NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARING

SANTA FE, NEW MEXICO

Hearing Date SEPTEMBER 23, 1993 Time: 8:15 A.M.

NAME	REPRESENTING	LOCATION
[illegible]	Santa Fe Energy Inc	Midland
W. Kellahin	Kellahin & Kellahin	Santa Fe
William F. Carr	Campbell, Carr, Berge & Sheehan	Santa Fe
David E. Nelson	Conoco	Midland
Jerry Hoover	Conoco	Midland
Curtis D. Smith	Santa Fe Energy	midland
Maurice Trimmer	BLM Byram	SF
Tommy Roberts	Tansey Law Firm	Farmington
Alan P. Emmendorfer	Giant E&P	Farmington
Ernest L. Padilla	Padilla & Snyder	SF
Kevin A. McCord	Robert L. Bayless	Farmington
[illegible]	Robert L. Bayless	FARmington
James Bruce	Hinkle Law Firm	Santa Fe
David A. Brown	Barbara Fasken	Midland
Tommy E. Taylor	"	"
Bill Duncan	Exxon	"
KEITH LOGAN	DAVID ARRINGTON O&G	"

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NAME	REPRESENTING	LOCATION
Mark McClelland	CONOCO INC.	MIDLAND
L.O. VanRyan	T. H. McElvain	Santa Fe
Susan Haycock	Conoco Inc	Conoco

NEW MEXICO OIL CONSERVATION DIVISION

STATE LAND OFFICE BUILDING

STATE OF NEW MEXICO

CASE NO. 10826

IN THE MATTER OF:

The Application of Barbara T. Fasken for Directional Drilling, an Unorthodox Bottomhole Gas Well Location, and Simultaneous Dedication, Eddy County, New Mexico.

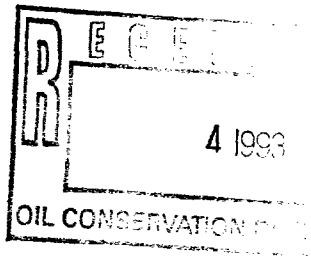
BEFORE:

MICHAEL E. STOGNER

Hearing Examiner

State Land Office Building

Thursday, September 23, 1993



REPORTED BY:

CARLA DIANE RODRIGUEZ
Certified Court Reporter
for the State of New Mexico

ORIGINAL

A P P E A R A N C E S

FOR THE NEW MEXICO OIL CONSERVATION DIVISION:

ROBERT G. STOVALL, ESQ.
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FOR THE APPLICANT:

PADILLA & SNYDER
Post Office Box 2523
Santa Fe, New Mexico 87504
BY: **ERNEST L. PADILLA, ESQ.**

I N D E X

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EXAMINER STOGNER: At this time, I will call Case No. 10826.

MR. STOVALL: The application of Barbara T. Fasken for directional drilling, an unorthodox bottomhole gas well location, and simultaneous dedication, Eddy County, New Mexico.

EXAMINER STOGNER: Call for appearances.

MR. PADILLA: Mr. Examiner, I'm Ernest L. Padilla of Santa Fe, for the Applicant in this case. I have two witnesses to be sworn.

EXAMINER STOGNER: Are there any other appearances?

Will the witnesses please stand to be sworn at this time.

TOMMY E. TAYLOR

Having been first duly sworn upon his oath, was examined and testified as follows:

EXAMINATION

BY MR. PADILLA:

Q. Mr. Taylor, for the record, would you please state your name, please.

A. Tommy E. Taylor.

Q. Mr. Taylor, do you work for the Applicant?

A. Yes, I do.
Q. In what capacity?
A. I'm a drilling and production engineer.
Q. Mr. Taylor, can you briefly explain what the purpose of this hearing is?
A. Barbara Fasken seeks permission to drill her Inexco Federal 17 No. 2 directionally, to an unorthodox location, in the Catclaw Draw Morrow pool.
Q. Mr. Taylor, have you coordinated the application aspects of this application?
A. Yes.
Q. Mr. Taylor, have you previously testified before the New Mexico Oil Conservation Division and had your credentials accepted as a matter of record?
A. No, I have not.
Q. Mr. Taylor, would you give the Examiner your educational background?
A. I received a bachelor of science degree in petroleum engineering from Texas Tech University in 1985.
Q. Mr. Taylor, since 1985, what has been your experience in the oil and gas industry as a petroleum engineer?

