STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY
THE OIL CONSERVATION DIVISION FOR THE
PURPOSE OF CONSIDERING:

APPLICATION OF YATES PETROLEUM
CORPORATION FOR AN UNORTHODOX
GAS WELL LOCATION, LEA COUNTY,
NEW MEXICO

CASE NO. 12,291

CASE NO. 12,291

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner

December 16th, 1999
Santa Fe, New Mexico

OL CONSCINATION DIV.

This matter came on for hearing before the New Mexico Oil Conservation Division, DAVID R. CATANACH,
Hearing Examiner, on Thursday, December 16th, 1999, at the New Mexico Energy, Minerals and Natural Resources
Department, Porter Hall, 2040 South Pacheco, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7
for the State of New Mexico.

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APPEARANCES

FOR THE DIVISION:

RAND L. CARROLL Attorney at Law Legal Counsel to the Division 2040 South Pacheco Santa Fe, New Mexico 87505

FOR THE APPLICANT and DAVID PETROLEUM CORPORATION:

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Santa Fe, New Mexico 87504-2208
By: WILLIAM F. CARR

* * *

WHEREUPON, the following proceedings were had at 1 2 10:47 a.m.: EXAMINER CATANACH: All right, at this time we'll 3 4 call Case 12,291. 5 MR. CARROLL: Application of Yates Petroleum 6 Corporation for an unorthodox gas well location, Lea County, New Mexico. 7 EXAMINER CATANACH: Appearances in this case? 8 9 MR. CARR: May it please the Examiner, my name is William F. Carr with the Santa Fe law firm Campbell, Carr, 10 11 Berge and Sheridan. We represent Yates Petroleum 12 Corporation and David Petroleum Corporation in this matter, 13 and I have two witnesses. 14 EXAMINER CATANACH: Any other appearances? 15 Will the witnesses please stand to be sworn in? 16 (Thereupon, the witnesses were sworn.) MR. CARR: Mr. Examiner, this case was originally 17 filed as an administrative application by Yates Petroleum 18 19 Corporation. 20 The testimony today will, however, be presented 21 by representatives of David Petroleum Corporation. 22 David Petroleum Group is the largest group of working 23 interest owners in the well. The well will, however, be 24 operated by Yates Petroleum. 25 Our first witness is Bill Owen.

1	BILL OWEN,
2	the witness herein, after having been first duly sworn upon
3	his oath, was examined and testified as follows:
4	DIRECT EXAMINATION
5	BY MR. CARR:
6	Q. Will you state your name for the record, please?
7	A. Bill Own.
8	Q. Mr. Owen, where do you reside?
9	A. Roswell, New Mexico.
10	Q. By whom are you employed?
11	A. David Petroleum Corporation.
12	Q. And what is your position with David Petroleum
13	Corporation?
14	A. Land Manager.
15	Q. Have you previously testified before this
16	Division?
17	A. Yes, I have.
18	Q. At the time of that testimony, were your
19	credentials as an expert in petroleum land matters accepted
20	and made a matter of record?
21	A. Yes.
22	Q. Are you familiar with the Application filed in
23	this case?
24	A. Yes, sir.
25	Q. And are you familiar with the status of the lands

in the subject area?

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A. Yes, sir.

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

EXAMINER CATANACH: They are.

- Q. (By Mr. Carr) Mr. Owen, would you briefly state what Yates and David Petroleum Corporation seek with this Application?
- A. An order approving an unorthodox gas well location for our proposed R.L. Burns Corporation Number 1 well, which is to be re-entered and deepened to test the Mississippian and Morrow formations at an unorthodox gas well location 330 feet from the south and east lines, Unit P of Section 11, Township 16 South, Range 35 East, Lea County, New Mexico.
- Q. Would you identify for the record what has been marked as David Petroleum Exhibit Number 1?
- A. This is our administrative application, which was originally filed September 30th, 1999. It was set for the hearing by the Division after there was an objection received from Chesapeake Operating.
- Q. And this exhibit contains a list identifying the offset operators who will be affected by the Application; is that right?
- 25 A. That's correct.

- Q. What is the status of the Chesapeake objection?
- A. We have a letter from Chesapeake waiving objection to this location.
- Q. Let's go to what has been marked David Petroleum Exhibit Number 2, and I'd ask you to identify this and explain to the Examiner what it shows.
- A. It's an orientation plat that shows the well location with the red dot, it shows the dedicated spacing unit that we intend, which is the east half of Section 11, and it shows the offset operators, which to the south is Arrington, to the southwest is Ocean, and to the east is Merit and Chesapeake.
- Q. Have all the working interest owners in the subject spacing unit voluntarily committed their interests to the well?
 - A. Yes.

