TEXAS WATER DEVELOPMENT BOARD HEARING

NOVEMBER 11, 2009 - 10:00 A.M.

AMARILLO, TEXAS

TESTIMONY FOR THE TEXAS WATER DEVELOPMENT BOARD HEARING was taken on the 11th day of November, 2009, from 10:00 a.m. to 2:13 p.m., before Janice Hoelting, CSR, in and for the State of Texas, reported by machine shorthand, at the offices of the Panhandle Regional Planning Commission, Amarillo, Texas.

APPEARANCES

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HEARING PROCEEDINGS - NOVEMBER 11, 2009

MR. REYNOLDS: We will now officially go on the record. And again for the record, my name is Joe Reynolds with the Texas Water Development Board and I call this hearing on Appeal of Desired Future Conditions Approved by Groundwater Management Area-1 to order.

Petitions were submitted by G&J Ranch, Inc. and by Mesa Water, LP under the provisions of Texas Water Code, Section 36.108(l), which states that a person with a legally defined interest in the groundwater in the Groundwater Management Area, a district in or adjacent to the Groundwater Management Area or a Regional Water Planning Group for a region in the Groundwater Management Area may file a petition with the Texas Water Development Board appealing the approval of the Desired Future Conditions established under that section.

The petition, the statute states, must provide evidence that the districts did not establish a reasonable Desired Future Condition of the groundwater resources in the Groundwater Management Area. 31 Texas Administrative Code, Section 356.44, a section of the board's rules requires that at least one hearing on the petition take place in a central location in the Groundwater Management Area. Notice for such a hearing

was provided to the Petitioners and the Respondents on October 16, 2009, and this hearing today is in fulfillment of those legal requirements.

On Monday, November 9th, the Water Development Board received the brief of the Petitioners, and on that same day we received a letter from the Respondents regarding that briefing. I have read the letter and I have looked at the brief, but have not had an opportunity to make a determination in response to the questions raised in that letter. However, I will do so and will have a response to Petitioners and Respondents by the first of the week so you will have plenty of time to deal with my response.

I think that is all that I have at the moment; therefore, I am going to turn this first hour and a half in the schedule over to the Petitioners for the presentation of their evidence.

Mr. Jones.

MR. JONES: Mr. Harden.

For the record, my name is Marty Jones. I'm with the Sprouse law firm here in Amarillo. I represent G&J Ranch, Inc. and Mesa Water, LP. G&J Ranch Inc. is represented here today by George Arrington; and Mesa Water, LP is represented here today by its vice president, Steve Stevens.

For the record, we have tendered exhibits previously to all of the parties and to the TWDB staff, and we tendered another four USB flash drives this morning of exhibits that we will be relying upon as part of our presentation. And for the record, we will not be tendering any paper copies of those exhibits unless the Board specifically requests that we do so, at which point we'll be happy to print them out. But we frankly didn't want to do that because of the amount of paper it would take.

That said, we will support our petitions with testimony of three people today; the first will be Bob Harden, a hydrologist of Austin; the second will be George Arrington; and the third will be Steve Stevens.

And let me say for the record that I -- I think our exhibits and the transcript of the testimony of -- sworn testimony of Mr. Harden adequately cover his qualifications. I believe the TWDB staff is fully familiar with Mr. Harden and his qualifications and I'm going to forego a lengthy description of his education and all of the experience in the Ogallala aquifer up here in the Panhandle and pretty much skip directly to his testimony.

I think this is supposed to be sworn testimony and so I'd ask the court reporter to put Mr.

Harden under oath.

(Whereupon the witness was duly sworn.)

PETITIONERS' CASE

BOB HARDEN,

having been first duly sworn, testified as follows:

EXAMINATION

BY MR. JONES:

Q. And for the record, you are Bob Harden?

A. Yes, I am.

Q. From Austin?

A. Yes, I live in Austin.

Q. And what is your occupation or profession?

A. I'm a professional engineer that specializes in groundwater hydrology.

Q. And for the record, you represent Mesa Water, LP and G&J Ranch, Inc?

A. Yes, I do, through my firm R.W. Harden and Associates.

Q. And have done work for both of them and many others in the Texas Panhandle?

A. Yes, I have.

Q. As part of that work, have you become familiar with the GMA-1 Desired Future Condition process?

A. Sure. I attended the first GMA-1 meetings about -- several years ago and attended many district

meetings over the course of the past couple of years where DFCs were discussed and have been involved at every stage of the process.

Q. Let me show you Exhibit 1 and can you just briefly describe to us what that is.

A. This shows the extents of GMA-1, the dark black outline. The blue area is the Ogallala -- extents of the Ogallala aquifer. And then we have the four groundwater district boundaries that are part of GMA-1.

Q. It appears to me that we caught just a little piece of High Plains in GMA-1?

A. That's correct.

Q. And of course the rest of High Plains is in another GMA altogether?

A. GMA-2.

Q. All right. Let me show you Exhibit 3. Tell us what that represents.

A. This is dividing the Ogallala into two compartments, a northern compartment north of the Canadian River and a southern compartment south of the Canadian River. We can call these aquifer subdivisions based on the characteristics of aquifer flow that exist naturally.

Q. Now, you have been familiar with the Texas Water Code all during your career as a hydrologist; is

that correct?

A. Yes, I have.

Q. And under the Texas Water Code definitions in Chapter 36, is there a definition for "aquifer" and "subdivision of aquifer"?

A. No. There's a definition of "reservoir".

Q. "Reservoir" and "subdivision of reservoir"?

A. "Subdivision of reservoir".

Q. Those definitions, "reservoir" and "subdivision of reservoir," do they correspond to what we would call aquifers and subdivisions of aquifers?

A. Yes, they do. The words are used interchangeably.

Q. All right. So the area that is depicted in green there would actually be a separate subdivision of a reservoir, but we'll refer to it as subdivision of the Ogallala aquifer.

A. That would be fine.

Q. And the area that appears to be in purple would be a southern subdivision of the reservoir that we know as the Ogallala aquifer.

A. That would be correct.

Q. And we'll, again, refer to that as subdivision of an aquifer for these purposes, correct?

A. Sure.

Q. All right. Let me show you Exhibit 4 and let you tell me what that represents.

A. Exhibit 4, these black lines are the -- what we call flow lines of the aquifer. They are drawn by looking at the water table elevation map, the contours specifically of the water table elevation and drawing lines on those contours of the water table elevation perpendicular to the contours. It's a common thing that groundwater hydrologists do to draw flow lines of an aquifer. These are the flow lines that depict the northern portion of the Ogallala from the southern aquifer subdivision here in GMA-1.

Q. All right. So is it fair to say that in the -- that this depicts how water will actually -- or does actually flow in the aquifer today?

A. This depicts how water flows on a regional basis in the aquifer today and historically.

Q. Let me show you Exhibit 5. And what does that depict?

A. That shows the three DFC areas that were adopted by GMA-1 and the percent remaining availabil -- avilabail -- avilaba -- availability criteria that applies to those three areas.

Q. Now, with respect to the area that's 40 percent, what does -- specifically what does that

represent?

A. That means 40 percent of the water is to be remaining in 50 years in that zone, and 50 percent of the water is to be remaining in 50 years throughout the majority of GMA-1, and 80 percent of the water is to be -- to be remaining in this other zone.

Q. All right. Now, are you familiar with the provisions in the Texas Water Code that have to do with the establishment of Desired Future Conditions?

A. Yes, I am. That's Chapter 36.108.

Q. And are these the provisions of 108(d)?

A. Yes, they are.

Q. Under the legislative directives for establishing Desired Future Conditions, as we understand it, the districts may establish different Desired Future Conditions for each aquifer, subdivision of an aquifer or geologic strata located within a -- a Groundwater Management Area; is that correct?

A. Yes, they may.

Q. Now, with respect to geologic strata -- we -- we've talked about aquifer and subdivision of an aquifer. What does "geologic strata" mean?

A. Geologic strata is -- is commonly used when, let's say, we have the Trinity aquifer or the Carrizo-Wilcox aquifer, where we have multiple

independent zones within a major aquifer.

In the Carrizo-Wilcox, we have the Hooper, the Simsboro, the Calvert Bluff, the Carrizo, so that's how the term "geologic strata" is applied typically.

Q. Do we have geologic strata that exist in the northern or southern subdivisions of the Ogallala aquifer in GMA-1?

A. Not for purposes of establishing a DFC.

Q. All right. Now, do you have an opinion, based on your education and experience as a hydrologist, whether the DFCs or Desired -- Desired Future Conditions established by the four districts of GMA-1 were based on an aquifer?

A. I do have an opinion and I believe they were not.

Q. All right. And were they based on a subdivision of an aquifer?

A. No, they were not.

Q. Were they based on geologic strata?

A. No.

Q. Let me show you Exhibit 12. What does that represent?

A. It's a map of the saturated thickness that is -- this data comes from the TWDB GAM. It's a map of saturated thickness in the GAM model.

Q. Now, let me back up. A "GAM" is what?
A. It's a Groundwater Availability Model. The Texas Water Development Board has a GAM program where they've developed computer models of all the major and I think most or all of the minor aquifers in the state now.
Q. All right. And it's my understanding that in -- in doing their duty to establish Desired Future Conditions, the four districts relied on TWDB GAM runs; is that correct?
A. Yes, that's correct.
Q. And a -- a specific GAM run, correct?
A. In the end, they adopted a specific GAM run as the basis of the Managed Available Groundwater calculations for the specified DFCs.
Q. And you have looked at that GAM run?
A. Yes, I have.
Q. And have you relied on that GAM run in all of the opinions that you're going to be talking about here this morning?
A. I have, as well, yes.
Q. All right. Accepted the conclusions in that GAM run for these purposes?
A. That's correct, the results of that GAM run formed the basis of some of my opinions.

Q. All right. Now, going back to Exhibit 12, this is a saturated thickness map of the Ogallala?

A. That's correct.

Q. If you were going to draw a line to establish different Desired Future Conditions in the Ogallala aquifer in GMA-1, based on this map where would you draw those lines?

A. It would be difficult to use saturated thickness as a basis for identifying proper management areas up here, so I would not be able to do it based on saturated thickness.

Q. Let me show you Exhibit 13. What does that show us?

A. It shows the three DFC areas superimposed on the map of saturated thickness.

Q. Now, based on the saturated thickness map, is there any rhyme or reason that you're able to discern, based -- based on your experience as a hydrologist, for drawing these specific boxes where these are drawn?

A. No, I could not use the saturated thickness map as a basis for drawing these three DFC management areas.

Q. Have you examined other common hydrologic features of the aquifer in GMA-1 in -- in your work?

A. Yes. I've looked at specific yield, depth to Red Bed, depth to water, water quality, hydraulic

conductivity.

And any of those other aquifer -- native aquifer characteristics, you come to the same conclusion where those native aquifer characteristics don't differ in a nice enough way for you to use them to be a basis for determining different aquifer subdivisions, so the -- you would not be able to use them to -- as well, to differentiate these three DFC areas.

Q. I want to be very specific here about one thing. If you're standing on that line that's drawn there between the 40-percent DFC and the 50-percent DFC, is there anything, hydrologically speaking, that's going to keep water from flowing from one side of that line to the other?

A. There is nothing that would keep water from flowing between these DFC areas.

Q. And can you explain to us real briefly what the principle of continuity is?

A. "Continuity" means it's -- to give you a -- it's a hydrologic principle when you do a mass balance, you've got ins and outs of a system, and it's like your checkbook. If you want to balance your checkbook, you've got to add up your deposits and withdrawals. And continuity requires you to contain the balance of your checkbook.

So here we have -- you know, the continuity of the 40-percent area would include the water flowing into the 40-percent area and the water flowing out of the 40-percent area.

Q. And to be certain, water will flow in and out of that area from the 50-percent area?

A. It will flow both into the 40-percent area and out of the 40-percent area. There will be an interchange of flows.

Q. And the same would be true with respect to the 80-percent area?

A. That's correct.

Q. And so if you're pumping water on -- on the west side of the 80-percent box, you'll be drawing water from that box?

A. You'll be drawing water from the 80-percent box. And if there's not offsetting pumpage in the 50-percent box, you'll be drawing water from the 50-percent area.

Q. Because there's nothing, hydrologically speaking, in the aquifer that will stop the water from flowing on one side of that box to the other?

A. That's correct. You're getting real close to the words "rule of capture".

Q. All right. We would like to avoid those words

today -- looking at the -- only because we don't want to introduce a lot of legal arguments.

MR. REYNOLDS: Thank you.

Q. By Mr. Jones) Looking at the -- the DFCs that are drawn here, is it your opinion as a hydrologist that those are based on any scientific, hydrological principles at all?

A. Yeah, I do have opinion and I believe they are not.

Q. Now, going back to 36.108(d), if it's not based on an aquifer, a subdivision of an aquifer, or a geologic strata, what does that leave us?

A. It leaves us with Item 2 which is "geographic area".

Q. Is "geographic area" defined in the Water Code?

A. No, it is not.

Q. You've read, of course, the -- the provisions of 108 relating to geographic area, correct?

A. Yes, I have.

Q. Is there any mention in 36.108(d) of political subdivision being a basis for a geologic area -- or geographic area?

A. No, there's no basis.

Q. Is the term "political subdivision" in fact defined in Chapter 36 of the Water Code?

A. Yes, it is.
Q. And so the legislature apparently knew the definition of "political subdivision" when it wrote 36.108(d)?
A. Yes, I would believe they did and I don't see "political subdivision" expressly listed as a basis for identifying DFCs.
Q. In other words, you can't -- based on the statute and based on what I'll represent are common statutory construction principles, if the word "political subdivision" does not appear there specifically, you can't use a political subdivision as a basis for having different Desired Future Conditions?
A. That's correct.
Q. All right. Now, have you examined the term "geographic area" as it apparently is interpreted by these four districts?
A. Yes, I have.
Q. And in Resolution 2009-01 which establishes these Desired Future Conditions, they refer to an extreme diversity of conditions -- uses and conditions of the aquifer in different areas of GMA-1, correct?
A. Yes, that's listed.
Q. They refer to substantial differences in the uses of water in various areas of GMA-1?

A. Yes, they do.
Q. And I assume that -- that they would refer to different areas topographically, surface features and the like?
A. Sure.
Q. Have you examined and are you familiar with the uses of Ogallala water in GMA-1?
A. Yes, I've reviewed that and I am aware of it.
Q. Let me just run through some of them with you. Exhibit 22 tells us -- represents what?
A. This is a map of irrigation wells that are distributed throughout GMA-1.
Q. And so this would be agricultural use?
A. This would be one form of agricultural use, yes.
Q. If you were to take a pen and draw a line there to establish different Desired Future Conditions based on irrigation use alone, where would you draw the line, Mr. Harden?
A. I would draw the line around GMA-1 to contain the whole area.
Q. Why?
A. Because of the extents of GMA-1 irrigation wells, and the effect of those wells when you pump them, and how it reaches out radially large distances from

each of the wells.

