STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

EXAMINER HEARING

IN THE MATTER OF:

Application of Yates Petroleum Corporation for compulsory pooling, Eddy County, New Mexico — Case 9869

TRANSCRIPT OF PROCEEDINGS

BEFORE: MICHAEL E. STOGNER, EXAMINER

STATE LAND OFFICE BUILDING

SANTA FE, NEW MEXICO

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(505) 984-2244

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I N D E X

E X H I B I T S

HEARING EXAMINER: This hearing will come to order. Call next case, No. 9869, which is the application of Yates Petroleum Corporation for compulsory pooling, Eddy County, New Mexico.

At this time I'll call for appearances.

MR. VANDIVER: Mr. Examiner, I'm David Vandiver of the firm of Fisk and Vandiver in Artesia, appearing on behalf of the Applicant, Yates Petroleum Corporation, and I have three witnesses to be sworn.

HEARING EXAMINER: Are there any other appearances? There being none, will the witnesses please stand to be sworn.

(Witnesses sworn.)

HEARING EXAMINER: Mr. Vandiver?

CY COWAN,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. VANDIVER:

Q. Mr. Cowan, please state your full name, your occupation, and by whom you're employed.

A. My name is Cy Cowan. I'm employed by Yates Petroleum Corporation of Artesia as a landman.

Q. You've previously testified before the New

Mexico Oil Conservation Division as a petroleum landman, had your qualifications accepted, and your qualifications are a matter of record, are they not?

A. That is correct.

Q. Are you familiar with the title to the land with regard to ownership of the various interests within the spacing unit for the well which is the subject of Yates' application in this case?

A. Yes, I am.

Q. Have you prepared certain exhibits to be presented to the Examiner?

A. Yes.

MR. VANDIVER: Mr. Examiner, I tender Mr. Cowan as an expert petroleum landman.

HEARING EXAMINER: Mr. Cowan is so qualified.

Q. (BY MR. VANDIVER) Please summarize, Mr. Cowan, briefly, the purpose of Yates' application in Case No. 9869.

A. Yates Petroleum Corporation seeks an order pooling all mineral interests from the surface to the base of the Morrow formation, underlying acreage in the north half of Section 14, Township 20 South, Range 24 East in the following manner: The north half is to form a standard 320-acre spacing and proration unit

for any and all formations and any and all pools developed on a 320-acre spacing; in the northwest quarter, to form a standard 160-acre gas spacing and proration unit for any and all formations developed on 160-acre spacing; and in the northeast quarter of the northwest quarter, to form a standard 40-acre spacing and proration unit for any and all wells and formations developed on a statewide 40-acre oil spacing.

These units are to be dedicated to our well, the John "AGU" No. 1, to be drilled at a standard location in the northeast quarter of the northwest quarter of Section 14.

We're also going to talk about the costs of drilling and completing this well and the allocation of costs, as well as the actual operating costs and charges for supervision, the designation Yates Petroleum Corporation as the operator of the well, and the charge for risk involved in drilling of this well.

Q. Mr. Cowan, please identify the Applicant's Exhibit 1, which is the land plat and review the information shown on that exhibit.

A. Exhibit No. 1 is a land plat showing portions of Township 20 South, Range 24 East, in Eddy County, New Mexico. The north half of Section 14 is

outlined in red. The actual location of our John "AGU" No. 1 well is located 660 from the north line, 1,980 feet from the west line, and it is designated by the red dot.

Q. At the present time, Mr. Cowan, what percentage does Yates Petroleum Corporation and affiliated entities own in the proposed spacing and proration unit?

A. 60 percent.

Q. Are there other parties with leasehold or unleased mineral interests within the spacing unit?

A. Yes, there are.

Q. Have you contacted all parties with leasehold or unleased mineral interests and requested them to join in the proposed well?

A. Yes, we have.

Q. Have all such parties agreed to participate?

A. All have contacted us except for one party has not responded at all.

Q. Which parties have not agreed to participate or reached some other agreement with Yates for the drilling of this well?

A. Clifford Cone has not responded at all to our proposal for this well.

MR. VANDIVER: Mr. Examiner, Applicant's Exhibit 2 is the Affidavit of Mailing prepared by my office, showing service pursuant to Rule 1207, notice of this hearing served upon Marilyn Cone, Trustee for the D.C. Trust, Kenneth Cone, Tom R. Cone, Cathie Cone Auvenshine, and Clifford Cone, and attached are the green return receipt cards showing that each of these parties received notice of the hearing.

Q. Mr. Cowan, what interest do the five parties I just named, the five members of the Cone family, own in the north half of Section 14?

A. The members of the Cone family own one-half of an undivided interest under the north half of Section 14.

Q. They own an undivided one-half of the minerals; is that correct?

A. One-half of the minerals, that is correct.

Q. And that's throughout the entire half section?

A. Yes.

Q. They don't own divided interest in the half section?

A. No, sir.

Q. One of the five Cones has executed an oil and gas lease to Yates?

A. That is correct.

Q. And that's Tom Cone?

A. Yes.

Q. If I could refer you to Applicant's Exhibit 3 in this case, and ask you to identify that packet of correspondence and review the information for the Examiner.

