STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO

21 November 1985

EXAMINER HEARING

IN THE MATTER OF:

Application of Doyle Hartman for nonstandard proration unit, two unorthodox gas well locations, and simultaneous dedication, Lea County, New Mexico. CASE 8770

BEFORE: Michael E. Stogner, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

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I N D E X

E X H I B I T S

MR. STOGNER: Call Case Number 8770.

MR. TAYLOR: The application of Doyle Hartman for nonstandard proration unit, two unorthodox locations, and simultaneous dedication, Lea County, New Mexico.

MR. CARR: May it please the Examiner, my name is William F. Carr with the law firm Campbell and Black, P. A., of Santa Fe. We represent Mr. Hartman in this matter and have one witness.

MR. STOGNER: Any other appearances?

Will the witness please stand?

(Witness sworn.)

WILLIAM P. AYCOCK,

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. CARR:

Q Will you state your full name and place of residence?

A William P. Aycock, Midland, Texas.

Q Mr. Aycock, by whom are you employed and in what capacity?

A Doyle Hartman, employed by Doyle Hartman as a consulting petroleum engineer in connection with Case 8770, Docket Number 36-85.

Q Have you previously testified before this Division and had your credentials accepted and made a matter of record?

A I have.

Q Were you qualified at that time as a petroleum engineer?

A I was.

Q Are you familiar with the application filed in this case on behalf of Mr. Hartman and the subject acreage?

A I am.

MR. CARR: Are the witness' qualifications acceptable?

MR. STOGNER: They are.

Q Mr. Aycock, will you please state what Mr. Hartman seeks in this case?

A Mr. Hartman has applied for a nonstandard proration unit with two unorthodox well locations and simultaneous dedication for the drilling of two wells to be lo-

cated, the first of which, at a location 2310 from the north and 100 feet from the east line of Section 20, and the second to be 2145 feet from the north line and 1600 feet from the west line of Section 21, both in Township 22 South, Range 36 East, in the Jalmat Gas Pool, Lea County, New Mexico.

Q And, Mr. Aycock, both of these proposed locations are unorthodox well locations, is that correct?

A That's correct.

Q Have the locations been staked at this time?

A They have not been staked at this time.

Q If it becomes necessary to move these well locations, will Mr. Hartman move them back toward a standard location and not a location that is more unorthodox than those proposed?

A That is correct. If it is necessary to move them, the movement will be toward a more orthodox location from the locations that have just been recited.

Q Would you now refer to what has been marked as Hartman Exhibit One, identify this and review it for Mr. Stogner?

A Hartman Exhibit Number One is an acreage plat that shows the proposed 320-acre proration unit comprising the northeast quarter of 20 and the northwest quar-

ter of Section 21, all in Township 22 South, Range 36 East, in Lea County, New Mexico.

Q Now, using this exhibit would you supply the Examiner with a general background history of how this acreage has been developed?

A The Sun Boren-Greer No. 1 Well was located in Unit B of Section 21 and at the time that well was drilled there was a 320-acre proration unit comprised of the northwest quarter of 21 and the northeast quarter of 20 dedicated to that well. That was Case Number 1317, Order Number 1074, and that was in October of 1957.

The Sun Boren-Greer Well No. 2 was drilled in Unit C of Section 21 and had the same 320-acre nonstandard proration unit dedicated to it and there was an administrative order, R-5688, that approved the drilling of this well, and this was in 1978.

The last well that was previously drilled on the lease was the Boren-Greer No. 3, which is located in Unit A of Section 20. At that time the existing 320-acre proration unit was broken into two 160-acre nonstandard proration units. The order number that accomplished this was Order R-6984, and this was in 1982.

Q And today Mr. Hartman is seeking the reestablishment of the 320-acre unit that was originally created back in 1957.

A That was originally created in 1957 and was reaffirmed in 1978, that's correct.

Q Do you have anything further to testify to from Exhibit Number One?

