

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
September 25, 1963

EXAMINER HEARING

IN THE MATTER OF:

Application of Robert N. Enfield for a unit
agreement, Eddy County, New Mexico, West
Indian Basin Unit Area comprising 4,278.29
acres of Federal, State and fee lands in
TS 21 South, Range 23 East, Eddy County,
New Mexico

Case No. 2905

BEFORE: DANIEL S. NUTTER, EXAMINER

TRANSCRIPT OF HEARING

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MR. NUTTER: The hearing will come to order. Next case
is 2905.

MR. DURRETT: Application of Robert N. Enfield for a unit
agreement, Eddy County, New Mexico.

MR. CHRISTY: Sir Christy in behalf of Robert N. Enfield.
We have two witnesses, Mr. Examiner.

(Witnesses sworn)

ROBERT N. ENFIELD,

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



DIRECT EXAMINATION

BY MR. CHRISTY:

Q Would you state your name, address and occupation for the record?

A Robert N. Enfield, Box 87, Roswell, New Mexico, oil operator.

Q You are the applicant in this case, sir?

A Yes.

Q What do you seek in the application, please?

A To form an exploration unit of some 2,561.28 acres, Township 21 South, Range 23 East, to be named West Indian Basin Unit.

Q All right.

MR. CHRISTY: Mr. Examiner, I will explain in a moment where the change in acreage comes in.

Q Mr. Enfield, I will hand you what has been marked Applicant's Exhibit one and ask if that is the unit agreement that is involved in the application.

A Yes.

Q Now, sir, I notice in your initial application that you sought a unit area of 4,278.29 acres, rather than the 2,561.28 acres that you mentioned a second ago. Would you explain the discrepancy, or difference in the acreages?

A Yes. Originally, the unit was designated a logical area

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by the USGS and Department of the Interior, encompassing also Sections Six, Seven and 18, of the same township, which lie directly west of the proposed unit. And at a conference with Neal Pilkinton of the Department of Interior, it came up and was known at the time that we had local approval, that there was an appeal pending on approximately 909.81 acres located within this particular section. Washington at that time, or the Federal Government, elected that they would not want to see this acreage that was in appeal status inside the unit area. They agreed to amend the original designation of logical area for the unit to encompass the presently shown sections on the plat that you have, due to the title status of that 909 acres.

Q I believe also in Section Seven, perhaps there was a fee tract that has now been depleted?

A That is true.

Q This also reduces the acreage, it eliminates any fee acreage from the unit. There was one 40 in the tract that was fee. Is that true?

A Yes.

Q This file copy of that unit agreement, as then proposed, and this application, Exhibit One, is different in certain respects, is it not, because of the change in the acreage and the deletion of the fee land?

A That is true. They deleted the references to the fee land inside the unit, and I think there was one other minor deletion



in the back, signature page, or something.

Q Directing your attention very quickly to the changes between the unit agreement and application initially, and the unit agreement in Applicant's Exhibit One. I believe the first change comes at Line 5 of Page 10, which deletes the privately owned land. If Mr. Examiner please, you have the original one in the application.

A The ones that were submitted now are the corrected ones with the deletions. The ones that were mailed up were the incorrect ones.

Q And as I understand your testimony, principally what they have deleted is simply reference to private land, privately owned lands?

A That is substantially correct.

Q Now, sir, is this now, the land involved now, strictly Federal and State acreage?

A That is correct.

Q About what percent?

A 98.46 Federal and 1.54 percent State.

Q Now, has the United States Geological Survey of the Department of the Interior approved your present area as logical area for unitization?

A Yes. I talked to Mr. Hinkle this morning and they have approved it as of Monday, and I do not have a letter. I doubt that you all do at this time. It has been approved.

Q Has the Commissioner of Public Lands of the State of New

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Mexico approved the unit agreement as to its form?

A Yes, by letter, signed by Mrs. Marion Ray.

Q Including privately owned land, but not showing these changes?

A Not showing these changes.

Q You will furnish that to Mrs. Ray today?

A I will furnish it to her office. Mrs. Ray is sick.

Q I might state to the Commission, I tried to talk to her about the changes. I could not reach her. Is this a typical State type of unit?

A Yes, sir.

Q Contains an expansion or contraction and subsequent joinder provision?

A Yes.

Q What is the term of the unit, sir?

A Until the discovery or two years.

Q Now, does it provide for the drilling of a test well?

A Yes.

