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IN THE SUPREME COURT OF THE UNITED STATES

VOLUME 17 OF 25 VOLUMES

TRANSCRIPT OF TRIAL PROCEEDINGS

STATE OF MONTANA
Plaintiff,

v.

STATE OF WYOMING

and

STATE OF NORTH DAKOTA
Defendants.

BEFORE THE HONORABLE BARTON H. THOMPSON, JR.
Special Master
Stanford, California

James F. Battin United States Courthouse
2601 2nd Avenue North
Billings, Montana 59101
9:02, Monday, November 18, 2013

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MONDAY, NOVEMBER 18, 2013, 9:02 A.M.

SPECIAL MASTER: Everybody can have a seat. So it looks like everyone's pretty well set up. The court reporter has asked that we take a maybe little bit earlier break this morning than we normally would simply so that she can check to make sure that everything's working properly at that point. So we'll probably take a break about 45 minutes into the proceedings this morning.

And so, Mr. Draper, I assume we're going to start with Mr. Nance?

MR. DRAPER: Yes, we'll continue with Mr. Nance and just ask him to resume the stand, which is the chair there.

THE WITNESS: Morning.

SPECIAL MASTER: Good morning, Mr. Nance. So, Mr. Nance, we're not swearing you in again this morning because you've already been sworn in. So you're still under oath.

THE WITNESS: Very good.

SPECIAL MASTER: Thank you.

Mr. Swanson.

MR. SWANSON: Morning, Your Honor.

JAY NANCE (CONT.),
having been first duly sworn, testified as follows:
DIRECT EXAMINATION CONTINUED
BY MR. SWANSON:

Q. Morning, Mr. Nance.

A. Good morning.

Q. I believe when we paused on Friday, we had just been discussing your water rights, specifically your direct flow right with the ditch that you use for your irrigation. Do you recall that testimony?

A. Yes.

Q. And I wanted to just ask you briefly, that water right is in the Water Court Adjudication in Montana; is that correct?

A. Yes, it is.

Q. And through that adjudication, is that flow rate maintained as the same flow rate, or has it been reduced?

A. It's 10.48.

Q. So it hasn't been reduced?

A. No.

Q. I wonder if we could look at Exhibit M243 for a moment. This is the -- I'm sorry. I believe you're going to have it in the stack next to you.

MR. SWANSON: May I approach, Your Honor?

SPECIAL MASTER: You certainly can. And my guess is that today there are going to be a variety of times that we're going to be adjusting to the new setup. So if at any point people need some time just to readjust, let me know.

MR. SWANSON: Is the Court ready to proceed?

BY MR. SWANSON:

Q. So, Mr. Nance, this document M243, do you recognize this document?

A. Yes.

Q. Can you tell us what it is?

A. It's the decree of 19 -- whatever year it is, '14, '13, that establishes the water rights on the Tongue River.

Q. And this document is already in evidence. So we won't need to talk too much about it. But if you turn to page 11 of the document, the number at the bottom is MT016785. Do you see that list of water rights, the bottom half of the page?

A. I do.

Q. Can you point out if any of those water rights are yours?

A. Yeah. It's the first water right, Joseph T. Brown Land and Cattle Company.

Q. The date? Could you read the date?

A. July 6, 1886, for 10.48 cubic feet, 419.55 miner's inches.

Q. So looking down the list, there's a couple of other entries for Joseph T. Brown Land and Cattle, looks like No. 4, No. 5, No. 14A, No. 18. Are those also with your ranch, or are those split off with other ranches?

A. They're off with other ranches that are associated with the Brown Cattle Company at that point in time.

Q. On Friday, we spoke briefly about your ditch and your headgate. And there's a demonstrative, going back to the photo of the demonstrative exhibit that's to your right there, and that's -- we don't necessarily need to look there. But I wondered if you could just tell us in terms of a year-to-year management of that, do you have to do work to maintain your ditch?

A. Yes, I do.

Q. Number one, why do you need to maintain a ditch?

A. Well, given the length of the ditch, it's subject to a lot of problems. In terms of keeping it clear of the water to go down, I guess one of the first problems is silt. Oftentimes we get a precipitation event, and the river gets really muddy. And

consequently, the water going down the ditch gets muddy, and the silt settles out of it. And over time, it doesn't take a lot of time either, but the bottom of the ditch just starts getting built up with silt.

And the other thing that happens with the ditch is later in -- later in the irrigating season as the temperature warms, it grows moss. And not so much in the lower portions, but the first mile or so of it, it grows moss, and the first mile or so gets a lot of silt in it.

Either one of those two conditions reduces my ability to get water out of the river since it's a gravity flow ditch. So if there's any restriction in the upper part, it causes problems, and I got to deal with it. And I do deal with it.

Then, of course, the other thing that happens with that length of ditch, some of it travels through terrain which is heavily -- has a lot of brush. And whenever you got water flowing and a lot of vegetation in terms of trees and grass and seclusion, you wind up with beaver dams, a lot of them. And so we struggle with that.

Further down the ditch, you know, there gets to be problems. Trees will fall over in the ditch and clog it up. Just all kinds of things.

Q. Do you have to maintain it at least once a year or more often?

A. At least once a year, or sometimes more.

Q. Can you tell us what you do to maintain that ditch?

A. Every spring we will clean the ditch entirely from one end to the other with a small bulldozer that has an angle dozer on it, so the blade goes to the side like a snowplow might on a highway. And we'll remove whatever vegetation is in the ditch in the spring. And this is before we ever turn the water on. We'll get as much of that out of there as we can, get the silt out of it, clear a path, and get all the sticks out of it -- there'll be a lot of sticks from the trees that have gotten in the ditch -- and move them up the bank and just park them there, working our way up the ditch from the end of it to the beginning of it.

In the beginning of it, we're not able to get in until -- we put a dirt dam in it to make sure that no water goes down the ditch after the irrigating season. And that dirt dam is about maybe a half a mile, may three-eighths of a mile below the headgate. So there's no water going down the ditch in the winter.

So when we clean that ditch with that angle dozer in the spring, that dirt dam is as far as we can

get until we open it up. Once we get it open, if the river is high, I don't worry about the upper part of the ditch because the water level at the headgate is high enough to push the water through for me to get my water right.

As the river goes down, then I start thinking I'm going to have to deal with the silt and whatever else is going on in the upper half mile of that ditch. And in that instance, I take two bulldozers. I put one in the ditch in the bottom, in the water, where this picture is taken. And I take another bulldozer and put it on a bank on a road above the ditch right on the edge.

And I take a cable about as long as this room, and I hook one bulldozer to the other. And I pull the one in the bottom through the ditch with the one on top and angle the mud off to the side.

And also sometimes I'll but a V-bottom ditcher through with the ditcher with the Cat that's in the bottom.

But it's a busy time. And it's scary being in the bottom of that thing 'cause you think you're never going to get out of it. So that's what we got to do to maintain it.

Q. That sounds like a lot of work to maintain

it.

A. Yes.

Q. Do you have any experience with other water users? Do they do -- maybe not the same way, but is maintaining their ditches something you see on a regular basis, or other efficiency measures?

A. Well, I'm quite sure -- I don't really keep track of what my neighbors are doing that much, but I'm quite sure they all have to keep their ditches clean, even though the ditches -- even all the way out into the field you have to keep clean. If you don't, it just takes forever to just -- to do the work with the water 'cause you can't get it there. So we all have ditchers and we all have bulldozers and we all have -- well, at least those of us who have any amount of ditches.

The border dike gated pipe situations are a little different, but they still have ditches to deal with between the pumps and the gated pipe. So, yeah, we're all dealing with ditches in some fashion.

Q. I'm going to ask you to look at another exhibit that you have before you. It's Montana 336. We talked about your direct flow right. Do you have shares in the Tongue River Water Users' Association as well?

A. Yes.

Q. If you look at page -- looks like it's page 3 of Montana 336. Do you see your name -- your -- I guess your ranch and your shares there?

A. Yes, I do.

Q. Could you tell us how many shares you've got?

A. It appears I have 500.

Q. So even with the No. 1 right on the river, you still have shares in the reservoir. Can you tell us what you do with it?

A. Yes. About -- in river miles, about a mile above this headgate that you took a picture of that's here, we have one field that's about probably 65 acres. We have a side roll on it, a sprinkler system and electric pump. And we use this stored water on that field because, among other reasons, the lands described under that side roll are not included in the lands described under the water right. So we had to acquire some water to put on those.

And also, there may be times -- and there are times -- where I want to use more than my 10.48 cubic feet water right. I have a couple of fields that I can irrigate on, either -- out of the water right because I have the ditch in place to go to the field. But I have two fields that are roughly 10 acres a piece, maybe

12 -- one of them is 12; the other might be 15 -- where I could put a pump in the river, irrigate those fields with a pump instead of out of the ditch, and take my ditch water, the water right water, and do other things with it. Consequently, it speeds up my -- it speeds up my -- the amount of time it takes me to irrigate the whole ranch. And there may be times that I want to put more than 10.48 through the headgate, although I can't really do that very well because the ditch won't hold it. It will hold a little more.

But anyway, those are the uses that I put that water to.

Q. And before we go on, I think, talking about the details of that, could you just explain -- we haven't talked yet about your crops, your haying, and your operation. Could you just explain what crops you grow and kind of your yearly cycle?

A. Sure. I guess the acres are about 370 something. And I don't have the exact figure on top of my head. But it's around 375 acres, predominantly alfalfa. As the alfalfa crops get older, they get more grass. So we call them grass and alfalfa. Some of them are straight alfalfa. But that's all I raise is hay, and irrigate it.

And some of the fields are border dikes. But

most all of them, each field has ditches in it. And we irrigate it essentially as it was irrigated in 1886, with the exception of the irrigating dams that they used in 1886 were made out of a pole that was stuck through a piece of canvas, which we were using when I was a child, which we were using when I was young; still using canvas dams to dam those ditches up with and run the water out both sides.

Only difference is now we're using plastic dams. And other than that, in a little bit of land leveling and moving high spots around when we replant, we plow it up. We'll try and level the fields a little better each time. Other than that, I'm irrigating that ranch just like it was in 1886.

And not much has changed. I get out there on a four-wheeler instead of a horse. And it's an all-day deal and half the night for a long time.

Q. So when do you start irrigating in the spring?

A. We'll start in May, as soon as we can in May. And I'll irrigate clear into September.

Q. How many cuttings do you usually get?

A. We get two cuttings. And depending on the year, like this year I didn't, but normally I would irrigate a third cutting and let the cows eat it

standing rather than bale it. The other thing, in a dry year -- the real dry years is when I would try and irrigate that thing three times. And it's always quite remarkable when you do irrigate it three times or if you irrigate part of it three times, when spring comes and things start to green up, you can go see exactly where that water ran when you irrigated the fall before. It's just as plain as day. It's grown much more quickly than the stuff you didn't irrigate.

So there may be some problems with it being harmful to the crop, having it ground freeze with that much water in it. I heard Les Hirsch testify to that. I'm quite sure he knows some things about alfalfa that I don't.

But I've always found it helpful to irrigate it three times.

Q. And so when you do your first cutting, which is at -- when would you guess that; the end of June maybe?

A. Yeah, be end of June.

Q. You've got basically a long area of multiple fields. Just tell us how you do that. Are you still irrigating while you're haying, or do you shut everything off entirely?

A. It depends. Normally, what happens is I'll

get done irrigating, and we'll start haying. And it's just it a matter of days. I mean, if I've got enough labor, which I normally don't, but if I did, my preference is to start -- my objective is to start irrigating as soon as the bales are off the field, the second cutting, just keep right behind them. And that's the way I would like to do it. And that's the way I try to do it.

And by the time we get the second cutting completely put up, I'm still on my way down, working my way down the valley with the water. And it just takes me about three and a half weeks to irrigate that ranch or four or whatever. And then we start all over again. The stuff that I started irrigating, you know, like on the second cutting, by the time I get through irrigating the first one and get the hay up, it's almost ready to cut again.

So it's just almost endless. Although, the ditch will be shut off for a week or so, maybe longer. It just depends on the year.

Q. And I believe when Mr. Kepper -- do you know Mr. Kepper?

A. I do.

Q. Charles Kepper?

A. Yes.

Q. Was he a water commissioner in your area?
A. Yes, he was.
Q. He testified last week that when -- he'll note when your ditch is off, and then he'll apply that 10 CFS to the direct flow right to T & Y. Did you have any knowledge of that, or do you disagree with that?
A. I don't neither disagree nor have any knowledge of it. But I guess I would have assumed somebody down way would put the water to use if I shut my ditch off.
Q. And then when you do hay, and you've -- let's say you've cut your first cutting and it's on the ground and you're baling. Is there anything that can either shorten or extend how long it takes you to do that cutting?
A. Rain will extend it. And, you know, mechanical breakdowns will extend the hay season. The water thing is pretty -- as far as getting the water on it, if I have the amount of water that I want, nothing will interfere with it.
Q. So if we could talk about the actual water commissioners. Do you recall years when there were water commissioners on the river?
A. I do.
Q. Do you recall what years those were?

A. No, I don't recall the years. You have better information than my memory as to when those years were.

Q. Well, the years we're focused on in this case, there's a number of years, but mainly 2001, 2002, 2004, 2006. Do you recall if those may have been years when there were commissioners?

A. I believe so.

Q. Do you think there were any additional years beyond that?

A. I believe there was some last year, for one.

Q. So you think it's ongoing as conditions require?

A. Yeah. I think it's ongoing as conditions require.

Q. So when commissioners are on the river, do they come and -- I mean, how do you have knowledge that they are there, that they're on the river that year?

A. Well, usually those of -- with water will get a letter from Art about how they're going to manage them, about what they got, what the problems are, what's going to happen, and say, okay, this year we're going to have water commissioners, and here's their number, and let them know when you turn the ditch on. That kind of information, we'll have that heads-up when

it occurs, whenever it occurs.

Q. Do the water commissioners ever measure your points of diversion?

A. Absolutely.

Q. Your pumps; they measure your pumps?

A. Yeah. Either they measure the pumps or they measure the output of the pump or the electricity. I only have one pump that I would have been using when the water commissioners were onboard which is the side roll sprinkler, which is an electric pump. And it's got probably 35 nozzles.

And basically they would probably measure eight or ten of those and do the math and see how much water it's putting out per minute and calculate it that way. And then you can tell by kilowatt hours how many hours the pump runs.

And plus, my instance, every time Chuck Kepper would drive to -- down either the road on the reservation side or the road on the east side of the river, any time he drives down the river, he can visually see my sprinkler, whether it's going or whether it isn't. And he's also familiar enough with it to know that when it gets to the end, I'm going to shut it off. Or I may run it twice. But he'll have all that information from -- either from me or from

visualizing it. And he knows how much water I'm using when it's running.

Q. So what about your ditch; do they measure the flow in your ditch?

A. Yeah. We have the Parshall flume in the ditch.

Q. So did they ever -- so you got the No. 1 right, and they're still measuring your ditch. Did they ever shut down your ditch or decrease your ditch?

A. No. They have never shut it down. I almost want to recall there was one time he said we were going over. And I'm sure we've gone over many times. And -- because of the unruly river. So -- but, no, he's never shut me down, and I don't think -- you know, I've told the water commissioners, whatever I need to do, you tell me what I need to do, and I'll do it.

Q. When you say gone over many times, what do you mean by that?

A. Oh, well, what I mean by that is if the river is running at 700, I go up there, and I open my headgate a certain amount. And I go read my flume. Then the ditch fills up below the flume. And then the flume number changes a little bit. And I'm looking for a specific number on that flume. I can't remember what it is.

And so then I get everything all set. And I'm running what I think is my water right through that headgate down that ditch through that flume. And then any number of things can happen.

Let's say it rains. And let's say it rains a lot. Let's say we got thunderstorms all the way from Sheridan all the way down the Tongue River Valley. Creeks start running, all sorts of things going on. And the river comes up. Say the river goes up to 900. Well, now all of a sudden my flume is running way more than my water right. And then all the creeks come down, and they run into my ditch. By the time you get to the ditch by my house, it's running water over the top, all four sides, going everywhere.

Now, whose water is what? Is my 10.48 on the bottom, is it in the middle, is it on the top? I have no idea. I can go up there and shut the ditch down and get my 10.48. And by the next day, the river has gone back down to 700. I got to go open the headgate again and get my water right set.

So when you asked have I used more water, yeah.

Q. So in times when you have used more water or the commissioners became aware you used more water, did they charge your storage account for that water?

A. Not that I know of.
Q. And do you know if that water ran off your fields, that extra water ran off your fields into the river?
A. Some of it did, yeah.
Q. So let's talk about your storage water. Have you ever used all 500 shares of your storage water, all 500 acre-feet?
A. I don't know.
Q. Do you recall if the commissioners give you an idea how much storage water you've used?
A. I think in probably 2002, we kept track of it. I mean, I don't know if that was the right year when it went to 55 percent. You know, I was concerned like everybody else. The place I do depend on that storage water is side roll sprinklers. And so, you know, I recall conversations with Art and with Chuck and with Alan Fjell about that whole water situation for those years.
Especially the year where we were 55 percent. I had concerns just like everybody else about running out of water. As to whether I've ever used it all or -- I don't know that I ever have. I doubt it, but I don't know.
Q. Did you communicate with commissioners or did

they communicate with you throughout the summer?

A. Oh, yeah.

Q. So would they ever talk to you about how much water you've used or --

A. Well, I would inquire.

Q. Would you expect them to notify you if you were reaching your limit or going over?

A. Well, I would have expected they would. But I was way ahead of that. I mean, I don't recall what it was now, but I knew. I kept in communication with them, even at the 55 percent, and said, is there any way I could possibly run out of water with my sprinkler? And they said, no, or maybe, or whatever they would say. But, yeah, we were in constant communication.

Q. Okay. So if they never told you you ran out, you assumed that that meant you did not run out?

A. That's what I would assume. And, I mean, I've always, even though I've known them and Alan especially in our end of the river, but I know Chuck Kepper as well, and they're good people and they do their job, is my observation. And they weren't going to do their job any differently with me than with anybody else. When we ran out of water, we ran out of water.

Q. Now, Mr. Kepper testified that if some gravity fed ditches, when the water level goes low or in the river, it reduces the head and the amount going down that ditch. Did you experience that?

A. I experience that every year.

Q. Can you explain what happens there?

A. Certainly. This headgate that we have a picture of here is -- you know, it's totally just taking water out of the bottom of the river. And, obviously, the higher the water is in front of that headgate, the more pressure there is, that 1 pound of pressure for every 2.4 feet or whatever it is. The higher the water is above that headgate, the more water I can get through it or get in my opening.

So, for instance, if I -- just as I said previously in my testimony, that if I've got my flume, my flume's reading exactly what my water right is, that headgate right there on that screen is set just like that. And I get 10.48 through my flume. Now, let's say that river comes up 2 feet and gets up to that water line that you see on the headgate. That would, like, double the water I'm putting down my ditch because it's blowing it through there. All that pressure is backed up above that cement headgate.

So every time the river goes up and down, my

ditch goes up and down. And if it goes -- conversely, if it goes down, the water going to my ditch goes down, the amount.

Q. So in times when you mentioned that the river goes up and it's pushing pressure -- pressurizing the water and pushing more through your ditch, do you leave it at that higher amount and just say, well, I'm taking it all, or do you try and screw it down to your --

A. No, I try and take my water right. I'll change it. But what's -- and I monitor it as best I can. And I try and sort of stay ahead of it. But I monitor the DNRC water gauges at Tongue River -- or I mean -- yeah, the Tongue River Dam. I monitor the ones on my computer, the ones coming into the dam, the gate that measurement's going out, and the one at Birney Day. The one at Birney Day is about -- river miles, is probably about 2 miles upstream from that.

If I -- for instance, if there's a precipitation event or something up the river and I see where I had a 700 CFS coming down the river and I look at Birney Day and all of a sudden it's at 9 or 1000 or 1200 or whatever, I get up there and shut that thing down for a couple of reasons: I don't want all that water going down my ditch. It's just too much. I can't deal with it.

And I got to make all kinds of adjustments down below. I mean, if you can imagine, I get this ditch all set. And I got 10.48, and I got headgates set down further down, and I'm irrigating out of fields. Then all of a sudden, I got 15 CFS overnight or whatever. And I get up the next morning, and I've got water going over the top of headgates. And it's completely out of whack. And I got to get up there and shut that thing down. I got to let some water go past to go down the ditch. And maybe I'll catch it somewhere else and put it to use. But I'm continual -- not continual. That's an exaggeration.

During the spring when we get thunderstorms and all this kind of stuff, this thing is pretty variable. And I just do the best I can. And when I say there's a lot of water going down the ditch, way more than my water right, I don't want it in there. I want it stable so I can manage it.

So I'm continually trying to get this thing set.

Q. And you mentioned that you're watching those gauges at the state line and at the reservoir, and you're probably about the fifth or sixth person I've heard say that. So I'm just curious, in talking with neighbors, if other folks, in your experience, are also

watching that state line gauge as something to indicate what Montana is getting?

A. Absolutely we watch it. And I also have on my computer the measurement at Dayton and also the snowpack. I mean, this stuff is important to us. And we watch it all the way from when it hits the ground in the form of snow till it comes down the river. 'Cause it's vital to us.

Q. So in spite of all that, it sounds like it's not an exact science on when the water is going to get there and how much?

A. Exactly. It's not. I mean, even if you get humungous snowpack, it depends on how it melts. I mean, if it's slow, you're not going to get the water content in the river that you think. You know, if it's fast, then it's all going to wind up in New Orleans. And I mean, who knows.

But it's something we all -- anybody -- I was so impressed with John Hamilton and Les Hirsch, and I'm sure many before that I was not here to hear their testimony. But they pretty well tell you all how important this is to us.

MR. SWANSON: Your Honor, I've got probably -- I'm guessing 20 minutes left. I don't know if now would be a good time for the break or if I

should keep going.

SPECIAL MASTER: Okay. Why don't we take, then, a ten-minute break at this point. And we will come back at ten to the hour. And everyone can be seated.

(Recess taken 9:39 to 9:53 a.m., November 18, 2013)

SPECIAL MASTER: Okay. Everyone can be seated.

Mr. Draper?

MR. DRAPER: I just wanted to take this opportunity, Your Honor, to introduce one of our attorneys that hasn't been here before. This is Mr. Brian Bramblett from the Montana Department of Natural Resources and Conservation. And he will be handling one of the upcoming witness testimonies.

SPECIAL MASTER: Okay. Thank you very much. How do you spell your last name?

MR. BRAMBLETT: B-r-a-m-b-l-e-t-t.

SPECIAL MASTER: It's very great to have you here. I was wondering who you were.

Thank you, Mr. Draper.

MR. DRAPER: Thank you, Your Honor.

SPECIAL MASTER: Mr. Swanson.

MR. SWANSON: Thank you, Your Honor.

BY MR. SWANSON:

Q. Mr. Nance, you've never met me before; right? Oh, wait, I was getting a little ahead of Mr. Kaste.

MR. KASTE: I'm not doing Mr. Nance.

MR. SWANSON: Sorry.

BY MR. SWANSON:

Q. I just wanted to mention a couple of things we talked about before the break. One of them was the photo of your headgate we kept referring to. I just want the record to reflect that that's the Demonstrative Exhibit 2 from Montana and it's photo 2-HH.

Is that the photo you were referring to?

A. Yes.

Q. And then when you mentioned a couple times a commissioner named Chuck, who was that?

A. That would be Chuck Kepper.

Q. And we left off talking about the use of your ditch and your storage rights and your communications with the water commissioners.

Now, have you ever had occasion or wanted to take more than your 10.48 CFS down your ditch? And if you did so, how would you account for that?

A. Well, I may and I don't recall actually having done that. But it's something -- because I have

stored water and I have a water right, I understand I'm allowed to take my stored water and put it anywhere I want. If I wanted to add it to the flow, the 10.48, I would just talk to the commissioners about it and say, my flume number's going to go up. Take that water and charge it to my stored water.

Q. But you don't recall if you ever actually did that?

A. I don't recall if I ever did it. But what I did was -- during those years where there were commissioners, is continually communicate with them about a number of things: the general nature of what the summer was going to look like, what the water situation was going to look like, what they were anticipating.

And then I would further discuss with them what my options might be with my water, how I might use it, or how I might move this water here or move this water there, and just ask them to make sure we're all on the same page with this. And if I go over somewhere, just take it out of the stored water.

Q. And have you ever failed to get your full amount of your direct flow water right in a dry year?

A. Oh, absolutely.

Q. Do you recall when that would have been?

A. Oh, I almost run into it every summer. Towards the end of the summer when the river gets low, I can't remember the CFS, but I have a hard time getting 10.48 -- well, even that day, you can see the headgate is -- there's not much water. And you can see the water line above it. I'd have a hard time getting 10.48 down that ditch with the water at that level.

Q. Do you have any guess, based on your years of watching the river, what flow rate is in the river when you have difficulty getting the water down your ditch?

A. I can't put a number on it. But, you know, I suppose it gets, like, below 400 or whatever it starts to manifest itself. I mean, I guess there's some things -- we can put a log in the river and kind back it up or whatever.

And the other thing I can do is get the bulldozers out and, even if there's not moss in it, try and improve that ditch condition for the first mile below that headgate and try and improve that ditch condition and get it slicked up and clean and dug out down to the depth that it's supposed to be. And it will do pretty well. But I mean, it still may not get water down it.

Q. And I believe you testified last week that ice jams are one of the reasons that you don't have

a -- something to cross the river to increase the diversion; is that right?

A. Yeah. It's -- whatever you put out there to raise the water in front of the headgate, it's going to be temporary. The picture which you referenced this morning looking upstream from that headgate --

Q. Yeah, can you flip the page; it's either the one before or the one after it. Can you tell us the picture number you're looking at?

A. No. 137, MT2127 -- 21207.

Q. Does it say 2-HH? It's up there. 2-GG.

A. That's it.

Q. Go ahead.

A. That's my original headgate, which is about 40 feet upstream from the one you previously had on the screen. It's quite a ways. You can't tell. But it's probably 8 or 10 feet from the water to the top of that cement.

Q. Vertically?

A. Yes. I'm just guessing, but it's quite a ways. So we've had ice jams here that have put ice over the top of that headgate. And, I mean, it is -- I think John Hamilton mentioned that these ice jams are just incredibly powerful events. I mean, I've seen those ice blocks go down the river the size of a school

bus, you know, and they will take cottonwoods out. The banks are being carved by the jagged edges of the ice as it goes down the river, and just takes everything out.

And we had a cast iron wheel on top of that headgate, which is on the riverside, obviously, in the upper end of it, a cast iron wheel to raise and lower the headgate. It broke it into pieces, nothing left of it, nothing but a rod sticking up out of the headgate. And actually, I think it broke the cement. But at any rate, ice -- there have been blocks of ice laying on top of that headgate.

So putting anything in the river is -- Mother Nature's going to have her way.

Q. And did you hear Mr. Hamilton testify about water in the river during the winter and how that affects ice?

A. Yeah.

Q. Did you agree with that, or do you have an opinion on that?

A. Well, he's observing a phenomenon that I'm not seeing, but it's because the water temperature. Obviously, the farther down the river it goes -- if it's 50 below 0, the farther down the river the water goes, the colder it's going to get.

