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BEFORE THE
OIL CONSERVATION COMMISSION
High School Auditorium
1300 East Scharbauer
Hobbs, New Mexico

May 16, 1962

REGULAR HEARING

IN THE MATTER OF:

In the matter of the hearing called on the
motion of the Oil Conservation Commission
to consider revising Rule 111, Deviation
Tests and Whipstocking.

CASE NO.
2561

BEFORE: Edwin L. Mechem, Governor
E. S. "Johnny" Walker, Land Commissioner
A. L. "Pete" Porter, Secretary-Director of Commission

TRANSCRIPT OF HEARING

MR. PORTER: Case No. 2561.

MR. MORRIS: In the matter of the hearing called on the
motion of the Oil Conservation Commission to consider revising
Rule 111, Deviation Tests and Whipstocking.

I want to call Mr. Nutter.

MR. PORTER: Let the record show that Mr. Nutter had
been previously sworn today. Do we have other appearances?

DANIEL S. NUTTER,

called as a witness, having been previously duly sworn on oath,



was examined and testified as follows:

DIRECT EXAMINATION

BY MR. MORRIS:

Q Mr. Nutter, --

MR. PORTER: We have other appearances.

MR. BRATTON: Howard Bratton on behalf of Humble Oil & Refining Company. I think we will have one witness.

MR. ANDERSON: R. M. Anderson of Sinclair Oil & Gas Company. We will have a statement to make.

MR. KASTLER: Bill Kastler with Gulf will have a statement to make at the conclusion of the testimony.

MR. PORTER: Mr. Christie.

MR. CHRISTIE: Clarence Christie. I would like to make a statement at the end of the case.

MR. PORTER: Mr. Morris, you may proceed with the witness.

Q (by Mr. Morris) State your name and position.

A Dan Nutter, chief engineer for the New Mexico Oil Conservation Commission.

Q Mr. Nutter, are you familiar with Commission Rule 111 as presently constituted?

A Yes, sir, I am.

Q And have you been the Examiner in several hearings which have involved Rule 111 and its construction and application to various situations?



A Yes, sir.

Q From your experience in these hearings and in other Commission matters involving this Rule 111, do you feel there is a need for its clarification and revision?

A Yes, sir, I stated I was familiar with it. I'm not sure of what it says in its entirety, however.

Q Mr. Nutter, in preparation for this case, have you prepared a complete revision of Rule 111?

A Yes, sir, I have.

Q I would ask you at this time to please read the entire rules as you have proposed it.

A Yes, sir, Rule 111 as it is presently constituted is divided into two paragraphs, Paragraph (a) and Paragraph (b), and has reference to the drilling of a well and controlling the drilling of it to keep the well within five degrees of the vertical in any 500 foot interval if the well deviates more than five degrees average in a 500-foot interval, a directional survey is required before any oil or gas can be sold from the well. A directional survey is required to establish that the bottom of the hole is on the lease before any oil or gas can be sold from the well.

Paragraph (b) has reference to intentional directional drilling. We have written Paragraph (a) in much the same manner that it is written at the present time; however, we have included a couple of new items in the rule.

Our proposal is that it would read as follows:



"(a) Any well which is drilled or deepened with rotary tools shall be tested at reasonably frequent intervals to determine the deviation from the vertical and a tabulation thereof filed with Form C-105, Well Record. When such deviation averages more than five degrees in any 500-foot interval, no oil or gas shall be sold until it has been established that the bottom of the hole is on the proration unit assigned to the well by means of a deviational and directional survey. In lieu of said survey, the operator may, with specific approval of the Commission, establish the location of the bottom of the hole by filing a notarized tabulation of all deviation tests, assuming the deviation from the vertical and the drift to be in a constant and continuous direction to the nearest boundary of the proration unit."

Q Before you go into Paragraph (b), let's discuss some of the things in Paragraph (a) for just a moment. At the beginning of Paragraph (a) your proposed rule reads that the well is to be tested at reasonably frequent intervals?

A Yes, sir.

Q Now, why have you used that particular wording, "reasonably frequent"?

A The present rule simply requires that tests be taken to determine the deviation from the vertical. It just stands to reason that these tests ought to be taken at reasonably frequent intervals.

Q Did you use that particular wording rather than a re-



quirement of footage, a footage requirement, because it might not correspond to actual drilling practices?

A Yes, sir, deviation tests are usually taken at the time the drillstem is pulled in order to change the bit, and if you try to specify that the deviation tests would be taken at certain hundred-foot intervals, it would of necessity require changing the bit for running a test at that time, whether you were ready to change the bit or not. This would be impractical; also, impractical to require the deviation tests be made every time the bit is changed because this may represent just a few feet from the last test or it may represent a large amount, depending on the drilling record of the bit, so we tried to make it sound reasonable and say reasonably frequent intervals.

Q Are you familiar with the practice in the industry as to what might be considered reasonably frequent intervals?

A I imagine there is a variation of opinion as to what reasonably frequent intervals should be on the intervals within a 500-foot interval to know what that drift is in the 500 feet; it's pretty much a matter of touch and go.

Q In other words, the requirement that you are taking these tests to know whether you are deviating more than five degrees in a 500-foot interval, of course, would have a bearing on what would be reasonably frequent?

A Yes, sir, I think the operators' experience in a given area would dictate to a large extent how often the tests should

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be taken. Some wells, in certain areas, will take off a sharper angle than wells in other areas.

Q Mr. Nutter, in the next line of your proposed rule there is the requirement that a tabulation of these tests be filed with the Form C-105, which is the Commission's form for the well record?

A Yes, sir.

Q Is it your feeling that the tests taken should be reported to the Commission?

A Yes, sir, there is no use taking the tests if you don't do something with them.

