stockholder in the West Union Canal Company?

A Yes sir.

Q Have you land under that system? A. Yes sir.

Q How much land have you?

A Five acres.

Q How much water have you?

A Seven shares and a half.

Q How long have you been connected with this company?

A I couldn't tell you, about fifteen years, I guess.

Q You are connected with the old enterprise, were you not, before the organization of this company? A. Yes sir.

Q Have you had actual experience in the irrigation of your lands?

A Yes sir.

Q With your seven and a half shares on five acres, has that been sufficient the whole of the time ?

A Well, it is up until probably a month ago, not quite a month.

Q I am speaking now generally during the year?

A No, some years it has been shy, good many years it has been shy.

Q In the low water season? A. Yes sir.

Q Now, you are acquainted with the system under the --

A Yes sir.

Q West Union Canal, are you? A Yes sir.

Q Has it materially changed since 1902, what we call the Morse decree date?

A Not that I recollect of.

Q You have not broken up any land since then?

A No.

Q And are the necessities of the people there less now than they were at that time?

A Not that I am aware of, just the same, same condition.

CROSS EXAMINATION by Mr. Ray.

Q How is your land, Mr. Carter, as being an average of the land under the West Union?

A I couldn't say, it is right here on this low bench, this rocky bench. That bench is pretty much all the same until you get in the farming district and I am not acquainted down there at all.

Q So in past years in the West Union, in your experience, it would take about seven and a half shares of water to irrigate five

acres of land?

A Yes sir, on this bench where I am.

Q Do you know anything about the rest of it?

A Not the farms.

Q What?

A Not the farming district, I don't know anything about it anymore than this bench on this side.

Q All you know about it is your necessities have remained about the same? A. Yes sir.

Q Whether other people have had plenty of water you don't know?

A No sir, they have not in this vicinity. We water in a lateral No. 1 on the ditch, and the same amount of water runs in that, regulated by a weir. All the people on that bench raise all the garden stuff they can in rows.

Q You don't know anything about what the other lands require?

A No, not in general, no.

Q And don't know whether they have too much or too little water?

A No.

Q So far as you know they may have had a great excess of water at times since 1902?

A Sure.

MR. JOHN E. BOOTH: That is all, we rest for the West Union.

THE COURT: The East River Bottoms Company

MR. JOHN E. BOOTH: Now, your honor please, in that our people are in session now with the reservoir company, and I have every reason to believe that some stipulation will be made as to them assoon as it can be reached. I will ask if we may pass that for the present.

THE COURT: Provo Pressed Brick Company; who represents the Provo Pressed Brick Company?

MR. CLUFF: I do, if your honor please. I don't know whether our witnesses are all here; we can perhaps start, I didn't anticipate until last yesterday evening we would be called. Our principal witness, the engineer, has not arrived yet.

THE COURT: How long will it take to put in the evidence?

M.R. CLUFF: It ought not to take very long.

THE COURT: Utah-Idaho Sugar Company, Zions Savings Bank & Trust Company, Spring Dell Resort Company, are any of these parties ready?

MR. COLEMAN: We can proceed with the Spring Dell Resort Company.

MR. THURMAN: Is there anybody objects to what this company gets under the decree? I suppose it was not contested, I am not representing the company, we do not.

MR. RAY: I wish Mr. Corfman would state briefly what their claim is.

MR. CORFMAN: May it please the court, the Spring Dell Resort Company is a Provo corporation organized for the purpose of using water for maintaining a pleasure resort upon the Provo River about three miles and a half or four above the mouth of the canyon. They own there a considerable area of land upon which no water whatever is used for irrigation or otherwise. The resort proper consists of a few acres of land immediately south of the banks of the river upon which a spring of water arises, that with the development made by the owners has a flow of approximately one second foot of water. This water is utilized for domestic and culinary purposes and to some extent in beautifying the grounds. The water runs from the spring which arises in the foot hills or mountain and flows down through the resort ground and is received there into a cement structure used for ponds for beaufifying the ground, and I believe it is used also for pleasure boats, but it is a cement structure without leakage, and the water flows from this reservoir a few rods down into Provo River and is again used by the water users taking water at the mouth of the river. The consumption of the water I take it, the only consumption of water,

that does not again flow into the stream would be the small quantity that is used for domestic and culinary purposes.

THE COURT: Some irrigation, is there, on the lawns?

MR. CORFMAN: There is probably an acre or two of ground that has been used for lawn purposes. There is no water whatever used for the purpose of raising any crop. This water, the appropriation of this water dates back some thirty or forty years at a time when the ownership was in a man by the name of Burbeck. He then used the water for the raising of agricultural crops and the present owners who purchased by mense conveyances from Mr. Burbeck has acquired the right to the use of the water, and have been using it in the manner in which I have stated. The right to the use of this water was once heard and determined and decreed in what is known as the Chidester decree, that decree fixing the right to the use of the entire spring for the purposes for which the resort has been kept and maintained, providing that the return of the water shall be made directly to the river, and subject to the rights of the appropriatators taking and using water at the mouth of the river.

MR. JACOB EVANS: Have you the decree?

MR. CORFMAN: I have a copy of it.

MR. RAY: 3-C of the decree.

MR. CORFMAN: To more specifically state the provisions of the decree I will read from that paragraph affecting the rights of this particular company.

MR. JACOB EVANS: I don't think we have any objection to that at all.

MR. THURMAN: No.

MR. RAY: We are willing a right be decreed to these people equal to the rights mentioned in C-3 of the Chidester decree.

MR. CORFMAN: You are willing that may be stipulated into the record?

MR. BAGLEY: Resort Company being the successors in

interest of the persons named in the Chidester decree.

MR. CORFMAN: Named in the Chidester decree. May that stipulation be taken into the record?

THE COURT: Yes.

MR. CORFMAN: It is hereby stipulated on the part of the plaintiff and the defendants in this cause that the rights of the defendant Spring Dell Resort Company, a corporation are as fixed and as determined by the decree of the District Court of the Fourth Judicial district of the State of Utah in and for Utah county in that certain cause wherein Provo City a municipal corporation, and others are plaintiffs and Telluride Power & Transmission Company and others are defendants; and that since the rendition of that decree that the water has been used by the defendant Spring Dell Resort Company as therein decreed; and that the use of such water is now being made by said defendant Spring Dell Resort Company for the purposes therein set forth.

MR. A.C. HATCH: Give the number of the case.

MR. CORFMAN: I haven't got the number.

MR. THURMAN: Was the Spring Dell corporation a defendamnt in the Chidester decree?

MR. CORFMAN: They are successors to Joseph T. Farrer.

MR. THURMAN: I don't think you have tied that up, I think you should state that.

MR. CORFMAN: That the Spring Dell Resort Company, defendant in this action are the successors in interest to said water by mesne conveyances through Joseph E. Farrer, R. A. Baney, George E. Howe, L. O. Taft, John R. Twelves, J. Beck, J. H. Denhalter, J. M. Smith, L. Holebrook, C. E. Loose and C. F. Decker defendants in the case of the Provo City a municipal corporation vs. the Telluride Power & Transmission Company et al.

THE COURT: Now, are your parties ready, Mr. Cluff?

MR. CLUFF: Yes, I think we are ready now.

SIDNEY BELMONT, called by the defendant Provo Pressed Brick Company, being first duly sworn, testifies as follows:

DIRECT EXAMINTION By Mr. Cluff.

Q What is your name?

A Sidney Henry Belmont.

Q Where do you reside?

A Provo.

Q Do you hold any position with the Provo Pressed Brick Company?

A Vice president and Assistant Manager.

Q Where is the plant of the Provo Pressed Brick Company located?

A About a mile and a half north of Provo on the Heber Branch of the Denver & Rio Grande.

Q By what power is it operated?

A Water power.

Q From what source do you obtain water for the power to operate the plant?

A Provo City and I believe what is called City Creek-- Provo River I should say, Provo River and City creek, both coming from Provo River.

Q I hand you, Mr. Belmont, Exhibit 110, and ask you to state what that is?

A Certificate of appropriation of water State of Utah.

Q By the Provo Bressed Brick Company?

A By the Provo Pressed Brick Company, February 20, 1907, before Caleb Tanner, State Engineer.

MR. CLUFF: We desire to offer this Exhibit.

MR. THURMAN: We simply want to get into the record at this time ~~the point~~ a point we make against this appropriation, not as against its validity for any purpose, but that undr the statute it is secondary and subject to the rights of the plaintiff and defendants I represent for agricultural purposes. The statute makes it so, although the appropriation and application is prior to ours. Simply want the record to show that we at this time make that point and do not waive it.

THE COURT: I understand you don't object to the introduction.

MR. THURMAN: Don't object to the introduction.

THE COURT: Of the paper itself. It may be received, and your suggestion is an argument as to the effect.

MR. THURMAN: I will state we make the objection under Section 1288-X-27 Compiled Laws of Utah, 1907, which makes water for power purposes subject to a superior right.

MR. RAY: We of course make the same contention -- not in the form of an objection.

THE COURT: I hardly understand your position, Mr. Thurman. I understand you object to the introduction of this certificate.

MR. THURMAN: We don't, the point is simply this. It may be simply out of a super abundance of caution, but we want the record to show at this time that we will contend-- in other words we don't want to waive --

THE COURT: I understand, but you have referred to it as an objection several times.

MR. THURMAN: I don't mean it in that sense.

THE COURT: There is nothing for the court to pass on at this time. I merely understand you announce at this time you will take that position with respect to it. The paper may be received and you may proceed with your evidence.

MR. CLUFF: Does the court prefer to have it read into the record.

THE COURT: No, it may be left with the reporter.

Q Mr. Belmont, you may state to the court the business of the Provo Pressed Brick Company?

A The manufacture of a number of grades of brick and farm drain tile, deriving our power from a water wheel -- two water wheels that we have installed.

Q Can you describe your plant and the water wheels and so forth.

A In a general way, yes sir.

Q If you will do so then?

A We have, I believe, six kilns for burning brick, the capacity of them about 225,000 brick each. We have one Chisholm boy white four molds, special dry press of a capacity of 20,000 brick in ten hours. We have an American Clay & Machinery Company from Bucyrus, Ohio, have a wire cut machine of a capacity from thirty-five to fouty thousand brick in ten hours. We have installed two 23 inch Sampson water wheels for the generating of the power and power is transferred from the water wheels to our machinery building with a rope transmission. We have also a dynamo that generates electric light for our plant, and the plant is wired for lighting in our kilns in the day and around the kiln at night. We use the water wheels for that purpose. We have the railroad facilities.

Q Are you able to state the amount of water necessary to operate those two wheels you speak of?

A I don't know that I can give you the exact amount, I believe the wheels are rated at about twenty three hundred, from twenty-three to twenty-eight hundred minute feet each, full capacity, full gate, according to the head we can get. The head varies very much. Figuring I believe with a sixteen feet head, I believe it is 2300 minute feet, sixteen feet six it is. Our maximum, I think, as near as I can measure it, about 2600 feet to each wheel running full capacity.

Q Is your plant so situated and you are in condition to operate it at full capacity at all times if you can get the water?

A We operate it at full capacity during the high water season. We cannot at other seasons. Our reason for installing two wheels was to use the water at the various stages of the river. During the high water season and up until the river starts to fall very materially we would use two wheels to the full capacity, and then during the rest of the season the river would be lower we would use one wheel sometimes and two wheels other times. We use all the water we can get. We are scarce of water and some of the time have to use steam, or have used a steam auxiliary We have a steam engine and boiler that when the water is down low

we cannot pull all the plant, we use steam as an auxiliary.

Q I would like you to describe to the court just the source of the water supply for your power, and what becomes of the water after you have used it, passed it through your wheels?

A The water during the high water season we take directly from the Provo River on a piece of ground that originally, I think, when our filing was made, was owned by Mr. Tanner.

Q You placed dams, head gates —

A Yes, we placed dams and gates. The filing mentioned the exact location of those. Then later, when the water was lower in the river the water is brought down City creek and diverted at the mouth of Provo River near Olmstead, and goes down City creek, passes through what was originally a part of the East Union ditch. Then through our water wheels and is returned partly to the Factory race.

Q That is the race that extends down through provo City here?

A Another part to what is called City race, and the balance of it goes back into the river to be divdrted again lower down, goes back directly, nearly directly west from our plant into Provo River, and the ditches, canals and gates are all fixed by our company to make those diversions according to our filing.

Q Now aside from the Factory race and the City race you speak of, do you know what other streams take the water that is diverted back in the provo River below there?

A I believe it mentions Little Dry Creek, and I don't know all the names. One, I believe, called Holdaway ditch, Little Dry Creek, City creek and Factory race, that is as near as I know the exact names of them. They seem to be named -- different people know them under different names.

Q Now, Mr. Belmont, in addition to your power rights you claim there, you may state whether or not the Provo Pressed Brick Companyis the owner of any land that is irrigated and upon which it claims water for irrigation purposes?

A Yes sir.

Q What is your acreageof irrigated land.

A That acreage of irrigated land that you would term proper agricultural land, land that could be cultivated, I would just estimate, I don't know definitely, probably thirty-five acres, while there are bottom lands we raise pasture and some hay, would be all the balance of our land maybe, over a hundred acres.

Q You have to irrigate and do irrigate what you call the bottom land, do you not. What crops do you raise on that?

A Some hay, some grass pasture.

Q What is the total acreage of your irrigated land?

A Why, I should say it all could be irrigated, I don't know we have always irrigated it during my time, but it has been irrigated, I am informed by the former owners when we bought it. We bought the Dixon estate, and Mr. Dixon, Arthur Dixon, who is one of my partners, prior to some floods flooded out of their land the whole country was irrigated.

MR. JACOB EVANS: Wait a moment, I object to that as incompetent. Mr. Dixon can tell that.

THE COURT: Objection sustained.

MR. JACOB EVANS: Move to strike it out as hearsay.

THE COURT: It may go out, what was stated by Mr. Dixon.

Q Just what you know about it yourself, Mr. Belmont. The acreage you irrigate there now for pasture and otherwise.

A I would say in the neighborhood of sixty acres.

Q As a total?

A Sir?

Q As a total?

A As a total.

MR. CLUFF: Perhaps we can stipulate it, I understand it is agreeable to stipulate a fifty acre duty to this River Bottom is about correct. If that is correct we don't need to go into the character of the soil.

MR. A. C. HATCH: We think you may just as well prove

all therights you have there. We will contest your right to the number of acres, time of irrigation and probably the duty. I am not sure as to that.

Q Are you familiar, Mr. Belmont, with the character of the soil?

A Yes sir.

Q Will you tell the court, describe to the court the kind of soil that you -- that is on your farm that is irrigated?

A The upper land is a heavy clay soil. That part we are taking the clay off of, what we call the Knoll, is a sandy soil, it is a fine quicksand, I would call it.

Q How about the flat?

A And the bottom lands are the soil has been washed away by overflows of the river different times, and the only soil that is there at the present time is silt that has been deposited again by the river, and a great many rocks, heavy cobble rocks and gravel, sandy.

MR. BAGLEY: There wasn't any stipulation regarding the duty?

MR. CLUFF: No.

CROSSEXAMINATION by Mr. Thurman.

Q Mr. Belmont, when did you commence to irrigate this land?

A When we got the farm from Dixon, when we leased it, about fifteen years ago.

Q Fifteen years ago?

A Yes sir.

Q You commenced to irrigate as long as fifteen years ago.

A Yes sir, we had men there to irrigate it ever since we have owned it.

Q How much did you irrigate fifteen years ago?

A Practically all we are irrigating now.

Q What kind of crops do you raise there?

A Various kinds of crops, raise hay, oats, wheat, potatoes, carrots, general stuff we could use for teams, and hay.

Q Does the company itself farm this land?

A Yes sir.

Q Or let it?

A Farm it ourselves.

Q Did you purchase from Dixon?

A We purchased from the Dixon estate. This is all of their lands, all that was owned there on the homestead of Henry Dixon.

Q Did you get a deed? A. Yes sir.

Q Have you got the deed?

A I haven't got it. We have got the deed, it is on record. What I am thinking about, I suppose you are alluding to the Dixon estate, we have other lands there. When I mention the sixty acres of land we are irrigating, that is the Dison estate. We have other lands there we irrigate from Provo city water.

Q Can you get your deed, I don't mean right now, but between now and noon.

A I believe we can get it immediately after noon, Judge.

Q Please do that. That is all for the present.

CROSS EXAMINATION by Mr. Jacob Evans.

Q I would like to ask a question or two. How much land do you irrigate from the Provo River, or Provo City system?

A Provo City system?

Q yes.

A We irrigate the -- what is called Charles Oi Dixon, five acres, isn't it. That was not in the Dixon estate, we have bought that since. I understand that was called Harrison estate, different men. We bought that long since our original, long since we bought the Dixon farm.

Q You claim sixty acres of land in addition, and the water?

A In addition to what we get from provo city. The land is very irregular and I can only give you generality the amount of it, I never had it measured.

Q Just approximate?

A Just approximate, yes sir.

Q Do you take your water for the irrigation of these lands through

more than one ditch?

A Yes sir, number of ditches.

Q Well, do you have a number of ditches connecting with the stream that you take the water from?

A There is one ditch that is considered an independent ditch, I think they call it Alfred Young ditch. Another ditch we take our water from I believe is called the Dixon ditch. Another ditch and other sources we have had of water in the bottom lands was to put dams across the overflow streams from the Factory race and through City race to raise grass on our bottom lands.

Q I was trying to clear up, Mr. Belmont --

A There was no particular ditch for that land. The bottom lands are irrigated-- there is a number of streams, great many streams passing through our land, and during the dry season, during the high water season it doesn't need any water, the river overflows. Later, after the ditches have been taken out above and the river has gone down, later we take the water out of the river and put it out in small ditches out on our land to raise grasses and trees and hay.

Q And that water is taken through quite a number of different laterals?

