STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

APPLICATION OF MEWBOURNE OIL COMPANY TO ABOLISH THE SEVEN RIVERS-YESO POOL AND THE CEMETERY-YESO POOL AND EXPAND THE NORTH SEVEN RIVERS GLORIETA-YESO POOL, AND TO ESTABLISH SPECIAL RULES AND REGULATIONS FOR THE NORTH SEVEN RIVERS GLORIETA-YESO POOL, EDDY COUNTY, NEW MEXICO CASE NO. 14554

TRANSCRIPT OF PROCEEDINGS
Examiner Hearing
October 28, 2010
2:35 p.m.
1220 South St. Francis Drive
Santa Fe, New Mexico 87504

BEFORE: DAVID BROOKS, HEARING EXAMINER
WILL JONES, TECHNICAL EXAMINER

REPORTED BY: CONNIE JURADO, RPR, NM CCR #254
Paul Baca Professional Court Reporters
500 Fourth Street NW, Suite 105
Albuquerque, New Mexico 87102

4afed9f6-ec7d-4d40-b660-4b1abf044d52

A P P E A R A N C E S

For the Applicant:

JAMES BRUCE
Attorney at Law
Post Office Box 1056
Santa Fe, New Mexico 87504

For Nearburg Producing Company:

MONTGOMERY & ANDREWS LAW FIRM
Attorneys at Law
325 Paseo de Peralta
Santa Fe, New Mexico 87501
BY: J. SCOTT HALL

For Fasken Oil & Ranch, Limited:

HOLLAND & HART, LLP
Attorneys at Law
Post Office Box 2208
Santa Fe, New Mexico 87501
BY: OCEAN MUNDS-DRY

I N D E X

MEWBOURNE EXHIBITS		ADMITTED
1.	Various Pool Descriptions	13
2.	Top of Yeso Structure Plat	27
2A.	Acreage Descriptions	13
3.	Echo Production and Concho Letters	13
4.	Affidavit of Notice	13
5.	Letter, Seligman to Fesmire, 10/11/10	13
6.	Regional Yeso X-Section	27
7.	Limousine 15 CD Fed Com #1H	27
8.	Yeso Producers in Seven Rivers, Cemetery and North Seven Rivers Pool	58
9.	Yeso Development 20S-25E	58
10.	Gunsmoke 9 K #1	58
11.	Gunsmoke 9 EF Fed #1H	58
12.	Long Draw 10 M #1	58
13.	Limousine 15 CD Fed Com #1H	58
14.	Lakewood 34 Fed IP #1H	58
15.	Noose Federal #6H	58
16.	Grave Digger State Com #1H	58
17.	Grave Digger St. Com. #1H	58
18.	Noose Fed #6H	58
19.	Limousine 15 CD Fed #1H	58

NEARBURG EXHIBITS	ADMITTED
1. Seven Rivers Glorieta-Yeso Area	86
2. Limousine 15 CD #1	86
3. Grave Digger State COM #1H	86
4. Noose Federal Com (7H)	86
5. Noose Federal (6H)	86
6. Noose Federal (4H)	86
7. Noose Federal Com (5H)	86

MR. BROOKS: Case Number 14554, Application of Mewbourne Oil Company to abolish the Seven Rivers-Yeso Pool and the Cemetery-Yeso Pool and expand the North Seven Rivers Glorieta-Yeso Pool, and to establish special rules and regulations for the North Seven Rivers Glorieta-Yeso Pool, Eddy County, New Mexico. Call for appearances.

MR. BRUCE: Mr. Examiner, Jim Bruce of Santa Fe representing the applicant. I have three witnesses.

MR. HALL: Mr. Examiner, Scott Hall, Montgomery & Andrews Law Firm of Santa Fe on behalf of Nearburg Producing Company with one witness this afternoon.

MS. MUNDS-DRY: Mr. Examiner, Ocean Munds-Dry with the law firm of Holland & Hart, LLP. I am representing Fasken & Oil -- Fasken Oil & Ranch, Limited, and I have no witnesses.

MR. BROOKS: And I'm sorry?

MS. MUNDS-DRY: I have no witnesses.

MR. BROOKS: You have no witnesses. Good.

MS. MUNDS-DRY: I don't take any offense by that.

MR. BROOKS: It's getting late in the

afternoon. Okay. Would each of the witnesses please state your name for the record, and then you will be sworn.

MR. MONTGOMERY: Brian Montgomery.

MR. MITCHELL: Corey Mitchell.

MR. LODGE: Jason Lodge.

MR. SPEER: Tim Speer.

(Note: The witnesses were sworn.)

MR. BRUCE: Mr. Examiner, there is a large plat marked Exhibit 2. You might want to pull that out. I think my first two witnesses will be testifying to that.

MR. BROOKS: Okay.

COREY MITCHELL

After having been first duly sworn under oath, was questioned and testified as follows:

EXAMINATION

BY MR. BRUCE:

Q Will you please state your name and city of residence for the record?

A Corey Mitchell, and I reside in Midland, Texas.

Q Who do you work for and in what capacity?

A Mewbourne Oil Company as a petroleum landman.

Q Have you previously testified before the division?

A Yes, sir.

Q And were your credentials as an expert petroleum landman accepted as a matter of record?

A Yes, sir.

Q Does your area of responsibility at Mewbourne include this portion of Southeast New Mexico?

A Yes, sir.

MR. BRUCE: Mr. Examiner, I tender Mr. Mitchell as an expert petroleum landman.

MR. HALL: No objection.

MS. MUNDS-DRY: No objection.

MR. BROOKS: Okay. He is so qualified.

Q (By Mr. Bruce) Mr. Mitchell, can you briefly describe what Mewbourne seeks in this case?

A We would like to abolish the Seven Rivers-Yeso Pool as well as the Cemetery-Yeso Pool and expand the North Seven Rivers Glorieta-Yeso Pool.

Q What is Exhibit 1?

A Exhibit 1 is the current descriptions of the three pools mentioned.

MR. BROOKS: Okay. And before we go

ahead, something has occurred to me. I believe that Brooks Oil & Gas interest actually does own some property in this general area, and I am not sure exactly where it is. We own some interest in some leases I know down to the southwest a mile or so. Are the parties willing to waive any disqualification on that ground?

MR. HALL: No problem.

MS. MUNDS-DRY: We have no problem with that, Mr. Brooks.

MR. BROOKS: Very good.

MR. BRUCE: Maybe I can address something.

Q (By Mr. Bruce) Mr. Mitchell, you have been involved in Mewbourne's wells in this area, correct?

A Yes, sir.

Q And a ton of them have been force pooled?

A Yes, sir.

Q You have never had to force pool Brooks Oil & Gas, have you?

A No, sir.

MR. BROOKS: Well, unfortunately, I don't think we own any interests in any of Mewbourne's wells. I deeply regret that according to

some of the statistics I have seen on some of the wells in this vicinity. You may continue.

Q (By Mr. Bruce) Just looking -- next identify Exhibit 2, Mr. Mitchell.

A Exhibit 2 is this plat here, and it identifies the three pools that we're discussing all designated by a different color with the red being the North Seven Rivers Glorieta-Yeso. Cemetery-Yeso is the purplish blue, and the green is the Seven Rivers-Yeso.

Q Okay. And just in looking -- comparing Exhibit 1 to Exhibit 2, the pools have not been expanded in the division's nomenclature process in accordance with the number of wells drilled out here. Is that fair to say?

A That is correct.

Q The wells, when the APDs are approved by the division, do place the wells in one pool or another, do they not?

A Yes, sir.

Q Okay. And who prepared this map?

A This was prepared by our geologist, Jason Lodge, who is here today.

Q Okay. Does this Exhibit 2 also identify the operators of all of the wells in the pools?

A Yes, sir.
Q Okay. What is Exhibit 2 A?
A 2 A is a description of the acreage that we are including, that we would like to be expanded -- the North Seven Rivers Glorieta-Yeso Pool expanded to cover.
Q So you would abolish the Seven Rivers-Yeso Pool and the Cemetery-Yeso Pool and put that acreage in the North Seven Rivers Pool?
A Yes, sir.
Q And then you would further expand the North Seven Rivers Pool to include, what, each quarter section where a current Yeso well is located?
A Yes, sir.
Q Okay.
A And also I would like to add that we would also like this to include the west half of Section 30, 19 South, 26 East. It is not included on our exhibit here, but we would also like to include that one.
Q Okay. And is -- and who operates that acreage?
A That is Concho.
Q Marbob/Concho?
A Yes, sir.

Q At the time it was Marbob?
A Yes, sir.
Q Okay. What is contained in Exhibit 3?
A Exhibit 3 is letters of support for this application as prepared by Echo Production and Concho.
Q And was notice of this application given to the operators identified on Exhibit 2?
A Yes, sir.
Q There is one exception to that, correct?
A Yes, sir.
Q Okay. First of all, does Exhibit 4 contain copies of my notice letter and certified return receipts from the operators listed in that letter?
A Yes, sir.
Q And was there one operator omitted from that listing?
A Yes, sir. It was Echo Production.
Q And what is Exhibit 5?
A Exhibit 5 is the waiver of notice from Echo Production.
Q And Mewbourne has been in touch with Echo Production for some time regarding this application?
A Yes, sir.

Q And they are fully aware of this application?

A Yes, sir.

Q And besides the -- take a step back. Do any of these three pools currently have any special pool rules?

A No, sir.

Q So this spacing -- what is the spacing and the current oil allowable?

A They are statewide rules with 40-acre spacing with 80 barrels of oil per day.

Q And what is Mewbourne seeking with respect to special pools?

A We would like to increase it to 240 barrels of oil per day for a standard 40-acre spacing unit.

Q Okay. Were Exhibits 1, 2 A, 3, 4, and 5 prepared by you or compiled from company business records?

A Yes.

Q And in your opinion, is the granting of this application in the interest of conservation and the prevention of waste?

A Yes, sir.

MR. BRUCE: With that, Mr. Examiner,

I move the admission of Exhibits 1, 2 A, 3, 4 and 5.

MR. BROOKS: Any objection?

MR. HALL: No objection.

MS. MUNDS-DRY: No objection.

MR. BROOKS: 1, 2 A, 3, 4 and 5 are admitted.

(Exhibits 1, 2 A, 3, 4 and 5 admitted.)

MR. BRUCE: And just to be clear, Mr. Examiner, I wanted you to know that Exhibit 2 A, the acreage on that is substantially larger than the acreage highlighted on Exhibit 2.

MR. BROOKS: Okay.

MR. BRUCE: I think on Exhibit 2, the well units were identified, whether 40-acre or a larger well unit for a horizontal well.

MR. BROOKS: Right.

MR. BRUCE: But it has always been my understanding that when the division creates or expands an oil pool, they usually do it by a quarter section. So what is requested is to expand it by a -- for instance, if you look at the very top of the map, we're asking that the northeast quarter of Section 16 of 19, 25 be part of the expanded pool rather than just that 40 acres where that Yates well is located.

