STATE OF NEW MEXICO 1 2 ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT OIL CONSERVATION DIVISION 3 IN THE MATTER OF THE HEARING 5 CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CASE NO. 10862 6 CONSIDERING: 7 APPLICATION OF YATES PETROLEUM CORPORATION 8 REPORTER'S TRANSCRIPT OF PROCEEDINGS 9 **EXAMINER HEARING** 10 **BEFORE:** David R. Catanach, Hearing Examiner Jim Morrow, Hearing Examiner 11 December 2, 1993 12 Santa Fe, New Mexico 13 14 This matter came on for hearing before the 15 16 Oil Conservation Division on December 2, 1993, at Morgan Hall, State Land Office Building, 310 Old Santa 17 Fe Trail, Santa Fe, New Mexico, before Deborah O'Bine, 18 RPR, Certified Court Reporter No. 63, for the State of 19 20 New Mexico. 21 **ORIGINAL** 22 JAN 2 4 1991 23 24

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FOR THE APPLICANT:
                            CAMPBELL, CARR, BERGE &
                              SHERIDAN, P.A.
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                            P.O. Box 2208
                            Santa Fe, New Mexico 87504
                            BY: WILLIAM F. CARR, ESQ.
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EXAMINER CATANACH: At this time we'll call 1 2 Case 10862, which is the application of Yates 3 Petroleum Corporation for an unorthodox gas well location, Eddy County, New Mexico. 4 5 Are there appearances in this case? MR. CARR: May it please the examiner, my 6 7 name is William F. Carr with the Santa Fe law firm 8 Campbell, Carr, Berge & Sheridan. We represent Yates Petroleum Corporation, and I have three witnesses. 9 10 EXAMINER CATANACH: Any additional appearances in this case? 11 Will the three witnesses please stand and 12 13 be sworn in at this time? 14 (Witnesses sworn.) MR. CARR: At this time we call Kathy 15 Porter. 16 17 KATHY PORTER, the witness herein, after having been first duly sworn 18 upon her oath, was examined and testified as follows: 19 EXAMINATION 20 BY MR. CARR: 21 22 Q. Will you state your name for the record, 23 please. Kathy Porter. 24

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Where do you reside?

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Q.

A. Artesia, New Mexico.

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- Q. By whom are you employed and in what capacity?
- A. I'm employed by Yates Petroleum Corporation as a petroleum landman.
- Q. Miss Porter, have you previously testified before this division?
 - A. Yes, I have.
- Q. At the time of that prior testimony, were your credentials as a petroleum landman accepted and made a matter of record?
 - A. Yes, they were.
- Q. Are you familiar with the application filed in this case on behalf of Yates Petroleum Corporation?
 - A. Yes, I am.
- Q. Are you familiar with the proposed Redbone BP Federal Well #2?
- A. Yes, I am.
- MR. CARR: Are the witness's qualifications acceptable?
- EXAMINER CATANACH: They are.
- Q. (BY MR. CARR) Miss Porter, would you briefly state what Yates Petroleum Corporation seeks with this application?
 - A. Yates Petroleum Corporation seeks approval

of an unorthodox well location for our proposed Redbone BP Federal #2 to be drilled 1980 feet from the north line, 510 feet from the east line, Section 10, Township 24 South, Range 24 East, Eddy County, New Mexico, with a north half dedication.

- Have you prepared certain exhibits for presentation here today?
 - Yes, I have. Α.

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- Would you refer to what has been marked for identification as Yates Petroleum Corporation's Exhibit No. 1, identify this, and review it for Mr. Catanach?
- Α. Exhibit No. 1 is a plat showing the proposed well location. A standard north half spacing unit is outlined. This plat also shows offsetting The Yates acreage is colored in yellow. owners.
- The well is unorthodox because it is being moved toward the eastern boundary of the dedicated acreage; is that correct?
 - That's correct, Section 11. Α.
 - Who is the operator of Section 11? Q.
- Section 11 is operated entirely by Α. 23 Moncrief.
 - That is the only tract for whom Yates is moving its well location?

