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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
April 23, 1969

EXAMINER HEARING

IN THE MATTER OF:)

Application of Humble Oil and)
Refining Company for a unit)
agreement, Lea County, New Mexico.)

) Case No. 4109
)
)
)

BEFORE: Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING

MR. UTZ: Case 4109.

MR. HATCH: Case 4109. Application of Humble Oil and Refining Company for a unit agreement, Lea County, New Mexico.

(Whereupon, Applicant's Exhibits 1 through 5 were marked for identification.)

MR. HINKLE: Clarence Hinkle, Hinkle, Bondurant and Christy, Roswell, appearing on behalf of Humble. We have one witness, Mr. Bushnell -- two witnesses; we could have them both sworn -- and Bill Leifeste.

(Witnesses sworn.)

MR. UTZ: Other appearances? You may proceed.

H. P. BUSHNELL

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

DIRECT EXAMINATION

BY MR. HINKLE:

Q State your name, your residence, and by whom you are employed.

A My name is H. P. Bushnell; I reside in Midland, Texas; I'm employed by the Humble Oil and Refining Company.

Q What is your position with Humble?

A I am district exploration manager of the Delaware-Val Verde district.

Q Which is in Lea County?

A Includes Lea County, New Mexico.

Q Have you previously testified before this Commission?

A I have not.

Q Will you state briefly your educational background and professional experience?

A I have a Bachelor of Science degree in geology from the University of New Mexico in 1951; with a Master of Science degree in geology from the University of New Mexico in 1953. I have been employed by Humble Oil and Refining Company for fifteen years as a petroleum geologist.

Q Are you familiar with the application of Humble in this case?

A Yes.

Q Have you made a study of the area which is involved in this proposed application --

A Yes, I have.

Q -- including all the wells that have been drilled in the area --

A Yes.

Q -- and all the geological information that is available?

A Yes, I have.

Q What is Humble seeking to accomplish by this application?

A We are seeking approval of the south Lea unit agreement which is located in southeastern Lea County; embraces 8324.16 acres.

Q Have you prepared certain exhibits for introduction in this case?

A Yes, I have.

Q Refer to Exhibit No. 1 and explain what this is and what it shows.

A Exhibit No. 1 is an index map and it shows the penetrations, the deepest formations penetrated of the wells which are within about a six mile radius of the unit.

Q Shows also the outlines of the proposed unit?

A The outline of the proposed unit is shown along with the south Lea County line in the town of Jal in order to locate it.

Q Is it pretty close to the south state line?

A Yes, sir, it's within a mile and a half of the state line.

Q Refer to Exhibit No. 2 and explain what this is and what it shows.

A Exhibit No. 2 is a plat showing the outline of the unit area. It shows the ownership of the oil and gas leases within the unit area and the character of the land.

Q That is whether state, federal and fee?

A That is correct. The unit consists of 5082.16 acres or 61.05 percent federal lands; 3202 acres or 38.47 percent New Mexico state land and 40 acres or .48 percent fee land.

Q Now, refer to Exhibit No. 3 and explain this to the Commission.

A Exhibit No. 3 is a structure contour map. It is contoured on top of the Hunton horizon. The contour interval is 250 feet. The scale is one inch equals four thousand feet. The heavy dark lines on the map are large faults and the lighter colored lines are the structure contour lines. There is a yellow line labeled AA prime.

This is a schematic cross section which is Exhibit No. 4. There are three green lines on the map. These are seismic lines which we use to help delineate prospect. This is a relatively large structure located adjacent to the central basin platform. We believe that closure to the southwest and northwest is accomplished by dip. We believe that the faulting on the east accomplishes the closure in that direction.

Q What is the basis of the information upon which this map was constructed?

A This map is constructed on a combination of geologic information from the wells and from the seismic lines which are shown on the map.

Q Now, does Humble propose to drill a deep well within the proposed unit area?

A Humble proposes to drill a well to test the Ellenburger formation or to a depth of 21,500 feet whichever is shallower.

Q Is the location of that well shown on Exhibit

3?

A Yes, the location is shown on the exhibit by the double red circle which says proposed location in section 17.

Q What other probable oil producing formations will be penetrated in this well?

A We think that the best secondary horizons are the Wolf camp, the Strawn, the Derry, the Morrow, the Hunton and, of course, the Ellenburger is the primary objective.

MR. UTZ: This Hunton is a new one on me. What is it in?

THE WITNESS: It's silurian and Devonian combined.

Q (By Mr. Hinkle) Is there anything else that you would like to testify to with respect to Exhibit 3?

A No, I think this completes my testimony.

Q Please refer to Exhibit 4 and explain what this is.

A Exhibit 4 is the cross section which is shown by the yellow line on Exhibit 3. This was prepared using

our geological and geophysical information; goes from southwest to northeast. The horizontal scale of the cross section is one inch equals two thousand feet; the vertical scale is one inch equals four hundred feet. In the lower right-hand corner there is an index map which shows the line of cross section; also on the lower part of the cross section there is a legend which shows the hydrocarbon shows that have been encountered in the wells along the line of cross section. You will note that the significance of the various shows is indicated by the symbols. These symbols are also shown adjacent to the logs in the cross section and the symbol is adjacent to the zone in which the show was found. This cross section, starting on the west at the Skelly Oil No. 1 P New Mexico Federal, comes up on to the prospect. The Olsen Oil No. 1 Federal is a shallow well which has been projected into the line of section and really doesn't help in the interpretation too much because it didn't get deep enough. The proposed location of our well is shown by the red line and we are estimating the elevation at the well location to be 2950 feet. The zones that I have mentioned previously are

shown on this cross section, our secondary objective horizons, the Wolf camp, the Strawn, the Derry, the Morrow, the Hunton, and the Ellenburger. You will see over on the east side the Sinclair No. 1 southwest Jal unit. This well was completed in what was called the Strawn and a zone which we consider to be Morrow. It's just a matter of terminology and has since been plugged. In contouring the interval between the top of the Wolf camp, which you can see on the cross section, and the base of the Strawn over regional area, we found that the Sinclair No. 1 southwest Jal unit was a thick well and this indicates to us that it's in the Graben, structurally low area on the east side of the prospect.