A. Yes. Exhibit No. 3 is correspondence between Yates Petroleum Corporation and the Cone family. I'd like to ask the examiner to go to the back of the packet, and, first of all, if you'd note that the date at the top right-hand corner of this page is September 10, 1987. This is a work sheet by one of the other landmen at Yates Petroleum when we were actually instructed to start trying to lease up acreage in this area.

HEARING EXAMINER: Are you referring to the back of Exhibit No. 3?

MR. VANDIVER: The very back page.

HEARING EXAMINER: It looks like a xerox copy of a legal pad that has some handwritten notes; is that correct?

THE WITNESS: Yes, sir, that is correct.

HEARING EXAMINER: And it's dated September 10, 87?

THE WITNESS: Yes, sir.

HEARING EXAMINER: I'm sorry. Please continue.

Q. (BY MR. VANDIVER) Mr. Cowan, the acreage that's included in your proposed spacing unit is included on the notes on the last page of that exhibit?

A. Yes, it is.

Q. What do these notes reflect?

A. They reflect the different interests owned by the Cone family members.

Q. Moving on to the next page of the exhibit, that's a plat similar to the one we've previously submitted, and what's the significance of that?

A. The significance of this plat is that the acreage described on the xerox sheet of the note pad that we just discussed is X'd out in the north half of Section 14, showing that that was one of the targeted areas that we are very interested in.

Q. All right. Now the next page.

A. The next page is what I call contacts and a progress report. It just has all the Cone family members, addresses, and when they were contacted.

Q. And do you know when these contacts were made? Were they at the same time as the previous

notes?

A. Yes. Down, several portions of the sheet have 9-11, 9-14; I'm saying that these notes were taken on the 11th and the 14th of September.

Q. And these notes reflect telephone conversations with members of the Cone family?

A. That is correct.

Q. What was the purpose at that time in 1987? Was your purpose to lease or propose a well or exactly what was your purpose?

A. We were trying to lease at that time.

Q. This is not the first time you've had dealings with the Cones, is it?

A. No, sir.

Q. Do you know how many wells in the Dagger Draw area you have drilled in which the Cones owned either a leasehold interest or an unleased mineral interest?

A. Right offhand, I believe there are five.

Q. Do all the Cones join together and agree to do one thing as a group when they participate in wells?

A. No. They act as individuals and on their own behalf. No one can speak for another member of the family.

Q. In situations such as this when Yates Petroleum has wanted to drill a well, and one of the Cones or a group of the Cones owns an unleased mineral interest, what sorts of agreements have been made with the various Cones?

A. We'll practically do anything to get them to join or participate or lease acreage.

Q. Various of the Cones have participated in some of your wells in the Dagger Draw area?

A. Yes.

Q. And various have farmed out on terms agreeable to both Yates and the Cones?

A. Yes.

Q. And when they've owned mineral interests, they have leased to Yates?

A. Yes.

Q. Do you know if any of them have ever sold their interests to Yates?

A. Right offhand, I do not know if anyone has sold their interest.

Q. But in your various dealings with the Cones, those terms are always available to them, are they not?

A. Yes, that is correct.

Q. Do you know whether the Cones, any of the

members of the Cone family that own an interest in this tract were aware of your plans to drill this well?

A. Yes, I'm sure they're all aware of this.

Q. In fact, Yates personnel met with Cliffcrd Cone this last summer, did they not?

A. That is correct. A meeting was set up between Yates' management and Mr. Clifford Cone, and also besides management, we had a member of the geological staff, engineering, and production at this meeting, and we went to such great lengths as to take Mr. Cohen on an actual field trip with our production superintendent to show him the area and where these wells could be, and what we had plans to do with these wells.

Q. And you pointed out the wells at that time that you intended to drill in the Dagger Draw area?

A. That is correct.

HEARING EXAMINER: Excuse me, Mr. Cowan. When you say Mr. Cone, are you referring to Mr. Clifford Cone?

THE WITNESS: Mr. Clifford Cone, that's correct.

HEARING EXAMINER: I wanted to make sure.

THE WITNESS: He was the only one that

attended this meeting.

HEARING EXAMINER: Thank you.

Mr. Vandiver?

Q. (BY MR. VANDIVER) Moving on to the next page on Exhibit 3, which is the letter from Douglas Cone to Ken Beardemphl of Yates Petroleum, describe what that is, please.

A. This is a letter from Mr. Douglas Cone to Mr. Beardemphl of Yates Petroleum. It isn't dated. I'm assuming it was in or around September of 87. And Mr. Cone's response to Ken's offer to lease was that he would be interested in joining any wells in this area, and send an AFE and an operating agreement to him.

Q. Now the next page.

A. The next page is a letter from Mr. Tom R. Cone, dated September 23, 87, from Mr. Beardemphl once again. Mr. Cone's letter said that he wanted more information regarding drilling on this acreage, and the captioned acreage does include our proposal in Section 14, the north half of 20 24.

Q. And then the next letter of December 7, 1989?

A. December 7, 1989, letter is address to the Cone family with the addressee list attached regarding

their acreage in the north half of Section 14, and we are offering to lease their acreage from them. There's a phrase in here, "on a very short-term lease," meaning we would be very interested in obtaining a lease from them.

Q. The letter also states that "Yates would like to work with you on your interest." Having entered into various agreements, the Cones are aware with regard to any particular well that Yates is open to any reasonable offer that they would like to make; is that correct?

