CASE 5199: Application of WM. G. ROSS FOR AN UNORTHODOX GAS WELL LOCATION, EDDY COUNTY, NEW MEXICO

# CASE 110. 5199

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# BEFORE THE NEW MEXICO OIL CONSERVATION COMMISSION Santa Fe, New Mexico March 27, 1974

### **EXAMINER HEARING**

### IN THE MATTER OF:

Application of Wm. G. Ross for an unorthodox gas well location, Eddy County, New Mexico.

Case No. 5199

BEFORE: Daniel S. Nutter, Examiner.

TRANSCRIPT OF HEARING

### APPEARANCES

For the New Mexico Oil Conservation Commission:

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Commission
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For the Applicant:

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### ROSS-DIRECT

MR. NUTTER: Call Case 5199.

MR. CARR: Case 5199. Application of Wm. C. Ross for an unorthodox gas well location, Eddy County, New Mexico.

MR. HINKLE: Clarence Hinkle, Hinkle, Bondurant, Cox & Eaton, Roswell, appearing on behalf of William G. Ross. We have two witnesses and four exhibits.

MR. NUTTER: Call for other appearances.

MR. KELLAHIN: Jason Kellahin, Kellahin & Fox, Attorneys for Felmont Oil Corporation. We have one witness.

MR. CARR: All the Witnesses stand please.

(Witnesses sworn.)

### WILLIAM G. ROSS

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

### DIRECT EXAMINATION

### BY MR. HINKLE:

- Q State your name and your residence, please?
- A I am William G. Ross, I live in Midland, Texas, and am an independent oil operator.
  - Q You are the Applicant in this Case?
  - A Yes.
  - Q What are you seeking to accomplish by this

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### Application?

A To secure approval for an unorthodox gas well location which would be 1650 feet from the south line and 660 feet from the east line of Section 10, 18 South, 26 East, the old Atoka-Pennsylvanian Gas Pool, Eddy County, New Mexico, and the east half of Section 10 will be dedicated to the Well.

- Q Have you prepared the exhibit marked Exhibit No.

  1, or was it prepared under your direction?
  - A Yes.
  - Q Refer to this Exhibit and explain what it shows.
- A It shows the lease ownership surrounding the east half of Section 10; also the lease ownership of acreage surrounding that.
  - Q Do you own all of the east half of Section 10?
- A I own it or control it by farm-out from Chevron Oil Company, and I own approximately 50 percent, 159 acres to be exact, and I've secured a farm-out from Chevron on the other 161.
- Q Has the Standard of Texas, or Chevron, agreed to the unorthodox location that you propose?
- A Yes, sir, they have agreed to as much as shown on the farm-out to the location in the east half of

<sub>age</sub> 5

Section 10.

MR. NUTTER: Let me interrupt here. What do the Pool Rules require as a standard location?

MR. ROSS: 990 from the quarter section line.

MR. NUTTER: The well is required to be in the northwest or the southeast?

MR. ROSS: That's right.

MR. NUTTER: So you are in the proper quarter section?

MR. ROSS: That's right.

MR. NUTTER: But you're not 990?

MR. ROSS: No, the only thing, I'm proper distance from the south line or the north line but I'm asking to move it over from 990 to 660.

MR. NUTTER: 330 feet closer than the Pool Rules require. I just want to be sure I understand.

### BY MR. HINKLE:

Q Under your farm-out agreement with Standard of Texas, when are you to commence the Well?

A The Well is to be started on or before April 30, 1974.

Q Does Standard of Texas have any other acreage other than in the east half of 10?

### ROSS-DIRECT

A Yes, sir, they own, or did own and have farmedout to Felmont, is my understanding, on the acreage to the
east which is the west half of Section 11, upon which
Felmont drilled a well. They also own acreage to the
southeast, to the south, and to the west.

Q Do you have any additional options with Standard to drill --

A (Interrupting) I have the option, upon completion of this well, to drill on their acreage in the southwest quarter of Section 10, which is 110 acres in there that they own.

MR. HINKLE: We would like to offer Exhibit No.

1, and that's all of this Witness.

MR. NUTTER: Exhibit No. 1 will be admitted into evidence.

(Whereupon, Applicant's Exhibit

No. 1 was admitted into evidence.)

MR. HINKLE: That's all we have.

MR. NUTTER: Are there any questions of this

Witness?

MR. KELLAHIN: No questions.

MR. HINKLE: Okay, we would like to call our

next witness.

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(Witness previously sworn.)

### C.R. APPLEDORN

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

### DIRECT EXAMINATION

### BY MR. HINKLE:

- Q State your name and your residence?
- A My name is Conrad Appledorn, I'm a Petroleum Engineer in Santa Fe.
  - Q Are you a Consulting Engineer?
  - A Yes.
- Q Have you been employed by Bill Ross in this Case?
  - A Yes.
- Q Have you made a study of the area that is involved?
  - A Yes, I have.
- Q Have you previously testified before the Commission?
  - A Yes, I have.
- Q Your qualifications as a Petroleum Engineer are a matter of record with the Commission?
  - A Yes, they are.

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MR. HINKLE: Are his qualifications acceptable?

MR. NUTTER: Yes, they are.

### BY MR. HINKLE:

- Q Have you prepared or has there been prepared under your direction the instruments marked as Exhibits 2, 3 and 4?
  - A Yes, I prepared them.
  - Q Refer to Exhibit 2 and explain what this shows.
- A Exhibit 2 is a structure map; the datum is the top of the Morrow El shale, which we will see on Exhibit No. 3 more clearly. It is simply an illustration. The structure in this area is a simple monocline striking northeast southwest and dipping to the southeast. The dip is somewhat variable but the monoclinal surface is broken by only very minor noses and the gas in the Atoka-Penn Pool apparently is entirely stratigraphic. The structure map illustrates that gas accumulation has a total relief from northwest to southeast of some 500 feet and within the area of the Atoka Pool in Sections 11, 14 and 15, it has a total relief of 130, 140 feet. The accumulation apparently is entirely stratigraphic.
- Q Now, you have marked A and A'. What does that represent?

### APPLEDORN-DIRECT

A That represents the cross section which will be Exhibit No. 3.

MR. HINKLE: Did you get copies of these?

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

### BY MR. HINKLE:

Q Now, refer to Exhibit No. 3 and explain what this shows.

A Exhibit No. 3 is a cross section of the Morrow

A,B and C Zones. The structural datum that was used in

Exhibit No. 2 is indicated as the top of the Bl shale

and is the actual datum on which this cross section is built.