A Lots of little laterals wherever it was convenient.

Q And then you do take some water through the Dixon farm ditch?

A We take some water through -- I don't know just how to designate it, I heard it explained all here, the Dixon farm ditch, by taking the clays off the land where we manufacture brick, we have had to change the ditches a number of times to be able to take the water on the other lands, in fact to take it around where our clay pits are so that where the water is coming at the present time is not exactly the same as where it was when we got the plant or got the place. The Dixon farm ditch, I cannot just designate it myself, under that name.

Q Do you know about a -- you say you cannot designate it?

A Not under that name, no sir, I don't know it, which they call the Dixon farm ditch.

Q You could not then of course determine how much land you irrigate under that ditch?

A No sir, some call it Alfred Young ditch, others call it Cluff ditch, and there is so many different names for it, it is hard for me to know just the proper name for it. Now, the Dixon farm ditch, I don't know just where it is or what it is, but if it is the ditch I think it is, it is a new ditch we have made entirely through the length and breadth of our place, and the water comes out of our head gate and out of the East Union, or where the East Union joins City creek.

CROSS EXAMINATION by Mr. Ray.

Q Mr. Belmont, out of the total of sixty acres which you irrigate, about thirty-five acres are up lands, aren't they?

A Yes sir.

Q And those lands are very deep heavy clay?

A Deep, heavy clay, the lower portion of it, the south portion of it. The north portion we call a knoll, it is a large knoll, and very sandy loam.

Q But a good loam soil?

A A good loam soil.

Q Of some depth?

A I should think twenty feet.

Q Then you have twenty-five acres down in the bottoms?

A Yes sir.

Q And those --

A We have more than that.

Q You irrigate about twenty-five?

A We irrigate at least that much.

Q And that twenty-five acres is irrigated by the low water, by the unavoidable flood water? A. Yes sir.

Q It is covered with grass and cottonwood trees?

A Covered with grass and cottonwood trees.

Q There are no fixed furrows?

A We make them. If the river gets very high it will take out

some of them every year. Other times doesn't bother us. For instance, last two or three years it has not been bothered at all by the overflows of the river, because the water has been low, but when the river gets high, the river will come over to our plant, and take out all our ditches every year and some cases we have to take our dams out of the streams, have to take them out to let the flood waters go on down.

CROSS EXAMINATION by MR. Coleman.

Q You take this water that you use for irrigation above where you use it for power ?

A Do we?

Q Yes. A. No.

Q Do you use the water for power first?

A I didn't understand your first question. What I thought you were asking whether We could use the water we are using for irrigation for power; We cannot.

Q You cannot, then you take it out above?

A The Alfred Young ditch is a way above us, and then the water that goes in what I presume they call the Dixon ditch cannot get back -- in fact, it is taken out of the same stream we use for power. It is taken out above our headgates.

REDIRECT EXAMINATION by Mr. Okuff.

Q State whether or not any of the water that you use for power can be or is turned back into what is known as the East Union canal? A. No sir.

Q All your power water is separate from water of the East Union canal?

A Yes, the water in the East Union canal, the gates for the East Union canal is below where we divert it into our wheel.

Q And you answer counsel that the bottom twenty-five acres of land is watered by unavoidable floods of the springs , spring of the year; do you water it in any other manner than that?

A Oh yes, as soon as the river goes down, we put in our dams and

put the water out, because there isn't enough there, wouldn't raise anything if we did not. Just at certain times, I noticed a number of times -- not a number, but one or two years since the brick company has had this land, quite a good deal of this land would be flooded, while at other years, why, it is high and dry all the time.

Q In other words, this twenty-five acres you speak of as bottom land is right near the main channel of the river?

A Yes sir.

Q And when the river is up in the spring of the year it floods over that ground?

A Some of it, not all of it.

Q Later there is small streams coming down through it and you dam up those streams and spread it out on the ground?

A Yes sir.

Q For the purpose of raising grass, pasture, and so forth?

A Yes sir.

CROSS EXAMINATION by Mr. A. C. Hatch.

Q Just a question, I understood you to say that this twenty-five acres was covered with cottonwood trees and grass?

A And hay land. Part of it is in to timothy and clover at the present time, a big portion of it.

Q When was it put in timothy and clover?

A Well, it has been sowed down to different stuff, it has been sowed one time to lucern, part of it, and year or so after that partly washed away. The last crop, the crop that is in it now I could not tell you just the length of time, but was a number of years we have had it into timothy and clover.

Q When was the cottonwood trees taken off the land?

A The last of it, part of it, probably a year ago, part of it.

Q You have been clearing up and extending the area of your cultivated land ever since you bought it, haven't you?

A Some of it has gone back, and some of it, we have cleared some of it that was clear when we got it, has grown to cottonwood

trees now as the river would make it rough and take away the soil so that we could not cultivate it, or it was not possible to try to. Wehave let it go back, neglected it probably, places where it was rough.

Q And do you mean to say to the court that you are now cultivating no more land in that bottom than you cultivated, or was under cultivation at the time you bought it?

A The question is cultivated lands, where you call hay lands cultivated lands?

Q I do yes, and clover.

A Sowed to clover you figure cultivated lands?

Q Trees grubbed up and sowed to clover, I call that cultivation.

A That is termed cultivated land?

Q Yes.

A Of course we havemore clover, more hay land in there at the present time than we had when we took over the property.

Q You hadn't any anymore than five acres of this twenty-five that was under cultivation, had you?

A I would say there was probably a third of the bottoms there that would grow good grass when we bought it.

Q I am asking you as to cultivating.

A Will you explain? It was not into tame grass, no sir. It wasn't in tame grass.

Q It never had been plowed or irrigated except by the overflow of the river up to the time you bought it, had it?

A I am informed different by Mr. Dixon, Mr. John D. Dixon, I didn't know the land before we bought it, but Mr. Dixon and all the Dixons told me that before we bought it they had cut hay and hauled hay from there.

MR. A. C HATCH: I move to strike that out.

THE COURT: It may go out.

Q You went over the land, didn't you, when you bought it?

A No sir.

Q When did you first go over it?

A Soon after the brick company took it in, I had no interest.

Q How long ago was that?

A Fourteen or fifteen years ago.

Q It was then all covered with cottonwood trees, that bottom land, wasn't it? A. No sir.

Q Twenty-five acres?

A No sir, first year we bought it we pastured eighty head of cattle there.

Q I am asking you as to the cottonwood trees?

A There are a great many cottonwood trees still, there was grass amongst it, that grass was irrigated with the overflow of the river.

Q And in that way only at that time, wasn't it?

A No sir.

Q Whereswas there any irrigating ditches and diverting channels from the Provo river upon that land when you bought it?

A The diverting channel of the Provo -- of the Factory race, we will say Factory race, was higher than most parts of this land, and by throwing a tree or something across the Factory race, it would irrigate the biggest portion of that land and then it was left --

Q Any portion of it on the west side of the river?

A There is some on the west side of the river.

Q How many of the twenty five acres on the west side of the river?

A The twenty-five acres there isn't any -- there was some we have had some wheat in last year, another piece, I believe, in oats last year. That was in the upper, that we are irrigating or trying to irrigate from the river above.

Q When did you remove the cottonwood trees from there?

A From the west side of the river, we have been dutting them down and using them since we have had the land, we have cut them down and used them for fire wood.

Q There is fourteen or the twenty-five acres on the west side of the river, is there not?

A I couldn't tell you. You mean fourteen of the twenty-five acres we had --

Q That you are claiming water for outside of the city system?

A No sir, big portion of it is on the east side of the river. There is some on the west side of the river.

Q I understood you to say that you had sixty acres of land that was irrigated from sources other than the city system?

A Other than the city, yes sir, that is my judgment.

Q And thirty-five of that was up land and twenty-five bottom land?

A Yes sir.

Q Now, the twenty-five I am asking you how many acres of this is on the west side of the river?

A I could not give you that in a definite --

Q Will you say--

A I haven't any survey or any way to give you the land. It is very irregular, we have patches all over there. Wherever it is open soil we have cultivated where it used to grow grass.

Q I am not asking you anything about that, I am asking you as to the acres of land, and I move to strike out his answer as being irresponsive.

THE COURT: It may go out. Pay attention, Mr. Belmont, to the questions and answer them if you can.

A Excuse me, Judge, but Mr. Hatch --

THE COURT: Nevermind.

Q If you will listen and answer my question, I will ask you if you will say there are not fourteen of the twenty-five acres on the west side of the river?

A I won't say there ain't fourteen of that twenty-five, because I couldn't tell you the amount on either side of the river.

Q You have answered the question.

A Sir?

Q You have answered the question. A. Yes.

Q You told me a moment ago by throwing a tree in the Factory race it would irrigate the most of that twenty-five acres?

A Most of it, yes sir.

Q Fourteen acres of it on the west side of the river, that would

not be true, would it?

A The fourteen acres over there could not be irrigated from the Factory race as the Factory race comes out from the east side of the river.

Q When were you last over that land, that twenty-five acres?

A Last?

Q Yes.

A Within the last month.

Q How many acres of it is river bottom bottom, river bed not fit

A for cultivation or cropping purposes in any way?

A I should judge from six to ten acres of the whole farm.

Q Of the whole twenty-five?

A Of the whole hundred acres.

Q I am asking of the twenty-five.

A Of the twenty-five, none.

Q You have the twenty-five acres --

A That we can cultivate.

Q Outside of the creek bottom and river bottoms?

A Yes sir, I should judge that.

Q Have you ever looked at it with a view to determining the quantity? A. No sir.

Q Then how can you form a judgment.

A You asked me for my best judgment, that is all I am giving you, I never had it surveyed, never stepped it or looked at it. I know we have over a hundred acres of land there and give you my best judgment of the land we are cultivating. I haven't gone over it with theidea of determining, and didn't know I would be asked that.

Q That part that is cultivated is in little spots and patches in the cottonwood timber?

A It is, that is up high enough would be soil and other places, of course there is heavy timber, and other places was gravelly, we didn't feel like cultivating it.

Q How many acres do you irrigate from the city of the 107 acres?

A I cannot give you that, Judge. Of the hundred and seven acres, I think we have taken from what is considered the East Union-- is that what you are asking now?

Q Yes, the city system?

A The East Union I figure twenty acres.we have been running across the flume. Is that right, Mr. Goddard, twenty acres across the flume?

MR. GODDARD: That is what it used to be.

A That is what originally come across the flume, but now it is not coming there. It has been changed now.

MR. GODDARD: About ten acres now across the flume.

A About ten acres now across the flume.

Q DO you have eighty acres in all under cultivation?

A Eighty acres in all?

Q Yes, under cultivation?

A I would say not.

Q Sir?

A I don,t think so.

Q You have twenty under the city?

A No, the twenty under the city, we consider that our irrigated land, and we pay the city for keeping up the ditches. We consider that our water, the Dixon water.

Q That is separate and apart from the sixty acres you are claiming this morning?

A That is apart, that is ten acres of it at least city, part of our sixty acres.

Q You take it out of the East Union ditch?

A We take about ten acres now out of the East Union ditch. We originally took twenty acres out of there.

Q And that ten acres is a part of the sixty?

A That ten acres is a part of the sixty coming from the way.

Q So you had that ten acres that you take from the East Union is taken from the canal that is under the city control, isn't it?

A It comes from the East Union and crosses a flume.

Q You can answer my question.

A Yes sir, that comes under the city control, the ditches, East Union is under city control.

Q That would be fifty acres then only outside of the city ditches?

A Fifty acres outside of the city ditches.

Q Then of that fifty acres, how many acres under actual cultivation of the thirty-five you testified to as up lands.

A I didn't just understand you, Judge. Read the question.

(Question read)

A Probably attorney has got a figure in there wrong, I don't know just exactly what he is getting at. Thirty-five acres of up lands, I figure the up lands the land that is heavy clay, and this ten acres of this that come across the flume would be of the heavy land or up land, that is, heavy clay, and be of course a part of our whole amount that is irrigated.

Q Now, is there twenty-five acres of that up land that is outside of the city system?

A Yes sir, all the up land -- no -- yes, twenty-five acres it is.

Q Is that twenty-five acres all under cultivation?

A With the exception of a few races through it.

Q What crops are growing on it?

A Hay and oats on part of it.

Q How much oats?

A Why, just a moment, I might be mistaken on oats, probably got timothy and I thought it was oats, I cannot give you definitely this season what crops was in it on the different pieces of land.

Q Can you give me what crops were on it last season?

A Partly in oats, I believe, partly in oats this year, or barley.

Q How much oats?

A I cannot give you that, I have no record of it.

Q Are your kilns and works located upon any part of these twenty-five acres? A. Yes sir.

Q Sir?

A Our kilns are located on what was originally up land, yes sir.

Q And would be a part of this twenty-five?

A Part of the thirty-five acres we considered up land.

Q How much area do your kilns and clay beds from which you take the clay to make the bricks and your races and roads and railroads cover?

A I wasn,t considering the railroad or the roads, but I was considering the land where the kilns are as up land and lands that were originally irrigated. It was irrigated and was clay land when we got the land. That is what I thought you were asking me to give you. Now, the clay pits, after we take the clay off of them, the clay pits --

Q Just a minute.

A Are cultivated again.

Q Will you wait a moment. A. Yes sir.

Q If you would listen to my question and answer it, you would save these people hundreds of dollars transcript. What you are saying it is wholly unnecessary. I don,t care why you located your works there, but I am asking you how many acres of land is covered by them, if you don't know you can say so, and if you do --

A By the kilns I don't know.

Q I ask you as to the kilns, the railroad tracks, the wagon roads, if you have any, and your water ects.

A I cannot tell you how many acres.

Q To make it clear to you what I am trying to find out the land that you have there that is actually cultivated and needs irrigation for the purpose of producing agricultural or horticultural crops, how many acres have you there of that class of this thirty-five acres? Of this thirty-five acres of this up land?

A I cannot tell you sir, I haven,t any survey of it, but I can tell you -- you asked for generalities and want to put me to acres, I cannot tell you.

Q Have you any in the entire tract that is subject to that condition?

A With kilns on and railroads?

Q pardon me, I am asking you with regard to the irrigation to

produce an agricultural or horticultural crop?

A Certainly they got lands there.

Q You have some land? A. Yes sir.

Q You are willing to swear to that and know it of your own knowledge

A Yes sir.

Q But you would not attempt to make an estimate as to the quantity, would you?

A I would not attempt to make an accurate estimate, no sir.

Q Now, of the other twenty-five acres of bottom lands, do you know anything whatever about that?

A I know I give you what in my best judgment approximately what we have in cultivation there.

Q Upon what do you base that judgment?

A I base it on the amount of land that we have on the opposite side of the track which our plats show the acreage of.

Q How many acres are there?

A I believe thirty-one above the -- east of the track, and taking in the plant.

Q How much?

A Thirtyone, and four below, I cannot give you all these things definitely.

Q How much west of the track?

A Eighty something.

Q And you are basing your judgment upon the amount of land that your plat shows you own lying west of the track?

A Lying east of the track. I judge that we would have probably as much land there on the west of the track in cultivation, or that there is as much in ~~xix~~ cultivation as we have altogether east of the track. That is where I base my estimate of sixty acres. We have thirty odd acres east of the track, and I judge we have that or more west of the track.

CROSS EXAMINATION by Mr. Bagley.

Q Could you estimate the number of acres that are occupied by

your pits and kilns?

A No sir, I could not give it.

MOSHER F. PACK, called by the defendant, Provo Pressed Brick Company, being first duly sworn, testifies as follows:

DIRECT EXAMINATION by Mr. Cluff.

Q What is your name?

A Mosher F. Pack.

Q Where do you reside?

A Salt Lake City.

Q What is your business?

A Civil engineer.

Q How long have you been engaged in that work?

A Thirteen years.

Q Are you acquainted with the Provo Pressed Brick Company property?

A Somewhat?

Q You may state whether or not you have made any survey or measurement for that company?

A I have.

Q Have you a plat that indicates the surveys that you have made there? A. Yes.

Q You may pin it on the board, if you will. For what purpose was this map on the board made, Mr. Pack?

A It was made primarily for the purpose of doing some improving that the company wanted to make relative to the supply of water from the river and also for the return water back to the river.

MR. A. C. HATCH: If the court please, I would suggest it be numbered and referred to by number so that it can be identified.

THE COURT: Yes.

(Exhibit 111)

Q Mr. Pack, I will ask you to explain just the meaning of the various lines on this plat, what they indicate?

A The important item on the map is showing the point of diversion and general alignment of the canal the supplies the water for the power at this point and returning the water through this canal back to the river. That is prindipally for which that was made.

Q The point of diversion is the point that the water is taken from provo River, is it?

A Yes. At this point here so designated point of diversion.

Q Where, if you can tell from the plat, does that channel intersect with City creek?

A It intersects the old City creek at that point.

Q And water --

MR. JACOB EVANS: What is that designated?

A What.

MR. JACOB EVANS: What do you designate that point as being?

A There is an indication of the dmm there, it says "dam" at that point.

MR. JACOB EVANS: What is there on the plat so that we can get it into the record.

A You will have to make a mark there. I can get a pencil amd make a mark there.

Q Do so, so that it wil, be definite?

A At the point indicated designating dam. it is the only point on the map showing dam.

Q From that point then the water is carried through the Citycreek channel down to the wheel?

A Yes, through the old City creek channel clear to the wheel.

Q Do you know anything of the wheels that are installed there?

A City creek, it was this point instaad of that point, that was the dam across the slough.

Q Mr. pack, do you know anything of the wheels that are installed at the plant there, kind of wheels?

A May I explain a little more definitely?
Q Yes.
A We intersect the City race at this point, and the City race after that run around here away from our race and comes back, enteres our race that point and leaves it there, goes across the land in this direction and it is indicated here again. That is the old City race going around here.

