STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO

25 July 1984

EXAMINER HEARING

IN THE MATTER OF:

Application of Gulf Oil Corporation for dual completion, Eddy County, New Mexico. CASE 8280

BEFORE: Michael E. Stogner, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division: W. Perry Pearce
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For the Applicant: Anthony V. Sorrentino
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I N D E X

E X H I B I T S

MR. STOGNER: We will now call Case Number 8280.

MR. PEARCE: That case is on the application of Gulf Oil Corporation for a dual completion in Eddy County, New Mexico.

MR. SORRENTINO: Mr. Examiner, I'm Tony Sorrentino, Houston attorney for Gulf Oil.

I'm appearing here today in association with the Kellahin and Kellahin firm, and I have one witness.

MR. PEARCE: Are there other appearances in this matter?

(Witness sworn.)

MR. SORRENTINO: Mr. Examiner, Mr. Pearce has correctly stated the nature of our application today. We are here seeking approval to dually complete the Artesia State Com No. 1 Well, located in Eddy County.

The Division has requested that we present this application in a hearing format.

I have one witness from our Midland, Texas office in support of our application, Mr. Les Munson, who I will call at this time.

LES D. MUNSON,

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. SORRENTINO:

Q Mr. Munson, for the record could you state your name and by whom you're employed, please?

A My name is Les D. Munson. I'm employed by Gulf Oil Corporation.

Q What is your educational background, Mr. Munson?

A I received a Bachelor of Science in industrial engineering at University of Texas, Arlington, and was hired by Gulf and have been practicing as a petroleum engineer with them since August, 1980.

I am currently assigned to the Proration Unit in our Midland Division, Midland Office, Western Division.

MR. SORRENTINO: Mr. Examiner, do you have any questions of the witness' qualifications as an expert in petroleum engineering?

MR. STOGNER: Mr. Munson, have you testified at this Division hearing or a Commission hearing here in Santa Fe before?

A No, sir.

MR. STOGNER: Mr. Munson is so

qualified.

MR. SORRENTINO: Thank you.

Q Mr. Munson, are you familiar with the Artesia State Com No. 1 Well?

A Yes. Our Exhibit One is a wellbore diagram which describes the -- describes the well physically as well as the proposed equipment installation.

Q Gulf made an administrative application to dually complete this well on June 18th, 1984.

Could you give us the relevant details of that application, please?

A Yes. The original application was made by Form C-107, as required. The pertinent, the relative information shows there are two zones to be -- the well's to be dually completed in two zones.

The upper zone is the Travis Upper Penn, just completed from 9669 to 9780 feet and is productive of oil and gas and currently flowing.

The initial production from that well was 150 barrels of oil and 260 Mcf gas per day.

The lower zone is the Turkey Track North Morrow Gas Zone, which would be from 10,678 to 10,860 feet and is gas productive and flows.

Its initial potential was 396 Mcf gas per day and 3 barrels of water.

The application was signed by the Area Production Manager in our Hobbs office.

Q What is the general location of this well?

A Exhibit Two is a 16-section plat and includes the section our well is located in.

Specifically, our well is the Gulf Artesia State No. 1, located Section 23, Township 18 South, Range 28 East. You can see in Section 23 where it's located.

Q Are there other wells completed in this field in a similar manner?

A Yes. The Holly Energy Corporation State B-14 Com No. 1 is completed in a similar manner. It's directly north of us within a half mile north of our well. It was granted administratively in September, 1981 and mechanically is identical to our proposed installation.

Q Could you please describe the producing characteristics of the Holly Well?

A Exhibit Three is a production tabulation and graphical representation of production from the Holly Energy Well, B-14.

The first stable month's production was May, 1981. It was 6007 barrels of oil, 14,861 Mcf gas, 384 barrels of water monthly figures.

The current production as of February, or production for the month of February, was 3570 barrels of oil, 14,342 Mcf gas, and 100 barrels of water.

Our Exhibit Four is a similar history for

the Empire Morrow South gas which is present in this well.

First month stable production was April, 1981, 1419 barrels condensate, 46,860 Mcf gas, 106 barrels of water.

Production for the month of February, 1984 was 318 barrels condensate, 13,475 Mcf gas, and 12 barrels of water.

Q What producing pressures are found in the Holly B-14 Well?

A The flowing -- flowing pressure for the Morrow zone is approximately 760 psi and the flowing pressure for the Travis Upper Penn zone in that well is approximately 420 psi.

Q To your knowledge has Holly Energy experienced any problems in producing this well?

A None to date. The only problems they've had were they've had down time for packer leakage test and they've been curtailed from time to time due to lack of market demand.

