CASE 4243: Application of MOBIL FOR DOWNHOLE COMMINGLING, LEA COUNTY, NEW MEXICO.

Case Number

4243

Application

Trascripts

Small Exhibits

ETC.

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
November 5, 1969

EXAMINER HEARING

IN THE MATTER OF:

Case No. 4243, Application of Mobile Oil Corporation for downhole commingling, Lea County, New Mexico.

Case No. 4243

BEFORE: Elvis A. Utz, Examiner

TRANSCRIPT OF HEARING

MR. UTZ: Case 4243.

MR. HATCH: Case 4243. Application of Mobil Oil Corporation for downhole commingling, Lea County, New Mexico.

MR. SPERLING: James E. Sperling of Modrall, Seymour, Sperling, Roehl & Harris, Albuquerque, appearing for the applicant. We have one witness.

(Witness sworn.)

MR. UTZ: Any other appearances in this case? You may proceed.

(Whereupon Exhibits 1 through 17 were marked for identification.)

W. B. SIMMONS JR.,

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

DIRECT EXAMINATION

BY MR. SPERLING:

Q Will you please state your name, your employer, the capacity in which you are employed, and your place of residence?

A I am W. B. Simmons Jr., Senior Production Engineer in the Proration Group for the Midland division office of Mobil Oil Corporation in Midland, Texas.

MR. UTZ: Would you state your name, again?

THE WITNESS: W. B. Simmons, S-i-m-m-o-n-s, Junior.

Q (By Mr. Sperling) Have you, on any previous occasions, testified before the Commission, so that your qualifications are a matter of record?

A Yes, I have.

Q Are the witness' qualifications acceptable?

MR. UTZ: Yes, they are.

Q (By Mr. Sperling) Mr. Simmons, you are familiar with the application filed by Mobil in this matter. Would you please state for the record, what is sought by the application?

A. Mobil Oil Corporation plans to seek exception to the New Mexico Oil Conservation Commission Rule 303, and request authority to commingle within the wellbore of Mobil Bridges State Well No. 121, production from the Vacuum-Middle Pennsylvanian Pool and the Vacuum-Upper Pennsylvanian Pool. This Well is located in Unit L, 760 feet from the west line, and 1830 feet from the south line of Section 13, Township 17 South, Range 34 East, Lea County, New Mexico.

Q Would you please refer, now, to what has been marked as Applicant's Exhibit 1, and state what is shown on that Exhibit, and its purpose?

A Exhibit 1 is an ownership plat showing the location of the subject well, which is triple completion in the Vacuum-Abo-Middle Pennsylvanian and Upper Pennsylvanian zones. The Middle and Upper Pennsylvanian Pools are referred to in Exhibit 1 and the following Exhibits, as a Vacuum-Middle Penn, and the Vacuum-Upper Penn Pools. Now, this is in agreement with the nomenclature used in the Commission's proration order, and it's provided with the short form of the name, which is going to be a lot more convenient to use.

Exhibit 1 is color coated to show the Vacuum-Upper Penn Pool, and it's outlined in red, and the Upper Penn completions are colored in red, the red colored wells there.

The Vacuum-Middle Penn Pool is outlined in green, and the Middle Penn completions are colored in green. Now, the dual, the two zones that we propose to commingle of the existing triple completion, is colored in red with a green circle around the red circle. It's noted with an arrow, and a notation up there.

The Vacuum field itself is a multi-zone field with some nine zones producing in this area alone, and the two zones in question, as you can see, are rather limited with seventeen completions in the Upper Penn Pool, and three

completions in the Middle Penn Pool, one of which is shut in.

MR. UTZ: Which one?

THE WITNESS: I have it marked up there as "SI" at the top.

Q (By Mr. Sperling) Now, who is the leasor on the Bridges State lease; is that the State of New Mexico?

A That's right. Mobil's Bridges State lease consists of some 5,281 acres, more or less, and it's leased from the State of New Mexico.

Q Now, would you refer to Exhibit Number 2 and describe that Exhibit and what it shows?

A Well, Exhibit Number 2 is a structure map showing details, the limit of the development in the north part of the Upper Penn field. This is a limestone formation, anticlined with porosity pinchouts to the north and to the east.

Now, Mobil's Well No. 121 appears to be situated on the northern limit of production of the field. And a confirmation of this was found with an oil-water contact at a 6150 subsea in Mobil's 125 and the well south of it.

Now, 125 actually produced water. The Mobil's No. 116 produced oil, that's down there on the south part of

this plat, but we subsequently treated it into the water. This is something that can happen if you try to treat those ten wells in that area too much.

Now, the Upper Penn porosity has partially shaled out in No. 121 and was completely shaled out to the north in 126 and in Pennzoil's No. 1 Bridges State; that's that one up at the very north part. All these are shown as a cross on the map and that designates a dry hole where we actually tried to -- something was actually tried to be done there.

Texaco's State W and Mobil's No. 4 State G, the porosity development was in the water zone. Actually, there was water there, porosity, but in the water. Texaco State O, Well No. 17 located in Unit N, Section 36 and that would be on Exhibit 1, down at the very south end of the field, was the Discovery Well. And that was discovered in June of 1963. It no longer has an allowable in the Upper Penn field.

MR. UTZ: What was the number of that well?

THE WITNESS: No. 17, the last line of wells on that last Section, No. 36.

MR. UTZ: That was the Discovery Well?

THE WITNESS: Yes, sir, in the Upper Penn.

Q (By Mr. Sperling) All right. Now, would you refer to Exhibit 3 and explain its purpose?

A Exhibit 3 is another structure map of the -- this field is small enough to show the entire field, the production is from the limestone stratagraphic trap --

Q This is the Middle Penn structure?

A That's right, the entire Middle Penn structure, the Middle Penn field. It's stratagraphic traps on an anticline structure. There's thirty feet of pay in Mobil's 121 which thins out to sixteen feet in Texaco State W No. 3. That's the well to the east there, it's tight to the west in Mobil's 124 and 125. Those are designated by dry holes.

Another thing that indicates the rather limited extent of this field is its very rapid decline rate. It's just a very limited reservoir.

The well shown up at 126 as a completion, and it was a completion, actually produced for a short time, is thought to be -- well, it's probably not connected, but in any event, we don't intend to produce this zone where it's in the Morrow right now, and it's a very high pressure well, and its zone in the Middle Penn is shut in. But, it's probably the same limestone as shown on the map.

Q When was this discovery made, that is, the Middle Penn Field vacuum?

A Actually, it was made by Mobil's subject well, August 24th, 1967.

Q Now, with reference to the two zones that you have described and the structures related thereto shown on Exhibits 2 and 3, are there secondary recovery prospects with reference to these two zones?

A None whatsoever. The small extent of both zones would give us very limited prospects, and the Middle Penn is just actually a two-well completion now, in the reservoir. So, Mobil has no plans and we know of no plans.

Q Now, please refer to Exhibit Number 4 and describe what it is intended to show.

A Exhibit Number 4 is a schematic wellbore sketch of Mobil's Bridges State Well No. 121. It shows existing triple completion as authorized by Commission Order R-3330, dated October 27, 1967. This is as a result of the case 3636 and testimony presented at that time. We were awarded this Order 3330. The well was actually completed in accordance with the order and is still in this state at this time.

Q Was all existing equipment installed pursuant to

that order in place at the present time?

A Yes, the well was completed as shown on the Exhibit and, of course, at the time we completed it, it was a flowing triple. Now, all three zones are pumping. But, from now on I would like to -- this is a triple well, but for all practical purposes and for the purpose of this hearing, we will be referring to the only two zones that are in question at this time, which are the Upper Penn and the Middle Penn.

Q Now, would you refer to Exhibit Number 5 and explain that exhibit?

A Exhibit 5 is your standard production performance curves, plotted on the graph to show the performance of the Upper Penn Pool. This is the entire pool. It is a small reservoir, but we can interpret from the curves and deduct that the development of the field has peaked, that the oil production is declining and that the water production is small and has been on a plateau for, oh, approximately two years.

Q Now, refer to Exhibit 6; explain that exhibit.

A Exhibit 6 is a graph of the performance curves for the Upper Penn Zone of Well 121. Now, this graph would indicate that the water production during the history of the

well has followed the production curve, and has averaged about fifteen percent of the oil production. However, the water production is now zero. Something you may note is that the scales change on here. In order to get any kind of a graph at all, we had to change the scale so there all listed, but, this will happen on both the individual well curves.

Q Have you determined a percentage decline on the oil production?

A Yes. In our best estimate that the oil production is declining at approximate thirty-four percent decline rate. I would also like to point out that the well is also at a low marginal rate.

Q Okay. Exhibit 7, explain it for us.

A Exhibit 7 is a performance curve graph showing the performance for the Vacuum Middle Penn Pool, the entire reservoir and as limited as it is, it is on a very small plat, so we were able to determine though, that the water production volumes which was started low have remained low and now amount to less than three percent of the field's oil production.

And the water production has been zero since March of 1969. It shows ten on the graph, but as you know on this log paper, you can't show zero very earily, but it

has been zero for quite some time. And it also shows that the field is in a rapid state of decline despite two completions in 1968. That's about the only thing that kept it up in 1968.

Q Now, there are some rather pronounced peaks and valleys shown on this graph insofar as oil production is concerned, as well as gas production. What is the reason for that?

A Well, the main thing was those -- being a small reservoir --

Q There are three wells in the field?

A Yes, sir, three wells in the field and being a small reservoir, any change at all to the pools will reflect in a very high change on the graphs, but after that peak we got back to the regular decline and we stayed there.

Q Would you please refer to Exhibit 8 and explain its ourpose.

A Exhibit 8 is a graph showing the performance curves for well No. 121 of the Middle Penn Pool, the zone, the single zone in that one well. And it indicates that the water production is very small, averaging less than two percent of the total wells' oil production and has been virtually

zero for almost a year, and we expect this tenancy to continue during the economic life of the well.

Q Have you computed a percentage decline rate in oil production for this well?

A Yes, I have. Our best estimates show that the oil production is decreasing about forty-four percent decline.

Q Would you describe the oil production from this well as being marginal as you did with reference to the other zones?

A Yes, it is marginal.

MR. UTZ: How many barrels a day was the last production?

THE WITNESS: On another exhibit we showed --

Q (By Mr. Sperling) All right. Now, refer to Exhibits 9 and 10 which I think is what the Examiner is about to ask about.

A Exhibits 9 and 10, they are mostly backup exhibits for the graphs but they compliment one another. They're production histories in tabular form of the Upper and Middle Penn zones, both for the entire field in the individual zones in Well No. 121. Now, number 9 is actually for the Upper Penn Pool and number 10 is for the Middle Penn Pool.

Something that was added to this that wasn't on the graphs, are your gas-oil ratios and they indicate the trend of the gas-oil ratios. The gas-oil ratios are increasing but neither zone is limited by the gas-oil ratios now, nor do we expect this to be the case when they are commingled downhole if authorization is received.

Q Then 9 and 10 simply present a tabular form with the exception of the gas-oil ratios, the same information as shown on 7 and 8, right?

A Yes, sir.

Q Now, refer to Exhibit 11, please.

A Exhibit 11 consists of two pages, and its reservoir commingling data that is pertinent to this case. The information from this sheet, as you can well imagine, came from many sources, but it is considered to be the best information available. The production figures on there are from tests, 6-29-69, for the vacuum Upper Penn Pool.

Now, at that time it was making thirteen barrels of oil a day, two barrels of water; this is on a test. And the vacuum Middle Penn Pool was making twenty-seven barrels of oil a day, no water, and gas-oil ratio of 1250, they are essentially the same.

Now, the current production is on the vacuum Upper

Penn Pool shown to be eight barrels of oil per day. No water, and gas-oil ratio of 1418. Production from the Middle Penn Pool is twenty-four barrels of oil a day, no water, and a gas-oil ratio of 1681.

These are as realistic figures that we can obtain when you are pumping from beneath the packer. I do believe that the sudden drop in the August, '69 production that is showing 80 and 1418 gas-oil ratio from the Upper Penn Zone of Well No. 128 to eight barrels of oil a day, was caused by an inefficient pump rather than the decline in the producing capacity of the zone.

In my judgment the Upper Penn Zone could produce at least eleven barrels of oil a day with efficient pumping equipment. Even if the Production were this high, the zone would still be uneconomical to operate.

Therefore, the Upper Penn Zone has been shut in. The pumping rods have been pulled and the zones pumping units and equipment was removed to the Mobil Bridges State Well No. 98 to pump the Wolfcamp zone.

MR. UTZ: Pump what zone?

THE WITNESS: The Wolfcamp.

Q Now, the exhibit also contains information which you haven't mentioned, but which appear to be self-explanatory as to reservoir characteristics to the pool.

A They are in there for history, and to help evaluate the rest of the testimony.

Q Would you refer to Exhibit 12, please, and explain it.

A Exhibit 12 is the summary of economic limit calculations for the Vacuum Upper and Middle Penn Zones. In this triple completed Well No. 121, field records have shown this well to have the area's most severe mechanical problems. We have had failures many, many failures. Among them being ten shell coupling failures in a six-month period with couplings in all three zones indicating some degree of wear. The two strings are apparently spiraled in the hole, and this aggrevates the situation considerably. Of course, the production losses during this time are considerable since the well is limited capacity, all three zones are limited capacity.

Q Have you made any attempt to make a mechanical change to correct any of these problems?

A Yes, we have. Whenever we had a pump failure or to rework a pump, we also inspected that zone, that rod string and put on new boxes where the wear indicated. But even with this, we can't alleviate the problem somewhat. We do expect this well to continue to be an above-average

maintenance problem for the life of the triple completed wells.

Q Now, I believe the exhibit indicates economic limits insofar as production from each of these zones is concerned. Would you explain that, please.

A Yes. Through information from the field and graphs on operating costs for these triple completed wells, we were able to come up with these operating expenses. The Upper Penn Zone of $910 a month, and since our oil is worth, after taxes and royalties, a net figure of two, fifty-six, eight, two dollars point five, six, eight, per barrel. Economic limit figured to be 354 barrels of oil per month; that's for the Upper zone.

Now, for the Middle Penn Zone which is the lower of the two, it came out to be 360 barrels of oil per month. This is just because it's a lower zone, and a few more problems because of being the lower zone.

Now, in my judgment if we can commingle these two zones, we will be able to use an inspected string of rods. We will be able to put good boxes on those rods and have a good pump go down the hole and we can expect a longer pump life. And we will have a vented completion there, and I believe we can cut that operating expense down to $770 a month.

Even with the inherent problems, it would be less, thereby, lowering the economic limit to 300 barrels of oil per month.

Q That would be production from both zones?

A Yes.

Q Do you have anything else to add with reference to Exhibit 12?

A You will note that Mobil's interest in both zones is a hundred percent working interest and eighty-seven point five, net interest. The State of New Mexico royalty interest in the two zones are the same for all debts.

Q Well, in that connection has notification been given to the Commissioner of Public Lands with reference to this application?

A Yes, we did by a letter dated October 16th, a copy of which, I believe, was sent directly to the Commission. If not, we have a copy of that that could be submitted at any time.

Q And what did they say, in substance?

A They consented to Mobil's proposal so long as we stayed within the limits of the authorization of the letter.

Q What is currently happening to the production from these two zones? Is it being commingled at the present time?

A Yes, it is. This is another reason why the gross sales value of the oil is the same before and after commingling, because since it's commingled on the top, on the surface already -- now, this was done by Commission's Administrative Order PC-362, -- the Upper and Middle Penn Zones were authorized for surface commingling along with the Abo and Morrow productions. Our subsequent work was carried out in accordance with the Commission's order and there have been no changes since then.

Q And I assume it's been established that the oil from the two zones are compatible?

A Yes, they are compatible. Their specific gravities are almost the same.

Q Now, would you refer to Exhibit No. 13, please and explain it.

A Well, Exhibit 13 is a graph that shows the expected production from the two zones produced under existing conditions and the same two zones produced commingled downhole. These are stratalated plots of the decline curves discussed on the previous exhibits. The plat of the thirty-four percent decline curve, number 1, the Upper Penn Zone, shows it to be below economic limit at this time.

Now, I'm using a reference date of November 19th, 1969, since that's current. And the Upper Penn Zone is shut

in, now, and Mobil has no plans for further production of this single zone completion as is.

Curve Number 2 is a plat of the forty-four percent decline curve of the Middle Penn Zone. As shown in the graph, the Middle Penn zone can be produced as a single zone in this triple completion for an estimated thirteen months before reaching the economic limit. The cross-dashed area shown there, it's outlined in red, indicates the extent of the Upper Penn production in excess of economic limit that this well could be expected to produce as a single.

Now, Curve 3 is a plot of the composite curves of 1 and 2, and represents an estimated decline curve of forty percent for both of the zones, downhole commingled. By commingling the production, the life of the zones will be extended two years and four months from this date down to the economic limits. This represents an increase of one year and three months of life over the producing well.

Q Well, your estimates show by the downhole commingling, that the life of the two zones in combination will be extended approximately two years and three months?

A That's right.

Q Now, what does that extension of the economic life mean in additional production revenue?

A Well, actually I tried to show this in a comparison tabulation of the information. It's a summary as you can well imagine, but it does show it on Exhibit No. 14, and I would like to refer to that exhibit now.

Q All right.

A As you can see since the Vacuum Upper Penn Zone is already temporarily abandoned or shut in, there will be no income from it. Now, the Middle Penn could produce 6,674 barrels of oil during a one-year and one-month life, with an estimated Mobil net revenue of $17,139, and estimated State Revenue of royalty and taxes of $4,285.

Now, if we were to be able to commingle both zones downhole, we could take advantage of this Upper Penn production. The new figures we would receive would be 17,122 barrels of oil, recoverable reserves; a productive life of two years and four months; and Mobil's net revenue estimated to be $43,969, and estimated State revenue would be $10,992. So, in summing this up, by commingling there will be 10,480 and 48 additional barrels of economically recoverable oil during additional one year, three months of productive life at a forty percent decline resulting in

$26,830 of additional revenue to Mobil and about $6,707 of additional revenue to New Mexico. This would be in the form of royalties and taxes.

Q Do the figures that you have just quoted, take into consideration any recovery as a result of salvage?

A No, actually not. I stayed away from trying to justify anything not for any other reason except that it didn't need it. Mobil will be able to salvage and we have salvaged pumping equipment worth $20,000, that's replaceable value, it's actually new value, to use on this other well. And this more than offsets the expected 2,000 conversion cost to accomplish this downhole commingling.

Q Now, do you have information as to the respective bottomhole pressures insofar as these two zones are concerned?

A Yes, we were able to -- even though the pumping well, we thought it would be well worth the expense and it was only expense for one well, the other was already down, so we went ahead and ran bottomhole pressure on these two wells, and those are shown -- copies of the record is shown as Exhibit 15 for the Upper Penn. It shows a bottonhole pressure to be 952 psi at 10,147 feet, which is the mid-point of the purse.

The fluid top is at 7,811 feet and the water top is at 8,000 feet. Exhibit No. 16 is a bottomhole pressure record of the Middle Penn in Well No. 121 and both of these were taken on September 9, 1969.

It shows a bottomhole pressure to be 812 pounds at 10,455 feet, which is the mid-point of the purse. Now, the fluid top is at the 9,275 feet and there is no water indicated.

Now, this amounts to 140 pounds difference in bottomhole pressure between zones measured at their relative mid-point of theirpurse with the upper Penn being the higher of the two.

Now, if you were to put the full head of the hood column of the Upper Penn on the Middle Penn, this difference that amounts to a maximum of 276 pounds between zones, but this would be a maximum figure.

Q Now, would that result in a crossflow if commingling within the wellbore were to occur?

A Well, thisprobably could be better answered if we looked at Exhibit No. 17. This is a schematic of the wellbore sketch of the proposed dual completion that would allow the Middle and Upper Penn zones to be commingled downhole and provide for vented pumping with the rod pump.

All packers will be left in place, we will not disturb them. The well will be operated in such a manner with the rod pump, as to maintain a low fluid level in the well. This will offset any tendency for crossflow since the pressure of the low fluid level in the well will be balanced by the reservoir pressure of the lower zone, even thought it is somewhat lower. Of course, things do happen and if the pump were to become inoperative for a sufficient period of time, and this would take some time, the fluid could build up. Now when it rose above the lower zone's pressure capacity to hold it, then the standing valve that I have shown there, that API standing valve, nonequalizing in the seating nipple installed for just this contingency, would mechanically prevent crossflow.

Q Do you have anything else to add with reference to this Exhibit 17?