Q. This is Exhibit 23. What does it show us?

A. It shows us the three DFC areas superimposed over the irrigation -- distribution of irrigation use.

Q. Again looking at the box that says "40 percent" and the line on the east side of that box next to the one that says "50 percent", is there anything about irrigation use -- any extreme difference in irrigation use in that area that would cause you to draw a line there and establish a different Desired Future Condition?

A. No, there's not.

Q. Is there anything in the four counties in the -- in the northwest area of the Texas Panhandle that is unique in terms of its irrigation use other than just quantum.

A. No. The same type of irrigation use exists -- exists over there as does in most all of the GMA-1 counties.

Q. Let me show you Exhibit 24. What does that show us?

A. It shows you a map of -- we've put -- put all the wells that have -- exist per se -- a representation of all the wells in GMA-1 and a -- for each of these wells, we've identified what we call radius of

influence.

A well, when it pumps, creates a cone of depression around the well that radially expands outward. Depending on the age of the well, the size of the well and the other factors, it goes out different distances.

If you look closely here, some of the wells have very little circles around them, some of the wells have much bigger circles, and this is just a composite of all of the cones of depression or radius of influence of wells as we've estimated them in GMA-1.

Q. And Exhibit 25 shows us -- I'm sorry, let me go to 26. Exhibit 26 shows us what?

A. The three DFC areas superimposed on the regional map of radius of influence.

Q. So based on actual withdrawals from the Ogallala aquifer, is there any basis for drawing these boxes where they're drawn?

A. No. These -- these radius of influences show how water will be drained from one DFC area by pumpage outside of that DFC area.

Q. Let me show you Exhibit 43 which relates to municipal well use; is that correct?

A. That's correct.

Q. The location of municipal wells in GMA-1?

A. That's correct.
Q. And Exhibit 44 shows us what?
A. It shows the three DFC areas superimposed over the distribution of municipal use.
Q. Based on municipal supply wells or municipal use, is there any reason that you would draw these boxes where they're drawn?
A. No, I would not draw the DFC areas based off of differences in municipal use.
Q. This is Exhibit 45 which shows industrial use, correct?
A. Yes, these are the -- the map of the distribution of industrial wells.
Q. Based on?
A. These -- all of these well maps are based off of Groundwater District databases that they supplied and the TWDB database in the far southwest corner of this map.
Q. Exhibit 46 shows us what?
A. The distribution of industrial use relative to the three DFC areas.
Q. Is there anything about the distribution of industrial use wells in GMA-1 that would cause you as a hydrologist to draw these boxes where they're drawn?
A. No, there is not.

Q. Let me show you Exhibit 48. What does that show us?

A. This is a map of livestock wells that's in those databases that shows a distribution of windmills and other stock wells.

Q. And this is Exhibit 49. What does it show us?

A. The DF -- three DFC areas distribution -- shown with the distribution of stock use.

Q. Now, is there anything in the distribution of stock wells in GMA-1 that would cause you as a hydrologist to draw these lines where they're drawn?

A. No, there is not.

Q. Are there other uses other than agricultural, municipal, industrial or livestock in GMA-1?

A. There are other minor uses. I guess the TWDB refers to some by saying medical use or this or that, but none of them are widespread or none of them form any distribution that would cause you to want to draw these three DFC areas based on those uses.

Q. I guess there's oil and gas use, but it's outside the purview of -- of the regulation of groundwater districts; is that correct?

A. So far.

Q. All right. We have heard a claim from one of the districts that the DFC of 80 percent was -- was

designed to protect stream flows. Is -- is that something that you would find to be a good basis for these DFCs?

A. I think that protection of stream flows is a basis for assigning DFCs.

Q. All right. Let me show you Exhibit 78. What does that show us?

A. This shows us a map of springs' locations as depicted on United States Geological Survey seven and a half minute topographic maps.

Q. All right. Are there -- is it accurate to say that there are spring locations in every part of GMA-1?

A. Maybe not quite that extensive, but I think they're certainly distributed throughout a -- a broad part of GMA-1. They're mostly confined to the contact between the Permian and the Ogallala. The Permian is the underlying formation of the Ogallala. Where the Ogallala has been eroded down to that base, we find lots of spring flows at that contact point. There's other springs that are distributed wherever the water table intersects ground level.

Q. Do you have clients in the Texas Panhandle, folks that you have represented in the past, who have springs on their land?

A. Yes, I have, and have worked with them in

estimating impacts to their springs.

Q. All right. Is that -- would that include, let's say, Hartley County?

A. Yes, we've had one client, J&J Ranch, who is interested in the spring flows on their property.

Q. Are those folks in Hartley County, in your opinion, any less interested in their spring flows than the folks on the east side of the county -- of the Panhandle?

A. I think any landowner in GMA-1 who has spring flows on his property is interested equally in protecting them.

Q. This is Exhibit 79. What does it show us?

A. The three DFC areas superimposed over the spring flow locations.

Q. Do the DFCs that were established by the districts in GMA-1 offer equal protection for the spring flows in GMA-1?

A. No, they do not.

Q. In fact, do they offer radically different protections for those spring flows?

A. They do offer different protections, sure.

Q. Is there any rational basis for drawing these boxes where these are drawn based on spring flows alone?

A. No, there is not.

Q. Let me show you Exhibit 15. What is this?
A. This is a map showing natural regional recharge and natural discharge characteristics as the GAM model models them. The light cyan going to blue is recharge, that's inches per year; and then the red area is natural discharge, stream flow, spring flow, that type of thing, and it shows the distribution of discharge today in the GAM model that the GAM model represents.
Q. And Exhibit 16 shows us what?
A. The three DFC areas superimposed over this regional dis -- regional recharge/discharge map.
Q. And Exhibit 17?
A. Shows the flow lines that you get from the water table elevation map. These flow lines are basically the conduits of recharge to discharge.
Q. Now, is there any basis -- based on the hydrological features that contribute to spring flow, is there any basis for drawing these boxes -- these DFC boxes where they're drawn?
A. No, there is not.
Q. Is it accurate to say if you really wanted to protect spring flows in the 80-percent area, that you would need to move the 80-percent box further west?
A. Probably further west, south and north. You would need to contain the -- anytime you're looking at

spring flows, you've got to look at, well, where is the regional recharge source to those spring flows and you want to draw a boundary around the regional recharge that maps to the natural discharge location.

Q. And so if the 80-percent area is based on a desire to protect stream flows, in your opinion is it adequate to do so?

A. No, it is not. It's not a proper management area of this aquifer.

Q. And what is a proper management area of this aquifer?

A. Historically, proper management areas have been utilized by the State of Texas as aquifer subdivisions. Aquifer subdivisions in the -- throughout the fifties and sixties, and probably maybe earlier, were the basis for forming groundwater districts. And historically, aquifer subdivisions have always been honored when we start talking about proper management areas.

Q. Do these DFCs in any way honor those principles?

A. No, they don't. As we said, they don't appear to conform to 36.108(d)(1). They appear to only be geographic areas of some sort.

Q. All right. So we've looked at various uses, agricultural, industrial, municipal, livestock and

spring flow. Any of those uses justify a different geographic area for these DFCs?

A. No, they -- they do not conform to the distribution of those uses or to the characteristic of those uses, don't map or conform to these three DFC areas.

Q. In looking at Exhibit 72, can you tell us what this is?

A. It's a map of GMA-1 with the Ogallala again in a map showing the county boundaries in GMA-1.

Q. So none of the other maps we've looked at so far have shown any county boundaries; is that correct?

A. That's correct.

Q. Exhibit 73 shows us what?

A. The three DFC areas that GMA-1 adopted on top of the county map.

Q. Is it your opinion that the DFCs were adopted based on county lines?

A. Yes, that's my professional opinion.

Q. Which would be political subdivisions?

A. That's correct.

Q. Now, if you were going to go in -- if you -- if you did not have the county lines on this map and you were trying to draw these DFCs, what are the odds that you could draw them exactly on these county lines based

on hydrological features or use features?

A. Impossible.

Q. In fact, you could draw a million such lines and they would all miss the county line, wouldn't they?

A. Many more times than a million.

Q. Are you familiar with the factors that are supposed to be considered by the TWDB under its internal rules with respect to determining the reasonableness of DFCs?

A. Yes, they have, I believe, six or seven items that they are to -- to review to assess reasonableness.

Q. The first factor is whether these DFCs are physically possible. And I note in the response from Hemphill County Underground Water Conservation District, that they point out in some respect that you have opined in your affidavit supporting our petitions that the DFCs might not be physical -- physically possible.

Do you have an opinion on that?

A. I think that the MAG calculations that predict 40-percent water remaining in the four western counties are physically impossible in that the MAG calculations and the model run shows I think it's 62 percent of Dallam County to be totally dry. And it is physically impossible to drain an aquifer, Dallam County, 62 percent dry. It would be financially prohibitive and

also the North Plains Groundwater District has certain rules about number of wells that are allowed. And both the financial aspects and the rules aspects would prevent 62 percent of Dallam County from being drained totally dry.

So I'm not sure how that works out in the 40-percent calculation because I haven't tried to recalculate it a different way, but that aspect of it is physically impossible.

I'd also say that if we look at the DFCs and the basis of the DFCs being these three subareas of aquifer subdivisions, the DFCs are physically improbable in that the 50-percent area requires water from the 80-percent area to drain to it to be part of the Managed Available Groundwater.

Let's say in Roberts County, Managed Available Groundwater reported for Roberts County must come from Hemphill County, and that amount of flow that will occur in the future is -- as Mr. Donnelly states in his affidavit, is dependent upon what future pumpage occurs out there which we don't know. It's impossible to predict.

Yet for the DFCs to be physically possible, the precise amount of flow must occur, so I don't think in the future they're going to be physically probable to

occur. I think it's physically improbable that these DFCs are --

Q. And just to be crystal clear, I think what I heard you say a moment ago was that the 50-percent MAG, or Managed Available Groundwater, number and the GAM run on which these districts rely in passing this resolution, that 50 percent relies in some part on a reality that water will be drained from Hemphill County?

A. That is correct. It's documented in the GAM run that forms the basis of the calculation of the MAG and supports the finding that the DFCs are -- are there.

Q. The second factor that is to be considered is socio-economic impacts. Have -- have we seen much quantification or discussion of those in this process?

A. No, I haven't seen much presented by GMA-1. I mean, I'm sure they considered it back in their office to some degree. I mean, there's large amounts of ongoing socio-economic issues up there, but I haven't seen any.

Q. And what I'm -- what I'm differentiating between here is, is discussion of socio-economic impacts that might occur and a quantification of those impacts. Have you seen any quantification of those impacts?

A. No, I've not seen any quantification.

Q. The third factor to be considered is potential

environmental impacts of the DFCs. Have you considered those?

A. Sure.

Q. And at, I think, Paragraph 25 of the G&J Ranch, Inc. petition, Mr. Arrington specifically refers to spring flows as being a basis for the DFCs and -- and complaining about that particular aspect.

And again we've looked at spring flows in GMA-1; is that correct?

A. Correct.

Q. And I believe this is actually Exhibit 78. Exhibit 79 will show us the existence of springs with an overlay of the DFCs; is that right?

A. That's correct.

Q. Are springs located in many areas of GMA-1 that don't enjoy the 80-percent protection?

A. Yes, there's springs in the 40-percent area and the 50-percent area.

Q. And I think we discussed a moment ago that it's your opinion that the 80-percent DFC box, in and of itself, will not adequately protect spring flows inside that box?

A. That's correct.

Q. Because of the hydrological realities of where that water comes from?

A. It's -- it's kind of a piecemeal approach to try to protect spring flows in Hemphill County by only managing Hemphill County.

Q. Now, with respect to the 40-percent area, what protection is offered for the environmental issue of spring flows there?

A. The protection that is provided is that 40 percent of the water is to be remaining in 50 years.

Q. And is that going to adequately protect spring flows in the same respect as the 80-percent box is intended to on the other side of the GMA?

A. No, there would be a -- a different level of protection afforded in those two different areas.

Q. The fourth policy factor -- or the fourth factor to be considered by the TWDB is policy and legislative directives, and I believe that the two petitions both indicate they believe that the DFCs do not meet the policy directives of joint planning.

Do you have an opinion on that issue?

A. Yes, I do. I -- I do believe that GMA-1, while it's a -- a challenging job and this is the first time everyone is trying to do it, I still believe that GMA-1 has not jointly planned. We've kind of compartmentalized and politically segmentized aquifers.

And the requirements of law, the requirements

of Chapter 36, the requirements of landowners mandate that we -- and the requirements of State water planning require that we do something a little more advanced or developed or just -- we just do a better job than this.

Q. We've already seen that in terms of -- of legislative directives, the legislation refers to aquifers, subdivisions of aquifers, geologic strata and we've ruled out those as a basis for these DFCs.

And then we looked at geographic area, we looked at it in terms of distribution of ag -- agricultural wells, industrial wells, municipal wells livestock wells, and springs, all the major uses.

Can we also look at topography and see if there's such extensive differences that might justify these different DFCs?

A. Well, we can look back on the map on the back wall there and see the regional drainages and plateaus that exist in GMA-1, and they are distributed in just about every county up here, different types of drainages, different types of plateaus, so --

Q. Different topographies?

A. The different topographies.

Q. And the question is: Are they uniquely distributed in such a way as would justify these DFCs?

A. No, they are not.

Q. Let me show you Exhibit 28 which is an aerial view of an area in GMA-1. Can you tell me what county that is?

A. No, I cannot.

Q. Why can't you?

A. Because there's many areas of GMA-1 that have center pivot irrigation.

Q. I'll represent to you that's -- that's Ochiltree County. Are there other areas in GMA-1 -- now Ochiltree County would be in a 50-percent DFC; is that correct?

A. Yes, it is.

Q. Is there anything that -- in that topography, in that pattern of sprinklers that differentiates it from, let's say, Dallam County?

A. I would not believe so, no.

Q. This is Exhibit 33. Again, the question is: Can you tell us, based on just topography, where this is?

A. I cannot, no.

Q. Exhibit 33-A will tell us that that's Hartley County.

Exhibit 39, I'll represent to you is an area along the Sherman County-Hansford County line. Could you take a pencil and draw a line that would

differentiate one DFC from another based on topography or pattern of use?