MR. JONES: You don't have that Section 30 of 19, 26 in here?

MR. BRUCE: We did not list that, and if it needs to readvertised, that is fine. That is Marbob operated acreage.

MR. JONES: But you do want it on there?

MR. BRUCE: Concho has requested that, and Mewbourne certainly does not object to that.

MR. BROOKS: I would think they would have to readvertise it if it is not included in the existing advertisement.

MR. BRUCE: We can readvertise it.

MR. BROOKS: Okay.

MR. BRUCE: I pass the witness.

MR. HALL: I have no questions of this witness.

MS. MUNDS-DRY: No questions.

MR. BROOKS: I don't believe I have any questions either. I assume the other witnesses will provide the basis for the requested -- but you're just here to say what lands we're dealing with and what you want on them, and the other witnesses will provide the reasons why we should increase this?

A Yes, sir.

MR. BROOKS: Okay. I have no further questions.

MR. JONES: Where is Brantley Dam from here?

A Excuse me?

MR. JONES: Is Brantley Lake pretty close?

A You know, I don't know where that is in relation. I know Lakewood is to the east here and Artesia is to the north and Carlsbad is kind of I guess --

MR. JONES: So it's not that far?

A It's not that far. It is in the immediate area. I don't know exactly how far.

MR. JONES: When they made that lake, they exhumed a cemetery out and moved all of the bodies, and a lot of them were shot full of holes. It was quite a deal back in the '80s. I remember when that happened. So the cemetery ought to be here somewhere?

MR. BRUCE: The division didn't do that.

MR. JONES: Well --

MR. BROOKS: Maybe Ms. Munds-Dry can

tell me where the Cemetery Federal well that they are reentering is on this map. I have a general idea where it is, but I can't remember what section number it is in.

MS. MUNDS-DRY: I have no idea.

MR. BROOKS: I know it's in 20, 26. No, it is in 20, 25. I think it's probably in Section 20 or 21, but I can't remember for sure.

MR. BRUCE: Mr. Jones, the center of the area affected is about three miles west, northwest of Seven Rivers.

MR. JONES: Okay. Rough area back in those days, I guess.

MR. BROOKS: There's been a lot of nonstandard units issued in this pool. Okay. Thank you.

JASON LODGE

After having been first duly sworn under oath, was questioned and testified as follows:

EXAMINATION

BY MR. BRUCE:

Q Will you please state your name for the record?

A Jason Lodge.

Q And where do you reside?

A Tyler, Texas.
Q Who do you work for?
A Mewbourne Oil Company.
Q And what is your job at Mewbourne?
A I'm a geologist working in southeastern New Mexico.
Q Have you previously testified before the division?
A No.
Q Would you please summarize your educational and employment background for the examiner.
A Bachelor's in science from Texas Tech University in geology. Currently finishing up my master's in science in geology from Texas Tech University. I have worked at Mewbourne for just over a year working this area.
Q Okay. And are you the primary geologist at Mewbourne responsible for this area?
A Yes, sir.
MR. BRUCE: Mr. Examiner, I tender Mr. Lodge as an expert petroleum geologist.
MR. BROOKS: Any objection?
MR. HALL: No objection.
MS. MUNDS-DRY: No objection.

MR. BROOKS: So qualified.

Q (By Mr. Bruce) Mr. Lodge, let's move back to Exhibit 2 that you prepared, and would you discuss that and maybe a little -- just give a history of the pools.

A Sure. Just a couple things basically. The pink dots here are representative of Yeso tests or Yeso producers. We also have purple dots here which are Yeso and San Andres commingled in this area. There is only a couple of those.

MR. BROOKS: Are you talking about on Exhibit 1?

A Exhibit 2.

MR. BROOKS: We're back to Exhibit 2. Okay.

A We also have a structure on here. This is my top of Yeso structure. You can see it is -- in general it trends north, northeast. To the north of the map, it starts to take a turn to the east, to the northeast, following the general trend of the shelf in this area. Down dip into the basin is to the east and obviously to the west.

These are 20-foot contours on the top of the Yeso. Geologically, again, we're on the shelf. This play kind of started for us in Section 10 of 20,

25. We drilled a Morrow well near there with good shows in the Yeso, so we recompleted some old wells in the Yeso there vertically, and then kind of started our vertical campaign there. We've expanded that vertically. Drilled about 40 vertical wells in the area.

Since then, we have kind of switched our philosophy to horizontal drilling. Currently, we have about five horizontal wells in the area.

MR. BROOKS: Where you have the lines drawn from the wells, those are the horizontals?

A Yes, sir. The squares are the surface locations. The dots, the pink dots are where the bottom of the locations are.

MR. BROOKS: Thank you.

A As far as kind of recent activity in the area, there is also some more horizontal development in the area. Just up in Section 35 of 19, 25 is Marbob Concho's development. They have been drilling some horizontal wells there, also. We also have some horizontal development up to the north there.

Section 3 of 20, 25, Nearburg it's my understanding has just TD'd a horizontal well not on this map in the east half, east half of Section 3.

MR. BROOKS: Section 3?

A Yes, sir. Just north of Section 10.

Q (By Mr. Bruce) Mr. Lodge, can you give the dates the pools were created and maybe a little more info on that?

A I don't have the dates with me. The Seven Rivers-Yeso Pool was created in 1982 with the discovery well -- the Irami Fed No. 1 is in the southwest quarter of Section 34, 19, 25. The Cemetery-Yeso Pool was created in 1983 with the discovery well being Amoco Rio Siete No. 1. This is in the southeast quarter of Section 11, 20 South, 25 East. And North Seven Rivers-Yeso Glorieta -- I'm sorry, Glorieta-Yeso Pool was created in 2007. Discovery well was Nearburg Boyd 27 No. 6. This was in the southwest quarter of Section 27, 19 South, 25 East.

Q Mr. Lodge, I think you hit on this briefly. Mewbourne did start recompleting or drilling vertical wells. Has its emphasis of late been primarily on horizontal wells?

A Yes. Correct. We have shifted our philosophy completely to horizontal development. We see that they are more economic for us to do that.

Q Okay. Let's move on to your Exhibit 6 and 7.

A Okay.

Q Can you open those up and discuss those for the examiners?

A Exhibit 6 is a regional cross-section of the area that includes the Yeso. You can see on Exhibit 2, this is my black cross-section line. It goes A to A prime from the south to the north, and it spans all three of the Yeso pools. Just a couple of general things here. Starting with the well 15L, this is Limousine 15L, Section 15 of 20, 25.

In general, we use six percent porosity cutoff. That is six percent neutron porosity cutoff. This is not always the case. We have perf'd some stuff that's lower than six percent. That's kind of our general porosity cutoff, but we use this data when we see greater than 100 ohmms in the deep resistivity curve.

In the 15L, you can see my -- the pink marker on the top is the top of my Glorieta. I usually pick this based on the resistivity. It's considerably lower. The Glorieta is a package of sands and dolomites intermingled with the sands. The top of my Yeso or the base of the Glorieta is the end of that package of sands. And then the next green marker below that is just a stratigraphic that I can

pick throughout the area, which is a sand that goes through there.

In general as with other Yeso fields, this is a dolomite reservoir. It is a thick dolomite package. It is generally tight with low permeabilities. We have to fracture stimulate it to get good production is basically where we're going. In general, with vertical completions, we do a two stage job. We have also done one stage jobs. You can see the red boxes on my cross-sections are the perfs that we picked.

On this 15L well, the first stage we frac'd at 210 gallons of slick water and 100,000 pounds of sand. And that was the first stage. And the lower set of perfs in the next stage on the same day, frac'd at 100,000 gallons and 50,000 pounds of sand. This is pretty similar to what we have done -- we have gone all the way down to 50,000 gallons of fluid in order to attempt to stay out of water as well as up to 600,000 gallons of fluid in one stage.

Q So they are large fracs?

A Yes, they are very large fracs. And that's because we have a thick interval of this type.

Q In looking at this, do all three pools produce from correlative intervals?

A Yes, sir. That's kind of what I am showing here is throughout the pools, the Yeso interval is stratigraphically continuous throughout the area. Generally, the main pay zone for us is just below the base of the Glorieta. We also have some lower production in certain areas as well.

Q And especially when you look at Exhibit 2, when the wells are designated, it looks like the pools are all mixed up anyway, correct?

A They are. That's correct.

Q And does that justify abolishing the two pools and just putting everything in one pool?

A Yes, sir.

Q Do you have anything else on Exhibit 6?

A Just one quick thing as far as well log evaluation. We have change in water throughout the area. We get a whole fresher down depth so that makes our resistivity of our water hard to figure out. So as far as water saturation calculations, they are pretty tough in the area.

Q Okay. And what does Exhibit 7 reflect?

A Exhibit 7 is introducing our Limousine 15 CD Fed Com #1H. This is the well that is producing or is capable of producing over the allowables. It is an 80-acre horizontal well in Section 15 of 20,

25. Basically what this cross-section shows as you can see on the far right-hand side of the cross-section, you can see the actual wellbore path of the 15 CD. This is the projected cross-section so I've projected in offsetting vertical wells based on their structure and what they would be if you were to draw a straight line to the horizontal well paths. I shifted those based on structure up or down.

In general, you can see, again, my red rectangles are the perfs that we have in the vertical wells in the area. Just wanted to kind of introduce our philosophy as far as completions for our horizontal wells. We use the packers, packers and port system. You can see on the horizontal wellbore, we have black rectangles as well as red rectangles.

The black rectangles indicate open hole packers. The red rectangles indicate the ports. So basically these are mechanical open hole packers where we pressure up on them. They expand mechanically in order to hold the string in place, as well as prevent fluid going up and down the wellbore. We start completion at the toe.

You can see port number 1, 5408 measured depth. We pumped in the first one at 193,000 gallons, roughly 194,000 gallons roughly. We also

put sand in those. I don't have those exact numbers. So we drop a ball. The ball seats. When that ball seats, it opens up the next port in which we frac the next one.

In this Limousine 15 CD, we have a total of eight ports. Roughly in the area, we try to put them 200, 250 feet apart. Just varies on the well. With the 80-acre lateral, we have done up to nine ports. With a full mile, we just ran 17 ports. So what this shows is we have the ability to do -- to have multiple fracs in one wellbore within 40 acres with one wellbore instead of having to drill four vertical wells, for example, like we see in the Yeso generally up on the shelf where they are drilling on up to ten-acre spaces.

Q One thing on this exhibit in looking at the plat right in the middle of Exhibit 7, the surface location is actually in the Unit B as in boy?

A Correct.

Q But it is only -- the Limousine 15 CD is only completed and perforated in Units C and D; is that correct?