The purpose of this cross section is to show the marked thickening and thinning across the Atoka Pool. The development of commercial production is apparently controlled by the total thickness of the "B" sands. The thickness of the "B" sands is further controlled by the amount of sand within each section as opposed to the amount of shale. As we leave the area of the field, which would be toward the David Fasken, Henry Brenner No. 1, or the first well on the Section, we can see that the total Section is quite thin, roughly 50 feet, and it is composed mainly of shale with that thin B2 sand at the bottom.

### APPLEDORN-DIRECT

As we approach the field from the northwest, coming into the area of the field in which Felmont Oil Corporation Aaron Unit No. 1 in Section 11, we find a total thickness of sands which are further broken down into three sands. These sands are all productive; two of them have been perforated, the Bl sand, the sand underneath the Bl has not been perforated and then the B2 sand is perforated. Now, the main producing horizon in the Atoka-Penn Pool is the B2 sand. The Bl sands has been found to be productive in the last three years; it is sometimes on some correlations referred to as the "A" sand. It's productive in the west Atoka Pool and here in the north end of the Atoka-Penn Pool.

Q This also shows the proposed location of the Well, does it not?

A Yes. The schematic location of the William G.
Ross Well will be at the location shown on the cross section. The "C" Zone and the "A" sands at the top and bottom of the cross section are sporadically productive and usually fairly small and may be very high pressure, but they don't have too much production within the area of the Pool.

Q Now, I take it that the objective of moving this

location 330 feet east is to have a better chance of penetrating the B1?

A It's shown grafically on the cross section. The farther one goes the closer one gets to a thicker section of sand. The William Ross location on the western flank of the build-up is in a area that is quite risky, and in order to reduce risk we must move as far east as we can.

Q Do you have any further comments with respect to this Exhibit?

A No.

Q All right, refer to Exhibit 4 and explain what this shows?

A Exhibit 4 is an isopach map of the Morrow'B"

Section which we have just seen illustrated on the cross section.

MR. NUTTER: That would be all of the "B" sands combined?

MR. APPLEDORN: Yes. Here we see the total "B" sands combined, yes.

### BY MR. HINKLE:

A (Continuing) And, here we see graphically the location of the William Ross Well as proposed, the location of the Felmont and Mobil Wells in the heart of the sand,

### APPLEDORN-DIRECT

the off-sets to the south, the Standard of Texas location is in a more-or-less of a flank area of the sand thickness and is off-set to the west further by wells that were non-commercial. The channel itself is seen to trend from the southern end of Section 15 to 14 and then continuing on north to Section 11. Mr. Ross has set his location on the western flank of this sand build-up and is attempting to gain thickness to reduce the risk of dry hole.

- Q By moving 330 to the east?
- A As far to the east as possible.
- Q Now, which wells shown on Exhibit 4 have been drilled at unorthodox locations?
- A The Felmont well to the east is in an unorthodox location in that it is in the southwest quarter instead of the northwest quarter of the section.
  - Q And that was approved by the Commission?
- A In June of 1972, that location was approved as an unorthodox location. Standard of Texas' Terry No. 2 in Section 15 is an unorthodox location.
  - Q Also approved by the Commission?
- A Also approved by the Commission in 1966. The Standard of Texas location Everett No. 1 is a third non-standard location and I'm not sure of the date, but that

was in the early '60s that that location was approved.

All of these locations were approved for structural and isopach advantage trying to gain thickest sand possible for commercial production.

Q Now, if the Felmont well which is located in the southwest quarter of 11, had it been drilled at an orthodox location in the northwest quarter of Section 11 and if the Ross well should be located at an orthodox location, which would be 330 feet west, what would be the distance between these two wells?

A The total distance between the wells in that case would be about 2640 feet; the total distance from a Felmont standard location and the current Ross location would be 2577 feet; the distance between the current Ross location and the current Felmont location is 2402 feet. In other words, Mr. Ross has gained about 174 feet direct distance advantage between the two wells.

- Q Over that --
- A (Interrupting) Over that of a standard location
- Q (Continuing) Of an orthodox or standard location?
- A Yes.
- Q Now, in your opinion, will approval of this Application be in the interests of conservation, the

### APPLEDORN-DIRECT CROSS

prevention of waste, and tend to protect correlative rights?

A Yes, in my opinion it would.

MR. HINKLE: We would like to offer Exhibits 2, 3 and 4.

MR. NUTTER: Exhibits 2, 3 and 4 will be admitted into evidence.

(Whereupon, Applicant's Exhibits 2,

3 and 4 were admitted into evidence.)

MR. HINKLE: That's all on direct

MR. NUTTER: Any questions of the Witness?

MR. KELLAHIN: I have no questions of the

Witness.

### CROSS EXAMINATION

### BY MR. NUTTER:

Q Mr. Appledorn, you mentioned that three of these wells here on your Exhibit No. 4 were drilled as unorthodox locations. Do you know if any penalty was applied to any of these wells because of their unorthodox location?

A Yes, the Felmont well has a 78 percent proration factor; now that proration factor was assigned, I believe, on basis of distance from the Mobil well.

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- Q I see.
- A Overlapping circles of influence. Now the Standard of Texas location --
  - Q (Interrupting) Which one?
  - A The Terry Gas Continental.
  - Q Okay.
- A Has a 79 percent proration factor and that's on the basis of acreage. Standard in its testimony indicated that only 252 acres of the 320 would be productive and accepted the 79 percent proration.
- Q They had already drilled a dry hole in the northwest quarter?
- A Yes. They had drilled their Terry Unit No. 1 as a dry hole, or non-commercial well. There was some gas on it but not enough to complete.
  - O And then how about the Standard Everett?
- A I am not aware of a proration factor in that case. They did not ask any as far as I know.
- Q Are you suggesting any penalty factor be applied to William G. Ross if the location were to be approved?
- A In this case, I went on straight distance factor, it would be roughly 93 percent.
  - Q I see. That would be your 174 foot advantage

### APPLEDORN-CROSS AYCOCK-DIRECT

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that would work out to --

A (Interrupting) Yes, that would be distance advantage.

- Q (Continuing) That would work out to ninety --
- A (Interrupting) three percent.
- Q (Continuing) Or seven-percent penalty?
- A Or 7-percent penalty, yes.
- Q Okay, thank you.

MR. NUTTER: Does that conclude your direct case,

Mr. Hinkle?

MR. HINKLE: Yes, that's all.

MR. KELLAHIN: I would like to call Aycock.

(Witness previously sworn.)