A. Since that time, I've worked for Mrs. Fasken as a drilling and production engineer for eight and a half years.

Q. Are you familiar with the engineering aspects of the directional drilling portion of this application and of the allowable aspects of the application?

A. Yes.

MR. PADILLA: Mr. Examiner, we tender Mr. Taylor at this time as an expert in petroleum engineering.

EXAMINER STOGNER: Mr. Taylor is so qualified.

Q. Mr. Taylor, let's turn now to what we have marked as Exhibit No. 1, and have you tell the Examiner what that is.

A. Okay. Exhibit No. 1 is a vicinity map of the general area. In the lower right-hand portion of the map is the city of Carlsbad. And northwest of Carlsbad, approximately three miles, is our Section 17 which we're proposing to drill the Inexco Federal 17 #2.

The proration unit, the entire section, is highlighted in yellow. The red dot is the proposed surface location for the well.

I want to point out that State Highway 285 cuts across diagonally through the middle portion of the section. The northern half of the section is a housing cevelopment called the McNew Subdivision.

Q. Is the housing development the reason you have chosen to directionally drill?

A. Yes, it is.

Q. Can you explain to the Examiner how you're going to--the general nature of the directional drilling? In other words, what's the angle, approximately?

A. Okay. We're going to drill at surface location 2300 foot from the south line and 1800 foot from the east line, straight down, to an approximate depth of 5000 foot.

At that time we're going to kickoff at a degree and a half per hundred and build angle at 25.2 degrees, and attempt to hold that angle to a bottomhole location of 800 foot from the north line and 1400 foot from the east line in the Morrow formation.

Q. Mr. Taylor, you hope to encounter the Catclaw, clean in the Catclaw Morrow pool, correct?

A. Correct.

Q. Do you know what the spacing or well location requirements for the Catclaw Draw pool are?

A. An orthodox location is 1650 feet from the boundaries.

Q. Either boundary, correct?

A. Either bouncary.

Q. Mr. Taylor, let's go on to what we have marked as Exhibit No. 2, and have you explain that.

A. Exhibit 2 is a land map that shows a little bit more about the surrounding area in a little more detail. Section 17 is, again, highlighted in yellow.

The orange drilling rig mast is at our approximate surface location. The red circle is our proposed unorthodox bottomhole location in the Catclaw Draw Morrow, and the dashed red line is the approximate angle, the path of the wellbore to the bottomhole location.

Q. Mr. Taylor, can you briefly tell the Examiner what acreage is going to be impacted by the unorthodox bottomhole location? I realize your geological engineer is going to go into more

detail on this, but just generally tell him whose going to get crowded here.

A. Okay. North of Section 17 is Section 8. The closest well to our bottomhole location would be the Kaiser-Francis AM Federal No. 1. It was originally drilled in 1972 to the Morrow, and completed as an Avalor Morrow well. In 1990, it was depleted and the well was plugged back, and it's producing in the Delaware at this time.

The next closest well to our bottomhole location is east of us in Section 16, and that well is the Devon State B2 No. 2, and it is currently completed in the Avalon Morrow field and producing approximately 300 Mcf per day.

Q. Do you know when these wells were drilled, approximately?

A. The Devon well in Section 16 was, I believe, completed in 1976. The Kaiser-Francis well, as I said, was completed in 1972.

Q. Mr. Taylor, do the boundaries of the Catclaw Draw and the Avalon Morrow join in these sections?

A. Yes, they do.

Q. So, in Section 8, you have the Avalon Morrow--

A. That's correct.
Q. --controlling?
A. That's correct. Right.
Q. And how about in Section 16?
A. It's also the Avalon.
Q. Do you know about Section 9?
A. Yes, I believe it's the Avalon, also.
Q. Do you have anything further concerning Exhibit No. 2?
A. No.
Q. Let's go on to Exhibit No. 3 and have you identify that for the Examiner, please.
A. Exhibit 3 is an AFE cost estimate that I prepared for drilling this well directionally. It shows that the very bottom total cost for a completed flowing Morrow well is approximately $931,000, and a dry hole cost of approximately $700,000.
Q. Mr. Taylor, can you explain why you're introducing this AFE at this hearing?
A. Yes. We wanted to show that the cost of drilling this well directionally would be significantly more.
Q. How much more?
A. On this AFE, we've estimated

approximately $176,000 additional cost to the completed and the dry hole cost.

