

BEFORE THE  
OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
March 3, 1961

IN THE MATTER OF: )  
 )  
 Application of Sinclair Oil & Gas Company for approval )  
 of a unit agreement. Applicant, in the above-styled ) Case  
 cause, seeks approval of the Keel Deep Unit Agreement, ) 2214  
 which unit embraces 6,155.5 acres of Federal and State )  
 lands in Township 17 South, Range 31 East, Eddy County )  
 New Mexico. )

BEFORE:

Daniel S. Nutter, Examiner.

TRANSCRIPT OF HEARING

MR. NUTTER: Case 2214.

MR. MORRIS: Application of Sinclair Oil & Gas Company  
for approval of a unit agreement.

MR. WHITE: Charles White of Gilbert, White & Gilbert,  
Santa Fe, New Mexico, appearing on behalf of the application. We  
also have associated with us Horace Burson, attorney out of Midland,  
Texas, and he will present the testimony. There are two witnesses  
to be sworn.

(Witnesses sworn.)

J. R. LODLE

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

DIRECT EXAMINATION

DEARNLEY-MEIER REPORTING SERVICE, Inc.

PHONE CH 3-6691

ALBUQUERQUE, NEW MEXICO



BY MR. BURTON:

Q Will you state your name, please?

A J. R. Lodle.

Q By whom are you employed?

A Sinclair Oil and Gas Company, Roswell.

Q What is your job with Sinclair?

A District manager, New Mexico District in Roswell.

Q Is the proposed Keel Deep Unit area in your district?

A Yes, sir.

Q Are you familiar with the proposed unit agreement?

A Yes, sir.

Q Have you prepared a map of the unit area?

A We have prepared the large scale map there that is identical to the map shown in the unit agreement with the exception there is a little more information that might be used at this conference on the big map.

MR. BURTON: We would like to mark the map applicant's Exhibit No. 1.

Q With reference to Exhibit No. 1, will you describe the type of acreage and the amount of acreage in the unit?

A The unit, as shown on the exhibit there, is comprised of Federal and State lands only. It comprises a total of 6155.45 acres. Of that amount 5675.45 acres are Federal, 480 acres are State.

Q ~~And the unit outline is shown by the broken outline around~~



the unit there which comprises Sections 3, 4, 5, 6, 7, 8, 9, 10, N/2 and SE of 16, which is State, and it is shown in yellow on that map, being the only State acreage. The rest is blank, and it is Federal and not colored, and the N/2 of 17 and the N/2 of 18.

Q Does it indicate the location of your proposed test well in this area?

A Yes, it does. The location is shown in the SE of the SW/4 of Section 4, 13,700 foot Devonian test in red.

MR. BURTON: We have filed two copies of the proposed unit agreement. Does the Commission require more copies than that?

MR. NUTTER: We will require an executed copy within 30 days after the unit is effected. This is fine for now.

MR. BURTON: We would like to mark the unit agreement as Exhibit 2, a copy of it.

Q Mr. Lodle, is Exhibit 2 a copy of the proposed unit agreement for the Keel Deep Unit?

A It is an identical copy, of which we have considerable.

MR. BURTON: Mr. Examiner, we have been requested to make one revision in the agreement, and it is an addition to Paragraph 18, Subparagraph (1), Page 20, and it is a proviso which I have prepared and marked as our Exhibit 1-a, which I would like to include in the record.

MR. NUTTER: Does this extra paragraph, or extra statement, does it go in following the conclusion of the Paragraph 18-1 as it is in the unit agreement at the present time?

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MR. BURTON: Yes, sir. It will be added at the end of the paragraph.

MR. NUTTER: I see, this is Exhibit 1-a, then?

MR. BURTON: Yes, sir.

MR. PAYNE: Is this a segregation clause, Mr. Burton?

MR. BURTON: That is a modification of the segregation clause, a further modification of it. The State leases are in their secondary, beyond the secondary term, and one party has thought it would be advisable to change the agreement.

Q Now, the unit area shown on Exhibit 1, has that been designated by the U.G.S. as an area logically subject to unit development and operation?