### WILLIAM P. AYCOCK

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

### DIRECT EXAMINATION

### BY MR. KELLAHIN:

- Q Would you state your name, please?
- A William P. Aycock.
- Q What business do you engage in?
- A I am a Consulting Engineer.
- Q Where are you located?

- A Midland, Texas.
- Q Have you ever testified before the Oil Conservation Commission and made your qualifications a matter of record?
  - A Yes, sir, I have.
- Q Were you employed by Felmont Oil Corporation to study the area involved in the Application before this Commission?
  - A Yes, I was.
  - Q Did you make such a study?
  - A Yes, sir, I did.

MR. KELLAHIN: Are the Witness' qualifications acceptable?

MR. NUTTER: Yes, they are.

### BY MR. KELLAHIN:

Q Mr. Aycock, referring to what has been marked as Felmont's Exhibit No. 1, would you identify that Exhibit, please?

A Exhibit No. 1 is a current land plat of the area showing the proration unit that is proposed to be designated to Mr. Ross' well and his proposed unorthodox location, and also showing in a different color the offsetting proration unit dedicated to the Felmont area

Unit No. 1.

Q The Felmont Area Unit No. 1 Well is drilled at an unorthodox location?

A Yes, sir, that's correct, and Mr. Appledorn's further testimony was entirely correct as to the reasons for the request for an unorthodox location and the reason for granting it.

Q Is there any other information you want to discuss on Exhibit 1?

A No, sir.

Q Turning to what has been marked as Exhibit No. 2, would you discuss that please?

A Exhibit No. 2 is a structure map. It is very similar to Mr. Appledorn's structure map. It is contoured on the bottom of what he calls the "B" sand, which is the main pay zone in the field. It simply shows that there is a monoclinal dip. I think it is important to note that the rate of dip, as near as we can tell from the available control change, is rather dramatically, as you go from the northwest toward the southeast portion, in that the rate of dip is much higher on the down-structure side, southeast side, than it is on the northwest side, as near as we can tell from available controls.

### AYCOCK-DIRECT

This proposed unorthodox location apparently will penetrate the zone from the available control in an area that is quite flat and, in my opinion, this would lead it to be an extremely risky location to drill, both from the standpoint of any gas flow at all, and commercial quality of the well.

- Q You are talking about their proposal?
- A Yes, sir.
- Q Not the orthodox location.
- A No, sir.
- Q Before you leave that Exhibit, would you point out the differences in your Exhibit and the Exhibit offered by Mr. Appledorn? The structure, as I understand it, in your Exhibit, is on the bottom of the "B" zone?
  - A Yes, sir.
  - Q And his would appear to be on the B1 shale?
- A Yes, sir. As you will note, they are very similar, but they are not exactly the same in that I don't believe he shows the same degree of dip change that I do. He shows a change in dip, however, a change in the rate of dip; I think it is just a little bit different and that is probably because of the fact he is mapping on top of a lithologic unit that -- well it was deposited from

the bottom up and so the conventional geologic approach is to take the main interval of interest and use the bottom of it as the datum because it was deposited from the bottom up and that's the approach that I have taken here.

- Q And that would account for his datum in the two exhibits?
  - A That's correct.
  - Q So, you don't really quarrel with --
- A (Interrupting) No, sir, not at all. The basic side of it I would agree with completely.
- Q Now, there is a cross section A-A' marked on the Exhibit?
  - A Yes, sir.
  - Q Is that the next exhibit?
  - A Yes, sir, that's our next exhibit.
- Q Would you discuss that information as shown on that?
- A Basically you will note that this Exhibit begins with the Western Oil Kennedy Farms Well on the far northwestern side progresses to the Dave Fasken dry hole which was shown on the extremity of Mr. Appledorn's Exhibit through the proposed locations of the Felmont Area Unit 1 to the Mobil Brenner Unit and over to the Felmont Atoka

Unit No. 1 which was a recently drilled well and resulted in very disappointing results. In addition to the structure map, what this points out as far as I'm concerned, is that with the rate of dip increase that we have seen, it appears to me that the probability that Mr. Ross' proposed location will be structurally higher, considerably structurally higher than the Felmont Atoka Unit Well, in my personal opinion, this could well lead to partial or complete deterioration of the pay quality. As an example of this, although it's on the other side and it's not directly related in the same way, the permeability thickness of both of the zones in the Area Unit No. 1 will calculate to be between 50 and 60 millidarcy feet, and for the Area Unit No. 1 there are about 4 millidarcy feet. I'm not saying the relationships are the same, but I'm saying this shows what can happen if you'll note that you go through a down and then an up to get over here so this is in a lower structural elevation. We know that this is a strand-line accumulation, I think that's generally agreed, and the quality of the pay zone will deteriorate with some obstructions in both the far-up structure and the far-down structure sides. think it is entirely likely that Mr. Ross 1 location

AYCOCK-DIRECT

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will penetrate at a location that will be detrimental to both the thickness and the quality of the pay that he will encounter.

Q Assuming that he drilled at the orthodox location, would he be in a better position?

A I think he would, of course I'm not proposing to tell him where to drill, but I feel that a 990 standard location that there are two things that would occur. One, we'll get to when we get to our next Exhibit, has to do with the performance of the Felmont Well; the other is that I think he would more nearly have a chance of penetrating the sand bodies in which Felmont has completed, and I think it's important because they requite anomalous with their gas to the off-set wells and the nearest offset wells, the Mobil Brenner and the Chevron Terry Gas Con 2. The quality is infinitely greater as can be told by calculating KH factors from the draw-down tests or from just a simple inspection of the four-point tests themselves. I feel like he has a much greater chance of penetrating one or both of these pay zones at that location. other reason has to do with our next Exhibit which we will get into when we discuss it.

Q Before we get to that, though, your proposal that

### AYCOCK-DIRECT

he drill in 990 location would move him to the south, would it not?

- A Yes, sir.
- Q Is the Standard of Texas Terry Well a good well?
- A It is about the same quality as the Mobil Brenner Unit and they are both about, well I'd say half or a third as good a well as either one of the zones in the Felmont Area Unit 1.
  - Q Than the Felmont Aaron?
  - A A-A-R-O-N, Yes, sir.
  - Q Then the Felmont Aaron Well is a good well?
  - A Yes, sir. It's very anomalous in that area.
  - Q Would you explain what you mean by anomalous?
- A Well, it's anomalous from the standpoint that although the reservoirs, neither one of them is extremely thick, they are high quality and they have the capability of delivering gas at rates much greater than either of the off-set wells that have sections, that you can see, that appear to be as thick or thicker, and you have to go to the south of those wells to get on the next row before you begin to find anything approaching the quality that has been demonstrated by the gas deliverability in each of the zones in Aaron Unit No. 1.

