BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
MARCH 22, 1961

IN THE MATTER OF

CASE 2224: Application of Len Mayer for an unorthodox gas well location. Applicant, in the above-styled cause, seeks approval for an unorthodox gas well location in the Atoka-Pennsylvanian Gas Pool at a point 1650 feet from the South line and 990 feet from the West line of Section 28, Township 18 South, Range 26 East, Eddy County, New Mexico.

BEFORE:

Elvis A. Utz, Examiner.

T R A N S C R I P T O F P R O C E E D I N G S

MR. UTZ: Case 2224.

MR. MORRIS: Application of Len Mayer for an unorthodox gas well location.

MR. KELLAHIN: If the Examiner please, Jason Kellahin, Kellahin & Fox, Santa Fe, representing the applicant. We will have two witnesses I would like to have sworn, please.

(Witnesses sworn)

LEN MAYER,

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Would you state your name, please?

A Len Mayer.

Q Are you the applicant in this case, Mr. Mayer?

A Yes, I am.

Q Are you engaged in the oil business?

A Yes. I'm an independent oil operator of Roswell, New Mexico.

Q How long have you been so engaged?

A Approximately six years.

Q Have you been active in the Atoka-Pennsylvanian Pool?

A Yes, from the very start, since I started in the oil business. Approximately six years.

Q Are you familiar with the application in Case 2224?

A I am.

Q Would you state briefly what you propose in this application?

A I seek approval for an unorthodox gas well location in the Atoka-Pennsylvanian Gas Pool at a point 1650 feet from the South and 990 feet from the West line of Section 28, Township 18 South, Range 26 East, Eddy County, New Mexico.

Q Do you have a plat showing the ownership of the acreage involved and the adjacent area to the location?

A Yes, I do, that is marked as Exhibit No. 1.

(Whereupon, Len Mayer's Exhibit No. 1 was marked for identification)

Q Now, referring to what has been marked as Exhibit No. 1, would you discuss the information shown on that Exhibit?

A In Exhibit 1 I have acquired either by sublease or by direct leasing, the south half of Section 28, which I will dedicate for a standard gas unit. However, I am requesting to move the location of the proposed gas well into an unorthodox location, as mentioned before, 990 out of the West, 1650 feet out of the South of Section 28.

Q There is a well in the north half of that Section, is there not?

A Correct.

Q Do you own an interest in that well?

A Yes. I'm a working interest partner in the well in the north half of Section 28.

Q Who is the operator of that well?

A Yates Petroleum Corporation of Artesia.

Q Now, the plat which you have submitted shows what appears to be a dry hole immediately to the south, is that correct?

A That is correct.

Q What is the status of that well at the present time, and why is it shown as a dry hole?

A Actually speaking, in the northwest of the northeast quarter of Section 33, there were two wells drilled by E. P. Camp-

bell of Lubbock, Texas to test the Abo formation at an approximate depth of 6100 feet. Subsequently, the No. 2 well, marked on the land map, which I have passed out as Exhibit No. 1, was reentered, and a slim hole deepening was attempted by Mr. Campbell, and subsequently by Mr. Leland Nix who took over operations of the well. At the present time the operations on the well are temporarily suspended. The well, what little I know about it, was a very peculiar situation in that they drilled out from under five and one-half inch casing at a depth of 6100 feet and drilled to a depth of approximately 9100 feet where they set two and one-half inch, well, two and 7/8ths inch tubing or casing as a production string, and it was determined after they had set the pipe that they had possibly set it too high. So as near as I know, they attempted then with a one and one-half inch drill stem to drill out from under the two and one-half inch casing and subsequently, I don't know whether they deepened it or not, and then I understand there is litigation at the present time on the properties. There has been nothing conclusive from the test. I personally feel that it was never drilled deep enough to encounter the main Atoka-Pennsylvanian pay. They did get, as I understand, some pressure and some measurable amount of gas on tests of the well, after they had subsequently deepened it, slim holed it to the depth of 9100 feet.

Q Did the well appear on the plat, then, as a dry hole?

A It was a dry hole in the Abo --

Q In the Abo?

