BEFORE THE DEPARTMENT OF WATER RESOURCES

OF THE STATE OF IDAHO

IN THE MATTER OF BASIN 37   )   Docket No.

ADMINISTRATIVE PROCEEDING   )   AA-WRA-2021-001

_____)

VOLUME V

(Pages 1097-1380)

BEFORE

HEARING OFFICER: GARY SPACKMAN

Date: June 11, 2021 - 8:38 a.m.

Location: Idaho Department of Water Resources

            322 East Front Street

            Boise, Idaho

REPORTED BY:

JEFF LaMAR, C.S.R. No. 640

Notary Public

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22     3 - Water Right No. 37-59M map          ****    1328

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1   THE HEARING OFFICER: This is Friday, the 11th

2   of June. This is Day Five of the hearing to determine

3   whether junior groundwater rights should be curtailed

4   in the Bellevue Triangle to satisfy senior surface

5   water rights.

6   Mr. Barker, you are calling witnesses.

7   Next witness.

8   MR. BARKER: South Valley Ground Water District

9   calls Gary Beck.

10   THE HEARING OFFICER: Mr. Beck, would you raise

11   your right hand, please.

12

13   GARY McKELL BECK,

14   having been called as a witness by South Valley Ground

15   Water District and first duly sworn, testified as

16   follows:

17

18

19   THE HEARING OFFICER: Thank you. Please be

20   seated.

21   You may examine the witness.

22   MR. BARKER: Thank you, Mr. Director.

23   ///

24   ///

25   ///

1   DIRECT EXAMINATION

2   BY MR. BARKER:

3   Q.   Good morning, Mr. Beck.

4   Would you introduce yourself, spell your

5   name, and tell the judge where you live.

6   A.   My name is Gary McKell Beck, G-a-r-y,

7   M-c-K-e-l-l, B-e-c-k. I live -- my address is 40

8   Hillside Ranch Road in Bellevue, Idaho 83313.

9   Q.   Okay. And what do you do for a living at

10 the present?

11   A.   I manage and operate Hillside Ranch Farms

12 in Bellevue.

13   Q.   How long -- sorry.

14   A.   I've been doing that since 1996, October.

15 I've almost been there 25 years now.

16   Q.   Okay. Just for the record, we need to make

17 sure we don't talk over each other, so let me try to

18 finish and make it easier for the --

19   A.   Okay.

20   Q.   -- court reporter.

21   A.   Oh, there I go again, talking over you.

22 Look at there. There's some smiles today. Wow.

23   You've even smiled. Look at that.

24   Q.   Mr. Beck, where were you born and raised?

25   A.   I was born and raised in Burley, Idaho.

1   Q.   So you've been in this area of south

2   central Idaho all your life?

3   A.   Yes. I was born and raised on a family

4   farm in Burley, and -- until 1996. Family farm just

5   wasn't big enough to handle me and my brothers and my

6   father, and so I moved to Bellevue.

7   Q.   And you took a position with the Hillside

8   Ranch at that time?

9   A.   That's correct.

10   Q.   So explain to the Director what the

11   Hillside Ranch is.

12   A.   Hillside Ranch is a malt barley farm for

13   Coors and Anheuser. We also raise alfalfa. We also

14   have a tree farm that we supply trees throughout the

15   Northwest from -- from Denver to Park City to Jackson

16   Hole.

17   Q.   How many acres do you have under

18   cultivation at the Hillside Ranch?

19   A.   4200.

20   Q.   And how much of that is in hay and how much

21   of that is in barley?

22   A.   So roughly we have hay -- barley right

23   now -- give me a second. So barley we are right at

24   about 2500 acres of barley. Half of that is organic,

25   the other half is conventional. And that is all malt

 1 barley with Coors and Anheuser.

 2   And the remaining is alfalfa, about

 3 1500 acres of alfalfa and grass mix.

 4   Q.   Do you have -- grow any other grains?

 5 Wheat?

 6   A.   We grow a little bit of wheat for the flour

 7 mill that we supply all the wheat for.

 8   Q.   Okay. How much land do you have under

 9 wheat cultivation?

10   A.   It varies, depending on the need, supply

11 and demand for the flour. But this year only we are at

12 just a small pivot, 35 acres.

13   Q.   Can you describe the water supply for the

14 ranch, please.

15   A.   So it varies. We begin -- the ranch begins

16 closer up to Bellevue. We have a farm up there callid

17 Bell Ranch. It's 310 acres. It has both surface and

18 groundwater.

19   Then as you go farther south, we call that

20 the North Ranch, which has both ground and surface.

21 All the acres, all -- the whole, entire farm has

22 groundwater with surface. Some of the acres only have

23 ground and no surface.

24   And then as we go farther south and we get

25 to Baseline Road, there's another farm called Price

 1 Place, and which was just purchased last year. And it

 2 is also ground and surface.

 3   And then as you get to south of Highway 20

 4 where we call Hillside Ranch, the main -- the main

 5 ranch, that is where the artesian wells are. There's

 6 three of them. One is located north of Highway 20, and

 7 the other two are on the south of Highway 20. And we

 8 go all the way to a field -- a canyon called Teeter

 9 Canyon is where we end up at the farthest south.

10   Q.   Okay. And then how far west and east does

11 your operations go?

12   A.   So we are in between -- right in the center

13 of the whole, entire valley pretty much. The north

14 farm is in between Friedman Lane and Kingsbury. And

15 then right off of Baseline, Price Lane, and then onto

16 the highway.

17   Q.   Okay. And are --

18   A.   So yeah, about right in the middle of the

19 valley.

20   Q.   Okay. And are you familiar with where the

21 TNC reserve is on Silver Creek?

22   A.   Yes. So the creeks that run through the

23 ranch are at the headwaters of Silver Creek.

24   Q.   So does your property adjoin the TNC

25 property?

1   A.   We're really close. Some of it does, yes.

2   Q.   Okay. So the source of your surface water,

3   where does that come from?

4   A.   It all comes from Big Wood and from a

5   couple drainages, Buhler Drain is one that is on the

6   south -- on the south end of the valley. And Patton

7   Creek.

8   Q.   Okay. And those are drains in the south --

9   both of those are drains in the south end of the

10 valley?

11   A.   That's correct.

12   Q.   And your surface water from Big Wood, how

13 is it delivered to the ranch?

14   A.   It's delivered in two different canals, one

15 in 45 and the other one in Baseline Canal.

16   Q.   Do you know roughly what percentage is

17 delivered from the 45 and the Baseline?

18   A.   I don't have that number.

19   Q.   Okay. Do you know -- can you locate the --

20 well, let me ask it this way.

21   Are the ranches located near the end of the

22 canal systems?

23   A.   Yes. We are -- majority of our -- yeah, we

24 are at the tail end. So there is typically a pit, a

25 gravel pit, at the end of the pump station, and if we

1 have any overages, they dump into gravel pits.

2   Q.   But past your ranches and your pivots,

3 there's no place -- no other deliveries past there?

4   A.   No.

5   Q.   I'm not sure the record's going to be right

6 on that.

7   Are there deliveries past your pits -- or

8 past your last pivots?

9   A.   The farthest to the south?

10   Q.   Right.

11   A.   On Price Lane, no. We're at the end of the

12 line there. So I would say, yeah, we are at the end.

13   Q.   Okay. So what I'd like you to do now is

14 explain for the Director what kind of modifications

15 have been made to the irrigation practices on the

16 Hillside Ranch and the other ranches you've described

17 over the last let's say decade or so.

18   A.   So I explained I arrived at Hillside Ranch

19 in October of 1996. Came from Burley where we just

20 kind of did the same thing over and over and over

21 again, like everybody else had been doing. And so we

22 watered seven days a week. The pivots never shut off.

23 If -- most of you probably know the soil in the

24 Triangle is gravel. And it's not a heavy loam soil

25 like what is on the south side of Highway 20.

1   And so we felt -- and I've done just like

2 what everybody -- the other managers ahead of me, we

3 just left the pivots running seven days a week. And we

4 did that for quite a few years, until 2008 we had an

5 end-gun go off of a pivot.

6   And again, all these pivots had end-guns

7 running. And the sprinkler packages were galloned up

8 to 1200 to a thousand -- a thousand to 1200 gallons a

9 minute on these pivots.

10   Well, not until 2008 when one end-gun --

11 well, the motor burned up. And we decided to leave it

12 off for the summer and not fix it.

13   Well, at the end of that year we -- thank

14 goodness we had two pivots side by side: one with an

15 end-gun, one without. And thank goodness they were

16 both off different meters. And we realized our power

17 bill was cut quite substantially, quite a bit. And

18 we're like, What's the difference this year between the

19 other years?

20   Well, that end-gun -- if you look at an

21 end-gun motor on a pivot, they're typically about a two

22 to a three horse motor. And if you're looking at a

23 pivot, each center drive on each tower is about

24 three-quarters of a horsepower. And typically they run

25 about three to four towers at a time.

 1   So we started noticing, Wait a minute, our

 2   power doubled when we had the end-guns on. And we

 3   went, Wait a minute. This is interesting. This is an

 4   interesting concept, because is it worth the power,

 5   doubling our power costs per acre, from going at $52 an

 6   acre down to 26 without an end-gun.

 7   Q.   So did you notice any changes in water

 8   consumption by removing the end-guns?

 9   A.   Yeah. You know, an end-gun usually puts

10   out -- a typical end-gun is about a hundred to

11   250 gallons a minute, depending on the size of the

12   pivot and the circumference you want to cover.

13   And we realized just that one end-gun, we

14   were able to shut -- we were able to save 10 percent

15   that year alone, just on one pivot, which if you look

16   at in a 24-hour period -- so you break it down, if you

17   are using 100 gallons less a minute on an end-gun,

18   you're looking at 144,000 gallons a day in savings.

19   And we're like, Okay.

20   You know, and back then we had plenty of

21   water, but we knew -- we just -- being at the

22   headwaters of Silver Creek, we knew we needed to make a

23   change. And so that year when I was explaining this to

24   Coors, our field man, that fall they came to us -- so

25   if you look at a season on an end-gun, it's about

1   7.2 million gallons of water in savings. That's a lot

2   of toilets that are being flushed. No smiles on that

3   one? There's a few.

4   Okay. So we -- as I talked to our field

5   man and explained to him what we're doing, he -- they

6   asked us that in the fall of 2009 to be their barley

7   showcase farm, because they -- they came to us and

8   asked us what's our efficiencies, "Would you be willing

9   to work with us on understanding water issues?"

10   And we said, "Yeah, let's work together on

11 this."

12   So when they came to us, we suggested that

13 TNC, which is The Nature Conservancy, be involved with

14 this, since they are part of Silver Creek. And then

15 things really started to change. This was our pivoting

16 point in 2010 when we started to really make changes.

17 And again, we did -- started doing this 12 years ago.

18   So in 2010 we bought two moisture probes.

19 And these probes consist of -- now, back then they were

20 pretty much unheard of. No one really knew much of

21 about a soil moisture probe, which there was four

22 probes that were put into the ground, one at 6 inches,

23 one at 12 inches, one at 18 inches, and one at

24 24 inches.

25   And we did -- we had two of these sensors

1 set up in two different fields. Actually, two of these

2 same pivots that we had the end-gun issue with the

3 previous year.

4   And as we set up these probes, one pivot

5 had a heavier soil than the other, and the other one

6 had a gravelly soil. And we wanted to compare the two.

7 And that's all of my data that we had been collecting

8 on Hillside Ranch for years with the help of Coors and

9 TNC.

10   And we realized at this time of the

11 ballgame we were putting on three-quarters of an inch

12 of water per pass, per pivot, thinking gravel needed

13 more water and the heavier soil needed less water.

14   Well, our soil moisture probes pretty much

15 kicked me in the butt that first week and taught me

16 otherwise. We had -- in a six-hour period, that

17 three-quarter inch of water was at 18 inches in depth.

18 I do not need 18 inches of water in depth in the soil

19 for barley. There's no reason.

20   Q. So what did you do to respond to the

21 information that you got from the soil moisture sensors

22 in terms of your irrigation practices?

23   A. So your question, let me finish, the other

24 probe was telling us on the heavier soil we did a

25 quarter inch a pass, and we realized that wasn't enough

1 water. So what it taught us, to use less water. So we

2 dropped it to a half an inch that next week. And we

3 still had plenty of water.

4   So then we dropped it to a quarter of an

5 inch, and we still -- that was seven days a week

6 running that pivot around seven days a week, one with

7 an end-gun, one without.

8   Then we noticed our probes. We still had

9 plenty of profile in our ground for the crop. So then

10 we started shutting off midseason a day a week. And

11 that -- we realized we're still putting down too much

12 water, which was pretty impressive.

13   And so at this time, as we cut the end-gun

14 on the one pivot and shut off a day a week, we really

15 dropped our percentage to over 25 percent decrease in

16 our water that year on that one pivot.

17   And with the help of Coors and The Nature

18 Conservancy and with their analyst and their field men,

19 we realized, Wait, we can save a lot more just on --

20 not just on one pivot, but on the whole entire crop for

21 Coors.

22   Q.   This was the barley crop, obviously?

23   A.   This was the barley crop. This is malt

24 barley.

25   So if I'm shut off one day a week, just one

1 day, that's 750 [sic] gallons of water a week per

2 pivot. And so we were just like, This is -- this is

3 pretty neat.

4   Now, again, we knew we were saving water

5 with the end-guns off, but we didn't know how much.

6 Now we know how much. We had the help of these other

7 entities that really help us fine tune this. But then

8 by 2011 Coors, when they came into this agreement with

9 us to be the barley showcase farm, out of -- now,

10 there's 200 growers for Coors in the state of Idaho, a

11 little over 200.

12   Out of the whole company there's 700, over

13 700 growers, and they picked us. Why? Well, part of

14 it was probably PR, and the other was to realize where

15 we lived. We lived next to Silver Creek. And they

16 understood that we really wanted to make a change.

17   So they asked us to do this for the next

18 five years, work with them, and they would work with us

19 and help us to understand more about our soil. So in

20 2011 we took those same two pivots and other pivots and

21 we dropped these -- so our sprinkler packages on

22 these -- on our pivots are i-Wobs, which put a bigger

23 droplet than the traditional sprays.

24   We were able to drop our regulators from a

25 20 PSI regulator to a 15 PSI regulator, which is going

 1 to save you more water also. Pressure is money. So --

 2 and pressure is water.

 3   So as -- our typical i-Wob was about 8 feet

 4 high off the ground. And we decided, Let's play around

 5 with this and drop these sprinklers 3 feet off the

 6 ground. And again, we had comparison, a pivot with

 7 8 feet off the ground. And going the same speed, seven

 8 days a week, comparing to a pivot that had no end-gun,

 9 shutting off one day a week, and dropping the

10 sprinklers closer to the ground.

11   And we found out we could save another day

12 a week in water. So we were able to shut off two days

13 a week on that pivot, compared to the other pivot,

14 which, again, now you're out -- you double that

15 7 1/2 million gallons, now we're saving

16 1.5 million gallons of water a week. And that's

17 shutting off. That's not even including the end-guns.

18   So again -- and that year also with the

19 help of Coors and -- and The Nature Conservancy, we

20 also did a few other things. We -- they asked us to be

21 involved in Idaho Peak Rewards. I'm sure most of you

22 know what that is. It's when Idaho Power, you put your

23 systems on -- again, with Idaho Power, and they will

24 shut you off, depending on your plan. But we chose the

25 plan to be shut off three days a week at peak power,

1 which was from four to eight o'clock at night. And

2 they shut us off three days a week, which was 12 hours

3 a day [sic], which was another, if you're shut off --

4 if you're down to two -- if you're down to five days a

5 week, that's another 10 percent savings.

6   So we started realizing, Wow. And our crop

7 was doing better. Our yields were better. We weren't

8 leaching out all of our fertilizer out of the ground.

9 We were able to have a plumper, healthier crop, a less

10 disease, because the ground was so -- it was so wet.

11 And again, this is ten years ago when we started to do

12 this.

13   And so -- and then we added a few more

14 things in 2011. We added -- we added our first VFD,

15 which is a variable frequency drive, which was pretty

16 neat. And we went from a 60 PSI system down to 30,

17 which decreased our water usage again. Then with the

18 help of Coors and the TNC, we -- they asked us to try

19 this new VRI, this variable rate irrigation. And they

20 would take a sled through our fields, and they would

21 map out our soil content. What soils were heavier,

22 what soils were lighter, what part of the field needed

23 more water, what part of the field needed less water.

24   And so as they did a program, that pivot

25 would speed up and slow down in places. And we figured

1 out we could save another additional 5 percent of

2 water. And so by the year of 2012 with the help of --

3 between Coors and the TNC, they came up -- with that

4 year alone they came up with a savings for us with

5 their analyst and what we had saved in 2011. And this

6 report came out in 2012. And we had saved

7 339 million gallons of water that year.

8   So if you want to look at -- if you want to

9 look at a pivot and what it uses on a yearly basis on a

10 barley crop, so this year -- like last year -- we'll go

11 off of last year. We started watering May 15th, and we

12 were able to start shutting water off by July 15th. So

13 we're 60 days of watering. Now, give or take,

14 rainstorms and different aspects.

15   So if you're watering 60 days -- 60 days,

16 keep that pivot running, you're looking at over

17 8 million gallons of water usage on that pivot. Well,

18 do the math. You divide that into the three -- almost

19 340 million gallons of water we had saved that year.

20   And this was just on shutting end-guns off,

21 dropping drops on the pivots, doing new sprinkler

22 packages, doing the VRIs, doing the VFDs. We had help

23 from -- the Purdys did some changes on some flood

24 irrigation on this. We did -- Rocky Sherbine and John

25 Molyneux did some sprinklers, new sprinkler drops on

1   this pivots, and the variable rate irrigation.

2   And now it became a community effort. And

3   everybody started realizing, Wait a minute. Let's work

4   together. This is really neat.

5   Q.   So, Gary, I'm sorry, but did you have an

6   estimate of the total savings that you were able to

7   accrue as a result of this -- I mean percentage of use,

8   for example, or --

9   A.   So by -- by this time we had been saving

10   roughly we figured about 39 to 40 percent decrease in

11   water use. Now, we changed some sprinkler packages.

12   We changed -- we did multiple things. And the great

13   thing about this, we had a comparison. And we knew we

14   were saving water. Not just "I think" or "We made some

15   changes and I'm not quite sure," we absolutely knew,

16   with the help with the analysts from TNC and from Coors

17   field man, we knew we were saving water.

18   Q.   Did you get any kind of information from

19   Coors or TNC about the impact of that water savings on

20   Silver Creek?

21   A.   Yeah. So TNC did a really neat study. So

22   on that two -- 339.8 million gallons that was saved in

23   2011, it's like if any of you have ever sat at Silver

24   Creek at the Preserve and you watched Silver Creek flow

25   by, imagine sitting there for 14 hours watching that

 1 creek go by, and that's how much water we had saved

 2 that year. 14 hours. And this was just on a few

 3 pivots.

 4   Q.   So did you keep up the effort after 2011?

 5   A.   Yeah. So by 2012 we started putting in

 6 smart panels in our pivots, and we kind of started to

 7 get away from the VRIs, the variable rate irrigation.

 8 And these smart panels on the pivots, we could actually

 9 use the panels now and adjust how the watering was in

10 the fields.

11   So by 2013 half of our end-guns were

12 removed. And then by 2015 we had four end-guns on.

13 Now, four end-guns, because we had just ripped out --

14 well, taken out with wheel lines and replaced with

15 pivots, because all of you know the efficiency of a

16 wheel line or a hand line is about 50 percent efficient

17 compared to a pivot.

18   And so we realized we can save more water.

19 And again, anytime you make an efficiency change it's

20 not for free. It's expensive. But we -- we knew we

21 were doing something amazing back then, and we wanted

22 to continue to do that.

23   So by -- and the one pivot we had left on

24 and the three new pivots that were added on that year

25 and ripping out wheel lines, the one pivot was -- we

1   call it the big pivot, because it's a 23 tower pivot,

2   hence "the big pivot." And that end-gun covered

3   35 acres on the circumference. That was a tough one to

4   shut off, 35 acres. But we did back in 2018. We shut

5   the end-gun off, and it's tough to see that ground, but

6   we planted some grass, some dryland grass underneath

7   it, and it's just the way it is. But to save that

8   water to us was more important than to farm every

9   possible acre.

10   Now, along with that we started to dry up

11 all of our corners that we had hand lines in. Again,

12 as we did these studies over the course of five years,

13 the first year we took a sample underneath the end-gun,

14 and we sent it down to Coors. And the barley was

15 rejected because the end-gun was so -- it pounded the

16 crop. Either it was lodged or too wet, and we ended

17 up -- and we realized, Wait a minute, the crop isn't

18 even worth harvesting.

19   And then we started looking at our quality

20 with Coors and realized our hand lines and our yield on

21 our hand lines were half what they were at the pivots.

22 And we continued to do this with -- with everything.

23   So, you know -- and so by the time we -- by

24 2015 this 339 million gallons of savings, that was

25 approximately -- and this is a printout I got from TNC

 1   themselves. That was four end-guns, four pivots were

 2   shut off that year. One pivot with dropping

 3   irrigation, dropping the drops on the pivots, nine new

 4   sprinkler packages, one smart panel, two VRI programs

 5   installed on two pivots, and then another additional

 6   eight center pivots for VRIs. Then this was also a

 7   nozzle change for a VRI irrigation system. So just

 8   those simple few pivots, we were able to save that much

 9   water. Now --

10   Q.   How much water is "that much water"? I'm

11   sorry. I didn't hear you.

12   A.   Well, 339 million gallons.

13   Q.   Oh, okay.

14   A.   So -- and that was in 2012. And by 2015

15   almost every end-gun was shut off, every pivot had been

16   dropped to 3 feet off the ground, two more VFDs were

17   installed.

18   Q.   So do you have an estimate of the savings

19   between '12 and '15? Do you have a number for that?

20   A.   Well, now we -- this was just on a few

21   pivots. You know, I haven't even -- we're talking

22   billions of gallons of water --

23   Q.   You don't have --

24   A.   -- a year we are saving.

25   Q.   Okay. Do you have any numbers, any actual

1   numbers?

2   A.   No.   But we can figure that out if we

3   wanted to real quick.   If we take 44 pivots, you shut

4   off the end-gun on 44 pivots, and you're saving --

5   let's see, and your saving 144,000 gallons a day on 44

6   pivots.   Excuse me, let me do the math right now.   And

7   this is just for Hillside Ranch as of this year.

8   44 pivots, times 144,000 gallons a day.

9   This is a day.   We are at 6,333,000 gallons a day.   You

10 want to times that by 60 days a year.   Let's just go

11 60.   That's 380,000 gallons of water saved just by

12 end-guns.

13   Q.   So 380 million?

14   A.   380 million, yes.   Let me write that down

15 so I don't forget.   380 million gallons a day -- a

16 year.

17   Now, that didn't -- you know, that

18 didn't -- that's not with us shutting our pivots off

19 now up to three days a week, sometimes four days a

20 week, because we realized -- back then we used to bale

21 all of our straw off the fields.   Every piece of straw

22 was baled off.

23   Now every other year we put the straw back

24 in the ground, build up our organic matter, and now our

25 soil is able to hold more moisture and keep it in

1 longer. So now we're off to about three days a week on

2 pivots.

3   So again, we're talking close to, for the

4 year, we're saving over a billion gallons of water a

5 year. Now, where does that water go? If we're saving

6 it, we're not using it, and we're at the end of the

7 line, it dumps into all of our gravel pits. And every

8 one of those gravel pits lead to Silver Creek.

9   And it's been -- it's been great to see

10 what -- with the help of Nature Conservancy and Coors

11 what can be accomplished in -- you know, I think five

12 years is a pretty short period of time what we were

13 able to do.

14   Q.   Okay. So let's -- let's talk, then, a

15 little bit about the process of growing barley when --

16 what happens to barley when it becomes time to ripen

17 and harvest, how much water do you need to get -- or

18 how much time do you need with water on to get barley

19 to a harvestable crop on your ranch -- ranches?

20   A.   So in the spring the barley crop does

21 not -- again, we've changed a lot of things in the last

22 12 years. Again, we used to water seven days a week.

23 Now, this spring with it being so cold, we were able to

24 only run a pivot around in 24 hours and shut it off.

25 Now we really are starting to understand our soil. And

 1   with that, we've cut back and cut and cut.

 2   Now watering a barley crop, it does not

 3   need a lot of water off the get-go. But if you can't

 4   get it out of the ground, if the ground's too dry, you

 5   got to water it up, which takes 3 to 4 inches at least,

 6   just to get the crop out of the ground. But this year

 7   we were very, very blessed to have really cool nights,

 8   the ground stayed wet, the crop came up by itself. We

 9   start watering it by May 15th.

10   And again, there's a timeline, what we

11   planted first, what we planted last, it all varies. It

12   took us a month to plant all 2500 acres.

13   Q.   So when do you plant?

14   A.   We plant as soon as we can.

15   Q.   And when was that this year?

16   A.   This year was the last day of March. It

17   was March 30th, we started planting this year.

18   Now the barley is in the boot stage. It's

19   starting to push the head. This is when it's really

20   important to have -- have water. If we don't have

21   water right now, what happens to that head with the

22   malt barley -- now, malt is much different than feed

23   barley. Malt is -- these contracts we've been building

24   for years, with organic and conventional. Right now in

25   the boot stage, this is when it needs a little more

1   water. But it has enough foliage and the barley is

2   tall enough that it holds enough water to the ground.

3   So we are a little more water right now.

4   And by -- by July 1st, then we start cutting the water

5   back a little more. But we're typically running at

6   least four days a week. And that's the most important

7   time of the crop's life is at the very end, because

8   that determines the quality of the barley for these

9   malting facilities.

10   If we short the water at that time, the

11   barley will become thin. They call them thins. The

12   barley will be rejected. If your barley is not plump

13   enough, your barley will be rejected. If you don't

14   water it correctly, your color will not be right, and

15   it will be rejected. Your protein will not be high

16   enough, and your crop will be rejected. And the list

17   goes on and on.

18   Q.   And this water after the 1st of July is

19   critical to the crop in order to -- so that it doesn't

20   get rejected by your contractors?

21   A.   Yes.

22   Q.   Okay. So you have contracts with Coors, I

23   assume, and anyone else to provide malt barley?

24   A.   So we have contracts -- two separate

25   contracts with Coors: one conventional, one organic.

1 And then we have an organic contract with

2 Anheuser-Busch.

3   Q.   Okay. And what's the -- do you have a

4 volume of barley you're supposed to provide?

5   A.   So between the three contracts, it's

6 14-and-a-half million pounds of barley. So if you want

7 to figure that into bushel of barley, a bushel of

8 barley is typically 48 pounds.

9   Q.   So what happens to -- what happens to

10 barley if you don't make the grade? What can you do

11 with it?

12   A.   So if we're shut off on July 1st, the crop

13 will not make grade at all. I've already been told by

14 Coors field men, Anheuser's field men, our crop, they

15 will not take our crop. And then it would go to

16 feeder. Feeder right now, you might as well just go

17 ahead, swath the barley field, and bale it up, because

18 by the time you put all the time and effort into

19 harvest, you're not going to even cover your cost to

20 sell it as feeder. So you're better off just cutting

21 it.

22   Q.   So have you made an estimate of the losses

23 on the contracts that you would accrue if you are not

24 able to fill your contracts with Coors and

25 Anheuser-Busch?

1   A.   So we're looking at with Coors

2   conventional -- and our crop is probably the best crop

3   I've seen in years this year. The -- Mother Nature has

4   been at -- been helping us so much, except for the

5   rain, and the moisture we need. But our conventional

6   contract with Coors, it will be $950,000 in loss. Our

7   organic contract will be $600,000 in loss. Organic

8   contract with Anheuser will be 450,000 in loss. And

9   that doesn't even include our hay crop.

10   Q.   So what do you anticipate the consequences

11   of your long-term relationships with Coors and

12   Anheuser-Busch would be if you're not able to deliver

13   your 14 million pounds of barley this year?

14   A.   So the Stevenson family has been raising

15   Coors barley since 1973. And not one year has gone by

16   that a contract has not been met. But I guarantee they

17   will cut our contracts. Everything that the Stevenson

18   family has worked for since 1973 to build their

19   contracts up -- to switch from conventional to organic,

20   to make -- to get rid of pesticides and all these

21   herbicides and all these chemicals, to make Silver

22   Creek and surrounding areas a better place to live,

23   will be lost.

24   I bet -- quote me or not, I would figure

25   they would cut our contracts in half. Or they might

1 not even ask us to do it again, knowing that we cannot

2 supply them a crop anymore.

3   Q.   Do you have an understanding of when these

4 contracts are entered into with companies?

5   A.   Yeah. All our contracts are entered in the

6 fall. And it varies. It -- it depends on what's going

7 on in the world. But typically, October, November,

8 December is when these contracts all go in place.

9   Q.   Okay. Mr. Beck, are you familiar with the

10 lands around Richfield and Dietrich and Shoshone?

11   A.   Yeah. I have a lot of friends down there.

12 I am -- I am a member of the Church of Jesus Christ of

13 Latter Day Saints, and I got a lot of friends down

14 there.

15   Q.   So have you been through that country

16 recently?

17   A.   Yeah, yeah. I drove through there

18 yesterday.

19   Q.   And --

20   A.   And my -- I got some in-laws -- well, my

21 daughter's in-laws, they have a ranch -- a farm in

22 Richfield. So I took a quick drive down there

23 yesterday.

24   Q.   Did you make any observations about the

25 irrigation practices in effect down there compared to

1   the ones that you're implementing up on the ranch?

2   A.   Yeah.   I seen -- I did not see one end-gun

3   off.   I drove around through Shoshone, Dietrich,

4   Richfield -- I know Dietrich's out of this equation.

5   Shoshone, Gooding, I did not see one end-gun off.   And

6   I took back roads.   I spent an hour and a half driving

7   around there yesterday.

8   Every corner is watered.   Every -- around

9   every rock pile, there's hand lines, there's -- and you

10 can see the difference in the crop between the pivot

11 and the hand lines.   But every -- everything is

12 watered.   Every end-gun on, sprinklers, top of the

13 pivots.   Now, again, there's different practices for

14 every area, but the waste of water, in my opinion, in

15 what we've been trying to accomplish for years, it --

16 it hurt.   It hurt.

17   Q.   So one last question: If you -- if you

18 have to lose your crop this year, what's going to be

19 the consequences for the ranch operations?

20   A.   Consequences? Will we survive? Yeah,

21 we'll survive another year.   We will lose contracts.

22 We will lose long-term relationships.   We will lose --

23 this was the best year I've had with hired help.   And

24 we get four guys every year from H-2A, four guys from

25 Mexico.

1   This year all of my guys -- I got six guys

2   that are Spanish, six of them with families. I will

3   have to send the majority of them back home, which

4   they -- they rely on us. The Hillside Ranch takes care

5   of multiple families.

6   It takes care of my six men, and my son, my

7   family, John and Elizabeth, Justin and Brett Stevenson,

8   and their other two -- and Andrea and John Fell. So

9   this ranch, you know, it's getting harder and harder

10   every year. Expenses go up.

11   And that's the one thing I do know, I do

12   know numbers. I do know expenses; I know income. If

13   you don't know either, how do you know which way you're

14   going to go.

15   Q.   So if you are curtailed, are you saying

16   you're going to have to send people home to Mexico?

17   A.   Oh, yeah.

18   MR. BARKER: Thank you, Gary. No further

19   questions.

20   THE WITNESS: Yes.

21   THE HEARING OFFICER: Ms. O'Leary, questions?

22   MS. O'LEARY: No, Director.

23   THE HEARING OFFICER: Mr. Bromley?

24   Mr. Lawrence?

25   MR. BROMLEY: No.

 1   THE HEARING OFFICER: Mr. O'Bannon, any

 2   questions?

 3   MR. O'BANNON: No questions.

 4   THE HEARING OFFICER: Cross-examination.

 5   Mr. Fletcher or Mr. Rigby?

 6

 7   CROSS-EXAMINATION

 8   BY MR. FLETCHER:

 9   Q.   Mr. Beck, you're a Beck from Burley, so I

10   have to stipulate you've got to be a good guy; right?

11   A.   A good guy? I'm a great guy.

12   Q.   A great guy. Yeah. Well --

13   A.   My dad was Denny Beck.

14   Q.   Yeah.

15   A.   Yes.

16   Q.   Whose name are the water rights in on this

17   farm you described?

18   A.   There's multiple names. John Stevenson is

19   under most of them. There's some other ones, but the

20   majority of them are under John Stevenson.

21   Q.   What are the other ones?

22   A.   The -- they're -- with the new property I'm

23   not sure how they have those. I think that's in

24   transition right now from Silver Springs, from Tom

25   Ogara's property to splitting between the new owners

1   and John. I'm not sure who that's all going

2   underneath.

3   Q.   Anything else? Any other name that you're

4   aware of?

5   A.   No.

6   Q.   As I understand your testimony, all of your

7   irrigated acres are covered by sprinkler; correct?

8   A.   Yes.

9   Q.   And all of them are covered by groundwater

10 rights; correct?

11   A.   Yes.

12   Q.   Do your surface water rights get curtailed

13 in priority?

14   A.   So that's a good question, because it's a

15 little difficult in our valley since we are at the end

16 of the line. When we get down to 1884 water rights,

17 they can't get water to us. It's really difficult.

18   Q.   So they get curtailed or they're cut off?

19   A.   Not necessarily curtailed. They -- we just

20 can't get the water.

21   Q.   It's not a source of water for you?

22   A.   No.

23   Q.   So when that --

24   A.   '86s, they can get the water to us. That's

25 great. But when we start cutting, then we have to make

1 a decision, Okay, where does all -- do we put all of

2 our water to. So instead of separating it through all

3 the branches of the creeks, all the ditches, we decide,

4 Okay, let's -- which crop is more important than the

5 others? Which well is more important? Which well is

6 going to be able to stand up for the next two weeks of

7 watering? Maybe it's a week of watering. Last year

8 most of them were ran for a couple weeks.

9   Q.   So when the surface water supplies to an

10 acreage -- when the surface water supply is no longer

11 available, you're able to turn on a pump and -- excuse

12 me, turn on a well and start irrigating with

13 groundwater on that same ground; correct?

14   A.   Yes. All of these systems are tied -- the

15 wells are tied directly into a majority of the pump

16 stations.

17   Q.   Okay.

18   A.   Some of them are dropped right into a pond,

19 and then we pressurize out of them.

20   Q.   And do you use the surface water supply as

21 long as it's available?

22   A.   Oh, yeah. That's our cheapest water.

23   Q.   Okay. Are the groundwater rights

24 supplemental, do you know, to the surface water?

25   A.   Some of them are.

1   Q.   Okay. And those that are supplemental, do

2   you only irrigate with those when the surface water

3   supply is not available?

4   A.   That's correct.

5   Q.   So is it fair to say that -- you testified

6   about stress to your barley crop.

7   But have you had stress due to lack of

8   water on your barley crop, historically?

9   A.   We've had pumps go out. We've stressed

10   them.

11   Q.   Okay.

12   A.   And they've been rejected.

13   Q.   Okay. But as far as an actual supply of

14   water, you've never had a shortage of supply of water

15   to your barley crop; isn't that true?

16   A.   That's correct.

17   Q.   And your groundwater rights have never been

18   curtailed; correct?