Q Now, has the Aaron Unit No. 1 Well been produced for some time?

A Yes, sir, after some delays that originated from various sources, it went on production the second day of December, 1973.

Q Referring to what has been marked as Exhibit No.
4, would you identify that Exhibit?

Exhibit No. 4 is a plot of surface-flowing pressure and estimated daily rate. When I say "estimated" I mean this is what the pumper estimates from the gas meter on the Lease, it is not an integrated finalized number on which the settlement was based at month end, but it's accurate enough for relative purposes to demonstrate the point and that is that both the upper and lower zones have had severe deterioration in their flowing pressures as compared to the fact that their rates have remained relatively constant during the period. This, as far as I'm personally concerned, is quite anomalous in that, as I said, the C 122 tests were legitimate tests, they were both performed with the pressure bombs in the hole, and they gave us assurance that we should not see this high degree of deliverability deterioration. Now the deliverability hadn't actually deteriorated yet, but the

### AYCOCK-DIRECT

pressure had, so the time will come very shortly when the deliverability itself will begin to decrease.

Q In your opinion, would the drilling of the Ross Well at the location proposed have any adverse effect on the Felmont Well?

A I think they could have a mutually adverse effect on each other, because I believe, that due to the fact that these structures have declined so dramatically, as well as the fact that the quality of the two off-setting wells is poor, that we have to conclude that this deterioration must mean that the gas flow is coming from along more or less parallel to the structure rather than across the structure. Now we know there is some permeability across it because the lower zone in the Felmont Aaron Unit initial measured pressure was close enough to that of the Brenner Unit that I think we can reasonably conclude that it's probably pressure communication with, at least with probably the other wells that are completed in that "B" zone.

- Q I think it is the lower "B" zone?
- A Yes, sir.
- Q The main pay zone?
- A Right. I call the zone the "A" zone in which

the -- the Unit the upper zone which is completed, but that's a matter of terminology, not anything of fundamental significance. I think the further that we can get away from draining in such a direction that we could easily affect each other, the better off both of us would be. I think if Mr. Ross' location were to the south, first he would have a better chance of getting a better deliverability well and adequately draining his reserves, and I think we would probably stand less chance of mutually interfering with each other and causing us both economic, if not loss, at least lengthening the time that we have to operate the wells.

- Q You heard Mr. Nutter ask Mr. Appledorn what penalty factor he would recommend in the event that the location is approved. Do you have any recommendation on that?
- A Well, I don't think that a simple ratio of the distances between the wells is adequate to account for the disparity here. I think probably, if you want to know the truth, that Mr. Ross' well at that location will be so poor that there won't be a necessity to apply any penalty to it. I think it will be penalized by nature.
  - Q Assume that he gets a top-allowable well.

# AYCOCK-DIRECT CROSS

A Well, I think if he gets a top-allowable well, indicating that the sand body is of larger extent, I feel like a penalty more in the range of what the Commission has chosen to apply in the past to the other cases would be something that would be fair to everybody involved.

- Q That would be your recommendation?
- A Yes, sir.
- Q Were Exhibits 1 through 4 prepared by you or under your supervision?
  - A Yes, sir, they were.

MR. KELLAHIN: At this time I would like to offer Exhibits 1 through 4 inclusive.

MR. NUTTER: Felmont's Exhibits Nos. 1 through 4 will be admitted into evidence.

(Whereupon, Felmont's Exhibits Nos.

1 through 4 were admitted into evidence.)

MR. NUTTER: Do you have anything further?

MR. KELLAHIN: No, sir, I don't.

MR. NUTTER: Do you have any questions?

MR. HINKLE: Yes, I might ask him a question or two.

### CROSS EXAMINATION

### BY MR. HINKLE:

Q Mr. Aycock, referring to your Exhibit No. 3,

which is a cross section.

- A Right.
- Q Now, you have not, on that cross section, tried to carry through the different sands which are productive?
  - A That's right.
  - Q You've just treated them all as one?
- A No, I didn't treat them all as one, Mr. Hinkle,
  I don't think anything except the main pay zone can be adequately correlated and I don't think we have any indication
  that these minor zones are continuous throughout the field.
- Q Well, you really haven't tried to indicate there whether or not the proposed location would penetrate, what would be the Bl sand, for instance, on our Exhibit No. 3, did you?
- A Well, no, Mr. Hinkle. As I testified, though, in my opinion, the fact that it will be structurally apparently at a much higher elevation than the Aaron Unit 1 indicates that the location has got a high degree of physical risk associated with it.
  - Q Now that --
- A (Interrupting) What I am saying is that the probabilities are, in my opinion, without this main "B" zone, the chances of making a commercial completion are

### AYCOCK-CROSS

poor, because I think this upper zone in which the Felmont
Aaron Unit 1 is completed has probably got a very very
limited extent. I think if Mr. Ross finds anything of
commercial quality, it is going to be the main pay zone
in the field.

- Q Would you agree with Mr. Appledorn's testimony that moving this location 330 toward the east they would have a better chance of penetrating this Bl zone?
- A I think that it's that location north that he is taking an additional risk factor on himself of drilling a dry hole.
  - Q You didn't answer my question.
- A I do not agree with it. I think that the chances of a quality and a dry-hole risk are greater at that location than they would be at a standard location.
- Q Now, you stated that the Felmont unorthodox location was obtained in order to obtain a better and a thicker pay section?
  - A That's right.
- Q Now, according to Mr. Appledorn's testimony, he has an opinion that locating this well 330 east will give them a better pay section.
  - A But locating the well 990 from the south lease

line will have about the same position as what he's projected based on his own interpretation.

- Q That's you opinion, not his.
- A Well yes, sir, that's right; we are discussing my opinion.
- Q Now, you don't think that the Applicant in this Case should be accorded the same privilege as Mr. Felmont in trying to get a thicker location?

A I definitely think he ought to be accorded the same privilege, but I don't think he ought to be accorded the privilege of drilling at a mutually disadvantageous location, which is my disagreement with Mr. Appledorn.

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

MR. HINKLE: That's all with respect to Mr.

Aycock. If you are through with him I would like to recall Mr. Appledorn.

### CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Aycock, with respect to your Exhibit No. 4 where you show the pressure decline? This Aaron Well is still being produced as a dual completion with the two zones isolated from each other, correct?

