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 STEVENS OPERATING CORPORATION FOR DIRECTIONAL DRILLING, CHAVES COUNTY, NEW MEXICO	CASE NO. 10271

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: MICHAEL E. STOGNER, Hearing Examiner

March 21, 1991
1:00 p.m.
Santa Fe, New Mexico

This matter came on for hearing before the Oil Conservation Division on March 21, 1991, at 1:00 p.m. at Oil Conservation Division Conference Room, State Land Office Building, 310 Old Santa Fe Trail, Santa Fe, New Mexico, before Paula Wegeforth, Certified Court Reporter No. 264, for the State of New Mexico.

FOR: OIL CONSERVATION DIVISION

BY: PAULA WEGEFORTH
Certified Court Reporter
CSR No. 264

I N D E X

March 21, 1991
Examiner Hearing

CASE NO. 10271

* * *

E X H I B I T S

A P P E A R A N C E S

FOR THE DIVISION: ROBERT G. STOVALL, ESQ.
General Counsel
Oil Conservation Commission
State Land Office Building
310 Old Santa Fe Trail
Santa Fe, New Mexico 87501

FOR THE APPLICANT: CAMPBELL & BLACK, P.A.
Attorneys at Law
BY: WILLIAM F. CARR, ESQ.
110 North Guadalupe Street
Santa Fe, New Mexico 87501

* * *

EXAMINER STOGNER: This hearing will come to order. Call next case, No. 10271.

MR. STOVALL: Application of Stevens Operating Corporation for directional drilling and an unorthodox bottomhole well location, Chavez County, New Mexico.

EXAMINER STOGNER: Call for appearances.

MR. CARR: May it please the examiner, my name is William F. Carr with the law firm Campbell & Black, P.A., of Santa Fe. We represent Stevens Operating Corporation, and I have one witness.

EXAMINER STOGNER: Are there any other appearances in this matter?

Okay. The witness is standing to be sworn.

(Whereupon the witness was duly sworn.)

EXAMINER STOGNER: Mr. Carr.

JACK AHLEN,

the Witness herein, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. CARR:

Q. Will you state your name for the record, please?

A. Jack Ahlen.

Q. Mr. Ahlen, where do you reside?

A. Roswell.

Q. By whom are you employed and in what capacity?

A. Stevens Oil Corporation. I'm a consulting geologist.

Q. Have you previously testified before this division and had your credentials as a geologist accepted and made a matter of record?

A. Yes. Yes.

Q. Are you familiar with the application filed in this case on behalf of Stevens Operating Corporation?

A. Yes.

Q. Are you familiar with the subject well?

A. Yes.

MR. CARR: Are the witness' qualifications acceptable?

EXAMINER STOGNER: Yes.

Q. (By Carr) Is Stevens seeking authority to directionally drill in Chavez County, New Mexico?

A. Yes, sir, it is.

Q. Could you explain briefly what Stevens is seeking with this application?

A. We're seeking actually two things: One, to directionally drill from a previously drilled dry hole to a location in the next proration unit to the west, as well as seeking an unorthodox location in case the bottom of the hole is different than where we have projected it.

Q. And this is going to be a Devonian oil well?

A. Yes, sir.

Q. What are the requirements governing well locations and acreage dedication in the area for a Devonian oil well?

A. In this particular area Devonian wells are customarily drilled on 40-acre spacing and within 330 feet of the edge of the proration unit.

Q. Why is Stevens proposing to directionally drill?

A. It's significantly less expensive to directionally drill from -- at this particular place.

Q. Would you refer to what has been marked as Stevens Exhibit No. 1, identify that and review it for Mr. Stogner?

A. This is a land map. It is a copy of the Midland Map Company map of the area. It shows portions of Township 12 south, 28 east, and 13 south, 28 east.