A That is correct. We put the surface location off lease because of surface issues, as well as maximizing our lateral length. You can see that I

have a red box that says 3505 measured depth. That is 965 from the north and 2310 from the west, which is where we are legally, and then we did not put our first port until 3578.

Q One final thing that you just alluded to that in certain areas, the Glorieta-Yeso wells, vertical wells, operators are drilling them, placing one well in each corner of a 40-acre unit; is that correct?

A Correct.

Q And that is the -- they've determined that those wells are not capable of draining one well per 40 acres?

A That is my understanding.

Q So the horizontal wells accomplished the fact of doing what -- in essence, what four wells in a 40-acre tract would do?

A Yes, sir.

Q Were Exhibits 2, 6 and 7 prepared by you or under your supervision?

A Yes, sir.

Q And in your opinion is the granting of this application in the interests of conservation and the prevention of waste?

A Yes, sir.

MR. BRUCE: Mr. Examiner, I move the admission of Exhibits 2, 6 and 7.

MR. HALL: No objection.

MS. MUNDS-DRY: No objection.

MR. BROOKS: 2, 6 and 7 are admitted.

(Exhibits 2, 6 and 7 admitted.)

MR. BRUCE: I pass the witness.

EXAMINATION

BY MR. HALL:

Q Mr. Lodge, looking quickly at your Exhibit 2, it appears that most of Mewbourne's horizontal projects are east, west; is that right?

A We actually do both. We have both. We have north, south and east, west wells. The majority of what Concho Marbob has done has been north, south.

Q Okay.

A We know from some microseismic data we have that we don't think north, south versus east, west matters as far as frac orientation.

Q All right. And can you tell the hearing examiner what are the setback rules for wells in these pools currently?

A I would have to defer to the engineer.

Q If we look at some of the locations on here, does it appear that they are 330 feet off the

sides of the quarter quarters?

A Yes.

MR. BROOKS: And we will take administrative notice that that is the case.

Q (By Mr. Hall) And Mewbourne is not asking for a change in the setback rules --

A No.

Q -- under any of these pool rules; is that right?

A No.

Q Okay. I want to ask you about a well I believe you have planned in Section 10. It is your Long Draw --

A Sure.

Q -- CD. Can you locate that for the hearing examiner?

A It is not on this because we haven't drilled it yet, but we have a projected well going through Unit letter D and C of Section 10 of 20, 25. It will be an 80-acre horizontal.

Q And do you know what the footage location is for that?

A It is going to be 350 from the north -- surface location is going to be 350 from the north, 280 from the east in Section 9.

Q And you have two other vertical wells in Unit C and D there?

A That's correct.

Q What do you propose to do with the allowables for all of those wells?

A My understanding, you have to share the allowables.

Q You have to apply for simultaneous dedication?

A I don't know the answer to that, but I would assume so.

Q Okay. Is there anything constraining Mewbourne from drilling the 10 CD well in, say, a north, south drill?

A Not to my knowledge. There might be some land issues as far as partners are concerned, but I'm not as familiar --

Q Okay. Would a north, south project put you into a little bit better geology?

A No, not in my mind.

Q Makes no difference stand up or lay down?

A I don't think so. Well, let me clarify. It depends on where you want to put that north, south.

Q Okay. Say between the existing wells?

Say 1320 --

A Okay.

Q -- and ran that to the south, is that possible?

A I think it would put us closer to some of our vertical wells, which would not be what we would want to do.

Q And why not?

A I think that where we have it planned is okay as far as staying away from our vertical wells, but as a general rule, you would like to stay further away in that unit from your vertical wells.

Q And why?

A Just so you don't affect that vertical well.

Q Is there a concern about drainage?

A No, not in my mind.

Q What can you tell the hearing examiner from a geologic perspective that will satisfy him that locations with these higher allowables, 330 feet off the quarter, quarter lines, won't cause drainage across the section lines?

A It is a low perm environment. We have some sidewalk core data in the area. It shows very low perms, .01 to 1 millidarcies, majority of which

are probably in the .01 to .1 millidarcy phase.

Q Okay. Do you know which wells have sidewall core data?

A We have sidewall core data on the Long Draw 10 F, which is in Section 10. We also have sidewalk core data in Section 22 of 20, 25.

Q Is it your view that the permeability is going to be fairly consistent along the entire geographic scope of these pools?

A Yes, it is. I think there is some -- you might have some rare bugs or something that are going to be higher permeability, but those aren't to my knowledge mappable as far as the majority of the reservoir. It is going to be thick and tight.

Q You told us a little bit about your fracture programs here.

A Uh-huh.

Q The completion techniques and fracturing techniques that you're using, is that increasing the drainage radii for these horizontal wells?

A As far as if you're increasing fluid or --

Q Drainage.

A With how much fluid is what I am asking?

Q Any amount of fluid.

A My question is how are you going to

increase your drainage radii if you use the same amount of fluid?

Q I don't know. I am asking you.

A No.

Q You don't believe your drainage radii will increase with the fracture techniques you're employing?

A No. I haven't done any drainage calculations. That is not my area.

Q Okay. That was going to be my next question. If I ask you that question, you can't tell me what the drainage radius is?

A Okay.

Q You agree with me? We're asking each other questions here.

A Okay. Sure.

Q We're out of sync. But you don't have any testimony, no evidence to offer the hearing examiner --

A No, sir.

Q -- about the drainage radius?

A No.

MR. HALL: No more questions.

MR. BROOKS: Ms. Munds-Dry?

MS. MUNDS-DRY: No questions.

MR. BROOKS: Well, I will follow right up on where Mr. Hall left off, and would it be fair to say that your engineering witness will present some evidence on the area of drainage in this --

A I believe he will have some thoughts on that.

MR. BROOKS: Okay. Basic thing you testified to as I understand it is that in your opinion this Glorieta-Yeso formation is continuous across --

A Yes, sir.

MR. BROOKS: So if it were all combined in a single pool, it would properly be characterized in your opinion as a common source of supply?

A Yes, sir.

MR. BROOKS: Mr. Jones?

MR. JONES: To clarify, the pool that you want to expand includes the Glorieta, but it doesn't include the -- I mean, the other pools don't include the Glorieta according to the nomen -- the way they are worded?

A Uh-huh.

MR. JONES: Is there any significance

in that? What I mean is the Glorieta out here, is it a target --

A No.

MR. JONES: -- at all?

A My opinion is that it is not a target.

MR. JONES: Too silty?

A Right. And not to say -- there is other operators in the area that have -- they have and have continued to put perfs in the Glorieta. We have put them in the lower part of the Glorieta maybe, but we don't think that that's the main target. The main target for us is just below the Glorieta into the dolomite.

MR. JONES: But when the pool was created, the pool, that doesn't include the Glorieta, the North Seven Rivers, Glorieta-Yeso. It must have had some wells initially that did perforate the Glorieta?

A To my knowledge, yes, there is.

MR. JONES: And that was up north more?

A Right, right.

MR. JONES: Does it become less prospective as you go south, the Glorieta?

A I still think it is less prospective to

the north as well.

MR. JONES: Okay. Just for the horizontal ones or for any type of drilling and completion?

A Any type of drilling. Actually, if you look, Section 22 of 19, 25 on Exhibit 2, there is two horizontal wellbores. You see there is one in Unit letter B and then one in Unit letter D. Those are two Nearburg wells that were drilled -- horizontals that were kicked off and landed in the Glorieta. I believe they have made some oil. I don't have production numbers on them, but to my knowledge, it is much less oil than what we're making in the ones that we're landing in the Yeso.

MR. JONES: Do you go out and watch them drill these wells? Are they pretty successful in drilling as far as you want to drill horizontally?

A We have been. And now that being said, we personally have only drilled a one mile long lateral, but we had no issues as we got down towards the end of it.

MR. JONES: And you're satisfied you're staying exactly where you want to be vertically?

A Yes, sir.

MR. JONES: You don't talk about any of the members of the Yeso. Is that because you're in the Delaware Basin? Like the Paddock --

A I think it is probably -- as far as the Paddock, the Blinebry, I think it is the same interval. We just don't use that name, that nomenclature.

MR. JONES: But you picked an interval for horizontal drilling down a couple hundred feet into the Yeso?

A Right. And to clarify, we do not land all of them right there. This one, we have some -- we think we have some better reservoir, deeper, so we landed this one specifically deeper. Now, the majority of the ones that we have drilled, we land probably just above that second green marker. We generally land it there or even a little bit higher. That is about 120 to 150 feet below the base of the Glorieta.

MR. JONES: Do you get involved in your reserve calculations? Do they come to you to have the -- to get the porosity and the net thickness?

A It is something that we're presently struggling with, but we continue to do that, but no,

we have not done many, or I haven't been involved in doing that.

MR. JONES: So you don't work on the volumetric calculations?

A I personally do not.

MR. JONES: You've got some nice software to crank out these maps. This microseismic stuff, I guess we can talk to the engineer about that.

A I am sure he will have some data on that.

MR. JONES: I don't have any more questions.

MR. BROOKS: Nor do I. Do the lawyers have any follow-up?

MR. BRUCE: No, sir.

MR. BROOKS: Very good. The witness may stand down. You may call the next witness.

BRIAN MONTGOMERY

After having been first duly sworn under oath, was questioned and testified as follows:

EXAMINATION

BY MR. BRUCE:

Q Would you please state your name and city of residence?

A Brian Montgomery. Tyler, Texas.

Q And who do you work for?
A I work for Mewbourne Oil company.
Q What is your job at Mewbourne?
A I am a manager of economics reservoir engineering.
Q Have you previously testified before the division?
A I have.
Q And as a reservoir engineer?
A I have.
Q And were your credentials as an expert accepted as a matter of record?
A They were.
Q Are you familiar with the engineering related to this application?
A Yes.
Q And does your area of responsibility at Mewbourne include this part of Southeast New Mexico?
A It does.
MR. BRUCE: Mr. Examiner, I tender Mr. Montgomery as an expert reservoir engineer.
MR. BROOKS: Any objections?
MR. HALL: No objection.
MS. MUNDS-DRY: No objection.
MR. BROOKS: So qualified.

Q (By Mr. Bruce) Mr. Montgomery, let's just start with your Exhibit 8. What is contained in this plat?

A Exhibit 8 is a two-page table of the wells that we had public data on, production data for these fields, these pools up through September 15 when I printed this out, and it is sorted in the date of first production so you can see some of those early wells at the beginning.

Going across the table, you see I have a little nickname. I use just the location, the lease name, the well number, operator name, field name, the cumulative oil, gas, water, first production, last production -- some of these wells are off production now -- the months that they were on production, and therefore, I can calculate the cumulative allowable. And then the overage or underage for those allowables. The last column is whether it is horizontal or vertical.

So the first page if you will notice, they are all V, they are all vertical, and there are no wells with any problems being over the allowable. There was a time when these wells were being developed that fractured techniques were different. There were some good wells, but there was nothing

that was that prolific.