A Yes, sir, it has, as of December 16th by the Acting Director of the Geological Survey in Washington.

Q With reference to the unit agreement, I will ask you some questions to bring before the Examiner the general provisions of the agreement, without trying to go into detail. The agreement is here, and, of course, will speak for itself.

Q What is the area being unitized, that is, depths?

A All formations below the top of the Glorieta sandstone which is found at approximately 4857 feet in the Skelly 6 Lynch A which is shown in Section 15 on the large scale map you have before you there.

Q That is spelled out in Paragraph 3, is it not, on Page 5?

A Yes.



Q And who is the unit operator?

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Q Is there a provision for the drilling of a test well and drilling of successive wells until discovery?

A Yes. There is drilling to discovery within six months after the effective date on a location that would be approved on Federal lands by the Director, and if on State lands, by the Commissioner, to drill a Devonian test or discovery of unitized substances at a lesser depth resulting in production at paying quantities

Q That is set out in Paragraph 9, is it not?

A Yes, sir.

Q And the total depth for the test well?

A 13,700.

Q After discovery is obtained, what is provided with reference to the development and operation?

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A Schedules will be submitted that will set up a participating area of all the unit lands that are then, at that time, reasonably thought to be productive.

Q Will the production then be allotted on an acreage basis?



A Yes, sir.

Q To all of those who are inside the participating area?

A Yes, sir, inside the participating area.

Q Suppose that some of the area, the leases or lands, are never put in a participating area. Does the agreement make any provision for disposing of that acreage?

A If they are not put into participating it provides for automatic elimination after five years.

Q I call your attention to Paragraph 16; what is that provision in there, Mr. Lodle?

A That is the conservation proration that operation hereunder will be conducted in the most efficient and economical manner to recover the most resources without waste as defined and pursuant to State and Federal regulations.

Q And when is the agreement to become effective?

A Effective date is after the approval by the Director and the Commissioner, for a term of five years.

Q An initial term?

A And, unless it is incapable of production, or if it results in production in paying quantities.

Q Then it continues after the five years, indefinitely, so long as the unit produces?

A Yes, sir.

Q In general, do you know if this unit agreement follows the form prescribed by the U.S. G.S.?



A Yes, it does.

Q And it is the form that has been approved several times by the Commission?

A Several times previously, yes, sir.

Q Exhibit A to the unit agreement is a map of the unit area, is it not?

A Yes. Exhibit A is a map that is contained in the unit agreement.

Q What is Exhibit B?

A Exhibit B is a list of the tracts, description of the land, number of acres, serial number of various leases, lessee or record, percentage of overriding royalty owners and the percentage of the working interest owners.

Q Does it also list the owners of the royalty, overriding royalty, and working interests?

A Yes, it does. It lists the overriding royalty owners and working interest owners.

Q What is the percentage of the leases which are owned by Sinclair Oil & Gas Company?

A Sinclair owns approximately 85.7% of the leases comprised in the outlined area.

Q Have you communicated with all the other working interest owners to ascertain whether or not they wish to join the unit?

A We have, verbally and by certified mail.

Q What is the status of the committed acreage?

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A The committed acreage, the working interests joining are Aston, Fair, Fair Oil and Cosden.

Q Their acreage is shown, I believe, on the bottom of the maps, is it not?

A Yes, it is. The one reason for the map there, we cross-hashed the areas there not committed as of now.

Q In the Sunray acreage in Section 17, what is Sunray doing about theirs?

A Sunray owns Federal leases and they have refused to commit their acreage to the unit.

Q Have you heard from Humble?

A Humble is considering joining the unit at this time.

A And they have some State leases in Section 16?

A Yes.

Q What about Shell?

A Shell has committed their acreage to the unit. They have State leases in Section 16, and they are committed.

Q They have a 40-acre lease in Section 16?

A That's correct.

Q Mobil is shown with a 40-acre State lease in Section 16?

A They are considering at this moment.