A. Not with a rational basis.

Q. And let me show you Exhibit 40 which shows us where the county line actually exists. Any rational basis for drawing that line there and making a difference of 40 to 50 percent?

A. No, I do not believe there is.

Q. Exhibit 41 is an area in GMA-1. Based on what you're seeing there, can you tell us exactly where that is?

A. No, I cannot.

Q. Is there -- and let me show you Exhibit 42 which will tell us it's in Dallam County. Are there areas of Dallam County that are not irrigated heavily?

A. Of course there are.

Q. If you were going to draw a different DFC within Dallam County itself, could you do that?

A. If you wanted to utilize some sort of geographic-area basis, I guess you could.

Q. Drawing a line east to west somewhere?

A. We might segregate out the pumpage from the -- on the southern half of the county from, say, the northern half of the county.

Q. Is it accurate to say that there's heavy

pumpage in the southern half of Dallam County as compared to the northern half?

A. Yes, there's a lot more intensity of use in the southern half than the northern half.

Q. Based on aquifer characteristics, would you actually draw a different DFC within the county based on the pumpage alone?

A. I wouldn't, considering existing use and the potential for future use.

Q. Let me show you Exhibit 52 which is a depiction of ranchland somewhere in GMA-1. Do you find similar ranchland distributed uniformly across all of GMA-1?

A. Yes, you do.

Q. Let me show you Exhibit 52-A that shows us that the ranchland in question is in Dallam County. Again, could that be in Ochiltree or Lipscomb or Hemphill,

A. Yes, or any of the other counties of GMA-1.

Q. Exhibit 58, again ranchland somewhere in GMA-1. Without a clue, could you tell us where it is?

A. No, I couldn't.

Q. Exhibit 58-A shows us that that's in fact in Hartley County.

Exhibit 63 is a depiction of land somewhere along the Hemphill-Wheeler County line which would be a county line where, on one side, you get a 50-percent DFC

and on the other you get an 80.

Can you tell us, based on this photograph, where that line can be drawn?

A. No, I cannot.

Q. Exhibit 64 shows us the county line, 80 percent on one side and 50 on the other. Any rational basis for drawing that line and making that distinction in this area?

A. Not based on topography, no.

Q. Exhibit 65 is the Roberts-Hemphill County line. Again, can you even tell us where the line should be drawn?

A. It all looks the same to me, so I would not draw a line through here.

Q. Exhibit 66 shows us that county line with Roberts at a 50-percent DFC on one side and Hemphill with an 80 on the other. Are there in fact some ranches that are divided by that line?

A. Yes, there are.

Q. Is there any rational basis for making that distinction along that line?

A. Not based on topography, no.

Q. Exhibit 67 shows us somewhere along the Hemphill-Lipscomb County line. Can you tell us, based on that photograph, where the line should be drawn?

A. No, you can't.

Q. And Exhibit 68 shows us the line, Lipscomb County with a 50-percent DFC on one side and Hemphill with an 80 on the other. Again, any rational basis for drawing the line where it is drawn?

A. No, I do not have that.

Q. Do you conclude that the lines are drawn strictly based on the political subdivision of either the county or the existence of a groundwater district in that area?

A. I believe that's the basis for drawing the three DFC areas that were drawn, yes.

Q. The fifth factor is impact on private property rights; is that correct?

A. Yes, it is.

Q. Will these DFCs impact private property rights?

A. They already have. And, yes, they will in the future.

Q. And how have they already impacted private property rights?

A. Well, I believe there has been -- I'll let George Arrington speak to this more, but -- and Steve Stevens. There has been offers made for water rights that excluded certain areas based off of regulatory concerns. The -- already the planning of water will be

affected by the perception of groundwater availability that these different DFCs provide, and so I'll just say it's already -- it's already occurring.

Q. You're familiar with the water market in the state of Texas?

A. Sure. I've been involved with lots of water rights transfers in -- in Texas, and especially up here in the Panhandle.

Q. Would people who are looking for reliable, long-term water supplies want to purchase water in the 80-percent DFC area?

A. If we're looking at just the regulatory concerns that these DFC areas will provide, then typically a buyer of larger amounts of water would desire larger amounts for any kind of industry, so forth, will avoid the 80-percent area to -- to go to more of the 50-percent area, say, in adjoining counties.

Q. And we've already seen Exhibit 12, the saturated thickness. It appears that this 80-percent area enjoys some of the greatest saturated thickness in the Panhandle?

A. Yes, the -- the 40 percent, 50 percent and 80-percent areas all have similar groundwater availability criteria or characteristics.

Q. And so what you're telling us is that based on

the designation of that area as 80-percent DFC, purchasers wouldn't be interested in that water?

A. There will be a regulatory burden that's greater over there than there would be in the 50-percent area.

Q. Let me show you Exhibit 88-A, a letter from Kent Satterwhite to Mesa Water. He says "Inc.", but it's "LP". Are you familiar with this letter?

A. Yes, I am.

Q. The date is February 17 of this very year, correct?

A. Yes, it is.

Q. And the middle paragraph of that letter says, "During our meeting, you asked what rights we were interested in," meaning water rights, "and I stated I assumed it was all-or-nothing type deal. You confirmed that was your preference. After giving that more thought, it appears to me that your holdings in Hemphill and Lipscomb Counties could be more of an liability to CRMWA than an asset. The rules the Hemphill County Groundwater Conservation District is leaning toward will surely cause litigation for anyone wanting to develop water there."

And so he turns them down on Hemphill, correct?

A. That is correct, he did not want to purchase

the water rights in Hemphill County that Mesa owned.

Q. And the last sentence there says, "By leaving that area out of our deal, CRMWA is able to offer a higher price for the balance of your holdings," meaning that the area in Hemphill County apparently is an impediment to value rather than an increase in value, correct?

A. Yes, that would be a way to interpret that sentence.

Q. Let me show you Exhibit 83. Can you tell us what that depicts?

A. It's a graphical depiction of the three DFC areas and the percent water available in blue and the percent water unavailable in red, it's the amount of water to be left. So we've got the three DFC areas here that are shown.

Q. All right. Does this indicate a difference in future availability of this water for -- for use?

A. Sure. That 60 percent is three times 20 percent and 50 percent is 2 1/2 times 20 percent.

Q. So if you're out in the market looking for municipal water supplies, as an example, where would you be most likely to look?

A. Just looking at using DFC criteria alone, I'd look in the 60 percent or 50 percent availability.

Q. And would you ever look in the 20 percent availability?

A. Would be the last place I would look.

Q. Now, that has to do with present value of groundwater rights. Do we also have an issue with drainage?

A. Sure.

Q. And does that impact private property rights?

A. It dramatically impacts private property rights. The delineation of subareas of aquifer subdivisions and then assigning different DFC criteria, in this case depletion, to those subareas inherently causes groundwater to flow from one subarea to another.

And therefore, in the case of Wheeler, Roberts or Lipscomb Counties, managed available groundwater reported for those counties is actually physically located in Hemphill County today and the groundwater GAM model plans for it to move across the county boundary out of one DFC area into another.

Q. And so the GAM model -- the GAM run upon which this resolution was based actually contemplates water moving out of Hemphill County and to the adjoining counties?

A. It predicts it and the MAG calculations require it.

Q. Exhibit 77-B tells us what?

A. It's a depiction of what happens when you try to stack up 80-percent water next to 50-percent water. Water flows downhill, and in this case that's what happens, so water would flow from Hemphill County to the three adjoining counties.

We also have a small case of this in Moore and Hutchinson County, as well, where groundwater -- managed available groundwater in one county in one DFC area is being relied on by drainage from an adjoining DFC area in an adjoining county.

And again in this -- we can't get out of this problem. If we're going to use subareas of aquifer subdivisions and apply different DFCs for groundwater availability or different depletion values to them, that -- we're going to get into this problem every time in every aquifer across every part of our state.

Q. It's kind of like trying to divide the water in a water glass between one side and the other, isn't it? It's just going to flow?

A. Yes, it is. And it's -- again, I just want to go back to why, historically, aquifer subdivisions have always been relied upon to delineate the proper management areas of aquifers.

Q. Let me show you Exhibit 80. What does that

show us?

A. It shows us a -- kind of a zoom-in of Roberts and Hemphill and these surrounding counties. We have the water table elevation contours on there. This is a map from the GAM, say, 2000 current -- current present time. It shows the blue arrows which are showing the direction of flow that presently is projected by the GAM.

Q. And Exhibit 81?

A. It's the results of the GAM run that Resolution 2009-01 is based on. Again, we have the water level contours. I believe it's 2055 or 50 years, if you will. And we've got a different -- different flow arrows here now and it shows how water from Hemphill County is projected to flow into the adjoining counties.

Q. And so if we continue with these specific designated Desired Future Condition areas and if the districts pass rules, as they are legally obligated to do to achieve these DFCs, this is the result over 50 years?

A. That is correct. They are -- the districts are required by 36.108 to pass rules to achieve these DFCs. And so, in essence, the districts and the state are -- if you want to use the word "enforcing" that this drainage is to occur.

Q. Exhibit 90 shows us what?

A. It shows a cross section through southwest Hemphill County and also going into Roberts County and Lipscomb County. We have water table elevation on the far left side. The blue line is present conditions, 2005, that shows the regional water level gradient that exists here. And in 2030 and 2055 are the two other projections from the GAM Resolution 2009-01 run.

You can see how the 50-percent availability criteria in Roberts County and in Wheeler County start depleting the aquifer more and the flow directions are reversed to drain water out of Hemphill County into the adjoining counties. And by 2055, the cone or hill is a little bit bigger.

Q. Now, let me show you Exhibit 82. What does that depict?

A. It shows a -- the results of the GAM run again, Resolution 2009-01. And the percent remaining in Hemphill County, all the areas in blue are 80 percent or more percent remaining, the areas in red are 70 percent or less -- I mean 80 percent or less remaining. We've got this red area around the boundary that shows how the adjoining 50-percent depletion zones tend to pull water from these red areas and we've labeled that a contribution zone to adjoining counties.

Q. Yeah, I had wanted to label it a sacrificial zone, but you say "contribution" was kinder, right?

A. That's correct.

Q. Now, what this says is that the landowners on the borders of Hemphill County, where it borders Lipscomb, Roberts, Ochiltree, Gray and Wheeler, are going to be contributing their groundwater to these other counties under this scheme?

A. That's a requirement for the DFCs to be achieved and for the MAG calculations to be honored.

Q. So in terms of the impact on private property rights, you've told us that it will reduce the value today in terms of marketability.

You're also telling us it will result in drainage of private property rights tomorrow?

A. It -- it's part of the basis of the DFCs in MAG today. The DFCs and MAG must have rules passed by the districts to achieve these. Long term, the actual drainage will be dependent on what pumpage is implemented. But the rules and regulation will guide and force pumpage towards this result because it's required by statute to do so.

Q. Hemphill, in this response, has indicated that they think they're providing reasonable and prudent development of the State's groundwater resources, which

is the sixth factor, because they're reserving water for future development and use.

Do you believe that this is a reasonable and prudent development of the State's groundwater resources?

A. I don't believe having three different groundwater availability criteria for areas of the aquifer with similar groundwater availability characteristics is a reasonable and prudent development of state's groundwater resources.

In some cases we're making more groundwater available for certain types of use. In other cases we're making less water available for certain types of use. We clearly aren't trying to conserve water equally. And again I just go back to the groundwater availability characteristics of these different areas are so alike that if we're going to have prudent, fair development, we need more alike DFCs.

Q. Now, we've -- we've talked quite a bit about the fact that you believe that a proper management area will adhere -- adhere to hydrological principles, that a proper management area would be a subdivision of the aquifer; is that correct?

A. It's just not me. It's -- it's been the State of Texas' policy for a long time. I can go back to 1986

when the blue precinct in Bastrop County petitioned the State to be a Groundwater Management Area, if you will.

And initially the State entertained their political ideas. Eventually the State ruled that that isn't a proper management area of the Carrizo-Wilcox and denied the petitions to create that regulatory area.

So we can go back through history and see where a subdivision has played a key role time and time again in defining proper management areas of the State's aquifers.

Q. Part of the reason that Bastrop petition was denied was that pumpage two counties away could affect the groundwater availability in that particular county?

A. Two or three counties away, sure.

Q. And so there's really no good way for a groundwater district to manage groundwater within its county boundaries because people outside those boundaries could affect the groundwater availability inside the boundaries?

A. It gets real complicated, and then I also don't believe the State is equally protecting private property rights and creating fair and impartial regulation.

Q. Is there, in your opinion, a -- not just a necessity, but a mandate from the State to give equal protection and equal treatment to all users in the same

field or reservoir or aquifer?

A. Well, 36.101 says the districts must pass fair and impartial regulations. And there has been the Marrs case in oil and gas in the mid-1940s that addressed this specific issue, and it's the same issue we have here in groundwater. It's why subdivision was part of the vernacular of groundwater management for decades and decades.

Q. Now, there are -- I guess the TWDB can act here to say these are reasonable DFCs or unreasonable DFCs. Do you have an opinion, based on your experience around the state, looking at these issues, as to what's likely to happen if the Texas Water Development Board fails to act here by requiring these DFCs to be equal across each subdivision of the aquifer?

A. Well, I guess I'd first say that we would be charting a new course. I do believe it would be the first time that the State as a body has not embraced subdivision.

The minute we get outside of aquifer and science and subdivisions and we move into regulation and politics, I think that aquifer development and conservation will suffer, certainly landowner rights will suffer, we'll have DFC areas that are draining other DFC areas, we'll have a host of complications.

I think that firm and secure water planning will suffer and we'll have many decades of wrangling to work it all out.

Q. And downstate there are other GMAs struggling to establish DFCs. For example -- well, in GMA-8, they've established DFCs, haven't they?

A. Yes, they have.

Q. On a county-by-county basis?

A. County by county and geologic strata.

Q. Now, if -- you're familiar with that area. If -- if you're pumping in McLennan County, who are you affecting, just McLennan County?

A. No, it's several. It's in the Trinity aquifer. The Trinity is a dipping, Artesian water table aquifer and pumpage in one county down there can reach out and cause Artesian pressure change in five, six, eight counties.

Q. Is that one of the reasons, in your opinion, that the legislator -- legislature wanted to have a mandate for joint planning?

A. Of course.

Q. And has, in your opinion, joint planning occurred here?

A. No, it has not.

Q. And if the TWDB fails to act here, will joint

planning likely not occur elsewhere, as well?

A. That's -- would be my opinion.

Q. All right. I appreciate your time, Mr. Harden.

MR. JONES: I would call George Arrington.