You know, the Tongue River Dam, in a normal winter, you know, it's many, many, many miles down the river before it ever starts freezing. And, I mean, that river may remain open all winter. And as you go down -- and also, the other thing about the first part of the river right below the dam, it runs a little faster.

But the water is warmer. And it's coming out of, you know, the bottom of the dam. So the water is warmer. And it -- the river will stay open most winters for quite a ways down below it. And I'm sort of in the middle between John Hamilton and the river. I'm sort of in a little different environment than he is. The water is not nearly as cold as it is at his place.

But also the river slows down when it gets, oh, you know, past -- well, I don't know. Probably about 10 miles above the Birney post office it starts slowing down a little bit. And, of course, as it slows down, it's able to freeze.

And so down here, we get, like, 2 or 3 feet of ice. Where the water slowed down in the river, it will get 2 or 3 feet of ice.

And I don't know, I think it was two spring -- spring before last, the river was all frozen

like it would be in April or whatever, and the ice hadn't gone out. And maybe it was -- I think it was April, we got a huge rainstorm. And it was raining on snow. And we wound up with a whole lot of water out of the drainage that is run into Tongue River on top of the ice.

And it broke the ice. And we had ice jams like you can't believe. I mean, they were bigger than I've ever seen. The one on my ranch, it almost got to my house because it just plugged that river up.

And then as John explained, after the pressure gets so high and something will break loose, and then down river this train goes, of ice, until it hangs up again. It's just an unbelievable phenomenon to observe. And a little scary.

Q. And you have livestock; is that correct?

A. I do.

Q. What livestock do you have?

A. I have about, oh, about 450 cows and about 200 yearlings on a normal year, maybe 250.

Q. You don't have any buffalo?

A. No, I have no buffalo.

Q. Do you winter your cows along the river?

A. I do.

Q. Do they water out of the Tongue River?

A. One of my pastures waters out of the Tongue River in the winter.

Q. And do you have any experience with dealing with the ice problem while trying to water your cattle?

A. Occasionally, I do.

Q. Is it much of a problem?

A. Usually not for me. And it isn't because we have -- the particular place where our cattle water in the winter, there's an oxbow in the river. And so it's like a U on its side. And the two sections of river come fairly close to each other. And as a consequence, water tries to do a shortcut underground. And it tends to keep that particular water all free of ice because the water has gone through the ground and warmed it. And it sort of comes out in this particular section of river is where I water these cows, remains open. So it's just luck of the draw. I just happen to have a good situation there.

But when I was a child, I might say, we used a lot of river for water. And we chopped a lot of ice.

Q. So in the years when it was particularly dry and there was a concern about shortage of water, did you change your irrigation practices in any way? Did you conserve any?

A. Well, we just tried to do everything we could

to -- you know, obviously, the river was low, so we couldn't get enough water down the ditch. And we were just trying to do everything like John and Les -- John Hamilton and Les Hirsch we're talking about. And also, John reminded me in his testimony that however many days it was 100 degrees and the wind blowing, you just can't keep up. And as far as using the watering any differently, I just employ the same practices that they did.

If I have a half ditch full of water because the river's low, I'm going to the fields that are most productive. And I also believe that that much heat for that length of time, it's just hard to get a crop to behave like you would like it to. It produces less.

Q. So you mentioned if you have half a ditch and you're irrigating just the most productive lands. So there were some lands that you did not irrigate in the dry years?

A. Yeah. I wouldn't say there was a lot we didn't irrigate. But the other thing that happens is if you've got a -- you know, a 10 cubic foot water right and you're running 5 down the ditch, it takes longer to irrigate. And so what happens is a field will start to green up and start to grow. And you're not there with the water when you should be. And so if

you take a dried out sort of stunted alfalfa crop and irrigate it, it's not going to produce like it would if you'd done it in a timely fashion. It's going to be less.

Q. So did you have less hay in those years.

A. Yeah.

Q. So did you have to either buy hay or make other adjustments?

A. Buy hay or sell cattle. We didn't buy hay.

Q. So you sold cattle?

A. We've sold cattle in any number of years. Not a lot, but we've -- oh, the other thing, you know, I don't recall. I sold cattle last year. Last summer we had -- well, the summer before, but we had fires and -- and hot and dry. And we didn't have any grass. Our hay land, we had water I could irrigate and all that. But I didn't have grass. So I sold cattle last -- a year ago.

Q. In the years that we're focused on, the early 2000s, 2000 to 2004 and 2006, did you sell any cattle in those years as a result --

A. I don't know what year it was, but we had -- well, it probably was 2002. But I don't know what year it was. But it was a dry year. It was along in there somewhere.

I said earlier in my testimony we had 450 cows or 470 or whatever and 250 yearlings. And one of those dry years, I'm sure it was a year when the commissioners were there, we -- it just wasn't looking good. And after the first of the year, we sold all the yearlings except for, like, 75 replacement heifers that we're going to keep and breed and turn into cows. So when May gets there or April comes along, we still have our 75. We've got all our cows. And we have our 75 replacement heifers.

We turned them out into the pasture that we would normally turn them into. And it rained and rained and rained. And we loaded them all up and stuck them on the truck in the first of June and sold them.

And I did the same thing last year. But it was more of a case than -- of no precipitation for forage in the hills to get through the summer than it was irrigation.

The other thing I might say about my irrigation system and my hay situation with respect to the cows, you asked if I bought hay or sold cows. We put up enough hay usually to have some left over. And it kind of goes in spurts. We'll have maybe a third more than we need for a couple of years. And then we feed it all up. And it's just sort of all averages

out.

Like this winter, I've got some old hay. And I'll feed it to those cows first. And we'll just -- and I'll keep a whole bunch of yearlings this year. I got good forage, and I had a pretty good hay crop. So I'll keep a lot of yearlings. But I sold my cows down, so I need to take some of those yearlings and make replacements out of them. So I'm just sort of looking off into the distance, trying to figure out what to do, how to play this.

And -- but some years, I have hay left over which is why I may not sell cows when somebody else does.

Q. So years when you do sell your cows down, does it take multiple years to recover that number in your herd?

A. Well, yeah. And the other thing, in dry years, we're relying on the Custer National Forest, some of us are, for our -- some of our summer grazing. And in a dry year, the Forest Service will go out and look at the grass, this, that, and the other. And they'll say, as they did this year, don't turn out all you're allowed. We're going to pull you back 10 percent or whatever, which they did this year.

Although -- so I sold a bunch of cows in

April. I went from 440 down to 390. The Forest Service was saying 390 would be okay, what we think is going to be okay this summer. You turn 390 out for the full term.

And the minute I sold the cows, it started raining. So it rained all summer. So that's how you make a record.

Q. You mentioned there were times when you were diverting about 5 CFS instead of 10 down your ditch. Do you know if those were -- that happened during those dry years we talked about in the early 2000s?

A. Oh, I know it happened then. But as I said earlier, it also happens to some extent towards the end of every summer.

Q. Do you know whether other irrigators down the river are able to divert their full direct flow right?

A. Well, no, I don't. Although, I don't think there are a lot of ranches up and down that river that do what I do with respect to this kind of irrigation system. I mean, they have pumps. Well, most of them do. So if the river is low and their pump is properly located, they're going to get their -- whether it's storage water or whether it's flow right, they turn their pump on, they're going to get it whether the river is high or low or whatever. Me -- and I don't

suggest I'm the only one with a ditch like this. But there aren't many left.

Q. But in terms of other irrigators, direct flow rights, is it your understanding that many irrigators junior to you are cut off most summers?

A. I would think that most summers it's me and T & Y. And the flow right game's over after the high water is down.

Q. Have you ever had an upstream user interfere with your direct flow water right?

A. I wouldn't know.

Q. You've gotten your -- I mean, you haven't had someone upstream that you had to call or try to call and say shut down --

A. Oh, no. I mean, you know, the records certainly will, you know -- I guess there's 10.48 cubic feet going into Tongue River Dam. I theoretically should have my water. But it just becomes absurd at that point.

MR. SWANSON: Your Honor, if I could have a moment with my co-counsel?

SPECIAL MASTER: You certainly can.

MR. SWANSON: No further questions, Your Honor.

SPECIAL MASTER: Okay. Thank you very much,

Mr. Swanson.

Mr. Kuhlmann, I assume you're doing the cross?

MR. KUHLMANN: That's correct.

CROSS-EXAMINATION

BY MR. KUHLMANN:

Q. Good morning, Mr. Nance.

A. Good morning.

Q. You haven't met me before the trial, have you?

A. I have not.

Q. All right. You talked earlier about the property that you irrigate with the sprinkler, that you irrigate only with storage water; correct?

A. Yes.

Q. When do you start taking water for that sprinkler?

A. Probably in May.

Q. Is that the same time you open your ditch?

A. Sometime in May, yeah. Probably the first part, depending on the year.

Q. You mentioned earlier that you use storage water when you want more than 10.48 CFS for irrigation or other uses. What did you mean by "other uses"?

A. Well, I just, as I said earlier, pretty well

continually have conversations with the water commissioner. That's Chuck Kepper. And they know my situation, that I've got 10.48 available down this. Then they know that I need to be able to irrigate that side roll for two cuttings. So I'm in kind of constant communication with them with respect to water amounts here, there, or whatever. And I make it known to them that I want to be certain that I have sufficient water to irrigate that side roll twice.

And if I choose to pump on one of those two 12-acre fields out of the river, we can take that water out of stored, or we could take it down the ditch. If there's more than 10.48 going down the ditch, reduce the stored water by the amount going down the ditch. So I just work it out with them. And I continually tell them, I want this all accounted for. I want it done right. And I want to know what my situation is at any given point in time as to what I've got left.

Q. So it sounds like those are all irrigation uses. Were there any other kinds of uses?

A. No. It's all irrigation uses.

Q. You just talked about having communications with the water commissioners. Do you ask the water commissioners to deliver stored water when you want to

use stored waters?

A. When they have asked -- when they have asked us to notify them when we want stored water, you bet. Or when Art asks us to notify them of stored water.

MR. KUHLMANN: Excuse me, Your Honor. I apologize.

SPECIAL MASTER: No problem.

BY MR. KUHLMANN:

Q. Mr. Nance, did you give a deposition in this case?

A. I did.

MR. KUHLMANN: May I approach the witness, Your Honor?

SPECIAL MASTER: You may.

BY MR. KUHLMANN:

Q. Mr. Nance, I wanted to show you a copy of the transcript for your deposition. Is that what you recognize that document to be?

A. Yes.

Q. Looking there, I believe I turned it to page 30; is that correct?

A. Yes.

Q. All right. Starting on line 10, there's a question: So when you use or have used your stored water, have you had to make a phone call or communicate

with the commissioner to say deliver X amount of acre-feet or CFS from the reservoir to my land? Or would you -- sorry, we'll just leave it at that question.

And then I believe -- could you please read your answer? I know it's a little long, but I want to make it complete.

A. A, the answer?

Q. Correct. Line 16.

A. "Well, during the years that they had water commissioners, the Tongue River Water Users, I believe, sent us a letter on the things they were -- when things -- they were running out of water. And they -- they wrote us. Everybody that had stored water had a written letter. And it said we only got 60 or 70 percent of the stored water is all we got or whatever it was. I don't remember the percentages.

"And if you want any of that water, you have to call and ask for it. We'll turn it loose out of the reservoir. Well, I don't recall my case. I'm fortunate or blessed with whatever -- with the water right. I don't ever recall having to call them to send me water out of the -- out of my store. I never -- which was fortunate, because as I recall, at the end of the year, they had all the water, the folks who had

called for it, and didn't get equal to what was in the reservoir. So I mean, if I called for my 500 acre-feet plus or minus 50 percent for the drought, it wasn't there. It was, like, well where did it go?

"But I never -- we never had to call and ask them to turn loose X amount of water in my stored water. I've never had to do that so -- okay."

Q. Was that the answer you gave at the deposition?

A. I believe so.

Q. So in that, you state that you never had to call to have water delivered to your headgate?

A. Yeah.

Q. Does that refresh your recollection on what you just answered to my question earlier?

A. Well, my answer to the question earlier is that I had conversations continually with the water commissioners, Chuck Kepper. And I believe my arrangement with Mr. Kepper was that I'm going to use the sprinkler. He knows that that sprinkler requires stored water and should be deducted from the stored water.

Now, if I'm running out of water or there isn't water there or whatever, that's one pattern, but I never did.

Q. But you never had --
A. Excuse me. I assumed Mr. Kepper accounted for the water that I was using and reduced my stored water by that amount.
Q. But you never called him ahead of time to ask for --
A. I never called him. I talked to him.
Q. Okay.
A. In these conversations, weekly conversations with him on the road or at my flume or in person, he knows how to handle the water going into that sprinkler system. He knows to reduce my stored account by whatever was going through that sprinkler.
Q. Okay. So you also talked with Mr. Swanson about times when you're unable to get 10.48 CFS through your ditch.
A. Yes.
Q. And you mentioned that that's happened in particular years but also generally the end of every summer?
A. Yes.
Q. So is it true that your ditch isn't sufficient to take a full flow of the river to ensure that you're getting your full 10.48 CFS?
A. Depends on how you define the river.

Q. Is there water at your headgate?
A. There's some water at the headgate.
Q. Okay. Do you know if there's -- if there isn't 10.48 CFS in the river at your headgate?
A. Yes.
Q. How do you know that?
A. Well, I know it by the reading at Birney Day, the DNRC gauge at Birney Day.
Q. Do you know how often that's happened?
A. No, I don't know how often.
Q. One small question, turning to a question about your livestock. You mentioned that you have one pasture where cattle water out of the river; is that correct?
A. That's correct.
Q. What about cattle in your other pastures; where do they get their water?
A. Well, first of all, I understood the question to be with respect to the river freezing and how many places do cattle water out of the river in the winter. Now, I understand that's not what you're asking me.
Q. Well, maybe we can talk about both. In the winter, where do the rest of your cattle get their water?
A. The rest of my cattle get water out of wells

in the winter except for one pasture that gets part of their water out of the river in the winter.

Q. And also talking about your water right, the first water right on the river; correct?

A. Yes.

Q. You mentioned that the water's been in the process of adjudication and that the flow has stayed the same at 10.48 CFS; is that correct?

A. The water right water.

Q. The water right flow allowed under the water right has stayed at 10.48 CFS?

A. Yes.

Q. Has anything else about that water right changed through the process of adjudication?

A. Well, I mean, when they readjudicated the river, they reduced the acres. The State of Montana had about -- I don't know when, four or five years ago, three or four years ago. I don't remember.

Q. Okay. Do you know if they -- what the acres were originally?

A. I think it was 426.

Q. Okay.

A. That's my memory.

Q. All right. How much did they reduce them to?

A. It went down to 375.

Q. Okay. So your acreage went down, but your flow did not. Do you know why your flow rate did not go down?

A. No, I don't.

MR. KUHLMANN: One moment, Your Honor.

SPECIAL MASTER: No problem.

BY MR. KUHLMANN:

Q. Just a couple quick questions left. So you don't have a diversion dam at your headgate on the river; correct?

A. No, I don't.

Q. So the flow in your headgate is limited to the flow that you can -- it goes into the headgate from the river?

A. That's correct. Although, I could put a temporary diversion in.

MR. KUHLMANN: All right. I think that's all I have.

THE WITNESS: Thank you.

SPECIAL MASTER: Okay. So, Mr. Nance, I have a few questions of my own.

EXAMINATION

BY SPECIAL MASTER:

Q. Actually, why don't we start with a question that I probably should have asked Mr. Hayes when he was

on the stand. The Supreme Court, when it reads this entire record, will probably find there are a lot of numbers and models. And I know they probably would love a little bit of history also. So I was wondering whether you could really quickly tell me a little about the original settlement of this area of the Tongue River.

This weekend I went out to the Little Big Horn Battlefield for the second trip since I've been here. And it occurred to me this time that the settlement of this area, at least according to the first water right, was only about ten years after that battle.

So could you just tell me a little bit about the history?

A. Certainly. I made note of that myself, that the water right is 1886, which would be ten years after the Custer battle, and in itself, is kind of amazing. Captain Brown who fought in the Civil War would be Art's great grandfather, brought cattle up, with his brother, from Texas in the early 1880s, I believe, and settled where -- very near where Art's ranch is currently.

And Captain Brown, who had fought in the Civil War as a young man, families -- and I seen that

many families moved to Texas. They were from Mississippi; they moved to Texas probably during or immediately after the Civil War and things were not good to be living in the south.

And he worked for the -- Captain Brown worked for the railroad and, obviously, got into the cattle business. And I think he was a surveyor for the railroad, and Art and I were talking earlier, he probably surveyed this ditch. I know he surveyed this one. But he probably surveyed a lot of ditches in the Tongue River area when he moved there as a rancher.

And this particular ranch that I'm on was owned by two Englishmen by the name of Scott and Hanks. And it's referred to, and my ranch is still called the SH Ranch. And Roger Muggli will be familiar, there's a larger SH Ranch on Tongue River between where I live and Miles City and another one on Powder River. And these two Englishmen were quite large ranchers.

And they eventually hired Captain Brown to survey this ditch, which some of the history's in the decree as to how this ditch -- anyway, they built this ditch with horses and things called Fresnos or slips, a little scraper device that pulls behind a horse and gathers dirt off the ground and dumps it wherever you want to dump it.

And to this day, I'm still amazed at my ditch on my ranch. The banks are packed. They're hard. You can run water over it. A lot of ditch banks, if you run water over the top, it's going to wash out. These ditch banks were packed with the feet of horses. They're hard and solid, and they don't wash out. And it's just amazing.

Well, at some point during Captain Brown's life there, he raised two sons and a daughter. And as Art and I were talking earlier, we have a family tree that looks a little weird. And those two sons married two sisters. And my grandmother was the third sister. And the Brown Cattle Company, I believe -- I was told anyway, my ranch was part of the Brown Cattle Company. Captain Brown bought this ranch from Scott Hicks, the water right with it.

And Captain Brown, he got this ranch and -- there's four or five other water rights listed in this decree. It's all part of the Brown Cattle company, the original water rights that they acquired or filed for on their places as it went.

Well, anyway, the Brown Cattle Company, my father told me, went completely broke three times. You know, some of it was winter. Some of it was economics, cattle prices, all sorts of things. And those two

girls that married the two brothers had a father, my great grandfather, who was fascinating. And he eventually came -- he was in business, had cotton gins and a whole bunch of stuff in Mississippi. And this was in the early 1900s, maybe in the '20s. He sold all that stuff and came up here to rescue his daughters who had gone broke.

And he was going to save their honor. And he came up to Birney, Montana, and moved in and brought finances with him. And he was a fabulous businessman, well educated, sharp man. And he lived to be 97 years old and stayed there at the ranch the whole time. And my grandmother, the third of those two sisters, came along with and invested in the Brown Cattle Company, as did my great grandfather. And then they went broke, I think, two more times.

And -- but eventually, they operated as the Brown Cattle Company until 1948, I think, or '49. I'm not sure which of those two years. By then, each of these families, my father being one of them, and each little family of the Brown Cattle Company was sort of residing on its own little ranch even though it belonged to the Brown Cattle Company.

In 1948, they decided these families want to be off on their own. So the families turned in their

stock to the Brown Cattle Company, took the ranch, took some cattle, and some horses and just turned in their stock as treasury stock. And we all sort of went our separate ways.

And so one last little interesting note: My great grandfather, Mr. Powell, father of the three girls, rode on a railroad train as a baby, with Abraham Lincoln, and he watched John Glenn go into space.

So it's kind of an interesting bit of history.

Q. Thank you for that. I appreciate it. And Mr. Hayes' gave a little bit of the history, and I just wanted to get a little bit more of it on the record.

So I'd like to talk for just a minute or two about some of your practices. So at the beginning of the year when you begin to irrigate your crops, do you -- I assume you start -- open -- after doing the cleaning that you talked about earlier, then you open up your headgate and let water from the river come through?

A. Yep. I'll open up the headgate. I'll go read the flume. I use that flume a lot to get information. I'll tell you why here in a second.

But I run it up to the number Chuck tells me is the number. The flume is a little different in that

the tail end of it is somewhat submerged. So they have to do some math when it comes to getting the water flow correct to this flume.

But anyway, it's way over my head. Anyway, they tell me a number that my water right is. So, yeah, I clean the ditch, I turn the water on, and I make sure all the ditches are clean where I'm going to put the water, where I'm going to take it.

And I take it down. And my house is about the first field. This ditch is high enough to be usable. And I just divert it out into the ditches that go into the fields. And I'll have -- I'll run maybe four big V-bottom ditches full of water, maybe three, and just start using it.

And that's typically how it starts. And I'll start at the south end, since the Tongue River runs north. I start at the south end, the first field I get to, and just start moving my way north.

Q. And I understood from your testimony earlier, that there are some times during the irrigation season when you are not irrigating crops; is that correct?

A. Briefly, yes. Like, a week or so.

Q. And during that period of time, you shut the headgate?

A. Yes.

Q. And why do you shut the headgate during that period?

A. Couple of reasons. I mentioned earlier that moss is a problem. And if you can take the water away, the moss won't grow. This new headgate is pretty good. It's got a rubber seal on it. And I can pretty well shut that ditch off. It's very low water. So it will restrict the moss growth. Plus, I don't need it.

Q. And are there times during the irrigation season when you reduce the amount of water that you're taking through your diversion without shutting it down entirely?

A. Probably not. In -- reason being, the more water I've got -- I mean, 10.48 is quite a bit of water. And if I can get that, just the whole thing works so much better downstream. If I could just get it done quicker. And you have to -- you're spending so much time to go out there and move dams down ditches, you can just as well be doing it with a good flow of water than a little bit of water. And just everything works better. It goes faster. It covers faster. One set out of a ditch will travel farther. Everything is better with more.

Q. And are there times when you're taking more water through the ditch than you need to irrigate your

crops?

A. Only those times when the river unexpectedly comes up and the creeks run. Then I'm up there shutting things off trying to get control of it.

Q. And you said, I believe earlier, that an answer to Mr. Swanson's question as to whether or not you used all of your stored water each year, that you weren't sure, but you doubted it?

A. Yes.

Q. So why is it you doubt that you used all your stored water?

A. Well, because very seldom I ever get more than 10.48 through that headgate. That's A.

B, the side roll sprinkler puts on -- if I ran it 24 hours, it might put on 6 inches. So that's 30 in one irrigation. And I got 500. So -- and even if I stuck a pump in the river and irrigated those two 12-acre fields and put a foot on them, there's another 24. There's 54 acres, and I've got 500.

That's why I don't get too concerned about it. Even in years when it's reduced by -- or when we've got 55 percent less, even then I still get -- I still get in conversations with the water commissioners in those dry years when all this -- we were all pulling our hair out.

I continually get into the conversations with Chuck Kepper. It's not unusual to get in conversation with Chuck and I get querying about, okay, where am I, Chuck, with all this? Am I good? He'll go, no, you're fine. And just keep doing what you're doing. We're going to be fine.

And I can't say it enough times, it's just luck of the draw. But I realize I have the first water right, and I've got 500 acreage of storage, but I'm grateful.

Q. So if, you know, in a typical year you're not going to need the entire 500 acres, why would you care to keep track of how much water you've used?

A. Well, that's true, but, you know, during those dry years when we went to the 50 percent thing, I just wasn't sure, you know. It's just I need that -- it's just insurance.

Q. Okay. And then the final question I had. And I just want to make sure the record's clear on this. So I think somebody who doesn't understand the way this river system works would assume, okay, so long as, you know, there is 10.48 CFS of water in the river coming down, you're going to be able to take your entire 10.48 CFS. But -- and as I understand your testimony, your testimony is, long before you get to

that point, you're actually not able to draw that amount of water out of the river because you don't have that much coming over your headgate; is that correct?

A. That's correct. And if I may add something to that?

Q. You certainly may.

A. If there's 10.48 coming in at Decker at Tongue River Dam, and let's say there's 10.48 coming out of the dam, and I've got neighbors upstream and downstream with no water, I am not going to dam that river up and put 10.48 -- take every drop of it and stick through that headgate. I am not going to do that. It's wrong. And I'm going to go suffer with the rest of them. Even if I could get it through there, I'm not going to do it. It's just not going to.

Q. Okay.

A. I don't think it's right.

Q. Yeah. And you also mentioned -- and I, unfortunately, didn't write it down. But in response to one of Mr. Kuhlmann's questions, you mentioned you could put up a temporary?

A. I could -- yeah, I could put a cottonwood log in front -- into the river. I talked to the Fish and Game about it and talked to Soil Conservation Service about it. Yeah. We can put a cottonwood in the river,

and it just backs it up 3 or 4 inches and just gives me -- and I can do that. And it doesn't interfere with the river bottom. It's not dredging anything. It's just a piece of wood. But when the ice goes out, the piece of wood has gone to Louisiana.

Q. So what that log does is give you a little more head so you can take your 10.48 CFS of water a little bit longer in the season; is that correct?

A. Yeah, that's correct. And then drag the bulldozers down the ditch.

Q. Thank you, sir.

SPECIAL MASTER: Mr. Kuhlmann?

RECROSS-EXAMINATION

BY MR. KUHLMANN:

Q. Is it correct that you close your ditch down for longer than a week sometimes?

A. I don't know. I don't know. I don't write it down. I mean, if the commissioners are working, I'll tell them, or they'll note it or whatever. But I don't know. I would doubt it. I just don't know. We get haying, and, you know, I don't know.

Q. Do you know if it's been as much as 20 days?

A. It could have been.

Q. Would the commissioners' records be the best place to find that?

A. You bet.
Q. Those are in evidence. Thank you.
SPECIAL MASTER: Thank you.
Mr. Swanson.
MR. SWANSON: No questions, Your Honor.
SPECIAL MASTER: All right. Then why don't we take the second of the morning breaks. We'll come back in ten minutes. So we're in recess for that period of time.
(Recess taken 10:47 to 11:00 a.m., November 18, 2013)
SPECIAL MASTER: Okay. Everyone can be seated.
Mr. Wechsler.
MR. DRAPER: Your Honor, Mr. Wechsler will be handling our next testimony. And that will be Mr. Roger Muggli.
SPECIAL MASTER: Thank you very much, Mr. Draper.
So, Mr. Muggli, you can approach the chair up here.
(Roger Muggli sworn.)
THE CLERK: If you would, state your name, and spell it for the court reporter, please.
THE WITNESS: I'm Roger Muggli. That's

M-u-g-g-l-i, and I'm secretary of Tongue and Yellowstone Irrigation District.

SPECIAL MASTER: So, Mr. Muggli, it's great to see you again. I'm disappointed, however, that you did not bring your dog with you.

THE WITNESS: He impressed everyone.

MR. WECHSLER: Your Honor, we've come to Montana's final witness. And appropriately, it's at the very bottom of the river. And that's the T & Y Irrigation District.

ROGER MUGGLI,

having been first duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. WECHSLER:

Q. And, Mr. Muggli, you've already stated your position with the T & Y. Let's start a little with your background. What's your educational background?

A. High school education.

Q. You have an irrigation operation?

A. Yes.

Q. And who is that operation owned by?

A. It's Muggli Brothers, Incorporated.

Q. What's your position with that?

A. Chairman.

Q. Chairman?

A. Yes.

Q. Can you please summarize your past work experience?

A. Well, it -- graduated in 1968 from high school. And I did go two winters to junior college. And at that time in 1968, we started to change more of the farm, if you will, into something that -- some way that we could make a better living at it. We had a fair amount of irrigated land in T & Y irrigation.