Q And the remaining State lease in Section 16 is shown to be owned by three individuals and Cosden, I believe you stated that Cosden has agreed to join the unit?

A Cosden has executed the agreement. The others have de-



clined to join the agreement at this time.

Q So that in this tract only 1/4 of the interest will be committed?

A Yes, sir.

Q Have you contacted the owners of the overriding royalty interests?

A All of the overriding royalty interest owners have been contacted by certified mail. There are approximately 34 owners, and of the 34 owners over 28 have joined, totalling 91% of the total override -- it is almost 92 plus.

Q If you haven't given us the figure, would you state what is the percentage of the working interests now committed?

A The working interests now committed, I have the figures, is 89.6 of the total, which amounts to 95.77% of the Federal acreage and 16.66 of the State, or a total of 89.6 total committed.

MR. BURTON: That is all.

MR. NUTTER: Any questions of Mr. Lodle?

BY MR. NUTTER:

Q Mr. Lodle, you stated Humble was considering joining. Does that apply to both of their leases there?

A Yes, sir.

Q And Mobil is considering?

A Yes, sir.

Q Sunray is definitely out?

A Sunray is definitely out. They advised us they were out.



In fact, they were the first to advise us.

Q Are these other three people in Tract No. 10 there definitely not going to come in, or just haven't made up their mind yet?

A I couldn't say they definitely won't come in, because they indicated at one time they might. The last we heard they will not join.

BY MR. PAYNE:

Q If another unit is formed to the south, and Sunray joins that unit, then what happens, we would have two unit orders outstanding with the same acreage in both.

A There is an existing unit to the south, the Skelly unit, yes.

Q Directly south?

A Yes.

Q Does Sunray intend to join that?

A I don't know sir, whether they do or not.

Q If we deleted the Sunray acreage from your unit area you would have to change the entire agreement?

MR. BURTON: Yes, we would, and we would have to obtain approval of the redesignated area from the U.S.G.S.

Q Does the unit agreement contain an agreement for expansion and contraction?

A Yes, sir.

MR. BURTON: The unit just would not become effective as

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to the acreage which is not committed. It would, in effect, change the boundary of it.

MR. NUTTER: Is your next witness a geologist?

MR. BURTON: Yes.

MR. NUTTER: Any further questions of Mr. Lodle? He may be excused.

J. W. HODGES,

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

DIRECT EXAMINATION

BY MR. BURTON:

Q State your name and employment, please.

A J. W. Hodges, employed by Sinclair Oil & Gas Company as a geologist in Roswell, New Mexico.

Q Have you previously testified before the Commission in your capacity as a geologist?

A Yes, sir.

Q And your qualifications as such are a matter of record?

A Yes, sir.

Q Have you made a study of the Kee: Deep Unit area which is the subject of this hearing?

A Yes, sir, I have.

Q And are you familiar with the geological features that are involved?

A Yes, sir.



Q Have you reduced your investigation and findings to a written form, a brochure?

A Yes, sir, we have.

MR. BURTON: We will mark this as applicant's Exhibit No. 3.

Q Does your brochure contain a location plat of the area?

A Yes, sir.

Q That is shown as Exhibit 1 to the brochure?

A Yes, sir, it is. The plat locates the proposed Keel Deep Unit approximately 28 miles east of the town of Artesia in a belt of shallow permian production on the Artesian vacuum trend.

Q What will be the primary objectives in the tests that you propose to drill?

A The No. 1 objective will be the Devonian dolomite, and No. 2 objective, Pennsylvanian sand, or Morrow section.

Q And if you will, by reference to the outline in the brochure, describe briefly what the existing production in the area is?

A The existing production on the unit itself is confined to the Seven Rivers-Grayburg and San Andres formations. Immediately adjacent is the Fren Pennsylvanian field located in Section 15, 22 and 21 of Township 17 South, 31 East, and comprises three wells.

Q This is shown on your Exhibit 3, is it not, the production in the area?

A Yes, sir, it is.

Q What is the nearest Pennsylvanian production?



A The nearest Pennsylvanian production is in the three-well Pennsylvanian field.