19   A.   That's correct.

20   Q.   You mentioned all of these improvements.

21   Has your operation incurred expense in

22   making all these improvements?

23   A.   Yeah, a lot of expenses.

24   Q.   How much?

25   A.   So the great thing with Idaho Power that's

1 not an expense when we do Peak Rewards, we get credit

2 for Peak Rewards.

3   Q.   Okay.

4   A.   Sprinkler packages, we don't pay a full

5 amount. Idaho Power has a great efficiency irrigation

6 system, which they will pay a partial of that crop -- a

7 partial of that sprinkler package. We take advantage

8 of that. This year alone we replaced nine sprinkler

9 packages.

10   So other expenses: Soil moisture probes.

11 Back then these ones -- now they're obsolete. Now

12 we've gone to other ones that are a single probe to the

13 ground. And you just put your phone up next to it. It

14 downloads everything, and it's wonderful.

15   The old ones, big, massive station with a

16 solar panel. They were about 4,000 each. We have --

17 we have five of those. The smart panels, instead of

18 doing the VRIs, we roughly now have five FieldNETs and

19 17 Valley pivot panels that are smart panels that we

20 can adjust the speed and the GPS direction of where we

21 want water.

22   Q.   Okay.

23   A.   And so each one of those, they range from 3

24 to $5,000 each.

25   Q.   Have you done a calculation of how much

1 money has been spent --

2   A.   Well, we look at --

3   Q.   Let me finish the question.

4   A.   Oh, sorry.

5   Q.   How much money has been expended to make

6 these improvements that you testified to here today?

7   A.   How far back do you want me to go?

8   Q.   Well, you said, I think, they started in

9 2010.

10   A.   Yep, 2000 -- so with improvements? Pivots,

11 hoses to drop things, panels, I would say with all the

12 pivots, we have replaced roughly about 12 wheel lines

13 and put in new pivots lately. So we are probably

14 looking at an expense of over a half a million dollars.

15   Q.   So these improvements you've been

16 describing are costly; correct?

17   A.   Anytime you make an improvement it's

18 costly.

19   Q.   Right.

20   A.   Anywhere you do it. At home, anywhere.

21   Q.   Based upon your testimony, as I understood

22 it, you were saying that as you reduced pumping -- or I

23 shouldn't -- I think your testimony was as you reduced

24 the amount of water you used to irrigate, you noticed

25 an increase in the flows at Silver Creek; is that

 1 correct?

 2   A.   We have -- I haven't necessarily seen the

 3 increase. But TNC, they made that comparison.

 4   Q.   Okay. So as your groundwater pumping

 5 decreased and your other irrigation decreased, Silver

 6 Creek responded to that; correct?

 7   A.   Yes.

 8   Q.   According to the study you've cited here

 9 today?

10   A.   Yes.

11   Q.   Did they give you any idea of how quickly

12 it responded?

13   A.   Typically, when we start putting water into

14 the gravel pits, up on Pero Road, let's say, or up on

15 Baseline, we typically see a 10 to a 14 day before we

16 see the water coming up in the creeks on Patton Creek

17 and Buhler Drain. That's typically what I have seen in

18 the past.

19   Q.   And those drains, where do they flow?

20   A.   Buhler Drain dumps into Stalker Creek. And

21 Patton Creek dumps into Stalker Creek, which dumps into

22 Silver Creek.

23   Q.   So they're tributaries to Silver Creek?

24   A.   Yes.

25   Q.   These stresses on your crop that you

1 described due to lack of water that would occur if you

2 were curtailed, those stresses are true with anyone

3 growing a crop; correct?

4   A.   That's correct.

5   Q.   And if anybody's growing barley, they would

6 have similar stresses if they were curtailed; correct?

7   A.   That's correct.

8   Q.   And it doesn't matter if that source of

9 water is surface water or groundwater, if it doesn't

10 get to the crop, the crop is stressed; correct?

11   A.   That's correct.

12   Q.   Based upon your experience with contracts,

13 if someone that has solely a surface water supply has a

14 contract with Coors or Anheuser-Busch and cannot

15 produce the crop the way Coors or Anheuser-Busch wants

16 it to be produced, it will be rejected; correct?

17   A.   That's correct.

18   Q.   Since you've noticed this interaction

19 between groundwater and surface water, do you believe

20 that groundwater rights should be administered in

21 priority with surface water?

22   A.   I believe in priority dates. I believe in

23 strictly priority. It's a -- without that -- you need

24 priority dates. That's how we get our water.

25   Q.   Well, can you explain that further. Why do

 1 we need to honor priority dates?

 2   A.   For us, when it comes to surface -- you

 3 know, like you said, we have supplemental wells, some

 4 of them. They've been studied -- I've been meeting

 5 with several people from IDWR these last few weeks

 6 going over them and understanding our situation,

 7 understanding the ditches.

 8   Yeah, if you want to look at well cost

 9 compared to surface -- ground compared to surface, it's

10 double the expense. So everyone is trying to get what

11 water belongs to them.

12   Q.   As you drove through the Richfield,

13 Dietrich, and north Shoshone areas, you commented that

14 you -- I'm paraphrasing, but you were disturbed by the

15 lack of upgrades in their system; is that a fair

16 statement? Or how would you characterize that?

17   A.   Yeah. Yeah, that's fair.

18   Q.   And do you know whether the source of water

19 on those fields that you observed was groundwater or

20 surface water?

21   A.   It was both. I seen wells, I seen ground,

22 and some of them I just seen strictly ditches going

23 into the pump stations.

24   Q.   Okay. Would you admit that to make some of

25 these improvements, perhaps not all farmers could

1 afford to make those improvements you've described?

2   A.   How do you not do the improvements? That's

3 the point.

4   Q.   Okay. Well, when you say "how do you not,"

5 if you don't have enough money, how can you?

6   A.   Then waste the water? To me, we've been --

7 this has been a project -- yeah, it's hurt to shut off

8 the end-guns. Every end-gun on every pivot you lose 5

9 to 7 acres. Okay? You start timesing that, that's a

10 lot of ground. And so we have dropped acres to become

11 as efficient as possible.

12   So how can you not do this?

13   Q.   Well, have all the groundwater users in the

14 Bellevue Triangle made these improvements?

15   A.   Quite a few of them have.

16   Q.   Have all of them?

17   A.   I don't know that. I don't run their --

18 their systems.

19   Q.   All right. So you're not saying that every

20 groundwater user in the Bellevue Triangle has made the

21 improvements that you've made?

22   A.   I have no idea.

23   MR. FLETCHER: Thank you, Mr. Beck.

24   THE WITNESS: Thank you.

25   THE HEARING OFFICER: Mr. Rigby.

1   MR. RIGBY: Thank you, Mr. Director.

2

3   CROSS-EXAMINATION

4   BY MR. RIGBY:

5   Q.   Mr. Beck, good morning.

6   A.   Morning.

7   Q.   I'm Jerry Rigby representing the senior

8   surface water users.

9   A.   You're smiling today.

10   Q.   Oh, and I haven't been?

11   A.   No. Yesterday you weren't.

12   MR. FLETCHER: That's only when he talks to Al.

13   MR. RIGBY: That's right.

14   Q.   Okay. Touché.

15   A.   Sorry.

16   Q.   Touché.

17   Carrying on with the questioning that

18   Mr. Fletcher asked of you, isn't it also a fact that

19   you were not able to see all of the improvements made

20   on the surface water users in your drive last Sunday or

21   yesterday?

22   A.   No, no. Nope.

23   Q.   Okay.

24   A.   I visited a few of my friends down there,

25   talked to them. And yeah, no one wants anybody to lose

1 a crop, farmers especially. That's your livelihood.

2 No one wants to see that.

3   Q.   And more importantly, you -- I believe your

4 testimony was that the time for barley watering is most

5 important at the end; is that correct?

6   A.   It's important the whole time. The amount

7 is important.

8   Q.   And if --

9   A.   It's not the -- how much -- it's how you --

10 how you put the water out. If you get it too wet, too

11 dry, you stress it. You got to do it just right. It's

12 like every crop.

13   Q.   But again, the issue is, even though you

14 may have watered it and it hasn't been stressed to

15 date, at the end becomes very important to continue the

16 correct watering; is that correct?

17   A.   Yeah. Everything we have done, those last

18 two weeks, if there's no water, it will be rejected.

19   Q.   Understood. And as I understand from your

20 testimony, that is still yet to come, timing?

21   A.   We'll see. We'll see.

22   Q.   No. I'm saying the need for the water is

23 still yet to come? Meaning in fact I believe your

24 testimony was, the 1st of July and there -- shortly

25 thereafter is an extremely important time for this

1   water?

2   A.   The last two weeks. Now, it all depends,

3   again, Mother Nature and how this works, but yeah,

4   typically those last two weeks are extremely important.

5   Q.   And so therefore even the surface water

6   users down below, if they were to lose their water in

7   those last few weeks, it would be the same problem for

8   their crops as well?

9   A.   Oh, yeah, I already know of some friends,

10 they've already been told by Coors and by Anheuser,

11 "You might as well swath your field." Correct.

12   MR. RIGBY: I have no further questions.

13   THE HEARING OFFICER: Redirect?

14   MR. BARKER: No questions.

15   THE HEARING OFFICER: Okay. Thank you,

16 Mr. Beck.

17   THE WITNESS: Well, that wasn't as painful as I

18 thought.

19   Are you smiling?

20   THE HEARING OFFICER: Well, you could be

21 recalled.

22   THE WITNESS: Could I? Then it gets painful?

23   THE HEARING OFFICER: I don't know.

24   MR. BARKER: Depends on how quickly he gets in

25 his truck.

1   THE WITNESS: I'm going to leave right now,

2 guys.

3   THE HEARING OFFICER: Do you want to take a

4 break, or do you want to call your next witness?

5   MR. BARKER: Let's take a quick break, five

6 minutes, ten minutes.

7   THE HEARING OFFICER: All right. Ten minutes.

8 Let's come back at five to 10:00.

9   (Recess.)

10   THE HEARING OFFICER: Next witness.

11   MR. BARKER: South Valley Ground Water District

12 calls Justin Stevenson.

13   THE HEARING OFFICER: Mr. Stevenson.

14   MR. BARKER: Justin.

15   THE HEARING OFFICER: Stretch out your legs and

16 come forward, please.

17   MR. STEVENSON: I'm going to take this chair in

18 case this takes awhile.

19   THE HEARING OFFICER: Yeah, you take whichever

20 chair you want.

21   Raise your right hand.

22 ///

23 ///

24 ///

25 ///

 1   JUSTIN STEVENSON,

 2   having been called as a witness by South Valley Ground

 3   Water District and first duly sworn, testified as

 4   follows:

 5

 6   THE HEARING OFFICER: Thank you. Please be

 7   seated.

 8

 9   DIRECT EXAMINATION

10   BY MR. BARKER:

11   Q.   That chair work for you?

12   Justin, would you state your name, address

13   for the record, please.

14   A.   Justin Stevenson. 11 -- 111 South Third,

15   Hailey, Idaho.

16   Q.   Justin, do you have a business occupation

17   at present?

18   A.   I am part of the barley farm we heard about

19   from Gary Beck.

20   Q.   Okay. So that's the Hillside Ranch farm?

21   A.   Yes.

22   Q.   Do you have -- would you explain your

23   educational background, please.

24   A.   Sure. I have a bachelor's degree in

25   agriculture from Montana State University.

 1   Q.   And since receiving that degree, have you

 2   worked on the family farm in the Triangle?

 3   A.   After working in vineyards in California

 4   for a few years and working for a sheep operation out

 5   of Carey called Lava Lake.

 6   Q.   Okay. So how long have you been with the

 7   family farm?

 8   A.   I came back about eight years ago.

 9   Q.   What generally are your responsibilities

10   with the farm?

11   A.   I converse with my father and Gary, our

12   ranch manager, make planting plans, decisions, sign

13   contracts.

14   Q.   Did Mr. Beck accurately describe the

15   operations, to your understanding?

16   A.   Certainly.

17   Q.   Is the source of your surface water for the

18   ranch -- or what is the source of surface water for the

19   ranch?

20   A.   District 45 Canal and Baseline Canal.

21   Q.   Does the ranch hold water rights in the

22   Triangle Irrigation District for delivery through the

23   45?

24   A.   Yes.

25   Q.   And does the ranch hold shares in the

1 | Baseline Canal Company?

2 | A.   Yes.

3 | Q.   Are you familiar with the operations of the

4 | D45 Canal?

5 | A.   Yes.

6 | Q.   Do you hold any positions either with the

7 | D45 Canal or the Joint Board of Control that operates

8 | the canal on behalf of the Wood River Valley Irrigation

9 | District and the Triangle Irrigation District?

10 | A.   Yeah. About six years ago I was asked by a

11 | Board member of the Triangle Irrigation District to

12 | help supervise the system when they had an

13 | untrustworthy ditchrider. So I was quite involved for

14 | a few years. But we have a new ditchrider who needs

15 | less oversight, so I've stepped back significantly from

16 | that role.

17 | Q.   Okay. So based on your understanding of

18 | the 45 Canal system, just explain briefly how that

19 | system works to deliver surface water to the Triangle.

20 | A.   Sure. So the D45 diversion is in Bellevue.

21 | It supplies water to about 9,000 acres in the Bellevue

22 | Triangle. I think there are about 200 users, starting

23 | with small users at the top, those are 5 to 10-acre

24 | places, and that is the Wood River Valley Irrigation

25 | District 45.

1   And on the southern end is most of the

2   bigger users, which are generally part of the Triangle

3   Irrigation District.

4   Q.   So sorry to interrupt, but would you

5   describe the canal system. Diversion location in

6   Bellevue.

7   So what happens to that canal?

8   A.   So the mainstem comes out of Bellevue, goes

9   under Highway 75 at about a little less than a mile and

10 a half. The first diversion comes off -- the first

11 lateral, rather. That lateral goes down Highway 75.

12 Terminates at Pero Road.

13   The center lateral, we would call it, goes

14 down Kingsbury to Baseline Road.

15   And the easternmost lateral goes underneath

16 Gannett Road, services the Cove Ranch, and terminates

17 just north of Gannett.

18   Q.   Okay. And what's the capacity of the canal

19 at the present?

20   A.   There is 170 cfs in it right now.

21   Q.   Is that full, or can it take more?

22   A.   It can take more.

23   Q.   How much more can it take?

24   A.   Well, in recent years I think it's only

25 been in the low 200s. But historically this canal in

1   the '70s I believe ran close to 400 cfs. So it's

2   diverting about half what it did in the '70s when --

3   Q.   And all these diversions are from the Big

4   Wood River; is that right?

5   A.   Yeah.

6   Q.   So are you familiar with the seepage losses

7   in the 45 Canal?

8   A.   Sure. I had a sneaky suspicion this may

9   come up. I brought a study from Alan Merritt dated

10 May 29, '90 --

11   Q.   Let's back up a second. Just your personal

12 observations --

13   A.   Oh.

14   Q.   -- first and then we can talk about that.

15   A.   Well, those are -- those are just site

16 observations. I mean we see big losses where it's

17 gravel. And where it's heavier soils, the losses

18 aren't as high. But generally I'd say losses are quite

19 high.

20   Q.   Would you look in this yellow book in front

21 of you to your upper left hand. And would you open to

22 tab 31.

23   A.   Uh-oh.

24   MR. BARKER: Mr. Director, can I?

25   THE HEARING OFFICER: Yes.

1   MR. BARKER: This is what happens when you use

2 too many exhibits.

3   THE WITNESS: You first.

4   Okay. Page 31.

5   Q.   (BY MR. BARKER): Okay. You're at South

6 Valley/Galena Exhibit 31? You have that in front of

7 you?

8   A.   Uh-huh.

9   Q.   You have to say "yes" --

10   A.   Yes.

11   Q.   -- or "no" instead of -- thank you.

12   Exhibit 31, have you seen this document

13 before?

14   A.   Yes.

15   Q.   Is this something that's kept in the

16 records of the -- of the irrigation districts?

17   A.   Yeah. It's the same one I found.

18   Q.   Okay. Can you tell the Director where

19 Gregory Ranch is.

20   A.   I believe Gregory Ranch is south of East

21 Glendale Road. Oh, yes, it is. It's -- this is --

22 this was for a water ski pond.

23   Q.   Okay. And that pond is located, yeah,

24 within the area that's now part of the South Valley

25 Ground Water District?

1   A.   Yes, it is.

2   Q.   And is this also a pond that has water

3 delivered to it from the 45 Canal?

4   A.   Yes. The Highway 75 lateral.

5   Q.   So this is the westernmost lateral that you

6 described?

7   A.   Exactly.

8   Q.   So is there any information in here that

9 the District relies upon in determining the seepage

10 losses for the -- for the canal system?

11   A.   Yes. This -- although it's dated, it's

12 still what's used, because to my knowledge there

13 haven't been any good seepage runs done on our system.

14 I know Kevin did one on the Baseline last summer,

15 but --

16   Q.   Okay. So -- go ahead.

17   A.   But I haven't seen that. So yes, we still

18 use this, to your point.

19   And I brought a Triangle Irrigation

20 District agreement here for a water bank application

21 that states that this application would be subject to

22 20 percent holdback from seepage loss in the system.

23   Now, this was for an application in

24 Bellevue Farms, which is on the north end of the

25 system. And so they held back 20 percent. This study

1 [indicating] says 15 percent loss in that first mile

2 and a half, which I spoke of, and Bellevue Farms is

3 about a half a mile after that. So that makes me think

4 that they're -- people are still using this study from

5 1997 to determine seepage loss.

6   Q.   Okay. And the study shows 15 percent loss

7 to the split and 5 percent per mile thereafter?

8   A.   That's right.

9   Q.   Okay. And as you get further down to the

10 Cove Ranch on the easternmost or to Baseline on the

11 center and to the old Harris place on the west, are

12 the -- do the seepage losses increase from what you

13 described in the 20 percent holdback at Bellevue Farms?

14   A.   Yes. And you might also read in this

15 Merritt study that -- it states that there are

16 additional charges, 5 percent per mile, but the rest of

17 that sentence is "as long as the 1886 rights are being

18 delivered."

19   So that leads me to believe that the losses

20 could be even higher once the '86s are cut.

21   Q.   And that's because there's less water in

22 the canal?

23   A.   Right.

24   MR. BARKER: Okay. So, Mr. Director, I move the

25 admission of Exhibit 31.

1   THE HEARING OFFICER: Any objection to the

2 admission of this document?

3   MR. FLETCHER: Director, I'm just trying to

4 figure out the relevance of this to this hearing.

5   THE HEARING OFFICER: Mr. Barker.

6   MR. FLETCHER: Considering the constraints of

7 the order, I'd object on that ground.

8   THE HEARING OFFICER: Mr. Barker.

9   MR. BARKER: Oh, certainly. The relevance is

10 the water supply to the Triangle comes from the Big

11 Wood River. A significant amount of that water -- all

12 the water supply is delivered through the 45 and the

13 Baseline Canal, except for whatever underflow is and

14 whatever precipitation. This is a significant part of

15 the water source that's been -- that feeds the

16 groundwater in the Triangle. And there's been

17 discussions in this proceeding about how much water

18 there is in seepage losses in the canals.

19   And now to say, Well, all the discussions

20 that came from the model about seepage losses are

21 things we can't talk about seems a bit harsh.

22   THE HEARING OFFICER: Okay. Well, I'll overrule

23 the objection and allow the exhibit into evidence.

24 We'll see how much weight it's given in consideration

25 of the decision.

1   Thanks, Mr. Barker.

2   (SVGWD GGWD Exhibit 31 received.)

3   Q.   (BY MR. BARKER): So, Mr. Stevenson, you

4   mentioned also that you understood that -- well, let me

5   back up a step.

6   You also get water out of the Baseline

7   Canal; right?

8   A.   Yes.

9   Q.   Where does that water come from?

10   A.   So the Baseline diversion is just north of

11   Glendale Road. It's part of the bypass system. It

12   bypasses the dry beds below Glendale Bridge.

13   Q.   And where does it deliver water to?

14   A.   The --

15   (Zoom interruption.)

16   THE WITNESS: Pardon?

17   The Baseline bypass splits --

18   THE HEARING OFFICER: Just a minute.

19   We have somebody that is not muted and is

20   interrupting the meeting we're trying to take care of.

21   But those of you who are listening in, you need to stay

22   muted, please.

23   Thank you.

24   THE WITNESS: The Baseline bypass split is -- I

25   don't know -- in the first half mile. I'm not as

1   familiar with that system. The remainder of the

2   Baseline Canal goes east across the middle of the

3   Bellevue Triangle and terminates at Price Lane south of

4   Baseline Road.

5   Q.   (BY MR. BARKER): And Price Lane, that's

6   where the property that Hillside Ranch has acquired is

7   located?

8   A.   Yes.

9   Q.   And so it's a source of water for your

10   property?

11   A.   Yes.

12   Q.   You mentioned earlier that Kevin -- are you

13   talking about Kevin Lakey?

14   A.   Yes.

15   Q.   Okay. Kevin Lakey had done some seepage

16   runs on the Baseline?

17   A.   Yeah. The manager of that -- of Baseline

18   mentioned that Kevin had done that last summer. And

19   those losses were quite high also.

20   Q.   Do you have a number of what those losses

21   were?

22   A.   I thought he said 350 inches to get

23   50 inches to the end of the Baseline Canal.

24   Q.   Yeah. Did you ask Mr. Lakey for a copy of

25   those studies?

1   A.   Well, yes, actually, I did.

2   Q.   Did you ever get a copy?

3   A.   No, I did not.

4   Q.   So, Mr. Stevenson, are you a member of the

5   South Valley Ground Water District?

6   A.   I'm a Board.

7   Q.   You're a Board member?

8   A.   Yes.

9   Q.   Okay. When were you elected or appointed

10 to the Board?

11   A.   Only two years ago.

12   Q.   And what is the responsibility of the Board

13 of the South Valley Ground Water District?

14   A.   Well, it's been, I think since the

15 inception, to try to find some agreeable, long-term

16 management plan for the use of groundwater in the

17 Bellevue Triangle.

18   Q.   And is that something that the District has

19 been actively attempting to achieve in your term on the

20 Board?

21   A.   Absolutely.

22   Q.   So let's describe a little bit about what

23 is -- what the District itself encompasses.

24   So do you know approximately how many acres

25 of land are irrigated by the -- by the groundwater

1   wells in South Valley Ground Water District?

2   A.   I believe it to be 22,000 acres.

3   Q.   23?

4   A.   22 or 23.

5   Q.   Okay. And do you know how many water users

6   there are roughly within the groundwater district?

7   A.   120.

8   Q.   And all of these 120 users, are they

9   groundwater users?

10   A.   This is only groundwater, yeah.

11   Q.   And you've heard the testimony over the

12 last couple of days -- well, let's back up a step.

13   Do you have any -- do you have any

14 information about the crop variation within the -- or

15 the different crops that are grown within the District?

16   A.   Well, the Ground Water District conducted a

17 survey when -- it must have been just before

18 pre-hearing conference when these discussions began, to

19 get some idea what those numbers were. I brought a

20 copy of it.

21   The totals were 5,418 acres of grain, 5,884

22 alfalfa acres, 3,200 acres of pasture, about 2,600 head

23 of cattle, 700 acres of seed potatoes, 280 acres of

24 mustard. So when I added that up, it only totaled

25 15,500 acres. So that's obviously not a complete

 1   picture of all users.

 2   Q.   So this was a voluntary request?

 3   A.   This was just a voluntary e-mail we sent

 4   out to all our members. Those are just the ones that

 5   responded.

 6   Q.   Okay. So of those -- did you also ask them

 7   for information about the impacts to their operations

 8   in the event of a July 1 curtailment?

 9   A.   Yeah, that's --

10   MR. FLETCHER: I'm going to object to this.

11   Calling for hearsay testimony.

12   MR. BARKER: This is information that was

13   collected on behalf of the South Valley Ground Water

14   District. This is the head of the south -- or a Board

15   member of the South Valley Ground Water District

16   testifying on behalf of the Ground Water District about

17   information collected for the Ground Water District.

18   THE HEARING OFFICER: Objection overruled, at

19   least for right now. I think the objection is

20   premature. Let's see where Mr. Barker goes with it.

21   THE WITNESS: So again, this is an incomplete

22   picture. Not all members participated in the survey.

23   But the value loss that we came up with was --

24   MR. FLETCHER: I'm going to renew my objection.

25   I think you said it was premature because the question

1   was --

2   THE HEARING OFFICER: That's true.

3   MR. FLETCHER: -- have you conducted the survey.

4   The answer was yes or no.

5   THE HEARING OFFICER: That's true.

6   MR. FLETCHER: He didn't answer the question.

7   And now he's telling you the results of the survey.

8   THE HEARING OFFICER: That's true.

9   So I would ask you to answer the question,

10 Mr. Stevenson. Let's go through this arduously. And

11 it was a question about whether you had or had not.

12 That was the basis of my ruling.

13   Thank you, Mr. Fletcher.

14   Q.   (BY MR. BARKER): Okay. So let's start,

15 was -- I thought we already answered this question.

16 Was a survey conducted on behalf of the South Valley

17 Ground Water District of its membership?

18   A.   Yes.

19   Q.   And did you learn from your members what

20 their crop mix was planted in 2021 for this year?

21   A.   Yes.

22   Q.   Did you have a complete response to your

23 survey?

24   A.   No, we did not.

25   Q.   Okay. And so of that response, you

1 identified roughly 5,000 acres of grain, 5,000 acres of

2 alfalfa, 3,200 acres of -- I forgot what that was.

3   A.   Pasture.

4   Q.   -- pasture, 700 acres of potatoes, and

5 2,600 head of cattle?

6   A.   Yes.

7   Q.   And that's about two-thirds of the

8 responses?

9   A.   Right.

10   Q.   Or sorry.

11   A.   Of the acres.

12   Q.   The responses considered about two-thirds

13 of the total acres?

14   A.   Yes.

15   Q.   Okay. And did you also ask for information

16 about -- from your members about what their estimated

17 losses were?

18   A.   Yes, we did.

19   Q.   Okay. And what was that information you

20 obtained?

21   MR. FLETCHER: I'm going to renew my objection.

22 Same grounds.

23   THE HEARING OFFICER: Okay. Thank you,

24 Mr. Fletcher.

25   As you know, the Department of Water

 1 Resources and the agency is not bound by the rules of

 2 evidence, and the application of them are relaxed in an

 3 administrative hearing. I'll let this information come

 4 in. I don't see a reason why it would be unreliable.

 5 It may be discounted, because we don't have the

 6 witnesses in front of us.

 7   So objection overruled.

 8   Mr. Stevenson.

 9   THE WITNESS: So the total I see in front of me

10 was $11,825,000.

11   Q.   (BY MR. BARKER): So you've been in the

12 courtroom, or the hearing room rather, for the

13 testimony of Mr. Johnson, Mr. Stewart, and Mr. Beck,

14 haven't you?

15   A.   Yes.

16   Q.   Okay. And is it your understanding that

17 those same kinds of injuries will result across the

18 entire 22 to 23,000 acres if a July 1 curtailment is

19 initiated?

20   A.   Yes.

21   MR. BARKER: No further questions, Mr. Director.

22   Thank you, Justin.

23   THE HEARING OFFICER: Ms. O'Leary, questions?

24   MS. O'LEARY: Nothing for me, Director.

25   THE HEARING OFFICER: Thank you.

1   From the joint parties?

2   Mr. Bromley?

3   MR. BROMLEY: No.

4   THE HEARING OFFICER: Ms. McHugh?

5   MS. McHUGH: No questions.

6   THE HEARING OFFICER: Mr. Lawrence?

7   Cross-examination, Mr. Fletcher.

8   MR. FLETCHER: Thank you.

9

10   CROSS-EXAMINATION

11 BY MR. FLETCHER:

12   Q.   Mr. Stevenson, I represent Big Wood Canal

13 Company.

14   You indicated that historically the -- and

15 I think you said it was the District 45 Canal ran

16 approximately 400 cfs; is that correct?

17   A.   Yes.

18   Q.   And you said that -- and I don't think you

19 gave a date.

20   But when did the declines in that canal

21 start appearing?

22   A.   I didn't give a date. I believe that was

23 probably in the early '80s when people were converting

24 from flood irrigation to sprinkler irrigation.

25   Q.   Okay. And it also coincided with

1   groundwater development?

2   A.   Yes.

3   Q.   And you said that the diversions into the

4   canal now are roughly half of what they were in the

5   '70s?

6   A.   Roughly.

7   Q.   I'm not sure you explained what the source

8   of that water was as far as -- is it a priority right

9   on the Big Wood River?

10   A.   Yes.

11   Q.   Okay. And is it more than one priority

12   right being diverted into that canal?

13   A.   I don't understand the question.

14   Q.   What water right is being diverted into the

15   canal for delivery?

16   A.   All those 200 users have a water right,

17   have a surface water right.

18   Q.   So they're the individual water users'

19   rights being diverted in the canal?

20   A.   Correct.

21   Q.   Okay. Does the entity itself that operates

22   the canal own any water rights?

23   A.   No. I see where you're going. Some of

24   these run differently. Like the Baseline -- like the

25   Big Wood Canal Company.

1   No, they don't own any rights. The users

2   all own their own right.

3   Q.   Okay. So it's the rights of the users that

4   are being diverted into the canal in priority?

5   A.   Yes.

6   Q.   And the rights of all of those users, the

7   volume of those rights is diminished by 50 percent

8   since 1970?

9   A.   The total volume in the canal, yes.

10   Q.   Okay. You've heard the testimony that many

11 of the users also have supplemental groundwater rights,

12 correct, that have surface water rights?

13   A.   Sure.

14   Q.   What happens if they don't receive their

15 surface water right?

16   A.   The people with supplemental?

17   Q.   Yes.

18   A.   They turn on a supplemental well.

19   Q.   They start pumping groundwater; correct?

20   A.   Correct.

21   Q.   So during the time, based upon your

22 observation since the declines in this canal have

23 occurred since the '70s, has groundwater pumping

24 increased?

25   A.   Yes. Because there weren't very many wells

1   in the early '70s.

2   Q.   Okay. And as the surface water supply has

3   declined, has the groundwater pumping also increased?

4   A.   I don't know if you could draw that

5   corollary, because the use of that water has changed.

6   Q.   Now, you referred to an exhibit, Exhibit 3,

7   South Valley Ground Water District Exhibit 3, of Alan

8   Merritt transfer file memo. And it sets out some

9   losses that are occurring in the 45 Canal.

10   That memo was written in 1997; correct?

11   A.   Yes.

12   Q.   Who operates the South -- the canal? What

13 entity operates it?

14   A.   Well, there are two, which I explained.

15 The Wood River Valley Irrigation District 45 generally

16 represents the small users on the north end, and the

17 TID, the Triangle Irrigation District, operates the

18 southern portions.

19   Q.   Do these two entities maintain the canal?

20   A.   Yes.

21   Q.   And are there costs incurred in maintaining

22 the canal?

23   A.   Yes.

24   Q.   And how are those costs -- are they

25 assessed to the members of those entities?

1   A.   Yes.

2   Q.   Since 1997 have any improvements been made

3 to that canal to reduce the seepage rate?

4   A.   Yes.

5   Q.   Can you explain what those are.

6   A.   Well, they cut down all the trees on

7 Highway 75. Maybe that changed the seepage rate.

8   Q.   Can you explain how that would change the

9 seepage rate.

10   A.   These were rather large Cottonwoods along

11 both sides of the canal. And they were pulling --

12 pulling water to feed the tree that wasn't going

13 down -- down the canal any longer.

14   Q.   Okay. And when was that done? I should

15 remember. It made headlines, but...

16   A.   Yeah. I should remember. It made

17 headlines. That was ten years ago, say.

18   Q.   Okay.

19   A.   I can't remember.

20   Q.   So ten years ago.

21   What other improvements have been made to

22 the canal since 1997?

23   A.   Overall or in terms of seepage?

24   Q.   In terms of seepage loss.

25   A.   Very little.

1   Q.   Who makes decisions on whether or not

2   improvements should be made to reduce seepage?

3   A.   The Board members.

4   There is an application for a system

5   optimization review, an application to apply for a

6   grant from BOR to help with some of these seepage

7   changes that the District has just applied for this

8   winter, so to address some of these seepage losses.

9   But it hasn't been done thus far.

10   Q.   You haven't heard if you've obtained the

11 grant, you mean?

12   A.   Right.

13   Q.   Now, I assume -- now, as I understand it,

14 the only source of water into this canal is the Big

15 Wood River; correct?

16   A.   That's right.

17   Q.   And so I guess the reason you're bringing

18 this information into this hearing is because you're

19 testifying that Big Wood water supplies affect the

20 amount of water to the senior users in this case?

21   A.   Say that again.

22   Q.   The only source of water to this canal is

23 Big Wood water; correct?

24   A.   Correct.

25   Q.   And the water is not delivered to any of

 1   the senior users on -- in this case; correct?

 2   A.   If it's not.

 3   Q.   No. It is not, is it?

 4   A.   It's not delivered to seniors?

 5   Q.   No. When I'm referring to "seniors," I'm

 6   talking about the folks that testified in this hearing

 7   today on behalf of the seniors, what have been referred

 8   to as the calling parties, even though no call has been

 9   made.

10   A.   Oh, okay. You mean a couple days ago?

11   Q.   Right. Those people.

12   A.   Okay.

13   Q.   This water isn't directly delivered to

14   them, correct, from this canal?

15   A.   No.

16   Q.   So you're bringing in this seepage loss to

17   show that that water affects their water supply?

18   A.   Yes.

19   Q.   Okay. And that's water from the Big Wood

20   River; correct?

21   A.   Yes.

22   Q.   In your operation -- according to the

23   testimony of Mr. Beck, in your operation you have a

24   combination of surface water and groundwater; correct?

25   A.   Yes.

 1   Q.   And you said you sit on the Board of one of

 2   these irrigation districts; correct?

 3   A.   No. I said I was a supervisor briefly, but

 4   I'm not on the Board.

 5   Q.   Okay. Which board was it that you sit on,

 6   you said?

 7   A.   South Valley Ground Water District.

 8   Q.   Okay.

 9   A.   And D37.

10   Q.   So do you -- do you know why the Board has

11   elected not to expend funds to reduce seepage losses

12   out of this canal in the past?

13   A.   No. Too expensive.

14   Q.   It's too expensive?

15   A.   It seems -- it seems probable.

16   Q.   Okay. So are -- your operation's

17   considered a fairly large operation, correct --

18   A.   Yes.

19   Q.   -- in the area?

20   Have you made demands upon them to improve

21   the seepage losses in this canal?

22   A.   We've talked about it. We have not

23   demanded it.

24   Q.   Okay. And aren't reduced deliveries to you

25   from this canal requiring you to pump more groundwater

 1 than you would if you otherwise had the surface water

 2 supply available?

 3   A.   Potentially.

 4   MR. FLETCHER: I have no further questions.

 5   THE HEARING OFFICER: Mr. Rigby?

 6   MR. RIGBY: Thank you.

 7

 8   CROSS-EXAMINATION

 9 BY MR. RIGBY:

10   Q.   Mr. Stevenson, Jerry Rigby representing the

11 seniors, surface water users.

12   So just to be clear, then, you are a

13 supervisor to the South Valley Ground Water District;

14 is that correct?