MR. JACOB EVANS: If the court please, I suggest that the ~~method~~ method of testifying here does not add any information in this record at all, doesn,t give any point and if this record was read hereafter the testimony of the witness would be absolutely meaningless to anyone who might read this record. Instead of referring to this point and that point and the other point, if he can state something on the plat that shows that the point is he is testifying to.

MR. A. C. HATCH: I suggest the testimony is all immaterial anyway, no matter what the record may show in relation to it. As I take it, all of this is only preliminary, like asking the witnesshis age and place of residence.

MR. CLUFF: That is correct.

Q Now, Mr. Pack, what I am getting at, do you know anything of the wheels that were installed at the provo Company for power purposes?
A There are two twenty-three inch Lefel wheels or Sampson wheels installed at the penstock indicated here.
Q Can you give to the court the capacity of those wheels?
A The capacity of the wheels, two wheels together will take approximately 100 second feet of water under a 16 foot head, giving approximately 67 to 68 or 69 horse power each.
Q And is your diverting channel sufficiently large to carry that amount of water to both wheeks ?
A Yes sir.
Q Have you used that amount of water for power purposes there?
A Yes, there was that amount of water running at the time I made my measurements.

Q Is that amount of water necessary to develop the power necessary to operate your plant there at full capacity?

A Yes, and is not sufficient, I think -- I will take it back, that amount probably is sufficient, but in low water when we don't have that much water.

Q That is because you cannot get it from the river?

A Because we cannot get enough water.

Q Can you tell the court just what becomes of the water after it passes through your wheels?

A Water passes through the wheels here --

Q Can you make that point definite?

A At the tail race immediately below the wheels there is a division weir dividing the water that runs down the original Factory race, portion of it, and rest is turned into the new tail race as constructed by the company and runs in a southwesterly direction until it intersects the City race where there is another flume, and division weir for dividing the water, and portion of it is turned into the City race at that point, and remainder is returned to the river at the point indicated as point of return. That water being returned to the river is for use, as I understand it in the Tanner canal and old Dry Creek canal.

Q Prior to the appropriation of water as indicated by Exhibit 110 had you used water there for power purposes?

A Prior to the appropriation?

Q Yes.

A Yes, they had been using water.

Q Do you know how long?

A Well, as long as I have been acquainted with the plant, probably since 1900, 1903, probably.

Q Have you any measurement, Mr. Pack, of the lands that are indicated by the Pressed Brick Company there using for growing of agricultural crops or pasture?

A I have not.

Q You don't know the amount. I think you may cross examine.

CROSS EXAMINATION By Mr. A. C. Hatch.

Q Did you compute the horse power that a hundred second feet of water with a sixteen foot head would produce with proper wheels?

A Yes, I have computed it.

Q Sir?

A I have computed it.

Q What is the horse power.

A It is approximately 134 horse power, roughly 134 to 140.

Q Why don't the wheels of this defendant produce that power?

A Well, I don't know, probably because they are not of a modern type.

Q They are old?

A I don't know that they don't produce that power.

Q I understood you to say that they produced 67 and 68 or 69 horse power?

A Each wheel produces that much. The two wheels will make about 130 or 40.

Q You say the two will produce that horse power?

A Yes.

Q How do you determine that?

A Well--

Q How did you determine it?

Q You can take the water flowing per second and multiply it by the head and ~~xtxf~~ divide it by 11 which will give you approximately horse power delivered.

Q That will give the horse power?

A No, that will give the horse power they take, that is allowing for the efficiency of the wheel.

Q Do you mean to say by taking the head and quantity of water that you can determine the power thatit will produce in any certain water wheel? A. Yes.

Q How much would it produce in an old wheel, over shot water wheel?

A The eificiency there is probably as low as fifty per cent. We are figuring on an 80 per cent efficiency when I give you the formula I did.

Q How do you know these wheels give you 80 per cent efficiency?

A We have been getting in that neighborhood for the last twenty years with water wheels.

Q I am asking you as to these wheels.

A Well, these wheels are standard wheels of that type.

Q Have you been for twenty years engaged at the point where these wheels are used? A. No.

Q When did you first see these wheels?

A Along in nineteen hundred and three and four.

Q Did you actually see the wheels?

A Yes, I have seen one of them, I never saw theother one.

Q In 1903 you saw one of them?

A I won't say just the date.

Q Have you ever seen either of them since?

A No, I have been to the plant but never have seen the wheels there in the pit.

Q You don't know the condition of the wheels then at this time?

A No.

Q You only knew the condition of one of them in 1903, what was its condition then?

A Well, it was in good condition. Wheels were all, I understand, second hand and installed by the company.

Q Do you know it had been used?

A I do not.

Q In 1903 it was a second hand wheel then?

MR. BELMONT: They were new wheels.

MR. A. C. HATCH: Who is interrupting?

MR. BELMONT: They were new wheels, I didn't want him to make a mistake, and I beg pardon if I should not interrupt.

THE COURT: No, it is not proper for you to interrupt.

Q Mr. Pack, do you say that the gentleman in the rear tells the truth with regard to those wheels, or do you --

A I am not going to say.

Q pardon me until I ask my question.

A State your question.

Q Did the gentleman from the rear state the truth with regard to those wheels up there, or,as a matter of fact, do you know what you are testifying to.

A My first statement I stand on.

Q That they were second hand wheels?

A No sir, I said I thought one of them was a second hand wheel, that was my statement, I understood so.

Q That is the only one you saw?

A That is the one, the one I understood was second hand was a new one they put in. I understood the other was new when it was put in.

Q When did you get that understanding -- since the gentleman in the rear spoke?

A As I told you before I understood one -- that the wheel was second hand, the second one, that is all I knew.

Q Canst you tell as an engineer whether wheels are second hand wheel and had been used or whether a new wheel, by looking at it?

A I can if it is not installed and in use at the time I see it.

Q This was installed and in use at the time you saw it?

A Yes.

Q One you saw? A. Yes.

Q The other you never saw? A. No.

Q And you say they are producing now about 130 horse power each?

A The two together.

Q How much water?

A Approximately a hundred second feet the two of them.

Q I guess you didn,t understand my question, did you. I am asking you as to now.

A I don't know what they are doing today, I have not been up there

Q Do you know what they have been doing during the past week?

A No.

Q Or month? A. No.

Q Or year?

A No, I don't.

Q When did you last know what they were doing?

A been some three years since I have been to the plant.

Q Now, do you compute the horse power that they are producing by the number of machines that are being propelled by that horse power? A. No.

Q And work it does? A. No.

Q Or do you do it upon the theoretical computation of the theoretical power that the wheels ought to produce?

A No, it is on a practical basis.

Q What is the practical basis?

A Actual experiments with those wheels show them to produce that power.

Q Then the only way you can tell what they do produce is by a measurement or computation of the actual work done, isn't it?

A No.

Q State some other way?

A By formula and tables and so on that are given for that purpose, worked out through experiments on those wheels.

Q That is, as to the wheel itself?

A Yes.

Q But as to the power that it actually produces, the machinery turns, that is another proposition. That is the practical part of it, isn't it?

A No, it is not.

Q Do you know what work was done by the wheels ?

A Yes, I have seen them do it --

Q What did they do that required 130 horse power when you saw them?

A I didn't say I had seen anything of the sort.

Q Then they don't produce the power and let it run to waste, do they?

A No, they are producing it for their running, and hooked on to the machinery.

Q Were they hooked on to the machinery?

A They were.

Q When you were there?

A They were.

Q What mchinery were they hooked on to that required 130 horse power to run?

A I don't know they did at that time.

REDIRECT EXAMINATION by Mr. Cluff.

Q Mr. Pack, just one word, what work is there, or machinery is there at the plant that would require that amount of horse power if you could develop it, if you had sufficient water to develop it?

A The only machinery I saw there that was there at the time I was acquainted with it was a drying fan and wire cut machine, tile machine and dry pressed brick machine.

Q I understand you have not been there lately?

A No.

JESSE CURTIS, called by the defendant, Provo Pressed Brick Company, being first duly sworn, testifies as follows:

DIRECT EXAMINATION by Mr. Cluff.

Q What is your name?

A Jesse Curtis.

Q Where do you reside?

A Out at Provo Pressed Brick yard.

Q Are you employed in the employ of the Provo Pressed Brick Company? A. Yes sir.

Q What is your duty?

A Foreman.

Q Do you have charge of the farm there? A. Yes sir.

Q Do you know how many acres of ground there are that are irrigated and upon which they produce various kinds of crops belonging to the Provo Pressed Brick Company?

A No, I don't exactly.

Q What kind of crops have you been raising and are you raising

there this year?

A had a good crop.

Q What kind?

A Most of our hay is timpthy and clover. We took an estimate on two acres and three quarters of it, I think they are cutting, and we got nine ~~ixtx~~ loads of hay, and we guessed, the four of us, with the best of our judgment that we had about twenty-five hundred to the load on.

Q What other crops besides timothy and hay?

A Barley and oats.

Q DO you use any of the land for pasture?

A Yes, we have three different pastures there.

Q What do you pasture?

A Well, we pasture all of our own stock, I have cow and horse of my own, and during the latter part of the season and early spring we take in stock of anybody's that wants to turn in until the pasture is filled up.

Q Is it necessary to irrigate the pasture land?

A Yes sir, all of it.

Q What sort of ground or soil is it where the pasture is?

A Well, it is not all alike, all of the bottom ground, most of it has a gravelly bottom soil on top. The other one is all good soil.

Q Is that along where the river bed has been in the past?

A Yes, the largest one is the river bottom west of the track.

Q State whether or not the soil has accumulated on the gravel and rock there, and there are some cottonwoods also growing up in this pasture you speak of?

A Yes sir.

Q What sort of grass do you grow there for pasture purposes?

A Well, we have different kinds, there is timothy, red top, small clover and lawn grass.

Q About how many acres, your best judgment, have you in pasture that are necessary to irrigate in order to grow this grass you speak of?

A In just the pasture?

Q Yes.

A Well, I would judge there would be about forty acres; of course, I am just passing my judgment on it, I have not measured it.

Q Now, outside of the pasture what is the nature and character of soil?

A Of the farm ground?

Q yes.

A It is good, most of it is kind of a clay ground, some of it has a little sand in it.

Q What crops were you raising on that this year?

A Everything that is not into hay is planted into barley and oats, with the exception of a few carrots and beets.

Q About how many acres would you say there is of that class of land on the far, irrigated?

A Well, we must have close to sixty. Of course, I have not measured it, it is just giving you my judgment off hand.

Q So that in your best judgment there is around 100 acres pasture and farm land on the farm there that you irrigate?

A Yes sir.

Q How long have you been irrigating that?

A Well now, I don't know just how long the company has been. I have been there little over thirteen years and majority of it has been irrigated since I have been there.

Q What would you say as to the clay land that you speak of requiring as much or more water or less than the pasture land that you speak of?

A Well, the pasture land will require a little more water where the soil is notso deep, and it dried out quicker.

Q Have you made any tests there this summer as to the amount of water it requires to irrigate an acre of the pasture ground?

A No, I have not.

Q Have you on the farm?

A No sir.

Q You havenot made any tests?

A No, we just used the water as we had to havsit all the time, keep it from burning up.

Q Have you had all the water that was necessary to properly keep your crops and pasture from burning?

A Well , we have lacked a little a time or two, place or two has got too dry because we didn't get the water and get around to it.

Q Have you a judgement as to the amount it is necessary to irrigate the sixty acres of farm land you speak of?

A Yes sir.

Q About how much?

A About how much. Well, I couldn't tell you just what it would take.

Q You say you are foreman at the brick yard?

A Yes sir.

Q Have you had sufficient water to furnish power necessary to operate the plant? A. No sir.

Q Do you know how much water it would require to operate the wheels at the plant?

A No sir, I don't.

Q You have not figured that. I think you may cross examine.

CROSS EXAMINATION by Mr. Coleman.

Q Mr. Curtis, do you take your water for irrigation purposes in turn?

A No sir.

Q Take it whenever you want it? A. Yes sir.

Q Just help yourself from the stream?

A Yes sir.

Q As often as you want to?

A Always have, yes sir.

CROSS EXAMINATION by Mr. A. C. Hatch.

Q Has this land been irrigated more than one time in the thirteen years that you have been there? A. Yes sir.

Q Majority of it? A. Yes sir.

Q You say you think there is about a hundred acres?

A Yes sir.

Q And more than fifty of it has been irrigated more than once during the thirteen years that you have been with the plant?

A Yes sir.

Q Are the forty acres all pasture covered with cottonwoods and grass?

A It is not all covered with cottonwoodd, it is most all covered with grass.

Q Does the forty acre estimate cover the river itself and different creeks and streams?

A Of course, I have not measured it, I don't know whether it takes in the river or not, just giving my judgment.

Q I am asking you of your estimate of the quantity of pasture you put it at forty acres, didn't you?

A Yes sir.

Q Does your estimate cover the river bed and creek bed and so on?

A No sir.

Q How much of the river beds and creek beds are there within the pasture?

A I have no idea, I have never sized it up to pass my judgment on it.

Q One third of it?

A No, there is not.

Q Fourth of it?

A No, I wouldn't think there was.

Q Would you say there is a fifth of it that is river bed and creek bed?

A Well, between that and one sixth.

Q How many trees, cottonwood trees, would you say there are per acre an that pasture?

A I have no idea.

Q A hundred?

A I haven't the slightest idea at all.

Q Think a moment, you can say whether or not there are a hundred trees per acre on that tract, can't you?

A I would judge there was more than a hundred.

Q Two hundred? A. No sir.

Q One hundred and fifty?

A No, I don't think there would be.

Q But you are quite certain there are at least a hundred?

A In places it would not average that?

Q And what kind of grass grows in it?

A There is some timothy and red top.

Q In the spring of the year it is principally what they call cheat grass, isn't it?

A No sir, there is some cheat grass, but the most of it is good pasture.

Q The cheat grass is good pasture in the spring time, isn't it?

A Yes, for a few weeks.

Q Now, are the cottonwoods of any value whatever for pasture purposes?

A No, not that I know of.

Q Don't the cattle browse on them?

A Well, have to get pretty hungry, I guess, to eat much of the cottonwood.

Q How much of the pasture is on the west side of the river, what proportion of it?

A On the west side of the river. Well, I don't know that I would be capable of passing my opinion on that at all, for I have not been over it enough to say, I have not sized it up to give my--

Q Haven't you been on the west side of the river in that pasture at all? A. Yes sir.

Q When?

A Oh, several times. Q. This season? A. Yes, sir.

Q More than once? A. Yes sir.

Q How many times?

A Well, I could not call to mind right now just how many?

Q Approximately?

A Oh, probably half a dozen times.

Q How many times were you there, about how many times last year?

A How is that?

Q About how many times were you there last season?

A Well, good many more.

Q What do you go over there for?

A Look over the place, see how things are going.

Q Is that all you go there for ?

A How is that?

Q That is all you go there for, you don't have any other business that takes you over that land at all?

A No, that is all I go over there for.

Q I understood you to say anybody that wanted to turned stock in the pasture, did you mean that?

A No, when we are pasturing, we have had quite a number of stock of other people that we are pasturing.

Q Did they pay rental for pasturing? A. Yes sir.

Q What is the greatest number of stock you have ever pastured on that forty acres any one season?

A I could not tell you without going to our books to find out.

Q Have you books that tell?

A Yes sir.

Q Do you keep books as to your own, the company's own animals that are turned in there?

A The company's own animals?

Q Yes. A. No sir.

Q They don't turn any of their own in there, do they?

A Yes.

Q Then how would your books show the number pastured?

A We know how many the company has.

Q And pasture all you have there?

A How is that?

Q You pasture all they have there, do they?

A Yes sir.

Q And then your books show the number of others that are permitted

to pasture there? A. Yes sir.

Q Can you say approximately the number that are pastured there during the entire season?

A No sir, I don't know as I could.

Q Will you look over or bring your books, pasture books, or such book accounts as you have showing it this afternoon?

A I think I can look them up; we have no book in the office, generally just keep little memorandums.

Q Will you bring them this afternoon to the court?

A Yes sir, if I can look them up, see what we have.

Q You say you pasture -- I won't ask that, I will ask you if when you need the water for power during the short period or low water season, if you divert water for irrigation upon these lands, or do you let the land go without water and run it through the wheels?

A We have done both. Water got so low we could not run and the farm didn't need it so bad, we would shut it off and run the the power.

Q But did you ever shut it off from your lands when they did need it?

A When the lands did need it?

Q Yes, and let it go through the wheels for power?

A Yes, we have done when it would have been better to have used it on the ground.

Q Your crops didn't suffer by reason of that, did it?

A Some of it did.

Q Which the pasture?

A We generally slighted the pasture in preference to anything else.

Q Did you ever turn the water off your grain crops when they were needing water? A. No sir.

Q And let that water go through the wheel?

A No, I don't know as I have.

Q But you turned it off the pasture whenever you needit for power purposes, don't you?

A No, if we done that we wouldn't have watered it at all this summer.

Q I understood the preceding witness -- you were in court when he testified, weren't you -- Mr. Belmont to say that the high water of the river overflowed those pasture lands?

A Yes sir.

Q Then they would have been irrigated every year for a month or six weeks continuously, wouldn't they?

A Yes sir.

Q Do you run your plant day and night?

A Yes sir.

Q That is the brick plant?

A Not always the brick plant, but generally use the water day and night.

Q What for?

A Well, if we are not using it for power we have a generator for generating light for lighting our yard.

Q Do you know the amount of power necessary to generate your electric lights?

A No sir, I don't.

Q Do you run both wheels?

A I don't.

Q Do you ever run both wheels at night?

A Only when we are running our plant.

Q The brick plant? A. Yes sir.

Q And when do you run your brick plant at night?

A When do we run the brick plant at night?

Q Yes.

A Whenever we have to to get up with our orders. When we have so much orders to fill we cannot do it in the daytime, we run a shift at night.

Q How many times have you run the plant at night this year?