A -- and was abandoned, and then, subsequently, reentered.

Q Then, your plat does not mean to reflect that it was a dry hole in the Atoka-Pennsylvanian Pool?

A No, it does not.

Q Based on your experience in this area, was the well drilled deep enough to adequately open the Atoka pay?

A Please be it understood that I'm not a geologist, but from my participation in three wells drilled in the Atoka-Pennsylvanian field, and what we can determine from logs, I do not feel that the well reached sufficient depth to completely test the Atoka-Pennsylvanian pay.

Q Based upon your experience in this Pool and not testifying as a geologist, what is your reason for wishing an unorthodox location for the well you propose to drill?

A Well, I feel that in a standard location in Section 28, that I will encounter the pays present in the Atoka-Pennsylvanian field. However, in the last well drilled, the Yates Petroleum Corporation No. 1 Len Mayer, which is located approximately 990 feet out of the north and west quarter of Section 28, we found that as we moved to the southeast that we were losing our permeability and porosity to such an extent that the main pay in portions of it had shaled out. For that reason, I feel that a standard location in Section 28 would cause us to encounter a very thin pay section as opposed to the unorthodox location, which I request in the northwest quarter of the southwest quarter of Section 28.

Q Based upon your experience, have you found any reason to believe that the pay would be absent in the western portion of the tract you propose to dedicate?

A Come again.

Q Based upon your experience, did you find anything that would lead you to believe there would be no pay whatever present in the western portion of the tract?

A No. I feel that the pay would be present. We have fairly good control in there now, and I feel very definitely that the pay would be present.

Q What is the depth of the Atoka-Pennsylvanian formation in this area?

A To fully test the Atoka-Pennsylvanian section, I would estimate somewhere between 9250 and 9300 feet.

Q Do you have any information on the cost of wells projected to that horizon?

A Well, from invoices which I received on the other three wells with which I was connected, depending on the amount of testing or coring that you have to do, and subsequent treatment upon completion, they could range anywhere from one hundred sixty thousand to two hundred and ten thousand dollars.

Q Would that be a factor in leading you to seek the unorthodox location which you seek here?

A Very definitely.

Q Was Exhibit No. 1 prepared under your supervision?

A That is correct.

MR. KELLAHIN: At this time I would like to offer in evidence Exhibit No. 1.

MR. UTZ: Without objection, Exhibit No. 1 will be entered into the record.

MR. KELLAHIN: That's all the questions I have of the witness.

CROSS-EXAMINATION

BY MR. UTZ:

Q Mr. Mayer, the Nearburg & Ingram well in the north half of Section 27, is that an Atoka-Pennsylvanian well?

A Yes.

Q How good a well is it?

A The well has a good deliverability. I do not know the open flow potential. I believe Mr. Gray, who will testify after me, has the potential on the well. Until this last week, Transwestern Pipeline was taking an estimated two million feet per day from this well, and this past week Transwestern has cut it in half in the feet per day because their line is too full, and weather conditions in California do not allow them to take a full capacity take on gas.

Q And this well shows a dry hole in the north half of Section 32, Ohio, Gulf and Western Ventures. How deep is that well?

A You say in the north half of 33?

Q 32.

A North half of 32. That is an Atoka-Pennsylvanian well, and, at the present time, is standing by on orders, but appears to be a dry hole. That's located in the northwest quarter of 32.

Q Yes.

A Yes, sir.

MR. UTZ: It would appear that somewhere between the Nearburg & Ingram No. 2 and the well in the west of Section 32 the Atoka-Pennsylvanian plays out?

A That could be. The Ohio well has not been technically abandoned. I understand the last well that we drilled, the Yates No. 1, Bob Gushwa well located in the south half of Section 21, uncovered what we call a sea-sand pay in the Atoka-Pennsylvanian, which was quite prolific, and, which I understand, Ohio has not tested in this well, and I believe they have intentions of testing it.

Q The Ohio well in Section 29, is that an Atoka-Pennsylvanian well?

A Yes, sir,it is.

Q Is it a good well?

A Yes, a very good well.

Q The Yates Petroleum Gulf Oil Company in the north half of 28, is that a good well?