A No, except that it will be a vented pumping string. We do not intend to disturb the existing well's completion. As to the packer settings, the anchor settings, the tubing, we propose to leave it as it is, except for the work that we are going to do in that lower string of tubing, going down to the bottom packer.

Q Now, you mentioned this would be a vented system.

Does that suggest that in the past you have had gas lock problems with reference to your pumps?

A We believe we have. I think this is to be expected and with this in mind we've done more investigatios and there may be an increase in prodoction. We would be very happy to see this. But we do not expect this increase in production to -- the maximum figure would probably be around 25 barrels a day, if that much.

But I did not include this in my economics because too many times you expect things that do not occur. The economics were figured with no increase in production at all except the ability to utilize the reserves of the now temporarily abandoned zone.

Q Have the other operators in both of these pools been notified of the proposed completion?

A Yes, they have.

Q Did you receive a response from them?

A Yes, we were fortunate to receive -- Getty Oil Company and Texaco both furnished Mobil waivers. I'm not sure if the Commission has copies of those. I believe that Texaco sent a copy. I'm not sure about Getty, but we do have copies that we could present at the proper time.

Now, there is another operator in there, Marathon,

and they informed us by telephone that they would not oppose this application. The State of New Mexico, as a royalty owner, has approved this application in accordance with that letter that we received from the State Land Commission.

Q And you're in a position to submit copies of this correspondence if not already in the Commission's file?

A Yes, I am.

Q Now,what is your recommendation for allocating production between these two zones?

A Well, this is always a difficult thing to come up with, but in this case I was able to utilize that the decline curves in Exhibit 13 and during periods in that decline, I figured out the amounts that would be contributed from each zone and came up with varying amounts of percentages, but there was an actual pattern there. And I based it on the average of the amount of production that would be contributed by each zone. And this average came out to be thirty-seven percent from the Upper Penn zone and sixty-three percent from the Middle Penn zone during the estimated remaining productive life of the reservoir.

I believe that this production allocation would in this manner, actually reflect the amount of reserves recovered from the reservoir.

Q Now, what is your opinion, Mr. Simmons, as to the effect of downhole commingling of these zones, one on the other? Would they result in damage to either? Would this process represent damage to either zone?

A No, not in any way that I know of. As testified previously, I propose to effectively prevent the cross-flow by keeping the fluid pressure down, by keeping the well pump down. Also, that standing valve between the zones will mechanically keep the upper zone from flowing into the lower zone.

Since there is little or no water being produced at this time, and we expect no high water volumes in the future, I expect no water compatibility problems. And the oil from both zones are compatible.

Q I understand from your previous testimony, that there is no problem about correlative rights insofar as the two zones are concerned, since the royalty is common?

A No, there isn't.

Q And you have already stated that the operators directly affected, have either waived or indicated no opposition to the application?

A That's correct.

Q What will be the effect of commingling?

A Well, immediately after we commingle, we can start recovering oil from the Upper Penn zone that is now shut in. The longer economical life of the commingled zones will result in additional oil recovery.

Now, while the volume of this additional recovery of oil is relatively small, it's only for one well. However, it will have a definite favorable effect for this one well and will allow the production of more oil for a longer life. And the Commission's recent Order No. %-3845 which provides for administrative procedure for downhole commingling under certain circumstances, will certainly help the oil industry in its efforts to maximize recovery from productive reservoirs.

And I believe that if we started adding the small amounts that we recover from this, and other downhole commingling cases, that significant volumes of oil will be realized and sure would be welcome at this time of declining domestic reserves.

Q Well, I take it from your remarks then, that you feel that the granting of this application would result in the recovery of otherwise unrecoverable oil, economically, and thereby prevent waste?

A Yes, sir, in my opinion, I do.

Q Do you have anything further to add?

A Not at this time.

Q Were these exhibits prepared by you or under your supervision?

A Yes, sir, they were.

MR. SPERLING: I would like to offer Exhibits 1 through 17 at this time.

MR. UTZ: Without objection, Exhibits 1 through 17 will be entered into the record of this case.

(Whereupon, Applicant's Exhibits 1 through 17 were entered into the record.)

CROSS-EXAMINATION

BY MR. UTZ:

Q Mr. Simmons, referring to Exhibit 17, your mechanic installations, what's the purpose of the tubing plug at ten, three, sixty?

A The tubing plug -- what we are trying to do is to efficiently vent this production, and with that plug we can force all the oil and gas away from the pump this way. And this is something rather new and I checked it out with our production people, usually they are the ones that tear me to pieces on something like this, but they liked the idea. We will not have to go back and redo this again. In other words, we have done everything we can to vent the production

there and with the economics being so close, you can't go back and do things over again.

So, we are going to do what we can down there and try to do it right the first time. But, we have every hope that this will help to vent the gas out --

Q Well, it puts the oil out into the casing where it will liberate the gas a little easier?

A Yes.

Q Now, is the Abo oil --

A Yes, sir.

Q Do you have a pump in there?

A Yes, sir.

Q And it will be sealed from the next packer down?

A Yes, sir, absolutely.

Q The packer doesn't quite come over to the tubing there.

A Yes, that confused me too, but why I went over there and on the side I note that that's a triple anchor.

See, actually, the Abo is vented to the casing, so we were fortunate enough to get a packer leakage test, and it was approved October of this year.

Q Well, then the oil from the Abo perforations does flow down through the tubing anchor?

A. Yes, sir.

Q Now, referring to the test I believe you got your thirty-seven and your sixty-three percent for your Upper and Middle zones respectively, from your Exhibit 13. Would you explain that a little more thoroughly as to how you arrived at that average?

A It was a proportion of what the amount of production contributed from the Upper Penn during its economic life, would be in proportion from the production from the Middle Penn. And it was just a mathematical calculation.

Q A projected figure then?

A Projected, yes, sir. But since the life of the zones are rather limited, the total effect on the reservoir's total production, would be very small. It would be, in my opinion, insignificant. But I do believe this would be a good way to do it.

Now, if we use the two tests as is done at times, the ones taken 6-29, 6-28, the percentage would change a few percentage points. But what I have tried to do was to realistically estimate what the performance would be at a later date, and that was the main reason I changed it from just the test status.

Q The test you are speaking of is not shown on

Exhibit 11-A?

A Yes, sir. Since the decline curves are different, I thought that we should allow for this.

Q And you would apply these percentages for the total production on a monthly basis?

A Yes, sir. And during the life of the commingled zones, this would average out and become, I think, a realistic figure that would show how much production came from each reservoir.

Q Did I understand you to say that the conversion will cost $2,000?

A Yes, sir. That is our estimated cost.

Q You salvaged $20,000 worth of pumping equipment out there in that zone?

A Yes, sir. Now, that's the replacement value. But that's -- in effect it's $20,000 -- we didn't have to spend $20,000 to put a new pump somewhere else. We were able to utilize that pump that we salvaged.

Q The actual salvage value was something less though?

A Oh, yes, sir, but well over $2,000.

Q And then the middle zone, there is only one other well left in the pool?

A Yes, sir. That's Texaco's, their No. 3. By the

way, they're down to twenty-six barrels of oil a day on their zones. I got that over the telephone.

MR. UTZ: Any other questions of the witness? You may be excused. Statements in this case?

MR. SPERLING: Mr. Examiner, I think in the course of the direct examination, we made reference to certain prior orders, and with particular reference to the one permitting surface commingling at the present time. I assume if this application is granted that that has some affect on the prior order because the prior order requires the production to be in accordance with the existing rule, which I think is 301. No. 101-B, isn't it?

MR. UTZ: In other words, the downhole commingling will replace the surface commingling?

MR. SPERLING: Right. I assume that would be the case. I don't know whether that requires modification of the prior order or whether it follows as a matter of course that the prior order is modified.

THE WITNESS: You are referring to 112-A which is also a consideration for a triple. You see, we have -- for the triple we have to follow certain rules, and this 112-A requires that we keep the two zones isolated. And the administrative order refers to measuring separately on the

surface, the production from the two.

MR. SPERLING: By meters?

THE WITNESS: By meters, yes.

MR. UTZ: What was the number of that surface order. I thought I had it written down here, but I can't find it.

MR. SPERLING: The surface order is -- this is for the administrative order, PC 362, for the surface commingling. That was October 29, 1968. And the authority to complete as a triple was Order No. 3330 of October 27, '67.

MR. UTZ: Any further questions?

MR. SPERLING: I think you have, George, the Texaco. This is simply an acknowledgement on behalf of Getty on the Mobil notification letter that's received.

MR. UTZ: Yes. You are excused. We will take the case under advisement.

I N D E X

EXHIBIT	MARKED	OFFERED AND ADMITTED
Applicant's 1 through 17	2	28

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, Wayne Flores, Court Reporter in and for the County of Bernalillo, State of 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 that the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.

Wayne Flores
Court Reporter

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 4214, heard by me on October 5, 1962.

Examiner
New Mexico Oil Conservation Commission

OIL CONSERVATION COMMISSION

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

GOVERNOR
DAVID F. CARGO
CHAIRMAN

LAND COMMISSIONER
ALEX J. ARMIJO
MEMBER

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

November 10, 1969

Mr. James E. Sperling
Modrall, Seymour, Sperling, Roehl & Harris
Attorneys at Law
Public Service Building
Albuquerque, New Mexico 87103

Re: Case No. 4243
Order No. R-3876
Applicant:
Mobil Oil Corporation

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.
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC x

Artesia OCC

Aztec OCC

Other

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. 4243
Order No. R-3876

APPLICATION OF MOBIL OIL CORPORATION
FOR DOWNHOLE COMMINGLING, LEA COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on November 5, 1969, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 10th day of November, 1969, 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, Mobil Oil Corporation, is the owner and operator of the Bridges State Well No. 121, located in Unit L of Section 13, Township 17 South, Range 34 East, NMPM, Lea County, New Mexico.

(3) That pursuant to authority granted by Order No. R-3330, the subject well was completed by the applicant as a triple completion (conventional) to produce oil from the North Vacuum-Abo, Vacuum-Upper Pennsylvanian, and Vacuum-Middle Pennsylvanian Pools through parallel strings of 2 3/8-inch tubing, with separation of zones by packers set at approximately 10,040 feet and 10,397 feet.

(4) That the Vacuum-Upper Pennsylvanian and Vacuum-Middle Pennsylvanian zones are now capable of only low marginal production.

(5) That the applicant now proposes to complete the subject well in such a manner as to produce oil from the North Vacuum-Abo Pool through one string of 2 3/8-inch tubing and to produce the low marginal production from the Vacuum-Upper Pennsylvanian and Vacuum-Middle Pennsylvanian Pools through a single parallel string of tubing set just above the Vacuum-Middle Pennsylvanian perforations, commingling in the well-bore the production from the Vacuum-Upper Pennsylvanian and Vacuum-Middle Pennsylvanian oil zones, with separation of the North Vacuum-Abo zone and the commingled Vacuum-Upper Pennsylvanian and Vacuum-Middle Pennsylvanian zones by means of a packer set at approximately 10,040 feet.

(6) That the proposed commingling of the Vacuum-Upper Pennsylvanian and Vacuum-Middle Pennsylvanian zones may substantially extend the productive lives of said zones.

(7) That the reservoir characteristics of the Vacuum-Upper Pennsylvanian and Vacuum-Middle Pennsylvanian zones in the subject well are such that underground waste would not be caused by the proposed commingling in the well-bore.

(8) That the proposed commingling may result in the recovery of additional oil from each of the commingled zones, thereby preventing waste, and will not violate correlative rights.

(9) That the mechanics of the proposed completion are feasible and in accord with good conservation practices.

(10) That production tests of the Vacuum-Upper Pennsylvanian and Vacuum-Middle Pennsylvanian zones should be conducted, prior to commingling, to determine the production from each of said zones.

(11) That approval of the subject application will prevent waste and protect correlative rights.

(12) That Order No. R-3330 should be superseded.

IT IS THEREFORE ORDERED:

(1) That the applicant, Mobil Oil Corporation, is hereby authorized to complete its Bridges State Well No. 121, located in Unit L of Section 13, Township 17 South, Range 34 East, NMPM, Lea County, New Mexico, in such a manner as to produce oil from the North Vacuum-Abo Pool through one string of 2 3/8-inch tubing

and to produce oil from the Vacuum-Upper Pennsylvanian and Vacuum-Middle Pennsylvanian Pools through a single parallel string of 2 3/8-inch tubing set just above the Vacuum-Middle Pennsylvanian perforations, commingling in the well-bore the production from the Vacuum-Upper Pennsylvanian and Vacuum-Middle Pennsylvanian Pools, with separation of the North Vacuum-Abo zone and the commingled Vacuum-Upper Pennsylvanian and Vacuum-Middle Pennsylvanian zones by means of a packer set at approximately 10,040 feet;

PROVIDED HOWEVER, that the applicant shall complete, operate, and produce said well in accordance with the provisions of Rule 112-A of the Commission Rules and Regulations insofar as said rule is not inconsistent with this order;

PROVIDED FURTHER, that the applicant shall take packer-leakage tests upon completion and annually thereafter during the Annual Gas-Oil Ratio Test Period for the Vacuum-Upper Pennsylvanian Pool.

(2) That the production from the Vacuum-Upper Pennsylvanian zone and from the Vacuum-Middle Pennsylvanian zone in the subject well shall be established and future production allocated to said zones in the subject well in the proportion that the production from each of said zones in the subject well bears to the combined production from both of said zones until further order of the Commission.

(3) That the commingling in the well-bore authorized by this order shall continue only so long as the commingled production of the two zones does not exceed the top unit allowable for either of said zones in the subject well.

(4) That Order No. R-3330 is hereby superseded.

(5) 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

DAVID F. CARGO, Chairman

ALEX J. ARMIJO, Member

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

esr/

4243
Heard 11-5-69
Rec. 11-5-69

Grant Mobil permission to Commingle the ~~Middle~~ Upper & Middle Penn in Adamson pool. Wells in their Bridger State #121 L 13-17-3W.

Both zones produce only 50 B.O.P.D. Zones shall be tested before commingled & reported bef. on basis of these tests.

Satisfactory tests indicate that 37% of commingled prod. should be charged to the Upper Penn pool & 63% to the Van. Middle Penn.

An estimated additional 10,000 Bbls oil can be produced by commingling.

Docket No. 30-69

DOCKET: EXAMINER HEARING - WEDNESDAY - NOVEMBER 5, 1969

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 Daniel S. Nutter, Alternate Examiner:

CASE 4243: Application of Mobil Oil Corporation for downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle production from the Vacuum-Upper Pennsylvanian Pool and the Vacuum-Middle Pennsylvanian Pool in the wellbore of its Bridges State Well No. 121 located in Unit L of Section 13, Township 17 South, Range 34 East, Lea County, New Mexico.

CASE 4244: Application of Gulf Oil Corporation for an amendment to Order No. R-1084, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-1084 to permit the simultaneous dedication of the 480-acre non-standard gas proration unit established by said order to its H. T. Mattern (NCT-E) Wells No. 10 and 11 located, respectively, 660 feet from the South line and 1980 feet from the West line of Section 1 and 1980 feet from the East line and 660 feet from the North line of Section 12, both in Township 22 South, Range 36 East, Eumont Gas Pool, Lea County, New Mexico. Applicant further seeks authority to produce the allowable assigned to said unit from either of the aforesaid wells in any proportion.

CASE 3889: In the matter of Case No. 3889 being reopened pursuant to the provisions of Order No. R-3585, which order established 160-acre spacing units and 160-acre proportional factors of 4.77 for the Middle Allison-Pennsylvanian Pool, Lea and Roosevelt Counties, New Mexico, for a period of one year. All interested parties may appear and show cause why said pool should not be developed on less than 160-acre spacing and why the 160-acre proportional factor of 4.77 should or should not be retained.

CASE 4245: Application of Texas Pacific Oil Company, Inc., for several non-standard gas proration units, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the dedication and rededication of certain acreage and the establishment of the following non-standard gas proration units in Townships 22 and 23 South, Range 36 East, Talmat Gas Pool, Lea County, New Mexico:

A 160-acre unit comprising the W/2 SE/4 and the E/2 SW/4 of Section 8, Township 22 South, Range 36 East, to be dedicated to the State "A" a/c-2 Well No. 56 located in Unit J of said Section 8;

A 200-acre unit comprising the NW/4 and the NW/4 SW/4 of Section 11, Township 22 South, Range 36 East, to be dedicated to the State "A" a/c-2 Well No. 42 located in Unit E of said Section 11;

A 280-acre unit comprising the SE/4, S/2 SW/4, and the NE/4 SW/4 of Section 11, Township 22 South, Range 36 East, to be dedicated to the State"A" a/c-2 Well No. 36 located in Unit M of said Section 11;

A 200-acre unit comprising the N/2 NE/4, the SE/4 NE/4, and the NE/4 NW/4 of Section 15 and the SE/4 SW/4 of Section 10, Township 23 South, Range 36 East, to be dedicated to the State "A" a/c-1 Well No. 31 located in Unit H of said Section 15;

A 160-acre unit comprising the S/2 NW/4, SW/4 NE/4 and the NW/4 NW/4 of Section 15, Township 23 South, Range 36 East, to be dedicated to the State "A" a/c-1 Well No. 33 located in Unit F of said Section 15;

A 240-acre unit comprising the SW/4 of Section 3 and the N/2 NW/4 of Section 10, Township 23 South, Range 36 East, to be dedicated to the State "A" a/c-1 Well No. 35 located in Unit L of said Section 3;

A 160-acre unit comprising the S/2 NW/4 and N/2 SW/4 of Section 10, Township 23 South, Range 36 East, to be dedicated to the State "A" a/c-1 Well No. 37 located in Unit F of said Section 10.

CASE 4246: Application of Humble Oil & Refining 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 San Andres formation in the perforated interval from 3860 feet to 4020 feet in its New Mexico "S" State Well No. 26 located in Unit L of Section 2, Township 22 South, Range 37 East, South Eunice-San Andres Pool, Lea County, New Mexico.

CASE 3928: (Reopened)

In the matter of Case No. 3928 being reopened pursuant to the provisions of Order No. R-3586, which order established 80-acre spacing units for the East Shoe Bar-Devonian, Lea County, New Mexico, for a period of one year. All interested parties may appear and show cause why said pool should not be developed on 40-acre spacing units.

CASE 4247: Application of J. J. Travis for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the North Shugart Queen Unit Area comprising 520 acres, more or less, of federal lands in Sections 20, 21, and 28, Township 18 South, Range 31 East, Shugart (Yates-Seven Rivers-Queen-Grayburg) Pool, Eddy County, New Mexico.

CASE 4248: Application of J. J. Travis for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in his North Shugart Queen Unit Area by the injection of water into the Queen formation through nine wells at orthodox and unorthodox locations in Sections 20 and 21, Township 18 South, Range 31 East, Shugart (Yates-Seven Rivers-Queen-Grayburg) Pool, Eddy County, New Mexico. Applicant further seeks a procedure whereby additional injection wells at orthodox and unorthdox locations may be approved administratively.

CASE 4249: Application of Tenneco Oil Company for amendment of Order No. R-3822 and off-lease storage, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks amendment of Order No. R-3822, which order pooled all mineral interests in the Basin-Dakota Gas Pool underlying the N/2 of Section 11, Township 29 North, Range 13 West, San Juan County, New Mexico, to form a 320-acre gas proration unit dedicated to a well to be drilled at an unorthodox location 2250 feet from the North line and 600 feet from the East line of said Section 11. Applicant now seeks amendment of said order to permit the drilling of said well at a point 2390 feet from the North line and 275 feet from the East line of said Section 11. Applicant further seeks authority to transport, prior to measurement, to another lease for storage the liquid hydrocarbons produced by the subject well.

CASE 3455: (Reopened):

In the matter of Case No. 3455 being reopened pursuant to the provisions of Order No. R-2565-B, which order, among other things, established 320-acre spacing units for the West Puerto Chiquito-Mancos Oil Pool, Rio Arriba County, New Mexico, for a period of three years. All interested parties may appear and show cause why said pool should not be developed on 40-acre spacing units.

CASE 4250: Application of McCrary & Franklin for waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Grayburg and Lovington sands through their Shipley Well No. 2 located in Unit K of Section 3, Township 17 South, Range 29 East, Square Lake Pool, Eddy County, New Mexico.

CASE 4251: Application of Kersey & Company for a waterflood project, Eddy 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 its Welch Well No. 2 located in Unit G of Section 4 and its Welch Well No. 4 located in Unit C of Section 4, both in Township 19 South, Range 31 East, Shugart Pool, Eddy County, New Mexico.