A How many different times?

Q Yes, how many different nights?

A Oh, I couldn't call that to mind, I would have to look that up.

Q Don't your records show? AL Yes sir.

Q Do you have charge of those records?

A Yes sir.

Q Will you bring them this afternoon?

A If it is necessary and the company requires it.

MR. A. C. HATCH: We will ask the court to instruct the witness --

THE COURT: You may bring the books at two o'clock.

MR. A. C. HATCH: That will be all until you bring th e records we asked for.

CROSS EXAMINATION by Mr. John E. Booth.

Q Mr. Curtis, who distributes the water to you or has charge of it, anybody?

A Nobody.

Q Where do you take the water from, what canal or ditch?

A Well, just a minute, we take itout in four different places.

Q And nobody regulates you?

A No sir, never have done.

Q Does the Commissioner ever visit you?

A Comes along and measures the water.

Q Now, comes out, part of it comes out of the City creek, does it?

A Yes, most of it.

Q Some out of the East Union? A. Yes sir.

Q And where is the other part, two places?

A There is one out of the East Union, two out of what we call City creek, and one out of Young ditch. Of course, that would come out of City creek just the same.

Q Now, suppose the water has been distributed on the Young ditch to somebody below you and he is given his time and depending on that; if you go and take that water that would interfere with him very much, wouldn't it?

A No, there is nobody below us on the ditch.

Q You said you took it out of the Young ditch, I understand?

A yes sir.

Q Isn't there anybody below you on the Young ditch?

A No sir.

Q Then do you have to go up the ditch to get the water into your place?

A Yes sir, unless they are using it above, and when they get through with it, turn it down to us.

Q Suppose there is none running in the Young ditch to your place when you want it, you cannot go up the Young ditch until you find water?

A How is that?

Q Suppose there is no water in the Young ditch at your place, then you go up the ditch to find it, do you?

A Yes sir,

Q When you get to it you take it, do you ?

A Yes sir.

Q Suppose that is being used for somebody below, there is a place you take it out somewhere into your ditch, isn't there?

A Yes, out of City creek.

Q Now, is that at the head of the Young ditch?

A Yes sir, that is at the head of the Young ditch.

Q Suppose there is water then in the Young ditch, put it that way, and there isn't any down to your place, you being the lowest one, you follow up the ditch until you find the water?

A Yes sir.

Q Then you take it, do you?

A No sir, not if the other man is using it.

Q If there is water in the ditch running on down, then you don't take it?

A No sir, not if the other party is using it on the ditch.

Q On the same ditch? A. Yes sir.

Q How many use on the Young ditch?

A I could not call to mind right now just what there is in there.

Q Well, suppose that on Monday morning you want the water, you go up to the place where you take it to your land and somebody else is using it, then you don't interfere with him?

A No sir.

Q Suppose you go up next morning and find it the same, then what?

A We have always been in the habit of waiting until they got through.

Q Suppose they wait for a couple of weeks?

A They never have done that, I don't know what we would do if we had to wait that long.

Q How long have you waited before you took it?

A I cannot call to mind just now .

Q You said you took it when you wanted it?

A Not in the particular ditch, in the other ditch below where there is nobody else taking it out.

Q Just take the city ditch, suppose you want the water on Monday morning out of the City ditch, is that what you call the Dixon ditch?

A I am not familiar with their names of their ditches.

Q You call it the City ditch, you take it directly out of the city--

A That is the City race until it get s to our plant.

Q you take it out of the City race, one part of the water you irrigate with? A. Yes sir.

Q Suppose on Monday morning then you find something that needs irrigating under that system under that ditch, you go to the City ditch and take it? A. Yes sir.

Q Don't say anything to anybody about it?

A No sir.

Q When you get enough then you turn it off?

A Yes sir.

Q Now, do you recognize the fact that if that water had been distributed to people in the city that interferes with the regulations down here?

A We have never been regulated on that end.

Q Nobody has ever complained to you about it?

A No sir.

Q Do you sometimes take more than one stream at once?

A No sir, only in the high water season when there is plenty of water.

Q So you don't water out of the Young ditch and out of the City ditch? A. No sir.

Q Nor either of the other two places?

A Only at high water times when there is plenty of water.

Q Does part of this water run out on the east side to the east of the City race City ditch.

A Run out on the east side of the City race?

Q Yes. You irrigate some land on the east side of the City race?

A All on the east comes through the Young ditch.

Q Have you any measuring device to know about the quantity of water you take?

A No sir.

REGROSS EXAMINATION by Mr. Coleman.

Q Mr. Curtis, you said you took water out of the City ditch whenever you wanted it? That is above where the water is measured to the city, is it not?

A That is above where the water is measured to the city, that is, in one place, it is below where the city measures it in the East Union.

Q Comes out of the Union?

A Yes sir, that is what comes out of the East Union.

Q That is for the water for the ten acres of land?

A I don't know just what there is in there.

J. D. DIXON, calbi by the defendant Provo Pressed Brick Company, being first duly sworn, testifies as follows:

DIRECT EXAMINATION by Mr. Cluff.

Q Your name is John D. Dixon? A. Yes sir.

Q Mr. Dixon, are you acquainted with the farm which is now owned by the provo pressed Brick Company?

A Yes sir.

Q Do you know from whom they purchased that farm?

A They purchased it from my mother, Sarah D. Dixon.

Q That is the Sarah D. Dixon that was mentioned in the decree, former decree of this court, where it distributes water to S. S. Cluff, Sarah Dixon and provo City?

A Yes sir.

Q Mr. Dixon, do you know about how much land -- I will first ask you how long you have been acquainted with that farm?

A I think my father purchasedit just about forty years ago.

Q And you have been familiar with it ever since?

A Yes sir.

Q In those early days do you know about how many acres of it you farmed?

A I think about forty acres.

Q And the remainder was down in what may be termed river bed?

A Yes sir.

Q You used that for pasture? A. Yes sir.

Q The river would overflow and streams running through it would cause the grass and vegetation to grow for pasture purposes?

A Yes sir.

Q Did you have any restrictions at all as to the amount of water you would use on that forty acres when you farmed it?

A Forty acres was divided into a number of pieces. There was the piece where the plant now stands, also in front of the house was from the East Union ditch. We had a flume across the Mill race and irrigated that from the East Union ditch.

Then there was a piece on what we call the knoll next to S. S. Cluff's farm that we irrigated from the Young Ditch and then there was a piece in the lower river bottoms next to Cluff's land on the north that we irrigated from the Young ditch. Then there was a piece across the Mill race from the plant that we irrigated from the East Union again. We had two or three places in the East Union to irrigate from.

Q Several different places you took water?

A Yes sir,

Q To get on the different pieces of ground?

A Yes sir.

Q And you were accustomed to use all the water you needed all those years?

A There was George Baum's farm and James Beans and our own farm, I think probably was the first farms that were irrigated, or among the first farms that were irrigated here, and we were under no restrictions. We took the water when our neighbor got through with it and would water and turn it back, did not waste it, but were under no restrictions from the city or any other person. We were not times, the water was not distributed to us, we went and took it and turned it off.

Q What proportion of the land that belonged to the farm that was in what you call the river bottom or pasture was it necessary to water there to make the grass grow for pasture purposes?

A We never irrigated it, we never attempted to irrigate it.

Q The water was running through the pasture great many times?

A The river and then ditches overflowed a good portion of it.

Q Do you know about how many acres there are in that farm at that the Pressed Brick Company obtained from your mother?

A There is 82 acres in the old deed and then we purchased from different parties, from Samuel Cluff's entry and from different other entrymen, Myrum Tanner; so that I would judge there was probably 125 acres all told. I don't remember, the river bed part or acreage there I don't remember just what there was,

MR. JOHN E. BOOTH: May I beg indulgence for a

minute. Perhaps you have already heard that the "Best-laid schemes o' mice an' men, Gang aft a-gley". I am much surprised with regard to the River Bottoms people and Faucett Field and others where we thought we had a stipulation all ready and practically agreed on in a few minutes. We find now we have to have some more information that is impossible to get at this time, and I call your attention to it now because a great many people are here and are busy, and I would very much like to have those matters go over until the next setting.

THE COURT: Very well, unless there is some objection that may be done.

MR. JACOB EVANS: I will suggest that Mr. Wentz would like the court to go over the ground again now and after hearing this evidence.

THE COURT: Probably it would be better to do that.

MR. JOHN E. BOOTH: I think it would be better to do it now than to wait until November.

THE COURT: Very well, I will do that then. Are there any matters that ought to be understood or stated into the record before I adjourn to the November session, if not, the court will take an adjournment at this time.

OMISSION.

Discussion as to Heber City stipulation.

12:00 Noon, Recess to 10:00 A. M., November 13, 1916.

THE COURT: Gentlemen, are you ready to proceed.

MR. CLUFF: The provo Pressed Brick Company has a little more evidence.

SIDNEY BELMONT recalled.

DIRECT EXAMINATION by Mr. Cluff.

Q Mr. Belmont, counsel asked you at the last hearing to have your deeds to the property that were owned, that is, the Provo Pressed Brick Company owned, have you an abstract showing title.

A Yes sir.

Q Now, Mr. Belmont, I wish to ask you about when did you first begin developing water power for the provo Pressed Brick Company?

A In about 1904.

Q And from that time on did you use water power there?

A Every since, yes sir.

Q Was that prior to your receiving title from the State Engineer for the 100 second feet of water you were using and developing water power? A. Yes sir.

Q You may state, Mr. Belmont, if you know, if you have more definite knowledge now than you had at the last hearing or estimate of the power and fall and so forth that you get there?

A I have found a copy of the original survey, that is the estimated amount made by Mr. W. B. Searles who was then our engineer.

Q Will you explain to the court just what you have there?

MR. JACOB EVANS: Object to it as incompetent and hearsay.

THE COURT: I understand the question to be to explain just what he has here.

MR. JACOB EVANS: That is the notes that Mr. Searles has prepared, is that correct?

THE COURT: I didn't understand he was asked for

the contents of it, merely explain whathe has. He may answer that question if I understand it correctly.

A I have a couple of estimates here made by Mr. Searles who was then our enginser, to give us approximately--

MR. JACOB EVANS: I object to the contents of what the estimates are.

Q Now, Mr. Belmont, do you know from your own experience there and estimates and so forth you have the fall that you got and the amount of power you are able to develop?

A Yes sir.

Q You maytell the court that?

A The fall I have measured a number of times when we have been running at full head, measured at 16 feet 8 inches, it varies a great deal according to the volume of water that will be coming into the flume. It is hard to take it the same at any two measurements because if the water fluctuates a very little, the height on the head will fluctuate with the amount of water flowing through the wheels.

Q I understand you, if I remember youstated you had two wheels?

A Yes sir.

Q And of what type?

A They are Sampson No. 23 Sampson, made by the Lefel Water Wheel Manufacturing Company, I believe it is , Springfield, Ohio.

Q And what amount of water fo you require to develop the full capacity of those wheels?

A Approximately a hundred second feet.

Q And do you require that amount of water to run your plant?

A yes sir.

Q Now, during the summer season and what is known as the low water season, do you know whether or not the commissioner has taken water that you have claimed as portion of your water and turned to the Provo Reservoir Company, plaintiff in this case?

A I don't have any positive proof. We always have been claiming we were short of water, we could only tell we didn't have

enough water to pull our wheels, we didn't take any measurements and sometime during September, early part of September this year, we were so short of water we could not pull our machinery. We were short of brick, we cannot run our -- what we call wire cut mchine, which takes the maximum amount of power, all the power we have, and then started making inquiries to determine why we didn't have the amount of water we should have. I first went to the city, Provo City, asked the City Engineer and Mr. Goddard if they could tell me why we didn't have enough water and they informed me they didn't know, they had turned all they could to us, that the w ater was short coming to the city, and Mr. Goddard remarked if I could get a measurement made up at the head of the Provo Reservoir's intake, I would probably find my water, and then I made application to the water commissioner to know if he could give us more water. He said that he would if he could, he would go and take all his measurements and turn in more if there was anybody getting more than the law allowed them. He did turn us a little more water for several days and then it dropped down again, until we practically had to shut down, we could only make about 50 or 60 per cent of the amount of brick that we ought to make on account of being short of power; and then, I could not give the exact date, but sometime the latter part of September or the first of October, I went to Mr. Wentz, and he says, "Well, the best thing we can do, Belmont, is go up and measure everybody's water they have got and see whether who- where this water was", and I took him to the mouth of the river and we came down to every intake. He said the gates were all right. He had gone to our penstock before going up the canyon, and when we got back he said we would go back again, see if the water has not increased, there is something wrong. We went back again and found we didn't have water enough to run our plant. Then he said the water was up in the Provo Reservoir's flume. He would go to them and ask them if they would not turn some loose and we could run to our capacity, and I don't know just

the date -- we have the date, we have a letter from him stating that he has seen them or something to the effect and they could not turn down our water, anymore water, as they did not think it belonged to us.

Q Well, did he give you any reason why he didn't turn the water from them to you?

A No, only that they claimed they had a prior right to us, or higher right to us, give the reason they had a higher right from the fact they were using it for irrigation purposes, which was a higher right to our uses for power, and therefore he could not turn it to us.

Q And the commissioner took that view that--

A He wrote us a letter to that effect.

Q Have you a plat there, Mr. Belmont, that shows the land you own there, the Provo Pressed Brick Company?

A I have, yes sir, a very old plat, best I have got.

Q And also your abstract of title?

A Abstract of title to the land.

Q Let's see the abstract, will you. I call your attention to entry No. 15, and 16, of this abstract, and ask you to state whether or not those two entries represent the deeds, or cover the land that the Provo Pressed Brick Company owns.

MR. JACOB EVANS: I would like to inquire what the purpose of introducing this abstract is. It is not a question of the title to the land, it is a question of the quantity of water required for the land and amount of land that is actually irrigated.

MR. CLUFF: If the court please, we gave that evidence before, and counsel on cross examination asked Mr. Belmont to produce his deeds. Of course, if he don't want them, we are not particular, it is simply to accomodate them, at their request.

THE COURT: Then I understand you have produced the deeds they asked for.

MR. CLUFF: Yes.

MR. JACOB EVANS: Who ask the production of the deeds?

MR. CLUFF: I think Judge Hatch or Mr. Evans.

MR. A. J. EVANS: I think Mr. Evans asked for it.

MR. CLUFF: That will be all then, if they don't want them.

CROSS EXAMINATION by Mr. Jacob Evans.

Q You have testified concerning a letter you received from Mr. Wentz, that was written to you at the time of this controversy when you claim you were short of water? Have you that letter?

A I haven't got it, I think the attorney has it.

MR. JACOB EVANS: Have you the letter?

MR. CLUFF: I think Mr. Boardman has it.

MR. BOARDMAN: I haven't got it.

MR. CLUFF: I wish you would get it.

Q Have you been short of water at any time before last year, Mr. Belmont? A. Yes sir.

Q Every year, haven't you.

A Practically every year, yes sir. We have had trouble with water in the low water season.

Q And while you were short of water all the time you knew the Provo Reservoir Company was building its canal and irrigating large quantities of land?

A We knew they were building their canals, yes sir, but we could never find where the water had gone to.

Q And knew they were using large quantities of water?

A Yes sir.

Q And you permitted that to run on during all those years, and the first complaint you made was in '16, when you tried to find out where your water went?

A No sir.

Q When did you first try to find out where it went to?

A We have made complaint for a number of years. I will say we made complaint, I could not give you the day, I made complaint

to provo City since we had the understanding that Provo City had the distribution of the water we got, and we made complaint to Provo City.

Q In other words, the water goes through your wheels and to the city? A. Yes sir.

Q And you merely had the use of such water as the city had for irrigating purposes?

A That is practically all we got, what went through their wheels and made complaint to Provo City, and the first complaint, they claimed it was the Telluride Power Company was backing up water and would hold it so that we would not get it. It was dropped down to us to a great extent.

Q All you ever did get or claimed was water that was used by Provo City, isn,t it ?

A No sir, we claimed out amount of water but we could never get it.

Q You could not get it because it was taken out of other canals above you who had prior rights to you?

A We don't know what rights they had, but they get it.

Q You knew they had been using water before you made your appropriation?

A We knew we didn't get the water, and have claimed every year, especially to the commissioner.

Q But you knew that Provo Bench took their water out above you, didn,t you?

A Certainly.

Q Didn,t expect them to turn down part of their water, did you?

A Not if they were not getting more than belonged to them.

Q You didn't expect them to turn water down to you,

A No.

Q You didn,t expect the Timpanogos Canal Company to turn water, did you ?

A We didn,t expect anybody to turn water down that had an old prior right.

Q And you knew a number of those prior rights were taking water

out above your wheels? A. Yes sir.

Q And when they took the water out above your wheels, the water that came to Provo City made you short?

A Yes sir.

Q And that has been the condition all along, hasn't it?

A We have always been short in the summer time.

Q In the low water season you have always been short?

A In the low water season.

Q In the high waterseason when there is plenty for everybody there is enough goes through the provo system to supply your wheels so you have all you want? A. No sir.

Q Don't you have all you want in ~~x~~ high water?

A In high water, yes, I misunderstood you.

Q I say high water.

A We are always short of water during the season after the river goes down our worse trouble has been.

Q That is so and has been so year after year?

A Always short of water, yes.

REDIRECT EXAMINATION by Mr. Cluff.

Q Have you noticed a greater shortage since the provo Reservoir have beentaking their water out?

A Yes sir.

MR, JACOB EVANS: I wish you would get that letter if you can.

A My recollection is the Judge has a copy of that. If Mr. Boardman can find it he will bring it.

THE COURT I think I have a copy of it.

MR. CLUFF: I believe counsel asked Mr. Curtis to furnish particular data as to the number of cattle or pasture. Mr. Curtis may take the stand.

JESSE CURTIS recalled.

DIRECT EXAMINATION by Mr. Cluff.