### AYCOCK-CROSS

- A Yes, sir.
- Q Although it is receiving one allowable?
- A That's correct, and this is, as you are aware, Mr. Nutter, we are about to lose our right to make up the pass under production to the fact that the well has been shut-in on waiting the market and all the other factors.
- Q Well, it was accruing an allowable for almost a year before they finally started producing?
  - A Yes.
- Q So, actually, the well has been producing far in excess of current allowable rate in order to make up a lot of this under production?
  - A That's right.
- Q Now, it appears on the bottom portion of your Exhibit No. 4 that the upper completion is continuing to produce at a steady rate but that the decline has already set in at the lower zone, correct?
- A Well, that's somewhat misleading. It's actually that the lower zone started to stabilize too. There is an adjustment back here in the notes, in February, where the pressure went up, they've adjusted the rate downward and the pressure responded virtually immediately to it.

Q Right.

A So, I think that the Well is trying to find a stable point after that adjustment.

Q I see three little ticks up here at the first part of December on the production curve. Would that be for the upper, or is that the lower? It looks like it fits onto the curve for the lower maybe?

A On the production curve?

Q Those three little ticks there on the second day, and on the sixth day --

A (Interrupting) Well, it's a steady rate of 6,000,000 on those days that you can't see and a steady rate of 5,000,000 on those days you can't see, Mr. Nutter.

Q Yes.

A And the other one's at steady rate of -- see it would be a lower zone with upper oil production until December the 16th.

Q You've got several days of production right on the line?

A Yes, sir.

Q Okay.

A You can't see anything because it overlaps the graph line.

Well, now, what about the first 15 days of
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STATE-WIDE DEPOSITION NOTARIES
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TEL. (505) 982-0386

December on the lower zone? What rate would that be?

A Well, it didn't go into steady production there until December the 14th.

- Q The lower zone?
- A Yes, sir.
- Q Oh, I see, then this is the upper zone, over here to the line.
- A Yes, sir. The upper zone is the upper line and the lower zone is the lower line and both the pressure is on the right.
- Q Now, you mentioned that you thought if the penalty were to be applied to the well that it should be more in line with the penalty that has been applied to previous wells. Now, previous wells that have a penalty applied to them were all drilled in the improper quarter section.
  - A Yes.
- Q Maybe not so much the penalty being applied for the footage but because they were in the improper quarter section. You will agree that Mr. Ross' proposed location is in the specified quarter section?
  - A Yes, it is.

MR. NUTTER: Are there any further questions

of Mr. Aycock?

MR. HINKLE: That's all.

MR. NUTTER: He may be excused.

MR. APPLEDORN: I want to discuss mainly what appears to be a difference in interpretation, yet it's not. Mr. Aycock's Exhibit No. 3, the structural cross section, illustrates what we call the B2 sand which is the main producing sand in the Atoka-Penn Pool. This is further illustrated by his pressure graph as the lower completion. It has apparently become fairly well stabilized, the low pressure being very close to field pressure. His graph further illustrates the very favorable productivity in what is here called the Bl sand and in other correlations is known as the "A" sand. It is a producing horizon in the West Atoka Pool; it is the producing horizon in all of these newer wells that have been developed. It is the upper completion in the Felmont Well, and it is the main objective of Mr. Ross' location, and in order to gain structure here has no effect, essentially. No where in the field does the structure have a good effect on the B1 sand on the thickness we gain. We're looking for a channel and that channel meanders down through the old strand line and Mr. Ross' location, quite frankly

seeks the farther east it is the better it is going to be if we're looking for the "B" sands. The ultimate risk cannot be discounted, however any movement to the west, whether south, north or otherwise, reduces the chances of encountering this "B" sand in a commercial thickness.

That's all.

MR. NUTTER: You are talking about the Bl sand?
MR. APPLEDORN: Yes, the Bl sand.

MR. KELLAHIN: Mr. Appledorn, the Bl sand has not been encountered in any other well in the vicinity of the Felmont Well, has it?

MR. APPLEDORN: No. Its absent to the south, or present as only very thin stringers. It develops in the thick channels and it has been found to the west and to the north.

MR. KELLAHIN: How far west?

MR. APPLEDORN: To the southwest.

MR. KELLAHIN: There is no well to the west, is there?

MR. APPLEDORN: No, I was speaking in an areal term. The discovery well in the northwest Atoka Pool was in the Bl sand or what at that time we called the "A" sand.

MR. KELLAHIN: Where was that?

MR. APPLEDORN: It's about four miles, five miles to the southwest, and there are a line of wells to the north. Now the Western Oil Producers' Well, I have not seen the log, but from the log that's on this cross section, it is, I believe, in Bl sands; the Fasken Well has no Bl in it, or only a very thin stringer; the B2 at that location was not productive; the Aaron Well does have the B1 and yet the B1 is absent in both the Standard of Texas and the Mobil Well. The Mobil Well is completed in a somewhat thinner stray beneath the actual B1. It is a part of the B1.

MR. KELLAHIN: Which Standard of Texas Well are you referring to?

MR. APPLEDORN: The Everett.

MR. KELLAHIN: The Everett?

MR. APPLEDORN: Yes.

MR. KELLAHIN: How about the Standard of Texas Terry?

MR. APPLEDORN: The Standard of Texas Terry is completed in the 6 section of B2 which is the main Atoka pay.

MR. KELLAHIN: Did it have the Bl section?

MR. APPLEDORN: Only a very very thin noncommercial segment.

MR. KELLAHIN: All that information would indicate that the Bl section is a rather limited extent.

MR. APPLEDORN: To the contrary. We don't know the extent. It's limited in certain directions, yes.

What it is is a channel fill, and when you run into it you may have it for three or four miles and you may have it only for a half a mile, but it will be very rich when you do get it as is indicated by Felmont's pressure graphs here; 6,000,000 cubic feet per day stabilized flow; 5,000,000; 200,000,000 cubic feet in December, '73.

MR. KELLAHIN: That's all.

MR. NUTTER: Are there any other questions of Mr. Appledorn? He may be excused.

Do you have anything further, Mr. Hinkle?

MR. HINKLE: On account of the drilling date
that has to be met here on this farm-out agreement, we
would appreciate your expediting the order.

MR. NUTTER: I think the Witness stated April 30th.

MR. HINKLE: April 30th. It, of course, takes a little while to get it going.

MR. NUTTER: Does anyone have anything they wish to offer in Case 5199? We will take the Case under advisement and the Hearing is adjourned.

(Whereupon, the Hearing was concluded at 12:04 P.M.)