15   A.   No. I sit on the Board.

16   Q.   Okay. So you are a Board member of the

17 South Valley Ground Water District?

18   A.   Yes.

19   Q.   Okay. And in that capacity have you been

20 working for -- I think you said trying to work things

21 out between the groundwater users and the surface water

22 users; is that correct?

23   A.   Uh-huh. Yes.

24   Q.   Is that "yes"?

25   Has that been through the Groundwater

1   Management Area --

2   A.   Plan, yes.

3   Q.   -- Plan, Advisory Board, et cetera?

4   A.   Uh-huh.

5   Q.   And how long have you been working through

6   that?

7   A.   I stated that I was -- I've been on the

8   Board for two years.

9   Q.   Okay. Do you know how long that Advisory

10   Board has actually been going?

11   A.   Since the beginning of the Ground Water

12   District.

13   Q.   And to date, has there been a resolution of

14   substance made with those talks?

15   A.   No.

16   Q.   And so to date, have there been any

17   curtailment of any wells in your South Valley Ground

18   Water District?

19   A.   No.

20   Q.   You were aware, were you not, of a

21   potential curtailment looming in the future or as a

22   result of the talks that were going on, were you not?

23   A.   Do you want to put a timetable on that or

24   just say --

25   Q.   Let's talk about even as of last year.

1   A.   It -- so it's been -- it's been looming

2 since before last year, certainly.

3   Q.   Okay. And yet do you know any member of

4 the Ground Water District that has -- as a result of

5 that contemplated -- in contemplating that made

6 substantial changes or diminished the time that they

7 are pumping?

8   A.   Yes, I do.

9   Q.   And who is that?

10   A.   So -- so it's been looming for a while.

11 But when the Director called for the Advisory Committee

12 to meet over the winter, it started to look more

13 serious. And some of our neighbors chose to fallow

14 some ground, some chose to change their cropping plans,

15 because of what may come of this.

16   I just would like to point out that the

17 timing of this whole hearing is very unfortunate. Had

18 this been coming in February or March, people could

19 have made changes to their farm, their cropping system.

20 But to have everything planted and then have these

21 discussions happen in June is completely unfair.

22   So in a scramble in April we started -- on

23 our place, I'm talking about now, we started to tear

24 out alfalfa that we thought couldn't be watered through

25 the season. Plant more barley in some of those places,

 1 because we feel that uses the least amount of water.

 2 And we chose not to irrigate pasture. We chose not to

 3 have any potatoes this year. But that was done in a

 4 very truncated time frame that we felt was unfair, to

 5 say the least.

 6   Q.   You understand the frustration of the

 7 senior surface water users in this, do you not?

 8   A.   Absolutely, Mr. Rigby. I sat through that

 9 day. And I have -- I have -- I completely understand

10 and have -- I feel bad for them.

11   Q.   So what's your position on the priority

12 system, as you compare groundwater users versus surface

13 water users?

14   A.   Well, as Stewart tried to say, I believe in

15 the priority system, but I don't believe you can shove

16 priorities that are in different centuries together.

17 There's too many other factors that go into the use of

18 groundwater.

19   Q.   But you do agree that something needs to be

20 done differently than what has occurred in the past, do

21 you not?

22   A.   Yes, I do.

23   Q.   And without curtailment what are the

24 possibilities?

25   A.   Well, let's talk about curtailment. What

1 kind of curtailment? By priority? By location? By

2 crop? What makes the most sense? Is the answer here

3 in this room going through this process? Is it in the

4 field? Is it people talking to each other?

5   I don't -- I don't feel like this is

6 getting us anywhere.

7   Q.   But you agree that it's been discussions

8 for several years, and you say there's no resolution

9 the other way?

10   A.   Is it the wrong people in the room? I

11 don't -- I don't understand. I realize there needs to

12 be some sacrifices. We need to figure out which

13 sacrifices make the most sense.

14   Q.   And yet to date, as testimony even on

15 Hillside, no pumps have been turned off on your lands?

16   A.   Nope.

17   MR. RIGBY: I have no further questions.

18   THE HEARING OFFICER: Redirect, Mr. Barker?

19   MR. BARKER: No questions.

20   THE HEARING OFFICER: Okay. Thank you,

21 Mr. Stevenson.

22   THE WITNESS: That's it?

23   THE HEARING OFFICER: That's it. But you're

24 welcome to stay for today and tomorrow and however long

25 we go.

1   THE WITNESS: Well, I -- I've run out of clean

2   clothes, so I think I'm going to go home. I thought I

3   was only going to be here for a day or two.

4   THE HEARING OFFICER: We have some very good

5   thrift stores in town.

6   Mr. Barker, next witness.

7   MR. BARKER: South Valley Ground Water District

8   calls Zach Hill.

9   THE HEARING OFFICER: Zach Hill, come forward,

10 please.

11   We may ask you, Mr. Stevenson, to lead us

12 in some repetitions of yoga later.

13   Mr. Hill, if you'll raise your right hand.

14

15   ZACH HILL,

16 having been called as a witness by South Valley Ground

17   Water District and first duly sworn, testified as

18   follows:

19

20   THE HEARING OFFICER: Thank you. Please be

21 seated.

22   MR. FLETCHER: Director, I'd just like to

23 clarify, is South Valley done with fact witnesses?

24   MR. BARKER: Perhaps. Likely.

25 ///

 1   DIRECT EXAMINATION

 2 BY MR. BARKER:

 3   Q.   Good morning, Mr. Hill.

 4   How are you?

 5   A.   Good morning. I'm well.

 6   Q.   So would you state your name and -- your

 7 full name and address for the record, please.

 8   A.   My name is Zach Hill, Z-a-c-h, H-i-l-l.

 9 202 North 9th Street, Boise, Idaho 83702.

10   Q.   Mr. Hill, what's your occupation?

11   A.   I'm a partner at Ecosystem Sciences,

12 environmental consulting firm here in Boise, Idaho. My

13 title is principal environmental planning and design.

14 We do environmental management, mitigation, monitoring,

15 a variety of things under that umbrella.

16   Q.   So Ecosystem Sciences, how long have you

17 worked for them?

18   A.   I've been a partner for 15 years. Prior to

19 that I was an associate for about eight years with

20 Ecosystem Sciences.

21   Q.   And before that what did you do?

22   A.   I worked for Don Chapman Consultants.

23 Dr. Don Chapman, Dr. William Platts, and Dr. Mark Hill

24 were some of the seminal scientists in fisheries and

25 stream ecology in the Pacific Northwest.

1   Q.   And how long did you work for Chapman?

2   A.   For about three years.

3   Q.   And before that what did you do?

4   A.   I was in school.

5   Q.   Okay. Tell us about your educational

6 background.

7   A.   I have a bachelor's of architecture,

8 professional licensed architect in Idaho and Montana.

9 I have a master's of architecture in environmental

10 design and planning. I have a master's of ecological

11 design. I have studies at the University of Utah with

12 the National Outdoor Leadership School in east Africa.

13   Sorry, I'll try to slow down. I was

14 admonished last time.

15   Q.   So you have two master's degrees?

16   A.   Correct.

17   Q.   And those were architecture and

18 environmental design and --

19   A.   Planning --

20   Q.   -- ecology?

21   A.   Yeah, planning -- and master's of ecology,

22 ecological design studies.

23   Q.   Okay. And where did you receive your

24 degrees from?

25   A.   Montana State and San Francisco Institute

1 of Architecture.

2   Q.   Is that where your BA came from?

3   A.   Montana State.

4   Q.   Okay. And in -- so if I add up right,

5 that's like 25 years ago that you got finished with

6 school?

7   A.   Yeah. There were multiple years, time off

8 too. I spent time working in between master's

9 programs. So it was accumulated over time.

10   Q.   What type of work have you done since

11 you've been with Environmental [sic] Sciences?

12   A.   Primarily watershed management, water

13 monitoring. We have worked on some of the largest

14 restoration projects for stream systems in North

15 America. The Owens River Valley in eastern California,

16 for the City of Los Angeles Department of Water and

17 Power for a significant amount of time.

18   We work on a variety of projects in Idaho

19 specific to Silver Creek. Water rights, water

20 monitoring, biological systems, stream restoration and

21 design, of that scope.

22   Q.   And in your experience at Ecosystem

23 Sciences, did you do any work in the Wood River Valley?

24   A.   I've worked in the Big Wood and Wood River

25 Valley since about 2008. We were first engaged to do a

 1 watershed management evaluation of Silver Creek in

 2 2008, I believe. That was for The Nature Conservancy

 3 and a group of landowners. We identified -- that was

 4 specifically looking at fisheries in Silver Creek, some

 5 of the aquatic biota, some of the limiting factors that

 6 were apparent out there.

 7   There was a lot of anecdotal observations

 8 at that time. One of the primary things that came out

 9 of our assessment was there was significant data gaps

10 for information that you would want to make an

11 assessment, largely related to water-quantity and

12 water-quality issues. And since that time we've been

13 working to kind of remedy those gaps.

14   Q. And so what have you been doing to remedy

15 those gaps since -- this is in 2008; right?

16   A. Yeah. Initially we established an array of

17 temperature monitoring and dissolved oxygen modeling

18 throughout the system from the headwaters down to

19 Highway 93. We also established some areas where we

20 did manual hydrologic measurements to try and establish

21 a better understanding of water quantity and streamflow

22 discharge. At the time and still to this day the

23 primary place where you get that information is the

24 USGS gage at Sportsman's.

25   As we know, the system is very complex.

1   It's a spring-driven system. It changes pretty

2   dramatically from the spring headwaters, the upper

3   tributaries down through the mainstem of Silver Creek.

4   And so from about 2011 through today we perform manual

5   measurements on about a monthly basis at six sites.

6   This is just a point in time to give us an

7   understanding of quantity in relation to some of the

8   water-quality issues that we're looking at. Subsequent

9   to that I have been hired by landowners to do more

10 specific monitoring of streamflow measurements.

11   Q.   So before you go to that, the monitoring

12 that you've been doing, was that for this TNC project?

13   A.   It grew out of that.

14   Q.   I'm sorry. This -- between 2008 and 2011,

15 is that all part of the TNC project, or was that

16 something else?

17   A.   Yeah, essentially that -- the watershed

18 management assessment came out in, I believe, 2010.

19 And from about 2011 forward the monitoring that I just

20 described has occurred.

21   Q.   Okay. And so what are these significant

22 data gaps that you found when you first started looking

23 at this basin?

24   A.   Well, if you want to do any management,

25 effective management, whether it's stream restoration

1 of any kind, you would want to have baseline data to

2 inform if your actions are successful or not.

3   In terms of water quantity, the only

4 available information was, and is, Sportsman's Access.

5 And so we want to build on that by doing these

6 cross-section areas. They're on the tributary streams

7 to the mainstem. Again, they're points in time, about

8 one day out of every month during the irrigation

9 season. It gives us a relative understanding of what

10 might be occurring and how that drives water-quality

11 conditions.

12   And then of course the array of

13 water-quality monitoring, which includes about 60

14 sensors from springheads down to Highway 93, and

15 dissolved oxygen monitoring as well. We also do some

16 sediment cross-sections. Sediment is an issue. It's a

17 limiting factor for the fishery as well.

18   Q.   And other than -- well, tell me about your

19 experience with water-quantity monitoring over the

20 years.

21   A.   Well, in addition to that, we were hired by

22 a landowner that has about a 3,500-acre ranch in what I

23 would call the center of Silver Creek. It's the Silver

24 Spring Ranch. It's in a very unique position, because

25 it's at the end of delivery systems for the District 45

1   and the Baseline canals. It's also where a majority of

2   the springheads for Silver Creek start, and it's the

3   headwaters of six of the creeks, which include Patton,

4   Cain, Chaney, Mud, Wilson, and Grove Creeks. The only

5   significant tributary that's not a part of that land is

6   Loving Creek.

7   At the time the owner was interested in not

8   only understanding the water delivery, surface water

9   deliveries, but also the amount of water that was

10 coming off of those creeks, exiting his land, and

11 feeding Silver Creek. So we established an array where

12 each of the creeks leaves the property, where we've

13 installed sensors that monitor streamflow continuously

14 since 2015 up through today.

15   Q.   So based upon that data that's been

16 collected at this Silver Spring Ranch, has that

17 informed your -- I don't want to say opinions, but has

18 it informed your -- what you've been asked to do here

19 in this case?

20   A.   Certainly. I mean it's current data. It's

21 relevant to any management that you would want to do

22 within the watershed. We're able to glean from that

23 not only changes within the season and yearly, but

24 through time.

25   In my work with the South Valley Ground

 1 Water District, we're able to discuss how that affects

 2 streamflows beyond what we find at the Sportsman's

 3 Access gage. So it just gives us an increased

 4 understanding of how the system functions through time

 5 and within water years.

 6   Q.   And when did you first take on any work for

 7 the South Valley Ground Water District?

 8   A.   I believe it was 2017.

 9   Q.   And what was the purpose of your engagement

10 with the District?

11   A.   There have -- there's a lot of

12 misunderstanding about how the system works. And I'm

13 talking specifically about the hydrology. It's

14 complex. There's a lot of nuance.

15   And so the Board engaged with me to help

16 not only establish a monitoring program that looked at

17 groundwater levels to look at the diversions in the

18 pumping from the watermaster records, but also to

19 develop some communication tools that they could share

20 with their membership and with other stakeholders to

21 better understand how the system functioned and to

22 accumulate the data into kind of a central repository

23 so that it could be used for the management planning

24 purposes.

25   Q.   Okay. And as an outgrowth of that effort,

 1   did you -- did you prepare any reports?

 2   A.   We have prepared information on groundwater

 3   levels from 2017 through 2020. The Department also has

 4   an array of groundwater sites where they monitor

 5   groundwater level throughout the Triangle.

 6   Before Mr. Wylie departed the Department,

 7   we shared that data back and forth. And the Board

 8   still would like me to reciprocate the sharing of that

 9   data. I think since Mr. Wylie left, I'm not really

10   sure who's in charge. But we've always felt that the

11   sharing of that data was of a benefit to everybody.

12   So the reporting consists of looking within

13   year at how those groundwater levels change within the

14   District and that depth to groundwater, you know,

15   basically what it looks like districtwide. So

16   obviously much further in the north, much shallower in

17   the south. There's a lot of factors around that, but

18   how it changes within the season.

19   Q.   Okay. And you said all this data has been

20   shared with the Department; is that right?

21   A.   Yeah. I don't think the 2020 has, mostly

22   because I don't have a point of contact since Mr. Wylie

23   left. But it's available.

24   Q.   So would you turn in the book to your left,

25   exhibit book, to Exhibit 23.

1   A.   Can you repeat the number?

2   Q.   2-3, 23.

3   Have you seen this exhibit before?

4   A.   Yes, I have.

5   Q.   Can you explain what this exhibit is and

6   what's it intended to illustrate.

7   A.   This was asked by the South Valley Ground

8   Water District Board. I was asked to prepare this in

9   cooperation with Dave Shaw. It's looking specifically

10   at how the hydrology in the basin works. I think it's

11   important to underscore that this is -- this is a

12   communication document.

13   It's meant to be digestible to a wide

14   audience, stakeholders. A lot of the work that I do in

15   Silver Creek is working with some of the growers, some

16   of the water users. And oftentimes this very technical

17   information is difficult to comprehend.

18   And so this was a way of getting at not

19   only explaining how the system works, but also how it's

20   changed through time, with a specific focus on the

21   early 1970s through -- through what was then, I think,

22   2016, 2017 data that we had available.

23   Q.   Okay. So if you would please look at the

24   exhibit and just walk us through what kind of

25   information you are trying to convey to the Ground

 1 Water District and to the growers about the hydrology

 2 of the basin.

 3   A.   The large themes were water availability

 4 and water delivery and how that has changed through

 5 time. We looked at data at the Hailey gage to see how

 6 discharge has changed over -- over that period of time.

 7 We also looked at the points of diversion for the

 8 District 45 in the Baseline canals.

 9   As you walk through the document, there is

10 some narrative that describes those. We tried to

11 illustrate as best as possible, using diagrams, to

12 understand volume comparisons, volume of discharge in

13 the Big Wood and how that's changed through time, how

14 the change from flood irrigation to pivot irrigation

15 has changed the amount of delivery for surface water.

16   Let's see what else further to that.

17   Q.   Let's go to this first question that -- or

18 first topic, the water availability. You start on

19 page 4 with a description.

20   Why don't you just briefly explain what

21 this document is trying to convey about the water

22 availability in the basin starting with the river

23 itself.

24   A.   Well, the Big Wood has diminished in volume

25 over time. It's due to probably a number of factors,

 1   not the least of which is just the snowpack,

 2   seasonality. It tends to, even when we have good water

 3   years, we're finding that the runoff occurs earlier in

 4   the season and oftentimes more quickly.

 5   When you want surface water delivery, you

 6   want that to coincide when you acquire the water for

 7   growing crops. If it's happening earlier, it's

 8   difficult to utilize that water. And so just looking

 9   at the change through time of the river, we know that

10   it's decreased.

11   Q.   And that's as a result of precipitation

12   decreases.

13   Is there a change in snow and rainfall

14   patterns in the basin?

15   A.   There has been. I think at the very end we

16   look at some of the summary of snow-water equivalent

17   through time. It's looking at '82 through 2018 in this

18   instance. And obviously there's variability in years,

19   but it has a slight downward trend.

20   But again, you know, what we were looking

21   at more specifically was the change in timing in volume

22   of water runoff and how that might affect how you

23   divert water and deliver water.

24   Q.   So if you look on page --

25   MR. RIGBY: Mr. Director -- excuse me,

 1 | Counsel -- I assumed until now he was laying foundation

 2 | to ask for qualification of this as an expert. This

 3 | witness is an expert. He's now giving conclusions.

 4 | I'm just wondering, are you intending to

 5 | have him accepted as an expert?

 6 | MR. BARKER: I'm sure you will accept him as an

 7 | expert.

 8 | MR. RIGBY: I will. I'm just trying to do it

 9 | right.

10 | MR. BARKER: Okay. Sure. So --

11 | THE HEARING OFFICER: Okay. I hope you're

12 | picking up that conversation, Jeff. I can barely hear

13 | it.

14 | And I want to tell you, Mr. Barker, and

15 | I've reserved, but you are chronically soft enough that

16 | it's almost not distinguishable. So anyway.

17 | MR. BARKER: Sorry, Mr. Director. I'll try to

18 | speak up.

19 | THE HEARING OFFICER: If you can raise the

20 | volume, please.

21 | MR. BARKER: So, Mr. Director, Mr. Rigby asked

22 | the question of whether we would offer Mr. Hill as an

23 | expert witness in the area of water management and

24 | water monitoring. And we offer him in that capacity at

25 | this time.

1   THE HEARING OFFICER: Any objection to the

2 qualifications of Zach Hill?

3   Mr. Rigby?

4   MR. RIGBY: No objection.

5   THE HEARING OFFICER: Mr. Fletcher?

6   MR. FLETCHER: No objection.

7   THE HEARING OFFICER: Okay. Mr. Hill is

8 recognized.

9   Mr. Barker.

10   Q.   (BY MR. BARKER): So, Mr. Hill, what's

11 the -- over the last 20, 30 years, what's been the

12 change in snowpack in the Big Wood Basin?

13   A.   Well, again, I would point to that it

14 varies by season, and obviously that's going to have a

15 direct impact on the length of time that water is

16 available in the Big Wood for diversion. What we've

17 seen is that you have an earlier -- a change in timing

18 of the runoff, which affects availability of the water

19 for diversion. Those would be the main conclusions I

20 would draw.

21   Q.   And so if you look at page 7 -- well, maybe

22 before I ask you about questions about it.

23   I would offer Exhibit 23 into evidence.

24   THE HEARING OFFICER: Any objection to the

25 admission of this document?

 1   MR. FLETCHER: Just --

 2   THE HEARING OFFICER: Mr. Fletcher?

 3   MR. FLETCHER: I don't necessarily -- can I ask

 4 some questions to clarify?

 5   THE HEARING OFFICER: In aid of objection?

 6   MR. FLETCHER: In aid of objection, yes.

 7   THE HEARING OFFICER: Sure.

 8

 9   VOIR DIRE EXAMINATION

10 BY MR. FLETCHER:

11   Q.   You're not the sole author of this

12 document; isn't that correct?

13   A.   That's correct.

14   Q.   Who are the other authors of this document?

15   A.   It was a collaboration between myself and

16 Dave Shaw.

17   Q.   Okay. Are you planning on testifying today

18 as to matters prepared by your collaborators?

19   A.   No.

20   Q.   You're only going to testify as to those

21 matters that you inserted into this memo?

22   A.   Yes.

23   MR. FLETCHER: Okay. With that understanding, I

24 have no objection.

25   THE HEARING OFFICER: Yeah, and I think it's

1   consistent, Mr. Fletcher, with the limitations of his

2   expertise that were recognized, because he's -- as I

3   understood, his education and his background work

4   experience, he really doesn't have the expertise to be

5   talking about the groundwater itself and the

6   hydrogeology of the relationship, so --

7   MR. FLETCHER: That's why I wanted to clarify

8   that he's basically going to talk about data, as I

9   understand it.

10   THE HEARING OFFICER: And at least surface water

11   or perhaps groundwater measurement data. But okay.

12   MR. FLETCHER: Thank you.

13   THE HEARING OFFICER: Mr. Barker.

14   MR. LAWRENCE: Mr. Director.

15   THE HEARING OFFICER: Yes.

16   MR. LAWRENCE: I'd like to object to this

17   document to the extent that it addresses groundwater

18   outside of the Bellevue Triangle. For example, it --

19   on page 5 it mentions aquifer conditions north of

20   Bellevue. And there may be other portions of the

21   document that address aquifer conditions outside the

22   Bellevue Triangle. So I'll just object to the extent

23   that it goes to those issues of that subject matter,

24   and it's beyond the scope of this proceeding.

25   THE HEARING OFFICER: And so your objection

 1   would be requesting me to do what?

 2   MR. LAWRENCE: I'm just making an objection for

 3   the record.

 4   THE HEARING OFFICER: Okay. Noted for the

 5   record.

 6   MR. BARKER: So --

 7   THE HEARING OFFICER: So we need to receive this

 8   into evidence, I think, Mr. Barker; is that correct?

 9   Did you offer this document?

10   MR. BARKER: I thought I just did, yes.

11   THE HEARING OFFICER: Yeah. So the document

12   that is marked South Valley and Galena Exhibit 23 is

13   received into evidence.

14   (SVGWD GGWD Exhibit 23 received.)

15   THE HEARING OFFICER: Thank you.

16   MR. BARKER: So, Mr. Director, I do want to

17   respond to something I think I heard you say about

18   Mr. Hill's expertise. One of the things he did say he

19   has been involved with is in groundwater monitoring.

20   And so to say that he has no knowledge about

21   groundwater or hydrogeology I think is a bit of a

22   stretch.

23   THE HEARING OFFICER: Well, to the extent that

24   he's been involved in the measurement and collection of

25   data for groundwater levels, he can testify about that.

 1   But I think drawing conclusions from that in trying to

 2   predict or discuss the effect on surface water streams,

 3   I don't -- at least from what I've heard, that's not

 4   within his area of expertise, Mr. Barker. Thank you.

 5   MR. BARKER: All right.

 6

 7   CONTINUED DIRECT EXAMINATION

 8   BY MR. BARKER:

 9   Q.   So, Zach, you've been retained by the

10   Ground Water District to help understand the complex

11   relationship between the water supply that they have

12   available to them; is that right?

13   A.   Yeah, I think that's fair. I'll just

14   qualify it by saying that, you know, primarily it is

15   the college of data and making that available to them,

16   the management of that data. I think that's the

17   primary focus.

18   And also that -- just the communication of

19   how the system works for their benefit. I would say

20   that that's kind of the scope of what I've worked on.

21   Q.   Okay. And so as part of the data, would

22   you turn to page 15 of Exhibit 23. And there's some

23   graphs or figures, I guess, on this page that identify

24   water deliveries.

25   Do you see that?

1   A.   I do.

2   Q.   Okay. So would you explain what was

3 happening in the 1970s with the water delivery?

4   A.   With the water delivery specifically, there

5 was much more diverted at the point of diversion for

6 the District 45 and slightly more at the point of

7 diversion of the Baseline in the early 1970s as

8 compared with 2016.

9   Q.   And since that time has there been a change

10 in the diversion rates -- or diversion volumes, I

11 should say?

12   A.   Well, yeah, there's a change in the

13 diversion volumes, but also the rate. On page 19 we

14 show the rate at the headgate. I think as

15 Mr. Stevenson testified to earlier, what used to be,

16 you know, greater than 400 and at times greater than

17 500 cubic feet has now diminished down to somewhere

18 around 200 on an annual basis that is diverted at the

19 headgate of the District 45.

20   Q.   Okay. And is part of that decline the

21 result of decreased water availability?

22   A.   I think that that is certainly part of it.

23 The -- one of the other main drivers is the change from

24 flood irrigation to pivot irrigation and probably

25 decreased demand because of that.

1   Q.   And does -- do you have some information

2   about the change in timing of water availability on

3   page 28?

4   A.   I have a 27. I don't have a 28.

5   Q.   The change in water runoff chart.

6   A.   26? Do you have a different number? I see

7   the chart, yes.

8   So yeah, that's illustrating that the

9   runoff that we see at the Hailey gage has changed in

10   its timing, essentially it's up to a month earlier when

11   the -- when it begins or when the increase in discharge

12   begins, and up to a month earlier when you see that

13   kind of falling limb in the discharge.

14   Q.   And so does the decrease in -- or sorry,

15   having water into the system earlier make it more

16   difficult to divert into the canal systems in the

17   District?

18   A.   Oftentimes in my conversations with not

19   only the users of the canal system but also

20   Mr. Stevenson, there's snow in the canals during the

21   early period. Sometimes they can't push water through

22   until much later on, depending on the year. So I think

23   it's somewhat difficult at that headgate for -- usually

24   because of winter conditions when there's water

25   available.

1   Q.   Okay. Thank you.

2   Now, would you turn to the next exhibit,

3   Exhibit 24.

4   A.   Uh-huh.

5   Q.   Can you explain to the Director what this

6   document is.

7   A.   This was prepared in collaboration with

8   Dave Shaw and Erick Powell as a presentation to the

9   Advisory Committee, the Big Wood Groundwater Management

10 Area. Much of the information in here was to give

11 background and context on the hydrology. There's a

12 significant technical presentation by Mr. Shaw and

13 Mr. Powell on the specifics of the hydrology, not only

14 its history but its change through time. You can read

15 in here what the presentation topics were.

16   Q.   So is there a part of this presentation

17 that you prepared?

18   A.   Specifically really taking what both Dave

19 Shaw and Erick Powell prepared and putting it into the

20 presentation, and of course the hydrology report that

21 we've been discussing in the front end of this

22 presentation.

23   Q.   Okay. We'll let Mr. Powell and Mr. Shaw

24 talk about those.

25   Turn to Exhibit 30, please.

1   So, Mr. Hill, you testified earlier you

2 were working on a project for the Silver Spring Ranch,

3 the ranch owner, from 2015 -- or beginning of 2015?

4   A.   Yes.

5   Q.   Okay. So tell me what Exhibit 30 is and

6 whether it has any relationship to the work that you

7 were doing for the ranch owner on Silver Spring Ranch.

8   A.   So this is a summary of the work that we

9 have been doing since 2015 for this particular

10 property. It's rather involved, the different aspects

11 that we have done out there. But the -- I guess the

12 two main things that are probably relative to what

13 we're discussing today are we establishing an array of

14 continuous monitoring for not only water delivery in

15 the Baseline in District 45 Canal, but the amount of

16 water that is leaving the ranch in those headwater

17 tributaries, the six tributaries that I named before.

18   Q.   So did you have any role at all in

19 evaluating and making recommendations for water

20 delivery operations on the Silver Spring Ranch?

21   A.   In the beginning there was a lot of

22 question as to the amount of water that was being

23 delivered to the ranch. They have a pretty significant

24 portfolio of water rights for a variety of beneficial

25 uses. They are at the end of both those delivery

 1   systems, the Baseline and that leg of the District 45.

 2   Historically what happened out there is

 3   there was a considerable amount of water delivered to

 4   that ranch. And so they filed a wastewater permit for

 5   that. We realized the license in 2017. So we wanted

 6   to --

 7   Q.   A license for what?

 8   A.   For the wastewater. There's two wastewater

 9   rights.

10   Q.   To use for irrigation?

11   A.   Nope. They are used for -- the beneficial

12   uses are for recharge, storage, wildlife.

13   Q.   Okay.

14   A.   And they're two separate rights on the

15   Baseline and the District 45.

16   Q.   And so what was the purpose of obtaining

17   those water rights?

18   A.   To use them for those beneficial uses.

19   There was -- as I said, they have a substantial amount

20   of water that's delivered above and beyond their

21   primary irrigation rights, being at the end of the

22   canal. So those wastewater -- which is water that has

23   been either previously used and returned to the system

24   or passed, was filed on. So anything above their

25   primary rights, the beneficial use is for the recharge.

1   And they wanted to understand exactly how

2   much of that delivery came onto the ranch and then how

3   much they are actually putting into those beneficial

4   uses for recharge and storage and wildlife.

5   Q.   So did you do anything to quantify the

6   beneficial use of recharge and wildlife storage for

7   this application?

8   A.   Yes. In order to realize the license, we

9   had to prove that. I worked with Erick Powell at

10   Brockway. We were able to do that, realize the

11   license. And so since 2015 we've been measuring that

12   quantity of water and how it's applied.

13   Q.   So do you have any -- or can you tell us

14   how much water is being -- well, first of all, how much

15   water is in the water rights for these various recharge

16   and wildlife rights?

17   A.   They both have 25 cfs, so both 25 in the

18   Baseline and 25 in the District 45. I believe the

19   total acre-feet is about 5,250 in one of them and about

20   5,500 in the other. They have combined use limits in

21   the license as well.

22   Q.   So do you have any understanding of what

23   happens to the water after it gets into the -- into the

24   gravel pits?

25   A.   It goes right back into the aquifer. Those

1   gravel pits are very porous. Any water that's applied

2   out there goes very quickly to the ground.

3   Q.   Very quickly to the aquifer?

4   A.   Yeah. Into the ground system, yeah.

5   Q.   Okay. And so what was the reason for

6   establishing those -- those water rights?

7   A.   Well, I think the -- the owner of that

8   ranch was very interested in the health of Silver

9   Creek. So he understood having a significant amount of

10 the springheads on his property, that he had the

11 headwaters of six tributary creeks that fed Silver

12 Creek, and that those springheads are fed by

13 groundwater conditions, that any recharge that was put

14 into the system would make it into Silver Creek, and

15 thereby increase the discharge in those creeks.

16   Q.   So your monitoring system summary that --

17 well, this is Exhibit 30 that you prepared; is that

18 right?

19   A.   Yes.

20   Q.   Okay. So explain what this document is

21 intended to illustrate.

22   A.   What it summarizes is the location of this

23 property within the heart of the center of the Silver

24 Creek watershed, the location of where we monitor both

25 surface and groundwater conditions. And to just

 1   summarize that, we've been doing it since 2015. We

 2   have a lot of data that's current and relevant to both

 3   stream discharge, but also water delivery and

 4   groundwater levels.

 5   Q.   So if you look at, for example, Figure 2 --

 6   Well, first of all, I would move for

 7   admission of Exhibit 30.

 8   THE HEARING OFFICER: Any objection to the

 9   admission of Exhibit 30?

10   MR. FLETCHER: I just want to ask a question in

11   aid of objection.

12   THE HEARING OFFICER: Yeah.

13

14   VOIR DIRE EXAMINATION

15   BY MR. FLETCHER:

16   Q.   Did you -- are you the sole author of this

17   report?

18   A.   This particular --

19   Q.   Exhibit 30.

20   A.   -- Exhibit 30?

21   Yeah, I'm the primary investigator. I

22   wrote the summary. I prepared the maps. Obviously, I

23   work in the firm with a lot of people. And so through

24   time --

25   Q.   But your firm prepared this report?

1   A.   Yes.

2   Q.   You didn't rely upon other experts in

3   preparing it?

4   A.   No.

5   MR. FLETCHER: I have no objection.

6   THE HEARING OFFICER: Okay. The document that's

7   been marked as South Valley and Galena Exhibit 30 is

8   received into evidence.

9   (SVGWD GGWD Exhibit 30 received.)

10

11   CONTINUED DIRECT EXAMINATION

12   BY MR. BARKER:

13   Q.   So, Mr. Hill, look at Figure 2 on page 6 of

14   South Valley/Galena Exhibit 30, please.

15   A.   Okay.

16   Q.   Are you there?

17   So explain what this figure demonstrates.

18   A.   This shows the spatial location of all the

19   monitoring that either we conduct or we're aware of

20   within the Bellevue Triangle and the Silver Creek

21   watershed. It's inclusive of the groundwater level

22   monitoring wells, which also includes those maintained

23   by the Department of Water Resources, the headgates for

24   the Baseline and the District 45 Canal, the location of

25   where we measure surface water delivery for the 45 and

1 Baseline, locations of where we monitor spring

2 discharge or creek discharge as it leaves the property,

3 and then as I mentioned before, further downstream our

4 streamflow measuring sites that are done on a

5 monthly -- relatively monthly basis for point-in-time

6 measurement. And I believe -- yep, I also put in the

7 Sportsman's Access gage and the gages there over on the

8 Big Wood as well.

9   Q.   So the Silver -- the streamflow monitoring

10 you do on the ranch is in blue squares?

11   A.   Yeah, correct.

12   Q.   And the streamflow monitoring you do in the

13 creeks, is that in light blue?

14   A.   Those are green.

15   Q.   Oh, green.

16   A.   Kind of green.

17   Q.   Okay.

18   A.   Sorry. It's not much -- not much contrast

19 there, but yes.

20   Q.   Okay. And then look over to the next

21 exhibit -- or sorry, the next figure on page 7 of

22 Exhibit South Valley/Galena Exhibit 30.

23   A.   Yes.

24   Q.   So tell me what your -- what these

25 indications on this figure are trying to show.

1   A.   So these are more specific to the ranch

2 boundary that shows the location of where we measure

3 stream discharge as it leaves the property for each of

4 the headwater creeks. It also shows that -- where we

5 monitor the delivery of surface water, and then we also

6 monitor within the property the distribution of water

7 to different portions of the property for the intended

8 beneficial uses. We also -- there's several water

9 bodies on the property, so we monitor the relative

10 water level of those and as they change through time.

11   Q.   Okay. Is there a -- let's look at this a

12 little more closely.

13   Where are the water delivery locations that

14 you measure?

15   A.   The District 45 is right on Baseline Road,

16 just north of the property boundary. The Baseline is

17 measured a little bit further up the canal system near

18 Kingsbury, so it's not on the property boundary, but

19 there aren't any other diversions where we measure it

20 so the total amount that comes onto the ranch is

21 measured there.

22   Q.   So this blue line at the upper end is where

23 the water comes into the system --

24   A.   Yeah.

25   Q.   -- or to the ranch from both canals?

1   A.   Yeah.   They actually -- where they come

2   together is right at Baseline Road.   Above that they're

3   split.   And so we measure above the split.

4   Q.   And where else do you measure flow?

5   A.   We measure it before it gets into what we

6   call the gravel pits, which are on Price Lane.   We have

7   a point there.   So we know exactly how much is being

8   delivered into those for recharge.

9   Q.   So those are shown right next to the legend

10 where it says "Price Lane" in a light blue color?

