

CASE No.

4969

Application,

Transcripts,

Small Exhibits

ETC.

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
January 22, 1975

EXAMINER HEARING

IN THE MATTER OF:)
)

Case Number 4969 being reopened)
pursuant to the provisions of)
Order No. R-4557-B, which order)
temporarily extended the special)
depth bracket allowable for the)
Tocito Dome-Pennsylvanian "D")
Oil Pool, San Juan County, New)
Mexico. All interested parties)
may appear and show cause why)
the temporary special depth)
bracket allowable should remain)
in effect.)

CASE NO. 4969

BEFORE: Daniel S. Nutter, Examiner.

For the New Mexico Oil
Conservation Commission:

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Commission
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For the Applicant
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MR. NUTTER: Case 4969.

MR. DERRYBERRY: In the matter of Case 4969 being reopened pursuant to the provisions of Order No. R-4557-B, which order temporarily extended the special depth bracket allowable for the Tociito Dome-Pennsylvanian "D" Oil Pool, San Juan County, New Mexico.

MR. SWAN: Mr. Examiner, I'm Oscar Swan, Denver, Colorado, attorney for Amoco Production Company. Mr. Cooter, I understand, has filed an appearance in here.

MR. NUTTER: We have your appearance.

MR. SWAN: We have one witness, Mr. R. B. Giles. May he be sworn at this time?

MR. KELLY: I'd like to enter an appearance also, Mr. Nutter. Booker Kelly of the firm of White, Koch, Kelly and McCarthy, of Santa Fe, New Mexico, for Texaco, and we will also have a witness. Do you want to swear him now? Mr. Matthews.

(Witnesses sworn.)

MR. SWAN: Apparently those are the only appearances.

MR. NUTTER: Are there further appearances? Proceed, Mr. Swan.

MR. SWAN: Mr. Examiner, Mr. Giles has previously testified before this Commission and his qualifications have

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been admitted. May they be admitted now?

MR. NUTTER: Yes, sir, he is qualified.

R. B. GILES,

being called as a witness and being duly sworn

upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. SWAN:

Q Would you state your name?

A R. B. Giles, G-I-L-E-S.

Q Just for the record, by whom are you employed and where and what position do you hold?

A In an engineering capacity for Amoco Production Company in its Denver Division Office.

Q Are you familiar with the Tocito Dome field which is the subject of this hearing?

A I am.

Q Have you prepared certain exhibits for the State Commission on the questions which have to be decided?

A Yes. I have two exhibits.

Q Would you proceed to those exhibits? Tell us what they are and explain each one of them?

A Yes. Let me lead into them this way by saying that six months ago this Commission put us on notice to tell

you, Mr. Nutter, at this hearing our optimum plans for depleting the Tocito Dome-Pennsylvanian "D" Pool. Even before that time Amoco had initiated a detailed reservoir study with that objective in mind. The reservoir study has become much more involved than we at first thought it would and we frankly are not ready at this particular time to present an optimum plan of depletion to you, but when we are, we'll file the application, because the notice of a hearing on this pool may have to be expanded greatly over the type of notice that was calling for this hearing today on Tocito Dome.

At this juncture in time we can tell you this. Three things: One, this Penn "D" Pool is operating efficiently under a gravity segregation mechanism with a limited water influx. We calculate 24,000,000 barrels of oil originally in place. This is based upon pool volume calculation substantiated by material balance. Of that 24,000,000 barrels originally in place, 40 percent of that oil has been recovered to date from this pool. The gravity segregation mechanism is efficient even though there is not much structural relief in the pool. Because of the very good rock quality that permits rapid transmissibility of fluid within the reservoir rock we foresee 56 percent recovery of the

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original oil in place as possible under this mechanism, regardless of the rates at which it is produced.

Point Two is that under any optimum plan of depletion we should, of course, have the full cooperation of the major operator in the pool, Texaco. We would hope to have that togetherness on the optimum plan before we present the plan to this Commission.

Unitization is not contemplated in the interest of expediency, but a cooperative plan among the lessees would be adviseable.

Point Three, and this leads us into the two exhibits, the double allowable, the 764 barrels of oil per day per quarter section allowable that has been in effect the past twenty months, has had no effect upon the ultimate oil recovery to be obtained from the pool. I'd like to offer at this time Amoco's two exhibits to explain this.

Exhibit One shows the performance history of the Amoco operated leases in Tocito Dome field. This is just Amoco. It shows the oil rate with time, the water production rate with time, and the GOR history, gas-oil ratio history. Incidentally, Mr. Kelly and Mr. Matthews have a set of these exhibits.

MR. KELLY: Yeah.

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A And I have marked in red on that Exhibit Number One the average gas-oil ratio through the life of this Amoco operated leases in this pool of 2800 cubic feet per barrel, and the gas-oil ratio has maintained a remarkable consistency regardless of the rates at which the oil and water produced from the leases in the pool.

Exhibit Number Two shows this same type of illustration in a slightly different manner. It shows the cumulative oil on the left with the cumulative gas at the bottom for the Amoco operated leases in Tocito Dome field. Each point has been plotted as the cumulative production from these leases has occurred and as you can see, the straight line portion would average out to 2800 cubic feet per barrel. The red pencil figures on the exhibit simply illustrate the latest cumulative oil and cumulative gas and shows a GOR of 2800 to 1. That, incidentally, was as of October 1, 1974.

To carry on, fewer and fewer quarter sections contain wells able to produce at the 764 barrel of oil per day rate. We have one quarter section, the southeast quarter of Section 15, that is able to produce over 900 barrels of oil per day at this time. Amoco has four other quarter sections that contain Amoco wells capable of making in

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excess of the old depth bracket allowable of 382 barrels of oil per day per quarter section. These four quarter sections produce primarily in the range of 400 to 555 barrels of oil per day at this time. We expect the rates to hold above the 382 barrel a day level for several more months. So as a practical matter we would have no objection to letting the allowable revert to the old 382 barrel a day rate effective May 1, 1975, keying it to the next oil proration order that would be issued for the four month period of May, June, July, and August in 1975.

That's all I have at this time, Mr. Nutter.

MR. SWAN: May I offer the exhibits at this time?

MR. NUTTER: Yes, sir.

MR. SWAN: And that concludes our presentation.

MR. NUTTER: Amoco's Exhibits 1 and 2 will be admitted in evidence.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Giles, as I recall at the time of the last hearing there were some additional lands in this area which had not been leased as of then, and that there has been a subsequent lease sale, is that correct?

A That is correct. That was held back in early

September, I believe, of 1974.

Q Has there been any additional drilling since the last hearing?

A Oh, yes, there has, over on the east side of the field and by both Amoco and Texaco.

Q Now apparently you don't have an exhibit showing the location of the wells in the pool. Mr. Matthews, would you have that exhibit in your testimony?

MR. MATTHEWS: Yes, sir.

MR. NUTTER: How many wells does Amoco operate, Mr. Giles?

A 28.

Q (By Mr. Nutter) 28 wells?

A 7 of these 28 are in the old gascap area and have been shut in because they produced rather high gas-oil ratios and very little oil production.

Q Now, well, now we do see on examination of your Exhibit Number One that early in the life of the pool there appeared to be some rather drastic fluctuations in gas-oil ratio. Was that on account of those wells in the gascap portion of the pool?

A Yes, sir, Mr. Nutter.

Q Being depleted, produced and depleted?

A I think that's a good rationalization for that question.

Q Now we see that there was a definite increase of production in about mid-1973.

A Yes, sir.

Q To what do you attribute that?

A This was the development over on the new east side in the leased portions of the field next to acreage that at that time was open and has since been picked up by Amoco and Texaco.

Q Now, it appears that maybe the production peaked out -- these are Amoco leases only?

A That's correct.

Q Now, it appears that your production may have peaked out in about July of 1974.

A Yes.

Q Do you expect some sort of a decline from that point on?

A We do.

Q I see. Now, at what point in cumulative production, Mr. Giles, was the so-called double allowable instituted? We'd have to know the date of that and then the cumulative production at various points along the line. I

want to see on this Exhibit Number Two at what point that was.

Apparently it was put in June 25th, 1973.

A Yes, I have found that.

Q In other words, we need cumulative production approximately the middle part of 1973.

A Yes. I'm checking back through my notes of that hearing to see if I didn't have that somewhere. Well, I can say this. My notes show that at that point in time the recovery from Amoco property only, properties only, was 19 percent of oil in place. So if we took 19 percent of 24,000,000 that would give us the cumulative from the properties. Let me do that. It would be 4.56 million barrels of oil from Amoco properties, 4.56.

Q 5.6 million.

A 4.56 --

Q Oh, 4.56 million.

A Which would put us roughly two-thirds of the way up that straight line portion of the curve. That would correspond roughly to gas cumulative of about 12 and 1/2 BCF.

Q Right. And then it becomes apparent just by observation of the curve there that there hasn't been any

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change in GOR with double allowable.

A That's correct. That's correct, and that was the point of my testimony.

MR. NUTTER: Are there any further questions of Mr. Giles?

(No response.)

MR. NUTTER: You may be excused. Mr. Kelly?

MR. KELLY: I would like to have Mr. Matthews take the stand, please.

A. GENE MATTHEWS,
being called as a witness and being duly sworn upon
his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. KELLY:

Q Would you state your full name and by whom you are employed and what position?

A My name is A. Gene Matthews, ~~MaA-T-e-T-H-E-W-S.~~
I'm employed by Texaco, Incorporated, in Denver, Colorado.
My position is Assistant Division Petroleum Engineer. My responsibilities include reservoir engineering for Texaco's Rocky Mountain Area.

Q And you have not previously qualified as an expert witness in the field of petroleum engineering before

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this Commission?

A No, I have not.

Q Would you give the examiner a summary of your educational and professional background in that field?

A My educational background, I have Bachelor's and Master's degrees in petroleum engineering from the University of Texas. From 1962 I've been employed by Texaco, Incorporated, as Field Engineer, Reservoir Engineer, Supervisor in Charge of Reservoir Simulation Development, as a Senior Reservoir Engineer in New York, and now my current assignment as Assistant Division Petroleum Engineer in Denver.

Q And as part of your responsibilities have you studied and been involved in the Tocito Dome Field?

A I've been involved with Tocito Dome evaluation since June of 1974 and have spent approximately the last month on a full time detailed study of the reservoir.

MR. KELLY: Are the witness' qualifications accepted?

MR. NUTTER: Yes, sir.

Q (By Mr. Kelly) Would you state in summary what Texaco's position is in this matter?

A On August 6, 1974, the Commission issued Order

No. R-4557-B relative to the matter of the Tocito Dome-Pennsylvanian "D" Pool special depth bracket allowable. In this order the Commission ordered the case be reopened at the January, 1975, hearing and at that time the operators could appear and show cause why the said special depth bracket allowable should not be rescinded.

At this time Texaco requests and recommends that the Commission retain the special depth bracket allowable of 764 barrels of oil per day for the Tocito Dome-Pennsylvanian "D" oil pool. I do not believe there has been any evidence demonstrated to date of damage to the reservoir either from water encroachment, water coning, gas coning, or any other phenomena. In support of this request I will present exhibits and give a statement concerning the performance of the Texaco leases to demonstrate why I have concluded there has been no adverse effect from the special depth bracket allowable.

Q All right. Now, referring to what has been marked Exhibit One, the plat, would you first indicate it to the examiner, the new acreage that Texaco has acquired since the last hearing? I believe -- I believe it's Sections 23 and 24 and 83 and 34, is that correct?

A Before proceeding, I want to ask the Commission's

indulgence. There are a couple of changes on the map. In referring to Section 21 in 18 west 26 north, we show the Number Two Well as being salt water disposal. That's incorrect. It should be the Number Two Well in Section 20.

The second correction, in 25 north, Section 15, we show BT Number One location. That should be in the same position in Section 16.

MR. NUTTER: Where is it?

A It's in Section 16 just to the west.

MR. NUTTER: I mean where do you show it now?

A We have it shown in Section 15, 25 north, Mr. Nutter, down to the south.

MR. NUTTER: Oh, uh-huh. Okay, that moves over to Section 16.

A That's correct. I apologize for these changes that are necessary. We were pressed for time.

MR. NUTTER: Well, how about this Number Two Well in Section 21 that is not a salt water disposal?

A It is plugged and abandoned.

MR. NUTTER: It's a T&A one?

A Yes, sir.

Q (By Mr. Kelly) Now, the additional increase that Texaco has acquired since the last hearing?

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A In the lease sale held in the fall Texaco acquired Sections 23, 24, in 18 west, 26 north, and Sections 34 and 35, and we have to date drilled and completed two wells in Section 23, the BS Number One and Number Two. The BS Number Four has been drilled and we are currently swabbing load water. The Number Three Well is a drilling location. We anticipate in the near future drilling wells on Section 34.

MR. NUTTER: I believe you stated that you'd acquired Section 34 and 35. It was 33 and 34, wasn't it?

A I'm sorry, that is correct.

MR. NUTTER: Do you know what lands Amoco acquired from that lease sale?

A For certain they acquired Sections 13 and 14 and 26 north. I am not certain of what other tracts they may have acquired, Mr. Nutter.

MR. NUTTER: Mr. Swan, could you tell us what lands --

MR. GILES: That's correct.

MR. NUTTER: The two sections, 13 and 14?

MR. GILES: Right.

Q (By Mr. Kelly) Okay, now referring to Exhibit Number One, would you detail the developments in the pool since the last hearing? As far as Texaco is concerned?

A All right. In Order R-4557-B Finding Number 7

stated that the majority operators in the pool would prepare a plan of operation for the pool to depletion and would present these plans at the January, '75, reopened hearing. As you are aware, subsequent to the issuance of that order, a lease sale was held at Tocito and the two major operators, Amoco and Texaco, acquired additional tracts of acreage around the periphery of the Tocito Field, and we have discussed these just now. Following the acquisition of these tracts, which were granted about November the 1st, an aggressive drilling program was entered into by both Amoco and Texaco, and in fact, a drilling program on the part of Texaco is continuing. It was Texaco's view that to embark upon a detailed study of the Pennsylvanian "D" Pool at Tocito Dome prior to the lease sale and prior to the drilling, which would define the periphery of the reservoir, would not be timely and that should the work be done prior to the definition of the periphery of the field it was very likely that the work would have to be revised, modified, and quite possibly redone. In fact, Texaco and Amoco were competing for the same acreage and therefore were not in a position to confer prior to the lease sale. Obviously, it was necessary to wait until the lease sale was over and some drilling had taken place before any indication could be ob-

tained as to what the periphery of the field was going to look like. Since November the 1st Texaco has worked steadily to develop basic information which would be necessary to the engineering work. I might add, Texaco is willing to participate in a joint engineering study of the Tocito area to develop a plan of operation for the remaining field life, and in fact, we have recently been in touch with Amoco and are beginning to formulate how we want to proceed to do an engineering study. I anticipate it will take some time; perhaps several months, to complete this work, and it will be influenced by the progress made with the development drilling. I can today, however, speak in general terms about my current views and thinking regarding the Pennsylvanian "D" Pool at Tocito Dome. I must also say that these views should not be construed as my final thinking on the matter, and a firm plan of operation can be presented only after the current development drilling and engineering work are completed.

The structure at Tocito Dome is generally elongated, running northwest-southeast. The approximately northwestern two-thirds of the field is operated by Amoco and Texaco operates the southeastern one-third. In Exhibit One the Texaco acreage is colored in yellow. In general terms, the

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Texaco leases lie on the flank of the southeastern end of the field but the Texaco Navajo AL-No. 4 well located in Section 28, being one of our high structurally located wells, from AL-4 the pay zone then dips structurally to the east, south, and southwest. Based upon the production performance I have seen to date, I think the water encroachment taking place in the Tocito Dome Field has been quite limited. The biggest part of the water production that is taking place today is from water that has been reinjected into the reservoir for salt water disposal.

Now, if you will, for a moment refer to Exhibit 2, Texaco Exhibit 2, this is a plot of Texaco's total performance to date. I think you can see that during the period 1971 to 1973 the water production itself was very stable. May I take a moment here to familiarize yourself with the plot? We have a plot of the water rate as the solid black line. This is in average daily barrels. We have the gas-oil ratio, which is the connected circles. The average daily water rate, which is the dotted line, or short dashes, as the case may be, and water-oil ratio is the long dashed. The water cut did not change until 1973, which would indicate there was very little influx from an aquifer. From 1968 to the present the gas-oil ratio has

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not materially increased. This type of performance would not be consistent with a solution gas drive reservoir. The leveling off of the water production would not be consistent with a water drive reservoir. It is my current thinking that Tocito Dome Pennsylvanian "D" oil pool is very likely some type of expanding gas cap, segregation drive type reservoir. I believe the reservoir performance to date, with special attention to the period since June of 1973, indicates that the special depth bracket allowable granted at that time has not been detrimental to the performance of the reservoir. It is my conclusion that the special allowable should be retained and that it will not in the future have any adverse effect on the type of performance that would be exhibited by the expanding gas cap, segregation gas drive reservoir.

I am recommending to the Commission that the special depth bracket allowable be retained.

Q Now, how about Exhibit Number Three? Would you comment on that?

A Before proceeding with Exhibit Number Three, if you please, a few more words in detail about Exhibit Two, which is the total Texaco performance. I want to emphasize here that although there's been some increase in the gas-oil

ratio since the early part of 1974, there appears to be some leveling off and even a slight decline within the last month or two. I would say the performance of the gas-oil ratio is in part due to the expanding gas cap, as previously mentioned, and in this case since all of the Texaco wells are included, the gas-oil ratio performance may be influenced somewhat by the new drilling. Our new drilling has been concentrated in the eastern part of the field and has resulted in substantial production from that area. With time I believe the natural behavior of the reservoir drive mechanism will cause the gas-oil ratio to stabilize and decline and, in fact, I think we're beginning to see this. I anticipate in the future to see the same type gas-oil ratio as was exhibited, say, from the period 1970 through 1973. With regard to the water-oil ratio, or the total water production performance, it is in large measure influenced by the performances from wells AR-2 and AR-7 in Section 27. You will note on the graph that the water-oil ratio itself took a dramatic drop in late 1973, early 1974. This was, of course, due to the new drilling in the eastern area of the field and far removed from the salt water disposal wells. Therefore the new production has been relatively low in water production and has contributed to de-

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creasing the overall water-oil ratio for the field. You will note that in the last two or three months the water-oil ratio has begun to increase again. I expect that the water-oil ratio will increase back to its original pre-new-drilling well level of approximately 4 to 1.

Now, to emphasize the statement that this special double allowable -- or special depth bracket allowable has not adversely affected the performance of Tocito, I'd like for us now to turn to Exhibit Three, which is a plot of the production performance of those wells that were on production prior to the drilling which commenced in the last half of 1973. The nomenclature on the plot is the same as in Exhibit Number Two. As you can see from this plot, a fairly well defined oil decline curve was established prior to June 1973 and subsequent performance has not significantly changed the oil production rate decline. The gas-oil ratio during 1972-1973 was on a decline; however, beginning in 1974 the gas-oil ratio does show an increasing trend. Since the group of wells represented in this plot are generally high on the geologic structure of Texaco's portion of the field, in my opinion this increase in gas-oil ratio is due primarily to a normally expanding gas cap as the reservoir pressure declines. The water production

has remained relatively stable into the first part of 1974 and only recently has shown any significant increase. This increase can be traced to well AR-2. I believe this increase in water-oil ratio for this well is due in large measure to the volume of water being disposed of in our AL-3 water disposal well located in Section 28, and perhaps some influence from the two Amoco salt water disposal wells, U-1 and N-2, in Sections 21 and 20, respectively. I do not consider the performance of either the water production or the gas-oil ratio to be a result of a special depth bracket allowable. On the contrary, it is due to the manner in which the expanding gas cap, segregation drive reservoir drive mechanism operates.

Q Okay, let's go back to Exhibit Number One and give the examiner the location of the wells that Texaco has drilled since the last hearing.

A Since the last hearing, which was in July of 1974, we have drilled the four wells on -- in Section 23, the Number 3 well is still currently drilling, by the way. Let me check my records regarding the other lease tracts right quickly. Of the AR-7 well was also completed following the last hearing.

Q That's in Section 27?

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A That is correct.

Q Now, what plans does Texaco have to continue with development in this pool?

A As I mentioned previously, we are studying two possible locations in the northeast of Section 34 and have under review possible locations in the eastern part of Section 23.

Q All right. Now, at the present time how many of Texaco's wells are producing in excess of the -- what would be the normal depth bracket allowable?

A We have one well.

Q And which one is that?

A The BS-1 well is producing in excess of 382 barrels of oil per day.

Q How long do you expect your wells or well to be capable of producing in excess of the normal allowable?

A Well, if we talk in terms of 160 acre quarter section, our analysis, my analysis indicates that these wells could -- these quarter sections could produce in excess of the 382 for as long as 12 months.

Q Now I take it that you agree with Amoco's position that the higher rate of withdrawal has not had any adverse affect on this reservoir?

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A Yes, I agree.

Q And do you feel that continuing at this high rate of withdrawal until the wells are down to a normal special depth bracket allowable will have any adverse effect?

A It will not have any adverse effect.

Q You have no reason to believe that continuing it would hurt the reservoir in any way?

A No, sir.

Q Now, in your opinion, or Texaco's opinion, what effect would keeping the special allowable have on, well, the rights of the operators in incentive as far as additional drilling?

A Basically we see no reason to rescind the allowable. Also we believe the special allowable does provide an economic incentive to pursue an aggressive development drilling program at Tocito. Finally, since Texaco acquired Section 23 only recently, and as a matter of fact, was able to begin production from this section only in December of 1974, we think we should have the opportunity to produce under this special allowable in view of the fact that Amoco was producing under this special allowable across the lease line from at least Well 15 since mid-1973.

Q Now, in connection with that latest sale, when was

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that actually completed so you could start your drilling?

A We did not -- I don't remember the exact date, but I believe the lease sale was consummated on or about November the 1st and we had a rig ready to go and we began drilling as soon as we could.

Q Well, what would Texaco's recommendation be, then, to the Commission as far as continuing this allowable?

A We recommend that the special allowable be continued. We would like to see it continued for at least six months and hopefully, for up to twelve months.

Q Were Exhibits One through Three prepared by you or under your direction or supervision?

A Yes, they were.

MR. KELLY: I would move the introduction of Texaco's Exhibits One, Two, Three at this time.

MR. NUTTER: Texaco's One, Two, Three will be admitted in evidence.

MR. KELLY: I have nothing further on direct.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Matthews, what it really boils down to, I think, by observation of your Exhibit One, is that since

the most recent lease sale there have been a number of wells drilled by both Amoco and Texaco, and essentially you're drilling these wells on 80 acre spacing. You've got 160 acre spacing allowed for the field and you're asking for 160 acre spacing to be continued but you want 80 acre allowables to be assigned. You want the full allowable to be assigned to each well on the 160, isn't that -- you've got two wells on 160 but if you've got a double allowable, then you get a full allowable for each well?

A I suppose that one could construe it that way. I really, quite frankly, hadn't thought of it in that way. I considered the special allowable to be for the quarter section and had viewed it in the light of examining the quarter section, not viewing it in the light of an allowable for each well.

Q But every one of the wells that's been drilled has been drilled right up and down that section line there. Actually those look like 40 acre spacing almost. You said that you contemplated some additional drilling possibly in the northeast quarter of Section 34, is that right?

A That is correct.

Q Now, you mentioned that the increase in your

water-oil ratio that was reflected on this Exhibit Number Three, and also on Number Two, was probably due to an increase in water production from your AR-2 well, which could be getting an influx of water from your disposal well or either one of Amoco's. How about your Number 4 and your Number 1 well in Section 28, have they experienced that same increase in water cuts?

A They have been producing at high water cuts, Mr. Nutter, and the point I was making is looking at the most recent performance and what has been affecting it, and it is the AR-2.

Q So the encroachment is going eastward from the Number 4 and the Number 1 had been producing at a higher rate?

A That's what it seems to be.

Q How about that Number 1 there on your AR leases?

A Well, let me just double check on that, to be sure. Yes, sir, it's also producing at a high water cut.

Q I believe some of the original testimony in this case, and we still are on the same case so it's fair for me to look at these old exhibits, showed that the water drive was from the southwest. Do you still believe that the natural water drive appears from the southwest?

A Sir, I don't believe that there is much of a natural water drive at all.

Q Now we don't have any exhibits here by you or Amoco showing bottom hole pressures. We've got indication here that the gas-oil ratio hasn't gone up so it's not a solution gas drive. We've got indication that the water cut hasn't gone up significantly, so it's not a complete water drive. What about bottom hole pressures? What are they doing?

A In general terms I can try to give you a picture of what's happening and to set the stage let me say both Amoco and Texaco are disposing of their produced water along the western - southwestern side of the field and our recent drilling has been along the eastern side. There appears to be a pressure grading across the field from west to east. Taking year-end '74 pressures in general terms, the pressures along the western side appear to be on the order of 1500-1600 PSI. On the eastern side in the range of 700 PSI.

Q And where -- where do you run into the higher gas-oil ratio of wells, on the eastern side?

A No, the -- from my examination, the higher gas-oil ratio wells are up on top of the structure.

Q Well, most of those have been up to the northwest

part of the pool out of Texaco's area, too, haven't they?

A That's right.

Q There was a gas cap probably up in that area or a secondary gas cap.

A A secondary gas cap at least. Well, my conversations with Amoco that we've just initiated, indicate there is an initial gas cap, or was an initial gas cap.

Q Now you said that of your four wells that you've completed or are -- you're completing the fourth one in a row there in Section 23, that the Number One at present is capable of making 382 barrels per day?

A In excess of 382, yes, sir.

Q What can Number Four make?

A The Number Four well, we talked with Denver this morning and they're still swabbing the load water from the acid job, so we do not have a test on it yet. I was hoping to have one for you, but I don't.

Q How about Number Three?

A Number Three is a drilling location.

Q You don't have any test at all on it yet?

A No, sir.

Q Number Two?

A Number Two, the latest test that I have on it in-

dicates 326 barrels of oil per day.

MR. NUTTER: Are there any further questions of Mr. Matthews?

(No response.)

MR. NUTTER: You may be excused.

MR. SWAN: Mr. Examiner.

MR. NUTTER: Yes, Mr. Swan.

MR. SWAN: Now that we have Texaco's plat to go from, could I recall Mr. Giles and have him point out for you the wells Amoco has drilled?

MR. NUTTER: Yes, sir, you may.

REEXAMINATION OF MR. R. B. GILES:

MR. GILES: R. B. Giles, with Amoco, again. Referring to Texaco's Exhibit Number One, since the lease sale Amoco has drilled four wells: In Section 14, the Number 1 well; in Section 15, the Number 27; in Section 22, Numbers 25 and 26; four wells since the issuance of the leases.

MR. NUTTER: Well, Mr. Giles, the exhibit we received at the last hearing on this showed that your Number 19 and 20 had been started but weren't completed at that time.

MR. GILES: I see, well, I --

MR. NUTTER: So those wells have also been completed, then.

REEXAMINATION OF MR. GILES

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MR. GILES: Yes, apparently so. I just looked at that exhibit myself and assumed today that they had been completed, but as you say that, they could have been in the transition period -- stage.

MR. NUTTER: Those show as locations or drilling wells, and also the Number 3 down in Section 22, has it been completed?

MR. GILES: Yes.

MR. NUTTER: It showed as a location at the last hearing also.

MR. GILES: I see, all right.

MR. NUTTER: Okay, thank you, Mr. Giles. Do you have anything further, Mr. Swan? Do you have anything further, Mr. Kelly?

MR. KELLY: No.

MR. SWAN: No.

MR. NUTTER: Does anybody have anything they want to offer in Case Number 4969?

(No response.)

MR. NUTTER: If there's nothing further we'll take the case under advisement and a fifteen minute recess.

(Hearing concluded.)

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STATE OF NEW MEXICO)
)
COUNTY OF SANTA FE)

REPORTER'S CERTIFICATE

I, Sally Walton Boyd, Notary Public and General Court Reporter, Santa Fe, New Mexico, DO HEREBY CERTIFY that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me, and the same is a true and correct record of the said proceedings to the best of my knowledge, skill and ability.