If you turn to the second page, you will see some of the newer vertical wells and a few horizontal wells, and I would just note the first horizontal well there is about a quarter down the page, and it is the Noose Federal Com 6H by Marbob. Further down the page, there is one that is highlighted in yellow as horizontal, and the yellow signifies that the cumulative allowable is over the statewide allowable for that well.

There is one vertical well that showed up in that form. At the very bottom, it is a Mewbourne well. It has since declined naturally to where it is no longer over its allowable. So this is just a little bit of a background to help go with this map. And I have studied lots of Yeso fields. And when I studied this one, I compared it to other fields, and this gives us a good handle at that point in time of what was going on with the development of this field or these three pools.

Q Let's move on to your Exhibit 9. This is more of a -- well, tell the examiner what it is.

A It is kind of a cartoon you might say or a diagram.

Q I was going to say.

A It is very localized. You see this is the south half of Section 10 and the north half of Section 15 in the Township 20 South, 25 East. Each small block is a 40-acre unit, and the total block is one square mile. There are 12 vertical producers and one horizontal producer that was talked about in the previous exhibit, the Limousine 15 CD #1. And you can see that has the several fracs denoted with the green ellipsis all connected together.

The vertical wells, they are fracture treated. As we heard, they are thick, low permeability dolomites. We talked a little bit about drainage. These aren't exact drainage areas, but I come up typically with ten to 20 acres for these vertical wells when they are done with their ultimate recovery, that they will have recovered at a ten percent, 15 percent recovery factor only in ten to 20 acres.

Q Let me step in there for a minute. These are all existing Mewbourne wells in the south half of Section 10 and the north half of Section 15?

A That's correct. They are Mewbourne operated.

Q Except for the Limousine 15 CD, they were vertical wells?

A That's correct, yes.

Q Have you in looking at the production data seen any interference, say, between the well and -- the two wells in the east half, southeast quarter of Section 10?

A No, nothing significant. Every once in a while when we frac a well, we will see a little bit of frac water in the nearby well, but the production is not affected.

Q Okay. So that would indicate that the drainage in these wells is substantially less than 40 acres?

A That is correct. It is very early on to know, but there is no evidence of production interference to where they would be competing for the same drainage.

Q Go on with your testimony.

A Okay. And so as we found that these -- these wells are very economic to drill vertically. The decision was made to try horizontal wells in addition to infill drilling these vertically, which is what -- the normal course that would occur. We heard earlier in the same room about the Burch Keely Unit. There are dozens, maybe hundreds, of Yeso wells drilled on ten-acre spacing, vertical wells,

due to the low permeability nature of these reservoirs. They just aren't able to drain a 40-acre unit very well.

So we drill a horizontal well, and what we find, we did a really good job of draining -- we think we're going to do a really good job of draining these 40-acre units that we drilled through. What we find, even though it is very low permeability, we can space the fracs so close together, that the oil doesn't have that far to travel to get to a fractured plane and into the wellbore.

And when we do that, we're able to maybe increase the recovery factor a little. We don't get a larger area, but we just do a better job of getting the oil out of those 40-acre units, like getting multiple fracs in a single well. The rub was we became -- we had high, high oil rates and exceeded the allowables.

Much like Marbob before us, who asked for testing allowables at maximum rate, we had asked for a testing allowable at maximum rate for this well, and we were able to produce 400, 500 barrels a day. The allowable for that well would be two 40-acre units, so 160 barrels a day that we were able to sustain high rates, close to triple that.

Now, the vertical wells may come on much above the initial oil allowable. They quickly decline. And within a few months, they are in balance with their allowable.

Q Mr. Montgomery, in looking at the Limousine 15 CD, you have eight little ovals on that. Is that because you're using eight points of entry when you are --

A We are. That's right. This well was frac'd eight different times the same day, but an hour or two apart for each one, and it allowed us to create eight points in those two 40-acre units.

Q Okay. And using eight fracs versus one, that does create the potential of high initial oil rate?

A Yes, it has many times. We have some other evidence to show after this about the actual productions from these wells.

Q Okay. Let's move on to that, and you've got a number of charts. And maybe for the first one, just fully describe what is shown on the chart, and then for the rest of them, we can probably get -- slip through them a little more quickly.

A Okay. That is a good point. This first chart is of a well that is right next to the section.

If you refer to Exhibit 2, the map, in looking to Section 9 and to the southwest quarter, Unit K, you see there is a Gunsmoke 9 K. And I brought this up to show a horizontal well next to a vertical well to talk about what the differences are, and I've got a few more examples.

And on this plot, the oil will be in green, the gas will be in red, and the blue will be -- the water will be in blue, and then the gas oil ratio is in a very light green with a smaller dot. The scales are logarithmic, and you can see the oil scale on the left with the gas and water and the gas oil ratio scale on the right.

At the very beginning of time, back in December of '09, we fracture treated the well. This is a vertical well. And you see the well came on barely able to do the 80 barrels a day. That is the allowable. It came on maybe 100 barrels a day for just a few days. So it was never in any need of any relief. This is sort of representative of the more moderate reservoir productivity. We do have sections that the vertical wells are much better than these.

And on the far right, you see the cumulative oil production, gas production, and water production. And if I could, I would like to go to

the next exhibit.

Q Yes, sir.

A If you put these side by side, what I'm trying to show here is that the horizontal well in the same lower productivity part of the reservoir is much stronger than the vertical well. In fact, my belief ultimately it will be six times as good as the ultimate one. And if you think about drilling two 40-acre wells, that's twice as good. 20-acre spacing would be four times as good. So it would be equivalent of drilling three wells per 40. It is hard to know that exactly so early on, but that is a --

Q Go ahead.

A -- it is obvious that they are much stronger wells.

Q Just to orient the examiners, on Exhibit 11, the Gunsmoke 9 EF Fed is directly north of the well that you just talked about?

A That's correct. I'm sorry. Yeah, looking at Exhibit 2, it is directly north, and it is an 80-acre horizontal going and producing through Unit letters E and F of Section 9. So its oil allowable would be 160 barrels a day, and that is about all it really did to be honest with you. It is at maximum

rate. We're not choking it back. It began to decline from there. It never had a problem with its current statewide oil allowable, but it does -- if you will notice, look how long it is sustaining over 100 barrels a day compared to a well in the same reservoir. It could only do that for a few days. And also notice the GOR. Although it is different, it is similar. Typical GORs are 500 to 2000.

Q It is a very low GOR?

A Very low GOR. It is.

Q And, again, this shows that the -- this is a very shallow rate of decline in this well?

A It is, yeah. And I would note that these flat GORs help me feel confident that this is a slow -- it is going to take years to get this oil out. This is a very tight reservoir that is -- I really don't think it is affected by high, high rates.

Q And maybe this is a sidetrack. Have you calculated what the life of some of these wells are?

A They are 40 to 70 years, I believe.

Q Whether vertical or horizontal?

A That's correct. Yeah, the better vertical wells will go longer, you know, closer to 50 or 60 years.

Q Okay. Let's move on to Exhibit 12. Again, what is this?

A Exhibit 12 and 13 go together as a pair. So if we want to look at them both, starting with Exhibit 12, this is a vertical well very near the Limousine 15 CD horizontal well that we talked about a while back. This well is due north. If you look at Exhibit 2, it is in Section 10, Unit letter M. It came on after being frac'd as a vertical well exceeding the 80 barrels a day allowable, but very shortly thereafter as we began to file papers, we were at the allowable, and so it fell below the allowable.

We felt we would be okay on a cumulative basis, and we were. In just two or three months, it was back in balance. I do want everyone to notice that the GOR is typical from what we saw in Section 9. This is just better, thicker actually and a better reservoir.

If you look at the next exhibit, 13, you see the horizontal well we have been talking about that was fractured stimulated eight times over two different 40-acre units. It was a very good well. Came on at much better rates than the last horizontal well we just talked about. It is in a little --

obviously a little better part of the reservoir, much thicker.

Here, we had to apply for testing rates at maximum rate for 60 days to see what we could find out in preparation for this hearing. So after 60 days, we pinched the well back. And you can see the gas oil ratio did go up, but very similar, and then pulled back down a little bit. I don't believe that that is that significant, but what it does show us is that this is a better -- this is better than the Gunsmoke Section, Section 9.

So here we have a horizontal well that gives us a problem with oil allowables. What do we do? Do we just restrict them? We spent a lot of money on horizontal wells. Or do we work with the Commission to try to work out a higher allowable?

Q And what about the next plat?

A The next plat is -- the next two or three are just sort of supplementary because I wanted to put out the rest of the horizontal wells to be honest. This is a Mewbourne well. It is also on Exhibit 2. You can find it in Section 34 north of where we have been looking up in the next township. It is a north, south 80-acre well on the far east side, and it is offsetting a couple of Marbob

horizontal wells that are in Section 35.

So if you look in the 19, 25, Section 34, the east half of the southeast quarter, you will see this well. It was fracture stimulated very similar. Although it is north, south, there wasn't much difference -- and you can see we had a very good well. Again, we were very near the allowable that we were okay with on the statewide basis.

160 barrels of oil per day is what this well has right now. It is bouncing around its allowable. It might struggle a little to stay under its cumulative allowable, but I believe it is slightly under the allowable right now, its cumulative basis, and it has got a typical GOR profile.

Q A very constant GOR?

A It is, yeah. And then the next exhibit, 15, is the well right next to it. A little bit better -- well, a lot better part of the reservoir. Fortunately for us, we noticed that in Section 35, Marbob drilled several horizontal wells, of which we believe this one just happens to be in the sweetest spot of the reservoir. Their other wells aren't this good. They are all very good, but this one is extremely good.

They applied for maximum testing for a period of time, for three months, and they did that. You can see the well got up to over 500 barrels a day -- I think even 800 barrels one day.

MR. BROOKS: Which well is this?

A This would be Exhibit 15, the Noose Federal 6H. And it is right next to the well we just looked at in 34, so it would be in the west half of the southwest quarter of 35.

MR. BROOKS: Okay. The number 6H, I'm trying to find that.

A It is kind of --

MR. BROOKS: Oh, I see. It's the Noose Federal 6. It doesn't limit -- the H doesn't come out.

A Right.

MR. BROOKS: Okay.

A And that gave me a brief time to remember I forgot to say one thing on the previous production plot in Section 34. It was the first time we drilled right through a section that had two producing wells in it. We bought the two wells. They were down to almost nothing to be honest. So we knew even if we had some effect on them, it would be minimal compared to if we made a good well. So we don't see any

effect on those wells, but to be honest, they weren't doing anything anyway.

But what it tells me is those wells didn't drain those 40s. They didn't come close to draining those 40s. These two horizontal wells, the Marbob well we're looking at now and our Lakewood well, are fantastic wells in a place where there were already two old Yeso wells that were frac'd and had produced, and I think they made 20,000 or 30,000 barrels apiece.