A. That's correct.

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- Q. Is Yates Exhibit No. 2 an affidavit confirming that notice of today's hearing has been provided to Moncrief and others as required by OCD rules?
 - A. Yes, it is.
- Q. Will Yates also call geological and engineering witnesses to explain the technical reasons for this location?
 - A. Yes, we will.
- Q. Were Exhibits 1 and 2 either prepared by you or compiled at your direction?
 - A. That's correct.
- MR. CARR: At this time, Mr. Catanach we move the admission of Yates Petroleum Corporation's Exhibits 1 and 2.
- EXAMINER CATANACH: Exhibits 1 and 2 will be admitted as evidence.
- MR. CARR: That concludes my examination of this witness.

EXAMINATION

22 BY EXAMINER CATANACH:

Q. Miss Porter, the acreage outlined in yellow on your Exhibit No. 1, that is 100 percent Yates' acreage?

A. That's correct.

- Q. Section 11, does that contain Morrow producing wells within its section?
- A. We have a technical witness that will go into the offset wells.
- Q. As far as you know, that's all operated by Moncrief, though?
- A. Yes, the entire Section 11 is operated by Moncrief.
- Q. You've got two additional parties, Chevron and Pennzoil, listed on your notice. What interest do they have in this?
- A. If you'll look on the plat, Section 9 is operated by Pennzoil. Chevron had an interest up in Section 2. When they first started this, they were attempting to notify everyone within the nine sections, although we were not encroaching against anyone except Section 11.
 - Q. This is all federal acreage in Section 10?
- A. In Section 10, that's correct, it's one lease.

EXAMINER CATANACH: I think that's all we have of the witness. She may be excused.

MR. CARR: At this time we call Brent May.

BRENT MAY,

1 the witness herein, after having been first duly sworn 2 upon his oath, was examined and testified as follows: 3 EXAMINATION BY MR. CARR: 4 5 Q. State your name for the record, please. 6 Brent May. Α. 7 Where do you reside? Q. Artesia, New Mexico. 8 Α. 9 By whom are you employed? Q. Yates Petroleum. 10 Α. And what is your current position with Q. 11 Yates Petroleum? 12 I'm a petroleum geologist. 13 Have you previously testified before this 14 division? 15 Yes, I have. 16 Α. At the time of that testimony, were your 17 Q. 18 credentials as a petroleum geologist accepted and made a matter of record? 19 Yes, they were. 20 Α. Are you familiar with the application filed 21 on behalf of Yates Petroleum Corporation in this case? 22 Yes, I am. 23 Α. Are you familiar with the proposed Redbone 24 BP Federal Well #2? 25

A. Yes, I am.

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- Q. Have you made a geological study of the area surrounding this well?
 - A. Yes, I have.

MR. CARR: Are the witness's qualifications acceptable?

EXAMINER CATANACH: They are.

- Q. (BY MR. CAR) To what formation is Yates proposing to drill this well?
 - A. The Morrow formation.
- Q. In what pool in the Morrow will it be completed?
- A. That would be within the Crooked Creek Morrow Gas Pool.
 - Q. What is your primary objective?
 - A. Our primary objective is what I loosely term the Moncrief Sand of the Morrow Clastics Section of the Morrow formation.
 - Q. Are there secondary objectives in this well?
 - A. Yes, there are. There could be other sands within the Morrow Clastics Section of the Morrow formation and also possible potential within the Strawn formation.
 - Q. Mr. May, why is Yates proposing to drill at

this particular location?

- A. Because of geological and topographical reasons.
- Q. Let's move to what has been marked Yates
 Petroleum Corporation Exhibit No. 3. Would you
 identify this and review it for the examiner?
- A. This is a topographic map of the area showing Section 10 and the proposed location. Yates originally asked for a location 1980 feet from the north line and 660 feet from the east line, and because of the topographic reasons, the BLM suggested that we move it to the 1980 and 510 location that we are currently asking for now.
- Q. Let's go on now to Yates Exhibit No. 4. Can you identify this exhibit?
- A. This is a stratigraphic cross-section

 A-A'. It runs from west to east. There's a location plat in the lower left-hand corner. Starting on the left side of the cross-section with the C & K

 Petroleum Lowe State #1 in Section 16 -- I might also add that this cross-section is basically showing the Morrow Section, but the datum is the lower Morrow.

I also have a top picked on the Morrow Clastics, and also a pick I call, loosely termed, the base of the sand.