CASE 4220: (Continued from the October 8, 1969, Examiner Hearing)

In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit E. P. Campbell, and all other interested parties to appear and show cause why the E. P. Campbell Christmas Well No. 1 located in Unit C of Section 6, Township 23 South, Range 36 East, Jalmat Pool, Lea County, New Mexico, should not be plugged and abandoned in accordance with a Commission-approved plugging program.

TEXACO

PETROLEUM PRODUCTS

PRODUCING DEPARTMENT - UNITED STATES
MIDLAND DIVISION

DARRELL SMITH
DIVISION MANAGER

October 31, 1969

TEXACO INC.
P. O. BOX 3109
MIDLAND, TEXAS 79701

DHC Case 4284

WELLBORE COMMINGLING
MOBIL OIL CORPORATION
VACUUM-UPPER & MIDDLE PENNSYLVANIAN POOL
LEA COUNTY, NEW MEXICO

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

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

Gentlemen:

Texaco Inc. has been notified by Mobil Oil Corporation of their request to commingle within the wellbore of their Bridges State Well No. 121 in the above subject pools and hereby waives objection.

Mobil Oil Corporation advised Texaco Inc. that the well location is in Unit L, Section 13, Township 17 South, Range 34 East, N.M.P.M. Lea County, New Mexico.

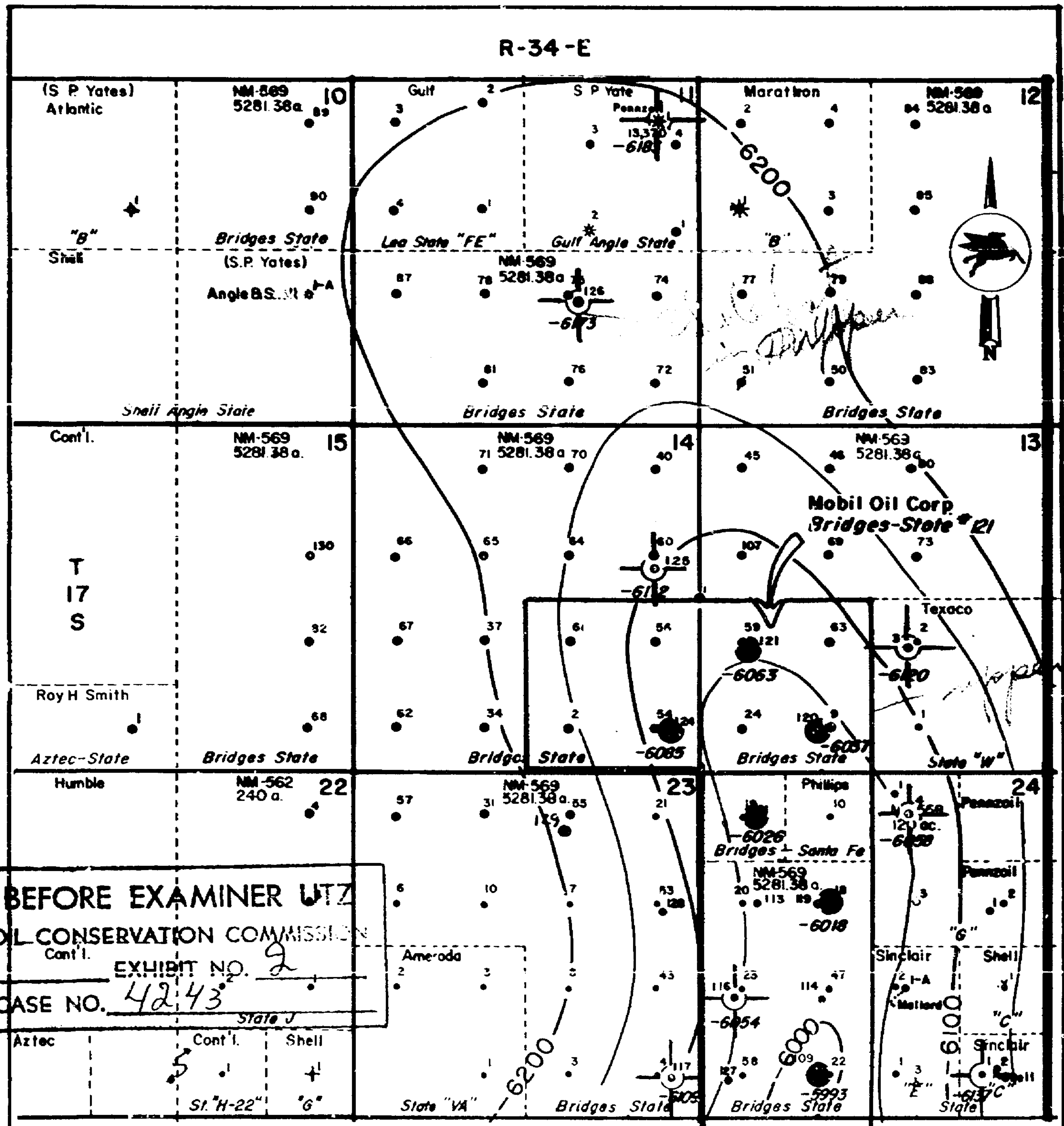
Yours very truly,

Darrell Smith

By _____
V. F. Dullnig
Assistant Division Manager

DDD/pw

cc: Mobil Oil Corporation
P. O. Box 633
Midland, Texas 79701



BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 2
CASE NO. 4243

LEGEND

- UPPER PENN PRODUCERS
- UPPER PENN DRY HOLES

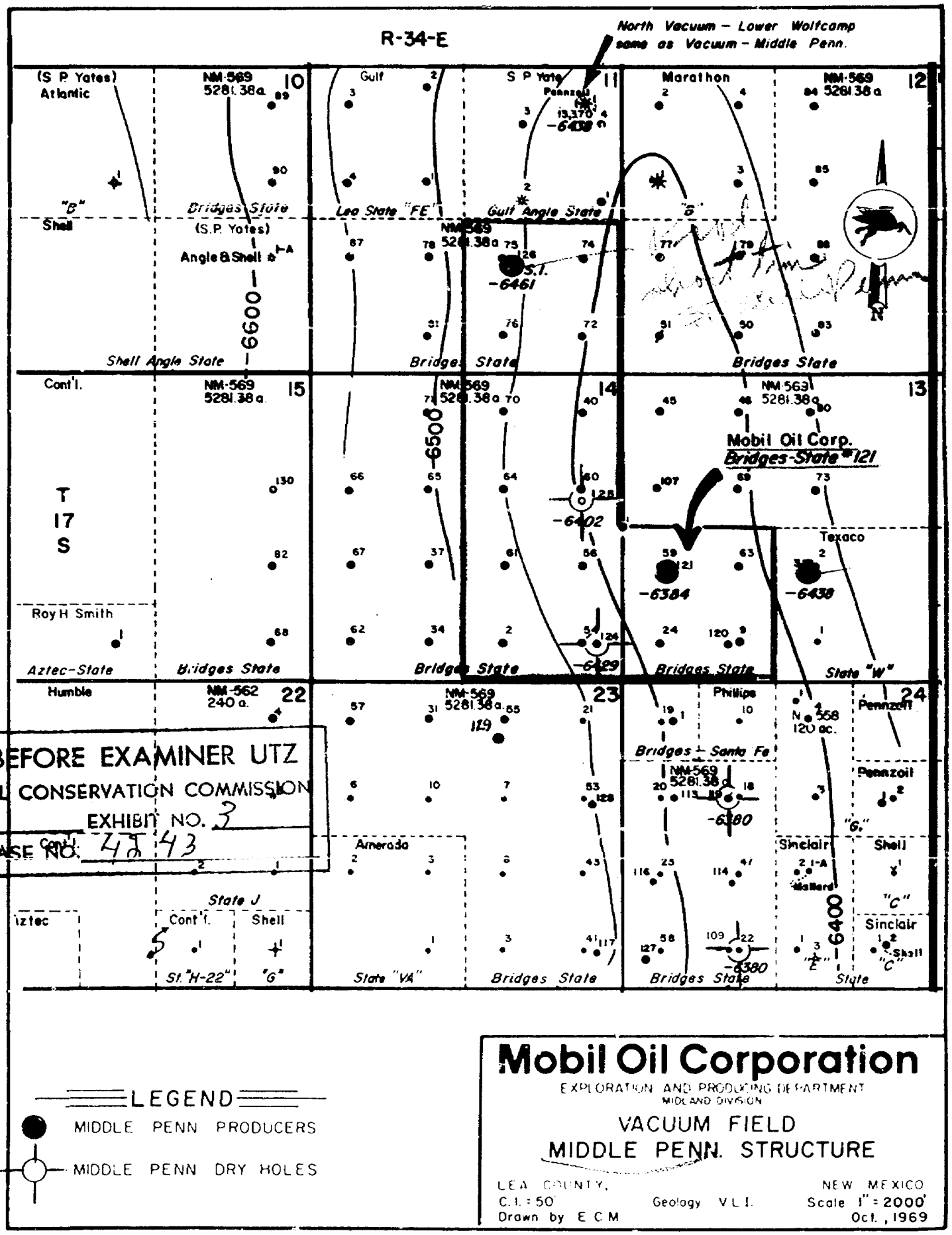
Mobil Oil Corporation

EXPLORATION AND PRODUCING DEPARTMENT
MIDLAND DIVISION

VACUUM FIELD
STRUCTURE TOP UPPER PENN.

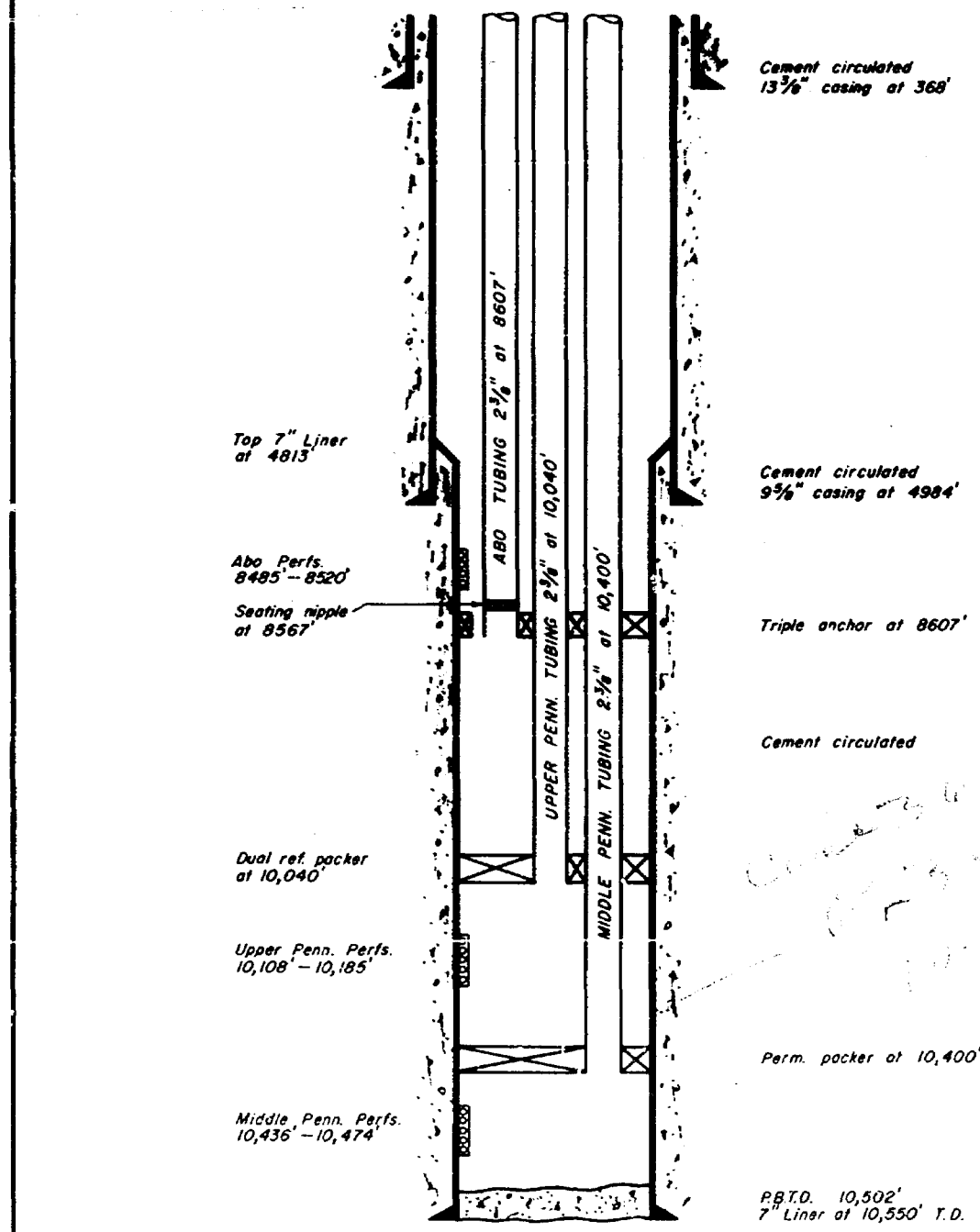
LEA COUNTY, NEW MEXICO
C.I. = 50' Geology V.L.I Scale 1" = 2000'
Drawn by E.C.M. Oct., 1969

2



BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 3
CASE NO. 4243

3



BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 4
CASE NO. 4243

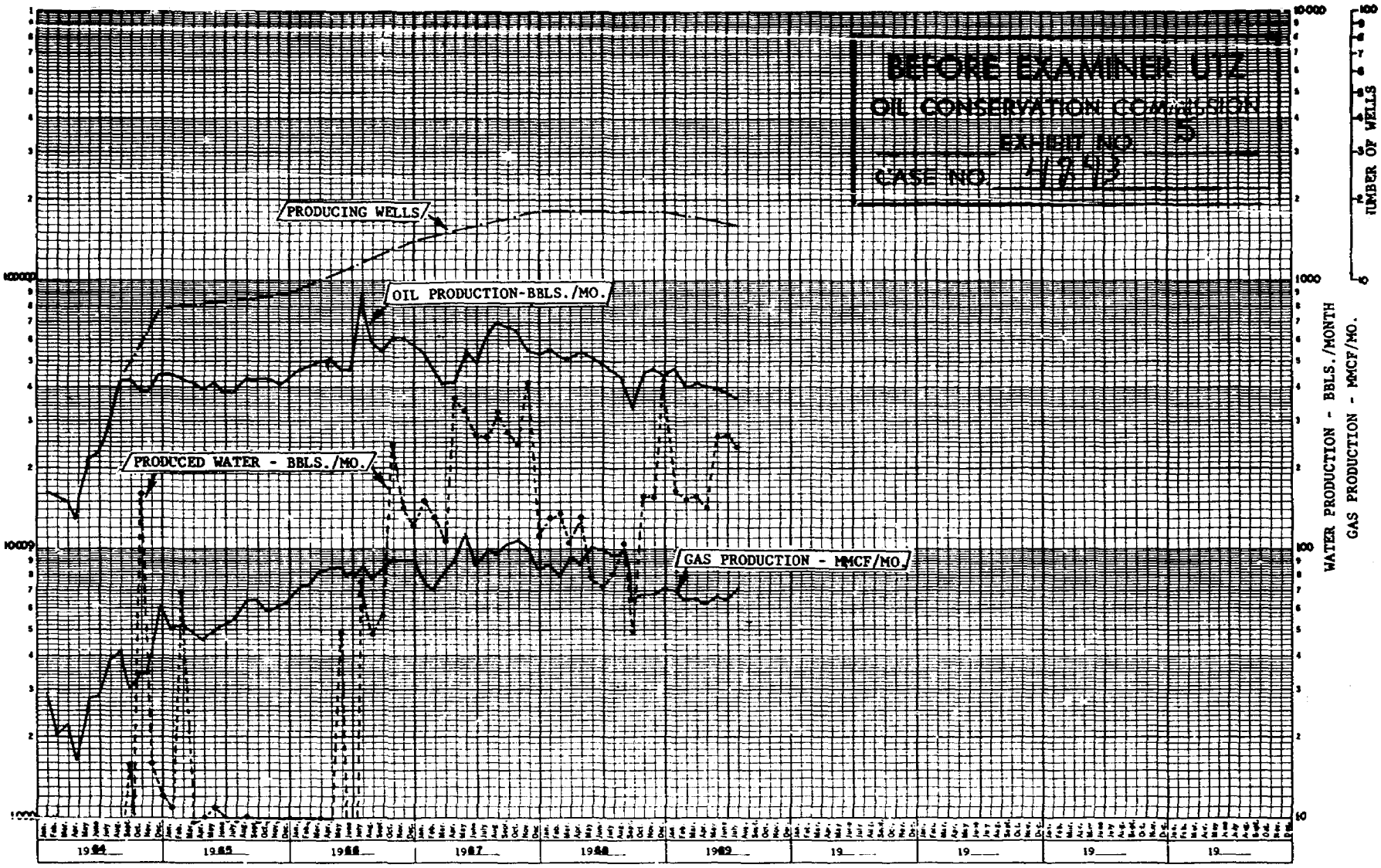
Mobil Oil Corporation
EXPLORATION AND PRODUCING DEPARTMENT
MIDLAND DIVISION