Q (By Mr. Bruce) So what you're saying, Mr. Montgomery, is two things. That your horizontal --

A Lakewood.

Q -- Lakewood IP well didn't have any effect on the two older Yeso wells, but by the same token, they had no effect on your new well?

A That's correct. That's correct. So the Federal 6H on Exhibit 15 is another example. I would point out one or two other things on this particular well. You know, I visit with Nearburg and I visit with Concho and all of these operators, and Concho Marbob told me the way they try to keep their allowable balanced after their maximum testing was to shut the well in and bring the well back on.

There is a problem with that. We have H2S here, and we treat with -- for both scale and corrosion with a chemical. And we need to keep that fluid moving; otherwise, we get a stagnant fluid that may impact the tubing and the casing. So figuring out just how to curtail these wells has been important. We have done something different than what they did, but it is a problem that we worry about, that by having to restrict these wells, we can have additional costs and problems with corrosion and scale.

And then moving on to Exhibit 16, again, for completeness, this is another well that is over its allowable, and it was applied for the testing period, and so it produced wide open. Didn't have any gas production at first. You can see this is the Grave Digger State #1 in Section 2, 20, 25, and it is a full mile lateral. You can see it in blue. North, south in Section 2 on the west half of the west half.

And so with a full mile, you're going to have even more fracs. Should have even a better long-term well. More total recovery. You don't always get the right multiple up front that first month, but ideally, I think we would draw at least a full mile if we had this blank slate, which we don't.

But this is another well that is over its allowable, and they have reduced its rate down to 320 barrels a day, which is the current allowable for a full mile lateral, but it is being choked back.

The GOR, I don't have the first month of gas, but you can see it is a typical GOR. Even at these high rates, the GORs don't do anything strange. That's the last of those kind of plots.

Q Okay. Let's switch gears a little bit. What are your next series of three exhibits, starting with Exhibit 17?

A These are exhibits for the benefit of the OCD to show the amount of allowable overage we have for these big wells. There is really just three that we're worried about right now. As we drill more wells, that is going to continue for all three operators, and there are other operators involved.

The first one would be the Grave Digger. It's the same well we just looked at. It's a slightly different plot. It shows oil production. There is no gas or water, but it shows the same peak in oil production at 700 barrels a day.

And I plotted on here the oil allowable, and in purple, there is a straight line that shows what the cumulative oil allowable would be day after

day added up. The green line is the cumulative oil production. So you can see on this well, for a while, it was below its cumulative allowable, but by producing over 320 barrels a day, it quickly got above its cumulative allowable. And if you look at the end point, which is as of October 1 -- I should have put that on there -- these three plots all end on October 1. This well is about 9,000 barrels over its current allowable waiting for this hearing, and it is being kept at its current allowable today.

The next two plots are very similar. It is the Noose Federal 6 we talked about a while ago. That well is, again, in Section 35, and this is the same type of plot showing that with those high rates, of course, it got over its allowable, but once they started to hold it to its allowable, those purple and green lines became parallel. You can see that well is about 25,000 barrels over its statewide allowable.

And then the last one is the Mewbourne well, which we're most concerned about, of course, and ever since we reduced our production rate, the two lines, the cumulative oil and the cumulative oil allowable begin to parallel, but of course, we're over our cumulative allowable, and that's about 16,000 barrels.

Q Even though the wells are over their cumulative allowable, right now, these three wells are producing at the statewide allowables?

A They are.

Q They are.

A There has been no effort really to try to make that up. We're really waiting on this hearing, and we would like to get those allowables grandfathered in to where we don't have to make those up.

Q The overages, you would like them excused?

A I would, yes. We would.

Q If this application is granted, Mr. Montgomery, do you see any negative impact on the correlative rights of operators in the pool?

A No, I do not.

Q Do you see where waste will occur by increasing the daily allowable?

A No.

Q Does the fact that these wells show a flat GOR indicate that there is no damage to the reservoir by increasing the allowable?

A Yes, to some degree, that is important.

Q And, again, getting back to the drainage areas, you don't see any effect on offset wells,

vertical or horizontal, at the current well spacing rules?

A No.

Q In your opinion is the granting of this application in the interest of conservation and the prevention of waste?

A It is.

Q Now, one thing is at this point, Mewbourne seems to think that drilling horizontally is the best way to develop this reservoir?

A Everything else being equal, yes.

Q And the horizontal wells do cost more than a single vertical well?

A Yes.

Q Do you see a benefit in increasing -- the production to increase -- to recuperate costs at a more rapid rate?

A Absolutely. Horizontals would be much better at that.

Q Make it more economical for the operators to drill in the pool?

A And getting more out of each 40, get a higher recovery factor out of each 40, much higher.

Q Were Exhibits 8 through 19 prepared by you or under your supervision?

A They were prepared by myself.

MR. BRUCE: Mr. Examiner, I move the admission of Exhibits 8 through 19.

MR. HALL: No objection.

MS. MUNDS-DRY: No objection.

MR. BROOKS: 8 through 19 are admitted.

(Exhibits 8 through 19 admitted.)

MR. BRUCE: I pass the witness.

MR. BROOKS: Mr. Hall?

EXAMINATION

BY MR. HALL:

Q Mr. Montgomery, if you refer back to your Exhibit 9 --

A Okay.

Q -- showing your drainage here, and if I understood you correctly, these ellipsis are demonstrating approximately ten to 20 acres of drainage?

A They are just diagrams showing approximately the angle that I think these fracs are going and the dimensions of the ellipsis, but they are not meant to been an exact number of acres.

Q I see.

A But I stand by my comment that ten to

20 acres per vertical well would be what I would estimate these would drain ultimately.

Q All right. And some of the ellipsis, for instance, the LD 10M #1, the vertical well, is showing drainage across the subdivision boundary?

A It is. Although, I don't know that it does that.

Q We should establish that current setback rules are 330?

A Yes, they are.

Q And you're asking for those to remain in place?

A Yes, we are.

Q If we look at the horizontal well there, at the Limousine 15 CD 1H, it is showing multiple ellipsis, and if we look at -- I guess that would be Unit D in Section 15, the equivalent of four ellipsis there, so is it accurate to say we're draining 80 acres out of Unit D?

A No. What would be accurate to say is we're draining more than one vertical frac would be draining. It depends on what one vertical frac truly drains, whether it is ten acres or 20 acres, and it depends on how big of a frac you put in there and rock and other things. These are just to demonstrate

some general concepts.

Q Okay. None of your horizontal wells are being drilled closer than 330 feet to any of the vertical wells; is that correct?

A Exactly. That's statewide rules, and that's what we're doing.

Q Okay. Even within the same --

A Oh, I'm sorry. You said next -- repeat your question.

Q Are any of your horizontal wellbores closer than 330 feet to any vertical wellbores within the same 40?

A I would have to look at the Lakewood. I bet the Lakewood is to be honest with you, but I would have to measure. I don't know for a fact.

Q On the fracture treatments in your horizontal wells, did you see any fracture water, fracture fluids coming out of your vertical wells?

A We did see a little bit -- it's hard because they are done by tank battery. We saw a couple of vertical wells that have that effect, and we saw a -- I believe the 10M #1 in this -- on this horizontal well showed a little bit of frac fluid come in. And we're not sure what finally gets propped versus what gets pumped and what finally gets

available for drainage from -- originally propagates out. It is a difficult thing to know just what that effect is.

Q If you're recovering frac fluids like that, is that an indication to you that you're likely going to see interference more than 330 feet away?

A No. This is not the only place we've drilled horizontal wells. And time after time, we will see -- sometimes an offset will take -- that day takes some frac fluid, a producing well, and then months later, look back and see no detriment to it, and the same is true with these wells.

Q No detriment in terms of producing rates?

A That's correct.

Q Your Exhibit 14, your plot on your Lakewood 34 Fed IP 1H --

A Okay.

Q -- and that's offsetting your well to the west of -- if I have the right name, the Unit Pan Canadian A 2? That's the same interval?

A Right. Those were -- I would have to look on that table, but some of those were renamed by a later operator. I call those the Lakewood 1, 2, and 3 wells, which are the vertical wells in that section, but we could find the exact name if you need

to.

Q Don't need the name. I just want to know whether the horizontal completion was in the same interval as the vertical --

A Yes, it was.

Q Tell us how you came up with an allowable of 240 barrels.

A Well, we looked at the vertical wells that were prolific, and even though they didn't sustain those rates, we had wells that were able to triple the oil allowable, and so we felt like that's what we should ask for. On top of that our one horizontal well that's so good is doing about triple or could do about triple its allowable of -- let's see, 80 and 80, 160, three times that, 480, yeah, that well could do about 480, I think even 500 barrels a day.

So by the performance of the actual wells, we saw that more than one instance, including some of the other operators, that three times was not unusual.

Q And requesting a test allowable is not an efficient way for you all to produce those wells and bring it back into balance after the test period?

A I'm not sure I follow the question.

Q Is there any other method under the rules

available to an operator to produce a well in access of the established allowable, of the depth bracket allowable so that you're exceeding that and then bringing it back into balance other than requesting a change of the pool rules?

A There is new field discovery allowable, and I am not an expert in this part, so I probably have to say I'm not sure to your question.

Q New field discovery, you have to be more than a mile away from existing pools?

A I will take your word on that.

Q Okay. Is it your view that operators have enough data from the historic production from these horizontal wells so that the hearing examiner can make a decision with confidence that interference won't result?

A Yes.

Q What is the basis of that?

A Well, I would think that it is a combination of things. We have the Lakewood example where there are wells that clearly produce, and we still have all of this unrecovered oil, and we went in and frac'd the horizontal well and made a very good well. We have evidence of a multitude of pools and dozens of Morrow wells that are drilled on

ten-acre spacing anyway in Yeso pools. We have geologic evidence that shows this Yeso is very low permeability, and those don't lend themselves to draining large areas, so I think this is an appropriate time to ask for this.

Q If we look at your Exhibit 8, it appears that on all of your horizontal drills, none of those wells are older than 2009 vintage?

A Yes, that's correct. It is a fairly new technique applied over many, many reservoirs and many pools.

MR. HALL: No further questions.

MR. BROOKS: Ms. Munds-Dry?

MS. MUNDS-DRY: No questions.

MR. BROOKS: I think I will defer to Mr. Jones here.

MR. JONES: Okay. Just for my own education, I am glad to see reservoir engineers are working on primary recovery again instead of just waterfloods and CO2 floods.

A Yeah.

MR. JONES: What's the gravity, oil gravity out there? I forgot.

A 38.

MR. JONES: 38, so it's pretty

normal. And the bubble point?

A We don't have a handle on that, but we think it is close to the original reservoir pressure based on just estimates of depth around 1,100, 1,200 pounds.

MR. JONES: Your GORs are hovering around 1,000.

