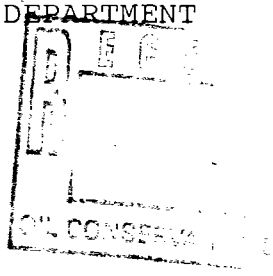
STATE OF NEW MEXICO

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:	)	CASE NO. 11,040
CASE 11,040 (REOPENED)	)	

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner

September 21, 1995

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, DAVID R. CATANACH, Hearing Examiner, on Thursday, September 21st, 1995, at the New Mexico Energy, Minerals and Natural Resources Department, Porter Hall, 2040 South Pacheco, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

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I N D E X

September 21st, 1995
Examiner Hearing
CASE NO. 11,040

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E X H I B I T S

Applicant's	Identified	Admitted
Exhibit 1	6	16
Exhibit 2	13	16
Exhibit 3	26	30
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Exhibit 6	28	30
Exhibit 7	29	30

* * *

A P P E A R A N C E S

FOR MARALO, INC.:

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By: W. THOMAS KELLAHIN

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By: JAMES G. BRUCE

* * *

WHEREUPON, the following proceedings were had at 9:05 a.m.:

EXAMINER CATANACH: At this time we'll call Case 11,040, which is in the matter of Case Number 11,040 being reopened pursuant to the provisions of Division Order Number R-5353-O, which order created the Burton Flat-Bone Spring Associated Pool in Eddy County, New Mexico, and promulgated special pool rules therefor.

Are there appearances in this case?

MR. KELLAHIN: Mr. Examiner, my name is Tom Kellahin. I'm with the Santa Fe law firm of Kellahin and Kellahin. I'm appearing today on behalf of Maralo, Inc.

We are the original applicants for the special pool rules for this associated pool, and I have two witnesses to be sworn.

EXAMINER CATANACH: Additional appearances?

MR. BRUCE: Mr. Examiner, Jim Bruce from the Hinkle law firm in Santa Fe, representing Exxon Corporation.

We have no witnesses.

EXAMINER CATANACH: Any additional appearances?

Will the two witnesses please stand to be sworn in?

(Thereupon, the witnesses were sworn.)

MR. KELLAHIN: Mr. Examiner, the two witnesses

I'm about to present are the same two witnesses that appeared before Examiner Morrow back in July of 1994, upon which the technical evidence was presented to justify the establishment of this Bone Springs associated pool. It's been identified as the Burton Flat-Bone Springs Associated Pool.

As a result of the order entered, a copy of which I've just supplied you, in August of 1994 the Division established for the associated pool 80-acre oil spacing, 160-acre gas spacing. There's a special limiting gas-oil ratio of 5000 to 1 and a depth bracket oil allowable of 222 barrels of oil a day.

We are back before you today to ask for a two-year extension of these rules on a temporary basis, principally to allow additional data to be gathered, additional wells to be drilled, so that we can decide upon permanent rules at a later date.

My first witness is Mr. John Thoma. Mr. Thoma is a geologist.

JOHN THOMA,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Thoma, for the record would you please state

your name and occupation?

A. My name is John Thoma and I'm a geologist for Maralo.

Q. On prior occasions, Mr. Thoma, have you qualified as an expert in the field of petroleum geology before the Division?

A. Yes, I have.

Q. And you made the geologic presentation to Examiner Morrow back in July of 1994 when this case was first heard?

A. Yes.

Q. Subsequent to then, have you continued to be involved in the geology in those aspects of that discipline with regards to this particular pool and reservoir?

A. Yes.

Q. And as a result of that continuing study, do you now hold conclusions and opinions concerning the special rules for this pool?

A. Yes.

MR. KELLAHIN: We tender Mr. Thoma as an expert petroleum geologist.

EXAMINER CATANACH: Mr. Thoma is so qualified.

Q. (By Mr. Kellahin) Let's turn to Exhibit 1, Mr. Thoma, and let's take a moment to use that display to orient the Examiner as to the wells involved in the pool,

and then we'll talk about your scientific conclusions.

First of all, let's look at the display and identify for us the stippled yellow area. What's the significance of that?

A. That is Maralo leasehold on the prospect in the field area.

The map, Exhibit 1, is an isopach of porosity in the First Bone Springs Sand greater than 12 percent. The contour interval is 25 feet, and you can see that there are a number of penetrations through that reservoir section. The -- Each well which penetrated the measured section of porosity has a value beside it.