Q When do you anticipate this initial test well will be drilled?

A We plan to start this well by June 15, 1969.

Q Providing you get the approval of the Commission?

A Yes, sir.

Q Do you have any estimate as to the approximate cost of the well?

A We estimate the casing point without trouble

the well will cost about one million dollars.

Q Do you have anything else you wish to testify to?

A We have Exhibit No. 5. Exhibit No. 5 is a letter dated February 19, 1969, from the acting director of the U. S. geological survey, designating the south Lea unit area as an area logically subject to development under the unitization provisions of the Mineral Leasing Act.

Q Has this area also been informally approved by the Commissioner of public lands?

A This is correct. It has been approved informally.

MR. HINKLE: That's all of this witness and I would like to offer Exhibits 1 through 5 in evidence.

MR. UTZ: Without objection, Exhibits 1 through 5 will be entered into the record of this case.

(Whereupon, Applicant's Exhibits 1 through 5 were entered into the record.)

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Bushnell, how many wells did you have that

went through the top of the Hunton which penetrates this structure; is there quite a number or --

A No, sir. I think if you go back to Exhibit 1 there is five wells which penetrated to the Hunton. In the north part of the map in the Custer-Ellenburger field, there is a Shell well which, of course, penetrated the Hunton in order to get to the Ellenburger. That's the red dot in the northeast corner of the map. The Southland Royalty well in Township 25 South, Range 35 East, penetrated to the Hunton. The Skelly No. 1 P Mexico Federal in Township 26 South, Range 35 East, penetrated to the Hunton. There is one well in the Crosby field in Township 25 South, Range 37 East.

Q There is a certain amount of conjecture in here?

A Yes, sir. This is an area that's a real wild-cat area. As you know, we are directly under the Capitan reef and we have had to do our seismic work in an area that's difficult, but we think our geophysical information, combined with our geological information, makes it a good place to search for hydrocarbons.

MR. UTZ: Are there other questions?

REDIRECT EXAMINATION

BY MR. HINKLE:

Q Are the faults shown on the structure map pretty well established by seismic work?

A They are not well established. We can see no indications of the fault. The main clue to the faulting in this area is this Sinclair southwest Jal unit which was thick in the -- from the top of the Wolf camp to the base of the Strawn. This is similar to structural features which we see farther south adjacent to the central basin platform and they do produce there.

MR. UTZ: Are there other questions?

You may be excused.

BILL LEIFESTE

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

DIRECT EXAMINATION

BY MR. HINKLE:

Q State your name, by whom you are employed and your residence.

A Bill Leifeste, Midland, Texas, Humble Oil and Refining Company.

Q How long have you been employed by Humble?

A Thirteen years.

Q What is your position with Humble at the present time?

A I'm a land man and I am in charge of unitization for our New Mexico lands.

Q Have you been in charge of getting up the unit of this proposed area?

A Yes, sir.

Q What is the present status of the formation of the unit?

A We have letters from all the working interest owners stating that they will either join or farm out, with the exception of -- let's see, that's Exhibit 2.

Q Exhibit 2, yes.

A Tract number 16, Gulf does not want to commit that section to the unit.

Q Have you contacted the U. S. G. S. in that connection and have they indicated that they would approve the unit without commitment of tract No. 16?

A Yes, sir.

Q Are you familiar with the formal unit agreement, copies of which have been filed with the application?

A Yes, sir.

Q Is this the same form or substantially the same form as have been heretofore used where federal, state and fee lands are involved?

A Yes, sir.

Q Has this form been approved by the U.S.G.S. and by the Commissioner of public lands?

A Yes, sir.

Q Is Humble designated as the unit operator in terms of the unit?

A Yes, sir.

Q Does the unit provide for the drilling of the initial test well which has already been testified to?

A Yes, sir.

Q What percentage of working interest owners do you anticipate will commit their interest to the unit, with the exception of Gulf?

A With the exception of Gulf and in tract No. 1,

Sinclair and Redfern Development Corporation own a fifty percent working interest above 13,605 feet and they are not going to commit their interests since our objective is the Ellenburger. Other than that, we anticipate one hundred percent.

Q Do you intend to invite all of the over-riding royalty owners to commit their interests to the unit?

A Yes, sir.

Q Now in the event this unit is approved and the initial test well is drilled and the discovery is made, in your opinion, will the unit agreement be in the interest of conservation and prevention of waste --

A Yes, sir.

Q -- and will tend to protect correlative rights --

A Yes, sir.

Q -- and will promote the greatest ultimate recovery of unitized substances?

A Yes, sir.

MR. HINKLE: That's all we have on this witness.

MR. UTZ: Any questions of the witness?

He may be excused.

The case will be taken under advisement.

(Whereupon, a ten-minute recess was taken.)

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STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, GLENDA BURKS, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.

Witness my Hand and Seal this 2nd day of May, 1969.

Glenda Burks
NOTARY PUBLIC

My Commission Expires:

March 12, 1973.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2409 heard by me on 7/3 1969
[Signature] Examiner
New Mexico Oil Conservation Commission