A. That's correct.

Q. Moving on to the next letter of January 22, 1990.

A. A letter dated January 22, 1990, from Yates Petroleum Corporation to the Cone family regarding our John "AGU" No. 1 well. This is the actual proposal to the Cone family. The letter gives the location and the cost to drill a dry hole and a completed well. It also includes an invitation for them to join with us in drilling of this well, and it also points out that an AFE and a copy of the operating agreement is enclosed for them to sign if it meets with their approval.

Then also there's a paragraph in there

stating that if you don't want to join, should you desire to lease your mineral interest to Yates, there is an offer in there to lease their acreage from Yates Petroleum.

The last paragraph says, "Please let us hear from you."

Q. The letter additionally offers to take a farm-out from the Cones, does it not, in the next-to-the-last paragraph?

A. Yes, it does.

Q. And that's on the basis of reserving -- executing a lease, reserving an overriding royalty with the option to convert the overriding royalty to a 25 percent working interest after payout?

A. That's correct.

Also in this letter, we point out that we do have an expiring lease, and that's why we're trying to move on this thing as quickly as we can.

Q. If you'll refer to the letter of January 29, 1990, which is the next letter on Exhibit 3.

A. A letter dated January 29, 1990, is to the Cone family from Yates Petroleum Corporation regarding the John "AGU" No. 1 well. This letter points out that other people have joined and signed the AFE's and the operating agreements, and we are sending them

copies of these signature pages for their files. And, once again, we're asking for their response in our proposal to drill this John well.

Q. If you will refer to the next exhibit, the letter of February 6, 1990, to Cathy Auvenshine, and describe what that is.

A. The February 6, 1990, letter to Miss Auvenshine, first of all, says thank you for responding to our drilling proposal, and it offers her a farmout for her acreage because it looks like she did not want to participate in the well, but we understood that, and we offered her a chance to farm out her acreage or her minerals in this lease.

Q. Your application for forced pooling in this case was filed on January 29, 1990, was it not?

A. That is correct.

Q. Since your application -- let me ask you this: before your application for forced pooling was filed, had Yates had any response to any request to lease or offer to participate in this well?

A. No, we haven't had any.

Q. Since you filed the application for forced pooling, have certain of the Cone family members agreed to participate?

A. Yes.

Q. What is the status of their interest?
A. Since we filed the forced pooling hearing, by doing this, it is our experience that is the only thing that will move the Cones off center to respond to our proposals and our requests for this well.
Q. What is the status of the five Cone family members owning an interest in this proration unit?
A. Mr. Tom Cone has leased to us. Kenneth Cone and Cathie Cone phoned in yesterday to Yates Petroleum at 1:30 in the afternoon stating that they have signed the AFE and the operating agreement, and they are in the mail. We do not have those on hand.
Q. That's Cathie Auvenshine?
A. Auvenshine, pardon me, yes.
Q. What about Doug Cone?
A. Doug Cone, who's in charge of the D.C. Trust, phoned Mr. Vandiver's office yesterday at ten minutes to five o'clock in the afternoon, stating that he will sign the operating agreement, but he has elected to go nonconsent in this well.
Q. And the only one you've not heard from as yet is Clifford Cone?
A. That is correct, we have not heard from Mr. Clifford Cone.
Q. It has been Yates' experience that the

Cones will not respond to any type of proposal regardless of what it might be until an application for compulsory pooling is filed?

A. That is correct.

Q. Is it also not Yates' position that regardless of an order force pooling the Cones' interest, that Yates is still willing to take a lease or farm out or have the Cones participate or sell their interest or whatever they want to do for the period of time under which they're entitled to participate under the forced pooling order?

A. That is correct. And I'd like to add that we are not using the forced pooling statutes as a bludgeon to brow beat the Cones into joining these wells, but it just seems to be the only thing that gets their attention to respond to our requests.

Q. This is the fifth force pooling you've had against the Cones in the past year, is it not?

A. That is correct.

Q. And orders force pooling the Cones were entered in each case, were they not?

A. That is correct.

Q. Did any of the Cone family members end up being subject to the forced pooling orders in any of those cases?

A. None of them were ever subject to the orders.

Q. After the application was filed or the hearing was held, they agreed to participate or lease or farm out or something in each situation?

A. That is correct.

Q. But it has been your experience that you don't get any response from the Cones until you file an application?

A. That is correct.

Q. If I could refer you to Applicant's Exhibit 4 and ask you to describe what that is.

A. Exhibit No. 4 is an A.A.P.L. Form 610, 1977, Model Form Operating Agreement, for the John "AGU" No. 1 well. This operating agreement is dated January 22, 1990, designating Yates Petroleum Corporation as operator, and the contract area is the north half of Section 14, Township 20 South, Range 24 East in Eddy County, New Mexico.

This is a standard form operating agreement used by Yates Petroleum Corporation.

Q. If I could refer you to Exhibit A to that operating agreement and ask you to describe what information is contained on Exhibit A.

A. Exhibit A shows how the working interest

owners will pay their proportionate share to drill this well.

Q. And Exhibit A is prepared on the assumption that the D.C. Trust, Clifford Cone, Cathie Cone Auvenshine, and Kenneth G. Cone will each join in and participate in the drilling of your proposed well?