The green markers on the map are wells currently producing from the first Bone Springs sand. There is one well in the southwest of the northwest of Section 32 which has a half-moon marker on it. That is a show, a recorded show from the first Bone Springs sand. That well has not produced as yet from that sand.

Q. Let's look in Section 32. The acreage in Section 32 is subject to the Burton Flat associated rules we have for this pool?

A. That's correct.

Q. Within Section 32, by your display, we show four wells currently capable of production?

A. That is correct.

Q. Under the associated rules for classifying wells as gas or oil, are any of those wells currently classified as gas wells?

A. No.

Q. So each one would be subject, then, to 80-acre oil spacing?

A. That's -- That is correct.

Q. Under that spacing pattern, are there still available to you and your company satisfactory locations for additional wells to be developed in Section 32 for this production?

A. Yes.

Q. In addition to Section 32, when we look down in Section 4, is there a portion of Section 4 that's also included within the pool rules for this pool?

A. Yes, the well in the southeast of the northeast.

Q. The one that's shown with the 87 feet?

A. That's correct.

Q. And who operates that well?

A. Merit.

Q. Do you have a geologic conclusion about whether or not all these wells are contained within the same common source of supply?

A. Yes, I believe they are.

Q. Are the wells in this common source of supply

separated from any other pool as we move to the east?

A. Yes, I believe they are by termination of porosity.

Q. When we go to the east, what is the next Bone Springs pool that we encounter as we move in that direction?

A. Due east, approximately two miles, is Avalon-Bone Spring Pool.

Q. It will be East Avalon-Bone Springs Pool, I think it is, or is it the Avalon?

A. To the east is Avalon.

Q. Okay. Now, when we look in Section 29 just to the north of the existing pool, there is a Yates well in the south half of 29 that has the same colored symbol as your wells. What's the status of that well?

A. That well is producing from the first Bone Spring sand.

Q. Geologically, are you in the same reservoir as the Yates well in the south half of 29?

A. I believe we are.

Q. Currently under the Division's designation procedure, in what pool is that well currently placed?

A. East Avalon-Bone Spring.

Q. So it's in the East Avalon-Bone Springs, which is a gas pool, is it not?

A. That is correct.

Q. Do you have an opinion as to whether or not this pool should continue to be managed as a separate source of supply from the other pools designated by the Division?

A. I believe it should be.

Q. Okay. Let's talk about the pool rules themselves.

The pool rules that we are currently operating with have 80-acre oil spacing, 160 gas spacing. In terms of your geologic exploration of the reservoir, is that an appropriate spacing pattern to continue for the next two years?

A. I believe it is.

Q. Will it provide you and other operators in the pool the opportunity to further develop the reservoir?

A. Yes.

Q. Describe for us what has occurred since the last hearing. When we were before the Examiner in the first hearing, describe for us what wells were in the pool.

A. When we came to the Commission for temporary rules, there was at that time one well -- There were two wells that were completed in the reservoir, those being the Yates Number 2 DS Stonewall in the northwest of the southeast of Section 29 and the Keystone Number 1, operated by Maralo, in the southwest of the northeast of Section 32.

Since that time, Maralo has drilled three development wells.

Q. Let's put some numbers on the wells so that the Examiner can keep track of where we are.

If we look within Section 32, the well that's got the 165 feet of thickness in the Bone Springs, that was the Number 1 well?

A. That's correct.

Q. And that's the well that we brought to hearing in 1994?

A. That's correct.

Q. Where is the Number 2 well?

A. The Number 2 Keystone is located in the northwest of the southeast quarter of Section 32.

Q. It's got the 74 feet next to it?

A. That's correct.

Q. Number 3 was never drilled?

A. Number 3 was never drilled.

Q. Number 4 is which one?

A. It has 128 feet, and it is located in the southeast of the northwest quarter of Section 32.

Q. And then finally the Number 5 well is where?

A. Located in the northwest of the northeast of Section 32. It has 76 feet of reservoir.

Q. When you examine the logs of the additional wells

that were drilled, do you find that they're all connected or can be correlated into the same reservoir?

A. They can be correlated as one reservoir.

Q. Describe for us the deposition and the characteristics you see as a geologist for this reservoir. What are we looking at?