Q That is where?

A Sections 15, 22 and 21 of Township 17 South, Range 31 East.

Q Where is the nearest Devonian production at the present time?

A The nearest Devonian production at the present time is in the Continental No. 12 Baish, a one-well pool in the Maljamar field, approximately six miles southeast.

Q The unit agreement covers only rights below a certain depth which is, I believe, the top of the Glorieta sand. Now, explain, please, how you have arrived at figuring the vertical limits of the unit?

A The vertical limits of the unit were arrived at in going to the next formation below the formation which had production. The San Andres is the lowest formation which has production on the Keel unit, and the next formation would be the Glorieta.

Q And that horizon is specifically defined, is it not, by a log which you include in your exhibits?

A Yes, sir, it is. We show that as Exhibit 4 of the geological brochure, and that is a portion of the electrical log of the Skelly No. 6 Lynch which is located 660 feet from the North and West lines of Section 22, Township 17 South, Range 31 East, Eddy County, New Mexico. The vertical limits of the unit have been placed at 4857 by electrical log, which is where we call the top of

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the Glorieta.

MR. NUTTER: I have a different 4 in my copy. My unit begins at 4800 feet.

MR. BURTON: That is an obsolete exhibit.

MR. NUTTER: Had you originally contemplated the unit to start in the San Andres?

A Yes, sir, we had, but after consultation with the U.S.G.S. it was found that it would be better to start the unitization at the next succeeding formation.

MR. NUTTER: You can furnish us with a correct Exhibit 4, can you not?

A Yes, sir.

Q (By Mr. Burton) Now, do you have a contour map of the Pennsylvanian and Devonian structures which you find in this area?

A Yes, sir, we do.

Q Those are your Exhibits --

A No. 5 and No. 6.

Q What data are these structures developed from?

A These structures are contoured from geophysical data.

Q Do you have any explanation or any description that you would like to give with reference to these formations?

A The plat shows, near the top of the Devonian on the structure contour map, a closed anticlinal structure which is terminated on the north by a fault, and on the Pennsylvanian we show a closed anticlinal structure.



Q Is all of the Pennsylvanian structure as depicted on your Exhibit No. 5 included within the boundaries of the unit area?

A Yes, sir, it is.

Q What about this acreage in Section 15, is Section 15 included?

A No, sir.

Q You show a portion of it.

A Inasmuch as our primary objective on this unit will be the Devonian dolomite, the producing limits, we should think, would not include the portion of Section 15 which already has a well drilled on it to the Pennsylvanian, and a well in Section 22 drilled to the Devonian. The Pennsylvanian as shown on the contoured map would occupy a slightly larger area than that of the Devonian.

Q What I am asking, though, is, the portion of the Pennsylvanian structure in Section 15 is outside the boundaries of the unit?

A Yes, sir.

Q Is there reason for that?

A Yes, sir. This was not included in the proposed unit inasmuch as that acreage in Section 15 is already committed to a unit.

Q Insofar as concerns the Devonian structure, you show a portion of it in Section 15 and 22; is that the same structure as the one which you have proposed to test?

A No, sir, it is not. We believe that the two structures will be separated by a saddle or a structural low.



Q So that would not properly be a part of the unit?

A No, sir.

Q In your opinion, do you have, within the unit area, all of the land which is expected to be productive?

A We believe that the unit as outlined would encompass all of the production from the Devonian and from the Pennsylvanian.

Q With the exception of this acreage in Section 15?

A Yes, sir.

Q Do you know what unit that is in?

A Yes, sir. I believe it is the Skelly unit.

Q Is that a recent unit, or has it been in force several years?

A It has been in force for several years.

MR. NUTTER: What is the name of the unit, do you know?

A The Skelly unit.

MR. NUTTER: Is that the full name?

A That is my understanding.

Q (By Mr. Burton) Did you hear the testimony here as to the acreage which is not being committed to the unit?

A Yes, sir.

Q That is the tract in Section 16 owned by Sunray. Where is that located with reference to the structure?