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- Q. Will you go to what has been marked as David Exhibit Number 3 and review this, please?
- A. This is a group of the waiver letters that we've received from four different entities.
- Number A is from Merit Energy, B is David H.

 Arrington Oil and Gas, C is from Chesapeake Operating, and
 D is from Global Natural Resources Corporation of Nevada, a
 subsidiary of Ocean.
 - Q. Has a waiver been obtained from each of the

Division-designated operators who offset this well, toward 1 whom the well is being moved? 2 Α. Yes. 3 Will David Petroleum call a geological witness to 4 Q. 5 review the technical portions of this case? 6 Α. Yes. 7 0. Were Exhibits 1 through 3 either prepared by you 8 or compiled under your direction? 9 Α. Yes. 10 MR. CARR: At this time, Mr. Catanach, we would move the admission into evidence of David Petroleum 11 12 Corporation Exhibits 1 through 3. 13 EXAMINER CATANACH: Exhibits 1 through 3 will be admitted as evidence. 14 15 MR. CARR: That concludes my direct examination 16 of Mr. Owen. 17 EXAMINATION 18 BY EXAMINER CATANACH: Mr. Owen, can you tell me again -- You said to 19 Q. 20 the south of this location that acreage is operated by 21 Arrington? 22 Α. Yes. Is that in Section 14? 23 Q. 24 Α. Yes. 25 Q. And is there a well on that acreage that produces

from the 320-acre proration unit, or do you know?

- A. There is a well on that proration unit -- or on that tract, but I'm not positive -- I'm sure our geologist, during the next testimony, would be able to specifically answer you in terms of what formation, of what the proration unit is.
- Q. Okay. Merit and Chesapeake own the acreage where? In Section 13?
- A. The own some in Section 13, and they also own it in Section 12, in the west half.
 - Q. West half of Section 12.

So it shows on the map Chesapeake and Yates in the west half of Section 12?

- A. That's correct. We, along with Yates, own some interest in the southwest quarter of Section 12, and Chesapeake owns also an additional interest in there, as well as up in the northwest quarter of Section 12.
- Q. So in Section 12 would Chesapeake be the only affected interest owner that you would provide notice to?
 - A. Yes.

- Q. Okay. And again in Section 13, the only affected interest owners would be Merit?
 - A. That's correct.
- Q. And Yates owns the -- It looks like the northeast quarter?

Yes, sir. Α. 1 Okay. Chesapeake originally objected to this 2 3 Application? 4 Α. Yes, sir. And has since waived objection? 5 0. That's correct. Α. 6 7 Okay. In your Exhibit Number 3 I show a letter Q. 8 from David Arrington, who waives objection to this 9 location, but there's a condition of that waiver about a production penalty? 10 Α. That's correct. 11 And would that penalty apply to the targeted 12 0. Mississippian formation? 13 14 Α. I believe that it would. 15 I would also possibly defer that to our geologist to ensure that the penalty that we're talking about here is 16 17 for the Morrow formation as well as the Mississippian. 18 Okay, so your geologist will address this Q. 19 penalty? 20 Α. Yes, sir. 21 EXAMINER CATANACH: Okay. I have no further 22 questions. 23 This witness may be excused.

MR. CARR: At this time we call Keith McKamey,

24

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M-c-K-a-m-e-y.

KEITH MCKAMEY, 1 2 the witness herein, after having been first duly sworn upon 3 his oath, was examined and testified as follows: DIRECT EXAMINATION 4 5 BY MR. CARR: 6 Q. Will you state your name for the record, please? 7 Α. Good morning. Keith McKamey. And where do you reside? 8 Q. 9 Artesia, New Mexico. Α. 10 Q. By whom are you employed? 11 A. David Petroleum. 12 Q. And what is your current position with David 13 Petroleum Corporation? 14 Senior Geologist. 15 0. Mr. McKamey, have you previously testified before 16 this Division? 17 Α. Yes. 18 At the time of that testimony, were your 0. credentials as a petroleum geologist accepted and made a 19 matter of record? 20 21 Yes, they were. Α. 22 Would you briefly summarize your educational 23 background for the Examiner? 24 Α. I'm a graduate of the University of Texas, 25 Permian Basin, there in Odessa. I graduated in May of 1979

with a BS in earth science.