A. We're looking at a reservoir section of about 200 gross feet. Within that reservoir section there are a large number of lenticular reservoirs, which alternately produce oil, gas and water. They mixed and not -- Those fluids are mixed vertically and not segregated vertically. And so when completions are made in this section, typically the entire section is perforated and fracture-treated, resulting in oil, gas and water production.

Q. Is it appropriate, then, to continue managing this reservoir as an associated pool?

A. Yes, sir.

Q. And why is that true?

A. Because we believe as we continue to drill upstructure, which is to the north -- the northwest -- we'll continue to see higher GOR -- gas-oil ratios in the first Bone Springs sand. We do have some evidence of that, that will be presented by our engineer.

The Exhibit 2, if I could jump to that --

Q. Sure, let's do that. First of all identify it,

and then let's talk about it.

A. Exhibit 2 is a structure map on top of the first Bone Springs sand.

Q. Both Exhibit 1 and 2 are your work product?

A. Yes.

Q. Describe for us the conclusions from Exhibit 2 that you want to share.

A. Well, it simply shows the direction of depth across Section 32, which is -- We're gaining structure to the north, the northwest. And that is the basis for my opinion that the GORs will continue to increase as we move to the northwest, along with what we are seeing in our producing wells.

Q. In Exhibit 1 and 2 there are some red triangles. You have not identified those yet. What's their purpose?

A. Those are either staked or potential locations. The two locations in Section 4 in the northeast quarter are staked locations by Merit. They have intentions to drill at least one of those two locations in 1995.

The two locations in Section 32 -- one being in the southeast-southeast, the other being in the northwest-northwest -- are locations available to Maralo, which I believe are in positions which would encounter the maximum reservoir section available to us on the acreage that we own.

Q. Can --

A. Those two locations, Maralo has plans to drill either in late 1995 or 1996.

Q. Can this further development continue under the existing rules?

A. Yes.

Q. Have you been in contact with representatives of Merit to determine their position with regards to continuing these rules?

A. Yes, I have.

Q. And what position do they have?

A. They are in agreement.

Q. Are you aware of any opposition with regards to continuing the rules on a temporary basis for another two years?

A. No.

Q. Describe for us if there are any other analogies in this are, Mr. Thoma, with regards to Bone Springs production.

A. Old Millman Ranch field, which is a first Bone Springs sand field, is located approximately four miles northeast of the Burton Flat field. It produces from the same reservoir section, although it is, I believe, a separate reservoir, a separate accumulation.

Q. Is it being managed under rules that are similar

to those that you propose to continue in your reservoir?

A. Yes.

Q. It's an associated pool, is it not?

A. It is an associated pool.

Q. Can you give us an indication of information by which you have inferred the permeability of the reservoir that you're managing?

A. Yes, in the Old Millman Ranch field a full core, a full-diameter core, was cut through the entire thickness of the Bone Spring -- first Bone Springs sand, in the Remington Number 3, Remington Federal Number 3. There were also sidewall cores taken in a second well.

Both of these pieces of evidence indicate that the average permeability of the first Bone Springs sand reservoir is a half a millidarcy.

Q. That would be a tight reservoir for production out of the Bone Springs, would it not?

A. Yes.

Q. How would that low-permeability reservoir affect or exhibit itself in terms of rate or productivity of the wells in your pool?

A. It would create the condition of rapid declines and potentially low productivity from wells which encountered lower thicknesses, lesser thicknesses of reservoir.

And from my work in the pools, both of these pools, an empirical value which we've generated for the better wells is 100 feet of reservoir section, 100 feet of 12-percent reservoir. Wells which penetrate in excess of 100 feet typically yield reserves in excess of 100,000 barrels of oil, gross ultimate. Wells with less than 100 feet have GORs -- GURs -- which are much less than that, in the range of 50,000 to 60,000 barrels per well.

Q. In order to obtain the most efficient development and exploration of the pool you're in, do you see any reason to change the spacing in the pool at this time?

A. No.

MR. KELLAHIN: That concludes my examination of Mr. Thoma.

We move the introduction of his Exhibits 1 and 2.

EXAMINER CATANACH: Exhibits 1 and 2 will be admitted as evidence.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Thoma, this Bone Spring interval consists of several different, distinct reservoirs; is that correct?