A. That is correct.

Q. If I could refer you to Exhibit A of the showing operating agreement, which is the COPAS accounting procedure form, and ask you to point out the overhead supervision rates requested for Yates' operations for drilling your proposed John "AGU" No. 1 well.

A. Yes. On page 3 of the COPAS agreement, our overhead rate for the drilling portion is $5,400 and the producing well rate is $540, and these are Yates Petroleum's standard overhead rates for drilling a well in this area to this depth.

Q. And Yates has drilled other Morrow wells in the Dagger Draw area, and the overhead rates are consistent with what Yates and other operators charge at the current time for supervisions for wells in this area at this depth?

A. That is correct.

Q. If you could identify Exhibit 5 and

describe for the Examiner what that is.

A. Exhibit No. 5 is an Authority For Expenditure for the John "AGU" No. 1 well, which is going to be a 9,400 foot Morrow test. It describes the cost of a dry hole at $316,700; a completed well is a producer at $776,500. It also outlines the working interest owners and their percentages of their cost to drill this well.

Q. I believe that was $676,500 for a completed well?

A. Yes, excuse me, that is correct.

Q. The costs reflected on this AFE, are those obtained by Yates engineering department's experience in drilling Morrow wells in this area?

A. Yes.

Q. Are these costs reasonable and necessary costs to drill a Morrow well at this time in this area?

A. Yes, they are.

Q. Is this AFE in line and similar to the costs shown on the AFE's of the Morrow wells in which the Cones previously have owned an interest?

A. Yes, they are.

Q. And they have been submitted to the Cones previously?

A. Yes.

Q. Were Exhibits 1 through 5 prepared by you or taken from the regular business records maintained by Yates in the ordinary course of business?

A. Yes.

MR. VANDIVER: Mr. Examiner, I move admission of Applicant's Exhibits 1 through 5 at this time, and I have no more questions of this witness.

HEARING EXAMINER: Exhibits 1 through 5 will be admitted into evidence at this time, and I have no questions of this witness. He may be excused.

THE WITNESS: Thank you.

HEARING EXAMINER: Thank you.

MR. VANDIVER: May I proceed?

HEARING EXAMINER: Mr. Vandiver.

RAY BECK,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY VANDIVER:

Q. Mr. Beck, state your name, your occupation, and by whom you're employed, please.

A. My name is Ray Beck. I'm employed by Yates Petroleum, Artesia, New Mexico, as a geologist.

Q. Mr. Beck, have you previously testified on numerous occasions before the Oil Conservation Division as a petroleum geologist, had your qualifications as a geologist accepted, and your qualifications are a matter of record, are they not?

A. Yes, sir.

Q. Have you made a study of the available geological data in the area of Yates' proposed well in this case for the purpose of presenting evidence relating to the risk involved in drilling this well and recommending to the Examiner a risk factor penalty?

A. Yes, I have.

Q. Have you prepared certain exhibits to illustrate your testimony today?

A. Yes, sir.

MR. VANDIVER: Mr. Examiner, I tender Mr. Beck as an expert petroleum geologist.

HEARING EXAMINER: Mr. Beck is so qualified.

Q. (BY MR. VANDIVER) Mr. Beck, is there risk involved in drilling Morrow wells in the Dagger Draw area?

A. Yes, sir.

Q. In order to illustrate some of the risk

factors, please refer to Applicant's Exhibit 6.

A. Since we're drilling for both the Canyon objective and the Morrow objective, I'll start first with the Canyon objective, though we are taking it down to the Morrow too.

Exhibit No. 6 is a map of a large portion of the Dagger Draw Upper Penn North and South oil fields. These Dagger Draw oil fields produce oil, sour gas and brackish sulfur water from a combined stratigraphic and hydrodynamic trap consisting of a band of partially porous and permeable dolomite pinching out updip into tight sealing limestone.

Downdip economic production is limited by water. There is no water-free production in these two fields; however, there is a hydrodynamically tilted surface below which the dolomite reservoir is virtually all water filled. For use for lack of a better word, we refer to it as the "big water" because there's water also up in the gas and oil portion too.

This exhibit is a combined Canyon or Upper Penn dolomite structure map and top of the "big water" structure map. Solid contours show the structural configuration of the top of the Canyon dolomite in 100-foot contours. Dotted contours show the structural configuration of the tilted "big water"

surface in 50- foot contours. Both sets of contours are limited to the east and west by zero dolomite pinchout lines.

Circled well spots are Canyon or deeper penetrations. Green-colored well spots are Dagger Draw Upper Penn north and south producers; red spots are Canyon sour gas wells. Uncolored circled gas well spots indicate gas production from zones stratigraphically lower than the Canyon such as Strawn, Atoka, and Morrow.

According to the map, the proposed John "AGU" well in Unit C of Section 14, 20 South 24 East, should encounter the top of the dolomite at a minus 3928 and should encounter the tilted "big water" surface at a minus 4122, which would mean that a gross dolomite interval of 194 feet above the "big water" would be encountered.

A portion of this gross interval will hopefully have enough porosity and permeability to result in an economically successful oil, sour gas, and water wells. However, let me quickly say that the Dagger Draw reservoir is a carbonate reservoir, and like all carbonate reservoirs, it is complex in geometry and variable in reservoir quality from place to place. That is, there is always geological risk in

drilling for carbonate reservoirs.