GEORGE ARRINGTON,

EXAMINATION

BY MR. JONES:

Q. Tell us your name.

A. My name is George Arrington.

Q. Mr. Arrington, where do you live?

A. I live in Canadian, Texas.

Q. Hemphill County?

A. Hemphill County.

Q. And what is your occupation or profession?

A. I am a rancher and an independent oil and gas operator.

Q. All right. And you have a educational background?

A. I have a -- a Bachelor of Business Administration degree from the University of Oklahoma and I have a Juris Doctorate degree from Oklahoma City University.

Q. All right. So you also have a law degree?

A. Yeah.

Q. You ever practiced law?

A. No.
Q. Okay. Fair enough.
Are you a land --
A. Pardon me?
Q. Probably a good idea, really.
A. Yeah, I wanted a real job.
Q. You can sit down.
Are you a land --
MR. REYNOLDS: Mr. Jones, that is on -- that is on the record.
MR. JONES: I know. I was --
MR. REYNOLDS: And, Mr. Arrington, you do realize --
Q. By Mr. Jones) Are you a landowner in Hemphill County?
MR. JONES: Oh, you know we need to put this man under oath.
MR. REYNOLDS: We do.
MR. JONES: Now that he's said all the bad things, put him under oath.
(Whereupon the witness was duly sworn.)

GEORGE ARRINGTON,

having been first duly sworn, testified as follows:

EXAMINATION

BY MR. JONES:

Q. All right. Are you a landowner in Hemphill County, Mr. Arrington?

A. Yes, I am.

Q. How long have you owned land in Hemphill County?

A. My family have owned this land, it's been owned and operated since -- I believe it's October or November of 1897.

Q. All right. And just looking at -- at the map on the board, Exhibit 82, can you tell us generally where that is?

A. Generally? I'm sorry.

Q. Generally where the land is.

A. Our ranch is in southwest Hemphill County.

Q. All right.

A. From Roberts County, it would be south and east of that down toward the 80 percent.

Q. All right, sir. Do you own groundwater rights in Hemphill County? Do you own --

A. Yeah.

Q. And did you make -- enter into a transaction with Mesa Water to sell 50 percent of those groundwater rights?

A. That's correct.

Q. But you still own 50 percent?

A. That's correct.
Q. All right. Your land, is it -- is it possible for you to use that water for irrigation?
A. No.
Q. Because of the topography?
A. Our land does not lend itself to irrigation.
Q. All right. Is it your desire to market that groundwater?
A. It is my desire to do what I want to with my property.
Q. Yes, sir. Well said.
Are you familiar with the Desired Future Conditions that have been established by these four groundwater districts for your area?
A. I'm familiar with the -- with them.
Q. Do you have an -- do you have an opinion as to whether the Desired Future Condition of 80 percent affects your property value, your groundwater rights property value in Hemphill County?
A. I think it greatly affects the value of the property.
Q. And in what way does it affect it?
A. Well, it renders it virtually no value.
Q. Why is that?
A. It's -- when my neighbor across the Roberts

County line --

Q. Yes, sir.

A. -- has the right to pump 50 percent -- or to use 50 percent in 50 years and I have the right to use 20 percent in 50 years, then logic dictates to me that my land will be drained. And if it's going to be drained, then you're not going to have anyone interested in purchasing the water rights.

Q. Now, you filed one of the petitions with the Water Development Board in -- in this matter; is that right?

A. Yes.

Q. What was your goal, Mr. Arrington, in filing that petition?

A. Mr. Jones, I really wanted to be treated like everyone else in GMA-1. It was my understanding that my Water Board is supposed to be representing me; and then when the State requires that they become GMA-1, that GMA-1 should be representing me, not special interest groups.

Q. Is it your desire that you be treated the same as everybody else in GMA-1?

A. That's correct.

Q. That's all the questions I have. I appreciate it.

A. Thank you.

MR. JONES: Mr. Stevens.

Thank you, George.

Put him under oath up front, please.

(Whereupon the witness was duly sworn.)

STEVE STEVENS,

having been first duly sworn, testified as follows:

EXAMINATION

Q. Tell us your name, please.

A. Steve Stevens.

Q. And, Mr. Stevens, what is it that you do?

A. I work for Mesa Water. I'm vice president of Mesa Water.

Q. Do your duties include acquisition and -- and management of groundwater interests?

A. Yes.

Q. And does Mesa Water own some groundwater rights in GMA-1?

A. Yes, they do.

Q. How much groundwater rights?

A. 210,000 acres.

Q. And was that acquired at some cost?

A. Yes.

Q. And what was that cost, generally?

A. Generally the cost was around $400 per surface

acre.

Q. And so what do you think you've spent totally on groundwater rights in -- in GMA-1?

A. On groundwater rights and other expenses to go along with them, right at a hundred million dollars.

Q. Do you own groundwater rights specifically in Hemphill County?

A. That's correct.

Q. Do you own groundwater rights in the other counties of GMA-1?

A. Yes.

Q. Which ones?

A. Roberts County, Wheeler, Gray, Lipscomb, Ochiltree.

Q. Do your duties include marketing groundwater rights?

A. Yes.

Q. And are you familiar with the groundwater rights market in the state of Texas?

A. Yes.

Q. Do you actually travel around and talk to different potential purchasers of these rights?

A. Yes, I do.

Q. Are you familiar with the value of groundwater rights in GMA-1?

A. Yes, I am.
Q. All right. Now, are you familiar with a 50/50 standard that originally was adopted by the Panhandle Groundwater District back in the nineties?
A. Yes.
Q. And are you familiar with a similar standard that was adopted for Region "A" as a whole?
A. Yes.
Q. Were the Mesa Water rights acquired in reliance on that 50/50 standard?
A. Yes, they were.
Q. And -- and explain how that -- why that would be true.
A. Well, originally we followed the lead of the Panhandle Groundwater District and they had a 50/50 goal. And starting in '97, the State had regional planning groups which included Region "A", and Region "A" also adopted the 50/50 goal.

And so all of our purchases have been based on the 50/50 or equal treatment of all producers.

Q. All right. And in particular, did the amount of groundwater rights you acquired rely on the 50/50 standard?
A. Yes.
Q. Now, does Mesa own any surface property in

Hemphill County?

A. No, we don't.

Q. Therefore, is it possible for Mesa, for example, to use this water you own for irrigation?

A. No.

Q. Or for domestic or livestock use?

A. No, it isn't.

Q. Or for any other reasonable use?

A. No, other reason except for to export.

Q. And you're familiar, of course, with the DFCs that have been established by these four districts?

A. Yes, I am.

Q. And obviously you're familiar with the fact that one of the DFCs is the 80-percent DFC in Hemphill County?

A. Yes.

Q. Do you have an opinion, based on your familiarity with groundwater marketing and groundwater values in the state of Texas, as to whether that 80-percent DFC has had an impact on the marketability of that water?

A. Yes.

Q. And what is that opinion?

A. It makes the water in Hemphill County that we own worthless.

Q. Let me show you again Exhibit 88-A, this letter from Mr. Satterwhite of CRMWA to Mesa dated February 17 of -- of 2009. You've seen this before, I take it?

A. Yes.

Q. And as I indicated earlier, it says the rules of Hemphill County Groundwater Conservation District -- "the rules they're leaning toward will surely cause litigation for anyone wanting to develop water there".

This letter basically says that CRMWA would be interested in buying Mesa's water interests in the Texas Panhandle except those in Lipscomb County, because they're so far away and spotty and development costs would be high, and those in Hemphill County because of regulatory concerns; is that right?

A. That's correct.

Q. And in your opinion, does this 80-percent DFC cause these regulatory concerns?

A. Yes.

Q. Hemphill says that their 80-percent DFC is a favor to you because it will make your water more valuable at some distant point in the future.

Do you agree or disagree with that?

A. I disagree.

Q. They say that this 80-percent DFC is good because it makes the streams flow along the surface and

that makes the surface more valuable.

Do you -- do you agree or disagree with that?

A. Well, if you were the landowner along the stream, it could increase the value of your property.

Q. And so this would benefit current landowners directly and financially today?

A. That's correct.

Q. Mr. Stevens, Mesa Water is one of the Petitioners that filed a petition with the TWDB here. I've asked Mr. Arrington and I'll ask you: What's your goal in -- in filing this petition?

A. We would like equal treatment in the GMA-1 and we would like to be treated like other producers.

Q. All right. Now, one of the DFCs here is -- is the 40 percent over in the northwest corner and then 50 percent adjacent to that.

As I understand it, you don't have any water rights over in the 40-percent area; is that correct?

A. That's correct.

Q. But you do in the 50-percent area?

A. That's correct.

Q. Do you -- do you still object to the 40-percent area being different from the 50?

A. Yes, I do. That's not equal treatment.

Q. Even though you don't own anything over in that

area?

A. That's correct. We're in the same district.

Q. Do you want better treatment than anybody else?

A. No.

Q. All right. That's all the questions I have, Mr. Stevens. Thank you.

MR. JONES: And, Mr. Reynolds, we would reserve the balance of our time for rebuttal. That's all we have right now.

MR. REYNOLDS: Thank you, Mr. Jones.

MR. JONES: Thank you.

MR. REYNOLDS: And that is -- that request is so noted. We will plan this afternoon for approximately an additional 17 minutes for rebuttal time for the Petitioners following the hour and a half that is allotted to the Respondents this afternoon.

It is currently almost 11:15 and I am toying with -- being not the only one, I'm sure, who has a plane to catch this afternoon after this is all over, I want to keep things on schedule, but at the same time not enforce a sudden change on anyone. But how would you feel about gathering together again at 12:30 rather than one o'clock to begin.

MR. JONES: That's fine with us.

MR. REYNOLDS: Would that be suitable,

Respondents?

MR. KRIENKE: Is that all right?

MR. WILLIAMS: That's fine with us.

MR. REYNOLDS: All right. With that in -- with that in mind, then we'll stand the hearing adjourned at 11:15 to reconvene at 12:30.

(Whereupon a lunch recess was had.)

MR. REYNOLDS: If the Respondents are ready, then I will reconvene this hearing at 12:32 in the afternoon. The floor is yours.

MR. KRIENKE: My testimony is to be sworn; is that correct?

MR. REYNOLDS: Correct.

(Whereupon the witness was duly sworn.)

DANIEL KRIENKE,

having been first duly sworn, testified as follows:

MR. KRIENKE: My name is Daniel Krienke. I'm the president of North Plains Groundwater Conservation District and also the president of GMA-1. GMA-1 is composed of Hemphill, High Plains, Panhandle and the North Plains Groundwater Conservation Districts. I am here to review the GMA-1 DFC adoption process.

Petitioners contend that the GMA-1 Ogallala DFCs are not reasonable. We believe they are reasonable. The GMA-1 Ogallala DFCs are the culmination

of several years of joint planning by the four districts. The four districts began planning on January 12, 2006, when we met in Hemphill County and discussed strategies for the best procedures to develop the DFCs for GMA-1.

The resulting plan was to first meet in each of the districts whereby each district could learn about the management plan and the groundwater management philosophies of the whole district. Four meetings were held, one in each district.

Prior to setting the DFCs, GMA-1 met 18 times. Several district-sponsored stakeholder meetings were also held in each of the respective districts. These combined efforts resulted in the unanimous adoption of DFCs for GMA-1 on July 7, 2009.

Generally these DFCs are: 40 percent of current groundwater volume remaining in Dallam, Hartley, Sherman and Moore Counties on the western side of GMA-1 in 50 years; 50 percent of the current groundwater volume remaining in the 13 counties located in the northern, central and southern portions of the GMA in 50 years; 80 percent of the current volume of groundwater remaining in Hemphill County on the far eastern side of the GMA in 50 years.

In setting the DFCs, input was sought from

all interested parties, including farmers, ranchers, businessmen, professionals, city managers and others. Consideration was given to the desires of each area represented and to the economic impact of different DFCs on those areas. Consideration was given to the State and Regional Water Plan. Guidance and scientific information were provided by the Texas Water Development Board.

GMA-1 is divided into Geographic Areas 1, 2 and 3. In setting the goals for Geographic Area 1, the GMA Joint Planning Committee acknowledged that the groundwater stakeholders in Area 1 are heavily invested in irrigated agriculture and related agriculture industries such as dairies and cheese factories.

Our studies indicated that to set a goal for Geographic Area 1 as a whole greater than 50 -- greater than 40 percent remaining in 50 years would likely force immediate cutbacks on groundwater production and cause economic harm to agriculture enterprises and financial institutions.

Conversely, higher DFCs are justified on the eastern side of GMA, specifically in Geographic 2, Hemphill County. This is because the topography there is less adapted to irrigation and there is more stakeholder interest in protecting stream flows to

enhance the natural beauty and property values of the area and to maintain and improve existing economy of Geographic Area 2.

Further, reasonable water planning and state water planning project -- projects that less water will be pumped in Area 2 and 3. Our analysis indicated that even with higher DFCs, collectively the counties in Area 3 will enjoy significant opportunity for expanded groundwater production far beyond any projected groundwater demands identified in the State Water Plan for this region in the next 50 years.

GMA-1 covers over 17,000 square miles. That area is larger than nine of the 50 United States. It is not difficult to perceive considerable geographic and socio-economic differences, and therefore differences in desires for the future of the GMA's groundwater resources.

We believe the DFCs adopted by the Joint Planning Committee are responsive, responsible and reasonable reflections of those desires. All in all, the GMA-1 DFCs, from the perspective of the Joint Planning Committee, are reasonable and on track with the legislative mandate to establish DFCs considering the various uses of groundwater, as well as the different conditions of the aquifer within the GMA.

The science and modeling runs also tell us that these DFCs are physically possible and compatible with one another. Further, these DFCs also adhere to the legislative mandate for groundwater conservation districts comprising GMA-1 to conserve and protect this valuable Texas resource.

Thank you. And I'll enter this for the record.

(Pause)

MR. WILLIAMS: Does this count against my time?

MR. REYNOLDS: No.

(Pause).

MR. WILLIAMS: There we go.

THE REPORTER: Let me swear you in first.

MR. WILLIAMS: Okay.

(Whereupon the witness was duly sworn.)

C.E. WILLIAMS,

having been first duly sworn, testified as follows:

MR. WILLIAMS: My name is C.E. Williams. I'm general manager of Panhandle Groundwater Conservation District and I'm here this afternoon to go over the 50/50 Desired Future Condition for GMA-1 and Panhandle Groundwater Conservation District's portion of that.

And it doesn't want to go.