A All of the wells that are shown on Exhibit Number One are consequential to this application and we'll give further testimony with subsequent exhibits that will apply to the point that there is observed water production that has to be isolated in the Lower Yates and Upper Seven Rivers formations in which the Boren-Greer Nos. 1 and 2 have been squeeze cemented and in which it appears that it may be necessary to re-enter the Boren and Greer No. 3 and isolate these same zones to prevent cross flow.

Q Would you review briefly the efforts made by Mr. Hartman to clean up the problems that were existing on this lease at the time he acquired it?

A Okay. Mr. Hartman, on the Boren and Greer Gas Com No. 1, Mr. Hartman filed a C-103 with the Commission on October 25th, 1985, in which he moved in, recovered all the downhole equipment; ran in with overshot and mill; washed over and recovered tubing between depths of 3228 to 3349 feet, and set a cement retainer and mixed and pumped 150 sacks of cement, Thixotropic cement, followed by 700 sacks of neat cement, and squeezed off all of the following perforations, 3065 to 94; 3103 to 17; 3133 to 40;

3153 to 3203; 3217 to 3250; 3343 to 49; 3391 to 95; and 3412 to 38; and 3461 to 70.

All of those perforations were in the Lower Yates and Upper Seven Rivers. They were contributing to the water that was existing in the wellbore and it caused problems with scaling and with the corrosion of the tubing and they have now been squeezed off.

A similar procedure was followed with the Boren and Greer No. 2, a C-103 that's dated March 21st, 1985, and the perforations are recounted on the C-103, which will subsequently be put into the record. It's the same zones. It's the Lower Yates and Upper Seven Rivers zones. They bear water. If they're not isolated, they will flood out the middle of Seven Rivers and Lower Seven Rivers portion of the Jalmat that do contain gas and they also contribute to mechanical problems because of scaling and corrosion.

Q What is the status of the No. 3 Well?

A The No. 3 Well is producing from the Tansill. It's just barely producing anything and it's Mr. Hartman's prospective intent to knock out the plugs and squeeze off the Lower Yates and Upper Seven Rivers to prevent the water from migrating up or down the hole to create problems in the middle -- particularly down the hole to the Middle Seven Rivers or Lower Seven Rivers, and flood those

out so that that gas -- those gas reserves cannot be recovered.

Q Mr. Aycock, I believe you testified there was substantial water production from the zone -- from various zones in each of these wells?

A That's correct.

Q And will that be shown on --

A Subsequent exhibits.

Q -- subsequent cross sections?

A That's correct.

Q Would you now refer to what has been marked as Hartman Exhibit Number Two, identify that and review it, please?

A Hartman Exhibit Number Two is a structure map on the top of the Yates formation that includes the proposed 320-acre nonstandard proration unit. It shows the cross section traces that will subsequently be presented and shows the two proposed well locations.

I would call the Examiner's attention to the fact that there is an error in the scale of the map that was not discovered until these exhibits had been prepared.

Well No. 5 appears to encroach upon the section line, the location that has been requested. That is, 2310 from the north and 100 feet from the east line appears to encroach upon the section line. It will not do so

and the footage that is at the bottom of Exhibit Two is the one that is requested and there will be no encroachment on the section line at that location.

Q Mr. Aycock, what general conclusions can you reach about the structure?

A We have a small closure on the top of the Yates. It's impossible to tell the exact reason for the observed water production in the Lower Yates and Upper Seven Rivers, but it has been documented in all of the Boren and Greer gas units and in the Hartman Gulf-Greer No. 1, and there's no question that it's there and there's no question that it's a problem and it has to be isolated in order to recover the gas and the -- while there was gas originally in the Lower Yates and Upper Seven Rivers, there is no longer in this immediate area, and whatever the remaining reserves are there are in the Middle Seven Rivers and Lower Seven Rivers portion of the Jalmat Pool interval.

Q Mr. Aycock, would you now turn to Hartman Exhibit Three, your cross section A-A', and review that?

A Cross section A-A' is figure -- Exhibit Three and is -- the trace of which is shown on Exhibit Two.