A Yes, sir. That is a good well.

MR. UTZ: Any other questions of the witness? Mr. Morris.

BY MR. MORRIS:

Q In the event the application were denied, would you drill in an orthodox location in the southeast quarter of Section 28?

A At this time I cannot say. It would be an extremely -- from my point, and the reason for my request for the unorthodox location, it would be an extremely ticklish proposition for the cost.

Q Yet, you feel that you do have 320 acres --

A Yes, sir, I do.

Q -- of productivity?

A I feel that due to permeability and porosity, I will definitely encounter the main pay, but when I encounter the tighter zone, I will not have the deliverability that I would have with a highly permeable zone, which I feel I would encounter in the unorthodox location.

MR. MORRIS: That's all.

BY MR. PAYNE:

Q Mr. Mayer, do you feel that locating your well where you propose will have an adverse effect on the south half of Section 29?

A No, sir, I do not.

Q This pool is not prorated at the present time?

A No, sir, it is not.

Q I assume that you are aware that if and when the pool

becomes prorated, it might be that some offset operator might ask for an adjustment of your allowable due to the non-standard location?

A I had not foreseen that, sir, because in the field proper itself there are two wells already producing in a non-standard location.

Q Were they drilled prior to the pool rules?

A I don't believe. I believe maybe one of them was the standard Everest. However, I'm not certain. There has been, as I understand, two petitions for field rules in this pool, and at the present time this particular order is temporary. I know that the other one drilled in which I joined in the working interest, located in the southwest of the northeast quarter of 21, was a non-standard location, and it was drilled after the field rules were established.

Q Of course, if this eventuality should occur, presumably, it could occur to any well on unorthodox location that had been drilled since the pool rules went into effect. It's just a possibility. I don't know that any offset operator would even ask that it be adjusted.

A Well, of course, I hadn't foreseen anything of that nature.

MR. PAYNE: That's all. Thank you.

MR. UTZ: Any other questions? The witness may be excused.

(Witness excused)

MR. KELLAHIN: I would like to call Mr. Gray, please.

RALPH GRAY,

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Would you state your name?

A Ralph Gray.

Q What business are you engaged in, Mr. Gray?

A Consulting engineer.

Q In your capacity as consulting engineer, have you been retained by Mr. Mayer in connection with Case 2224?

A Yes, I have.

Q Have you previously testified before the Oil Conservation Commission as a petroleum engineer and geologist, and had your qualifications accepted?

A Yes, sir.

MR. KELLAHIN: Are the witness' qualifications acceptable?

MR. UTZ: Yes, sir, they are.

Q (By Mr. Kallahin) Have you made a study of the area involved in this application?

A Yes, I have.

(Whereupon, Len Mayer's Exhibit No. 2 was marked for identification.)

Q Now, referring to what has been marked as Exhibit No. 2, will you discuss the information shown on that Exhibit?

A Exhibit No. 2 is a copy of a portion of the gamma ray neutron log on Yates Petroleum Corporation Len Mayer No. 1. The purpose of this Exhibit is to show a typical log in the area and to show the sands which are present in the area. You will note that there are three sands present which we designate as "A," "B," and "C" sands. The "B" sand is the main producing sand in the area.

Q Have you examined logs on other wells in this area?

A Yes, sir.

Q Is this generally the picture throughout the Atoka-Pennsylvanian Pool as it is presently developed?

A Generally speaking. Of course, the sand thicknesses vary considerably from well to well, but the three sands are present over most of the entire area.

Q Are all three of them productive of gas?

A Not always. In some wells, in quite a few of the wells only the "B" sand has actually been tested, but in other wells, possibly the "A" and "B" sands may be productive, and then in other wells the "B" and "C" sands might be productive. So, there is a variation throughout the field in the productivity of the three sands.

Q What are the general characteristics of the sand involved here?

A These sands are generally a coarse grain, clean sand Pennsylvanian age.

Q Is there a tendency to shale out at any point in the area?

A Well, in some areas there is a tendency to shale out, especially as you get close to what we consider the edge of the field or as the sands thin out. There's a tendency sometimes to have some shaling out effect.