The carbonate reservoir may abruptly thin, thicken, or change from porous and permeable rock to tight or impermeable rock, resulting in a so-called inside location becoming an uneconomic well.

I could point to examples four wells to show this sort of risk. This is, of course, a currently developing field with a number of recently completed wells with little production history, and it must be remembered that the wells produce not only oil but sour gas and large amounts of water. Therefore, there is a risk that a number of the wells will turn out to be uneconomic. Another Yates witness will testify in more detail about the high drilling, equipping, and lease operations costs.

The first of the examples to show risk is the Conoco Preston Federal #4 in Section 34 of Township 20-1/2 South, Range 23 East, down at the south end of this. The well had 90 feet of dolomite above the "big water." The well was originally drilled and plugged by Standard Oil of Texas in 1965.

The well was worked over by Conoco in 1983 for an initial pumping by gas lift of zero barrels of oil, 420 Mcf of gas, and 973 barrels of water per day. Conoco never sold any production from this well and

plugged the well in August of 1989, last year. With 90 feet of dolomite above the "big water," one would have thought that the well could have been economic, especially the re-entry; however, the dolomite was just a little too impermeable and somehow too much water with too little hydrocarbons was produced to make the well uneconomic.

The second well to show geologic risk is the Conoco Preston Federal #2 in the northeast quarter of Section 34, Township 20-24. This well was drilled a little less than a half a mile north of the well with 351 feet of dolomite, yet what I'm speaking about encountered all tight limestone and zero dolomite. It was plugged after testing through perforations.

The Conoco Preston is also a little over half a mile to the west northwest of the Conoco Preston Federal #1, a well which has produced over 19,000 barrels of oil, over 2.9 Bcf of gas, and 2.4 million barrels of water. The Preston #2 example well, when it was drilled in 87, found an unexpected section of tight limestone instead of dolomite.

The third well to show risk is the Conoco, formerly the Ralph Nix Debbie well, located in the southeast quarter of Section 11 of Township 20 South, 24 East, which encountered 307 feet of Canyon

dolomite, of which 174 feet was above the "big water."

The Debbie well was originally completed in 82 by Nix for an IPP of 55 barrels of oil and 162 barrels of water per day. Later when Nix wished to plug the well, Conoco took over operations in an attempt to improve the production. Conoco then finally plugged the well in November of 1986 with the well's final uneconomic cumulative production of 5,496 barrels of oil, 28,607 Mcf of gas, and 211,000 barrels of water.

The fourth and last well to show geological risk is the Yates Cacti "AGB" in Section 2 of 20 South - 24 East, which will be discussed on the next exhibit, a cross-section, whose trace is shown on this map exhibit.

Q. If I could refer you to Exhibit 7 then and ask you to identify it and explain the information shown.

A. We're still talking about the Canyon here. Exhibit 7 is a northwest-southeast structural cross-section, depicting the depth dimension across the southern part of Dagger Draw Upper Penn North oil field. The compensated neutron-density porosity logs are hung on a minus 3500 below sea level datum. Vertical scale is 2-1/2 inches equals 100 feet.

Horizontal distance between the wells is only proportional to map distances.

Shown on the cross-section is the top of the Canyon limestone, also called Upper Penn by some workers. Also shown is the limits of the dolomite reservoir facies and the hydrodynamically tilted so-called "big water" contact.

In order to have a chance at finding commercially economic hydrocarbons in Dagger Draw field, one must encounter adequate porous and permeable dolomite reservoir facies above the tilted "big water" contact below which all the dolomite reservoir is filled with water.

The fourth well from the left on the cross-section, the Yates Cacti "ABG" State #1, cut 116 feet of section between the top of the dolomite to the "big water"; however, 52 feet of the middle of that section was not dolomite reservoir but a tight interval of interbedded shale and lime. This Cacti well is currently producing from the Morrow and will later be perforated in the Canyon dolomite; however, it is possible that this well will not be an economically commercial producer from the Dagger Draw Upper Penn field because of the unexpected 52 feet of nonreservoir rock in what looked like a so-called

inside location before drilling.

That's all I have to say about this exhibit.

Q. Now turn to Exhibit 8 and identify that and describe the information contained.

A. Since we are taking the well to the Morrow an additional 1600 feet, I thought I'd point out the risk of going to the Morrow. Exhibit No. 8 is a Morrow penetration map surrounding the north half of Section 14 of 20 South - 24 East where the proposed well is to be drilled at a standard location through the Morrow formation. This means an additional 1600 feet below the Canyon objective will have to be drilled to test the Morrow objective.

As the map shows, the Morrow penetrations in the nine contiguous sections surrounding the north half of Section 14 offer ample evidence to show risk in finding commercially economic Morrow wells in the area. Nine wells have penetrated the Morrow, and only two have or will produce economic quantities of Morrow gas. That is, the Yates Conoco in the north half of Section 11 with estimated reserves of 1.32 Bcf, and the BHP, formerly Monsanto, Mayer well in the north half of Section 24 with a cumulative production of over 1/2 Bcf.

Q. Mr. Beck, based upon your review of this data, do you have a recommendation to make to the Examiner for a risk factor penalty to be ordered in this case?

A. I recommend a risk penalty of 200 percent.

Q. In your opinion, will granting of this application be in the interest of conservation of oil and gas, prevention of waste, and protection of correlative rights?