Q Further down in the next sentence, you have used the term, "proration unit", with respect to the requirement of the rule that no oil or gas shall be sold until it has been established that the bottom of the hole is on the proration unit, "whereas the previous rule, as now written, the word "lease" is used. Could you explain why you made that change?

A Yes, sir, the word "lease" is a rather general term. It may include a large amount of acreage and has no application whatsoever unless it would happen to be a 40-acre lease. In the case of the 40-acre oil well, we substituted the term "proration unit" because the producing interval of the bottom of that hole should be on the proration unit, not specifically on the lease. You haven't proven any proration unit to be productive until you have completed a producing well on that proration unit. So we felt that the term "proration unit" was more applicable and pro-

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bably used than "lease" in this sense.

Q Now, your proposed rule down to this point through the sentence containing the word "proration unit" requires that the deviational and directional survey be taken and filed to show the bottom of the hole is on the proration unit. If the five degree variation or deviation has been expected in a 500-foot interval, now, your last sentence in Paragraph (a) employs an alternative to that requirement under certain circumstances. Now, in that last sentence, that is completely new in the proposed rule, is that correct?

A Yes, sir, I believe that the three changes we have made in Paragraph (a) up to this point are all relatively insignificant. The fourth line in the paragraph, as you say, is new and reads as follows: --referring back to the well that has a deviation of more than five degrees from the vertical in a 500-foot interval, no oil or gas could be sold until it was established that the bottom of the hole was on the proration unit. You have to make this establishment by means of the deviational and directional survey, so we added this sentence: "In lieu of said survey, the operator could assume all of the drift to be in a single constant direction towards the nearest proration unit boundary, and if the bottom of that hole or the producing interval is shown to be on the proration unit." By making those two basic assumptions of the conditions, then no survey would be necessary, then the cost of the survey would be eliminated. You are making the two words,

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"assuming" and "establishing" that the bottom of the hole is on the proration unit.

Q So a deviation test, to try to put this whole paragraph together, is required on every well?

A Yes, sir.

Q Then, if you have a five-degree deviation in a 500-foot interval, you have to go further and take a directional survey unless you exercise this option, so to speak, and can show just using the deviational tests alone, and applying the deviation towards the nearest boundary of the proration unit, the bottom of the hole is still on the unit?

A Yes, sir.

Q And in this event, the directional survey would not be necessary?

A That is correct.

Q Do you have anything further to add before we take up Paragraph (b)?

A No, I think not.

Q Would you read Paragraph (b) please?

A Paragraph (b) really doesn't, the way we have it proposed, it doesn't change from the present Paragraph (b) at all, I don't think. Like I said before, I am not sure what Paragraph (b) really says. This paragraph has been subject to several interpretations over the years, and I think -- well, the rule that I have proposed here for (b) is the interpretation that I have of the



present Paragraph (b), but I tried to make it a little clearer so we would know what it says. My proposal is as follows:

"No well shall be whipstocked and directionally drilled without special permission from the Commission. Permission to whipstock to straighten a crooked hole, to sidetrack junk in the hole, or to control a blow-out may be obtained from the appropriate District Office of the Commission on Commission Form C-102, with copies of said Form C-102 being furnished all offset operators. Permission to whipstock for any other reason will be granted only after notice and hearing. Upon completion of any whipstocked well and prior to producing any oil or gas therefrom, a deviational and directional survey shall be conducted and a report thereof filed with the Commission."

Q Mr. Nutter, in view of recent developments we all read about in the morning paper, and it appears the last few days, what is happening over in the East Texas field, do you feel the requirements of the Commission with respect to requiring notice and hearing for whipstocking in all cases other than just three that you have enumerated here, that is straighten a crooked hole, to sidetrack junk in the hole, or to control a blow-out, do you feel that the requirement to have a hearing is unreasonable?

A No, sir, I do not.

Q Absolutely necessary to exercise a clearly high degree of control over the use of whipstocking in order to be completely sure that the operators are producing from their own proration

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units?

A Yes, sir.

Q Do you have anything further you would like to add in respect to Paragraph (b)?

A Yes, sir, in the first sentence where it says that "no well shall be whipstocked and directionally drilled," I would change that slightly and say, "whipstocked and/or directionally drilled" to cover the instance where you may be directionally drilling without the use of the whipstock. I would like to further explain that the notification of the offset operators by the form C-102, in the instance where you are trying to straighten a crooked hole, to sidetrack junk in the hole, or to control a blow-out does not imply there would be any waiting, before the Commission would approve the form C-102. It is merely to put the operator on record as having notified the offset operators of his intent to set a whipstock and directionally drill. The offset operators have been notified that the well must be directionally surveyed later on, at which time the offset operators, having been notified, could come in and see the directional survey and find out just where the bottom of the hole was. That portion of the rule is different than anything that is contained in Paragraph (b) at the present time, but I don't think it is unreasonable to send a C-102 to your operators when you're whipstocking. It's not a real common practice anyway.

Q Do you have anything further?

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A No, sir.

MR. MORRIS: That, then, concludes the direct examination.

MR. PORTER: Anyone have a question of Mr. Nutter?

Mr. Kendrick.

CROSS EXAMINATION

BY MR. KENDRICK:

Q Mr. Nutter, this term "proration unit" is misused, I believe, in this case. I would prefer to have the thing called a "drill track", a "spacing unit" or a "drilling unit" or some term other than "proration unit", because proration unit would imply that the well is a prorated well.

Do you agree?

A Well, it appears that the unit, the prorated, if it is a proration unit, some substitutions could be made there.

MR. PORTER: Mr. Jameson.

CROSS EXAMINATION

BY MR. JAMESON:

Q Mr. Nutter, can you make a reasonable definition of the crooked hole? Is it possible to make it?

A I think that the Commission's definition of what must have a survey made on it being the well that is off more than five degrees average in a 500-foot interval, would be a crooked hole. I think the connotation there is if a well is within five degrees in all the 500-foot intervals, it is a straight head.