(Whereupon, Len Mayer's Exhibit No. 3 was marked for identification.)

Q Referring to what has been marked as Exhibit No. 3, will you discuss the information shown on the Exhibit, please?

A Exhibit No. 3 is an isopach map showing the thickness of the "B" sand. The 320-acre Len Mayer Stallings' lease is indicated by the yellow colored tract, and this shows the proposed location of the unorthodox location. The blue figures indicate the thickness of the "B" sand at each individual well. The red figures indicate the initial potential of the wells, a million cubic feet of gas per day. This well, a study of the map will show that the higher potential wells are found generally down the middle of the sand in the main portion, and then as you approach the edge of the productive area, you will notice that the initial potential, generally speaking, declines. Also we have found that as we approach the edges or approach the thinning section, we find that the permeability decreases too.

Q Based upon your study of that area, what are the general characteristics of the Atoka-Pennsylvanian Pool as to its formation and continuity?

A Well, the limits of this sand body have not been determined in a northeasterly and southwesterly direction. On the present information, it's indicated that its stratigraphic accumulation of oil, and we're not certain just how far it will extend in these other directions.

Q What do you mean, of gas or of oil?

A Of gas, excuse me.

Q The contour lines, as shown on there, are the isopach pay thickness, is that correct?

A That's right.

Q You show a zero contour running through the southeast corner of the tract involved here.

A Southeast.

Q You heard Mr. Mayer's testimony with regard to the well located in Section 33. What is your opinion of the situation there, Mr. Gray?

A I am of the opinion that Mr. Mayer would be running quite a risk in drilling a well on the southeast quarter of Section 28. I feel that the gas actually exists over the entire 320 acres, but from experience in working in the field, I know that as you approach what we consider the edges of the production, or where the sand thins up considerably, we know that the permeability de-

creases. I feel that he would be taking quite a little chance in drilling a well in the southeast quarter of the Section. I think he would get some kind of a well, but it's possible that the permeability would be so limited that there would be considerable doubt that he would be able to recover his proportion of the gas, and that very likely his tract would be drained by these more permeable wells which offset him.

Q Are you referring, then, to the well to the north, the Yates well, and the well to the west?

A Yes.

Q The Ohio well?

A All of these other wells in the area have mugh higher permeabilities, I think, than what he could expect to get.

Q Do you know what the permeabilities on those wells are?

A Yes. I have seen core analyses on various wells, and I know that the permeabilities in the better wells in the field are -- quite often, it's pretty common to have permeabilities ranging from a thousand to six thousand millidarcies.

Q On that basis, in your opinion, will one well drain in excess of 320 acres?

A Yes, I think it's very possible.

Q If Mr. Mayer encountered the situation on the eastern portion of his lease that you discussed, would he then be able to protect himself against drainage to the west and to the north?

A No. If he encountered this very low permeability, which

we normally expect to get, as we get closer to the edge, I doubt if he'd be able to protect drainage from his lease. I think he would probably suffer drainage.

Q At the present time, do you think he is suffering drainage?

A Yes, sir.

Q It is your feeling that the wells offsetting him are draining gas from under his acreage, is that correct?

A Yes, to a certain extent; yes, sir.

(Whereupon, Len Mayer's Exhibit No. 4 was marked for identification).

Q Now, referring to what has been marked as Exhibit No. 4, would you discuss the information shown on that Exhibit, please?

A No. 4 is an isopach map showing the thickness of the "A" sand in the field. You will note that there's quite a difference in the sand thickness of this sand as compared to the "B" sand, and in this particular case you will note that we do not expect the "A" sand to be, or to completely cover the south half of Section 28. It's my feeling that a regular location, which would be in the southeast quarter of Section 28, may entirely miss the "A" sand or, in any event, would encounter a very thin section of it; whereas a well in the southwest quarter of Section 28 would probably encounter enough thickness in the "A" sand to permit recovery of some of that gas.

Q Then, a location in the eastern portion of the lease

would deny Mr. Mayer the right to produce his share of the gas existing in the "A" sand?

A Most probably.

Q The "A" sand is productive, is it not?