STATE OF NEW MEXICO SS.
COUNTY OF SANTA FE

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

RICHARD L. NYE. Court Reporter

I do hereby certify that the foregoing as a complete record of the proceedings in the Examiner hearing of Case No. 19 heard by me on ..., 19 No. Mexico Oil Conservation Commission



## **OIL CONSERVATION COMMISSION**

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

April 16, 1974

I. R. TRUJILLO CHAIRMAN

LAND COMMISSIONER ALEX J. ARMIJO MEMBER

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

	Re:	CASE NO.	5199			
Mr. Clarence Hinkle	la ton	ORDER NO.	R-4770			
Hinkle, Bondurant, Cox & B Attorneys at Law	er cou	Applicant:				
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Roswell, New Mexico 88201		William G.	Ross			
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## 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. 5199 Order No. R-4770

APPLICATION OF WILLIAM G. ROSS FOR AN UNORTHODOX GAS WELL LOCATION, EDDY COUNTY, NEW MEXICO.

#### ORDER OF THE COMMISSION

#### BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on March 27, 1974, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 16th day of April, 1974, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

### FINDS:

- (1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.
- (2) That the applicant, William G. Ross, seeks, as an exception to the Atoka-Pennsylvanian Gas Pool Rules, authority to drill a gas well 1650 feet from the South line and 660 feet from the East line of Section 10, Township 18 South, Range 26 East, NMPM, Eddy County, New Mexico; that the E/2 of said Section 10 is to be dedicated to said well.
- (3) That the rules for the subject pool require that a well drilled at a standard location be located no nearer than 990 feet to the outer boundary of the NW/4 or the SE/4 of the section and no nearer than 330 feet to a governmental quarter-quarter section line.
- (4) That the evidence presently available indicates that the entire E/2 of said Section 10 may be presumed to be productive of gas from the Atoka-Pennsylvanian Gas Pool.
- (5) That the entire E/2 of said Section 10 can be efficiently and economically drained by the subject well.
- (6) That there is evidence that a well drilled at the proposed location would encounter a thicker pay section than a well drilled at a standard location.

-2-CASE NO. 5199 Order No. R-4770

- (7) That the correlative rights of other producers in the pool would be impaired by the proposed unorthodox location if unrestricted production by the subject well is permitted.
- (8) That to offset the advantage to be gained over other producers in the pool by virtue of the proposed unorthodox location, the subject well should be assigned an acreage factor of 93 percent in the Atoka-Pennsylvanian Gas Pool.
- (9) That approval of the subject application will afford the applicant the opportunity to produce his just and equitable share of gas in the Atoka-Pennsylvanian Gas Pool, will prevent the augmentation of risk arising from the drilling of an excessive number of wells, and will otherwise prevent waste and protect correlative rights, provided the above-described acreage factor is assigned to the subject well.

#### IT IS THEREFORE ORDERED:

(1) That the applicant, William G. Ross, is hereby granted an exception to the well location requirements of the special rules and regulations of the Atoka-Pennsylvanian Gas Pool and is hereby authorized to drill a gas well in said pool at an unorthodox gas well location 1650 feet from the South line and 660 feet from the East line of Section 10, Township 18 South, Range 26 East, NMPM, Eddy County, New Mexico;

PROVIDED HOWEVER, that said well shall be assigned an acreage factor of 0.93 in the subject pool for proration purposes.

- (2) That the E/2 of said Section 10 shall be dedicated to the well.
- (3) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

STATE OF NEW MEXICO OIL CONSERVATION COMMISSION

I. R. TRUJILLO, Chairman

17. 9

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

SEAL

#### DOCKET: EXAMINER HEARING - WEDNESDAY - MARCH 27, 1974

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

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

## CASE 5188: (Continued from the March 13, 1974, Examiner Hearing)

Application of Continental Oil Company for downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle Drinkard and Blinebry production in the wellbore of its Lockhart B-1 Well No. 8 located in Unit H of Section 1, Township 22 South, Range 36 East, Lea County, New Mexico.

- CASE 5194: 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-Grayburg formation through one well on its Creek Lease in Section 23, Township 18 South, Range 30 East, Leo Pool, Eddy County, New Mexico.
- CASE 5195: Application of J. M. Huber Corporation for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests, including those of Harry V. Allen or his devisees, underlying the E/2 of the SE/4 of Section 21, Township 12 South, Range 37 East, Southwest Gladiola-Devonian Pool, Lea County, New Mexico. Also to be considered will be the cost of drilling and completing said well and the allocation of such costs, as well as actual operating costs and charges for supervision. Also to be considered is the designation of applicant as operator of the well and a charge for risk involved in drilling said well.
- CASE 5196: Application of Kimbell Oil Company for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling in the wellbore of Blanco-Mesaverde and Basin-Dakota gas production in its Warren Federal Well No. 3 located in Unit P of Section 26 and in its Salazar Federal Well No. 3 located in Unit H of Section 27, and Otero-Callup Oil and Basin-Dakota gas production in its Warren-Salazar Well No. 2 located in Unit M of Section 26, all in Township 25 North, Range 6 West, Rio Arriba County, New Mexico.
- CASE 5197: Application of Skelly Oil Company for a waterflood project and a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Seven Rivers-Queen formation in its J. C. Johnson Well No. 4 located in Unit D of Section 20, Township 23 South, Range 37 East, Langlie-Mattix Pool, Lea County, New Mexico. Applicant further seeks authority to dually complete said well for water injection and for the production of gas from the Jalmat Gas Pool. Applicant also seeks an administrative procedure for said project for approval of additional injection wells without notice and hearing.