A It would be located on the south flank of the Devonian structure.

Q If none of these tracts that have been mentioned as not



coming in, if they do not come in, but all the other working interests join, approximately 90%, in your opinion as a geologist, will the interests committed insure effective control of the unit area?

A Yes, sir, I believe they would.

Q Do you believe that it will obtain substantially all the benefits of the unit operation?

A Yes, sir.

Q What is your opinion as to whether the unit plan of operations is in the interests of conservation?

A Yes, sir, I think that there are several reasons that it would be beneficial to all the participants. It would provide an orderly manner of drilling. It would allow a systematic depletion of the reservoir, and without any undue delay secondary recovery methods could be initiated.

Q That is, you could go from your primary phase of recovery right into secondary at the most opportune time?

A Yes, sir.

Q And development could occur without regard to these interior lease lines, could it not?

A Yes, sir, it could.

MR. BURTON: That is all the questions.

MR. NUTTER: Any questions of Mr. Hodges?

BY MR. PAYNE:

Q What kind of control did you have in drawing these con-

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tours?

A This was based on geophysical control only.

Q Are there any wells producing in a horizontal and vertical limit of the proposed unit; is there any producing well, not only in the horizontal area, but the vertical area that is being unitized?

A Within the unit itself?

Q Yes, sir, at present.

A No, sir, there are no.

BY MR. NUTTER:

Q No proration whatsoever from the top of the Glorieta on down?

A Not in the proposed unit area.

Q This Skelly well in Section 15 is producing from the Pennsylvanian at this time?

A There are three wells in the Fren-Pennsylvanian field, Skelly No. 6 Lynch currently producing; Skelly No. 21 Dow in Section 21, currently shut in, and I was not able to find any production listed. It is still listed, but not shown as being shut in, the No. 3 Dow Well in Section 15, and I presume it is still capable of some production.

Q All three of these wells were producing from the Pennsylvanian?

A From the Lower Pennsylvanian.

Q Your well is going to be drilled in the SE of the SW of



4, is it?

A Yes, sir.

Q That is on the high as far as the Devonian contour is concerned, also located on your highest contour on the Pennsylvanian contour map, correct?

A Yes, sir.

Q Mr. Hodges, in your opinion, geological opinion, is the boundary of this unit sufficiently large to afford a dequate control of the unit for conservation purposes by the operator?

A Yes, sir, I believe it is.

Q In your opinion is the unit boundary unduly large to encompass acreage that is not within the closed contours as you have determined them to be from the geophysical data?

A No, I believe the proposed unit outline would encompass the producing area.

MR. NUTTER: Any further questions of Mr. Hodges? You may be excused.

MR. BURTON: Applicant offers its exhibits into the record.

MR. NUTTER: Sinclair's Exhibits 1 through 3 will be entered in evidence. Do you have anything further, Mr. Burton?

MR. BURTON: That is all.

MR. NUTTER: Take the case under advisement.

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I N D E X

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E X H I B I T S

<u>NUMBER</u>	<u>EXHIBIT</u>	<u>IDENTIFIED</u>	<u>OFFERED</u>	<u>ADMITTED</u>
Ex.#1	Map	2	19	19
Ex.#2	Unit Agreement	3	19	19
Ex.#3	Brochure	12	19	19

I do hereby certify that the foregoing is a complete record of the proceedings in the Hearings of Case No. 2214 heard by me on 3/3, 1967.

*[Signature]*  
 Examiner  
 New Mexico Oil Conservation Commission

DEARNLEY-MEIER REPORTING SERVICE, Inc.

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A Yes. Exhibit A is a map that is contained in the unit agreement.

Q What is Exhibit B?

A Exhibit B is a list of the tracts, description of the land, number of acres, serial number of various leases, lessee or record, percentage of overriding royalty owners and the percentage of the working interest owners.

Q Does it also list the owners of the royalty, overriding royalty, and working interests?

A Yes, it does. It lists the overriding royalty owners and working interest owners.

Q What is the percentage of the leases which are owned by Sinclair Oil & Gas Company?