Sally Walton Boyd
Sally Walton Boyd
Notary Public and General Court
Reporter

My Commission expires:

10 September 1975

I do hereby certify that the foregoing is
a complete record of the proceedings in
the Examiner hearing of Case No. 4969
heard by me on 1/22, 1975

[Signature] Examiner
New Mexico Oil Conservation Commission

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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
July 24, 1974

EXAMINER HEARING

IN THE MATTER OF:

Case No. 4969 being reopened pursuant
to the provisions of Order No. R-4557-A,
which Order continued the special depth
bracket allowable for the Tocito Dome-
Pennsylvanian "D" Pool, San Juan County,
New Mexico.

Case No.
4969

BEFORE: Richard L. Stamets, Examiner.

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the New Mexico Oil
Conservation Commission:

William Carr, Esq.
Legal Counsel for the
Commission
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Santa Fe, New Mexico

For the Applicant:

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MR. STAMETS: The Hearing will please come to order. Mr. Cooter, you may proceed.

MR. COOTER: Let me just say that Amoco appears here this morning seeking a continuation of the special depth bracket allowable for an additional period of 6 months. We have one witness, Mr. R.B. Giles, who has been sworn.

R.B. GILES

called as a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. COOTER:

Q Please state your name for the record.

A R.B. Giles.

Q And by whom are you employed, Mr. Giles?

A Amoco Production Company in Denver.

Q In what capacity?

A In an Engineering capacity.

Q You have previously testified in the two hearings in this Case?

A Yes.

MR. COOTER: We would ask that the transcript of these proceedings be incorporated into this Hearing this morning.

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BY MR. COOTER:

Q First, may I direct your attention to what has been marked as Exhibit No. 1 and ask you to relate what is shown by this?

A Amoco's Exhibit No. 1 shows the wells in the Tocito Dome-Pennsylvanian "D" Pool and the land ownership in that Tocito Dome field.

Q What developments have taken place since the last hearing on January 16 of this year?

A Two things. More new eastside wells have been drilled and completed. Amoco has drilled and completed its U-17 in the Northeast quarter of 22, U-19 and U-21 in the Northeast quarter of 15, U-20 in the Southeast quarter of 15 and U-23 in the southwest quarter of Section 22. These are all in Township 26 North, Range 18 West. Texaco has drilled a number of wells in Sections 26, 27 and also 35 down in the southeastern portion of this field. A second thing that's happened is that Amoco has, in the old gas cap area, shut-in six high gas-oil ratio wells in that area earlier this month to conserve reservoir energy. These wells are N-1, N-6, N-8, N-12, all in Section 17, U-3 in the southwest quarter of Section 16, U-12 in the northwest quarter of Section 21.

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Q I think it will be mentioned later on, but while we're looking at the map, there are two sections marked "open," Section 14 and 23 to the right-hand side of the map.

A Yes.

Q Those lands are owned by the Navajo Tribe?

A They are.

Q All right. Next let's turn to Exhibit No. 2 and ask you to relate what is depicted on that.

A Exhibit No. 2 is Amoco's total field production; this is actual production since inception of the pool; just Amoco. The significant features or conclusions that can be drawn from Exhibit 2 are that we have been operating under the increase, or what I might call double allowable, in Tocito Dome for over a year now, and that is clearly shown by the green-colored curve. We are presently producing 3900 barrels of oil per day. At the same time, the water production has reasonably stabilized at the level of 3300 barrels of water per day at this time. All of that water is reinjected back into the pool from which it was produced, the Pennsylvanian "D," namely into two wells on the southwest side of the pool, U No. 1 and N No. 2. I think a very significant factor is the gas-oil-ratio curve

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colored in yellow on Exhibit 2. The over-all-pool effect is that the field GORs are declining, certainly are not increasing, and the present ratio on Amoco's wells would average out at 1500 cubic feet per barrel. So I would draw the conclusion here that there has been no adverse effect upon water cut or field GOR at the higher permissible withdrawal rate during the past year. In fact, I look at it as favorable effects continue to be observed in this pool at the higher withdrawal rate. Consequently, I would quite logically conclude that no waste is occurring in the reservoir and we see no impairment of correlative rights as between the parties in the pool.

Q Mr. Giles, in your opinion, is their need for continuation of the higher withdrawal?

A Very definitely.

Q Please explain that.

A We need to reduce field life because the operating costs continue to soar. I testified in May of 1973 that the operating costs -- this is our properties -- averaged \$23,000 per month in May of 1973. I testified in January of this year that for the first 11 months of 1973 the operating costs had risen to \$29,000 average per month. Now I tell you that in the first 5 months of 1974 costs

have nearly doubled. They are now running \$56,000 a month. These costs are rising primarily because of increasing compression needs for sale of the gas to El Paso Natural Gas Company. We have an eight-mile line out of the field to the east to the main collection system of El Paso. Costs are also rising because of an increase in other production handling facilities and larger-size pumps. In the last few months we have added compression to handle another 3 million cubic feet per day more gas for sale to El Paso. The gas and the water handling facilities continue to be capable of handling the increased volume of all fluids. As I mentioned earlier, we are reinjecting all of the produced water from our properties into westside wells U-1 and N-2.

Q I believe a moment ago you testified that that was 3300 barrels of water per day.

A At this time.

Q What was that figure a year ago?

A 2500 barrels of water per day.

Q All right. Now, let's next turn to what we have , marked as Exhibit 3 -- we stapled them together and marked them just as one exhibit -- relate what is Exhibit 3?

A Exhibit 3 is a plot of monthly well tests furnished

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the Commission on each of our producing wells in Tocito Dome field. This differs from Exhibit 2 in that these are well tests that are plotted monthly. We show, as Exhibit 3, 15 individual well curves. I do not intend to go through each and every one of the curves. I do want this in the record of the Hearing and I think the Commission would like to have this plotted up. The data is in your files but this is a plot of it. I will focus on certain wells and for your benefit, the way you identify the well number is to go to the upper right-hand corner and you have four lines of typing there and the last line says "Well" and the first one here we're looking at -- are you on the first curve or the second -- okay, the first one would be Tribal P-4. In other words the first number is the well number, the K has no specific meaning, the 7 is simply the section in which the well is located, so the first number in that series is the well number.

Q Which of the wells do you want to talk about?

A I would like to talk in the middle of the set, U-13. It is probably about two-thirds of the way back in.

MR. STAMETS: Well, there is U-16, U-8 .

MR. GILES: Keep going.

MR. STAMETS: U-14.

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MR. GILES: The next one is U-13.

BY MR. COOTER:

A (Continuing) What I have done is I've arranged Exhibit 3 in a sequence, looking at Exhibit 1, from the northwest side of the pool from the southeast. The reason I selected U-13 to look at is it was the well that we completed in May of 1973 that prompted us to come before you and ask for the increased allowable. It was the second well drilled on its 160-acre drilling unit, and I want to focus on it today because it shows what we have seen heretofore that the gas-oil ratio has stabilized, the water cut when the well was completed in May of 1973 was 29 percent, it has dropped slightly to 27 percent water cut at this time. So we see very favorable effects by virtue of the increased allowable.

I would also like to turn to the very last curve in Exhibit 3, U-15; the very last one. This is one of our newer eastside wells and its performance is much like the performance of U-13. I can visually draw a downward slanting line through the water production to show that the water cuts certainly are not increasing and staying pretty constant in relationship to the oil rate. The water cut on this well is in the range of 10 to 13 percent, so we

see very favorable performance from this new well that has been completed since the first part of the year 1974.

I will talk about other wells later on in my testimony and refer back to Exhibit 3, but I would like to move on by simply saying that we have shut in six high gas-oil ratio wells in the old gas cap area earlier this month; I named those. The point I would like to make is that as the GORs, in or adjacent to this area, rise in the future, we shall continue this practice. The prime conclusion we reach from a review of these individual well curves, which are a part of Exhibit 3, is that the curves generally show stabilized water cuts or decreasing water cuts indicative to us of excellent performance at the increased oil-withdrawal rates.

Q All right. Let's turn next to what has been marked as Exhibit 4. Please explain that.

A Exhibit 4 reflects pumping bottomhole pressures on three wells, pumping bottomhole pressures measured by bottomhole sensors in Wells U-13, U-16 and U-14, and these pressures are recorded at the surface.

Let's look at U-13, which again is the well that we used as the basis back in May of 1973 to ask for this special depth bracket allowable in Tocito Dome.

The shut-in pressure of U-13 in March of 1973 was 1142 pounds; we put a Reda Pump in the well and then periodically we have tested, we have observed the recorded pressures while the well has been pumping in the course of the last year or 14 months. During the period of increased withdrawals we see from this Exhibit 4 on U-13 no unusual or radical decline in pumping bottomhole pressures, and we say this recognizing that we have withdrawn some 220,000 barrels of oil during this period of time. I have a note down at the bottom of this Exhibit that I would like to elaborate on. I say that the shut-in pressures are not obtainable with submersible pumps due to leaking cable pack-off at the surface if the wells are allowed to build up. Most assuredly we would like to get shut-in pressures on these wells that Ritas in them, but if we try to clamp the cable tighter to get a pack-off, then as gas and fluid pressure builds up it injures the lead-rubber jacket that encases this electrical cable and we more often than not get a resulting electrical short. So, this is the problem we have with the high-volume submersible pumps in trying to get a shut-in pressure. This is why I am presenting to you bottomhole pressures pumping, which I think also indicates that since the pressures are not appreciably lower

than a year ago, with the increased withdrawals, it is just another bit of evidence that the increased withdrawals are not adversely affecting this excellent quality reservoir. We have U-16 shown on this Exhibit 4, and once again the pumping bottomhole pressures are in the same order of magnitude in the last six months. This particular well received a high volume acid frac, yet it has never been a real strong producer. U-16 is in an area that we consider to be a lower porosity area in the north end of the field. The performance of that well is much like the performance of our P-3 and Mobil's two wells in Section 9. It is a tighter reservoir-rock area, and we have removed the Reda Pump because the well actually is not making enough fluid to justify continuing to use such a large volume submersible pump, and we've installed a Beam Pump. We have data on Exhibit 4 showing U-14, which is the well to the west of U-13 in Section 16. Not a whole lot of data, but it certainly indicates that pumping bottomhole pressures are staying in the same order of magnitude with time. That well too has a Reda submersible pump in it.

Q Does that complete your explanation of Exhibit 4?

A Yes.

Q Turning back to the map, which is Exhibit 1, in

the open acreage on the east side, in Sections 14 and 23, wasn't the Navajo lease sale last March, following the January hearing, supposed to include the sale of the leases covering this open acreage?

A Yes, it was.

Q Was it?

A No.

Q Why wasn't it?

A Apparently our written request was inadvertently ignored, to put that acreage up for bid at that time, but we do have assurance the acreage on the east side is now open, will be included in the next lease sale and we have received word this week that the sale is to be held August 21, 1974.

Q For what period of time are you now recommending that the 764-barrels-of-oil-per-day allowable remain in effect?

A For another six months so we can have the Indian sale behind us.

Q What information can you now divulge on your new eastside well?

A Not much. Just the production performance of the first well drilled and completed on June 15, which is

included in our Exhibit 3, because it is public information filed with the Oil Conservation Commission.

Q What information would you divulge at a hearing following the Navajo lease sale on the open acreage to the east?

A All the data the Examiner would like to have now, such as geology, pressure information, core analysis, and so forth, that quite frankly must remain proprietary pending the lease sale, but when it is divulged after the sale, this will support continuing the higher allowable throughout this Pennsylvanian "D" Pool.

Q Which 160-acre unit can now produce in excess of the old regular allowable of 382 barrels of oil per day at this time?

A Let's look at Exhibit 1. There are three such units. In Section 16 there is the southwest quarter of Section 16 that contains U-14. That well tests 539 BOPD. In the southeast quarter of the same section 16 there are two wells, U-13, and U-5, and together they produce 571 BOPD. Down in the southeast quarter of Section 22 is Well U-15. It produces 503 BOPD. Now, besides those three units there are four other Amoco units involving new eastside wells that have the capacity to produce in

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excess of the double allowable, with 764 BOPD special allowable.

Let's go back to Exhibit 3, the set of individual curves; U-14, this is again about two-thirds of the way back, right in front of U-13. It is the first well I mentioned that can produce in excess of the old allowable. I think that the individual curve on U-14 shows quite clearly that the GORs are stabilized, that the water cut is erratic, but generally has remained in the 34 percent to the 40 percent range, and so we see no adverse effect certainly from increased withdrawals as it pertains to that well. I have reviewed the next curve before, which is U-13. Let's go beyond it to U-5.

U-5 is in the same quarter section as U-13, and this likewise shows that the water cut in September of 1973, 9 months ago, was 47 percent. The water cut today is 37 percent, so it is decreasing with time; very favorable effect as a result of the higher withdrawal rates. The GOR is climbing a bit at this time but we shall watch it carefully and, as I said before, those wells that indicate we should shut them in to conserve reservoir energy we will do so as the practice and need dictates.

I would like to move now to U-9, which is further

on back about 3 curves. U-9 and U-23 are two wells located in the southwest quarter of Section 22. This is a 160-acre unit that contains the capacity to produce in excess of 764 barrels of oil per day. We just have a test rate on U-23. It shows 874 BOPD. I've asked you to look at the individual curve on U-9 in that same quarter section. It tests at this time 187 BOPD, and so the total capacity of the two wells to produce is 1061 BOPD. Looking at the curve on U-9, the water cut in October of '73 was 43 percent. the water cut today is 44 percent, essentially unchanged, again indicating excellent performance at the higher rate.

Q Mr. Giles, you stated previously that Amoco seeks an extension of the present special depth allowable for a period of 6 months. Please explain your reason for this request.

A First of all it will allow us to have the Indian sale behind us. Secondly, I know Texaco is here to address the question itself, but Amoco, on its observation of the performance of this field at the higher-increased-with-drawal rates during the past year sees no adverse effect whatsoever on the reservoir by continuing the status quo of the double allowables for another 6 months. What this does, it will give us the time we need to evaluate and

formulate long-range plans of depleting this Tocito Dome Pool. We don't know at this time what those plans will show. It may show that secondary recovery is not needed in this field; it may show that secondary recovery is needed, and if it is needed it may be imperative that we unitize the field in order to carry out such a program. These are unanswered questions at this time and we are engaged in such studies to determine what are the long-range plans. But we have an internal problem that is probably of no concern to Mr. Stamets, but I should mention it. We have had better than a 50 percent engineering personnel turn-over in Denver in the last 9 months, mainly because our International Company is expanding so rapidly world-wide they have been pirating us and every time we put a man on Tocito Dome Engineering Study he gets a liking for overseas assignment and he leaves and we put somebody else on and we have done this four or five times in the last year and we think we have a man who is going to sit in the saddle until it is done and this is why we would like the Commission's indulgence to allow us 6 more months and not some shorter period of time to accomplish this objective.

Q Do you anticipate that this study would be completed within this requested 6-month period?

A I would certainly hope so. I can get him an Oklahoma guarantee, but that is about all.

I would like to say one final thing in closing. I would hope that we have given enough evidence and testimony to the Examiner that it will justify supporting the continuation of the double allowable. I think we have. But I think to change at this time the double allowable rates would obscure and would mask any engineering analysis of this pool if a change were made in those producing rates because we've operated this way for a year, we see beneficial effects, no adverse effects, and to change the name of the game at this stage when we are trying to analyze this reservoir in a sound manner, could really upset the apple cart.

I think that's it.

Q Were the Exhibits 1 through 4 prepared either by you or under your direction and supervision?

A Under my supervision.

MR. COOTER: We offer Exhibits 1 through 4.

MR. STAMETS: Without objection Exhibits 1 through 4 will be admitted.

(Whereupon, Amoco's Exhibits
1 through 4 were admitted into evidence.)

MR. COOTER: Do you have anything else to add
Mr. Giles?

MR. GILES: No, sir.

MR. COOTER: That completes our direct case.

MR. STAMETS: Are there questions of this
Witness?

CROSS EXAMINATION

BY MR. STAMETS:

Q Mr. Giles, referring to your Exhibit No. 2, these
are just Amoco's properties, but basically what you have
here is the majority of the field as it was when you
started this project, is that correct?

A Yes. Up until mid '73 you saw the performance
under the 382-barrel-a-day allowable.

Q We see here an increase in gas-oil ratio in February
and March of '74 and a drastic decline in April. Did that
result from shutting-in the high gas-oil ratio wells?

A No. The increase would be, I would say, the
result of producing in the area near the old gas cap. The
decrease after April would be the effect of the new east-
side wells coming on stream.

Q I see.

A The shutting-in of the six wells in the old gas

cap area took place earlier in this month of July, which would not yet be reflected on this curve.

Q You have testified that your cost has gone up from \$23,000 a month to \$56,000 per month. You have completed a number of new wells and you have put in new pumping equipment as a result of this Order. A substantial portion of this increase is a result of these two factors isn't it?

A Oh yes.

Q If you had not drilled new wells and if you had not installed the new pumping equipment your cost would not have gone up that much?

A Right. We're delighted to have the cost increase if it is getting us the justifiable increase in producing rate.

Q I presume part of the long-range plan that you would propose to present would include the potential for reinjection of this gas that you are currently selling?

A That would be considered as a factor, yes. I am sure water injection would likewise be considered, but as I say, we may find that no additional extraneous energy should be put into the reservoir. That's a possibility; that's an option that is also open.

Q Referring to Exhibit No. 3 and the curves on U-13?

A Yes?

Q The water appears to be declining at a pretty stable rate and then it looks like maybe in April or May there is a rather substantial increase in the water production and then a decline the following month. What causes this sort of situation?

A I would say it is probably a bad test the month it jumped.

Q You say a bad test. What procedures do you use to determine the amount of water production?

A I don't really know our field procedure on this.

Q It might have been the only good test.

A Oh, I don't think you would strike out the previous eleven, though.

Q The Examiner would be interested to know what procedure is used to test these wells and to get the information that is necessary to prepare Exhibit No. 3 and that can be submitted at a later date.

A I shall do that.

Q Exhibit No. 4, take U-13 for instance, on 5/5/73 you report a pump pressure of 690 pounds. There are various other pump pressures going through 7/9/74 with 534 pounds.

A Yes.

Q Now, to your knowledge, was this well pumped continuously through that time? Do these pressures represent pressures which are analogous one to the other?

Can we compare the pressures on each of those dates and say "Yes, the conditions were exactly the same or essentially the same"?

A Essentially the same, yes, I think you can do that, and yes the well has been continuously produced to my knowledge throughout that period of time.

Q You indicated you would like to have six months and the sale is coming up in August. To present much of the data which you have left out here a hearing could be scheduled in say September or October, at which time it could be presented, is that not correct?

A Well as I explained to you, that would be cramping our style to extreme limits. To be in the type of position that I want to be in when I appear before you next, to be able to present the data I think you ought to have to tie the whole ball game together, and as I tried to explain in my direct testimony, I think that 3 months from now would perhaps be premature to have all the answers that I wish to have to present to you. I see no adverse

effect from the increased withdrawal that has now been going on for over a year, and I see that logic tells me that another six months ought to be perfectly safe at the increased rates before I am in a position to come before you and explain the whole ball game to you, and I would strongly urge you that you allow us another six months of this performance.

Q Is there data which could be submitted to the Secretary Director following the sale which could be used by the staff in an analysis sort of situation to determine whether or not a hearing should be called earlier than six months?

A Like what, sir?

Q Some of the material that you mentioned, the geological data, the porosities, permeabilities, and this sort of situation.

A Well, the geology, of course, is interpretive and of yes, it could be presented after the sale, yes. But if there is no harm being done to the reservoir, I would again urge why can't we wait for six months and present the whole ball of wax to you rather than piece meal over the next six months.

Q Getting back to the whole ball of wax, now this

is the sort of thing, you've been talking about unitization, possible say pressure maintenance, this sort of thing which could result in additional recovery, over and above what might result from just primary production in itself. Is it possible that the high rates of production current in the field could result in the depletion of the field before the plans could be put into effect?

A I don't see that, no, no. Now, unitization would take longer. We couldn't accomplish unitization by January of 1975, no way. I'm sure you appreciate that. But, at least we will have conducted our in-house study as to what we think is the optimum way to deplete the reservoir and we would, of course, have to convince the Texacos and the Mobils of this before we could really come before you and try to convince you as to the best plan for depleting this pool.

Q Do you suppose if the allowable were reduced to the original allowable in this field that you might have a more persuasive argument?

A Well it would sure foul up the reservoir engineers trying to analyze this pool to change the rules of the game now.

Q You mean following this next six months.

GILES-CROSS
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A It might be the way to go. If it is, we'll be before you and recommend it.

MR. STAMETS: Are there any other questions of this Witness? He may be excused. Mr. Cooter do you have anything further?

MR. COOTER: Nothing further to offer, sir.

MR. STAMETS: Mr. Kelly?

MR. KELLY: We have a witness, Mr. Examiner.

MR. STAMETS: Your Witness has already been sworn.

(Whereupon, a discussion was held off the record.)

(Witness previously sworn.)

KENNETH PETERS

called as a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLY:

Q Would you state your name, position, and employer, please?

A My name is Kenneth Peters; I am employed by Texaco, Incorporated, in Denver, Colorado.

Q And in what capacity?

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A As a Division Reservoir Engineer.

Q Have you previously qualified as an expert witness in your field before this Commission?

A Not in the field of reservoir engineering; as a Petroleum Engineer I have qualified as a witness, yes.

MR. KELLY: Do you recognize the distinction, Mr. Examiner? Do you need any further qualifications?

MR. STAMETS: You might just briefly describe your reservoir engineering work.

MR. PETERS: My present assignment includes the analysis of the Tocito Dome Field, the subject field, located in New Mexico. I am looking at the primary performance of the field and in the future will be looking at its secondary aspects.

MR. STAMETS: We will qualify the Witness.

BY MR. KELLY:

Q All right. Referring to the plat, can you state Texaco's position briefly?

A Yes. Texaco, Incorporated, as an operator in the Tocito Dome-Pennsylvania "D" Pool located in San Juan County, New Mexico, seeks continuance of the existing special depth bracket allowable of 764 barrels of oil per day for an additional six months with Exhibit 1, which

is a basic ownership plat of the field. Texaco's operated properties are Section 28, 27, 26, and 35 in Township 26 North, Range 18 West. We are currently operating 15 wells in this field.

Q How many wells has Texaco drilled since the Commission last considered this Application?

A Since June, 1973, which permitted the increase in allowable, Texaco has drilled an additional eleven wells in the field on an in-field drilling basis. Ten of them have been completed and the eleventh one is currently being completed.

Q Now, have you prepared an exhibit which shows the total production from Texaco wells, water, oil, and GOR, etc.?

A Yes, I have. Moving to Exhibit 2 we have a performance plot for parameters that have been already supplied to the State on the C-115 report. These parameters include the GOR, the oil, the water, and the water-oil ratio. Picking up the production since June, 1973, this performance curve indicates that production has been increased from 160 barrels of oil per day to a high in May of 2100 barrels of oil per day. The water-oil ratio has decreased from a value of 6 to the existing value of

1.14, and the GOR is currently 1600 cubic feet per barrel of oil and we are currently producing 2100 barrels of water per day. We have increased water production and this was primarily due to the drilling to the east of our older existing wells, but now this water rate is decreasing. We are currently reinjecting all of our produced water in our A.L. No. 3, which is located on the extreme west of our property.

Q All right. Now, referring to what has been marked Exhibit 3, would you compare that with Exhibit 2 and what conclusions you have reached so far as the effect the higher allowable has had on this reservoir.

A With Exhibit 3 this performance curve is exactly the same as the one that we looked at up until June, 1973. Exhibit 3 is a continuance of sole performance of the older existing wells in the field and we can contribute this production to four wells, two of them located in the A.L. Lease, A.L. No. 1 and 2, and 2 located on the A.R. Lease, Wells Nos. 1 and 2. The oil has, since June of 1973, has continued on an established decline except for the previous four months of this year, where we have increased production an additional 40 barrels, and this coincides with an established trend on water production where we

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again have increased water production and this is due to larger pumping equipment in some of our wells. The GOR has maintained an equilibrium and is currently at 1450 cubic feet per barrel of oil, and the water-oil ratio has maintained an established incline, which is predictable with the depletion of the field, and it is currently 7.3 for the existing-older wells in the field. One can see from these parameters that no detrimental effects have occurred through the increased withdrawal which has essentially occurred with the drilling operations surrounding and to the east of the older-existing wells in the field.

Q What limiting factor would the reduction back to the old allowable have on Texaco's production?

A This would not permit us to produce 150 barrels of oil which we are currently producing now above the old allowable of 382 barrels of oil per day.

MR. STAMETS: 150 barrels for all of your wells total?

MR. PETERS: Yes, sir.

BY MR. KELLY:

Q Have you, in your reservoir studies, determined any adverse effect of pumping this pool basically at its

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capacity?

A No, I haven't.

Q Now, has Texaco also experienced the same base increases in operating these wells that Amoco generally testified to?

A Yes, generally so, both in the continued production of our older wells and the drilling and operation of the newer wells in the field.

Q Do you have available for the Examiner individual curves showing GOR and oil production on your individual wells?

A Yes, I do, if the Examiner requests them I do have them.

MR. KELLY: Would you like to see those? We haven't marked them, but you may have them if you like.

MR. STAMETS: It might be good to take a look at them to see whether or not they would be of real value to the Hearing.

MR. KELLY: All right, we will make them available.

(Whereupon, a discussion was

held off the record.)

MR. KELLY: Mr. Examiner, I have marked this
— Exhibit No. 4, one exhibit that contains 10 individual

performance history curves.

MR. STAMETS: I guess we're up to 12 then.

MR. PETERS: We may have some doubles in there.

MR. KELLY: We will go ahead then and just offer them at the end of the questions.

BY MR. KELLY:

Q Now, you have heard the testimony of the Amoco Witness in this Case, Mr. Peters. Do you have any recommendation to make to the Examiner so far as the continuance of the allowable in this Case?

A Yes. I believe that it should be continued for the same reasons that were given by the Amoco Witness.

Q Are you asking for a six-month continuance?

A Yes.

Q Were Exhibits 1 through 4 prepared by you or under your supervision?

A Yes, they were.

MR. KELLY: We would move the introduction of Texaco's Exhibits 1 through 4.

MR. STAMETS: Exhibits 1 through 4 will be admitted.

(Whereupon, Texaco's Exhibits Nos. 1 through 4 were admitted into evidence.)

MR. KELLY: We have nothing further on direct,
Mr. Examiner.

CROSS EXAMINATION

BY MR. STAMETS:

Q Mr. Peters, will Texaco also be taking a look at the long-range development of this field and have some proposals in six months as to how they think the field should be developed?

A Yes, I think that would be a reasonable period of time.

Q To your knowledge, Mr. Peters, do any of these parts of Exhibit 4 show anything of a disastrous nature so far as production of the wells and the effect on the reservoir?

A No, sir. Briefly making a comment on their total contents, there may be an inconsistency or so but this is due primarily to the performance of new wells. One might expect a stabilized rate in any of these plotted parameters to occur 3 or 4 months after the well has been placed on completion. Some of the parameters are erratic and it is due to the initial performance of these wells.

MR. STAMETS: Are there any other questions of this Witness? He may be excused. Is there anything

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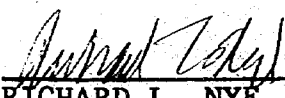
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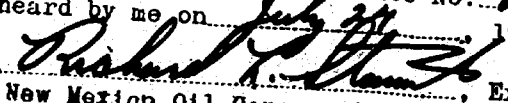
further in this Case? If not, we will take the Case
under advisement.

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

I, RICHARD L. NYE, Court Reporter, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me, and the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.


RICHARD L. NYE, Court Reporter

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 4969 heard by me on July 24, 1974.