Q. Does this have the effect of increasing the risk, and does it also have some consideration in whether to ask for an unorthodox location?

A. Yes, it does. We believe that, of course, a directional well is a little bit more risky and the cost is considerably more than drilling a straight hole and, therefore, that was why we chose the optimum bottomhole location for this well.

Q. Mr. Taylor, I notice that in Section 17 there's another gas well. Can you tell the Examiner about what kind of current production that well has?

A. Yes. That is Mrs. Fasken's Inexco Federal 17 No. 1. It is currently completed in the Catclaw Draw Morrow pool, and is producing approximately 150 Mcf per day.

Q. Would you combine the production from both wells to determine the allowable for the proration unit?

A. Yes.

Q. And that would be, in effect, a

simultaneous dedication of the unit to both wells, is that correct?

A. Yes.

Q. Mr. Taylor, do you have anything further to add to your testimony?

A. No.

MR. PADILLA: Mr. Examiner, we tender Exhibits 1, 2 and 3, and we pass the witness.

EXAMINER STOGNER: Exhibits 1, 2 and 3 will be admitted into evidence at this time.

EXAMINATION

BY EXAMINER STOGNER:

Q. Mr. Taylor, do you know what the status of the APD with the BLM is on this well at this time?

A. We have chosen to wait on filing that on the outcome of this hearing.

Q. Have you contacted the BLM in any manner, as far as surface disturbance, or going out and taking a look at the surface to see if that was initially adequate with the BLM?

A. Yes, sir. We have staked the proposed surface location, have met and negotiated with the landowner, and the BLM has inspected the location, and the site has been surveyed

archeologically.

Q. Some points of clarification. You've testified, and obviously you're somewhat knowledgeable about the pool rules of Catclaw Draw. Is that a prorated gas pool?

A. Yes.

Q. 640-acre spacing?

A. That's correct.

Q. What will be the true vertical depth down to the bottomhole?

A. 11,000 foot to the--it will be 10,600 foot to the top of the Morrow formation, and the total depth of the well will be 11,000 foot.

Q. Is that true vertical depth?

A. Yes. Measured depth of the well will be 11,515.

Q. And kickoff point will be underneath the intermediate string, is that correct?

A. That's correct. The intermediate string will be set at 2500 foot, and we'll kickoff below the Delaware at 5000 foot.

EXAMINER STOGNER: I have no other questions of Mr. Taylor at this time.

MR. PADILLA: We'll call Mr. Brown at this time.

DAVID H. BROWN

Having been first duly sworn upon his oath, was examined and testified as follows:

EXAMINATION

BY MR. PADILLA:

Q. Mr. Brown, for the record, please state your full name.

A. My name is David Holbrook Brown.

Q. Mr. Brown, have you previously testified before the New Mexico Oil Conservation Division and had your credentials accepted as a matter of record?

A. No, sir, I haven't.

Q. Can you tell the Examiner what your educational background is in geology?

A. I received a bachelor of science degree in 1984 from Colorado School of Mines, and I received a master's degree in geology from the University of Texas, Permian Basin.

Q. When did you receive that master's?

A. 1992.

Q. What has been your experience in the oil and gas industry?

A. I've worked for Barbara Fasken for the last eight and a half years in the Permian Basin,

both west Texas and New Mexico.

Q. Mr. Brown, have you made a study of the geology in the Catclaw Morrow pool--

A. Yes, sir, I have.

Q. --in preparation for this hearing?

A. Yes, sir.

Q. Have you prepared certain exhibits for introduction at this hearing?

A. Yes, sir.

MR. PADILLA: Mr. Examiner, we tender Mr. Brown as a geologist.

EXAMINER STOGNER: Mr. Brown is so qualified.

Q. Mr. Brown, first of all let's get to Exhibit No. 4 and have you explain what that is.

A. Yes, sir. Exhibit No. 4 is a cross-section, from south-to-north, starting from the Inexco 17 No. 1, going through our proposed location.

Q. Let's pull out Exhibit No. 5 as well, at the same time, so that you can show what the line of cross-section is.

A. On the top map of Exhibit No. 5 the cross-section is outlined in red.

Q. Briefly describe what Exhibit 5

contains.