It shows the location of the proposed reentry well in Section 11 of Township 13, south, Range 28 east. The reentry well is the Intex Gulf State No. 1 well, which was a dry hole in the Devonian formation at a total depth of 8,844 feet. The well was dry and abandoned in 1960.

I show -- that well is located in Proration Unit A.

I show the proposed total depth of the side track hole in Unit B of that same section. I show its location at a distance of 330 feet from the north line and

1,650 feet from the east line.

Now, essentially that is our proposed intersection with the top of the Devonian formation and its distance from the proposed well. The diagonal distance is approximately 1,045 feet from the location of the former Intex well.

Q. Stevens proposes to dedicate the northwest of the northeast to the well?

A. Yes, sir.

Q. Anything else you want to present with Exhibit No. 1?

A. No, sir.

Q. Let's go now to Exhibit No. 2. Please identify this for Mr. Stogner and then review the information contained thereon.

A. This is a seismic structure map on the top of the Devonian formation. It is an interpretation of seismic data in the area. The seismic data that was acquired for this particular project is perhaps 20 to 30 miles of seismic lines in this vicinity, and this is the summation of that structural information.

You will note that the top of the structure that we are looking for is located in Unit B of Section 11, and we are attempting to drill the side track hole to the crest of that structure, which will be approximately 300 feet

high to the Intex well.

Q. How will you control the location of the well while drilling?

A. Continuous monitoring of the deflection and the deviation.

Q. Let's go to Stevens Exhibit No. 3, and would you review that for Mr. Stogner?

A. Yes, sir. This is a schematic diagram of the Intex Gulf State No. 1 well that is located in our previously discussed Section 11; also show the elevation there.

Thirteen-and-three-eighths casing was set at 40 feet. Eight-and-five-eighths-inch casing was set at 1,902 feet, and it was cemented by 300 sacks of cement.

There currently is a 15-sack plug at the surface; 25-sack plug at the bottom of that eight-and-five-eighths-inch casing; another 25-sack plug at about 3,000 feet; 25-sack plug at 6,400; and a 25-sack plug at the total depth. The total depth is 8,844.

Q. Mr. Ahlen, would you now go to Stevens Exhibit No. 4 and, using this exhibit, review for Mr. Stogner exactly how Stevens proposes to directionally drill the well?

A. Yes, sir. Exhibit 4 is a very large diagram, and if I may stand to present this testimony, it's a lot

easier.

First of all, I direct your attention to the upper left-hand corner. It illustrates Section 11 again, and we are calling this the Stevens Oil Corporation No. 1 Marjon State. The Intex No. 1 Gulf State well is at the center of Unit A in Section 11.

The circle representing the intersection with the top of the Devonian formation is 330 feet from the north line and 1,650 feet from the east line.

I have drawn a square around that particular location as our probable margin of error in getting to that location, as well as to the bottom location of the well. That orthodox location 330 from the north is what we hope -- where we hope to penetrate the top of the Devonian formation, and that is our aim point.

The square around that well is 200 feet in each direction from that location for a 400-foot square.

The distance from the Intex well is 1,045 feet, and the direction is north, 70 degrees west, and the intersection point is at a datum of 4,850 feet below sea level.

On the right and on the bottom I illustrate the Intex Oil Company Gulf State No. 111, which was a wildcat drilled at that location, and it shows the well log from a depth of 5,700 feet to total depth. The scale on that log

is one inch equals a hundred feet. This is a true scale cross section, which means that the horizontal distance -- there is no exaggeration in the horizontal or vertical scale.

We will -- let's talk about the geology first. The well log illustrates the section from the lower Abo through the Wolf Camp Section, the Pennsylvanian Section, the Mississippian Section, the Woodford shale and into the top of the Devonian formation.

In this particular well the top of the Devonian formation is at a depth of 8,820 feet. They penetrated approximately 24 feet into the Devonian formation and tested water.

The top of the Mississippian formation, if I can read this properly, is at about 8,100 feet.