A I would use an initial GOR closer to 500, 600.

MR. JONES: Oh, okay.

A Solution GOR.

MR. JONES: Okay.

A These are so tight, they begin to give up gas almost immediately.

MR. JONES: Okay. But despite the fact that -- should we wait?

A I am good without him.

MR. JONES: Okay. Despite the fact that you frac these things pretty heavily, isn't it true that very rapidly, your production is controlled by your tight radial reservoir drainage?

A Yes. That's well put.

MR. JONES: Okay. I guess I will go on with -- are you convinced this is a solution gas drive reservoir?

A I am.

MR. JONES: No water drives whatsoever out there?

A None.

MR. JONES: Are you of the opinion that solution gas drive reservoirs do not really need a limiting production rate? They won't be harmed by production as high as you can get them, especially at these low permeabilities?

A That's the key. Yeah. If you have very low permeability, I don't think there is any significant problem with high production rates if you can get them through a horizontal or through a fracture or multiple fractures and horizontal.

MR. JONES: Okay. Do you have any papers or anything that's intuitive to us, but do you have anything that's -- anything written about this?

A I don't have anything I can point you to corroborate that, but I just lead you to the wealth of wells out here. The evidence is overwhelming.

MR. JONES: Okay.

A These tight Yeso wells, that when that third or fourth well in a 40-acre unit comes on and it still has -- you know, maybe not as good, but very strong reserves, you know, that these wells aren't

draining large areas, and that the high rates are not affecting them.

MR. JONES: Okay. Is your frac treatments hurt by your high rates?

A My frac treatments hurt?

MR. JONES: What I mean is you pull back a bunch of sand by letting the well flow --

A Oh, I see. No, we -- everybody fracs these differently. They are such low permeability here that we have gone to a slick water, very low loading gel with still a substantial amount of sand, but instead of the traditional frac it at one pound per gallon, and two, three, four where you pack sand close to the wellbore, we pump sweeps of sand out into the reservoir to help open -- keep some things open and divert.

We overflush, which means we pump pure water after every stage, after every port, and see no detriment. And we see some sand back, but not as much. We've tried it both ways. We tried pumping the typical Nearburg and Marbob style fracs, but we prefer our own.

MR. JONES: Speaking of those fracs, have you tagged any of the sand?

A We have.

MR. JONES: Do you see -- does your frac sand -- the height growth limited out here at all by the reservoir?

A It grows high very easily. We tag vertical fracs with two stages, so we pump the bottom stage with a tag, and we set a plug. And when we frac the second stage and begin producing, we immediately saw that tag. And these were 200 feet apart, bottom perf to top perf. So we know we have good height growth, which helps the horizontals. We have to have that, and we have done microseismic to show height growth also.

MR. JONES: You think it is tectonically balanced so that your fracs are vertical, but they are oriented kind of north, east, south, west?

A We had one straight vertical, and we had one that was tilted ten degrees.

MR. JONES: Tilted a little bit?

A Yeah.

MR. JONES: You can actually tell that with your microseismic --

A Yeah.

MR. JONES: Do you have a lot of tortuosity around the wellbores and more if you drill

in one direction than another?

A We haven't established that. The frac orientation is not 45 degrees, but it is close enough to where we feel like it is okay to drill either north, south or east, west. We have shown by good producers that both work. We haven't had a problem -- we don't have any problems putting away the frac jobs.

MR. JONES: Okay. But you're targeting it seems like, if I heard correctly, one zone in the Yeso. Does this mean that you might be able to target some different levels in the Yeso someday and --

A If you have a thick enough interval, you have to make a decision where you're going to land it. If you have a 100-foot interval, you land it near the bottom of that 100 feet and you'd probably be okay, and even 200 feet. But some of these are 300 feet in our vertical producers.

MR. JONES: Oh, okay.

A And they are good wells, so that could happen. I remember hearing the Burch Keely discussion today, and those are like 1,000 feet or more from top to bottom. So you would struggle if you got too far apart drilling one horizontal and

getting it on.

MR. JONES: I think they showed some heavy water production in some of those, but you're not showing that here at all?

A We do in some wells.

MR. JONES: Oh, you do in some wells?

A Yeah. We have a high water cut in some wells.

MR. JONES: And you're satisfied with 330 from both east, west, north, south and not like closer spacing on one than the other?

A No. No, there is no need for that in my opinion.

MR. JONES: Okay. I'm fine.

MR. BROOKS: Okay. I have nothing further. The lawyers have any follow-up?

MR. HALL: Do not.

MR. BRUCE: No, sir.

MR. BROOKS: Very good. The witness may stand down. Let's take a ten-minute recess.

(A recess was taken.)

MR. BROOKS: Does that conclude your case in chief, Mr. Bruce?

MR. BRUCE: That is correct.

MR. BROOKS: Mr. Hall?

MR. HALL: Mr. Examiner, we would call Tim Speer to the stand.

TIM SPEER

After having been first duly sworn under oath, was questioned and testified as follows:

EXAMINATION

BY MR. HALL:

Q For the record, please state your name.

A Tim Speer.

Q Two Es?

A Yes, correct.

Q And where do you live, Mr. Speer?

A Midland, Texas.

Q By whom are you employed, and in what capacity?

A Nearburg Producing. I am a staff engineer.

Q All right. You've not testified before the division before. Would you give the hearing examiner a summary of your educational background and work experience.

A Yes. I have a bachelor of science in geological engineering from the University of Missouri. I have about 26 years experience, both school, working pretty much all phases: Production,

engineering, reservoir engineering, geology, and several other things.

Q Permian Basin experience?

A Primarily in the Permian Basin.

MR. HALL: We would offer Mr. Speer as a qualified expert geologic engineer.

MR. BRUCE: No objection.

MS. MUNDS-DRY: No objection.

MR. BROOKS: So qualified.

Q (By Mr. Hall) Mr. Speer, let's look at Exhibit 1 if we could, and would you give the hearing examiner an overview of the Nearburg wells and its acreage holdings in the area of the pool rule consolidation.

A Yes. This shows -- the yellow is the acreage where we operate. We have interests in other acreage in this area, but the yellows were where we actually operate. It shows the -- somewhat obscured, but the red is showing outlines roughly of the existing units. And the green is the outline of the proposed units, the proposed consolidated unit. I have also outlined in general -- we have kind of identified two producing trends.

There is to the northwest, the Glorieta and Upper Yeso producing trend outlined in light

blue. A lot of our wells, particularly up in Section 22 and 27 and the south half of 15 are completed in the Glorieta in the very upper part of the Yeso going down to about the first green line on Mewbourne's cross-sections, you know, that they show.

The green area out here outlines what we call the Middle Yeso play. That is where these horizontals are being drilled. That's where Mewbourne has completed most of their wells in Section 10 and 15 and throughout the area, which is generally below that lower green line on Mewbourne's cross-sections.

For the most part, we don't have any qualms with their geology. We see it pretty much the same way they do. Although we do see to the north the Glorieta as being, you know, pretty prospective. We have made some pretty good vertical wells there. The Middle Yeso actually becomes less well-developed. It starts getting a lot sandier as you go to the north and northwest. Whereas in the south, southeast part, it has got some pretty thick clean sections as Mewbourne demonstrated.

By the same token, as you get to the south, southeast you tend to lose your Yeso. So, you know, in some areas where they are -- I mean your

Glorieta, I'm sorry. In some areas where they are in 10 and 15, you know, your Glorieta is probably less prospective. Although I think they do have a well or two down there that they have, you know, had wells where they watered out in the Yeso and flood back to the Glorieta and made decent wells in there. But that's kind of an overview of the area as we see it.

Q All right. Now, all three of these pools that Mewbourne seeks to consolidate are operating on statewide rules, correct?

A Correct.

Q 40-acre oil wells?

A Correct.

Q And the depth frac allowable is 80 barrels per day?

A Correct.

Q From the perspective of the division and operators in the pools, do you see any administrative problem in managing all of these three pools as a single common pool?

A No.

Q Okay. Note in Mewbourne's application for Section 3 and 20 South, 25 East, they only asked for the inclusion of the southeast quarter, I believe. Is Mewbourne asking for the inclusion of all of

Section 3 in the new pool?

A It is my understanding just the southeast quarter where there is an existing fairly large Glorieta-Yeso well. It is actually completed in the Glorieta and upper part of the Yeso.

Q Okay. So by including all of Section 3, we would be able to close that gap in the middle of the consolidated pools?

A Yes. And that is -- for instance, as they mentioned, this shows our well here. We are just finishing drilling. Right now actually reaming out the curve section of the well in the east half, east half of 3, you know, half of which is in their proposed boundary and half of which is out.

Q Nearburg's perspective, is there a question whether there is currently sufficient production data, production history, waterhole pressure and the like that would allow the hearing examiner to make a determination that a triple increase in the allowable won't result in the impairment of correlative rights?

A We think there is a relative lack of data, and I have asked of Mewbourne, there is no data on current bottom hole pressures, what our bottom hole pressures are doing, whether we are at or below the

bubble point. Most of these wells are pretty new. The Marbob wells, the oldest of the horizontals were completed right I believe at the very end of '08, December of '08. So on most of these, we have less than two years production history. On several of these, we have a matter of, you know, Mewbourne's newest well 15 --

Q The Limousine?

A -- yeah, the Limousine 15, you know, is a matter of a few months old. Marbob's newer well in Section 2 is, you know, about two or three months old production, so it is all relatively new production. That's, you know, an expanding area. This is really kind of a -- even our older verticals -- most of our verticals are actually recomplete.

So up to the north, we have drilled a couple of new wells, new holes, but most of these were Canyon wells, which played out and we plugged back. But even those are generally a couple of years or less old production, so there is not a lot of long historic production out here.

Q So you think operators in the division are in a position now to make the determination that there won't be reservoir damage if we increase the allowable out there?

A We don't feel we're at that point.

Q Okay. And we know from Mewbourne's testimony today that we have more than one well capable of exceeding the allowable?

A Yes. I believe there is at least a couple of wells.

Q All right. Let's look at your Exhibits 2 through 7. If you would discuss those with the hearing examiner, what it shows.

A Okay. Section -- I mean, Exhibit 2 is a plot of their Limousine 15 CD. This is the one they got the testing allowable for. The darkest green is daily oil production. The red is gas. And the kind of yellow-orange is GOR. And what we are seeing is as they increase production, there is an increase in the GOR.

When they brought their production back to allowable, there is a distinct drop in the GOR. Their GOR, when they were producing at the higher rates, runs a little over 1,000 to 1 versus coming back to what Mr. Montgomery said is more normal, you know, 600 to 1 under the lower rates. So that's one area where we do see that the GOR may be getting affected by production rates.

Q Okay. Now, for your Exhibit 2, the

Limousine 15 CD #1 and then your Grave Digger State Com 1H, Exhibit 3, can you locate those on your Exhibit 1?