A. Exhibit 5 contains three maps. The upper map is the structure map, and the middle and lower maps are isopach maps on individual morrow sands.

Q. On your structure map is where the line of cross-section is located, correct?

A. That's correct.

Q. And it goes from south to north?

A. That's correct.

Q. Go ahead and go back to the cross-section and explain what that cross-section shows.

A. Okay. The cross-section shows the sands and how I interpret them to be continuous or discontinuous across the area, tying the Inexco well with our location and the nearest offset, the Kaiser-Francis AM Federal No. 1.

The most significant part I would like to draw your attention to is the D and E sand. These are the most prolific sands in the Catclaw and Avalon Morrow Field. They are responsible for the greatest amourt of productivity in Sections 8, 9 and 16.

It is our hope, as is illustrated in

the cross-section, Exhibit 4, that we can, at the proposed location, contact the E sand, approximately 30 feet high to the Kaiser-Francis AM Federal #1, as well as get an increased thickness in the D sand, hopefully getting a higher productivity.

Q. Are the D and E sands your primary objectives?

A. Yes, sir, they are. There are other sands there that do produce in the area, most notably the C sand and the F sand. Those are minor producing sands, but we hope to encounter those, also.

Q. Can you tell the Examiner what the cumulative production on the two wells shown on the cross-section would have been?

A. Yes. If I can refer to Exhibit 5, the numbers on the top of the well symbols, directly above the well symbols, are estimated ultimate recoveries of each of the wells.

Q. Now, which map are you looking at?

A. The top. All of the maps, but we can refer to the top map for now, the structure map.

The Inexco 17 will have produced about 1.5 Bcf, a little over 1.5 Bcf of gas, and the

Kaiser-Francis AM Federal No. 1 has produced 3 Bcf of gas, and is now plugged back to the Delaware.

Q. In terms of drainage, essentially, the well to the north--what's the name of that?

A. The AM Federal.

Q. --the AM Federal, that has, in effect, already produced all of the reserves it's going to produce essentially, correct?

A. Yes. There is not much of a reentry potential. They have plugged back. That well has produced a significant amount of gas and has probably taken a significant amount of gas from the extreme northern portion of Section 17, also.

Q. And your location, in your opinion, is the optimum place to bottom the well at?

A. Yes, sir.

Q. Can you explain to the Examiner why that is so?

A. If we can refer, again, to Exhibit 5, the top map, this is a structure map on the base of the Middle Morrow shale.

Most significantly what it shows is anticline plunging to the northeast, large structural feature for the area.

I would like to draw your attention to the ultimate production of the wells on the anticline and just on the flank of it. The best wells in the entire field are intimately associated with that anticline; namely, the AM Federal which we spoke about before, at 3 Bcf, the well in Section 9, the BQ No. 1, which is the northern Morrow well has produced over 6 Bcf, which is on the anticline, and the other well to the south, still on the anticline, is almost 2.5 Bcf.

When you get off that anticline and into poorer sands, you start producing less gas, below 2 Bcf. I believe the anticline is responsible for increased productivity, probably through increased porosity and permeability of the sands that are draped over that anticline.

The bottomhole location of our Inexco Federal No. 2 is designed to contact the access of the anticline at the highest point in that quarter section.

Q. In terms of the E sand isopach, which is the bottom map, is there any competitive advantage you're going to have with respect to whether or not you're going to drain to the east?

A. Yes. The E sand at the bottom of this montage is an isopach with five-foot contours of clean sand. The AM Federal had 20 feet of sand. We hope to also encounter approximately 20 feet of sand.

The offset to the east did not have any E sand at all, and so did not significantly drain E sand gas from that area. It's not likely that anyone will try to drill for just five feet of sand on the far west side of Section 16, so we hope that this well will effectively drain--recover all the remaining gas in that quarter section.

Q. Mr. Brown, considering that the two pools are right beside each other, the way Section 17 is located and the way that the pools are situated, is there any competitive advantage that you see that will occur as a result of the unorthodox bottomhole location?

A. I think the competitive advantage for us would be that we can get closer to the access of the anticline. The Avalon Morrow field, being on a proration unit of 320 acres, those wells are allowed to get 660 from the west line or from any of the lines there, and that has presented a

competitive advantage to the other wells in that area.