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- Q. And since graduation, for whom have you worked?
- A. I have 20 years of experience as a geologist, two years with a major -- it was Gulf Oil Corporation -- 12 years as a consultant and on term contract, and six years employed by private individuals like Reed and Stevens, Crystal River Oil and Gas, and now David Petroleum.
- Q. Were you also for a time employed as a geologist by the Oil Conservation Division?
- A. That's correct.
- Q. Are you familiar with the Application filed in this case on behalf of David Petroleum and Yates Petroleum Corporation?
- A. Yes, I am.
- Q. Have you made a geological study of the area surrounding the proposed well?
- 17 A. I have made a geological study.
- Q. And are you prepared to share the results of your work with Mr. Catanach?
 - A. I am prepared.
- MR. CARR: We tender Mr. McKamey as an expert in petroleum geology.
- EXAMINER CATANACH: Mr. McKamey is so qualified.
- Q. (By Mr. Carr) Initially, Mr. McKamey, is it your understanding that the penalty that is being recommended

for this well be applicable to any formation developed under rules which would provide for standard setbacks of 660 feet from the outer boundary?

- A. Yes, 320-acre proration units.
- Q. What is the primary objective in this well?
- A. The primary objective is the lower Morrow, Morrow formation. We will test the Mississippian, just to make sure that we're through the entire Morrow interval.
 - Q. And what pool would this Morrow well be in?
- 10 A. The pool is the Morrow -- Undesignated Townsend-11 Morrow Gas Pool.
 - Q. And is that operated under statewide rules?
- 13 A. Yes, it is.

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- 14 Q. Are there secondary objectives in the well?
- 15 A. Yes, there are, a Cisco formation which would be
 16 in the Undesignated Townsend-Permo-Upper Pennsylvanian
 17 Pool.
- 18 Q. And is this pool also operated under statewide 19 rules?
 - A. Yes, it is.
 - Q. Let's go to what has been marked for identification as David Petroleum Corporation Exhibit

 Number 4, and I'd ask you to first identify that and then review the information on this Exhibit for Mr. Catanach.
 - A. Mr. Catanach, I have three geological/geophysical

exhibits, the first of which is Exhibit Number 4. It's a Mississippian structure map. It illustrates four producing wells that are colored blue that have completely tested the lower Morrow formation.

You'll notice that there are three northerly wells in Section 2 and 3 that are similar and analogous to our prospect. They're located in a Mississippian low, which is adjacent to steep dip. That is one of the analogous situations we are expecting to find in our Burns re-entry location, which is in the southeast of 11. We're looking for a Mississippian low, structurally, and we'll also address the isopach as another part of the analogy.

- Q. Do you have reserve estimates for the four wells that are shaded blue on this exhibit?
- A. The three wells to the north are 1.5 BCF per well. Those are channel-like deposits. The well in the southwest of 10 is an anomalous well, it's an erosional well, and I have not done reserves for that well.
- Q. Let's go to Exhibit Number 5, the isopach map,
 Morrow isopach. Would you review that, please?
- A. Mr. Catanach, all of these wells that appear on both maps are just wells deeper than 11,300 foot, which is the Strawn formation. There are only four wells that are producing out of the lower Morrow.

This is a Morrow isopach map, which illustrates

the thicknesses, oriented north-south through this area of interest. The three wells in Section 2 and 3 there are the analogy that we're looking for and the target that we're looking for in the lower Morrow formation. We expect a look-alike through the east half of 11 and the west half of 12 there, that we will test with our well in the southeast of Section 11.

- Q. Now, you're able to locate wells in the area with 3-D seismic, are you not?
 - A. That's correct.

- Q. And is Exhibit Number 6 an exhibit that contains 3-D seismic information on the subject area?
- A. Exhibit Number 6 is a 3-D slice of the Mississippian time map. It's the one located at the bottom of your exhibit there. It's -- That picture there is just the southwest quarter of 11. The black lines are the section lines. The re-entry location is a little white dot in the right-hand corner of the green, time map there.

part of your map through the re-entry location. The one on the left is a south-to-north seismic line. The one on the right is a west-to-east. The one on the left, which is the south-to-north, shows you the quick dip, quick, steep dip, which we feel enhances porosity and permeability and is certainly an analogous part to our prospect.

The other thing that's analogous is the thick channel-like deposits which you can see in the east-west seismic trace as well. And both the seismic time map -- It confirms both the structure map on the Mississippian that I've made as well as the isopach map on the lower Morrow.

- Q. Now, this seismic method has been tested in other wells in the area, has it not?
- A. It has. It has been tested in three wells there in Section 2 and 3, with some success. There are 18 wells total on the map that you see that have drilled to the Mississippian, of which four of those are producing that I have colored. One is still completing. So that's approximately a 28-percent success rate for the Morrow, just in the outlined area on the map.
- Q. How much geological risk is actually associated with this re-entry?
- A. This is extremely high geological risk for the Morrow, the 28 percent, just doing the numbers for all the dry holes versus the producers, and it's mainly based on two sands that are located in these channels that are about six to eight foot thick.
- Q. There also are risks related to the costs associated with this effort, are there not?
- A. That's correct, as well as risk -- engineering risk in re-entering a well.