And years prior to that, income of farm commodities was pretty low. We weren't diverse or clever enough or whatever to be cattle people, other than a small meat herd. So dad decided that we needed to make a work project for the winter. And he decided it would be a pellet farm. So we started building on that. And the fall of '69, we started into the processing of alfalfa and grain products, primarily at that time off of our own farm, and then pelletized it and sold it to the local ranching community for winter maintenance feed.

Q. Now, I think we'll talk a little bit about that, both operations, both the irrigation and the pellet. And before we get there, I want to understand, you also are a member of the Tongue River Advisory Committee; is that right?

A. Yes.
Q. How long have you been on that committee?
A. Let's see. Since the rebuild of the Tongue River Reservoir. I can't even think what year.
Q. Approximately completed in '98?
A. Yes.
Q. Where did you grow up?
A. At Miles City.
Q. There on the T & Y Irrigation District?
A. Yes. Been there my whole life.
Q. That's a family farm that you talked about?
A. Yes.
Q. I understand that you learned about the T & Y Irrigation District from your grandfather; is that right?
A. Yes.
Q. Can you tell us a little bit about that?
A. My grandfather was a banker by trade. And he came to the area from Minnesota. And him and two of his brothers bought a bank in Richardton, North Dakota, and started one in Rosebud, Montana, and started a bank in Ringling, Montana, and operated those for a number of years.

And I guess their claim to fame, and not knowing much or even seeing many pictures of the banks

or anything related, was that his brothers were pretty foresighted and they saw the coming of the '29 crash, stock market crash and Depression. And they were worried about the banks. And they got enough money in their -- cash capital in their banks and wrote letters and telegraphed folks to come and get their money out of the bank.

And when the system failed or collapsed, they didn't lock anyone out of their money. And to this day, I still have folks commenting about my grandfather saving their operation. 'Cause he didn't lock them out of their cash. And he has a pretty good foresight in stuff like this, very good business head on him.

And he came to Miles City and became involved in Tongue and Yellowstone Irrigation District. And it was in deep debt at the time. And his goal was to get it solvent and manage it and maintain it in its elected position. He was elected to secretary of T & Y.

Q. What was your grandfather's name?

A. Joseph Muggli.

And he got it solvent. And he also, relative to water, was one of the authors or signors of the Yellowstone River Compact with Wyoming.

Q. Did you have a chance to travel around with your grandfather on the T & Y Ditch?

A. Yes, I did. I used to delight going with him to the 12-mile diversion dam south of Miles City and regulate the water. And I would -- given the age and probably my attention span, I didn't listen much to what he had to say. But you always kept your mouth shut. You learned to do that. And he just kind of commanded that respect.

But as time went on and as I got maybe a little wiser with age and my dad had -- was -- became the secretary of T & Y. And then I got the job and was elected to the board in '87, and I'm secretary of T & Y. And I've come to appreciate what my grandfather represented and the things he told me.

I can still see him telling me different things about the canal and the operation of it, the river, the compact and on and on. And it didn't have much significance at the time. But I've come to realize how sharp he really was and how significant a person he was for irrigation water for the community.

Q. Your grandfather, Joseph Muggli, was the secretary, it sounded like, from 1929 until what year?

A. Until '57, I believe.

Q. Is that when your father became the secretary?

A. Yes.

Q. And when your -- when did your father stop being secretary?
A. In '87.
Q. Is that when you started?
A. And that's when I started.
Q. I understand you have a son?
A. Yes, I have a son. But he's told me unequivocally that I am the end of the line.
Q. Well, you do also have some grandchildren running around the T & Y; is that right?
A. Yes.
Q. Maybe one of them will be interested.
A. Maybe.
Q. It sounds like from your grandfather you learned the significance of the Yellowstone River Compact; is that right?
A. Yes.
Q. And have you read the compact?
A. Yes.
Q. Do you consider the compact to be important?
A. Yes.
Q. Why?
A. Well, it defines the waters. The document that actually defines the shared water in the given drains on the southern tier of Montana, with respect to

the rivers that originate in Wyoming. And I think it's hugely significant. I am overwhelmed that it was -- the 1950 Compact, from my understanding, is that it was the third attempt at getting the compact to fruition. And it's really -- says a lot to folks in not only Wyoming and Montana, but also North Dakota was involved in the signing.

And I was impressed at what they went through. And it was the third commission that finally got the job done and how difficult it would be to do that. And I've really -- it's really raised my respect because those are difficult issues.

Q. You mentioned your grandfather negotiated and signed the compact?

A. Yes.

Q. Do you consider this case to be a continuation of your grandfather's efforts?

A. Yes. I think it's -- I wish we could look at it more simply in the context of what it was and what the understanding that they had, each side. That maybe we could -- it sometimes seems like we're kind of going a difficult road and making it more difficult than it should be with respect to the compact itself.

Q. I'd like to talk about your operation first. After that we'll talk more in detail about the T & Y

Irrigation District. And I want to start by taking a look at a couple pictures that we took when we were visiting on the basin tour.

And those are hopefully coming up on the screen. And I believe it's going to be Montana Demonstrative Exhibit 2. And there are a couple of the pictures right at the end. They are going to be labeled Montana Demonstrative Exhibit 2-OO.

Mr. Muggli, do you recognize that?

A. Yes.

Q. What is that?

A. That's one of our fields in the valley below Miles City. And it's sort of a wide stretch. It's the widest distance between the canal, and the Yellowstone River is right in this.

Q. I understand that you divide your properties into an upper farm and a lower farm; is that right?

A. Yes.

Q. Are we looking at the upper farm or lower farm?

A. Upper.

Q. And let's take a look at the other picture, which is Montana Demonstrative Exhibit PP.

What is that?

A. That's looking towards the west from the road

that we call the railroad grade. We own the railroad grade that was the Milwaukee Railroad. And that's looking almost straight west. And that's the windmill that my grandfather erected that. But behind that a few hundred yards is the top of the pellet plant storage facility.

Q. I want to take a look at a map.

MR. WECHSLER: And to do so, Your Honor, it's a very old map, so we haven't pinned it up. If I could ask your indulgence to have some people hold it up for Mr. Muggli?

SPECIAL MASTER: Yes, that would be fine.

BY MR. WECHSLER:

Q. So, Mr. Muggli, there is a very cool map. Can you describe what this map is?

A. It's one of the three original T & Y maps. And they're still in the nature of what they were -- I was told how they were made. And they were kind of made like the old tablecloths used to be. It's kind of a cloth. You can see the frayed strings hanging off the edge of them. And how they are made, I'm not sure. But anyway, that's the -- one of the three maps.

Q. Do you know approximately what year?

A. Oh, I think it was about -- I forgot.

Q. One of the maps we looked at maybe said 1913?

A. That's right. Yes, that's right. Yes, that's when the maps were -- original maps were drawn.

Q. Now, at the bottom of this map -- which is about four and a half feet long, does that sound right to you?

A. At least.

Q. At the bottom, it says District No. 3; what does that refer to?

A. They divided it -- my grandfather told me that there was three maps. And that was in the day before I ever saw these. And the maps were drawn. And they decided because they were going to be so big that there would be three maps showing the entire length of it. And so they decided that they would have a commissioner for each map, for each reach that's represented on the map.

And that's, to my knowledge, how there became -- or how T & Y came to have three commissioners.

Q. And, in fact, there's still three districts; is that right?

A. Yes, there's still three districts and still three commissioners.

Q. Where is the first district located? Is it closest to the 12 Mile Dam?

A. Yes.
Q. And then No. 2 is in the middle?
A. Yes.
Q. And this is the one that's furthest downstream?
A. Yes.
Q. In fact, can you stand up and please point to us where the Yellowstone River is shown on there?
A. Right. This would be the Yellowstone River.
Q. Are your upper and lower farms shown on this map?
A. Yes, they are.
Q. Can you please point them out?
A. Our upper farm is right in this area. And the lower farm is right in here.
Q. That's good. About how far is the lower farm from the confluence of the Yellowstone?
A. About 3 miles.
Q. How many water users on the T & Y are below your lower farm?
A. Three.
Q. Approximately how many acres total, including both the upper and lower, do you irrigate?
A. Our farm personally?
Q. Your whole operation. How many acres are

irrigated?

A. About 1700. That's the actual field size.

Q. What's the number of acres in the upper farm?

A. About 1100.

Q. How about the lower; the remainder?

A. Yes.

Q. So about 600?

A. Yes.

Q. How many points of diversion do you use?

A. Five.

Q. Is that total including the upper and lower?

A. Yes.

Q. Are your points of diversion directly from the T & Y Irrigation Ditch?

A. Yes.

Q. And -- now, what method of irrigation do you use?

A. It was all leveled, border diked and leveled in 100-foot border dikes. And last year, we converted the upper farm to six pivots.

Q. And now, the upper farm is in sprinkler irrigation; is that right?

A. Yes.

Q. And the lower farm, is it still in flood?

A. Yes.

Q. What crops do you grow?
A. Primarily alfalfa. And we rotate with corn and small grain.
Q. I want to talk a little bit about the way those are done, the irrigation of each of those crops. First, can you tell me approximately what proportion you have of alfalfa, corn, and small grains?
A. It would probably be three-fourths of the farm would be in alfalfa and one-fourth would be in small grain or corn. And it varies a bit because the field sizes vary quite a bit. So you plant a whole field, whether it's 140 acres, which is our biggest field, and the smallest is, like, 10 or 8 or some such. It just depends on how the land lays and how you can accommodate a field. So they all vary somewhere in between those sizes.
Q. Sounds like at any given time, there might be two-thirds to three-quarters in alfalfa?
A. Yes.
Q. And the rest is corn and small grains?
A. Yes.
Q. So it also sounds to me like you do a rotation of the crops; is that right?
A. Yes.
Q. Could you please describe what that rotation

is?

A. It's usually about five years in alfalfa, and then we take it out. We tear it up, subsoil or deep rip, a series of disking and then roller harrow, and smooth it back down, level it or drag it, one or the other.

Q. Is that a time-consuming process?

A. Yes.

Q. After the alfalfa, what crop do you go to?

A. Corn.

Q. How long is a field in corn?

A. Depending on the year, but usually we put corn in one year and then go two years on small grain.

Q. After the small grains, is it then back to alfalfa?

A. Yes.

Q. So roughly five years alfalfa, one year corn, two years small grain?

A. Yes.

Q. Back to alfalfa?

A. Yes. And then the only clarification is once in a while, depending on the field and the soil and a few other things, we'll put two years of corn in. And then -- we have heavy clay soil. So we -- the best -- it gets very compact.

And so the way to battle the compaction is by putting more organic residue in there. And corn is your biggest return there. Because we just combine the kernels, take the tops off of the field, and the whole stock is then put back into the soil. It's a humic material.

Q. Are all three of those crops -- alfalfa, corn, and small grains -- are they all irrigated the same way?

A. Yes.

Q. Meaning, the type of irrigation that you're using, flood or sprinkler, is the same; right?

A. Yes.

Q. Do they take the same amount of water?

A. No.

Q. So can you please describe the way in which you irrigate alfalfa?

A. Well, we start out in the spring, and, of course, I manage T & Y. There's work that I have to do on the canal to get it ready and then turn the water in the canal. And depending on the year, how dry, you know, what the winter conditions were, then I'll shortly start irrigating, which is in around between -- around the 15th of May usually, someplace right in there and then just continue through until fall.

And a lot of years, we'll do three irrigations on the alfalfa and probably four on the corn and two on small grain.

Q. When you say an irrigation, what do you mean by that?

A. Irrigate it. And you get the field irrigated. And then there's a period I don't irrigate, and then you go back and irrigate it again.

Q. So now for the hay, you stop irrigating, right, when you do a cut?

A. Yes.

Q. Now, how is corn different?

A. Well, that -- different in that it takes usually -- well, depending on the weather and the condition, I've learned that the best irrigation on corn, the most important one, is right at half. And even if you've irrigated it ten days before, you want to irrigate it then, 'cause that seems to allow the kernels to fill the best. It helps the pollination and all that. And so you want to irrigate it then, disregarding when you irrigated it the previous time.

And that -- you've got -- a farm like ours, you have this inherent problem of water availability, which in normal years I can make it work with what we can -- with our water right, with respect to the river

and all that. But then you have this time problem in there. You can't wait until everything needs to be irrigated. You have to jump the gun and start on it a little bit prematurely or you're going to end up way too late. You're going to have stressed crops. You're better off to irrigate it sooner than going to a stressed time.

Q. We talked about the alfalfa and the fact that you can harvest it two or three times a year; right?

A. Yes.

Q. Can you harvest corn more than one time a year?

A. No.

Q. When is corn harvested?

A. In around late October, early November is when we combine the corn.

Q. Once you get the corn on the field, you start irrigating. Let's say you run out of water midway through the season. You lose that corn crop?

A. You can. But it will always hurt you in yield. Really it will hurt you a lot.

Q. How about small grains; when are small grains harvested?

A. They're harvested in July. In the Miles City area, we have the longest growing season in Montana.

So if you get in early, you can harvest it in mid to late July.

Q. So you actually start irrigating small grains early?

A. Yes.

Q. About when?

A. Oh, in probably middle of May.

Q. Same time as --

A. Yeah. Or middle to last. In there.

Q. How many times a year are you irrigating your small grain?

A. Usually twice.

Q. Can you get three times irrigating in a year?

A. There's been times when we do three irrigations on small grain. But usually not. It's usually twice.

Q. We talk about the fact that you divide your farm between the upper and lower farms. How many fields do you have?

A. I think there's, like, 20.

Q. So are you irrigating 24 hours a day?

A. Yes.

Q. Are you irrigating every day during the irrigation season?

A. No.

Q. Do you -- is it important for you to use the water efficiently?

A. Yes.

Q. Why is that?

A. Well, it's -- because to get it timely, you want to save every bit of time you can, not run it too long to create waste water. So I know on the flood fields how far from the end -- I pace it to the bottom. And I know, based on the length of the field -- like, there's this one field I can shut water off when -- on the flood when it gets to within 200 yards of the bottom. 'Cause it will coast that far. It's just amazing.

But you have to have a big head going in the top. And then you shut it off. And then you're irrigating the next set. And that one is coasting. And you hope you didn't jump the gun and shut it off too quick.

The reason for being very timely is our farm has developed into me being the irrigator. And to irrigate that much and that many fields, I've got to go around the clock. And I don't like wasting time. It just kills me. You end up getting so far behind. So my sleep and my personal life is second. It all pivots on if I have to switch water at 1:00 in the morning,

I'm out there at quarter to.

And that's the way my day goes all summer.

Q. How many days during the irrigation season would you say you're not irrigating?

A. Well, familywise, I try to shut off on sometimes Saturday night because we've never worked on Sunday or try not to, go to church and that. But then Sunday night, I'll start if my wife allowing and we're not doing something.

But anyway, it just goes around the clock.

Q. Not very many?

A. Not very many.

Q. Does the amount of water that you have influence the production on your farm?

A. Yes.

Q. So in a normal year, in a year where there's no water shortages, about how much alfalfa do you harvest?

A. Oh, about -- right at about 5000 tons.

Q. How about corn?

A. We -- last year we had a 209-bushel average. And this year we didn't because we had two hailstorms on it this year.

Q. 209 per --

A. Bushels per acre.

Q. So what is that? Can you translate that to a round number? Over 30,000 bushels?

A. Yes, would be like -- there again, of course the size of fields. But between 30 and 35,000 bushels.

Q. How about small grains?

A. We'll get anywhere from around -- anywhere from at least 20 to 25,000 bushels in any given year.

Q. So where is the alfalfa, the corn, and the small grains, where is that used?

A. It's used in the feed plant.

Q. You take that product and move it over to the feed plant that we can see here, and it's used to make feed for the cattle; right?

A. Yes.

Q. Let's talk about the feed plant. So could you please just generally describe the feed plant operation?

A. Well, yes. It's -- it's probably one of the best. If you were to drive in the yard, it would probably remind you of a movie set from a Mad Max movie. It's pretty intense. It's -- we've built everything there. And we've built it for capacity. If we run straight grain, which we never do anymore, but the plant, it could run probably 20 tons an hour of straight grain.

When you put the scenario of alfalfa in there, it really slows it down. But we built the plant to market what we can raise. And then it's sort of morphed into this, we got to have the plant. We can't go back to the old ways. It's how we're structured. We figure on making feed, and we just buy a lot, grow a lot, and make a lot.

Q. What's the mixture that you put into your feed?

A. Always 50 percent alfalfa and 50 percent grain. And the grain is usually -- the major grain in it is barley. But there's wheat, canola meal, and some peas, a small amount of peas.

Q. That mixture can be adjusted based on the products you have --

A. Yeah, but it's always 50 percent alfalfa. On availability and somewhat pricing is how we control or what we do with the other 50 percent with respect to the different grains. And you're always better in a processed feed to put at least three different grains.

Q. Ultimately, the product, as I understand, they're described at pellets; is that right?

A. Yes, just pelletized.

Q. What does a pellet look like?

A. It's three quarters of an inch in diameter.

That's the die size there. And then they break off in pieces from generally around 2 inches long. Some are a little longer; some are a little shorter.

Q. Do you use all of this -- so going back to your farm operation, you take all of that and bring it to your pellet operation; right?

A. Yes.

Q. Do you need more alfalfa and grains for your pellet operation than you can produce?

A. Yes.

Q. About how much alfalfa and grains do you use?

A. We have to -- if we can produce, the year allows us to get to 5000 tons on our production, we have to buy another 10 to 11,000 tons of hay.

Q. So total would be somewhere around 15,000 and 16,000 tons of hay a year?

A. Yes.

Q. How about grains?

A. Depending on the percentages. But the -- because it's 50 percent alfalfa, 50 percent grain, we have an equal amount of grain to either grow or buy. And we have to buy most of it.

Q. So it sounds like you produce about 50 percent of what you need, or is it less?

A. It's less.

Q. Is it in the same percentage as the alfalfa?
A. I don't understand the question.
Q. In a typical year, normal year, not water short, how much -- how many small grains do you have to buy for the pellet operation?
A. Most of it.
Q. So most of it does not come from your farm?
A. Right.
Q. And have you had to develop a trucking operation in order to move stuff around for the pellet operation?
A. Yes.
Q. How far do your pellets get shipped?
A. To -- on the west, they go to Missoula, Montana. And on the east, they go to Kearney, Nebraska. On the south, they go to Colorado, and the Canadian border on the north.
Q. How far do you go to get hay and grains to make your pellets?
A. We, unfortunately, have to haul some of the hay out of Canada. We try to buy it as close as we can, primarily on the Yellowstone River and some on the Tongue. But most of it comes off the Yellowstone within a hundred miles.
Q. So I want to turn to shortages. And I want

to talk a little about how you deal with shortages and what the impact might be both on your farm and pellet operation.

And so do you pay attention to yearly precipitation data?

A. Yes.

Q. Why do you do that?

A. Well, 'cause you -- it's a typical farm, you're constantly looking at the sky and wondering what the weather is going to do to you. And the weather plays just a pivotal role on how you manage it and how you get through the season with what -- and hope for rain. And then your prayers sometimes get answered, and it's just exactly right after you've started cutting alfalfa. So then you've got a wet spell that you're dealing with.

And it's just very difficult. I mean, you manage -- I feel like my day pretty much consists of crisis management. What are we going to do next relative to the weather and how my -- how our farm and my family operation kind of plays into that.

And then my other role with the T & Y Irrigation is I have all that issue to deal with and try to configure, manage as well.

Q. Sounds like the water is pretty important to

your personal operation and also the T & Y?

A. Yes.

Q. Do you also pay attention to the water in the Tongue River Reservoir?

A. Yes.

Q. Why do you do that?

A. 'Cause we have the oldest major water right on the river. It's an 1886, actually, second major water right. Mr. Nance's is first. But the T & Y's water right is for 187 and a half CFS.

Q. Do you also need storage water in any given year?

A. Yes.

Q. Is that why you're paying attention to the level of the reservoir?

A. Yes.

Q. Do you rely on that storage water every year?

A. A lot of the years, yes. Well, yes. Probably every year because the inflow drops below the demand on the river. So, yes, it's an every-year concern. Yes.

Q. Thinking about the beginning of a year and you're looking at the reservoir, you're looking at the likely precipitation, do you do any planning ahead of time?

A. Yes.
Q. So how do you plan for a shortage?
A. You try to have more small grains in. If we look like we're going to have a short snow year or less water in the system, then we'll put in more grain, small grain.
Q. More grain as opposed to corn?
A. As opposed to corn.
Q. Why is that?
A. What's that?
Q. Why do you switch from corn to small grain?
A. Because it requires less water.
Q. And you can harvest it earlier in the season?
A. Yes.
Q. I'm sorry, I interrupted. It sounded like you were going to say something about alfalfa.
A. Alfalfa, if you don't get it irrigated, you have a tonnage loss, of course. But it usually does not kill the stand. So it sort of dormants out. It just sits there. And it won't get much off of it, but it isn't going to die on you.
But corn is a different story. Corn is such a high-dollar crop.
Q. Does that mean if it's looking like a water-short year, you're better off having more

alfalfa?

A. Or leaving the alfalfa, but go to more small grain.

Q. Can the conditions in the Tongue River Basin change rapidly from day to day and month to month?

A. Yes.

Q. Does that make it hard to plan?

A. Yes. 'Cause you're always hoping it gets better. And there's been years that -- on the council or advisory board that there's been -- like, one year I remember -- I don't remember what year, but it was, like, 54 percent of normal. And it was in about March. And it's like, oh, boy, this is going to be bad. And one snow event, we were -- it put us over a hundred percent.

So we can just -- it's a blessing can come and hit you so fast and with such magnitude, it's just such a relief. And you know you're not going to have the battle on the river. You're not going to have the battle in T & Y. So you've got two problems: T & Y's operation and sharing water, because there's -- I don't know, 400 people to take water out of T & Y, I mean, very small ones, garden size. But they're a telephone call, like some little lady in Michael's Addition in Miles City wondering why she doesn't have water in the

canal.

Q. And the other problem is your own operation; right?

A. Yes.

Q. Unfortunately, I want to talk about some of those years when you were having some of those water wars, as you describe them. Do you recall the years of 01, '02, '04, and '06?

A. Yes.

Q. What do you remember about them?

A. Sharing the water and worrying about the river and having, at times -- in the worst of times have, like, 20 and 30 CFS at the 12 Mile Dam.

Q. Pretty dry years?

A. Pretty dry years. And it's just like it's almost impossible to divide it equitably.

And then I have the difficulty of being the largest irrigator and a commissioner.

Q. You have to balance those roles?

A. Yes. It has to be very equitable and fair for everybody and shared sections on the ditch and on and on and on it goes.

Q. Let's talk first just about your farming operation, and then we'll talk about the difficulties of managing the T & Y. So did the prolonged drought

have an impact on your personal farming operation?
A. Yes.
Q. How so?
A. Well, we had some grain losses that were -- like, in that 20- to 30-bushel range, that just we couldn't get irrigated.
Q. When you say 20- to 30-bushel, do you mean per acre?
A. Yes.
Q. What's your normal production per acre?
A. Hundred to 120.
Q. Go on.
A. Bushels per acre. And then alfalfa is just -- alfalfa, when you stress it from water, lack of water, and then you go into the hot period, even if it gets water, it's set up to be -- deal with a dormancy then because it cues that it's got a shortage of water. So the plant sort of shuts down. It's not going to put on this real prolific growth. So even if you get water later, you're -- you can be done. It just doesn't produce any. It shuts down.
Q. So basically that means there's less production per acre that you have irrigated; right?
A. Yes.
Q. Is that true for all three of the crops you

raise?

A. Yes.

Q. In those water-short years, did you also have to cut back the number of acres you were irrigating?

A. Yes.

Q. Can you give an example?

A. Well, the simplest in our operation, Muggli Brothers operation, would be to suffer the lower farm. Because it's further away, further down the canal. So it was -- it always tends to be that that's the place where we realize the shortage. And it was so bad down there that the clay soil, the hard, tough soil had the -- spots in places and fields that weren't even worth combining, it was that bad.

And one of those years -- and I can't remember which was the worst. But I thought it was '4, possibly, 2004. And there was no water in the lower 4 to 5 miles of the canal, that the fire weeds grew in the bottom of the canal about a foot and a half tall.

Q. In that year, did you shut down the irrigation on the lower farm?

A. Yes.

Q. Did you also -- in those years, '01, '02, '04, and '06, did you get fewer cuttings of alfalfa?

A. Yes.

Q. Do you know how many cuttings you got in those years?

A. Some of them we got two on. And the other part of it is -- see, there's years on our operation, if we get started at the right time, meaning cutting, the first cutting, we can get four cuts of hay. It's that much of a banana belt of Montana. It's the longest growing season is right around Miles City. And you can get four cuttings of hay off of there.

Well, then when you go to two, and in some of those dry years, in some of the fields, you're a one. And there was a couple of fields in that bottom farm that we didn't cut at all.

Q. We talked about the amount of production that you get in a typical year where water is not an issue. In those years, '01, '02, '04, '06, the water-short years, do you recall the amount of production you were getting on your fields?

A. Oh, yeah. The numbers were seriously skewed as far as averages. It was -- when you start losing fields and you start getting areas and fields that are soil condition -- now, some of the better soil, you could cut it. But on some of those fields in that lower farm and the upper one, too, when you start short with water and it's got this clay in there and it

starts shrinking and cracking open, then the heat gets in there. The moisture evaporates even faster. And the plants just shut down. They're done.

Q. Are you able to estimate a percentage of the normal production that you got in the dry years?

A. Oh, we probably got -- in those dry years, we probably got -- or suffered in that lower farm, probably all told, all the fields, it probably was a 60-, 70-percent loss or reduction.

Q. Meaning you only got 40 percent of what you normally did?

A. Yes.

Q. I'm going to try to do math while I'm standing up here, which is probably a bad idea. Let's use the number 50 percent and say you got 50 percent of your production because that's a lot easier for me. I think you said earlier that you got roughly, in a typical year, 5000 tons of hay; is that about right?

A. Yes.

Q. So if you got 50 percent of your production, you got something like 2500 tons of hay?

A. Yes.

Q. Back in those years, do you know how much a ton of hay cost?

A. It was -- by the time we'd get hay there with

freight, we were, like, 125 ton.

Q. 125?

A. Yes.

Q. Again, so that my math is very simple, let's assume it was $100 a ton. So that would roughly come out to, my math, $250,000 per ton that you -- or $250,000 total that you lost; is that right?

A. Yes.

Q. You typically use that alfalfa in your pellet operation; right?

A. Yes.

Q. So in those years, '01, '02, '04, '06, did you have to go out and buy the alfalfa somewhere else?

A. Yes.

Q. Does that sound like about the amount you had to pay per year?

A. Yes.

Q. Okay. Let's talk about the T & Y Irrigation District. So you said that you're the secretary of the T & Y Irrigation District; is that right?

A. Yes.

Q. Do you need some water, Mr. Muggli? Are you okay?

A. I'm fine.

Q. What do you do as secretary of the T & Y

Irrigation District?

A. I pay the bills and do the phones, phone calls relative -- I'm the person that anybody has any trouble with their headgate, farm, canal, whatever, or people perceive a problem, they call me.