11   A.   Correct.

12   Q.   Those are the gravel pits where the

13 recharge rights exist?

14   A.   Correct.

15   Q.   Or sorry, are put to use?

16   A.   Yeah.

17   Q.   Okay.

18   A.   And we also measure where the water -- it

19 splits at Baseline Road and is either delivered into

20 those gravel pits or is delivered into what we call the

21 holding pond, which is used for pressurized irrigation

22 system throughout the property.   We have a flume just

23 below that that measures the water that comes out of

24 there and is basically delivered to the east side of

25 the property for applications down there.   And so we

 1 know that that's going to storage, wildlife, and

 2 recharge beneficial uses.

 3   Q.   So you have a recharge and storage and

 4 wildlife right at the -- the light blue area that's

 5 shown more to the right?

 6   A.   Yeah, that's called Big Lake. And it has

 7 those water rights and beneficial uses.

 8   Q.   Okay. So is part of this ranch irrigated?

 9   A.   Yeah, about 2,100 acres plus.

10   Q.   Of a total ranch size of what? 35?

11   A.   3500.

12   Q.   Okay. So the area to the north, is that

13 mostly the irrigated ground?

14   A.   Yeah. Predominantly the irrigated ground

15 is to the north and to the west. As you get down into

16 the springheads and the creek systems, that ground

17 is -- it depends on the year, but it tends to be pretty

18 subby down there. As you get closer to Highway 20, you

19 have artesians, you have very shallow depth to

20 groundwater down at that end of the ranch. And so it's

21 less productive. It has been irrigated and farmed in

22 the past, though.

23   Q.   In the years that you've been working for

24 the owner of this ranch, have you made any -- or have

25 there been any improvements in the delivery systems or

1   in the methods of irrigation on this property?

2   A.   They removed end-guns in 2017 because the

3   area under those end-guns was not as productive in

4   terms of their yield and crop. We did an estimate of

5   that. It was probably around 200 acre-feet in savings

6   of water not applied under those end-guns.

7   I know that they upgraded graded their

8   sprinkler packages. I couldn't tell you specifically

9   what or how, but that was part of it. Those are the

10 things that come to mind.

11   Q.   Has there been any change in the amount of

12 water that's been delivered to the individual pivots?

13   A.   Well, it depends on the crop and the

14 rotation, whether -- they were mostly doing barley,

15 alfalfa, there were some a couple years with potatoes.

16 Those have different water requirements. The last few

17 years they really transitioned to pasture, and that has

18 a much less water requirement.

19   The owner of this ranch was very interested

20 in water conservation and trying to limit the amount of

21 water that might be applied in any particular crop

22 area.

23   Q.   So other than the sprinkler packages and

24 the end-guns, converting to pasture, are there other

25 measures that were taken on this ranch to improve water

1   conservation?

2   A.   Nothing more really to mind, other than,

3   you know, there was a -- the importance of

4   understanding of the water delivery and how much left

5   the ranch was of significant value to the owner. What

6   we were able to glean from not only the flow of the

7   springheads and the discharge of the creeks through

8   time showed that the water beginning on this property

9   has a significant impact or influence on Silver Creek

10 flows.

11   Q.   So what is that significant impact?

12   A.   In any year we have found that it's between

13 60 to 75 percent of the total flow of Silver Creek that

14 we see as discharge from this area.

15   Q.   The discharge from on the springs, from the

16 springs?

17   A.   Correct. Well, where they leave the

18 property, so we aren't actually measuring the

19 springheads, but actually a little bit further down.

20   Q.   Okay. And are those locations shown on

21 the -- on Figure 3?

22   A.   Correct.

23   Q.   So at each one of these creeks that you

24 mentioned, Cain Creek, Chaney Creek, Mud Creek, Wilson

25 Creek, and -- what's the last one? Grove Creek?

1   A.   Grove and Patton. I don't know if you

2   mentioned that one, but yeah.

3   Q.   Oh, Patton?

4   A.   Six of them.

5   Q.   Oh, Patton is to the -- is to the west;

6   right?

7   A.   Yes.

8   Q.   So you know exactly how much water is --

9   well, you know how much water is leaving the property

10   at those -- in those springs?

11   A.   In those creeks.

12   Q.   Or from the springs into the creeks --

13   A.   Yeah.

14   Q.   -- at that location where --

15   A.   And there aren't any -- there aren't any

16   diversions or uses between the springheads and the --

17   and where it leaves the property.

18   Q.   Okay. And your legend says -- describes

19   those locations as "SonTek flow."

20   A.   So those are flow meters. At the time when

21   we originally did this in 2015, we were using a

22   particular sensor that was a SonTek. The technology

23   changes pretty rapidly. I believe they're a different

24   unit now, but they're essentially velocity area

25   sensors.

 1   Q.   Okay. Flip over to Figure 5, page 9. This

 2   is a little busy of a figure, but can you explain for

 3   the Director what we're looking at here.

 4   A.   So the -- one of the ambitions of the owner

 5   was to really understand not only delivery but

 6   discharge of the creeks and how the water was used

 7   throughout his ranch. And so we found that it was more

 8   successful to use illustrations.

 9   And I apologize for the size of this. This

10   is meant to be a map that's, you know, 3 by 4 feet.

11   And so it's much more clear in that regard.

12   But what we are illustrating is not only

13   the discharge at each one of the locations that we

14   monitor, but the total volume as well. And this is

15   just illustrative of 2017. So that's kind of what

16   that's depicting. It's almost kind of a report of

17   sorts on the conditions.

18   Q.   So this tells you how much -- this reports

19   the outflow of the creeks from the property as well as

20   the inflow to the property from the two canal systems?

21   A.   That's correct.

22   Q.   Is there any other source of water for

23   this -- this ranch?

24   A.   Groundwater.

25   Q.   Is the groundwater and surface water

 1   stacked?

 2   A.   Yes.

 3   Q.   Are there any places where there's only

 4   groundwater?

 5   A.   No.   It's -- everything is stacked on the

 6   property.

 7   Q.   And turn to Figure -- it says Figure 2 on

 8   the next page, page 10.

 9   A.   Yeah, I see this one.

10   Q.   Okay.   So tell me what you're trying to

11   illustrate with this figure.

12   A.   This is looking at -- I believe this is

13   from 2017 again.   Yeah, October through September.

14   This is showing the -- it's a graph that basically

15   depicts the discharge and volume of Silver Creek in

16   comparison to the -- all the creeks that flow off the

17   ranch, and in comparison to the surface water delivery

18   to the ranch.   They're kind of layered on top of each

19   other to -- as a comparison.

20   Q.   So this is for the year 2017; is that

21   right?

22   A.   Correct.

23   Q.   So does this tell us that 9,800 acre-feet

24   was delivered to the ranch?

25   A.   That's right.

1   Q.   And that almost 40,000 acre-feet left the

2   ranch at the spring, in the creeks?

3   A.   That's right.

4   Q.   And that the total flow in Silver Creek was

5   63 or 64,000 acre-feet?

6   A.   Yeah. And those -- those values are for

7   the irrigation season. So we -- we did that for

8   April 1 through the end of September where we had the

9   data for this particular graph.

10   Q.   Okay. And do you have any other data

11   backing up these stream -- the streamflow data of the

12   discharge from the ranch?

13   A.   Yeah. We have all of the tabular data

14   from -- from those monitoring stations through time

15   from 2015 to today.

16   Q.   Okay. Have you prepared an exhibit?

17   A.   I have.

18   Q.   Okay. Do you have a copy of it, or is

19   this --

20   A.   I do not.

21   MR. BARKER: Okay. I'd like to mark this as

22   South Valley/Galena District Exhibit 40.

23   Is that where we're at?

24   (SVGWD GGWD Exhibit 40 marked.)

25   Q.   (BY MR. BARKER): Mr. Hill, do you have

1   Exhibit -- South Valley/Galena Exhibit 40 in front of

2   you?

3   A.   I do.

4   Q.   Can you explain what this exhibit is

5   intended to show.

6   A.   This shows the discharge at each one of the

7   stations that we monitor on those headwater

8   tributaries. It shows what we have seen from 2015 --

9   July of 2015 through -- I believe this goes to May of

10   this year, May 18th. And it shows the -- we put a

11   trend line on there as well to just show the difference

12   of a change over that time period.

13   Q.   So does this accurately depict the

14   monitoring data that you've been collecting on the

15   ranch, Silver Spring Ranch, since 2015 through looks

16   like March of 2021?

17   A.   Yeah, actually the date actually goes

18   through May of this year. I just didn't get it in

19   there.

20   Q.   Oh, I see.

21   A.   And to answer your question, yes.

22   Q.   Okay. So -- and this exhibit has a number

23   of pages to it.

24   A.   Uh-huh.

25   Q.   It speaks of Grove Creek discharge, Mud

 1 Creek discharge, Wilson Creek discharge, Cain Creek

 2 discharge, Patton Creek discharge --

 3   A.   Correct.

 4   Q.   -- Chaney Creek discharge.

 5   So those are all the springs that you

 6 discussed that are illustrated in your Exhibit 30?

 7   A.   Yes.

 8   Q.   Okay. Then the next page of the exhibit is

 9 "All creeks total discharge," what does that show?

10   A.   It's a sum of all the creeks, so --

11   Q.   Just a sum of the numbers in these previous

12 six?

13   A.   That's correct.

14   Q.   And then you've got another chart "USGS

15 Sportsman's Access discharge."

16   A.   Yeah, same period of record. We wanted to

17 see if there was a trend that was similar. And we do

18 see an increase in discharge over that same time

19 period.

20   Q.   And then this next chart, which is a little

21 busy --

22   A.   It's a little busy.

23   Q.   -- after, what is this?

24   A.   That's just actually stacking all of those

25 up for the same period of record to just show not only

1   the relative discharge, but also you can see that many

2   of those creeks have fairly low discharge or what we

3   consider volume. But they do add up to quite a bit.

4   Q.   Okay. And then the last three pages of

5   this?

6   A.   I think these -- these are maps again.

7   They're probably duplicated from an earlier exhibit

8   showing the location of the ranch within the Ground

9   Valley -- South Valley Ground Water District relative

10 to Silver Creek watershed, Little Wood.

11   Again, this is another map of all the

12 monitoring locations that we discussed earlier.

13   Similarly with the last figure, which is

14 the monitoring locations which we discussed earlier.

15   MR. BARKER: So, Mr. Director, I offer South

16 Valley/Galena Ground Water District Exhibit 40.

17   THE HEARING OFFICER: Any objection to the

18 admission of this document?

19   MR. RIGBY: No.

20   THE HEARING OFFICER: Have you had a chance to

21 review it?

22   MR. RIGBY: We're looking at it, but I don't

23 believe so.

24   THE HEARING OFFICER: Was this document

25 previously disclosed?

1   MR. BARKER: It was not.

2   MR. FLETCHER: No.

3   MR. RIGBY: No.

4   MR. BARKER: Well, it was not disclosed, but as

5   I said, it's a summary of what we did disclose.

6   THE HEARING OFFICER: Do you need more --

7   MR. RIGBY: And based upon that, that's why we

8   would not object, if it's a summary of what was

9   disclosed.

10   THE HEARING OFFICER: Do you need more time to

11   review the document, Mr. Fletcher?

12   MR. FLETCHER: I don't think so. I think the

13   numbers are the numbers, so...

14   THE HEARING OFFICER: Okay. So the document,

15   then, based on the conversation that we just had, the

16   document marked as South Valley and Galena Exhibit 40

17   is received into evidence.

18   (SVGWD GGWD Exhibit 40 received.)

19   Q.   (BY MR. BARKER): Okay. So, Mr. Hill,

20   let's walk through each one of the pages of Exhibit 40,

21   starting with Grove Creek discharge.

22   A.   Uh-huh.

23   Q.   What does your data indicate about Grove

24   Creek discharge from the Silver Spring Ranch between

25   7/17 and May of '21?

1   A.   Well, the trend is that it's increased.

2   Obviously each one of these creeks will fluctuate

3   seasonally. Grove, in particular, is -- has the most

4   volume of each one of these. It's a very important

5   tributary.

6   Q.   So is it your estimation that these -- that

7   at least some of this increase is a result of the

8   actions that have been taken on the Silver Spring

9   Ranch?

10   A.   Yeah, I think so. We heard testimony

11 earlier about conservation practices. I also think

12 that the fact that recharge is actually occurring has

13 an influence on these. So, yeah, I would agree with

14 that.

15   Q.   What do the variations in time of year

16 indicate to you?

17   A.   Well, these are really responsive to

18 groundwater conditions, and I also think responsive to

19 the amount of surface water delivery and how that's

20 applied, particularly on this ranch. The springheads

21 are very close to where recharge water and wildlife

22 storage water is applied. And I think they respond to

23 that.

24   Q.   Do you have any knowledge or estimate of

25 how long it takes for the water from the recharge pit

1 on this property to show up in the -- in the streams?

2   A.   I haven't done any particular specific

3 research on that, no.

4   Q.   Okay. And so you have a general increasing

5 trend at Grove Creek from looks like 25 to almost 40?

6   A.   Yeah, the trend line would indicate that,

7 as just a discharge, yeah.

8   Q.   Okay. Mud Creek, what's happening -- well,

9 first of all, on these reports there's some red lines.

10   A.   Yeah.

11   Q.   Is that where you don't have data?

12   A.   So -- yeah, either that or the sensor

13 was -- there was probably an issue with the sensor

14 through winter conditions and/or something happened in

15 that particular location. There's a lot of wildlife

16 there. You could have a moose in the stream that gets

17 in there. You could have sticks that come down and

18 move stuff.

19   So we're out there pretty often, and we try

20 to keep up on it. We calibrate these pretty often.

21 But oftentimes you'll see gaps, and those red lines

22 indicate those gaps. They can easily be removed, and

23 they probably would not change the trend line much, if

24 at all. But I wanted to be clear that that data was

25 interpolated.

 1   Q.   Okay. So Mud Creek shows a similar

 2   increasing trend over the last six years?

 3   A.   Yeah, that's what the data indicates. And

 4   as I said before, Grove Creek is probably the largest

 5   in terms of discharge, and so it's often easiest to get

 6   good data for.

 7   Mud, contrary to its name, is actually the

 8   cleanest and clearest of all the creeks. The way that

 9   these sensors work is they measure particles or water

10   bubbles as it goes by to create a calculation of total

11   discharge. And we had to install a bubbler actually

12   upstream to get it to work properly.

13   You also see that Mud really -- when you

14   see these bars going up and down pretty quickly, it's

15   just showing that what we see in the sensor probably

16   is -- is that inability sometimes to measure all of

17   that -- that particle or air bubbles coming through.

18   So I think it would be fair to say that --

19   that while this is really good data and better than

20   anything else we have in the upper system, it's -- you

21   have to understand that those sensors are bound by kind

22   of the constraints of the natural system and what may

23   occur out there.

24   Q.   Okay. And is this the data that's been

25   shared with the Department?

1   A.   No, this data has not.

2   Q.   Oh, it's the groundwater monitoring data?

3   A.   The groundwater has.

4   Q.   Okay.

5   A.   The data that has been shared with the

6   Department is relative to the surface water deliveries

7   for the licensing of those two water rights we

8   previously discussed.

9   Q.   So going back to the -- these discharges,

10   if I go through all six of these creeks, there's a

11   general increasing trend over the last six years?

12   A.   Yeah, with the exception of Cain. It's

13   showing a slight decrease or steady. I think that one

14   would be worth spending some more time investigating.

15   It's kind of unique of these tributaries.

16   Q.   What is unique about Cain compared to the

17   other five streams?

18   A.   I'm not sure, other than it has that

19   decreasing trend. I would like to spend more time

20   understanding it better.

21   Q.   And if I go to the page that's total of all

22   sum -- all creeks total discharge from '15 to '21.

23   You can go from 50 to about 70?

24   A.   As a discharge, yeah.

25   Q.   Right. And then the Sportsman's Access,

1 how do you see the trends that you've reported at the

2 Sportsman's Access correlating to the trends of these

3 total discharges from the creeks?

4   A.   Well, there's an increase there, probably

5 not as dramatic, but there's a lot of things that we

6 don't understand that occur between where we're

7 measuring at these headwater creeks and Sportsman's in

8 terms of injection, conveyance, rediversion that would

9 really benefit from more scrutiny and clarity.

10   Q.   But is it -- do you believe your data show

11 that as a result of the -- or there is a connection

12 between the increase in flows at these creeks and at

13 Sportsman's Access on Silver Creek?

14   A.   That's what it appears to me, yes.

15   MR. BARKER: Thank you, Mr. Hill. I don't have

16 any further questions.

17   THE HEARING OFFICER: Thank you, Mr. Barker.

18   Are there questions from the groundwater

19 group, Ms. O'Leary?

20   MS. O'LEARY: Nothing for me, Director.

21   THE HEARING OFFICER: Thank you.

22   Joint group?

23   MR. BROMLEY: No.

24   THE HEARING OFFICER: Mr. O'Bannon, any

25 questions?

1   MR. O'BANNON: No.

2   THE HEARING OFFICER: Cross-examination,

3   Mr. Fletcher.

4   MR. FLETCHER: Thank you.

5

6   CROSS-EXAMINATION

7   BY MR. FLETCHER:

8   Q.   I think it's Exhibit 23, the hydrology

9   report.

10   Is that the correct exhibit?

11   A.   That's what I have listed here, yeah.

12   Q.   Can you turn to page 15 on that, please.

13   A.   Okay.

14   Q.   This piece -- Exhibit 40, you're dealing

15   with five years worth of data; correct?

16   A.   This one? Yeah, correct.

17   Q.   Page 15 of Exhibit 23 you're dealing with

18   45 years of data?

19   A.   Uh-huh.

20   Q.   "Yes"? Or some --

21   A.   From 1970 to 2016, yeah.

22   Q.   46 years.

23   A.   46.

24   Q.   Do you believe looking at a longer term is

25   more reliable than a short term of five years?

1   A.   Oftentimes it depends. I think that

2   relative to this Exhibit 40, we're trying to show that

3   there is current data that should be considered and

4   it's important. If I had started this longer, we'd

5   have more data. But this is what we have.

6   Q.   On page 15 of Exhibit 23, did you -- did

7   you put together that page?

8   A.   In terms of graphically or illustrating the

9   information, yes.

10   Q.   Okay. Where did you acquire that

11   information?

12   A.   Most, if not all, of that data is from some

13   of the information collected by Mr. Shaw. Some of it

14   may have been supplemented by me or transformed in

15   terms of the -- the Excel or tabular data, you might do

16   something where you're looking at instead of rate,

17   creating acre-feet in order to show volume.

18   Q.   Looking at Exhibit 23, page 15, wouldn't

19   you agree that it shows declining water supplies over

20   the surface water supplies over 46 years on Big Wood?

21   A.   Yeah, that's what that shows.

22   Q.   It shows 26 percent; correct?

23   A.   Less water available in that time period.

24   Q.   Doesn't that mean less water in the river

25   over that time period?

1   A.   That's correct.

2   Q.   And it also shows the Canal 45 diversions

3   decreasing by 54 percent during that time?

4   A.   That's correct.

5   Q.   What would you attribute those declines to?

6   A.   Well, as I testified earlier, the declines

7   in the Big Wood are probably from snowpack. I mean

8   that's the main driver of what we have up there.

9   The declines in the District 45 and

10 Baseline are probably less demand, because of change

11 from flood irrigation to pivot irrigation

12 predominantly.

13   Q.   Okay. And Baseline diversions show a

14 decline of 47 percent; correct?

15   A.   Uh-huh, yeah.

16   Q.   Isn't it true that you've rendered opinions

17 in the past that declines are not just from lack of

18 precipitation, but also because of pumping?

19   A.   Declines where?

20   Q.   Declines to water supplies, to the Big

21 Wood.

22   A.   Pumping in the upper area specifically?

23   Q.   Groundwater pumping.

24   A.   The only groundwater pumping that I've

25 spent any time looking at is in the Silver Creek

 1 watershed.

 2   Q.   Okay. Has groundwater pumping reduced

 3 supplies in Silver Creek?

 4   MR. BARKER: Wait a minute. I'm going to

 5 object.

 6   Mr. Fletcher said he wasn't qualified to

 7 talk about the impacts of the groundwater pumping. You

 8 limited his testimony to his measurements, so --

 9   MR. FLETCHER: Okay. I'll ask it a different

10 way.

11   Q.   You -- I withdraw the question.

12   Isn't it true that you studied a well --

13 two wells that had been in existence since 1954 when

14 doing hydrology work in the Silver Creek area?

15   A.   I've seen that data, yes.

16   Q.   And what did that data show?

17   A.   A decrease.

18   Q.   A decrease in what?

19   A.   In depth to groundwater.

20   Q.   Okay. So you reviewed that data, and it

21 showed that the well levels were dropping; correct?

22   A.   Correct.

23   Q.   Okay. And based solely on that data,

24 didn't you draw conclusions from that as to what the

25 source of declines in Silver Creek were?

 1   A.   Based solely on that data? No. I mean we

 2   made a comparison, but that's -- there are many

 3   factors.

 4   Q.   Have you rendered any opinions on the use

 5   of the model --

 6   A.   No.

 7   Q.   -- in the past?

 8   What does a reduction in the groundwater

 9   level -- I'll withdraw that question.

10   Have you monitored or measured Silver Creek

11   flows as part of your duties?

12   A.   Which portion of Silver Creek are you

13   referring to? I -- all the headwater creeks that I've

14   already testified to, portions of the lower -- lower

15   tributaries before you get to the mainstem, but not on

16   what we'd call the main portion of Silver Creek below

17   all of the confluence.

18   Q.   Okay. So you don't --

19   A.   Sorry. We rely on the Sportsman's Access

20   gage for that.

21   Q.   Okay. So you don't know the -- if there's

22   a trend in the flows in Silver Creek?

23   A.   Again, where? I mean we can look at the

24   data from any of these places that I've talked about

25   and look at a trend.

1   Q.   How about on Silver Creek itself, have you

2 monitored how much water is flowing on Silver Creek?

3   A.   I'm not sure I understand your question.

4 Again, we have --

5   Q.   Well, let me back -- let me rephrase it,

6 then.

7   Have you monitored flows in Silver Creek at

8 any point in Silver Creek?

9   A.   Again, the headwaters and some of the

10 tributary stems, but not below Sportsman's Access.

11   Q.   So you don't have any data on flow trends

12 in Silver Creek itself?

13   A.   Beyond the USGS gage at Sportsman's, no.

14   Q.   I'd like you to look at Exhibit 40. And

15 I'd like you to turn to the Sportsman's Access page.

16   In between November of 2016 and July of

17 2017 there is a big spike on that chart; correct?

18   A.   Yes.

19   Q.   Do you know what that's attributed to?

20   A.   2017 was a historic water year. So you saw

21 a spike there. At Hailey there's probably a similar

22 spike. I would also -- if I remember correctly, there

23 was rain-on-snow events, which would also influence

24 that.

25   Q.   Okay. As you mentioned, it was a historic

1   snow year and runoff year that year, wasn't it?

2   A.   Uh-huh.

3   Q.   Correct?

4   A.   Correct.

5   Q.   When you're looking at a short period of

6   time and you put a spike like that into it, doesn't it

7   skew the result?

8   A.   Sure. You can change a different -- you

9   can look at a different period of record.

10   MR. FLETCHER: Okay. I don't think I have any

11 other questions. Thank you.

12   THE HEARING OFFICER: Thank you, Mr. Fletcher.

13   Mr. Rigby, questions?

14

15   CROSS-EXAMINATION

16 BY MR. RIGBY:

17   Q.   Mr. Hill, Jerry Rigby representing the

18 senior surface water users. I just have a few

19 questions.

20   And taking off on Mr. Fletcher's addressing

21 the trend line for the USGS Sportsman Access on SVGWD

22 40 exhibit, isn't it a fact, even in your deposition,

23 that your major concern with the data you were dealing

24 with was the limited time period?

25   A.   Not relative to this gage. This gage has

 1 | extensive time period.

 2 | Q.   From September '15 through '21?

 3 | A.   Well, it goes back much further than that.

 4 | This is just the period of record that I'm reflecting

 5 | in relation to the headwater tributary creeks that we

 6 | monitor.

 7 | Q.   I understand. What I'm asking, though,

 8 | same as Mr. Fletcher, is that as a result of only using

 9 | September 15th of '21, that would, then, in fact skew

10 | this; correct?

11 | A.   Again, if you choose a different period of

12 | record, you'll get a different result.

13 | Q.   And why, then, did you not use that as far

14 | as all of these discharges? Why did you only go from

15 | '15 to '21?

16 | A.   Because we began measuring/monitoring those

17 | systems in 2015.

18 | Q.   Okay. So again, as far as -- as far as

19 | your participation in this particular hearing and, of

20 | course, with the limitation of your expertise, were you

21 | able to hear or -- and I'll represent the statement by

22 | Ms. Sukow was that curtailment within the Triangle

23 | would result in a substantial increase in flows at

24 | Sportsman Access.

25 | Did you hear that?

1   A.   I've heard that, yes.

2   Q.   And do you have any of the data that you've

3   set here and produced or do you have any data that

4   would disagree with that?

5   MR. BARKER: Objection. Beyond the scope. The

6   witness was not allowed to testify about impacts. Only

7   measurements.

8   MR. RIGBY: That's all I'm asking. Any

9   measurements.

10   THE HEARING OFFICER: Yeah, this is

11   cross-examination, Mr. Barker. Overruled.

12   THE WITNESS: Can you restate the question?

13   Q.   (BY MR. RIGBY): Ms. Sukow testified that

14   curtailment within the Triangle of the groundwater

15   wells would result in substantial increase in the flows

16   at Sportsman Access.

17   And because you measured Sportsman Access,

18   I'm asking you, do you have any measurements that would

19   refute that argument?

20   MR. BARKER: I'm going to object to the

21   mischaracterization of the witness' testimony. He

22   didn't say he measured Sportsman's Access. He said he

23   took it from USGS records.

24   MR. RIGBY: Okay.

25   Q.   I'm asking you from USGS records, or any

 1   other source of measurement that you've done or data

 2   that you've obtained for purposes of your testimony

 3   here, would you refute -- have anything to refute

 4   Ms. Sukow's statement?

 5   A.   You're referring to what she produced as

 6   part of the model; correct?

 7   Q.   Well, her memo and her testimony.

 8   A.   But that's based on the model results.

 9   Q.   Certainly.

10   A.   I don't have any, you know, opinion on the

11   model, other than I know that utilizing the data that

12   we have available to us is probably an important part.

13   It's always an important part of any modeling exercise,

14   use current, relative data. I can't speak to anything

15   else beyond that.

16   Q.   So other than the periods that you've

17   monitored, for example, the Sportsman Access on

18   Exhibit No. 40, you haven't reviewed the historical

19   or -- the historical discharges and done anything with

20   it, other than what's been produced by the staff memos?

21   A.   Well, again, I don't monitor the USGS

22   Sportsman's gage. I use the data that's available from

23   the USGS.

24   Q.   I'm sorry, taking the data from USGS.

25   A.   I'm well aware of that data going back to

1 its inception.

2   Q.   And you've already testified from

3 Mr. Fletcher's that you acknowledge that that shows a

4 different trend than this trend analysis evidences;

5 correct?

6   A.   Again, depending on your choice of period

7 of record, you're going to get a different result.

8   Q.   But again, from the period of time used in

9 the memos themselves, the staff memos, that period of

10 time you would -- you would agree with; correct?

11   A.   I'd have to look at that information in

12 order to decide if I agree with it or not.

13   MR. RIGBY: I have no further questions.

14   THE HEARING OFFICER: Redirect, Mr. Barker?

15   MR. BARKER: Yes, just one question.

16

17   REDIRECT EXAMINATION

18 BY MR. BARKER:

19   Q.   Zach, in your five-year period from 2015 to

20 20 -- or six year period from 2015 to 2021, in addition

21 to the high-flow year of 2017, were there drought

22 years?

23   A.   2015 was exceptionally low. 2020 I would

24 characterize as --

25   Q.   Okay. So those drought years would also

1 skew the results --

2   A.   Absolutely.

3   Q.   -- in Mr. Fletcher's words; right?

4   A.   Yes.

5   MR. BARKER: Thank you.

6   THE HEARING OFFICER: Okay. Any recross within

7 the scope?

8   MR. FLETCHER: Yes.

9   THE HEARING OFFICER: Mr. Fletcher.

10

11   RECROSS EXAMINATION

12 BY MR. FLETCHER:

13   Q.   I would like you to turn to your Sportsman

14 Access gage number on 40.

15   So the drought year you're referring to

16 is -- the one reflected on your exhibit as being

17 July 17, 15 -- 7/17/15 to 7/17/16; is that correct?

18   A.   Approximately. It was a low water year,

19 2015.

20   Q.   Okay. So -- but I'm just pointing out,

21 that's the year that Mr. Barker was asking you about;

22 correct?

23   A.   Well, I would say that by the time you get

24 into the fall, conditions have changed. So it's

25 probably earlier than that. And my record starts in

 1   July -- July 17th, which is halfway through the

 2   irrigation season.

 3   MR. FLETCHER: Okay. Thank you. No further

 4   questions.

 5   THE HEARING OFFICER: All right. Thank you,

 6   Mr. Hill.

 7   We're into the lunch hour. Time for lunch

 8   break. Be back in an hour. 1:15.

 9   (Lunch recess.)

10   THE HEARING OFFICER: Let's go on the record.

11   We're back recording after a lunch break. It's about

12   1:20.

13   And, Mr. Shaw [sic], we finished with

14   Mr. Hill. Next witness.

15   MS. O'LEARY: Yes, Director. The Galena Ground

16   Water District calls Erick Powell.

17   THE HEARING OFFICER: Oh, I'm sorry.

18   Ms. O'Leary.

19   Mr. Powell, if you'll come forward. Raise

20   your right hand.

21

22   GEORGE ERICK POWELL,

23   having been called as a witness by Galena Ground Water

24   District and first duly sworn, testified as follows:

25   ///

 1   THE HEARING OFFICER: Thank you.

 2   Please be seated, Ms. O'Leary.

 3   MS. O'LEARY: Thank you, Director.

 4

 5   DIRECT EXAMINATION

 6 BY MS. O'LEARY:

 7   Q.   Good afternoon.

 8   A.   Good afternoon.

 9   Q.   Can you please state your name and current

10 address for the record.

11   A.   My name is George Erick Powell. And I live

12 at 426 Kay Drive in Twin Falls, Idaho.

13   Q.   Erick, what is your occupation?

14   A.   I am an engineer.

15   Q.   Where are you an engineer at?

16   A.   I work at Brockway Engineering in Twin

17 Falls.

18   Q.   Can you just describe your educational

19 background a little bit for us, please.

20   A.   Absolutely. I have a bachelor's in civil

21 and environmental engineering, I have a master's in

22 civil and environmental engineering, and I have a Ph.D.

23 in agricultural engineering.

24   Q.   Okay. And when did you acquire each of

25 those degrees?

 1   A.   I graduated with my bachelor's in 2001, my

 2 master's in 2002, and my Ph.D. in 2006.

 3   Q.   Okay. Where did you get your bachelor's

 4 degree from?

 5   A.   At Brigham Young University.

 6   Q.   How about your master's?

 7   A.   At Brigham Young University.

 8   Q.   And then what about your Ph.D.?

 9   A.   At Ohio State -- or The Ohio State

10 University, if I'm...

11   Q.   Do you have any publications?

12   A.   When I was a graduate student at Ohio

13 State, I did publish several articles and books and

14 refereed journals and publications, yes.

15   Q.   What topics were those publications

16 addressing?

17   A.   I wrote the solutions manual to a hydrology

18 textbook. And I -- most of my refereed publications

19 were involving stream channel design, two-stage ditch

20 sediment trapping of small, agricultural streams in the

21 Midwest.

22   Q.   Can you describe your work experience since

23 obtaining your Ph.D.

24   A.   After I finished school, I started at

25 Brockway Engineering and have been an engineer with

 1 Brockway Engineering since. We specialize in water

 2 resource engineering, hydrology and hydraulics, as well

 3 as water rights. And I think everyone in this room is

 4 fairly familiar with our firm, too, so...

 5   Q.   So that would be about 15 years, then, that

 6 you've been with Brockway; is that right?

 7   A.   Yes, that's correct.

 8   Q.   And what are your present duties? I know

 9 you touched on the areas of focus. But how would you

10 describe your present duties at Brockway?

11   A.   I would categorize them very similarly.

12 I'm a senior engineer with the firm. I do a lot of

13 modeling, both groundwater and surface water modeling.

14 I do a lot of water work -- water rights evaluations,

15 designing of hydraulic systems, and oversee those

16 systems. We do a lot of stream channel restoration

17 work as well, and the appropriate permitting with

18 those, so...

19   Q.   Okay. You mentioned groundwater modeling.

20   Can you elaborate a little bit on the type

21 of modeling that you use.

22   A.   Sure. So I actually -- in between my

23 bachelor's and master's, I spent a summer in Vicksburg,

24 Mississippi, at the U.S. Army Corps of Engineers

25 Waterways Experiments Station doing groundwater

1   modeling using FEMWATER for the Corps.

2   And then that's more research oriented,

3   FEMWATER was. And so application at Brockway I have

4   used MODFLOW only as a groundwater model and have

5   developed models, I have reviewed models. I was on the

6   Eastern Snake Plain Hydrologic Modeling Committee --

7   ESPHMC, is that what Sean refers to it as? -- as well

8   as the MTAC with the Wood River Valley Model as well.

9   Q.   Do you have any experience in irrigation

10   efficiency?

11   A.   So I grew up in north central Kansas. We

12   had a family farm that both has dry farming and

13   irrigation. And so I grew up around irrigation. I

14   have looked at irrigation throughout my college

15   experience. And then at Brockway I've done a lot of

16   irrigation, both design, evaluation, efficiency,

17   calculations for supply for both municipalities and

18   farmers.

19   Q.   At some point throughout your work tenure

20   at Brockway, or even before, did you come -- become

21   involved with the groundwater management area of

22   Basin 37?

23   A.   Yes.

24   Q.   Do you recall when that was?

25   A.   So if I can have you rephrase the question

1 about the groundwater management area just --

2   Q.   Sure.   You're aware that there were Model

3 Technical Advisory -- that there is a Model Technical

4 Advisory Committee that met over the past I think it

5 was about eight years, are you not?

6   A.   Yes.

7   Q.   Did you have any involvement with that

8 committee?

9   A.   Yeah.   So when the -- when the -- the

10 Department of Water Resources and the USGS first

11 started to discuss creation of a groundwater model,

12 they formed a Modeling Technical Advisory Committee.

13 They called it the MTAC.   In 2013, I believe.   And I

14 attended, I think, most every one of those meetings

15 that they held since 2013.

16   Q.   And you are here today, because you've been

17 engaged by Galena Ground Water District; is that right?

18   A.   That's correct.

19   Q.   Okay. Do you recall when your involvement

20 with Galena Ground Water District began?

21   A.   I believe the District was formed in 2016.

22 And our firm was retained by the -- by Galena Ground

23 Water District when it was formed or right after it was

24 formed.

25   Q.   Can you describe the purpose of your firm's

1 engagement.

2   A.   We were requested to provide general

3 engineering services, provide mapping services, and any

4 other tasks that the Board directed us, including

5 representation at those MTAC meetings.

6   Q.   You mentioned your familiarity and use of

7 modeling.

8   What version of the model do you work with

9 today?