A. Yes.

Q. And they're not in vertical communication?

A. Some of them are, through vertical fracturing. Some of them are not. It's extremely difficult to

determine which are and which are not, because the bedding -- you're looking at, as I said, approximately a 200-foot gross interval, and the individual productive beds will range anywhere from 2 feet up to 15 feet thick. And they are segregated by very thin, 2- to 3-foot, tight siltstone, nonporous siltstone rock.

Q. Is it generally the procedure of Maralo to perforate all these different reservoirs?

A. Yes --

Q. Is -- Go ahead.

A. I was going to say, that is the general practice in Millman Ranch also.

Q. Okay. Are there some of these sand lenses that are just gas productive, or can you tell that?

A. From production testing, we have not determined that. You can infer from log profiles neutron density crossover and associated resistivities which you believe are prone to be gas.

As I said, though, they are not vertically -- the fluids in the reservoir are not vertically segregated in terms of being gas on top, oil and water on the bottom. You can have gas zones below oil zones, water zones above oil zones, or water above gas.

And it's virtually because of the required completion technique, which is a fracture treatment -- The

reservoir, being tight, requires a very aggressive fracture treatment to produce. Because of that treatment, it is impossible to segregate these reservoirs, from a completion standpoint.

Q. Is it likely that, say, the well that you're going to drill in the northwest-northwest -- Could that be a gas well?

A. It could be. But we don't believe that those reserves will be drained by existing wellbores because of the low permeability of the reservoir.

Q. The well that you show to have a first Bone Spring sand show in Section 32, what's the status of that well?

A. It is producing -- Well, right now I think it's shut in, in the Morrow. Exxon, to my understanding, has plans to recomplete that wellbore from the Atoka. Maralo owns the -- all rights -- Well, no, Maralo owns from the base of the Delaware to the base of the Bone Springs section, in the west half of Section 32, and Exxon owns the balance of the rights, the Delaware in the section below the base of the Bone Springs. And so they have plans to rework the deep section in that well. Maralo does not own that wellbore.

Q. Where is the location of the East Avalon-Bone Spring Pool?

A. The well --

MR. KELLAHIN: I've got them plotted out, Mr. Examiner. Let me show you my copy. I've taken on the original exhibit that was presented in 1994 and outlined in pink the boundary of the Avalon Oil Pool to the east. And then the gas pool is shown in the green.

Q. (By Examiner Catanach) Okay, so the south half of Section 29 where that Yates well is located, we did put that in the East Avalon-Bone Spring Gas Pool; is that your understanding?

A. The Yates DS well?

Q. Yeah, in the south half of 29.

A. Right, that's in the East Avalon Gas Pool.

Q. What separates the Burton Flat from the East Avalon-Bone Spring Gas Pool?

A. In my opinion, nothing. I believe they're the same pool.

Q. Do you know what that's spaced on, the East Avalon?

A. It's statewide.

Q. 320?

A. 160, I think.

Q. 160. So as you move northwest in the Burton Flat, you encounter the East Avalon, which -- Does that continue to go upstructure to the northwest?

A. I believe it does, yes.

Q. That's why you have the gas wells in that area?

A. That's correct.

Q. Mr. Thoma, you talked about the permeability. Is that -- How was that arrived at?

A. Full-core analysis.

Q. From the entire producing interval?

A. Yes, it was -- it was -- Core was cut from the top to the base of the Bone Spring, or two or three cores cut, and the entire core, full core diameter analysis was run, and they generated permeabilities by foot.

Now, there are, within individual lenses in the Bone Spring section in those wells, that particular well, permeabilities as high as 4 millidarcies. But the average perm for that entire core, the arithmetic average was a half a millidarcy.

Q. What does that do to your oil drainage areas? Do you have any idea how that affects it? Do you believe these wells will ultimately drain 80 acres?

A. No.

Q. Why leave them on 80 acres for two more years?

A. Well, the main reason is that under the current rules we can -- we need more data in the reservoir to determine whether or not it's going to be an economic project.

We've drilled -- As I said, we've drilled three development wells. Two of those three right now are marginally economic, and we really don't know yet whether they will ultimately be economic.

The Number 1 -- The Keystone Number 1 and the Keystone Number 5 are being put on pump as we speak.

The Keystone Number 2 still flows, although it has declined significantly, and I think Mr. Gill will go through some of these -- this information in more detail.