(Pause)

The 50/50 DFC is the oldest -- oldest Ogallala aquifer management goal. It was initially adopted by Panhandle Groundwater District in 1995. It was subsequently adopted in the Regional Water Planning Group in 1998, and then additionally in 2001 and 2006. It has been the foundation of Panhandle Groundwater District's Management philosophy for over a decade and it was formally adopted by the GMA-1 process as a part of the joint planning process under 36.108 in the TWDB's 356 rules.

This graphic shows the districts and the different Desired Future Conditions. The one in tan is the 50/50, the ones that I'm addressing. The genesis of our management philosophy, back in the mid-nineties there were several things that occurred that needed a long-term water conservation goal.

In May of '95, QUIXX Corporation -- the district received production permits from QUIXX Corporation and CRMWA that were at unprecedented levels of production. QUIXX Corporation challenged the -- our transportation rule and permit process at the time. It went to district court in Amarillo and the district court ruled that the District could manage the

portion -- manage their production of water, but not the act of transportation.

So we put together the construction of the 50/50 management plan. Bill Mullican, then with UT -- UTBEG, did the technical review of the city on the CRMWA permits in the City of Amarillo. He also did the study of depletion analysis and management programs and depletion rules and the impact of the production scenarios that were evaluated at that time. From this report, the concept of the 50/50 management goal was conceived.

The benchmark year in Panhandle Groundwater District was 1998. Part of it was a result of the pass -- passage of Senate Bill 1 in '97 that required all groundwater districts to do a Certified Management Plan. The -- the District's first management plan was done -- which contained the 50/50 was in the summer of '98. It was also approved by the executive administrator of the TWDB, and it also led to incorporating the 50/50 in the initial 1998 Ogallala aquifer 50/50 goal.

A -- a study for the Panhandle Regional Water Planning efforts in the first round came up with this GAM model. And I'll let it set -- run through, and the change in color from blue to pink to black is the

result of this GAM aquifer showing problems in certain areas of the -- of the region.

So since that -- since that time, the 50/50 standard has -- has been formally a part of -- of our management plan and it -- and it states that 50 percent of the current supplies of saturated thickness is to be remained after 50 years.

Why -- why the depletion management? There's a long history. Some irrigation wells we've got histories back to the fifties. It accounts for the lateral movement and recharge.

In the initial stages of the program, it does not require meters on all wells, saving money for producers and data collection, and it focuses the efforts in our district on areas of concern. Depletion management has also been continually approved by the IRS since 1963.

How do we meet the goal in working to identify studies needed in order to ensure our board that the constituents would not be unduly harmed? We had a couple of studies done working to identify what rules were needed to be changed to ensure reasonableness.

From '99 to 2003, we did quite a bit of research and working back and forth. We worked with the

Water Development Board, other groundwater districts and the Bureau of Economic Geology through this process, as well as stakeholders and other producers.

We continued the process into 2003. As required by statute, PGCD updated their management plan and started reworking on our 2004 rule. We hired Dr. Dutton from BEG at the time to do a decline rate evaluation. And it showed us, if -- if we were looking back 50 years, what -- what areas would likely have triggered it if we had had the plan in place.

The main thing that was garnered from this study, it was not widespread and it was focused on areas of -- of concern.

And then the 50/50 goal was included in the 2003 management plan. We think it's a reasonable DFC in implementation. The Groundwater Availability Model, in our opinion, should be used to set the D -- DFC. Good monitoring network with sound science should drive the implementation.

Conservation must be an integral part of our plan, and the plan has to be updated and rule making incorporated as time -- incorporating the DFC as time goes forward. It's a very time-consuming process because of -- of all the implications to the producers.

Like I said, these are very difficult

decisions. We had a -- had a hearing yester -- yesterday afternoon on -- on our process that we're going through for this year. The hearing lasted almost five hours, so there was a lot of input and we take a lot of input from everybody.

In Step 1, if there's an area that exceeds more than 1 -- 1 1/4 percent decline and has 9 square miles, it's declared a study area. If the study area continues to decline for more than two -- ten years and ex -- and ex -- and exceeds the acceptable decline trend line, it may be declared a conservation area by the board.

This is our acceptable decline curve. What we liked about it, it's recalculated through time and starts out at the levels we are today and becomes more conservative as we move through, and actually would be more conservative than the 50/50.

The conservation areas may be regulated until compliance comes into the floor rate that is reached. No area may be regulated before the -- below the floor rate during reasonable use.

Production is measured and enforced on contiguous acres that each person owns or controls. This creates value in non-produced water and does not create a rush to the pump.

This is the areas that we discussed yesterday. We believe the 50/50 is a reasonable rule. Our program was adopted eleven years ago and has stood the stest -- test of time without legal challenges. The program has broad-based acceptance with producers and the general public. It strikes a positive balance between the needs today and conservation for future generations.

The 50/50 has been selected for 13 out of the 19 counties in GMA-1 which comprises 69 percent of the total area.

In conclusion, PGC has invested unprecedented amounts of time, effort in developing the 50/50. Our district has worked hard with all stakeholders to improve the process through time. The 50/50 management goal has been adopted by the Regional Planning Group. The 50/50 management goal strikes what we believe is a posi -- positive balance between the needs today and conservation for tomorrow. The 50/50 management goal is -- is a reasonable Desired Future Condition for PGCD.

That's all I have.

MR. REYNOLDS: Thank you.

(Whereupon the witness was duly sworn.)

JIM CONKWRIGHT,

having been first duly sworn, testified as follows:

MR. CONKWRIGHT: My name is Jim Conkwright and I'm general manager of the High Plains Underground Water Conservation District No. 1. The testimony, while brief, that I'm about to give has previously been provided to the executive administrator of the Texas Water Development Board and all other parties to this hearing.

The board of directors of the High Plains Underground Water Conservation District No. 1 based their decision to adopt a 50/50 DFC, our goal for the Ogallala aquifer, for the district portion of GMA-1 based on the following criteria.

First, after years of discussion, the board made a commitment to ensure the economic viability of irrigated agriculture in the High Plains, and the board saw that 50/50 is a way to sustain that water for generations to come.

Second, significant support for the 50/50 management goal already existed. The goal has been under a certain positive level of acceptance in the area and the board did not desire to lose that support.

We would like to retain three minutes at the end of the hearing should we have other information

we deem to be helpful or provide more clarity.

MR. REYNOLDS: So noted. Thank you.

MR. GOOD: Mr. Reynolds, if I may enter the record. I'm Keith Good. I'm counsel for the North Plains Groundwater Conservation District. Mr. Walthour has approached the podium to speak. I want to enter into the record, and we have already entered into the record, Exhibits 1 through 5 for the North Plains Groundwater Conservation District.

The first exhibit -- and by the way, these have been provided to counsel of record. The first exhibit is a brief of the North Plains Groundwater Conservation District, the second is the opening statement of Mr. Danny Krienke who just spoke, the third is a resume of Steven D. Walthour, PG, who will be the next speaker, Exhibit 4 is a -- is his statement, and Exhibit 5 is a white paper prepared by Mr. Walthour.

(Whereupon the witness was duly sworn.)

STEVE WALTHOUR,

having been first duly sworn, testified as follows:

MR. WALTHOUR: My name is Steve Walthour and I am the general manager of the North Plains Groundwater Conservation District. I am (sic) a 25-year practice and a geoscientist in the state of Texas and I have been directly employed and responsible for various

aspects of groundwater management in the state for the past seventeen years. I am here to review my district's joint planning efforts as it relates to GMA-1 DFC adoption process.

Petitioners contend that GMA-1 Ogallala DFCs are not reasonable. Based on my years of experience as a geoscientist and as a leader directly responsible for developing and implementing rules and permitting programs that govern the use of groundwater resources, I believe they are.

For reference in my discussion today, I adopt the Groundwater Availability Model, GAM Run GRO9-001 when I refer to geographic areas.

Since 2006, the District has required all well owners, other than those exempted from Chapter 36 of the Water Code, to report their groundwater production. The District groundwater production in Geographic Area 1 averages a million acre feet of water per year. Geographic Area 1 consists of the four counties: Dallam, Hartley, Sherman and Moore Counties.

In 2008, producers in the District used 1.1 million acre feet of water in that geographic area. In 2010, Geographic Area's projected use, based on the 2006 Region "A" Water Plan, is 1.1 million acre feet of water compared to 694,900 acre feet of water of

projected demand met by all other water resources in the other fourteen counties combined.

Groundwater management planning in the -- in the Texas -- and the Texas Courts have considered the amount of groundwater produced and its type of use as critical components of use. In establishing the Desired Future Conditions of the aquifers, Chapter 36 of the Water Code requires that districts consider uses and conditions of an aquifer within the management area that differ substantially from one geographic area to another.

The four counties in Geographic Area 1, a geographic area roughly equal to or larger than three of the 50 United States comprises approximately 25 percent of GMA-1. These four counties produce at least 1 1/2 times more groundwater than the other 14 counties combined and are projected to use more water than the 14 counties throughout the 50-year planning period.

Any substantial different uses threshold as directed by Section 36.108(d) of the Water Code and Texas Water Development Board Administrative Rules are certainly reasonably addressed by delineating this geographic area from the other areas based solely on its groundwater use amounts.

Additionally, the high pumping rates of the

Ogallala aquifer in Geographic Area 1 are providing accelerated water level declines compared to similar size areas of the aquifer in GMA-1. Substantially different accelerated water level decline conditions in Geographic Area 1 compared to other areas of the same size are reasonably addressed by setting a different DFC for that geographic area.

Because local stakeholders' participation and input is viable to the success of implementing my district's management plan and District rules to address any adopted DFC, the District's board and my staff conducted two series of well-attended stakeholder meetings across the District to explain the DFC process and receive input from the public.

The first series consisted of three stakeholder meetings in Dalhart, Dumas and Perryton, Texas. The District listened to the stakeholder desires and modified its draft DFC proposal to address those desires.

The District anticipated that additional unplanned demands for water from the Ogallala aquifer may arise over the next 50-year planning period.

In the fall of 2008, the District held a second series of stakeholder meetings in Dalhart, Darouzett, Dumas and Spearman. Generally the District

stakeholders expressed concern and wished to be treated equally across the District.

If an -- aquifer withdrawal limit reductions are required by the District rules to achieve a DFC, District stakeholders requested the District to provide time to make those reductions.

Stakeholders requested that economic growth in the eastern area of the District which currently has relatively little pumping not be restricted as a result of the District's management planning and rule-making process to achieve the DFC goals.

Some stakeholders asked the District to protect spring flows and/or the tourism economy in the eastern half of the District. Stakeholders in Geographic Area 1 preferred a DFC for the western half of the District that would not adversely affect the regional economy or impair the ability of the individual producers to make a living.

Across the District, stakeholders desired to set a DFC high enough to retain sufficient groundwater supplies for families to continue to farm the same land in the future. However, concern has also been expressed that the District should not develop rules or plans that would put those families out of the farming business before the future arrived.

Stakeholders in the western half of the District did not want their groundwater supply issues to adversely affect the eastern half of the District.

Stakeholders also expressed concern that the pumping in the white areas of Dallam County not within the District could adversely affect the District.

On December 15, 2008, the North Plains Groundwater Conservation District provided a recommendation titled "Proposed Desired Future Conditions for the Ogallala Aquifer" as part of its presentation and proposal that the Joint Planning Committee adopt DFCs for the Ogallala aquifer in the counties that comprise the District.

The Joint Planning Committee considered the two DFCs because they reflect the stakeholders' desires and because the uses and conditions of the aquifer within the District differ substantially from one geographic area to another.

Based on the 2006 Region "A" Water Plan and the Texas Water Development Board GAM Run GR09-001, the Ogallala aquifer cannot provide all of the water to meet the projected total demand in Geographic Area 1. Ogallala aquifer users in this geographic area must obtain water supplies from other sources or reduce demand.

The MAG in Geographic Area 2, which is Hemphill County -- County, provides almost ten times more water than its total projected demand, while MAG -- the MAG in Geographic Area 3 provides more than twice the total amount of projected water.

The DFCs collectively provide for surplus groundwater supplies throughout the 50-year planning period above the Regional Water Plan or State Water Plan projected demands.

In fact, by 2060 there will be more water available for new demands, including unplanned export, than is projected to be used in Geographic Area 2 and Geographic Area 3 in GMA-1.

It must be noted that the Petitioners must interpose assumed rules for each of the four Groundwater Conservation Districts to support the Petitioners' argument that the GMA-1 DFCs are unreasonable. We believe that based on the DFCs adopted by GMA-1, the North Plains Groundwater Conservation District can and will adopt rules which will provide each water producer a fair and equal right to produce.

The DFCs for the North Plains Groundwater Conservation District approved by the Joint Planning Committee are responsive, responsible, and reasonable reflections of the groundwater uses and stakeholders

within the District.

When we look at Geographic Area 1, each of the four counties in Geographic Area 1 pump far more water than any other county in GMA-1 by themselves. They produce more groundwater than probably some of the other GMAs combined.

If -- and in -- in what we looked at in the future is that we think that we're going to -- we're going to have to do some reductions, we're going to have to look at declines in that area to meet our DFC. We could not go with 50 percent in those areas, 50/50, because we believe that would cause some irreparable economic harm, and therefore, we picked the 40/50.

And that's my comments.

(Whereupon the witness was duly sworn.)

DREW MILLER,

having been first duly sworn, testified as follows:

MR. MILLER: Good afternoon. My name is Drew Miller. I'm an attorney with Kemp Smith in Austin and I serve as legal counsel for the Hemphill District. If -- if it's okay, I would -- what I'd like to do -- we have four more presenters in addition to myself, so I would like to have them stand and if you could swear them in collectively, that would be -- I would appreciate that.

And -- and these are Janet Guthrie, Jim Haley, Andy Donnelly and Ray Brady.

(Whereupon the witnesses were duly sworn.)

MR. MILLER: First, I want to stop -- start off by thanking Mr. Reynolds and the other Texas Water Development Board staff for traveling to Amarillo today and for conducting this hearing -- for observing this hearing.

I will also note that on Friday, we filed, on behalf of the Hemphill District, a written rebuttal to the petitions and have attached evidence to that rebuttal. Our rebuttal -- this written rebuttal presents arguments on why the DFCs adopted by GMA-1 are reasonable and explains why Petitioners' grounds for challenging those DFCs are without merit and should be rejected.

The Petitioners raise the following legal question: Does Section 36.108 of the Water Code authorize and contemplate the adoption of different DFCs for different geographic areas within a Groundwater Management Area along the boundaries of political subdivisions like those of Groundwater Conservation Districts.