Q In that event, a hearing would have to be held if they wanted to directionally drill after drilling the original hole less than five degrees?

A A hearing would have to be held when?

Q Assuming an operator came in and asked to set a whipstock on a well which had been drilled in total depth and the deviation in any 500-foot interval did not average five degrees at the time, it would be necessary for this operator to apply for a hearing before the Commission, is that correct?

A Well, if it's going to whipstock and keep within five degrees --

Q No, sir, supposing an operator has drilled a standard location, his well is undeviated beyond five degrees and actually he wants to set the whipstock in that well. In that event, it would be necessary for him to have to?

A Yes, we would want to set a stage. He got a dry hole notice, he wants to get a producer.

Q Yes, sir?

A Yes, sir, he would have to have a hearing.

MR. PORTER: Anyone else have a question?

(No response.)

MR. PORTER: The witness may be excused.

(Witness excused.)

Mr. Bratton, call your witness.

MR. BRATTON: If the Commission please, before we question

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Mr. Willingham, I have a statement to make. I would like to advise the Commission the purpose of putting on this witness.

We certainly concur with Mr. Nutter that the present rule needed revisions and ~~that~~ the proposed provision is a step in the right direction. We do believe that there are very serious implications involved and feel that the matter should be carefully and fully explored to see if additional consideration should be given to the amendment of the rule, to what amendment should be made to it, and for that purpose, we would suggest that an industry committee of operators, contractors, survey companies, and that the chairman be a member of the Commission staff, should give the matter consideration and report back to this Commission, at the hearing, within the very near future, two months or so, at the convenience of the Commission.

Our reasons for making that request will be detailed by our witness.

J. E. WILLINGHAM,

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

DIRECT EXAMINATION

BY MR. BRATTON:

Q Would you state your name, occupation, and location?

A My name is J. E. Willingham. I am a production engineer for Humble Oil & Refining Company in Midland, Texas.

Q Have you previously testified before this Commission as



an expert witness?

A Yes.

Q Will you state Humble's reasons, Mr. Willingham, for making the requests which I have outlined?

A In my opening testimony, I want to reiterate what Mr. Bratton said. Humble is in favor of a statewide rule on deviation which would result in a well drilling that is fair and equitable to all concerned, and we concur with the Commission. This present rule does mean provision and also some of the proposals that have been proposed in the revision, we heartily concur with because we feel they will benefit the operator in making -- particularly where the operator pursues the deviation from the vertical and the drift to be in a constant and continuous direction to the nearest boundary of the proration unit. I think that is an advantage for the operator and in some cases eliminates the need for directional survey, but in general, we believe that the bottom of the hole should fall below the surface location.

However, there have been many new techniques in tools that have become available to the industry, and we feel it would be very desirable to also have rules that allowed you to have a surface location in one place and a target for your bottom hole. The target should be in another whereby you can take the advantage of high bit waste through drilling beds. We feel this would reduce costs to the contractors and in turn, reduce cost to the operators. We know that in the past the New Mexico Commission

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has always been very sympathetic with the problem of the operators, and I want to point out some parts of this rule which we feel need very careful consideration, and certainly we believe when a hole is deliberately deviated, it should require deviation control that is available both to the Commission and to the industry.

I want to emphasize before I go into these details that we feel that very careful consideration should be given to this because you can have regulations on deviations to the point where you can harm the economics of well drilling to the point where they wouldn't want to drill the well.

Some suggested changes that we have is, first, that the requirements for the tabulation and submission of deviation measurements as a routine policy should be deleted. The reason for this, there would be a very great volume of paper work which would add to the cost of the well.

Number two, in the portion of the rule revision proposed, it says "bottom of the hole." We feel this should be changed to "producing interval" because in a deep well with a shallow pay and this particular bottom hole might be one place and your producing interval another.

Also, in the portion in which Mr. Nutter has brought out thoroughly, but we wanted in particular to bring up some ways that you can whipstock or ways and things you can do in lieu of whipstocking, there are many ways to deviate a well and these are commonly used in the field. For one, you can plug two eyes of a

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bit and leave the other open, orient your drill pipe with a fill driver stake on the ground the way you want to go, lower your drill pipe or bit down to the shale section, and start pumping until you work out a hole in the shale section and start drilling; and if you deviate another way, you can use small collars in a reamer immediately above the bit which will deviate a well very rapidly.

Another way you can do it, you can take your crown block and move it off center, start your hole an an angle, keep a conductor pipe in the hole, pack your hole and take off at an angle.

Another way you can do it, if you want a sharp angle, move your rotary off center, drill a shanked hole, cement down, pack your hole, and you are deviated.

You can also use a cement plug and a slope, run light weights at that slope, cut a new hole and start a new hole in your well without setting a whipstock.

You can also use the area for making dips. In other words, if you know you are in a certain portion of the field and the field is dipped in a certain direction, you, with knowledge of deviation techniques, hole size and collar size, can deliberately deviate your well without using any bottom hole tool whatsoever.

The last method I want to show you, you can use a stabilizer in small collars and by the use of gravity deviate your well.

Another portion of the rule that we want to mention that leaves a problem, although different operators interpret



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this in different ways, the requirement for averages of more than five degrees in any 500-foot interval, the average to one operator is one thing and to another, it is another thing. For example, if you had an eight or twelve-degree hole, it is conceivable you could go back in an area of the hole within this 500-foot section that is one or two degrees sloped and run one or two deviations in an area and get it below five degrees. Understand, Humble does not do this, but it could be done.

In closing, I want to re-emphasize and call on the Commission to use the attitude they have always used toward the oil industry in recognizing our problems and realizing if we do not come up with a rule that corresponds with the requirements of the Commission, which I know that you need for controlled deviations, but also the operational requirements of the industry to provide the most economical drilling methods we can use.