The picture to the left is our conception of the reservoir configuration immediately adjacent to the well. We interpret a fault on the seismic data approximately three to 600 feet to the west of the well bore. We plan on penetrating the fault itself, going up over onto the higher fault block and intersecting the top of the Devonian formation at a true vertical depth of 8,500 feet. Now, that turns out to be a measured depth of 8,744 feet.

That datum of minus 4,850 feet is actually 321 feet higher than that similar datum in the original hole.

The procedure will be to set -- that we will reenter the old hole first with a pulling unit, clean out all of the plugs to total depth. At that point we plan on running Slumber Jays Vertical Seismic Profiling Device, which is another seismic tool, a recent innovation, in which a seismic generator is located at the surface at a remote distance from the well bore. Geophones are lowered down the bore hole, and the generator, the seismic generator, is initiated at the remote location, and it sends the energy signal, and it is recorded within the well bore.

The seismic device then is raised to a different horizon in the well, and the seismic generator works again. And then with repeated changes in depth in the seismic recording device, the seismic generating device is initiated each time. And then -- and then the seismic device is moved closer to the well, and the whole sequence is started over again. This is a process that probably takes a day or a day and a half.

After that procedure has taken place, we'll move the pulling unit off the well and wait for the interpretation of the seismic data that we have acquired in that manner. That usually is ten days to two weeks before we can actually start the deviated hole.

After we confirm the fault and get an idea as to

the distance from the well bore that the fault is located, then we will initiate the deviated-hole program.

We will have -- before we pull the pulling unit off of the well, or the work-over rig off the well, we will have set a 200-foot plug at approximately 5,850. That's the point where we plan to kick the well off. We will set a whip stock such that the well will be kicked off in a direction north, 70 degrees west. We will build our deflection angle at the rate of one and three-quarters degree per 100 feet of penetration.

By the time we reach a measured depth of 7,613, we shall have acquired a deviation of about -- deflection of about 31 degrees. At that particular point we will maintain the deviation through the remaining rocks to the top of the Devonian formation.

At the top of the Devonian formation we intend to test the reservoir to see if there's any oil or gas present. If there is some, we will continue drilling through the Devonian formation at this 31 degrees deviation until we have encountered the oil-water contact. At that point we will log the well and run casing and attempt completion.

Q. Mr. Ahlen, you don't know exactly where you're going to intersect the Devonian, do you?

A. The seismic suggests that we'll intersect the

top of the Devonian at minus 4,850 feet at approximately 1,045 feet from the original well bore. That's an interpretation, and as we all know, seismic interpretations are not always exactly correct.

So that -- everything is projected on the basis that the seismic is correct and we have made a correct interpretation of that seismic data. That means that our intersection point will be at the top of the Devonian within an orthodox -- at an orthodox location.

However, if we continue drilling past that point, we will get outside of an orthodox well location, and the farther we drill, the farther away we will get from that.

Q. And that is the reason you're asking for the unorthodox location approval?

A. Yes, sir; that is correct.

Q. And Stevens is seeking authority to complete within this 400-feet target area that you previously referenced?

A. Yes, sir.

Q. Will Stevens Operating Corporation run a directional survey on the well as required by OCD rules?

A. Yes, sir.

Q. And with this bottomhole location, if it is unorthodox, you will be encroaching on the acreage to the

north; is that correct?

A. That is the direction that would be most affected, yes, sir.

Q. Who is the operator or working interest owner of the acreage to the north?

A. Kaywal, Incorporated, which is a land and cattle company that is located in Roswell, New Mexico.

Q. And who is the operator of that tract?

A. Stevens Oil Corporation.

Q. In fact, Stevens operates every offsetting tract to this 40-acre Devonian spacing unit; is that correct?

A. That is correct.

Q. And the surface -- or the royalty interest owner is who?

A. The royalty interest owner is Kaywal, Incorporated.

Q. Would you identify Exhibit No. 5, please?

A. Exhibit No. 5 is a letter from Kaywal, Incorporated, endorsing our application and requesting that the Oil Conservation Commission grant our application, and that should we realize production from this effort that we not be penalized for being at an unorthodox location.