Q. You do it all?

A. Yes.

Q. Are you on the ditch every day?

A. Yes.

Q. Before we get into some of the specifics of managing the irrigation on the T & Y, let's talk about how it's organized. We saw the 1913 map, and there's three different districts. Are there still three commissioners for the T & Y Irrigation District?

A. Yes.

Q. Are you one of those commissioners?

A. Yes.

Q. Who are the other two?

A. Paul Herzog and Mike Blum.

Q. Do the three of you collectively make decisions regarding the T & Y Irrigation District?

A. Yes.

Q. How do you do that?

A. We have meetings, and then -- monthly meetings. And then I lead the meeting, of course,

because I'm always on the canal and they're not. They're just more or less figureheads, but they are commissioners. But it's a bad place to be as the secretary for T & Y 'cause that means that you do not just the pencil work but all of the legwork on the canal. And the T & Y also, I would -- I would get some machinery, acquire machinery.

Q. Let's talk about that in a moment. Before we leave the other commissioners, I thought I heard you say they were figureheads. Are they involved in the decision making?

A. Yes, they are. But they are not involved in the work or the --

Q. The management of the --

A. The going and turning the headgates up and down and adjusting it. It's always been left to the secretary.

Q. There's monthly meetings?

A. Yes.

Q. Are those meetings open to all the members of the T & Y?

A. Yes.

Q. Let's talk about the finances. Can you describe what an irrigation district is?

A. It's a political subdivision of the county.

Q. It's actually a political subdivision?
A. Yes.
Q. Since you have been involved, has it always been a subdivision of the county?
A. Yes.
Q. Do you know if there are statutes related to that?
A. Yes.
Q. Where do you get the finances for the T & Y Irrigation District?
A. They're assessed on folks' taxes. T & Y, if you have property in the boundary of the T & Y on your tax bill, there will be a line item, T & Y Irrigation. And whatever acres you have, times whatever rate I assess, is what is added on to your property tax. So it's penalty of property tax default if you don't -- decide you don't want to pay your T & Y bill.
Q. Who collects that?
A. The county.
Q. And there's an account, then, with the county for your finances?
A. Yes.
Q. What rate is an acre of land assessed?
A. $7.50 now.
Q. So approximately how much is your budget on

an annual basis?

A. 80,000.

Q. And that's from all the assessments from all the acreage in your irrigation district?

A. Yes.

Q. All right. How many acres?

A. 9400.

Q. How is that money used?

A. On maintenance of the canal and primarily maintenance and -- ordinary care is the biggest item on the Tongue River Water Users' bill.

Q. How much is that?

A. About 27,000 annually.

Q. So you mentioned maintenance. Does that include expenses like contractors and fuel, materials?

A. Yes.

Q. And you have $87,000. Approximately 30 is used for the payment of the stored water, leaves you about 50 for all those other things. Do you consider it to be a tight budget?

A. No, in the sense from an operational part of it. Because when I took over the job, I could see that a lot of the structures were old and delapidated and were going to have to be repaired. So I vigorously tried to save as much money as I can to replace these

dilapidated flumes.

Q. You have to use that same assessment to replace all these things?

A. Yes. And I'm trying to do it without raising the assessment too high. I don't have a problem raising it some. But I just don't want to have to raise it real high.

Q. Some of those facilities have been in since, when, the early 1900s?

A. Yeah. Some of the flumes have been in -- the timber, creosote timber structure that carries the flume across the creek have been in there since the early '30s. But the ones that are tin, rolled tin, sheet metal, rust out. And then I replace those.

Q. Do you allocate a certain amount of your budget to be able to replace those facilities?

A. Well, unfortunately, I react more than I -- you know, when one gets bad -- I have it all planned out how to replace them. And my plan to replace them -- did you want to hear about that?

Q. Well, what I'm really curious about is, are you pretty much using your budget every year?

A. No.

Q. Some of it gets reserved so you can make these --

A. Yes.
Q. Well, let me finish my question. Some of the money gets reserved for these repairs that you're talking about; is that right?
A. Yes.
Q. And then you've got an overall plan about how to do all these repairs?
A. Yes.
Q. And so taking into account the repairs that you have to be doing and the money that's reserved and the yearly operating expenses, is there money left over?
A. Yes.
Q. What do you use that for?
A. Savings account.
Q. How much do you have in the savings account?
A. I think there's 154,000 in there now.
Q. Is that what you do improvements with?
A. Yes.
Q. So, ultimately, all of that money gets used?
A. Eventually.
Q. For these various things?
Is there a lot of excess money left over for additional expenses?
A. Well, no, because I have in my mind these

plans to replace these dilapidated flumes. And I'm trying to do it in a timely fashion before they crater, but not before I have enough money. Because I don't want to float a bond and go down that road with the county. Because there's a whole bunch of state statute stuff and county things you have to do once you run one of these into debt, and I don't want to go there.

Q. If you don't do these repairs that you're planning for and you're talking about, can it cause problems for the irrigation district?

A. Yeah. It's like the fall over, collapse or leak or whatever.

Q. Cause problems for the irrigators?

A. Yeah, by not getting the water down the canal.

Q. Let's talk about the description of the T & Y facilities. And the first thing I want to get you to do is look at Exhibit M243, which I think talks a little bit about the 12 Mile Dam.

Mr. Muggli, have you ever seen this document before?

A. Yes.

Q. Do you know what it is?

A. Yes.

Q. What is it?

A. It's more or less a history of years of operation and --

Q. Let me point you to the first page. You see at the very top there it says, In The District Court Of The 7th Judicial District; do you see that?

A. Yes.

Q. And are you familiar with the 1914 decree?

A. Yes.

Q. And have you seen this particular document, M243?

A. Yes.

Q. And do you understand this to be that 1914 decree?

A. Yes.

Q. So I want to -- well, first of all, was this a lawsuit that was actually brought by the T & Y Irrigation District? See here at the top Miles City Canal and Irrigating Company?

A. Yes.

Q. Was that an old name for the T & Y?

A. Yes.

Q. Let's look at what it talks about for some of these facilities on the second page, which is marked with the Bates number of MT16776. Do you see under No. 1?

A. Yes.

Q. And here this is talking about an irrigating -- commercial irrigation project. And it says it was completed in the year -- it says that the dam and headgates were completed in the year 1887.

Is that when the 12-mile was first built?

A. Yes.

Q. So can you describe a little bit about what the 12-mile was like, as you understand it, when it was first built?

A. Well, it's a crib dam. And crib means that it's -- the timbers that were cut out east of Miles City in the Pine Hills area. And the people at the fort, or the military, did a lot of the cutting and timbering and hauling the timbers to the site. And they're stacked up like the old egg crates used to be made. Kind of like Lincoln logs, but a pile of timber. Put one down and spike it to the bottom. They were usually excavated. And if you hit blue shale, which in this case they did --

Q. Blue shale is?

A. A formation in the bottom of the river that isn't gravel or sandy or moveable. It's a very solid material.

And these 12 by 12 -- 12-inch by 12-inch

timbers were spiked to the bottom of the river. And there's another one laying on top of it perpendicular. And they built these, what are described as cribs. And they went up with them to whatever elevation they wanted. The water could still flow through them. So there's this big wooden affair that had timber and void, timber and void, for lack of a better description. And then there's a gangplank put across the top. And then there was four of these boxes in the length of the river from upstream to downstream.

And there's about 12 -- they are about 12 feet square. And they were placed all the way across the river. It was a lot of work, lot of effort. And then the gangplank was put across the top. And they wheelbarrowed rock out there and started filling all these cribs, and they didn't quit until they got them full. There's 300 feet of them going across the river.

And then they put a timber top on there, a forward slope. The upstream slope is about 8 feet at about a 40-degree angle up. And then they -- there's a 45-foot length on two different bent angles going down.

So essentially what happens with these dams is you have a luxury of building it in a live river. Back then, to divert a river was a huge problem, cost

probative. They couldn't do it actually. But the river flowed through this crib dam. And as they filled it with rocks, this thing got heavier and heavier and heavier. And then it started silting in from the upriver side until it quit flowing through it. And the river just started silting in and building up until it flowed over the top of it.

And that created a pool differential of 10 feet from upriver above the dam to low pool below the dam is a 10-foot differential. And right on the left end of the dam is the inlet structure, which is --

Q. When you say left, you mean looking from downstream to upstream?

A. Yes. If you walked out on the dam when -- and looked south, your left hand would be towards the inlet of the canal.

Q. The -- I'm looking back at that second page still of M243. It says here that -- in paragraph 2, that there were 9704 acres of irrigable land. I believe you told us earlier, now there's 9400.

So have there been some changes since this time in the land that's irrigated?

A. Yes. It was an urban sprawl of Miles City, included some of the irrigated land. And it was, over the years, petitioned out and taken out.

Q. So you've lost approximately 300 acres or so?
A. Yes.
Q. And we'll look at the water rights later and see if that had any impact on that.
Before I do that, now I want to have you talk about the way the T & Y or the -- you call it the 12 Mile Dam; right?
A. Yes.
Q. Where does that name come from?
A. Because it's really clever. It was 12 miles south of Miles City.
Q. So I want to talk about the 12 Mile Dam as it is now. And I'm going to have you look at these pictures that we have in the Montana demonstrative exhibit again.
Let's start with this Montana Demonstrative Exhibit 2MM, which is the picture of the dam across the river. Can you describe what we're seeing here, Mr. Muggli?
A. That's -- looking to your left on that picture would be upstream. And to the right is downstream. And that's -- I can't say that. Is there a date on there?
Q. There's not a date, but this is the day we visited you in July -- I'll represent to you -- in July

of this year as part of the basin tour.

A. Okay. You can see the water going over the top of it in three places. And those were -- just happened to be low spots on the dam. And the water is right at the crest of it. And it's just barely tipping, going over the top.

Q. What is the dam made of now?

A. You're looking at a concrete cap on a crib dam.

Q. The crib dam, as you described it, is still there?

A. Well, it's still underneath there.

Q. So on top of it you put cement?

A. Yes, sir.

Q. How did that happen?

A. In my dad's reign, the ice scored the deck up really bad. It was 4-inch thick creosoted timbers across -- 4 by 12s going all the way across there. And the ice had come over it, and it would just lathe off chunks of these timbers. It was a scary place to be. It was not pretty.

So they put rails on the top of it to hold the ice off of the -- literally railroad rails to hold the ice off there. And they worked the first year. But the second year the ice was even meaner, and it

tore the rails off the top of the dam.

And so in '57, my dad decided that it needed to be concrete and hired a contracting firm to put the concrete cap on those, which you're looking at right there now.

Q. Any idea how much concrete it took?

A. It's a lot. I don't know. Because the very crest on the left where the water hits to that bottom slope is 45 feet. Then there's a vertical 5-foot jumpoff. And then into -- the upstream end of it is about 8 feet long. And then it goes vertically down about 4 feet. And that encases the crib. They didn't take any of the cribbing out. It's all there.

Q. As you're looking at this picture on the right-hand side, which is basically, if you're looking upstream of the river on the right-hand side of the 12 Mile Dam, there's a fish passage; right?

A. Yes.

Q. When was that put in?

A. In 2007.

Q. And that allows water to be -- to pass around the 12-mile there on the river's left; is that right?

A. Yes.

Q. Can you shut down that fish passage if necessary?

A. Yes.
Q. I want to look, then, back with you at Exhibit 2JJ. There it is. What are we looking at here?
A. That's the inlet structure to the new inlet to the canal. That's the crown works. And you can see the three shafts sticking up with the gears on them. That's the openers for the gates into the canal.
Q. That's how you let the water into the canal?
A. Yes.
Q. Do you operate those yourself?
A. Yes.
Q. Do you operate them regularly?
A. Yes.
Q. Do you adjust those headgates on a regular basis?
A. Yes.
Q. Again, we're looking at -- this is on -- if you're looking upstream at the 12 Mile Dam, it's on the left-hand side there of the dam; is that right?
A. Yes.
Q. Let's look at the next one, which is KK. What are we looking at here?
A. That's the structure itself. Right where the picture is taken from, is that crown works where the

headgates are. And that's the water entering the canal. And it's -- the angular thing that looks like there's a railing on there, that's the fish louver, and all the water passes through that louver. And the fish are bypassed back -- there you can see it better. There's nine of those louvers. You can see the panels that go down into the water on the left.

Q. You're actually looking now at a different picture; right? That's -- so the water comes in the headgate, and it goes down past the louver and into the canal at the lower -- downstream part of the canal there?

A. Yes. All the water goes -- to go into the canal goes through the louver.

Q. You brought a poster of this louver, that's sitting behind you. I wonder if you could stand up there and explain how this louver works.

A. The water comes into the river, of course, and the water moves into the canal or the boxed section. When the gates are open, the water passed into the canal. And then it all has to go through the fish louver, which is this device. And that's looking at a simplified drawing from the top that defines the spacing and the bar configuration.

The bars are angled upstream. So the water

goes in. But it doesn't show it. You can't see it very well here. But they are slightly upstream. And that creates a vortices. I don't know how you spell it. Anyway the water rotates in there and creates this little noise. And the fish don't like it, and they stay away from it is the theory. Because it's an inch gap. So small size fish can or do make it through there. But not many do. Not many try to.

And then it's up on -- right here. This louver is -- I have to put it on a foot-high concrete curb wall on the bottom of it. And -- that's a cross-section of this trough here. Because the concrete-smooth surface, in my college experience that I had when I was six and seven years old playing with flumes and watching fish in there, to them it's a foreign place. They don't like to get off of the bottom because they don't know -- they are confused. It's obvious they are because they are used to gravel, silty, soily river bottoms. So they get into something as big as this, and that bottom is really foreign to them, and they want out of there.

So if they're little, they're going to come over here, and they're going to try their attempt at getting through. If they are an inch or littler, they can slither through.

Q. If they are bigger, they stay away from there. And do they get spit back into the river?

A. But inherently they don't like the noise in the first place. So they stay away from it. And they stay, hover on the floor and swim around in there and get tired, and then they are bypassed out the flume or bypassed back into the river below the dam.

Q. How big is that bypass?

A. The bypass has a weir in it. And it weirs down to about 6 inches wide. And it's got an elevated floor so that it actually -- it raises just slightly, ever so slightly in the bottom of it.

Q. Can you shut that weir down, that bypass down?

A. Yes.

Q. So when it's shut down, no water is going out; right?

A. Right.

Q. If it's wide open, about how much water comes out?

A. It's about a 1 CFS.

Q. So if water is needed in the T & Y Canal, do you shut it down?

A. Yes.

Q. So you got fish running around in this area;

is that right?

A. Yes.

Q. How do you get them out of there?

A. I'll go up there every few days or every -- you know, every three, four days, and I'll shut the headgates down, open -- make sure -- take the stop logs out of this and let it drain down. I get in there with a -- really scientific, with a shovel and a fork and drag it along the bottom. And it scares them. And they all take off to the bottom end, go back into the river out the flume.

Q. Then you shut down the bypass again?

A. Shut down the bypass again, and open the headgates up and start the flow back into the canal. And I do it quick enough that down the canal a mile, you'll see -- it doesn't drain the canal. You'll just see a drop, a serious drop, like between a foot and 2-foot drop. And then it comes right back up.

Q. We talked about those dry years, '01, '02, '04, '06. Did you do that in those years?

A. Yes.

MR. WECHSLER: Your Honor, this might be a good time to break for lunch.

SPECIAL MASTER: That sounds great. How much longer do you think your direct is going to be?

MR. WECHSLER: I'm going to estimate, and I do it at my own hazard, I understand. But I'm going to estimate an hour still of direct.

SPECIAL MASTER: Okay. So then let's break right now for an hour, and we'll come back at quarter after by that clock. And everyone can go their way.

At this point, I'm just going to stay right here and talk to the court reporter and the deputy.

(Recess taken 12:14 to 1:17 p.m., November 18, 2013)

SPECIAL MASTER: Mr. Wechsler.

BY MR. WECHSLER:

Q. Welcome back from lunch, Mr. Muggli. Before lunch we were discussing the facilities at 12-Mile Dam. I want to talk a little bit more about the T & Y Irrigation District.

How many miles of canal are there?

A. Twenty-seven.

Q. Down to the confluence?

A. Yes.

Q. Is the canal the same size the whole way down?

A. No.

Q. Can you describe the size of the canal?

A. It handles your water right flow at the top.

And, of course, the canal makes a northern trek down the Tongue River Valley, south and east of town. It sort of swings around the east side of Miles City, and then it continues north, northwest into the valley, where I think there's -- I did the math once, but I think there's 76 percent of the land of T & Y is below Miles City. And 24 percent of it is south of Miles City on the -- along the west side of the highway and west side of the canal.

Q. At the end of the canal, is it much smaller than at the top?

A. Yes.

Q. What's the size of the canal at the top?

A. At the top, its water volume size is to handle our water right, which is 187 and a half cubic feet per second. And it varies in width in places. From bank to bank, it's possibly 20 feet wide. And then the lower reach of it, the last 2 and a half, 2 miles, it's only about 3 to 4 feet wide.

Q. Gets smaller as it goes down?

A. Yes.

Q. How many users on the T & Y?

A. Well, it's a little hard to keep track because of the change of property owners around Miles City. But some of east Miles City is in the district.

So lots, city blocks and lots are in the district. So they have a yard. And they are in the boundaries of T & Y. So that makes the numbers pretty high. But I think there's pretty close to 400 users.

Q. Is there a smaller number of users that take up the majority of the acreage?

A. Yes.

Q. How many users is that?

A. That's -- I believe there's 10 of us that consume 58 percent of the water. 58 percent, that's right.

Q. How do you determine how much water goes to each user?

A. It's T & Y Irrigation Company supplies the water in the canal. And the users turn on and off their own headgate.

Q. Is there a certain amount of water assigned per acre?

A. No. Not per se there isn't. It's just -- you take it as you need it, and then you shut it off, not to create a shortage for someone else.

Q. Is there a gauge at the headgate where the T & Y meets the Tongue River?

A. Oh, yes. It's downstream in the canal just past Pumpkin Creek siphon.

Q. Is it before there's any users on the system?
A. Yes.
Q. Who put that gauge in?
A. DNRC.
Q. When was it put in?
A. It was put in in 1996.
Q. Is that also the time that the fish louver we were talking about was put in?
A. No, it was before.
Q. Which was before?
A. The water measuring device was in before we put the new inlet.
Q. When did you put in the new inlet?
A. It was completed in '97.
Q. Are there other flumes along the canal?
A. Yes.
Q. Could you identify those.
A. There's Mill Creek, Mill Creek flume. Some 15 years ago, I replaced the flume, and it was a wooden and steel combination structure. The wooden structure carried the steel portion of it, spanned the creek. And it was getting in bad shape.

And I bought some 10-foot 4-inch pipe from a man in Glasgow that came out of -- this pipe came out of Fort Peck Dam. It was a pressure line, 11 feet in

diameter. And it was torched apart in pieces that I could haul. And I bought it and hauled it to Miles City and put it on location and welded it together and dug a big hole and pushed it in the hole, rolled it into the hole. And the creek goes through the pipe. And the canal goes over the top of the pipe in two dirt fills.

Q. That was at Mill Creek?

A. That's in Mill Creek.

Q. Are there other flumes as you go down the canal?

A. Yes. There's Log Creek, Squaw Creek, and Squaw Creek -- excuse me, Squaw Creek is the first one. And I replaced it. I hired a contractor to pour in place a two-stall pipe in the creek. And then I had him put a concrete floor on the dirt fill and two 4-foot walls. And now the canal spans the creek and on the -- in a concrete ditch. And it's 140 feet long. And I had this contractor replace this this last year.

Q. So you've identified Mill, Squaw, and Log Creeks, where there were flumes. Are there others?

A. Then there's Cowell Creek. Then there's Kircher Creek, Bentley [phonetic] Creek, Jones Creek, and Kelly Creek.

Q. Do those flumes help you to know how much water is in the canal?
A. Yes.
Q. Looking at all of the water users that are on the T & Y, do all of the water users grow the same mixture of crops?
A. Yes.
Q. So they're all doing small grains, corn, and alfalfa?
A. Yes.
Q. Do you have a feel for about what the percentages are?
A. I would say the alfalfa is probably 75 percent. And the corn and small grains is probably 25 percent.
Q. All the users, are they using the exact same kind of irrigation equipment?
A. Open ditches mostly, with headgates and an extension pipe that takes the water under the ditch bank, lower ditch bank to their lateral or field ditch. And in a few instances, they have now went to direct pipe to the field that's connected to the back of the bank pipe, which in turn, the first thing that is on the canal is the headgate and the control gate. And then it goes into a pipe under the bank. And then

they'll hook on to the backside, maybe 20 feet out, with a plastic line or pipe.

And in a couple instances, there's a -- sprinkler pipes are hooked directly onto there because there's a few folks south of town who have started to go to sprinklers.

Q. So there's a few different types of irrigation equipment?

A. Yes.

Q. We talked about the overall 75 alfalfa, 25 grain and corn. Is that different for each individual water user?

A. Yes.

Q. So do they have their own individual practices for irrigating?

A. Yes.

Q. Are there people irrigating every day during the irrigation season on the T & Y?

A. Yes.

Q. Let's take a look at the water right that is associated with the T & Y. And do you have a large stack of papers there that's labeled Exhibit M6?

A. Yes.

Q. Turn please to page 139; do you have that?

A. Yes.

Q. So that's a title page that says Tongue and Yellowstone River Irrigation. If you could turn, please, to the next page, there should be an examination report; do you see that?

A. Yes.

Q. Did the T & Y water right users go through part of the adjudication on the Tongue River?

A. Yes.

Q. Does this look like the documents from that adjudication?

A. Yes.

Q. So looking at that examination report on page 140, there's a map there of the T & Y. Does that look reasonably close to what you understand the T & Y to be?

A. Yes.

Q. Turning to the preliminary decree there, it indicates a maximum acres of 9589; do you see that?

A. Yes.

Q. And we looked earlier at the 1914 decree that said 9700. And I think you said some of that acreage has been lost over time?

A. Yes.

Q. What's the flow rate on the T & Y water right?

A. 187 and a half.
Q. And that's shown here; right?
A. Yes.
Q. So they reduced the acreage, but they left the flow rate the same; do you know why?
A. My understanding is that -- I wondered that a long time. And I was in Helena one time, and I went to the DNRC office and found out that it was about half of the water flow required to do that acreage. And so under the times of boundary change, it was never reduced in volume. And that was the reason. Because it pencils out about 187 and a half would be about 8 gallons or 8 and a half gallons per minute per acre. And one Montana water right volume is based on 16 gallons a minute per acre.
Q. Per acre.
A. Per irrigating season.
Q. So it's making an efficient use of the water?
A. Yes.
Q. How many water rights on the Tongue River are senior to the T & Y?
A. One.
Q. And which one is that?
A. Mr. Nance.
Q. Is the T & Y water right the largest one --

direct flow right on the Tongue River?

A. Yes.

Q. Allowing that Mr. Nance takes his water first, are there times when the T & Y is taking all of the remainder of the direct flow water?

A. Yes.

Q. Does that happen every year?

A. Yes.

Q. And you guys are pretty much at the bottom of the system; right?

A. Yes.

Q. We talked about the gauge at Pumpkin Creek. Do you check that gauge regularly?

A. Yes.

Q. So you're monitoring the level of water that's coming from that gauge?

A. Yes.

Q. I want to show you an exhibit that's been marked as Exhibit M377. The gauge at Pumpkin Creek, does it send readings electronically every day?

A. No. It's -- you can access it through the telephone. But it doesn't -- well, I guess I'm not sure. I don't think it sends it to Helena. I think they have to access it.

Q. Do you know --

A. But it does have a phone connection.
Q. Do you know if the DNRC accesses that data every day?
A. I don't know that.
Q. Have you seen Exhibit M377 before?
A. Yes.
Q. What is it?
A. It's dates and flow rate.
Q. Is that for the gauge at Pumpkin Creek on the T & Y?
A. Yes.
Q. And these -- you said that the gauge started in 1996 or 1997; is that right?
A. Yes.
Q. And here it lists 5/14/1997 as the first measurement; do you see that?
A. Yes.
Q. Would that be your understanding of when the readings first started being taken?
A. May not be quite. Because of the early on, they had some problems with electronic equipment. They had problems with the device that actually floats in the pool under the measuring device. The static pool there was a few problems involved with that. But I think the attempt was made -- it was -- in fact, it

might have even been the year before that. But there was a curve of learning and trying to make the thing work. And they got the few bugs worked out of it.

But I might add, it isn't just that simple to fix, geographically. Because the folks or the keeper of the keys are in Helena. And this is south of Miles City.

Q. Looking back at Exhibit M377, does this look like the readouts from the gauge at Pumpkin Creek?

A. Yes.

MR. WECHSLER: Your Honor, I'd move the admission of Exhibit M377.

MR. KASTE: No objection.

SPECIAL MASTER: So just before admitting this, I'm just curious. So I know this ends in, like, 2005. So is this a record in somebody's possession at some point that Montana produced?

MR. WECHSLER: Your Honor, it is a document that I believe Montana produced. It was also backup for Mr. Book's report, I believe. I don't know whether it was a complete set of meter readings.

MR. KASTE: Your Honor, our understanding is that the meter wasn't used after the date identified in this report. So nobody has the data that would follow 2005. It's also information that Mr. Hinckley relied

on in his report. And we have no objection.

SPECIAL MASTER: Okay. That sounds fine. But, again, for my clarity, at the moment, we don't know any data that's actually been recorded and is still in existence after the July 2nd, 2005, date?

MR. WECHSLER: I'm not aware of any. Maybe I could ask Mr. Muggli if he knows of any.

SPECIAL MASTER: In the meantime, though, I'll go ahead and admit Exhibit M377.

(Exhibit M377 admitted.)

MR. WECHSLER: Thank you, Your Honor.

BY MR. WECHSLER:

Q. Mr. Muggli, are you aware of any data from the Pumpkin Creek gauge that's been recorded and maintained after 2005?

A. I am not.

Q. And maybe set that aside. I do want to come back to that particular exhibit.

Other than the Pumpkin Creek gauge, are there other ways of measuring water entering the T & Y?

A. Usually.

Q. So how do you do that?

A. Just look at it in passing. And when I go out there to the dam, I don't go and specifically open up the measuring device. And that might be partly at

fault there with the not keeping connected with the state. 'Cause I'm not capable of fixing this thing if it goes haywire.

I can run water downhill mostly, but I can't fix electronic equipment. And it always mystifies me how the thing works. But it does work. And it's based on an elevation and a measurement. That elevation is calculated off of the dimensions of the canal.

Q. So other than the electronic gauge, is there also an instrument there that you can read the level of the water?

A. Yes, mechanical. I let the cable down until the weight hits the water. And then on the other end of the cable, I have a bent nail on there that reads the level.

Q. We talked about the flumes. Are there also certain, say, measurement points that you can visually determine how much water is entering the canal?

A. One of them is a linear rule. And the rest of them are just visually a certain mark and -- which represents an elevation in the flume. And I know if it's to this mark or that mark, it's so much water. And by reading that, I've done this so long, I know further down, based on use, how full it is. Or if I'm down, really can -- I mean, I have a clear answer as to

if I'm in the lower reaches of the canal, I know, with general use, what the flow is going to be like, for instance, at Kircher Creek or if I'm at Kelly Creek.