As I was explaining earlier, the well on the far left-hand side of the cross-section is the Lowe State #1 in Section 16. This well currently is producing out of the Morrow and has produced cumulatively less than a half a Bcf out of several Morrows and the Atoka sands.

The next well on the cross-section is the Yates Petroleum Redbone BP Federal #1 in Section 10. This well in the past has produced out of a few sands lower down in the Morrow Clastics, and within the lower Morrow here just recently, though, Yates has come uphole and recompleted into the Moncrief Sand, which is colored in yellow on this cross-section. And on initial potential, it flowed for 1.6 million cubic feet of gas.

I almost might note that on the Lowe State #1, the Moncrief Sand is present, but it does appear to be thinner and tighter.

The last well on the cross-section, the Moncrief Marathon State Com #2, in Section 11 is currently producing out of the Moncrief Sand and has cum'd almost a little over 3 Bcf out of this sand.

Q. Basically the proposed location would lie between the two wells on the right-hand side of the cross-section?

A. Yes, between the Redbone #1 and the Moncrief Marathon State Com #2.

- Q. Let's go now to Yates Exhibit No. 5. Would you identify that, please.
- A. This is a structure map of the area showing Section 10 in the center of the proposed location.

 This structure map has a datum on the top of the Morrow Clastics Section.

The contour interval is 100 feet. There is a general dip, regional dip, to the east. On the far left-hand side of the map running basically north and south through Sections 4, 9, and 16 is the apex of an anticline, and Section 10 with the proposed location would be on the eastern flank of this high.

I might note that the two wells that I was just discussing on the cross-section, the Yates

Petroleum Redbone BP Federal #1 is shown in Section

10, which is updip of the current proposed location,

and the Moncrief Marathon State Com #2 is in the north
half of Section 11 and would be downdip of the current
proposed location.

And the Moncrief well has produced over 3
Bcf of gas out of the Moncrief Sand. So we should be updip of that. Structure should not be too much of a worry here.

Q. Mr. May, let's now go to your isopach map, which is Exhibit No. 6, and I'd ask you to review that for me.

A. This is an isopach map of the area. It is an isopach of the Moncrief Sand only. It is basically a density porosity of greater than 10 percent with a few exceptions. Where there was no density log available, I use a sonic log of 10 percent cutoff or higher.

I generally use on Morrow sands what I call an isolith, which is a clean sand map, but this Moncrief Sand shows up hot on the gamma ray because of in the samples show a lot of glauconite, and plus I can't use gamma cutoff so I used a porosity cutoff to map this particular sand in this area.

This is showing the limits of the sand porosity in the area. It's showing a porosity thick trending in a northeast-southwest direction through Section 10 and into Section 11. This sand is probably a bar or a beach sand that runs parallel to paleo shoreline.

- Q. Basically this shows that the thickest portion of the sand in the north half of 10 would be under the proposed well location?
 - A. Yes, that is correct. In fact, the

proposed location is the best location on the north half of Section 10 to encounter the sand thick.

- Q. Based on your geological study, would approval of this application enable Yates to most effectively produce the reserves that remain under this acreage?
 - A. Yes.

- Q. Would approval of this application also be in the best interest of conservation, the prevention of waste, and the protection of correlative rights?
 - A. Yes, it would.
- Q. Is there any other location in the north half of this section where you believe you could effectively drain the reserves under the acreage?
 - A. No, there is not.
 - Q. Were Exhibits 3 through 6 prepared by you?
- 17 A. Yes, they were.
 - MR. CARR: At this time, Mr. Catanach, we move the admission of Yates Petroleum Corporation's Exhibits 3 through 6.
 - EXAMINER CATANACH: Exhibits 3 through 6 will be admitted as evidence.
 - MR. CARR: That concludes my direct examination of Mr. May.

EXAMINATION

BY EXAMINER CATANACH:

- Q. Mr. May, the primary reason for this location is geologic; is that correct?
 - A. Yes, it is.
- Q. What is the topographic consideration that the BLM had?
- A. I was not out there when the BLM met with our representatives, and I'm not sure of the exact reason they had us move it from 660 to 510, but looking at the topo map, it looks like the slope may be a little bit less extreme at this location.
- Q. The well in Section 10 is a C & K Petroleum well?
 - A. In Section 16?
- Q. I'm sorry, in Section 16, that's correct, that has produced from the Morrow interval you're speaking about?
- A. It appears that they have. The only information I had on the scout ticket showed a long perforation interval, and it appeared that several sands were included in that perforation interval, and I have to make the assumption that that sand is open.