Richard L. Nye, Examiner
New Mexico Oil Conservation Commission

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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
January 16, 1974

EXAMINER HEARING

IN THE MATTER OF:

Being reopened pursuant to the pro-
visions of Order No. R-4557, which
Order established a temporary special
depth bracket allowable for the Tocito
Dome-Pennsylvanian "D" Oil Pool, San
Juan County, New Mexico.

Case No. 4969

BEFORE: Richard L. Stamets, Examiner.

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the New Mexico Oil Conser-
vation Commission:

William Carr, Esq.
Legal Counsel for the Com-
mission
State Land Office Bldg.
Santa Fe, New Mexico

For Amoco Production Company:

Paul Cooter, Esq.
Atwood and Malone
Security National Bank Bldg.
Roswell, New Mexico

I N D E X

WITNESS

R. B. GILES

Page

Direct by Mr. Cooter

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Cross by Mr. Arnold

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Cross by Mr. Stamets

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E X H I B I T S

Marked Admitted

Amoco's Exhibits No. 1 through 7

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MR. STAMETS: The Hearing will come to order. We will take at this time Case 4969.

MR. CARR: Case 4969. In the matter of Case No. 4969 being reopened pursuant to the provisions of Order No. R-4557, which order established a temporary special depth bracket allowable for the Tocito Dome-Pennsylvanian "D" Oil Pool, San Juan County, New Mexico.

MR. STAMETS: Are there appearances in this case?

MR. COOTER: Mr. Examiner, my name is Paul Cooter. I'm with the firm Atwood and Malone in Roswell, representing Amoco Production Company. We have one witness, Bart Giles.

MR. STAMETS: Are there any other appearances in this case?

MR. SEEREY: John Seerey of Mobil.

MR. STAMETS: The witnesses will be sworn, please.

(Witnesses sworn.)

MR. COOTER: Mr. Examiner, it is my understanding that this is a reopening of the prior case so that record presented at the May 23 Hearing would be constituting part of the record in this case?

MR. STAMETS: Yes, that's correct.

R. B. GILES

called as a witness, having been first duly sworn, was
examined and testified as follows:

DIRECT EXAMINATION

BY MR. COOTER:

Q Would you state your name for the record, please?

A R. B. Giles, G-i-l-e-s.

Q By whom are you employed, Mr. Giles?

A Amoco Production Company in Denver.

Q What is your position with Amoco?

A I'm senior staff engineer in their producing
department.

Q You are the same Mr. Giles who testified at the
Hearing held in this case on May 23, this past year?

A I am.

Q May I direct your attention to the Exhibits which
you have before you? I direct your attention to Exhibit 1
and ask you to relate what is shown thereby?

A Yes, I might first open by saying that we today
are requesting a continuation of the special depth bracket
allowable for 764 barrels of oil per day per one-hundred-and-
sixty-acre drilling unit, a continuation for another six
months of that special depth bracket allowable. As a result

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of the Hearing held last May, the Commission issued for a six-months period ending December 25, '73, this special allowable and we will ask today it be continued until June 25, 1974.

We will, of course, present evidence to support our request.

Exhibit 1 for Amoco shows a structure-contour map on top of the Pennsylvania "D" porosity. The contours are exactly the same as we gave you last May at the Hearing. However, there are additional wells that have been drilled in Tocito Dome. I have shown on the Examiner's copy the potential at these two new wells in Section 16, 26. North, 18 West. Unit 14 assessed on November 1, 1973, showed 644 barrels of oil per day with a Reda submersible pump, 12 barrels of water a day and a GOR of 1,909.

Also, in Section 16, Unit 16 has been completed, December 28th, 1973, for 667 BOPD, 24 barrels of water a day, 1,436 GOR by Reda pump. There has been some additional developments out to the east of the contours of this map by both Amoco and Texaco in Section 22 of the extreme southeast corner Amoco has completed and is producing this Unit 15 as a tight hole. We have Unit 17 in the northeast corner of Section 22 down to total depth and are performing at this time. We have started drilling Unit 19 up in

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Northeast quarter of Section 15. Unit 20 is simply a staked location. Meanwhile Texaco has drilled three wells, its AR-3, BP-1 and BP-2 in Section 26 and 27 as tight holes and the reason these wells are tight is there is an open acreage lease sale coming up from the Tribe this spring.

I will combine my testimony to the contoured part of the Tocito Dome-Pennsylvanian "D" Pool, most particularly to support the request for a continuation for another six months of this special depth bracket allowable. I will confine myself to the eastern extremities of that contoured map where the larger capacity wells are completed.

Again, on this map, Exhibit 1, Mobil has a well at the north end of the pool. It's No. 1 in the extremely southwest corner of Section 9. Texaco has wells in the southern end of the pool and Amoco has the wells in between.

I'd like to now pass out Exhibit 2.

Q Please relate what is depicted by Exhibit 2?

A Exhibit 2 shows since the field was discovered in 1964, Amoco's oil, water and gas-oil ratio picture for its wells in the Penn "D" Pool. Essentially, this is the same curve we presented last May, except we have updated it to include the most recent months' production history. I think if you will look into the year 1973, you will see that the oil rate

GILES-DIRECT

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has increased under special allowable. Water rate has increased to some extent, but not nearly as much as an increase proportionately as the oil rate, and the GOR picture remains stabilized, even at the higher and special allowable rates. This, in itself, tells us that the special higher allowables are not adversely affecting reservoir performance in the Penn "D" Pool and that it can be continued without any waste occurring or impairment of correlative rights. I will lead further into that with individual well performance data.

Q Before you pass from Exhibit 2, that is basically the same Exhibit 2 in the prior Hearing, except brought current?

A That's correct. I'd like to add something at this point. One of the reasons we asked for last May the higher allowable is because the operating cost in this pool is extremely high and we need to shorten the field life which is projected to be 15 or 20 years or longer, in view of these high costs of compressed gas for sale to El Paso and to dispose of produced water. We are disposing of produced water back into two wells on the west side of the field are shown by black squares, the U-1 and the N-2 and Mobil and Texaco are jointly disposing of their water into the AL-3 Well, down in Section 28. Last May I testified that our

average (transcriber's break)

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operating cost is running \$23,000 a month. It's higher now. For the first 11 months of 1973 our average cost was \$29,000 a month. There's a reason for the increase. We have put Reda submersible pumps on our newer drilled wells. We have two new compressors. One is a small compressor to handle 300 MCFD of flare gas off a treater. Another compressor is a three-million-a-day gas handling compressor for handling gas to El Paso at the increased allowable rates and we have inserted new flow lines and new test facilities on wells, high-productive wells along the east flank.

Q One question that you were asked at the prior Hearing was that if the Commission granted the Application at that time with the increased withdrawals, could Amoco handle the increased volumes of oil and water and gas with no problem with marketing or transportation facilities and whether or not your water disposal facilities were adequate? You answered in the affirmative.

A I still answer in the affirmative. We are reinjecting about 3,000 barrels of water a day at this time, produced water, back into the same formation on the west side and we can handle 7,500 barrels of water per day injection or more. We have no problem with getting rid of the gas to El Paso for sale or with the increase oil production.

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It makes good sense to more efficiently use these facilities that are available under the increased allowables.

I would like now to go to Exhibit 3. If I may, I'd like to stand at your shoulder, Dick, and explain this with you.

We have a computer plotted printout of individual well curves for all of Amoco wells in the field. Seems like we can do things easier and more efficiently on a computer than we can by human needs. I have colored the various well performance charts of those wells that I wish to speak of on the eastern side of the field.

I'd like to first go back into the Exhibit to Unit 14. You look at the bottom of the graph and you'll see -- U-13, excuse me, U-13. You see the well on it. U-13 was the well last spring that was completed in April that was the basis for our asking the Commission to increase the allowables and we now have the eight-months performance on that U-13 since that time.

(Whereupon, a discussion was held off the record.)

A The performance of U-13 with its Reda pump, the green curve shows the oil rate and the scale is on the left

GILES-DIRECT

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side going from zero to 1,000. The water is the computer printout on the left. It is shown in blue, water production. Up at the top of the graph, the kind of straight-across line is the water cut percent, in percent, and the red curve is the gas-oil ratio. What this curve shows is that the oil rate is declining. That's a little misleading, because we had to compensate for the 50,000 barrel best allowable given this well to get back into balance and therefore the rate is showing more of a decline than would be normal, but even at the rate shown which are in the six to 800-barrel-a-day range, the water cut remains relatively constant. This is the key conclusion to draw from that chart.

Let's go back to the U-5 Well, which is back in the interior of the -- U-5, right. U-5 is a southeast well to U-13. It's in the same governmental quarter section of Section 16. To see the effect that increase allowables had on it, you see the increase in oil producing rate on this U-5 well. You'll see that the water production is coming down and most significantly, this water cut is also coming down, even at the higher oil producing rates. The gas-oil ratio is essentially constant with what it was.

Q When did the higher allowables go into effect?

A June 26th, 1973, for a six-month period. I would

like to have you flip the page toward the back one page and go to U-8 at this time.

This particular well is northwest of U-13 in the next 160-acre quadrant. The oil ratio is declining some. The water rate is declining, but the water cut, that remains essentially constant. The gas-oil ratio has increased some, but, of course, we are restricted by the 2,001 GOR limit.

Q Excuse me. On this graph and on the other one we have looked at --

A (Interrupting) I changed the scale, but I did not change the scale on this. It is correctly shown.

Q What we are reading on the left is the oil rate and the water rate and so on?

A Yes, sir. I'd like next to go near the end of the computer printout to U-14, not much history on it, because it was only completed -- not much history on it, because it is a west offset to U-13 and it was just completed in November. It has a Reda pump in it and the oil rate is increasing, just on the two months performance. The water production rate is coming down and the water cut, likewise, is coming down, as is the GOR. This is direct west offset to U-13.

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The next chart would be U-4.

(Whereupon, a discussion was
held off the record.)

A U-4 has only a four-and-a-half inch casing, so
it's production is somewhat restricted by the casing's size.
It is in the south 160 to U-13. It's down in Section 21.
Here again, the performance shows that the water cut is
remaining essentially constant.

The last one I would like to go to is U-9, on
farther south on the structure, along the east side. U-9
is an offset Texaco AR-2 Well, the southern portion of the
field. This well has five-and-a-half inch casing and a
Reda pump in it and we have been able to increase the
capacity to produce this well to the five-hundred-barrel-
a-day range under the increased allowables. We see no
change in the water cut as a result of doing this and no
change in the actual ratio.

So, what we are saying with all this performance
at increased rate is that we are having no detrimental
effect whatsoever upon the reservoir by pulling it harder
on the east side. I think it's partly due to the fact that
we are reinjecting water on the left side and we have a par-
tial-pressure-maintenance-type projection. I think this

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reservoir can definitely stand the increased rates.

Q Mr. Giles, as shown by this Exhibit, this Exhibit 3, on the performance of all of Amoco's wells, have the water cuts been stable or are they declining?

A Yes, they are stable or declining.

Q Turning now to Exhibit 4, would you please explain that?

A Yes. Exhibit 4 is a plot of the information filed with the Commission on the Mobil Corporation's Navajo No. 1 Well at the north end of the field. We have plotted from the information available to us, that the oil rate curve does not account for any down time during the particular month, if there were some. I don't think that would change the general shape of the curve. We see from this general set of curves on the Mobil Well that the oil rate is hanging in there at a rather constant level, even though it does jockey from one month to another. The same can be said for the water rate. I don't believe Mobil's reporting any GORs anymore to our knowledge, because the rate may be down so low as to be rather insignificant.

We see a rather normal performance of the Mobil Well before and after the increase withdrawal rates from the pool.

GILES-DIRECT

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The next Exhibit is 5 and shows the Texaco AR-2 Well. This particular Texaco Well is the south offset to Amoco's U-9 well. Here again, the performance is rather normal for this well. The oil rate is continuous to decline, but at a rather constant rate. Now, as compared to before, increased withdrawals were taken from this pool in the last six months. Likewise, the water producing rate is essentially constant as is the GOR. So, this well also looks normal now as it did before.

Q Number 6?

A Up to this point, we are presenting updated information on the field and on the individual Amoco Wells, the Mobil Well and the Texaco Well, updated from the May Hearing.

Amoco's Exhibit 6 now is a new Exhibit prepared especially for this Hearing and it shows the measured pressures in the Penn "D" Pool under Amoco's tract minus 510 foot datum since the field was discovered in 1964 and the original pressure was 3,200 psia and we show the decline in pressures as measured at different points in time in the last ten years. I think if you'll look at my Exhibit, sir, you'll see that we have as a result of the disposal of water back into the west side, we are seeing

GILES-DIRECT

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a re-pressuring effect on the west side by the water disposal. We're seeing also that the decline on the east side of the pressures is quite normal and continues on in almost a straight line. We took a pressure at U-16 in December, when that well was completed and it falls right on the extrapolated line. We took a pressure last weekend on the U-13 and its pressure was 812 psi, which again follows the same trend of the entire reservoir pressure decline. This tells us that the increase withdrawals are not adversely effecting the performance either pressure or production wise in the pool.

The last Exhibit of Amoco's is No. 7, and has two parts to it. In the upper part of Exhibit 7 shows for four different wells along the east side, U-13, U-5, U-8 and U-14, the last two test taken at those wells. Gentlemen, those tests have been plotted on Exhibit 3, that computer printout sheets. They have been incorporated on those sheets already.

The reason I'm entering Exhibit 7 is for the bottom half of that Exhibit, measured producing bottom hole pressure, U-13. Since it was completed back in April, we have five different tests into December of 1973. The second column shows production in barrels of fluid per day. This

GILES-DIRECT

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is oil plus water. The last column is the bottom hole producing pressure. The significance of this data is that the bottom hole producing pressure on this particular well, U-13, has stabilized in 700 psi range or only 100 pounds below the reservoir equilibrium pressure serving that well. This, to me, shows that the partial pressure maintenance is fully in effect on the water drive. Or I could say it another way: If we had no water drive, but we just had a solution gas drive mechanism operating in this pool, we would expect to be able to draw the producing pressure down to the 100, 150, 200-pound range. We are unable to do that.

Q Mr. Giles, let me direct your attention to finding 4 in the prior Order of the Commission, which recites that the evidence presently available indicates that the assignment of a special depth bracket allowable to wells in subject pool will not result in damage to the reservoir or causeways, and will be in the interest of protection of correlative rights. Has the six-months production at the increased rate proven that to be true?

A It has.

Q Let me also direct your attention to Paragraph 3 in its prior order, that the Secretary-Director of the Commission may at any time it appears that premature water

GILES-DIRECT
CROSS

encroachment or water coning is occurring or other evidence of reservoir damage is apparent, rescinding the provisions of this Order to cause the top unit allowable to revert to the 380 barrels of water per day. My question is: Has there been any evidence of that occurring during the past six months of increased production?

A No. I might add that if it should happen in the future that the increased allowables have an adverse effect upon performance, I think it would be safe to say that Amoco would be here before you to request a change in those allowables before the Commission would have a chance to set that for Hearing.

MR. COOTER: Mr. Examiner, we offer Exhibits Nos. 1 through 7. That concludes our presentation.

MR. STAMETS: Without objection, Exhibits 1 through 7 will be admitted in evidence.

(Whereupon, Amoco's Exhibits Nos. 1 through 7 for identification, were admitted in evidence.)

MR. STAMETS: Are there any questions of this witness? Mr. Arnold?

CROSS EXAMINATION

BY MR. ARNOLD:

Q Mr. Giles, I notice that you are injecting water

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about 500 -- minus 500, 530 contour. Essentially, these wells come up on the east side appear to have oil-water contact in Tocito Dome of Penn "D" Pool.

A When you talk about the new wells, Emery, which wells do you mean, 15 and 16?

Q U-15, AR-3, BP-1 and BP-2, or am I asking you something that's confidential information?

A It is. There are a couple of things that are proprietary information on those wells. One is the pressure and the other is the core analysis data which ties to oil-water contact and so forth. I'd rather not divulge that.

Q The reason I asked the question, of course, you are justifying allowable raise in Tocito Dome-Pennsylvanian "D" Pool, if it should be, develop these wells in this pool. Isn't it possible to justify production of rates in these wells only?

A All right. Let me answer it this way. I cannot, because it's confidential information, give you the full supporting data for the statements I'm about to make, but from my review of the information on our wells, in my professional view, those wells are part of the same Pennsylvanian "D" Pool that is contoured on Exhibit 1. Is that sufficient?

Q In view of the fact you consider that confidential

information, I'd just as soon go further with the question, but you would agree with me that it appears rather strange for oil to be showing up below oil-water contact?

A As the map is now contoured before you, yes.

Q You think more contours might change?

A You bet. Let me also add that by asking for a continuation of the present special allowable for another six months, two things will happen. We'll have the open acreage lease sale behind us, I would think. Secondly, we will also have additional information available in June on these newer wells that are now tight, whereby we come before you and give you the whole package as to how to use allowables from then on. The new wells that are tight plus the old wells.

Q But you wouldn't propose any way of restricting these new wells below the pool?

A No, I would not.

Q During that period?

A Not this six months coming up, no.

MR. ARNOLD: I believe that's about all.

CROSS EXAMINATION

BY MR. STAMETS:

Q Mr. Giles, how many of the wells on this Exhibit are producing at rates, essentially capacity rates?

GILES-CROSS

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A Not very many, because of the restrictions due to casing size, four-and-a-half to five-and-a-half casing. Now, the newer wells, 13, U-14, U-16, have seven-inch casings and have a greater capacity of producing with Reda pumps and we honestly believe this could produce more than the 764 barrel of oil allowable, although at this time they are not being produced that hard.

Q I notice as you were going through Exhibit No. 3, that the gas-oil ratios on Well No. U-8 and U-4 had gone up since the higher allowables have been instituted and then, if I interpret what I see on these charts and graphs properly, the same could be said of Well U-3 and U-12. U-12 looks like it's reached the top of the scale. What does that indicate?

A You said U-3 also in that group?

Q Yes.

A I don't agree on U-3. It looks rather stable to me. Let me show it to you here, Dick. The red curve down here looks rather stabilized. You plot the R's, you connect the R's. Starting in July, we got three little R's there in each one successively higher to scale than the next, which would seem to indicate, at least for that short period of time, an increase in oil-gas ratio.

Q What about Well 12?

A I don't know any explanation on U-8 and U-12. Perhaps it's the result from the fact of no longer injecting or disposing of water on the east side into U-6 because we had mechanical problems, taking that water over to the west side and injecting it. Perhaps that has allowed the gas-oil ratio to claim a few of the wells, certainly not on all of them.

Q This would be an indication that you are getting inefficient use of the water drive in this field?

A No, I don't think it's this way. I really don't. I think that the overriding considerations is the -- how's the water cut performance on these wells. I think that shows excellent performance, unusually excellent performance on the reservoir on underactive water drive, because normally, in an active water drive, you expect the water cut to increase with time. We're not seeing that.

It seems that we do have some problem with the water drive in that area since there are wells completed in what is essentially the same reservoir below the water-oil contact.

Q Say that again, now.

A Okay. In talking about an active water drive located in the immediate vicinity, say, of Well U-16 and U-13 down dip. We wouldn't expect to find oil wells completed on down dip or from that area. It's possible that it gives some indication

GILES-CROSS

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of water-oil contact further on down. We might not be seeing the effect of water encroachment at this level in this water. I would agree. I would also say the main thrust of the water drive, as we see it, is from the southwest over into the higher reaches of the structure to the east side. That is the main thrust of the water drive there. There used to be water drive from the northeast, also, practically all around the reservoir, but it has diminished to the point where the strong thrust as we see it from performance reviews is from the southwest. That is why we are disposing water on the west side.

Q Where are the pressures measured on the west side as shown on your Exhibit 6?

A Dick, I don't know. That's the plot of the pressure information on Amoco's wells, which particular wells other than the last two points, I do not know, but I'm sure that information has been filed with your Commission, and it could be derived from your files to reach this conclusion and plot. I do not have a breakdown by wells.

MR. STAMETS: Are there other questions of this witness? If not, he may be excused.

(Witness excused.)

MR. STAMETS: Do you have anything further in this

case, Mr. Cooter?

MR. COOTER: Nothing further.

MR. STAMETS: Is there anybody else that has any testimony in this case, any statements they wish to offer?

MR. SEEREY: Mobil would like to make a statement.

MR. STAMETS: Mr. Seerey.

MR. SEEREY: Mr. Examiner, Mobil Oil Corporation, as operator of the Navajo No. 1 Well, located in Unit M, Section 9, in the Tocito Dome Pool, San Juan County, respectfully requests that the Commission not make the special depth bracket allowable of 764 barrels of oil per day permanent at this time.

Even though the present temporary special depth bracket allowable of 764 barrels of oil per day has been in effect for six months, only one proration unit with a second well located on it has produced in excess of the regular 382 BOPD allowable throughout that entire period. Approximately five other recently completed wells have reported production in excess of the regular 382 BOPD allowable for the last two or three months. Reports show that there are presently nine additional new wells in the pool that are either staked, drilling, or in the completion stage. Considering these facts, we suggest that it is too soon to conclude the

the full effect on the subject pool of operating at the special 764 BOPD allowable.

Mobil's Navajo No. 1 Well has declined from a producing capability of 191 BOPD in May 1973 to a present 96 BOPD. We do not have sufficient data at this time to determine the cause of this decline. Due to the complex nature of the subject reservoir, Mobil believes that it is too soon to predict what effects the increased withdrawals of 764 BOPD may have on the remaining life and productivity of the Tocito Dome Penn "D" Pool. That's all.

MR. STAMETS: Anything further in this case; any other statements?

We will take this case under advisement.

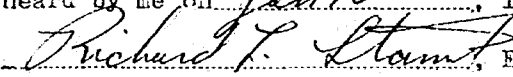
MR. COOTER: We just seek a six-months extension, and not permanent.

MR. STAMETS: I will take the case under advisement.

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

I, RICHARD L. NYE, Court Reporter, do hereby certify
 that the foregoing and attached Transcript of Hearing before
 the New Mexico Oil Conservation Commission was reported by me,
 and the same is a true and correct record of the said proceed-
 ings, to the best of my knowledge, skill and ability.


 RICHARD L. NYE, Court Reporter

I do hereby certify that the foregoing is
 a complete record of the proceedings in
 the Examiner hearing of Case No. 4969
 heard by me on Jan 16, 1974

 Richard L. Nye, Examiner
 New Mexico Oil Conservation Commission

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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
CONFERENCE ROOM, STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO

May 23, 1973

EXAMINER HEARING

IN THE MATTER OF:

Application of Amoco
Production Company for a
special depth bracket
allowable, San Juan County,
New Mexico.

Case No. 4969

BEFORE: Elvis A. Utz,
Examiner.

TRANSCRIPT OF HEARING

dearnley, meier & associates

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NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARING

SANTA FE, NEW MEXICO

Hearing Date MAY 23, 1973 TIME: 9 A.M.

NAME	REPRESENTING	LOCATION
Bart Giles	Amoco	Denver
Paul Cooter	Atwood & Malone (Amoco)	Roswell
DAN CORRENS	Amoco Prod. Co.	Houston
JAMES H. POSEY	Amoco Prod.	HOUSTON
Tom Kellahan	Kellahan & Fox	Santa Fe
James H. Posey	At-Richfield & Petro Corp.	Roswell
Paul Lutz	HSC E	Lowell
William F. Markgraf	Union Texas Petroleum	Midland
Nash A. Metts	Mark Prod. Co.	Midland
Don Wells	Union Texas Petroleum	Midland
Glen Houston	John M. Etchevery	Hobbs
BERT O. BROWN	Skelly Oil Co	MIDLAND
David J. Rogers	Clayton W. Williams, Jr.	Midland
Jon T. Edmonson	Skelly Oil Co.	Midland, Tex.
John M. Lopez	Montgomery Federic	Santa Fe
George A. Brown	Tesco Pet. Corp.	San Antonio

NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARING

SANTA FE, NEW MEXICO

Hearing Date MAY 23, 1973TIME: 9 A.M.

NAME	REPRESENTING	LOCATION
Robert H. Cox	Robert C. Cox	Dallas
D.I. Alspar	Robert C. Cox	Dallas
J. S. Tweed	Atlantic Richfield	Midland
D.W. Bore	Atlantic Richfield	Midland
James R. O'Brien	Clayton W. Williams, Jr.	Midland
J. Lopez	Lopez & Carson	Artesia
N. Raymond Law	Wilson Oil Co	✓
Xmas De Vries	John W. K. K. K. K.	Santa Fe
Ben Donegan	Leland A. Hodges, Trustee	Albuquerque
LARRY C. SHANNON	THE PETROLEUM CORP	DALLAS
K.H. GRIFFIN	Skelly Oil Company & Clayton W. Williams, Jr.	Midland
W. B. Crownover	Skelly Oil Co.	Midland
Dean E. Rowe	Adobe Oil Co	Midland Tex

1 MR. UTZ: Case 4969.

2 MR. CARR: Case 4969: Application of Amoco
3 Production Company for a special depth bracket allowable,
4 San Juan County, New Mexico.

5 MR. COOTER: Mr. Examiner, my name is Paul Cooter,
6 of Atwood and Malone, Roswell, appearing on behalf of Amoco
7 Production Company. The applicant in this case has one
8 witness to be sworn.

9 MR. UTZ: Are there other appearances?

10 (No response)

11 MR. UTZ: There are none.

12 * * * *

13 R. B. GILES,

14 was called as a witness, and after being duly sworn according
15 to law, testified as follows:

16 DIRECT EXAMINATION

17 BY MR. COOTER:

18 Q State your name for the record, please.

19 A R. B. Giles, G-i-l-e-s.

20 Q What is your profession, Mr. Giles?

21 A I am Senior Staff Engineer with Amoco in their Denver
22 Division, responsible for conservation hearings in
23 the fourteen western-most states.

24 Q How long have you been practicing the engineering
25 profession?

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1 A Twenty-five years this August.

2 Q Have you previously testified before this Commission,
3 and placed your qualifications on the record?

4 A I have, many times.

5 MR. UTZ: And they are accepted.

6 Q (By Mr. Cooter) Briefly relate what Amoco seeks by its
7 application in this case.

8 A We seek a much greater allowable than is now afforded
9 by the depth bracket allowable for the Tocito Dome
10 Pennsylvanian "D" Oil Pool. The increased allowable
11 is proper to not only prevent waste, because there is
12 a very good possibility we will improve ultimate
13 recovery with the increased withdrawals, but such an
14 increased withdrawal can also protect correlative
15 rights of the three operators in this pool.

16 Q First, may I direct your attention to Exhibit Number
17 One, and will you relate what is shown on that exhibit?

18 A Exhibit One is a structure map on the top of the
19 Pennsylvanian, and it shows the limestone pay interval
20 that we see in the Tocito Dome Pennsylvanian "D".

21 It shows that a portion of the limestone pay zone
22 permeability runs up into several Darcies. The
23 majority of this reservoir has been affected by bottom
24 waterdrive. The mine is 550 contour, the outer-most
25 heavy contour on Exhibit One was the original oil-water

1 contact. There is some waterdrive from the southwest
2 through the uppermost reaches of the structure to the
3 top of the structure.

4 This map shows all the wells in the Pennsylvanian
5 "D" pool. It shows the two disposal wells now being
6 used to dispose produced water back into the Pennsylvanian
7 "D" in the same interval from which it was produced,
8 some 2,500 barrels of water per day.

9 Exhibit One also shows that there is a well in
10 Section 28, indicated by a black square in the Northeast
11 of the Southwest of Section 28, jointly used for the
12 same type of disposal by Mobil and Texaco.

13 Mobil has a well on the north end of the field
14 in the Southwest of the Southwest of Section 9. Texaco
15 has several wells on the south end of the field in
16 Sections 27, 28, and 34--- Excuse me, the well in 34
17 is plugged.

18 In between, Amoco has all the rest. We have the
19 unique distinction here of having probably eight-five
20 to ninety percent of the pool.