10   A.   So the current version is version 1.1 that

11 was released by the Department of Water Resources in

12 2019.

13   Q.   And as far as you're aware, is that the

14 same version model that the Department is using to

15 date?

16   A.   That is my understanding, yes.

17   MS. O'LEARY: Director, I'd like to tender this

18 witness as an expert in groundwater modeling.

19   THE HEARING OFFICER: Any objections?

20   MR. RIGBY: No objections.

21   THE HEARING OFFICER: Mr. Fletcher?

22   MR. FLETCHER: No objection.

23   THE HEARING OFFICER: So recognized.

24   Q.   (BY MS. O'LEARY): I'd like to talk to you

25 about the model itself a little bit and your knowledge

1   of it, Erick.

2   In your opinion, does the model have a

3   particular stress period?

4   A.   So the model was developed with a one-month

5   stress period over originally 15 years, they extended

6   that another five, to 20 years.

7   Q.   Okay. Is the model linear?

8   A.   It is not linear.

9   Q.   Are you aware of any models that are

10 linear?

11   A.   The ESPA model is considered a linear

12 model.

13   Q.   And what of significance, if any, do you

14 place on a linear versus a nonlinear model?

15   A.   I think one of the big strengths of a

16 linear model is that you're able to simplify some of

17 the runs that you're able to do. You -- the ESPA model

18 has -- has developed response functions. And those --

19 those are -- you can use those easily to calculate the

20 effects at different reaches. Those effects can also

21 be additive. So you can add responses on top of

22 themselves, so to get an anticipated result.

23   A nonlinear model, it's not appropriate to

24 do some of those simplifications.

25   Q.   So this is a complex system that we're

 1 talking about, then; would that be fair to say?

 2   A.   It is a very complex system.

 3   Q.   Okay. And for model 1.1, do you know how

 4 many cells there are?

 5   A.   There were -- there are over 55,000. And I

 6 don't recall exactly how many, but there's over 55,000

 7 cells.

 8   Q.   Okay. And what does each individual cell

 9 represent?

10   A.   So each individual cell in the Wood River

11 Valley Model is 100 meters by 100 meters. That's the

12 result of the USGS involvement and their desire to try

13 to shift us over to SI units.

14   And each cell, the centroid of that cell is

15 a calculated node. And so as the water model is run

16 and evaluated, each -- there has to be a water surface

17 calculation made at every single cell within the model

18 domain.

19   Q.   Okay. Does -- in your opinion, does the

20 quality of data that is input into the model connect to

21 the quality of the predictions that the model makes?

22   A.   Absolutely. So any -- the common phrase

23 used is "garbage in is garbage out." And so the

24 benefit or the quality of any model is the data that

25 goes in and supports that model.

1   Q.   Okay. And how do you acquire the data that

2   you use to put into the model?

3   A.   So are you speaking specifically of the

4   Wood River Valley Model or --

5   Q.   Yes.

6   A.   -- any model in general?

7   Q.   I should have been more clear. Yes.

8   A.   The Wood River Valley Model, the Department

9   staff, in collaboration with USGS, was really tasked

10   with a difficult assignment to try to develop a

11   groundwater model, because of the lack of data. That

12   was something we discussed at length in every MTAC

13   meeting was the availability of data, both surface and

14   groundwater.

15   And so surface flows, the USGS was the

16   primary resource for that. I don't believe that

17   Ms. Sukow testified about that in this proceeding, but

18   there was no gage at the Big Wood River near Ketchum.

19   And so -- or on Trail Creek or on East Fork. And so a

20   lot of those gage values used in version 1.0 and 1.1,

21   up until 2011, were fabricated datasets based on the

22   USGS gage at Hailey. And so they were -- they were

23   challenged -- I mean just with a lack of data to create

24   a model within that time period.

25   Similarly, groundwater levels, there are

1 very few groundwater locations with a long period of

2 record. And so a lot of wells were measured at the

3 time of construction with well logs or spot

4 measurements from the USGS at different -- different

5 time periods. And so they tried to pull as much data

6 from every source that they possibly could.

7   Q.   Okay. I believe you testified earlier

8 about surface flows.

9   So in addition to groundwater modeling, do

10 you also calculate trends -- or have you calculated

11 trends in surface flows, specifically for this

12 proceeding?

13   A.   I have, yes.

14   Q.   Okay. And what have you calculated?

15   A.   So I looked at stream gage data and

16 calculated surface flow trends on the Big Wood River at

17 Hailey at Stanton Crossing and on Silver Creek at

18 Sportsman's Access.

19   Q.   Okay. And is there any particular type of

20 analysis that you use, some proven method?

21   A.   So the best statistical analysis for any

22 streamflow data is an analysis called a Mann-Kendall

23 analysis. It accounts for time-series data. And so

24 you're not relying on potential influence from

25 time-series data, as the process has recommended by the

 1 USGS.

 2   Q.   And did you use that analysis in your

 3 stream -- in your trend flow calculations?

 4   A.   I did, yes.

 5   Q.   Okay. Are you familiar with an individual

 6 named Allan Wylie?

 7   A.   I know Mr. Wylie, yes.

 8   Q.   And are you familiar with analyses that he

 9 has performed in the past?

10   A.   He did publish a paper looking at

11 groundwater trends in the Valley, I believe in 2019,

12 that looked at groundwater trends from 1991 through

13 current at the time of publication. And he also

14 reported and used Mann-Kendall analysis on that trend

15 data.

16   Q.   Erick, if I could have you direct your

17 attention to Exhibit 24 in the binder in front of you,

18 please.

19   Have you seen this document before, Erick?

20   A.   I have seen this, yes.

21   Q.   Can you describe to me what it is.

22   A.   This was a summary presentation that was

23 given at the Advisory Committee meeting, I believe in

24 February, by Zach Hill, Dave Shaw, and myself.

25   Q.   And when you say "Advisory Committee

1   meeting," would that be the Advisory Committees for the

2   Big Wood Groundwater Management Area?

3   A.   Yes.

4   Q.   Okay. And did you attend most of those, if

5   not all, of those meetings?

6   A.   I did not attend most of them. I attended

7   some, I would say, at the direction of the Board when

8   they asked me to attend.

9   Q.   Okay. If I could just have you turn to

10   page 25, please.

11   A.   Okay.

12   Q.   And I guess I should have asked you, so you

13   didn't prepare this whole presentation; correct?

14   A.   That is correct.

15   Q.   Okay. This particular page, page 25, is

16   this a portion of the presentation that is attributable

17   to your work?

18   A.   Yes, page -- on page 25 is entirely my

19   work.

20   Q.   Okay. And can you describe to us what this

21   is. Is this one of your trend flow analyses that you

22   calculated?

23   A.   Yes, it is. So this is the Mann-Kendall

24   results of flows at Silver Creek at Sportsman's Access.

25   Q.   Okay. And it looks like this is a pretty

 1   lengthy time period, about 45 years; is that right?

 2   A.   Yes.

 3   Q.   Okay. And can you just explain the tau and

 4   the p value categories and what those signify.

 5   A.   I'll do my best. So in an effort not to

 6   feel like you're in Stats 101 again --

 7   MR. THOMPSON: Or ever.

 8   THE WITNESS: -- or ever, just to provide some

 9   context -- and this is a little bit of a pet peeve of

10   mine, is the word "significantly" that's used often in

11   proceedings like this. And I've heard it many, many

12   times.

13   In the scientific field "significantly" has

14   very specific connotations associated with it. And so

15   it -- in my opinion, it's very inappropriate to use the

16   word "significant" unless you've done statistical

17   analysis on data. So it's just a little bit of a pet

18   peeve. Soapbox. I apologize for that.

19   So what I did to develop this table is I

20   took flow data for the period of record from 1975

21   through 2020. This was done in January or February of

22   this year, so it did not extend -- I did not extend it

23   into 2021. And I took -- and averaged the monthly

24   data, so I had one value per month over the time

25   period.

1   And then I ran the Mann-Kendall analysis

2 that looks at trends in the data. And so rather than

3 just plotting a line, some of the concerns that were

4 raised earlier with -- at Silver Creek from 2017, that

5 depending on the period of record, that can influence

6 the trend data.

7   And so for the period of record, 1975

8 through 2020, the tau value gives the slope of that

9 line. It tells you what direction. So the sign,

10 positive or negative, tells the direction of the trend

11 and then the value per year.

12   And then the p value represents the

13 statistical significance evaluation. And so typically

14 in statistics a p value of .05 or less is considered

15 statistically significant. And so if we look at the

16 stream gage at Sportsman's Access, there is a negative

17 trend for every month of the period of record, meaning

18 that every month that the streamflows have gone down

19 for the entire period of record.

20   The p values then are -- every month are

21 statistically significant, with the exception of May

22 and June. And so there is a declining trend over the

23 entire period of record at Sportsman's Access.

24   Q.   Okay. For Silver Creek?

25   A.   For Silver Creek, yes.

1   Q.   Okay. And in your opinion, do these

2   calculations indicate any connection to groundwater

3   pumping?

4   A.   So unfortunately, we cannot draw specific

5   conclusions attributing all of the decline toward one

6   specific source, whether -- so what I can say is that

7   this is a -- likely a combination of atmospheric

8   climate change, diversions into canal systems,

9   groundwater pumping, changes in agricultural practices,

10   conversion from flood to sprinkler, a variety of

11   different sources.

12   Q.   Could I please have you turn to page 36 of

13   this exhibit. I'm on page 36. The title is "Water Use

14   Efficiency."

15   A.   I am there, yes.

16   Q.   Okay. Is this particular slide, is this

17   attributable to work that you prepared or set forth in

18   this presentation?

19   A.   It is, yes.

20   Q.   And this particular slide says,

21   "Efficiency: BWLWWUA assumes 90 percent for all

22   diversions."

23   Is that referencing Mr. Miller's

24   calculation of 90 percent irrigation efficiency?

25   A.   It -- it was, yes.

1   Q.   Okay. Do you know where Mr. Miller

2   acquired his data to calculate that certain percentage?

3   A.   So Mr. Miller and Mr. Shaw and I have been

4   meeting regularly for the last two years discussing

5   different issues, trying to determine injury or

6   discussion of this situation that we're in currently in

7   this proceeding.

8   Mr. Miller has always used an efficiency

9   value for irrigation diversion that's, in my opinion,

10 high. And I've raised that concern repeatedly over

11 time, and have not received any sort of feedback or any

12 sort of evidence that a 90 percent efficiency is an

13 appropriate value. And so I was -- I was concerned

14 about those values as a blanket percentage applied

15 across the entire basin.

16   Q.   Okay. And when you say you raised those

17 concerns, who did you raise those concerns to?

18   A.   To Mr. Miller.

19   Q.   Okay. And you never received any data or

20 explanation?

21   A.   Just that he said that he had talked to an

22 agricultural engineer who said that was appropriate.

23   Q.   You don't know who that agricultural

24 engineer is, though, do you?

25   A.   I do not, no.

1   Q.   Okay. Did you calculate your own

2   irrigation efficiencies?

3   A.   So for this presentation I selected just a

4   few areas within the entire model basin to illustrate

5   differences of irrigation efficiency. And so I did

6   look at, in this specific presentation, six different

7   locations.

8   Q.   Okay. And would that -- would those

9   calculations be on page 37?

10   A.   Yes.

11   Q.   Okay. And out of these six calculations,

12   can you identify what ones are located within the

13   Bellevue Triangle?

14   A.   So the -- on page 37, I'm going to say the

15   three that are on the far right, Water Right

16   No. 37-22328, Water Right 37-8011A, and the very last

17   one that says just says "Agricultural Irrigation

18   Efficiency."

19   Q.   And where did you acquire your data to

20   perform these calculations?

21   A.   So I looked at -- for the two individual

22   water rights, I looked at water diversion data from --

23   provided by the watermaster for groundwater diversions

24   under that specific water right, and then overlaid the

25   water right place of use and used the Department of

1 Water Resources ET mapping ability, and generated

2 METRIC crop irrigation requirements for those specific

3 locations.

4   For the last one this was diversion data on

5 individual pivots and wheel lines that Mr. Hill

6 provided me. So that was diversion data not from the

7 watermaster, but from Mr. Hill for those specific

8 pivots.

9   Q.   And this last column, the "Agricultural

10 Irrigation Efficiency" column, would that be the Silver

11 Springs Ranch?

12   A.   That's correct, yes.

13   Q.   Okay. And just taking these one at a time,

14 the column for the "Individual User Efficiency Water

15 Right No. 37-22328," it says, "Irrigation Efficiency:

16 35.4 percent." And then the second water right

17 individual, water right, 37-8011A, calculates

18 irrigation efficiency at 23.8 percent. And then that

19 Silver Springs irrigation efficiency is calculated at

20 84 percent.

21   These are all substantially less than that

22 90 percent that we looked at on the prior page; right?

23   A.   That is correct, yes.

24   Q.   Okay. If you turn to the next page, it

25 looks like perhaps there's a comparison of Mr. Miller's

1   calculations versus your calculations that we just

2   looked at. So page 38.

3   A.   I'm there.

4   Q.   The right two columns, one is efficiency

5   90 percent and the other is efficiency 61.3 percent.

6   Is that far right column based on your

7   calculations?

8   A.   That is correct. Those are -- are just

9   a -- yeah, to provide comparison of those specific

10 irrigation evaluations that were performed.

11   Q.   Okay. So roughly he is calculating

12 30 percent more irrigation efficiency than you are?

13   A.   For these six locations, that's correct,

14 yes.

15   Q.   Okay. And I think you testified earlier

16 that his locations were not specific to the Bellevue

17 Triangle; is that correct?

18   A.   That is correct. That was basinwide, all

19 pumping within the model domain.

20   Q.   Okay. And you're not entirely sure where

21 he acquired his data; is that right?

22   A.   I have not seen any supporting evidence of

23 that.

24   Q.   If we turn to slide 48 or page 48 of this

25 exhibit, please.

 1   Is this particular page of the presentation

 2   work that you contributed?

 3   A.   This particular page was a reproduction of

 4   a page from Mr. Wylie's 2019 groundwater trend report

 5   that he published.

 6   Q.   Okay. And would this be referencing that

 7   Mann-Kendall analysis that you were testifying about

 8   earlier that Mr. Wylie performed?

 9   A.   That is correct.

10   Q.   Okay. And can you just walk us through

11   what his conclusions were. These charts are a little

12   hard to read if you're not well-versed in statistics.

13   A.   Absolutely. So in my previous chart that

14   we looked at -- and I don't recall what page that was,

15   20-something, I only reported the tau and the p value.

16   There's other values that are generated through a

17   Mann-Kendall analysis that Mr. Wylie produced here.

18   But if we look at the comparison of the tau

19   value, which is right underneath -- it's the row right

20   underneath "locations," that's the trend in slope of

21   the water elevations within each of these October,

22   November, or April months.

23   And then the p value is the second from the

24   bottom, is the -- the showing statistical significance.

25   So there's a positive trend in October, November, and

1 April. But the p value is not statistically

2 significant except for the April -- the month of April.

3   MR. FLETCHER: Director, the version of this

4 report that was furnished in disclosure seems to be

5 different than the one that this witness is testifying

6 to.

7   MS. O'LEARY: I think we provided a corrected

8 copy of this exhibit prior to the hearing.

9   Is that right?

10   MR. THOMPSON: And at the deposition, I believe,

11 the exhibit was replaced --

12   MS. O'LEARY: Yeah.

13   MR. THOMPSON: -- given to Mr. Rigby.

14   MR. RIGBY: So it's part of the deposition?

15   MS. O'LEARY: It is. I think it's Exhibit 2,

16 maybe.

17   MR. FLETCHER: But you didn't change it on

18 your --

19   MS. O'LEARY: We circulated it prior to this

20 hearing.

21   MR. FLETCHER: This page that the witness is

22 testifying to is not in the one that was disclosed as

23 part of your exhibits?

24   MS. O'LEARY: We corrected that prior to this

25 hearing, though.

1   MR. THOMPSON: I believe it was a day later,

2   that supplemental disclosure. It was in that.

3   MR. RIGBY: Oh, so it's located in the

4   supplemental disclosure?

5   MR. THOMPSON: I think so. Let me check.

6   THE HEARING OFFICER: Jeff, are we keeping up

7   with this colloquy and identifying the people who are

8   speaking?

9   THE COURT REPORTER: Yep.

10   THE HEARING OFFICER: Okay. With your back

11   turned to them?

12   THE COURT REPORTER: Yeah, I got them.

13   MS. McHUGH: Should we just go off the record

14   while we figure it out?

15   THE HEARING OFFICER: Yeah, I think that's a

16   good idea.

17   Let's go off the record.

18   (Recess.)

19   THE HEARING OFFICER: Back on the record.

20   And we are -- why don't you repeat,

21   Ms. O'Leary, where we're at and then -- you don't need

22   to repeat all of what we discussed, but just for

23   purposes of continuity, the exhibit and the page.

24   MS. O'LEARY: Yes, Director.

25   So we are looking at South Valley Ground

 1   Water District and Galena Ground Water District

 2   Exhibit 24. It is the presentation to the Advisory

 3   Committee. It was presented in February of this year.

 4   And it's -- there is a link to it on the Department's

 5   website.

 6   And we are now looking at page 48, which,

 7   as Erick has testified, is an excerpt that he pulled

 8   from Mr. Allan Wylie's September 2019 report showing

 9   the Mann-Kendall analysis that Mr. Wylie calculated.

10   THE HEARING OFFICER: Great. Thank you.

11   Q.   (BY MS. O'LEARY): So, Erick, I'm not

12   entirely sure where we left off, but you were

13   explaining the analysis to me in layman's terms and

14   what you can discern from it.

15   A.   So just for comparison of the previous

16   Mann-Kendall statistics that were provided, the tau and

17   the p value are also shown. The tau is the second row

18   underneath "location" -- well, it's of the first row

19   underneath "locations," excuse me, and the p value is

20   the second from the bottom.

21   So again, the tau just indicates direction

22   of trends. So in this case it's positive from the

23   groundwater levels from October, November, and April

24   are all positive. The p values are not -- excuse me,

25   are not statistically significant in October or

1   November, but is statistically significant in April.

2   Q.   And what does that tell you?

3   A.   It tells me that there's always a mixed

4   bag. We'd love for everything to be statistically

5   significant that disproves the Noel hypothesis. But in

6   this case when things are not statistically

7   significant, that means they're -- it could be, I'm

8   going to call it noise, background -- you know, that

9   there's not really -- there's not really a trend if

10 something's not statistically significant.

11   But it tells me that we don't have negative

12 levels of -- we don't have a declining aquifer from the

13 data presented from 1991 through 2018, I believe, is

14 when Allan did this analysis, and that the values in

15 April are showing a statistically significant trend.

16   Q.   And if I'm interpreting this correctly,

17 this analysis was performed looking at, depending on

18 the month, 43 to 46 locations; is that right?

19   A.   That's correct.

20   Q.   Okay. And I believe Mr. Wylie actually in

21 the paragraph above, as you said that your takeaway is

22 the aquifer is not declining, he's stating that since

23 these values are all positive indicates rising

24 groundwater levels actually; right?

25   A.   That's -- that's what the trend data

1 suggests, yes.

2   Q.   Okay. Would you agree that it's fair to

3 say that this analysis shows that the aquifer is

4 stable?

5   A.   That was the conclusion that Mr. Wylie

6 reached in his -- in his language. He says that there

7 is no trend and -- he says -- to quote, he says,

8 "Perhaps the October and November data contain enough

9 noise that the trend is masked or there is no trend and

10 the water table is stable."

11   MS. O'LEARY: Director, I would request that

12 this Exhibit 4 be admitted into -- or excuse me,

13 Exhibit 24 be admitted. And that's South Valley Ground

14 Water District and Galena Ground Water District

15 Exhibit 24.

16   THE HEARING OFFICER: Any objection to the

17 admission of this document?

18   MR. FLETCHER: May I ask a question in aid of

19 objection?

20   THE HEARING OFFICER: Yes.

21

22   VOIR DIRE EXAMINATION

23 BY MR. FLETCHER:

24   Q.   Are you the sole author of this report?

25   A.   Mr. Fletcher, are you talking about the

1   entire presentation, or this page specifically, or --

2   Q.   No.   I think she asked for admission of the

3   entire presentation.

4   A.   So this was a collaboration between Dave

5   Shaw, Zach Hill, and myself.

6   MR. FLETCHER: I would object on the grounds

7   he's not the sole author, and there's been no

8   foundation laid for the rest of them.

9   THE HEARING OFFICER: Mr. Fletcher, I think I

10 already stated at the beginning that the presentation

11 documents were -- would be a part of the record the

12 Director would review.   So I'll overrule the objection

13 and allow this to come into evidence.   Thank you.

14   So the document marked as South Valley and

15 Galena Exhibit 24 is received into evidence.

16   (SVGWD GGWD Exhibit 24 received.)

17

18   CONTINUED DIRECT EXAMINATION

19 BY MS. O'LEARY:

20   Q.   Erick, are you aware that four Department

21 staff members submitted memorandums to the Director

22 regarding their analysis relating to this

23 administrative proceeding?

24   A.   Yes, I am aware of that.

25   Q.   Have you reviewed each of those four

 1   memorandums?

 2   A.   I have.

 3   Q.   Okay. And are you aware that each of those

 4   four individuals -- and those being Jennifer Sukow,

 5   Sean Vincent, Phil Blankenau, and Tim Luke -- testified

 6   at this hearing earlier this week?

 7   A.   Yes, I am aware of that.

 8   Q.   Did you listen in or were you present for

 9   any of that testimony?

10   A.   I heard most of the testimony. I missed

11   most of Mr. Luke's, because I was traveling here on

12   Tuesday morning, I believe.

13   Q.   But you did hear Ms. Sukow's testimony?

14   A.   I did, yes.

15   Q.   Okay. And how about Sean Vincent?

16   A.   Yes, I heard Sean Vincent's.

17   Q.   And is the same true for Phil Blankenau?

18   A.   Yes.

19   Q.   Do you believe that upon your review of --

20   having reviewed the memorandums that the data that

21   those four individuals used to create their memorandums

22   is based on the same type of flow data that you have

23   used in your modeling experience?

24   A.   Yes, I do believe that.

25   Q.   If I could have you direct your attention

1   to -- it's actually the Department's Exhibit 2. I

2   think it's in one of those other binders.

3   MS. CARTER: I moved it to the green binder.

4   THE WITNESS: The green one? Thank you.

5   Q.   (BY MS. O'LEARY): Erick, I'm

6   referencing --

7   A.   I'm sorry, Exhibit 2 of IDWR?

8   Q.   Yes. Is that from Jennifer Sukow to the

9   Director dated May 17, 2021, her memorandum --

10   A.   Yes.

11   Q.   -- a corrected June 8th, 2021 version?

12   A.   That is correct, yes.

13   Q.   And you -- so you testified you have

14   reviewed this document; is that right?

15   A.   Yes.

16   Q.   And so you're aware that the curtailment

17   analysis that Ms. Sukow performed was based on using

18   2022 values in this memorandum; is that right?

19   A.   2002.

20   Q.   2002. Thank you.

21   A.   Yes. I am aware of that.

22   Q.   Okay. Do you think that using 2002 as a

23   base year is reasonable to compare to this particular

24   year?

25   A.   I think at the time she wrote this memo,

 1   that was a reasonable conclusion, yes.

 2   Q.   And can I just have you turn to page 21 of

 3   this document, please. It's Table 1. This is

 4   identified as Ms. Sukow's "Predicted responses to

 5   curtailment starting July 1 within the Wood River

 6   Valley 1.1 model boundary."

 7   A.   Yes, I'm there.

 8   Q.   Okay. Have you tried to replicate the

 9   impact value that she calculated in this particular

10   table?

11   A.   Yes. So using the supplemental information

12   that Ms. Sukow provided, I have replicated her model

13   curtailment run and have produced the same result, yes.

14   Q.   And what supplemental data are you

15   referring to?

16   A.   So she did provide complete MODFLOW files

17   to support this document.

18   Q.   Okay. So that's what you looked at to

19   assist you in your replication?

20   A.   Yes.

21   Q.   And do you know what stress periods

22   Ms. Sukow used for this analysis?

23   A.   So she looked at several different

24   curtailment runs starting with different start dates

25   going through the end of the irrigation season. And

1   according to the data that was in the supplemental

2   information, it actually extends all the way through

3   October, not -- it doesn't end in September.

4   And so for this specific curtailment run in

5   Table 1, she evaluated within the entire model domain

6   curtailment of all groundwater pumping starting

7   July 1st through the end of the irrigation season. So

8   four months.

9   Q.   Okay. Did she report four or three months?

10   A.   Well, she reported three, but she -- the

11   actual model run was four.

12   Q.   Okay. And in your opinion, what time

13   period was the model intended to be run for?

14   A.   So the model was developed to be run from

15   the start date through the end date. And -- and that's

16   how the model is run. And so they -- they -- in this

17   specific case, they curtail or they modified the .wel

18   file, the input data for the model to exclude

19   groundwater diversions, reduce ET, and decrease

20   incidental recharge or excess irrigation from the whole

21   model for the months of July, August, and -- July,

22   August, September, and October for 2002. But they run

23   the whole model, and then compare the two together.

24   Q.   Okay.

25   A.   So...

1   Q.   What significance or impact, if any, would

2 you anticipate this shorter three-month stress period

3 that Ms. Sukow relied upon?

4   A.   This gets into discussions of uncertainty.

5 And relying on a specific three-month response raises

6 questions of increased uncertainty over the model

7 results, based on Allan Wylie's uncertainty analysis

8 that was done.

9   Q.   Okay. So you are aware of Mr. Wylie's

10 uncertainty analysis of model version 1.1?

11   A.   I am aware of that, yes.

12   Q.   Okay. Do you recall what he predicted the

13 uncertainty in the Bellevue Triangle to be?

14   A.   If I remember correctly, he had two

15 locations that he looked at for uncertainty, so two

16 model cells that he evaluated and determined that it

17 was at 22 percent uncertainty at those two locations

18 over a ten-month period.

19   Q.   Okay. So he's -- let me make sure I'm

20 understanding this right. He's predicting a 22 percent

21 uncertainty over a ten-month span, and you are opining

22 that if you reduced that time period it creates even

23 more uncertainty; is that right?

24   A.   It -- it changes the uncertainty. And

25 most -- the logical conclusion is it probably increases

1   its uncertainty, as opposed to decreasing it. The

2   predictive uncertainty indicates the response of stress

3   at a certain location to river reaches over that period

4   of time.

5   And by decreasing the month evaluation, the

6   timestamp that we're looking at, in my opinion, would

7   most likely increase the uncertainty. Now, I have not

8   done that or run that to support that conclusion, but

9   that's my -- that's my opinion of it.

10   Q.   Okay. So it would be fair to say that

11   there is -- it's likely that Ms. Sukow's three-month

12   period has a greater uncertainty than 22 percent; would

13   you agree?

14   A.   I would agree with -- and she makes that

15   same observation.

16   Q.   In addition to the uncertainties that we

17   just talked about, is there uncertainty with the model

18   because of lack of data?

19   A.   Absolutely. I -- there's lots of different

20   uncertainty besides just predictive uncertainty.

21   Uncertainty helps any modeler identify areas where they

22   can focus to collect more data to help reduce some of

23   that uncertainty. And so uncertainty isn't always

24   necessarily a bad thing. It helps identify areas that

25   can improve the model in the future.

1   And so there are -- there's framework

2   uncertainty, there's model parameter uncertainty,

3   there's calibration uncertainty, all those

4   uncertainties, the date of availability. If we have

5   questions about gage information, that's also -- you

6   know, just the raw data uncertainty as well.

7   Q.   Okay. Are you aware -- so have you

8   reviewed the model final report?

9   A.   I have, yes.

10   Q.   And let's just turn to it. It's our

11   exhibit, South Valley Ground Water District and Galena

12   Ground Water District Exhibit 14.

13   A.   Okay.

14   Q.   So this is titled "Groundwater-Flow Model

15   for the Wood River Valley Aquifer System, Version 1.1."

16   Are you on that same document?

17   A.   I'm on that same document.

18   Q.   So this was actually authored by, among

19   others, Allan Wylie and Jennifer Sukow; right?

20   A.   That is correct.

21   Q.   Okay. And if you could just turn to

22   pages 26 and 27, please. This appears -- the latter

23   portion under "Conclusions," last about one-third of

24   the page, talks about significant data gaps. And it

25   lists about nine or ten gaps that at the time this

 1   report was created existed.

 2   Do you believe that these data gaps still

 3   exist within the model?

 4   A.   Absolutely. The model was updated to 1.1,

 5   and these data gaps were identified. There's been no

 6   update to the model. So these data gaps still exist in

 7   the model.

 8   Q.   Okay. So the suggestions for future work,

 9   such as installing transducers, monitoring certain

10   streams and recharge, all these items listed, you think

11   that they still exist?

12   A.   Yes.

13   Q.   In addition to the data gaps that we were

14   just discussing, do you believe that there are other

15   imperfections in the model or areas that raise

16   questions?

17   A.   No model is perfect. And every model has

18   problems. And having a model with 55,000-plus model

19   cells doesn't increase the accuracy of the model. I --

20   earlier this week -- this is -- someone asked me in our

21   office what some estimates of hydraulic conductivity

22   were for the aquifer in a specific location within the

23   Bellevue Triangle for a different project.

24   And I opened that up and looked at those

25   values, and they were outrageously high, in my opinion.

1   And so I -- I started doing a little bit more

2   investigating, and there are some values in the model

3   that raise some serious questions about some of the

4   sideboards that were placed on hydraulic conductivity

5   calculations, to the order of layer one, I think, had a

6   maximum hydraulic conductivity value of 500 -- over

7   500,000 feet per day. Layer two had a value of over

8   950,000 feet per day, which I have never seen before.

9   And so that raises some questions about

10   just the way the model was -- just some sideboards that

11   were placed on those parameters during calibration.

12   Q.   Okay. So being logically applied, some of

13   the calculations that you are -- or some of the output

14   that you're receiving just isn't illogical; is that the

15   takeaway?

16   A.   Yeah. Physically I just have never seen

17   that before.

18   Q.   Okay. Can you please turn to Exhibit A in

19   that same binder that you're looking at.

20   A.   Is that the end? Yes.

21   Q.   Yes. It was a supplemental exhibit. It's

22   Galena Ground Water District's supplemental exhibit.

23   And it was served on everyone on June 2nd.

24   A.   Okay.

25   THE HEARING OFFICER: I don't know where you're

 1 looking, Ms. O'Leary.

 2   THE WITNESS: It is A.

 3   THE HEARING OFFICER: Same binder?

 4   THE WITNESS: Same binder, at the very end,

 5 Exhibit A.

 6   THE HEARING OFFICER: Oh, okay. Handwritten?

 7 Okay. I found it. Thank you.

 8   Q.   (BY MS. O'LEARY): Erick, are you looking

 9 at an Excel spreadsheet with a list of Galena Ground

10 Water District members' water rights within the

11 proposed curtailment area?

12   A.   I am.

13   Q.   Have you seen this document before?

14   A.   Yes, I produced this document.

15   Q.   Okay. And can you explain to me why you

16 produced this document.

17   A.   After the staff memorandums came out, the

18 Galena Ground Water District Board requested a list of

19 individuals within their district that were within the

20 proposed curtailment area. And so using the

21 Department's water right information and cross-checking

22 that with the Galena Ground Water District members, I

23 generated this list of -- of members within the

24 curtailment area.

25   Q.   Okay. And I count 21 water rights.

1   Is that what you recall being the number of

2   water rights owned by Galena Ground Water members

3   within that proposed curtailment area?

4   A.   I count 21 as well.

5   Q.   Okay. And at the bottom it says, "Total

6   4.04."

7   Can you please tell me what that number

8   signifies.

9   A.   So these are water right -- water rights

10 with a partial decree or decreed flow rate, and so I

11 just totaled those up. None of these water rights are

12 stacked or have a combination limit, so they're just

13 additive.

14   Q.   Okay. And you testified earlier that in

15 addition to Ms. Sukow's memorandum she produced some

16 supplemental data; is that right?

17   A.   That's correct.

18   Q.   Were there .shp files within that data?

19   A.   There were several .shp files within her

20 data.

21   Q.   Were there any response functions embedded

22 within those .shp files?

23   A.   She did produce some response functions. I

24 believe she testified in her testimony that those were

25 locations where there were points of diversion for

1 water rights within the Bellevue Triangle. And so

2 that -- those response functions were within those .shp

3 files.

4   Q.   Okay. Did you look at the response

5 functions associated with the 21 water rights located

6 on this particular exhibit?

7   A.   I looked at the response functions within

8 the Galena Ground Water District area. I don't think I

9 necessarily cross-referenced it with these 21

10 specifically. But they range somewhere between a 20 --

11 excuse me, 20 percent response and a 4 point -- it was

12 less than 5, but like 4.8 or 4.6 percent response.

13   Q.   And that was looking at the cells that were

14 in the area of where these water rights would have been

15 located; is that correct?

16   A.   Correct, yes.

17   Q.   Okay. If a curtailment was ordered as a

18 result of this hearing, do you know how much of the

19 4.04 cfs the State would be allowed to curtail?

20   A.   I would imagine it would be the entire

21 diversion flow rate.

22   Q.   Okay.

23   A.   So the entire 4.04.

24   Q.   Okay. Did you do any calculations to try

25 to quantify the impact of the -- this diversion rate if

1 a curtailment was ordered?

2   A.   So I was concerned just because it's a

3 nonlinear model, just using the response functions. I

4 was not really comfortable doing that. And so I did

5 actually run a model simulation following Ms. Sukow's

6 analysis of just curtailment of Galena Ground Water

7 District members. And it was a reduction of 3.8 cfs,

8 if I remember that number correctly, which is based off

9 ET, not necessarily the face of the water right value.

10   Q.   Okay. So your calculations show an impact

11 that these particular water rights in this exhibit

12 would have if a curtailment was issued would be what?

13   A.   3.8 cfs.

14   MS. O'LEARY: Okay. Director, this has been

15 submitted as Exhibit A, but I'm just thinking for

16 record purposes that perhaps it should be numbered as

17 Exhibit 41. We would like to have this -- we'd move to

18 have this admitted.

19   THE HEARING OFFICER: Okay. Do we want to

20 remark it somehow?

21   MR. FLETCHER: Did you say 41?

22   MS. O'LEARY: Yes.

23   THE HEARING OFFICER: It will be a joint

24 exhibit, then, is what you're proposing?

25   MS. O'LEARY: Yes. South Valley Ground Water

 1 District and Galena Ground Water District Exhibit 41.

 2 Thank you.

 3   (SVGWD GGWD Exhibit 41 marked.)

 4   MR. FLETCHER: You don't want it to be Heather

 5 Exhibit A? No.

 6   Q.   (BY MS. O'LEARY): Erick, I'd just like

 7 to -- I'm just wondering, those calculations for impact

 8 that you did, did you do them for any specific months?

 9   A.   Of the model run of these Galena Ground

10 Water District members? I did. I did it the same way

11 that Ms. Sukow did from July through the end of the

12 irrigation season.

13   Q.   And each of those months had an impact of

14 3.8?

15   A.   No. That was -- that was the reduction in

16 pumping at the location. The impact to Silver Creek

17 specifically was substantially smaller. And if I -- it

18 was all three of -- all three months of July, August,

19 and September were less than a half a cfs.