CASE 5198: Application of Texaco Inc. for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Grayburg formation in the perforated interval from 3815 feet to 4068 feet in its V. M. Henderson Well No. 3 located in Unit H of Section 30, Township 21 South, Range

37 East, Penrose Skelly Pool, Lea County, New Mexico.

CASE 5199:

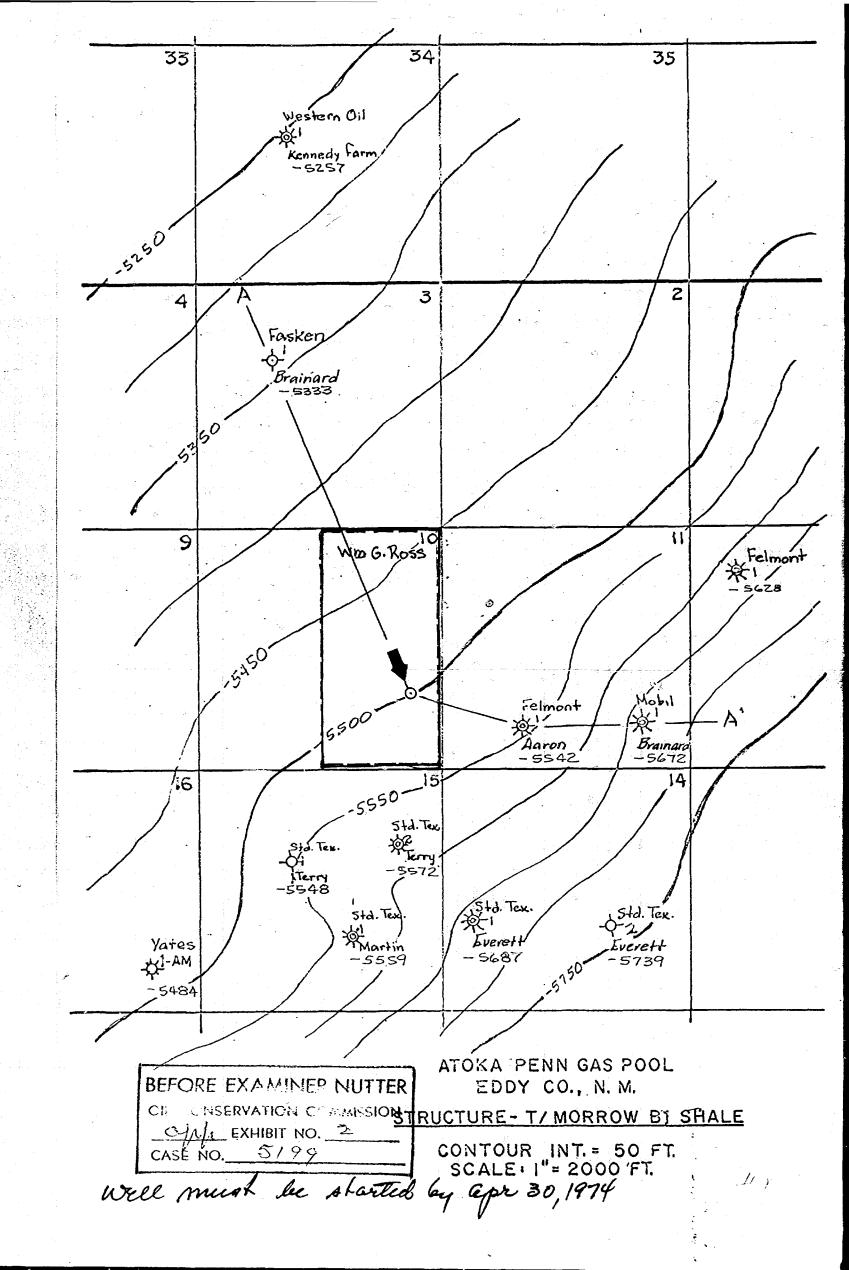
Application of Wm. G. Ross for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks, as an exception to the Atoka-Pennsylvanian Gas Pool Rules, authority to drill a gas well 1650 feet from the South line and 660 feet from the East line of Section 10, Township 18 South, Range 26 East, Atoka-Pennsylvanian Gas Pool, Eddy County, New Mexico, the E/2 of said Section 10 to be dedicated to the well.

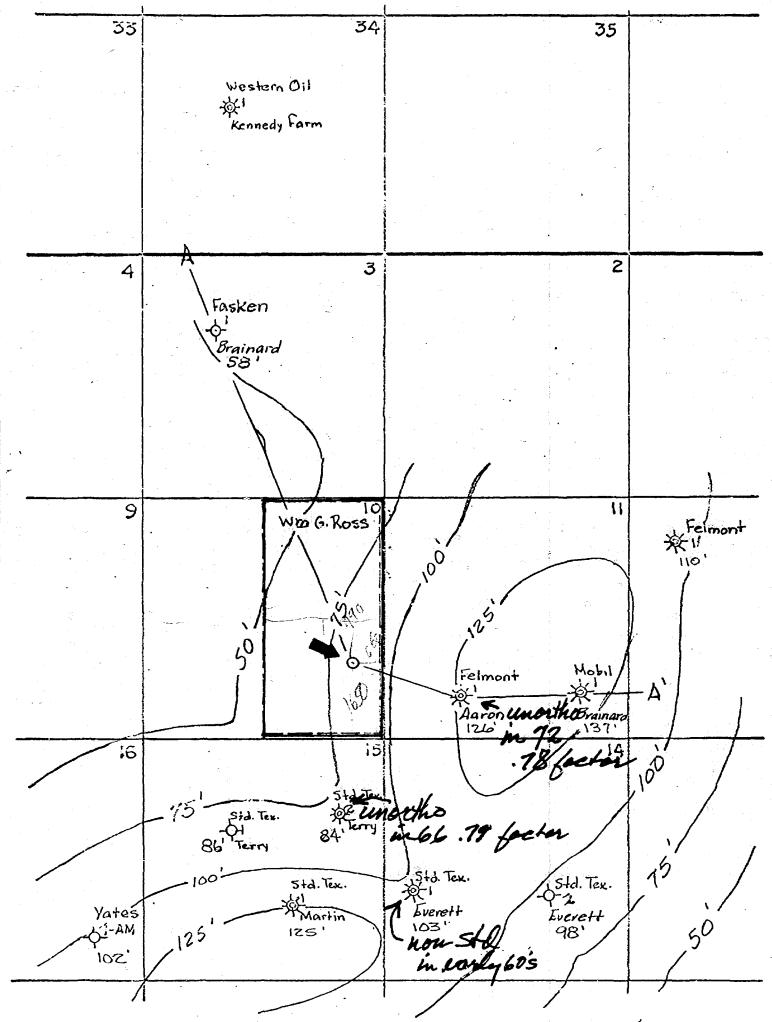
CASE 5200: Application of Monsanto Company for a triple completion, Eddy County, New Mexico. Applicant in the above-styled cause, seeks approval for the triple completion (conventional) of its Wilderspin Well No. 1 located in Unit F of Section 11, Township 21 South, Range 27 East, Burton Flats Field, Eddy County, New Mexico, in such a manner as to produce gas from the Wolfcamp, Strawn, and Morrow formations through three parallel strings of tubing.

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BEFORE EXAMINER NUTTER

CASE NO. 5/99

ATOKA PENN GAS POOL EDDY CO., N. M.