A. Yes, sir.

Q. Before I conclude your examination, I might ask you, were you available, and did you speak to Clifford Cone when he was in your office in the summer of 1989?

A. That's correct. I was there. I was the geologist who showed him the geology of the field.

Q. Was that throughout the Dagger Draw field? Was that what he was primarily concerned with?

A. Yes, sir, that's right. They have considerable leaseholds or other mineral interests in the Dagger Draw area, and I talked to him generally about the geology of the whole area, especially around the area that he had interest in, and he asked questions pertinent to his leaseholds or mineral interests and to offsetting wells and how they did.

Q. Mr. Beck, were Exhibits 6, 7, and 8 prepared by you or under your direction and supervision?

A. Yes, they were.

MR. VANDIVER: Mr. Examiner, I move the admission of Applicant's Exhibits 6, 7, and 8, and I have no further questions of the witness.

HEARING EXAMINER: Exhibits 6, 7, and 8 will be admitted into evidence.

CROSS-EXAMINATION

BY HEARING EXAMINER:

Q. Mr. Beck, in referring to Exhibit No. 8, the two Morrow wells that you show on this map, are they out of the same pool, or are they out of different pools?

A. I believe that these two wells -- I know for a fact that the BHP Monsanto Mayer well, the red dot down in Section 24, belongs to the Cemetery Morrow Pool, and the well in 11 is a new well, and I believe it's been assigned to the Cemetery Morrow Pool too.

Q. Between those two wells, the two wells that you show on there, do they penetrate the Morrow? We're talking about the two wells in the south half of 11, and might as well include that well in the south half of 13.

A. Yes, sir. All the double circled wells are Morrow penetrations, and there are nine Morrow penetrations, and the only two that have made even Morrow wells are the two red dots.

Q. There is another well up in 14. Do you know anything about that? This is the north half of 14.

A. Yes, sir. That's a shallow well. I believe if I could look at a land plat, it might even tell the depth on it.

Q. I believe I'm looking at Exhibit No. 6, TD'd at 599; is that correct?

A. Yes.

Q. Did something happen to that well, do you know?

A. I think it was just probably an attempt by whoever the operator was at that time to keep from drilling over a leased exploration at that time, or something of that nature. That's usually the course to see what they do.

Q. Operators do that?

A. I've heard about it.

HEARING EXAMINER: I have no other questions of Mr. Beck. He may be excused.

Mr. Vandiver, please continue.

DAVID FRANCIS BONEAU,
the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. VANDIVER:

Q. Please state your full name, your occupation, and by whom you're employed.

A. My name is David Francis Boneau. I work as a petroleum engineer at Yates Petroleum in Artesia.

Q. Dr. Boneau, you've previously testified on numerous occasions before the New Mexico Oil Conservation Division, had your qualifications as an engineer accepted; your qualifications are a matter of record, are they not?

A. Yes, sir.

Q. Have you made an engineering study of the proposed Yates Petroleum Corporation John "AGU" No. 1 well and the area surrounding it, the Dagger Draw area?

A. Yes, I have done that.

Q. Have you prepared certain exhibits to illustrate your testimony?

A. Yes, sir.

Q. Your investigation was for the purpose of presenting evidence relating to the risk involved in

drilling this well and recommending to the Examiner a risk factor penalty?

A. That's correct.

MR. VANDIVER: Mr. Examiner, I tender Dr. Boneau as an expert petroleum engineer.

HEARING EXAMINER: Dr. Boneau is so qualified.

Q. (BY MR. VANDIVER) If I could ask you to refer to Applicant's Exhibit 9 and identify that and describe what information is contained.

A. Exhibit 9 is a small scale map of a big area that shows that this is a project that extends over a large area. The proposed well has two objectives, the Canyon and the Morrow. The Canyon is what I would call the primary objective, and the well is an extension in the Canyon of the Dagger Draw Upper Penn North or South Field.

Exhibit 9 shows the water and gas gathering lines that we have installed to try to produce these hydrocarbons.

I'm sure you understand by now that the wells make lots of water, and the gas is very sour. The gas is like 2 to 3 percent H2S. So the gas has to be sweetened in order to be sold, and the water has to be disposed of. As a result, these are just costly

wells to operate.

Exhibit 9 shows that there are 20 miles of water gathering lines that Yates has installed four salt water disposal wells that are shown by black dots, and we're installing a fifth salt water disposal well this month.

In addition, there are gas gathering lines which are a little lighter on the map. We've built about between 25 and 30 miles of gas gathering lines. Some of them are 8 inches in diameter and special metallurgy to resist the H2S, etc.

The gas is taken two places at the present time. It's taken to a Transwestern sweetening plant, which is located in Section 26 of 18 of 25, more or less towards the top of this exhibit, where Transwestern operates a sweetening plant, and the excess gas is taken approximately five miles further east than Yates gathering line over in the very upper right-hand corner, where it says Dayton, where it goes into a Northern Natural gas line which takes it to Hobbs to be sweetened at the plant at Hobbs.

The point is simply to kind of introduce where we are, but also to show that there is a lot of steel, etc., sunk in the ground, a lot of expense invested just to be able to drill these wells and have

a chance of handling the production should we discover more production.