SCHEMATIC WELL BORE SKETCH
BRIDGES STATE WELL NO. 121
EXISTING TRIPLE COMPLETION

LEA COUNTY, MEXICO

SCALE NONE
DATE 9/14/69
DRAWN BY E C M
CHECKED W B S
APPROVED
REVISED

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 5
CASE NO. 1292

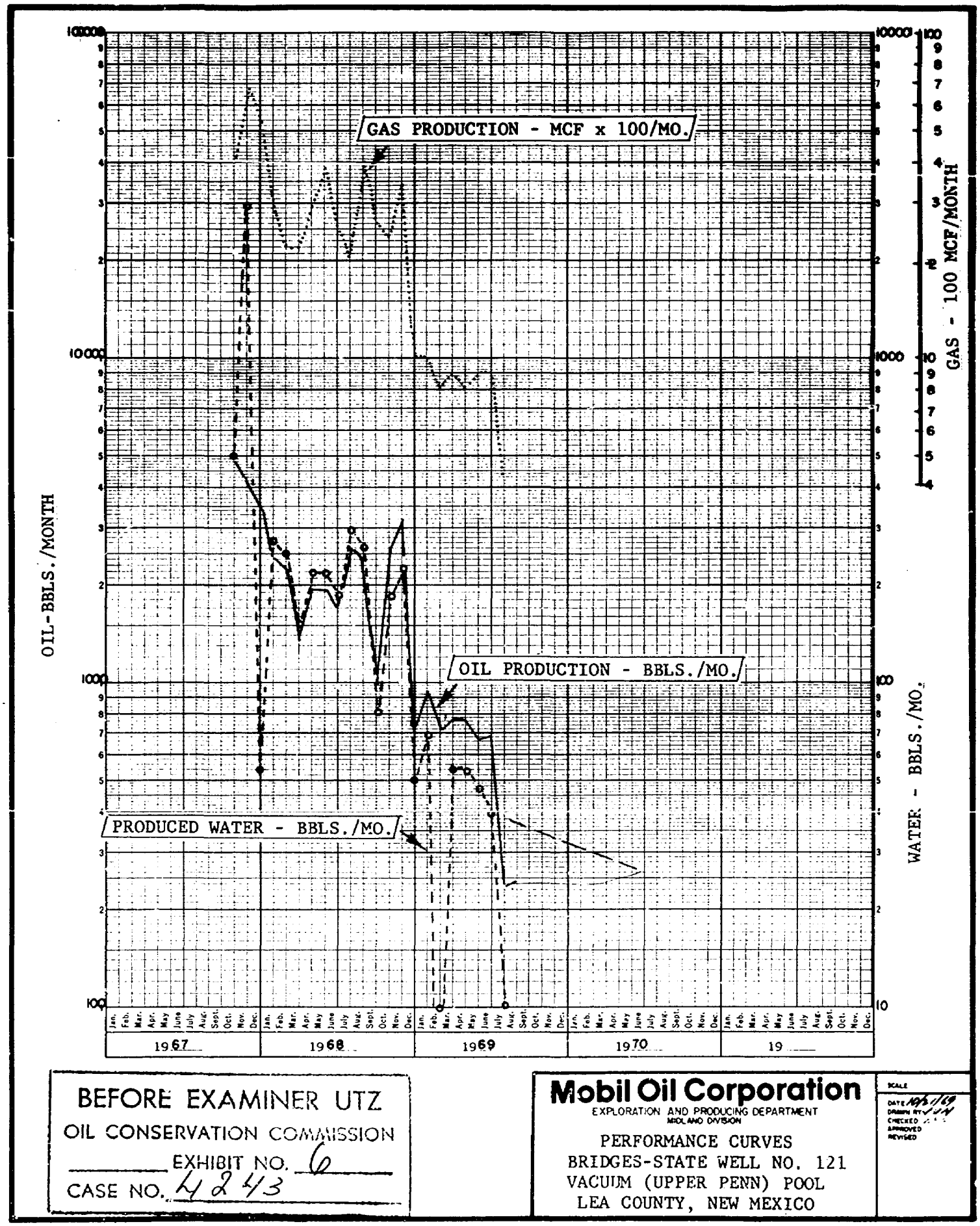


TIME-YEARS

Mobil Oil Corporation
EXPLORATION AND PRODUCING DEPARTMENT
MIDLAND DIVISION

PERFORMANCE CURVES
VACUUM (UPPER PENN) POOL
LEA COUNTY, NEW MEXICO

SCALE
DATE 10/31/89
DRAWN BY JWH
CHECKED BY BLS
APPROVED
REVISED



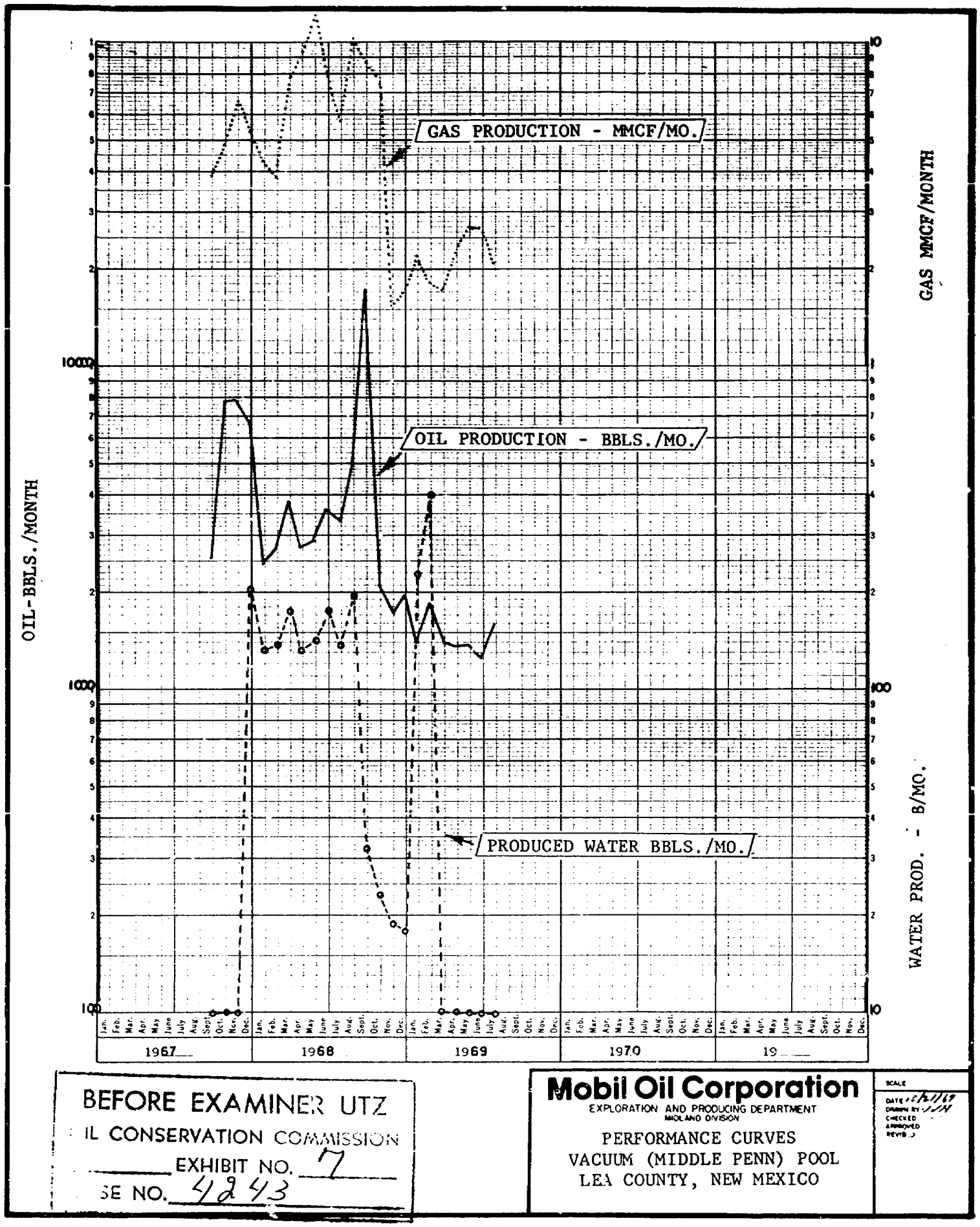
BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 6
CASE NO. 4243

Mobil Oil Corporation
EXPLORATION AND PRODUCING DEPARTMENT
MIDLAND DIVISION

PERFORMANCE CURVES
BRIDGES-STATE WELL NO. 121
VACUUM (UPPER PENN) POOL
LEA COUNTY, NEW MEXICO

SCALE
DATE Nov 11 '69
DRAWN BY
CHECKED
APPROVED
REVISED

6



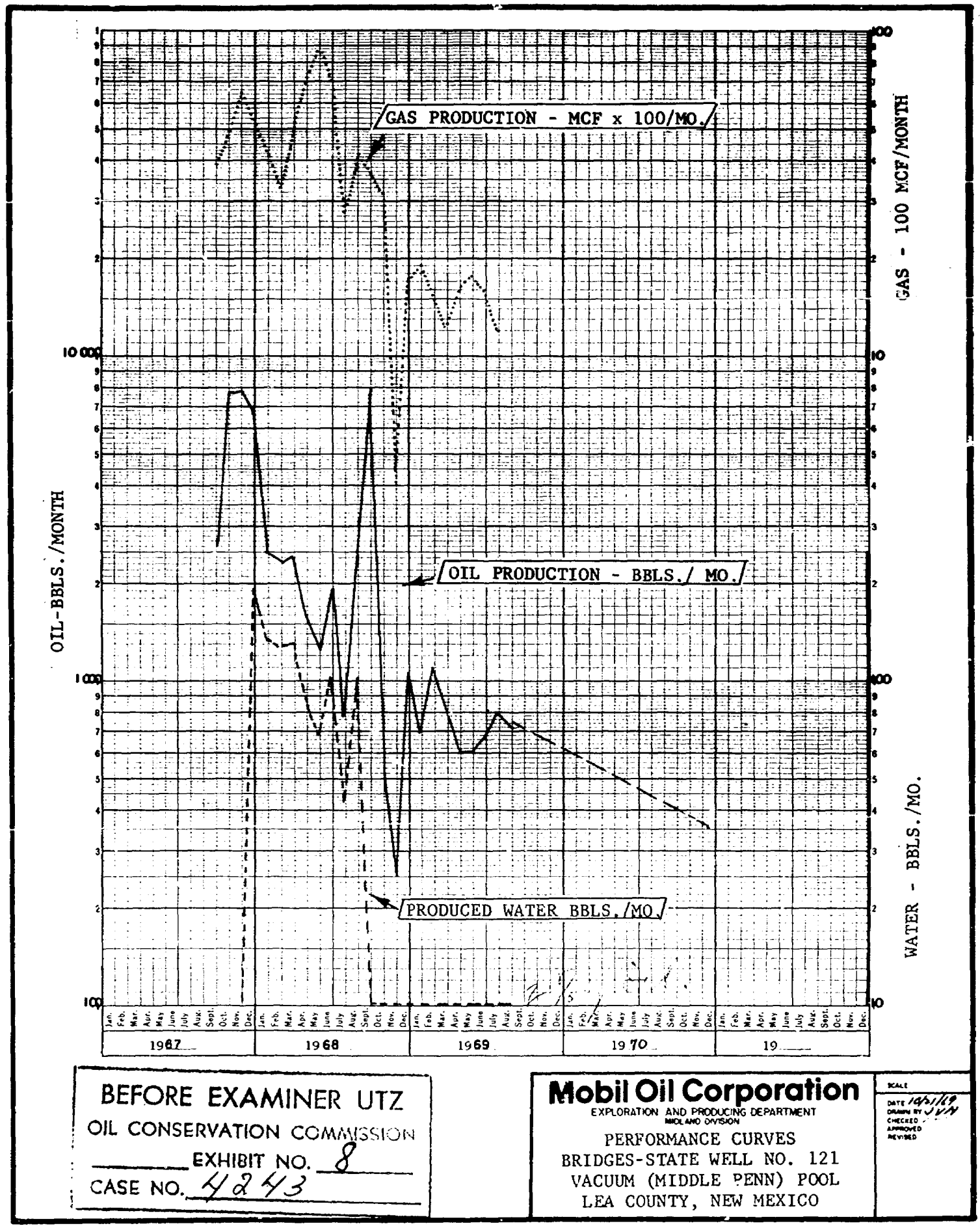
BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 7
CASE NO. 4243

Mobil Oil Corporation
EXPLORATION AND PRODUCING DEPARTMENT
MIDLAND DIVISION

PERFORMANCE CURVES
VACUUM (MIDDLE PENN) POOL
LEA COUNTY, NEW MEXICO

SCALE
DATE 2/11/69
DRAWN BY JJN
CHECKED
APPROVED
REVISED

7



BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 8
CASE NO. 4243

Mobil Oil Corporation
EXPLORATION AND PRODUCING DEPARTMENT
MIDLAND DIVISION

PERFORMANCE CURVES
BRIDGES-STATE WELL NO. 121
VACUUM (MIDDLE PENN) POOL
LEA COUNTY, NEW MEXICO

SCALE
DATE 10/1/69
DRAWN BY JVH
CHECKED
APPROVED
REVISED

8

PRODUCTION HISTORY
MOBIL OIL CORPORATION'S
BRIDGES-STATE LEASE
VACUUM (UPPER PENN) POOL
LEA COUNTY, NEW MEXICO

Total Reservoir

	Oil/Bbl	Gas/Mcf	Water/Bbl	GOR
1964	339,430	397,050	209	1,170
1965	501,742	669,297	168	1,330
1966	672,460	1,004,959	8,302	1,490
1967	664,747	1,113,197	29,892	1,680
1968	575,433	1,011,970	16,293	1,760
January, 1969	47,958	69,822	1,655	1,460
February	39,839	65,461	1,547	1,640
March	41,254	65,598	1,581	1,590
April	40,484	62,293	1,422	1,540
May	39,890	65,688	2,613	1,650
June	37,838	65,231	2,645	1,720
July	36,479	70,344	2,400	1,930
	283,742	464,437	13,863	
Cumulative	3,037,554	4,660,910	68,727	

Bridges State Well #121

1967 (3 mos.)	12,528	16,496	3,466	1,310
1968	24,438	32,326	2,396	1,320
January, 1969	976	954	68	975
February	708	773	0	1,090
March	771	858	54	1,110
April	708	787	54	1,025
May	674	892	47	1,325
June	698	866	39	1,240
July	233	331	0	1,420
	4,828	5,461	262	
Cumulative	41,794	54,283	6,124	

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 9
CASE NO. 4243

BJStubbs/WBSimmonsJr:bje
October 15, 1969

PRODUCTION HISTORY
MOBIL OIL CORPORATION'S
BRIDGES STATE LEASE
VACUUM (MIDDLE PENN) POOL
LEA COUNTY, NEW MEXICO

Total Reservoir

	Oil/Bbl	Gas/Mcf	Water/Bbl	GOR
1967 (4 mos.)	24,835	20,891	209	840
1968	50,198	81,109	1,329	1,620
January, 1969	1,410	2,255	230	1,600
February	1,871	1,800	402	960
March	1,388	1,710	0	1,230
April	1,373	2,287	0	1,665
May	1,385	2,701	0	1,950
June	1,250	2,653	0	2,085
July	1,591	2,017	0	1,265
	10,268	15,423	632	
Cumulative	85,301	117,423	2,170	

Bridges State Well #121

1967 (4 mos.)	24,835	20,891	209	840
1968	24,882	52,165	806	2,095
January, 1969	681	1,919	0	2,815
February	1,157	1,513	0	1,310
March	810	1,234	0	1,525
April	605	1,582	0	2,620
May	609	1,792	0	2,950
June	667	1,609	0	2,410
July	817	1,168	0	1,430
	5,346	10,817	0	
Cumulative	55,063	83,873	1,015	

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 10
CASE NO. 4243

BJStubbs/WBSimmonsJr:bje
October 15, 1969

10

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 11
CASE NO. 4243

RESERVOIR COMMINGLING DATA SHEET
MOBIL OIL CORPORATION'S BRIDGES STATE LEASE, WELL NO. 121
VACUUM (UPPER AND MIDDLE PENN) POOLS
LEA COUNTY, NEW MEXICO

	Vacuum (Upper Penn) Pool	Vacuum (Middle Penn) Pool
Production Information on Well No. 121 *		
Date of Test	6-29-69	6-28-69
Test - Barrels of Oil/Day	13	27
- Barrels of Water/Day	2	0
- Mcf Gas/Day	17	34
- Gas-Oil Ratio	1285	1250
Current Allowable	30 (Shut-in Since 9-69)	40
Current Average Production - Bbls Oil/Day	8	24
(Month of August, 1969) - Bbls Water/Day	0	0
- Gas-Oil Ratio	1418	1681
Reservoir & Fluid Characteristics of Well		
Date zone completed	8-24-67	8-21-67
Composition	Limestone	Limestone
Type of drive	Solution Gas	Solution Gas
Original BHP	N.A.	2129 psi
Current BHP	952 psi (MPP)	812 psi (MPP)
Connate water content (% pore space)	28% (Elec. Log Calc.)	20% (Elec. Log Calc.)
Gravity of oil (API°)	41.2	42.7
Cumulative oil production to date/bbls	42,038 to 9-1-69	55,797 to 9-1-69
Reservoir & Fluid Characteristics of Entire Pool		
Estimated productive area	1520 Acres	240 Acres
Type of structure	Anticlinal; porosity pinchout to north and east	Stratigraphic trap on anticlinal structure
Subsea depth of oil-water contact	6150'	Unknown
Average depth to top of pay	10,108'	10,436'

Reservoir & Fluid Characteristics of Entire Pool (Cont'd)	Vacuum (Upper Penn) Pool	Vacuum (Middle Penn) Pool
Average effective pay thickness	77'	38'
Average porosity (%) Elec. log calculations	3.5% to 9%; Avg. 6.3%	3.5% to 8.5%; Avg. 6.5%
Number of producing wells	17	2
Date of discovery well completion	June 1963	August 21, 1967
Proportional Factor	5.67	4.67
Top Allowable (NUA - 70 BOPD, Nov. '69)	397	318
Proration Size	80 Acres	40 Acres
GOR Limit	2000:1	2000:1

Note: * Production volumes obtained with existing rod pumping equipment operating unvented beneath a packer.

BFD/VLI/DMO/WBS:bje
10-30-69

ECONOMIC LIMIT CALCULATION SUMMARY
DOWNHOLE COMMINGLING OF VACUUM (UPPER & MIDDLE PENN) POOLS
MOBIL OIL CORPORATION'S BRIDGES STATE WELL NO. 121
LEA COUNTY, NEW MEXICO

Vacuum (Upper Penn) Zone

Operating Expense	$910/Month
Gross Sales Value/Bbl (Incl. Gas)	$3.210/bbl
(Less Taxes & Royalty)	(0.642/bbl)
Net Value (after taxes & royalty)	$2.568/bbl
Economic Limit	354 BOPM

Vacuum (Middle Penn) Zone

Operating Expense	$924/Month
Gross Sales Value/Bbl (Incl. Gas)	$3.210/bbl
(Less Taxes & Royalty)	(0.642/bbl)
Net Value (after taxes & royalty)	$2.568/bbl
Economic Limit	360 BOPM

Vented Downhole Commingled Production of Vacuum (Upper & Middle Penn) Zones

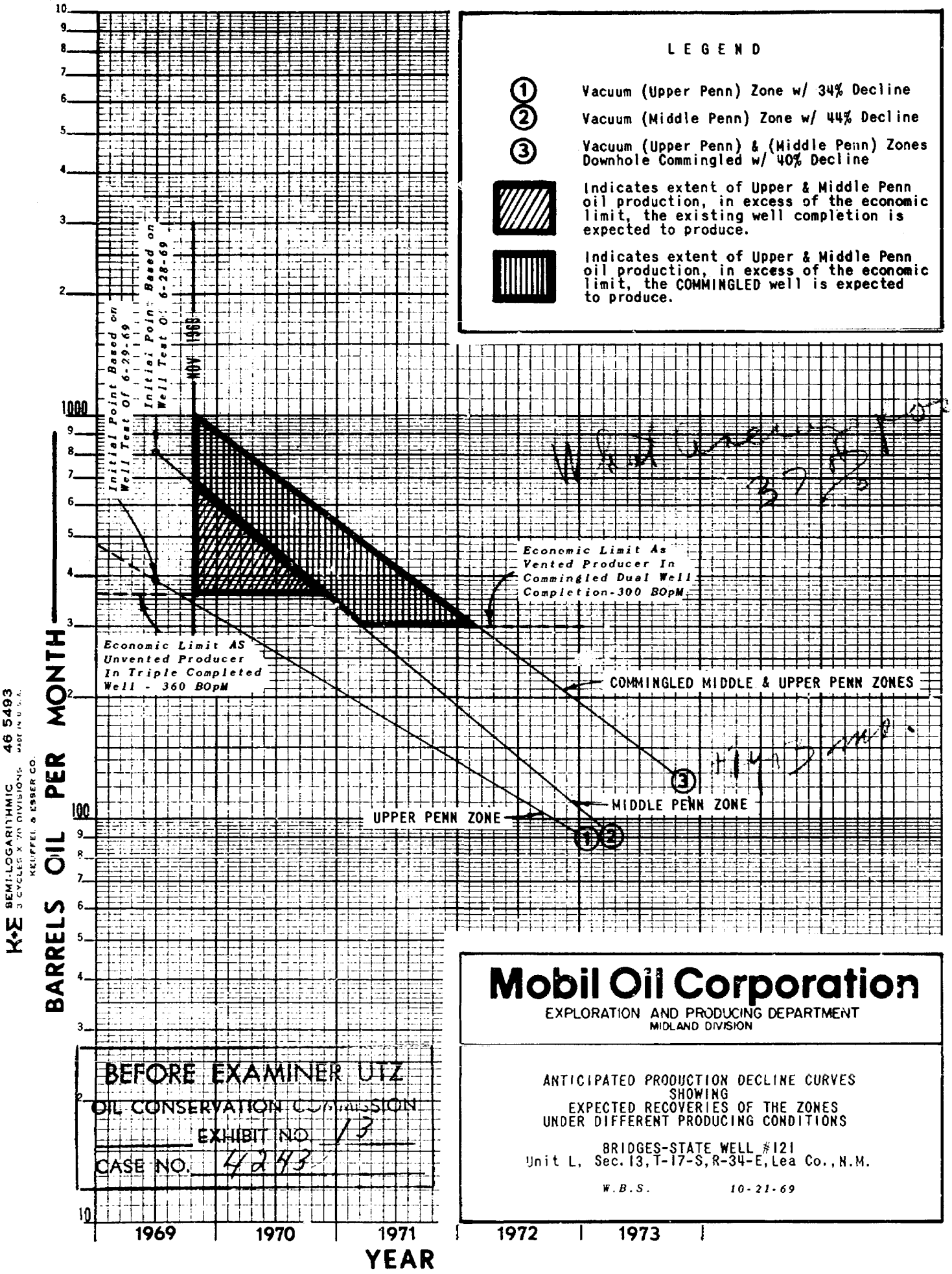
Operating Expense	$770/Month
Gross Sales Value/Bbl (Incl. Gas)	$3.210/bbl
(Less Taxes & Royalty)	(0.642/bbl)
Net Value (after taxes & royalty)	$2.568/bbl
Economic Limit	300 BOPM

Note: Mobil's interest in both zones:
100% Working Interest
87.5% Net Interest

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 12
CASE NO. 4243

DMO/WBS:bje
10-30-69

12



BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 13
CASE NO. 4243

Mobil Oil Corporation

EXPLORATION AND PRODUCING DEPARTMENT
MIDLAND DIVISION

ANTICIPATED PRODUCTION DECLINE CURVES
SHOWING
EXPECTED RECOVERIES OF THE ZONES
UNDER DIFFERENT PRODUCING CONDITIONS

BRIDGES-STATE WELL #121
Unit L, Sec. 13, T-17-S, R-34-E, Lea Co., N.M.