Q Mr. Munson, in your opinion will granting of this application prevent waste and result in the protection of correlative rights?

A Yes.

Q Were Exhibits Numbers One through Four prepared by you or under your supervision and control?

A Yes, they were.

MR. SORRENTINO: Mr. Examiner,

at this point I'd like to offer Exhibits Numbers One through Four into evidence and tender the witness for any questions that you may have.

MR. STOGNER: Exhibits One through Four will be admitted into evidence.

CROSS EXAMINATION

BY MR. STOGNER:

Q Mr. Munson, when was your Artesia State Com Well No. 1 drilled?

A Let's see, I'm looking for my spud date. Okay, March 2nd, 1984.

Q And what was its initial goal, what formation?

A I believe it was the Travis Upper Penn and the well is completed down through the Morrow to test to see if the -- see if it would be productive.

Q So your Penn was your initial goal with your Morrow as a secondary goal?

A Yes, sir.

Q What size of production casing is in this hole?

A 5-1/2 inch, Mr. Examiner.

Q This would make it, because of the 5-1/2 inch casing, this would make it impossible to run dual completion?

A Yes, sir.

Q Okay, on your schematic marked Exhibit Number One, what's the top of the cement in your production casing?

A It is 8690 feet. That's by temperature survey.

Q And what is the 9-5/8ths inch intermediate set at? Is that 2999?

A Well, 2999.

Q So essentially you've got an uncased area, I mean an uncemented area in the production string from 8690 to 2999?

A That's right.

Q Did you run any pressure test on that production casing when this hole was drilled?

A Yes, sir, that test was run as soon as the -- as soon as the production string was set and cemented, before any perforations were made. That string was tested for 2500 psi and that was January 26, 1984, and there was one of the sundry notices also reflected that, a sundry notice dated April or dated January 30, 1984.

Q Well, let's back up a little bit here. This test was run when?

A My drill core shows January 26th. I believe I've given you an incorrect spud date on that. Let me look if it was.

Okay, spud date -- I'm sorry, spud date

was December 6th, 1983.

Q Okay. Thank you.

Do you know of any producing formations, either oil, gas, or water, between 8690 and 3000 feet that could be corrosive or have been corrosive in the past in any wells at that depth?

A No. There's a Wolfcamp -- there's a Wolfcamp zone that is -- the bottom of the Wolfcamp zone is approximately 8630 at this point. That zone is the only zone that would be productive of anything.

In this particular area it is thought to be water productive and there's no production from that zone in the general area.

I believe the Wolfcamp is generally sweet where it's found in this -- found in this area.

Q Is there any water disposal into that Wolfcamp anywhere around here?

A None to my knowledge.

Q On your schematic, then, again on Exhibit Number One, you show to produce the Morrow.

A Yes, sir.

Q Up through some tubing, through the Canyon Penn interval between two packers.

A Uh-huh.

Q And then cross over to the annulus between the tubing and the 5-1/2 inch casing.

A Yes, sir.

Q All the way to the rest -- all the way to the surface, and you show your Canyon Penn production interval coming into the annulus between the tubing and the 5-1/2 inch casing between those two packers and then crossing over into the tubing.

A Uh-huh.

Q Is that correct?

A That's right.

Q What size of tubing are you going to be running?

A 2-3/8ths inch tubing.

Q How about between the packers?

A I believe it will be the same size.

Q The Morrow production in that area, do you know of any corrosive -- corrosiveness that exists in either the gas or any of the water that's in there?

A No. Not really. I talked to some personnel from Holly Energy and they indicated they hadn't had -- they haven't seen any indication of corrosiveness in their wells and they've been -- they've been producing since 1980.

We've had analysis run and hydrogen sulfide is not a problem in this area.

Q This Baker Model C Tandem Tension Packer with wireline set crossover assembly, who manufactures this? Does Baker manufacture --

A I assume Baker manufactures this -- this

packer assembly.

Q So it's readily available in the industry?

A Yes, it is.

Q Do you have any pressure data in either the Morrow or the Canyon Penn in this area?

A I don't have any -- any producing data except -- except what was in the Holly, what's been in the Holly Well.

I do have a DST on the Travis Upper Penn and other than that I don't have any other pressure data.

Q So you don't know what your bottom hole pressure in the Morrow was?

A The Morrow, I do believe, let's see, I've got the 4-point test that was run on that, so that would give some pressure data.

Their 72-hour closing pressure was 2400 psi on the tubing, tubing pressure 2400 psi on the Morrow.

Q Okay.

A It looks like bottom hole pressure 3455.

Q If the Morrow had to be shut in at any time, could it be shut in down hole in this packer assembly?