The answer is yes, and this conclusion comes right from the text of Section 30 -- 36.108(d)

itself which states that Districts may establish different Desired Future Conditions for each geographic area overlying an aquifer in whole or in part. And Texas Water Development Board staff has previously, and in former situations, stated their concurrence on this point.

Our submitted response and the testimony that we will present today show that the DFCs adopted for GMA-1 are physically possible and that they are compatible with each other. The successful GAM run by the Texas Water Development Board shows that.

In fact, Petitioners do not even allege that -- that the GMA-1 DFCs are not physically possible, nor do they allege that they are not compatible with one another.

Our submitted response and the testimony that will be presented here today also show that in developing, proposing and adopting the DFCs for GMA-1, the uses and the conditions of the Ogallala aquifer were considered.

Petitioners also launch a series of Constitutional challenges to the DFCs adopted by GMA-1, including a claim that the DFCs necessarily result in a taking of their property. However, Texas Water Development Board does not have jurisdiction to hear

Constitutional claims. And besides, these claims are based on false premises and speculation and are completely without merit, and this is further explained and discussed and detailed in our written response.

Also, and as demonstrated in our written response, one of the main purposes of the 80/50 DFC in Hemphill County is to protect property rights by protecting existing and intended uses of property in Hemphill County. A large number of landowners in Hemphill County are of the view that the 80/50 DFC protects their property and their property values and these views have been expressed by way of 75 affidavits from landowners in Hemphill County who support the 80/50 DFC which we have submitted so far in this proceeding.

I want to spend a few minutes talking about the implications of Petitioners' arguments. Petitioners' challenge is against the principle of local control. Our entire system of groundwater management, as reflected in Chapter 36, clearly contemplates that individual Groundwater Conservation Districts have the authority to manage groundwater resources differently from one another.

As Lieutenant Governor Bob Bullock said in his article in the "Texas Tech Law Review" in 1999, "Groundwater Conservation Districts, quote, 'embody a

central premise of SB-1, local control, and represent the idea that those closest to the resource are the most capable of managing it.'"

Petitioners' view of Section 36.108 and joint planning would require us to take a giant eraser and erase all groundwater district boundaries. Petitioners argue that we must regulate as if separate jurisdictions of the various Groundwater Conservation Districts simply do not exist. It is clear that this novel argument has no legal authority behind it.

Petitioners' argument is also directly con -- contrary to the Conserva -- Conservation Amendment to the Texas Constitution which clarifies and establishes that the conservation of the natural resources of the state, including groundwater, is a public right and duty and expressly allows for the creation of local Groundwater Conservation Districts to execute those duties.

Ground -- Groundwater Conservation Districts in Texas are empowered under the Texas Constitution and by statute to manage groundwater resources within their jurisdiction in a manner in which they see fit. They are answerable to their constituents and in accordance with governing law.

The other clear implication of Petitioners'

argument is that the more conservative approach toward groundwater management adopted for Hemphill County is invalid and illegal. Petitioners argue that the Hemphill District is required by Constitutional and other principles to allow the same rate of depletion of the aquifer as its neighbors allow.

This is a radical argument. It is also based on misapprehension and misunderstanding of oil and gas law and the improper application of those misapprehended principles to groundwater. There is absolutely no valid legal support or just -- justification for this approach which seeks to render groundwater conservation illegal. Under the Texas Constitution, Groundwater Conservation Districts have a duty to conserve groundwater resources.

We have four people here today in addition to me who will each make brief -- brief presentations. You will first hear from Ms. Janet Guthrie. She's the general manager of the Hemphill District. She will focus on the work of the Hemphill District, including its work with its technical consultants and its efforts to communicate with its stakeholders and to take action which reflects their values and preferences, that of their stakeholders.

Next, you will hear from Mr. Jim Haley, the

president of the Hemphill District's board of directors. Mr. Haley will provide important background and some details regarding the work of the Joint Planning Committee for GMA-1. He will show that joint planning, as contemplated by 36.108(d), did happen at the GMA Joint Planning Committee. Mr. Haley will also talk about why the Hemphill District has taken the approach it has with regard to proposing the 80/50 DFC.

Finally, you will hear from two of the District's technical consultants, Andy Donnelly of Daniel B. Stevens and Associates; and Ray Brady of RMBG (sic) Geo, Inc. These scientists will focus on the various considerations that went into the development of the 80/50 DFC for Hemphill County, how that DFC is clearly physically possible in the context of the other DFCs adopted for the other portions of the GMA and how these DFCs are compatible with each other.

And without further delay, I'll turn the microphone over to Ms. Guthrie.

JANET GUTHRIE,

having been previously duly sworn, testified as follows:

MS. GUTHRIE: My name is Janet Guthrie. Along with my husband and three children, we reside at 307 West Elliott Avenue in Canadian, Texas. I have lived in Canadian for 25 years.

I have been serving as the general manager of the Hemphill County Underground Water Conservation District since May of 2001. Over the past 8 1/2 years, I have worked with members of the public, other political bodies in Hemphill County, consultants, regional planning groups, State agencies and other groundwater districts across the state to assist the Hemphill District in the development of a management plan, rules and now a Desired Future Condition for Hemphill County.

Issues of groundwater management have been before the landowners and members of this community long before the establishment of the Hemphill District. Groundwater management was practiced by the settlers who established their homesteads and this community so many years ago. And it's many of the same principles of good land stewardship that have guided generation after generation to work through the hardships and changes that Mother Nature and progress brings us and they still guide us today.

From times of flood through periods of drought, the channels and creeks and streams and the banks of the Canadian River have managed to survive. Those creeks and streams have also survived the conservation dams and the damming of the Canadian River

to form Lake Meredith which has also protected our homes from floods, our soils from erosion, leaving us with the beautiful foliage and wildlife habitat that would please any outdoorsman.

And that is where we are today, planning for tomorrow and for the long-term availability of water for the citizens of Hemphill County so that our community can continue to exist. Local water planning started in 2000 when the Hemphill District hired Ray Brady as a consultant to establish the groundwater level and water quality monitoring programs for the District.

Mr. Brady also prepared total saturated thickness maps of the aquifer, he assisted in establishing the Early Contamination and Detection Program which monitors water quality in the vicinity of more than 30 saltwater disposal wells in Hemphill County.

Mr. Brady has prepared hydrographs that show the historical water level activity and the long-term trends for periods ranging from just a couple of years to over 50 years in over 70 wells used within our monitoring network.

Mr. Brady has also assisted the District in providing updated Red Bed elevations to the Panhandle Regional Planning Group for use in the updates to the

Regional Groundwater Availability Model.

The Hemphill District also hired the firm of Daniel B. Stevens and Associates to provide technical assistance to the District in August of 2005. They have assisted the District in several projects such as the Net Sand Study, the Bureau of Economic Geology Recharge Study and the development of our DFC Letter Report.

Daniel B. Stevens has also developed 3-D images of the aquifer's different layers. Daniel B. Stevens is also currently working on building a refined model of the groundwater resources in Hemphill County which will work within the regional model that will be used in our permitting system.

The stakeholders have played a very important role in the development of the policies of the District and in the developments of the DFC. Canadian is a rural community, so it's very common for directors or staff to have one-on-one communications with landowners at the post office, local restaurants or sporting events.

For our directors and for me, what we say in these discussions are considered to be your word and will be stated back to me, "Well, you told me", and it's those very discussions that these stakeholders tend not to forget.

There have also been several occasions where committees -- where a committee of the board and the staff met with representatives of individual stakeholders, for example, Mesa Water and G&J Ranch, to discuss the different possible approaches to groundwater management.

Petitioner Mesa Water has made several presentations to the Hemphill District Board throughout the years. Over the years we have heard several different positions and arguments ranging from the desire to have no change in the aquifer storage level whatsoever all the way to allowing the production of over seven million acre feet in just 50 years.

Very few of the landowners in Hemphill County have chosen to enter into contracts with Mesa Water. The majority are still strongly in favor of keeping a significant amount of water in storage for use sometime in the future.

Because much of this study and communication have been pursued over the recent years when the legislature passed House Bill 1763, the District was well prepared to bring this information to the table. From the first GMA-1 meeting in Canadian, Texas, on July 12, 2006, until the final adoption of the DFCs in July of 2009, the Joint Planning Committee met

regularly and in accordance with the by-laws they had adopted.

Each representative reported the progress that was being made in the Joint Planning Committee to their respective boards. After each District had the opportunity to present information about their respective Districts, the JPC discussed and considered the management plans, rules, policies, water uses, GAM runs and any other issues relevant to the management of the groundwater within GMA-1.

The Joint Planning Committee then, with the approval of their respective boards of directors, established the DFCs for the Ogallala aquifer within GMA-1.

Under the governing law, groundwater districts must adopt a management plan and rules to implement the DFCs. The legislature has clearly expressed its intent that the GCDs manage and conserve groundwater resources within their jurisdiction and in accordance with their boundaries and established powers.

The GAM model run by TWDB showed that the adopted DFCs were physically possible, feasible and compatible with each other. Accordingly, the four representatives to the Joint Planning Committee voted unanimously to approve the DFCs.

The Petitioners argue that a uniform DFC across the whole northern Ogallala is legally required. As -- as explained in our written response, we disagree.

Also, Petitioners' arguments, if correct, would require all elected officials to disregard the views of the stakeholders they represent.

A great majority of stakeholders in Hemphill County are clearly calling for a reasonable degree of conservation of groundwater resources within our county. We have now received over more than -- and more than 100 affidavits from landowners in Hemphill County supporting the adopted DFCs. These landowners believe, based on their life experiences, and their knowledge of the value of their property, and the value and the current and future uses of their property are being protected and enhanced by the 80/50 DFC. Their rights and interests should not be pushed aside or trampled on in the joint planning process or this proceeding.

Thank you.

JAMES HALEY,

having been previously duly sworn, testified as follows:

MR. HALEY: Mr. Reynolds, ladies and gentlemen, my name is James E. Haley, III. I currently reside at 15406 Marshall Drive, Hemphill County, Texas.

I have lived on and managed ranch property in Hemphill County for 25 years and have raised four children on the ranch, a family ranch founded by my great-grandfather, C.H. Shaller in 1887.

Our ranch was honored by the Texas Department of Agricultural Family Land Heritage Program as a ranch that has been in continuous agricultural operation by the same family for 100 years or more. That program is designed to recognize and chronicle the unique history of Texas agriculture and the men and women who settled this great state and continue the ranching tradition today.

One of my earliest memories about water was the fact that I carried the drinking water for our family of four into our house by bucket from a guttered cistern tank that held rainwater from our roof which we saved to drink. The water that came from the faucets inside our house was muddy, red and unfit to drink as we had no potable source of groundwater for our home.

Before anyone ever heard of Arrowhead, Aquifina, Evian or Ozarka, it was my chore to carry the water we drank. When it comes in by bucket, by physical effort, and ladled out drinking glass at a time, perhaps that has a lasting effect on the conscious need to be judicious and conserve the water we are all blessed to

have.

Why do I care about water conservation? Maybe that elemental job at a formative age made a big impression and laid a lasting foundation for the need for water conservation and preservation. But that was in Oklahoma.

I live in Hemphill County, Texas, now and we still have a chance to make a difference, to make an impact on conservation. One of the life lessons my grandfather Frank Shaller tried to impart to his grandchildren is when you've been entrusted with the care of the land, part of good stewardship means to strive to leave the resources in better shape than you found them.

I currently serve as the president of the board of directors of Hemphill County Underground Water Conservation District. I was initially appointed as a director for the Hemphill District in 2002. I was later elected as a director in 2004 and again in 2006. I was elected by my fellow directors to serve as vice president in 2006 and served in that capacity until May 2007 when I was elected president. I have continued to serve in that capacity since.

In January of 2008, I began my service as the Hemphill District's representative for the Joint

Planning Committee for Groundwater Management Area-1. I am aware of the Desired Future Condition established for Hemphill County by GMA-1 for the Ogallala aquifer and believe it to be reasonable.

The Joint Planning Committee for GMA-1 began to meet in 2006. Early meetings of the Joint Planning Committee focused on an initial exchange of information and the identification of relevant aquifers. The Joint Planning Committee adopted by-laws to guide our proceedings and determined that we needed to learn more about groundwater conditions and management in the member districts.

Meetings were held at each of the Districts and technical and other information about groundwater management within each host District was presented and discussed.

Beginning in 2006, GMA-1 requested that the Texas Water Development Board provide seven separate Groundwater Availability Modeling runs of aquifer conditions throughout the joint planning area. Seven GAM runs and two supplemental reports were issued by Texas Water Development Board for our use and consideration.

After the results of each GAM was provided to the GMA by Texas Water Development Board, the GMA met

to discuss the results and the implications for planning throughout the area. Considering the amount of water available in GMA based on current and future projected use, the last GAM run request was filed with the Texas Water Development Board to see if the proposed DFCs would work together, and the Texas Water Development Board concluded the proposed DFCs were feasible and compatible with each other.

Throughout the joint planning process, the GMA meetings have been filled with discussions and deliberations regarding available science, current and future demands, stakeholder input. In our efforts to establish DFCs for the Ogallala aquifer and Rita Blanca aquifer, the joint planning group relied heavily on the historical data prepared by the regional planning group and updated that information with input from each District.

The Hemphill District participated in all 19 meetings of the joint planning group, hosting two of the meetings, the first of which was held in Canadian on January 12, 2006.

At least four presentations were made by the Hemphill District over the period from January 2006 through the final adoption of the DFCs on July 7, 2009. The Hemphill District utilized the services of the Texas

Water Development Board Groundwater Availability Model on four occasions prior to the joint planning process.

The Hemphill District provided funding and worked jointly with the Panhandle Regional Water Planning Group and the Bureau of Economic Geology to explore recharge to the aquifer.

In January 2008, the Hemphill District released its Net Effective Water Saturation Report. And at the December 15, 2008 meeting of the joint planning group, the Hemphill District first introduced the results of the methods we used to develop the proposed DFC statement for Hemphill County.

The DFC report for the Ogallala aquifer in Hemphill County Letter Report of June 2009 explained and presented the many factors the Hemphill District considered in developing the DFC. One of the primary objectives of the DFC was to maintain a -- sustainable groundwater conditions for future generations.

It is our goal and -- to keep groundwater levels high enough to allow continuing discharge to surface water within Hemphill County which is important to the constituency of the District.

In order to develop a DFC, the Hemphill District evaluated a variety of factors, such as the desires of local constituents, the Ogallala aquifer

physical characteristics, estimated current, future demands and other DFC statements, the effects of different DFCs on adjacent counties and Districts and estimates of the resulting managed available groundwater.