Q. You've been secretary since 1987. Are you basically on the T & Y Canal every day during the irrigation season?

A. Oh, yes. Some days real short, but other days longer. It varies.

Q. Is every water user on the T & Y using the same water right?

A. Yes.

Q. Are there any other water rights coming in through the canal?

A. No.

Q. Do you ever have problems with water users where one water user is saying, hey, so and so is taking too much water?

A. Seldom. On the dry years there's that -- it happens more than when there's water in the canal. An individual turns his headgate on, and he gets the water out of there. They're not very concerned with someone below them or the level of the canal. If it works, it's no complaint. And if it doesn't --

Q. You have trouble?

A. -- you have trouble.

Q. So how do you resolve that trouble?

A. Follow up on it as quickly as I can and figure out the problem. And early on, I sort of had the attitude that a lot of people complain -- and it's probably true with anything -- is that they don't quite understand why something is the way it is.

And the really -- after the dry years and the real shortage of water, the good years after that, it's probably telephone calls dealing with the operation of the canal are probably 10 percent of what they were before and during the drought era.

It was -- people just have a better understanding that I don't know a greater power. And if there's not water in the river, there's daresay I can do little. Call Bonnie Hayes or give them the hope of when I think the water is going to be there or tell them that it's been ordered or whatever. But we're working with it, and we have a drought and it's the way it is.

Q. You personally get involved in resolving those disputes?

A. Yes.

Q. Have you ever had a dispute you couldn't resolve?

A. Well, they walked away as unsatisfied as when

they came. But then I've never heard from them again. So I guess it was resolved. Maybe I should have been a lawyer, I guess. I don't know.

Q. During the -- in a typical season, when do you begin taking water into the T & Y?

A. Oh, usually in the middle of May and sometimes later. My theory is that I try to turn -- keep it off as long as I can. 'Cause sometimes -- it's happened to me a few times. And the earlier in May that I've turned it on, the more trouble I've gotten in.

I turn it on, and it's going well. And we get a rain, and that floods the canal from rain event, mostly east of Miles City. And then I'm just going back and forth trying to regulate myself out of the mess I made by jumping the gun on turning it on. And if you turn it on and there isn't a reasonable amount of users, then you have a lot of water to deal with in the smaller reach of the canal.

So I'm very cautious about how early on in the season, how I turn it on. And as predictable as it is, is that some folks just simply don't wake up to the fact maybe they should be irrigating. But it's not my job to tell them to on their farm. So all of a sudden, it's the surprise factor that hits folks. And then it

could go from virtually no irrigators to a whole lot of them. And then the consumption -- and I've chased the consumption up, meaning opening the headgate more to keep water -- or get water in the northern reach of the canal.

Q. Sounds like you try and adjust the gauge in order to make sure people are using all of the water you're taking?

A. Yes.

Q. You said you typically open it up in mid-May. Prior to May, is there water in the canal?

A. Only from storm events.

Q. Is there maintenance to be done prior to mid-May when you open up the canal?

A. Yes.

Q. So could you briefly describe that?

A. The maintenance, I steal away some time from the farm and the feed plant and go over to the canal. And I'll walk a lot of the reaches of it. Because driving along it, which you can in some places, you can't see into the canal. And I make it a visual by actually making it a habit to look at every inch of the canal, 'cause I've gotten myself in a jam a time or two by skipping a quarter mile of a section. And there's something about laws of averages. But anyway, there

will be a spot where I have trouble.

So I do not turn it on until I've visualed every inch of it. And then when I get that completed -- and a lot of times it will involve a tree over fall -- winter will fall into the canal. And I'll make arrangements to get it out either with myself or a contractor to get it out.

Q. When does a typical irrigation -- if you have enough water in an irrigation season, when does a typical irrigation season end on the T & Y?

A. I will try to shut it off pretty close to October 1st, thereabouts. But sometimes, dry years, and if I have a sense that folks want to irrigate alfalfa the last time or if they are in the middle of it, I don't make it a habit to have some farmer halfway across his field and shut the canal off. So there isn't really a specific date that I shut it off for weather-related reasons.

So I try to keep abreast of what folks are doing on the fields. And I drive -- I don't have to talk to very many people. But I've always got my eye out there looking at what's going on and how they are doing, what and when and where, and that defines to me what the use is.

And then I know in the lower reaches,

especially below Miles City, when I go look at the canal, I know how much I've had from the previous time I was at the canal, whenever that may have been. That's what I have it set at. And by looking at the canal down there, I can tell -- I've done it so long. I can tell how much use is from there.

Q. Will people tell you if they need more water?

A. Yes.

Q. Does -- the time that you end at the end of the season, is that impacted by the availability of, say, stored water?

A. Yes.

Q. So if you run out of the storage water, what do you do?

A. Shut it down.

Q. Just out of luck?

A. Yes. On those dry years that's -- yeah.

Q. Dry years, is that what happened?

A. Yes.

Q. Do you try and make that stored water last as long as you can?

A. Yes.

Q. Why?

A. It's kind of liken it to your bank account. I don't like to overdraw. I don't like to catch myself

in a situation where I need water. And I don't like to put demands on the reservoir. So kind of leave it alone type of thing. And if we can get past the season, and we've ended up keeping a few thousand acre-feet at more in the dam, that's where I like to be. It's just a safer place to be.

Q. We talked about how the headgate gets adjusted and that you try to keep the amount of water in the canal that's needed. How often are you adjusting the headgate during the irrigation season?

A. Early on in the season, quite often. Meaning there will be -- sometimes I'll miss calls, and I have to -- because if I've seen something later in the day or evening in the lower end and I was up there this morning and I see something that triggers me, well, I got to go back to the dam again tomorrow morning because of this or this or more use. Or there's a -- I just simply didn't turn it down enough because there's more water needed in the lower reach. So then I'll go back to the 12-Mile and adjust it accordingly.

Q. Sounds like you're in somewhat regular communication with water users about their needs?

A. Yes.

Q. Are you also able to tell the amount of water needed based on the amount of water at your lower farm?

A. Yes.

Q. So how do you go about doing that?

A. Well, I just know how full the canal has to be to irrigate, to irrigate on the lower farm down there. And it's a great regulator. For instance, if the canal has more water in it, like two operators south of Miles City decided to shut down and there's more water down there on that lower farm, I can take water out on multiple places. And then I just start irrigating more places.

And then it spreads me pretty thin. But I can accelerate -- it's obvious that if you irrigate in two places versus one and, you know, the field size and the location of the field to the canal and all these things, and slope in the canal, the lateral ditch from the canal to the field, and it makes a difference in how much growth is in there, and if you've got the ditch clean enough that you can handle more water. There's all these factors come into it.

But when there's water there -- when there's water there, I'll start on, you know, whatever number of farms that it takes on that lower reach to consume it.

Q. You also mentioned that there's four water users below your lower farm. Do you have a feel for

how much water they need?

A. Yes.

Q. So then does that help you adjust how much water comes into the T & Y?

A. Yes.

Q. Go ahead.

A. The T & Y, the further down the reach of the canal it gets, becomes -- it's sort of -- it's odd in a way. It's the littlest reach of the ditch, as it gets littler and littler, the north it goes. And the biggest management part of -- meaning communications and talking to people -- and as it goes back south, the littler and less the communication and operation and worrying about volumes in the canal going back south.

Q. You mentioned that in the dry years, you actually found weeds growing in the bottom part of the canal; is that right?

A. Yes. One of the six. I can't remember if it was either 2006 or 2004. It was -- I've tried everything under the sun to try to get a shared program. I think it was '4, I believe. But no -- and there was just no water down there. And there was fireweed growing to the bottom of the canal, a foot to 18 inches.

Q. Is it rare for water to make it through the

T & Y Canal to the Yellowstone River?

A. Yes.

Q. Do you remember any occasions in 2001, 2002, 2004, or 2006 when water did make it to the river?

A. No. There's periods in there that it -- and some of those years, it never made it to the end.

Q. Are there times every year in normal years -- again, looking at normal years, are there times in every normal year when the T & Y is diverting the maximum amount of its water right?

A. Yes.

Q. Does that happen often during a normal year?

A. Yes.

Q. And during those times when the full amount is being diverted in a normal year, is that full amount being used?

A. Yes.

Q. So now there's times when water is not viable; is that right?

A. Yes.

Q. And you talked about the fact that you might not be getting full direct flow right for that 187?

A. Yes.

Q. So then what do you do then?

A. Everybody has to deal with it, go into a

shared program in the canal and/or I run that out as far as I can timewise. And, like, I'll short our -- my family farm on the lower reaches that are that close to the lower end of the canal. And I'll short that down there. And if I'm irrigating on the upper reach, I then let those folks down there have it.

So I don't -- I mean, I'm in a uncomfortable position when it comes down to those, sort of, dictating to folks along the canal, land -- irrigators and landowners along the canal how much water they can use when in a dry situation, when our farm, I'm managing the biggest farm in the irrigation district and the T & Y Canal.

Q. So it sounds like you're basically shorting yourself, then, a number of times?

A. Yes.

Q. When you run out of direct flow rights, then do you switch to storage water?

A. Yes.

Q. You mentioned earlier you try to make that storage water last as long as possible. Do you also wait as long as possible to go into storage water?

A. Yes.

Q. Do you do that by shorting the lower farm of yours?

A. Yes.
Q. In water-short years, are you tending to divert less water?
A. Yes.
SPECIAL MASTER: Can I just ask the particular question, is that you personally or is that T & Y?
THE WITNESS: Both.
BY MR. WECHSLER:
Q. T & Y also diverts less water in water-short years; is that right?
A. Yes. I mean --
Q. You're not taking the full 187?
A. We don't have a choice. If it's not in the river, we can't take it. Yeah, that's right.
Q. Thinking about water lasting throughout an irrigation season, what would happen if you ran out of stored water in August?
A. Then we're backed up to direct flow and what happens in the river.
Q. Be a small amount of water?
A. Yes.
Q. Would that be hard on the water users in the T & Y?
A. Yes.

Q. How big?

A. They are just short, and they're -- it's two issues then. It's short of water, and it's short of patience. And people don't like to be short of water for whatever reason. And they become afraid. And if it carries on, and especially if it's hot, the level of dissatisfaction and misery just goes up. There's just nothing I can do about it. But I can assure them there's another day.

Q. Do you have an exhibit before you that's been labeled Exhibit W3? Maybe I have it.

Mr. Muggli, I'll represent to you this is an expert report that's been drafted by an expert on behalf of the State of Wyoming in this case. And I just want to get you to look at a page, page 15. And you'll be looking at a table that's diversions from the T & Y; do you have that before you?

A. Yes.

Q. So looking at this, it indicates that it's measured average diversions. And it's got a bunch of years, and it's got a bunch of months. Do you see that?

A. Yes.

Q. Now, '97 and '98, I think you mentioned the rehabilitation project for the Tongue River Reservoir.

Is that when that was completed?

A. I think it was, yes.

Q. When that project was going on, did that impact the amount of water that was in the river and available to the T & Y?

A. You know, I don't think it did greatly because of the flume capacity they had on the big dam, able to get water across the construction site.

Q. You got the direct flow down to you?

A. Uh-huh.

Q. Did it affect the amount of storage you had?

A. Yes.

Q. Looking, then, we talked about some of these years, 2001, 2002, and 2004. Those were water-short years; is that right?

A. Yes.

Q. And so did that impact the amount of water that you were diverting? Without looking at the table, I'm just asking you if you know. Were you impacted in those dry years? Did it impact the amount of water that you were diverting?

A. Yes.

Q. You diverted less during those years?

A. Yes.

Q. So I want to look at the other two years

here, 2003 and 2005. And looking -- what strikes me about this one in particular -- if you look at 2003; you see that?

A. Yes.

Q. And the number 67 CFS in July, does that strike you as unusual?

A. Yes.

Q. Why?

A. Well, 'cause I -- it was a wetter year, but the truth of the matter is there's -- there, the temperature probably could have been a factor in it. And another thing --

Q. Does that seem like a small amount to be diverting in July?

A. Yes.

Q. Okay. If you look with me at Exhibit M377. And I want to just look at M377 here. First I just want to peruse through a few years here, say, in July, starting in '97. So I'm looking at the second page there marked 23754; you see that?

A. Pardon me?

Q. If you look at the second and third pages of the document there, we have 1997.

A. Yes.

Q. You see that?

And then there's the month of July. And it looks like there's some dates in there where you're taking the full water right; is that right?

A. Yes. Close -- yes.

Q. And that continued through August. Turning to 1998, if you look with me, then on page -- it's labeled at the bottom MT23758. And here again in '98, you're up around -- in July looks like you got up to 186.5; you see that?

A. Could you repeat that question?

Q. Well, it Looks to me that you're running between 170 and 186 in July, does that look about right, of 1998?

A. Yes.

Q. And then, in fact, it got even higher in August of '98. We can see the same thing, same pattern, I think, all the way through here until we get -- there's those water-short years. But what I want to focus on is 2003. So if you'd turn with me, please, to page MT23775 at the bottom. And I'm looking at the month of July 2003, if that helps you find the page.

A. I don't have page numbers on here. But give me the year again.

Q. So, unfortunately, Mr. Muggli, it looks like

your copy doesn't have page numbers. Are you now looking at the page that at the top has the date May 28th, 2003?

A. Yes.

Q. And at the bottom has the date July 28th, 2003?

A. Yes.

Q. So looking there at the beginning of July, starting July 1st, it looks like you're running pretty high there. In fact, there's some numbers that are over the 187.5; is that right?

A. Yes.

Q. And then it gets to the 7th of July. And there seems to be a gap there. And the next date is 7/28/2003; you see that?

A. Yes.

Q. If you look over to the right there, it's got a note. Can you read that note?

A. "Date missing."

Q. Is that data?

A. Oh, data. "Data missing 7/8/2003 through 7/27/2003."

Q. Also turn to the next page, you can see another indication of that happening in August. Do you see that, between 8/11 and 8/18?

A. Oh, okay. Yes.
Q. Do you recall anything that would have impacted the gauge there on the T & Y in 2003?
A. Possibly lightning strike.
Q. Do you recall a time that there were lightning strikes back then?
A. Yes.
Q. Did that impact the gauge?
A. If it's very close, it will shut it off.
Q. Was there a particular cottonwood tree, you say, that got struck?
A. Yes.
Q. Where was that tree?
A. Right by the Pumpkin Creek bridge.
Q. Let's go back to this Table 1 on Exhibit W3; do you have that again? Do you have that now, Mr. Muggli?
A. Yes.
Q. I want to look now at -- in 2005. And this time, what strikes me as pretty unusual is May and June. And in May, it looks like you weren't irrigating or opening the T & Y at all; is that right?
A. That's what it looks like.
Q. Does that strike you as odd?
A. Yes. Yes.

Q. Do you have a document there labeled Exhibit M5?

A. Yes, I do.

Q. If you could turn with me, please, to page 167. And while you're looking, I'll represent to you that this is an expert report, this time from one of the experts for the State of Montana. And I'm taking you to an appendix of that report, Appendix A, that shows the monthly total precipitation for the Miles City airport.

Do you have page 167 before you?

A. Well, the page number is missing.

MR. KASTE: While he's helping him find that, I guess I just want to lodge an objection to foundation and qualification for this line of questioning. This really seems like something Mr. Book should have done on direct examination while he was on the stand. It's not information within Mr. Muggli's personal knowledge. And, obviously, there are a couple of mathematical errors or data issues in Mr. Hinckley's report that he'll clear up when he takes the stand. But it doesn't seem like the right witness.

MR. WECHSLER: I'm not going to be asking any data issues. I'm going to be asking him to look and see if he remembers 2005 as being wet, which is

consistent with that report.

SPECIAL MASTER: I think it's perfectly fair for him to ask Mr. Muggli questions about what he recalls as to reasons why data might be missing or there were unusual situations with respect to the amount of water that was taken from the T & Y canal. Obviously, all of the -- what we can actually ask here is what Mr. Muggli himself knew. And so far I haven't heard any questions to specifically interpret the data itself, which I think I would agree with you on, Mr. Kaste.

So you can go ahead, Mr. Wechsler.

MR. WECHSLER: Thank you, Your Honor.

BY MR. WECHSLER:

Q. So, Mr. Muggli, looking at 2005 there on this chart, it indicates that May had 3.5 inches of precipitation. And the average there is shown as 2.5. And then June had 5.2 inches, and the average is shown as 2.63.

And my question to you is: Do you remember the beginning of 2005 as being a wet period?

A. Yes.

Q. What do you remember about it?

A. It was. Because I ended up turning the canal down.

Q. In June, you mean?
A. Yes.
Q. And, in fact, it looks like you had it pretty tight; right?
A. Yes.
Q. What happens if it's raining quite a bit? Do the users on the T & Y need water to be diverted into the canal from the Tongue River?
A. No.
Q. Are they able to take advantage of the rain?
A. Yes.
Q. Let's talk a little bit about stored water. How many shares of stored water does the T & Y have?
A. 5280.
Q. Is the stored water important to the T & Y?
A. Yes.
Q. Why?
A. Because if we were short on inflow at state line, then -- and we're -- for instance, if it drops to 100 CFS at state line and we're taking 150 into the canal, 50 CFS, it technically comes out of stored water.
Q. Some of it would be direct flow, and some would be stored water?
A. That's right.

Q. And in dry years, do you rely on your stored water?
A. Yes.
Q. Have you ever run out of stored water?
A. Yes.
Q. Did you run out in any of the years between 2001, 2002, 2004, and 2006?
A. Yes.
Q. Did you run out in all of those years?
A. Yes.
Q. During the -- during times when the reservoir doesn't fill, does that impact the amount of stored water that you have available?
A. Yes.
Q. How so?
A. It's a -- if the reservoir fills 50 percent, the stored water or purchased water in the reservoir is cut by that. It's a direct amount.
Q. If there's a water commissioner on the river on the Tongue, how do you order your stored water?
A. Call him. Call the commissioner.
Q. Does the commissioner then speak with Mr. Hayes?
A. Yes.
Q. How long does it take water to get from the

reservoir down to the T & Y?

A. Seven days.

Q. Are there ever any losses assigned by the Water Users' Association?

A. Yes.

Q. Do you recall what those were?

A. I think it was, at one time, 12 percent that had to be raised because it was -- the Association felt it wasn't adequate to cover the period in time in that time, relative to heat, that it was -- that the loss was greater.

Q. During a normal year where there's no water commissioner, are you in regular contact with Mr. Hayes?

A. Yes.

Q. About what?

A. About the flow condition of the river. And the less problematic the system is, the less I talk to Mr. Hayes. But if there's problems on any front with snow, shortages in Wyoming, reservoir condition, river condition, then we're in communication.

Q. During those normal years where there's no water commissioner, is it Mr. Hayes that you contact to release water?

A. Yes.

Q. Have you ever bought additional water beyond your allocated stored water for the T & Y?

A. Yes.

Q. Do you remember what years? I think I can help. So now I've just handed you three exhibits that have already been admitted: Exhibit M378A, Exhibit M343, and Exhibit 394.

Let's look at the first one first. This appears to be the water commissioner order for the year 2001. If you turn to the last page with me, Mr. Muggli. Do you know who Mr. Charles Kepper is?

A. Yes.

Q. Who was he?

A. He was the river commissioner.

Q. And then in the -- this appears to be a note from Mr. Kepper. In the second paragraph, it indicates that "On 8/20/01 7000 acre-feet of stored water was purchased from the Northern Cheyenne by the Tongue River Water Users' Association"; do you see that?

A. Yes.

Q. In 2001, did you buy some of that Northern Cheyenne water on behalf of the T & Y?

A. Yes.

Q. Do you recall how much?

A. Oh, I don't offhand. I'm sorry.

Q. Do you recall in 2001 that there was difficulties getting the water down to the T & Y?

A. Yes.

Q. What do you recall about that?

A. I believe that was the year it showed our hydrograph or our measuring device went up. And then it fell off pretty rapidly. It was for a very short period of time, and it was back down. It just -- river infiltration back into the banks, recharge when it's low and turn it up. The difficulty in it is getting it down there. Because it's recharging the gravels in the bank. And it just takes a lot of water to recharge it once it's depleted.

Q. And that year, there was a lot of loss?

A. Yes.

Q. If you turn to M343, and here this is -- looks to be notes of the Tongue River Advisory Committee members of which you are a member; right?

A. Yes.

Q. And so if I can turn your attention to Agenda Item 3 there. Here it says, "Roger says that some of the people from the T & Y want to buy water. If it is feasible and the cost is right, then maybe they would purchase some water from the tribe"; you see that?

A. Yes.

Q. Let me ask you, is 2002 a year that you bought water from the Northern Cheyenne Tribe?

A. I believe it is.

Q. Why was it important for the cost to be right?

A. Well, it's -- in my own mind, had to do geographically because we're so far away. And the price of the water wasn't that it was so probative. It was the likelihood of it getting there in the scenario that the Association or Mr. Hayes is faced with two things: recharge and pump withdrawal. And it's such a long stretch that it's really difficult. And everybody can do their best, but, boy, it is still hard to get it down there. It just is.

Q. If you turn to the next page, and I'm looking under the heading "Roger makes a motion"; do you see that? And there it indicates that Roger said that T & Y had -- in the paragraph under there, third sentence says, "Roger said that T & Y had used about 2212 acre-feet and at 55 percent of 5300 equals 2950 acre-feet, they have about used their water"; you see that?

A. Yes.

Q. Do you know if you ran out that year?

A. Yes. That was -- yes, we did.

Q. Do you know if you ran out of water in 2001?
A. Yes, we did. We were --
Q. And I meant to point this out to you. But if you look at M377 again. And turn to the date August 10th, 2001; do you have that?
A. Let's see, August -- okay.
Q. You see a number of days there where you're actually not diverting any water; right?
A. No. Let's see.
Q. Do you have August 10, 2001, before you now?
A. Yes.
Q. Does it look like there were a number of days where you weren't diverting any water?
A. Yes.
Q. Was that a time where you ran out of stored water?
A. It appears to be, yes.
Q. And you remember running out of water in 2001?
A. Yes.
Q. I want to look back briefly at Exhibit M343. And that was 2002 Advisory Committee minutes. There's a large paragraph that begins "The discussion goes back"; you see that?
A. Yes.

Q. And then at the bottom of that it says -- five lines from the bottom, it says, "Roger says figure on about 200 acre-foot per day for about ten days for 2000 acre-feet." And then it goes on, and it gives some numbers here. At $8 it looks to be 24,000. And at $9 it looks to be about 27,000; do you see that?

A. Yes.

Q. And your budget -- how much is your annual budget?

A. 80,000.

Q. And so is it difficult for you to be paying that additional 25 grand or so in a given year?

A. Yes.

Q. And, lastly, I'm going to show you Exhibit M394. Let me help you find it. And here I'll ask you to turn to page MT10027. And it looks like this. One of the -- it's a chart.

A. Yes.

Q. You have that?

A. Yes.

Q. And at the top, it says -- do you see T & Y Irrigation District?

A. Yes.

Q. And it says the period is 9/4 to 9/30; do you see that?

A. Yes.
Q. If you scroll all the way over there to the end, it looks like there was roughly 3000 feet of the Northern Cheyenne water that was purchased. Do you remember purchasing water in 2006?
A. Yes.
Q. Have you ever bought water from anyone other than Northern Cheyenne Tribe?
A. No.
Q. Did you buy Northern Cheyenne Tribe water in 2004?
A. I believe so.
Q. So you would have bought Northern Cheyenne Tribe water in every year, 2001, 2002, 2004, and 2006?
A. I don't -- I don't remember, no. I don't remember how many years. I thought it was, for sure, two. But I don't remember.
Q. In the years when you haven't bought Northern Cheyenne Tribe water, why didn't you?
A. Oh, 'cause it was difficult, really difficult, to get it there, get it to the T & Y inlet.
Q. We talked about the way your personal operation deals with shortages, and I want to talk about how the T & Y does that. So did the drought in the 2000s impact the T & Y?

A. Yes.

Q. How did you deal with shortages?

A. We implemented -- started off in the first year of dealing with shortages. I tried going with the upper reach or south of Miles City, went with 12 hours on. And they had to shut their headgates off at 6:00 at night, turn them on 6:00 in the morning.

And then the thought was that in the off time, it would recharge the ditch going north. Well, the fallacy in that is that there's a bigger amount of land north. But I thought it would be a defining point turned off and tried it.

And that didn't work very well for a couple of reasons: One is that I got -- would get -- right away I got phone calls individual and understandable, gee, I got to make -- my set where the water is currently running, isn't quite halfway down the field. And if I shut it off -- shut it off, then I've got to reirrigate that reach of the field, so wasted hours running water back across because it's already infiltrating into the ground. South of Miles City it isn't as tight of soil as north.

So I started thinking, gee, maybe that isn't the best way to go. So let's go to 48 hours on and 48 hours off. And that seemed to be a lot better

scenario.

Q. So the upper would irrigate for 48 hours, and then it would have to shut off for 48 hours?

A. Shut it off for 48 hours, yes.

Q. Did that happen in any of those years, 2001, '2, '4, and '6?

A. It did in -- let's see. It happened for a few years in there, and I can't remember which years it was. But it was more than one year we did that. And it's still really, really difficult. We have to really micromanage it to make it work.

Q. Based on your observations, do water users in the T & Y use water efficiently?

A. Yes.

Q. You're out there every day. Do you ever see any waste?

A. Yes.

Q. What do you do if you see waste?

A. Talk to the individual and ask them why and tell them that they have to not do that or -- and if I have to tell you again, it will result in a -- I'll turn your headgate off, and I'll put a yellow ditch company tag on there.

Q. You actually have T & Y tags; right?

A. Yes.

Q. You ever had to use them?

A. Yes.

Q. And describe that.

A. Has a little wire, looks like a shipping tag. It's bright yellow. And it has -- on the one side, it's printed and has -- this is T & Y Irrigation, and from such and such to such and such hours, this headgate remains closed.

And then I comment, make comments on the back of it. And I usually write something, dear Mr. So and So, kind of a little bit personalize it. When I started doing that, it frayed the individual a little less. Because he got a personal note from me, and it sort of softened the blow of the so-called tag.

Q. Then would you meet with them afterwards?

A. Not always. Sometimes it was just a phone call, and sometimes they would just see the tag and shut it off, and that was that. But I usually called them up front, and said I was going to put it on there and to not take it personal. But it needs to be off and that the time is listed on there when you can turn the headgate back on.

And that was sort of reassuring that they were sort of jumping the gun here. Because they didn't know how well it was going to work down the canal with

the amount of water. But it was better than leaving them hanging if they don't know when they can turn it back on.

And it was worth the gamble that I could make the system work farther down and give them more time. I thought it was a more courteous way to go about it. And that frayed their good humor less if I did it that way.

Q. Let's talk about water going past the T & Y. We saw the picture earlier where water really wasn't going over the top. Are there times of year every year at the T & Y when there's no water going over the top of the T & Y?

A. Yes.

Q. And so the T & Y is actually diverting all the water available?

A. Yes.

Q. Did that happen in '01, '02, '04, and '06?

A. Yes.

Q. Did it happen frequently during those years?

A. Yes.

Q. Now, even during those times where there's no water getting past the T & Y, you've got the ditch diversion shut down -- I should call it the fish bypass shut down, is there still water below the T & Y?