If we don't provide these and every time you raise the cost of a well to a certain extent, curtail your drilling, and it is in particular requested that we form a committee with the Commission as the chairman, someone from the Commission as the chairman, to look at the problem in detail and see if we can come up with some rules that would perhaps set the pattern for New Mexico and also the United States, because there are no rules in the United States right now that adequately answer the problem of deviation control.

That is all I have, Mr. Porter.



Q (by Mr. Bratton) Mr. Willingham, are you a self-confessed expert on controlled deviational drilling?

A Let's say I have considerable knowledge of this.

MR. BRATTON: I believe that is all we have at this time, Mr. Porter.

MR. PORTER: Anyone have a question?

MR. MORRIS: Yes, sir.

CROSS EXAMINATION

BY MR. MORRIS:

Q Mr. Willingham, would these rules, that a committee such as you have proposed might come up with, would these rules prescribe among other things exactly the way you would compute averages if we were going to eventually adopt something like Mr. Nutter has proposed here? That was one of the problems.

A I would say they would come up with suggestions of how it could be done, that however is minor compared to some of the other problems.

Q Do you feel that it is being too restrictive to require the deviational tests be run continually as the well is drilled?

A No, sir, in fact I think if the Commission didn't even have this as a requirement you would still see it done for operational reasons because a drilling contractor on a footage rate or company, say, drilling with a company rig, they want to know how their hole is deviating, for operational reasons.

Q Mr. Willingham, you are aware of Mr. Nutter's last



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minute change in his proposed rule where he interjected the word "and/or" into Paragraph (b) which would require that no well shall be whipstocked and/or directionally drilled without special permission from the Commission?

A Yes, sir, I am aware of that; however, I am sure you are aware of this, that an operator that plugs two eyes of a bit and goes down and washes a hole in the soft formation may not consider that directional drilling. It's up to his interpretation what is directional drilling.

Q Well, that may be true, Mr. Willingham, but if a given operator has a mind to directionally drill, either intentionally or by one of the more conventional routes or by some unconventional routes such as many of those you outlined to us today, there is no rule that the Commission can pass that is going to keep him from doing that?

A That is certainly true.

Q Do you feel that after a committee study you might be able to come up with some rule which could be enforced to the extent of preventing this type of practice?

A Well, in direct answer to your question, it is very difficult, I am sure, to regulate integrity, and I don't know that a new rule would control that situation. However, I do think the new rule would be of help to the industry as providing us with good practices and still provide you with the information that you need and which we support.



Q In essence, then, you are asking the Commission, rather than to adopt the rule at the present time, to go into a full-scale investigation of whipstocking and directional drilling practices and come up with something more extensive than what has been proposed here today?

A Yes, sir.

MR. MORRIS: Thank you.

MR. PORTER: Anyone else have a question? Mr. Nutter, do you have any questions?

MR. NUTTER: No, I believe not.

MR. PORTER: Witness may be excused.

(Witness excused.)

MR. BRATTON: If it please the Chairman, at this point Humble would renew its motion that the Commission retain the case on its docket possibly for three months and appoint an industry committee chairman and a member of the Commission staff to report back and make recommendations to the Commission at the August hearing.

MR. PORTER: You have heard testimony in this case by Mr. Nutter and Mr. Willingham. You also heard Mr. Bratton's motion for continuing the case until August and appointing a committee to come up with recommendations.

Does anybody care to comment on that, on Mr. Bratton's motion?

MR. ANDERSON: R. M. Anderson of Sinclair Oil & Gas

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Company. I was unaware of Humble's recommendations prior to the hearing today, but in preparation for this case Sinclair took everything they thought pertinent into consideration. One of the things is the timeliness of this case. I think now it is a good time to act on the matter. I feel that many of Mr. Willingham's objections or possibilities for deviation do not have too much pertinence in the case unless they are coupled with some knowledge of the direction of the deviations, and we have found it extremely difficult when we were aware of deviations, extremely difficult to know what direction it was in. In spite of the rules about the bit will dig in and move up-structure, we have seen the contrary applied numerous times. I feel that the recommendations as made by Mr. Nutter are sufficient and satisfactory and necessary. I believe that they would result in the workable rule that would not be overly burdened with detail and with the necessity of going to a lot of extra work in order to accomplish and satisfy the rule, so Sinclair likes this rule as proposed by Mr. Nutter and we find no way that we can improve upon it. We feel, due to the time limits of it, we feel it is timely right now and we would like to see the Commission adopt it in the very near future. For that reason, we object to a six-month or longer delay and the industry committee and we don't feel they can accomplish much more than what we heard today from Mr. Nutter.

Thank you.

MR. PORTER: Anyone else care to express themselves?



MR. SHELDON: My name is Vilas P. Sheldon, Independent of Artesia. I am quite in accord, I think, with Mr. Nutter's provision in the rule. I definitely think the rule does need revising, but since the question came up here twenty minutes ago what constituted a perfect hole, I see we are going to dig ourselves into another hole not knowingly. I wonder if the Commission would be willing to add the fourth provision in allowing the operator to deviate the hole without the Commission hearing. The fourth provision to be added to the straighten a crooked hole, to sidetrack junk in the hole, or to control a blow-out, sets forth and reads as follows: or to deliberately drill a straight hole. It didn't seem to me that an operator is indebted to dig a straight hole. I am thinking especially of a hole going to some deliberate depth, maybe 8,000, maybe 10,000 in a field where they habitually deviate at 5,000 or 6,000 or 3,000 foot. If an operator has intended to set a whipstock at that point, he would be deliberately drilling a straight hole.

MR. PORTER: Anyone else have any statements to make?

MR. GORDON: Joe Gordon, Socony Mobil, we support the proposal by Mr. Nutter.

MR. PORTER: Mr. Christie.