The Texas Water Development Board notified the Hemphill District that the annual MAG of 54,998 feet would leave approximately 80 percent of the initial stored water in storage at the end of 50 years. The Hemphill District decided to amend its previous DFC statement of 90/50 and to propose an 80/50 DFC for Hemphill County.

The statement met the established criteria that the Texas Water Development Board had developed and the members of the GMA indicated that they believed the DFCs proposed were reasonable in light of consideration of each of the Districts and the areas considered.

Each representative to the joint planning group presented the proposed DFC statement to their full boards for consideration, and on July 7, 2009, the DFCs were adopted by unanimous vote.

In passing the resolution adopting the DFCs for GMA-1, all of the members of the Joint Planning Committee stated, "Joint planning has been undertaken."

It is my opinion that the adoption of the

DFC for Hemphill County benefits Hemphill County, as well as the city of Canadian. The presently adopted DFC for Hemphill County not only takes into account existing use of 12,000 acre feet a year, but provides further opportunity for future development with an annual MAG number of 55,000 acre feet a year. It allows for orderly development of a natural resource which our community has been -- managed to utilize without depleting or causing environmental harm since this Panhandle town was founded in 1887.

The DFC adopted for Hemphill County makes provision for future, orderly growth of the city of Canadian and provides ample supply to meet both the continued needs of the oil and gas industry and the demands from farming and ranching as the MAG significantly exceeds the projected demands estimated to the Regional State Water Plan.

This DFC will protect stream flow along the creeks and tributaries comprising the river system drainage of the Washita and Canadian Rivers flowing east into Oklahoma. The DFC for Hemphill County will serve to protect our delicately balanced environment which provides a haven for numerous species of wildlife, some of which are threatened by extinction.

Many forms of forage survive and thrive

along the riparian areas that make up the drainage of Hemphill County located below the Caprock. In order to support and sustain this ecosystem, it is necessary to maintain a high level of groundwater.

This DFC will also positively impact property values, in turn benefitting the local agricultural and civic communities. The Hemphill County DFC all -- all -- also helps maintain a positive impact on private property rights ensuring a variety of existing and intended uses and economic viability on these lands for future generations.

According to the Texas YES Program in 2003, Canadian, Texas was voted Number 1 in the state for the most hard-working rural community in the area of tourism, community development, education and training and creating regional partnerships with other communities.

It is also stated that Canadian has over 60,000 annual visitors who are given the opportunity to enjoy the unique and natural beauty of the Lone Star State.

Our property rights and values are enhanced by a policy that will conserve water, preserve and protect streams and provide a habitat for a wide variety of plants and game than otherwise found in areas free of

naturally-occurring sources of water.

These conditions deserve preservation for the sake of posterity. The price of land proves that foliage, water and other acidic assets significantly raise its value.

The GMA-1 DFCs were adopted in accordance with applicable law. The DFC for Hemphill County represents the will of the majority of Hemphill County residents. And as elected officials it is our duty to represent their desires.

The DFC for Hemphill County is consistent with the State's water policy and legislative directives and is reflective of the goals, policy and decisions of the people it serves. It allows for the conservation of water which should be a goal if the word "conservation" is found in the name of a water district.

And for the local districts to regulate groundwater in accordance with the will of the people, we feel we must also speak on behalf of those not yet able to speak for themselves, the young and the not-yet born who will inherit the earth.

In my opinion and that of the board of directors of Hemphill County, the DFC of 80 percent of the current volume in storage remaining in 50 years is appropriate and serves as the foundation for responsible

development of our precious natural resource. It promotes the conservation of water and is -- and is reflective of the unique cultural heritage this community has enjoyed since its inception 125 years ago.

Thank you.

ANDREW DONNELLY,

having been previously duly sworn, testified as follows:

MR. DONNELLY: Hi. My name is Andrew Donnelly. I'm a senior hydro-geologist with Daniel B. Stevens and Associates. And Daniel B. Stevens has been working with Hemphill County District since -- since 2005 on a variety of projects, including the development of a proposed 80/50 DFC for consideration by GMA-1.

First of all, what's the purpose of the proposed 80/50 DFC? The District wanted to -- to come up with a DFC that maintains sustainable groundwater conditions within the -- the county for future generations. They wanted to achieve this by minimizing groundwater level declines as much as possible and this would then reduce the impact of pumpage on discharge to surface water as much as possible within Hemphill County.

They also wanted to come up with a DFC that resulted in a MAG that provided sufficient water to meet projected local demands, and also to provide groundwater

availability for additional development in the county.

A variety of factors were evaluated in the proposed DFC selection, characteristics of the Ogallala aquifer and flow of the Ogallala aquifer, historic use both within the county and within the GMA itself, projected future demands within the county, the desires of local -- local constituents, other potential DFCs that were being proposed for GMA-1, and then also the effects of the DFCs on adjacent counties and the -- the available -- the estimated MAG that results from the DFCs.

Let's start with the current conditions in Hemphill County. In large number, varies within the GMA. Groundwater level declines have -- have been observed. In Hemphill County, there -- there have been relatively few areas with observable declines. Groundwater levels are generally high enough to provide water to springs, streams and rivers within the county. These were reported to flow, surface water streams and rivers, even during times of drought.

What happens when we get groundwater level declines? Declining water levels reduce the discharge of groundwater to surface water. This occurred throughout GMA-1. Habitat reduction occurs as a result of decreased discharge to surface water, springs and

streams lose flow and dry up, riparian areas die.

I'm not a wildlife biologist, but I think it's fair to say that loss of springs and stream flows and riparian habitat could be considered to be a negative environmental impact.

And we've come in and done sort of a three-dimensional visualization of groundwater levels. This is based on 2008-2009 water level elevations within the county based on a survey done by the -- the District.

As you can see, based on this representation, that we have areas with discharge from the Ogallala aquifer to streams and rivers within the county. That's where the groundwater table is projected to intersect some of these river and stream valleys.

We took the drawdowns from the GAM Run 0901 and projected the water levels based on those drawdowns. And as you can see, we're -- we're -- we're losing some of the discharge to the streams and rivers in the -- in the -- in the county.

And based on the GAM Run 0816 drawdowns, which is a 60 percent DFC, you can see the further impact of the reduction in water levels on -- on stream flow in the county.

Now, this is not intended to be an exact

quantitative analysis of what will happen with the 60 and 80 percent and other DFCs, but I think given the information available, it's a fair representation of the impacts of what may happen with groundwater level declines within the county. And this is -- this is really not anything new.

In 1981, a volume came out called the "Springs of Texas" which was a comprehensive look at springs and stream flows and -- historical springs and stream flows throughout the state, or many parts of the state, including GMA-1.

And here area a couple -- some of the quotes from -- from there. "Very few springs remain in Dallam County, but at one time there were numerous and large springs."

Also, "Although springs no longer exist in Sherman County, many formerly poured from Ogallala sand and caliche, especially along the major streams."

These are just a couple of quotes that I took from Brune's work. He noted in there that the chief cause of the drying up of the springs is the pumping of groundwater for crop irrigation. And yet I don't think this is really anything new. I think a lot of people who live here or study groundwater realize that this is the case.

He also said, "With the disappearance of most of the springs and the loss of their natural habitat, many of the animals can no longer survive in the area." That was touched upon by Jim just a few minutes ago.

The District also looked at the historic use, and it has been noted by previous speakers there's significant differences in historic use of -- in counties across the GMA. In general, in the western counties, historic use are in the hundreds of thousands of acre feet per year per county; eastern counties significantly less than that. The primary difference in this is -- is the amount of water that's used for irrigation.

Hemphill County -- this is from the Water Development Board Water Use Survey database -- generally in the 2,500 to 5,000 or 6,000 acre feet per year groundwater use within the county.

Now, projected future demand within Hemphill County is estimated by the Hemphill County Management Plan to be fairly stable at about 12,000 acre feet per year of pumpage. It goes from 11,667 up to 12,1O2, but it's fair to say that it's -- it's fairly consistent at 12,000 acre feet per year.

Now, the estimated MAG, based on the

proposed 80 DFC and the other DFCs that were performed by GMA-1, has a MAG for Hemphill County of approximately 55,000 acre feet per year.

As I showed in the previous slide, Hemphill County has a future demand projection of about 12,000 acre feet per year which leaves more than 40,000 acre feet per year for other development.

The third bullet point is very important. The District has not come in and tried to set things such that only local demand numbers or estimates are met. But I know in other parts of the state, that is something that's -- that -- that -- that I've seen.

I'm not going to comment on those. It needs to be taken on kind of a case-by-case basis whether the aquifer -- aquifer can support it. But I think it's important to note that the -- the District has realized that they have a groundwater resource that is available, that's important, and it can -- that -- that more development than what they need can -- can be taken from it, and so they have made sure that they have come up with a MAG that allows for that additional development to occur.

Compatibility with other DFCs, I think we've heard this several times today. GMA-1 obviously put forth a -- a DFC statement that they felt was

physically possible. The Water Development Board would typically raise a red flag, so to speak, in -- in their analysis of it if they found that it was not physically possible. They weren't. They were able to successfully conduct GAM Run 0901 and finding that the -- the DFC statements are -- are compatible and there was not a physical impossibility issue with the DFC statement.

So in conclusion, the Hemphill County Underground Water Conservation District considered a lot of factors in the development of a proposed DFC to be considered by the GMA. Have not seen -- we have not seen significant water level declines historically within Hemphill County in the Ogallala aquifer which continues to provide discharge to surface water within the county, and this -- this is considered to be fairly important by the District and their constituents.

Historic water use in Hemphill County is small, much lower than other parts of the GMA. Projected future use is -- is estimated to remain fairly constant. The other DFCs within GMA-1 were considered and the 80/50 DFC is compatible with those, and the DFC statement as a whole is -- is considered to be physically possible.

The 80/50 DFC results in smaller water level declines than previously considered DFCs for the

county, such as 50/50 or 60/50. This proposed 80/50 DFC protects discharge to surface water more than those previously considered DFCs.

And the estimated MAG of approximately 55,000 acre feet per year of -- of availability is well above the projected future demand for Hemphill County and provides for substantial amount of additional groundwater development that can occur from within the county.

Thank you.

RAYMOND BRADY,

having been previously duly sworn, testified as follows:

MR. BRADY: My name is Raymond Brady. I'm the principal of RMBJ Geo, an ultrasmall business. My civilian education includes Bachelor of Science in geology, Master of Science in civil engineering, and a Master of Engineering degree. I'm a registered professional geoscientist in Texas.

Before working as an independent geologist, I was employed by Panhandle Groundwater Conservation District as a geologist, and by the Battelle Corporation at Pantex plant as a project engineer, and the U.S. Army. I have over 40 years experience working with groundwater, service water, drinking water systems and wastewater systems and other construction projects.

I have worked with the Hemphill County since 2000. I helped them set up their initial operations, designed their monitoring network and so forth. I continue to do so.

I am familiar with the DFC process in general and the DFCs adopted by GMA-1. I have reviewed the resolution and was present at the GMA-1 meeting when it was adopted. I'm also familiar with 1763, the GMA Water Plan, various GAM reports, so forth.

I participated in DFC discussions at multiple directors' meetings in five different Groundwater Conservation Districts and three different Groundwater Management Areas. I believe the 80/50 DFC for Hemphill County is reasonable on its own in the context of the other GMA-1 DFCs.

The method of retaining some percentage of saturated thickness for a time period is a well known and accepted method. It has been in use in the neighboring Districts, for instance the Panhandle Groundwater District's 50/50 rule, since as early as 1995. Other areas within GMA-1 adopted certain percentages of saturated thickness based on conditions within their areas.

The Hemphill Groundwater Conservation District proposed its DFC based on conditions and

landowner input in its local area. One area of concern was maintaining stream and spring flow. Brune identified 20 existing stream and spring systems in Hemphill County in his "Springs of Texas, Volume 1".

The primary stream systems were the Washita River, the Gageby Creek and Lake Marvin. Thirteen additional flowing springs were identified. Three springs and four creeks were identified as dry. The remainder continued flowing at various rates. The 80/50 DFC is intended to assist continued stream flow within the county.

In Carson County, Brune identified nine previously flowing stream and creek systems. All except one of the nine systems were located in the ranchlands in the northern part of Carson County. His inventory reported four systems completely dry, four reduced to seeps and one spring maintaining a series of pools. One of those four seeps had deteriorated water quality.

In Roberts County, directly west of Hemphill County, Brune identified 18 previously flowing water systems; 9 of the 18 were dry, 6 systems slowed -- showed decreased flow, one system located in the northeast corner of Roberts County near Hemphill County had maintained steady flows.

In Wheeler County, directly south of

Hemphill County, Brune described 18 water flow systems. Two of the creeks formerly used as water supplies were completely dry, twelve spring systems had decreased flows, while two springs maintained steady flows. The two steady flow systems were in the Blaine aquifer, not in the Ogallala. All of the Ogallala systems showed decrease of flows.

One of the purposes of the 80/50 DFC is to ensure continued stream flow within Hemphill County and avoid the fate of Carson, Roberts, Wheeler and other counties.

There are examples of higher retained percentage of saturated thickness in other DFCs already approved. GMA, for example, has DFC examples of 82 percent, 90 percent and 100 percent of current saturated thickness retained in 50 years in their plan.

The 80/50 DFC for Hemphill County adopted by GMA-1 is physically possible as shown in the Texas Water Development Board GAM Run 09-001 and the 001 Supplement.

Run 09-001 shows that a 90/50 DFC is physically possible in context with the 50/50 DFCs in the adjoining counties. GMA Run 09-001 Supplement verifies, of course, that the 80/50 DFC is physically possible in context with the others.

The 80/50 DFC meets the current water needs in Hemphill County for the next 50 years and allows additional use up to 55,000 acre feet per year. The DFC adopted for Hemphill County considered the current groundwater use in the Region "A" Water Plan and provided for the additional water use up to this 55,000 acre feet per year, thus allowing groundwater for future development in the county.

Reductions of existing stream and spring flows in Hemphill County can be expected with less conservative 60/50 or 50/50 DFCs. The effects of a less conservative DFC in Hemphill County were indirectly tested with GAM Run 05-2005-12. We specified scenarios involving withdrawal of one acre foot per year for 50 years over an eight mile by eight mile, 64 square mile area in the southwest corner of Hemphill County and similar withdrawals in a larger area of Roberts County.

The GAM run predicted a 20-percent reduction in stream flow in the Washita River when withdrawals were limited to the Hemphill County area. If both Roberts and Hemphill County withdrawals were included, Washita River stream flows decreased by 26 percent.

Additional reductions or elimination of stream flow would result if that same one acre foot per

acre withdrawal were to be applied to the additional 500 or so square miles in the Washita drainage area of the Canadian River.