A Sinclair owns approximately 85.7% of the leases comprised in the outlined area.

Q Have you communicated with all the other working interest owners to ascertain whether or not they wish to join the unit?

A We have, verbally and by certified mail.

Q What is the status of the committed acreage?

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A The committed acreage, the working interests joining are Aston, Fair, Fair Oil and Cosden.

Q Their acreage is shown, I believe, on the bottom of the maps, is it not?

A Yes, it is. The one reason for the map there, we cross-hashed the areas there not committed as of now.

Q In the Sunray acreage in Section 17, what is Sunray doing about theirs?

A Sunray owns Federal leases and they have refused to commit their acreage to the unit.

Q Have you heard from Humble?

A Humble is considering joining the unit at this time.

A And they have some State leases in Section 16?

A Yes.

Q What about Shell?

A Shell has committed their acreage to the unit. They have State leases in Section 16, and they are committed.

Q They have a 40-acre lease in Section 16?

A That's correct.

Q Mobil is shown with a 40-acre State lease in Section 16?

A They are considering at this moment.

Q And the remaining State lease in Section 16 is shown to be owned by three individuals and Cosden, I believe you stated that Cosden has agreed to join the unit?

A Cosden has executed the agreement. The others have de-



clined to join the agreement at this time.

Q So that in this tract only 1/4 of the interest will be committed?

A Yes, sir.

Q Have you contacted the owners of the overriding royalty interests?

A All of the overriding royalty interest owners have been contacted by certified mail. There are approximately 34 owners, and of the 34 owners over 28 have joined, totalling 91% of the total override -- it is almost 92 plus.

Q If you haven't given us the figure, would you state what is the percentage of the working interests now committed?

A The working interests now committed, I have the figures, is 89.6 of the total, which amounts to 95.77% of the Federal acreage and 16.66 of the State, or a total of 89.6 total committed.

MR. BURTON: That is all.

MR. NUTTER: Any questions of Mr. Lodle?

BY MR. NUTTER:

Q Mr. Lodle, you stated Humble was considering joining. Does that apply to both of their leases there?

A Yes, sir.

Q And Mobil is considering?

A Yes, sir.

Q Sunray is definitely out?

A ~~Sunray is definitely out. They advised us they were out.~~

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In fact, they were the first to advise us.

Q Are these other three people in Tract No. 10 there definitely not going to come in, or just haven't made up their mind yet?

A I couldn't say they definitely won't come in, because they indicated at one time they might. The last we heard they will not join.

BY MR. PAYNE:

Q If another unit is formed to the south, and Sunray joins that unit, then what happens, we would have two unit orders outstanding with the same acreage in both.

A There is an existing unit to the south, the Skelly unit, yes.

Q Directly south?

A Yes.

Q Does Sunray intend to join that?

A I don't know sir, whether they do or not.

Q If we deleted the Sunray acreage from your unit area you would have to change the entire agreement?

MR. BURTON: Yes, we would, and we would have to obtain approval of the redesignated area from the U.S.G.S.

Q Does the unit agreement contain an agreement for expansion and contraction?

A Yes, sir.

MR. BURTON: The unit just would not become effective as

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to the acreage which is not committed. It would, in effect, change the boundary of it.

MR. NUTTER: Is your next witness a geologist?

MR. BURTON: Yes.

MR. NUTTER: Any further questions of Mr. Lodle? He may be excused.

J. W. HODGES,

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

DIRECT EXAMINATION

BY MR. BURTON:

Q State your name and employment, please.

A J. W. Hodges, employed by Sinclair Oil & Gas Company as a geologist in Roswell, New Mexico.

Q Have you previously testified before the Commission in your capacity as a geologist?

A Yes, sir.

Q And your qualifications as such are a matter of record?

A Yes, sir.

Q Have you made a study of the Keel Deep Unit area which is the subject of this hearing?

A Yes, sir, I have.

Q And are you familiar with the geological features that are involved?

A Yes, sir.



Q Have you reduced your investigation and findings to a written form, a brochure?