Q. Before we look at the cost, are there other standard locations available from which you could test the Morrow and Mississippian formations under this proration unit?

- A. No, geologically it's necessary to be adjacent to steep dip to enhance porosity and permeability, as well as to have a thick Morrow section, and economically a newly drilled well would not meet the criteria for return on investment.
- Q. Now, Yates and David have attempted other reentries in this area, have they not?
- A. In this immediate area shown on the map, we've attempted four, with two being successful, so we have a 50-percent success rate.
- Q. Let's go to what has been marked for identification as David Petroleum Exhibit Number 7. First, I'd like you to identify the exhibit, and then go to the exhibit and explain to the Examiner what it shows.
- A. Exhibit 7 is an economic spreadsheet, created to track costs and justify the drilling of exploration prospects. I want you to notice the highlighted middle portion of the spreadsheet, which compares the re-entry cost and the return on investment.

David Petroleum will prevent waste by re-entering the Burns Number 1 well with an AFE cost of \$774,500. A

new-drill well at the same depth would cost \$1.2 million.

So there would be a savings of about half a million dollars for drilling and completing a new well.

The return-on-investment column is calculated using 1.5 BCF per well, 150,000 barrels per well, an a very low risk factor, which I think is very conservative.

The re-entry return on investment would be 4.30.

A new-drilled well return on investment would be 2.78,
using average prices of \$20 oil and \$1.90 gas.

- Q. Based on this 2.78-to-1 return on investment for a newly drilled well, could David Petroleum Corporation of Yates drill a new well at this location to test the Morrow formation?
- A. David Petroleum would not, nor would most oil and gas companies, mainly because they're competing for funds, and we're looking for 3- to 4-to-1 return on investments.
- Q. And if no well is drilled, or if the Morrow is not tested and, if producible, produced at this location, would reserves be left in the ground that otherwise could be produced?
 - A. That's correct.

- Q. Would it be economically feasible to directionally drill this well back to a standard location?
- A. No, it would not. It would cost more than a new-drilled well.

Q. And if you directionally drilled back to a standard location, you would be at an inferior location in the Morrow, would you not?

A. That's correct, we'd be away from the steep dip, which enhances porosity and permeability. As a matter of fact, we've already tried that in two locations:

The Number 3 Runnels, which is in the northeast of 11. That is a dry hole.

And in the southeast of 12, that's also a dry hole, in the lower Morrow.

- Q. Let's go to David Petroleum Corporation Exhibit
 Number 8, and using this exhibit, I'd ask you to briefly
 review the history of the Burns well, and I would ask you
 to explain to the Examiner how you will confirm the
 integrity of the wellbore.
- A. Exhibit Number 8 contains four stapled pages. It includes a plan for re-entering the well, as a cover sheet, and then there are three wellbore diagrams, the first of which is a complete wellbore diagram. The third, third page, is a "before" wellbore diagram, constructed by Yates Pet. And the fourth is an "after" picture of what the wellbore diagram is expected to look like.

The Burns Number 1 Witt was originally spud in November of 1973. It was P-and-A'd and approved January of 1974. It was re-entered at that time, and they pulled 1438

feet of 8 5/8 casing. Then it was replugged and abandoned on June 28th of 1974.

Our intent is to re-enter this well, splice onto the 8-5/8-inch casing, drill out the remaining plugs, and increase the depth to 12,700 foot using standard 9.3 brine mud.

- Q. In the course of this re-entry, will you be able to establish the integrity of the wellbore?
 - A. Yes, we will.

- Q. And if you encounter problems, what will be your option at that time?
 - A. Abandon the location.
- Q. Re-plug the well?
- 14 A. Or re-plug the well, that's correct.
 - Q. What conclusions have you reached from your study?
 - A. We are basing this 330 from the south and east location on geology, where it's necessary to be within the Morrow isopach thicks that trend north south, as well as being close to steep dip, which enhances porosity and permeability.

And economic factors are certainly foremost in this re-entry location because otherwise, a newly drilled well, it would not be profitable, considering the risk, to test it.