MR. CHRISTIE: After hearing the Humble proposal, we would like to see this thing continued, because we feel it is not complete the way it is now. As for example, the precise of the unit depth we are drilling to now, if we can get over more than

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five degrees -- as a matter of fact, if you drill on a 640-acre tract, 2310 feet from the line, that would be a gas unit. Of course, you could get off five, ten degrees and still be on your own tract, and it might be something like that should be considered. In other words, at a greater angle of deviation, so I think the rule needs more study and we are in favor of the motion made by Humble.

MR. PORTER: Mr. Kastler.

MR. KASTLER: Gulf feels that the present rule is somewhat inadequate. To that extent, we concur with the Commission bringing this on but you might say also, no objection in support of Humble's suggestion for giving this matter such further consideration as might be deemed necessary, other than that if the rule changes, is to be accepted without further delay, I would like to suggest instead of whipstocking and/or directionally drilling, wherein the word "whipstocking" be changed to "intentionally deviated." We also question the necessity of filing a form C-102 for straightening a crooked hole or sidetracking junk where the deviated hole is five degrees or less in a 500-foot interval. In other words, if you straighten out a very minor crook in the hole, then it should be possible to do so without filing the form C-102.

Thank you.

MR. PORTER: Anyone else?

MR. MORRIS: I have a statement, if the Commission please.



Mr. Nutter's proposed rule was intended primarily to clarify the existing Rule 111 under which we have operated for quite some time. If a further study of the entire problem is necessary, as Humble has proposed, then it would seem to me that such a further study could be undertaken, but that the proposed rule of Mr. Nutter could be adopted immediately to clarify the present rule which badly needs clarification.

That is all I have.

MR. PORTER: Anyone else care to make a statement?

The Commission will grant the motion by Mr. Bratton for a continuance until August.

We will appoint an industry committee, and Mr. Bratton, personally I think it probably advisable to appoint only the producers or operators. Of course, the committee can avail itself of its services or drilling contractors or deviation test people who think they might be able to give good advice on it, and also one other point, we will rule on this later as to the chairman of the committee. But the case will be continued until August and we will appoint the committee.

* * * *

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BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
August 15, 1962

IN THE MATTER OF: (Continued)

Case 2561

The hearing called on the motion of the motion of the Oil Conservation Commission to consider revising Rule 111, Deviation Tests and Whipstocking. The Commission will consider the report and recommended rule of the Industry Committee appointed by the Commission after the May, 1962 hearing. The proposed rule, as stated in the Committee Report, reads in its entirety as follows:

Rule 111. Deviation Tests and Directional Drilling

(a) Any well which is drilled or deepened with Rotary Tools shall be tested at reasonably frequent intervals not to exceed 500 feet or at the next subsequent bit change to determine the deviation from the vertical. A sworn notarized tabulation of all tests run shall be filed with Form C-105, Well Record. When such deviation averages more than five degrees in any 500 foot interval, the Commission may request that a directional survey be run to establish the location of the producing interval (s).

The Commission, at the request of an offset operator, may require any operator to make a directional survey of any well. Said directional survey and all associated costs shall be at the expense of the requesting party and shall be secured in advance by a \$5,000

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indemnity bond posted with and approved by the Commission. The requesting party may designate the well survey company, and said survey shall be witnessed by the Commission.

(b) No well shall be intentionally deviated in a predetermined direction without special permission from the Commission. Permission to deviate toward the vertical to straighten an excessively deviated well bore as defined in (a) above; or to sidetrack junk in the hole in an indeterminate direction or toward the vertical; or to drill a relief well to control a blow-out shall be obtained from the appropriate District Office of the Commission on Commission Form C-102 with copies of said Form C-102 being furnished to all offset operators. Permission to deviate a well in any other manner or for any other reason will be granted only after notice and hearing. Upon completion of any well that was deviated in a predetermined direction, except toward the vertical, a directional survey of the entire well bore must be run and filed with the Commission. In addition, all directional surveys run on any well that was intentionally deviated in any manner for any reason must be filed by the operator with the Commission upon completion of the well. Prior to the assignment of an allowable, operator shall submit a sworn notarized statement to the effect that all directional surveys run on the well have been filed.

BEFORE: Honorable Edwin L. Mechem
Mr. A. L. "Pete" Porter
Mr. E. S. "Johnny" Walker

TRANSCRIPT OF HEARING

MR. PORTER: We will take up next Case 2561.

MR. PAYNE: Case 2561, in the matter of the hearing



called on the motion of the Oil Conservation Commission to consider the revision of Rule 111.

Mr. Commissioner, the Commission has one witness, Mr. C. J. Beaupre.

MR. PORTER: Mr. Beaupre, will you come forward and be sworn, please?

(Witness sworn.)

MR. PORTER: Take the stand, please.

C. J. BEAUPRE

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

DIRECT EXAMINATION

BY MR. PAYNE:

Q Will the witness please state his name and his position?

A My name is C. J. Beaupre, Petroleum Engineer with Mobil Oil Company.

Q Mr. Beaupre, have you ever testified before the Commission before?

A No, I have not.

Q Will you give them a brief resume of your background and professional experience?

A I have had eight years drilling well completion and workover experience in Louisiana, Gulf, West Texas and eastern



New Mexico. I'm a registered professional engineer in the State of New Mexico Certificate 3652.

MR. PAYNE: I'll ask the Commission if the witness's qualifications are accepted.

MR. PORTER: Yes, they are.

Q (By Mr. Payne) Did you serve as Chairman on a Committee to consider revision of Rule 111?

A Yes.

Q What basic changes did you and the Committee propose, and what is the purpose for these particular changes?

A The basic changes are in that the operator must file the surveys and the old rule had just implied it. Also, the old rule stated that if the deviation exceeded five degrees in any 500 feet, that the Commission would require a survey, or survey must be furnished to the Committee, this is a deviation and directional survey.