Q Mr. Curtis, you testified at the last hearing there was a portion of the land owned by the Provo Pressed Brick Company that was used for pasture, through which the river passed, and where cottonwoods and so forth --

A Yes sir.

Q And grass grew. Can you state the number of cattle that you pastured there the last few years on that ground?

A I can back to '13; that is as long as I have been keeping track of the pasture, but then they done more pasturing than that, but I haven't the record.

Q What is your record.

A 1913 we had twenty-three head. 1914, twenty-one. 1915, nineteen. 1916, twenty.

Q That was horses and cows?

A Horses and cows.

CROSS EXAMINATION by Mr. Jacob Evans.

Q In pasturing these animals did you pasture them during the entire summer?

A Well, not all of them.

Q How many did you have there constantly?

A How is that?

Q How many did you pasture there constantly?

A 1916 we had fifteen.

Q That was the highest number at any one time?

A Yes sir -- no, not at any ~~it~~ one time, that was what we had the whole season through. The others were in only part of the season.

Q You had how many in, did you say, ~~it~~ fifteen?

A Fifteen.

Q And they were there all the time?

A They were there all the time.

Q What were they, horses or cows or cattle?

A Some horses and some cows, one colt, heifer.

Q Work horses, any of them? A. yes sir.

Q What do you say ? A. Yes sir.

Q Work in the day time?

A Not all the time. Whenever we needed those we used them.

Q And whenever you took them out of the pasture, I take it you fed them too, didn't you?

A At noon we did, we turned them out at night.

Q When did you commence to pasture them and when did you cease pasturing them?

A You mean in the springtime?

Q Yes.

A We generally get to pasturing there about the 1st to the fifteenth.

Q I am asking you about the year '15, if you can tell us.

A 1915?

Q Yes.

A We generally get pasturing about --

Q I don't ask you generally, what did you do that year?

A What did we get?

Q When did you commence that year, pasturing these twenty-one.

A I could not give you the date, just the date we turned them in there.

Q You could not give us the day you turned them out?

A Not exactly, no.

Q What did you make up this data from?

A From my list I have. I know what stock we have in there.

Q Have you got that original list?

A And the balance --

Q Have you the original list?

A Yes, the company has at the office, I think.

Q You didn't bring that down with you? A. No sir.

Q Wouldn't that show the date these animals were turned in and

date they were turned out?

A No, for the majority of it belongs to the company, and when we were using them they were not turned in.

Q Then you don't know when you turned them in and took them out?

A No, I don't keep track of the company stock turned in, we turned them in when we didn't want them.

Q You don't know the number of days they were pastured and number of days they were fed and worked either, do you?

A No sir.

REDIRECT EXAMINATION by Mr. Cluff.

Q Now, Mr. Curtis, when you were working any of the work horses that were pastured there, you turned them in there at night?

A Yes sir.

Q So that during the daytime the only feed they would get would be what you would give them at noon?

A Yes sir.

Q Those that you worked were pastured there practically constantly during the summer? A. Yes sir.

Q Except for noon feed. Does it require water to irrigate all of that pasture land in order to raise grass so that you can pasture them? A. Yes sir.

CROSS EXAMINATION by Mr. A. L. Booth.

Q This irrigation water that you have been talking about, does that run through your wheel, or doesn't it?

A The irrigation water we use on our ground?

Q Yes. A. No sir.

Q Then if you need the water for irrigation and they also need it for powerpurposes, which do you take it for?

A Depends on which needs it the worst.

Q When they were short in September of this year did you irrigate your land?

A We have, yes, and we have let parts of it burn up because we

needed it worse for power purposes.

Q And you just go according to your own judgment as to which needs it s worse whether you use it for irrigation or for power?

A We had to, we didn,t have enough of it for the other, so we had to.

Q How much did you take from the irrigation water to use for power purposes in September this year, if you know.

A I don't know.

Q How much land did you let burn up?

A Well, some of the pasture land that got too dry, I don't know just what there is, I never measured it.

Q Did you take any cattle out on account of that pasture burning up? A. No sir.

Q How long between irrigations did your land go during this scarce season?

A I don,t know, I couldn,t say off hand, I never -- I wasn't doing the watering.

Q Do you know how often you irrigate the land when you have plenty of water?

A No, we have no specified time.

SIDNEY BELMONT recalled.

CROSS EXAMINATION by Mr. Jacob Evans.

Q I show you Exhibit 112, and ask you to state whether or not that is the letter which you testified to receiving from Mr. Wentz?

A I would have to read it through, and I don,t know I would remember the exact contents of it. I believe this is a copy of the letter I received from Mr. Wentz.

Q Well, can't you tell by glancing it through, whether that is the letter you received?

A Yes, by reading it through. I have never seen this I know of before, and it is possibly a copy of what I have. I can remember about what the contents of it was, I believe this is a copy.

MR. JACOB EVANS: we offer this in evidence in explanation of his testimony on cross examination.

THE COURT: Any objection.

MR. CLUFF: Yes, I object to it as being immaterial, irrelevant and incompetent. It is simply a self serving proposition on the part of the water commissioner, and attempts to interpret the law and construe the statute.

THE COURT: What was your object ~~af~~ in proving the contents of it by the witness?

MR. CLUFF: I did not attempt to prove the contents of the letter.

THE COURT: The witness stated the contents of it, substance of the letter, I think it is part of the cross examination and admissible. I don't think it would have been admissible independent of the evidence of Mr. Belmont.

MR. CLUFF: I didn,t understand, if the court please, he attempted to give any of the contents, he simply stated he had been short of water and what he had done in protesting, and he had received the letter.

THE COURT : And stated what the letter contained, if I remember correctly. It may be received for that purpose only.

Q Will you state in detail, Mr. Belmont, just what machinery you operate with this water power?

A I will say this, that we already have the principal machines that we use, I gave that in my other testimony, but to give you all of them in detail, I don:t know that I could enumerate every piece of machinery out there that needs power, but I will give you most of them.

Q Will you make up a list, if you can, of the various pieces of machinery that you operate and the horse power required for the

operation of each one of those pieces of machinery?

A I could not do it.

Q You cannot.

A No sir, take a better man than me to do that.

Q Have you anyone in your employ ?

A No sir, we haven't anybody in our employ that could do that. We would have to take a mechanical engineer and he would have to go out and determine that by means where I could not, and I have had some try it that were experts and they have missed it twenty-five horse power even on one machine.

Q What machine was that?

A Not on one out there, on an engineI am using in another plant. We had a mechanical engineer come to determine how much power that engine was furnishing. It was 25 horse power engine, that is supposed to be, and the engineer's name was Mr. Black. He was working for the Telluride Power Company and he came and put a testing machine on that engine something to test the amount of horse power and determined we were getting twelve horse power out of a twenty five horse power engine. He did this to determine what size motor it would take to generate the same amount of power and give us the same amount of power our engine was giving. He put in a twelve horse power motor to take care of it and he could not start the machinery. He put in a fifteen horse power motor and he could not start the machinery. He finally put in a 25 horse power motor and they would start it with the help of three or four men on the fly wheels.

Q As I understand it you have not attempted to determine then the horse power required for each piece of machinery that you operate?

A No sir,it would take quite an expert and lot of work and then we might be just as near --

Q I say you made no attempt to do that?

A No sir.

Q And it has not been done by you or anyone in your employ?

A All we can give you sir, it takes more power to pull all our

plant than the two wheels will give us there which are rated at 15 foot head, I believe, at 62 horse power each.

MR. CLUFF: I think that is all we have, if the court please.

IN THE DISTRICT COURT IN AND FOR UTAH COUNTY, UTAH.

The Provo River Water Company, - - Plaintiff, :
:
Vs :
:
Provo City, et al, - - - - - - - - Defendants. :

- ----------

THE COURT: Then you may proceed with your proof.

MR. STORY: Before proceeding with the proof I would like to settle two or three preliminary matters. Among other rights claimed by the Utah Power & Light Company, is the right to percolating water which is developed in the Snake Creek tunnel some eight or ten second feet. As I remember a number of the attorneys here who are in the case have signed a stipulation to the effect that the right to the use of that particular water is not an issue in this case.

MR. THURMAN: You mean Ontario Drain tunnel?

MR. STORY: Yes, I mean Ontario Drain tunnel. I think you have the correction and that matter was threshed out in the Federal court sometime ago and decree entered in favor of the Ontario Tunnel. I would like to ask the Provo Reservoir Company's attorney whether or not they have reached a conclusion, whether or not you will sign that stipulation, whether or not you are claiming that is an issue in this case. If it is, Your Honor, we will

not be prepared to into that proof to-day, probably take days trial itself. The testimony in the Federal court covers some two thousand pages. I have understood from Mr. Murdock they were not going to contest that right.

MR. A. J. EVANS: We wil let you know at noon. He is not here now; it is my understanding we are going to accept that.

MR. STORY: Another preliminary matter I wish to have determined is the amendment of the cross complaint of the Utah Power & Light Company in reference to the amount of water claimed from the Provo river. As I wrote counsel for the Provo Reservoir Company sometime ago, it was our intention to ask leave to amend our complaint by interlineation so as to claim three hundred and forty five second feet instead of three hundred, as originally claimed when the cross complaint was filed. The reason for that is that at the time the pleading was prepared no accutate measurements had been made to determine the actual capacity of the work of diversion and the old measurements, if they were taken were not available, so that we had to depend and willhave to depend upon the condition of that proof, actual measurement here, maximum amount of water that went through the flume used for beneficial purpose, but our subsequent investigations have shown that the appropriation were amended to three hundred and forty-five second feet, and are going to ask leave to amend our cross complaint by interlineation in that respect. I wrote a letter to Mr. Evans about

a week ago.

MR. JACOB EVANS: Yes, I received the letter; I don't think we have any objections to amending the complaint.

MR. STORY: You may have objections to our proof, but not to the claim.

THE COURT: Amendment may be made.

MR. STORY: Then, there is one further matter I wish to take up. I understand that the appropriators in Wasatch County have already entered into a stipulation settling their rights on the upper river. I did not attend the hearing there for the reason that I understood that any stipulation that was made would have to be confirmed at the hearing here in any event. The Utah Power & Light Company claims a small irrigation right in that county, amounting to three second feet, I think, and we are perfectly willing to agree to the stipulation that has been prepared up there and agreed upon by the other attorneys provided our right is included in the stipulation.

THE COURT: Do you know whether it is included?

MR. THURMAN: What right is that?

MR. STORY: It us only six twenty-firsts of a second foot.

THE COURT: That is in paragraph eleven of your cross complaint.

MR. A. J. EVANS: Have you any land up there?

MR. STORY: Yes, we have five acres.

MR. A. J. EVANS: This water has been used on that land?

MR. STORY: Yes, water has been used on that land.

MR: THURMAN: Is it an old right?

MR. STORY: We claim it as successor in interest to W. H. Walker and it is included in the Fulton case.

MR. THURMAN: You don't know what class it comes under in the Fulton decree?

MR. STORY: No.

MR. THURMAN: There will be no trouble about stipulating that.

MR. JACOB EVANS: It is probably already in the stipulation.

A. D. BUCKLER, called by the defendants, having been first duly sworn, testified as follows:

DIRECT EXAMINATION by Mr. Story.

Q. You may state your name, residence and occupation.

A A. D. Buckler, Civil Engineer, with the Utah Power & Light Company.

Q Where do you reside?

A Salt Lake City.

Q Where did you reside in 1894?

A Provo City.

Q What occupation were you engaged in at that time?

A Ninety four?

Q Yes.

A I was--I had an office in Provo City, as a civil engineer;

Q How long had you then been engaged in your profession?

A About eight years.

Q Were you ever employed by the Telluride Power Company,

predecessor in interest of the Utah Power & Light Company?

A Yes, I entered their employ in March 1896.

Q Do you know anything about the original work--strike that out--

a are you familiar with the power development now owned by the Utah Power & Light Company on Provo river?

A Yes, sir.

Q I have particular reference to the appropriation of water which is used in the Olmstead station .

A Yes.

Q When did you have first knowledge or first have knowledge of the work of construction of the flumes and grades of that power development?

A 1895.

Q Please tell the court what happened at that time and your knowledge of what was done.

A There was preparatory work such as surveying and cutting of brush and about seven hundred feet of grade was made in that year under the direction of Mr. O. B. Suhr.

Q Who ran the original survey for that work, if you know?

A Mr. Suhr.

Q How did you happen to have knowledge of what was done by Mr. Suhr?

A Mr. Suhr worked up his notes in my office and I was familiar with what was going on by communication with him at the time.

Q Of what did those original surveys consist, if you know?

A Trial grades from up about where the dam is now to down where what is called the Nuyn's power station.

Q You say during the year 1895 there were some seven hundred feet of grade construction?

A Yes.

Q Brush cut, etc., you testified that you were personally connected with the work in 1896; am I right--your personal

connection with the work commenced in '96?

A Yes.

Q Please state what you did at that time.

A I surveyed the government line from the head works, down to the mouth of the canyon or Olmstead. I think I should change that statement by saying permanently down as far as Nunn's, and temporary grade down as far as Olmstead.

Q What time of the year was that work done, Mr. Buckler?

A June, 1896.

Q Do you know the intention of the company at that time as to where their permanent plant was to be situated?

A To be at Olmstead.

Q I will ask you to examine Utah Power & Light Company's exhibit number 113, and state what it is.

A It is a plat showing Provo river from the south fork down to the mouth of Provo canyon, or Olmstead, showing on the north side the flume line as constructed, the flume line shown in red down to where it delivers the water at Olmstead. This being the flume line commencing at the dam site. Half way down about a mile and a half is the Nunn's plant shown here, which was the first piece of construction on that line.

Q Does that plat substantially correspond with the survey which youmade in the Spring of 1896?

A Yes.

Q I had not finished my question; is it a permanent line as far as the Nunn station and a projected line to the Olmstead

s station?

A Yes, very closely.

Q When did you firnish your survey that year?

A November 1896.

Q What, if anything, was done that year in the way of construction?

A The grade was made from the dam to the Nunn's plant, very

nearly, not quite, and about five thousand feet of flume was constructed.

Q What is the distance from the dam to the Nunn's station?

A About a mile and a half; I think it is not quite a mile and a half.

Q What, if anything, was done during that year in the way of determining the locations of a dam?

A It was decided upon within a variation of perhaps fifty feet either way up or down the river.

Q When was the dam constructed?

A In 1897.

Q What time in the year?

A In the summer.

Q What, if anything, was done in the way of construction of flume that year?

A The flume was completed that year.

Q To what point?

A To the Nunn's plant and work commenced on the Nunn station, construction work.

Q How much work was done on the station that year, did you know, approximately?

A It was mostly done that year because it was--the first installation was completed by the following February.

Q Describe the installation of the Nunn's station.

A There was one water wheel, Lafelle water wheel, one generator, one thousand horse power, one exciter, and three transformers. What was generally called a one thousand horse power plant.

Q What was the dimensions of your flume?

A It was a horse shoe shaped flume with an area of twenty-nine square feet.

Q Assuming a free board of how much?

A About three inches.

MR. A. L. BOOTH. I didn't catch that.

A That is the water three inches below the top of the planks.

Q What, if any, pipes were put in at that time?

A Yes, there was one four foot pipe from the pressure box at Nunn's down to the station.

Q What was the dimension of that pipe, if you remember?

A Four feet.

Q Remember the head at that point?

A Yes, one hundred and twenty-seven feet.

Q I believe you have testified that there was merely a preliminary installation?

A Yes.

Q Mr. Buckler, you have testified that a dam was constructed across the Provo river?

A Yes.

Q In 1898--1897?

A '97.

Q Is that dam still used as a diversion?

A Yes.

Q For the present work?

A Yes.

Q Please describe that dam, referring to exhibits, number 114 and 115.

A A rock filled, crib dam, one hundred and twenty-five feet in length, sixteen feet high that crosses the Provo river at the head works, and the intake for the present development of the Utah Power & Light Company's works at Olmstead.

Q Is the intake at the present time the same as it was at the time this original flume was constructed?

A The intake?

Q Yes.

A Not quite, very near.

Q Will you please give--referring to your survey, will you please give the elevations of the dam at its crest and also at the bottom of the flume?

A The crest of the dam was 512.89. Did you ask anything else but the crest of the dam?

Q The intake of the flume at the headgate, what was that?

A 512.99. That is taken at seventy-five feet below the screen.

Q That is the top, is it not? What I want is the bottom of the flume.

A That is the water level.

Q. What was the bottom of the flume?

A 508.27.

Q Were there any flash boards provisions on the dam?

A Yes, two flash boards on top of the dam, which made an elevation at the top of the flash board of 514.87

Q Could there be any more flash boards put on above that?

A Yes, there have been.

Q How many, to your knowledge?

A One to my knowledge.

Q How much higher would that raise the surface of the water in the dam?

A One foot.

Q Please describe the original intake, giving its dimensions.

A It had three gates, making a width of twelve feet across the front and seventy-five feet long. Three gates were each four feet by six, four feet wide, six feet high.

Q How is that connected with the main flume?

A I don't quite understand your question. The taper brought the water into the main flume.

Q Beg pardon?

A I say the water ran through the tapering to the main flume.

Q I wish you would describe the taper, referring to Exhibits 114 and 115.

A The dam being here, the water came along this way and entered the taper here. Here are the gates and here is the entrance

to the main flume.

MR. JACOB EVANS: Just designate something; you say "here."

Q That won't get into the record. Take your pencil and mark in A. B. and C.

A We will call the entrance to the taper "A".

Q On exhibit No. 115?

A On Exhibit No. 115, and the entry to the flume, "B".

Q What was the width of that part of the flume at the head or at the gates?

A At the gate?

Q Yes.

A About thirteen feet wide.

Q And how deep?

A About eight.

Q And it tapered down, as you say, to the point where it went into the main flume, it was how wide?