Q. So although the working interest ownership interest is common, the ownership north that is held by this individual is different than on the 40 acres involved

in this application?

A. Yes, sir, that is correct.

Q. And you have --

A. And Mr. Lackey, who has signed this, has stated that any activity in this area will make his minerals much more valuable and he'll gain a -- it will significantly affect development of production on his lease, and so he's willing to grant us this right.

Q. There was no other interest owner to whom notice had to be given of this application?

A. That is correct.

Q. In your opinion, do you believe that granting this application will be in the best interests of conservation, the prevention of waste and the protection of correlative rights?

A. Yes, sir.

Q. Were Exhibits 1 through 5 either prepared by you or compiled under your direction?

A. Yes, sir.

MR. CARR: At this time, Mr. Stogner, we move the admission of Stevens Exhibits 1 through 5.

EXAMINER STOGNER: Exhibits 1 through 5 will be admitted into evidence.

(Whereupon Applicant's Exhibits 1 through 5 were admitted into evidence.)

MR. CARR: That concludes my direct examination of Mr. Ahlen.

EXAMINATION

BY EXAMINER STOGNER:

Q. Mr. Ahlen, approximately -- roughly -- how much money do you reckon Stevens is to save by reentering a new well as opposed to drilling a new one?

A. He intend to save about half of the cost of a new well.

Q. Which is?

A. At this depth it would be on the order of 6 to $700,000 for a new well.

Q. Referring to your Exhibit No. 2, this is --

A. The seismic map?

Q. Yes.

A. Yes, sir.

Q. Would you be a little more specific on your geological description of what we're looking at as far as -- you called it a "crest"?

A. Yes, anticline.

Q. An anticline. What kind of structure are we looking at?

A. We're looking at a faulted anticline right here. The fault that you see running essentially north-south is regionally compatible to a wrench-fault system that has

been mapped in other areas of this part of Chavez County.

Regional gradient here is into the basin to the east-southeast with a regional dip going east-southeast. The critical dip of this particular structure is located in the center of Section 35 and the northwest corner of Section 2. That's the critical regional -- counter regional dip, and the top of the structure, or the anticlinal climax of this particular structure, is located there in Unit B of Section 11.

Q. There was no production casing ever set in this original well bore, was there?

A. Correct, there was not. It was plugged and abandoned as a dry hole.

EXAMINER STOGNER: Any other questions of Mr. Ahlen? If not, he may be excused.

MR. STOVALL: It's always tempting, but I think I won't.

EXAMINER STOGNER: If not, he may be excused.

Mr. Carr, do you have anything further?

MR. CARR: No, sir.

EXAMINER STOGNER: Does anybody else have anything else further on Case No. 10271?

If not, this case will be taken under advisement.

(The foregoing hearing was concluded at the approximate hour of 1:30 p.m.)

* * *

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 10271, heard by me on 26 March 1991.

Michael E. Stogner, Examiner
Oil Conservation Division

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

REPORTER'S CERTIFICATE

I, PAULA WEGEFORTH, a Certified Court Reporter and Notary Public, DO HEREBY CERTIFY that I stenographically reported these proceedings before the Oil Conservation Division; and that the foregoing is a true, complete and accurate transcript of the proceedings of said hearing as appears from my stenographic notes so taken and transcribed under my personal supervision.

I FURTHER CERTIFY that I am not related to nor employed by any of the parties hereto, and have no interest in the outcome hereof.

DATED at Santa Fe, New Mexico, this 22nd day of April, 1991.

Paula Wegeforth

PAULA WEGEFORTH
Certified Court Reporter
CSR No. 264, Notary Public

My Commission Expires:
September 27, 1993