21 Q When was development first started in the pool?

22 A 1964.

23 Q And has that been completed, and if so, when?

24 A Well, we have recently completed a new well this
25 spring, but the initial development peaked out in 1965.

1 Q I would like you to refer to Amoco Exhibit Two at
2 this time.

3 A Production reached a level of 2,500 barrels of oil
4 per day from Amoco properties shown on Exhibit Two.

5 Production has pretty well stabilized. The oil
6 production has, in the past seven or eight year, shown
7 only slight changes in the curve.

8 The curve indicates that in the middle of 1968,
9 we put the U-4 and the U-8 on pump. There was another
10 slight change at the end of 1969, when the M-11 and
11 the U-12 were completed as oil producing wells.

12 We worked over U-7 and U-9, and made pump changes
13 in the middle of 1970, and as a result, we see a nice
14 increase into 1971.

15 The U-13 well in the Northwest of the Southwest
16 of Section 16 was just completed last month. This
17 caused a jump in April production during 1973.

18 Turning to the dotted line, which is the water
19 production rate increase, this started in early 1965,
20 and when we reached a level of about 2,500-- Excuse
21 me, 250 barrels of water per day. In the first part
22 of 1966, we started disposing of this produced water
23 back into the interval from which it was produced
24 in the Pennsylvanian "D" Zone. We did this initially
25 on the east side of the structure into our U-6, which

1 is in the Northwest of the Northwest of Section 22.

2 Since early 1966, we have been returning all
3 produced water back into the Pennsylvanian "D", so in
4 fact we have had a partial pressure maintenance project
5 for some seven and a half years.

6 It's interesting in Exhibit Two to see that for
7 the last three and a half years, the water rate has
8 been stabilized on the order of 2,500 barrels of water
9 per day.

10 In Exhibit Two, the gas-oil ratio is stabilized,
11 and all three curves show maximum density of the oil
12 rate and the water rate, and it shows the GOR to have
13 been stabilized. This is the key point in our testimony
14 for support of our application.

15 Prior to the adoption of the present 382 BOPD
16 per 160-acre unit, the allowable last September was
17 changed from 477 barrels of oil per day when you did
18 away with the Northwest and Southeast proration system,
19 and made it State-wide rules.

20 Q This field is on 160-acre spacing, is that right?

21 A Yes, although there have been a couple of instances
22 where we have drilled a second well on the 160.

23 Q You are talking about your water disposal system?

24 A Yes.

25 Q Are your water disposal operating costs high?

1 A Terribly high, not only in disposing the produced
2 water, but also they are high because of the compressor
3 needed to compress gas for sale to El Paso.

4 The average cost, averaged for each month of
5 this year, is \$23,000 a month. This is another reason
6 why we very much want to get withdrawals from the pool
7 higher, because of the rather long expected life, from
8 fifteen to twenty years or longer, that we can foresee
9 for this pool.

10 There is a need to reduce that life because of
11 the excessive operating costs.

12 Q If the Commission were to grant your application, and
13 with the increased withdrawals, could you handle the
14 increased volumes of oil, water and gas?

15 A Very easily. All available facilities are capable
16 of handling substantial volumes of oil, gas and water.
17 We have the capacity to handle 7,500 more barrels
18 of water per day in the two west side wells. We have
19 additional market outlets for the oil, and any
20 additional gas could be sold to El Paso. So this
21 presents no problem at all with the facilities
22 available in this field, and it would really make
23 excellent sense to utilize these facilities to their
24 fullest extent.

25 Q Let me turn next to what has been marked as Exhibit

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1 Three, and ask you to explain that exhibit.

2 A This is a tabulation of twenty-four hour test data on
3 the most recently drilled Navajo Tribal U-13 Well.

4 It was initially on pump, and we show test data
5 for some thirteen test periods. Test data in the last
6 thirty-four days. Down through last Friday, the 18th
7 of May, tests revealed close to 800 barrels of oil
8 per day, and 264 barrels of water per day.

9 This is some 1064 barrels of fluid per day, and
10 notice the percentage of the water cut column initially
11 started cutting thirty-three percent water and that
12 has steadily declined to the neighborhood of twenty-four
13 or twenty-five percent water.

14 We will present evidence on the other wells later
15 to show this is a remarkable pool in that the water
16 cut has declined on the east side, and you will notice
17 also, the GOR column has stabilized in the 1,400 to
18 1,500 to one range.

19 So all three rates, oil, water and gas rate on
20 this well through this month's testings have shown
21 the ability to stabilize. I think the key point to
22 bring out on this exhibit is the very last figure down
23 on the bottom on the right. The bottom hole pressure
24 of 708 pounds has stabilized with only a thirty-seven
25 percent drawdown in pressure.

1 This indicates a productivity index of 2.3 barrels
2 of fluid per pound.

3 Q Has this well, the U-13 well, been given a test allowable?

4 A Yes, it's a 50,000 barrel test allowable, and the
5 customary procedure is to adjust the allowable later on
6 to compensate for the 50,000 barrel test allowable.

7 I would like to see the Commission waive that
8 requirement in this instance, because it will be a
9 requirement that we shut in the U-13 for at least two
10 months to get back to balance, and we have found in
11 conversations with our pumpers that wells in this
12 field that are shut in usually produce almost all water
13 for several days, even up to a week, before the oil
14 rate begins to show, and comes back to the present
15 shut in oil rate.

16 So this would be an additional lapse of time that
17 we could be producing oil at the proper rate.

18 Q Please turn to the next exhibit, Exhibit Number Four,
19 and explain what this exhibit is.

20 A This is a little unique, Mr. Utz, as this is information
21 we intend to use in conservation hearings. It is a
22 computer-plotted well curve of each of our wells
23 in the field. It is just a lot easier and simpler
24 to have a machine do it rather than having a draftsman
25 do it.

1 I think I ought to take a minute and explain
2 what some of these symbols mean. I would like to have
3 you go to the second page from the end, and I will
4 explain, first of all, that down at the very bottom,
5 below each curve, and you will see the first number is
6 the well number, and the rest of the numbers are just
7 accounting terminology.

8 MR. UTZ: That's the trouble with this type of thing.

9 A (Continuing) I would like you to turn to U-8, if you
10 can find it. Above the curves on the left side where
11 all these numbers run across the page, the first thing
12 it says is Status Condition of the Well, and you have
13 a Nine there.

14 The Nine happens to be the accounting code for a
15 flowing well. Then there's a Two after that, and the
16 Two happens to be the accounting code for a pumping
17 well. So this indicates that in 1968, this well was
18 put on pump. On the left, under that, you will see
19 the flowing tubing pressure and the fluid level, and
20 you read the numbers down.

21 For instance, 1,200 means that the flowing tubing
22 pressure was 1,200. The next one was 1,175 pounds---
23 Are you with me on that?

24 MR. UTZ: As soon as I find the flowing tubing
25 pressure, I will be.

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1 THE WITNESS: It's up on the left side.

2 A (Continuing) So you read down for numbers 1,200,
3 1,175, 180, and so forth. Then after that, you see
4 200 repeated for quite some time, and that's the well-head
5 pressure, pumping pressure.

6 The next series of numbers are the number of tests
7 during the month, and it shows just one in almost every
8 case. In a couple of instances, there were two tests
9 in a month, and that will be indicated.
10 Then you have producing hours per day, and generally
11 it runs, of course, to twenty-four hours. SPM is
12 strokes per minute, and reading down, you will see 11
13 strokes per minute after this well was put on pump.

14 Then the next series of data are the tubing choke,
15 or the stroke length. The first number shows 11, then
16 you see 12S, 13S, and 14S. That would be 12 sixty-
17 fourths inch choke. Then after the well was put on
18 pump, you see a 10E, and frankly, I don't know what
19 the E means, but it has to be 100 inch choke.

20 Then later on, you see 14D, and it would have to
21 be 144 inch stroke. Then the next thing you see is
22 the diameter of the pump in sixteenths of an inch.

23 After the well was put on pump, you will see a
24 32A, 40A, 32A, 40A. The 32 would be a two inch pump,
25 32 divided by 16 is a two inch pump.

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1 Then you see the volumetric efficiency and
2 percentage, and the test times in twenty-four hour
3 periods.

4 At the top of the curve, you have the day of the
5 test and the 27 would mean the 27th of that month.

6 Then on the top set of curves, you will see them
7 all marked with threes, and that indicates three
8 percent water cut.

9 Then you have on the left scale the twenty-four
10 hour capacity of these tests. Oil is shown with a
11 zero, and water with a W, and we then connect the
12 points on this U-8 well to show you the water rate and
13 the oil rate. Now, wherever the oil and water rates
14 happen to coincide, the machine put an X, and that's
15 shown down on the left scale.

16 Over on the right side of the graph is the gas-oil
17 ratio shown by R. Then when you come down to the
18 bottom, you have the field, the pool, and the well
19 number.

20 At this time, I would like you to turn over to
21 U-9. These are numerical sequences. U-9 is a well
22 that is in the Southwest of the Southwest of Section 22,
23 and is offset on the 40-acre location to the Texaco
24 A.R.2 Well. We ran a pump in this well last fall to
25 see what it would do. This well happens to be equipped

1 with five and a half inch casing, and it and the U-13
2 Well just completed with seven inch casing are the
3 only two wells that have casing in the field greater
4 than four and a half inch.

5 A test was taken on the five and a half inch casing,
6 on July 7th, 1972, and showed 313 barrels of oil and
7 294 barrels of water with forty-eight percent water cut,
8 and 1447 GOR.

9 Then a test was taken after the Rita had been
10 pulled out of the well on November 28th, and the oil
11 rate was 279, the water rate 238, and the water cut
12 forty-six percent with a GOR of 1,466.

13 The significance of this data is that we produced
14 twice as much oil, 600 barrels of oil, as compared
15 to the previous test rate, and the water cut was in
16 the same range, forty-six to forty-eight percent.
17 We did not increase the water cut, in fact, it had a
18 slight tendency to come down.

19 The productivity index of this well that was
20 measured was 2.2, again very comparable to the 2.5
21 shown by the U-13 with a Rita in it.

22 So we would have to judge from that test that
23 we certainly did not affect the reservoir adversely,
24 nor did we seem to affect the correlative rights of
25 the offset operator, Texaco, and we frankly plan

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1 another Rita installation into the U-9 if the
2 Commission will look favorably upon our request as
3 a result of this hearing.

4 Let's turn to U-4. The key thing on U-4 is that
5 with the water rate declining, the oil rate is declining
6 too, but the percentage of water cut has certainly
7 stabilized.

8 If you will look at the curve right below it, you
9 will see the U-5. The U-5 shows a declining water cut.
10 Notice that at the top of the curve, the water rate
11 is decidedly coming down.

12 I would like for you to turn next to U-8, which
13 is on the next page over. U-8 is located just to the
14 northwest of the new well, U-13. The water cut on
15 this well is declining, and the GOR has stabilized.
16 The rather interesting picture shown by the curve in
17 U-8 is that when we were injecting east side disposal
18 water in U-6, the water cut went up, and then came
19 down when we switched injections to the west side of
20 the pool. When we did this, the water cut went back up,
21 and the oil rate decidedly went up. The oil rate
22 has stayed up there, yet the water is declining now,
23 and the water cut is declining also.

24 So we see a definite effect of this partial
25 pressure maintenance by disposal of the water here.

1 It's doing us some good, and the movement seems to
2 be from the southwest to the northeast, and we can
3 expect that a well up in the Southwest of the Southwest
4 of Section 9 would benefit from this west side water
5 injection.

6 So I would like to turn now to Amoco Exhibit Five,
7 which is a performance curve of the probable well.

8 We have plotted this from the information available
9 to us, but the oil rate curve does not account for
10 down time, if there were any down time during any
11 particular month. But I don't think that would change
12 the general shape of the curve. I think we are
13 already seeing, sir, if you will look at my Exhibit
14 Five, I think you are seeing a slight increase in the
15 oil rate on the Mobil well, so I think we are beginning
16 to see the benefit of the west side injection across
17 to the northeast, just as we have seen it in the
18 U-8 well, which is just to the southeast of the Mobil
19 well.

20 But everything else looks rather normal on that
21 curve. We don't quite understand how the GOR has
22 come down so rapidly in the last few months, but it's
23 a nice thing to see.

24 Exhibit Six is our last exhibit, and it's Texaco's
25 performance curve for its A.R.2 Well located in the

1 Northwest of the Northwest of Section 21. That curve
2 again shows in performance that the water rate has
3 stabilized, and the GOR has certainly stabilized in
4 the last several years. So it looks like rather good
5 performance again.

6 Q What conclusions can you draw from your testimony and
7 these six exhibits?

8 A I will start out by talking about the fact that we have
9 thick, black oils under moderate waterdrives, and as
10 we produce under that system, we see the water cuts
11 increase with time. But here in the Tociito Dome
12 Pennsylvanian "D" Oil Pool, we are seeing just the
13 opposite.

14 We are seeing the water cut decline with time,
15 even though we can see the effects of the partial
16 pressure maintenance program. The reason we see this
17 is that this is excellent oil, it's forty-six gravity
18 oil, that is half the thickness of the water itself.
19 With the effects of the partial pressure maintenance
20 program, we are getting more oil and less water with
21 time.

22 Of course, this will happen until the water
23 essentially reaches the well bore, but because of this,
24 we can do no harm whatsoever, in our view, with
25 substantially increasing the withdrawals. We can

1 only do good, and we see a very good possibility of
2 improving the ultimate oil recovery from the pool with
3 substantially increased volumes of fluid being produced.

4 It, of course, will assist us in overcoming in
5 a small way the current energy crisis. It will
6 improve our current oil income, which is the key to
7 helping overcome that crisis.

8 What we are really saying is that this reservoir
9 ought to be produced to its capacity, and each operator
10 should be given the opportunity to drill an additional
11 well or wells to improve his capability to produce,
12 because of this four and a half inch casing restriction.

13 Q You mentioned the granting of the application would
14 in your opinion prevent waste. How so, Mr. Giles?

15 A By the very good possibility that it will increase
16 the ultimate oil recovery from the evidence we see
17 of declining water cut as we produce at increased
18 intervals.

19 Q May it also prevent premature abandonment of present
20 facilities?

21 A Yes. It will shorten the life and utilize those
22 facilities far more effectively than they otherwise
23 would be utilized.

24 Q Would the granting of this application, in your
25 opinion, in any way impair the correlative rights of

1 any of the parties, producer or royalty owner, in the
2 field?

3 A No. As a matter of fact, it would go the other way.
4 I think capacity production would eliminate any
5 correlative right problem if one existed, because one
6 would have the opportunity to produce his well to its
7 capacity of production.

8 Q Would the granting of this application establish, in
9 your opinion, a precedent for similar applications for
10 other fields?

11 A No. The Pennsylvanian "B" Limestone here is the only
12 one of its kind that we know of in Northwestern New
13 Mexico. Now, there may be some limestone production
14 in the Southeastern part of the state, but I am not
15 that familiar with that portion of the state. But up
16 here, it is unique and is also unique in rock
17 characteristics.

18 It's the best permeability around, so to speak.
19 Anyplace else that we have waterdrives, the permeability
20 is not nearly so good. Of course, I look at it this
21 way, each pool has to stand or fall on its own merits
22 with a request like this.

23 Q Has this application been under study by Amoco for
24 some time?

25 A Yes, it certainly has. I would like to accentuate our

1 haste here, because of the fact that we lose ninety-five
2 barrels a day ever since last September when the
3 allowables were adjusted to a state-wide basis rather
4 than the southeast and northwest proration system.

5 Also we wanted to be sure that we had what we
6 considered to be good evidence, a good case, and I think
7 Exhibit Two certainly illustrates that we have stabilized
8 all three rates here, and have good justification for
9 what we are asking for.

10 Q Were Exhibits One through Six prepared by you or under
11 your direction and supervision?

12 A Yes, they were.

13 MR. COOTER: We offer Exhibits One through Six
14 in evidence.

15 MR. UTZ: Without objection, Exhibits One through
16 Six will be entered into the record of this case.

17 (Whereupon Applicant's Exhibits One through Six
18 were entered in evidence.)

19 Q (By Mr. Cooter) Mr. Giles, do you have anything else
20 to add to your testimony?

21 A Yes, one thing. I am not sure how the Commission wants
22 to justify our request, but if it is necessary to
23 classify the pressure maintenance which really has
24 been in existence for seven and a half years to
25 achieve the objective, we would like to say that that

1 would be fine with us, that we will leave it to your
2 discretion. But I did want to mention this, that this
3 has in fact been a partial pressure maintenance project.

4 Q Is there a need for, or a desire on Amoco's part, for
5 some early word on this?

6 A Yes. In the U-13 Well, the new well, we have the Rita
7 pump on rental with an option to purchase, a sixty-day
8 option to purchase, and your decision will certainly
9 facilitate our decision whether to go ahead and buy
10 the pump or not.

11 If we could receive some sort of advanced word,
12 even before the order is actually signed by the
13 Commission, we would appreciate it.

14 MR. COOTER: That concludes our direct examination.

15 MR. UTZ: That is an unusual request.

16 THE WITNESS: Is it? I'm sorry.

17 MR. UTZ: You never know when they are going to
18 sign it, or when they are not.

19 THE WITNESS: I see.

20 * * * *

21 CROSS EXAMINATION

22 BY MR. UTZ:

23 Q How much of the 50,000 test allowable have you produced?

24 A Twenty-seven thousand five hundred.

25 Q How much water are you producing and injecting?

dearnley, meier & associates

209 SIMMS BLDG., P.O. BOX 1092, PHONE 243-6691, ALBUQUERQUE, NEW MEXICO 87103
1216 FIRST NATIONAL BANK BLDG., EAST ALBUQUERQUE, NEW MEXICO 87108

- 1 A We are injecting 2,500 barrels of water per day, and
2 we have the capacity to inject 7,500 barrels of water
3 per day.
4 Q And you are injecting most of it on the west side?
5 A Yes, all of it, in fact, in the U-1 and U-2 at this time.

6 MR. UTZ: Are there any other questions of the
7 witness?

8 (No response)

9 MR. UTZ: The witness may be excused.

10 (Witness excused.)

11 MR. UTZ: Are there any statements in this case?

12 (No response)

13 MR. UTZ: Case 4969 will be taken under advisement.

14 * * * *

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dearnley, meier & associates

209 SIMMS BLDG., P.O. BOX 1092, PHONE 243-6891, ALBUQUERQUE, NEW MEXICO 87103
1216 FIRST NATIONAL BANK BLDG. EAST, ALBUQUERQUE, NEW MEXICO 87109

1 STATE OF NEW MEXICO)
2 COUNTY OF BERNALILLO) SS
3

4 I, RICHARD E. McCORMICK, a Certified Shorthand
5 Reporter, in and for the County of Bernalillo, State of New
6 Mexico, do hereby certify that the foregoing and attached
7 Transcript of Hearing before the New Mexico Oil Conservation
8 Commission was reported by me; and that the same is a true
9 and correct record of the said proceedings to the best of
10 my knowledge, skill and ability.

11 *Richard E. McCormick*
12 CERTIFIED SHORTHAND REPORTER
13
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21

22 I do hereby certify that the foregoing is
23 a complete record of the proceedings in
24 the Examiner hearing of Case No. 4869,
25 heard by me on May 23, 1953.
Richard E. McCormick Examiner
New Mexico Oil Conservation Commission

I N D E XWITNESSPAGE

R. B. GILES

Direct Examination by Mr. Cooter

3

Cross Examination by Mr. Utz

21

E X H I B I T SEXHIBITOFFEREDADMITTED

Exhibit #1 Structure Map

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Exhibit #2 Curve

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Exhibit #3 Tabulation

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Exhibit #4 Well curve

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Exhibit #5 Performance curve

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Exhibit #6 Performance curve

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OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501

May 6, 1975

I. R. TRUJILLO
CHAIRMAN

LAND COMMISSIONER
PHIL R. LUCERO
MEMBER

STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

Mr. Paul Cooter
Atwood, Malone, Mann & Cooter
Attorneys at Law
Post Office Drawer 700
Roswell, New Mexico 88201

Re: CASE NO. 4969
ORDER NO. R-4557-C

Applicant:

Amoco Production Co.

Dear Sir:

Enclosed herewith are two copies of the above-referenced
Commission order recently entered in the subject case.

Very truly yours,

A. L. Porter, Jr.
A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC X
Artesia OCC
Aztec OCC X

Other Mr. John Seerey

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF CASE NO. 4969 BEING
REOPENED PURSUANT TO THE PROVISIONS OF
ORDER NO. R-4557 WHICH ORDER ESTABLISHED
A SPECIAL DEPTH BRACKET ALLOWABLE FOR THE
TOCITO DOME-PENNSYLVANIAN "D" OIL POOL,
SAN JUAN COUNTY, NEW MEXICO.

CASE NO. 4969
Order No. R-4557-C

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on January 22, 1975, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 6th day of May, 1975, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That by Order No. R-4557, dated June 25, 1973, a temporary special depth bracket allowable of 764 barrels of oil per day was established for the Tocito Dome-Pennsylvanian "D" Pool, San Juan County, New Mexico, for a period of six months.

(3) That by Order No. R-4557-A, dated January 24, 1974, the temporary special depth bracket allowable was extended for an additional six months.

(4) That by Order No. R-4557-B, dated August 6, 1974, the temporary special depth bracket allowable was continued in full force and effect.

(5) That pursuant to the provisions of Order No. K-4557-B, this case was reopened to allow the operators in the pool to appear and show cause why said special depth bracket allowable should remain in effect.

(6) That the operators in the pool failed to show the necessity or the advisability of continuing the special depth bracket allowable.

-2-
Case No. 4969
Order No. R-4557-C

(7) That the operators in the pool failed to show that further continuance of the special depth bracket allowable is in the interest of the prevention of waste and the protection of correlative rights.

(8) That the special depth bracket allowable of 764 barrels of oil per day for the Tocito Dome-Pennsylvanian "D" Oil Pool, San Juan County, New Mexico, should be rescinded.

IT IS THEREFORE ORDERED:

(1) That the temporary special depth bracket allowable of 764 barrels of oil per day for the Tocito Dome-Pennsylvanian "D" Oil Pool, San Juan County, New Mexico, is hereby rescinded.

(2) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION



I. R. Trujillo
I. R. TRUJILLO, Chairman

Phil R. Lucero
PHIL R. LUCERO, Member

A. L. Gomez, Jr.
A. L. GOMEZ, Jr., Member & Secretary

S E A L

jr/

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CA. NO. 4969
Order No. R-4557

APPLICATION OF AMOCO PRODUCTION COMPANY
FOR A SPECIAL DEPTH BRACKET ALLOWABLE,
SAN JUAN COUNTY, NEW MEXICO

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on May 23, 1973,
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 25th day of June, 1973, the Commission, a
quorum being present, having considered the testimony, the
record, and the recommendations of the Examiner, and being
fully advised in the premises,

FINDS:

(1) That due public notice having been given as required
by law, the Commission has jurisdiction of this cause and the
subject matter thereof.

(2) That the applicant, Amoco Production Company is the
operator of 17 producing wells in the Tocito Dome-Pennsylvanian
"D" Oil Pool, San Juan County, New Mexico.

(3) That the applicant seeks the assignment of a special
depth bracket allowable of 764 barrels of oil per day for the
Tocito Dome-Pennsylvanian "D" Oil Pool, San Juan County, New
Mexico, to replace the current regular depth bracket allowable
for said pool of 382 barrels per day.

(4) That the evidence presently available indicates that
the assignment of a special depth bracket allowable to wells
in the subject pool will not result in damage to the reservoir
or cause waste, and will be in the interest of protection of
correlative rights.

(5) That special depth bracket allowables should be

-2-

Case No. 4969
Order No. R-4557

assigned for a temporary period to expire six months from the date of this order; that during this period all operators in the subject pool should gather all available information relative to the effects on said reservoir.

(6) That this case should be reopened at an examiner hearing six months from the effective date of this order, at which time the operators in the subject pool should appear and show cause why the temporary special depth bracket allowances should be made permanent.

IT IS THEREFORE ORDERED:

(1) That the applicant, Amoco Production Company is hereby given approval of a temporary special depth bracket allowable of 764 barrels of oil per day as hereby established as top unit allowable for the Tocito Dome-Pennsylvanian "D" Oil Pool, San Juan County, New Mexico.

(2) That this case shall be reopened at an examiner hearing six months from the effective date of this order, at which time the operators in the subject pool may appear and show cause why the temporary special depth bracket allowable of 764 barrels of oil per day for the Tocito Dome-Pennsylvanian "D" Oil Pool, San Juan County, New Mexico should be made permanent.

(3) That the Secretary Director of the Commission may, at any time it appears that premature water encroachment or water coning is occurring, or other evidence of reservoir damage is apparent, rescind the provisions of this order and cause the top unit allowable for the Tocito Dome-Pennsylvanian "D" Oil Pool to revert to 382 barrels of oil per day.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

-3-

Case No. 4969
Order No. R-4557

DONE at Santa Fe, New Mexico, on the day and year herein-
above designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION


I. R. Trujillo
I. R. TRUJILLO, Chairman

ALEX J. ARMIJO, Member

A. L. Porter Jr.
A. L. PORTER, Jr., Member & Secretary

S E A L

ac/

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF CASE NO. 4969 BEING
REOPENED PURSUANT TO THE PROVISIONS OF
ORDER NO. R-4557 WHICH ORDER ESTABLISHED
A SPECIAL DEPTH BRACKET ALLOWABLE FOR THE
TOCITO DOME-PENNSYLVANIAN "D" OIL POOL,
SAN JUAN COUNTY, NEW MEXICO.

CASE NO. 4969
Order No. R-4557-A

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on January 16, 1974, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 24th day of January, 1974, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That by Order No. R-4557, dated June 25, 1973, a temporary special depth bracket allowable of 764 barrels of oil per day was established for the Tocito Dome-Pennsylvanian "D" Pool, San Juan County, New Mexico, for a period of 6 months.

(3) That pursuant to the provisions of Order No. R-4557, this case was reopened to allow the operators in the subject pool to appear and show cause why said special depth bracket allowable should remain in effect.

(4) That the evidence presented indicates that the temporary special depth bracket allowable should be continued in effect for an additional 6 months.

(5) That this case should be reopened at an examiner hearing during July, 1974, at which time the operators in the subject pool should appear and show cause why the temporary special depth bracket allowable should remain in effect.

-2-

Case No. 4969

Order No. R-4557-A

IT IS THEREFORE ORDERED:

(1) That the temporary special depth bracket allowable of 764 barrels of oil per day for the Tocito Dome-Pennsylvanian "D" Oil Pool, San Juan County, New Mexico, shall remain in full force and effect.

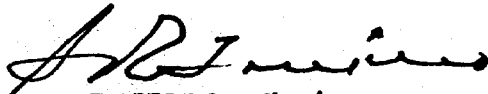
(2) That this case shall be reopened at an examiner hearing during the month of July, 1974, at which time the operators in said pool may appear and show cause why said special depth bracket allowable should not be rescinded.

(3) That the Secretary-Director of the Commission may, at any time it appears that premature water encroachment or water coning is occurring, or other evidence of reservoir damage is apparent, rescind the provisions of this order and cause the top unit allowable for the Tocito Dome-Pennsylvanian "D" Oil Pool to revert to 382 barrels of oil per day.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION


I. R. TRUJILLO, Chairman


ALEX J. ARMITO, Member


A. L. PORTER, Jr., Member & Secretary


S E A L

dr/

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE NO. 4969
Order No. R-4557-B

IN THE MATTER OF CASE NO. 4969 BEING
REOPENED PURSUANT TO THE PROVISIONS OF
ORDER NO. R-4557-A WHICH ORDER TEMPORARILY
EXTENDED THE SPECIAL DEPTH BRACKET ALLOWABLE
FOR THE TOCITO DOME-PENNSYLVANIAN "D" OIL
POOL, SAN JUAN COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on July 24, 1974,
at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 6th day of August, 1974, the Commission,
a quorum being present, having considered the testimony, the
record, and the recommendations of the Examiner, and being
fully advised in the premises,

FINDS:

(1) That due public notice having been given as required
by law, the Commission has jurisdiction of this cause and the
subject matter thereof.