20   Q.   Okay. So I just want to make sure I'm

21 understanding this correctly, you're saying that if a

22 curtailment occurred, the impact that Silver Creek

23 would see, based on your calculations, would be maybe a

24 half of a cfs?

25   A.   That's -- that's what the model output

1   suggests, yes.

2   Q.   Okay. But you can't determine the timing

3   on that impact, can you?

4   A.   The model shows timing, it raises questions

5   about timing about uncertainty. But the model, yes,

6   definitely does respond and show that in July, August,

7   September there are certain flow rates. But it doesn't

8   quantify or calculate the uncertainty associated with

9   that.

10   Q.   Okay. Erick, you've testified that you've

11   been attending this proceeding throughout the week.

12   Were you present for Eric Miller's

13   testimony in this proceeding?

14   A.   I was.

15   Q.   Have you reviewed Mr. Miller's June 1st,

16   2021 report that he prepared?

17   A.   I have reviewed that, yes.

18   Q.   Could we turn to that. It's Miller

19   Exhibit 1.

20   A.   I have no idea which binder this is in.

21   MR. RIGBY: It's the big white one.

22   THE HEARING OFFICER: It would be in this one.

23   THE WITNESS: Okay.

24   THE HEARING OFFICER: But I think you have one

25   right underneath that Picabo exhibits.

 1   THE WITNESS: Oh, sorry, Director. I didn't
 2   know that was yours.
 3   So it's under Miller 1?
 4   Q.   (BY MS. O'LEARY): Yes.
 5   MR. RIGBY: It's at the beginning. At -- yeah.
 6   A couple down from there.
 7   THE WITNESS: Oh, Miller. There you go.
 8   MR. RIGBY: There you go.
 9   Q.   (BY MS. O'LEARY): I'm looking at a
10   document titled "Impacts to surface water rights in the
11   Little Wood/Silver Creek drainage."
12   A.   Yes, I have that document.
13   Q.   Okay. And this is what you were referring
14   to as Eric Miller's report; is that correct?
15   A.   Yes, the one dated June 1st, 2021.
16   Q.   And if we turn to page 2 of this document,
17   my understanding from reading this report is that
18   Mr. Miller used 2007 as the -- as his base year for his
19   curtailment analysis; would that be correct?
20   A.   That is correct, yes.
21   Q.   And it -- again, from my understanding, it
22   appears that he used that particular year based on a
23   2019 model run that Jennifer Sukow performed.
24   A.   That is correct.
25   Q.   Okay. Now, you testified earlier that

1 Ms. Sukow's 2007 reliance on her calculation -- did she

2 use the 2007 or 2002 in her memorandum?

3   A.   In her memorandum she used 2002.

4   Q.   Okay. So would you agree that the 2007

5 year that Mr. Miller used and that Ms. Sukow used in

6 her 2019 run was also reasonable?

7   A.   Yes, I think that they were both dry years.

8   Q.   Okay. So did you review how Mr. Miller

9 applied his methodology?

10   A.   I have -- I have reviewed that, yes.

11   Q.   Okay. And did you form any opinion about

12 how he ran his model?

13   A.   I have concerns about the additive approach

14 from previous years, just because the model is not

15 linear. And I -- I believe I indicated to -- yeah,

16 I'll just leave it there.

17   Q.   When you say that you have concerns about

18 his additive approach, can you break that down for me.

19   A.   So my understanding of Mr. Miller's

20 methodology is that he took the percentage of response

21 from the 2007 curtailment run to Silver Creek, and that

22 extending over three year -- that extends over a

23 three-year period.

24   He then took the anticipated consumptive

25 use using pumping data from 2019, 2020, and an

1   estimated 2021 year, and then applied those percentages

2   of response from 2019, 2020, and 2021 to project total

3   impact in 2021.

4   Q.   And you testified you have concerns.

5   So is it fair to say that's not how you

6   would have performed your analysis?

7   A.   It's not. And I think that Mr. Miller was

8   handicapped, because he didn't have access to the

9   model. But I would have actually run three consecutive

10   years of pumping in the model to generate a response,

11   as opposed to taking an additive approach just based on

12   one response, one-year response.

13   Q.   Okay. And if we look at --

14   A.   And, Heather, can I also just add that this

15   is looking at the entire model -- so Ms. Sukow's

16   analysis, both in her 20 -- her 2007 and her 2002

17   curtailment runs from 2000 -- I'm getting a lot 2000s

18   in my head here. So 2002 curtailment run that she did

19   for this proceeding in her May 17th, 2021 memo and her

20   2007 curtailment run that she produced as part of the

21   modeling update to model version 1.1, included the

22   entire model domain.

23   And so looking at curtailment just in the

24   Bellevue Triangle also probably is not appropriate to

25   look at a three-year response because there's no

1   equivalent percentages of that three-year -- the

2   response from just curtailment within the Bellevue

3   Triangle.

4   Does that make sense? Do you follow me?

5   Q.   So you're saying that the hydrologic

6   benefits, you don't believe that there would be a

7   three-year response from one year of curtailment; is

8   that correct?

9   A.   I have not looked at that, and I have not

10   evaluated that.

11   Q.   Okay.

12   A.   So I don't believe that it would look the

13   same with curtailment just in the Triangle.

14   Q.   Okay. And that's because one good water

15   year versus one bad water year can have just drastic

16   results; is that fair?

17   A.   So that's definitely fair with an additive

18   approach, because it's not linear. I think just

19   reducing the scale of the model and looking just at

20   curtailment in the Triangle also reduces the length of

21   impact that we're seeing in those curtailment runs in

22   2007 and 2002.

23   Q.   Okay. Do you recall Mr. Miller testifying

24   that he received pumping data from the watermaster,

25   Kevin Lakey?

1   A.   I do recall that, yes.

2   Q.   And you've testified earlier here this

3   afternoon that the model is only as accurate as the

4   data that is put into it; is that correct?

5   A.   Yeah. Absolutely.

6   Q.   So if you were to put inaccurate data into

7   the model, is it fair to say that the results that are

8   output would also be inaccurate?

9   A.   Yeah, because it would be based on that

10 inaccurate input data.

11   Q.   Have you yourself received any pumping data

12 from Kevin Lakey with regards to the Wood River Valley?

13   A.   I believe I received data from Kevin in

14 January of 2020 pumping data.

15   Q.   Did you make any effort to determine

16 whether the numbers or information that Mr. Lakey

17 provided you were accurate?

18   A.   We -- I did look at those and identified

19 several that were incorrect and notified Mr. Lakey. I

20 also, in discussions with Mr. Shaw and Mr. Hill, they

21 identified several that were incorrect in the Galena

22 Ground Water -- or sorry, the South Valley Ground Water

23 District as well.

24   Q.   And did you notify Mr. Lakey of those

25 errors?

1   A.   We notified Mr. Lakey of the errors in the

2 Galena Ground Water District, not anything to do with

3 South Valley.

4   Q.   Okay. Do you know whether those errors

5 were corrected?

6   A.   I have not seen any update to those pumping

7 data to date.

8   Q.   Okay. So it's possible that they have not

9 been corrected?

10   A.   It is possible.

11   Q.   Okay. So if Mr. Miller's report is based

12 on inaccurate numbers provided by Mr. Lakey, then his

13 results would also be inaccurate; is that correct?

14   A.   Yes.

15   Q.   And if we look back at page 2 of this

16 Miller Exhibit 1, the last paragraph, the first part of

17 the last paragraph is "Anticipating withdrawals for

18 2021 were reduced by 15 percent to arrive at an average

19 value of consumptive use for each corresponding year."

20   Do you see that?

21   A.   Yes, I do see that.

22   Q.   Do you have any opinion about this

23 conclusion?

24   A.   I think that irrigation efficiency values

25 of 85 percent are very difficult to achieve. And I --

1   Mr. Miller alluded to some other study that was done

2   recently that concluded a much higher efficiency value.

3   But based on my brief look at several places within the

4   Valley, I think that that number is still -- 85 percent

5   is still very high.

6   Q.   And when you're saying your look at several

7   places in the Valley, would that be those three

8   locations that we talked about in Exhibit 4 -- 24 that

9   are located within the Bellevue Triangle?

10   A.   So those specific locations, and then just

11 my experience with irrigation efficiencies, yes.

12   MS. O'LEARY: Okay. Thank you. That's all I

13 have.

14   THE HEARING OFFICER: Thank you, Ms. O'Leary.

15   Questions, Mr. Barker?

16   Mr. Thompson?

17   MR. THOMPSON: I have a few.

18   May I stay seated?

19   THE HEARING OFFICER: Depends on how loudly you

20 speak.

21   MR. THOMPSON: I'll speak up.

22   THE HEARING OFFICER: Maybe we'll give you the

23 microphone.

24 ///

25 ///

 1   DIRECT EXAMINATION

 2   BY MR. THOMPSON:

 3   Q.   Mr. Powell, Travis Thompson for the South

 4   Valley Ground Water District.

 5   You looked at Ms. Sukow's May 17th report;

 6   is that correct?

 7   A.   That is correct.

 8   Q.   And you heard her testimony earlier this

 9   week; is that true as well?

10   A.   That is true.

11   Q.   And she used the term "significant." And

12   I -- I'll represent on page 23, looking at the modeled

13   results of curtailment, she describes that the

14   curtailed water remaining in the aquifer, 67 percent as

15   being a significant portion, and she also references

16   the predicted increases in Silver Creek to be

17   significant.

18   Now, from your review of this report, did

19   she conduct that Mann-Kendall statistical analysis for

20   these statements?

21   A.   I haven't seen anything to support that --

22   that significant work. People use it all the time to

23   just indicate a substantial or large number, but I

24   haven't seen anything to indicate that any statistics

25   were run.

1   Q.   Okay. And getting back to the -- I guess

2   what you've heard of the hydraulic conductivity values

3   you reviewed for a couple cells, is that true, the

4   500,000 feet per day, the 950,000 feet per day?

5   A.   Yeah, in excess of those numbers.

6   Q.   And do those values, in your mind, impact

7   the reliability of the model results?

8   A.   It definitely raises questions about model

9   aquifer parameters that are used, and then therefore

10   impacting the results, yes.

11   Q.   How do you calculate conductivity values?

12   A.   Like in a laboratory?

13   Q.   I guess for purposes of the model

14   parameters, how do they come up with those numbers?

15   A.   So we use hydraulic conductivity all the

16   time technically, and we usually use pumping data, so

17   well pumping data, volume and drawdown to estimate,

18   through a variety of different equations, what the

19   hydraulic conductivity values are.

20   We built a groundwater model 12 years ago

21   in the central area of the Valley for -- at the request

22   of the Department for a water right permit and transfer

23   application. And based on those numbers we were using

24   values of about 300 feet per day. And so we -- we use

25   actual pumping data.

 1   Through model calibration, the Department

 2   uses a process called PEST. And they put sideboards on

 3   values. And PEST automatically adjusts those

 4   parameters within those -- that range to produce values

 5   that best match the goal. So streamflows and aquifer

 6   elevations.

 7   Does that answer your question?

 8   Q.   I think so. For those values you reviewed,

 9   the 500,000 and 950,000 feet per day, what kind of flow

10   rate is that? What's that compared to.

11   THE HEARING OFFICER: Just a minute. We're

12   having trouble with transmission, I think.

13   MS. JENKINS: That's why.

14   THE HEARING OFFICER: That's the reason.

15   MS. JENKINS: They should be charged, though.

16   Q.   (BY MR. THOMPSON): Sorry, Mr. Powell.

17   I'll repeat the question.

18   Those values, those conductivity values you

19   reviewed, would that relate to any sort of flow rate?

20   Would that be comparable as far as how quick water is

21   moving?

22   A.   I have never seen values that high, so I

23   have no idea what to even compare it to.

24   Q.   So if you had updated information or

25   different conductivity values that showed something

1 different, how would you go about making those changes

2 in the model?

3   A.   So we would have to change -- well, the

4 model would have to be recalibrated entirely if we were

5 to adjust the range of those aquifer parameters, which

6 is a significant undertaking. And so we could go

7 through and just adjust the parameters in the current

8 model, but then the model wouldn't be calibrated and it

9 wouldn't be -- we couldn't use it for anything that

10 would be for any actual purpose.

11   Q.   So if you had different information for

12 those cells you looked at and you wanted to recalibrate

13 the model, what kind of process would that take?

14   A.   It would be a substantial process, one

15 that -- that usually takes the Department several --

16 and I'm going to qualify this. I'm not sure how long

17 it actually takes them, but usually it's years

18 following the availability of data before they

19 recalibrate the model information.

20   Q.   So as far as testing the results of the

21 Department's memo in this case, would you have had time

22 to undertake that type of analysis between May 17th and

23 the start of this hearing?

24   A.   Absolutely not.

25   MR. THOMPSON: Thank you. That's all the

```
 1   questions I have.
 2          THE HEARING OFFICER:  Any questions from the
 3   joint participants in category three?
 4          MR. BROMLEY:  No.
 5          MR. LAWRENCE:  No.
 6          MS. McHUGH:  No.
 7          THE HEARING OFFICER:  Mr. O'Bannon?
 8          MR. O'BANNON:  No questions.
 9          THE HEARING OFFICER:  Cross-examination.
10            Mr. Fletcher, so you'll lead?
11          MR. FLETCHER:  Thank you.
12
13                  CROSS-EXAMINATION
14   BY MR. FLETCHER:
15          Q.   Mr. Powell, I represent Big Wood Canal
16   Company.  I'd like you to turn to Exhibit 23, please.
17          THE HEARING OFFICER:  And this would be
18   Exhibit 23 --
19          MR. FLETCHER:  South Valley's -- South
20   Valley/Galena's Exhibit 23.
21          THE HEARING OFFICER:  Thank you.
22          THE WITNESS:  I have Exhibit 23.
23          Q.   (BY MR. FLETCHER):  You helped author this
24   report; correct?
25          A.   That's incorrect.
```

1   Q.   Who authored this report?

2   A.   I believe this was the product of Zach Hill

3 and Dave Shaw.

4   Q.   Okay. You referred to it in your

5 testimony?

6   A.   No.

7   Q.   I would like you to look at page 4, the top

8 of the right-hand column. It says, "The Big Wood River

9 and Silver Creek are a complex, interconnected

10 hydrologic system, the relationship between the surface

11 and groundwater systems such that any stress on one

12 system will result in an effect on the other."

13   Do you agree with that statement?

14   A.   I do.

15   Q.   Can explain what that means.

16   A.   That they are combined to -- the water that

17 shows up in Silver Creek I would say originates in the

18 Big Wood River or through precipitation in the Valley,

19 and that they are -- there is hydraulic connection

20 between -- between those river sources.

21   Q.   I'd like you to turn to page 8, please.

22   THE HEARING OFFICER: And I'm assuming,

23 Mr. Fletcher, that you are referring to the numbering

24 on the original document, not the exhibit numbering.

25   MR. FLETCHER: That's correct.

 1   THE HEARING OFFICER: So page --

 2   MR. FLETCHER: I'm looking at the page numbers

 3   at the bottom of the page.

 4   THE HEARING OFFICER: Yeah. Okay.

 5   Q.   (BY MR. FLETCHER): Are you familiar with

 6   the development of wells -- excuse me, I'm sorry.

 7   A.   It's okay.

 8   Q.   Are you familiar with the history of well

 9   development in the South Valley Ground Water District?

10   A.   Like actual well construction; is that your

11   question?

12   Q.   When it occurred.

13   A.   Yes.

14   Q.   Okay. I'd like you to look at the

15   right-hand column on page 8. It states, "Several

16   hundred wells have been drilled in the District since

17   1940."

18   Do you agree with that statement?

19   A.   I honestly have no idea --

20   Q.   Okay.

21   A.   -- what number that is.

22   Q.   Okay. Well, tell me what your familiarity

23   is with the history of well development in the South

24   Valley Ground Water District.

25   A.   I've looked at groundwater rights within

1   the Basin 37 that I would call the Wood River Valley,

2   both from a water right point of view and also from the

3   point of diversion file used in the Wood River Valley

4   Model, and have looked at priority dates for those. I

5   have not counted how many wells have been drilled since

6   1940.

7   Q.   So you wouldn't know that -- how many were

8   drilled between 1947 and 1963, for instance?

9   A.   I would have no idea.

10   Q.   So let's move on down to the second full

11   paragraph on the right-hand column. It says,

12   "Groundwater pumping has affected groundwater levels

13   and available water. Groundwater pumps increased

14   steadily for the period of record and have affected the

15   delivery of surface water and groundwater levels in the

16   South Valley Ground Water District."

17   Do you agree with that statement?

18   A.   I would.

19   Q.   I would like you to turn to page 15,

20   please.

21   Are you familiar with the trends of surface

22   water supplies in the Big Wood system?

23   A.   I am familiar with those trends.

24   Q.   Okay. Looking at page 15, it indicates

25   that since between 1970 and 2016 surface water supplies

1   on the Big Wood River have declined 26 percent; isn't

2   that correct?

3   A.   That's what this document says, yes.

4   Q.   Do you agree with that?

5   A.   I have not run that analysis from 1970

6   through 2016.

7   Q.   What is your opinion about the trend of

8   water supplies on the Big Wood between 1970 and 2016?

9   A.   Well, again, I haven't run 1970 through

10   2016, so I can't really speak to that. I can say that

11   I did an analysis in Exhibit 24, page 11, that looks at

12   trends from 1915 through 2020, which is with the whole

13   period of record for the Big Wood River at Hailey, and

14   through 1960 through 2020, which is close to the same

15   period that you were referring to.

16   Q.   And what has the trend been?

17   A.   So from 1915 through 2020 every month was

18   showing a positive trend, except for the month of July.

19   But the only statistically significant month that

20   showed positive -- that was statistically significant

21   was March from 1915 through 2020.

22   On page 14 it looks at from 1960 through

23   2020. And the trend is reversed, that we have negative

24   trends for every month except March and April, but

25   there are no statistically significant trends based on

1   the Mann-Kendall analysis.

2   Q.   Do you know -- do you have an opinion as to

3   what created that change or that reversal of trend?

4   A.   My opinion on that is that the river at

5   Hailey is predominantly driven by precipitation. And

6   so the trends we're seeing are changes in precipitation

7   amounts.

8   Q.   Do you believe the river at Hailey is also

9   affected by groundwater pumping?

10   MR. LAWRENCE: Objection. Outside the scope of

11   the proceeding.

12   MR. FLETCHER: He just testified what the trend

13   was at Hailey.

14   MR. LAWRENCE: The scope of this proceeding is

15   groundwater pumping within the Bellevue Triangle, not

16   groundwater pumping elsewhere.

17   MR. FLETCHER: Well, you should have objected to

18   the prior answer, then.

19   THE HEARING OFFICER: No, I think they're

20   different. I want to limit the scope of this

21   particular hearing, Mr. Fletcher.

22   Sustained.

23   Q.   (BY MR. FLETCHER): I'm not sure what is

24   the accurate page number on Exhibit 24, but there is a

25   page number in there that has your calculation of

 1   irrigation efficiencies; is that correct?

 2   A.   That is correct.

 3   Q.   And what is that page number?

 4   A.   So there's a brief description of those on

 5   page 37, and then it's summarized on page 38.

 6   Q.   So on page 37 you have six different

 7   columns; correct?

 8   A.   That's correct.

 9   Q.   And for agricultural irrigation your

10   efficiency is 84 percent; correct?

11   A.   The last three are all agricultural

12   applications.

13   Q.   Okay. Give me one minute.

14   A.   Not going anywhere.

15   Q.   Okay. Well, when you talk about

16   agricultural, you're saying that municipal efficiency

17   is agricultural?

18   A.   No. The last three. The individual water

19   right -- and I apologize to whoever owns these water

20   rights. I was not intending for them to be in the

21   limelight here. But Water Right 37-22328, 37-8011A,

22   and then the Silver Springs Ranch, which is the last

23   one, those are the three that are within the Bellevue

24   Triangle area.

25   Q.   And do you know how the water right, for

 1 example, 37-22328, how they are applying their water?

 2   A.   I have no knowledge of their system

 3 application. I just picked two random water rights out

 4 of the watermaster's delivery records for 2018 --

 5   Q.   Okay.

 6   A.   -- and used METRIC ET to figure out what

 7 the consumptive -- the crop irrigation requirement was

 8 for those two.

 9   Q.   Okay. So you don't know, looking at these

10 various columns, what percentage of diversions are

11 similar to each of the columns in the Triangle?

12   A.   I'm sorry. I don't understand that

13 question.

14   Can you rephrase that?

15   Q.   Well, under agricultural irrigation, how

16 much -- let me word it a different way.

17   What percentage of diversions in the

18 Bellevue Triangle is agricultural irrigation?

19   A.   I don't know that value off the top of my

20 head.

21   Q.   So when you did your net result of

22 irrigation efficiency, you didn't weight that to the

23 percentages of the various types that are in your

24 columns?

25   A.   No. My only intent was just to show that a

 1   blanket 90 percent was probably inaccurate.

 2   Q.   Okay. Well, Mr. Miller didn't use

 3   90 percent in his report, did he?

 4   A.   For -- at the time of this production for

 5   this presentation, he had used 90 percent, yes.

 6   Q.   He had, but in his final report that was

 7   admitted, Exhibit 1, Miller Exhibit 1, he used

 8   85 percent, didn't he?

 9   A.   He did. Absolutely.

10   Q.   Okay. And this report says agricultural

11   irrigation efficiency is 84 percent; correct?

12   A.   For that one farm, there was 84 percent,

13   yes.

14   Q.   And Jennifer Sukow also used 85 percent;

15   isn't that correct?

16   A.   That is the number that she used, yes.

17   Q.   I believe you were making reference to the

18   Wylie report. You were talking about the aquifer

19   being -- or the groundwater -- well, you talked about

20   something being stabilized.

21   What were you referring to?

22   A.   That was Mr. Wylie's report that he issued

23   in 2019.

24   Q.   What were you referring to that was

25   being -- that has stabilized?

1   A.   I was quoting him that said that the

2   aquifer -- there's no trend and the water table is

3   stable.

4   Q.   Okay. So it's the water stable that has

5   stabilized?

6   A.   That's what he concluded, yes.

7   Q.   Okay. And did any significant event occur

8   in 1991, that you're aware of, that may have led to

9   that stabilization?

10   A.   I believe you're probably referring to

11 the -- to the formation of the groundwater management

12 area.

13   Is that what it's classified as?

14   Q.   I'm just asking you if you're aware of any.

15   A.   I -- I -- I believe that happened in 1991.

16   Q.   Did anything else happen --

17   A.   Not that I'm --

18   Q.   -- that you're aware of that could affect

19 this?

20   A.   Not that I'm aware of.

21   Q.   Was a moratorium put in place on

22 groundwater development?

23   A.   I don't remember the date of that.

24   Q.   Okay. And if in fact there had been a

25 moratorium put in place, that could help stabilize

 1   groundwater levels; correct?

 2   MS. O'LEARY: Objection. Speculation.

 3   MR. FLETCHER: He's an expert.

 4   Q.   In your opinion.

 5   A.   In my opinion, yes.

 6   THE HEARING OFFICER: Just a minute.

 7   Overruled.

 8   MR. FLETCHER: Thank you.

 9   THE HEARING OFFICER: Thank you.

10   Q.   (BY MR. FLETCHER): Does that mean -- when

11   you used the term "the groundwater levels are

12   stabilized," does that mean that they're no longer

13   impacting surface water supplies?

14   A.   That's not the conclusion that anyone has

15   reached.

16   Q.   Okay. So the fact that water tables are

17   stabilized means that the water table is not declining

18   any further; correct?

19   A.   Correct.

20   Q.   And that's all it means; correct?

21   A.   Correct.

22   Q.   You talked quite a bit about uncertainty.

23   What do you understand "uncertainty" to

24   mean when you use that term?

25   A.   So uncertainty is that any model result is

1 not a -- necessarily a perfect number, that there is

2 uncertainty associated with that. And so I hate to use

3 the word in the definition, but that there is --

4 that's -- that's the best number, according to the

5 model, but that number could vary.

6   Q.   Okay. And when someone uses a number like

7 22 percent as model uncertainty -- was it model

8 uncertainty of 22 percent or --

9   A.   It's predictive uncertainty.

10   Q.   Predictive uncertainty.

11   When that 22 percent phrase is used, that's

12 a plus or minus number, isn't it?

13   A.   It is.

14   Q.   So that means the prediction could favor,

15 in this case, groundwater pumping or it could favor

16 surface water users; correct?

17   A.   Yeah. They're looking at both timing and

18 location and a 95 percent confidence.

19   Q.   Okay.

20   A.   And it could be either side.

21   Q.   And even though there's this uncertainty in

22 the model, you believe it's the best science to use to

23 do these calculations; correct?

24   A.   So I don't think the model necessarily is

25 science. I think it's a tool based on science. And so

1   I think it's the best tool we have.

2   Q.   Okay.

3   A.   But I think it could be a lot better.

4   Q.   And that's true with virtually every model,

5   isn't it?

6   A.   Absolutely.

7   Q.   I assume -- you were talking about South

8   Valley Ground Water District 41, and that's the list of

9   the users. If you want to look at it, you're free to.

10   I'm not going to make a specific reference to it.

11   I think you said you had calculated that

12   the impact from curtailment of those users in pumping

13   would be 3.8 cfs; is that correct?

14   A.   That's the curtailment flow rate.

15   Q.   Okay. Explain what that is, would you,

16   please.

17   A.   So maybe I should ask you to rephrase your

18   question.

19   Q.   Well, what does the 3.8 cfs represent?

20   A.   So that's the flow rate that would be

21   curtailed under a curtailment scenario.

22   Q.   Okay. So that -- and just correct me if

23   I'm wrong on this, but isn't that another way of saying

24   that's how much water will no longer be pumped if those

25   wells are curtailed?

1   A.   Yes.

2   Q.   And then you talked about a .5 cfs.

3   And what was that .5 cfs?

4   A.   That was in the irrigation season the

5   impact to Silver Creek.

6   Q.   That's how much water would return to

7   Silver Creek if those users were curtailed?

8   A.   In the irrigation season of that

9   curtailment, yes.

10   Q.   Okay. During your -- while we're talking

11 about that very issue -- well, you mentioned this with

12 Miller's report, Exhibit 1, Miller 1. You were -- you

13 had concerns about the manner in which he did an

14 additive approach.

15   Do you remember that testimony?

16   A.   Yeah. What was the word you used?

17   Q.   "Additive."

18   A.   Oh, "additive." Okay.

19   Q.   I think that was the word you used.

20   A.   Yeah, sorry. I didn't hear that clearly.

21   Q.   Yeah. Okay. And you said that if you were

22 going to do that type of approach you should do it a

23 different way; correct?

24   A.   I would have done it differently, yes.

25   Q.   And the way you would have done it is run

 1   the model for three consecutive years to make that

 2   determination; correct?

 3   A.   Correct.

 4   Q.   Did you do that?

 5   A.   No.

 6   Q.   So you didn't do any work to determine if

 7   his number was inaccurate or accurate?

 8   A.   I -- I did not try to replicate that. And

 9   I did not run a three-year curtailment scenario.

10   Q.   Okay. You agree that if curtailment

11   occurs, there is some residual benefit from that;

12   correct? I mean it doesn't all come back in one year?

13   A.   Depending on the area of curtailment, yes

14   and no. I mean --

15   Q.   Well, if the Bellevue Triangle is curtailed

16   this year, will there be benefits to the aquifer

17   occurring after the irrigation season this year?

18   MR. BROMLEY: Objection. Outside the scope of

19   the notice.

20   THE HEARING OFFICER: How?

21   MR. BROMLEY: Director, the scope of this

22   proceeding was limited to the 2021 irrigation season.

23   Mr. Fletcher is asking about benefits extending past

24   that season.

25   THE HEARING OFFICER: Well, whether it is or

1   not, there's been substantial testimony on this --

2   substantial testimony on this particular subject. So

3   the objection is overruled.

4   THE WITNESS: Yeah, according to the model,

5   there's water that's left in the aquifer.

6   Q.   (BY MR. FLETCHER): And when you're doing

7   modeling, like in this case, modeling for a particular

8   time period, does the model account for pumping effects

9   in prior years?

10   A.   Yes.

11   Q.   How does it do that? Do you know?

12   A.   By changes in aquifer storage.

13   Q.   Excuse me?

14   A.   Changes in aquifer storage.

15   Q.   Okay. So the model, no matter how much we

16 try to restrict it, I mean it's dealing with all these

17 inputs and all these outputs; correct?

18   A.   Correct.

19   Q.   Okay. Do you have an opinion on how long

20 that response time would be if -- how long will water

21 continue to benefit the aquifer if curtailment occurs

22 this year?

23   A.   I -- honestly, I don't know how long it

24 would last.

25   Q.   Okay. But you agree it would last more

1 than one year?

2   A.   Not necessarily.

3   Q.   Okay. You don't have any idea, then?

4   A.   No, I -- it really just depends on

5 precipitation in the winter and in the spring. I mean

6 we could see that that effect of curtailment is not

7 propagated, and that could be an easy -- that's a

8 scenario that could easily happen. We could see that

9 it couldn't remain. But there's no really -- it's

10 impossible for me to know what's going to happen in the

11 future.

12   Q.   Your counsel asked you some questions about

13 groundwater data submitted by Kevin Lakey.

14   Do you remember that --

15   A.   Yes, I do.

16   Q.   -- submitted to Eric Miller? Do you

17 remember that testimony?

18   A.   Yes, I do.

19   Q.   Do you remember Eric Miller's testimony

20 saying he also received groundwater data from Tim Luke

21 at the Department?

22   A.   I don't recall that.

23   Q.   Okay.

24   A.   But he easily could have said it.

25   Q.   Concerning the Lakey data, you used the

1   term "inaccurate," kind of like "significant."

2   What was inaccurate about it, specifically?

3   A.   There were duplications in the data.

4   Q.   Okay. Tell us what the inaccuracies were.

5   A.   Well, if something's reported twice, that's

6   double the pumping than actually occurred.

7   Q.   How many cfs was misstated on that report?

8   A.   I don't recall.

9   Q.   You did not do a calculation?

10   A.   I don't recall. That -- that was in

11   January, and I don't remember what that was.

12   Q.   But you're willing to render an opinion

13   that using that data makes Mr. Miller's conclusions

14   inaccurate?

15   A.   Well, I'm -- I didn't say anything about

16   Mr. Miller's calculations. I was saying that if poor

17   data was given, and then the result is going to be

18   misinformation.

19   Q.   Well, wouldn't it make a difference if that

20   was .5 cfs versus 50 cfs?

21   A.   I think it would. Absolutely.

22   Q.   But you today, while you're silting here,

23   you have no idea what amount of inaccuracy there was in

24   that report?

25   A.   Well, I don't recall, Mr. Fletcher. I'm

1   sorry. That was not something I brought with me.

2   Q.   Thank you.

3   Do you remember the testimony of Mr. Beck

4   earlier today? I think it was today.

5   A.   Yeah.

6   Q.   Sometime this week. And he was talking

7   about the response time on Silver Creek after

8   groundwater reductions.

9   Do you remember him talking about that?

10   A.   There's been a lot of testimony about that,

11   so it's all kind of jumbling together.

12   Q.   Do you remember him talking about a 10 to

13   14-day response time that he observed?

14   A.   I do recall that.

15   Q.   Do you disagree with that?

16   A.   Knowing where he was speaking about

17   specifically, I would absolutely believe that.

18   Q.   When you were talking about this

19   conductivity issue, hydraulic conductivity --

20   A.   Uh-huh.

21   Q.   -- how many cells did you look at?

22   A.   I looked at the entire model domain.

23   Q.   So you looked at 55,000 cells?

24   A.   I did.

25   Q.   And did you examine all of those for this

1 problem?

2   A.   I exported the data into Excel and looked

3 at ranges in the Bellevue Triangle specifically, and

4 the average for layer one was at somewhere in the order

5 of 3,000 feet per day. So an order of magnitude higher

6 than I thought it would be. But still the maximum

7 numbers were -- were -- and I don't recall that -- how

8 many, but it was like 200 cells that had an extreme

9 value.

10   Q.   200 out of 55,000?

11   A.   Yeah.

12   Q.   I don't know what the right phrase is. I

13 don't want to use "significant."

14   But do you find 200 cells out of 55,000 to

15 be significant?

16   A.   It raises a lot of questions in my mind

17 just about what kind of constraints were put on PEST

18 during that calibration process.

19   Q.   Okay.

20   A.   If that was error that the model couldn't

21 account for and had to make those cells that

22 conductive, I don't know.

23   MR. FLETCHER: Mr. Powell, I think I'm done. I

24 appreciate your testimony. Thank you.

25   THE WITNESS: Thank you.

 1   THE HEARING OFFICER: Mr. Rigby.

 2   MR. RIGBY: Thank you.

 3

 4   CROSS-EXAMINATION

 5 BY MR. RIGBY:

 6   Q.   Mr. Powell, Jerry Rigby on behalf of the

 7 senior water users.

 8   Lucky for you, the questions I had written

 9 down Mr. Fletcher asked most of them. I just want to

10 cover a little bit more on a couple of the questions

11 that he asked of you, and that is getting back to the

12 SW Galena Ground Water District Exhibit 24 dealing with

13 the stability of the aquifer.

14   In addition to -- well, first of all, so it

15 is a fact that when we're talking about stability of

16 the aquifer, that's with all the -- mostly all of the

17 pumps and wells already installed? By that I'm saying

18 this aquifer at that particular time, from 1991 through

19 now, had significant pumping already occurring within

20 that aquifer; is that correct?

21   A.   I would agree, yes.

22   Q.   And so therefore -- I mean I'm taking this

23 to a logical conclusion, if pumps were -- had

24 significantly lowered the level of the aquifer, you'd

25 still have a stable aquifer, it just would be much

1   lower, except for -- much lower than if the pumps were

2   not actually pumping water from the aquifer; is that

3   right?

4   A.   Yeah.   There's no downward trend.

5   Q.   Right.   Well, in fact, let's talk about

6   that, because you also indicated that in your

7   discussion of it or analysis of it that you actually

8   saw a rising of the aquifer; is that correct?

9   A.   According to Mr. Wylie's analysis, there is

10 a positive trend in that data, yes.

11   Q.   Okay.   Now, you heard the testimony again

12 of Mr. Beck and others as to the conservation that

13 they've gone through.

14   I think his initial -- when he first

15 started working here, and others as well, it was

16 pumping 24/7, Katy, bar the doors, and that's been

17 significantly changed; right?

18   A.   That's correct.

19   Q.   And so therefore could that be one of

20 reasons why the aquifer is raising, in your mind?

21   A.   That could be one of the variables.

22   Q.   And yet you've heard the testimony of my

23 clients and my people still indicating that they

24 believe the trend for their historical recognition of

25 the Little Wood River has not increased?   Did you hear

 1 that testimony?

 2   A.   I did, yes.

 3   Q.   And so therefore how would -- even though

 4 there may be a -- you're arguing a raising of the

 5 aquifer and that most of the water from the aquifer is

 6 not retained in the aquifer, I'm seeing a disconnect,

 7 do you?

 8   A.   I did not do this analysis.

 9   Q.   Understood.

10   A.   And so I'm just producing this for -- well,

11 yeah.

12   So ask me your question again.

13   Q.   More simply that if there's a rising of the

14 aquifer and, according to the analysis, most of the

15 aquifer in this basin gets into the river and is not

16 retained, although some of it, as testimony indicated

17 that it is, but if most of it in fact does get to the

18 river, the disconnect we're still seeing is that the

19 levels that my people were testifying to are not

20 increasing, in fact actually decreasing. And I'm

21 trying to find out if you have an opinion as to that

22 disconnect.