A Yes. In the 15 CD, it's not really drawn on here, but there is -- it actually starts, I believe, where the little drilling rig is in the west part of the northeast of 15, and it goes west through the CD units. And then the Grave Digger #1 is in the west half of the west half of Section 2, and it is drawn on here, the horizontal section.

And, you know, there again on Exhibit 3, the Grave Digger -- and I've got to assume they were wearing the gas early on. I know we had to -- we're drilling a well and our well is just a direct west offset of that, and we're having to do some right-of-way work on the gas line. So I suspect they may have had to do some of the same type of work, delaying on getting a gas hiccup, because all of these wells generally have at least a 600 to 1 GOR initially.

You know, some of them have higher. And obviously, they wouldn't had to have some gas production. When they start showing the gas production, you can see -- and this is where they're doing their testing allowable and running upwards of

close to 800 barrels a day. Their GOR is running at 1,000 to 1, you know, getting over in parts. Again, as they cut back the production a little less than that, you do start to see a moderation in the gas oil ratio.

Q All right. Let's look at Exhibit 4.

A Okay.

Q Would you locate that well on Exhibit 1 as well?

A Exhibit 4 is a Marbob well in Section 35. It is their Noose 7H. I believe that's the well in the west half of the east half, their full horizontal. Yeah, I believe that is correct. And there, again, you see some of the same, you know, type of thing. If you look at the curve of the oil production, and here I have pooling off of IHS versus my other plots were done off Excel, so the color codes are a little bit different, but this purple at the top is the GOR.

You do see a tendency of that GOR to reflect the variances in your oil production, which is the green below, and then your red is showing your gas production below.

Q And data for this well begins when?

A In February 2010.

Q All right. Let's look at Exhibit 5. Would you locate that well for us?

A Yes. This is their Noose 6H. That's the one that Mewbourne showed as, you know, a pretty high volume horizontal. That is the west half of the southwest of 35. That's the one that they got -- that Marbob got their testing allowable over. You can see on a daily average, it hit 500. This is monthly production versus daily production. I was pulling off IHS. I didn't have daily on these.

But you can see that monthly average, they peak out about 500 barrels a day. Again, as they bring that well back to allowable, you see a moderation in the GOR.

Q Let's look at Exhibit 6. Can you identify that well for us?

A This is the Marbob Noose #4H, which is the west half of the northwest of 35. This -- and I believe this is the oldest horizontal in the Middle Yeso. You know, like I say, some of the horizontals we drilled to the north which were actually up in the Glorieta predate this, but for the Middle Yeso, it really kicked off this play. This is the oldest well. It was completed in December of 2008.

And there, they did not have quite as big

of a well. It certainly was, you know, as Mr. Montgomery pointed out, it is better than the verticals. It's held up around 150 a day for several months. The production has declined since then, but you do see over time that we are seeing an increase in GOR.

Q And Exhibit 7?

A That's the 5H, which is the east half of the west -- yeah, the east half of the west half of 35. It is actually a 120-acre horizontal. It was completed in July 2009, so getting in a little -- one of the older ones. Still not that old of a well. But, again, same thing. It was topped out around 180 barrels a day. It actually held that pretty flat for a period of time, but we're seeing there, again, an increase in the GOR over time.

Q If these wells and these pools are produced at an accelerated rate, is there any risk of reservoir damage?

A That's one of our concerns is we really -- to me, you know, looking at it, I certainly feel a lack of data to know exactly. I do agree this is primarily a solution gas reservoir. How the gas is breaking out in this reservoir, at what times we're seeing gas break out in the reservoir, whether we're

creating, with some of our higher production rates, some localized pressure sinks where we may be seeing increased gas breakout, we really don't have a lot of information. And a lot of that is we don't have the bottom hole pressures. We don't know what we're draining for sure.

One of the things we intend to do on our new well is to take a bottom hole pressure to see where we are starting out. We would like to have that information. Are we kind of normal for the area or have we been affected by some of the offset production? Particularly, with Marbob's, you know, COG's well being, you know, a pretty big well, 330 feet off our line --

Q Which well is this?

A This is the Grave Digger #1, which is the west half of west half of Section 2. So we just feel that in general, we lack the data to make a really good decision about this, and that we would like to collect some more information on it. We would like to see some other information taken on it. Collected on it.

Q Does Nearburg have a new well that is coming online soon?

A Yes. And that's the one I mentioned,

which we have just -- we're finishing the drilling phase in the east half of the east half of Section 3.

Q And that's the offset to the Grave Digger, the large well?

A Correct.

Q And do you know the footage location of your well?

A We're 660 off the lease line.

Q Why did you choose to locate it at 660 off the lease line?

A Two reasons, because within our camp, you know, we kind of had the group go 330, you know, make sure they are not draining us. I have concerns that if we're 330 and they are 330, that we are going to have interference, and we may well be draining each other. My charge is to see that we make as good of a well as possible. That is my primary charge.

So by keeping it, you know, 660, we do two things. We maximize the distance from them -- well, we increase the distance from their well while still allowing us to fully develop our section on more normal 660, 1980, 1980, 660. That keeps our wells 1320 apart, so we have equal spacing so we're not interfering between our own wells.

Q Let me ask you about a focal point. Have

we seen gas break out anywhere?

A I don't think we're seeing a major breakout like you see in some solution gas reservoirs. I think we are seeing potentially some gas breakout, and I think that's what we are seeing a little bit when we see these GORs increase, particularly when we see the GORs that tend to reflect the production rate.

Q Are you concerned about drainage across lease boundaries, section lines with the increased allowable?

A I think that certainly increases the potential for drainage across lease lines. I think minimally to the extent if there is drainage occurring across the lease lines, that is going to accelerate that drainage and accelerate that effect. If you have it on the lower allowable and you have wells, you know, on each side of a lease line, you're going to be able to drain your own acreage more equally than if you're sitting there trying to make a horse race out of it.

Q Do you believe that operators are in a position to make the determination that we're simply doing acceleration here and that ultimate recoveries won't be produced?

A Not at this time. You know, there again that's what I am seeing on the gas oil ratio. I think we really need more data to be able to decide that.

Q Can you tell us what type of data would be helpful and how long it would take to collect that data?

A I think a little longer production data. I know in a lot of these -- particularly in tighter reservoirs, as this is, you know, a tighter reservoir as they describe, it takes a longer period of time before you really see the effects of your gas breakout and your GORs. I have looked at these in other areas. Particularly looked at even like your Bone Springs where it is tighter and siltier. Sometimes it is two, three years down the line before you really start to see your gas oil ratio increase.

I think some bottom hole pressure would be beneficial, not just initial bottom hole pressure, but seeing some bottom hole pressure measurements taken down the line, you know, a year or so after a well has been producing to know how fast we're depleting the reservoir pressure and be able to gauge that against the gas and oil production that we're seeing in our GORs.

Q All right. What course of action are you recommending that the division take here?

A We would recommend minimally that any action be delayed until we do have more data and can make a better decision on it.

Q How would you propose that past overproduction be handled?

A Our proposal at this time would be that it be made up within the allowable. That the allowable at this time be kept in place.

Q Let me ask you, Mr. Speer, were Exhibits 1 through 7 prepared by you?

A Yes.

MR. HALL: At this point, we move the admission of Exhibits 1 through 7. That concludes our direct of this witness.

MR. BROOKS: Any objection?

MR. BRUCE: No objection.

MS. MUNDS-DRY: No objection.

MR. BROOKS: Exhibits 1 through 7 are admitted.

(Exhibits 1 through 7 admitted.)

MR. BROOKS: Mr. Bruce?

EXAMINATION

BY MR. BRUCE:

Q Yeah, just a few questions. Looking at your Exhibit 1, Mr. Speer, and you have -- the yellow color is Nearburg operated acreage?

A Correct.

Q How long has Nearburg operated Glorieta or Yeso wells in this area?

A I believe our earliest well in this area was completed about four years ago. I don't have an exact date, but that would be close.

Q That's fine. To date, have they all been vertical wells?

A Yes.

Q Have you obtained any pressure data on those wells?

A No, we have not.

Q Have you calculated drainage in those vertical wells?

A No, we have not. I might add, you know, our program has been a little different because most -- with the exception of two wells, all of our wells have been recompletes --

Q Okay.

A -- Canyon wells. Might have recompleted a Morrow well, but most of them are older Canyon wells.

Q Dagger Draw wells? Some of them?

A Pardon?

Q Weren't they -- is this in the area of the Dagger Draw Pool?

A Yes, the Dagger Draw Pool, correct. And they -- you know, a little different, too, because they are up in the Glorieta Section and Upper Yeso part as, you know, kind of where I outlined, up in this blue, and it is a little bit different reservoir up there.

But no, we have not been -- till very recently, we dabbled our feet in the vertical part. And there again we were in the Glorieta, Upper Yeso. We did not see the new drills as economic. We did see the recompletes as economic. You know, we have done pretty good on the recompletions as far as the cost. But we weren't looking at this as an active area that we were going out and drilling and developing, other than taking the recompletion opportunities that we had.

We are now because -- you know, early what we see a big play, the horizontals -- I agree with Mewbourne's analysis, we see the horizontals as much more economic, and I will qualify that, the horizontals in the Middle Yeso. We did not do well

with our Glorieta horizontals. But these Middle Yeso wells are much more economic, the horizontals than the verticals.

Q And in your recompletions, I think you said that it was typical to see 600, 800 GOR in the initial completion --

A Correct.

Q -- or recompletion?

A Correct.

Q And what has the GORs -- what have the GORs in those wells done over time over the last three or four years?

A Most of them have shown a slight increase in GORs, and there again, we kind of went through a learning curve and some of this predates my tenure with Nearburg. But some of our older vertical recompletes were not as successful, and we went through -- our more successful vertical recompletes are probably no more than two years old. They are probably less than two years old, most of them. So we have relatively limited production history even on our vertical recompletes.

Q So those ones you mentioned that are a couple of years old, what types of current GORs do they have?

A Most all of them are over 1,000 to 1 GOR. It is slightly over. You know, they aren't huge.

Q But regardless, we are talking pretty well GORs here. Roughly 1,000 to 1, right? We're not talking 10,000 to 1 or 20,000 to 1 GORs here?

A Right. That's because likely the nature of the reservoir, you are not building secondary gas caps. You know, if you are, we certainly don't know about it. We don't have the production history. But where you see those very high GORs, that is where you build a secondary gas cap, and you start tapping into the secondary gas cap into the well's line.

Q And you agree this is a low permeability reservoir?

A Yes.

Q Now, if drainage is limited, you talked about there could be some limited gas breakup, but if it is low permeability and very limited drainage areas, does a little bit of gas breakup matter?

A It matters within the drainage area for that well. I mean, you -- the area -- if you're breaking out gas and prematurely producing that gas, you're depriving the reservoir of energy within a localized area.