(2) That by Order No. R-4557, dated June 25, 1973, a
temporary special depth bracket allowable of 764 barrels of
oil per day was established for the Tocito Dome-Pennsylvanian
"D" Pool, San Juan County, New Mexico, for a period of 6 months.

(3) That by Order No. R-4557-A, dated January 24, 1974,
the temporary special depth bracket allowable was extended for
an additional 6 months.

(4) That pursuant to the provisions of Order No. R-4557-A,
this case was reopened to allow the operators in the subject
pool to appear and show cause why said special depth bracket
allowable should remain in effect.

(5) That the evidence presented indicates that the
temporary special depth bracket allowable should be continued
in effect for an additional 6 months.

(6) That this case should be reopened at an examiner
hearing during January, 1975, at which time the operators in
the subject pool should appear and show cause why the temporary
special depth bracket allowable should remain in effect.

-2-

CASE NO. 4969
Order No. R-4557-B

(7) That the evidence presented shows that the majority operators in the pool will prepare a plan or plans for operation of the pool to depletion and that such plans will be presented at the reopened hearing in January, 1975.

(8) That such plan or plans would include data relative to efficient rates of withdrawal, secondary recovery or pressure maintenance, and interim pool operation procedures or rules pending implementation of such plans should they be considered by the Commission.

IT IS THEREFORE ORDERED:

(1) That the temporary special depth bracket allowable of 764 barrels of oil per day for the Tocito Dome-Pennsylvanian "D" Oil Pool, San Juan County, New Mexico, shall remain in full force and effect.

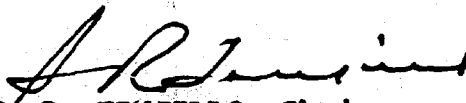
(2) That this case shall be reopened at an examiner hearing during the month of January, 1975, at which time the operators in said pool may appear and show cause why said special depth bracket allowable should not be rescinded.

(3) That the Secretary-Director of the Commission may, at any time it appears that premature water encroachment or water coning is occurring, or other evidence of reservoir damage is apparent, rescind the provisions of this order and cause the top unit allowable for the Tocito Dome-Pennsylvanian "D" Oil Pool to revert to 382 barrels of oil per day.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION


R. TRUJILLO, Chairman

ALEX J. ARMIJO, Member

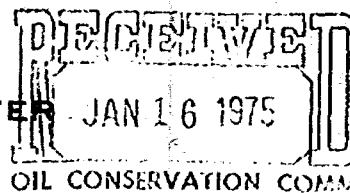

A. L. PORTER, Jr., Member & Secretary

S E A L

jr/

ATWOOD, MALONE, MANN & COOTER
LAWYERS

JEFF D. ATWOOD [1883-1960]
ROSS L. MALONE [1910-1974]



P. O. DRAWER 700
SECURITY NATIONAL BANK BUILDING
ROSWELL, NEW MEXICO 88201
[505] 622-6221

CHARLES F. MALONE
RUSSELL D. MANN
PAUL A. COOTER
BOB F. TURNER
ROBERT A. JOHNSON
JOHN W. BASSETT
ROBERT E. SABIN
RUFUS E. THOMPSON
RALPH D. SHAMAS

January 15, 1975

Mr. A. L. Porter, Jr.
Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

RE: Case No. 4969 on the January 22, 1975 docket --
Special Depth Bracket Allowable for the
Tocito Dome, San Juan County, New Mexico

Dear Mr. Porter:

We have previously entered our appearance as attorneys for Amoco Production Company in the captioned case. This case is now being re-opened for further hearing on the January 22 docket. We continue as counsel for Amoco Production Company in this case, but the presentation of the evidence in the forthcoming hearing will be handled by Oscar Swan, a member of the Colorado Bar and House Counsel for Amoco Production Company in its Denver office.

Very truly yours,



Paul Cooter

PC:sas
cc: Oscar Swan, Esquire
Mr. R. B. Giles

Dockets Nos. 4-75 and 5-75 are tentatively set for hearing on February 5 and February 19, 1975. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - JANUARY 22, 1975

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

The following cases will be heard before Daniel S. Nutter, Examiner, or Richard L. Stamets, Alternate Examiner:

CASE 5394: (Continued and Readvertised)

Application of Walter Duncan Oil Properties for amendment of special pool rules, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks amendment of Rule 2 of the Special Rules and Regulations for the Slickrock-Dakota Oil Pool to allow wells to be drilled to within 25 feet of a quarter-quarter section when the offset acreage is owned by the operator of the well; also to allow drilling to within 165 feet of a well producing from the same pool.

CASE 5401: Application of Burma Oil and Gas Company for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of its Willow Lake Unit Area, comprising 4800 acres, more or less, of Federal, State, and fee lands in Township 24 South, Range 28 East, Eddy County, New Mexico.

CASE 5402: In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Tyra & Tyra, Fidelity and Deposit Company of Maryland and all other interested parties to appear and show cause why the Tyra & Tyra BTA Lulu Well No. 1 located in Unit C of Section 22, Township 9 South, Range 35 East, Lea County, New Mexico, should not be plugged and abandoned in accordance with a Commission-approved plugging program.

CASE 5122: (Reopened)

In the matter of Case 5122 being reopened pursuant to the provisions of Order No. R-4693, which order established temporary special pool rules for the East Lusk-Wolfcamp Oil Pool, Lea County, New Mexico, including a provision for 160-acre spacing and proration units and a limiting gas-oil ratio of 4000 to 1. All interested parties may appear and show cause why said pool should not be developed on 40-acre spacing and proration units with a limiting gas-oil ratio of 2000 to 1.

CASE 4969: (Reopened)

In the matter of Case 4969 being reopened pursuant to the provisions of Order No. R-4557-B, which order temporarily extended the special depth bracket allowable for the Tocito Dome-Pennsylvanian "D" Oil Pool, San Juan County, New Mexico. All interested parties may appear and show cause why the temporary special depth bracket allowable should remain in effect.

Examiner Hearing - Wednesday - January 22, 1975

Docket No. 3-75

-2-

CASE 5403: In the matter of the hearing called by the Oil Conservation Commission on its own motion to further consider the subject matter of Case No. 5377, namely to permit all interested parties to appear and show cause why the continued injection of water for secondary recovery or disposal purposes into any formation from the surface of the ground down to and including the Drinkard formation should be permitted in the following described area in Lea County, New Mexico:

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM
Sections 13 through 36: All

TOWNSHIP 23 SOUTH, RANGE 37 EAST, NMPM
Sections 1 through 12: All

Further to consider requiring temperature surveys and cement bond logs on all wells in the above-described area; and to consider requiring that any well in said area indicating any leakage, surface or sub-surface, or inadequate cementing, should be repaired, recemented, or plugged.



OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501

August 6, 1974

L. R. TRUJILLO
CHAIRMAN
LAND COMMISSIONER
ALEX J. ARMijo
MEMBER
STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

Mr. Paul Cooter
Atwood, Malone, Mann & Cooter
Attorneys at Law
Post Office Drawer 700
Roswell, New Mexico 88201

Re: CASE NO. 4969

ORDER NO. R-4557-B

Applicant:

Amoco Production Co.

DOCUMENT FILED

Date 1-10-75

Dear Sir:

Enclosed herewith are two copies of the above-referenced
Commission order recently entered in the subject case.

Very truly yours,

A. L. Porter, Jr.

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC x

Artesia OCC

Aztec OCC x

Other Mr. Booker Kelly



OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501

I. R. TRUJILLO
CHAIRMAN

LAND COMMISSIONER
PHIL R. LUCERO
MEMBER

STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY -- DIRECTOR

SUBJECT: STATUTORY UNITIZATION -
THE PROPOSED NEW MEXICO STATUTE

BY: WILLIAM F. CARR, GENERAL COUNSEL, NEW MEXICO OIL CONSERVATION
COMMISSION

Statutory unitization is the bringing together, as required by law or a valid order or regulation, of separately owned tracts into a unit constituting all or some portion of a producing reservoir and the joint operation of such as a unit.

The first unitization statute was adopted by Louisiana in 1940 and since that time all major oil and gas producing states have adopted some form of unitization statute with the exceptions of Texas and New Mexico.

This is the first unitization bill ever to be considered by the New Mexico legislature and it is drawn in large measure from the Model Statutes proposed by the Interstate Oil Compact Commission and the American Petroleum Institute. The New Mexico bill is limited, however, to pressure maintenance projects and secondary and tertiary recovery operations. Its enactment should result in increased recovery of oil and gas in this state from pools which have passed primary production without large capital investments.

Under the proposed statute, any working interest owner may file an application with the Oil Conservation Commission requesting an order for unit operation of a pool or portion thereof. The matter is then set for hearing where the party proposing unitization must show, among other things:

1. the limits of the area to be unitized;
2. the type of operation contemplated;
3. that unitization is reasonably necessary to carry out pressure maintenance or secondary or tertiary recovery projects;
4. that the plan is feasible, will prevent waste and will result in increased recovery of hydrocarbons; and
5. that the proposed allocation of production is on a fair and reasonable basis.

The party proposing unitization must also present copies of the proposed plan for unitization and the proposed operating agreement.

Under this bill, when the Oil Conservation Commission is convinced that these conditions exist, it shall issue an order unitizing the area and providing for its operations. Requirements for this order are set out in detail in Section 7 of the proposed bill.

The order will provide that the plan for unit operations must be approved in writing by at least 75% of the working interest owners and 75% of the royalty owners within six months of the effective date of the order or it becomes null and void. This provision assures that at least 75% of those affected by the order consent to the plan of unitization.

Other sections of the bill deal with implementation of the unitization plan and its amendment. They closely follow language from the model statutes and should not be controversial.

The proposed bill is narrow in scope. First, it does not apply to primary production and it is the intent of the bill that statutory unitization be used only at a time when it becomes necessary to supplement reservoir energy from outside sources. It should be emphasized that the Oil Conservation Commission cannot initiate any action under this proposal. This will protect against the situation where a disinterested Commission would attempt to unitize an area when the operators in the pool oppose unitization for economic or other reasons. The bill provides that the Commission will be bound by the agreements of the parties unless there is no such agreement. In this event, the Commission shall determine the value of the interests involved based upon the evidence introduced at the hearing. The proposal requires that three-fourths of those affected as well as the Oil Conservation Commission must approve all unit agreements and there are also special provisions limiting activities of large operators and preventing one working interest owner with a small interest in the unit from blocking unitization.

Definite advantages will accrue to the State of New Mexico and to the oil and gas industry in this state as a result of an effective unitization statute. First, and perhaps most importantly, voluntary unitization agreements will be encouraged because statutory unitization will eliminate the unreasonableness of small minorities. Unitization also will permit more efficient production, ensure maximum recovery, prevent waste for it will permit more efficient use of reservoir energy, protect correlative rights, provide for efficient pressure maintenance and secondary recovery operations, generate increased revenue to the state and will increase the present worth of oil and gas interests in New Mexico. Statutory unitization has, in fact, been characterized as a must in secondary recovery projects because if secondary recovery projects are to be effective there must be drainage across property lines.

Disadvantages also will result from the enactment of this legislation for immediate profits will be decreased; certain limitations will be placed on individual rights; the small operator may be put at a disadvantage in some dealings with large corporations and competition will be decreased. It is questionable, however, whether it is proper to criticize unitization statutes for decreasing competition since such competition will only be decreased at the production stage where it probably is not desirable and leads to the waste of hydrocarbons.

Passage of a unitization statute is consistent with present national energy needs, but more importantly, it will provide a more comprehensive energy conservation program for the State of New Mexico.

SENATE BILL 262
STATUTORY UNITIZATION ACT

- Section 1. PURPOSE OF ACT - to authorize and provide for the unitized management, operation and further development of certain oil and gas properties to the end that greater ultimate recovery may be had therefrom, waste prevented and the correlative rights protected of all mineral interests in each unitized area. It is not intended that this act apply to exploratory units.
- Section 2. SHORT TITLE.
- Section 3. ADDITIONAL POWERS AND DUTIES OF THE OIL CONSERVATION COMMISSION - The Commission is vested with jurisdiction, power and authority to effectuate the purposes of this act.
- Section 4. DEFINITIONS
- A. "pool" - same definition as in oil and gas statutes.
 - B. "oil and gas" defined.
 - C. "waste" - expands the oil and gas statute's definition to include exonomic and physical waste resulting, or that could reasonably be expected to result, from the development and operation separately of tracts that can best be developed and operated as a unit.
 - D. "working interest" defined.
 - E. "working interest owner" and "lessee" defined.
 - F. "royalty interest" defined.
 - G. "royalty owner" defined.
 - H. "unit operator" defined.
 - I. "basic royalty" defined and limited to one-eighth.
 - J. "relative value" is defined and the factors to be considered when setting a valuation are outlined.
- Section 5. REQUISITES OF APPLICATION FOR UNITIZATION - Any working interest owner may file an application for unitization. The application shall contain:

- A. a description of the unit area including vertical limits and a plat;
- B. a statement that reservoir is reasonably defined by development;
- C. a statement of the type of operations contemplated;
- D. a copy of the unitization plan;
- E. a copy of the operating plan; and
- F. the matters required in Section 6.

Section 6. MATTERS TO BE FOUND BY COMMISSION PRECEDENT TO ISSUANCE OF UNITIZATION ORDER -

- A. the Commission must find that:
 - 1. unitization is necessary to carry on pressure maintenance projects or secondary or tertiary recovery operations;
 - 2. unitization is feasible and will result in increased recovery;
 - 3. the additional cost is less than the estimated value of the new oil or gas to be recovered plus a reasonable profit;
 - 4. unitization will benefit the working interest owners and the royalty interest owners;
 - 5. there has been a good faith effort to obtain voluntary unitization; and
 - 6. the participation formula provides for a reasonable allocation of production.
- B. If the Commission feels the participation formula is not fair, reasonable and equitable, it shall determine the relative value of the tracts and allocate production accordingly.
- C. When the Commission determines that the matters set out in Subsection A exist it shall make findings to that effect and issue an order creating the unit and providing for its unitization.

Section 7. COMMISSION ORDERS -

The Commission orders shall approve or prescribe a plan or

unit agreement which shall include:

- A. a legal description of "the unit area" including vertical limits;
- B. a statement of the type of operations contemplated;
- C. an allocation of unit production;
- D. a provision for credits and charges among the owners of the unit area for their respective investments in materials and equipment contributed to the unit.
- E. provisions governing how the costs shall be determined, charged and paid including a provision governing how, when and by whom the unit production allocated to an owner who does not pay his share of the costs of unit operations charged to such owner, or the interest of such owner, may be sold and the proceeds applied to the payment of such costs.
- F. a provision for carrying a working interest owner and paying his share of the costs out of his share of the production.
- G. a provision designating the unit operator.
- H. a provision for a voting procedure.
- I. the time when the unit operations shall commence and the circumstances under which they shall terminate.
- J. such additional provisions as are deemed appropriate.

Section 8. RATIFICATION OR APPROVAL OF PLAN BY OWNERS -

- A. No order providing for unitization shall become effective until it has been approved in writing by:
 - (1) those who will be required to initially pay at least 75% of the costs of unit operations, and
 - (2) by the owners of at least 75% of the production or proceeds thereof

and the Commission has made a finding providing for unit operations.

SPECIAL PROVISIONS:

one owner with 75% - must be joined by one other to approve the plan.

one owner with 25% to 50% of the costs - must be joined by one other in disapproving the plan.

B. SPECIAL PROVISION:

one owner of 25% to 50% of the production or proceeds of the unit - must be joined by one other in disapproving the plan.

C. The required percentages must sign up in 6 months or get an extension of time.

D. The plan of unitization binds all - whether signed up or not - once the necessary percentage of signatures is obtained.

Section 9. AMENDMENT OF PLAN OF UNITIZATION - The plan is amended in the same manner as the original order was obtained.

Section 10. PREVIOUSLY ESTABLISHED UNITS - can be brought into a new unit. Treat the unit as a single tract and allocate its share of production in accordance with the plan of the previously established unit.

Section 11. UNIT OPERATIONS OF LESS THAN AN ENTIRE POOL - this is allowed when the unit area is reasonably suitable for this purpose.

Section 12. OPERATION - EXPRESS OR IMPLIED COVENANTS - All operations of the unit shall be deemed to be operations on each separately owned tract in the unit. These operations shall constitute a fulfillment of all express or implied obligations for each lease or contract on unit lands.

Section 13. INCOME FROM UNITIZED SUBSTANCES - unit production shall be the property and income of the persons to whose credit, the same is allocated.

Section 14. LIEN FOR COSTS - the unit has a prior lien upon the leasehold estate and other oil and gas rights in each tract to secure payment of the amount of the unit expense charged against such tract.

Section 15. LIABILITY FOR EXPENSES - shall be several and not joint or collective.

Section 16. DIVISION ORDERS - No division order or other contract relating to the sale or purchase of production shall be terminated by the order providing for unitization.

Section 17. PROPERTY RIGHTS - Except when the parties so agree, no order providing for unit operations shall be construed to result

in a transfer of all or any part of the title of any person to the oil and gas rights in any tract in the unit area.

Section 18. EXISTING RIGHTS, RIGHTS IN UNLEASED LAND, AND ROYALTIES AND LEASE BURDENS - shall be regarded amended only to the extent necessary to conform to the provisions and requirements of this act. If a lease or contract provides for a royalty in excess of 1/8th, the working interest shall bear and pay the same.

Section 19. AGREEMENTS NOT VIOLATIVE OF LAW GOVERNING MONOPOLIES OR RESTRAINT OF TRADE.

Section 20. EVIDENCE OF UNIT TO BE RECORDED - the unit agreement is to be recorded in the office of the county clerk in the county where the unit is located.

Section 21. UNLAWFUL OPERATION - Once a pool is unitized, it is unlawful for anyone other than the unit operator to operate a well in the unit area.

Section 22. SEVERABILITY OF PROVISIONS.



OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501

June 25, 1973

GOVERNOR
BRUCE KING
CHAIRMAN
LAND COMMISSIONER
ALEX J. ARMJO
MEMBER
STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

Mr. Paul Cooter
Atwood, Malone, Mann & Cooter
Attorneys at Law
Post Office Drawer 700
Roswell, New Mexico 88201

Re: Case No. 4969
Order No. R-4557
Applicant:
Amoco Production Company

DOCKET MAILED

Dear Sir:

Date 1-4-74

Enclosed herewith are two copies of the above-referenced Commission order recently entered in the subject case.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC X
Artesia OCC
Aztec OCC X

Other

Docket No. 21-74

Dockets Nos. 22-74 and 24-74 are tentatively set for hearing on August 7 and August 21. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - JULY 24, 1974

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

The following cases will be heard before Richard L. Stamets, Examiner, or Daniel S. Nutter, Alternate Examiner:

CASE 4954: (Reopened)

In the matter of Case 4954 being reopened pursuant to the provisions of Order No. R-4555, which order established temporary special pool rules for the South Lindrith Gallup-Dakota Oil Pool, Rio Arriba County, New Mexico, including a provision for 160-acre spacing. All interested parties may appear and show cause why said pool should not be developed on 40-acre spacing.

CASE 5277: Application of Pierce & Dehlinger for the amendment of Order No. R-4560, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an extension of time in which to commence the drilling of the third well covered by Order No. R-4560, to be drilled in the NE/4 of Section 24, Township 9 South, Range 33 East, Vada-Pennsylvanian Pool, Lea County, New Mexico. Applicant further seeks the establishment of an administrative procedure for additional extension of time in which to comply with the drilling schedule as set forth in the subject order. Applicant further seeks the amendment of Orders Nos. 4 and 5 of Order No. R-4560 to provide certain changes in the time schedules outlined therein for the furnishing of estimated well costs and the payment of proportionate shares of well costs by all parties.

CASE 5278: Application of Texaco Inc. for downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Blinebry, Drinkard, and Tubb production in the wellbores of its A. H. Blinebry Federal Wells Nos. 23 and 26, located in Units C and B, respectively, of Section 29, and its C. H. Lockhart Federal Well No. 5, located in Unit C of Section 18, all in Township 22 South, Range 38 East, Lea County, New Mexico.

CASE 5279: Application of Tom L. Ingram for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Delaware Sand in the perforated interval from 5012 feet to 5033 feet in his State "O" Well No. 2 located in Unit E of Section 7, Township 24 South, Range 33 East, Triple X-Delaware Pool, Lea County, New Mexico.

CASE 5280: Application of Coastal States Gas Producing Company for an unorthodox location and the amendment of Order No. R-4715, Lea County, New Mexico. Applicant, in the above-styled cause, seeks, as an exception to Order No. R-2746, approval for the unorthodox oil well location for its

(Case 5280 continued from Page 1)

McGuffin Well No. 3 to be drilled 660 feet from the North line and 1980 feet from the West line of Section 29, Township 9 South, Range 33 East, Flying "M" San Andres Pool, Lea County, New Mexico, the N/2 NW/4 of said Section 29 to be dedicated to the well. Applicant further seeks the amendment of Order No. R-4715 which dedicated the W/2 NW/4 of Section 29 to its McGuffin Well No. 2 located 1980 feet from the North line and 660 feet from the West line of said Section 29. Applicant proposes that the N/2 NW/4 of said Section 29 be dedicated jointly to said McGuffin Well No. 2 and to its McGuffin Well No. 1 located in Unit F of said Section 29.

CASE 5281: Application of Morris R. Antweil for an extension of time, Order No. R-4772, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks a 90-day extension of the July 15 deadline for the commencement of drilling operations in the S/2 of Section 17, Township 22 South, Range 27 East, South Carlsbad Field, Eddy County, New Mexico, which lands were pooled to form a standard 320-acre gas spacing and proration unit by Order No. R-4772.

CASE 5282: Application of Union Texas Petroleum Corporation for downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Jalmat and Langlie-Mattix production in certain of its wells in the Langlie-Jal Unit Area, currently being waterflooded under authority of Commission Order No. R-4051.

CASE 4969: (Reopened)

In the matter of Case No. 4969 being reopened pursuant to the provisions of Order No. R-4557-A, which order continued the special depth bracket allowable for the Tocito Dome-Pennsylvanian "D" Pool, San Juan County, New Mexico, for an additional six months. All interested parties may appear and show cause why said special depth bracket allowable should not be rescinded.

CASE 5283: Application of Belco Petroleum Corporation for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in formations of Pennsylvanian age or older underlying the W/2 of Section 5, Township 22 South, Range 27 East, Eddy County, New Mexico, to be dedicated to a well to be drilled at a standard location for said unit in Unit F of said Section 5. Also to be considered will be the cost of drilling and completing said well and the allocation of such costs, as well as actual operating costs and charges for supervision. Also to be considered is the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 5284: Application of Champlin Petroleum Company for a dual completion, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion (conventional) of its Nix-Yates Well No. 1 located in Unit C of Section 2, Township 22 South, Range 27 East, Eddy County, New Mexico, in such a manner as to produce gas from the Morrow formation through tubing and from the Wolfcamp formation through the casing-tubing annulus.

CASE 5152: (Reopened)

In the matter of Case No. 5152 being reopened pursuant to the provisions of Order No. R-4713, which order established a special depth bracket allowable for the Media-Entrada Oil Pool, Sandoval County, New Mexico. All interested parties may appear and show cause why said special depth bracket allowable should not be rescinded.

CASE 5285: Application of Texas Pacific Oil Co. for an unorthodox location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox gas well location of its Phantom Draw Unit Well No. 1 to be located at a point 800 feet from the South line and 1000 feet from the West line of Section 20, Township 26 South, Range 31 East, Eddy County, New Mexico, the W/2 of said Section 20 to be dedicated to the well.

CASE 5286: Application of Texaco Inc. for a Special Allowable, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for an injection response allowable increase for its Vacuum Grayburg-San Andres Unit Pressure Maintenance Project, Lea County, New Mexico. Applicant seeks an additional 2320 barrels of oil per day to be added incrementally to the current 4640 barrel per day allowable as injection response occurs. Applicant further seeks the establishment of an allowable of up to 240 barrels per day for lease line wells which have demonstrated a substantial response to water injection.



OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501

I. R. TRUJILLO
CHAIRMAN
LAND COMMISSIONER
ALEX J. ARMijo
MEMBER
STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

January 24, 1974

Re: CASE NO. 4969

ORDER NO. R-4557-A

Applicant:

Amoco Production

Mr. Paul Cooter
Atwood, Malone, Mann & Cooter
Attorneys at Law
Post Office Box 700
Roswell, New Mexico 88201

DOCKET MAILED

Dear Sir:

Date 7-12-74

Enclosed herewith are two copies of the above-referenced
Commission order recently entered in the subject case.

Very truly yours,

A. L. Porter, Jr.

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Copy of order also sent to: DOCKET MAILED

Hobbs OCC x

Artesia OCC

Aztec OCC x

Date 7-12-74

Other Mr. John Saarey

STATEMENT FOR THE RECORD OF CASE 4969

*Reopened
1-16-74*

Mr. A. L. Porter
c/o New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

Mobil Oil Corporation, as operator of the Navajo #1 well, located in Unit M, Section 9, T-26-N, R-18-W, San Juan County, New Mexico, in the Tocito Dome - Pennsylvanian "D" Pool, respectfully requests that the Commission not make the special depth bracket allowable of 764 barrels of oil per day permanent at this time.

Even though the present temporary special depth bracket allowable of 764 barrels of oil per day has been in effect for six months, only one proration unit with a second well located on it has produced in excess of the regular 382 BOPD allowable throughout that entire period. Approximately five other recently completed wells have reported production in excess of the regular 382 BOPD allowable for the last two or three months. Reports show that there are presently nine additional new wells in the pool that are either staked, drilling, or in the completion stage. Considering these facts, we suggest that it is too soon to conclude the full effect on the subject pool of operating at the special 764 BOPD allowable.

Mobil's Navajo #1 well has declined from a producing capability of 191 BOPD in May 1973 to a present 96 BOPD. We do not have sufficient data at this time to determine the cause of this decline. Due to the complex nature of the subject reservoir, Mobil believes that it is too soon to predict what effects the increased withdrawals of 764 BOPD may have on the remaining life and productivity of the Tocito Dome Penn. "D" Pool.

If the Commission does choose to continue increased withdrawals of 764 BOPD in the subject pool; Mobil respectfully requests that such approval be granted on an additional temporary basis for possibly six months to permit observation of the effects on the reservoir.

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

January 2, 1974

C
O
P
Y

**Mr. J. C. White
Texaco Inc.
P. O. Box 2100
Denver, Colorado 80201**

Dear Mr. White:

**In response to your letter of December 28, 1973,
enclosed please find a docket for the January 16,
1974, examiner hearing, in which Case 4969 is scheduled
to be reopened.**

Very truly yours,

**R. L. STAMETS
Technical Support Chief**

**RLS/dr
enclosure**



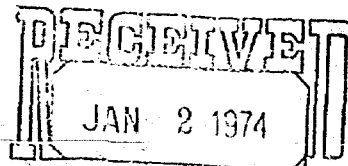
PETROLEUM PRODUCTS

PRODUCING DEPARTMENT
ROCKY MOUNTAINS-U. S.
DENVER DIVISION

J. C. WHITE
ASSISTANT DIVISION MANAGER

December 28, 1973

TEXACO INC.
P. O. BOX 2100
DENVER, COLORADO 80201



OIL CONSERVATION COMMISSION

CASE NO. 4969, ORDER NO. R-4557
TOCITO DOME-PENNSYLVANIAN "D" OIL POOL
SAN JUAN COUNTY, NEW MEXICO

6.02-1

Mr. A. L. Porter, Jr.
New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

Dear Mr. Porter:

Order No. R-4557, dated June 25, 1973, granted a temporary special depth bracket allowable of 764 barrels of oil per day for the Tocito Dome-Pennsylvanian "D" Oil Pool. The Order further specified that the case would be reopened at an Examiner hearing in six months to determine if the new allowable should be made permanent. As an operator in Tocito Dome Field, Texaco would like to know your present plans for reopening this case.

Thank you.