23   A.   At this point, Mr. Rigby, I don't have an

24 opinion of why that's the case. I haven't seen any

25 statistics on flows at Station 10, Station 54. We

1   talked a lot about those. But, you know, I have

2   evidence from the State saying that there's gage --

3   questions about Station 10. Other testimony says that

4   no, this is a perfect -- not perfect, but this is a

5   good gage.

6   So there's a lot of uncertainty or a lot of

7   unknowns throughout this whole system. And so I'm

8   having the same problem, that disconnect on -- on the

9   data to support one side or the other.

10   Q.   Dealing with the staff memos, especially

11   Ms. Sukow's memo, from my understanding of your

12   testimony, for the most part you agreed with most of

13   her analysis, other than using the three-month stress

14   period; would that be a fair statement?

15   A.   I think that she did the analysis like I

16   would have done the analysis and I did do the analysis.

17   Q.   In fact you did run it and found hers to be

18   correct; right?

19   A.   I got the same answer, yes.

20   Q.   Okay. So -- but again, getting back to the

21   three-month stress period, you, as I understand your

22   testimony, that was too short a period, is that

23   correct, according to the model?

24   A.   Well, it's not that the model can't run a

25   three-month stress curtailment scenario. She just at

1   the very end of her memo talked about that using a

2   three-month scenario likely causes the uncertainty with

3   that answer to rise. So timing and location of

4   response raises more questions, but we don't know what

5   that uncertainty is because no one's ever done it.

6   Q.   And although Mr. Fletcher addressed the

7   issue of the pumping reports from Kevin Lakey, that was

8   one of the questions I was definitely going to ask, is

9   if they were in error, just how significant was it? I

10 think you've already answered that.

11   Until someone runs the corrected pumping

12 analysis, we don't know; right?

13   A.   We don't know.

14   Q.   It could be very insignificant?

15   A.   It could be.

16   Q.   Even though, like you say, bad in, bad out,

17 if the bad is miniscule, then it really doesn't make

18 that much difference in the bottom line; correct?

19   A.   I would agree.

20   Q.   Have you looked at the precipitation since

21 the 1915 to 2020 in any of your analysis? And if so,

22 is it built into the Kendall model, the Mann-Kendall

23 model?

24   A.   So I looked at trying to do some regression

25 between precipitation and flow rate like years ago.

1   And it didn't correlate real well. And so I have not

2   looked at that recently, probably at least two years.

3   So I can't tell you even -- anything about what I did

4   at the time. I just remember pulling precipitation

5   data.

6   Is that embedded in Mann-Kendall was your

7   second question?

8   Q.   Yeah.

9   A.   It is. The flows in any stream system are

10 a reflection of the sources of where that water comes

11 from.

12   Q.   Certainly. Well, the only reason I'm

13 asking is we've heard almost everyone testify as to the

14 reason for flows in the river itself obviously include

15 precipitation and pumping, and you had a list of

16 several other things?

17   A.   Sure.

18   Q.   And wouldn't it be appropriate or wouldn't

19 it be helpful to understand those that we can quantify

20 to determine then what the pumping effects are?

21   A.   So is that a statement or is that a

22 question? Sorry.

23   Q.   No. I said wouldn't it be helpful? I

24 think that's a question.

25   A.   Would be helpful?

1   Q.   I think that's a question.

2   A.   Yeah. Absolutely it would be helpful.

3   Q.   Yes.

4   A.   The more data we have, the better that we

5   can address any problem.

6   Q.   I believe in your deposition when I was

7   taking it with you, you were talking about one of the

8   problems with the model is that it's a one-month stress

9   built into that.

10   Am I remembering that correctly?

11   A.   No. I would say that's fairly standard. I

12   mean most models have a one-month stress.

13   Q.   The reason I'm asking that is it seemed to

14   me that we went on to discuss how soon would water then

15   get back into the river from the model -- I mean from

16   the aquifer. And I believe your testimony was a small

17   amount would be very quickly, and others you just

18   didn't know. And one of the reasons I thought you said

19   was because when it's a one-month stress model, that

20   makes it a little more difficult.

21   Am I wrong there?

22   A.   I think that was -- Mr. Miller had some

23   reference to like days response. And I think I was

24   just saying the model can't do days. It has to do

25   months. And so trying to interpolate days makes things

1   really difficult. And so I think that's where that

2   discussion came from. But I don't have that whole

3   transcript in front of me, so...

4   Q.   So the question that's been asked of

5   several is just how soon does it come back in.

6   And you don't have an opinion, do you, as

7   to -- or any additional data that would suggest what

8   that time period is in any given year.

9   A.   So I don't have any data from recent. I've

10   been to numerous locations in the Bellevue Triangle,

11   and I -- and the Bellevue Triangle extends up the

12   Valley. And so like you have headwaters and locations

13   right next to headwaters I would imagine have a much

14   quicker response than those up the Valley. And so, you

15   know, there's not one you turn off all wells and

16   there's an immediate response location, both

17   horizontally, vertically -- or north and south, maybe I

18   should -- north and south, east and west will determine

19   responses to it.

20   Q.   Would you disagree with several of my

21   clients' testimony, and also the watermaster, that

22   there is a fairly quick response when wells are turned

23   off for various reasons?

24   A.   I don't have any data to support that. I

25   also heard the testimony that the watermaster gave that

1   he also recognized that someone was pumping directly

2   into the river and not diverting that water. And so

3   I'm not really sure quantity and timing. I don't think

4   it's going to be instantaneous. I -- yeah. So...

5   MR. RIGBY: I have no further questions.

6   THE HEARING OFFICER: Okay. Ms. O'Leary, should

7   we take a break? I think we're overdue. And then you

8   can come back.

9   MS. O'LEARY: We could do that, Director. I

10 just have a couple questions. It will be short. Or if

11 you prefer a break. That's fine.

12   THE HEARING OFFICER: I don't care.

13   MR. FLETCHER: Let's finish with this witness.

14   THE HEARING OFFICER: Okay. If everybody's all

15 right with that. I thought maybe the redirect might be

16 extensive. So thank you.

17

18   REDIRECT EXAMINATION

19 BY MS. O'LEARY:

20   Q.   Erick, Mr. Fletcher was discussing the

21 percentage of irrigation efficiency with you and really

22 focusing on that Silver Springs Ranch 84 percent

23 efficiency.

24   In your opinion and based on the research

25 that you've conducted, is an average of 84 percent

1 irrigation efficiency achievable throughout the

2 Bellevue Triangle?

3   A.   Through a lot of effort -- knowing what was

4 put in at Silver Springs Ranch, I -- it takes time,

5 effort, and money to achieve that efficiency. So it is

6 possible. I don't believe it's across the Valley.

7   Q.   Okay. So -- so based on your other

8 calculations we saw as low as in the 20 to 30 percent.

9   Your opinion is that that 60 percent in

10 Exhibit 24 is a more reasonable average of irrigation

11 efficiency throughout the Bellevue Triangle?

12   A.   Well, and I'm sorry, Ms. O'Leary, I'm

13 not -- I'm reluctant to even say that that number is

14 right. I haven't done an analysis on -- and I think

15 that we could do that. I just haven't done it on total

16 pumping. We have lots of ET -- METRIC ET data that we

17 could evaluate what is being diverted, both from a

18 surface and groundwater standpoint, and what the ET is.

19   And so I think we could easily come up with

20 a better efficiency number than debating, you know,

21 what it is here. I just haven't had the time to do

22 that.

23   Q.   Okay. But the calculations that you have

24 done don't show an average of 84 percent; correct?

25   A.   No.

1   Q.   Okay. Mr. Fletcher also asked you whether

2   you tried to replicate Mr. Miller's work with respect

3   to his June 1st, 2021 report; right?

4   A.   I think that he asked that question,

5   yesterday.

6   Q.   And was the condensed time period of

7   this -- of notice of this proceeding and receipt of

8   Mr. Miller's report attributable as to why you didn't

9   have time to replicate that work?

10   A.   That definitely played a role. I mean

11   we've all been under a time constraint for sure.

12   Q.   Okay. And just to be clear, because

13   opposing counsel was really focusing on the --

14   Mr. Lakey's data and whether the errors that you found

15   would be, in your mind, throwing around a term,

16   "significant" versus "insignificant."

17   At the end of the day, if the model is not

18   input with accurate data, it's not going to output

19   accurate data; right?

20   A.   That's correct.

21   Q.   Okay. Is it possible that even if there is

22   a curtailment this year that surface water users might

23   not receive a benefit of the curtailment, meaning, in

24   other words, you can't time your quantity to the amount

25   of water that would be available to them pursuant to a

1 curtailment, can you?

2   A.   We -- again, the best tool we have is the

3 model. And there may -- you know, at this point it is

4 what it is, warts and all. And it does produce some

5 timing estimates and volume associated with those

6 timing estimates.

7   Now, the uncertainty of that, we don't

8 know. And so there is a potential that there would not

9 be any benefit. But that's impossible to calculate

10 here.

11   Q.   Okay. And we've talked about that

12 uncertainty amount being plus or minus 22 percent;

13 correct?

14   A.   That's the uncertainty number from

15 Mr. Wylie for the model 1.1 report, yes.

16   Q.   Based on that ten-month time period?

17   A.   Yes.

18   Q.   And under the analysis by Ms. Sukow, since

19 it's that three-month time period, it's reasonable to

20 assume that the uncertainty would be greater than that

21 22 percent; right?

22   A.   That's correct.

23   MS. O'LEARY: That's all I have. Thank you,

24 Erick.

25   THE HEARING OFFICER: More recross,

1   Mr. Fletcher?

2   MR. FLETCHER: Just one item.

3   MR. THOMPSON: I have one question.

4   THE HEARING OFFICER: Oh.

5   MR. FLETCHER: You do? Okay.

6   THE HEARING OFFICER: Sorry, Mr. Thompson.

7

8   REDIRECT EXAMINATION

9   BY MR. THOMPSON:

10   Q.   Mr. Powell, just one question.

11   You said you were able to replicate

12   Ms. Sukow's model run; is that correct?

13   A.   That is correct.

14   Q.   And does that just mean that she ran the

15   model correctly as far as running the tool itself?

16   A.   Yes.

17   Q.   Okay. It doesn't mean that the results are

18   actually right or -- as far as estimates?

19   A.   Well, yeah, any -- I mean the first step is

20   just making sure we can replicate what was done. So

21   I'm not saying that was right or wrong. I was able to

22   replicate it.

23   MR. THOMPSON: Okay. Thank you.

24   THE HEARING OFFICER: Mr. Fletcher.

25   ///

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 1                 RECROSS-EXAMINATION
 2   BY MR. FLETCHER:
 3        Q.   I'd like to put this issue about where
 4   Mr. Miller's source of information came from to bed.
 5   So can you look at Miller report -- it's Exhibit 1,
 6   Miller Exhibit 1, page 2.
 7        A.   Okay.  I'm here --
 8        Q.   Are you there?
 9        A.   -- on page 2.
10        Q.   Okay.  The second full sentence, it's about
11   four lines down, starts with the word "Estimates."
12        A.   Okay.
13        Q.   Can you read that sentence, please.
14        A.   "Estimates of hydraulic impacts to surface
15   water rights in the Little Wood/Silver Creek drainage
16   during the 2000" --
17        Q.   No, excuse me.  That's -- are you on
18   page 2?
19        A.   Yes.  Page 2.
20        Q.   Do we have different exhibits.  We're not
21   sure what you're looking at, Mr. --
22        A.   I'm looking at impacts to senior surface
23   water right holders in the Little Wood/Silver Creek
24   drainage, Exhibit Miller 1 on page 2.
25        Q.   Is it the paragraph that starts "For this
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 1  study"?
 2          A.    No.  I'm sorry, you said the second
 3  sentence at the top.  So I was reading the second
 4  sentence.
 5          Q.    No, at the -- I'm sorry.  Let's get you to
 6  the right place.
 7          A.    Okay.  "Estimates of actual withdrawals"?
 8          Q.    Yeah.  Where it goes down, at the very last
 9  paragraph of page 2 --
10          A.    Okay.  Yeah, I have that.
11          Q.    -- the second full sentence --
12          A.    Yeah, I see it.
13          Q.    -- starts with the word "Estimate."
14          A.    "Estimate of actual withdrawals for
15  2019/2020 were provided by Tim Luke."
16          MR. FLETCHER:  Thank you.  I have no further
17  questions.
18          MS. O'LEARY:  Director, before we take a break,
19  just one housekeeping matter.  I want to make sure --
20  we renumbered Exhibit A as Exhibit 41, and I'm not
21  entirely sure if I moved to have that admitted into
22  evidence.  And I just wanted to make sure that I did
23  get that on the record.
24          MS. CARTER:  I don't have it admitted.
25          MS. O'LEARY:  Okay.  Can we have it admitted?
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1   THE HEARING OFFICER: Any objection?

2   MR. FLETCHER: We have some exhibits too.

3   MR. RIGBY: Oh, that's right. We have some as

4   well.

5   MS. O'LEARY: But do you object to --

6   MR. RIGBY: No objection.

7   MR. FLETCHER: No objection.

8   THE HEARING OFFICER: Okay. So the document

9   that's been marked as South Valley and Galena

10 Exhibit 41 is received into evidence.

11   (SVGWD GGWD Exhibit 41 received.)

12   THE HEARING OFFICER: Okay. I just have one

13 line of questions for the witness.

14

15   EXAMINATION

16 BY THE HEARING OFFICER:

17   Q.   I want to refer back to South Valley and

18 Galena Exhibit 24 and page 48 that we discussed at

19 length.

20   A.   Director, I'm there.

21   Q.   Okay. And this was -- the entire

22 discussion about this page was related to what's

23 happening with groundwater levels; right?

24   A.   That is correct.

25   Q.   And the groundwater levels that we're

1   talking about are groundwater levels within what area?

2   A.   Within the Wood River Valley. I believe

3   that that exhibit also has a map, and I don't recall

4   where that is.

5   Q.   Well, in particular, look at the first

6   clause, first sentence. It says, "The Big Wood

7   Groundwater Management Area," and then there are

8   additional references to the groundwater management

9   area.

10   A.   Uh-huh.

11   Q.   And do you know the extent of that

12 management area?

13   A.   I believe it includes Camas Prairie as well

14 as the Big Wood valley.

15   Q.   And that's true. And also in the -- it

16 includes the Bellevue Triangle; right?

17   A.   Yes.

18   Q.   And it includes the drainage of the Big

19 Wood River itself; correct?

20   A.   Correct.

21   Q.   And so is -- in your opinion, does this

22 data have any relevance to water levels or in

23 describing the water levels solely in the Bellevue

24 Triangle?

25   A.   It definitely includes areas outside of the

1 Bellevue Triangle. I think really my only -- my

2 original intent of putting this in here was to show

3 that Mann-Kendall's statistics were used by the

4 Department for other purposes so that people weren't

5 just looking at me like a blank stare when we started

6 talking about time series statistical analysis.

7   Q.   Well, I understand that. But there was

8 also a discussion about whether there were positive

9 trends.

10   A.   That's correct.

11   Q.   I guess I look at the document, Mr. Powell,

12 and say it has no value to me, because it's looking at

13 wells throughout the groundwater management area and is

14 not specific to the Bellevue Triangle, which is the

15 subject of this particular contested case. So I just

16 throw it out.

17   Okay.

18   A.   Yeah.

19   THE HEARING OFFICER: Thanks.

20   Jerry.

21   MR. RIGBY: Mr. Director, apparently we have --

22 when we were attempting to get all of our exhibits in,

23 we discussed a couple of exhibits, and we were reminded

24 that we, although discussed them, didn't ask for their

25 admission.

 1   Would you please remind us which ones those

 2 were?

 3   MS. CARTER: W. Arkoosh 2 and 3.

 4   THE WITNESS: Director, am I done?

 5   MR. RIGBY: So it was the testimony that John

 6 Arkoosh --

 7   THE HEARING OFFICER: Just a minute. I think

 8 so, but just a minute.

 9   MR. RIGBY: It was the testimony of John Arkoosh

10 wherein he was testifying for not only on his behalf,

11 but his father's behalf, W. Arkoosh. And it was

12 Exhibit No. 1 and Exhibit -- excuse me, Exhibit No. 2

13 and Exhibit No. 3.

14   And those were, I believe, his water

15 rights, were they not?

16   MS. CARTER: Yes. Water right and the

17 place-of-use map.

18   MR. RIGBY: Very good. And so we would move for

19 the admission of those two exhibits.

20   THE HEARING OFFICER: I don't even remember

21 those documents.

22   But I will ask, is there any objection --

23   MR. THOMPSON: No.

24   THE HEARING OFFICER: -- to the admission of

25 those documents?

1   Okay. So based on no response, Mr. Rigby,

2   the documents marked as Arkoosh --

3   MR. RIGBY: W. Arkoosh.

4   THE HEARING OFFICER: -- W. Arkoosh Exhibits 2

5   and 3 are received into evidence.

6   (W. Arkoosh Exhibits 2 and 3 received.)

7   All right. Thanks. Let's take a

8   ten-minute break.

9   (Recess.)

10   THE HEARING OFFICER: We're back on the record

11 after an afternoon break.

12   Mr. Barker, next witness.

13   MR. BARKER: South Valley Ground Water District

14 calls David Shaw.

15   THE HEARING OFFICER: Mr. Shaw, if you'll raise

16 your right hand.

17

18   DAVID B. SHAW,

19 having been called as a witness by South Valley Ground

20   Water District and first duly sworn, testified as

21   follows:

22

23   THE HEARING OFFICER: Thank you. Please be

24 seated.

25   Mr. Barker, you may examine.

1   MR. BARKER: Thank you, Mr. Director.

2

3   DIRECT EXAMINATION

4   BY MR. BARKER:

5   Q.   Mr. Shaw, would you state your name and

6   address for the record, please.

7   A.   David, middle initial B, as in boy, Shaw

8   S-h-a-w. 4001 East Main Street, Emmett, Idaho 83617.

9   Q.   Mr. Shaw, have you -- do you have an

10   occupation at the moment?

11   A.   I do.

12   Q.   Besides growing fruit, do you do other

13   things?

14   A.   I do other things as well, yes.

15   Q.   Okay. So what would those other things be

16   that are relevant this proceeding?

17   A.   I've worked for the Department of Water

18   Resources and its predecessor agencies from 1973 to

19   19 --

20   MR. FLETCHER: Mr. Director, can people speak

21   up. I'm having a hard time hearing --

22   THE HEARING OFFICER: Yep.

23   MR. FLETCHER: -- both sides of this

24   conversation?

25   THE HEARING OFFICER: Both of you need to talk

1   loudly, please. Okay.

2   THE WITNESS: Okay. I worked for the Department

3   of Water Resources and its predecessor agencies from

4   1973 to 1996. Then I went to work for ERO Resources.

5   That's a natural resource consulting firm. And I've

6   done water resource work for them since 1996.

7   Q.   (BY MR. BARKER): Can you tell me a little

8   bit about your educational background. What kind of

9   degrees do you have?

10   A.   I have a bachelor's of science and a

11   master's of science from the University of Idaho in

12   agricultural engineering.

13   Q.   And what did you do when you first went to

14   work for the Department of Water Resources or its

15   predecessor agency?

16   A.   The first program I worked on was the

17   Stream Channel Protection Program.

18   Q.   All right. How long did you do that work

19   and what did you do in that job?

20   A.   Well, the Department did administer -- I

21   guess they still do -- the Stream Channel Protection

22   Program. So it was reviewing permits and channel work,

23   whether or not it could be permitted or not, or

24   recommendations for changes in proposed channel work.

25   Then I moved to what at the time was the

1 Water Resource Board. They had a separate agency. And

2 I did hydrology work for them.

3   Q.   What was the -- what was the separate

4 agency that was then known as the Board, Water Resource

5 Board?

6   A.   Well, the Water Resource Board had a

7 separate agency called the Water Resource Board Agency.

8   Q.   I see.

9   A.   And the constitutional amendment, I think

10 was -- the Idaho Constitutional amendment in 1974

11 limited the number of State agencies. So the -- what

12 was the Department of Water Administration and the

13 Water Resource Board were combined into the Department

14 of Water Resources, the current agency.

15   Q.   Okay. So when you went to work for this

16 subagency of the Board, what was your responsibility?

17   A.   Specifically I was working on a model. I

18 believe it was a water-quality model for the Boise

19 River. And I worked on that for six months or so while

20 the agencies were still separate.

21   And when the agencies were brought back

22 together, there was a technical support section, I

23 think it was called. A unit of some kind. And we had

24 engineers, hydrologists, soil scientists, economists,

25 and we provided technical support for the rest of the

 1   agency. And I was the manager of that section.

 2   Q.   Do you have any professional

 3   certifications?

 4   A.   I do.

 5   Q.   And what are those?

 6   A.   I'm a registered professional engineer and

 7   land surveyor in Idaho and a registered professional

 8   engineer in Arizona, Colorado, and Oregon.

 9   MS. McHUGH: Can I ask the witness to speak up?

10   I don't know why I can't hear you today, but I can't.

11   THE WITNESS: Okay.

12   Q.   (BY MR. BARKER): So when you became the

13   manager of this technical services division, what were

14   you -- what were your responsibilities? What kind of

15   work did you do?

16   A.   We were providing technical support for

17   development of the State Water Plan primarily. We did

18   some work from time to time for the administration

19   side. There was a separate hydrology section at that

20   time that did the hydrologic modeling.

21   Q.   And how long did you remain in this

22   position as the lead of the technical division or the

23   manager -- what did you say it was? The manager?

24   A.   It was a manager. I can't remember what

25   the title was. I think it was about two years, maybe

 1   three. And then there was a unit -- a water rights

 2   section, and I started managing that section. We

 3   processed applications, licenses, transfers for the

 4   water rights in Idaho.

 5   Q.   How long were you in charge of

 6   administering -- or in charge of that section

 7   administering water rights in Idaho?

 8   A.   Probably another two years. And then I

 9   moved to Western Region, and I was the manager at

10   Western Region until 1985, maybe.

11   Q.   And what was your -- what were your duties

12   as the manager of the Western Region in that time

13   frame?

14   A.   In the Western Region we had an ongoing

15   water right adjudication in the Payette. We processed

16   water right applications, transfers, the dam safety

17   program was administered out of the region, as well as

18   the Stream Channel Protection Program.

19   Q.   Okay. And then after 2000 -- or say 1985

20   you had another position with the Department?

21   A.   I did. About that time the Snake River

22   Basin Adjudication was authorized by the legislature,

23   and I was selected as Bureau chief to lead that effort.

24   Q.   And did you remain in that position for the

25   rest of the time you were with the Department?

1   A.   I did.   Until 1996.

2   Q.   And in all the time that you worked for the

3   Department and its predecessor entities, did you have

4   any involvement in stream -- or sorry, surface water

5   hydrology?

6   A.   Yes.

7   Q.   Okay.   And what was that?

8   A.   Well, some of it was related to the Stream

9   Channel Protection Act, some of it was related to dam

10   safety and inspecting dams. I believe we did a

11   preliminary review on plans for repair before they were

12   finally approved at the State office, and the Stream --

13   I think I mentioned the Stream Channel Protection

14   Program, and also processing new water right

15   applications to verify if there was water available.

16   Q.   Is that something you did yourself, or did

17   you delegate that to other people to do under your

18   supervision?

19   A.   A combination. If it were an ordinary

20   event, staff would take care of it. If it was unusual,

21   I usually got involved.

22   Q.   During the period of time when you were

23   with the Department, did you do any work with respect

24   to groundwater rights?

25   A.   With groundwater rights, yes.

1   Q.   Okay. Tell us what that was, what

2   involvement you had with groundwater rights during that

3   period of time.

4   A.   Well, from the time I went to work for the

5   water rights section, we processed applications for

6   groundwater rights and reviewed licensing exams for

7   groundwater permits that had been developed.

8   The same at the regional office, reviewing

9   applications. And of course, the field exams were done

10   by staff in the regional office. I reviewed those.

11   And the adjudication, we took tens of thousands of

12   claims for groundwater rights that all had to be

13   evaluated and recommended to the court.

14   Q.   And in the process of reviewing these

15   groundwater applications and then later claims in the

16   adjudication, did you have some involvement in

17   groundwater hydrology?

18   A.   Some involvement, yes.

19   Q.   Okay. And what was that that you had?

20   What did you do with respect to understanding

21   groundwater hydrology so that you could process

22   applications and claims in the adjudication?

23   A.   In some cases it was an evaluation of

24   whether or not water would be available for a new

25   permit. In other cases, it was conflicts. A new

 1 permit application might be protested by either an

 2 existing surface water user or groundwater user.

 3   Q.   And were you also involved in these -- in

 4 handling these protests?

 5   A.   Yes.

 6   Q.   And that was with -- both when you were at

 7 the SRBA and also at the Western Regional office?

 8   A.   Yes. The protests in the SRBA, of course,

 9 were before the court. In regional office it was the

10 administrative procedure for a decision by the Director

11 of whether or not a permit would be granted.

12   Q.   Okay. And then you said you left the

13 Department in 1996; did I get that right?

14   A.   Yes.

15   Q.   Okay. And joined ERO Resources.

16   So what have you done for ERO Resources

17 over the last 25 years?

18   A.   A lot of the same kind of work. Evaluating

19 water supplies for new water right applications or

20 protecting -- helping existing water users defend their

21 rights if they believe they would be adversely impacted

22 by new applications, helping claimants in the Snake

23 River Basin Adjudication for both surface and

24 groundwater get their claims decreed.

25   Q.   And does that work that you've done at ERO

1   involve evaluating impacts of water use from one source

2   to -- or from one water use to another?

3   A.   Yes, it did.

4   Q.   And did that include evaluating impacts

5   from surface to groundwater --

6   A.   Yes.

7   Q.   -- and vice versa?

8   A.   Yes.

9   Q.   Do you have -- have you done any work in

10   the Wood River Valley before this proceeding?

11   A.   Yes.

12   Q.   Okay. What kind of work have you been

13   involved in in the Wood River Valley?

14   A.   The work I remember particularly was the

15   Stream Channel Protection Program. And in the '80s

16   there were some big water years that caused some

17   erosion in the Wood River Valley.

18   And at that time there were only two

19   offices, two regional offices of Water Resources

20   processing stream channel applications. And the Wood

21   River Valley was handled out of the Western Region

22   office here in Boise. So I spent a fair amount of time

23   dealing with flood issues in the Wood River Valley.

24   Q.   Okay. How about water rights and water

25   delivery systems in the Wood River Valley, have you had

1   any prior experience with that before getting involved

2   in this administrative proceeding?

3   A.   Yes.

4   Q.   Okay. And what has that involvement been?

5   A.   In particular, there was a proposal for

6   groundwater development on what's now called the Heart

7   Rock Ranch. It was --

8   Q.   Heart Rock?

9   A.   Heart Rock Ranch. Used to be the something

10   Dragon Ranch. And I worked for the adjacent property

11   owner that was concerned that their property would be

12   impacted by changes in groundwater levels on the Heart

13   Rock Ranch.

14   Q.   By increasing groundwater levels?

15   A.   By increasing groundwater levels.

16   Q.   And did you do any groundwater analysis in

17   terms of what the -- how groundwater -- how water would

18   move about underground for this project?

19   A.   We -- we did not do any modeling. We did

20   monitoring. The developer finally agreed to provide us

21   with groundwater-level data, and we were able to

22   compare that year to year, and also make an evaluation

23   of whether or not the increase in groundwater level was

24   going to impact the adjacent property.

25   Q.   Have you been -- well, first of all, let me

 1 do this.

 2   Have you been qualified as an expert

 3 witness in Department of Water Resources proceedings

 4 before?

 5   A.   I have.

 6   Q.   Many times?

 7   A.   Many times.

 8   MR. BARKER: I offer Mr. Shaw as an expert in

 9 hydrology and water rights.

10   MR. FLETCHER: No objection.

11   MR. RIGBY: No objection.

12   THE HEARING OFFICER: Any objections?

13   Mr. Shaw is recognized in the areas

14 described.

15   Q.   (BY MR. BARKER): Mr. Shaw, have you been

16 retained by the South Valley Ground Water District?

17   A.   I have, yes.

18   Q.   And when was that first -- when were you

19 first asked to provide services to the Ground Water

20 District?

21   A.   As I recall, it was about six months before

22 the Ground Water District was formed. So that was

23 2015, maybe.

24   Q.   And what was your task at that time?

25   A.   First task was just to become familiar with

1   the water rights that were within the District and

2   their relationship, both surface and groundwater, to

3   one another.

4   Q.   And sometime during the course of working

5   for the Ground Water District, did you look at other

6   issues?

7   A.   Yes.

8   Q.   Were you involved in analyzing the 2015

9   delivery call?

10   A.   Yes, I was.

11   Q.   And have you seen -- or did you see the

12   staff memoranda that were prepared by Mr. Luke and

13   Jennifer Sukow with respect to that 2015 delivery call?

14   A.   Yes.

15   Q.   And were you providing advice to the Ground

16   Water District about the issues raised in those staff

17   memos?

18   A.   Yes.

19   Q.   Have you over time evaluated claims of --

20   or delivery calls by Mr. Rigby's clients and others

21   from the Little Wood and Big Wood?

22   A.   The most work was evaluating the

23   Department's, Mr. Luke's, Ms. Sukow's memos in 2015.

24   The later calls, nothing really happened, I guess, at

25   my level, because they were resolved before they

 1 required a lot of work at -- work for me.

 2   Q.   Okay. So since then what -- since those

 3 first couple of delivery calls fizzled out, what have

 4 you been doing for the Ground Water District, if

 5 anything?

 6   A.   A couple of things. Helping them with

 7 applications for groundwater rights in the basin that

 8 might -- might create difficulty for their -- for that

 9 water supply. I've also been putting together a

10 Groundwater Management Plan that we hope will be

11 implemented at some point.

12   Q.   So you were involved in helping the South

13 Valley put together the initial draft of the

14 Groundwater Management Plan?

15   A.   Yes, I was.

16   Q.   So tell me about that process. What kind

17 of information was gathered? What kind of consultation

18 were you engaged in?

19   A.   The first step I believe was necessary was

20 to educate the groundwater users about at least my

21 understanding and Mr. Powell and Mr. Hill's

22 understanding of the hydrology of the basin.

23   Q.   Is that -- so how did you -- what kind of

24 information did you gather to understand the hydrology

25 of the basin?

1   A.   There is publicly available data for

2   streamflows on Big Wood, on Silver Creek. Both the

3   Department and Geological Survey have depth to

4   groundwater data, limited, but some is available. The

5   Ground Water District started monitoring one well in

6   2016, and since have put monitoring equipment in

7   additional wells to monitor groundwater levels.

8   So the first thing was to accumulate and

9   understand the available data -- to understand to the

10   best of our ability the function of the hydrology in

11   the basin.

12   Q.   And did you work with Mr. Hill to put

13   together that Exhibit 23, the hydrogeology -- or sorry,

14   the hydrology of the basin report we've looked at?

15   A.   Yes, I did.

16   Q.   What was the -- that's the educational

17   piece that you mentioned?

18   A.   Yes.

19   Q.   Okay. So then what happened next after

20   that process of trying to educate the groundwater users

21   about what was happening in the basin?

22   A.   I've been advocating as strongly as the

23   Directors will listen to me that we need to put

24   together a Groundwater Management Plan.

25   Q.   So you helped draft a couple versions of

1   Groundwater Management Plans?

2   A.   At least a couple.

3   Q.   And you were involved in submitting the

4   Groundwater Management Plan that came -- went to the

5   Director last fall; is that right?

6   A.   I worked on that plan, yes.

7   Q.   Okay. Along with Mr. Powell and Mr. Hill?

8   A.   Yes.

9   Q.   Okay. And what were you trying to

10   accomplish or what were you suggesting as a proposal in

11   this Groundwater Management Plan?

12   A.   I believe one of the changes to the basin

13   has been the change in irrigation methods over time.

14   Originally the Triangle was developed with surface

15   water, flood irrigation. We know it's sandy, gravelly

16   soil, so it took large amounts of water to irrigate.

17   And we've seen over time the diversions of

18   surface water into the Triangle have diminished. And

19   my belief is that's one of the impacts to -- that has

20   resulted in a decline of Silver Creek.

21   Q.   So you've looked at the -- what is -- so

22   first of all, you said there has been a decline in

23   flows in Silver Creek?

24   A.   There has been, yes.

25   Q.   Over what period of time?

 1   A.   Well, the gage only goes back to 1975, so

 2   we've looked at the period of record.

 3   Q.   So you're looking at the Sportsman's gage?

 4   A.   Yes.

 5   Q.   And you said you were concerned or trying

 6   to evaluate what led to that.

 7   What do you understand the sources of water

 8   to be in the Bellevue Triangle?

 9   A.   We know that Silver Creek responds to the

10   Big Wood and the discharge at the Hailey gage. There's

11   a strong relationship there.

12   Q.   So let me stop you there for a second.

13   Do you remember Mr. Vincent explaining that

14   there was a very strong -- or a strong relationship

15   between the Hailey gage and the flows at Sportsman's

16   Access?

17   A.   Yes.

18   Q.   Okay. Can you explain why that's the case?

19   A.   If I knew exactly why that was the case,

20   we'd be a lot further down the road. We know it

21   happens. So I believe there is a connection -- it

22   may -- well, I'm sure part of it is precip, because

23   both gages respond to precip. I believe there's a more

24   direct connection than that, but I don't have data at

25   this point to describe it.

 1   I think part of the connection is the

 2   diversions into the Triangle for irrigation purposes.

 3   When there's more water in the Big Wood, there's more

 4   water diverted on the Triangle for surface

 5   irrigation -- or with surface water.

 6   Q.   Okay. So have you found a correlation at

 7   all between diversions and the -- into the Triangle and

 8   flows in Silver Creek?

 9   A.   I have.

10   Q.   And what is that?

11   A.   It's -- I can't remember. About .5, as I

12   recall, so it's not a blockbuster correlation. But I

13   believe it is a relationship that exists.

14   Q.   And have you -- is that relationship or

15   that -- let me rephrase that.

16   That relationship that exists, is that

17   illustrated in Exhibit 24, the presentation that you

18   gave or you were part of giving to the Advisory

19   Committee?

20   A.   There is a chart in there that shows the

21   relationship. I'm not sure there's a chart in there

22   that shows the R-squared value.

23   Q.   Okay. And did you run the calculations to

24   come up with an R-squared value?

25   A.   I did.

1   Q.   So when this -- when this hearing came

2   about, were you asked to participate in some fashion by

3   the Ground Water District?

4   A.   I was, yes.

5   Q.   And you have either been here or listened

6   to a great deal of the testimony so far?

7   A.   Yes, I have.

8   Q.   Have you also reviewed the staff memoranda?

9   A.   I have.

10   Q.   I want to call your attention to IDWR

11   No. 4, Tim Luke. It should be in the green book, the

12   one in your hand. The green book to your right hand.

13   Do you have Mr. Luke's --

14   A.   I do.

15   Q.   -- staff memo in front of you?

16   Would you turn to page 21, please.

17   A.   I have that.

18   Q.   Okay. This is a part of Mr. Luke's memo

19   that's described as "Analysis of Possible Injury."