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LAW OFFICES

HINKLE, BONDURANT, COX & EATON

600 HINKLE BUILDING

POST OFFICE BOX IO

ROSWELL, NEW MEXICO 68201

March 2, 1974

TELEPHONE (SOB) 622-6510

MIDLAND, TEXAS OFFICE 52: MIDLAND TOWER (915) 663-4691

DIEGISTATION COMM

Oil Conservation Commission Box 2088 Santa Fe, New Mexico 87501

Gentlemen:

CLARENCE E.HINKLE

LEWIS C. COX,JR.

PAUL W. EATON, JR.

STUART D. SHANOR

C.D.MARTIN PAUL J. KELLY, JR.

ANDREW ALLEN

HAROLD L.HENSLEY, JR.

We enclose herewith in triplicate application of Wm. G. Ross for an unorthodox location in the E½ Section 10, Township 18 South, Range 26 East, Atoka-Pennsylvanian Gas Pool, Eddy County.

Yours very truly,
HINKLE, BONDURANT, COX & EATON

By Clarence E. Henkle

Enc.

DOCKET MAILED

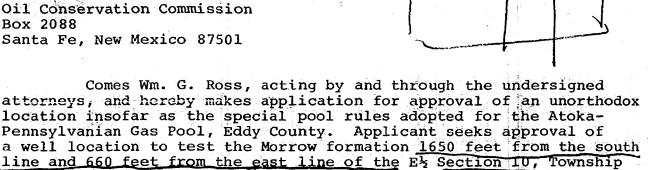
Date 3/14/14

BEFORE THE OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

APPLICATION OF WM. G. ROSS FOR LOCATION (NSOFAR AS) THE SPECIAL POOL RULES ADOPTED FOR THE ATCKA-PENNSYLVANIAN GAS POOL, EDDY COUNTY. APPLICANT SEEKS APPROVAL OF A WELL LOCATION TO TEST THE MORROW FORMATION 1650 FEET FROM THE SOUTH LINE AND 660 FEET FROM THE EAST LINE OF THE E3 SECTION 10, TOWNSHIP 18 SOUTH, RANGE 26 EAST, N.M.P.M., SAID HALF SECTION TO BE DEDICATED TO THE WELL.

Oil Conservation Commission Box 2088 Santa Fe, New Mexico 87501



Case & J Gasta Fe

OIL CONSERVATION COMM

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- Pennsylvanian Gas Pool, Eddy County. Applicant seeks approval of a well location to test the Morrow formation 1650 feet from the south line and 660 feet from the east line of the Ex Section 10, Township 18 South, Range 26 East, N.M.P.M., said half section to be dedicated to the well, and in support thereof respectfully shows: There is attached hereto, made a part hereof and for
- purposes of identification marked Exhibit "A", a plat showing the proposed unorthodox well location, together with the ownership of all oil and gas leasehold interests within a radius of 2 miles and also showing all of the wells which have been drilled in said area.
- The special pool rules adopted for the Atoka-Pennsylvanian Pool provide that each well shall be located in either the northwest quarter or the southeast quarter of the section and shall not be located nearer than 990 feet to the outer boundary of the quarter section nor nearer than 330 feet to any governmental quarter-quarter section line.
- 3. Applicant believes that the proposed location will stand a better chance of obtaining production than if located at a standard location provided by said pool rules.

- 4. Approval of said application will be in the interest of conservation, prevention of waste and will protect correlative rights and will prevent the drilling of unnecessary wells.
- 5. Applicant requests that this matter be set down for hearing at the examiner's hearing on March 27.

Respectfully submitted,

WM. G. ROSS

By Clarence 6. Service
HINKLE, BONDURANT, COX & EATON
Attorneys for Applicant
P.O. Box 10
Roswell, New Mexico 88201

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# BEFORE THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO

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

W.//am APPLICATION OF WM. G. ROSS FOR AN UNORTHODOX GAS WELL LOCATION.

EDDY COUNTY, NEW MEXICO.

CASE NO. 5199

Order No. R-4770

ORDER OF THE COMMISSION

### BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on March 27, 19 at Santa Fe, New Mexico, before Examiner Daniel S. Nutter

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

#### FINDS:

- (1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.
- (2) That the applicant, Wm. G. Ross, seeks, as an exception to the Atoka-Pennsylvanian Gas Pool Rules, authority to drill a gas well 1650 feet from the South line and 660 feet from the East line of Section 10, Township 18 South, Range 26 East, NMPM, Eddy County, New Mexico; that the E/2 of said Section 10 is to be dedicated to said well.
- (3) That the rules for the subject pool require that a well drilled at a standard location be located no nearer than 990 feet NW/4 or the SE/4 of the 330 to the outer boundary of the quarter section and no nearer Than 330

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- (4) That the evidence presently available indicates that the entire E/2 of said Section 10 may be presumed productive of gas from the Atoka-Pennsylvanian Gas Pool.
- (5) That the entire E/2 of said Section 10 can be efficiently and economically drained by the subject well.
- (6) That there is evidence that a well drilled at the proposed location would encounter a thicker pay section than a well drilled at a standard location.
- (7) That the correlative rights of other producers in the pool would be impaired by the proposed unorthodox location if unrestricted production by the subject well is permitted.
- That to offset the advantage to be gained over other (8) producers in the pool by virtue of the proposed unorthodox location, the subject well should be assigned an acreage factor of 93 percent in the Atoka-Pennsylvanian Gas Pool.
- That approval of the subject application will afford the applicant the opportunity to produce his just and equitable share of gas in the Atoka-Pennsylvanian Gas Pool, will prevent the augmentation of risk arising from the drilling of an excessive number of wells, and will otherwise prevent waste and protect correlative rights, provided the above-described acreage factor is assigned to the subject well.

## IT IS THEREFORE ORDERED

(1) That the applicant, Wm. G. Ross, is hereby granted an exception to the well location requirements of the special rules and regulations of the Atoka-Pennsylvanian Gas Pool and is hereby authorized to drill a gas well in said pool at an unorthodox gas well location 1650 feet from the South line and 660 feet from the East line of Section 10, Township 18 South, Range 26 East, NMPM, Eddy County, New Mexico;

PROVIDED HOWEVER, that said well shall be assigned an acreage factor of 0.93 in the subject pool for proration purposes.

- (2) That the E/2 of said Section 10 shall be dedicated to the well.
- (3) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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

> STATE OF NEW MEXICO OIL CONSERVATION COMMISSION

I. R. TRUJILLO, Chairman

ALEX J. ARMIJO, Member

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

SEAL