Q But if it is in a localized area, how does

that affect the offsets?

A It will affect the offsets to the extent that they are close together. Like I say, we don't know exactly what the drainage radius of these wells are. I would tend to guess, you know, compared to Mr. Montgomery's, it may be -- it is probably not over 40, but it probably is over ten or 20 when you look at the porosity.

And I have not, you know, run calculations here, but just kind of my intrinsic knowing the thickness of the reservoir and the relatively low porosity of the reservoir, when we're seeing on vertical wells, you know, some of them 60,000, 70,000 barrels EURs, you know, to me that is more than ten or 20 acres.

Q But you haven't calculated that?

A No.

Q Now, on your -- the remainder of your plots, you have the GOR calculated, and generally it is almost always around 1,000 to 1. If that is not a problem on your more recent two-year-old vertical wells, why is it a problem with these horizontal wells, these more prolific wells?

A Well, I mean, our vertical wells that are doing that are generally on the order of ten to 20

barrels a day currently. They are already heading towards the end of their life. So, you know, there again, we're not sitting there producing or asking to be produced at upwards of 900 barrels a day that, you know, a full length vertical would under the proposed allowable.

Q Okay. But they are at the end of their life, and they are still at not much than 1,000 GOR?

A They will probably hold ten to 20 barrels a day fairly long-term. I mean, as Mr. Montgomery mentioned, these are probably pretty long-lived reserves. They will tend to flatten out.

Q Have you made any estimate of what type of oil rates you might get from your well in the east half, east half of Section 3?

A No -- well, I mean, for our economic purposes, I have. But as far as what we realistically expect, we won't have that data till we frac it.

Q Okay. If it is over the current daily allowable, will you restrict your well to the daily allowable, the current daily allowable?

A Yes. Our tendency would be to bring that within the allowable pretty quick. If it started out and shot above it, we generally try to produce our

wells within the allowable unless we have a reason, as Mewbourne did -- as Marbob did, to ask for a testing allowable. Certainly, we understand they're asking for a testing allowable to see what it would do.

I don't foresee that in our case, but you know, barring something like that, we generally try to keep our wells within the allowable.

Q Do you intend to -- what type of fracture treatment does Nearburg plan? Are they kind of doing what Mewbourne and Marbob have been doing? Similar stages?

A Very similar to what Mewbourne is doing. We are running the packer and port system. Our overall frac, I don't know their exact design, but our overall frac is very similar. I think Marbob is doing similar on their fracs, but they are actually cementing through and perforating and fracing in stages.

MR. BRUCE: That's all I have, Mr. Examiner.

MR. BROOKS: Ms. Munds-Dry?

MS. MUNDS-DRY: No questions.

MR. BROOKS: Is there any potential for damaging these wells that are productive --

capable of producing considerably more than their allowable if they are choked back and produced at their allowable?

A If they are produced, you know, there again, at a full length which would be current allowable 320 barrels a day -- yeah, 320 barrels a day --

MR. BROOKS: For a one-mile?

A Pardon?

MR. BROOKS: For a one-mile horizontal?

A Right. For a one-mile horizontal or even 160 barrels a day for a half-mile horizontal, I don't really think there is that potential. I think it is likely, going back to Exhibit 7, which is Marbob's Noose 5H --

MR. BROOKS: Is this your Exhibit 7 or their Exhibit 7?

A My Exhibit 7.

MR. BROOKS: Okay. Thank you.

A That well, you know, to me, I am kind of guessing that that flat of production, that they were probably restricting that production in some manner to keep it that flat for that long of a time. They are producing, you know, right at 170, 180 barrels a

day. Their decline is actually, if anything, a little more shallow than some of the other wells. So I don't see that it has really harmed that well.

And I would have to guess that they probably were restricting it to have that flat of production.

MR. BROOKS: Okay. Mr. Jones?

MR. JONES: Okay. Mr. Speer, you get into the reserves calculations in your company? You're responsible for turning in the reserves?

A Correct.

MR. JONES: You don't let a third party do it?

A For our official books, we have a third party do it. I usually work with them. And internally, for most of our wells and for our purposes, I calculate reserves.

MR. JONES: Seems to me like you could calculate a bunch of behind the pipe reserves here, couldn't you? That are not being affected by this -- maybe completed by this horizontal well?

A Yes. And when you're doing a horizontal, I mean, you know, that is a little different than a plugback recomplete. So I don't know that I would really classify it as, quote, "behind pipe" as far as

your horizontal, because minimally, if you have a vertical, you would have to drill out of that. But, yes, there probably is some behind pipe reserves in places. I know we have vertical wells in the north where we can do more vertical recompletions when the time comes.

MR. JONES: You -- on this reservoir, how do you do reserves on it? Volumetrically or decline curve?

A Decline curves.

MR. JONES: Do you look at the decline curve as being hyperbolic in a real tight reservoir like this?

A It is definitely hyperbolic.

MR. JONES: So it is natural for the production to decline rapidly at the beginning?

A Yes. And that's what you will see, and kind of as Mr. Montgomery alluded to, you know, some of their vertical wells had very high initial rates. Like our verticals didn't have as high as theirs. You know, ours, maybe 100 barrels a day for very short periods of times. I don't calculate 50- to 60-year reserve life, but we certainly give them a pretty long reserve life. So they have very steep initial declines, and they tend to flatten out.

MR. JONES: What bubble point do you -- can you back into a bubble point through standings?

A I have not done that work.

MR. JONES: So neither side here came up with a bubble point on this?

A Correct. And kind of that's part of, you know, my bad, their bad in a way, but we're just really pretty new. There again, as far as looking at this as something that we can go aggressively -- you know, develop with new drilling, we have just come into that stage, you know, within the last couple of months. And with our own wells, there again, you know, our wells are a little bit different reservoir. You get into the Glorieta among other things, we really see the Glorieta as pretty stratified.

Whereas if you look at the logs on their cross-section, you know, down here in this Middle Yeso section, you do have some very thick sections of pretty clean dolomite. So I think it is a lot less stratified coming down in, and I think that's what makes it work.

MR. JONES: What kind of ultimate primary percentwise would you say this is out here after you guys get through and walk away from the

cemetery?

A Probably in the range of 15 percent.

MR. JONES: It's kind of depressing, isn't it?

A Yeah.

MR. JONES: That's the problem of being a reservoir engineer. When you produce these horizontal wells, you probably produce them with a pumping unit; is that correct?

A Correct.

MR. JONES: So your gas that shows up on the surface is going to be related to your fluid level in your well at any one time?

A Yeah. What tends to happen on these wells is as you pump them, and you know, you usually have to -- you flow back part of your load, and you usually have to put them on some kind of pumping unit and pump them back. As you get your load back, what you find out initially is you actually start flowing up the back side, so it's not just that you have a high fluid level. You're actually semi-flowing, pumping the well.

MR. JONES: But there is no energy added to these frac jobs, correct? No nitrogen --

A No.

MR. JONES: So your flow back on the back side would be gas breakout on the back side?

A Correct.

MR. JONES: When you design a pumping unit or a pump, tubing, rods, everything, you have to assume a certain produce -- productivity of the well to do that?

A Correct.

MR. JONES: So you can't hit it exactly. So you just do it, and then as these wells pump off, maybe they make more gas through the back side?

A Yeah. We have had -- and like I say, the better wells, you know, like I say, until they get past that flush production -- you know, the beauty of these horizontals is they hold up that flush production much longer. You do get a lot bigger reserves. But you really, you know, during that flush period, as I say, you really aren't pumping them off. You're really just kind of helping them along as much as anything.

MR. JONES: Okay.

A We have seen in that cases, in other high productive areas, we have done some of the Wolfcamp Abo horizontals, and we have actually ended up

choking them back on the back side of the casing, putting chokes on the casing to hold our production back.

MR. JONES: Thank you very much. I am all out of questions here.

MR. BROOKS: Any follow-up from the attorneys?

MR. BRUCE: Not me.

MR. HALL: Nothing further.

MR. BROOKS: Very good. You may step down. Anything further you wish to say, Mr. Bruce, before we conclude this matter?

MR. BRUCE: I would -- just give me a minute here, Mr. Examiner. I would like to point out a couple of things which is --

MR. BROOKS: Okay.

MR. BRUCE: -- you know, Mr. Speer is right, we -- the operators always like more data, but I would point out that, in essence, that's what we're here for because the division -- it has been a while since the division has granted initial permanent pool rules. And by granting temporary pool rules, the operators in this pool will be able to obtain more data, and they can come back in a number of months and discuss this data again.

I would also point out like Mr. Montgomery said during the testimony, that in one of our prior cases on this very full day was the Burch Keely Unit, which has substantial drilling wells close together in the Yeso. And I would point out one further pool if we go to the -- I believe it is -- I did this case years and years ago for Devon in the Northeast Red Lake Glorieta Yeso Pool where Marbob, now COG, Devon, and other operators were -- you can go check out the division's records -- were essentially drilling four Glorieta-Yeso wells per 40.

And in one particular instance, Devon had overproduced one well by about 100,000 barrels, and there is testimony in the record in that case that they saw virtually no adverse effect on any immediate offsets. So drainage is limited in these Glorieta-Yeso reservoirs. And in that Northeast Red Lake Pool, there was an increase allowable granted to the operator, so I don't think this is anything out of the ordinary, and it will help obtain more data that the division can look at. Thank you.

MR. BROOKS: Mr. Hall?

MR. HALL: I have nothing further. I think we need to get people to the airport.

MR. BROOKS: Okay. Ms. Munds-Dry,

does your client take a position on that?

MS. MUNDS-DRY: We have no position.

MR. BROOKS: Okay. Very good. There being nothing further, Case Number 14554 will be taken under advisement.

(Discussion held off the record.)

MR. BROOKS: Let's change it from this case will not -- this Case Number 14554 will not be taken under advisement. It will be continued to the December --

MR. BRUCE: 2.

MR. BROOKS: -- December 2; is that correct?

MR. BRUCE: I believe that is correct.

MR. BROOKS: Okay. First Thursday in December in any event. Okay. We stand adjourned.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 14554 heard by me on Oct 28 2010

David K. Brooks, Examiner
Oil Conservation Division

4afed9f6-ec7d-4d40-b660-4b1abf044d52

REPORTER'S CERTIFICATE

I, CONNIE JURADO, do hereby certify that I reported the foregoing case in stenographic shorthand and transcribed, or had the same transcribed under my supervision and direction, the foregoing matter and that the same is a true and correct record of the proceedings had at the time and place.

I FURTHER CERTIFY that I am neither employed by nor related to any of the parties or attorneys in this case, and that I have no interest whatsoever in the final disposition of this case in any court.

WITNESS MY HAND this 28th day of October, 2010.

Connie Jurado

Connie Jurado, CCR, RPR
New Mexico CCR No. 254
Expires: December 31, 2010