As of this point, we would like to see some of the offset operators drill wells in the offsetting sections to help us define the extent of the pool. We have not had tremendous success extending the limits of this pool. We have confirmed hydrocarbon presence in the first Bone Springs sand. But in terms of commercial production and viability of the reservoir, we're still a long way from achieving that.

We think that the spacing we have right now will enable us to continue our development. We feel that we will be prudently developing the pool, continuing to develop the pool, under the existing rules with the current spacing, for the next 12 to 24 months.

It may be in 24 months, if we drill some wells, particularly downdip in the south -- well, in the east half of Section 32, in the southeast-southeast, if we can

encounter the kind of reservoir section that I'm anticipating, that data point will give us much better information as to not only GOR, what the ultimate GOR is going to be in the good reservoir section where we feel we will be draining a reasonable area, but it will also help us to define further development of the pool in the east half. And at that time I think we'll be much better prepared to present drainage information.

Q. At this point, Maralo plans to drill only the two additional wells in Section 32?

A. That's correct.

Q. And Merit -- You understand Merit is proposing to drill one of two wells in Section 4 this next year?

A. Well, they've staked both of the wells in Section 4, and both of those wells as of this date are in their drilling plans. One of those two will be drilled in 1995, the other will be drilled in 1996.

And if those are successful, I am told that they will continue developing in the northeast quarter of Section 4.

Q. What's your understanding of the Exxon well? Are they going to recomplete that, or do you know?

A. Yes, I've been told by Exxon that they do have plans to recomplete that well in the Atoka.

Q. In the Atoka?

A. In the Atoka.

Q. They're not going to recomplete to the Bone Spring?

A. They do not have Bone Spring rights. We have the Bone Spring rights.

Q. Oh, okay.

A. We have attempted to get -- acquire that wellbore from Exxon, and they have declined our offers because of their plans to recomplete in the Atoka.

Q. You say the Old Millman Ranch, it exhibits similar reservoir characteristics?

A. Yes.

Q. Multiple producing intervals?

A. That is correct.

Q. It's spaced on 80s and 160s, to your knowledge?

A. It was originally spaced on 80s and 160s. It has since been downspaced to 40s and 80s with a 5000-to-1 GOR. The GOR did not change in the transition from temporary to permanent field rules, but the field was downspaced.

EXAMINER CATANACH: Okay, I think that's all the questions I have, Mr. Kellahin.

MR. KELLAHIN: For reference, Mr. Examiner, the oil pool immediately east of the pool we're talking about, which is the East Avalon-Bone Springs Oil Pool, it's got a 5000-to-1 GOR, and that's subject to Division Order R-8897,

issued in April of 1989.

Call our next witness, Mr. Richard Gill.

RICHARD GILL,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Gill, for the record, sir, would you please state your name and occupation?

A. My name is Richard Gill. I'm a petroleum engineer for Maralo, Incorporated.

Q. And where do you reside, sir?

A. In Midland, Texas.

Q. On prior occasions have you testified and qualified before the Division as an expert petroleum engineer?

A. Yes, I have.

Q. Have you conducted engineering analysis on the production from the Bone Springs pool that we're talking about here today?

A. Yes, I have.

Q. And have you taken that information and generated some exhibits for discussion?

A. Yes, I have.

MR. KELLAHIN: We tender Mr. Gill as an expert

petroleum engineer.

EXAMINER CATANACH: Mr. Gill is so qualified.

Q. (By Mr. Kellahin) As part of your work, Mr. Gill, have you prepared for the Examiner production plots on the four wells that Maralo operates in Section 32 of the pool?

A. Yes, I have. They're --

Q. Let's talk about generally what you see in terms of the performance of the wells in the pool.

A. Okay.

Q. When we look at a typical performance of one of these Bone Springs oil pool wells, what are we seeing for the oil well?

A. The oil well -- Most of these wells will come in -- They've all come in flowing at pretty reasonable rates but the production drops off rather quickly.

Q. Do you have any of your oil wells that are still capable of production on a flowing basis?

A. Yes, we do. The Keystone Number 2 is still flowing.

Q. As to the other two oil wells, what are your plans for continuing the production of those wells?

A. Both wells are set to be put on pump. We have pumping units and rods in the well. We're just waiting on the electricity right now.