A Had a radius, I think, of eight feet.

Q Referring to Exhibit No. 114, which is the one underneath there, will you please state to the court whether that correctly represents a cross section of the dam?

A It does nearly, it was not exactly adhered to in construction itis practically the same.

Q And does exhibit number 115, represent approximately the plan?

A Yes.

Q Of the dam?

A Yes.

MR. STORY: We offer exhibits 113 and 114 and 115.

Q Those were made from your surveys, were they?

A Yes.

THE COURT: These exhibits may be received.

if there is no objection.

Q State, Mr. Buckler, what, if anything, was done during the year 1897, to your knowledge, in the way of construction of power lines.

A There was a forty thousand volts power line construction from the Nunn station to Mercur, thirty-five miles away.

Q Was the Nunn station subsequently enlarged and if so, when?

A In 1898 and 9.

Q What was done in the way of enlargement at that time?

A The capacity was double. The part that had been built was duplicated becoming a two thousand horse power station.

Q That is, was there any change made in the flume?

A Yes.

Q What change was made in the flume at that time, if any?

A The horse shoe shaped flume was taken out and replaced by a square flume, practically six by eight feet.

Q Was that done in 1898 or wasn't that done at ~~this~~ a later date?

A That was done at a later date.

Q What was done in the way of enlargement of the station itself in '98?

A It was doubled in capacity.

Q When you say doubled in capacity, you have reference to what part of the station?

A One side was built first.

THE COURT: I understood you to say that this was done in '99.

A '98 and '99.

Q You mean the hydraulic equipment, hydraulic and electrical equipment?

A Yes.

Q What was done, if anything, in the way of building an additional pipe line?

A Another pipe line was built to match the first one.

Q That is, originally, from the flume to the station house?

A From the flume at the pressure box to the station house, yes.

Q What, if anything, was done during that year in the way of constructing power lines, in 1898 or 1899?

A The forty thousand volts power line was constructed from the Nunn's plant to Eureka, forty-two miles away, and from Eureka to Mercur, making a complete circuit.

Q Was that flume subsequently changed and if so, when?

A Yes, the flume was enlarged in September, 1902, from the dam down to the Nunn station.

Q What was the change that was made at that time?

A The old flume was taken out and new flume constructed.

Q Just describe the flume which was constructed at that time.

A Rectangular flume, five feet and nine-tenths wide---5.9 high I meant, and 8.05 wide.

Q Was that inside or outside measurement?

A That is inside.

Q. Did you have in charge the surveys of that flume?

A Yes.

Q That flume was constructed, as I understand it, from the dam to the Nunn station?

A Yes.

Q After it was constructed, did you make any surveys to determine whether or not it had been constructed on grade?

A I did.

Q What did you do at that time in that respect?

A I ran levels on the inside of the flume on the floor of the flume to check the correctness of the grade.

Q Please state what the grade of the flume was as you determined it by your survey?

A The first four hundred and sixty feet the grade was fifteen hundredths of one foot per hundred feet. The remainder of

of the flume was one-tenth of a foot for every hundred feet in length.

Q And, can you testify of your own knowledge, that it was actually constructed on these grades?

A Yes.

Q Please examine Exhibit 116 and state what it is.

A It shows the flume grade from the head works down to--shows a grade of one tenth per hundred. This shows--the lower line shows the flume floor and the upper line the top of the flume.

Q The top of the flume, or the top boards on the flume?

A Top of the boards.

Q Side boards, you mean?

A Yes.

Q Does it correctly represent the initial part of the flume commencing at the dam?

A Yes.

Q And that had a grade of what, did you say?

A For four hundred and sixty feet, fifteen hundredths of one foot per hundred feet.

Q What, if any, change was made at that time in the intake at the dam?

A The intake was changed slightly, raised about four or five tenths of a foot.

Q What was the difference in elevation of the sill of the flume, of the new flume at the intake, and the sill of the flume, if it displaced?

A I think it was twenty-three hundredths of a foot higher.

Q Which was the higher?

A The second flume.

Q The sill was twenty-three hundredths of a foot higher?

A Yes.

Q Than the sill of the other?

A Yes.

Q You are speaking of the top of the sill, I assume?

A Yes, the top of the sill.

Q Was there any change made in the height of the sides of the intake at that time?

A Yes, they were raised.

Q How much, refer to the profile shown on Exhibit 116, state what the height was, total height was.

A The height of the intake?

Q The height of the intake, yes.

A From what it was before?

Q No, you have given what it was originally; now state what it was at the time the new flume was constructed or completed.

A Top of the intake?

Q I mean the height of the side boards of the intake; what was the height, what was the depth of the flume at that point, at the intake?

A Oh, six feet, five feet nine, 5.9 feet. But the intake itself was higher.

Q Please describe the intake and give the dimensions of it then.

A I don't know I have anything here that will show. There is another map that does show that.

Q Were the gates changed at any time?

A Yes.

Q When were they changed?

A They were changed at the time the flume was changed.

Q In 1902?

A Yes.

Q What change was made at that time?

A The gates were enlarged, I think.

Q I will ask you to examine Exhibit 117, Mr. Buckler, and state

what that shows.

A The gates were four feet by six.

Q How many gates were there?

A Three.

Q Is the exhibit to which you have just referred, being 116, a plan of those gates?

A This exhibit?

Q Yes, 117.

A That is the front elevation.

Q Did you make the surveys from which that---or did you make the drawing?

A I think I did; it looks like mine; I have not seen it for a number of years until just this moment.

Q What was the width of the intake at the dam?

A About thirteen or fourteen feet.

Q I don't remember whether you gave the height of the sides of the intake; please state it again.

MR. A. L. BOOTH: 5.9 feet.

A That is the flume; the intake was higher.

Q What was the height of the sides of the intake, refer to your profile.

A I think they were about nine feet.

Q Was there any change made in the crest of the dam at that time?

A No, not in the crest of the dam.

Q Or, in the flash board provisions?

A Yes.

Q What was done in that respect?

A Another flash board was added.

Q Making how many in all?

A Three.

Q State how the intake which you have described was connected with the main flume that you have described.

A The water---

Q What I had reference to, was the taper or what is it?

A Oh, it tapered.

Q It tapered down to the flume, did it?

A Yes.

Q What did you say was the grade of that taper section of the flume?

A The taper section was practic ally level. From the intake or gate down to where the main flume started that taper was practically level.

Q And that extended for what distance?

A About seventy-five feet.

Q Commencing at that point the grade--the flume had a grade of how much?

A Fifteen hundredths.

Q For a distance how far?

A Four hundred and sixty feet.

Q And from there to the Nunn station, it had a constant grade of how much?

A One-tenth of a foot per hundred.

Q I believe you say that you run your level to determine the grade of that flume after the flume had been completed?

A Yes.

Q I will ask you to examine the exhibit number 118 and state whether or not that has been prepared from surveys which you made of the original dam and original flume and the flume which you testified was constructed in 1902.

A Yes.

Q Does it approximately, does it show with approximate correctness the course and ddistance of the structures to which you have testified?

A Yes.

Q The location of them?

A Yes.

Q State whether or not after the construction of the flume, the reconstruction of the flume in 1902, anything occurred which caused a change in the upper part of that structure; was that flume destroyed?

A Yes.

Q That is, the upper part of it?

A It was taken out by a snow slide.

Q What part of it was taken out?

A The first one thousand feet.

Q Referring to Exhibit 118, will you please point out to the court the location of the original flume and also the location of the flume which you say was constructed in 1902?

A The original flume and the flume of 1902 was along this red line. It might be better to call it an orange colored line, to distinguish it from the other.

Q You say the first thousand feet of that flume which was constructed in 1902 was ~~ka~~ taken out in 1900--

A 1907.

Q 1907?

A All of the part from the dam down to this point was destroyed by a snow slide in 1907.

Q In the spring of that year?

A Yes.

Q What if any provision was made for the carriage of water into the flume, that part of the flume which was not destroyed after the snow slide took out the upper thousand feet or so?

A The temporary flume was constructed on the line shown in yellow from the head works coming down here to a point where the flume was still lying intact, shown by the yellow line on the map.

Q Did you make/~~a~~ the surveys for the construction of that temporary flume?

A I did.

Q Did you survey it after it was constructed?

A Yes.

Q During what time of the year was it constructed?

A April, I think, 1897.

Q 1907?

A 1907.

Q Give us the dimensions and grade of that temporary flume.

A The size of that flume was 7.6 feet wide by 5.8 High. The grade was one foot in a thousand feet, or one-tenth of a foot per hundred feet.

Q Throughout the entire length of it was there a change in grade near the headgate?

A There was a little extra grade at the head works.

Q Do you know approximately how much that was?

A About two tenths of a foot.

NOON RECESS TO 2:00 P.M.

A. D. BUCKLER-----

DIRECT EXAMINATION by Mr. Story continued.

Q At the time the court recessed for noon you were discussing the temporary flume which was constructed after the snow slide in 1907. I wish before proceeding with further discussion of your testimony in regard to that flume, to revert to some prior development. First, I wish to refer to the flume which was constructed in 1897, which, if I remember correctly, you have called the Sterling flume. Did youprepare the plans for that flume?

A No.

Q I will ask you to examine Exhibit 119 and state whether or not that approximately represents the plan and cross section of the flume--of that flume constructed in '97 and early in

'98?

A Yes, it shows the cross section of the flume itself, not entirely the frame work around it.

Q Did you after the construction of that flume, have occasion to survey its grade?

A Yes.

Q When?

A I surveyed the grade while the flume was being constructed.

Q And did you have occasion to survey it after it had been constructed?

A Yes.

Q About how long afterwards?

A About a year afterwards.

Q Do you know what thegrade was?

A Yes.

Q Please state what it was.

A First seventy-five feet was twenty-three hundredths and the rest was one-tenth of a foot per hundred feet.

Q Do you know of any development which occurred on Lost creek in 1900?

A Yes.

Q Please describe that development---first of all, I wish you would please state where Lost creek is.

A Lost creek is here--

Q Referring to Exhibit 113.

A It is in the northwest quarter of the southeast quarter of section 33, township five, south range three east.

Q And please describe that development.

A We put in a wood flume twelve by fourteen inches which was later taken out by a snow slide and a pipe placed in there.

Q When was the original construction of that---when was that flume originally constructed?

A In 1900, I think.

Q Do you know about the time of the year?

A September 4, 1900.

THE COURT: What construction was that?

A Lost creek flume.

Q Do you know approximately where that Lost creek flume joined the main flume, at all?

A Yes, in the northwest quarter of the southeast quarter of the same section.

Q What was the grade of that flume, if you know?

A I don't remember the grade, it was rather steep.

Q Did you ever have occasion to estimate the amount of water that that flume would carry?

A Yes, not as a matter of measurement, but matter of estimation. About six second feet.

MR. STORY: As a matter of fact, Mr. Wentz measured it, six and a fraction second feet. Can we agree upon that?

MR. A. J. EVANS: I don't know about that. Mr. Wentz, have you measured Lost creek?

MR. WENTZ: Yes.

MR. STORY: Your measurement was six and a fraction?

MR. WENTZ: 6.11, I believe it is; it is in the files there.

MR. STORY: May it be stipulated the actual measurement is---

MR. A. J. EVANS: Is that the uniform flow?

MR. STORY: No, it varies some.

Q Lost creek is a tributary to Provo river, is it not?

A Yes.

Q I will ask you whether or not the flume which was constructed at that time took all the water in the creek?

A Very nearly all.

Q At what season of the year would it not take it all, if any?

A Generally speaking, it would take it all, but I think there was a little got by.

Q At what season of the year would it get by; do you mean during the high water season?

A No, I don't think there was any high water season.

Q Is it due to a defedt in the diversion work, was it, that it got by?

A Yes.

MR. STORY: Mr. Wentz's measurements are 6.41. That was taken on May 8, 1915.

MR. JACOB EVANS: One measurement here, July 9th, 3.45.

MR. STORY: Yes.

MR. JACOB EVANS: And May 8th, 6.41.

MR. STORY: May we stipulate Mr. Wentz's measurement on--made a measurement of the water on May 8, 1915, and at that time found flowing in the flume which at that time had been changed to a pipe line, 6.41 second feet.

MR. JACOB EVANS: Willing to make the stipulation of the two measurements there, as shown by the report.

MR. STORY: Perfectly willing that may be stipulated, all right; and it may be stipulated Mr. Wentz also made a measurement on July 9th, 1915, and at that time found flowing in the pipe line 3.45 second feet.

Q Do you know, Mr. Buckler, whether or not that flume was subsequently changed in any respect?

A Yes, it was changed.

Q When?

A I think one or two years after it was first placed in.

Q What change was made?

A I cannot say of my own knowledge; I never saw the change.

Q Was it subsequently changed to a pipe line?

A Yes.

Q That was after the snow slide, I believe you testified?

A Yes.

Q Can you give us the dimensions of the pipe line?

A No, I cannot.

Q Did the pipe line enter into the flume, join the flume at approximately the point where the old flume did?

A Yes, I have seen the point where it joined the flume.

Q Was there any development about 1900 of any springs, to your knowledge?

A Yes, the Guardquarters springs.

Q Describe, if you can, with reference to Exhibit 113, where these springs called the Guardquarters springs are situated.

A In the northeast quarter of southwest quarter section 33, same township and range as the other.

Q What was done in the way of construction of a flume, if anything, from those springs?

A There was about three hundred feet of flume built which would carry about two cubic feet of water per second.

Q And did that flume extend to the main flume?

A Yes.

Q And where did it join the main flume, approximately?

A In the same forty acre tract as the intake.

Q Did you ever notice the weir in the upper portion of that flume or at the intake?

A Yes; I think I saw one.

Q Did you make an estimate of it, as to the amount of water that was diverted from those springs into the flume leading from the springs?

A Yes; it appears to be about two second feet.

Q When was that?

A That was about 1901.

Q Was there a subsequent change in the volume of flow of water

from those springs?

A Oh, yes.

Q When did that occur?

A After some development work had been done on the ditch up above.

Q What ditch do you refer to?

A The Alta ditch.

Q What effect did it have?

A It reduced that flow to about eight tenths of one second foot.

Q How recently have you examined the flow from those springs?

A I think about two years ago.

Q And you found them flowing at that time, about eight-tenths of a second foot?

A Yes.

Q Is the flow from those springs fairly constant throughout the year?

A I believe so, it used to be.

Q Can you give the month, day of the month, or even the month during which the flume from the Guardquarters springs to the main flume was constructed, or when construction commenced?

A No, I cannot give the months.

Q Can you give approximately the time, the year?

A I think it was in the fall, about September.

Q You have testified, Mr. Buckler, that you made surveys in 1896 of a preliminary grade from the Nunn station down to the present Olmstead station?

A Yes.

Q I will ask you whether or not you did any further work on that line during the year 1900 or thereabouts?

A 1900?

Q Yes.

A Yes, we made a permanent survey of there.

Q Was anything done in the way of construction on that survey that you made at that time, subsequent to yuur making it?

A Yes, there was some grade work done.

Q When was that work done and what was done?

A Part of it was made about 1900 and I think I can give you--that flume grade was finished and the flume constructed April 8, 1904.

Q I understand you; you surveyed--made your permanent survey in 1900?

A Yes.

Q And you have testified this morning, if I remember correctly that what you call the Sterling flume was merely a temporary structure leading to the Nunn station?

A Yes.

Q And that that flume was replaced?

A Yes.

Q By a permanent structure in 1902?

A Yes.

Q Was the flume which was built in 1902 part of the permanent line to the Olmstead station?

A Yes.

Q When did work begin on the actual work of construction of a flume from the Nunn station to the Olmstead station, actually begin?

A I think it began in 1900.

Q I mean the actual constructio n of the flume itself?

A The flume itself was constructed in 1903.

Q In other words extension was started after the replacement of the Sterling flume by the permanent structure as far as the Nunn's plant, was it?

A Yes.

Q And you say that it was, the flume was completed in 1904?

A Yes.

Q Now, please give the grade and dimensions of that extension from the Nunn plant to the Olmstead station.

A The grade was one-tenth of one foot per hundred feet, and the size was 5.9 feet deep, by 8.05 in width, until we reached the point, two thousand feet above the Olmstead plant; then we increased the depth and width of the flume gradually until when it reached the tunnel it was nine feet wide and ten feet deep in the tunnel.

Q And what was the width at the end of the flume, at the pressure box?

A At the pressure box, the width?

Q Yes.

A Eight feet by nine feet---nine feet six.

Q Nine feet wide or high?

A Nine feet six high.

Q When was the Olmstead station built?

A It commenced to operate April 12, 1904. It had been about one year in construction.

Q Describe that installation.

A There were three water wheels made by the Stillwell-Bierce Bi Company, each wheel with a capacity of thirty-six hundred horse power, Three General Electric generators 24 KW.

Q You mean twenty-four hundred?

A Twenty-four hundred and two exciters.

Q And other electrical equipment, I presume?

A Yes.

Q Such as would ordinarly occur. How were the turbine on this equipment, included in thisequipment, which you have mentioned, connected with the flume?

A By three pipes coming down the hill; three steel pipes four and a half feet in diamter at the bottom, five feet in diameter at the top.

Q Under what head or what was the head?

A Three hundred and thirty-two feet.

Q I believe you have testified this morning, Mr. Buckler, that at the time you began your surveys in 1896, you knew the intention of the company with reference to its development of the Provo water, waters of Provo river?

A Yes.

Q And that it was his intention, the intention of the company at that time to construct the plant at Olmstead eventually?

A Yes.

Q I will ask you whether or not it was at that time the intention of the company eventually to construct a plant the size of the one which was ultimately constructed there?

MR. A. L. BOOTH: I think we will object to that, what the intention was. He may show what has been done. Their intention at that time would not have any effect on their right to water now.

MR. STORY: I should like to be heard on that, Your Honor, if you have any question about it.

THE COURT: Was this intention expressed in any way?