The perforation interval, the base of it started from -- well, the perforation interval was from 9243 down to 9660. And I have to make the

assumption that they opened up most of the sands within that interval. They did run a DST over the Moncrief Sand interval in that well and recovered a small amount of gas, too.

- Q. Is structure really not a consideration in this well location?
- A. Not in this particular location. Since we have an excellent producer downdip of us, I'm not worried about structure.
- Q. How much sand in this interval do you think you need to encounter to get a commercial well?
- A. The well, the C & K Lowe State #1 in Section 16 had approximately 10 feet, and I would say we definitely need something above that. The two producer wells, the Redbone #1 in Section 10 and the Marathon State #2 in Section 11 both had 19 feet.

I would like to see something more in the range of those two wells. If we go something below that, we're, in my opinion, increasing our risk. So I would prefer to stay around 19, in that area, 19 feet.

The other consideration is if we went to a standard location, 1980 from the north line and 1980 from the east line, that would probably give us about 14 feet.

The other consideration, if you look on

Exhibit 3, the topographic map, that would put us right in the bottom of the arroyo. I don't think the BLM would allow us to build a location there and remain standard. We would have to move north and east, which would take us even further out of the sand thick.

EXAMINER MORROW: So even the 660 was unorthodox; is that correct?

THE WITNESS: Yes, sir, with the laydown, north half standard location, 1980 from the north line and 660 from the east line is an unorthodox location.

EXAMINER CATANACH: I don't have any other questions. The witness may be excused.

MR. CARR: At this time we call Pinson McWhorter.

PINSON McWHORTER,

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

EXAMINATION

BY MR. CARR:

- Q. Would you state your name for the record, please.
 - A. My name is Pinson McWhorter.
 - Q. Where do you reside?
 - A. Artesia, New Mexico.

Q. By whom are you employed? 1 2 Yates Petroleum Corporation. Α. What is your current position with Yates 3 Q. 4 Petroleum Corporation? I'm a petroleum engineer. 5 Have you previously testified before this 6 Q. 7 division? 8 Α. Yes, I have. 9 At the time of that testimony, were your credentials as a petroleum engineer accepted and made 10 a matter of record? 11 Yes, they were. Α. 12 Are you familiar with the application in 13 Q. this case? 14 Yes, I am. 15 Α. Are you familiar with the proposed Redbone 16 BP Federal Well #2? 17 18 Α. Yes. 19 MR. CARR: Are the witness's qualifications 20 acceptable? EXAMINER CATANACH: They are. 21 (BY MR. CARR) Mr. McWhorter, have you 22 Q. 23 prepared certain exhibits for presentation today?

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Would you refer to what has been marked for

Yes, I have.

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Α.

Q.

identification as Yates Exhibit No. 7 and identify this for Mr. Catanach?

- A. Yes. Exhibit No. 7 is an isopach that I prepared of the hydrocarbon pore volume in the Moncrief Sand. And I used this particular exhibit in the volumetric analysis of the gas in place in the Moncrief Sand. I used a set of porosity logs and resistivity logs, open hole logs, to create this exhibit.
- Q. So this differs from the isopach that was previously presented by Mr. May?
- A. That is correct. This is a hydrocarbon pore volume isopach.
- Q. Let's move on to Exhibit No. 8. Could you identify and then review these calculations with the examiner?
- A. Yes. This exhibit shows my volumetric estimate of the current reserves in the north half of Section 10 where the proposed location is. And using the hydrocarbon pore volume map, planimetered that, and used the current reservoir parameters, I calculated a current gas in place of approximately 2.3 Bcf in the north half of Section 10.

I estimate that the recoverable reserves for this location are approximately 2 Bcf. That's

using 85 percent recovery factor, which is reasonable for a dry gas reservoir that's essentially a volumetric depletion type reservoir.