A I believe it could. You can run a -- you can run a wireline blanking plug and set it in the crossover assembly. That crossover assembly gives freedom to change your flow -- change your flow many different ways, but that is one possibility, so you could blank off that flow nipple

and the effectively close in the Morrow.

Q Do you know if that's standard practice if you had to shut in the Morrow?

A I don't know.

Q What worries me is you've tested the casing at 2500 feet. You tell me the bottom hole pressure in the Morrow is 3450. What is the minimum bursting pressure in the 5-1/2 inch string?

A I'd have to look it up to be sure but I believe it's -- it's somewhere around 4800 psi.

Q What kind of condensate production do you anticipate from the Morrow?

A We expect 6 or 7 barrels per day. We may -- it may produce more than that, I don't know, but the first -- first test we've made on it indicates there will be 6 or 7 barrels per day condensate.

And water was negligible after the -- after the completion fluids are cleaned up the water production was negligible.

Q What's the present status of this Artesia State Com No. 1?

A It's shut in. It's shut in awaiting -- waiting for approval to dual complete.

Q Okay. In the Holly Energy Incorporated Well No. 1 that you alluded to several times and had exhibits on, it has this same type of downhole assembly.

A Let me -- let me add one thing. Their --

their tools of choice are Otis but the configuration of those tools is essentially the same as the Baker.

Q The production that -- from the Morrow that you show on Exhibit Number Four, essentially shows the water production in the beginning to be relatively high, then dropping off, and it seems to be stabilized at around 10 barrels of water.

Do you anticipate this same type of production configuration in your well?

A From what we've seen. We haven't seen evidence that we'll start out with that much water but the end of the month allocation could -- we could start out as high as that, and we would expect it to be very similar in producing behavior.

Q Did you run a gas/oil ratio test or water/gas ratio test on this well, other than your deliverability?

A No, sir.

Q Do you have any pressure data on that Holly Well, how much the pressure has dropped over the years?

A I -- I may have. I know -- I know what their producing pressures are right now.

I've got a Dwight's curve for that well. Okay, Dwight's -- the Dwight's I have for the Morrow shows only a wellhead shut-in pressure and that is 1283, 1283, the last test being January of '83, so you'd expect that to be

pretty indicative of the downhole pressure.

Q Would you please copy that and submit that --

A Sure.

Q -- to me as Exhibit Five?

A Okay.

MR. SORRENTINO: Sure.

Q Have you made any calculations, flow calculations of the annulus area of the minimum pressure it would -- it would take to lift, say, your water and condensate load?

A No. I did talk to, again, I didn't make any specific calculations like that, but in talking to Holly I asked them if they ever had, when they were curtailed, had the well shut in, I asked them if they ever had any trouble resuming production, and they say that to date they've never, they've never had to swab or coach the well other than just working the choke to have production resumed in that well.

Q That would be pretty difficult to swab this, I would think.

A It can be done, though. They can do it.

Q How?

A They -- they can blank off the production from the Penn and the swabbing, effectively the swabbing woudl be done from the top packer at 96 -- 9650, as shown on this. And that would let them reduce the load, in any case,

to have production resume.

Q If it gets to a point where this well logs off with fluid because you don't have enough pressure to lift this in this big of a cross-sectional area, what is Gulf's proposal to do then?

A If it ever reaches that point, we'll go in and swab it and fully expect it to flow after that.

If it didn't flow, we would look, I'm sure we would look toward possibly abandoning the zone, because pressure would actually be depleted by then.

Or go in and do an additional stimulation of some kind.

Q Could these two zones be downhole commingled?

A I don't -- I don't really know. I do know, you know, one's basically an oil zone and the other is basically a gas zone, and depletion rates may be dissimilar enough to -- that you might have some crossflow at some time.

I don't think it's been done anywhere in this -- in this area; hasn't been done anywhere in this 16-section area.

It would be a possibility we could look at.

MR. STOGNER: I have no further questions of this witness at this time.

Is there any other questions of

Mr. Munson?

MR. SORRENTINO: I don't have any other questions of him, sir.

You'd like us to submit the Dwight's test, was it?

A It's Dwight's curve.

MR. SORRENTINO: Dwight's curve as an additional exhibit, is that correct, sir?

MR. STOGNER: Yes, sir, if you would, please.

MR. SORRENTINO: Fine. I have nothing further. Thank you, Mr. Examiner.

MR. STOGNER: Okay. Does anybody else have anything further in Case Number 8280?

If not, this case will be taken under advisement.

I'm sorry, it will be left open pending the --

MR. SORRENTINO: Sure.

MR. STOGNER: -- submittal of Exhibit Number Five.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 8280, heard by me on July 25, 1984.

Michael E. Stogner, Examiner
Oil Conservation Division