The old rule, the well must be bottomed on the lease, and in the new rule it must determine that it is in a producing interval, and it's meant that it be in the producing interval on the proration unit.

A new paragraph has been added to Section A, in that the offset operator may require a survey. In Part B the emergency clause has been clarified, and also that the deviation toward the

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vertical is clarified. Every other intentionally deviated hole shall be only after notice and hearing.

Now, I have some background, and I would like to read the minutes of the meeting.

Q All right.

A First I would like to read off the members who were on the Committee. There's myself, C. J. Beaupre with Mobil Oil Company; Clark E. Storm with Carper Drilling Company; J. E. Newkirk with Amerada Petroleum Company; R. M. Anderson with Sinclair Oil & Gas; J. E. Willingham with Humble Oil & Refining Company; Merrill Wilson with Great Western Drilling Company; W. E. Bingman with Shell Oil Company, and J. E. Robinson with Texaco, Inc.

Other participants were Johny Hampton, W. R. Harrison, J. G. Yope, E. G. Hays, A. E. Snyder, A. J. Troop, J. B. Peddy and George R. Hoy.

The Commission participants were Daniel S. Nutter, Joe D. Ramey and J. W. Runyan.

Governor Mechem, Mr. Walker and Secretary-Director Porter, the following is a resume of the meetings of the Deviation Tests and Directional Drilling Committee which was formed by you, the Commission, for the specific reason of studying and recommending a clarification and revision of Commission Rule 111. The Commission designation is Case 2561. The following is the recommended

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revision to Rule 111 and has the unanimous support of all committee members. The recommended rule reads as follows:

Rule 111. Deviation Tests and Directional Drilling

(a) Any well which is drilled or deepened with Rotary Tools shall be tested at reasonably frequent intervals not to exceed 500 feet or at the next subsequent bit change to determine the deviation from the vertical. A sworn notarized tabulation of all tests run shall be filed with Form C-105, Well Record. When such deviation averages more than five degrees in any 500 foot interval, the Commission may require that a directional survey be run to establish the location of the producing interval(s).

The Commission, at the request of an offset operator, may require any operator to make a directional survey of any well. Said directional survey and all associated costs shall be at the expense of the requesting party and shall be secured in advance by a \$5,000 indemnity bond posted with and approved by the Commission. The requesting party may designate the well survey company, and said survey shall be witnessed by the Commission.

(b) No well shall be intentionally deviated -- this is part (b), No well shall be intentionally deviated in a pre-

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determined direction without special permission from the Commission. Permission to deviate toward the vertical to straighten an excessively deviated well bore as defined in (a) above; or to sidetrack junk in the hole in an indeterminate direction or toward the vertical; or to drill a relief well to control a blow-out shall be obtained from the appropriate District Office of the Commission on Commission Form C-102 with copies of said Form C-102 being furnished to all offset operators. Permission to deviate a well in any other manner or for any other reason will be granted only after notice and hearing. Upon completion of any well that was deviated in a predetermined direction, except toward the vertical, a directional survey of the entire well bore must be run and filed with the Commission. In addition, all directional surveys run on any well that was intentionally deviated in any manner for any reason must be filed by the operator with the Commission upon completion of the well. Prior to the assignment of an allowable, operator shall submit a sworn notarized statement to the effect that all directional surveys run on the intentionally deviated well have been filed.

The above recommendation is not a rigid, detailed, complicated rule, but does represent a reasonable yet complete rule which the



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prudent operator will have no difficulty in following. Also, the proposed rule may save both the Commission and the operator considerable money in the future and it is hoped that this rule will encourage rather than discourage continued drilling.

The following will present the findings of the committee and present the analysis of the important items which were discussed that pertain to hole deviation and directional drilling. The fine details of the meeting will not be listed for the simple reason that it would be too time consuming and will not add to the clarity of the findings; the meetings to date required $24\frac{1}{2}$ hours or approximately 251 man hours in the conference room and an indeterminate amount of time outside of the conference room. The first meeting was held in Hobbs, New Mexico, on May 18, 1962. The minutes of the Commission called hearing to amend Rule 111 (Case 2561) were read to the committee. The present Rule 111 was also read. Mr. Daniel S. Nutter stated the need for clarification of the rule and briefly described several of the hearings involved. Two proposed revisions were presented at this time; one by Mr. Nutter and Mr. Morris of the NMOCC, and one by Mr. E. G. Hays of Humble Oil & Refining Company. Most of the discussion that took place evolved around the following topics:

1. The bottom hole location with respect to surface location.
2. The 5° in any 500 ft. present yardstick.



3. Whether or not to include cable tools in the hole deviation rules.
4. The method of handling of controlled directional drilling administratively or by notice and hearing.

The discussion that took place ended with no acceptable conclusions. The discussion and other data were to be continued at the next meeting. Also, it was agreed that a well deviational and directional survey expert would be present at the next meeting and that cable tool drilling companies would be contacted with regard to hole deviation and survey practices.

The second meeting was held in Midland, Texas on June 22, 1962. Prior to this, the members of the committee were furnished with copies of the hole deviation and directional drilling rules from 12 of the states in the United States which have rules pertaining to hole deviation. A copy of such is enclosed along with a tabulation of the various points covered in these rules. Surveying experts were consulted and information obtained from them indicated that cable tool drilled holes could be drilled as crooked as rotary drilled holes. Continued discussion pertaining to cable tool drilling resulted in the following conclusions:

1. That since the depth of cable tool drilling is limited, it is possible but improbable that cable tool rigs would "bottom the hole" off the proration unit.

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2. That when deviation changes rapidly in a cable tool hole, the tools no longer work freely in the hole.
3. That generally cable tool drilling usually drifts down dip rather than up dip; rotary drilled holes usually drift up dip.