W.B.S. 10-21-69

13

MOBIL OIL CORPORATION'S BRIDGES STATE WELL NO. 121

COMPARISON OF EXPECTED OIL RECOVERY WITH THE VACUUM (UPPER & MIDDLE PENN) ZONES PRODUCED UNDER EXISTING CONDITIONS

VERSUS

THE TWO ZONES PRODUCED AS A SINGLE, VENTED, DOWNHOLE COMMINGLED ZONE

Vacuum (Upper Penn) Zone

Economically Recoverable Reserves	0 Bbls of oil
Productive Life (@ 34% Decline)	0 Months
Mobil's Net Revenue	$0
State's Revenue (Royalty & Taxes)	$0

(Note: Well was operating below its economic limit and was shut-in.)

Vacuum (Middle Penn) Zone

Economically Recoverable Reserves	6,674 Bbls of oil
Productive Life (@ 44% Decline)	1 Year, 1 Month
Mobil's Net Revenue	$17,139
State's Revenue (Royalty & Taxes)	$ 4,285

Operated With Both Zones Downhole Commingled

Economically Recoverable Reserves	17,122 Bbls of oil
Productive Life (@ 40% Decline)	2 Years, 4 Months
Mobil's Net Revenue	$43,969
State's Revenue (Royalty & Taxes)	$10,992

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 14
CASE NO. 4243

WBS:bje
10-30-69

14

COLEMAN PETROLEUM ENGINEERING COMPANY

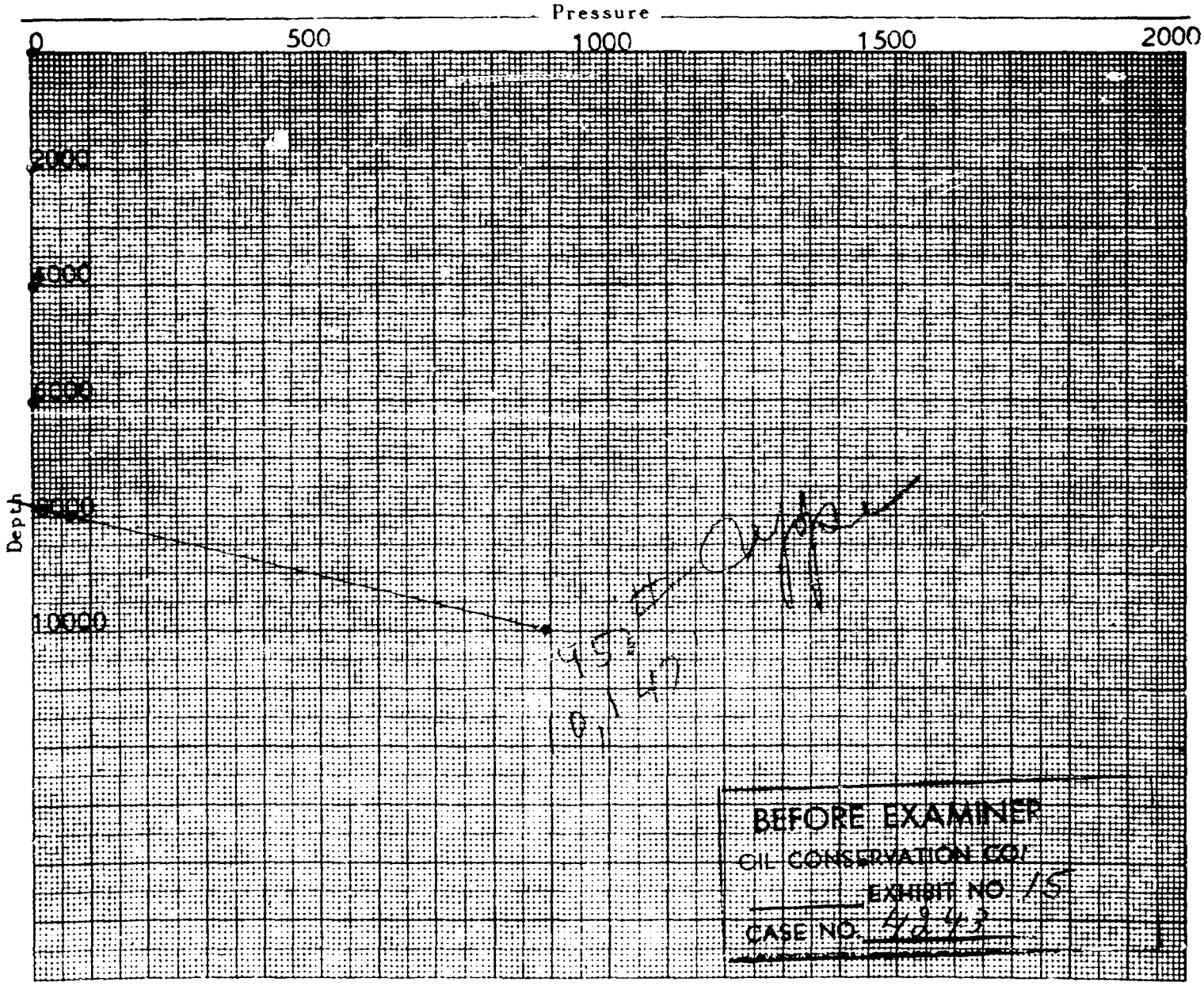
PHONE EXPRESS 3-3813
611 GRIMES
P O BOX 1829
HOBBS, NEW MEXICO

BOTTOM HOLE PRESSURE RECORD

OPERATOR MOBIL OIL CORPORATION
FIELD VACUUM FORMATION UPPER PENN
LEASE BRIDGES STATE WELL No. 121
COUNTY LEA STATE NEW MEXICO
DATE 9-9-69 TIME 8:30 AM
Status SHUT IN Test depth 10000'
Time S. I. 48.0 HRS Last test date INITIAL
Tub Pres. 0 BHP last test -
Cas. Pres. TRIPLE BHP change -
Elev. 4020'GL Fluid top 7811'
Datum (-6127')** Water top 8000'
Temp. @ 156°F Run by WEAVER
Cal. No. A2419N Chart No. 2

Depth	Pressure	Gradient
0	0	-
2000	0	-
4000	0	-
6000	0	-
8000	63	.032
10000	891	.414
10147(-6127)	952* **	(.414)

* EXTRAPOLATED PRESSURE
** MID POINT OF CASING PERFORATIONS



BEFORE EXAMINER
OIL CONSERVATION COM.
EXHIBIT NO. 15
CASE NO. 4943

COLEMAN PETROLEUM ENGINEERING COMPANY

PHONE EXpress 3-3813
611 GRIMES
P O BOX 1629
HOBBS, NEW MEXICO

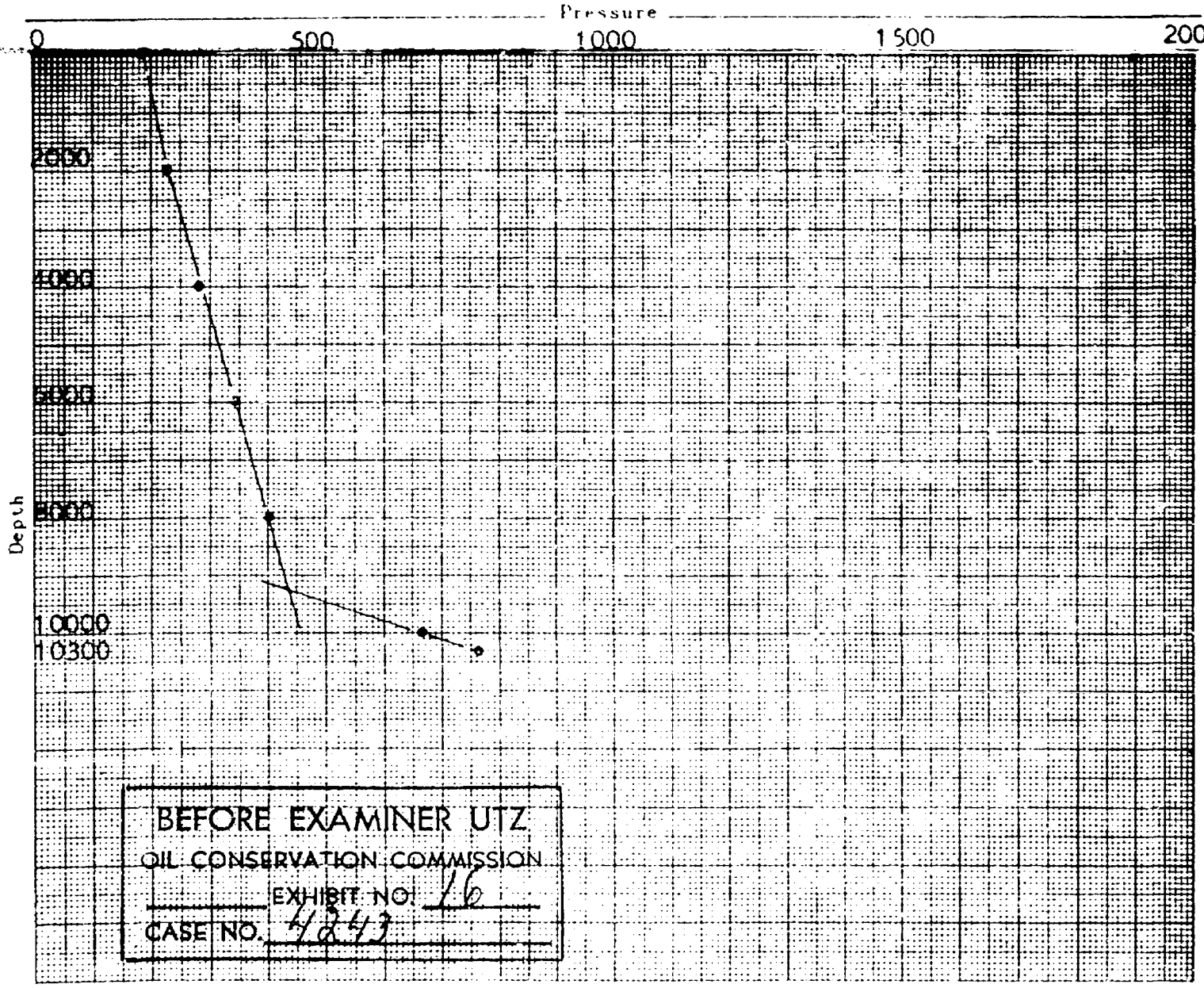
BOTTOM HOLE PRESSURE RECORD

OPERATOR MOBIL OIL CORPORATION
FIELD VACUUM FORMATION MIDDLE PENN
LEASE BRIDGES STATE WELL No. 121
COUNTY LEA STATE NEW MEXICO
DATE 9-9-69 TIME 7:00 AM

Status	SHUT IN	Test depth	10300'
Time S. I.	48.0 HRS	Last test date	1-4-68
Tub Pres.	185	BHP last test	1011
Cas. Pres.	TRIPLE	BHP change	199# Loss
Elev.	4020'GL	Fluid top	9275'
Datum	(-6435')**	Water top	NONE
Temp. @	148°F	Run by	WEAVER
Cal. No.	A2419N	Chart No	1

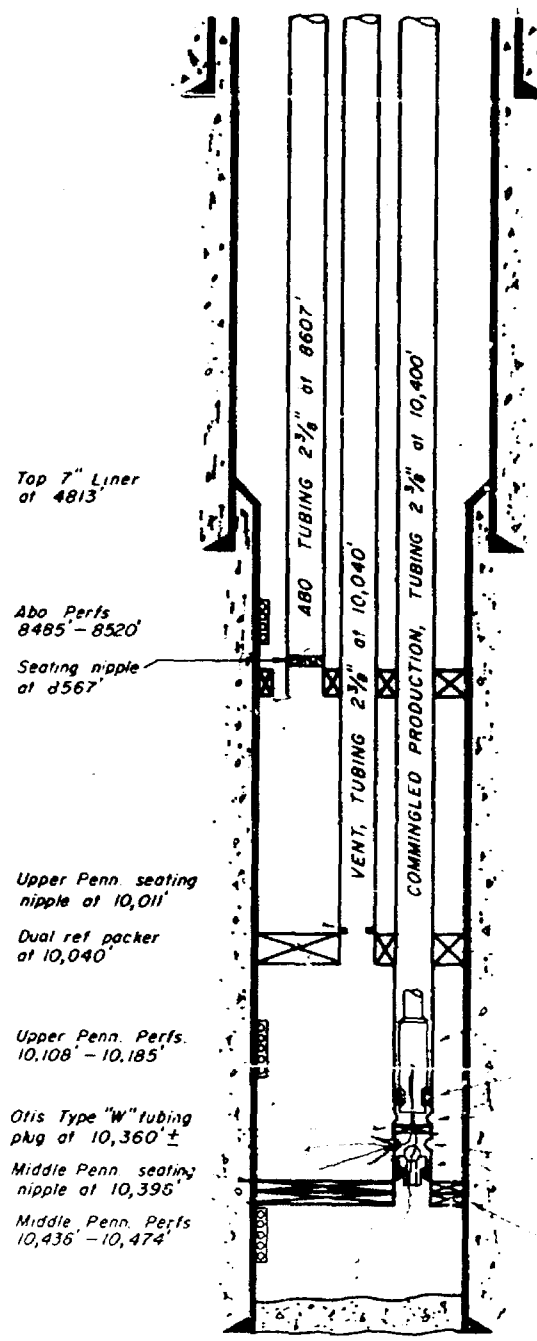
Depth	Pressure	Gradient
0	185	-
2000	224	.020
4000	280	.028
6000	340	.030
8000	400	.030
10000	668	.134
10300	763	.317
10455(-6435)	812* **	(.317)

* EXTRAPOLATED PRESSURE
** MID POINT OF CASING PERFORATIONS



BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 16
CASE NO. 4243

16



BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 17
CASE NO. 4243

Mobil Oil Corporation
EXPLORATION AND PRODUCING DEPARTMENT
MIDLAND DIVISION

SCHEMATIC WELL BORE SKETCH
BRIDGES STATE WELL NO. 121
PROPOSED DUAL COMPLETION

LEA COUNTY, MEXICO

SCALE NONE
DATE 9/14/69
DRAWN BY E.C.M.
CHECKED
APPROVED
REVISED

17

~~G-013~~
10-28-69

State of New Mexico

Commissioner of Public Lands

ALEX J. ARMIJO
COMMISSIONER

October 22, 1969

P. O. BOX 1148
SANTA FE, NEW MEXICO

Mobil Oil Corporation
P. O. Box 633
Midland, Texas 79701

Re: APPLICATION FOR EXCEPTION TO NMOCC RULE 303 AND AUTHORIZING THE DOWNHOLE COMMINGLING OF THE VACUUM (UPPER PENN) ZONE & THE VACUUM (MIDDLE PENN) ZONE IN MOBIL'S BRIDGES STATE WELL NO. 121 LEA COUNTY, NEW MEXICO

Gentlemen:

Reference is made to your application dated October 16, 1969, requesting approval for downhole commingling of the Vacuum (Upper Penn) pool and the Vacuum (Middle Penn) Pool in Mobil's Bridges State Well No. 121, Lea County, New Mexico.

You are hereby given approval to the above request. Any deviation from your proposed request will be reason to cancel approval.

This approval is subject to the subsequent approval of the New Mexico Oil Conservation Commission.

Very truly yours,

Ted Bilberry

Ted Bilberry, Director
Oil and Gas Department

TB/MT/s
cc: New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico

DISTRIBUTION
MONZINGO
ELLEDGE
WEIHRICH
PRORATION
JESperling

Mobil Oil Corporation

P.O. BOX 633
MIDLAND, TEXAS 79701

October 13, 1969

Getty Oil Company
Box 1231
Midland, Texas 79701

APPLICATION OF MOBIL OIL CORPORATION FOR EXCEPTION TO NEW MEXICO OIL CONSERVATION COMMISSION RULE 303 AND AUTHORIZING THE DOWNHOLE COMMINGLING OF THE VACUUM (UPPER PENN) ZONE AND THE VACUUM (MIDDLE PENN) ZONE IN MOBIL'S BRIDGES STATE WELL NO. 121 LEA COUNTY, NEW MEXICO

Gentlemen:

Mobil Oil Corporation plans to seek exception to New Mexico Oil Conservation Commission's Rule 303 and request authority to commingle within the wellbore of Mobil's Bridges State Well No. 121 production from the Vacuum (Middle Penn) Pool and Vacuum (Upper Penn) Pool, said well being located in Unit L, Section 13, Township 17 South, Range 34 East, N.M.P.M., Lea County, New Mexico. It is Mobil's understanding that this hearing has been docketed for Examiner's Hearing on November 5, 1969.

In support of the application, Mobil will state:

1. That production from the Upper Penn zone has reached its economic limit under present producing methods and restrictions and the Middle Penn will reach its economic limit within the next year.

2. That if applicant is required to continue to produce from these zones as presently required, economic limits will be exceeded which will result in abandonment of otherwise recoverable oil from these zones which could be produced under less restrictive producing conditions.

3. That said well is located upon lands subject to lease from the Commissioner of Public Lands of the State of New Mexico and that the royalty under said lease is common to the two pools or zones which are the subject of this application.

4. That the granting of this application will prevent waste, protect correlative rights and will be in the best interests of conservation.

Attached is a plat of the area showing well location and a list of the field operators notified by this letter.

If you have no objections to this application, please sign and return two copies of this letter as a waiver to Mobil. A self-addressed envelope is attached.

If additional information is required, please contact W. B. Simmons, Jr., Midland, Texas, Phone 915 684-8211.