1	Q. Does David Petroleum recommend that a penalty be
2	imposed on the well in accordance with the agreement with
3	the Arrington?
4	A. That's correct.
5	Q. Who will actually operate the well?
6	A. Yates Pet.
7	Q. In your opinion, will approval of this
8	Application and the re-entry of the Burns well be in the
9	best interests of conservation, the prevention of waste and
10	the protection of correlative rights?
11	A. That's correct.
12	Q. Were David Petroleum Corporation Exhibits 4
13	through 8 prepared by you or compiled under your direction?
14	A. Yes, they were.
15	MR. CARR: May it please the Examiner, at this
16	time we would move the admission into evidence of David
17	Petroleum Corporation Exhibits 4 through 8.
18	EXAMINER CATANACH: Exhibits 4 through 8 will be
19	admitted as evidence.
20	MR. CARR: And that concludes my direct
21	examination of this witness.
22	EXAMINATION
23	BY EXAMINER CATANACH:
24	Q. Mr. McKamey, your interpretation of the penalty
25	provision in Arrington's order or Arrington's letter do

you interpret that to be a 50-percent penalty?

A. I believe that's correct.

- Q. Okay. I've got a question with regards to -Within that letter, the statement actually reads the well's
 bottomhole location. And do we know what the bottomhole
 location of that well is? Have there been any directional
 surveys run on that well?
- A. No, there has not, just the standard deviation surveys.

EXAMINER CATANACH: Okay. I think we need a clarification on that penalty provision. If they do actually want it based on the bottomhole location, then we do need to conduct a directional survey on the well.

MR. CARR: I'll be glad to follow up on that and confirm that to you in writing within the next two or three days, if that's all right with you.

EXAMINER CATANACH: Okay.

MR. CARR: Mr. Catanach, I can tell you that in conversations between Arrington and Yates I believe they do want it based on the bottomhole location, but I will confirm that, and we understand if that is the provision, a survey will be required.

Q. (By Examiner Catanach) Okay. Mr. McKamey, on your Exhibit Number 4, you were saying something about 1.5-BCF recoveries?

A. Per well, correct.

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- Q. Per well. And this is from the Mississippian?
- A. No, it's from the Morrow.
- Q. This is from the Morrow. And the wells on this map that have been drilled to the Morrow are identified in what manner?
- A. All of the wells that have penetrated the top of the Mississippian, which have completely drilled through the Morrow, they have black subsea numbers as well as red isopach values for the Morrow formation. There are a total of 18 of those.
- A. Eighteen wells. And your testimony was that only four of these 18 wells have been completed as producers in the Morrow?
 - A. Are currently producing, correct.
 - Q. The rest were essentially dry holes?
- A. That's correct, with one exception. There's one well being completed, and I don't know the status of the well in the northwest northwest of 14. That well did test the Morrow formation, and it's my understanding they are completing that well as we speak.
- Q. Okay, and this Morrow would be the primary target of the well?
- A. Correct.
- 25 Q. But you will drill to test the Mississippian; is

that right?

- A. That's correct.
- Q. Is there any Mississippian production in this area?
- A. No, sir, the Mississippian is more of a log type and a good type for seismic reflections, and it's a sign that you're completely through the Morrow interval.
- Q. And you believe that the reason that the wells in Section 2 and 3 were productive Morrow wells was because they encountered that steep dip?
- A. That's correct, as well as the thick sections. You'll notice that all three of those have 489 feet of Morrow section or better.
 - Q. And that's the total Morrow section?
- 15 A. Yes.
 - Q. How much do you think you'll encounter at this location?
 - A. We anticipate encountering approximately 500 feet.
 - Q. You would not recommend drilling a Morrow well at a standard location in the southeast of Section 11?
 - A. That's correct, it's not adjacent to steep dip.

 It would be an orthodox location, 660 south and east would be analogous to the Runnels 3, which is a dry hole in the Morrow formation.
 - Q. So this location gives you the best chance to

1	encounter Morrow production in that quarter section?
2	A. That's correct.
3	EXAMINER CATANACH: Okay, I have no further
4	questions.
5	MR. CARR: That concludes our presentation.
6	EXAMINER CATANACH: Okay, if you'll provide me
7	with that clarification, Mr. Carr, within the next two or
8	three days.
9	MR. CARR: I will.
10	EXAMINER CATANACH: And with that, Case 12,291
11	will be taken under advisement.
12	(Thereupon, these proceedings were concluded at
13	11:17 a.m.)
14	* * *
15	
16	
17	I do hereby certify that the foregoing is
18	e complete record of Cose No.
19	heard by the on Local Caramine
20	Of Conservation Division
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CERTIFICATE OF REPORTER

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

I, Steven T. Brenner, Certified Court Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I transcribed my notes; 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 December 22nd, 1999.

STEVEN T. BRENNER

CCR No. 7

My commission expires: October 14, 2002