Several deviational and directional surveys were presented at this meeting. Most of these surveys showed that in Eastern New Mexico low deviational holes usually, but not always, tend to spiral while high deviational holes (over 4 or 5°) nearly always trend toward one direction. At this time three proposed rule amendments were presented by Texaco, Sinclair, and Mobil. Considerable discussion evolved around such items as bottom hole location with respect to surface location. In other words, should an operator who drills a well one foot from the proration unit boundary have the same allowable as an operator who bottoms his hole under the 330 ft. from lease line location. It appeared to be difficult to formulate a rule which would seemingly be a contradiction to Rule 104. Mr. D. S. Nutter stated that, in the past, as long as a random drilled well is bottomed within the proration unit boundaries the well would receive a full allowable.

The third meeting was held in Midland, Texas, on July 2, 1962. At this meeting the following was agreed upon concerning deviation tests:



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1. That a practical minimum hole deviation be adopted; this is to be 5° for any 500 foot interval.
2. The Commission may require a directional survey if the deviation stated in "1" is exceeded.
3. Deviation tests should be taken at reasonably frequent intervals at least every 500 feet or the next subsequent bit change and these tests be filed with Form C-105 and made a part thereof.
4. That the first paragraph of Rule 111 (a) pertain to rotary tools.
5. That the Commission may require a directional and deviational survey of any well at the request of the offset operator; the cost and other expenses (including loss of production, pulling unit costs, etc.) of this survey would be borne by the requesting company, since it was agreed that the operator may either refuse or be unable to pay for the survey. It was not intended that these surveys be limited to rotary tools.

Since it was agreed by most of the committee members that rotary drilled wells with deviations less than 3° tend to spiral, it was proposed that the Commission use only the cumulative of drifts in excess of 3° deviation in determining whether or not a survey is necessary as in "2" above.



Q Let me interrupt you at this point, Mr. Beaupre.

Did the rule mean to imply that this is all the Commission can use in determining whether a survey is necessary?

A No, sir, it is not.

Q Thank you.

A A motion was made and seconded to adopt Part (a) of the proposed Rule 111 by Mr. Clark E. Storm and Mr. R. M. Anderson, respectively. The proposed rule vote was unanimously accepted by all committee members present. Paragraph (b) of Rule 111 pertaining to intentional directional drilling appeared to be less controversial than paragraph (a). The committee members agreed on the following:

1. That the rule must contain a suitable emergency clause, one which would permit the operator to take action immediately in the event of emergency.
2. That other than for those reasons stated in the emergency clause, all planned directional drilling should require a hearing.
3. That a deviational and directional survey of the entire well bore, sworn and notarized, of any intentional directionally drilled holes (except those deviating toward the vertical) should be required by and filed with the Commission.



4. That all surveys run in an intentionally deviated hole, be filed with the Commission.

Considerable discussion evolved around whether the operator or the survey company would file the deviational and directional surveys. Mr. Joe D. Ramey of the Commission stated that the Commission does not have any jurisdiction over the survey company, while it does have jurisdiction over the operator. A motion was made by Mr. E. G. Hays to require that the directional survey companies file the required directional surveys. Mr. Clark E. Storm seconded this motion. This motion was defeated. A motion was made and seconded that the committee accept Rule 111 part (b) similar to the way it appears above by Mr. R. M. Anderson and Mr. J. E. Robinson, respectively. The meeting was then adjourned. Therefore, it was decided by vote that the operator file the surveys.

The last meeting of the committee was held at Santa Fe, New Mexico on July 19, 1962. This meeting was arranged so as to familiarize the commission members with the work of the committee and to determine if the Four Corners or other areas presented deviation problems different from those of Eastern New Mexico. Mr. J. M. Durette (Commission Legal Staff) suggested that the proposed "Rule 111 a" (second paragraph) contain a \$5,000 bond requirement. After a discussion, a motion was made and seconded

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by Mr. J. E. Willingham and Messrs. R. M. Anderson and J. E. Robinson, Jr., respectively, that the wording of the second paragraph of the proposed rule be reworded to include the posting of a bond by the party requesting a survey. The committee voted to accept this addition.

A motion to adopt the proposed Rule 111 as it appears in this letter was made and seconded by Mr. J. E. Willingham and Mr. W. E. Bingman, respectively. The vote by the committee to adopt the proposed rule to be presented to the August commission hearing was unanimously accepted.

It is sincerely hoped that the Commission will accept the proposed revision of Rule 111. The committee believes that it will be accepted by all operators and that it will not place any additional burdens on any operator or the Commission.

Q Mr. Beaupre, if you had a dual completion, one completion being in one proration unit and the other completion being in a different proration unit due to deviational drilling, under your rule, what's going to be dedicated to each well?

A It would depend on the producing interval in the proration unit that the producing interval is in.

Q That's the criterion under your rule?

A Right.

Q Mr. Beaupre, did you prepare Exhibit A?



A Yes, sir.

Q Do you have anything further you would like to state to the Commission relative to this exhibit?

A No, sir, not at this particular time.

MR. PAYNE: We move for the admission of Exhibit A in Case 2561.

(Whereupon, Exhibit A was offered into evidence.)

MR. PORTER: Without objection, the exhibit will be admitted.

(Whereupon Exhibit A was admitted into evidence.)

MR. PORTER: Does anyone have a question of Mr. Beaupre concerning the committee report or his testimony? His exhibit? Mr. Beaupre, you may be excused.

(Witness excused.)

MR. PORTER: Does anyone have any further testimony to offer in the case? Does anyone have a statement to make?

MR. HENSLEY: Mr. Commissioners, My name is Harold Hensley, Jr., associated with the law firm of Hervey, Dow & Hinkle in Roswell, New Mexico, and appearing on and in behalf of Humble Oil & Refining Company and tender the following statement for the record. The Humble Oil & Refining Company recommends and supports the proposed change to Rule 111, Deviation Test and Directional Drilling as read. Thank you.