A. Yes.
Q. Are there sources of water? Are there creeks that come in below the T & Y?
A. Yes.
Q. What are those?
A. Pumpkin Creek, Squaw Creek, Mill Creek, Log Creek, and Cowell Creek.
Q. Some of those creeks have water in them year-round?
A. Yes.
Q. Including the Tongue?
A. Yes.
Q. And have you ever observed typically how much water is below the T & Y when it's shut down like that when there's no water going over the top?
A. Yes.
Q. Typically, how much water is down there?
A. Right below the dam directly?
Q. Yeah, somewhere down in that reach, let's say, Miles City.
A. Oh, there can be -- there's usually about 18 to 20 CFS. And that's -- determination is by the interstate highway gauge, gauging station on the Tongue right where the interstate crosses the Tongue at Miles City.

Q. You talked about the fact that you are the second oldest right on the river, and you're a pretty big right all the way down at the river, at the bottom. Have you ever had to ask someone upstream of you that was junior to shut off?

A. Yes.

Q. Has that happened more than once?

A. Yes.

Q. Can you describe one of those times?

A. If the individual has a large pump and I would ask them to shut it off and -- it frayed his good humor a bit. But when I explained how long I thought he would have to and got sort of into the play of the thing and then he actually got into the habit of calling me and asking me if we had enough water, even after the event it was like when he'd see a drop in the river, he'd call me.

And it really -- it was a good experience. Interacted well. And I thought it was quite amazing when he'd call me and ask me if I wanted him to shut off. And that was really reaching out in the spirit of sharing.

And after you get through a few of these years and you talk to folks that you had to come down on because of water and in a few cases, mismanagement,

and then a few folks up river and you visit about it when the crisis is over, they will always comment about, well, you know, I thought it was going to really be bad. But you did exactly what you said. And you called me back when there was water so I could start up again. And didn't -- they just viewed it as not being quite so hopeless when I would tell them a time and stick to it.

And if it wasn't quite the time that worked for the bottom of the canal or our lower farm specifically, then I would still leave it at that and still live with it because that's what I told them.

And I just didn't want to get myself in a situation or -- water shortage is bad enough. But if you go back on your word, then it's a lose-lose battle. So it's a good measure of good politics and manage it the best of your ability and just get by it.

Q. In the years when the water commissioners were on the Tongue River, what did you understand their role to be?

A. To -- specifically, the way I personally felt of it is that we are -- at T & Y -- and I felt the same way as users on T & Y, that I was in turn controlling. Because it felt like they are doing their job. And knowing these gentlemen, you could see it in their eye,

they were doing the best they could. And that's all we can ask.

I mean, it might not be the best you want. And what you want is a canal at least three-fourths full of water. Well, in these dry situations, that just flat didn't happen sometimes.

And you just give it your best shot. And you know they have a -- really a difficult job. And you just wait the time and turn and hope it works.

Q. Did you think the water commissioners did a good job?

A. Yes.

Q. You ever attended a Yellowstone River Compact Commission meeting?

A. Yes.

Q. Why did you attend?

A. Oh, concerned about the water, the amount, and how the compact is interpreted. And I always sort of learned to envy my grandpa's position because he didn't really have to see it in action. It was put in place as a matter of fact, and everybody is going to do this. But sometimes, that more uncomfortable place to be is in the trial side of it when you're on the ground, all the politics and all the good judgment that created a document. And that's kind of where I feel

I'm at.

Q. At some point, did you start to believe that there was more water being used up in Wyoming than should have been?

A. Yes.

Q. When did you start to have that feeling?

A. Well, it was probably pretty young in life, talking to my grandpa and him operating it after -- operating T & Y or managing T & Y.

Q. You became the secretary in 1987. Did you have that feeling in those late '80 years?

A. Yes.

Q. Did you ever talk to people at the DNRC about that?

A. Yes.

Q. Did you ever go up to Wyoming and investigate?

A. Yes.

Q. Explain what you did.

A. Well, my cousin had an airplane, and we flew over there on a few occasions to view what was -- what it looked like from the air. And what I knew of maps describing the area, and it was sort of flying over it looking at the amount of irrigated properties over there. And, quite frankly, didn't find it alarming

that the river was so low of water looking at the amount of green fields. And it was, you know, difficult. And looking at the context of the water right and the compact and all these issues, it was very mind bothersome to see it and wonder and not see -- or having any real profound handle on what was going on there and just fly away and hope for a better year.

Q. Who from the DNRC did you talk to about this issue?

A. Well, it was -- there was a few people. Glen McDonald. Oh, I can't remember some of the other names of folks. But --

Q. Rich Moy?

A. Rich Moy, yes.

Q. Ever talk to Jack Stults.

A. Yes.

Q. How about Keith Kerbel?

A. Yes.

Q. Now, you don't know exactly what the DNRC did with that information, obviously. But was it your understanding that the DNRC was talking to Wyoming?

A. Yes.

MR. WECHSLER: One moment, Your Honor?

SPECIAL MASTER: You may.

BY MR. WECHSLER:

Q. Mr. Muggli, I just want to get your help identifying a couple other pictures here. If you'd look at Montana Demonstrative Exhibit 2LL, which looks like this. It's up on the screen too.

Is this where the water comes in from the headgate?

A. Yes.

Q. Anything else that we should know about this particular picture?

A. The walkway, the louver -- or walkway there is the walkway or the access to the far end. And right in front of it, as you can tell, it's going across the inlet box at a slight angle. And that -- you can see right under that chain is the -- that's the top edge of the louvers for the water passing through. And hopefully the fish stay on the upside and move to the north end of the bypass to the river.

Q. Turning two pages in, it's Exhibit 2NN. Is this one of the flumes that you were describing?

A. Yes.

Q. Which flume is this?

A. Log Creek.

MR. WECHSLER: No further questions, Your Honor.

SPECIAL MASTER: Okay. Thank you. Why don't we take the first of the afternoon breaks, then, at this point. And we'll come back at quarter to for cross-examination.

(Recess taken 2:35 to 3:47 p.m., November 18, 2013)

SPECIAL MASTER: Okay. Everyone can be seated.

Mr. Kaste.

MR. KASTE: Thank you.

CROSS-EXAMINATION

BY MR. KASTE:

Q. Good afternoon, Mr. Muggli.

A. Good afternoon.

Q. You talked a little bit about getting into your airplane or a friend's. I can't remember that part of your testimony. You were flying over various places in Wyoming; do you remember that?

A. Yes.

Q. When did the flight occur?

A. I would say probably in 2002.

Q. Okay. Do you think it's at all fair that we keep asking you what year stuff occurred that happened so many years ago?

A. Well, if you're satisfied with the answer, I

guess I'll do my best.

Q. I've always thought it was totally unreasonable for us to ask you specific dates and specific years that were maybe a decade ago. And we keep doing it as lawyers. And I apologize. But we have to.

A. Yes, I appreciate it. I understand.

Q. If I understand right, at that time, you flew over Wyoming. You got an impression of the irrigation that was occurring in Wyoming at that time but didn't feel you had a very good handle on what was really going on; right?

A. Yes. Well, it's one thing to fly over and see this, this, and this. But how relative it is to what you can do, you know, what you see is what you see. And it looked like a lot to us. But, you know, with ditches and water rights and things in Wyoming and on and on, it was more or less just a look and see type of thing.

Q. Sure. From the air, you can't tell where any of the water that made those green areas came from; right?

A. Well, you sort of surmise in the drainage when you're across a divide, you know, that something -- it's a different ballgame or different

scenario. But as far as where we were, we were fairly mindful of that, I mean, as to what was -- what we were flying over. And we looked at maps and stuff beforehand so we had a fairly reasonable idea where we were.

Q. All right. Now, if I understood you right, the T & Y Canal, as it's presently constructed, can take the entire river if it so chooses; right?

A. Depending on the flow at the time of the river at 12-Mile.

Q. Sure. And what I mean, I guess, is once -- I mean, if it was 700 CFS of flow, you probably couldn't take that?

A. No, not even.

Q. But when the flow is below 187.5, your dam is capable of taking the entire river?

A. The diversion or the canal is capable, yes.

Q. All right. I also understand that most of the time, you try not to run your canal at 187.5 in order not to damage things within the canal; is that right? Do you try to keep it a little below that completely full amount?

A. No. If it's needed, I'll go there. But if I don't, I'll chase it up and down. I do. It is pointless to run it down the wasteways, if I don't need

to, into the river.

Q. What do you mean by "wasteways"? Is that where the canal exits into the Yellowstone?

A. No. You have to have spill capacity along the way in case you have a rain event. And that was tried and tested. And the reason they're there is that if you have a rain event that impacts the ditch two ways: river rising or north of the inlet and the gumbo hills out to east of Miles City. And those rain events impact the ditch greatly. And so you need to be very wary of that, that you don't want to run the -- run it in that scenario. You've only got so much room in the canal.

Q. So let me see. There's kind of two scenarios. When you need to run at 187.5, you certainly can and do at times. And if you don't absolutely have you to, you'd want to leave a little bit of space in case there's this rain event so you don't hurt your canal?

A. I never operate it for the event, but that is a likely scenario. I never do do that. But I will keep it in. I chase the use up and down on -- the consumptive use on the canal, I move up and down with that.

I don't generate wastewater for the sake of

wastewater. If it's going in the canal and going out the end, which is a very small part of it -- 'cause down there it goes through a 26-inch pipe or some such is all that's left of the canal. And I don't run water in that canal to, what I call, waste it, and that's turn it out to spill. And they make their way either back to the Tongue or, north of town, back to the Yellowstone. I leave it in the river.

Q. All right. So there are a lot of times during the course of any given water year where the amount of water actually going through the diversion works that you have at the 12-Mile Dam is somewhat less than the 187.5. And we can look at specific numbers in that exhibit to see that; right?

A. Yeah, but it's...

Q. Now, I want to talk a little bit about what happens when the T & Y Canal does take the entire river. So I want to show you an exhibit. And it's Exhibit J54. And it's already admitted into evidence. So I'm just going to tell everybody this. It's the 2004 Annual Report of the Yellowstone River Compact Commission.

And I'm going to hand to you a specific page that has the gauge readings at Miles City. Okay?

A. Okay.

Q. I've handed you Exhibit J54. And I've turned it to page 10 for you. And I'll wait just a minute for the Special Master to get his copy and Montana to get theirs.

SPECIAL MASTER: 2004?

MR. KASTE: Yes.

SPECIAL MASTER: So I have it.

BY MR. KASTE:

Q. Now, obviously, the columns here are months, rows here are various days in those months. And I want to focus your attention first on the month of May.

MR. WECHSLER: Can I just ask, what page?

MR. KASTE: Page 10, the numeric pages towards the end. I think there are some Roman Numerals at the beginning. So the Miles City gauge data.

SPECIAL MASTER: So this is 16219?

MR. KASTE: Yes, sir.

BY MR. KASTE:

Q. So we're looking at the month of May. Looking at May 3rd, 4th, 5th, 6th; do you see those values?

A. Yes.

Q. Okay. Can you tell us what the values were for those days were at Miles City gauge?

A. 8.5, 8.7, and 8.9.

Q. And we can agree that's in cubic feet per second; right?

A. Yes.

Q. All right. So those are just a couple of examples. Here's a question I want to ask you about them. If the Miles City gauge is reading about 8, maybe 9, maybe 7, that is what the Miles City gauge looks like when the T & Y Canal is taking basically the entire river upstream; right?

A. Is the day over here, is that, like, the 1st in that part? 1st to the 5th, is that what that means, then, of May?

Q. Yes. The first column says day. Then it says 1, 2, 3, 4, 5. Those are the particular days of month. And then we have a value for each specific day of the year. And what I'm getting at is the number 8 CFS what the Miles City gauge looks like when the Tongue -- T & Y Canal is taking all the rest of the river upstream. When you're drying it up, the amount that gets back is about 8?

A. Well, obviously, I guess that's what it's saying here.

Q. And I guess to be fair, once irrigation starts and return flows pick up a little bit, it could be a little more than that; right?

A. Yes.

Q. All right. Now, let's look at some different dates. And I apologize for the quality of the copy. Let's look for some dates in July, maybe the first five days in July. What are those values?

A. Well, I'm not sure, but it looks like 53, 32, 21, 24, and 34, I think.

Q. I think you read that right. And, again, I apologize about the quality of the copy.

How about a couple days in August, maybe the first five days in August?

A. 50, 49, 55, 36, and 33.

Q. All right. Now, is it possible that the T & Y Canal wasn't necessarily taking the entire river throughout the months of July and August of 2004?

A. Well, see, the problem is is this -- there's a huge -- a lot of land that influences the flow at the Miles City gauging station, creeks that dump into the river north of the T & Y diversion dam.

Q. Sure. My understanding is most of those creeks are actually ephemeral; right?

A. No, there's two of them run year-round.

Q. One of those is Pumpkin Creek?

A. Pumpkin Creek, Log Creek.

Q. All right. And we can see, I think, in this

Miles City gauge, when rain shows up, can't we? For example, if we look at August 6th and 7th, the Miles City gauge jumps dramatically from 34 on the 5th up to 213 on the 6th. And you agree that would reflect a rain event; right?

A. Yes.

Q. All right. I don't see another thing on there for July or August that looks like a big rain event. Do you?

A. No, possibly not.

Q. All right. So I guess my point here, ultimately at the end of the day is, the T & Y Canal does not take the entire river throughout the entire irrigation season every single year; right?

A. Right.

Q. Is there a measuring device at the end of the canal where it meets the Yellowstone River?

A. No.

Q. But your testimony is very little water actually makes its way to the Yellowstone River from the T & Y Canal?

A. The end -- yes.

Q. And are you the person that watches the inflows to Yellowstone River from the T & Y Canal, or does somebody else?

A. I do it.
Q. How often do you get down there?
A. To the end?
Q. Yes.
A. Of the canal? Not often.
Q. I think I understand your testimony to be that you referred often to these dry years in your testimony with Mr. Wechsler; do you remember that?
A. Yes.
Q. And I understood that to be all years in the 2000s; is that fair?
A. Early years, yes.
Q. Early in the 2000s, you --
A. Yes.
Q. So the 2001, 2002, '4, and '6 that you talked about?
A. Yes.
Q. Before the 2000s. And I understand you became secretary of the T & Y Irrigation District in 1987?
A. '88.
Q. '88, I'm sorry. And I would presume, in your earlier testimony, that you were farming in part of your family's operations even before that?
A. Yes.

Q. So you have occasion to know sort of what was going on with the river even before you were made secretary of the irrigation district?

A. Yes.

Q. In those years before the 2000s, did it seem like there was typically sufficient water to meet the notes of the T & Y Irrigation District?

A. Generally, yes.

Q. And the years you talked about are all years after the Tongue River Reservoir was enlarged; right?

A. I forgot what year that was.

Q. I think it was 1999 that it kind of came online.

A. Okay.

Q. So I'm correct, these dry years happened after the enlargement of the reservoir?

A. Yes.

Q. If -- I assume, over the course of the winter, you have occasion to take a look at the Tongue River Reservoir at various times -- or the Tongue River, I'm sorry, at various times; right?

A. Yes.

Q. And you understand that there's water flowing in the Tongue River all year round?

A. Yes.

Q. Even in the winter?
A. Yes.
Q. Do you know how much water is flowing by the 12-Mile Dam over the course of any given winter?
A. 50 CFS.
Q. Do you know why that much water is flowing past the dam?
A. Well, 'cause we are not supposed to shut it completely off, the discharge of the dam, for the health of the river and something else. I can't remember. Anyway, it's just bad policy to shut a river off. It just doesn't happen.
Q. The other purpose is related to providing fish habitat?
A. Probably had to do with it, but it was mandated by the state.
Q. Do you know which arm of the state? Was it -- I think it's called Fish and Game here, and/or DNRC?
A. I think it was DNRC.
Q. All right. Do you get an accounting of the amount of storage water that you use in the irrigation district from the Tongue River Water Users' Association every year?
A. Yes.

Q. These guys keep wondering why I keep asking people whether they get a receipt. And I'm wondering, would it bother you if you were overcharged for your storage water?

A. No.

Q. It wouldn't bother you if you were overcharged for your storage water? All right.

A. 'Cause it...

Q. Go ahead. Tell me why it wouldn't bother you.

A. 'Cause there's costs associated with the operation of the dam. The state has an expense in it. And whether there's water in there or not, there's -- the cost is still there.

Q. And when I say overcharged, I don't mean monetarily. What I mean is, the amount of water attributed to your storage use in any given year. If they said you used more storage water than you actually used, would that bother you?

A. Oh, yes.

Q. All right. Well, let's look at a couple of things that might help us figure out whether they did that or not. I don't think you have this exhibit up in front of you, so I'm going to give you a copy. It's M397. We looked at this with Mr. Gephart. And I'm

going to give him another one to compare it to. And that will be M400.

Okay. I handed you first M397, which Mr. Gephart described for us as his handwritten notes of when people called in for storage water. And I also gave you a copy of M400, which is Mr. Gephart's field notes where he wrote down what he observed during his duties. And I actually opened Exhibit M400 to page MT05526 [sic] on the top. And on the top of that page, it says "2006 Tongue River flows."

A. Yes, sir.

Q. Okay. On M397, the first exhibit that I handed you, on June 13th, it's about halfway down the page; do you see the date June 13th?

A. Yes, sir.

Q. And does it say "T & Y called for 40 CFS"?

A. Yes, sir.

Q. All right. So Mr. Gephart testified that when you needed water for the T & Y Canal, you would call him, and he'd relay that on to Mr. Hayes. Is that consistent with your understanding of how the process worked?

A. Yes, sir.

Q. And did you have that kind of conversation with Mr. Gephart when he was water commissioner?

A. Yes, sir.

Q. All right. So on June 13th of 2006, you make a phone call to Mr. Gephart and asked for some storage water; right?

A. Yes, sir.

Q. All right. Let's look at M400 on that page that I asked you to look at, MT015526. Mr. Gephart was kind enough to write down a number of flow rates along the Tongue River on various dates. And on June 13th, the state line flow, can you find that? It should be in the top of the second row down of the third column of reported values.

A. You said state line?

Q. Yes, sir.

A. Okay.

Q. Can you tell us the value?

A. Oh, and what was the date?

Q. June 13.

A. 191.

Q. Okay.

A. I think.

Q. We must be looking at different things. I have 420. Can I point it to you? So now that I've directed your attention to the right box, the state line reported by Mr. Gephart was 420 CFS that day;

right?

A. Yes.

Q. If you have 420 CFS of direct flow coming into the state of Montana, is there any reason you should be calling for storage water?

A. Appears not.

Q. All right. Well, what if things are happening seven days later and you're planning for events that are going to occur seven days later, 'cause you're seven days downriver; right?

A. Yes.

Q. All right. Well, let's look at the state line flows on June 20. So just follow that same row along. Can you tell me what the value was on June 20?

A. 248.

Q. Again, is there any reason at all you should be asking for storage water with a state line flow of 248?

A. No.

Q. Do you have any idea how often this happens that you are calling for stored water when the flows exceed your right? And I'm not asking you to figure it ought mathematically from those pages. I'm just saying, is that something that you even knew occurred?

A. No, I guess I didn't -- don't -- I'm not

aware of it.

Q. All right. Now, one thing that I heard from the commissioners is that in their practice, they look at state line on a given day and get up in the morning and check their computer and see that flow at the state line and say that is direct flow. That belongs to, say, Mr. Nance and then maybe the rest to the T & Y and so forth. I don't know if you heard all of their testimony, but is that your understanding of what they do?

A. Yes.

Q. All right. What I didn't hear from them is that they make any allowance for the seven-day time period that it takes for that water that enters the state line in the morning to get to your place at the T & Y Canal.

Do you know if they do that?

A. I don't know. I don't know that -- no, I don't know that.

Q. In the summertime, often the flow today is going to be higher than the flow seven days from now; right?

A. Yes.

Q. All right. So if you're being charged for the storage water based on flows that happened today

that might not be reflected at your diversion, you could be being overcharged for storage water; right?

A. But it -- it has the seven-day lapse so -- of the time frame for it to get to our diversion is the problem.

Q. Do you know if they did the math to figure that problem out?

A. To my knowledge, they did.

Q. And, of course, you're in an unenviable position so far from the reservoir that a lot could happen in that seven days; right?

A. That's right.

Q. In fact, it could rain three days after your storage order, and you could have more water than you know what to do with; right?

A. That's right.

Q. Now, let's turn to another problem. All of the commissioners testified they didn't try to take into account return flows that happen along this river. Did you hear any of that testimony?

A. Yes.

Q. Now, do you understand that if somebody uses their stored water south of the T & Y Canal and some portion of that makes its way back into the river as return flow, that becomes direct flow that you're

entitled to?

A. Yes.

Q. All right. And they don't account for it, do they?

A. No.

Q. And more than likely, it's in some of the water that you've received; right?

A. Yes.

Q. So isn't it true that, because they don't account for return flows, you're likely getting overcharged for your storage?

A. No, I don't believe that. The reason is that because the storage -- the storage -- the storage water has -- we pay for that every year. We don't get to choose how much we pay. It isn't based on consumptive use. It isn't based on streamflow. It's based on puddle size.

Q. I understand that. And, again, I'm not talking about the monetary aspect of your storage water right. I'm talking about the accounting for the amount of storage water that you use. If you only look at the state line and then you say that's T & Y's direct flow and you don't add in all this water that is augmenting the direct flow as it makes its way down to your diversion, you're being told that the difference

between the state line flow and what you use is storage, aren't you?

A. Yes.

Q. And it's not, is it?

A. If the -- let me see if I've got this right. If there's 100 CFS coming across the state line and I'm taking 150, I get the hundred that's coming across the state line. Technically the 50 comes out of the stored water.

Q. That's what the Tongue River Water Users' Association is ascribing to your storage account, yes, sir. You agree with that?

A. Yes.

Q. Now, if there was more direct flow as a proportion of that 150, you would be accounted less storage use; right?

A. Say that again.

Q. If there was more direct flow as a proportion of the 150 that you're using, you would ultimately use less storage; right?

A. Yes, if there's 149 CFS coming in and I'm taking 150, 1 is the difference.

Q. Right. So it would be important for you to know what the effect of these return flows are to know whether or not you actually need to use storage; right?

A. Yes.
Q. All right. But we can agree that's just not being done?
A. I beg to differ. I think it is being done.
Q. Who is accounting for return flows on the river?
A. Oh, well, no one. It comes to bear on what we have in the -- in that scenario, what enters the canal.
Q. Now, in order, sometimes, to make up for shortfalls, you had to purchase water from the Northern Cheyenne Tribe 'cause you ran out of storage water; right?
A. Yes.
Q. You'd have to purchase less if you actually used less of your storage water; right?
A. Yes.
Q. Now, we looked at a document with Mr. Gephart, and I think you have it up there. It's Exhibit M394. And I believe you looked at this page with Mr. Wechsler. I'll grab it for you if you'd like.
A. I would like that.
Q. I thought you had this one up there. If you don't, that's okay. It's Exhibit M394. And I just want to look at one page. I'm going to bring it up to

you in just a second. It's MT10027 for everybody following along. And I'll just hand you my copy.

A. Thank you.

Q. Maybe you looked at a different version of this same document. There are multiple ones. But I know you looked at this one with Mr. Wechsler.

It shows the commissioner accounting from 2006. And on the very top row is the T & Y Irrigation District; right?

A. Yes.

Q. And what it shows is that you purchased 3000 acre-feet of water from the Northern Cheyenne Tribe in that year; right?

A. Yes.

Q. And it also shows that you went 1220 acre-feet over both your contract amount and the amount that you purchased from the Northern Cheyenne Tribe. Do you know how that happened?

A. Well, it was just mathed out based on the water at the reservoir. It was a math calculation as to what they did calculating the water at the reservoir. If it's turned out and that's what's calculated, there's no guarantee of getting it 190 miles north.

Q. What I don't understand, and maybe you can

help me, is how, when there's a commissioner on the river, the T & Y Canal can take 1220 acre-feet of water that it's not entitled to.

A. Well, I'm assuming that it was probably in the system some way or another, and it could be affected, of course, by a rain event somewhere between here, between the T & Y and the dam. And it came down there and it was there to use and we used it.

Q. If you look at the column where the 1220 is, it seems to indicate to me, and maybe you can set me straight, that this 1220 acre-feet is stored contract water over the amount that you were supposed to use. Is that what it indicates to you?

A. Yes. But it would be -- but it would be a counting against the streamflow and not the reservoir.

Q. Okay. I'm not sure I'm following you on that. Because there's nowhere else on that document where direct flow is reported, and Mr. Gephart, I think, told us he doesn't report direct flow to the court. Why would your 1220 of some direct flow be on there? I don't get it.

A. Well, it's like the reach of the river north of the dam. That same thing can happen south of that, that you can have events either two ways: recharge or creek rain events that impact the river.

Q. Sure. But my understanding from the commissioners, and correct me if I'm wrong, is that their job was to deliver stored water to various users on the Tongue River Water Users' Association; right?

A. Yes.

Q. And he, Mr. Gephart, is accounting for the storage water here on this page that he delivered to the T & Y Canal; right?

A. Yes.

Q. And you're showing you're 1220 over. And all I'm wondering is if you have an explanation how that happened? And your explanation is it could have rained; correct?

A. Yes.

Q. Okay. Now, since that's my copy, I'm going to take it back before I walk off without it.

Would it -- in reality, would it be fair to say that the accounting that goes on from the dam to the T & Y Canal over the years has been significantly less than perfect?

A. I'd disagree.

Q. All right. Now, I want to ask about an event that occurred on our tour, some information that we learned there. And I want to get it on the record if I can 'cause I think it's really important.

We came out and looked at the dam that you talked about, the Twelve Mile Dam, in about late July of this year; do you remember that?

A. Uh-huh.

Q. If I understand right, the day that we came out to visit you, your understanding was that you were taking simply the direct flow of the Tongue River on that day; right?

A. I don't know.

Q. Let me ask you this: Do you sometimes think that you're taking the direct flow of the river and Mr. Hayes or somebody else tells you, no, you're on storage?

A. Well, Mr. Hayes informs me when I'm on storage.

Q. And he does that before you even make a call for it?

A. Well, it's just a mathematic equation. It has to come from someplace. So it can be after the fact. If it doesn't match the inflow, and the amount we're taking or needing or gets there, it has to come from someplace. So it's either storage water or spring events or rain events between the 12-Mile and the 190 miles to the dam.

Q. Is that typically the way that it used to or

still works is that there comes a point in the year where the Tongue River at the state line gets pretty low and Mr. Hayes calls everybody and says, you guys are on stored water?

A. Yes.

MR. KASTE: Thank you very much.

EXAMINATION

BY SPECIAL MASTER:

Q. So I just have a couple of questions. And it's really trying more to understand a little bit how the T & Y Canal system actually works. And you've covered some of this actually with Mr. Wechsler. But it's helpful for me sometimes to take a step back and understand it more.

I understand that the way in which the T & Y Canal works, people don't have a specific amount of water to which they're entitled; is that correct, that each user doesn't have a set amount to which they're entitled?

A. That's right.

Q. So instead it would be considered an on-demand system?

A. Yes.

Q. And so given that, I'm curious, again, as to how -- you used this phrase several times: "You chase

the use up and down the canal." And I understand that basically to say that you're trying to regulate the amount of water you're bringing in to actually meet the demand. Is that what you're referring to when you use that phrase?