A Yes, sir, we have.

MR. BURTON: We will mark this as applicant's Exhibit No. 3.

Q Does your brochure contain a location plat of the area?

A Yes, sir.

Q That is shown as Exhibit 1 to the brochure?

A Yes, sir, it is. The plat locates the proposed Keel Deep Unit approximately 28 miles east of the town of Artesia in a belt of shallow permian production on the Artesian vacuum trend.

Q What will be the primary objectives in the tests that you propose to drill?

A The No. 1 objective will be the Devonian dolomite, and No. 2 objective, Pennsylvanian sand, or Morrow section.

Q And if you will, by reference to the outline in the brochure, describe briefly what the existing production in the area is?

A The existing production on the unit itself is confined to the Seven Rivers-Grayburg and San Andres formations. Immediately adjacent is the Fren Pennsylvanian field located in Section 15, 22 and 21 of Township 17 South, 31 East, and comprises three wells.

Q This is shown on your Exhibit 3, is it not, the production in the area?

A Yes, sir, it is.

Q What is the nearest Pennsylvanian production?



A The nearest Pennsylvanian production is in the three-well Pennsylvanian field.

Q That is where?

A Sections 15, 22 and 21 of Township 17 South, Range 31 East.

Q Where is the nearest Devonian production at the present time?

A The nearest Devonian production at the present time is in the Continental No. 12 Baish, a one-well pool in the Maljamar field, approximately six miles southeast.

Q The unit agreement covers only rights below a certain depth which is, I believe, the top of the Glorieta sand. Now, explain, please, how you have arrived at figuring the vertical limits of the unit?

A The vertical limits of the unit were arrived at in going to the next formation below the formation which had production. The San Andres is the lowest formation which has production on the Keel unit, and the next formation would be the Glorieta.

Q And that horizon is specifically defined, is it not, by a log which you include in your exhibits?

A Yes, sir, it is. We show that as Exhibit 4 of the geological brochure, and that is a portion of the electrical log of the Skelly No. 6 Lynch which is located 660 feet from the North and West lines of Section 22, Township 17 South, Range 31 East, Eddy County, New Mexico. The vertical limits of the unit have been placed at 4857 by electrical log, which is where we call the top of



the Gorieta.

MR. NUTTER: I have a different 4 in my copy. My unit begins at 4800 feet.

MR. BURTON: That is an obsolete exhibit.

MR. NUTTER: Had you originally contemplated the unit to start in the San Andres?

A Yes, sir, we had, but after consultation with the U.S.G.S. it was found that it would be better to start the unitization at the next succeeding formation.

MR. NUTTER: You can furnish us with a correct Exhibit 4, can you not?

A Yes, sir.

Q (By Mr. Burton) Now, do you have a contour map of the Pennsylvanian and Devonian structures which you find in this area?

A Yes, sir, we do.

Q Those are your Exhibits --

A No. 5 and No. 6.

Q What data are these structures developed from?

A These structures are contoured from geophysical data.

Q Do you have any explanation or any description that you would like to give with reference to these formations?

A The plat shows, near the top of the Devonian on the structure contour map, a closed anticlinal structure which is terminated on the north by a fault, and on the Pennsylvanian we show a closed anticlinal structure.



Q Is all of the Pennsylvanian structure as depicted on your Exhibit No. 5 included within the boundaries of the unit area?

A Yes, sir, it is.

Q What about this acreage in Section 15, is Section 15 included?

A No, sir.

Q You show a portion of it.

A Inasmuch as our primary objective on this unit will be the Devonian dolomite, the producing limits, we should think, would not include the portion of Section 15 which already has a well drilled on it to the Pennsylvanian, and a well in Section 22 drilled to the Devonian. The Pennsylvanian as shown on the contoured map would occupy a slightly larger area than that of the Devonian.

Q What I am asking, though, is, the portion of the Pennsylvanian structure in Section 15 is outside the boundaries of the unit?

A Yes, sir.

Q Is there reason for that?

A Yes, sir. This was not included in the proposed unit inasmuch as that acreage in Section 15 is already committed to a unit.