MR. STORY: It was an old right which was inqugerated in 1895, as shown by the testimony and the question was at that time what the intention of the parties was.

THE COURT: The objection is sustained, if it is objected to now, as the evidence now stands.

MR. A. L. BOOTH: It is objected to.

MR. STORY: On what ground?

THE COURT: It does not appear he has any knowledge whatever as to the intention.

MR. STORY: I asked him whether he did know.

THE COURT: He said yes.

MR. STORY: What the intention of the parties was at that time, and he was the engineer.

THE COURT: No, not at the time you suggest.

MR. STORY: In '96, he became the engineer and Mr. Suhr was making surveys at that time, and was doing his work in his office and he, himself, ran the preliminary line to Olmstead in 1896.

THE COURT: The objection is sustained. It appears he could not know except by hearsay. Although he says he knows, I take it it must be by hearsay.

Q Do you know, Mr. Buckler, what the intention of the Telluride Company, the predecessor in interest of the Utah Power Company, Utah Power & Light Company was, with reference to the development of this power plant on Provo river, at the time that you made the preliminary survey of the line from the present dam to the Olmstead station in 1896?

A Yes.

Q Please state what the intention of the company was at that time.

MR. A. L. BOOTH: We object to that on the same ground.

THE COURT: The objection is sustained. It is apparent to the court if he knows what the intention was, that the information which he received and from which he says he got this knowledge, is what ought to be presented to the court, rather than the second hand impression. It is merely an impression that he got from some information that came to him, and that information ought to be presented to the court rather than his conclusion from that information.

Q What was your position with the company at that time?

A Assistant engineer.

Q Who was the chief engineer?

A Mr. F. J. Cramer.

Q Did you have anything to do as assistant engineer with the formulation of the plan of development at that time?

A Yes.

Q Did you participate with the other officers of the company in formulating those plans?

A Yes.

Q Now, you may state what the plan of development was at that time.

MR. A. L. BOOTH: Object to it as hearsay, not the best evidence.

THE COURT: I am inclined to think that is true, unless it appears those plans formulated were never in any way manifested and if they were not, it would go no farther than this witness's plan. No record made, no application pursuant to it filed with anyone, or no appropriation made of water. I hardly see the theory upon which you ask it, Mr. Story. I take it this was a corporation

MR. STORY: Yes.

THE COURT: And I take it a corporation would express its intention by some resolution, by some determination made to act, the evidence of which would be accessible and could be hand, and not by the impression that some employe got of what their intention was.

MR. STORY: Your Honor, I say to you frankly, I don't know of any corporate resolution in that connection, but I do take it that the men who were the agents in the corporation for this particular purpose and in determining these questions, (engineer and his chief assistants) were the

men who formulated the plans at that time, and when the diversion was made, or rather the construction was started which eventually ended in diversion and application of the water, they would be the best ones of all to know exactly what the intention was when the work started, what the parties intended to do and that, I take it, is an element of diligence right.

THE COURT: It would seem to the court they would be the ones who would not know. Now, I understand that the engineer would formulate the plans, but the engineer being an employe of the corporation, would not determine what the corporation was going to do. He might be employed to submit a number of different plans.

MR. STORY: I think perhaps Your Honor is not familiar with the fact this was a corporation sole at the time.

MR. A. L. BOOTH: Mr. Buckler was not the corporation.

MR. STORY: Then, I think Your Honor, of course, in the absence of any act, I mean any specific determination, that Your Honor will have to gather what the intention of the parties was by their subsequent acts.

THE COURT: Certainly, and I might add suppose the court had overruled this objection and let this witness testify what the intention of the corporation was. When the court came to consider it, the court could not give it any weight, because it is not supported by any fact and someone who was working for the corporation at the same time

might come upon the stand and with equal sincerety and absolute honesty, state that the intention of the corporation was entirely different, because that employe might get a different impression what the intention was. You can see at a glance such evidence would be of no weight whatever. What the corporation did, if there is no record of their intent, in the ordinary way, that an intention is expressed, what they did must govern the court in determining what their intention was. If they persisted in the development of this enterprise to the extent that it was developed, whatever it was, the court must assume they started out with the intention to develop it to that extent.

MR. STORY: I really wish to bring out that fact, and I think what they did is the best evidence.

THE COURT: Unless the contrary is shown, the court will assume they started in with the intention of doing just what they did do, and reach the proportions they finally reached. You may have an exception to the ruling of the court, so as to save your record.

MR. STORY: Thank you.

Q What did you say was the static head of the water in the pipe lines?

A Three hundred and thirty-two feet.

Q I believe you testified this morning that in 1907 a snow slide occurred which took out the upper part of the flume which had been constructed in 1902?

A Yes.

Q And that a temporary flume shown on Exhibit No. 118 was then constructed?

A Yes, sir.

Q And that is shown on Exhibit 119 in yellow, is it?

A Yes.

Q And also marked "temporary flume built in 1907". Will you please give again the dimensions of that flume?

A 7.6 by 5.8 feet.

Q Which is the height, and which is the depty or width?

A The height is 5.8.

Q And I believe you say you have made a survey on which that flume was constructed?

A Yes.

Q What was the grade of the flume?

MR. A. L. BOOTH: I think that has been gone over three or four times.

MR. STORY: I don't know it has been gone over three or four times. I am not sure it was gone over once.

MR. A. L. BOOTH: I have it down here.

A The grade was one tenth of a foot per hundred.

Q Was there any change at the upper part?

A Yes, twenty-three hundredths.

Q I will ask you whether or not subsequently to the time of the construction of that temporary flume a further or auxilliary flume was constructed?

A Yes.

Q Is that shown on Exhibit 118?

A Yes; that is shown by the red line along here.

Q That follows practically the line of the--

A Of the old original flume.

Q Did this temporary and auxilliary flume join at any point?

A Yes.

Q Where?

A They joined here at about one thousand feet below the dam.

Q I will ask you whether or not those were more than temporary affairs?

A Yes, only temporary.

Q Do you know the reason for the construction of the auxilliary flume, if so, state it.

A The temporary flume was not giving sufficient water, so the auxilliary one, the auxilliary flume was added to produce more water into the main flume.

Q Do you know the dimensions of the auxilliary flume?

A Not from any measurements.

Q Do you remember any works which were constructed for the diversion of Bridal Veil Falls?

A Yes.

Q What works were constructed and when were such works constructed to your knowledge?

A In 1900, a pipe line was constructed across from the foot of the Falls to a point on the opposite side of the canyon, turning the water of the Bridal Veil Falls into the main flume.

Q Where, approximately, was the intake of that pipe line, you may refer to Exhibit 113.

A In the northeast quarter of the southeast quarter of section thirty-three.

Q What was the size of that pipe line?

A Forty inches.

Q Was that pipe line subsequently changed in any respect?

A The pipe line itself was retained, but additions were made.

Q What additions were made?

A Another pipe was extended to the top of the Falls.

Q Do you know the size of the extensions?

A No.

Q Where did the pipe line join the main flume leading to the Olmstead station?

A In the same quarter, the northeast quarter of the south-east quarter of section 33.

Q Did you ever make an estimate of the amount of water carried by the pipe line which was originally constructed from the Bridal Veil creek over to the flume?

A I made an estimate of it, not a measurement.

Q Were you making your estimate at the time for the purpose of determining what the capacity of it was?

A Yes.

Q What did you estimate it to be at that time?

A About six second feet.

Q Did that divert all the water of that stream?

A Practically all.

Q At the time the pipe line was extended up to the top of the falls, I will ask you whether or not there was any other change made and if so, what it was.

A Yes, a pump was placed in the river.

Q What was the object in extending the pipe line to the top of the falls?

A To pump the water out of the river at that point, into the main flume.

Q In other words, to get ahead a for pumping purposes?

A Yes, sir.

Q Was the water used in this manner, that is for pumping?

A Yes.

Q I will ask you whether or not there was a by-pass placed in the pipe?

A Yes, sir.

Q What was that placed there for?

A So that the water could be carried over the Bridal Veil falls straight across without doing any other pumping.

Q Straight across to the---

A Straight across to the main flume.

Q When the water was used for pumping purposes, where was it discharged?

A Into the river.

Q And you say that a pump was installed, where did the pump get its water?

A From the river.

Q Do you know how much water was pumped from the river at that point into the flume when the pump was in operation?

A Only from hearsay.

Q Did you ever make an estimate of it, yourself?

A No.

Q Do you know of any change which was made in the Olmstead plant during the winter of 1908 and 1909?

A Yes.

Q What change was made at that time?

A The turbines were changed, turbine wheels.

Q What change was made?

A The old wheels were taken out and replaced.

Q With new ones?

A With new ones.

Q What was the reason for the change?

A The old wheels were not competent to do the work they were supposed to do; not producing sufficient energy.

Q They were inefficient, you mean?

A Yes.

Q Were the generators changed at that time?

A No.

Q Referring to the flume which was constructed in 1902, and later carried on to the Olmstead plant, I will ask you whether or not you had occasion at any time to notice whether or not that flume was run full to its capacity?

A Yes, it was.

Q I will ask you whether or not you know of your own knowledge.

that an effort was being made while the Stillwell-Bierce turbines were installed in the Olmstead plant to crowd water through the flume at its maximum capacity to get the greatest efficiency, or the greates capacity out of these turbines?

A Yes, every effort possible was being made to crowd as much water through as could be gotten through.

Q You say that you saw the flume running full; at what point did you notice it?

A It was full for the first--about the first mile.

Q Now, when you say "full" what free board are you allowing?

A About three inches.

Q In other words, it was running within three inches of the top of the board?

A Yes.

Q Can you state approximately when that was with reference to the time that the flume was constructed?

A About 1903.

Q The Olmstead installation was made in 1904. I will ask you whether or not in that year you had occasion to notice that, and subsequent years, notice whether the flume ran full?

A Yes.

Q What did you notice at that time?

A I left there directly after the Olmstead plant was completed, and did not go back again for a year and a half.

Q You still remained in the employ of the company, did you?

A Yes, I was with the company, but I was employed at Niagara Falls at that time.

Q After you returned.

A After I returned I saw it.

Q You continued in the employ of the company, did you?

A Yes.

Q After you returned, did you have occasion to notice whether or not they were crowding water through the flume?

A Oh, yes, I walked all over it; they were crowding through.

Q During that time, 1904 and subsequent years you say you saw it crowded full to its capacity, to the top?

A Not 1904.

Q Subsequent years?

A 1906, yes.

Q Are you familiar with the general power system of the Utah Power & Light Company?

A Yes.

Q In a general way, how many plants does it consist of?

MR A. L. BOOTH: Object to it as immaterial.

MR. STORY: I will state the reason, if you wish me to. The object of this testimony is to show this is merely one unit of a very large---

MR. A. L. BOOTH: We withdraw the objection then.

Q Of this particular system?

A Yes.

Q Of the system of which this is a part?

A About thirty-seven plants.

Q And the power lines extend into what locality, generally speaking?

A About twelve hundred miles of transmission lines connecting all of these plants together, extending over into southern Idaho and down as far as Huntington, in Emery County, Utah, connecting up the mining camps and the cities for lighting purposes and mining operations, running of factories and inter-urban railroads, street cars in Salt Lake City, and so forth.

Q Is the power generated in this station used for these various purposes?

A Yes.

Q Do you know anything about the method of operation of this system?

A The operations?

Q Yes, whether or not each plant is always run to its full capacity, or if there is any to spare?

A Well, not all the time, but we are running most of the plants now to their full capacity. The demand is increasing each month for more power.

Q What I am trying to get at is, has there always been a demand requiring the constant operation of all these plants at their full capacity?

A Well, what I meant was, that occasionally something may go wrong with one plant which would necessitate the other plant doing their utmost to make up for the ones closed down.

Q In other words, I take it, the operation of the plants on the system, depend upon the amount of demand, any particular demand on that system, for power?

A Yes.

Q And it may come from one plant or may come from any series of plants?

A Yes.

CROSS EXAMINATION by Mr. A. L. Booth.

Q You say, Mr. Buckler, that the intention always was from the beginning, to have the power plant come down to Olmstead?

A The final plan, yes.

Q Don't you remember there was a lawsuit instituted in 1902 to obtain the power plant above the Olmstead, the Steele property?

A No, there was some discussion, I don't know there was any suit. There was a discussion.

Q Where were you in 1902?

A I was in Provo and Provo City.

Q Are you acquainted with Mr. A. L. Woodhouse?

A Yes.

Q What was he at that time, if anything, for the company?

A Assistant Superintendent.

Q I show you--I will state these are the files of the Telluride Power Company, a corporation, vs the Suzanna Steel, No. 945. in the Fourth Judicial District Court of the State of Utah. Judgement roll filed February 4, 1903.

THE COURT: That is sufficient identification. We don't makr court files.

Q I show you these documents here, Mr. Buckler, and ask you if you know anything about that suit being brought?

A I don't remember the suit, no.

MR. A. L. BOOTH: We offer this as part of our cross examination. I don't want to read it into the record, but it shows a complaint here withthe Telluride Power Company, a corporation, plaintiff, and Suzanna Steele defendant.

MR. STORY: Object to it on the ground it is irrelevant and immaterial.

THE COURT: For what purpose is it offered?

MR. A. L. BOOTH: To test the ~~xxxxx~~ credibility of the witness.

THE COURT: What is the nature of the suit?

MR. A. L. BOOTH: The nature of the suit is to condemn a power ~~right~~ site.

THE COURT: It may be received.

THE WITNESS: It is the same place, Mr. Booth, it is only a thousand feet away, anyway.

Q It is not the same place then?

A What I meant by Olmstead was the mouth property and ~~that~~ Steele property, and that property is in the mouth of the canyon.

Q This is not the same place where the present site is, isit?

A Not exactly, no.

Q It is up the canyon some distance?

A A thousand feet, yes.

Q Did I understand you to say that the plant, all the plants of this Utah Power & light Company have been running their full oppacity of late?

A I can ot say that of my own knowledge. I believe they have.

Q And that includes this plant here, does it?

A Yes.

Q For how far back, did you say the Provo plant, or the Olmstead plant, has been running to its full capacity?

A May I ask what you mean by full capacity?

Q You used the term, so I ask you what you mean?

A I mean all the power we can get out of it. A plant may be built for a greater capacity than the water will supply.

Q Would you say or do you know whether the flume has been full enough so that there has been water running over the sill way for the last three or four months at Olmstead?

A There has been water running over the sill way occasionally, yes; that is due to the variation of load.

Q And also water over the dam, hasn't there?

A Sometimes, yes.

Q All the time for three or four months?

A I don't know whether it has run as long as that.

Q What would you say, for two months back?

A It might have; I don't know, I wasn't there.

Q Do you get reports from the officers of the company?

A Not on that question, no.

Q Then on what did you base your statement that the plants had been running to their full capacity?

A Because the demand is such we are trying to get all the power we can out of all the plants or most of them.

Q If there had been any lack of water for running this Olmstead

plant the last few months, you would have known it, wouldn't you, as an officer of the company?

A I might.

Q And you have not heard of any shortage of water during that time in Provo river, have you?

A During the last two months?

A Yes.

A I may have.

Q If the water had been there or was there you would have used all you needed, wouldn't you?

A I don't know; I am not the operating superintendent.

Q But, if you were crowding the plants to their full capacity, then you would certainly use all the water that was available for all the plants, wouldn't you, up to the capacity of the plant?

A No.

Q Why not?

A Because a plant may be built for a greater capacity than the water that comes through the flume will give.

Q Your flume is part of the plant, isn't it?

A Yes.

Q Then you would use all that the flume would carry, wouldn't you? if you needed it?

A Yes.

Q And if it was there?

A Yes.

Q And that would be true of this Olmstead plant as well as all the others?

A Yes.

Q When did the Utah Power & Light Company acquire this Olmstead plant?

A In 1912.

Q Previous to that time there had not been any connection with

all these thirty-seven plants, had there?

A Some of them, yes.

Q How many of them?

A I forget how many was on the system at that time. Some were under development, some were in operation.

Q The Utah Power & Light Company did not acquire all of those plants from the Telluride Power Company, did they?

A Oh. no.

Q It was only those that were owned by the Telluride Power Company that you connected with the Olmstead plant, wasn't it, up to 1912, when they sold out?

A No, there was a plant at Battle Creek.

Q Was that owned by the Telluride?

A Sure.

Q That is what I say, it was the plants owned by the Telluride Company?

A And the one at Grace, and different places were connected up at that time.

Q Certainly, but they were all owned by the Telluride, were they not?

A Yes, those were.

Q And the Grace plant was constructed a long while after this Olmstead plant, was it not?

A Yes,

Q So, that I will repeat my question; it was only the plants that were owned by the Telluride Power Company that were connected with each other up to the time the Utah Power & Light Company acquired them in 1912, was it not?

A Yes, I think so.

Q Don't you know how many plants the Telluride Power Company owned?

A I could not tell you right off hand.

Q How many did they have connected with this plant, to your knowledge, with this Olmstead plant in 1912?

A Five or six.

Q Then, all of the other thirty-one or two have been connected up since 1912?

A Yes.

Q. They were connected up because the Utah Power & Light Company required all these other plants as well as those belonging to the Telluride Power Company?

A Yes.

Q And previous to that time there had been no attempt at connecting them up, had there?

A Yes.

Q Had there been an attempt to connect the Telluride owned companies with the non-Telluride owned companies?

A Yes.

Q By whom?

A By the Utah Power & Light Company.

Q I mean physically. They had been trying to acquire the plant but there had been no construction of any line to connect them together, had there?

A Yes.

Q Previous to the time when the Utah Power and Light acquired them?

A Not previous, no.

Q That is what I say, previous to that time there had been no movement at all of a physical nature to connect these plants up by wires, had there?

A No.

Q I will ask you, Mr. Buckler, if the Telluride Power Company plant or system were not connected up with the Utah Light & Railway Company's plant prior to 1912, were they not a connected line so they might be used for each other?