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MR. PORTER: Mr. Gordon.

MR. GORDON: Joe Gordon with Socony-Mobil. Socony-Mobil recommends that the Commission adopt the revised Rule 111 as proposed by the Commission.

MR. PORTER: Mr. Eaton.

MR. EATON: George W. Eaton, Jr. for Pan American Petroleum Corporation. Pan American believes the proposed revision to Rule 111 is a definite improvement, and, therefore, recommends and supports the adoption of the revised rule.

MR. PORTER: Mr. Anderson.

MR. ANDERSON: R. M. Anderson, Sinclair Oil & Gas Company. Sinclair participated in the industry committee study and we would like to concur with the committee recommendations.

MR. PAYNE: Mr. Commissioner, we have two statements that we received in the mail.

MR. PORTER: Would you indicate what they are, Mr. Payne?

MR. PAYNE: Gulf Oil Corporation and Texaco, Inc. both recommend the adoption of the rule proposed by the study committee.

MR. PORTER: At this time, before we take the case under advisement, I certainly want to thank the industry committee for the many hours they put in on this project, to which



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they were assigned. I particularly want to thank Mr. Beaupre for serving as chairman and for presenting the recommendations of the committee here today. We think the committee has represented a good cross section of the industry. I didn't attend any of the committee meetings, but I was close enough to hear some of the rumbles, so I know there was some yielding here and there on occasion.

We certainly appreciate the work that has been done by this committee.

One other thing I would like to say is that I have been asked by various segments of the news media as to whether our docketing of this case was precipitated by some incident of slant hole drilling in another state, and it wasn't. Really, this case was scheduled to be heard early this year and we didn't find a convenient place to put it on the docket. It wasn't docketed until May, where we thought it would be a good case to put on the Hobbs docket, because it was something of industry-wide interest. It came on there in May, and at a suggestion, or upon motion of some of the interested parties, we did appoint the committee and brought it back on here this month.

I've been asked by the press as to whether we have had incidents of slant hole drilling. We didn't go out on the limb as some other states have and said no. That's something we



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. 2561
Order No. R-2308

APPLICATION OF THE OIL CONSERVATION
COMMISSION, UPON ITS OWN MOTION, TO
CONSIDER REVISING COMMISSION RULE
111.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on May 16, 1962, at Hobbs, New Mexico, and on August 15, 1962, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission,"

NOW, on this 28th day of August, 1962, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, 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 subsequent to the Hobbs hearing and the continuance of Case No. 2561 to August 15, 1962, the Commission appointed an Industry Committee to study Rule 111 of the Commission Rules and Regulations and to make a recommendation as to possible revision thereof at the August hearing.

(3) That the Committee's proposed revision of Rule 111, with certain minor modifications, should be adopted inasmuch as the proposed Rule, as modified, will require wells to be drilled in such a manner as to prevent injury to neighboring leases and properties and will be in the interest of more adequate protection of correlative rights and the prevention of waste.

IT IS THEREFORE ORDERED:

(1) That Rule 111 of the Commission Rules and Regulations be and the same is hereby amended to read in its entirety as follows:

RULE 111. DEVIATION TESTS AND DIRECTIONAL DRILLING

(a) Any well which is drilled or deepened with rotary tools shall be tested at reasonably frequent intervals to determine the deviation from the vertical. Such tests shall be made at least once each 500 feet or at the first bit change succeeding 500 feet. A tabulation of all deviation tests run, sworn to and notarized, shall be filed with Form C-104, Request for Allowable. When the deviation averages more than five degrees in any 500-foot interval, the Secretary-Director of the Commission may require that a directional survey be run to establish the location of the producing interval(s).

The Secretary-Director of the Commission, at the request of an offset operator, may require any operator to make a directional survey of any well. Said directional survey and all associated costs shall be at the expense of the requesting party and shall be secured in advance by a \$5,000.00 indemnity bond posted with and approved by the Commission. The requesting party may designate the well survey company, and said survey shall be witnessed by the Commission.

(b) No well shall be intentionally deviated without special permission from the Commission. Permission to deviate toward the vertical to straighten a crooked hole, to deviate toward the vertical or in an indeterminate direction to sidetrack junk in the hole, or to drill a relief well to control a blow-out shall be obtained from the appropriate District Office of the Commission on Commission Form C-102 with copies of said Form C-102 being furnished to all offset operators. Permission to deviate a well in any other manner or for any other reason will be granted only after notice and hearing. Upon request from the Secretary-Director of the Commission, any well which was deviated in an indeterminate direction or toward the vertical shall be directionally surveyed. In addition, a directional survey of the entire well bore must be made on any well which was deviated in a predetermined direction, except toward the vertical. The District Office of the Commission shall be notified of the approximate time all directional surveys are to be conducted. All directional surveys run on any well which was intentionally deviated in any manner for any reason must be filed with the Commission upon completion of the well. The Commission will not assign an allowable to a well until the operator has submitted an affidavit that all such directional surveys have been filed.

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CASE No. 2561
Order No. R-2308

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

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION



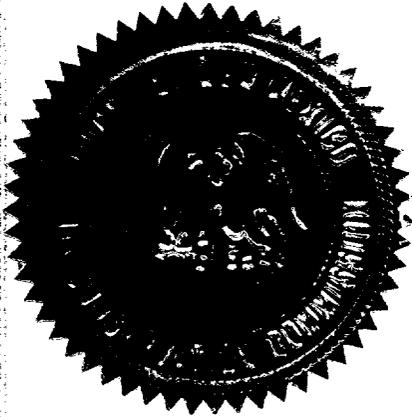
EDWIN L. MECHEM, Chairman



E. S. WALKER, Member



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



esr/