Annual water level changes between zero and two feet per year in adjoining areas of northwestern Wheeler County have been reported by Panhandle Groundwater District. Fort Elliott springs are located in this area. Since 1951, pre-irrigation development, Brune reported stream flows have decreased by over 90 percent.

Spring and stream flows in the GMA are directly related to groundwater levels. Decreasing groundwater elevation has and will continue to directly impact stream and spring flow. The 80/50 DFC allows for reasonable and prudent development of the State's groundwater resources. Current groundwater use, according to the Region "A" Water Plan, was about 5,900 acre feet per year. The 80/50 DFC provides up for ten times that use in the future which is a reasonable increase with potential prudent development.

We have seen a flow map presented in connection with this proceeding. This map is based on differences in water surface elevation as calculated by the Northern Ogallala GAM. I would point out that differences in water surface elevation are not

necessarily the direction of flow. There are documented examples of as much as 40 degrees difference between actual groundwater flow direction and groundwater elevation gradient in the Ogallala formation. I believe this map indicates flow within the Ogallala aquifer in areas where there is no water in the Ogallala formation, specifically in areas within Armstrong and Potter County.

The argument that DFCs should be continuous across county lines is a moot point in my opinion. There are already examples of approved DFC conditions in other GMAs with differences on either side of a county line in the same aquifer, specifically GMA-8, Lampasas and Burnett County.

In conclusion, the argument that Hemphill County Underground Water Conservation District should not set a DFC of 80/50 that provides for some semblance of groundwater conservation because all of their neighbors are setting their DFC at 50/50 seems similar to the argument that since your neighbor is cutting off his hand while shooting himself in the foot, you should, too.

Thank you.

MR. REYNOLDS: Mr. Miller, does that --

MR. MILLER: Does that conclude our

presentation? I believe that concludes the presentation of the Respondents. Is that correct?

MR. WALTHOUR: It does.

MR. MILLER: It does.

MR. REYNOLDS: Okay. All right. Anybody --

MR. CONKWRIGHT: We have no more comments.

MR. REYNOLDS: Okay. If that concludes the presentation of Respondents, then Petitioners had reserved 15 minutes to -- for rebuttal and the floor is yours, Mr. Jones.

PETITIONERS' REBUTTAL TESTIMONY

MR. JONES: Thank you. And I would call Mr. Harden as a witness in rebuttal.

BOB HARDEN,

having been previously duly sworn, testified as follows:

EXAMINATION

BY MR. JONES:

Q. Mr. Harden, you have listened to the various presentations, and particularly the very last presentation on behalf of these four districts; is that correct?

A. Yes, I have.

Q. And you may want to back away from it a little.

A. All right.

Q. Mr. Miller was opining legally that political subdivision is a proper basis for a different Desired Future Condition. He says this is legally permissible.

Are you familiar with Mr. Miller's other legal opinion that he has stated around the State recently; that is to say that, "Landowners do not own the groundwater in place under their land."

Are you familiar with that one, Mr. Harden?.

A. Yes, I am.

Q. Let's hope he's wrong about both of those, correct?

A. I think he is wrong.

Q. Now, let's talk about spring flows for a minute. By the way, of course, Hemphill County Underground Water Conservation District has actually contributed taxpayer money to support the position that ownership -- that landowners do not own the groundwater under their property.

Are you familiar with that?

A. I'm under -- I understand the legal briefs that they have supported with their funds, yes.

Q. On the other hand, CRMWA and the City of Amarillo have filed briefs that say just the opposite, that landowners do in fact own the groundwater in place under their land, right?

A. Yes, that's correct.
Q. Now, let's talk about springs for a minute. We've heard a lot of talk about protecting spring flows in Hemphill County as being the rationale or basis for this 80/50 demarcation that -- that they have outlined; is that correct?
A. That is correct.
Q. And there was a discussion about a single spring in northeast Roberts County that has not diminished any in its flow.
Are you familiar with that spring?
A. Not specifically, no.
Q. Are you familiar with other springs in Roberts County?
A. Yes, I am.
Q. Are those springs in Roberts County equally protected under this GMA plan as those in Hemphill?
A. No, they are not.
Q. And why aren't they?
A. Because of the different depletion criteria applied to the two different areas that contain the springs.
Q. And I guess I'm left wondering, Mr. Harden, and perhaps you can help me with this, as to why the springs in Hartley County or the springs in Hutchinson County or

the springs in Roberts County or the springs in Gray County are entitled to less protection than the ones in Hemphill.

Do you know of any reasons?

A. I have no basis to believe why that is from a performance standpoint or habitat support standpoint or any legal basis for that, no.

Q. And in terms of this joint planning that was supposed to take place in GMA-1, is there any basis for saying that a 50-percent DFC is unreasonable because it doesn't protect spring flows equally to the 80 percent?

A. I think there is a basis for saying it's unreasonable. Essentially what we've heard here is one area of the aquifer can have its springs not protected because of past historic use and projected use while another area needs to be assured greater protection because of current plans, that it doesn't have as much projected use.

But I find that kind of appalling. There are landowners that own property in -- throughout GMA-1, each of them has the right to produce water according to the Groundwater District's rules and regulations. The potential for future use in this aquifer is equal, it is not tied to historic use levels.

And so to say that we can protect more in one

area and we can't protect as much in another area because of historic use, I just say that unfairly regulates certain landowners and it's not prudent water planning as far as the potential for future use of the aquifer.

Q. We heard quite a bit of discussion of -- from a report by Mr. Brune from 1981 about various counties in GMA-1, but I didn't hear anything about Hemphill County.

Did he just fail to write about Hemphill County?

A. I think maybe Mr. Brady talked about Hemphill and I think --

Q. Briefly. Let's just go ahead and read what Mr. Brune said about Hemphill County, if you would.

A. Well, this is from the Brune 1981 report. "Hemphill County springs issue -- issue chiefly from Ogallala sand, gravel, and caliche, Canadian River terrace sand, gravel and windblown sand. Especially in the northeast part of the county there are also beds of clay. Springs often emerge on top of the clay layers. Shallow flowing wells, five to ten meters deep, can be completed by penetrating the sand beneath the clay bed.

"As the entire county is quite hilly, springs formerly gushed forth nearly everywhere, but the largest springs still flowing are along the Canadian River. The

springs have been used as campsites for at least 10,000 years. Mastidon bones of species that has been extinct for that length of time have been found pierced by flint projectile points fashioned by Paleo-Indian people.

"Just before the dawn of history in the new world, the plains village people were building stone slab houses along the Canadian River and irrigating crops with spring waters. In historic times, early explorers such as Mey, in 1601, were guided to the better springs by the Indians.

"Long before the time of anyone now living, the county was literally bursting with springs. In the sand hills area in the northeast there were many seep-fed, tree shaded ponds. Tall grasses dominated the prairie. The areas near springs and spring-fed creeks teemed with bison, deer, antelope, bears, wolves, turkeys, prairie chickens, geese, ducks and countless other animals.

"The natural environment with which man lived in harmony for so many thousands of years has now been largely destroyed. Overgrazing by the cattle barons and plowing up of steep hillsides by the early farmers left the soil open to attack by wind and water. Huge gullies began to cut headward and roadside ditches deepened, enormous volumes of sediment moved downstream to clog the channels, cover old swimming and fishing holes and

bury springs.

"But much greater damage was done to the groundwater reservoir by the drilling and pumping of wells, especially for irrigation which consumes appalling amounts of water.

"As the water table declined, most springs greatly decreased in discharge or failed completely, meaning windmill wells are finding themselves high and dry unless either by -- either by deepened or abandoned. And of course many of the plants and animals that depended upon abundant fresh water cannot now survive in the area."

Q. So I ask the question: Is there anything unique about the springs in Hemphill County that necessarily distinguishes them today from the springs in the other counties that have a different DFC?

A. No, there is not. I don't believe that protection of these springs is more important than protection of springs in Potter County or other counties. There's lots of contemplated future uses and there must be a balance between the potential for future use and conservation.

Q. Which brings us really to the second question which is the question of joint planning. As I sat here and listened to these presentations, what I was struck

by was the fact that I was hearing arguments for each of the individual DFCs, but no arguments that would justify the different DFCs.

In other words, I'm hearing a lobbying position on behalf of North Plains saying essentially, "We can't live with 50 percent, we got to go to the 40 in the north -- four northwest counties."

I'm hearing from Hemphill that they -- they want an 80-percent DFC to support stream flows, but don't really support an 80-percent DFC for nearby Roberts County with the same stream flows or Lipscomb County or Wheeler County.

I don't hear North Plains stepping up to justify the 80 percent.

I don't hear Hemphill stepping up to justify the 40 percent.

High Plains, I think, is honest in saying, "We needed a 50/50 because that's what our public would support."

I think Panhandle Groundwater District is very honest in saying the 50/50 standard is one that has been worked out over the course of a decade. It is one that they think is reasonable in terms of development -- balancing development with conservation. It is the Region "A" Plan. It was the one that was adopted for

the entire Panhandle after much deliberation and expenditure of a great deal of money and time by a lot of good people, including the groundwater districts who are sitting at this table today.

But I'm not hearing Panhandle attempting to justify the 40-percent DFC or the 80-percent DFC. And so I -- I would ask you, Mr. Harden, did you hear anything that sounded like joint planning in those presentations?

A. No, I did not. I -- I think this is a reflection of the challenge each of the Districts feels for itself in what DFCs mean, what types of rules have to be passed to achieve them and the -- just the challenge of this process.

They tended to withdraw to themselves to hold onto what they think they can do within their District to run their District. And what we need to do now is broaden that work effort into getting Districts to work together so that the aquifer is managed in an equitable and fair and prudent fashion.

Q. You're -- I've played for you an audio clip from a meeting of the board of directors of Panhandle Groundwater Conservation District that occurred on October 14 of 2009, have I not?

A. I've heard that, yes.

Q. Let me play this for you again, if I can.

(AUDIO TAPE CLIP PLAYING)

FIRST UNIDENTIFIED SPEAKER ON TAPE: But that's one of the problems, is we've failed or ignored one of those groups of people that has got a hold of the overall picture, period.

SECOND UNIDENTIFIED SPEAKER ON TAPE: Well, that's what this process was trying to address. I'm struggling with that, I think, is my --

THIRD UNIDENTIFIED SPEAKER ON TAPE: Now, we thought joint planning --

SECOND UNIDENTIFIED SPEAKER ON TAPE: Meant joint planning.

THIRD UNIDENTIFIED SPEAKER ON TAPE: -- meant joint planning, and seems like "joint" seemed to take on a different meaning.

SECOND UNIDENTIFIED SPEAKER ON TAPE: Well, and that's what I argue. I don't think we've joint planned a darned thing in GMA-1. I think we've lobbied for our position.

FOURTH UNIDENTIFIED SPEAKER ON TAPE: I agree.

SECOND UNIDENTIFIED SPEAKER ON TAPE: But as far as joint planning, I think we've failed miserably.

(END OF AUDIO CLIP PLAYING)

Q. By Mr. Jones) So what I heard there was, "I don't think we joint planned a darned thing in GMA-1. I think we've lobbied for a position. In terms of joint planning, I think we've failed miserably."

That from the board of directors of the Panhandle Groundwater Conservation District, agree or disagree?

A. I agree.

Q. Why?

A. Because it's -- we can go down the factors that the TWDB is supposed to review; Number 1, the groundwater availability criteria or characteristics of this region are remarkably similar throughout GMA-1. The saturated thickness, the storage, the groundwater that is there, the spring flows that are out there.

To base groundwater availability on present demand unfairly prejudices future potential use because the way I see it, we're all future potential users and we need to manage the aquifer in a fair and equitable fashion for all potential users, not for one selected group of users in one locale to the detriment of another locale that's supposed to conserve more.

It just isn't prudent development for the State. If we go down this route, everybody is going to

dig their heels in and hold onto what they have. We're not going to fairly administer the rights of landowners, which is one of the impacts or considerations the board has. And in the end, we're not managing the aquifer; we're managing the politics of political regions which doesn't fare well for the water.

MR. JONES: That's all we have, Mr. Reynolds. Thank you very much.

MR. REYNOLDS: Thank you, Mr. Jones.

MR. WILLIAMS: Is there any time left?

MR. REYNOLDS: There is time left on the clock. The process, as we had outlined it, has been completed.

MR. WILLIAMS: I don't want to be a problem. It's however you want to do it. But if there's any time left, I would like to make a statement.

MR. REYNOLDS: Is Petitioner comfortable with that?

MR. JONES: I'm fine with Mr. Williams making a statement if he would like to, Mr. Reynolds.

MR. REYNOLDS: All right. Then I will allow it.

MR. WILLIAMS: I think that's what we agreed to.

MR. KRIENKE: That's not what we agreed to.

MR. WILLIAMS: Okay.

MR. REYNOLDS: All right. Thank you.

Okay. This concludes this hearing. As I stated earlier, the record will remain open until Wednesday, November 25th, for comments by other interested parties. If you do wish to submit comments to the Water Development Board and have not done so already, you may -- you will find copies of the affidavit form that must accompany that testimony on the table outside.

I want to thank the Panhandle Regional Planning Commission for providing the facilities for today's hearing and also our court reporter for her work and her diligence.

A transcript of these proceedings will be available through the Water Development Board after Wednesday the 18th, that is after next Wednesday. And the board will hear the analysis and a summary of the testimony and proposed recommendations by staff at the February 17th meeting in -- of the board in Austin, Texas at the Water Development Board offices in the Sam Houston -- Stephen F. Austin -- excuse me, got to get my right hero there -- Stephen F. Austin building in Austin, and you are invited to attend that meeting if you desire.

There being no other business before this hearing, the -- declare the hearing concluded. I believe the GMA, however, needs to reopen and recess, so I turn the meeting back over to them.

* * * * * * * * *

(CONCLUSION OF PROCEEDINGS)

REPORTER'S CERTIFICATE

THE STATE OF TEXAS)
COUNTY OF POTTER)

I, Janice Hoelting, Certified Shorthand Reporter in and for the State of Texas, do hereby certify that the above and foregoing contains a true and correct transcription of all proceedings which occurred at the Texas Water Development Board Hearing held on November 11, 2009.

I further certify that this Reporter's Record of the proceedings truly and correctly reflects the exhibits, if any, admitted by the respective parties.

I further certify that the total cost for the preparation of this Reporter's Record is $931.00 and was paid by the Texas Water Development Board.

WITNESS MY OFFICIAL HAND this the 14th day of November, 2009.

_____

Janice Hoelting, Texas CSR #2450
Expiration Date: 12-31-09
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