Q And what kind of a project and where did you propose the well?

A 9,000 feet, the Southeast Southwest of Section 17, 29-23.

Q When do you propose to start that well?

A September 30, 1963, or before.

Q Approximately five days?

A We are building roads today.

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Q Now, sir, what kind of percent joinder approval have you had out of this from the working interest standpoint?

A 87.51 percent of the unit is committed. 1.53 percent has been recommended to management, but I have not received approval on it and I have been advised by Marathon, who owns 10.96 percent, that they will not commit to the unit.

Q In this portion of it, shown as Tract 14- -

A The interest, the one and a half, has local approval, but has not finalized. Tract 15, Southern Petroleum, 40 in the same south half.

Q So, that excluding the south half, you have 100 percent approval of the south half of Section 20?

A South half of Section 20 is the only place where there is no commitment.

MR. NUTTER: What percent has actually been committed?

A 87.51.

MR. NUTTER: And what was the fractional percentage there that was tentatively- -

A Southern Petroleum has recommended locally to commit 1.53 percent.

Q (By Mr. Christy) That would be their other acreage?

A That would be the only acreage. They have a single 40 inside the unit area.

Q That is the 40 that is down there with Marathon?

A Tract 15. Marathon has definitely said they would not

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join in the unit.

Q Is there anything, Mr. Enfield, that is unusual or peculiar about this unit agreement, or different?

A No. It is the standard Federal approved unit agreement.

MR. CHRISTY: I think that is all the questions we have from this witness.

MR. NUTTER: Are there any questions of the witness? He may be excused.

LEE HARVARD,

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

DIRECT EXAMINATION

BY MR. CHRISTY:

Q Would you please state your name, address and occupation?

A My name is Lee Harvard. I am from Roswell, New Mexico. I am a consulting geologist representing Robert Enfield.

Q Mr. Harvard, have you previously testified before this regulatory body and have your qualifications as a geologist been accepted?

A No, sir, I have not.

Q Would you briefly tell the Examiner your schools of higher learning you attended and degrees, if any, you received and in what year?

A I attended the Texas A & M College at College Station from

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'49 to '52, and graduated from the University of Texas with a geology degree in 1955. I worked for Robert Enfield for one year and in the west Texas-New Mexico area four years for Sinclair Oil Company as a sub-surface geologist, and four years as a consulting geologist in New Mexico.

Q Are you familiar with the area involved in this application in Case 2905, and the geological histories of it?

A Yes, sir, I am.

Q Does the Examiner have any question concerning the qualifications of the witness?

MR. NUTTER: Mr. Harvard is qualified.

Q (By Mr. Christy) Now, Mr. Harvard, directing your attention to the - - what has been marked as Applicant's Exhibit Three, which contains various exhibits thereto, and ask you first of all what the Applicant's Exhibit Three is? I notice the typewritten sheet giving the geological report. Was this prepared by you?

A Yes, sir.

Q Without attempting to read it verbatim, would you simply give us the highlights of the geological status here?

A Right. This is a test for dual objective, to test the Morrow Sand and Cisco Canyon Age Reef. The Morrow Sand is a blanket sand deposit that covers most of the Western Eddy County, or, of course, all of the Permian Basin. Thicker lenses are normally more productive, or are the productive areas. There are - - The

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thinner zones many times are non-permeable, or have little permeability, and are non-productive, non-commercial. In this report, I point out that there are five wells that are completed in the immediate area here. There are five wells that are completed in the Morrow. They are presently shut in due to no market. There is another well, that is the J. C. Williamson well, is west of our unit on the Southwest end of the unit. That indicates that it should have been a well. They tested- - they drilled into the Morrow sand with salt water, and they lost a thousand barrels of salt water. They then took a 30 minute drill stem test, recovered 90 barrels of water. So, they have left quite a bit of water back in the formation. My estimate is that the formation was not adequately tested. Our second objective would be the Cisco Canyon Reef, and there are presently six wells in the area that are completed in the Reef as shut in gas wells.

MR. NUTTER: Is this the section that has been designated by the Commission in the lower area as the Upper Penn?

A Yes, sir. This is the Upper Penn. I refer to it as Cisco Canyon Reef, but that is probably a better designation, as I will point out later on in my report, in that the reef is growing. It crosses time lines, geological time lines. So, the Upper Penn, actually, it does cross over in my estimation, into the Lower Wolfcamp. This is a better designation. But, there are six wells completed in the area, and they are completed as shut in gas wells.