A Yes.

Q Do you know whether or not any energy was ever supplied from the Telluride plants to the Utah Light & Railway

system prior to 1912?

A Yes, it was, considerable power was supplied to Salt Lake City to the system.

REDIRECT EXAMINATION by Mr. Story.

Q The connection of the wires for the Telluride Company with the Utah Light & Railway Company was made merely for selling power to that company, was it not, at that time? the same as it was to sell it to Mercur and Eureka mines?

A Connected up with the s tub station.

Q I say the object was merely to sell power?

A Sell power, yes.

Q Same as you sold it to the Mercur mines and Eureka mines?

A Yes.

Q And it was an entirely independent company at that time from the Telluride?

A Yes.

L. M PHARIS, called by the defendants, being first duly sworn, testified as follows:

DIRECT EXAMINATION by Mr. Story.

Q State your name, residence and occupation.

A My name is L. M. Pharis, and you want my age--residence is Salt Lake City; I am a civil engineer.

Q What, if any official position do you hold with the Utah Power & Light Company?

A Why, I am hydraulic engin er for the Utah Power & Light Company.

Q Are you familiar with the power developed--were you ever connected with the Telluride Power Company?

A Yes.

Q When, and in what capacity?

A Why, I worked for the Telluride Power from 1907 until the time the Telluride Power Company sold out to the Utah Power & Light Company in 1912.

Q And ever since, what capacity were you employed by the Telluride Power Company?

A Why, I was employed in the engineering department.

Q And since then you have been in the employment of the Utah Power & Light Company, have you?

A Yes.

Q Are you familiar with the power development known as the Olmstead plant on Provo river?

A Yes.

Q Did you ever have anything to dowith a change in the upper portion of the flume leading from the Provo river to the Olmstead plant?

A Yes, I did.

Q State what connection you had with the change.

A In the fall of 1909 I was requested to make plans for the reconstruction of the upper end of the flume from the point of diversion to a point eleven hundred feet below the point of diversion through the section which had been reconstructed in 1907 after a snow slide had taken out the original construction.

Q I will ask you to refer to Exhibit 118 and designate on the plat what construction was made at that time to which you refer.

A Why, I was told to prepare plans for the reconstruction of the portio n of the flume between the point of diverions at the dam and the point where the temporary construction joins the old construction.

Q There was also an auxiliary flume existed at that time, was th there?

A Yes.

Q Shown by the red line on the plat?

A Yes.

Q What was done in the way of construction at that time--strike that out--did you have charge of construction which was done a t that time?

A No construction was done at that time. It was in the fall of 1909 that surveys and plans were made.

Q Was that work later done under your direction?

A It was done in the fall of 1912 under my direction.

Q What was done at that time?

A A reinforced concrete intake and re-inforced concrete pipe line eight and a half feet in diameter was constructed, extending for a distance of approximately one thousand feet from the fore-bay.

MR. JACOB EVANS: What date was that?

MR. STORY: 1912.

Q Did you survey the grade on which that pipe line was constructed?

A No.

Q Do you know the datum of the intake works, how it was located with reference to the old headgate which had been constructed in 1902?

A The new work was put on the same datum as the old work.

Q That is the bottom of the pipe line was at the same height?

A No, I mean that the elevations were referred to the same datum.

Q What was the elevation, what is the elevation of the pipe line at the intake as compared with the datum of the crest of the dam?

A You mean the floor of the new intake?

Q The floor of the new intake.

A The floor of the new intake is 12.5 feet below the top of the topmost flash board on the dam.

Q What is it below the crest of the dam?

A I have no record of the elevation of the permanent crest of the dam. The flash boards are always in place.

Q How many flash boards are you speaking of?

A Pardon me, I want to correct that; the flash boards are not always in place. Strike out the last part of that,"flash boards are always in place", they are not always in place.

Q I will ask you to examine Exhibit 120 and state what that is.

A That is a drawing of the re-inforced concrete in place.

Q Was that made by you or under your direct supervision?

A It was made under my supervision.

Q What are the dimensions of the intake?

A The intake is seventeen feet wide by ten feet high, rectangular in the cross section at the entrance. It is in the shape of a paper, rectangular taper. At a distance of eighteen feet from the entrance the section assumes a shape which is eight and a half feet square. In the next six feet the cross section is modulated from square to round. The lower end of this modulation the cross section is circular in shape and eight feet and a half in diameter.

Q That is the diameter of your pipe, is it?

A Yes.

Q Referring to the sill of the intake please state how that compares in elevation with the sill of the old flume?

A I have no record of the elevation of the sill of the old flume. I have nothing in my notes which shows the exact elevation of the sill of the old flume at the intake.

Q I believe you have given the distance between the top flash board datum and the sill of the intake, have you?

A Yes.

MR. A. L. BOOTH: Let me understand that, you have given the datum for those two?

A No, the datum is the same, there is a difference in elevation.

MR. A. L. BOOTH: I understood him to ask you the datum of the top flash board and--

A They are the same.

MR. STORY: I asked him if he knew the difference in elevation between.

MR. A. L. BOOTH: If you had said elevation.

MR. STORY: I stand corrected.

Q You have given that, have you, difference in elevation?

A Yes.

Q. What, if you know, is the grade of the intake to the point it reaches the pipe from the headgates to the point it reaches the pipe?

A There is a grade of a foot and a half straight through from the entrance of the intake to the screen box at the lower end of the pipe line.

Q I will ask you to examine Exhibit No. 121 and state if you know what it is?

A That is a profile of the intake, and re-inforced concrete pipe line from the fore-bay to a point approximately one thousand feet below.

Q Does that correctly show the grade of the pipe?

A Yes, it does. The lower line shows the grade of the bottom of the pipe or rather the floor.

Q What does the upper line show?

A The upper line is the inside line on the top of the pipe.

Q I will ask you to examine exhibit No. 122 and state what that is?

A That represents the controlling works at the lower end of the re-inforced concrete pipe, controlling works and screen box.

Q Will you please designate to the court the controlling gate?

A The pipe line end at this point right here.

Q Marked "A"?

A At point"A", an open re-inforced concrete flume starts. The section of this flume is eight and one half feet in

width and sixteen feet in ~~height~~ depth by twenty feet, six inches in length. Within this open flume is installed a painter or radial gate which controls the flow of water into the flume below.

Q Go ahead and please continue to describe this flume section.

MR. JACOB EVANS: That was all made in 1912, I understand it?

MR. STORY: Yes.

MR. JACOBS EVANS: We desire to object to any further examination along this line, on the ground it is incompetent, immaterial and irrelevant, so far as this case is concerned.

THE COURT: When was this case commenced?

MR. JACOB EVANS: I don't remember exactly, the clerk probably can tell us.

THE COURT: Commenced before that time or after?

MR. JACOB EVANS: The case was commenced before ~~after~~ that time, and our appropriations were made long prior to the time when they made all these new changes here.

MR. STORY: Of course, they are not the only ones to be considered in the case.

THE COURT: Objection is overruled. I am not advised of the fact no one is interested in this.

MR. JACOB EVANS: That might be so.

THE COURT: My recollection is there is evidence of rights and facts that might affect it.

MR. JACOB EVANS: That might be so, I didn't have that in mind, Your Honor.

MR. STORY: I will say, Your Honor, we

expect to connect this up with the capacity of the old flume. It is the next element in our proof.

THE COURT: The objection may be overruled, anyway, because it might apply to some of the rights.

Q Please continue with your description of the flume, Mr. Pharis.

A The rectangular open section ends at a point twenty and one half feet below the end of the concrete pipe. From this point there is an enlarging tapering section, eleven feet long by sixteen feet in depth, the width at the upper end of the section is eight and a half feet, and at the lower end fourteen feet. From this point the rectangular section fourteen feet in width, sixteen feet in depth and nineteen feet in length was constructed in which are placed 4 screens for the purpose of keeping trash, leaves and so forth from entering the flume. The flume is attached to the back end of this rectangular section by means of a taper constructed of wood.

Q What are the dimensions of that last mentioned taper?

A The taper at the upper end is fourteen feet in width, ten and one half feet in height, and at the lower end is six feet in depth by eight feet in width.

Q Referring to Exhibit No. 121, please describe the bottom grade of thesection that you have just been describing, was there any change in grade?

A The floor of this re-inforced concrete screen box is approximately three feet below the bottom of the flume at a point twenty feet from the back end of the box, and from this point--

Q Marked what?

A Marked "B".

Q Referring to Exhibit 122, are you not?

A Referring to Exhibit 122; there is a drop of one and a quarter feet in the next fifty feet of flume.

Q Reverring to the point where the lower or the taper section at the lower end of the large section which you have just been describing joins the flume, I will ask you whether or not you changed the elevation of the flume as it existed at the time the taper section was made?

A Yes, it was raised one and a quarter feet.

Q What is the distance between the point where it was raised and the point where the flume was left on the original grade?

A Fifty feet.

Q What is the grade of the flume from that point to the point you have just mentioned, to the point where the taper joins in?

A I just stated there was a drop of a foot and a quarter in fifty feet from the lower end of the taper--or drop from the lower end of the taper to a point fifty feet below the lower end of the taper is a foot and a quarter.

Q Is that constant or otherwise,constant drop, constant grade?

A Uniform grade.

Q The lower end of that drop is marked "E" on Exhibit 121, is it?

A Yes.

Q Was the grade of the flume below the point marked "E" just referred to, changed?

A No.

Q What effect, Mr. Pharis, has the enlargement of the section of the flume and the rise in the grade of the flume at the taper at the lower end of this section on the velocity of the water?

A The screen box has a tendency to lower the velocity, or does lower the velocity of the water due to the increase

in cross section and the water, therefore, has to be increased in velocity in order to get it into the flume. The screen box to this extent has some effect upon the amount of water which can be carried in the flume.

Q In other words, it has a retarding effect on the velocity?

A Yes.

Q What effect has the rise in the bottom of the flume, as shown on the cross section Exhibit 121 on the velocity?

A That is shown here, ~~yes at that~~

Q Yes, at that point.

A Why, under existing conditions it limits the amount of water which could be put in the flume.

Q Did you ever measure the---what is known, commonly known, as the auxiliary flume shown in red on Exhibit No.---

A Shown on Exhibit No. 118.

Q Yes.

A Yes, the cross section of that flume was three feet by six and one half feet.

Q Three feet in depth?

A Three feet in depth and six and one-half feet in width.

Q Describe how that flume was used with the other flume.

A The auxiliary flume takes out of the reservoir or rather the fore-bay at point "I" on Exhibit 118, and empties into the flume about twelve hundred feet below the dam. This flume, auxiliary flume grade was carried on top of the cross ties of the main flume at the point of junction and waters flow out of the end and along the sides of this flume into the main flume.

Q Do you know the grade of that flume?

A No, I don't.

Q Do you know the difference in elevation between the intake and point where it empties into the other flume?

A No, I don't believe I have any notes which show that exactly.

Q Can you tell approximately?

A The difference in elevation between the two ends must have been approximately one foot, possibly a trifle greater.

Q In what distance?

A In the length of about between eleven and twelve hundred feet.

Q What is the elevation of the lower end ?

A 513.22.

Q Did you ever see any water in that flume?

A Yes, sir.

Q How much, with reference to the capacity of the flume or the depth?

A My memory is rather hazy on that particular point, I should say half full at least.

Q Was the water running in the temporary flume at that time, what you call the temporary flume?

A Yes, the temporary flume was running full.

CROSS EXAMINATION by Mr. A. L. Booth.

Q I understood you, Mr. Pharis, to say that the construction of this box at the lower end of the flume would retard the flow of the water in the flume?

A Yes.

Q What distance back would it have that effect on it?

A It would limit the amount of water which you would get into the flume, due to the fact that the water in the pipe line, come from the pipe line---

Q I am speaking of the lower box now.

A You are speaking of this box here, aren't you?

A No, the upper one on the picture, but I understood that was at the lower end.

A Yes, the pipe line, re-inforced concrete pipe line ends at this point here.

Q That is a s I understood it.

A And the water- -this pipe line has a certain area of cross

section, therefore, for any given quantity of water the velocity is a constant. If this water in the pipe line is under pressure, the water level just back of the end of this pipe line inthe open section is somewhat higher, due to the fact the cross section area is changed, the velocity is lower for any given quantity of water than it is in the pipe line. The velocity in the flume is constant for any given amount of water, therefore, if the water, if you have a given amount of water going through the pipe line and going into the flume there is a loss of head between the end of the pipe line and the flume due to the fact that the water is slowed up, due to the increased area of cross section and the necessity of increasing the velocity in order to crowd it through the upper end of the flume.

Q My question refers to the flume above this.

A There is no flume above this point.

Q Is that where it goes into the pipe leading down to the power plant?

A No, this pipe line ends at this point, starts at the dam. This covers simply the upper eleven hundred feet of the water way.

Q Then, I have been laboring under a misapprehension; I thought this upper one on the picture, on the plat was the lower one on the---

A You thought it was at the lower end of the water way leading to the station?

Q Yes. Now, which one is at the lower end or is either?

A That is not shown here. There is about nearly five miles of flume below point "B" on Exhibit---

Q Never mind that; I have been laboring under a mistake as to that. Was there any change in the flume below the intake that would tend to increase or decrease the capacity of the flume since or about the time you installed this headgate

at the intake?

A Yes, the capacity of the flume in general was increased due to the fact that we replaced the temporary flume referred to previously by this re-inforced concrete pipe. The re-inforced concrete pipe has a smaller friction loss than the temporary flume which it repladed.

Q Do you know about how much the capacity was increased by these improvements?

A No, I don't know exactly how much.

Q Approximately, could you give us the figures?

A Oh, probably between seventyfive and one hundred second feet.

Q That was done in 1912, was it?

A In 1912.

Q Was the capacity of the flume down at the point of the spill-way increased

A You mean down in the tunnel?

Q Yes.

A Not to my knowledge, no.

Q The water would overflow that spillway about the same all the time, would it, before and after these improvemement was made?

A Yes.

REDIRECT EXAMINATION by Mr. Story.

Q Mr. Pharis, you say the capacity of the flume was increased; to what part of the flume do you refer?

A I refer simply to the part extending from the dam to a point about eleven hundred feet from the dam.

Q In other words, at the point where the pipe line ended, is that it?

A Yes.

Q I will ask you whether or not the construction of the pipe line and the section which you have described increased or decreased the total amount of water which could be put

through the flume, and it was decreased, what was the reason, what was the cause of the decrease?

A Why, it has decreased it, due to enlargement of cross section areas through re-inforced concrete structure at the lower end of the pipe line, but only by those losses.

Q You mean through the loss in the velocity

A Loss in velocity head.

Q In other words, I take it then, you can not get as much water through the flume in its present condition as you could through the old flume, or as you could through the flume without this box which you have referred to---strike that question out, perhaps I can get it---then, as I understand you, you cannot get as much water through the flume to-day because of loss in velocity ~~xxxx~~ due to conditions mentioned as you could if that enlargement did not exist, am I right?

A No, I don't think you are. Previous to the construction of this work here the capacity of the flume was limited by the temporary flume. This has replaced that temporary flume and the capacity is therefore increased, but it has not been increased as much as it could be increased if the connection to the flume had been taken care of in a little better manner.

A. D. BUCKLER, recalled.

DIRECT EXAMINATION by Mr. Story.

Q Have you a tie from the dame to a section corner?

A Yes.

Q Please give it.

A From the northeast corner of section five, township six, south range three east, the dam is south sixty degrees, seven minutes west. I should reverse that. I should say

the corner is from the dam south sixty degrees seven minutes west, nine thousand six hundred and fifty-three feet.

Q Could you tell approximately where the water from the tail race of the Olmstead Power Plant is discharged into the river?

A In the southwest quarter of the northwest quarter of section seven, township six, south range three east.

Q In your testimony you have referred to the temporary flume, and also the auxiliary flume; I believe you testified that you had made the survey on which the temporary flume was constructed?

A Yes

Q Did you ever see that flume filled to its capacity with water?

A Yes.

Q When was that?

A Several days after it was constructed.

Q You remember the construction of the auxiliary flume, do you?

A I have seen it, never took any particular notice of the temporary--of the auxiliary flume.

Q Did you ever notice water flowing in the temporary and auxiliary flumes at the same time?

A Yes.

Q What was the condition of the temporary flume at the time that you mention?

A It seemed to b e about from half to three quarters full.

Q I spoke of the temporary flume.

A Oh, the temporary flume?

Q What is denominated the temporary flume.

A The temporary flume was as full as it could get.

Q And what was the free board at that time, as near as you can remember?

A I don't think it was more than two inches.

Q And it was at this time you also noticed the water in the auxiliary flume, was it?

A Yes.

Q And what do you say was the condition of the auxiliary flume at that time?

A About half or three quarters full.

Q You didn't measure it?

A No.

Q Do you know whether or not the water which you saw in the flumes, temporary and auxiliary flumes concerning which you have just testified, was at the time you saw it, being used in the operation of the Olmstead plant, was the plan under operation at that time?

A Oh, yes.

FRANK DUSENBERRY, called by the defendant, being first duly sworn, testified as follows:

DIRECT EXAMINATION by Mr. Story.

Q State your name, residence and occupation?

A Frank Dusenberry is my name, residence Provo, occupation construction gang foreman, Utah Power & Light.

Q Are you acquainted with what is known as the Olmstead Power Plant in Provo canyon?

A Yes, sir.

Q Did you take any part in the original surveys which were made at the commencement of that construction?

A Yes, sir.

Q With whom were you, who was in charge of the surveys at that time?

A Mr. W. B. Searles at one time and Mr. Buckler at another.

Q When was Mr. Sour in charge?

A/

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IN DIST. COURT
UTAH CO., UTAH.
FILED
SEP 24 1921
Clerk.
W. M. Hale
E. B. Dastrup Deputy