We would point out to the Examiner that this is a north/south cross section in which all of the pertinent data are included, and in the interest of time I will not recite them, but it includes the completion dates of the

wells, the intervals from which they were completed; what the results of the initial completion were; and we would particularly call the Examiner's attention to the fact that the second and third wells from the left, which are the Doyle Hartman Boren-Greer No. 2 and the Doyle Hartman Gulf-Greer No. 1, on this cross section have experienced water production from perforations that are now squeezed off in the Lower Yates and Upper Seven Rivers formations and the Conoco (not understood) South Eunice No. 18, which is to be converted to a water injection well in the Langlie Mattix zones, which is the righthand well on this cross section, also experience water production from the Lower Yates and Upper Seven Rivers, all of which were squeezed off in 1974.

There is a continuing scale problem associated with the production of water on the Doyle Hartman Gulf-Greer No. 1. The water that's produced, while there are no analyses available of it, superficially appears to be reef water because it is fresh but it's highly corrosive.

Q Will you now review Exhibit Number Four, cross section B-B?

A Cross section B-B' is a west/east cross section. Once again the intervals that have produced water in the Lower Seven Rivers and -- I mean the Lower Yates and Upper Seven Rivers formation are colored in blue, both on the logs and the intervals that are described on the comple-

tion records that produced water are indicated in blue, and all of those that produced gas are shown in yellow.

We would call the Commission's attention to the fact that Well No. 1 was -- is partially -- was originally partially gas productive from the perforations in the very top of the -- in the Yates, above the Yates in the Tansill. That's the Boren and Greer No. 3 that we've previously discussed, and that there was -- there is -- all of these wells have produced significant quantitites of gas at one time or another from zones that are now watered out and that, further, you will, as will be subsequently established, there is abnormally high pressure associated with the observation of water production from the Lower Yates and the Upper Seven Rivers formations in all of the wells in which it has been tested, or in which it has occurred through previously gas-producing perforations.

Q Will you now go through Hartman Exhibit Five, identify this, and review what it shows?

A Hartman Exhibit Number Five is a tabulation of -- includes the two C-103's that have previously been referred to that apply to the workovers that Mr. Hartman did non the Boren and Greer Gas Com No. 1 and the Boren and Greer Gas Com No. 2.

It includes the costs of the clean-out and squeeze cost to isolate the Lower Yates and Upper Seven

Rivers water-bearing zones in the two wells which are approximately $92,500, and also includes a letter from Sun's file showing that at the time they were the operator they felt that there were significant gas reserves in the area; that they were difficult to recover because of the water problem.

Q In this situation what does Mr. Hartman have to do to protect himself?

A He will have to redrill the proration unit and complete the well selectively in the Middle and Lower Seven Rivers portions of the Jalmat interval in order to recover the remaining gas reserves.

When he purchased the lease from Sun he was not aware of these -- of the scope of the problems at the time he purchased it, and that's the reason that all this work has been done subsequent to that time.

Q Mr. Aycock, will you now refer to Hartman Exhibit Six, identify this, and review it for us?

A Hartman Exhibit Number Six is a pressure map which shows the -- for the various wells that have been discussed here, they include the Hartman Boren-Greer Nos. 1 and 2, the Doyle Hartman Gulf-Greer No. 1 and the Dalport A. L. Christmas No. B-1, it shows that at the time the Lower Yates and Upper Seven Rivers formations were open there had been abnormally high pressures indicated, both wellhead pressures and subsurface pressures. The normal shut-in

pressure would be expected to range plus or minus about 100 psi and the normal subsurface pressure plus or minus about 150 psi, and you will notice that every time that these, the Lower Yates and Upper Seven Rivers formations have been open and the water production has occurred, we have seen pressures in the range of 400 to 500 psi.

Q Will you now go to Exhibit Seven, the BHP surveys?

A Attached here are the following BHP surveys: For the Hartman Boren and Greer No. 1, on the date of 9-6-84 there is an indicated bottom hole pressure of 491 psi at a depth of 270 feet.

For the Boren and Greer No. 2 there are two of them. One of them is prior to the opening up of the Lower Yates and Upper Seven Rivers. That's in 11-30-78, and it shows a bottom hole pressure of 282 psi at a depth of 3550 feet.