A. Yes.

Q. Can you explain a little bit, again, how you actually go about chasing water up and down the canal?

A. Well, first of all, the experience that I've had with irrigating, and I've irrigated a lot of land, you have a feeling, and you look at the canal. And my sense, where I'm at, I look at it from the perspective of, not my withdrawal of water out of the canal, but with respect to the amount of water, specifically when I'm on the lower farm, which is three miles from the bottom end, and three landowners beyond me. I look at it from the perspective of not so much the volume, but if there is water there and if there's a sufficient amount of water to meet those guys' need. Because they talk to me more than anybody above me on the canal. Well, I shouldn't say more. But there's a fair amount of conversation regarding water and availability down there.

And sometimes -- well, not sometimes; every year -- I'm down there irrigating. And I have to talk

with some of those guys down there about where I'm irrigating and how much water. And if they are irrigating and I haven't talked to them, pretty quick, one of them drives up through the place and finds me 'cause they have seen the drop down there. And they just wonder where I'm at on irrigating, what I'm going to irrigate, and how long I plan to take. Or can I not turn on any more water to negatively affect the flow that's down there.

And we always work out the amount that's going on past our farm because it is that point. And that point right at the edge of our farm is what's called the Kelly Creek spillway, which isn't, per se -- we hardly don't spill there at all. But you have to have the capability to because the ditch turns into an over the creek siphon or a pipe that goes across the creek. And the pipe is, I think, 26 or 28 inches. And that's what services the lower end.

So you have that bottleneck there. But you have to have this spillway in case the ditch comes up and it won't all fit through this pipe. And those folks are down there.

And if I'm irrigating on our farm, there's water going down there. And it's topping that spill. Or I have some reason, and they'll call, too, if

they're not irrigating. And I'll take the majority of it. And based on if there's one of them irrigating, I'll let so much go by. And we talk back and forth. And it's never a battle at all. We just decide who is doing what when and get through it.

Q. And so as I understand you then, you're primarily looking at what's happening towards the end of the canal where your lower form is and where you have three additional diversions past you; is that correct?

A. Well, that's -- it sort of comes to bear on those folks down there and our lower place as well. If the canal consumptive use -- like, in a dry year, then I'll have a hard enough time getting water down there because there's enough water users relative to getting the hay off at the same time. And if you don't get people that are delayed in their haying operation because of a rain event or a shower event, then all of a sudden, you can have water there one day, and the next day it's gone. And it's dry, gone.

So I've got to calculate that or talk to folks to try to be able to get enough water in the canal. Or sometimes I'll shut our upper farm off so that if it isn't as dry at the bottom and the folks on the bottom end, I'll kick that water down there. And

I'll wait until they get done, you know, in four, five, six days or whatever. And then I'll start on the part of the upper farm that's typically right by the canal that I don't have to worry about lateral loss to other users around there. And I'll use the water there.

Q. So is it fair to say, then, you're primarily using your experience and rules of thumb to determine exactly how much water you need in any particular point in time?

A. Yes. And do it with a heart.

Q. Okay. But you're not actually getting orders from individual water users?

A. No. Just a conversation, how's the water look, and when are you going to be done and that sort of -- it's very informal. And we just make it work.

Q. And in the years in which you have been short of water, I understand that one of the things that you've tried is to ration water by the amount of time that you can irrigate your field?

A. Yes.

Q. Are there other ways in which you've tried to ration or divide the water in addition to that?

A. Well, it's all relative to how much is in the canal. And if there isn't any more in the river, if the river is low enough, then the pie, the splits

become littler and littler. And there becomes a point in time that they're no longer viable flows. You can drain the canal -- like, things -- when all the hay comes off virtually at the same time, no one was short on time or hurt by a rain event. So everybody pretty much gets done with it.

And you can just bet that the corn folks -- and some are the same people have corn as well. And they'll want to irrigate corn. And they just got our alfalfa, so they want to irrigate that. So then I start squeezing them down the amount. Well, just run it all night. You have your choice: You want to run it on the corn, or you want to run it in the alfalfa? And it's always they want to run it on the corn 'cause that's the high-dollar one. And they got one chance. And they got three chances at the alfalfa. So they will go and irrigate the corn.

And they try to keep -- regulate it until we get enough water to get it to the bottom. And then those -- I found out in those -- that really dry year, when the weeds grew in the bottom end of the canal, it was like, how come the folks down there didn't shoot me? And they were very patient. And, I mean, to be out of water as long as they were was very gut wrenching and very difficult.

And the only solace in the whole thing was that one of our farms is down there. So, by my actions, they knew I wasn't shorting them to the good of my own farm in that that farm was so short on water just like theirs was.

Q. Okay. So, again, I'm trying to understand exactly how this works. And I understand it's complicated. But so you sometimes told people, okay, 12 hours on, and then you have to do 12 hours off, or 48 hours on, 48 hours off.

Sometimes there just isn't water at the end of the canal. So assuming that situation, if you happen to have the bad luck of being down the canal, then you might lose water while people at the head of the canal actually pick up water; is that correct?

A. Yes. And the worst part about the shared thing is the whole idea is if the top part of the canal has got water for X amount of time and they have to shut off, well, of course it's very tempting to see the water going by there, and I should sneak some or whatever. But the poor people on the bottom reach, that are on the bottom of the bottom reach, okay, they know that it's going to be the bottom canal's turn to get water. And it doesn't show up in the 48 hours or whatever the time frame, no water showed up.

Then I'm in real deep credibility with those folks. And understandably. So then I have to micromanage the ditch further down to the north to shut folks off, go past the Catholic cemetery is where my shutoff point is, just on the south side of Miles City. And then I'll move that shutoff distance closer to the bottom end of the canal to get more people than have to go on the shared with the upper reach to be able to get water to the bottom of it.

Q. And could you describe, during the years when there were water commissioners, what your interaction is with the water commissioners?

A. Well, it was good because I've been so many years in the management of water on T & Y. And it was no different problem for them now, that new hired on commissioners and Mr. Gephart called me and asked me, well, how do you do this? And how do you do that? And I would lay it out as fairly as the way I saw the scope of his job.

Because you have to kind of learn into these things and all these different scenarios, you know, he was wondering. And I've been around my dad and grandpa and done it myself since '88. And so I, you know -- in the premise of fair and equitable for everyone.

And I'll tell you, it's very gut wrenching

when the bottom end of the district is where the worrisome part comes. Because on a shared canal or time on, time off, like the upper part, and the time when they are off and it doesn't make it to the bottom end, then the first thing they see is poor management on my part. And maybe it is. Maybe it is. But it's the human part of it that you have to say, okay, there isn't enough water in there. And if that isn't bad enough, then maybe by the time these guys are shutting off, we're on the head end of the canal, it's on a drop. And you're even going further down.

Like that one time I went out there and thought, this is going to work. We got it in a pretty good head. I go down to tell them and look at it, and there's 20 CFS. Well, guess what? By tomorrow morning, that drop hit on the upper reaches of the lower section I was supposed to irrigate. The folks in the lower section, there wasn't even a fourth of them had water.

It was just a disaster. Just, like, throw your hands in the air and go do something else. It was so heartbreaking to be in that position and see these folks and see the look in their eye. And some were sad. And some were just downright mad.

And, of course, the mad ones, it's always my

fault that I didn't manage it properly. And then you do have polite comebacks to it. And one guy that was just so out of sorts about the whole thing, I asked him if he ever prayed.

Well, what do you mean? He barked back.

And I said, Well, did you pray for rain and pray for more water?

Well, no. And stomps away. And a week later he called me up and apologized and said, oh, geez, I tried, and the ditch came up.

Q. So if you needed storage water, you'd call the commissioners?

A. Yes, sir.

Q. And when you would actually change the amount of water that you were taking through the canal, is that something where you would call the commissioner to tell them that?

A. You mean to change T & Y's inlet?

Q. Yeah. So you change the amount you were diverting. Would you tell them that?

A. That I was changing it?

Q. Uh-huh.

A. Yes. Yes, I would. But I would change it.

Q. Right. No, I understand.

A. Yes.

Q. Okay. So you talked earlier about the tags that you used.

A. Yes.

Q. And is it that you simply -- all you did was attached the tag, and then you would call the person to tell them that you'd attached it?

A. Yes.

Q. And if I understood what you said earlier, you then expected them to reduce the amount they were diverting?

A. Yes.

Q. So you wouldn't actually close it off yourself?

A. No. I would never go and spin their headgate down, close it, alter it, change it at all. They went and did it. And I felt it was a part of the -- it was part of my teaching or learning tool to those folks, that they have to go there and turn their headgate down because they turned it on and that I really didn't feel I had the place to do that. I would have if I had to. But then I would probably lock it shut with a chain. And I felt if it's confrontational, if they know, well, geez, at least he's given me the responsibility to shut my own headgate off, then they would go do it.

And I -- it just made life simpler to me.

Because the least of which I wanted -- didn't want to make any enemies of neighbors or folks that are out of sorts on water. And that -- those things can go on for years in battles like that. And in my position, I just felt it was never worthwhile to create -- if I could in any way possible head off a fracas or a battle, I just didn't want to go there.

So keeping them engaged by, well, you could turn it down. And when I got by there, if it was timewise -- and most people I never had to put a tag on there. And they would literally call me. I would tell them when they could open back up. And probably half of them would call and say, are you sure it's going to work down there for you? Just because I was a nice guy to them.

And I'm sorry about water management as it is, but it has a whole lot to do with when you get in a tight situation with water, it's just like always, the presentation and how you put yourself and sell yourself across to these guys and how much belief they have in you.

Then when the word gets out that, well, Muggli told me I could go turn on; that was pretty good of him. Then they are sort of at your beckoning. And you respect that 'cause you know it's hard. It's a

difficult time for those guys as well.

Q. And do you know of any instance where they didn't comply with the tag?

A. On two occasions. And I took my trusty length of chain and padlocked their headgate. And that brings them to their knees because they know now they have to be nice or the chain -- you know, they're worried whether the chain won't come off, whether they are nice, good, bad, or indifferent, where according to plan, when they could turn that back on.

The chain, I never used it as a punishment. But it reminds folks that, hey, we got to play this game and play it the way I want it done because I need to get water to the bottom end or whatever, you know, however this all plays out. And then I'd come and take it off. And I never ever had to put a chain back on the same headgate.

Q. And since you normally -- the way in which the canal works is basically on an on-demand basis, what did these individual water users do that led you to put tags on there?

A. They did -- on the shares scenario, this reach has to shut down to get it further north in the canal. And when they didn't do it, didn't do it, I just spun it down and locked it.

Q. So these were -- all of the situations where you used tags were situations where you were in a shortage period and people were not complying with the way in which you were trying to ration water?

A. Yes, that's right.

Q. Okay. Now, you also said at one point that in some years you didn't purchase Northern Cheyenne water because of the difficulty of getting the water to the T & Y Canal. And I wasn't quite clear what you were explaining at that point.

A. Could you read that again, the first part, what you said there? The difficulty.

Q. So I believe that you testified that in some years you didn't acquire Northern Cheyenne water because of the difficulty of getting water down to the T & Y Canal.

A. That's right.

Q. Okay. And could you explain why it's difficult?

A. Well, because it's so far away. It's in the reservoir. It's 198 miles. And a water-tight year, bad things can happen with it. And if you're in one of those down deals and you turn it on and there was times that the commissioners couldn't find any infraction, well, why in the heck didn't the water get here? It

just went horizontally back into the profile that had been drained out.

And so you can -- that is very imminent when you have a low river. That's my biggest fear, is, can you get folks to accommodate, shut down in shared events. But when it's been lowered to a real low level for a long time, it drains the profile back from the river. It just isn't a vertical profile. The river is what you got.

The river is depending on the profile, the gravels and the soils and silt and sands back in the bank. It's loaded back there a long ways, and then when it's shutting down, that's draining out and adding to the flow.

So on an up time, when they turned the water up for T & Y, sometimes that it didn't make it is because it just simply went back into the recharge on the off -- either side of the river to a greater or lesser degree depending on the soils and the soil profile, how easy it moved water back into it and all that.

So there's times that it just flat didn't make it. And it was just one of those things that it is just so long and so difficult to manage and control. You start talking 190 miles of river. And it -- oh, it

can be -- it's like, is this going to happen or not? And that was kind of where I got taught with the tribal water. Because you just had this loss, and it went into the profile on the side. Maybe there was somebody along the way that pumped some of it.

You know, well, for two commissioners to look at every pump, try to follow the water down the minute the guy drives out of the yard, he goes and starts his pump because the commissioner won't be back for a few days. I'm not saying that happens.

But when you're on the bottom end and you're thinking of all these things and scratching your head and trying and hoping the water makes it, and it doesn't, the first thing you want to do is start blaming. And it's just one of them things it just didn't make it.

Q. So your concern was, then, that if you released additional water from the reservoir, that wouldn't necessarily mean that you would see that water at the T & Y Canal?

A. That's right.

Q. Okay.

SPECIAL MASTER: I think those were my only questions.

Mr. Kaste?

MR. KASTE: I have no follow-up questions.

SPECIAL MASTER: Okay. Thank you.

Mr. Wechsler?

MR. WECHSLER: I have a couple questions.

REDIRECT EXAMINATION

BY MR. WECHSLER:

Q. You ready, Mr. Muggli?

A. Yes.

Q. Couple follow-up questions. First, you were asked about whether or not you were able to get sufficient water in the years prior to the 2000s. That's a long time ago; right?

A. Yes.

Q. We talked about the fact that you started as secretary in 1987 and shortly thereafter, you started having a concern that Wyoming was taking more than their share of water; you remember that conversation?

A. Yes.

Q. Did you have concerns about shortages in the 1980s?

A. Yes.

Q. Second, Mr. Kaste asked you a number of questions about the Tongue River Reservoir; you remember that?

A. Yes.

Q. And one of the questions was how much water is released in the winter. Now, the DNRC person currently involved with the Tongue River Reservoir, do you know what his name is?

A. Oh --

Q. It used to be Glen McDonald. We talked about him today. Now, do you remember the name Kevin Smith?

A. Kevin Smith, of course, yes.

Q. So would he be the best person for us to talk to about those releases and the operation at the reservoir?

A. Yes.

Q. What about Mr. Hayes as well?

A. As well, yes.

Q. And they actually work with the reservoir on a daily basis?

A. Yes.

Q. Next, Mr. Kaste asked you a number of questions about 397, M397 and M400; do you remember that? Do you still have those?

Let me help you, Mr. Muggli.

Now, Mr. Muggli, these aren't your records; right?

A. No.

Q. And I think you were asked if you looked at

Exhibit M397 about this 6/13. It says, "T & Y called for 40 CFS"; you see that?

A. Tell me the number -- okay.

Q. On the left-hand column, it says date ordered, and it has a thing that says June 13th; do you see that? 6/13?

A. Yes. Oh, yes.

Q. And then it says, "T & Y called for 40 CFS"; do you see that?

A. Yes.

Q. Do you have any way of knowing, looking at this record, whether that was actually charged against your account?

A. No.

Q. And if we look back at this Exhibit M400, there's an awful lot of things going on here. What I'd like you to do is look at the very last page of that document. I'll help you find it.

I'll hand you another copy. This one is stapled. And still is not -- well, I understand there's actually more to this exhibit that hasn't been entered, so I can't ask you about those particular questions.

So let's stay on M397. And here we have -- do you have that before you? That's the four-page

exhibit.

Okay. Now, we were looking at Exhibit M397 and looking at the third page here. In the third column, there's a column that says 8/17. And you were asked about the storage water and whether you were overcharged. And here it's talking about T & Y was out of contract water about 8/11; do you see that?

SPECIAL MASTER: Which page?

MR. WECHSLER: It's labeled at the bottom MT15482 in the lower right-hand corner.

BY MR. WECHSLER:

Q. Do you see that, Mr. Muggli?

A. Yes.

Q. And then it indicates next to there not true; you see that?

A. Pardon me?

Q. On the right-hand column, then it says not true; do you see that?

SPECIAL MASTER: Okay. Mr. Kaste was about to get up. But let me ask you first, and you might have a totally different question. But at least immediately, I'm not finding that particular page. And the other thing that worries me a little bit is I think you said there were portions of this that weren't in evidence, but I could be remembering the wrong witness.

But I thought the witness said these were all of the documents. So I'm confused.

MR. WECHSLER: Well, Your Honor, as far as Exhibit M400, which is the one that I think is incomplete, and the reason I think that is I'm staring at additional pages on my copy that are not part of the record copy. And I can't explain why there's a difference other than that I see the version given to Mr. Muggli is not complete. And I'll stop there. And maybe Mr. Kaste has something about that.

MR. KASTE: As far as I know, I've never seen any additional pages. I gave him the copy of Exhibit M400 as it was received from the state of Montana. I thought that we had switched over at this point to talking about Exhibit M397.

MR. WECHSLER: I did -- I had switched over.

SPECIAL MASTER: So the pages you were just doing were 397?

MR. WECHSLER: Correct.

SPECIAL MASTER: Well, that will help me at least on finding that page.

MR. WECHSLER: Yes.

MR. KASTE: And I did get up to talk about Exhibit M397.

SPECIAL MASTER: Okay.

MR. WECHSLER: Do you want to complete the discussion on the other one first?

SPECIAL MASTER: Yes, why don't we start with 400, and then we can go to 397.

MR. WECHSLER: So can I ask what the last Bates numbered page of the record version is?

SPECIAL MASTER: So at least on the copy that I have of Exhibit M400, the last Bates stamp is Montana 015536.

MR. WECHSLER: So -- and I'm looking at the copy that I have -- and I can't explain the difference -- also has three additional pages that, again, look to be Mr. Gephart's same format. And they go from MT15488 to MT15491.

And so I can't explain the difference. And the questions that I had -- hoping to ask Mr. Muggli dealt with one of those pages. And so when I didn't see the page, I --

SPECIAL MASTER: So I do have -- oh, so 15 -- so it might be a transcription error here on the transcript, the instantaneous transcript. But I do have 15488 to 15491. But they're earlier in this document.

MR. WECHSLER: Okay. Well, that is entirely a confusion of my own making then. And I apologize for

all of that.

SPECIAL MASTER: Which would actually make sense because they then follow in numerical order. So we've solved, then, the problem of Exhibit 400. And that's good news. That's better than having pages that were actually missing from that, although, better make sure Mr. Kaste has --

MR. BROWN: We do. I was looking at 488.

MR. WECHSLER: Yeah.

MR. BROWN: Yeah, we have it.

SPECIAL MASTER: So basically the exhibit, just to be absolutely clear, of Exhibit M400 begins Bates stamp 015486 and then runs numerically through 015536. Thank you.

MR. WECHSLER: Yes, thank you.

SPECIAL MASTER: So, Mr. Kaste, you have a question with respect to M397?

MR. KASTE: I forgot the question that was pending that led me to stand up.

MR. WECHSLER: I don't know that I had gotten a question yet.

MR. KASTE: Well, not one that wasn't leading. But I wanted him to -- as you can see, he was pointing out on -- I can't see the Bates stamp number, the entry for August 17th related to the T & Y. And it

has a parenthetical, for lack of a better word. I don't know the name for that kind of sign, but it seems to apply to the second line as well. And for completeness, I wanted the second line read as well.

SPECIAL MASTER: Okay. So now that we've probably totally confused you.

MR. WECHSLER: No problem. I think I can pick up.

BY MR. WECHSLER:

Q. Why don't we start with Exhibit M397, Mr. Muggli; do you have that before you?

A. Yes, I do.

Q. So we were talking about page 15482; do you see that?

A. Pardon me?

Q. We were talking about at the bottom is Bates-stamped MT15482.

A. Oh, yes. 15484.

Q. Okay. If you could turn the page, please. Do you see at the bottom where it's marked 15482?

A. Yes.

Q. So the whole entry -- and I actually have trouble reading this, which is why I didn't -- "T & Y was out of contract water about 8/11, started Northern Cheyenne water 8/12 at -- something -- 50 CFS for 30

days (September 10.)"; do you see that?

A. Yes.

Q. On the side there it says "not true"; do you see that?

A. Yes.

Q. Do you have -- do you have any recollection of some difficulties in accounting that occurred in August of 2006?

A. It's just jogging my mind a little bit with something. I cannot remember.

Q. No problem. Let's look down a little further. Here on 8/29, it says, "T & Y 75 CFS shut off today. T & Y will have 75 CFS until 9/5"; do you see that?

A. Yes.

Q. Now, in 2006, do you recall running out of contract water?

A. Yes.

Q. Do you recall that in 2006 the Tongue River Reservoir didn't fill?

A. I believe that's right.

Q. Sitting here today, Mr. Muggli, do you have any reason to think that you overused your storage water in 2006?

A. No, I don't think so.

Q. So it may be just a matter of understanding all of these records. And in that regard, I would like to talk to you about -- going back to the document labeled M400.

A. Okay.

Q. All right. Mr. Muggli, the two pages I'd like to look at here of Exhibit M400 are MT15524, and that should be one of the two pages I just handed you, and MT15488.

Now, the date that we have looked at on M397, I think, was June 13th; do you remember that?

A. Yes.

Q. So if we look on Exhibit MT15488, actually, I don't see a June 13th. Do you? I think, to help orient you, it looks like the dates start on the right-hand side of the page, go down the column. And then there's a CFS, and then it moves over. There's another column of dates. And then there's a column of CFS. And there doesn't appear to be any June 13th; do you agree with me?

A. That's right.

Q. Now, I was trying to figure out this document. You don't know how this was done; right?

A. No.

Q. Now, you talked with Mr. Kaste about if there

was, say, 200 CFS in the river, you would have been getting your direct flow right; is that right?

A. Yes.

Q. And so you wouldn't have been charged storage water in that situation; is that right?

SPECIAL MASTER: So could I just ask, only because Mr. Kaste said earlier and I'm just seeing him struggling now not to stand up. The questions are getting leading at this point. I think you can ask him more that are not.

MR. WECHSLER: Sure.

BY MR. WECHSLER:

Q. Do you have any reason of knowing, Mr. Muggli, if you were overcharged in those years?

A. No.

Q. Did you think at the time that you were overcharged?

A. No.

Q. Now, let's talk a little bit about return flows. You were asked a number of questions about return flows. It sounds like in one of those years, you had difficulty actually getting the water from the reservoir to the T & Y. Can you describe that?

A. Yes. It was just a case of difficulty to get it there. It was just hard to -- with the length of

the river and low water and it recharging into the banks, I was just -- it was just hard.

Q. And then have you also -- at other times, have you observed return flows on the Tongue River?

A. Yes.

Q. In fact, I think you have a story about an experiment you did with your cousin; is that right?

A. Yes.

Q. Could you describe that for us?

A. Yes. My cousin's farm is not connected with the Tongue and Yellowstone Irrigation District at all in any fashion. It's the next irrigating farm above the inlet of T & Y. And his pump dramatically affects the inflow of T & Y or the amount of water that's in the river 3 and a half miles north of his pump site by way of the river just a bit.

And one time we decided we were going to try to solve the riddle of a recharge, water recharges put on the surface and then going into the profile and then going back into the river above the T & Y diversion. Anyway, so one time we had concocted this plan, my cousin and myself, to try and check it out and see how dramatically and to what time frame would starting at his pump had on the flow that ended up at the T & Y diversion.

So he turned his pump on at 6:00 in the morning. And for all intents and purposes, we had, according to our gauge, a relatively constant flow into the canal. There was one of those times that we were using all the water other than what seeped through the dam, the diversion dam. He started his pump at 6:00, and I believe it was about -- I'm not exactly sure on the time exactly. But somewhere about an hour and a half to two hours later, the river started to drop dramatically. It just fell.

And so the assumption was the effects of him turning on the pump came to the reality that it -- the drop in the river came to T & Y. And the drop that we recorded was companion with the number on his pump on the gallons per minute, the amount of water that -- CFS that we calculated. And it came to, like, 23 or 24 CFS. And it just plummeted. And then it leveled off.

And anyway, we watched this and talked about it and drove up there, and we were visiting about the whole thing. And I went back and they were watching it and it stayed constant. It stayed flat lined for about -- I believe it was about three hours. Of course, he was running the water onto his field, onto his -- whatever the particular place he was irrigating.

And about three hours later, three and a half

maybe, the water started. I noticed there started to be a little bit increase in the flow into T & Y. And it just started picking up, picking up, picking up.

And by 6:00 that night, he was still irrigating, and the water had gotten almost back to, I think it was within a couple CFS of where it started just prior to him turning on his pump. And the gauging station, next one up the river at the Mark Fix bridge, remained constant.

And so my point is -- in that whole thing, is that we were always wondering about the effects of recharge. Because if we're in a short water situation, my cousin turns on that big pump, it just kills us. And how long is the effects of this? And he claimed he didn't think it was very long.

Of course, now I'm -- the shoe is on the other foot here, so I'm, well, by George, it is affecting it a lot and for a long time. And it -- we're not going to get any of that return back until it starts running off the end of your field. Well, he claims he's switching it so he doesn't create a runoff situation so he can switch it quicker and get it on and off.

And I was just absolutely shocked that it was within, I believe, 2 CFS of what it started with, the

recharge is going through, and he's got sandy type loam soil. And it was -- came back to the river. And we almost had, within a couple of CFS, the same amount that we started with. Within 2 CFS, the recharge was that significant.

Q. So then, Mr. Muggli, are you familiar with the term "gaining stream"?

A. Yes.

Q. So it sounds like you've observed some times when the Tongue is a gaining stream?

A. Yes.

Q. Now, you also talked earlier about the time in 2001 where you had difficulty getting the water down to the T & Y headgate; do you remember that discussion?

A. Yes.

Q. Do you understand the term "losing stream"?

A. Yes.

Q. Are there times you observed the Tongue River as a losing stream?

A. Yes.

Q. It sounds like a complicated issue. Are you an expert in hydrology?

A. No.

Q. So, fortunately, we have some of those who have testified to whether or not the Tongue is gaining

or losing, so we can rely on that.

MR. WECHSLER: One moment, Your Honor?

SPECIAL MASTER: Certainly.

MR. WECHSLER: No further questions.

SPECIAL MASTER: Thank you. Thank you, Mr. Wechsler.

Mr. Draper?

MR. DRAPER: Well, Your Honor, I think with that, our -- once Mr. Muggli is excused, I think that will be the final witness in our direct case. Of course, we reserve, as plaintiff, the right for any appropriate rebuttal evidence. But at this point, I think that finishes our direct.

SPECIAL MASTER: Okay. Thank you very much.

And, Mr. Muggli, you can be excused at this point.

THE WITNESS: Thank you.

SPECIAL MASTER: You're welcome. Thank you very much for coming.

MR. KASTE: We feel short changed. I didn't hear the magic words that the plaintiff rests. I think I'm entitled to them.

MR. DRAPER: Well, that's in essence what I was saying, Your Honor. The plaintiff rests.

SPECIAL MASTER: Okay. Thank you.

Mr. Kaste?

MR. KASTE: Before we begin our case, I have a motion to make to the Court.

SPECIAL MASTER: All right. Fine.

MR. KASTE: As ill-fated as these motions often are, I believe it's my duty to do so. So I have prepared one with a eye towards brevity. 'Cause I know no one wants to spend more time on this than we have to.

At this time the state of Wyoming moves for an entry of judgment on partial findings pursuant to Rule 52C of the Federal Rules of Civil Procedure.