Q. Now if you would turn to Exhibit 10 and describe the information contained in that exhibit.

A. Exhibit 10 is pretty short. It simply says that to date, we've spent $4-1/2 million on the gas gathering lines and $1/2 million on water disposal. We are right at this time converting another well to water disposal, and we are building an eight-mile gas gathering line that I should have pointed out maybe on Exhibit 1. It is the diagonal, very straight line that extends from sort of the southwest towards the northeast, more or less in the middle of the picture. We're building an 8-inch steel gas gathering line at an additional cost of $1-1/2 million, and it's designed to try to open up the southern extension down into 20 24 that we're talking about today, and that this John well would be one of the producers, we hope, in.

Q. Now if you could refer to Exhibit 11 and identify that and describe the information contained in that exhibit.

A. Exhibit 11 talks about the Canyon producers in the area of the proposed well. This is a 24-section area in Township 20 24, and it's kind of a

south extension of -- the old Dagger Draw is up in the two sections, the township to the north and township to the northeast. This is the area of interest.

And I think the point -- well, there's a lot of numbers on it. The numbers on this exhibit show the cumulative production of the wells and a current production for each black dot. The numbers are the most up-to-date I can get.

For the Yates wells, the cumulatives are till the 1-1-90, and the current production is the -- it's actually the first 47 days of 1990. It's from January 1 to February 16.

The numbers for the non-Yates wells are cumulatives through the end of November, and the current productions or the values are for the month of November.

The red dot shows the location of the John well. The nearby wells are in Section 11. One of the wells in the east of Section 11 is the Debbie well that Mr. Beck testified to. It's clearly an uneconomic well.

The other well in Section 11 is a very new Yates well called Saguaro. It is not yet completed; so it has no cum as of the end of 1990, but it is producing, as the exhibit shows there, 107 barrels of

oil per day, 881 Mcf per day, and 418 barrels of water per day. It's starting out looking like a pretty decent well. That's a pretty decent Dagger Draw well. It only makes 80 percent water.

The wells to the south of the proposed location are mostly the old Conoco wells in south Dagger Draw Upper Penn. There's five producers and a dry hole down in 34 that were drilled by Conoco.

The well in Section 22 was drilled recently by Yates. It has a very low cum because it was drilled in late 89, and is now producing 11 barrels of oil, almost a million cubic feet of gas a day, and 239 barrels of water a day. That well is called Carl TP #1. It's not clear whether that well is going to be economic or not at the present time, although making a million a day, it has a good chance with not a whole lot of water.

The Conoco wells to be discussed in a little more detail in one of the following exhibits, but the summary is that the wells in 23, 26, and 35 consist of five Conoco wells. All four of them are shut in now. One of the five is clearly economic, one of them is marginally economic, and the other three are uneconomic. So there is a good chance of getting an uneconomic well in the area of the John.

Q. Anything further with regard to that exhibit?

A. No, sir.

Q. If you would turn to Applicant's Exhibit 12 and identify that exhibit and describe what it shows.

A. Exhibit 12 is a companion to Exhibit 11. It is a tabular listing of of the data we reviewed on Exhibit 11, plus other data such as spud dates and total depths, etc., producing pools on all the wells shown on Exhibit 11.

I don't think there's anything else to conclude from that. It's a supporting exhibit for Exhibit 11.

Q. Now refer to Exhibit 13 and identify that and describe what you're trying to show by that exhibit.

A. Exhibit 13 attempts to show economics for these kind of wells. And I picked in particular the five wells that Conoco operated for ten years or so in which there's lot of history; and so you can know what the wells are going to produce.

I did detailed economics on two of the wells, and they're the two wells in Section 26, the Vicki Federal #1 and the Robin Federal #2.

The cumulatives are listed there. The

Vicki made 24,000 barrels of oil over three-quarters a Bcf of gas, and 1.9 million barrels of water, which doesn't sound all that bad, but it didn't come close to paying out. It only returned approximately 70 percent of the cost to drill the well, and it's because of the expenses in treating the gas and in handling 1.9 million barrels of water or in handling large amounts of water. So that Vicki did not pay out, and I wrote it down as a clear loss.

The Robin Federal made 39,000 barrels of oil, 1-1/2 Bcf of gas, and almost 4 million barrels of water.

I might add, either clarify or confuse, early in the history of these wells, they produced lots of water and little hydrocarbons, and Conoco reworked them. And in my reconstruction of it, I omitted a lot of that water. So in the Vicki, my reconstruction had like 1.1 million barrels of water, and in the Robin, about 1.8 million barrels of water. So I did not count some of that early water that I thought was not appropriate.

Anyway, the well made 39,000 barrels of oil, and 1-1/2 Bcf, and normally you would say, that ought to be a very good well. Well, because of the operating environment here, it really only makes a

small profit. It returns the $500,000 investment together with the Canyon plus $57,000 profit, takes six-and-a-half years to pay out, and you get your money back plus 38 percent on a nondiscounted basis. That's clearly a small well.

Then the bottom of the exhibit tries to extrapolate those two results to the other wells and also to the Debbie. The Debbie only made, converting the -- there's a column there that says equivalent in Mmcf, and what I did to try to get it summarized was take the oil and assign each barrel of oil as 10 Mcf, which is a reasonable conversion factor on a price basis, and add the oil to the gas.