And then on 10-4-84 after these zones had been opened, there's a bottom hole pressure of 454 psi at 3600 feet that is -- what was also detected.

And finally, we have two surveys on the Gulf-Greer No. 1, one on 4-16-78 where the bottom hole pressure was 417 psi at a depth of 3450 feet; and another one subsequent to the isolation of the squeezing off or elimination of the perforations in the Lower Yates and Upper Seven

Rivers on 4-19-78 with a bottom hole pressure of 237 psi at a depth of 3450 feet.

Q Will you proceed to Hartman Exhibit Eight, identify this, and review the information contained therein?

A Hartman Exhibit Eight are tabulations of gas production and shut-in wellhead pressure with production curves for the wells that have been discussed in the -- previously, the subject of this application, and in view of the time contraints that are imposed upon this docket and the fact that there's a significant volume of it, I would invite the Mr. Examiner to please review these and notice that they will further document the fact that there are high reservoir pressure; that is, in the range of 4500 pounds, have been observed for shut-in well head pressures and/or subsurface pressures at the time the water production problems have occurred from the Lower Yates and Upper Seven Rivers, as well as the fact that there have been -- there is significant gas production that has occurred from the Jalmat zones within the area of this lease that's the subject of this application.

Q Will you now go to Exhibit Number Nine and identify that?

A Exhibit Number Nine is a -- is a waiver letter directed to Mr. Gilbert Quintana, dated July the

22nd, 1985, from W. Thomas Kellahin, that refers to a waiver from Zia Energy pertaining to this tract and it also states that while Conoco, Inc., will -- cannot sign a waiver, they will not oppose an application on this lease.

Q Mr. Aycock, I'm going to hand you what has been marked as Exhibit Nine-A and ask if the letter attached, dated July 1, 1985, is in fact the waiver letter from Zia Energy?

A That's correct.

MR. STOGNER: Is this an exhibit?

MR. CARR: That's Exhibit Nine-A.

MR. STOGNER: Okay.

Q Mr. Aycock, do you have anything further to add to your testimony in this matter?

A No, I think we've documented the fact that to recover the remaining reserves, that there will have to be redevelopment and that there has been water production that's been a severe problem in the Lower Yates and Upper Seven Rivers formation and that the remaining gas reserves, if any, on this lease will be derived from the Middle and Lower Seven Rivers portions of the Jalmat interval.

Q And, Mr. Aycock, were Exhibits One through Nine prepared by you or compiled under your direc-

tion?

A They were.

Q And Exhibit Nine-A is a copy of records from the files of the Oil Commission?

A It is.

MR. CARR: At this time, Mr. Stogner, we would offer into evidence Hartman Exhibits One through Nine and Nine-A.

MR. STOGNER: Exhibits One through Nine and Exhibit Nine-A will be admitted into evidence.

Q Mr. Aycock, when does Mr. Hartman hope to drill the additional wells in this area?

A He would like to drill them in calendar 1985, if possible.

Q And are we asking that the orders be expedited, to the --

A We would sincerely appreciate it if they could be.

Q -- extent possible.

MR. CARR: At this time, Mr. Stogner, that concludes my direct examination of Mr. Aycock and I pass the witness for cross.

MR. STOGNER: Okay, Mr. Aycock, as I understand the two nonstandard well locations will be

at the worst the locations as advertised today --

A Yes, sir.

MR. STOGNER: -- and if they have to be moved away for some reason, such as a pipeline, they will be moved to a less unorthodox location?

A That's right, to a fairly more orthodox location.

MR. STOGNER: Thank you, Mr. Aycock.

I have no further questions of this witness.

Are there any other questions of Mr. Aycock?

There being none, Mr. Aycock may step down.

Anything further in Case 8770?

There appears there is none. Case 8770 will be taken under advisement.

(Hearing concluded)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division (Commission) was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 8770, heard by me on 21 November 1985.

Michael E. Stogner, Examiner
Oil Conservation Division