Very truly yours,

Ira B. Stitt

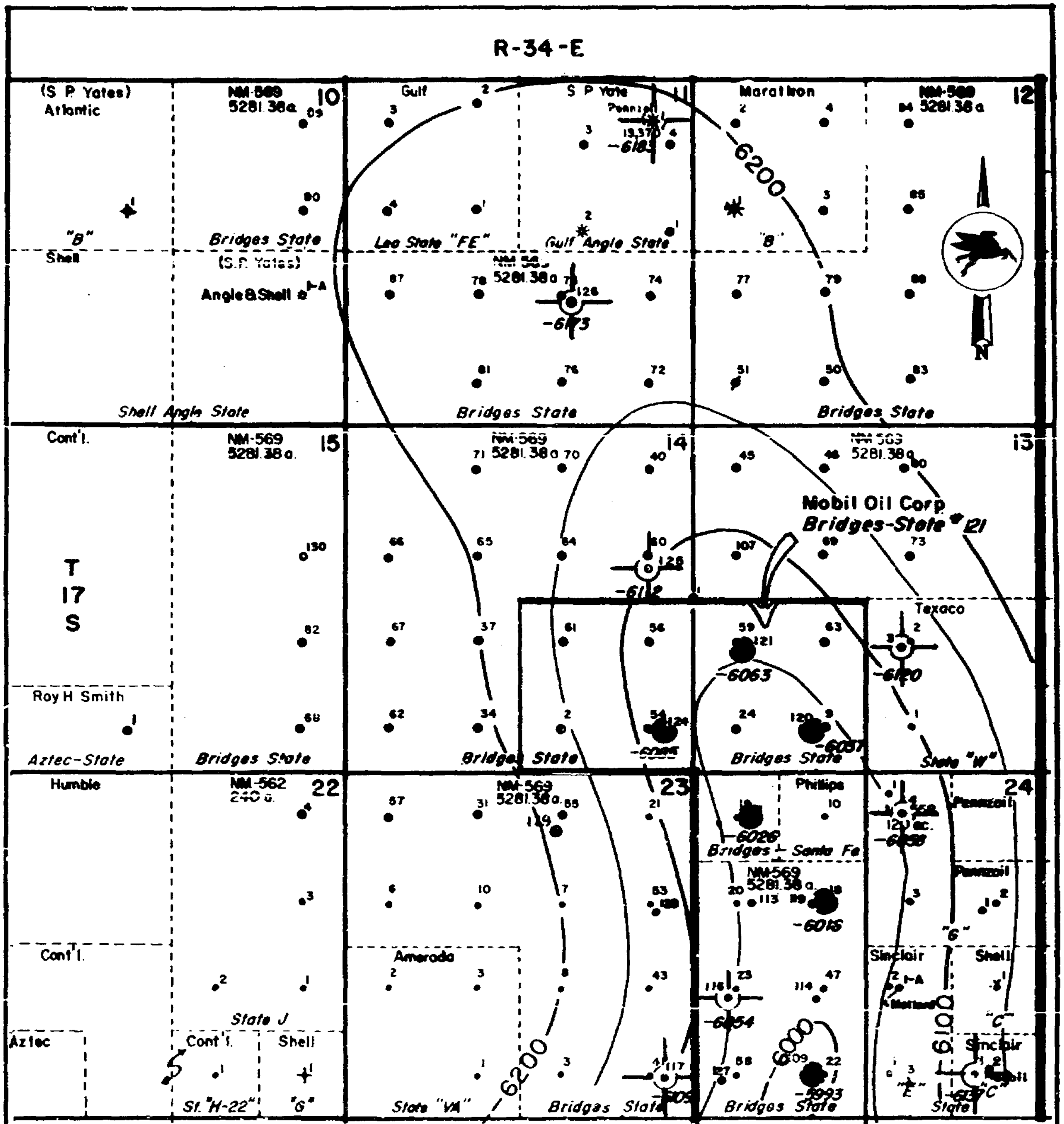
Ira B. Stitt
Division Operations Engineer

WBSimmonsJr/bje
Attachments

GETTY OIL COMPANY

By J E Pierce

Date 10-24-69



LEGEND

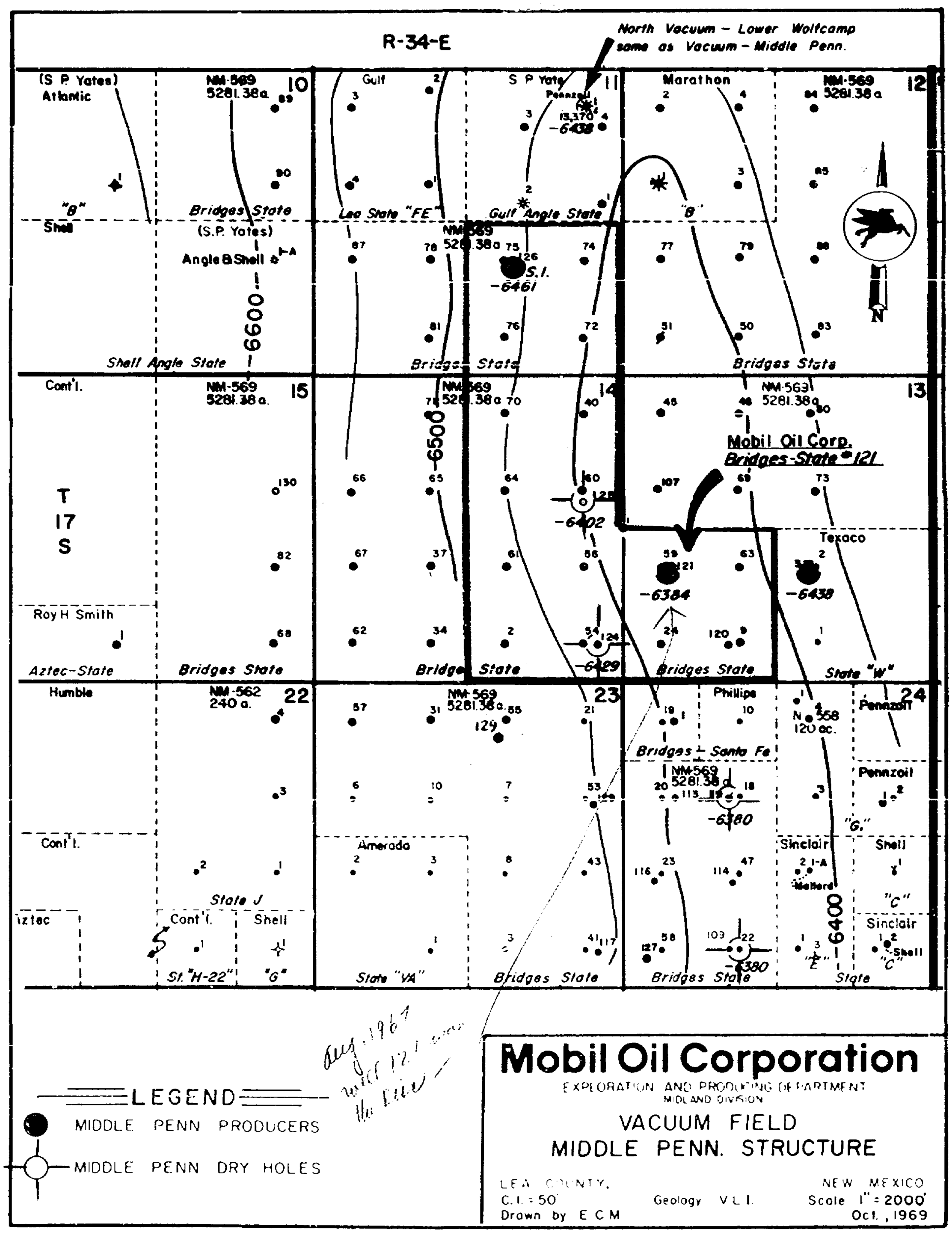
- UPPER PENN PRODUCERS
- UPPER PENN DRY HOLES

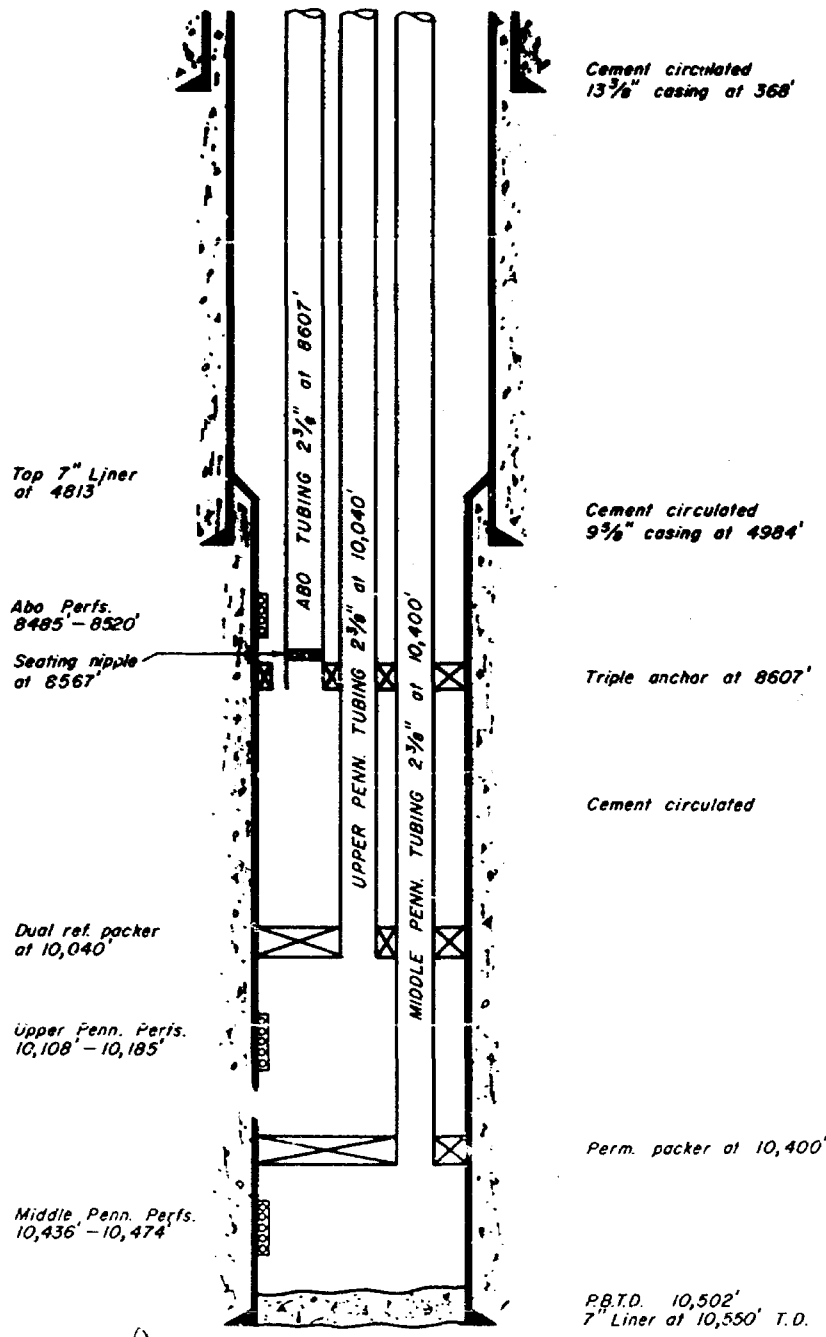
Mobil Oil Corporation

EXPLORATION AND PRODUCING DEPARTMENT
MIDLAND DIVISION

VACUUM FIELD
STRUCTURE TOP UPPER PENN.

LEA COUNTY, NEW MEXICO
C.I. = 50' Geology V.L.I Scale 1" = 2000'
Drawn by E.C.M Oct., 1969


R-34-E
North Vacuum – Lower Wolfcamp same as Vacuum – Middle Penn.
T 17 S
Mobil Oil Corp. Bridges-State #121
Bridges State
Shell Angle State
Gulf Angle State
Lea State "FE"
Aztec-State
State J
State "VA"
State "W"
Bridges – Santa Fe
NM-569 5281.38 a.
-6461
-6402
-6384
-6438
-6429
-6380
6600
6500
6400
LEGEND
MIDDLE PENN PRODUCERS
MIDDLE PENN DRY HOLES
Mobil Oil Corporation
EXPLORATION AND PRODUCING DEPARTMENT
MIDLAND DIVISION
VACUUM FIELD
MIDDLE PENN. STRUCTURE
LEA COUNTY, NEW MEXICO
C.I. = 50
Geology V.L.I.
Scale 1" = 2000'
Drawn by E C M
Oct., 1969



R-3330

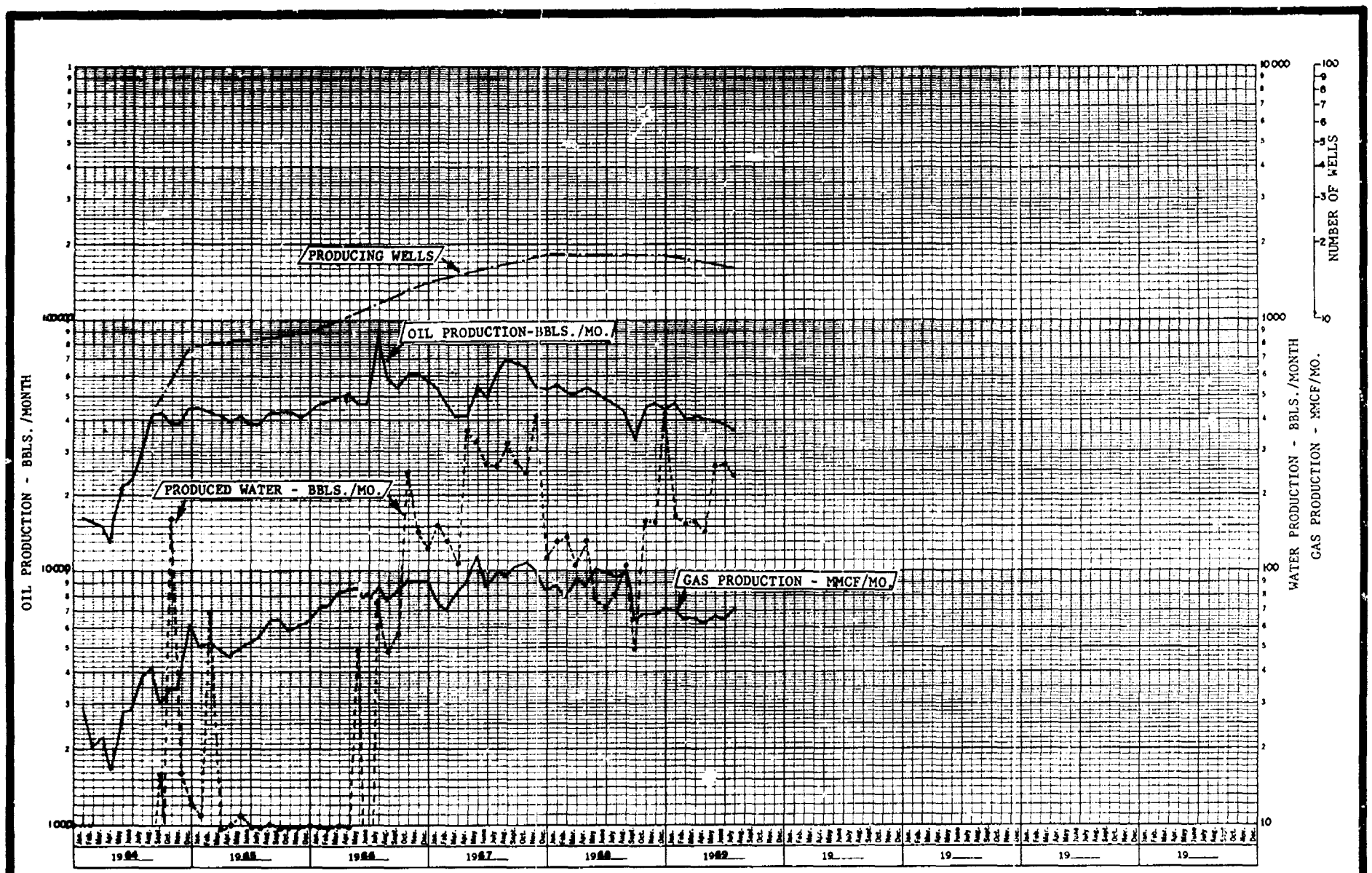
Mobil Oil Corporation

EXPLORATION AND PRODUCING DEPARTMENT
MIDLAND DIVISION

SCHEMATIC WELL BORE SKETCH
BRIDGES STATE WELL NO. 121
EXISTING TRIPLE COMPLETION

LEA COUNTY, MEXICO

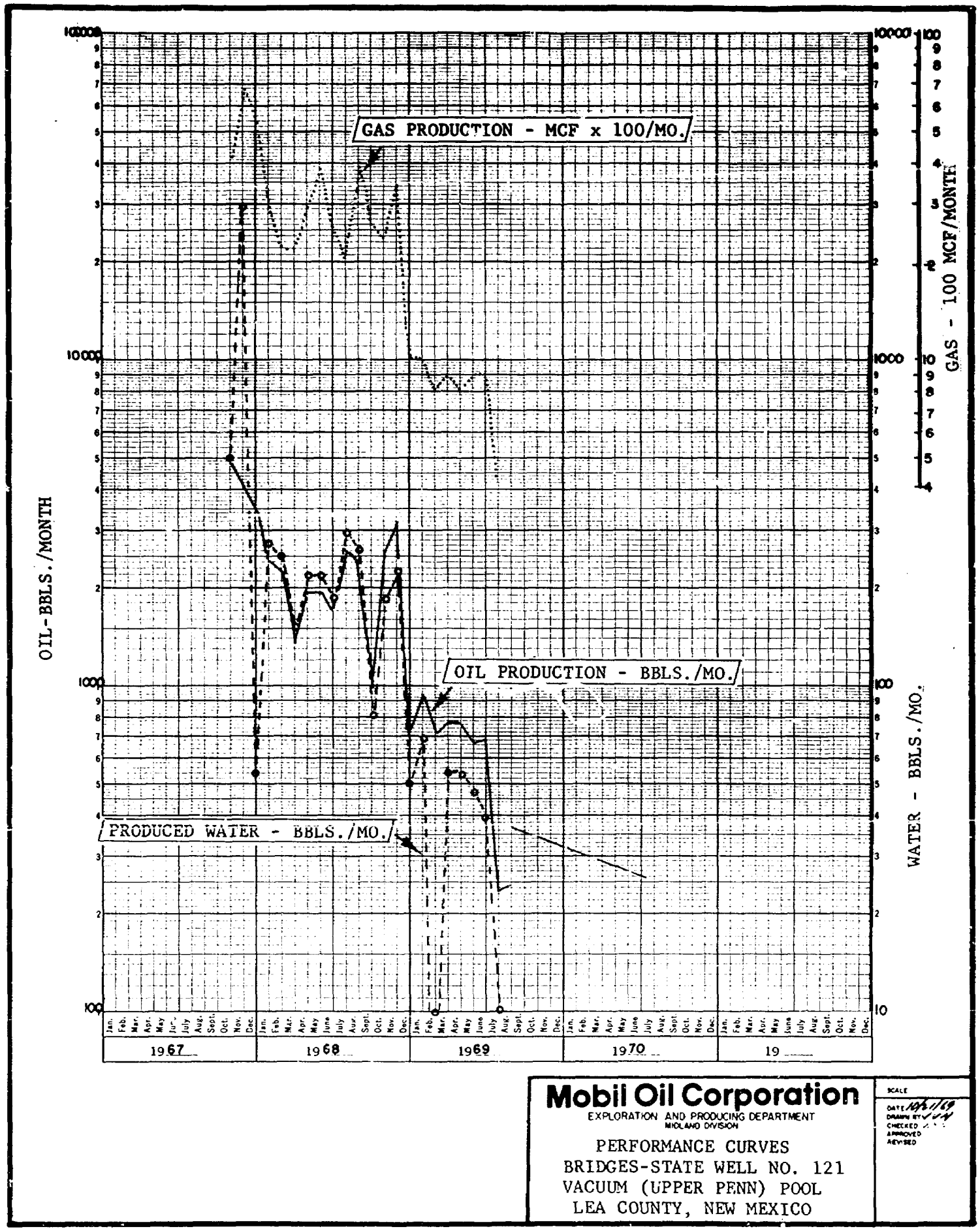
SCALE NONE
DATE 9/14/69
DRAWN BY ECM
CHECKED WBS
APPROVED
REVISED



Mobil Oil Corporation
EXPLORATION AND PRODUCING DEPARTMENT
MIDLAND DIVISION

PERFORMANCE CURVES
VACUUM (UPPER PENN) POOL
LEA COUNTY, NEW MEXICO

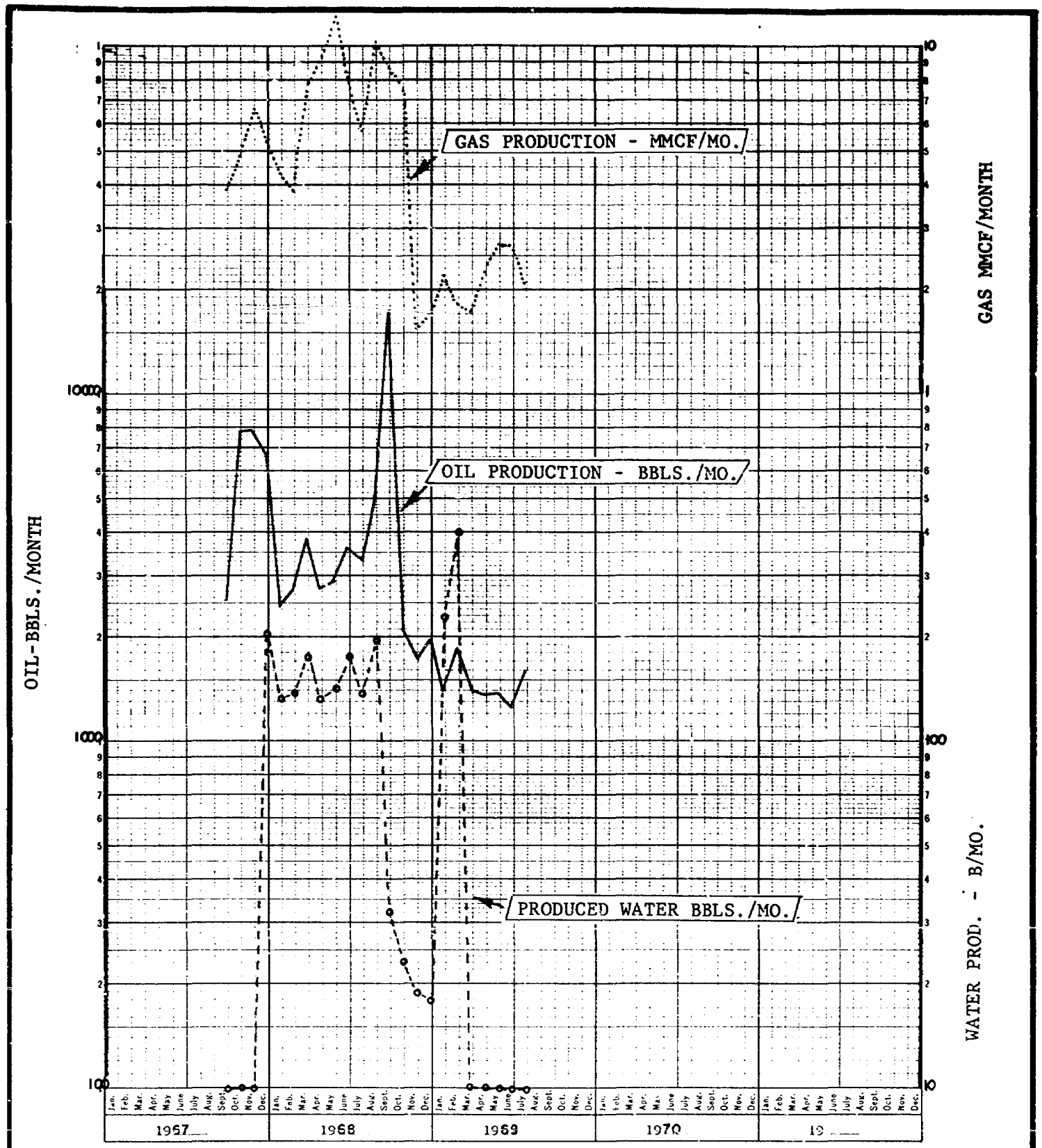
SCALE
DATE 10-21-49
DRAWN BY JWH
CHECKED
APPROVED
REVISED