Q. Okay. Would the continuation of the current rules for an additional two-year period allow you as an engineer to gather additional reservoir and production data?

A. Yes, it would.

Q. From that additional data, will you be able to more appropriately determine drainage areas for the wells and the appropriate spacing patterns for the pool?

A. Yes, I will.

Q. Are you able to conduct those calculations now to your satisfaction?

A. No.

Q. There's simply not enough data from which you can accurately perform drainage calculations?

A. That's correct.

Q. Can you give us some sense of the difficulties that you're having?

A. There's just not enough production data, and the fact that the wells are flowing. I'd like to see them on pump for a while and see what they can do.

Q. All right, let's go through the production plots then. If you'll start with 3, Exhibit 3, that is the Keystone 1 well.

A. Exhibit 3 is the Keystone 1, production curve. The curves are signified -- green is oil, red is gas, the

yellow is the GOR. And as you can see, the oil production has taken a nosedive to where it is today. It's shut in, no longer capable of flowing..

Q. Okay, and what are your plans for this well, then?

A. It will be put on pump just -- anytime.

Q. All right. Let's look now at Exhibit 4, which is the Keystone 2. Describe for us what you see on that well.

A. The Keystone 2, again, you see a pretty steep decline in the oil rate, although here in the last six months it looks like it is leveling off a little bit.

Q. And what are the plans for this well?

A. We'll continue to flow it as long as it will flow. And once it dies, we'll put it on pump.

Q. Okay. What's the current rate on this well? Do you remember?

A. The current rate is about to -- I believe it's about 25 barrels a day.

Q. Okay. Going to Exhibit 5, let's look at the Keystone 4. Describe the performance of that well for us.

A. The Keystone 4 is still flowing. The oil production has dropped some, the gas production seems to be holding pretty steady. It's our largest gas producer.

Q. In terms of the gas allowable for the associated pool, under the formula by which you're allowed to produce

the well the maximum allowable is what? Just over 2.2 million a day?

A. That's correct, right.

Q. And what is this well capable of doing?

A. We're producing just almost a million a day.

Q. Do you see any adverse consequence in this associated pool to maintaining the 5000-to-1 GOR for the next two years?

A. No.

Q. You don't see any impact of gas withdrawals on oil production?

A. No, I don't believe so.

Q. Okay. Let's turn to Exhibit 6 and look at the Keystone 5. Describe the performance of that well.

A. The Keystone 5 came on, began production in April, and it has dropped to the point now it's no longer capable of flowing either.

Q. And the plans for this well?

A. It will be put on pump immediately.

Q. Okay. Have you taken this information and put it together in the terms of a tabulation --

A. Right.

Q. -- by month of the various production levels?

A. That's correct, Exhibit 7 is a tabulation of just the numbers that are on these graphs.

Q. All right, let's do that, let's look at Exhibit 7. Tell us how you've organized the spreadsheet.

A. Exhibit 7 shows columns across the top, the four wells we have producing, the Keystone 1, 2, 4 and 5, and then broken out underneath each of those wells are the oil, gas and the GOR rates.

Q. Number 4 is going to be the high-GOR well?

A. That's correct.

Q. Has it reached the point where it could be classified as a gas well under the associated rules?

A. Probably not quite. It runs close to 30,000 GOR, but not quite.

Q. So you're still under the 30,000 benchmark for identification?

A. That's correct.

Q. Let's set that aside because of its high GOR. Let's look at the 1, 2 and 5 wells. When you compare oil to gas and calculate the monthly producing GOR, do you see any adverse consequence to continuing to produce these wells under the current rules?

A. No, I don't. The Keystone, particularly the Keystone 2 and 4, the GORS in those wells have remained relatively constant through their life, the Keystone 2 probably averaging somewhere in the 13,000, 14,000 GOR range. The Keystone 5 is running about 10,000 GOR. The

Keystone 1 has seen an increase in GOR, but that's due to the drop in the oil production.

Q. Okay. As best you can see as an engineer, you don't see any adverse consequence from any of the components of the current rules?

A. No, sir, I do not.

Q. What's your position with regard to continuing these rules for another two years?

A. I think to be able to continue for another couple years will give us just that much more data points on production, get the wells on pump and see what they'll do while they're pumping. Plus, as Mr. Thoma mentioned, the fact that we can drill a couple more wells and see what kind of performance we get out of those wells. All that data combined would be able to give us a lot better handle on what we would need on a permanent basis.