A The "A" sand is productive in some wells, but not over the entire field.

Q Would the "A" sand alone be a commercial zone to develop?

A Generally speaking, it isn't a very prolific sand as we know it in some of the older wells, but the well in the northwest quarter of Section 28, the Yates Drilling Company, Len Mayer Well, encountered the "A" sand and was actually perforated in it. I feel that in some areas that the "A" sand is going to be productive and will contribute to production from the field.

Q Do you consider it a separate common source of supply from the "B" sand or "C" sand?

A Yes, I think so.

Q Yet they're all in the same pool?

A Designated in the same pool.

Q Are they open in the well bore in other wells in the pool?

A Yes, sir.

Q So, if there is no communication in the formation, there is communication to the well bore at the present time, is there not?

A That's right.

Q Are the permeabilities in the "A" sand relatively high as compared to your testimony in regard to the "B" sand?

A No. I think that generally the permeabilities in the "B" sand are higher than they are in the "A" sand. As I stated, the "B" sand is really the main producing sand in the field.

Q Would Mr. Mayer suffer drainage if he's not permitted to produce the "A" sand?

A Yes. I think it's very possible that if he drilled in the southeast quarter of Section 28, and did not encounter the "A" sand, I'm quite certain that he would suffer some drainage from the other portion of the lease.

Q Do you have anything to add to your testimony, Mr. Gray?

A No, sir, I don't believe so. I believe it's been stated that there are two wells in the field already that do not conform to the regular spacing pattern, so I believe that's all I have to offer.

Q Were Exhibits 2, 3 and 4 prepared by you or under your supervision?

A Yes, sir.

MR. KELLAHIN: We would like to offer in evidence Exhibits 2, 3 and 4.

MR. UTZ: Without objection, Exhibits 2, 3 and 4 will be entered into the record.

MR. KELLAHIN: That's all.

MR. UTZ: Any questions of the witness?

CROSS-EXAMINATION

BY MR. PAYNE:

Q Mr. Gray, do you believe that if you drilled a well in the northeast quarter of Section 28 and dedicated the east half, and dedicated the west half to the Yates Drilling Company Well No. 1, that those two wells would be better than the Yates Well No. 1 and the well at the proposed location, based on your contour map?

A Well, I don't believe I can answer that question definitely.

Q Well, according to your contours, you would probably -- you probably would encounter more feet of net pay, wouldn't you? For instance, in the northeast quarter than in the southeast quarter of 28?

A Oh, yes, I think definitely that a well in the northeast quarter of Section 28 would encounter a greater thickness of sand than a well drilled in the southeast quarter of that Section.

Q Mr. Mayer, is the ownership of the south half and the north half of Section 28 the same?

MR. MAYER: No, it is not.

Q How does it differ insofar as the working interest is concerned?

MR. MAYER: The working interest in the north half is owned, 50 percent by the Yates Petroleum Corporation, and then a group in Roswell, including myself, the Etz Brothers, and Mr. T. J. Jackson own the other 50 percent of the working interest. I

might add that as concerns these three wells, the Howard Olsen, the Yates Petroleum Gushwa well, and the Yates Petroleum Len Mayer, that I began leasing some five years ago, an old abandoned townsite by lots and blocks, and finally got it together about last August, and then we conducted quiet title action and commenced drilling operations in the townsite proper. The Gulf Oil Corporation joined us and the Yates Petroleum Corporation Len Mayer with acreage that they owned; whereas the south half of Section 28 is fee tracts, several fee tracts owned by different individuals.

Q In drilling the Yates Drilling Company Well No. 1, do you know if any attempt was made to find out if the Abo was productive?

MR. MAYER: Yes. We drilled the well with air down till we hit fluid and encountered the Abo formation, of which it was nonproductive. As you know, drilling with air, your samples are blown out into the open, and all we got was a rather dense dolomite until we got down into the Abo a little ways and encountered water, at which time we had to mud up and continue the well with a total depth of well.

Q Those old wells of E. P. Campbell's in Section 33, they were originally Dayton-Abo wells?