Q Insofar as concerns the Devonian structure, you show a portion of it in Section 15 and 22; is that the same structure as the one which you have proposed to test?

A No, sir, it is not. We believe that the two structures will be separated by a saddle or a structural low.



Q So that would not properly be a part of the unit?

A No, sir.

Q In your opinion, do you have, within the unit area, all of the land which is expected to be productive?

A We believe that the unit as outlined would encompass all of the production from the Devonian and from the Pennsylvanian.

Q With the exception of this acreage in Section 15?

A Yes, sir.

Q Do you know what unit that is in?

A Yes, sir. I believe it is the Skelly unit.

Q Is that a recent unit, or has it been in force several years?

A It has been in force for several years.

MR. NUTTER: What is the name of the unit, do you know?

A The Skelly unit.

MR. NUTTER: Is that the full name?

A That is my understanding.

Q (By Mr. Burton) Did you hear the testimony here as to the acreage which is not being committed to the unit?

A Yes, sir.

Q That is the tract in Section 16 owned by Sunray. Where is that located with reference to the structure?

A It would be located on the south flank of the Devonian structure.

Q If none of these tracts that have been mentioned as not



coming in, if they do not come in, but all the other working interests join, approximately 90%, in your opinion as a geologist, will the interests committed insure effective control of the unit area?

A Yes, sir, I believe they would.

Q Do you believe that it will obtain substantially all the benefits of the unit operation?

A Yes, sir.

Q What is your opinion as to whether the unit plan of operations is in the interests of conservation?

A Yes, sir, I think that there are several reasons that it would be beneficial to all the participants. It would provide an orderly manner of drilling. It would allow a systematic depletion of the reservoir, and without any undue delay secondary recovery methods could be initiated.

Q That is, you could go from your primary phase of recovery right into secondary at the most opportune time?

A Yes, sir.

Q And development could occur without regard to these interior lease lines, could it not?

A Yes, sir, it could.

MR. BURTON: That is all the questions.

MR. NUTTER: Any questions of Mr. Hodges?

BY MR. PAYNE:

Q What kind of control did you have in drawing these con-



tours?

A This was based on geophysical control only.

Q Are there any wells producing in a horizontal and vertical limit of the proposed unit; is there any producing well, not only in the horizontal area, but the vertical area that is being unitized?

A Within the unit itself?

Q Yes, sir, at present.

A No, sir, there are no.

BY MR. NUTTER:

Q No proration whatsoever from the top of the Glorieta on down?

A Not in the proposed unit area.

Q This Skelly well in Section 15 is producing from the Pennsylvanian at this time?

A There are three wells in the Fren-Pennsylvanian field, Skelly No. 6 Lynch currently producing; Skelly No. 21 Dow in Section 21, currently shut in, and I was not able to find any production listed. It is still listed, but not shown as being shut in, the No. 3 Dow Well in Section 15, and I presume it is still capable of some production.

Q All three of these wells were producing from the Pennsylvanian?

A From the Lower Pennsylvanian.

Q Your well is going to be drilled in the SE of the SW of



4, is it?

A Yes, sir.

Q That is on the high as far as the Devonian contour is concerned, also located on your highest contour on the Pennsylvanian contour map, correct?

A Yes, sir.

Q Mr. Hodges, in your opinion, geological opinion, is the boundary of this unit sufficiently large to afford a dequate control of the unit for conservation purposes by the operator?

A Yes, sir, I believe it is.

Q In your opinion is the unit boundary unduly large to encompass acreage that is not within the closed contours as you have determined them to be from the geophysical data?

A No, I believe the proposed unit outline would encompass the producing area.

MR. NUTTER: Any further questions of Mr. Hodges? You may be excused.

MR. BURTON: Applicant offers its exhibits into the record.

MR. NUTTER: Sinclair's Exhibits 1 through 3 will be entered in evidence. Do you have anything further, Mr. Burton?

MR. BURTON: That is all.

MR. NUTTER: Take the case under advisement.





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