MR. KELLAHIN: That concludes my examination of Mr. Gill.

We move the introduction of his Exhibits 3 through 7.

EXAMINER CATANACH: Exhibits 3 through 7 will be admitted as evidence.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Gill, these wells have not established a

decline yet?

A. No, sir, I don't think they've reached a point where they'll level off. I think, as Mr. Thoma was talking earlier, the nature of this kind of reservoir is, you'll see a fast decline initially, but then they'll begin to level out at some point, and I don't think we've found that point yet.

And once they reach that point, they should stay relatively flat for a long period of time.

Q. How close do you anticipate being to that point where they start?

A. I'm hoping by putting the Number 1 and the Number 5 on pump in the next couple of weeks, you know, certainly within, you know, a year's period of time on those wells, we might have a good idea.

I would also anticipate that probably within that period of time, the Number 2 will probably have to be put on pump. Again, all those factors should guide us toward a reasonable decline curve that we could accept for the field.

Q. With this type of reservoir, are you going to be able to calculate volumetrically oil in place?

A. I haven't done that because I'm not real confident that the numbers will mean a whole lot. But I'm sure we'll attempt it. You know, again, the way the -- The

thin layers of the different reservoirs, it will be pretty hard to come up with a real good handle just how much pay thickness is really contributing.

Q. The gas allowable for these wells is 2.2 million a day?

A. I believe that's correct.

Q. 5000-to-1 GOR. What's the oil allowable? Do you know?

A. 222.

Q. Mr. Kellahin asked you whether or not high gas withdrawals will affect the reservoir. You said no. What do you base that on, Mr. Gill?

A. The fact that the -- based on our production to date, we're not seeing any, you know, marked increase in GOR on the other producing wells, again with the exception of the Keystone Number 1, but again that's a factor that -- the oil production dropping down to nothing.

Again, I think when we put the wells on pump we should get a better handle on what our oil rates will be and also what our GORs will be. I'm not quite sure exactly what will happen there. I would anticipate an increase in gas production, along with the increase in oil production. But to date I don't see -- The production decline is, in my opinion, a reflection of the reservoir, of the tightness of the reservoir, and not due to any withdrawal of the gas.

Q. What's the significance of a two-year period for the continuation of the wells?

A. Just an effort to gain as much data as we can. Plus again, to get some more wells drilled. Like I say, I know that our wells will be drilled probably within the next year. And if Merit gets theirs drilled in the next year, that would give us at least four more wells plus some time to see some production from those wells.

I would point out that on Exhibit 1, our Keystone Number 1 well had the highest thickness, 165 feet, but yet it's one of our poorer producers. I just wanted to point out to you the mechanical problems we had in completing that well.

We're hoping that if we can get another well, a new-drilled well -- That well was a wrench of an old well that had been there a long time, had no cement across the zone. We had trouble cementing it. We also had trouble frac'ing it. We're anticipating that if we can drill a new well, get that kind of thickness, we could obtain considerably different kind of production rates out of it.

Q. With the data you've seen so far, do you have an opinion as to whether these wells at this point in time will drain 80 acres?

A. With the data I have right now, I would venture to say they won't drain 80 acres.

Q. Do you think the additional data gathered in this two-year period might change that?

A. I think so. If -- Again, if we drill a well to the east side that encounters the thick sand and get -- you know, and produces more like what we'd anticipate, then that might change our opinion.

EXAMINER CATANACH: I have nothing further, Mr. Kellahin.

MR. KELLAHIN: That concludes our presentation, Mr. Examiner.

EXAMINER CATANACH: Okay, there being nothing further in this case, Case Number 11,040 will be taken under advisement.

(Thereupon, these proceedings were concluded at 9:52 a.m.)

* * *

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 11040, heard by me on 9/21 1995.

David R. Catanach, Examiner
Oil Conservation Division

CERTIFICATE OF REPORTER

STATE OF NEW MEXICO)
) ss.
COUNTY OF SANTA FE)

I, Steven T. Brenner, Certified Court Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I transcribed my notes; and that the foregoing is a true and accurate record of the proceedings.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL September 25th, 1995.

STEVEN T. BRENNER
CCR No. 7

My commission expires: October 14, 1998