MR. MAYER: I believe they classified at -- the actual well is located around the juncture of Sections 34, 35, 26 and 27. In that corner there. Mr. Campbell reentered another slim hole operation and took it into the Abo section. However, I understand that that is not true Abo reef production.

Q Do you propose to test the Abo in your location?

MR. MAYER: Yes, sir, we will.

MR. PAYNE: Thank you.

MR. UTZ: Any other questions of the witness?

BY MR. UTZ:

Q Mr. Gray, on your Exhibit No. 3 where you contoured the "B" sand, I have been wondering why you protrayed as two noses coming into Section 21 instead of going right on through with it --

A Well, --

Q -- with one, with eight feet there between the two wells. Is that 845 feet of pay?

A No. The red number indicates AIP. It had an 845 feet per day. The blue figures indicate the sand thickness. This twenty-five foot contour, of course, a contour map can be drawn many ways, depending on how you interpret the thing, but to me, this was a reasonable interpretation of the data that exists.

MR. KELLAHIN: Actually, that is an isopach map, not a contour map.

A Well, yes, you might say there's some similarity, and it's very possible to connect these things and draw a little neck in there. I don't think that it would particularly be significant. Like I say, I think this thing could be changed slightly and drawn different ways, but, to me, this portrays a reasonable picture as we know the thicknesses exist.

Q The red figures are the absolute open flows --

A Yes.

Q -- you say, in millions?

A Yes. The red figures indicate the calculated open flow in million cubic feet per day. That's the absolute open flow. You will note, of course, down the center of this thing you get a real high potential; the highest one is this five hundred forty-five million, and then there's one one hundred sixty-three million, and forty-three million. And, then, as you get down into the south part of this thing, for instance, the Nearburg & Ingram Hawkins Well, only had seven million, which is a very low potential in comparison to a lot of these other wells. I think your potentials indicate that you would lose your permeability as you approach the edge of the field.

Q According to the potentials, the cances are, in this quarter, you wouldn't get too hot a well, is that the way it looks?

A Pardon?

Q I say, if you were to contour the potentials, the chances are, in drilling in your proposed location, you wouldn't get too good a well?

A No, I don't expect a highly prolific well. In other words, I think the potential will be on the low side in comparison to the average of the field.

MR. UTZ: Are there questions of the witness? If not, the witness may be excused.

(Witness excused)

MR. UTZ: Any other statements in this case?

MR. KELLAHIN: The only statement I would like to make is that Mr. Mayer has the acreage on a farmout and he does have a drilling commitment, and anything the Commission can do to expedite the decision will be appreciated.

MR. MORRIS: We have received a communication from The Ohio Oil Company, an offset to the west. I won't read it in its entirety, but we will place it in its entirety into the record.

"Gentlemen:

We have noted that hearing has been set for March 22 on request of Mr. Len Mayer for approval of an unorthodox location for an Atoka Penn gas well 1650' FSL and 990' FWL of Section 28, Township 18 South, Range 26 East, Eddy County, New Mexico. Although we have received no additional information concerning Mr. Mayer's acreage since our letter of February 24, 1961, we anticipate that at the hearing he will present such pertinent information as he may have.

As we do not plan to have a representative present at the hearing, we considered it appropriate to advise you and Mr. Mayer of our position in this matter.

If the evidence at the hearing establishes to the satisfaction of the Commission that the proposed unorthodox location is justified and that correlative rights of interested parties will not be adversely affected, we would have no objection to either the unorthodox location or the dedication of the entire S/2 of Section 28 to the well without restriction of the allowable below the allowable of wells on other standard units in the Pool.

Very truly yours,

/s/ I. G. Burrell
/t/ I. G. Burrell"

MR. UTZ: Are there other statements? The case will be taken under advisement.

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, ADA DEARNLEY, Court Reporter, in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Proceedings before the New Mexico Oil Conservation Commission was reported by me in machine shorthand and reduced to typewritten transcript under my personal supervision, and that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal this, the 11th day of April, 1961, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Ada Dearnley
NOTARY PUBLIC

My Commission expires:

June 19, 1963

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2224, heard by me on March 22, 1961.

, Examiner
New Mexico Oil Conservation Commission