Mobil Oil Corporation
EXPLORATION AND PRODUCING DEPARTMENT
MIDLAND DIVISION

PERFORMANCE CURVES
BRIDGES-STATE WELL NO. 121
VACUUM (UPPER PENN) POOL
LEA COUNTY, NEW MEXICO

SCALE
DATE 10/1/69
DRAWN BY
CHECKED
APPROVED
REVISED

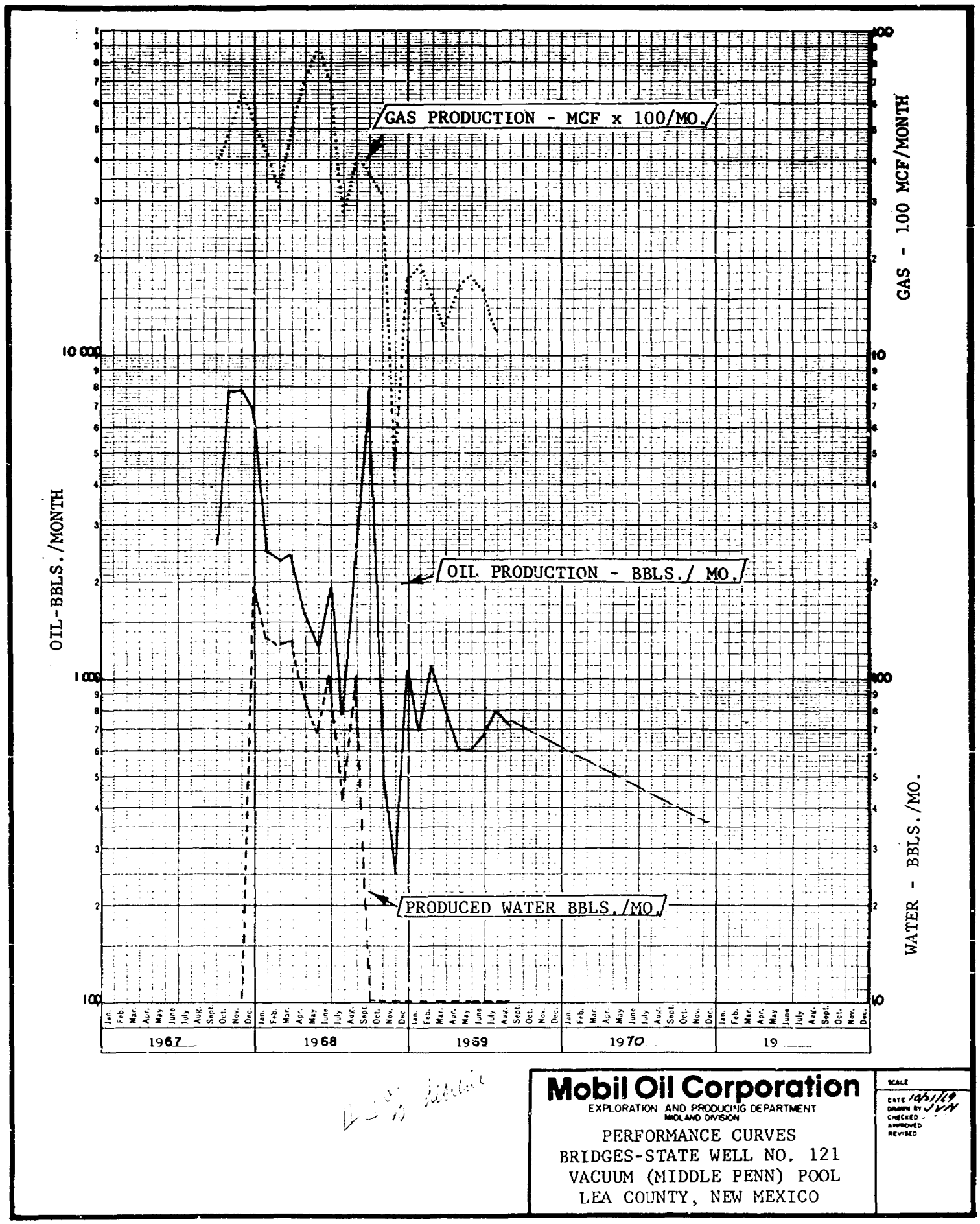


Mobil Oil Corporation

EXPLORATION AND PRODUCING DEPARTMENT
MIDLAND DIVISION

PERFORMANCE CURVES
VACUUM (MIDDLE PENN) POOL
LEA COUNTY, NEW MEXICO

SCALE
DATE: 5-21-69
DRAWN BY JJN
CHECKED
APPROVED
REVISED



Mobil Oil Corporation
EXPLORATION AND PRODUCING DEPARTMENT
MIDLAND DIVISION

PERFORMANCE CURVES
BRIDGES-STATE WELL NO. 121
VACUUM (MIDDLE PENN) POOL
LEA COUNTY, NEW MEXICO

SCALE
DATE 10/1/69
DRAWN BY JVA
CHECKED
APPROVED
REVISED

PRODUCTION HISTORY
MOBIL OIL CORPORATION'S
BRIDGES-STATE LEASE
VACUUM (UPPER PENN) POOL
LEA COUNTY, NEW MEXICO

	Oil/Bbl	Gas/Mcf	Water/Bbl	GOR
Total Reservoir				
1964	339,430	397,050	209	1,170
1965	501,742	669,297	168	1,330
1966	672,460	1,004,959	8,302	1,490
1967	664,747	1,113,197	29,892	1,680
1968	575,433	1,011,970	16,293	1,760
January, 1969	47,958	69,822	1,655	1,460
February	39,839	65,461	1,547	1,640
March	41,254	65,598	1,581	1,590
April	40,484	62,293	1,422	1,540
May	39,890	65,688	2,613	1,650
June	37,838	65,231	2,645	1,720
July	36,479	70,344	2,400	1,930
	283,742	464,437	13,863	
Cumulative	3,037,554	4,660,910	68,727	
Bridges State Well #121				
1967 (3 mos.)	12,528	16,496	3,466	1,310
1968	24,438	32,326	2,396	1,320
January, 1969	976	954	68	975
February	708	773	0	1,090
March	771	858	54	1,110
April	768	787	54	1,025
May	674	892	47	1,325
June	698	866	39	1,240
July	233	331	0	1,420
	4,828	5,461	262	
Cumulative	41,794	54,283	6,124	

BJStubbs/WBSimmonsJr:bje
October 15, 1969

PRODUCTION HISTORY
MOBIL OIL CORPORATION'S
BRIDGES STATE LEASE
VACUUM (MIDDLE PENN) POOL
LEA COUNTY, NEW MEXICO

Total Reservoir

	Oil/Bbl	Gas/Mcf	Water/Bbl	GOR
1967 (4 mos.)	24,835	20,891	209	840
1968	50,198	81,109	1,329	1,620
January, 1969	1,410	2,255	230	1,600
February	1,871	1,800	402	960
March	1,388	1,710	0	1,230
April	1,373	2,287	0	1,665
May	1,385	2,701	0	1,950
June	1,250	2,653	0	2,085
July	1,591	2,017	0	1,265
	10,268	15,423	632	
Cumulative	85,301	117,423	2,170	

Bridges State Well #121

1967 (4 mos.)	24,835	20,891	209	840
1968	24,882	52,165	806	2,095
January, 1969	681	1,919	0	2,815
February	1,157	1,513	0	1,310
March	810	1,234	0	1,525
April	605	1,582	0	2,620
May	609	1,792	0	2,950
June	667	1,609	0	2,410
July	817	1,168	0	1,430
	5,346	10,817	0	
Cumulative	55,063	83,873	1,015	

BJStubbs/WBSimmonsJr:bje
October 15, 1969

RESERVOIR COMMINGLING DATA SHEET
MOBIL OIL CORPORATION'S BRIDGES STATE LEASE, WELL NO. 121
VACUUM (UPPER AND MIDDLE PENN) POOLS
LEA COUNTY, NEW MEXICO

	Vacuum (Upper Penn) Pool	Vacuum (Middle Penn) Pool
Production Information on Well No. 121 *		
Date of Test	6-29-69	6-28-69
Test - Barrels of Oil/Day	13	27
- Barrels of Water/Day	2	0
- Mcf Gas/Day	17	34
- Gas-Oil Ratio	1285	1250
Current Allowable	30 (Shut-in Since 9-69)	40
Current Average Production - Bbls Oil/Day	8	24
(Month of August, 1969) - Bbls Water/Day	0	0
- Gas-Oil Ratio	1418	1681
Reservoir & Fluid Characteristics of Well		
Date zone completed	8-24-67	8-21-67
Composition	Limestone	Limestone
Type of drive	Solution Gas	Solution Gas
Original BHP	N.A.	2129 psi
Current BHP	952 psi (MPP)	812 psi (MPP)
Connate water content (% pore space)	28% (Elec. Log Calc.)	20% (Elec. Log Calc.)
Gravity of oil (API°)	41.2	42.7
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Reservoir & Fluid Characteristics of Entire Pool		
Estimated productive area	1520 Acres	240 Acres
Type of structure	Anticlinal; porosity pinchout to north and east	Stratigraphic trap on anticlinal structure
Subsea depth of oil-water contact	6150'	Unknown
Average depth to top of pay	10,108'	10,436'

Reservoir & Fluid Characteristics of Entire Pool (Cont'd)	Vacuum (Upper Penn) Pool	Vacuum (Middle Penn) Pool
Average effective pay thickness	77'	38'
Average porosity (%) Elec. log calculations	3.5% to 9%; Avg. 6.3%	3.5% to 8.5%; Avg. 6.5%
Number of producing wells	17	2
Date of discovery well completion	June 1963	August 21, 1967
Proportional Factor	5.67	4.67
Top Allowable (NUA - 70 BOPD, Nov. '69)	397	318
Proration Size	80 Acres	40 Acres
GOR Limit	2000:1	2000:1

Note: * Production volumes obtained with existing rod pumping equipment operating unvented beneath a packer.

BFD/VLI/DMO/WBS:bje
10-30-69

ECONOMIC LIMIT CALCULATION SUMMARY
DOWNHOLE COMMINGLING OF VACUUM (UPPER & MIDDLE PENN) POOLS
MOBIL OIL CORPORATION'S BRIDGES STATE WELL NO. 121
LEA COUNTY, NEW MEXICO

Vacuum (Upper Penn) Zone

Operating Expense	$910/Month
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(Less Taxes & Royalty)	(0.642/bbl)
Net Value (after taxes & royalty)	$2.568/bbl
Economic Limit	354 BOPM

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Operating Expense	$924/Month
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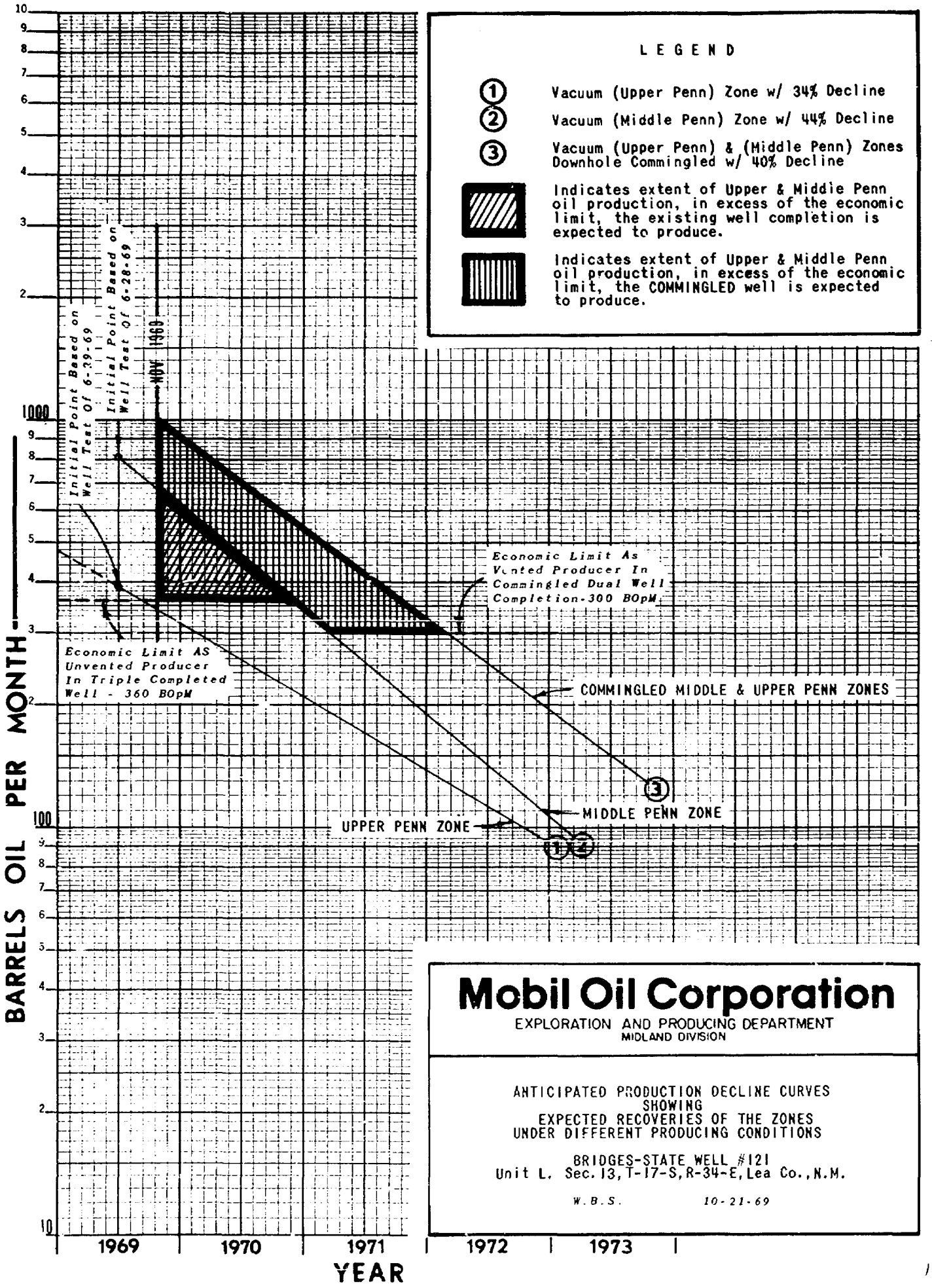
Net Value (after taxes & royalty)	$2.568/bbl
Economic Limit	300 BOPM

Note: Mobil's interest in both zones:
100% Working Interest
87.5% Net Interest

DMO/WBS:bje
10-30-69

12



Mobil Oil Corporation

EXPLORATION AND PRODUCING DEPARTMENT
MIDLAND DIVISION

ANTICIPATED PRODUCTION DECLINE CURVES
SHOWING
EXPECTED RECOVERIES OF THE ZONES
UNDER DIFFERENT PRODUCING CONDITIONS

BRIDGES-STATE WELL #121
Unit L. Sec. 13, T-17-S, R-34-E, Lea Co., N.M.

W.B.S. 10-21-69

MOBIL OIL CORPORATION'S BRIDGES STATE WELL NO. 121

COMPARISON OF EXPECTED OIL RECOVERY WITH THE VACUUM (UPPER & MIDDLE PENN) ZONES PRODUCED UNDER EXISTING CONDITIONS

VERSUS

THE TWO ZONES PRODUCED AS A SINGLE, VENTED, DOWNHOLE COMMINGLED ZONE

Vacuum (Upper Penn) Zone

Economically Recoverable Reserves	0 Bbls of oil
Productive Life (@ 34% Decline)	0 Months
Mobil's Net Revenue	$0
State's Revenue (Royalty & Taxes)	$0

(Note: Well was operating below its economic limit and was shut-in.)

Vacuum (Middle Penn) Zone

Economically Recoverable Reserves	6,674 Bbls of oil
Productive Life (@ 44% Decline)	1 Year, 1 Month
Mobil's Net Revenue	$17,139
State's Revenue (Royalty & Taxes)	$ 4,285

Operated With Both Zones Downhole Commingled

Economically Recoverable Reserves	17,122 Bbls of oil
Productive Life (@ 40% Decline)	2 Years, 4 Months
Mobil's Net Revenue	$43,969
State's Revenue (Royalty & Taxes)	$10,992

WBS:bje
10-30-69

COLEMAN PETROLEUM ENGINEERING COMPANY

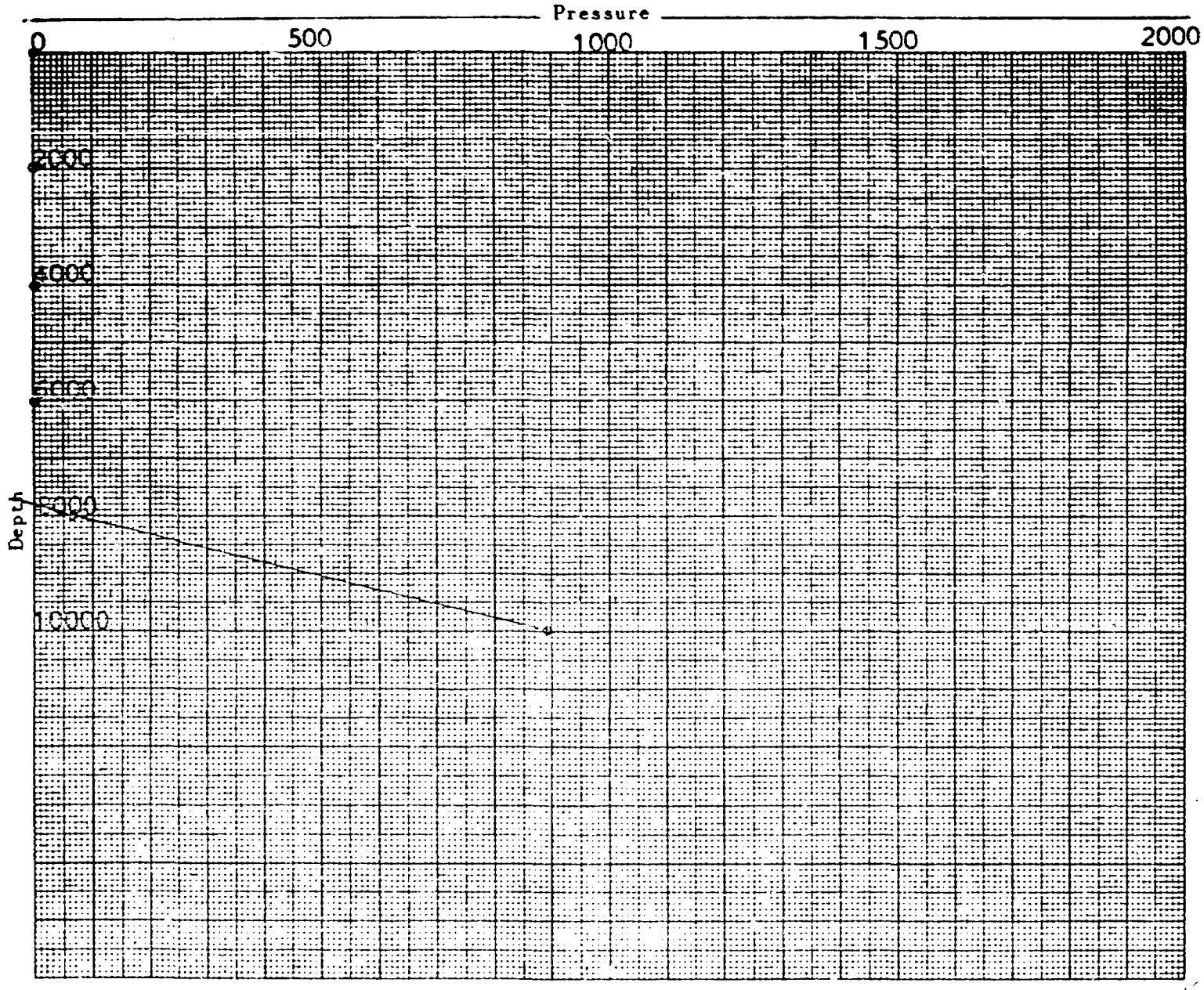
PHONE EXPRESS 3-3813
611 GRIMES
P O BOX 1029
HOBBS, NEW MEXICO