Very truly yours,

LEA:nr

DOCKET: EXAMINER HEARING - WEDNESDAY - JANUARY 16, 1974

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

The following cases will be heard before Richard L. Stamets, Examiner, or Daniel S. Nutter, Alternate Examiner:

- ALLOWABLE: (1) Consideration of the allowable production of gas for February, 1974, from fifteen prorated pools in Lea, Eddy, Roosevelt and Chaves Counties, New Mexico;
- (2) Consideration of the allowable production of gas from nine prorated pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico, for February, 1974.

CASE 5110: (Continued from the November 15, 1973, Examiner Hearing)

In the matter of the hearing called by the Oil Conservation Commission on its own motion to consider extending the horizontal limits of the Washington Ranch-Morrow Gas Pool, Eddy County, New Mexico, to include the S/2 of Section 28, Township 25 South, Range 24 East.

Also to be considered will be the institution of gas prorationing in said pool to provide for fixing the total allowable natural gas production from said pool to an amount equal to reasonable market demand and to the capacity of the gas transportation facilities. Also to be considered will be the adoption of special rules and regulations for said pool including a provision for allocating the allowable production among the wells in the pool.

CASE 5111: (Continued from the November 15, 1973, Examiner Hearing)

In the matter of the hearing called by the Oil Conservation Commission on its own motion to consider extending the horizontal limits of the Burton Flats-Morrow Gas Pool, Eddy County, New Mexico, to include the S/2 of Section 34, Township 20 South, Range 28 East, and the N/2 of Sections 8 and 9, and all of Section 10, Township 21 South, Range 27 East.

Also to be considered will be the institution of gas prorationing in said pool to provide for fixing the total allowable natural gas production from said pool to an amount equal to reasonable market demand and to the capacity of the gas transportation facilities. Also to be considered will be the adoption of special rules and regulations for said pool including a provision for allocating the allowable production among the wells in the pool.

CASE 5112: (Continued from the November 15, 1973, Examiner Hearing)

In the matter of the hearing called by the Oil Conservation Commission on its own motion to consider extending the horizontal limits of the Burton Flats-Strawn Gas Pool, Eddy County, New Mexico, to include all of Section 10, Township 21 South, Range 27 East.

(Case 5112 continued from Page 1)

Also to be considered will be the institution of gas prorationing in said pool to provide for fixing the total allowable natural gas production from said pool to an amount equal to reasonable market demand and to the capacity of the gas transportation facilities. Also to be considered will be the adoption of special rules and regulations for said pool including a provision for allocating the allowable production among the wells in the pool.

CASE 5113: (Continued from the November 15, 1973, Examiner Hearing)

In the matter of the hearing called by the Oil Conservation Commission on its own motion to consider the institution of gas prorationing in the Burton Flats-Atoka Gas Pool, Eddy County, New Mexico, and to provide for fixing the total allowable natural gas production from said pool to an amount equal to reasonable market demand and to the capacity of the gas transportation facilities. Also to be considered will be the adoption of special rules and regulations for said pool including a provision for allocating the allowable production among the wells in the pool.

CASE 5124: (Continued from the November 28, 1973, Examiner Hearing)

Application of Belco Petroleum Corporation for compulsory pooling and an unorthodox gas well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests underlying the S/2 of Section 30, Township 20 South, Range 33 East, South Salt Lake-Morrow Gas Pool, Lea County, New Mexico, to be dedicated to a well to be drilled at an unorthodox location 660 feet from the South line and 1300 feet from the East line of said Section 30. Also to be considered will be the cost of drilling and completing said well and the allocation of such costs, as well as actual operating costs and charges for supervision. Also to be considered is the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 5143: Application of El Paso Natural Gas Company for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its proposed Rocky Arroyo "D" Com. Well No. 2 in the center of Unit L of Section 4, Township 22 South, Range 22 East, Rocky Arroyo-Morrow Gas Pool, Eddy County, New Mexico, the S/2 of said Section 4 to be dedicated to the well.

CASE 5144: Application of Depco, Inc. for two waterflood projects, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute two waterflood projects by the injection of water into the Grayburg-San Andres formation through six wells located on applicant's State 647 lease in Sections 31 and 32, Township 17 South, Range 28 East, Artesia Pool, Eddy County, New Mexico, and through one well on the Kersey and Company Ramapo "A" Lease in said Section 32.

CASE 5145: Application of Texas Pacific Oil Company for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Devonian formation in the perforated interval from 10,872 feet to 11,032 feet in its State "B" Well No. 2 located in Unit B of Section 11, Township 12 South, Range 33 East, Bagley Siluro-Devonian Pool, Lea County, New Mexico.

CASE 4969: (Reopened)

In the matter of Case No. 4969 being reopened pursuant to the provisions of Order No. R-4557, which order established a temporary special depth bracket allowable for the Tocito Dome-Pennsylvanian "D" Oil Pool, San Juan County, New Mexico. All interested parties may appear and show cause why the special allowable should be made permanent.

CASE 5146: Application of Midwest Oil Corporation for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the Target Unit Area comprising 5120 acres, more or less, of State and Federal lands in Townships 25 and 26 South, Range 25 East, Eddy County, New Mexico.

CASE 5147: Application of Mesa Petroleum Corporation for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Morrow formation underlying the S/2 of Section 12, Township 16 South, Range 35 East, North Shoe Bar Field, Lea County, New Mexico, to be dedicated to a well to be drilled at a standard location for said unit in Unit O of said Section 12. Also to be considered will be the cost of drilling and completing said well and the allocation of such costs, as well as actual operating costs and charges for supervision. Also to be considered is the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 5148: Application of Coquina Oil Corporation for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill a well at an unorthodox gas well location 990 feet from the North and East lines of Section 16, Township 19 South, Range 25 East, Boyd-Morrow Gas Pool, Eddy County, New Mexico, the N/2 of said Section 16 to be dedicated to said well.

CASE 5149: Application of Cities Service Oil Company for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the N/2 of Section 33, Township 21 South, Range 27 East, Eddy County, New Mexico, to be dedicated to a well to be drilled at a standard Pennsylvanian gas well location for said unit. Also to be considered will be the cost of drilling and completing said well and the allocation of such costs, as well as actual operating costs and charges for supervision. Also to be considered is the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 5150: Application of Hanson Oil Corporation for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Queen formation through 10 wells in its Mescalero Ridge Unit Area in Sections 26 and 35, Township 19 South, Range 34 East, Pearl-Queen Pool, Lea County, New Mexico.

CASE 5151: Application of Penroc Oil Corporation for a dual completion, Eddy County, New Mexico. Applicant, in the above-styled cause seeks approval for the dual completion (conventional) of its Dero-Federal A-Com Well No. 1, located in Unit N of Section 35, Township 19 South, Range 28 East, Eddy County, New Mexico, in such a manner as to produce gas from the Winchester-Wolfcamp gas pool and an undesignated Strawn gas pool through the casing-tubing annulus and through tubing.

CASE 5152: Application of Petro-Lewis Corporation for a Special Depth Bracket Allowable, Media-Entrada Oil Pool, Sandoval County, New Mexico. Applicant, in the above-styled cause, seeks a special depth bracket allowable for the Media-Entrada Oil Pool, Township 19 North, Range 3 West, Sandoval County, New Mexico.

CASE 5140: (Continued from the January 3, 1974, Examiner Hearing)

Application of Pierce & Dehlinger for compulsory pooling, Vada-Pennsylvanian Pool, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Vada-Pennsylvanian Pool underlying the NW/4 of Section 24, Township 9 South, Range 33 East, Lea County, New Mexico, to be dedicated to the King Resources Sheridan Well No. 1-A located in Unit C of said Section 24. Also to be considered is designation of the applicant as operator of the NW/4 of said Section 24 and the well located thereon, provision for allocation of actual operating costs and charges for supervision, and allocation of costs for reworking said well including a 200% charge attributable to any non-consenting working interest owner's pro rata share of said workover costs, for the risk involved in said workover.

CASE 4956: (Reopened) (Continued from the January 3, 1974, Examiner Hearing)

Application of Pierce & Dehlinger for a determination of well costs, Lea County, New Mexico. Applicant, as operator of the Sheridan Well No. 1 located in Unit M of Section 13, Township 9 South, Range 33 East, Lea County, New Mexico, to which well is dedicated the SW/4 of said Section 13, all mineral interests in the Vada-Pennsylvanian Pool thereunder having been pooled by Commission Order No. R-4560, seeks the determination of reasonable well costs attributable to applicant and to King Resources, including, but not limited to, the costs of reworking and placing said Sheridan Well No. 1 back on production and attorneys fees in connection therewith. Applicant further seeks an order assessing, as a charge for the risk involved in the reworking of the well, 120% of the pro rata share of the reasonable well costs attributable to the working interest of King Resources.

CASE 5145: Application of Texas Pacific Oil Company for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Devonian formation in the perforated interval from 10,872 feet to 11,032 feet in its State "B" Well No. 2 located in Unit B of Section 11, Township 12 South, Range 33 East, Bagley Siluro-Devonian Pool, Lea County, New Mexico.

CASE 4969: (Reopened)

In the matter of Case No. 4969 being reopened pursuant to the provisions of Order No. R-4557, which order established a temporary special depth bracket allowable for the Tocito Dome-Pennsylvanian "D" Oil Pool, San Juan County, New Mexico. All interested parties may appear and show cause why the special allowable should be made permanent.

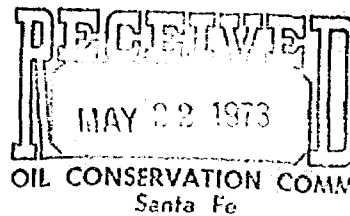
CASE 5146: Application of Midwest Oil Corporation for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the Target Unit Area comprising 5120 acres, more or less, of State and Federal lands in Townships 25 and 26 South, Range 25 East, Eddy County, New Mexico.

CASE 5147: Application of Mesa Petroleum Corporation for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Morrow formation underlying the S/2 of Section 12, Township 16 South, Range 35 East, North Shoe Bar Field, Lea County, New Mexico, to be dedicated to a well to be drilled at a standard location for said unit in Unit 0 of said Section 12. Also to be considered will be the cost of drilling and completing said well and the allocation of such costs, as well as actual operating costs and charges for supervision. Also to be considered is the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 5148: Application of Coquina Oil Corporation for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill a well at an unorthodox gas well location 990 feet from the North and East lines of Section 16, Township 19 South, Range 25 East, Boyd-Morrow Gas Pool, Eddy County, New Mexico, the N/2 of said Section 16 to be dedicated to said well.

CASE 5149: Application of Cities Service Oil Company for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the N/2 of Section 33, Township 21 South, Range 27 East, Eddy County, New Mexico, to be dedicated to a well to be drilled at a standard Pennsylvanian gas well location for said unit. Also to be considered will be the cost of drilling and completing said well and the allocation of such costs, as well as actual operating costs and charges for supervision. Also to be considered is the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

Mobil Oil Corporation



P.O. BOX 633
MIDLAND, TEXAS 79701

May 21, 1973

New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

Attention: Mr. A. L. Porter, Jr.

NEW MEXICO OIL CONSERVATION COMMISSION
CASE NO. 4969, MAY 23, 1973 DOCKET
AMOCO APPLICATION FOR A SPECIAL
DEPTH BRACKET ALLOWABLE
TOCITO DOME PENN. "D" OIL POOL
SAN JUAN COUNTY, NEW MEXICO

Gentlemen:

Mobil Oil Corporation has reviewed Amoco's request for a special depth bracket allowable of 764 barrels of oil per day for the Tocito Dome Pennsylvanian "D" Oil Pool in San Juan County, New Mexico.

Due to the complex nature of the subject reservoir, we find it difficult to predict what effects Amoco's proposed increased withdrawals may have on the remaining life and productivity of the Tocito Dome Penn. "D" Pool.

If the Commission does choose to rule in favor of Amoco's request for increased withdrawals in the subject pool; Mobil respectfully requests that such approval be granted on a temporary basis, for possibly six months, to permit observation of effects on the reservoir. At the end of the temporary period, Mobil would further recommend that consideration for extension be only given after notice and hearing.

Yours very truly,

A handwritten signature in cursive script that reads "J A Morris".

J. A. Morris
Production Engineering Supervisor

JHSeerey/cs

cc: NMOCC - Dist. 3 - Aztec

4969-FB. Files

* waive requirement to shut in wells
to bring it back
into balance

want to increase approval
say it will increase total recovery.
want to drill additional wells

expedite ———— renting equipment —
w/ option to buy

Case 6969

Heard 5-23-73

Rec. 5-20-73

Grant Amoco ~~permanently~~
as an exception to the depth
bracket allowable of 382
BOPD to 76 & BOPD. It appears
from testimony that this
will not harm the reser-
voir. Grant this for
only 6 mos. to be recalled
of & report on the effect
of 76 & BOPD on the res.

[Signature]

Evidence. 6-1-73

M17

Docket No. 14-73

DOCKET: EXAMINER HEARING - WEDNESDAY - MAY 23, 1973

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The following cases will be heard before Elvis A. Utz, Examiner, or Richard L. Stamets, Alternate Examiner:

CASE 4683: (Reopened) (Continued from the April 11, 1973 Examiner Hearing)


In the matter of Case 4683 being reopened pursuant to the provisions of Order No. R-4286, which order established special rules and regulations for the West Tres Papalotes-Pennsylvanian Pool, Lea County, New Mexico, including a provision for 160-acre proration units. All interested parties may appear and show cause why said pool should not be developed on less than 160-acre units.

CASE 4946: (Continued from the May 9, 1973 Examiner Hearing)

Application of Union Texas Petroleum for special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the promulgation of special pool rules for the Crosby-Fusselman Pool, Lea County, New Mexico, including a provision for classification of oil wells and gas wells, 320-acre spacing for all wells, and a limiting gas-oil ratio of 5000 to one.

CASE 4966: (Continued from the May 9, 1973 Examiner Hearing)

Application of Read & Stevens, Inc. for compulsory pooling, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests underlying the N/2 of Section 36, Township 12 South, Range 30 East, Chaves County, New Mexico, to be dedicated to a well to be drilled to the Queen formation in Unit B of said Section 36, in the Southeast Chaves Queen Gas Area. Also to be considered will be the cost of drilling and completing said well and the allocation of such costs as well as actual operating costs and charges for supervision. Also to be considered is the designation of applicant as operator of the well and a 200 percent charge for risk involved in drilling said well.

 CASE 4969: Application of Amoco Production Company for special depth bracket allowable, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks the assignment of a special depth bracket allowable of 764 barrels of oil per day for the Tocito Dome Pennsylvanian "D" Oil Pool, San Juan County, New Mexico, to replace the current regular depth bracket allowable for said pool of 382 barrels per day.

CASE 4970: Application of Robert G. Cox for directional drilling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to re-enter his Federal "EA" Well No. 1, a crooked hole the surface location of which is 330 feet from the North and West lines of

(Case 4970 continued from page 1)

Section 12, Township 18 South, Range 27 East, Empire-Abo Pool, Eddy County, New Mexico, to set a whipstock at a depth of 4,200 feet and to drill in such a manner as to return the hole to the vertical, and to bottom said well at a depth of 6,200 feet approximately beneath the surface location.

- CASE 4971: Application of Tesoro Petroleum Corporation for a secondary recovery project, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a secondary recovery project by injection of water and/or gas into the Hospah sand in its Santa Fe RR "A" Well No. 84 to be located five feet from the South line and 2,950 feet from the East line of Section 1, Township 17 North, Range 9 West, South Hospah-Lower Sand Oil Pool, McKinley County, New Mexico.
- CASE 4972: Application of Skelly Oil Company for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the Forty-Niner Ridge Unit Area comprising 7,679 acres, more or less, of State, Federal, and Fee lands in Township 23 South, Range 30 East, Eddy County, New Mexico.
- CASE 4973: Application of Clayton W. Williams, Jr. for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Badger Unit Area comprising 10,158 acres, more or less, of State and Federal lands in Township 22 South, Range 31 East, Eddy County, New Mexico.
- CASE 4974: Application of Atlantic Richfield Company for a non-standard gas proration unit and simultaneous dedication, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the approval of a non-standard 160-acre unit comprising the W/2 NE/4 and E/2 NW/4 of Section 12, Township 24 South, Range 36 East, Jalmat Gas Pool, Lea County, New Mexico, to be simultaneously dedicated to its Cooper Wells Nos. 1, 2, and 3 located in Units G, F, and B, respectively, of said Section 12.
- CASE 4975: Application of Atlantic Richfield Company for a non-standard proration unit, simultaneous dedication, and an unorthodox location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for a non-standard 320-acre gas proration unit comprising the NW/4, N/2 SW/4, and W/2 NE/4 of Section 11, Township 20 South, Range 36 East, Eumont Gas Pool, Lea County, New Mexico, to be simultaneously dedicated to its W. P. Byrd Wells Nos. 5, a non-standard location 1650 feet from the North line and 330 feet from the West line, and No. 7, located 990 feet from the North line and 1980 feet from the West line of said Section 11.

CASE 4979: Application of Michael P. Grace II for directional drilling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to set a whip-stock in his Airport Grace Well No. 1, the surface location of which is 1980 feet from the South line and 2164 feet from the West line of Section 36, Township 22 South, Range 26 East, South Carlsbad Gas Field, Eddy County, New Mexico, and to directionally drill said well in such a manner as to bottom the well in the Morrow formation at a point approximately 500 feet Northeast of the surface location.

CASE 4980: Application of Pubco Petroleum Corporation for pool creation, an oil discovery allowable, and surface commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of the Humble City-Wolfcamp Pool and the assignment of approximately 47,970 barrels of oil discovery allowable to the discovery well for said pool, applicant's Shipp Well No. 4 located in Unit L of Section 11, Township 17 South, Range 37 East, Lea County, New Mexico. Applicant further seeks authority to commingle production from said pool with production from the Humble City-Strawn Pool underlying applicant's Shipp lease after separately metering the Wolfcamp production.

CASE 4981: Southeastern nomenclature case calling for an order for the creation and extension of certain pools in Eddy, Lea, and Chaves Counties, New Mexico:

(a) Create a new pool in Eddy County, New Mexico, classified as a gas pool for Cisco production and designated as the West Atoka-Cisco Gas Pool. The discovery well is the Coquina Oil Corporation Five Mile No. 1 located in Unit H of Section 14, Township 18 South, Range 25 East, NMPM. Said pool would comprise:

TOWNSHIP 18 SOUTH, RANGE 25 EAST, NMPM
Section 14: E/2

(b) Create a new pool in Eddy County, New Mexico, classified as a gas pool for Morrow production and designated as the Cabin Lake-Morrow Gas Pool. The discovery well is the Phillips Petroleum Company James A Com No. 1 located in Unit O of Section 2, Township 22 South, Range 30 East, NMPM. Said pool would comprise:

TOWNSHIP 22 SOUTH, RANGE 30 EAST, NMPM
Section 2: S/2

(c) Create a new pool in Eddy County, New Mexico, classified as a gas pool for Morrow production and designated as the West Sand Dunes-Morrow Gas Pool. The discovery well is the El Paso Natural Gas Company Mobil Federal No. 1 located in Unit J of Section 29, Township 23 South, Range 31 East, NMPM. Said pool would comprise:

TOWNSHIP 23 SOUTH, RANGE 31 EAST, NMPM
Section 29: E/2

CASE 4951: (Continued from the April 25, 1973 Examiner Hearing)

Application of Atlantic Richfield Company for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests underlying the N/2 of Section 15, Township 21 South, Range 26 East, Eddy County, New Mexico, to be dedicated to a well to be drilled by the applicant at a standard location to test the Morrow formation. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision. Also to be considered is the designation of applicant as operator and the risk involved in drilling said well.

CASE 4976: Application of The Petroleum Corporation for a dual completion, creation of two gas pools and special rules therefor, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete its Parkway West Unit Well No. 1 located in Unit C of Section 28, Township 19 South, Range 29 East, Eddy County, New Mexico, to produce gas and associated liquid hydrocarbons from the Strawn and Atoka formations through parallel strings of tubing. Applicant further seeks the designation of a Strawn pool and an Atoka pool for said well and the promulgation of special pool rules for each, including classification of oil wells and gas wells and special gas-oil ratio limitations.

CASE 4977: Application of Michael P. Grace II for compulsory pooling and an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests underlying the N/2 of Section 12, Township 22 South, Range 26 East, South Carlsbad Gas Field, Eddy County, New Mexico, to be dedicated to a well to be drilled to the Morrow formation at an unorthodox location 1440 feet from the North line and 1880 feet from the East line of said Section 12. Also to be considered will be the cost of drilling and completing said well and the allocation of the costs thereof as well as actual operating costs and charges for supervision, designation of the applicant as operator of the well, and the establishment of a 200 percent risk factor for the well.

CASE 4978: Application of Adobe Oil Company for a dual completion and non-standard gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete its Smith Federal Well No. 2 in such a manner as to produce gas from an undesignated Atoka gas pool and from the Rock Tank-Upper Morrow gas pool through parallel strings of tubing. Applicant further seeks approval for the non-standard location of said well for the Atoka formation at a point 660 feet from the South line and 330 feet from the East line of Section 11, Township 23 South, Range 24 East, Rock Tank Gas Field, Eddy County, New Mexico, said location having previously been approved for the Upper Morrow formation by Order No. R-4456.

(d) Create a new pool in Lea County, New Mexico, classified as an oil pool for Wolfcamp production and designated as the North Shoe Bar-Wolfcamp Pool. The discovery well is the Pubco Petroleum Corporation Skelly State No. 1 located in Unit I of Section 14, Township 16 South, Range 35 East, NMPM. Said pool would comprise:

TOWNSHIP 16 SOUTH, RANGE 35 EAST, NMPM
Section 14: SE/4

(e) Extend the West Atoka-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 26 EAST, NMPM
Section 18: S/2

(f) Extend the Blinebry Gas Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 36 EAST, NMPM
Section 1: NE/4

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM
Section 6: N/2

(g) Extend the East Brunson-McKee Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM
Section 24: SW/4

(h) Extend the Buffalo Valley-Pennsylvanian Gas Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 15 SOUTH, RANGE 27 EAST, NMPM
Section 11: E/2

(i) Extend the Burton Flat-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 21 SOUTH, RANGE 27 EAST, NMPM
Section 2: Lots 1 through 8
Section 3: Lots 1 through 8

(j) Extend the East Caprock-Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 12 SOUTH, RANGE 32 EAST, NMPM
Section 10: SE/4

(k) Extend the Catclaw Draw-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 21 SOUTH, RANGE 26 EAST, NMPM
Section 30: All

(l) Extend the Cedar Canyon-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 24 SOUTH, RANGE 29 EAST, NMPM
Section 10: All

(m) Extend the Double L-Queen Associated Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 14 SOUTH, RANGE 29 EAST, NMPM
Section 35: All

TOWNSHIP 15 SOUTH, RANGE 30 EAST, NMPM
Section 5: NE/4

(n) Extend the East EK-Queen Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 34 EAST, NMPM
Section 21: S/2 SE/4

(o) Extend the Golden Lane-Strawn Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 21 SOUTH, RANGE 29 EAST, NMPM
Section 5: Lots 1, 2, 7, 8, 9, 10,
15 and 16

(p) Extend the Grayburg-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 29 EAST, NMPM
Section 28: N/2

(q) Extend the Justis-Montoya Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 25 SOUTH, RANGE 37 EAST, NMPM
Section 13: SE/4

(r) Extend the Sand Dunes-Cherry Canyon Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 23 SOUTH, RANGE 31 EAST, NMPM
Section 23: SW/4 SE/4

(s) Extend the West Sawyer-San Andres Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 9 SOUTH, RANGE 37 EAST, NMPM

Section 22: SE/4

Section 23: E/2 SW/4

(t) Extend the West Tres Papalotes-Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 14 SOUTH, RANGE 34 EAST, NMPM

Section 29: NW/4

(u) Extend the Twin Lakes-San Andres Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 9 SOUTH, RANGE 28 EAST, NMPM

Section 1: SE/4 NW/4 and NE/4 SW/4

CASE 4943: (Continued from the May 9, 1973 Examiner Hearing)

Application of M. W. Staples for an unorthodox oil well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to produce oil from his Vanderventer Well No. 2 located 1310 feet from the North line and 1330 feet from the East line of Section 20, Township 18 South, Range 28 East, Artesia Pool, Eddy County, New Mexico. Said well was drilled as an injection well at said location pursuant to authority granted by Order No. R-3341.

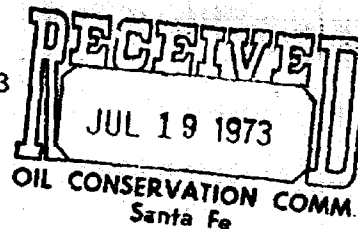
ATWOOD, MALONE, MANN & COOTER
LAWYERS

JEFF D. ATWOOD [1983-1980]

P. O. DRAWER 700
SECURITY NATIONAL BANK BUILDING
ROSWELL, NEW MEXICO 88201
[505] 622-6221

CHARLES F. MALONE
RUSSELL D. MANN
PAUL A. COOTER
BOB F. TURNER
ROBERT A. JOHNSON
JOHN W. BASSETT
ROBERT E. SABIN
RUFUS E. THOMPSON

JULY
18th
1973



Mrs. Ida Rodriguez
Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

Re: No. 4969 - Application of Amoco Production
Company for a Special Depth Bracket Allowable,
San Juan County, New Mexico

Dear Ida:

Thank you for forwarding to me the transcript in the
captioned case. It was a short one, so I return it
to you quickly.

Appreciating your courtesy, and with the very best of
wishes, I am,

Very truly yours,


Paul Cooter

P
C
*
V

Encls.

Case 4969

DPK



Amoco Production Company
Security Life Building
Denver, Colorado 80202

P. J. Early
Division Production
Manager
A. M. Roney
Assistant Division
Production Manager
T. M. Curtis
W. M. Jones
District Superintendents

August 12, 1974

File: VDP-210-986.511

Mr. R. L. Stamets
New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

Dear Mr. Stamets:

Re: Measurement of Water Cuts, Tocito Dome Field
San Juan County, New Mexico

During the course of Amoco's presentation at the July 24, 1974 Tocito Dome hearing, you asked me how we measure water cuts monthly on our wells. Recognizing it could be done in several ways but not knowing precisely the method we use in Tocito Dome, I answered "I do not know, but will find out and let you know." This letter will satisfy that obligation.

Net oil computers are used at the test facilities at Navajo Tribal "U" No. 9 and "U" No. 14. These are standard skid mounted, packaged net oil computer separator metering units. Wells tested through the net oil computer at "U" No. 9 are: U-9, U-15, U-17 and U-23. Wells tested through the net oil computer at "U" No. 14 are: U-14, U-16, U-19 and U-20. Gas is measured with a simplex meter tube with orifice plate and a two pen gas recorder with 500 psi static spring and a 0-100" differential bellows.

All of our other Tocito Dome Pennsylvanian "D" wells are tested through a metering separator at the central battery. This is a three phase separator, the gas, oil and water separated within the vessel, with each fluid then metered separately. Gas is measured with a two pen gas recorder with 500 psi static spring and 0-100" differential bellows.

Both the net oil computer unit and the three-phase metering separator are proven well test units, and are accepted throughout the industry as reliable, accurate test facilities.

August 12, 1974

File: VDP-210-986.511

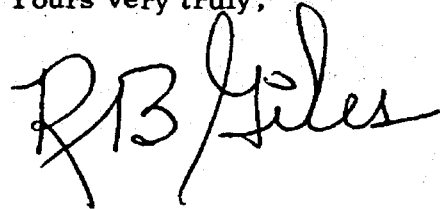
Page 2

You also asked, "Why are there large fluctuations in water production on some wells?" A one month jump in water production at Well U-13 seemed to prompt your question at the hearing.