I'm getting off in left field, but let's fight it on through here, guys. So the Vicki converting oil to gas made a little over a Bcf equivalent and was a loss. The Robin made 1.9 equivalent Mcf, equivalent Bcf of gas, and is a small profit. The Debbie, north of our proposed location, made very little and is a huge loss.

The Penny Federal #1 and the Penny Federal #2 were no better than the Vicki and are clear losers, and the Preston Federal has made, that Mr. Beck said, almost 2 Bcf of gas and 3.3 Bcf equivalent gas and is a clearly profitable well but nowhere near as

profitable as a 3 Bcf Morrow well would be.

So the economics are clearly questionable in that southern area.

Q. Now turn to Applicant's Exhibit 14 and identify that and describe the information you're showing on that exhibit.

A. Exhibit 14 is the map of the same area in Township 20 24. Here we're looking at the Morrow penetrations. Mr. Beck had a similar map restricted to nine sections and minus 14. I think we're going to have the same conclusions.

The numbers next to the locations here are total reserves, what the well will make in its life in gas. I've included two wells that bottomed out in the Morrow but were completed in the Atoka and completed from the Atoka; so if you drilled from the Morrow, you would probably get that gas.

The story is that offsetting the proposed John location are very many zeros. In almost every direction there is a dry hole Morrow. There are 22 Morrow penetrations here, 13 of them were dry holes. Of the nine that did produce from the Morrow, three are economic.

And those three are the Conoco in the north half of Section 11 that has 1.3 Bcf of reserves. The

well in the north half of Section 24 that has 625 million, and that one is not going to make very much money. That's about enough to be even. And the well in the north half of Section 36, way down in the southeast has reserves of almost 2 Bcf.

The other wells are not economic Morrow wells when drilled, top to bottom. What we're talking about here is going an extra 1600 feet at an extra expense of $50,000 to $100,000 to test the Morrow. The average reserves of these 22 wells, you add them all up at $219 million, and, on average, that probably justifies spending an extra $50,000 to $100,000, but you've got a risk. 60 percent of the time you're going to get no Morrow, and another 30 percent of the time, you're going to get only a small amount of Morrow production.

So the Morrow is, I think, clearly more risky than the Canyon in this area.

Q. And all the wells shown on Exhibit 14 are Morrow penetrations?

A. All the wells are Morrow penetrations, yes, sir.

Q. If you'll move to Exhibit 15 and identify that exhibit and describe the information shown.

A. Exhibit 15 is a tabular listing backup for

Exhibit 14, and it contains more details, but it doesn't add anything to the conclusions. It supports the conclusions of Exhibit 14.

Q. From your review of this information, what conclusions do you draw about your proposed well, the John well?

A. Easy conclusion is that the Morrow is quite risky.

As far as the Canyon goes, we're moving out to the south away from where we produced, and we're moving towards the old Conoco wells, which really don't look that good; so you're probably going to get some production, but there is a chance that it won't be enough to pay the high operating cost and the disposal and the sweetening, etc., involved.

Q. What sort of production does a Canyon well need to have to be economic in the Dagger Draw area?

A. A typical well makes 100 barrels of oil a day, 800 to 1,000 barrels a water of day, and several hundred Mcf of gas, and that is barely -- that kind of numbers are barely economic, but 90 percent water is kind of the norm.

We're moving down here to the south, and we're getting to the part of the reservoir, the updip part of the reservoir where the oil is going away, and

there's more gas. So the oil numbers here that we've looked at are lower, and a lot of them are 100 barrels a day, but some of the wells are making more than a couple hundred Mcf of gas.

From the main part of the field, which my thinking is attuned to, 100 barrels of oil with no more than 1,000 barrels of water will probably get you an economic well. Down here, we don't have that much experience, and we've got some wells that are making 1/2 million cubic feet a day up to a million cubic feet a day with 500 barrels of water, 700 barrels of water, etc. I don't know if they're going to turn out to be economic or not. It depends if the water would go away a little bit, they would be economic, but if the water stays that high, it's going to be close, and I've run out detailed calculations on all these things, and I worry every time we drill one because I don't know what we're going to get.

Q. Based upon your review of this data, do you have a recommendation to make to the Examiner as to a risk factor penalty to be ordered in this case?

A. The risk factor penalty ought to be 200 percent.

Q. In your opinion will the granting of this application be in the interest of the conservation of

oil and gas, the prevention of waste, and the protection of correlative rights?

A. Yes, sir.

Q. Were Exhibits 9 through 15 prepared by you or under your direction or supervision?

A. Yes, they were.

MR. VANDIVER: Mr. Examiner, I would move admission of Applicant's Exhibits 9 through 15, and I have no further questions of the witness.

HEARING EXAMINER: Exhibits 9 through 15 will be admitted into evidence at this time, and neither do I.

Does anybody have any questions of Dr. Boneau? There being none, he may be excused.

Does anybody have anything further in Case No. 9869? If not, this case will be taken under advisement.

CERTIFICATE OF REPORTER

STATE OF NEW MEXICO)
) ss.
COUNTY OF SANTA FE)

I, Deborah O'Bine, Certified Shorthand Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I caused my notes to be transcribed under my personal supervision; and that the foregoing is a true and accurate record of the proceedings.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL February 22, 1989.

Deborah O'Bine

DEBORAH O'BINE
CSR No. 127

My commission expires: August 10, 1990

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 9869, heard by me on 21 February 1990.

Examiner
Oil Conservation Division