Q (By Mr. Christy) Now, have you made an isopac map of the



Morrow Sand and the Cisco Canyon from these wells?

A Yes, sir. Exhibit A is the Morrow Sand isopac map. The red arrow shows our proposed location. The dashed lines shows the proposed unit area. The thickness- - the darker colors indicate thicker sands, going from lighter to darker colors, you are getting thicker. As you go north and west, your sands thin, and there are two wells- - Well, there is one well to the north. The Carper Number One, State MA, which was originally the Monsanto well that tested this zone, and found it to be non-productive, and to the west, the Standard Number One State, found the zone also to be non-productive.

Q And the Cisco, again you concurred with Exhibit B to Applicant's Exhibit Three?

A Right. This is Exhibit B, and it is also an isopac map. See, both of the objectives are stratigraphic in nature. I have prepared isopac maps. This indicates, again the red area indicates the location, proposed location, and the darker colors indicate thicker reef zones. Again, as you go north, and west, your zone thins and is absent to the north and west. By my correlation, the Carper Monsanto might have got a thin reef stringer, but certainly not anything in commercial nature. The Standard Number One State to the west of his unit, five miles to the west of the unit, did not have any reef at all. The reef was not present in that location.

Q All right, sir. In that same Applicant's Exhibit, you, I believe, have a north-south cross section as Exhibit 1. Tell the

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Commissioner briefly what this is?

A Right. If the Examiner please, the line of cross section is indicated on both of the isopach maps, running from north to south, from the Odessa Natural well, which is the - - in the unit, south to the Sun Number One, Weaver Federal. On the north end of the cross section, you will notice that the Odessa Natural did not drill deep enough to test the reef. If the reef is present there, as I am projecting that it is, it would be strictly Canyon age. The second well, the middle well in the cross section, is the J. C. Williamson Number One Standard Federal. Now, this shows that the reef in this well is Cisco Canyon in age. Lower Cisco, upper Canyon in age.

Going down to the Morrow Sand, the lower zone, that, of course, was not tested in the Odessa well, but J. C. Williamson did drill through the Morrow and test that zone, as indicated on the cross section. South of there is the Sun Weaver, which is the -- on the right side of your cross section. And they encountered a Dolomite in the Upper Penn Reef, strictly Cisco in age. They are off the front edge of the reef. This well tested salt water in the reef. The J. C. Williamson well was a limestone in age. The reason for the change in lithology is the reef, or as it goes from a shelf type of deposition, you have a shelf type of limestone, go over the hinges or the edge of the basin, or hinge line, of the basin, your limestone graduated into a Dolomite, becoming first a porous permeable limestone, and then, a porous permeable Dolomite.

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And then, on further out in the basin, not shown on this cross section, probably going to either a dirty Dolomite non-permeable, or basin type of limestone.

Q I believe you do have a similar east-west cross section as Exhibit D?

A Right.

Q Excuse me. Before we go any further, for orientation purposes, on Exhibit C, would you show us where the land involved in this application is?

A Let's look on the east-west. The proposed well is indicated by the red line. Again, this is a cross section showing the wells in the unit, or in the immediate area. The furthest well here on the west is the Standard Number One State, which are referred to on the isopach map. This well did not have any reef. The Morrow Sand was thin, and non-productive. Non-commercial. The J. C. Williamson well penetrated the Upper Penn Reef, and as I discussed on the other cross section, it is Cisco, Lower Cisco, Upper Canyon in age. And they potentialized that well and calculated absolute open flow of 21,000,000 cubic feet of gas per day. It is presently shut in. And I also discussed the Morrow Sand, and drill stem test that was taken in there. Going further Basinward, you have a lithology change from your limestone into a Dolomite, and also, Basinward, you have your reef crossing geologic time lines, in that the Ralph Lowe Number One Indian Basin unit well, the discovery well, they had strictly Cisco age reef, Dolomite lithology. And the last

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well, the furthest east well on the cross section, is the Ralph Lowe Number One Indian Hills unit well, and there they encountered a reef, lower Wolfcamp, Cisco Canyon age. Also, a Dolomite.

Q Now, I believe the application does seek to unitize both oil and gas for all zones; is that correct?

A Yes.

Q Now, Mr. Harvard, these particular maps and Applicant's Exhibit Three, they were prepared by you or under your supervision?

A Yes, sir, they were.