Most of the large fluctuations in water rates occurred in 1974 on the production curves used by Amoco at the July 24, 1974 hearing. The rates plotted were test rates and not actual monthly production average rates. Taking U-13 for analysis, it was noted that the April, 1974 production showed a high water rate. The particular test plotted was taken on April 18, 1974. It also was noted that a corrosion inhibitor squeeze was performed April 15, 1974 after which the well was shut-in for 24 hours. Since 305 barrels of water were squeezed into the formation during the inhibitor squeeze and the well was put on test immediately after the shut-in period (April 17, 1974), it can easily be seen that high water production would result from the test. Many of the other wells have high water productions that correspond to inhibitor squeeze treatments also.

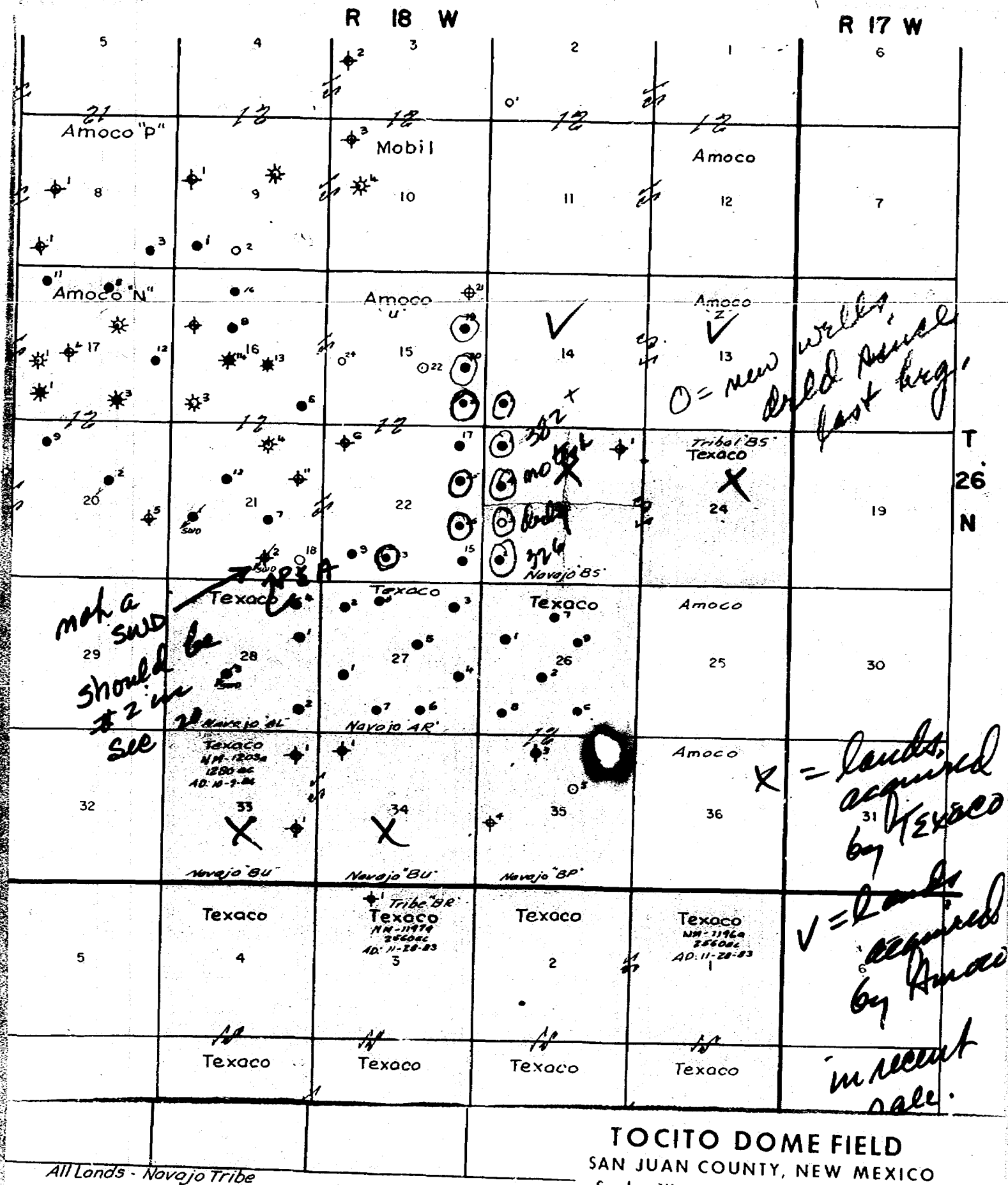
Hindsight might suggest we ought to screen out such tests taken after an inhibitor squeeze treatment; however, the reasons for large fluctuations are not usually answerable without a lot of trouble-shooting. We depend instead on the overall trend of these tests with time to show us how a well is performing, feeling that the general trend is more conducive to proper analysis of the well's performance than the extra time involved to validate any one particular test.

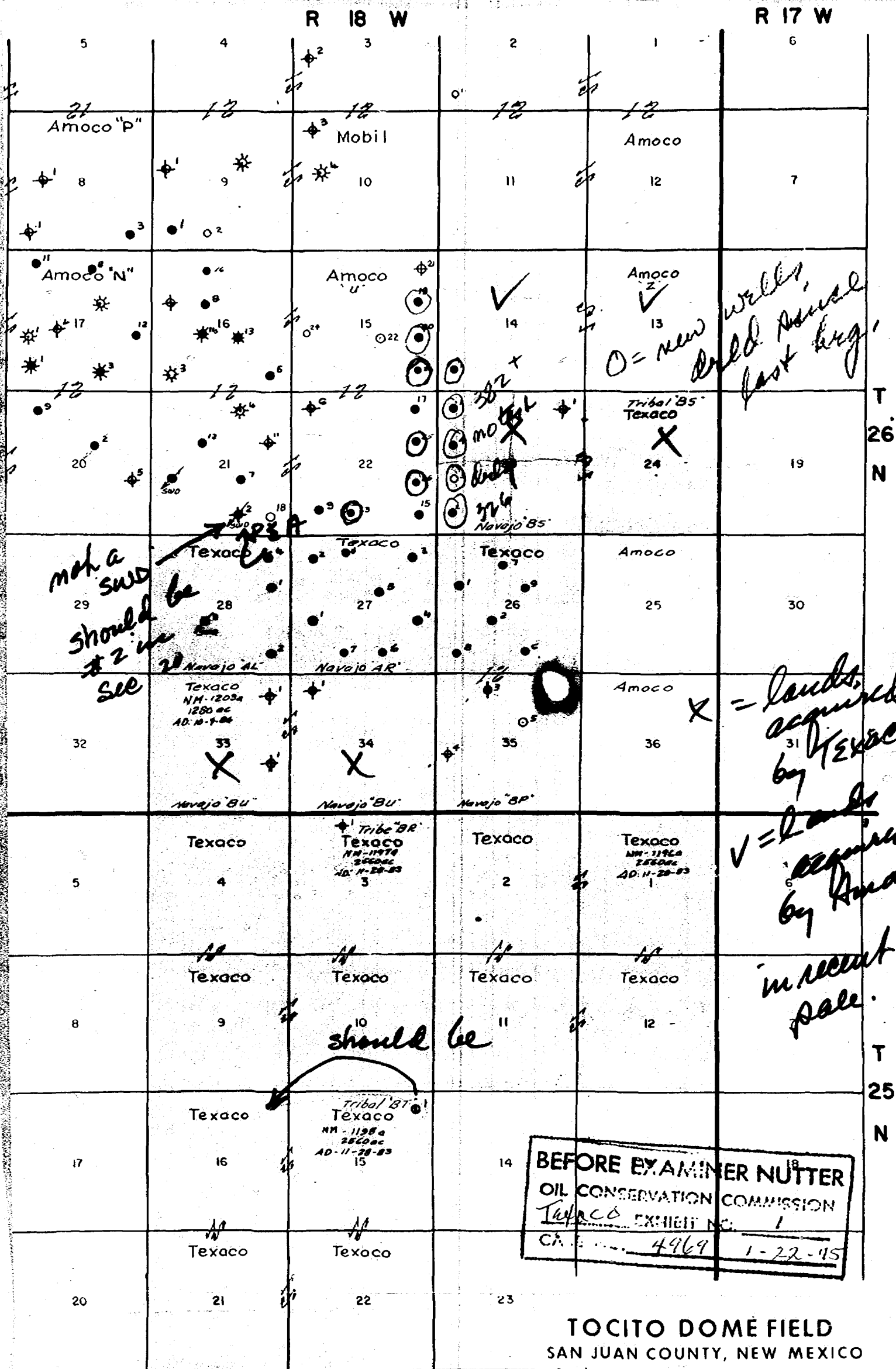
Yours very truly,

A handwritten signature in dark ink, appearing to read "R. B. Giles". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

cc: Mr. R. E. McCleskey - Farmington

Mr. Paul Cooter
P. O. Drawer 700
Security National Bank Bldg.
Roswell, New Mexico 88201





All Lands - Navajo Tribe

Tocito Dome - Bottom Hole Pressures

Amoco Production Company

U-13

SI 1142 psi 3-26-73
Put on pmp. 3-26-73 (reda)
P 690 5-5-73
P 708 10-27-73
P 660 12-18-73
P 672 1-13-74
P 624 1-26-74
P 618 1-29-74
P 612 2-17-74
P 600 3-11-74
P 498 6-11-74
P 576 6-19-74
P 540 7-3-74
P 534 7-9-74

U-14

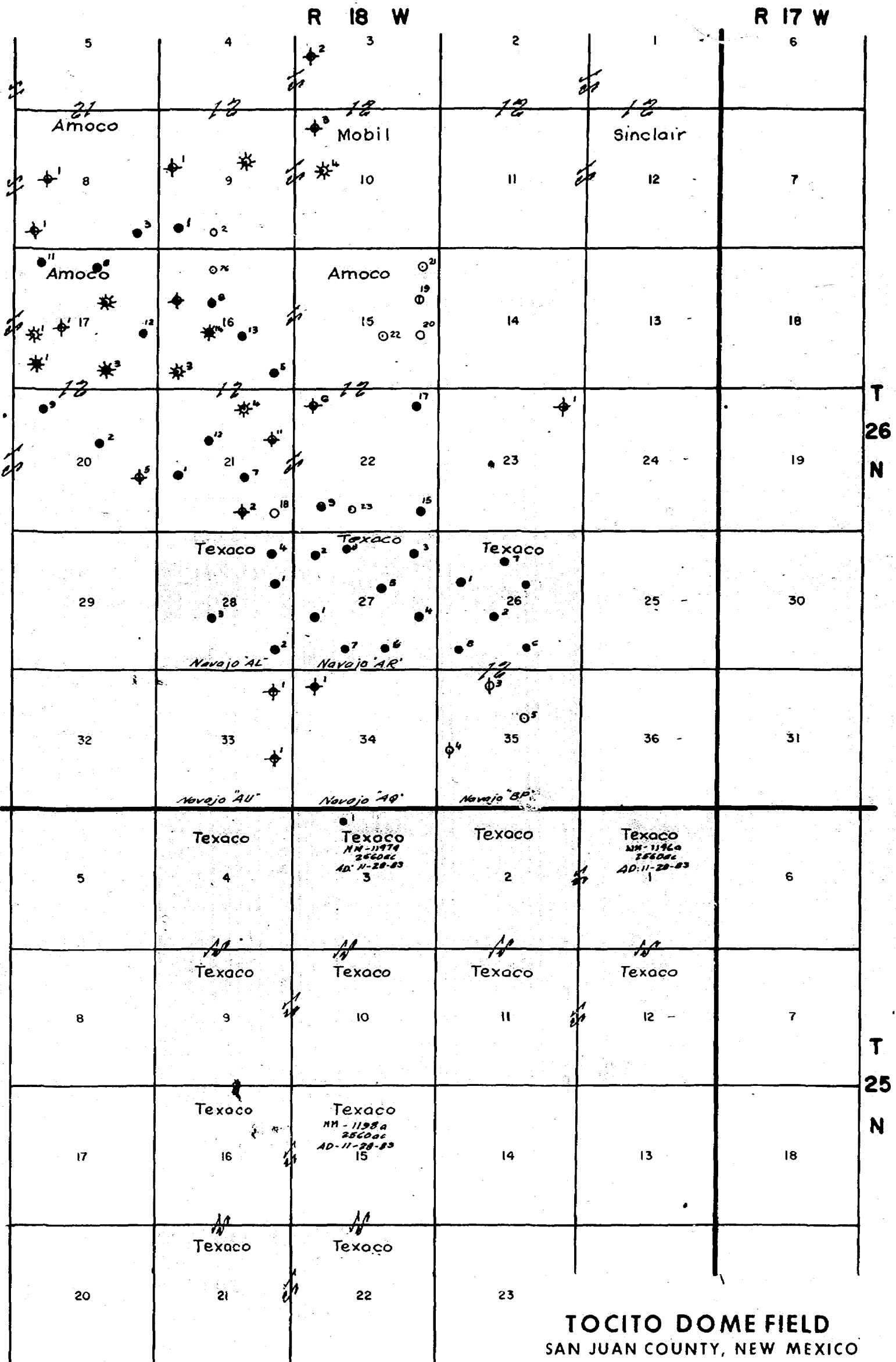
SI psi
Put on pmp. 9-28-73 (reda)
P 510 10-27-73
P 600 12-18-73
P 840 1-13-74
(bad pr. indicator)

U-16

SI 846 psi 1-14-74
Put on pmp. 1-14-74 (reda)
P 534 1-14-74
P 498 1-26-74
P 486 2-6-74
P 516 2-6-74
P 474 2-17-74
P 450 3-11-74
P 510 4-9-74
P 618 6-11-74
Remove reda 6-2
Install Beam Unit

Note: Shut-in pressures not obtainable with submersible pumps due to leaking cable pack-off at surface if wells allowed to build-up.

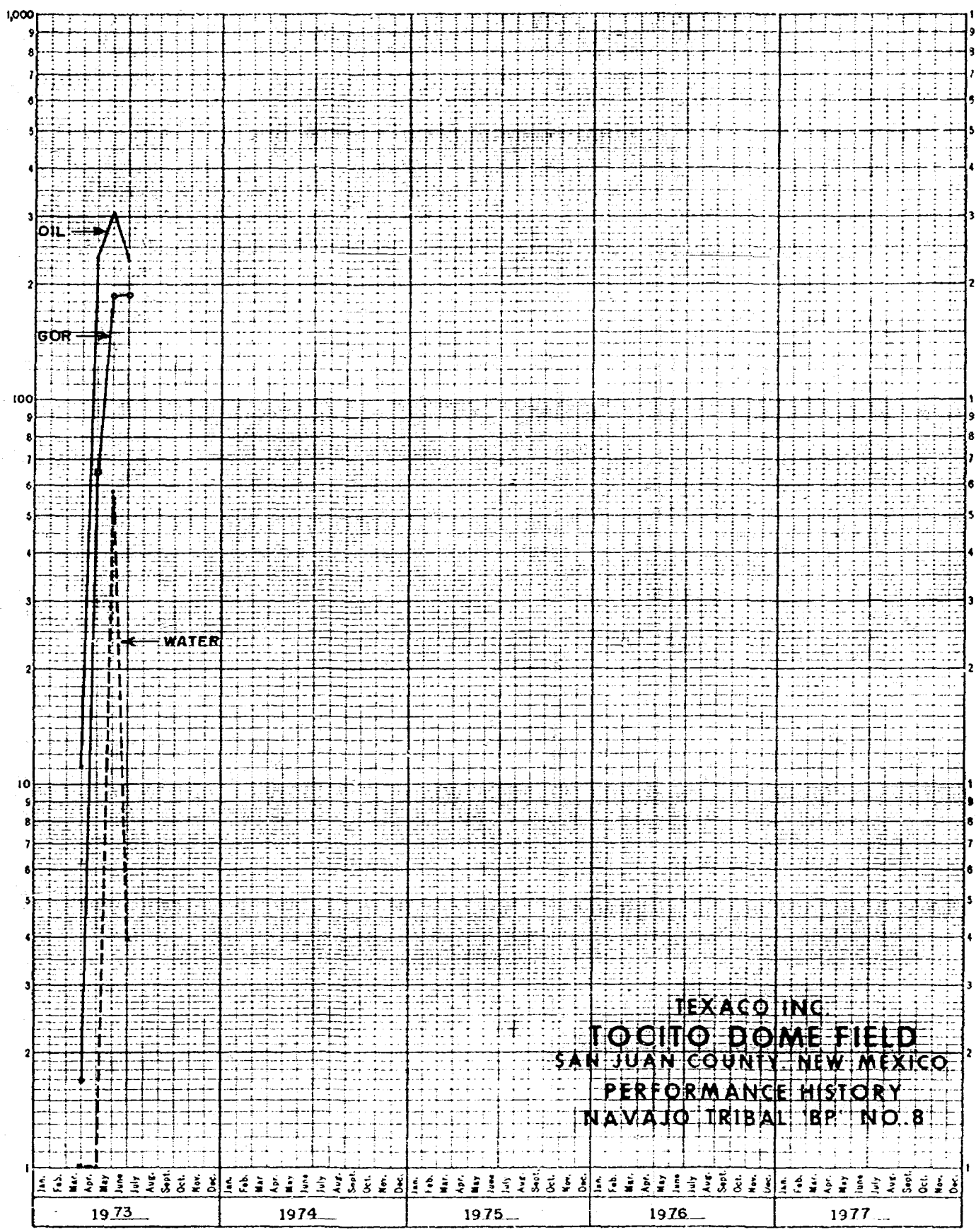
BEFORE EXAMINER STAMETS	
OIL CONSERVATION COMMISSION	
EXHIBIT NO.	4
CASE NO.	4969
Witnessed by	Amoco
Hearing Date	7-24-74