Montana at this point has been fully heard on the entirety of its claim that Wyoming breached the Yellowstone River Compact, and it failed to prove any of the five essential elements of its claim.

As you know, Montana must prove, by a preponderance of the evidence, that it's pre-1950 appropriations were unsatisfied at specific times, that at those specific times, Montana engaged in intrastate regulation, sufficient to ensure that no post-1950 appropriations in Montana were receiving water, that Montana then placed a call on Wyoming for regulation, and that Wyoming appropriators continued to divert water under post-1950 appropriations after the call was

made, to the detriment of Montana's pre-1950 appropriations.

Starting with the most glaring deficiency, the evidence clearly establishes that Montana did not make calls on Wyoming before 2004. The most credible witness on this issue in the years that actually even sort of matter, 2001 and 2002, was Mr. Stults. And he testified that he was not making calls on Wyoming but rather trying to get Wyoming to consent to the development of an administrative system based on hydrology, but did not follow the doctrine of appropriation.

After he failed in that attempt, in 2004, his communications with the state of Wyoming changed. And he actually made a call for priority regulation and to vindicate Montana's rights under the Yellowstone River Compact. And there's a difference, and that difference has meaning.

Mr. Fritz and Mr. Kerbel didn't testify that they made calls. Even Mr. Moy's testimony is clear that he didn't really make calls either. And he certainly didn't make them during the irrigation season. While his memory is admittedly fuzzy, it's clear that his communications with Wyoming occurred at meetings of the Yellowstone Compact Commission and

others that were outside the irrigation season and that these communications were part and parcel of long-standing disputes and discussions amongst the two states that never amounted to anything near a call for priority regulation. And, of course, there's not a single piece of paper corroborating Montana's claims they've made calls before 2004.

It makes little sense at this point to force Wyoming to use more trial time putting on the testimony of witnesses who will categorically deny what Montana has already failed to prove. Accordingly, Wyoming is entitled to the entry of judgment on Montana's claims for all remaining years before 2004.

Montana also has the burden of proving its pre-1950 rights were actually short in 2004 and 2006. As perhaps this witness and a host of others recently demonstrated, trying to figure out what went on in Montana with any degree of accuracy can't be done.

With regard to the reservoir, Montana completely misapprehends the nature of its rights under Article V, A of the compact. Montana spent a lot of time talking about the original capacity of the reservoir versus the sedimented capacity of the reservoir, despite the fact that it consistently reported 69,400 as the capacity of the reservoir to the

compact commission and to Wyoming. But neither of these numbers define Montana's Article V, A right. Neither of them matter. Montana's Article V, A right in the Tongue River Reservoir is actually defined by the terms of Article V, C3.

That provision provides, in the main section of Article V, C, the quantity of water subject to the percentage allocations in paragraph B1, 2, 3, and 4 of this Article V shall be determined on an annual water year basis, measured from October 1st of any year through September 30th of the succeeding year. The quantity to which the percentage factor shall be applied through a given date in any water year shall be in acre-feet equal to the algebraic sum of four different things. The third of those things is what's important here.

Article V, C3 provides, "The net change in storage in acre-feet in existing reservoirs in Wyoming and Montana above the point of measurement which is used for irrigation, municipal, and industrial purposes developed after January 1, 1950, during the period October 1st to that given date."

Accordingly, it's pretty clear that the compact protects existing uses in existing reservoirs under Article V, A and new uses in existing reservoirs

under Article V, C. The evidence in this case has been clear. As of 1950, the existing uses in Tongue River Reservoir were limited to less than 32,000 acre-feet of contracts within the Tongue River Water Users' Association. Even if Montana is entitled to the 45,000 acre-feet that it used to deliver these 32,000 acre-feet of Contract water in 1950, there's been no evidence presented that Montana failed to receive this amount of water in any of the years in issue.

Instead, the evidence shows that even allowing for Montana's profligate winter bypasses, Montana received sufficient water to meet the right protected by Article V, A. When those bypasses are properly accounted for, Montana received water well in excess of its Article V, A right every single year. The magic number in this case is 32,000 acre-feet. That is the end of Montana's right. And they got it every single year.

With regard to its direct flow rights, Montana attempted to show a shortage with a flow model based on paper rights; it doesn't reflect reality at all. The model is insufficient to show any actual shortage occurred for any individual irrigator at any time.

The only other evidence of shortage comes

from the individual irrigators, typically, of course, unrelated to particular dates and particular conditions.

Montana did not compile information from which we could fairly determine that its pre-1950 rights were not being satisfied after May 18th, 2004, or July 28th, 2006. Those are critical dates in these proceedings, and you've heard precious little about this from Montana to this point. There hasn't been sufficient evidence for any of us to determine what really happened in Montana during these years. And that's true even though Wyoming agrees that at some point during the irrigation season, the direct flows on the Tongue River, from the time the compact was written, and the compact drafters understood, to today, are going to fall to a point where it's unlikely that Montana's pre-1950 rights are going to be satisfied. We can't assume that situation in these proceedings. Montana has to prove it. And they have failed.

Next, of course, the regulation, the intrastate regulation that is necessary in order for us to have some certainty that Wyoming is faced with a valid call and that Montana's rights are right, in a sense, did not occur. The regulation that did occur failed to accurately distinguish between stored water

and natural flow at any time and failed to take into consideration the substantial effect that return flows may have on the availability of natural flow.

Ultimately, Montana needs to figure out what's really going on on their stretch of the river. And at that point, when they come to us with sufficient information that anybody can fairly ascertain that they are, in fact, short, Wyoming will be obligated to regulate its post-1950 uses for the benefit of Montana's pre-'50 uses. It hasn't happened yet. It probably will in the future, but it hasn't happened yet.

All we really know is that natural flow seems to be chronically under accounted in the river. And there is not enough evidence for any fact finder to conclude by a preponderance of the evidence that Montana showed a real shortage either in its storage or direct flow rights at a particular time.

Montana has also utterly failed to show when post-1950 use occurred in Wyoming in relation to the call dates. This is a critical piece of their case. And yet Mr. Book made no attempt to distinguish when depletions occurred in relation to that date, and neither did Mr. Allen. This is information essential to the maintenance of their claim that the various

depletions that they identify actually occurred after the call dates. And there's none of that. I think the only one that even comes close is the deductions related to CBM which seem to occur every single day. But there are, of course, problems with CBM.

So, for example, there has been no evidence establishing that any of the 16 parcels identified by Mr. Book in his rebuttal report actually used water after the call dates in 2004 and 2006.

Wyoming, not Montana, but Wyoming, based on the careful records of its hydrographer commissioners, showed that no storage occurred anywhere in Wyoming after the call in 2006.

And similarly, Wyoming, not Montana, in pursuit of the truth -- I kind of think that's important -- attempted to show there was some storage in Wyoming after the call date in 2004. But, of course, that amount of storage was very small, may have been used for certain reservoirs by some of the senior appropriators in Wyoming. And there's been no evidence demonstrating that that small amount of water could have made any difference for the folks in Montana.

In fact, there really hasn't been any evidence at all that the small amount of water, even the small amount identified by Mr. Book and the other

experts for Montana and Wyoming, could have made any difference for the irrigators in Montana for these very dry years. I think we just heard from Mr. Muggli that there were times that even a little more water isn't going to make a difference, isn't going to get to him. And he represents basically half the irrigation on that river.

Finally, of course, Montana -- the evidence is clear that there was always water in this reservoir. The Tongue River Reservoir was never empty. And from Wyoming's perspective, it doesn't matter whether Montana assigns that water to the tribe, the Tongue River Water Users' Association, or anybody else. For purposes of the Yellowstone River Compact, the important question is: Was the supply there? And the answer is: Yes, it was. It was always there.

How Montana chooses to distribute that among its citizens and its relationship with the tribe is entirely Montana's business until they call Wyoming. And we should not be made to pay for the internal distribution decisions of the State of Montana.

With regard to CBM production in Wyoming, it's obvious that Mr. Larson's results are not reliable. He took a model, created for an entirely different purpose, and skewed certain inputs for

Montana's benefit. In particular, the factual basis for his alteration of the return flow rate is directly contradicted by the very guy responsible for inspecting the CBM impoundments which generate the return flows. Just fixing this one problem with Mr. Larson's analysis essentially eliminates any effect on Montana in 2004 and 2006.

Finally, I think Wyoming has proven that Montana has failed to store a substantial amount of water over the years. And this waste of water in and of itself is a complete defense to Montana's claims and justifies dismissal of this case. For these, and I think the other, reasons that were outlined in Wyoming's opening statement, Wyoming moves for and believes it is entitled to the entry of judgment on partial findings at this time.

SPECIAL MASTER: Okay. Thank you, Mr. Kaste.

Mr. Draper?

MR. DRAPER: Well, Your Honor, it might be a very formalistic approach to things, is taking up some of our trial time listing their view of the case, and I'll be glad to respond. I can do that right now on the fly, if that's all right with you.

SPECIAL MASTER: So, let me say several things: The first is that, although these are

frequently motions that are almost made perfunctorily at this stage of a trial, you know, I think we need to take them seriously. And since it's 4:30 in the afternoon, one of the things I plan to do is go back and take a look at my notes, from all of the various testimony, this evening before actually ruling on this particular motion.

You know, there's always -- this is a little bit of an unusual proceeding in that ultimately, I am preparing recommendations for the United States Supreme Court on this, which I think means that, and you've heard this from me before, Mr. Kaste, I defer a little more towards having more evidence on the record than less.

Let me ask you, Mr. Draper, so the one thing that I appreciate your thoughts on, and you could do it now or you can do it first thing in the morning, are the years prior to 2004 were the question of notice, and in particular, the years prior to the 2000s, for the -- if I remember correctly, 1987, '88, and '89. And that, I would appreciate some greater findings on.

MR. DRAPER: Very good, Your Honor. I think it might be most efficient if I gave this response first thing in the morning.

SPECIAL MASTER: I think that would be fine.

Okay. What I would suggest is maybe we start at 8:30 in the morning on this. And, Mr. Kaste, I would probably be prepared if I were you, to have your first witness available after that.

MR. KASTE: Well, I would point out that I never make one of these perfunctorily, but I always make them and have not yet succeed on one. Although, I have on occasion felt a small victory when the judge thought about it. That usually makes me feel great.

SPECIAL MASTER: Then hopefully it makes you feel good that I'm actually going to review my notes overnight. So as I said, the one thing that -- you know, I think I have a good memory for most of the testimony in this case on the various issues. But the one that is -- one of the things I'll specifically take a look at this evening is the question of the testimony with respect to those years, '87, '88, '89, and then 2001, 2000 -- 2001, 2002, 2003. Yes, those years.

MR. DRAPER: Yeah, 2000.

SPECIAL MASTER: Okay. So why don't we, then, break for the afternoon right now. And we will come back at 8:30 in the morning, at which point you can give me any guidance you want to on those particular years, Mr. Draper, and I will rule on the motion. And then we will then start whatever evidence

is appropriate at that time.

MR. KASTE: We actually have Mr. Levens here who would be our first witness in our case in chief. And given that we don't have to worry about them locking us in like we do at the court, I wonder if it might make sense to utilize this time between now and 5:00 to get as far as we can with Mr. Levens. I don't know how everybody feels about that.

SPECIAL MASTER: The only concern I have is that my car, apparently, is in the lot that will be locked in. But if people don't mind taking five minutes, I'll move my car.

(Discussion held off the record.)

SPECIAL MASTER: So I'm going to officially reserve Mr. Kaste's -- ruling on Mr. Kaste's motions until the morning. But we will go ahead with the first witness right now.

Is that okay with you, Mr. Draper?

MR. DRAPER: Yes.

SPECIAL MASTER: Okay. Great.

MR. BROWN: This is the first opportunity that we've had to call a witness. And you had mentioned at the beginning of the proceedings that you'd like to have some outline or guidance or

discussion about what the witnesses are going to talk about.

If you recall, we had it kind of set up that Mr. Larson was going to be the last Montana witness talking about groundwater, CBM issues. And then Dr. Schreüder was going to be our first witness. And we had lined up a couple gentlemen to talk about the groundwater issue as well.

So as we pick up our case, the first two witnesses we're going to talk to have knowledge with regard to the groundwater issue in this case, most specifically, Mr. Levens. And he works for the DNRC up here in Montana. And most specifically, we just want to speak with him regarding his knowledge to the Powder River Basin Controlled Groundwater Area, of which he was the chairman of the Technical Advisory Committee.

And the next gentleman is John Wheaton. And he's with the Montana Bureau of Mines and Geology. He was also on the Tongue River Basin Controlled Water Area Technical Advisory Committee. And he's also done more extensive monitoring with regard to CBM impacts and analysis with regard to that in Montana. So those are the first two gentlemen.

So with that, the state of Wyoming would call Mr. Levens.

(Russell Levens sworn.)

THE CLERK: Please have a seat. And if you'd state your name and spell it for the court reporter, please.

THE WITNESS: Russell Levens, L-e-v-e-n-s. Russell is two S's, two Ls.

RUSSELL LEVENS,

having been first duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. BROWN:

Q. Hello, Mr. Levens.

A. Hello.

Q. And I will say we've never met before, and I do that to introduce myself. My name is Chris Brown. I'm with the Wyoming Attorney General's Office.

And you did have your deposition taken in this case; right?

A. That's correct.

Q. But I wasn't there to do it. But I think I was on the telephone. I think I heard you.

At any rate, the first thing I want to do is -- please state your professional position, your current profession.

A. I'm the supervisor of the Hydrosciences Section and the Water Management Bureau, which is in

the Water Resources Division at DNRC.

Q. Sure. And what's your professional address? Is it in Helena?

A. Yes. 9th Avenue, Helena, Montana.

Q. And the first group of questions I want to ask you is just some background stuff to describe to the Special Master who you are, what your background is, and what it is you do. Okay?

A. Okay.

Q. And could you start -- just give us a general summary of your educational background after high school.

A. I have a bachelor's degree in geology from the University of Montana. And I have a master's degree in hydrology from the University of Idaho.

Q. And I think after you received your bachelor's degree in geology, you went to work; is that right?

A. That's correct.

Q. And what did you do? Where did you go to work at?

A. I was a mud logger in the oil business in southwest Wyoming mostly.

Q. What's a mud logger do?

A. Collects samples of drill cuttings, monitors

the progress of oil expiration, monitors the gas produced during...

Q. And that apparently wasn't for you because you went back to school; is that right?

A. I did it for five years, which is a pretty long period of time for mud logging.

Q. Okay. And so you went back to school and, I think you said, got a master's degree in hydrology in 1990; right?

A. Yes.

Q. What did you do after that?

A. I went to work for the U.S. Bureau of Mines in Spokane, Washington. After I did have a short five-month stint as a consultant; I worked with the U.S. Bureau of Mines in Spokane. Worked there for about five years and continued in that job under another agency, under the National Institute for Occupational Safety and Health. And then in 1998, I went to work for the Montana Department of Environmental Quality. And in 2001, I went to work for the DNRC.

Q. Okay. With regard to your work at the Bureau of Mines, briefly describe what you did for them, would you?

A. I was a research hydrologist where I

investigated water inflow to underground mines and water chemistry related to metal contamination at abandoned mines and active, primarily abandoned mines.

Q. I think you said, in 1998, you went to work for Montana DEQ?

A. Yes, I did.

Q. Okay. What did you do for those folks?

A. Worked in their storage water protection program, which is a -- used to be called the Wellhead Protection Program. It's -- the goal is to protect public water supplies from contamination, help them plan.

Q. And then you went to work as a hydrologist for Montana DNRC in 2001; right?

A. Correct.

Q. What does a hydrologist do, or what did you do specifically for DNRC?

A. The bulk of my time was spent providing technical assistance to the Water Rights Bureau. And that involved reviewing submittals by consultants for water right applications, and, you know, reviewing aquifer tests data and other technical reports presented to get a water right.

Q. Okay. Did you do anything else as a hydrologist?

A. I did do a couple of field investigations of different kinds, unrelated to proposed controlled groundwater areas, and then just a variety of things that come up. I've sort of done technical oversight committees and advisory committees on a number of groups.

Q. And I apologize if I get it backwards because you call them controlled groundwater areas and in Wyoming we call them groundwater controlled areas. So if I get it backwards, that's the reason, so correct me if I do.

But didn't you also have some responsibility serving on technical advisory committees for these controlled groundwater areas?

A. I was just thinking for the Powder River Basin controlled groundwater, I've served on a technical advisory committee. I think that's the only one.

Q. Okay.

A. For a controlled groundwater area. On other advisory committees for other purposes.

Q. Can you tell us just generally for what purposes controlled groundwater areas are established in Montana?

A. Well, generally, they are your water quantity

or water quality. The water quality ones typically are related to water contamination -- or to, yeah, water contamination sites where the goal is to protect public health, to prevent people from consuming contaminated water, so around a landfill or another groundwater contaminator, solvent spill sites. So it's a controlled mechanism to keep people from using water that's not healthy.

Others, the water count quantity ones, the number of them are where you have development in areas where there are concerns over whether there's enough water to supply additional uses.

Q. Okay. And you've been, I think you said, the supervisor of the hydrosciences section since 2010?

A. That's correct.

Q. And what is it you do as the supervisor of that section?

A. I supervise currently seven hydrologists which are -- there's two other groundwater people. The rest are primarily surface water hydrologists. And they just -- there's a wide variety of things, working with watershed groups to just a wide variety of surface water and groundwater coming up through the pump.

Q. And I think you said -- let's move into, I guess, the time period that we're -- or at least I'm

interested in having you here for, and that's generally during the time that you're a hydrologist with the DNRC. And I think you said part of your job duties included permit review; right?

A. Correct.

Q. And from my understanding, what you would do is review the technical memos that would be submitted with groundwater applications; is that right?

A. Yeah. Currently, I'm -- applications for permits for groundwater use, yes.

Q. And my understanding is that just generally -- and I'm not interested in going into this deeply -- but just generally, you were looking at the hydrologic connection between surface water or groundwater between water sources; is that right?

A. That's part of that that comes up.

Q. Okay. And if the -- and you did your review with regard to proposed groundwater applications or permits; right?

A. Yes.

Q. And if the proposed groundwater withdrawal didn't require a permit, then you wouldn't be doing any kind of analysis of that; right?

A. That's correct.

Q. And CBM withdrawals of groundwater don't

require a permit in Montana. And so you didn't do reviews of any of those types of withdrawals; right?

MR. BRAMBLETT: I'm going to object. That calls for a legal conclusion.

BY MR. BROWN:

Q. Do you recall if you did any kind of analysis of a CBM withdrawal in relation to a permit?

A. We had -- yes.

Q. Describe that for me.

A. We had -- I don't know. And there's more than one. There's a group of applications by Fidelity Exploration to put some of their produced water to beneficial use at coal mines and provide stock watering.

Q. Were any of those permits ever granted?

A. Not to my knowledge.

Q. And so other than those, did you do any other sort of review with regard to CBM withdrawals?

A. Not for permitting.

Q. Okay. And you also wouldn't do any review of any groundwater withdrawals if they were exempt from the permitting process; right?

A. That's correct.

Q. And proposed groundwater withdrawals that are less than 35 gallons a minute or 10 acre-feet per year

are exempt from the permitting process; right?
A. 35 gallons a minute up to 10 acre-feet.
Q. And they're exempt; right?
A. Yes.
Q. Okay. What I really was interested in talking to you about today is your experience with controlled groundwater areas and, specifically, the Powder River Basin controlled groundwater area. And you're familiar with that groundwater area; right?
A. Yes.
Q. And what is it?
A. It's an area, controlled groundwater area established in the Powder River Basin structural -- geological structural area. And it was established with the public over concerns from impacts from coalbed methane.
Q. So it was established for the purpose of monitoring and assessing impacts from coalbed methane?
A. Correct.
Q. And hopefully we're getting switched over. I'm going to show you an exhibit. And actually, I'll hand you that first. How about that?
I'm going to show you what's been marked as Exhibit W203; do you recognize that?
A. That's the map of the Powder River Basin

controlled groundwater area.

Q. And does that particular map that you're holding in your hand appear to be an accurate depiction of the controlled groundwater area?

A. Yes.

MR. BROWN: I'd like to offer Exhibit W203.

SPECIAL MASTER: Any objection?

MR. BRAMBLETT: No objection, Your Honor.

SPECIAL MASTER: Okay. Thank you. Then Exhibit W203 is admitted into evidence.

(Exhibit W203 admitted.)

BY MR. BROWN:

Q. The groundwater area itself was created prior to you becoming involved with it; right?

A. Yes.

Q. But you did become involved with it in 2001 when you came to work for the DNRC?

A. Yes.

Q. Okay. And you were actually the chair of the technical advisory committee that advises the Montana Board of Oil and Gas since 2001; right?

A. Yes.

Q. You're still the chair of that committee?

A. Yes.

Q. And you would be the main point of contact

for that committee's records and documents and such; right?

A. Yes.

Q. And we're going to look at a few of the documents related to the control area. And it's referred to as the -- you guys just say TAC, or do you say TAC?

A. I don't think there's a tradition on that.

Q. Okay. But a lot of places in the document it's T-A-C; right?

A. Yeah, TAC is fine.

Q. Okay. Can you identify -- and I'll probably just call it the Advisory Committee if that's okay with you. Could you please identify the different individuals that serve on that advisory committee? And I don't -- and I mean by the organization that they're affiliated with.

A. Okay. There are representatives. In addition to DNRC, there's the Department of Environmental Quality of Montana. There is Montana Bureau of Mines and Geology, the U.S. Geological Survey, and the U.S. Bureau of Land Management.

Q. And just describe what the Advisory Committee does, please.

A. We -- I guess we advise the Board of Oil and

Gas on the topics of characterization and monitoring for the purpose of understanding the impacts of coalbed methane development.

Q. Okay. And how often does the Advisory Committee meet?

A. At least once a year. There have been years we've met either in person or by phone as many as three or four times.

Q. Okay. And I think, from what I understand, the Advisory Committee initially relied on CBM production information supplied by the CBM producers; right?

A. Yes.

Q. And then later on, the Advisory Committee relied more heavily on information compiled or gathered by the Montana Bureau of Mines and Geology; right?

A. I think compiled might be a better -- it does come from different sources. Some of it comes from the companies. But they compile it. And the majority of it, they do collect.

Q. Sure. And I think, from what I understand, anyway, the companies are still under an obligation within the controlled area -- within a controlled area to supply production information; right?

A. Yes. I think that's a requirement by the

Board of Oil and Gas directly for their production.

Q. And that includes not only the CBM gas production but the water production as well; right?

A. That's correct.

Q. And I think that -- they're required to supply that information to the Montana Bureau of Mines and Geology, or does the Montana Bureau get that from the Board of Oil and Gas?

A. My understanding is they get that from the Board of Oil and Gas.

Q. But essentially, and I guess that was a long way to make my point, the Montana Bureau of Mines and Geology compiles all that information and puts it in a yearly report; right?

A. That's correct.

Q. And those reports provide the primary source of the information on -- upon which the Advisory Committee relies in performing its functions; right?

A. Yes.

Q. And I think you had mentioned that the Advisory Committee gets an opportunity to comment on drafts of those reports before they are published; right?

A. Yes.

Q. I'm going to show you what's been marked as

Exhibit W204; do you recognize that document?

A. Yes.

Q. What is it?

A. This is the final order -- just reading it -- in the matter of designation of the Powder River Basin controlled groundwater area. This is the establishing order.

Q. So as chairman of the Technical Advisory Committee, you're familiar with that order?

A. Yes.

Q. Could you take a look at the whole thing and see if it appears complete to you?

A. Without -- I guess, yeah, it appears complete. It looks -- you know, has findings of facts, conclusions of law. And I think that's the main elements.

MR. BROWN: I'd like to offer Exhibit W204.

SPECIAL MASTER: Any objection?

MR. BRAMBLETT: No objection.

SPECIAL MASTER: Then Exhibit W204 is admitted.

(Exhibit W204 admitted.)

BY MR. BROWN:

Q. One question I was curious about. I've seen in several documents where order 99-99 was referred to.

Is this order 99-99?

A. No.

Q. It's not. Can you tell me what that order is?

A. That's an order of the Board of Oil and Gas that establishes their specific rules to their -- the way they deal with coalbed methane permit applications.

Q. Okay. And this particular order, Exhibit W204, was actually established or promulgated by the DNRC; right?

A. Yes.

Q. Okay.

MR. BROWN: I think, Your Honor, before we dig into this order and my following exhibits, this is probably a pretty good place to pause until tomorrow morning.

SPECIAL MASTER: Okay. That sounds good. Why don't we pause then. We'll come back at 8:30 tomorrow morning. And, actually, before everyone stands up, just one other question.

Do you plan to probably generally proceed in the same order in which the witnesses were listed on your original motion for time limitations?

MR. BROWN: No. Not entirely, anyway. As a matter of fact, following Mr. Levens and Mr. Wheaton,

Mr. Fassett will be our next witness.

And we have provided the list, that I believe you have, of our witnesses through Wednesday. And so generally, at this point in time, that's all we know. Given the way that this schedule has changed, we've had to do some adjustments to make sure we can get some folks lined up.

And so we'll have these two gentlemen. And then we'll have Mr. Fassett, which will be followed by a series of additional Montana water users, which will then be followed by a series of Wyoming water users, which then, I believe, will be followed by Sue Lowry, who is Wyoming's current Yellowstone River Compact commissioner, and then followed by the Wyoming State Engineer, Mr. Pat Tyrrell, and then after that, I believe we've got some other folks that we're still lining up.

SPECIAL MASTER: And will Mr. Fritz and Mr. Hinckley probably --

MR. BROWN: They'll probably bring up the end.

SPECIAL MASTER: Okay. I was just curious. I went through last night and sort of correlated the list with your original identification of who the witnesses were and was trying to get a sense,

recognizing having to move witness in and out, of how you were actually planning on proceeding with your case. And it looked as if it was sort of groundwater and then additional focus on Montana water use and then Wyoming groundwater water use and then Wyoming water officials and then the expert witnesses.

MR. BROWN: We'll follow that general pattern, I think, with a kind of splash of other folks here and there that we weren't able to get scheduled where we'd like them to be scheduled.

SPECIAL MASTER: Okay. Sounds good. So we will adjourn now. And we will go back into session at 8:30 tomorrow morning. So thank you very much for taking the stand this afternoon. Unfortunately, you'll have to come back tomorrow.

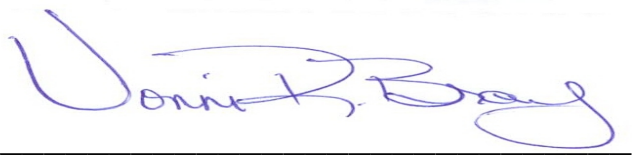
(Trial Proceedings recessed at 4:54 p.m., November 18, 2013.)

REPORTER'S CERTIFICATE

I, Vonni R. Bray, a Certified Realtime Reporter, certify that the foregoing transcript, consisting of 260, is a true and correct record of the proceedings given at the time and place hereinbefore mentioned; that the proceedings were reported by me in machine shorthand and thereafter reduced to typewriting using computer-assisted transcription.

I further certify that I am not attorney for, nor employed by, nor related to any of the parties or attorneys to this action, nor financially interested in this action.

IN WITNESS WHEREOF, I have set my hand at Laurel, Montana, this 12th day of February, 2013.



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