Q Now, based upon the information you have presented here today, in your opinion, will the formation of this unit, the granting of the unit area, tend to promote the conservation of oil and gas to prevent waste by the drilling of unnecessary wells?

A Yes, sir, it will.

Q Prevent the drilling?

A Yes.

Q You see where the rights of any of the royalty working interests, or other owners might be violating the correlative rights of these parties by granting of this unit?

A No, sir, I do not.

MR. CHRISTY: I believe that is all we have from this witness.

EXAMINATION

BY MR. NUTTER:

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Q Mr. Harvard, I presume that you- - Now, your proposed well location is here in the southwest quarter of 17; is that correct?

A Yes, sir. That is the southeast southwest of Section 17.

Q I presume that based on the Williamson well and the Lowe Indian Basin well, you figure you pretty well have got a cinch in the Upper Penn or Cisco Canyon?

A Well, yes, sir, I do.

Q You also feel that the Williamson should have been productive in the Morrow, although it wasn't, you propose to test the Morrow in these wells?

A Yes. We certainly do. I certainly wouldn't so presume, or be so presumptuous to say it is. I would say it was not tested adequately, as far as I am concerned.

Q When was the Williamson well completed in the Cisco Canyon, do you know?

A I can tell you very quickly, sir. It was completed January 18, 1962.

Q If you get a producing well, in the Cisco Canyon, and the Morrow, in your opinion, will it be a part of the same common source of supply that has been designated the Indian Upper Penn and Indian Morrow Pool?

A Yes, sir.

Q Are you aware of the provision in the pool rules there that provide for 640 acre spacing, and also, that the wells be



located at least 1600 feet from the outer point or boundary of the section?

A I am aware of the 640 acre spacing, or 640 acre unit. As far as the 1650 feet, now, no, I am not, sir.

Q I believe that is the case, Mr. Harvard. Mr. Harvard, that is the case in the Indian Basin Morrow and Indian Basin Upper Penn gas pool rules, being more than a mile from that pool, do you think it would be possible to stake a well that would be 1650 feet from the outer boundary of Section 17, which would be a comparable location to the one that you proposed here?

A I don't know that really I am able to answer that. I know that the country down there is rough, and there are some canyons through there. There may be some other reasons, too. I am not aware of it, no, sir.

Q What is your proposed location, 660 feet from the south and 1980 feet from the west?

A Yes, sir. Somewhere in that 40 acres, the way it is spotted, 660 from the south and 1980 from the west.

Q Has the drilling permit be applied for for that well yet, do you know?

A No, sir. It has been-- the location has been staked and we are in the process now of taking bids on the building of the roads and locations.

MR. NUTTER: All right. Are there any other questions of Mr. Harvard. He may be excused.

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MR. CHRISTY: We would like to offer into evidence Applicant's Exhibits One, Two and Three, including the A thru D part of the Applicant's Exhibit Three. I might mention for the record, Applicant's Exhibit Two is just another copy of a map attached as Exhibit B to the unit agreement.

MR. NUTTER: Exhibits One the unit agreement?

MR. CHRISTY: Yes, sir. So marked. Two is the map.

MR. NUTTER: Exhibit Two is the map?

MR. CHRISTY: Exhibit Three is the history.

MR. NUTTER: That is the geological report?

MR. CHRISTY: Correct, sir.

MR. NUTTER: Exhibits One through Three will be admitted in evidence. Do you have anything further?

MR. CHRISTY: I would only like to mention to the Examiner, as Mr. Enfield has testified, we do have a problem concerning formation of this unit, and drilling, and any consideration the Commission might give us as to an early approval of the unit, would be sincerely appreciated. We are in a bind.

MR. NUTTER: Does anyone have anything further to offer?

MR. DURRETT: What is your deadline, Mr. Christy?

MR. CHRISTY: We have got to start drilling by the 30th. We sure would like to have some indication, shall we say, by the 30th.

MR. NUTTER: If there is nothing further in Case 2905, we will take it under advisement.

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STATE OF NEW MEXICO I

COUNTY OF BERNALILLO I

I, ROY D. WILKINS, 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 18th day of November, 1963.

Roy D. Wilkins
NOTARY PUBLIC

My Commission Expires:

September 6, 1967.

I do hereby certify that the foregoing is a complete record of the proceedings of the Examiner hearing of Case No. 2905 Heard by me on 9/25, 1963

[Signature] Examiner
New Mexico Oil Conservation Commission