Subsequent to that, using those recoverable reserves, performed a discounted cash flow economic analysis, and for the investment of approximately \$610,000, that generates a profit of around \$1.4 million. Present value is about \$916,000, and that's using a 10 percent discount rate.

- Q. So what conclusion can you reach from your review of?
- A. The conclusion I have is that this location will afford Yates Petroleum the opportunity of best developing the Moncrief Sand and producing the well at commercial rates and making a commercial well.
- Q. In your opinion, will approval of this application and the drilling of this well result in the recovery of hydrocarbons that otherwise would be left in the ground?
 - A. Yes, that is my opinion.
- Q. This would be an economic venture for Yates
 Petroleum Corporation?
 - A. Yes, it would be.
 - Q. Were Exhibits 7 and 8 prepared by you?
 - A. Yes, they were.

MR. CARR: At this time Mr. Catanach, we move the admission of Yates Petroleum Corporation's Exhibits 7 and 8.

EXAMINER CATANACH: Exhibits 7 and 8 will be admitted as evidence.

MR. CARR: That concludes my examination of Mr. McWhorter.

EXAMINATION

BY EXAMINER CATANACH:

- Q. Mr. McWhorter --
- A. Yes.

- Q. -- because of the position of the sand in this area, would you expect the proposed well would drain a substantial portion of Section 11?
- A. Well, sir, I guess the best way of answering that is this; that the original reservoir pressure in this Moncrief Sand was 4,075 pounds back in 1980. When the well that's currently in Section 11 was completed in this Moncrief Sand, the Marathon State Com #2, as of January 1st of this year, the reservoir pressure is just slightly over 2100 pounds. And that was measured at our Redbone BP #1 which had never produced from this Moncrief Sand and was only recompleted into the Moncrief Sand in January of this year, and that's when the reservoir pressure was

measured.

I also checked on the Moncrief well, and the Moncrief well had a reservoir pressure pretty similar to that. So the Moncrief well has significantly depleted reserves in this Moncrief Sand for a considerable distance.

So I guess to answer your question, the gist of what I'm trying to say is that I don't think that drainage by our well on the Moncrief well is going to be a significant factor.

- Q. Do you have an opinion as to whether or not, if you do not drill the well, that drainage may be occurring from the Moncrief well, drainage within Section 10 may be occurring by that well?
 - A. I think that is a legitimate concern.
- Q. Your opinion is that a well at that location will effectively drain the north half of Section 10?
- A. Yes. I am of that opinion due to the location of the sand body itself and the orientation of the sand body, yes, I believe that's true.
- Q. Do you know what the current producing rate of the Moncrief well is?
- A. Yes, sir. That well currently produces somewhere around 400 Mcf a day.

1	Q. That well has been producing for how long,
2	do you know?
3	A. Since 1980, since October of 1980, yes,
4	sir.
5	EXAMINER MORROW: When did Yates acquire
6	Section 10?
7	THE WITNESS: When did they acquire Section
8	10?
9	EXAMINER MORROW: Yes, sir. Do you recall
10	that?
11	THE WITNESS: That I'm not real I just
12	don't know the answer to that, sir. The land
13	department would know the answer to that. I do not
14	know the answer to that question.
15	EXAMINER MORROW: You've been operating an
16	existing well for a number of years; is that correct?
17	THE WITNESS: Yes, sir, that is correct.
18	EXAMINER CATANACH: I don't think I have
19	anything else.
20	MR. CARR: We have nothing further in this
21	case.
22	EXAMINER CATANACH: The witness may be
23	excused, and there being nothing further, Case 10862
24	will be taken under advisement.
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CERTIFICATE OF REPORTER

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STATE OF NEW MEXICO

) ss.

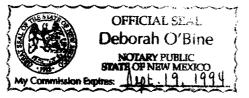
COUNTY OF SANTA FE

I, Deborah O'Bine, Certified Shorthand Reporter and Notary Public, HEREBY CERTIFY that I caused my notes to be transcribed under my personal supervision, and that the foregoing transcript is a true and accurate record of the proceedings of said hearing.

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, December 9, 1993.

DEBORAH O'BINE CCR No. 63



I do hereby costify that the foregoing is a complete record of the processings is the Examiner hearing of Care 100. 1006 heard by me on Arriber 2

, Excola :

Oil Conservation Division