Several of the wells you can see in Section 18 have been spaced very close to the lease lines there, chasing what they felt was adequate geology to make strong wells. And more closer to home in Section 8, the AM Federal was able to get 660 from the lease line. Even the well in the north part of Section 16 is somewhat unorthodox. They're crowding the west line at a location of about 1850 from the west.

Being in the Avalon Morrow pool has proven to be somewhat of a competitive advantage versus the people in the Catclaw, because of the legal locations.

Q. Would a penalty be justified in this case, in your opinion?

A. I don't believe so. Barbara Fasken is seeking no penalty, for two main reasons. One is the cost that is going into this well that Mr. Taylor alluded to. Barbara Fasken, for safety reasons, has chosen not to drill within this subdivision and to, essentially, force herself to drill a directional hole.

We spoke about the increased cost of

this, to stand a better chance than decrease the risk of not getting payout on this well and the added cost, it will be necessary to bottom the well in the optimum geologic positions.

Q. Mr. Brown, do you have anything further concerning Exhibits 4 and 5?

A. No, sir.

Q. Mr. Brown, in your opinion, would approval of this application be in the best interests of conservation of oil and gas and the prevention of waste?

A. Yes, sir.

MR. PADILLA: Mr. Examiner, we tender Exhibits 4 and 5, and we pass the witness.

EXAMINER STOGNER: Exhibit 4 and 5 will be admitted into evidence at this time.

EXAMINATION

BY MR. STOGNER:

Q. You said your primary zone of interest was the D and E sands?

A. Yes, sir.

Q. What about the F and G sands? Will those also be tested?

A. The F sand appears to be watering out. The Inexco 17 No. 1, produced from the F sand, it

has since been plugged back. It is producing only from the C and D sands now. So we believe that because we'll be slightly lower than the No. 1 well, it is likely the F sand will be wet.

The G sand, throughout the entire area, appears to be wet. There is no production in the G sand.

Q. In preparing your map--and I'm looking at the well in Section 16 in the northern half; well, both of them, for that matter, but let's refer over to Section 16--those two gas well symbols that you show, are those actual Morrow gas wells?

A. Yes, sir, those are Morrow gas wells and they both produce solely from the D and E sands.

Q. Now, those are in the Avalon Morrow pool?

A. Yes, sir.

Q. Or the Catclaw Draw?

A. Those are in the Avalon Morrow.

Q. How about the gas well symbol--there's two in Section 9, also. What about those?

A. I'm sorry. I thought we were referring to Section 9.

Q. I was talking about 16, now I'm talking about 9. Were you talking about 9?

A. I'm sorry, I was talking about Section 9. The wells in 16 are in Avalon. They're in the Avalon field. If I could go back to the well to the north in Section 16, it's producing from the D sand and the A, B and C.

As you can see from the E sand isopach, it does not have any cf that sand.

And the well at the south half of 16 is producing from the B, C and D sand. Both of those wells' primary reserves are coming from the D sand.

EXAMINER STOGNER: I have no other questions of this witness at this time. Going back to your first witness, and he can answer from there, what was the name of the housing addition to the north of Highway 285?

MR. TAYLOR: The McNew Subdivison.

EXAMINER STOGNER: How do you spell that?

MR. TAYLOR: M-c-N-e-w.

EXAMINER STOGNER: McNew Subdivision.

MR. PADILLA: Mr. Examiner, I also have to submit to you the notices that we submitted to

the offset operators.

EXAMINER STOGNER: One other question of Mr. Taylor. How far is your surface location off the highway, apprcximately?

MR. TAYLOR: It's 500 feet.

EXAMINER STCGNER: All right. Thank you, sir. What have you just handed me, Mr. Padilla?

MR. PADILLA: I've handed you the notice that we sent the offset operators, together with the return receipts for all of those operators, certified return receipts, mailing receipts.

EXAMINER STCGNER: Does anybody else have anything further in this case? If not, Case 10826 will be taken under advisement. Thank you, Mr. Padilla.

MR. PADILLA: Thank you.

(And the proceedings concluded.)

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 10826, heard by me on 24 Sept., 1993.

, Examiner
Oil Conservation Division

CERTIFICATE OF REPORTER

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

I, Carla Diane Rodriguez, 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 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 September 30, 1993.

Carla Diane Rodriguez

CARLA DIANE RODRIGUEZ, RPR
CCR No. 4