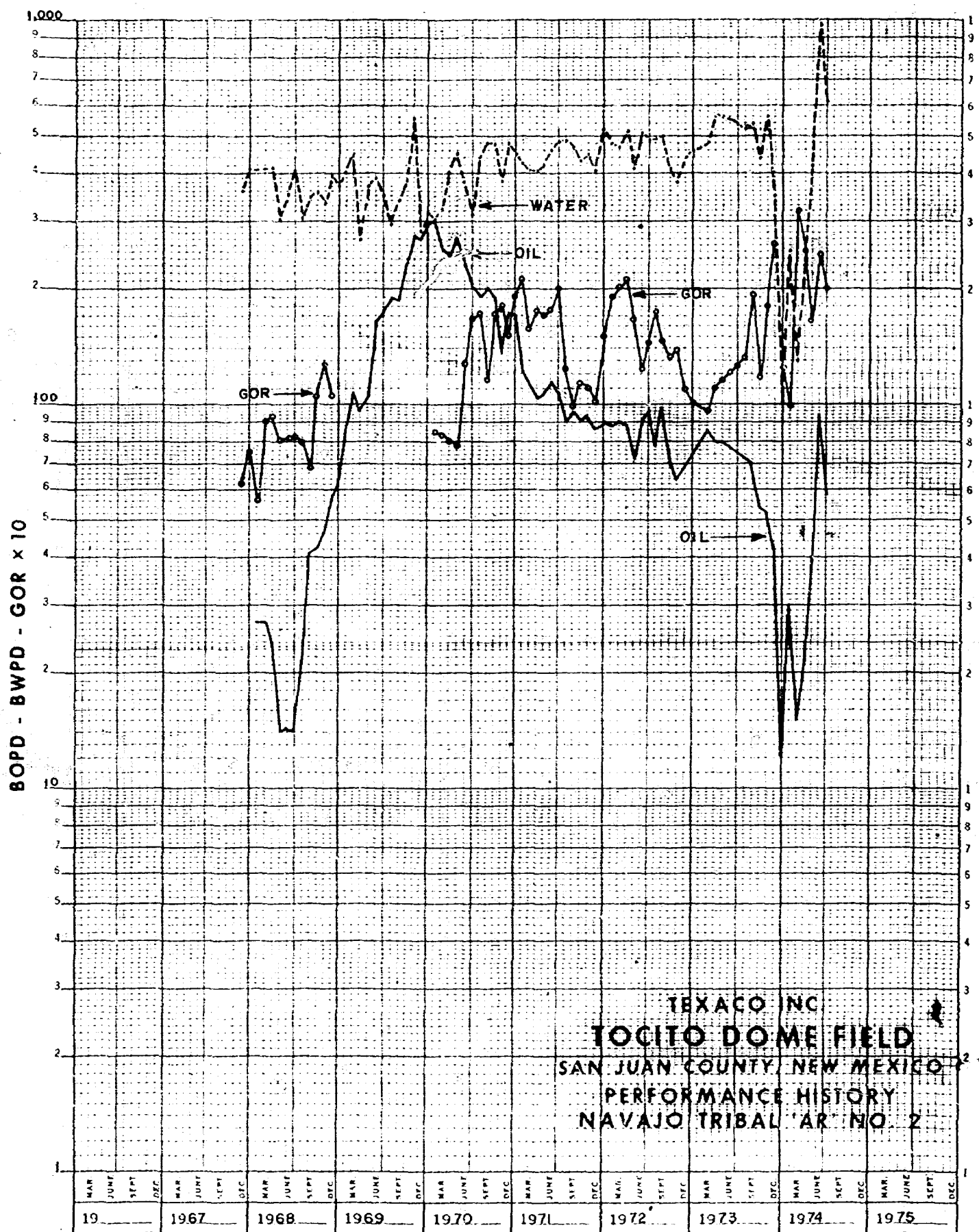
All Lands - Navajo Tribe

TOCITO DOME FIELD
 SAN JUAN COUNTY, NEW MEXICO
 Scale: 1" = 4000' 4-11-74

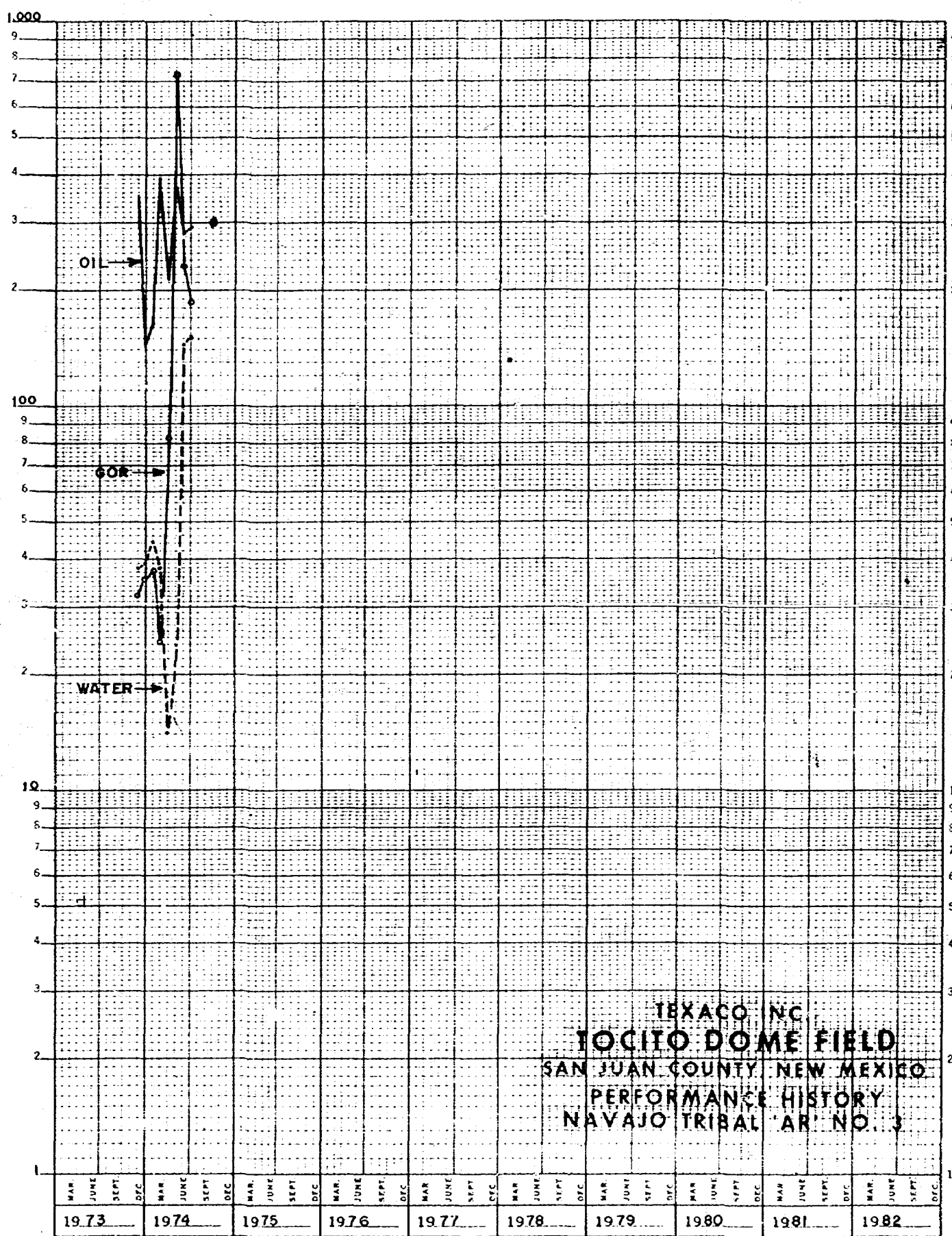
BOPD - BOPD - GOR x 10



TEXACO INC.
TOCITO DOME FIELD
SAN JUAN COUNTY, NEW MEXICO
PERFORMANCE HISTORY
NAVAJO TRIBAL BP NO. 8

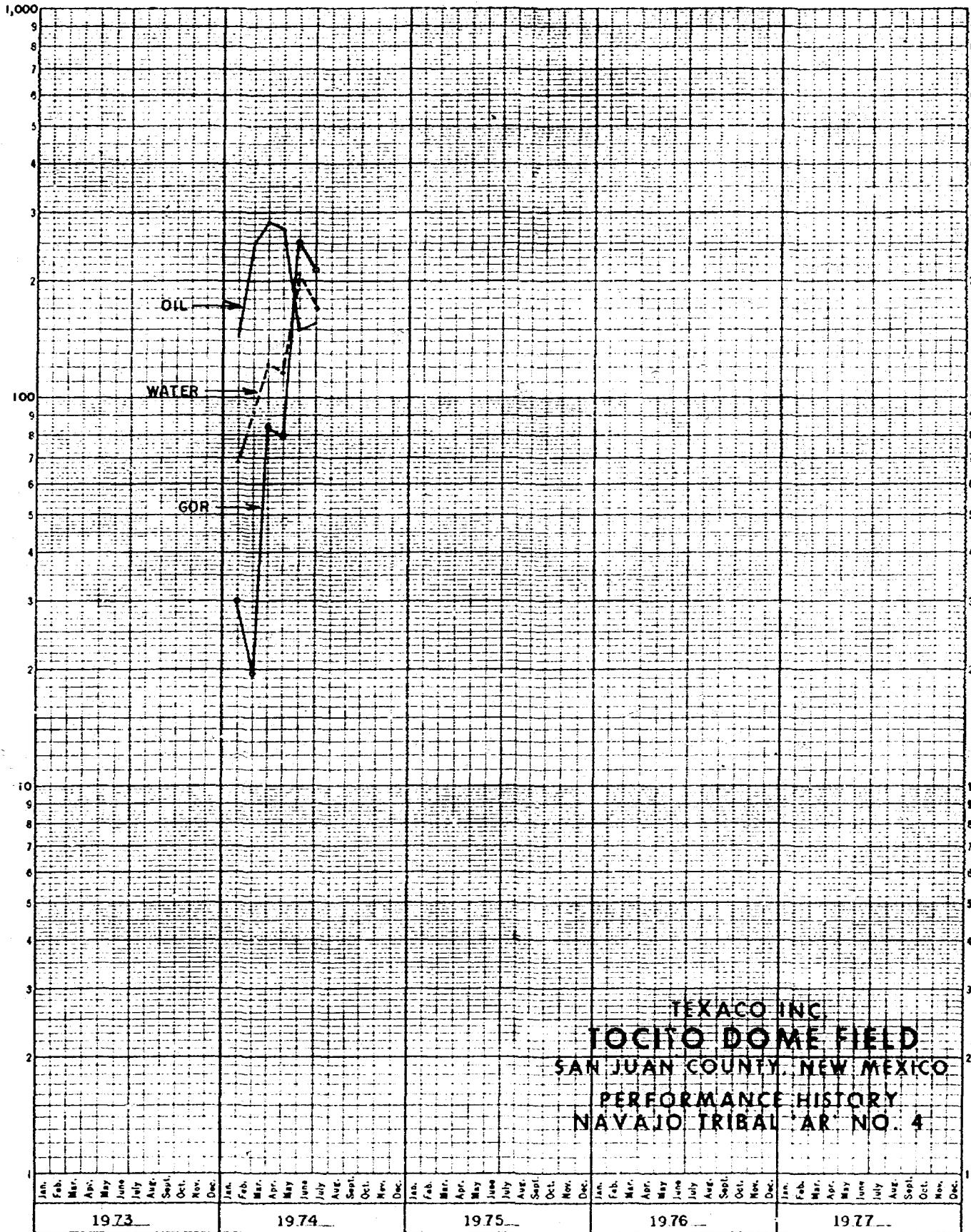


BOPD - BWPD - GOR x 10

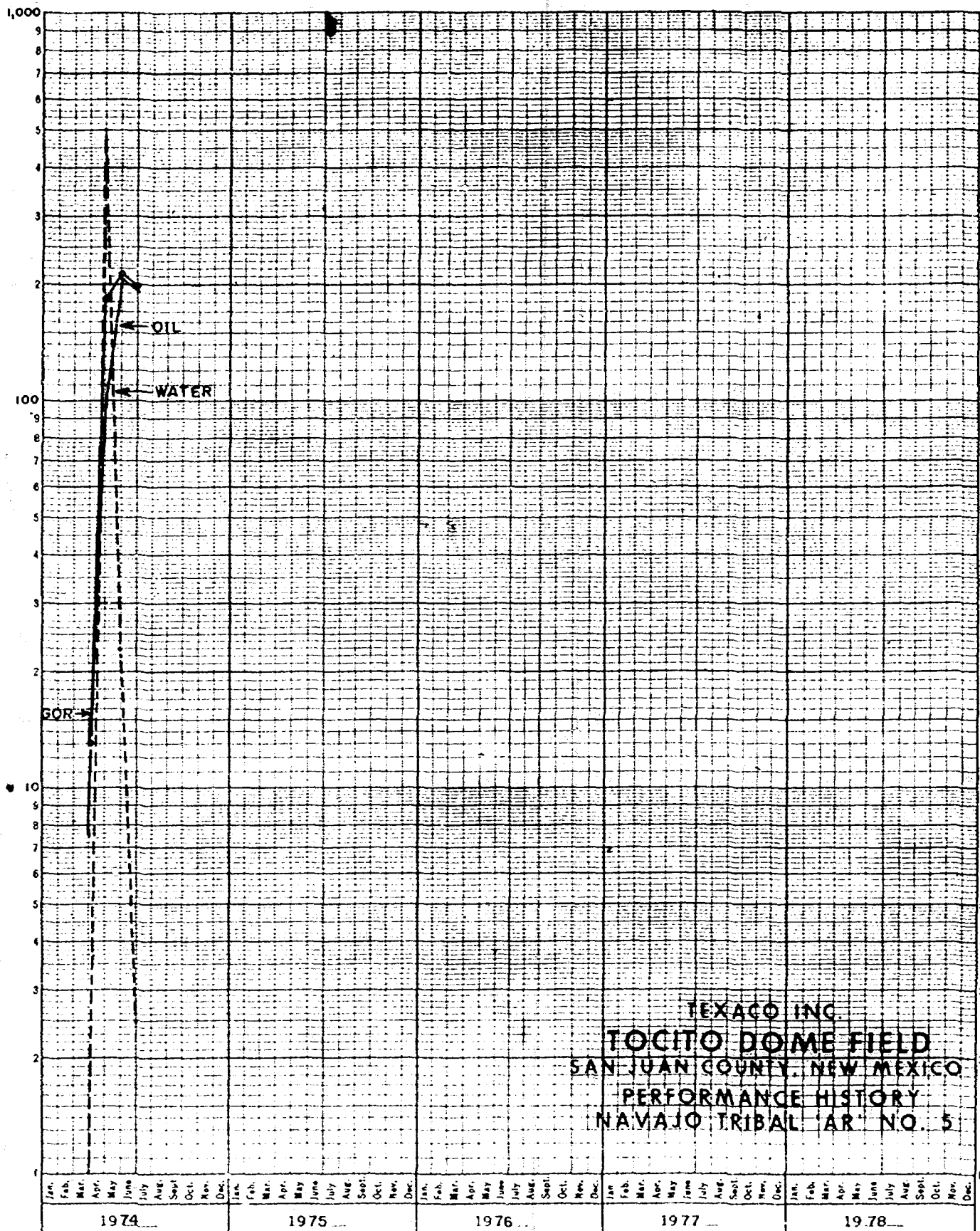


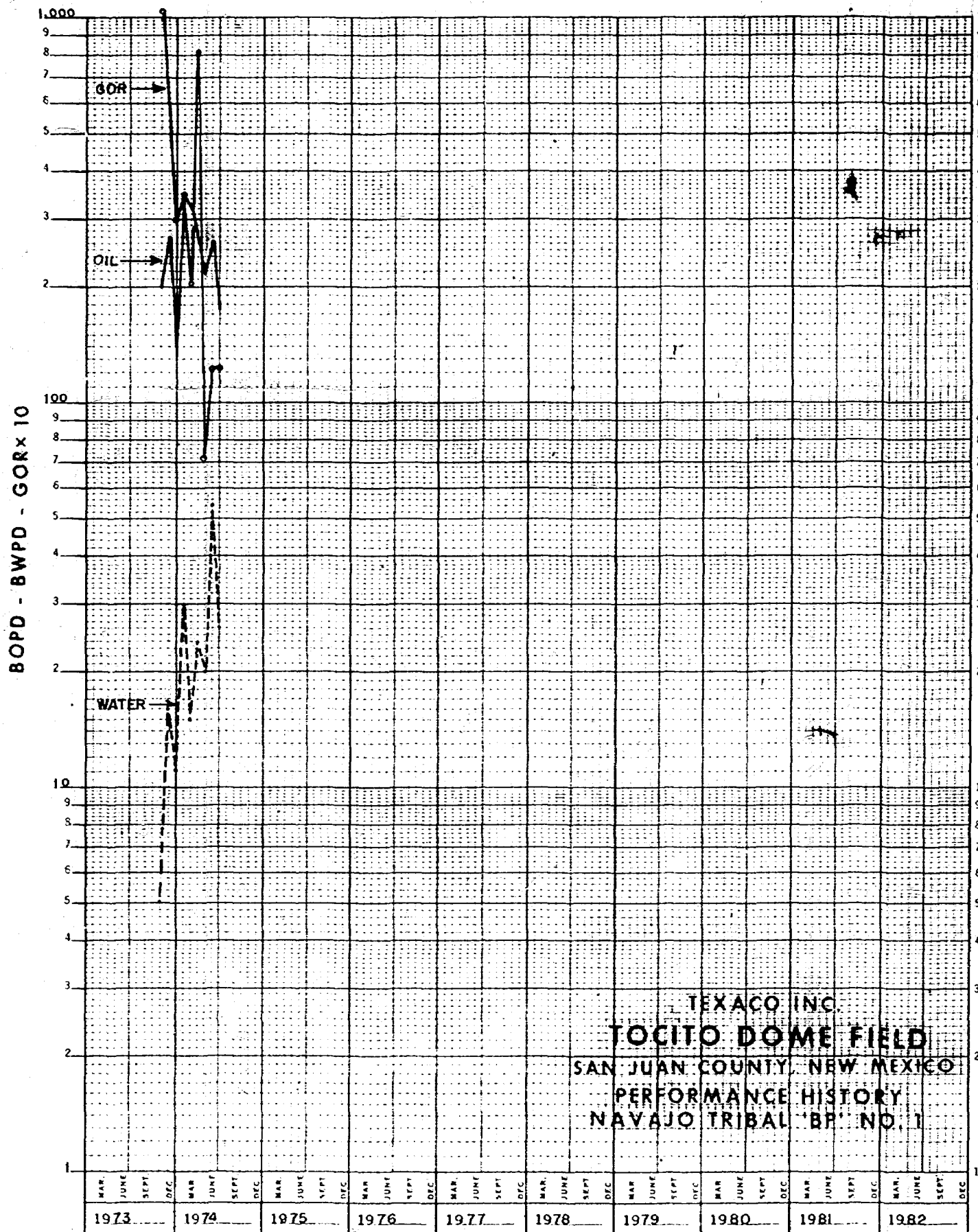
TEXACO INC.
TOCITO DOME FIELD
SAN JUAN COUNTY NEW MEXICO
PERFORMANCE HISTORY
NAVAJO TRIBAL 'AR' NO. 3

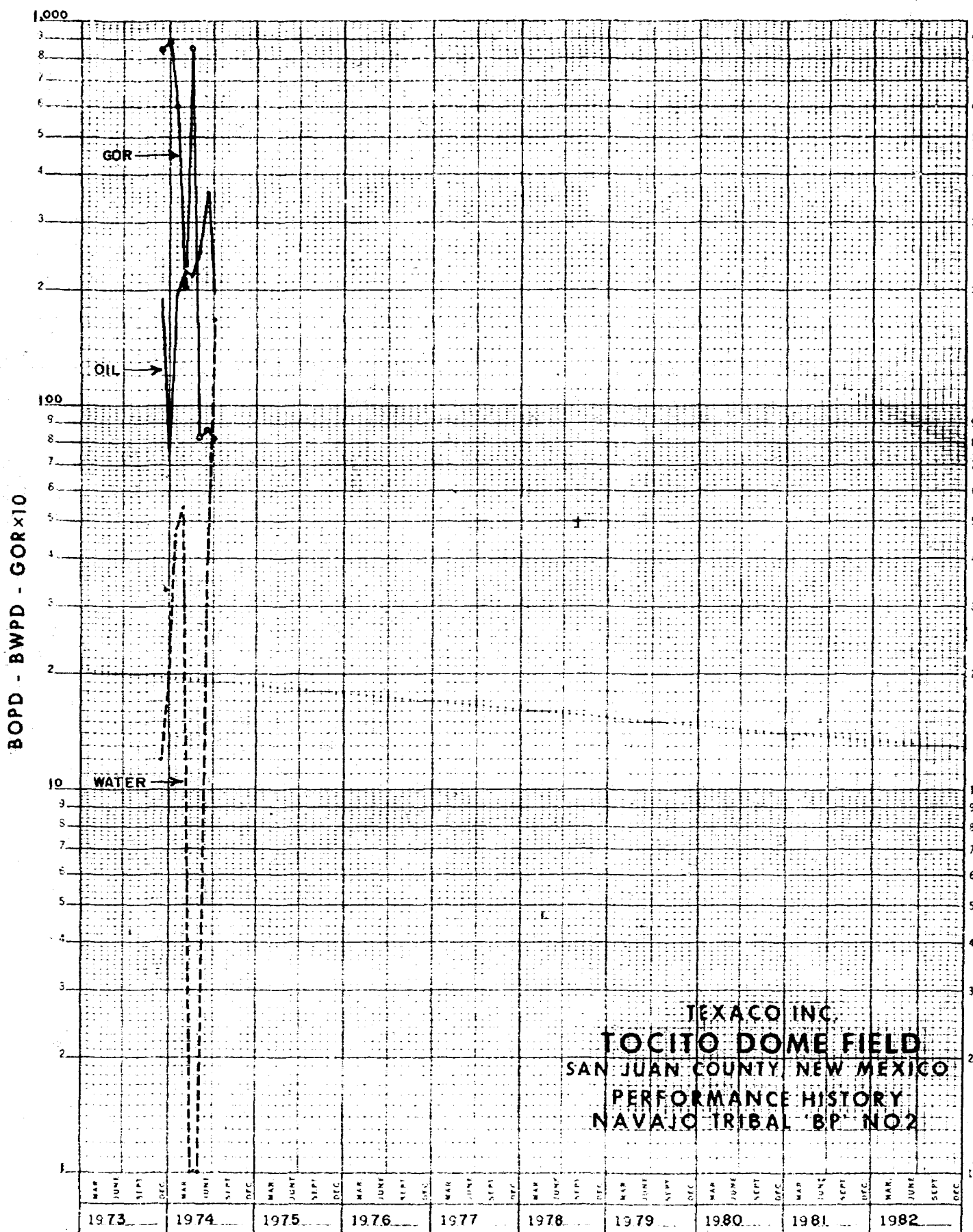
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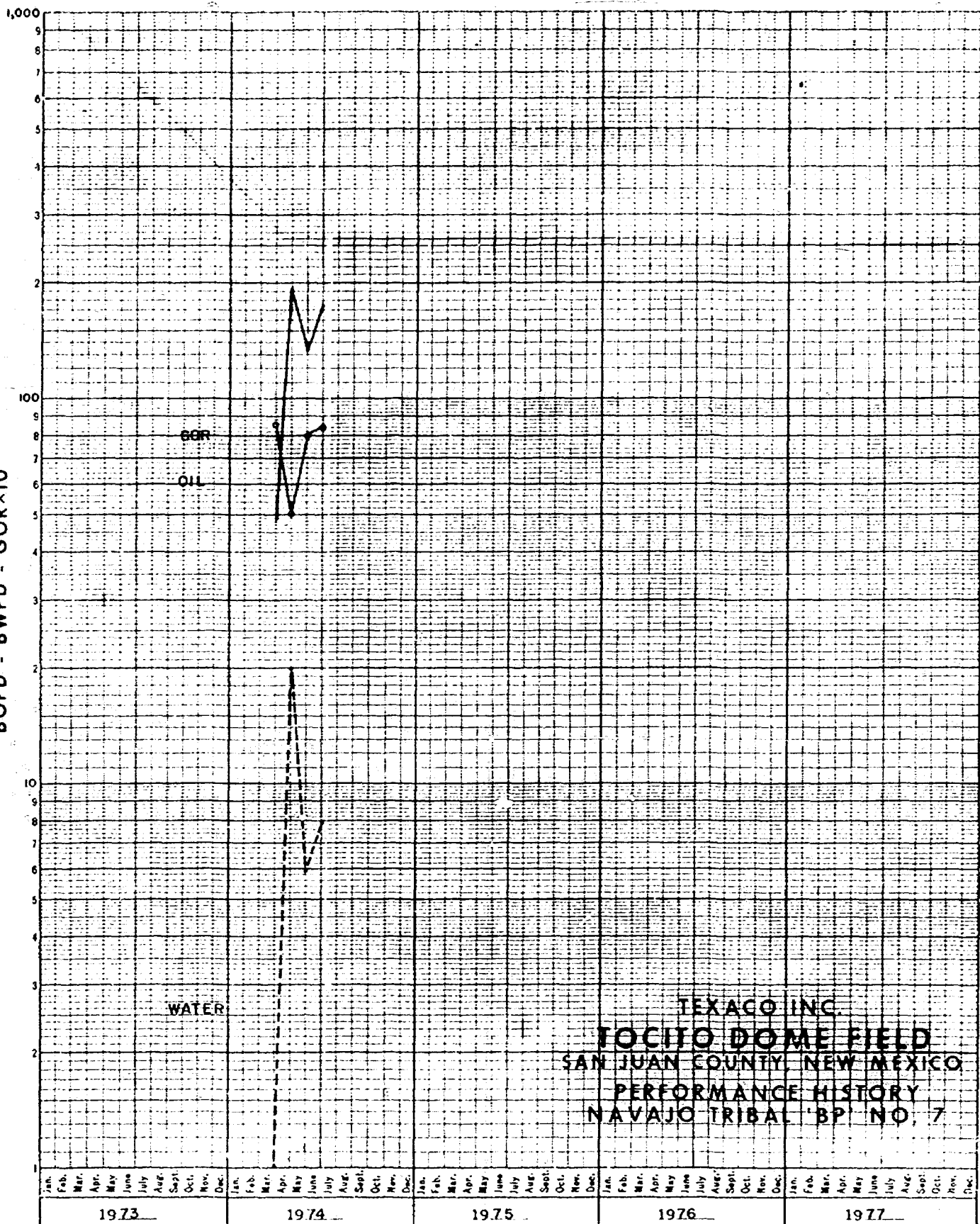
BOPD - BWPD - GOR x 10







BOPD - BWPD - GORx10



TEXACO INC.
FOCITO DOME FIELD
 SAN JUAN COUNTY, NEW MEXICO
 PERFORMANCE HISTORY
 NAVAJO TRIBAL 'BP' NO. 7

TOCITO DOME FIELD
RECENT WELL TESTS - 1973
NAVAJO TRIBAL U-13 AND OFFSETS

<u>Well</u>	<u>Date</u>	<u>BOPD</u>	<u>BWPD</u>	<u>GOR</u>
U-13	11-2-73	610	195	1231
	12-11-73	564	252	1220
U-5	11-8-73	257	158	1462
	12-16-73	258	66	1449
U-8	11-7-73	213	39	2469
	12-14-73	207	32	3146
U-14	11-1-73	644	12	1909
	12-20-73	386	95	2334*

* Low production due to Reda pump failure.

MEASURED PRODUCING BOTTOM HOLE PRESSURE
NAVAJO TRIBAL U-13

<u>Date</u>	<u>Prod-BFPD</u>	<u>Pressure-psi</u>
4-16-73	1020	762
4-21-73	1104	752
5-6-73	1059	690
5-24-73	1062	706
12-11-73	816	708

BEFORE EXAMINER STAMETS
OIL CONSERVATION COMMISSION

EXHIBIT NO. 7

CASE NO. 4969 REOPENED

Submitted by Amoco

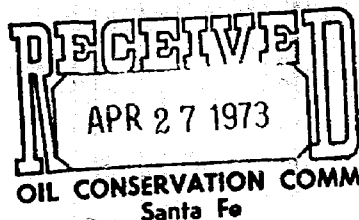
Hearing Date 1/16/74



Case 4969

Amoco Production Company
Security Life Building
Denver, Colorado 80202

April 25, 1973



File: ARR-293-986.511

Mr. A. L. Porter, Jr. (3)
Secretary-Director
New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

Dear Mr. Porter:

Subject: Application to Increase Depth Bracket Allowable, Tocito Dome
Pennsylvanian "D" Oil Pool, San Juan County, New Mexico

Amoco Production Company hereby makes application for an increase in the depth bracket allowable for the Tocito Dome Pennsylvanian "D" Oil Pool from the present 382 BOPD as provided in Rule No. 505, as amended by Order No. R-4348, to a level of 764 BOPD for each 160 acre spacing unit in the depth range of 6,000 to 6,999 feet.

In support of this application the following points are submitted:

- 1) Several spacing units within the pool are now capable of producing at rates exceeding the present depth bracket allowable.
- 2) Increasing withdrawals from individual spacing units to 764 BOPD, or double the existing allowable, will not damage the reservoir and will not cause surface or underground waste.
- 3) Available crude oil transportation and marketing facilities, casinghead gas transportation and marketing facilities and water disposal facilities are all capable of handling substantially increased volumes of oil, water and gas.

DOCKET MAILED

Date 5-11-73

File: ARR-293-986.511
April 25, 1973
Page 2

- 4) Correlative rights will continue to be protected if the increase is granted.

We respectfully request this application be given public notice and be set for hearing at the earliest possible date.

Yours very truly,

R. B. Giles

CJB:plg

cc: Mr. E. C. Arnold (2)
New Mexico Oil Conservation Commission
1000 Rio Brazos Road
Aztec, New Mexico 87410

United States Geological Survey (2)
P. O. Box 965
Farmington, New Mexico

United States Geological Survey
Drawer 1857
Roswell, New Mexico

670 965, 966

DRAFT

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

W Records Center

CASE NO. 4969

Order No. R-4557

APPLICATION OF AMOCO PRODUCTION COMPANY
FOR A SPECIAL DEPTH BRACKET ALLOWABLE, SAN JUAN
COUNTY, NEW MEXICO

John *DP*
6715-73

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on May 23, 1973,
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this day of June, 1973, the Commission,
a quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, and being fully advised
in the premises,

FINDS:

(1) That due public notice having been given as required by
law, the Commission has jurisdiction of this cause and the subject
matter thereof.

(2) That the applicant, Amoco Production Company is the
operator of ~~several~~ 17 producing wells in the Tociito Dome-Pennsyl-
vanian "D" Oil Pool, San Juan County, New Mexico.

(3) That the applicant seeks the assignment of a special
depth bracket allowable of 764 barrels of oil per day for the

-2-

Case No. 4969

Order No. R-

Tocito Dome Pennsylvanian "D" Oil Pool, San Juan County,
New Mexico, to replace the current regular depth bracket allowable
for said pool of 382 barrels per day.

*the evidence presently
available indicates that*

(4) That *special depth bracket* the assignment of a ~~capacity~~ allowable to wells
should will
in the subject pool ~~will~~ not result in damage to the
should will
reservoir or cause waste, and ~~would~~ be in the interest of
protection of correlative rights.

(5) That ~~the assignment of~~ special
depth bracket allowables should
be assigned for a temporary period
to expire six months from the
date of this order; that during this
period all operators in the subject
pool should gather all available
information relative to the effects on
said reservoir.

(6) That this case should be
reopened at an examiner hearing
six months from the effective date
of this order, at which time the operators
in the subject pool should appear and
show cause why the ^{temporary} special depth
bracket allowables should ~~not~~ be
made permanent.

IT IS THEREFORE ORDERED:

(1) That the applicant, Amoco Production Company is hereby given approval of a ^{temporary} special depth bracket allowable of 764 barrels of oil per day as hereby established as top unit allowable for the Tocito Dome, Pennsylvanian "D" Oil Pool, San Juan County, New Mexico.

(2) That this case shall be reopened at an examiner hearing six months from the effective date of this order, at which time the operators in the subject pool may appear and show cause why the temporary special depth bracket allowance of 764 barrels of oil per day for the Tocito Dome Pennsylvanian "D" Oil Pool, San Juan County, New Mexico should ~~not~~ be made permanent.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

I. R. TRUJILLO, Chairman

ALEX J. ARMIJO, Member

A.L. PORTER, Jr., Member & Secretary

S E A L

ac/ (3) That the Secretary Director of the Commission may, at any time it appears that premature water encroachment or water coning is occurring, or other evidence of reservoir damage is apparent, rescind the provisions of this order and cause the top unit allowance to revert to

for the
Tocito Dome
Pennsylvanian "D"
Oil Pool

382 barrels of oil per day

dr/

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF CASE NO. 4969 BEING
REOPENED PURSUANT TO THE PROVISIONS OF
ORDER NO. R-4557 WHICH ORDER ESTABLISHED
A SPECIAL DEPTH BRACKET ALLOWABLE FOR THE
TOCITO DOME-PENNSYLVANIAN "D" OIL POOL,
SAN JUAN COUNTY, NEW MEXICO.

CASE NO. 4969
Order No. R-4557-A

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on January 16, 1974,
at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this _____ day of January, 1974, the Commission,
a quorum being present, having considered the testimony, the
record, and the recommendations of the Examiner, and being fully
advised in the premises,

FINDS:

(1) That due public notice having been given as required by
law, the Commission has jurisdiction of this cause and the subject
matter thereof.

(2) That by Order No. R-4557, dated June 25, 1973, a
temporary special depth bracket allowable of 764 barrels of oil
per day was established for the Tocito Dome-Pennsylvanian "D"
Pool, San Juan County, New Mexico, for a period of 6 months.

(3) That pursuant to the provisions of Order No. R-4557, this
case was reopened to allow the operators in the subject pool to
appear and show cause why said special depth bracket allowable
should remain in effect.

(4) That the evidence presented indicates that the temporary
special depth bracket allowable should be continued in effect for
an additional 6 months.

-2-

Case No. 4969
Order No. R-4557-A

(5) That this case should be reopened at an examiner hearing during July, 1974, at which time the operators in the subject pool should appear and show cause why the temporary special depth bracket allowable should remain in effect.

IT IS THEREFORE ORDERED:

(1) That the temporary special depth bracket allowable of 764 barrels of oil per day for the Tocito Dome-Pennsylvanian "D" Oil Pool, San Juan County, New Mexico, shall remain in full force and effect.

(2) That this case shall be reopened at an examiner hearing during the month of July, 1974, at which time the operators in said pool may appear and show cause why said special depth bracket allowable should not be rescinded. *(C.A.P.)*

(3) That the Secretary-Director of the Commission may, at any time it appears that premature water encroachment or water coning is occurring, or other evidence of reservoir damage is apparent, rescind the provisions of this order and cause the top unit allowable for the Tocito Dome-Pennsylvanian "D" Oil Pool to revert to 382 barrels of oil per day.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

DRAFT

jr/

W

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

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CASE NO. 4969

Order No. R- 4557-B

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IN THE MATTER OF CASE NO. 4969 BEING
REOPENED PURSUANT TO THE PROVISIONS OF
ORDER NO. R-4557-A WHICH ORDER TEMPORARILY
EXTENDED THE SPECIAL DEPTH BRACKET ALLOWABLE
FOR THE TOCITO DOME-PENNSYLVANIAN "D" OIL
POOL, SAN JUAN COUNTY, NEW MEXICO.

adp

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on July 24, 1974,
at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this day of August, 1974, the Commission,
a quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, and being fully advised
in the premises,

FINDS:

- (1) That due public notice having been given as required by
law, the Commission has jurisdiction of this cause and the subject
matter thereof.
- (2) That by Order No. R-4557, dated June 25, 1973, a temporary
special depth bracket allowable of 764 barrels of oil per day was
established for the Tocito Dome-Pennsylvanian "D" Pool, San Juan
County, New Mexico, for a period of 6 months.

1 (3) That by Order No. R-4557-A, dated January 24, 1974,
2 the temporary special depth bracket allowable was extended for
3 an additional 6 months.

4 (4) That pursuant to the provisions of Order No. R-4557-A,
5 this case was reopened to allow the operators in the subject
6 pool to appear and show cause why said special depth bracket
7 allowable should remain in effect.

8 (5) That the evidence presented indicates that the temporary
9 special depth bracket allowable should be continued in effect for
10 an additional 6 months.

11 (6) That this case should be reopened at an examiner
12 hearing during January, 1975, at which time the operators in the
13 subject pool should appear and show cause why the temporary
14 special depth bracket allowable should remain in effect.

15 (7) That the evidence presented ^{shows} ~~shows~~ that the majority
16 operators in the pool ^{will} ~~would~~ prepare a plan or plans ^{for} ~~of~~ operation
17 ^{of} ~~for~~ the pool to depletion, ^{and that such plans will be} ~~to be~~ presented at the reopened hearing
18 ^{in January, 1975.}

18 (8) That such plan or plans would include data relative to
19 efficient rates of withdrawal, secondary recovery, or pressure
20 maintenance, and interim pool operation procedures or rules
21 pending implementation ^{of} such plans should they be ^{considered} ~~approved~~ by
22 the Commission.

23 IT IS THEREFORE ORDERED:

24 (1) That the temporary special depth bracket allowable of
25 764 barrels of oil per day for the Tocito Dome-Pennsylvanian "D"
26 Oil Pool, San Juan County, New Mexico, shall remain in full
27 force and effect.

28 (2) That this case shall be reopened at an examiner
29 hearing during the month of January, 1975, at which time the
30 operators in said pool may appear and ~~show~~ cause why said
31 special dpeth bracket allowable should not be rescinded.
32

1 -3-

2 CASE NO. 4969

3 Order No. R-4557-B

4 (3) That the Seeretary-Director of the Commission may, at
5 any time it appears that premature water encroachment or water
6 coning is occurring, or other evidence of reservoir damage is
7 apparent, rescind the provisions of this order and cause the
8 top unit allowable for the Tocito Dome-Pennsylvanian "D" Oil
9 Pool to revert to 382 barrels of oil per day.

10 (4) That jurisdiction of this cause is retained for the
11 entry of such further orders as the Commission may deem necessary.

12 DONE at Santa Fe, New Mexico, on the day and year herein-
13 above designated.

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