20   Have you reviewed this?

21   A.   I have.

22   Q.   Have you spent some time analyzing this

23   part of the memo?

24   A.   Yes, I have.

25   Q.   Okay. So first of all, tell me what you

 1 understand that this analysis was intended to show or

 2 intended to look at.

 3   A.   I believe Mr. Luke was looking -- making a

 4 comparison between water years 2020 and 2004 and 1939

 5 and 1937 as analogous years.

 6   Q.   So why do you understand that 19 -- the

 7 years in the 1930s were selected?

 8   A.   I believe Mr. Luke selected those based on

 9 comparable SWSIs from this year, 2020, 2004, 1939, and

10 1937.

11   Q.   Okay. But why did he go back to the 1930s,

12 to your understanding?

13   A.   I believe he looked for years with

14 comparable SWSIs pre-groundwater development.

15   Q.   So do you believe that the 1930s are pre --

16 essentially pre-groundwater development, based upon

17 your review of the history of groundwater pumping in

18 this basin?

19   A.   Essentially, yes.

20   Q.   Is it your understanding that Mr. Luke's

21 analysis was based on the SWSI information that he had

22 at the time he did the May 17th memo?

23   A.   Yes, the April 1 SWSI.

24   Q.   Okay. So we -- when we started this

25 hearing, we got a very -- an updated SWSI report from

1 Mr. Vincent.

2   Do you remember seeing that?

3   A.   I do.

4   Q.   Okay. So what did that tell you -- or what

5 did that updated report tell you about how to analyze

6 what Mr. Luke had done in trying to compare

7 pre-groundwater pumping with current?

8   A.   It -- it made the years 2020 and 2004 that

9 he selected not be the best years to use in the

10 comparison.

11   Q.   And why is that?

12   A.   Because the SWSI for those years was higher

13 in -- at the 1st of June than for 2021.

14   Q.   So you were trying to find a comparable

15 year for 2021 that would -- is that what you're --

16   A.   Yes.

17   Q.   -- that's different than the years that

18 Mr. Luke selected?

19   A.   Yes.

20   Q.   Okay. So how did you go about making that

21 determination?

22   A.   Well, Mr. Vincent suggested that 1994 was

23 the most comparable June 1 SWSI in the last 30 years.

24   Q.   Okay. And so did you do -- did you look at

25 the 1994 hydrology data?

1   A.   I did.

2   Q.   Okay. And what did that tell you about a

3 comparable year? Well, first of all, why did you

4 need -- why did you and Mr. Luke both need a comparable

5 year? Is there a reason you can't just use 2021?

6   A.   Well, we don't have data yet for 2021.

7   Q.   So you're trying to find a year as close as

8 possible to 2021?

9   A.   Yes.

10   Q.   Okay.

11   A.   But I want --

12   Q.   So you looked at 1994.

13   And then what did you conclude?

14   A.   Well, I had started the process before

15 Mr. Vincent's last report. And I wanted to look at

16 years where I could see if there was a difference in

17 water supply pre-groundwater development and presently.

18 So the '30s were a time pre-groundwater development.

19 And there are some data available for those years. So

20 that was a good start that Mr. Luke made. And he, like

21 I said, chose 2020 and 2004.

22   Well, then we got a report from Ms. Sukow

23 that used 2002 as a comparable year. And Mr. Miller

24 has been using 2007 as a comparable year. And then

25 like I said, Mr. Vincent on Monday put 1994 on the

1   table as a comparable year. And I wanted to do a

2   comparison but have it be manageable so we could talk

3   about it today.

4   So I did an analysis of turning off water

5   rights of priorities that are involved in this

6   proceeding in a current year and in the '30s. And in

7   the '30s a water right was on for the entire year, and

8   in current year --

9   Q.   So you said "current year."

10   Are you using -- you're not using 2021

11 data?

12   A.   Recent year.

13   Q.   Okay.

14   A.   Pardon me. Bad term. Recent year. The

15 right was turned off on August 15th, say, then there

16 were 46 days difference between August 15th and I used

17 September 30th for the end of the year, end of the

18 irrigation season.

19   And since I was looking at 2020, 2007,

20 2004, 2002, 1994, it became a little unmanageable to

21 make into some form of exhibit. So I did that analysis

22 for all of those years, compared them to the '30s, and

23 I picked the year that had the most days of difference.

24   Q.   Okay. And what year was that?

25   A.   That's 2002.

 1   Q.   Okay. And why did you pick the year with

 2   the most days of difference, instead of the least?

 3   A.   I believe that will result in the largest

 4   difference in water supply between the '30s and recent

 5   times.

 6   Q.   So that would be the upper limit as far as

 7   the difference between the '30s and recent years?

 8   A.   Yes, I believe it would.

 9   Q.   So did you also look at the -- the SWSI

10   numbers for the years in the 1930s?

11   A.   I didn't look at the SWSI numbers. I

12   looked at the June through September discharge since we

13   have a good gage at Hailey that goes back to 1916, I

14   think. And I compared the discharge from June to

15   September in 1994 to years in the '30s.

16   1994 is about 43,000 acre-feet. And 1926

17   would have been a perfect match, but as Mr. Luke says

18   in his memo, there are no Black Books available for

19   1926. So I selected 1931. That's about 10,000

20   acre-feet less than 1994. And 1937. That's about

21   10,000 acre-feet more than 1994. And completed my

22   analysis using those three years, comparing 2002 to

23   1931 and 1937.

24   Q.   Okay. And did you prepare some information

25   in a tabular form?

1   A.   I did.

2   MR. BARKER: Can we go off the record and put a

3   sticker on this?

4   THE HEARING OFFICER: Sure.

5   Let's go off.

6   (Recess.)

7   (SVGWD GGWD Exhibit 42 marked.)

8   Q.   (BY MR. BARKER): Okay. So looking at the

9   document that we marked as Exhibit 42, would you just

10 walk us through the methodology first again.

11   A.   Okay. First the selection of the names.

12 Attachment A to Mr. Luke's May 17th, 2021 memorandum

13 had a list of individuals that he thought could be

14 impacted by groundwater pumping in 2021. So I started

15 with that list and selected those individuals who had

16 made an appearance in this proceeding.

17   Q.   Okay. And that's the block on the

18 left-hand side?

19   A.   That's the block on the left-hand side,

20 except for Mr. Taber at the bottom.

21   During his deposition it appeared he had

22 groundwater rights that covered his surface-water

23 irrigated area. We found that the groundwater only

24 covers two-thirds, three-quarters. So I put him on the

25 list, even though he was not on Mr. Luke's list.

 1   Q.   Okay. And then the center block is, what

 2   does that mean when it says "Cut dates"?

 3   A.   The cut dates are from the watermaster

 4   Black Books. So if a water right, like the first one

 5   in 2002, was curtailed on May 15th, it came back on on

 6   June 3rd, and was curtailed for the year on June 18th.

 7   And I did the same procedure for 1937 and 1931.

 8   MR. BARKER: Okay. So -- well, I guess before

 9   we testify any further about this, I'm going to offer

10   South Valley Ground Water District No. 42 as part of

11   Mr. Shaw's expert witness analysis.

12   THE HEARING OFFICER: Any objection to the

13   admission of this document?

14   MR. FLETCHER: May I ask a question in aid of

15   objection?

16   THE HEARING OFFICER: Yes.

17

18   VOIR DIRE EXAMINATION

19   BY MR. FLETCHER:

20   Q.   When did you prepare this document,

21   Mr. Shaw?

22   A.   Pardon me?

23   Q.   When did you prepare this document?

24   A.   This has been evolving from when I received

25   the report from Mr. Luke. I finished this document

1   last night.

2   Q.   Did you furnish this -- any of this

3   information at the time of your deposition?

4   A.   No.

5   Q.   Were you working on this at that time?

6   A.   Yes.

7   Q.   Weren't you asked to produce your work

8   product at that deposition?

9   A.   I didn't have a work product. Mr. Rigby

10 asked me what I was working on. I told him. And he

11 didn't inquire any further.

12   Q.   But wasn't there a duces tecum attached to

13 that deposition asking you to bring those documents?

14   MR. BARKER: And wasn't there an objection to

15 the subpoena duces tecum as beyond the scope of

16 Rule 26?

17   THE HEARING OFFICER: Well, Mr. Barker,

18 Mr. Fletcher is asking these questions in aid of

19 objection.

20   MR. BARKER: Okay.

21   THE HEARING OFFICER: I think your participation

22 is improper right now.

23   MR. BARKER: Thank you.

24   THE HEARING OFFICER: Mr. Fletcher.

25   MR. FLETCHER: Yeah, I'm going to object to

 1   this, your Honor. Here we are the last witness of the

 2   hearing, and we're getting this exhibit for the first

 3   time. Our exhibit -- our experts have had no

 4   opportunity to go through this analysis or through this

 5   documentation.

 6   Our expert furnished his report --

 7   actually, I can't remember when we first furnished the

 8   first version. Several weeks ago. They've furnished

 9   no expert reports. They haven't furnished us

10   information. It's just too late for us to respond to

11   this.

12   MR. RIGBY: I would join in that objection.

13   Having taken that deposition, there was nothing about a

14   report that is before us now identified with even

15   specificity of what the report was going to do. It was

16   just that I'm continuing to work for the plaintiffs --

17   I mean for the Ground Water District.

18   THE HEARING OFFICER: Okay. Mr. Barker.

19   MR. BARKER: There was no report prepared at the

20   time of the deposition. This is something that, as

21   Mr. Shaw says, has been evolving over time. Part of it

22   has been as a result of the deposition testimony.

23   We've been receiving new exhibits as we go along.

24   We've been receiving new information and new exhibits

25   as we go along. The '31 Black Book was just provided

1   to us by the Department this week, a couple of days ago

2   in fact.

3   So it -- unfortunately with the timing of

4   this hearing, and we've been getting new information

5   from Mr. Miller this week as well. So it's a little

6   bit unfortunate that we're supposed to respond to all

7   of this information that's been provided to us, and in

8   this period of time where information keeps slowly

9   dribbling in to the parties.

10   And so this is part of the analysis. It's

11   not anything different than what Mr. Luke has done,

12   except for he brings this information up to date based

13   upon the new information that we got from the

14   Department, from Sean Vincent on Monday, and from the

15   Department with the 1931 information on Wednesday. So

16   we -- I don't understand why we wouldn't be able to

17   respond to new information that the Department

18   provides.

19   How are we supposed to make this available

20   before the -- before we get the information?

21   THE HEARING OFFICER: Well, I understand your

22   argument, Mr. Barker. And I also have -- I'm sensitive

23   to the concerns of those who are objecting.

24   So at least right now I'll withhold

25   allowing this into evidence, but I'll allow you to

1 question Mr. Shaw. I'm not sure I'll allow this in.

2 And part of the problem is I'm not sure -- I'm not sure

3 I even understand the selection of the years and why he

4 did what he did, but anyway --

5   MR. BARKER: Okay. Well --

6   THE HEARING OFFICER: Because I think this is a

7 departure from Mr. Luke's analysis. And it takes us in

8 an entirely different direction. So I'm inclined,

9 honestly, not to allow it in.

10   But go ahead, Mr. Barker. I'll withhold

11 ruling on the objection.

12   MR. BARKER: Okay. So first of all -- well,

13 before I ask a question, I do want to ask the question.

14   Are we not allowed to respond to the

15 information that the Department has added to the record

16 in this week? Are we not allowed --

17   THE HEARING OFFICER: I don't know --

18   MR. BARKER: Are we not allowed to consider

19 that?

20   THE HEARING OFFICER: I don't know what that

21 information is, Mr. Barker.

22   MR. BARKER: Well, we got -- as I explained, we

23 got Mr. Vincent's new SWSI information on Monday. You

24 saw that. You admitted that into evidence. On

25 Wednesday we got the 1931 Black Books.

 1   THE HEARING OFFICER: But, Mr. Barker, this

 2   isn't even using SWSI; right? It was a selection of

 3   year 2002, which was not an analogous year. It was

 4   selected --

 5   MR. BARKER: Why do you think 2002 is not an

 6   analogous year?

 7   THE HEARING OFFICER: It was not selected based

 8   on SWSI. That's what I understand Mr. Shaw's testimony

 9   to be, that he took and selected one of four or five

10   alternative years that he might want to select.

11   MR. BARKER: Well, you -- your witnesses, your

12   witnesses have used four or five different years. He

13   was analyzing each one of those four or five different

14   years and picking the one that he thought provided the

15   greatest amount of difference.

16   THE HEARING OFFICER: This analysis is not based

17   on SWSI. And the -- and the other years that were

18   referred to, 2002, 2007, and the other years, those

19   were not based on SWSI either. They were -- the

20   criteria for selecting those years were different than

21   what Mr. Luke's analysis was.

22   MR. BARKER: Correct. But what Mr. Vincent's

23   new exhibit shows us is that there is new information

24   about the water conditions this year that requires a

25   review of what is the appropriate year.

1   THE HEARING OFFICER: Okay. Based on our

2   discussion, Mr. Barker, I will right now exclude this

3   document.

4   Thank you. Let's go on.

5   MR. BARKER: So you're not going to allow

6   Mr. Shaw to testify about the work that he's done; is

7   that what you're telling me?

8   THE HEARING OFFICER: You can explore the

9   subject with him.

10   MR. BARKER: Okay.

11

12   CONTINUED DIRECT EXAMINATION

13   BY MR. BARKER:

14   Q.   So let's go back and try to answer some of

15   the Director's concerns.

16   So, Mr. Shaw, is this -- is what you -- the

17   analysis that you've done a departure from what

18   Mr. Luke has done, or are you simply building upon

19   what -- the work that he's done?

20   A.   I believe I'm taking Mr. Luke's work the

21   next step. He talked about differences in the years,

22   but he didn't quantify the differences, and that's what

23   I attempted to do.

24   Q.   Okay. And were you satisfied that the

25   years that he had selected from the -- based on the

 1 April 1 SWSIs were accurate years to compare?

 2   A.   I was until Monday, when Mr. Vincent had

 3 the new SWSI and suggested we use 1994 as an analogous

 4 year.

 5   Q.   Okay. So why did you not use 1994? Why

 6 did you use 2002 instead?

 7   A.   I used 2002 because I know it will produce

 8 a larger difference.

 9   Q.   So had you used 1994, the calculations

10 would have shown less of a difference?

11   A.   That's -- yes.

12   Q.   Okay. And so you were trying, again, to

13 set the upper bounds of what the difference would be?

14   A.   Yes.

15   Q.   And did you also have at the time of the --

16 of Mr. Luke's report any information about the 1931

17 delivery cuts?

18   A.   No. I selected 1931 based on Mr. Vincent

19 selecting 1994 as a comparable recent year.

20   Q.   Okay. So why do you think 1931 is

21 comparable to 1994?

22   A.   Well, the June through September discharge

23 of the Big Wood at Hailey in 1994 was about 43,000

24 acre-feet. So I was looking for a comparable year

25 pre-groundwater development. The best match was 1926.

  1 But there is no watermaster book for 1996 [sic].

  2   So I selected 1931. That's about 33,000,

  3 and 1937, that's about 53,000, and believe that the

  4 actual difference will be between the analysis of those

  5 two years.

  6   Q.   And where did you get these numbers from,

  7 the 33, 43, 53,000 acre-feet of flow from the -- from

  8 the Hailey gage at Big Wood?

  9   A.   I used the curtailment dates.

 10   Q.   No, no, no. Where did you get the total

 11 volume --

 12   A.   Oh, pardon.

 13   Q.   -- from -- for each one of those three

 14 years?

 15   A.   Yeah. From the USGS gage at Hailey.

 16   Q.   Okay. And so you got -- I think you said

 17 you compared the 1994 date, which was suggested by

 18 Mr. Vincent, and you didn't find an analogous year

 19 where there was actual Black Books from the Department?

 20   A.   That's right.

 21   Q.   Or from the Water District?

 22   A.   That's right.

 23   Q.   So you looked at the two closest years you

 24 could find predevelopment?

 25   A.   Yes.

1   Q.   And those were what?

2   A.   1931 and 1937.

3   Q.   Okay. And then once you had that

4   information from the Black Books, what did you do to

5   compare the 2002, which provided -- which provided a

6   greater difference than 1994 with 1931 and 1937?

7   A.   As you can see in the middle column --

8   MR. RIGBY: We would object to the analysis or

9   the summary of the exhibit --

10   THE WITNESS: All right.

11   MR. RIGBY: -- that's not been allowed to be

12 included or admitted.

13   THE WITNESS: And in the Black Books there

14 are --

15   MR. FLETCHER: He needs to rule.

16   THE HEARING OFFICER: All right. I've got an

17 objection again.

18   I suppose, Mr. Barker, you're headed

19 towards re-offering this exhibit that's been marked?

20   MR. BARKER: Well, I was trying to lay a little

21 more foundation for what he did in each one without --

22 in the columns so that you would understand what we

23 were trying to accomplish here.

24   But yes, I'd be happy to offer this

25 Exhibit 42 at this time.

1   THE HEARING OFFICER: Well, I mean the argument,

2   again, has been that there was a new SWSI. And because

3   of the new SWSI on June 1st or the 1st of June, that

4   there was another analogous year, which was 1994. But

5   through some process that then was not the analogous

6   year. The analogous year that was selected was 2002.

7   So it had nothing to do with the SWSI at all.

8   MR. BARKER: Well, I --

9   THE HEARING OFFICER: And I'm sorry, but that is

10   not the analysis that Mr. Luke went through. And I

11   don't even see this as being rebuttal evidence, so --

12   MR. BARKER: I'm not -- we're not rebutting

13   Mr. Luke. As Mr. Shaw said, we're building upon --

14   taking his information, updating it with new water

15   supply information, and trying to explain the

16   consequences of his approach with the new water supply

17   information.

18   And as Mr. Shaw said, had he selected 1994,

19   which Mr. Vincent used, he would have had less

20   difference than using the 2002.

21   THE HEARING OFFICER: All right. Well, I guess

22   I will treat this, Mr. Barker, as an offer of proof.

23   And if you want to put it on and refer to the document,

24   I won't rule on its admission. But certainly at least

25   the evidence will be in the record and the document

1   will be in the record. So I don't want to tell you you

2   can't at least put it in the record as an offer of

3   proof.

4   MR. BARKER: Okay.

5   THE HEARING OFFICER: But I may disregard it

6   completely. I can't draw the connection.

7   Go ahead. You can refer to the document.

8   MR. BARKER: Thank you.

9   Q.   So, Mr. Shaw, the middle column that you

10 used, explain the process that you went through.

11   A.   Well, first of all, I want to make clear

12 that the 1931 year was selected because of the new

13 June 1st SWSI, because previously I had used 1937 and

14 '39 based on Mr. Luke's analysis. So --

15   Q.   And why did the SWSI -- June 1 SWSI change

16 your selection of years from the ones Mr. Luke had

17 selected?

18   A.   Because the -- as Mr. Vincent pointed to

19 1994, and the June, September discharge was different

20 than 1937 and 1939, and I wanted to match that

21 discharge. So I eliminated 1939 and selected 1931.

22 And now they're bookends to what the 1994 June,

23 September discharge was.

24   Q.   Okay. And then when you evaluated the --

25 each one of those three years, 2002, 1937, and 1931,

 1   did you look at the cut dates in the Black Books?

 2   A.   I did.

 3   Q.   Okay. And then did you compare the cut

 4   dates from those years with the cut dates in 2002?

 5   A.   Yes.

 6   Q.   Okay. And what did you find with respect

 7   to the junior water rights?

 8   A.   The junior water rights in the -- late '85

 9   is kind of on the bubble of junior and senior. The

10   junior water rights had been on more days per season in

11   recent years than they were in the '30s.

12   And referring to the document again, under

13   the delta days column, some of those are negative

14   numbers. And that means those water rights were on

15   more days in 2002 than in either 1931 or 1937.

16   Q.   All right. And so in Mr. Luke's report,

17   did he attempt to determine the number of days that

18   water rights were cut between the years that he had

19   selected?

20   A.   I don't believe he did, no.

21   Q.   And so the difference is that you're taking

22   that approach and now determining what the number of

23   cut days would have been?

24   A.   Yes.

25   Q.   Or were, actually?

1   A.   Would have been, yes.

2   Q.   And when you go through the next column,

3   the delta between '02 and '37 and '02 and '31.

4   A.   Yes. I multiplied the number of days

5   difference times the diversion rate, and came up with a

6   number of acre-feet.

7   Q.   So you got number delta in days, and then

8   you got delta in acre-feet column; right?

9   A.   Yes.

10   Q.   And then you have acre-feet per acre

11   column.

12   What does that refer to?

13   A.   I tested to see if any of the numbers that

14   I calculated -- excuse me -- would provide more than

15   3 1/2 acre-feet per acre.

16   Q.   And so if that occurred, what did you --

17   what did you do?

18   A.   If that occurred, I reduced the total

19   amount of water to make the water available 3 1/2

20   acre-feet per acre.

21   Q.   And why did you pick 3 1/2 acre-feet per

22   acre?

23   A.   It -- that's not on the surface water

24   rights. I believe it's the amount on the groundwater

25   rights in annual volume. So I picked that as a full

1 water supply.

2   Q.   And did you total up the differences

3 between 2002 and 1937 and 2002 and 1931?

4   A.   I did.

5   Q.   And what did you find the difference in

6 acre-feet between those years was?

7   A.   The difference between 2002 and 1937 was

8 2781 acre-feet. The difference between 2002 and 1931

9 was 904 acre-feet.

10   Q.   And so in 1937 there was about 10,000

11 acre-feet more in the river --

12   A.   That's true.

13   Q.   -- at Hailey?

14   A.   Yes.

15   Q.   Okay. And when you're trying to compare

16 what happened in the 1930s with what happened in recent

17 years, are there any -- are there any differences

18 between the operations or conditions in the Little Wood

19 between -- between those years?

20   A.   In -- excuse me. In the 1931 Black Book,

21 it wasn't the part that was distributed to everyone on

22 Wednesday, but there was a table that shows the losses

23 between the old Silver Creek gage, which is near

24 Picabo, it was a little bit downstream from the

25 existing gage, and Gage 10 was 15 percent for the year.

1   MS. McHUGH: Mr. Shaw, can you speak up?

2   Q.   (BY MR. BARKER): How much was the loss in

3   the 1931?

4   A.   That loss was 15 percent, the average for

5   the year.

6   Q.   And you've seen Jennifer Sukow's estimate

7   of seepage loss?

8   A.   Yes.

9   Q.   And what is it now currently estimated to

10   be?

11   A.   As I recall, her estimate was 25 to 37, or

12   something like that, percent.

13   Q.   So in essence, the seepage losses in the

14   Little Wood have doubled since the 1930s?

15   A.   Based on those two samples, yes.

16   Q.   And what would the effect of having twice

17   as much seepage loss in the Little Wood between the

18   1930s and today have on the water supply?

19   A.   It would reduce the water supply for the

20   reach of the river that these water rights were located

21   on.

22   Q.   And in -- is it your understanding that the

23   operations of the Magic Reservoir have an effect on

24   flows in the river at Silver -- or sorry, in Little

25   Wood?

1   A.   In the -- in the reach of the Little Wood

2   from Gage 10 to Gage 54, yes, I understand they do have

3   an impact.

4   Q.   And does that have -- if there's water from

5   the Big Wood injected into the Little Wood at

6   Richfield, what does that do to relative priorities on

7   the Little Wood?

8   A.   There's usually water from the Big Wood in

9   the reach from Gage 10 to Gage 54. When the Big Wood

10   has water, that increases the water supply in that

11   reach.

12   Q.   Okay. And so does that mean that water

13   rights would stay in priority longer in the Little Wood

14   when the Big Wood is in -- is delivering water to

15   Richfield?

16   A.   That's my understanding, yes.

17   Q.   Okay. So would you take a look in the book

18   in front of you at Exhibit 28. No, no, no. The yellow

19   book. Sorry.

20   A.   Which number?

21   Q.   28. South Valley/Galena Exhibit 28.

22   A.   I have that.

23   Q.   Okay. So tell me what Exhibit 28 depicts.

24   Well, first of all, where did you -- how

25   was Exhibit 28 generated?

 1   A.   Exhibit 28 came from the USGS record of

 2   storage in Magic Reservoir.

 3   Q.   And was this something that you looked at

 4   when you evaluated the years in the 1930s?

 5   A.   I actually looked at the data that this

 6   came from.

 7   Q.   Okay. But this is based upon federally

 8   generated data from the USGS?

 9   A.   Yes, it's public record.

10   MR. BARKER: Okay. I would offer Exhibit 28.

11   THE HEARING OFFICER: Any objection to the

12   admission of this document?

13   MR. RIGBY: No.

14   THE HEARING OFFICER: Based on no response, the

15   document marked as South Valley and Galena Exhibit 28

16   is received into evidence.

17   (SVGWD GGWD Exhibit 28 received.)

18   Q.   (BY MR. BARKER): So what does Exhibit 28

19   tell you about the condition of Magic Reservoir in 1937

20   when the -- which was one of the years that Mr. Luke

21   used as a comparable?

22   A.   1937, the reservoir didn't quite fill. As

23   I recall, the number was 174,000 acre-feet was

24   available in Magic in 1937.

25   Q.   So what would that mean for the

1 availability of water in the Little Wood in 1937?

2   A.   From our understanding, it would improve

3 the water supply in the reach from Gage 10 to Gage 54.

4   Q.   So if I'm comparing current years with

5 1937 -- well, first of all, in 2021 is there going to

6 be any water in Magic to get to Richfield?

7   A.   No. 2021 is much like 1931.

8   Q.   Okay. So '31 is a more comparable year in

9 that regard; right?

10   A.   In regard to storage in Magic, it is, yes.

11   Q.   Okay. So is the document that you prepared

12 that we've offered as Exhibit 42, is that intended to

13 be a demonstration of loss of supply?

14   A.   It's intended to be the difference between

15 water availability based on cut dates in the '30s and

16 2002.

17   Q.   And does this Exhibit 42 show injury, to

18 your understanding?

19   A.   No.

20   MR. BARKER: So I -- I've heard what you said,

21 Mr. Director. I'm going to re-offer Exhibit 42 at this

22 time.

23   THE HEARING OFFICER: And I will reiterate that

24 this will at least be viewed as an offer of proof. I

25 won't receive it into evidence at this time.

 1   MR. RIGBY: And we would continue to object.

 2   THE HEARING OFFICER: Noted.

 3   MR. BARKER: Okay. So since it's just an offer

 4 of proof, there won't be any cross-examination, I take

 5 it? At least that's the way a courtroom proceeding

 6 works.

 7   THE HEARING OFFICER: Mr. Fletcher?

 8   Mr. Rigby?

 9   MR. FLETCHER: Well, I would like a

10 clarification on that issue.

11   Usually with an offer of proof, the offer

12 of proof's made, and then a ruling is made on the

13 exhibit after the offer of proof. If this exhibit's

14 not going to be admitted, I will not cross on it.

15   MR. RIGBY: I agree. How can you still hold the

16 potential of it being accepted and not allow us to

17 cross-examine?

18   MR. FLETCHER: Unless you want us to

19 cross-examine as part of the offer of proof. But the

20 problem I have with this is being dropped -- I mean if

21 it was -- even if it had been to us yesterday when it

22 was prepared --

23   MR. BARKER: It was prepared last night, Kent.

24   MR. FLETCHER: Okay. It could have been sent to

25 us last night.

 1   MR. BARKER: It was given to you today.

 2   MR. FLETCHER: You keep interrupting me, Al.

 3   THE HEARING OFFICER: Let's go off the record.

 4   MR. FLETCHER: Why do you interrupt me when I'm

 5   making my point?

 6   THE HEARING OFFICER: I don't want all that on

 7   the record.

 8   (Recess.)

 9   THE HEARING OFFICER: Back on the record. So

10   we're back on the record.

11   And I stated that I will consider the

12   testimony of Mr. Shaw related to the document marked as

13   South Valley and Galena Exhibit No. 42. I will

14   consider all of that as an offer of proof, and at least

15   without some additional -- well, no, as an offer of

16   proof. I'm not allowing some particular exhibit into

17   the record.

18   Thank you.

19   MR. BARKER: I'm sorry. Mr. Director, I didn't

20   hear what you said, unless -- you said unless

21   something?

22   THE HEARING OFFICER: No, I retracted that.

23   MR. BARKER: Oh, okay.

24   THE HEARING OFFICER: I'm not allowing this into

25   evidence. But it is in the record as an offer of

1   proof.

2   MS. McHUGH: Mr. Director, this is Candice on

3   behalf of the City of Bellevue.

4   Just to clarify, the document isn't in and

5   testimony relating to the document and the document are

6   both offers of proof, or the oral testimony --

7   THE HEARING OFFICER: No, I think they're

8   both -- I think they're both a part of the offer of

9   proof.

10   MS. McHUGH: Okay. I just wanted to understand

11 what you were doing --

12   THE HEARING OFFICER: Yeah.

13   MS. McHUGH: -- with the oral testimony as well.

14   THE HEARING OFFICER: Yeah.

15   MS. McHUGH: Thank you.

16   THE HEARING OFFICER: More questions for

17 Mr. Shaw?

18   MS. O'LEARY: Mr. Director.

19   MR. BARKER: Oh, sorry. Go ahead.

20   MS. O'LEARY: I just had a couple.

21   THE HEARING OFFICER: So you're finished,

22 Mr. Barker?

23   MR. BARKER: Yes.

24   THE HEARING OFFICER: Okay. Ms. O'Leary.

25 ///

 1   DIRECT EXAMINATION

 2   BY MS. O'LEARY:

 3   Q.   Good afternoon, Mr. Shaw. I just have a

 4   few questions for you.

 5   To the best of your knowledge, does Tim

 6   Luke collect actual data? Does he go out in the field

 7   and collect data, or would he rely on somebody to

 8   provide him with data?

 9   MR. FLETCHER: I'm going to object. That's

10   beyond the scope of direct, based upon the Director's

11   ruling, as I understand it.

12   MR. BARKER: Wait a minute. I'm going to

13   object. This witness is appearing on behalf of both

14   South Valley and Galena. So Galena's entitled to do

15   direct examination, just like you guys both directly

16   did those witnesses.

17   THE HEARING OFFICER: Let me rule.

18   Objection overruled.

19   MR. FLETCHER: Yeah. Excuse me. I made that

20   objection thinking -- is this direct examination of the

21   witness?

22   MS. O'LEARY: Yes. I represent Galena Ground

23   Water District.

24   MR. FLETCHER: Okay. No, I understand. That's

25   fine.

1   MS. O'LEARY: Okay.

2   MR. FLETCHER: I have no objection to your

3   direct examination of the witness. I'm sorry.

4   THE HEARING OFFICER: Great. Thank you.

5   THE WITNESS: Could you restate the question?

6   THE HEARING OFFICER: Go ahead, Ms. O'Leary.

7   Q.   (BY MS. O'LEARY): Sure. Mr. Shaw, you

8   have a long tenure of experience in this field and with

9   the Department.

10   And based on your experience, would someone

11   in Mr. Luke's position go out into the field and

12   collect data, or would he rely on someone like the

13   watermaster to provide him with such information?

14   A.   I believe in Mr. Luke's case he does both.

15   He has gone out in the field and collected data, and

16   he's relied on others, including the watermaster.

17   Q.   Okay. So in your experience, it is

18   reasonable for him to use data provided to him by the

19   watermaster and not necessarily data that he computed

20   or collected himself?

21   A.   Yes.

22   Q.   Okay. And so if someone in this proceeding

23   was relying on data from Mr. Luke, that would mean that

24   such data may have come from the watermaster, not

25   necessarily calculations made by Mr. Luke?

 1   A.   You said "data" and then you said

 2   "calculations."

 3   So I need to clarify which you're talking

 4   about.

 5   Q.   Sure. Let's go with calculations

 6   provided -- if Mr. Luke was to provide someone in a

 7   proceeding such as this with certain calculations, is

 8   it reasonable to assume, based on your experience, that

 9   those were not computed by him, but they could have

10   been computed by the watermaster?

11   A.   I think as far as computations are

12   concerned, if Mr. Luke reported them as computations, I

13   believe they would be -- would have been made by him.

14   He may rely on water -- on data from others, including

15   the watermaster, to make the computations.

16   Q.   Okay. And if he relied on data that was

17   provided by other people that was inaccurate, then it

18   would be reasonable to assume that his calculations

19   would also be inaccurate; is that fair?

20   A.   That's fair.

21   MS. O'LEARY: Okay. Thank you.

22   THE HEARING OFFICER: Any other questions?

23   Group three?

24   Mr. O'Bannon, question.

25   MS. McHUGH: I think we do.

1   THE HEARING OFFICER: Mr. Bromley.

2   MR. BROMLEY: Just one question, Director.

3   Chris Bromley.

4   THE HEARING OFFICER: Yeah.

5

6   CROSS-EXAMINATION

7   BY MR. BROMLEY:

8   Q.   Mr. Shaw, what you were discussing with

9   counsel, was this just simply an alternative way of

10   looking at the ultimate question here, which is injury?

11   A.   I want to emphasize this was not an injury

12   analysis. It was a difference analysis to identify the

13   water supply differences over time.

14   Q.   And not an injury analysis, but a supply

15   analysis?

16   A.   Yes.

17   MR. BROMLEY: Okay. Thank you.

18   THE HEARING OFFICER: Thank you, Mr. Bromley.

19   Cross-examination, Mr. Fletcher?

20   MR. FLETCHER: I have no questions.

21   THE HEARING OFFICER: Mr. Rigby?

22   MR. RIGBY: No questions.

23   THE HEARING OFFICER: Okay. Ten after 5:00.

24   What do we want to do?

25   MR. THOMPSON: So we can go off the record.

 1   THE HEARING OFFICER: Do you want to go off the

 2   record?

 3   MR. THOMPSON: We could stay on.

 4   I guess I just have a question. Has the

 5   pumping data that Mr. Luke orally provided to

 6   Mr. Miller represented for 2019, 2020 been provided in

 7   written form? I guess the source of that data I'd like

 8   to know.

 9   There was a question earlier about Kevin

10   Lakey providing pumping data, Mr. Luke providing

11   pumping data. I just need to know where all of this

12   came from. I don't think we've been provided that by

13   the Department.

14   THE HEARING OFFICER: Let's go off the record.

15   (Discussion.)

16   THE HEARING OFFICER: We're on the record.

17   We're adjourned until tomorrow morning at

18   8:30.

19   Thank you.

20   (Hearing adjourned at 5:22 p.m.)

21   -oOo-

22

23

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  1                    REPORTER'S CERTIFICATE

  2          I, JEFF LaMAR, CSR No. 640, Certified Shorthand

  3    Reporter, certify:

  4          That the foregoing proceedings were taken before

  5    me at the time and place therein set forth, at which

  6    time the witness was put under oath by me.

  7          That the testimony and all objections made were

  8    recorded stenographically by me and transcribed by me

  9    or under my direction.

 10          That the foregoing is a true and correct record

 11    of all testimony given, to the best of my ability.

 12          I further certify that I am not a relative or

 13    employee of any attorney or party, nor am I financially

 14    interested in the action.

 15          IN WITNESS WHEREOF, I set my hand and seal this

 16    17th day of June, 2021.

 17

 18

 19

 20          _____

 21                    JEFF LaMAR, CSR NO. 640

 22                    Notary Public

 23                    Post Office Box 2636

 24                    Boise, Idaho 83701-2636

 25    My commission expires December 30, 2023
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