BOTTOM HOLE PRESSURE RECORD

OPERATOR Mobil Oil Corporation
FIELD Vacuum FORMATION Upper Penn
LEASE Bridges State WELL No. 121
COUNTY Lea STATE New Mexico
DATE 9-9-69 TIME 8:30 AM
Status Shut In Test depth 10000'
Time S. I. 48.0 Hrs Last test date Initial
Tub Pres. 0 BHP last test -
Cas. Pres. Triple BHP change -
Elev. 4020'GL Fluid top 7811'
Datum (-6127')** Water top 8000'
Temp. @ 156°F Run by Weaver
Cal. No. A2419N Chart No. 2

Depth	Pressure	Gradient
0	0	-
2000	0	-
4000	0	-
6000	0	-
8000	63	.032
10000	891	.414
10147(-6127)	952* **	(.414)

* Extrapolated Pressure
** Mid Point Of Casing Perforations



COLEMAN PETROLEUM ENGINEERING COMPANY

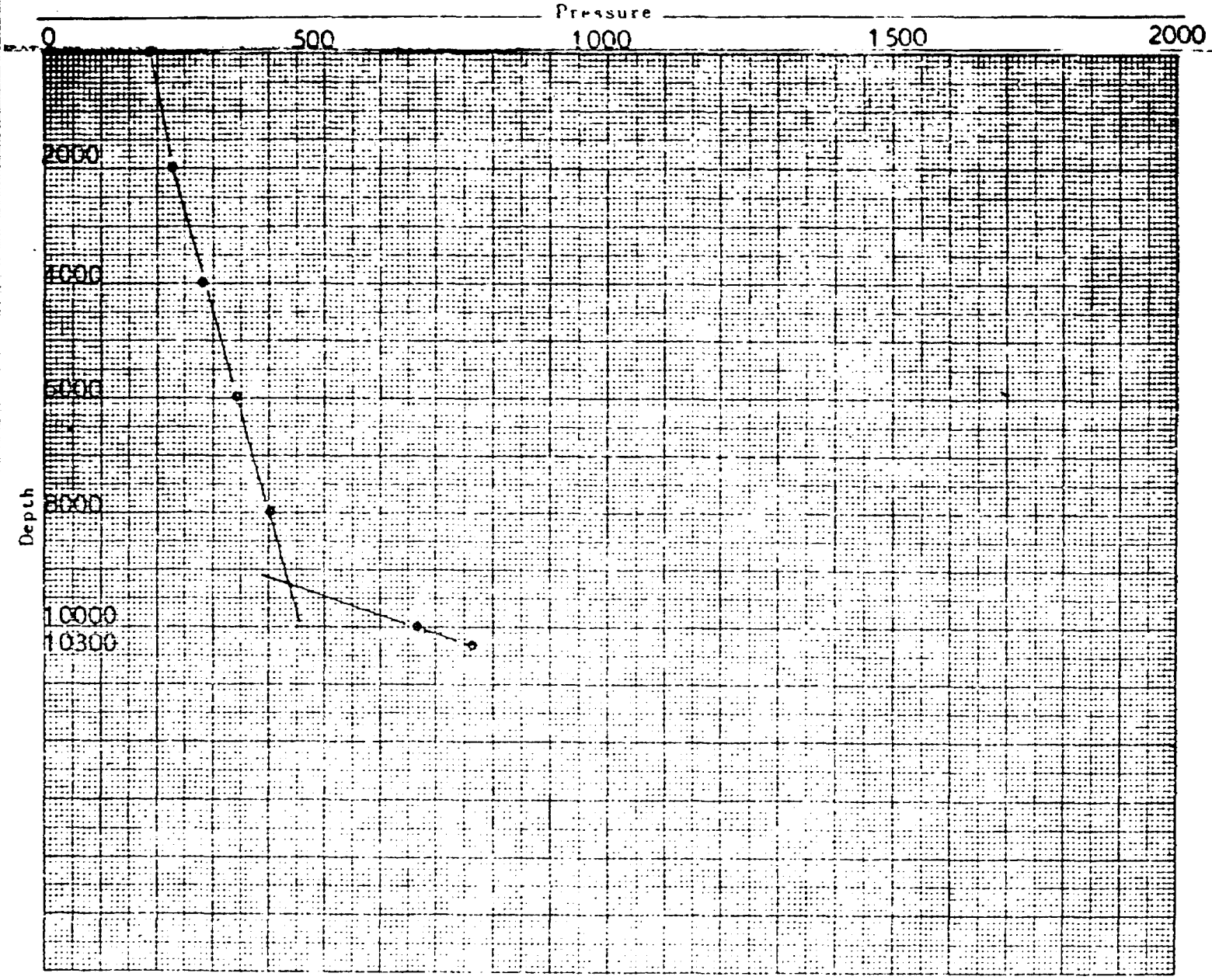
PHONE EXPRESS 3-3813
611 GRIMES
P O BOX 1829
HOBBS, NEW MEXICO

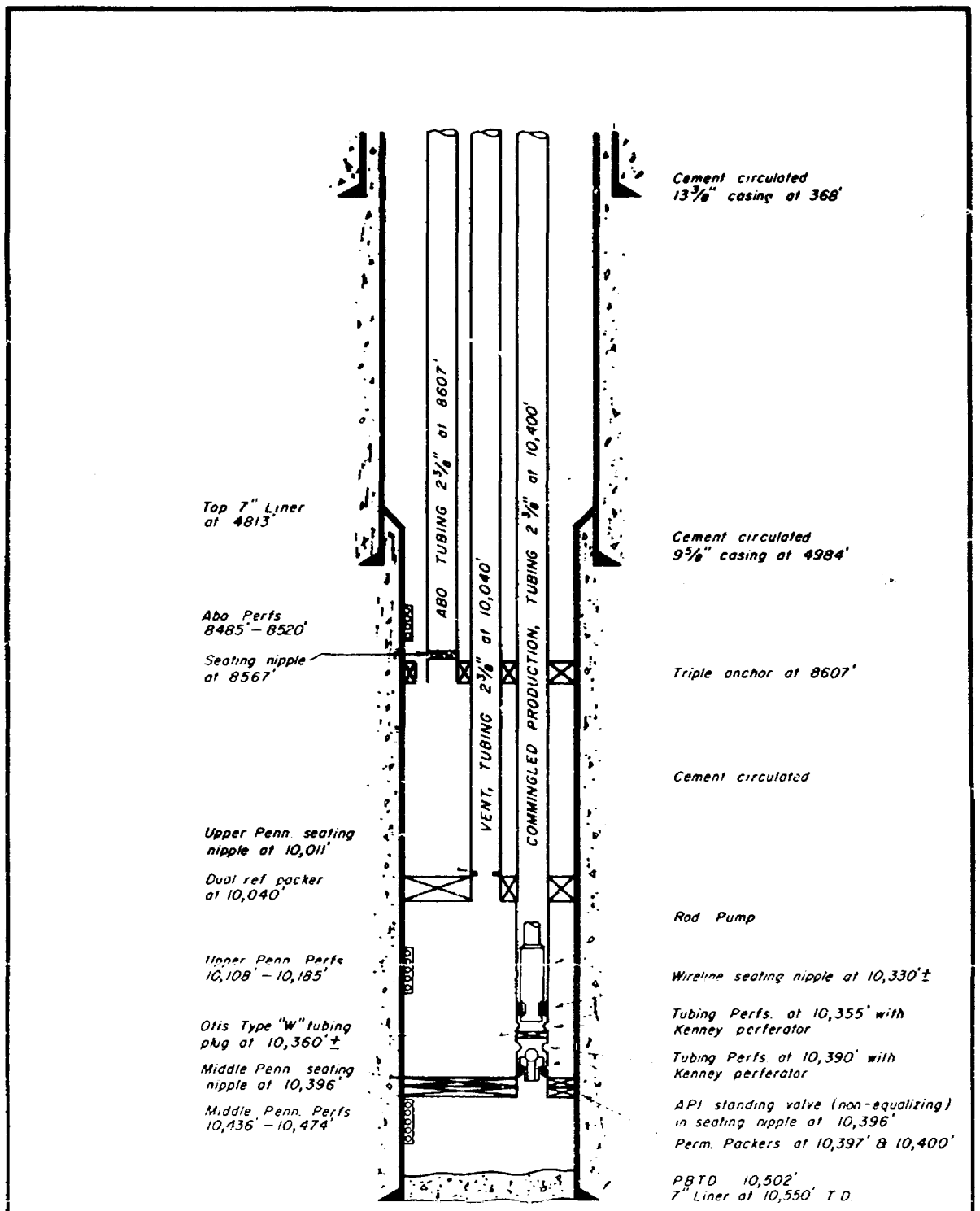
BOTTOM HOLE PRESSURE RECORD

OPERATOR MOBIL OIL CORPORATION
FIELD VACUUM FORMATION MIDDLE PENN
LEASE BRIDGES STATE WELL No. 121
COUNTY LEA STATE NEW MEXICO
DATE 9-9-69 TIME 7:00 AM
Status SHUT IN Test depth 10300'
Time S. I. 48.0 HRS Last test date 1-4-68
Tub Pres. 185 BHP last test 1011
Cas. Pres. TRIPLE BHP change 199# Loss
Elev. 4020'GL Fluid top 9275'
Datum (-6435')** Water top NONE
Temp. @ 148°F Run by WEAVER
Cal. No. A2419N Chart No. 1

Depth	Pressure	Gradient
0	185	-
2000	224	.020
4000	280	.028
6000	340	.030
8000	400	.030
10000	668	.134
10300	763	.317
10455(-6435)	812* **	(.317)

* EXTRAPOLATED PRESSURE
** MID POINT OF CASING PERFORATIONS





Mobil Oil Corporation

EXPLORATION AND PRODUCING DEPARTMENT
MIDLAND DIVISION

SCHEMATIC WELL BORE SKETCH
BRIDGES STATE WELL NO. 121
PROPOSED DUAL COMPLETION

LEA COUNTY, MEXICO

SCALE NONE
DATE 9/14/69
DRAWN BY E.C.M.
CHECKED BY
APPROVED
REVISED

~~GDB~~
10-28-69

State of New Mexico

Commissioner of Public Lands

ALEX J. ARMIJO
COMMISSIONER

October 22, 1969

P. O. BOX 1148
SANTA FE, NEW MEXICO

Mobil Oil Corporation
P. O. Box 633
Midland, Texas 79701

Re: APPLICATION FOR EXCEPTION TO NMOCC RULE 303 AND AUTHORIZING THE DOWNHOLE COMMINGLING OF THE VACUUM (UPPER PENN) ZONE & THE VACUUM (MIDDLE PENN) ZONE IN MOBIL'S BRIDGES STATE WELL NO. 121 LEA COUNTY, NEW MEXICO

Gentlemen:

Reference is made to your application dated October 16, 1969, requesting approval for downhole commingling of the Vacuum (Upper Penn) pool and the Vacuum (Middle Penn) Pool in Mobil's Bridges State Well No. 121, Lea County, New Mexico.

You are hereby given approval to the above request. Any deviation from your proposed request will be reason to cancel approval.

This approval is subject to the subsequent approval of the New Mexico Oil Conservation Commission.

Very truly yours,

Ted Bilberry

Ted Bilberry, Director
Oil and Gas Department

TB/MT/s

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

DISTRIBUTION
MONZINHO JESperling
ELLEDGE
WEIHRICH
PRORATION

00067 [illegible]

J. R. MODRALL
JAMES E. SPERLING
JOSEPH E. ROEHL
GEORGE T. HARRIS, JR.
DANIEL A. SISK
LELAND S. SEDBERRY, JR.
ALLEN C. DEWEY, JR.
FRANK H. ALLEN, JR.
JAMES P. SAUNDERS, JR.
JAMES A. PARKER

JOHN R. COONEY
KENNETH L. HARRIGAN
PETER J. ADANG
DALE W. EK
PETER J. BROULLIRE, III
CAMERON R. GRAHAM

LAW OFFICES OF
MODRALL, SEYMOUR, SPERLING, ROEHL & HARRIS
PUBLIC SERVICE BUILDING
P. O. BOX 2168
ALBUQUERQUE, NEW MEXICO 87103

JOHN F. SIMMS (1885-1954)
AUGUSTUS T. SEYMOUR
(1907-1965)

TELEPHONE 243-4511
AREA CODE 505

October 6, 1969

Case 4243

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

Re: Application of Mobil Oil Corporation for Exception to Commission Rule 303 and Authorizing the Downhole Commingling of the Vacuum Upper Penn Zone and the Vacuum Middle Penn Zone in Mobil's Bridges State Well No. 121, located in Unit L, Section 13, Township 17 South, Range 34 East, N.M.P.M., Lea County, New Mexico

Dear Mr. Porter:

Enclosed herewith, please find above-referenced application, which we would appreciate your filing and docketing for Examiner's Hearing on November 5, 1969.

Very truly yours,

James E. Sperling

JES:jv

Enclosures (3)

cc: Mr. Ira B. Stitt, w/encl.
Mobil Oil Corporation

DOCKET MAILED
Date 10-24-69

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF MOBIL OIL CORPORATION FOR EXCEPTION TO COMMISSION RULE 303 AND AUTHORIZING THE DOWNHOLE COMMINGLING OF THE VACUUM UPPER PENN ZONE AND THE VACUUM MIDDLE PENN ZONE IN MOBIL'S BRIDGES STATE WELL NO. 121, LOCATED IN UNIT L, SECTION 13, TOWNSHIP 17 SOUTH, RANGE 34 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO.

Case No. 4343

A P P L I C A T I O N

Mobil Oil Corporation, by this application, seeks exception to Commission Rule 303 and requests authority to commingle within the well bore of Mobil's Bridges State Well No. 121 production from the Vacuum Middle Penn Pool and Vacuum Upper Penn Pool, said well being located in Unit L, Section 13, Township 17 South, Range 34 East, N.M.P.M., Lea County, New Mexico, and in support of such application states:

1. That production from the Upper Penn zone has reached its economic limit under present producing methods and restrictions and the Middle Penn will reach its economic limit within the next year.

2. That if applicant is required to continue to produce from these zones as presently required, economic limits will be exceeded which will result in abandonment of otherwise recoverable oil from these zones which could be produced under less restrictive producing conditions.

3. That said well is located upon lands subject to lease from the Commissioner of Public Lands of the State of New Mexico and that the royalty under said lease is common to the two pools or zones which are the subject of this application.

4. That the granting of this application will prevent waste, protect correlative rights and will be in the best

interests of conservation.

Respectfully submitted,

MOBIL OIL CORPORATION

BY: MODRALL, SEYMOUR, SPERLING, ROEHL & HARRIS

By _____
James E. Sperling, its attorneys
800 Public Service Building
P. O. Box 2168
Albuquerque, New Mexico 87103

DRAFT

GMH/esr
11-7-69

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. 4243

Order No. R-3876

APPLICATION OF MOBIL OIL CORPORATION
FOR DOWNHOLE COMMINGLING, LEA COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on November 5, 1969, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this _____ day of November, 1969, 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, Mobil Oil Corporation, is the owner and operator of the Bridges State Well No. 121, located in Unit L of Section 13, Township 17 South, Range 34 East, NMPM, Lea County, New Mexico.

(3) That pursuant to authority granted by Order No. R-3330, the subject well was completed by the applicant as a triple completion (conventional) to produce oil from the North Vacuum-Abo, Vacuum-Upper Pennsylvanian, and Vacuum-Middle Pennsylvanian Pools through parallel strings of 2 3/8-inch tubing, with separation of zones by packers set at approximately 10,040 feet and 10,397 ~~to 10,400~~ feet.

(4) That the Vacuum-Upper Pennsylvanian and Vacuum-Middle Pennsylvanian zones are now capable of only low marginal production.

(5) That the applicant now proposes to complete the subject well in such a manner as to produce oil from the North Vacuum-Abo Pool through one string of 2 3/8-inch tubing and to produce the low marginal production from the Vacuum-Upper Pennsylvanian and Vacuum-Middle Pennsylvanian Pools through a single parallel string of tubing set just above the Vacuum-Middle Pennsylvanian perforations, commingling in the well-bore the production from the Vaccum-Upper Pennsylvanian and Vacuum-Middle Pennsylvanian oil zones, with separation of the North Vacuum-Abo zone and the commingled Vacuum-Upper Pennsylvanian and Vacuum-Middle Pennsylvanian zones by means of a packer set at approximately 10,040 feet.

(6) That the proposed commingling of the Vacuum-Upper Pennsylvanian and Vacuum-Middle Pennsylvanian zones may substantially extend the productive lives of said zones.

(7) That the reservoir characteristics of the Vacuum-Upper Pennsylvanian and Vacuum-Middle Pennsylvanian zones in the subject well are such that underground waste would not be caused by the proposed commingling in the well-bore.

(8) That the proposed commingling may result in the recovery of additional oil from each of the commingled zones, thereby preventing waste, and will not violate correlative rights.

(9) That the mechanics of the proposed completion are feasible and in accord with good conservation practices.

(10) That production tests of the Vacuum-Upper Pennsylvanian and Vacuum-Middle Pennsylvanian zones should be conducted, prior to commingling, to determine the production from each of said zones.

(11) That approval of the subject application will prevent waste and protect correlative rights.

(12) That Order No. R-3330 should be superseded.

IT IS THEREFORE ORDERED:

(1) That the applicant, Mobil Oil Corporation, is hereby authorized to complete its Bridges State Well No. 121, located in Unit L of Section 13, Township 17 South, Range 34 East, NMPM, Lea County, New Mexico, in such a manner as to produce oil from the North Vacuum-Abo Pool through one string of 2 3/8-inch tubing and to produce oil from the Vacuum-Upper Pennsylvanian and Vacuum-Middle Pennsylvanian Pools through a single parallel string of 2 3/8-inch tubing set just above the Vacuum-Middle Pennsylvanian perforations, commingling in the well-bore the production from the Vacuum-Upper Pennsylvanian and Vacuum-Middle Pennsylvanian Pools, with separation of the North Vacuum-Abo zone and the commingled Vacuum-Upper Pennsylvanian and Vacuum-Middle Pennsylvanian zones by means of a packer set at approximately 10,040 feet;

PROVIDED HOWEVER, that the applicant shall complete, operate, and produce said well in accordance with the provisions of Rule 112-A of the Commission Rules and Regulations insofar as said rule is not inconsistent with this order;

PROVIDED FURTHER, that the applicant shall take packer-leakage tests upon completion and annually thereafter during the Annual Gas-Oil Ratio Test Period for the Vacuum-Upper Pennsylvanian ~~Oil~~ Pool.

(2) That the production from the Vacuum-Upper Pennsylvanian zone and from the Vacuum-Middle Pennsylvanian zone in the subject well shall be established and future production allocated to said zones in the subject well in the proportion that the production from each of said zones in the subject well bears to the combined production from both of said zones until further order of the Commission.

(3) That the commingling in the well-bore authorized by this order shall continue only so long as the commingled production

of the two zones does not exceed the top unit allowable for either of said zones in the subject well.

(4) That Order No. R-3330 is hereby superseded.

(5) 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.