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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
July 10, 1968

EXAMINER HEARING

IN THE MATTER OF:

Application of Pan American Petroleum Corporation for a pressure maintenance project, Roosevelt County, New Mexico. Case No. 3804

BEFORE: Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING

NEW MEXICO OIL CONSERVATION COMMISSION

Examiner Hearing

Santa Fe , NEW MEXICO

Hearing Date JULY 10, 1968 TIME: 9 A.M.

NAME	REPRESENTING	LOCATION
Booker Kelly	White Gilbert Koch & Kelly	S. F
Guy T. Buell	Pan Am	Ft. Worth
George Ford	✓ ✓	✓ ✓
E. M. Pringle	Atlantic Richfield Co.	Roswell
Jack Beard	" " "	Roswell
[illegible]	" " "	Roswell
N DuHamie	RW Byram	SF
D. Losee	H & S Oil	Artesia
R. L. Heinzel	H & S Oil	Artesia
Bill Kastler	Gulf	Roswell
Lonnie C. Smith	"	"

MR. UTZ: Case 3804.

MR. HATCH: Case 3804: Application of Pan American Petroleum Corporation for a pressure maintenance project, Roosevelt County, New Mexico.

MR. BUELL: Guy Buell for Pan American Petroleum Corporation. We have one witness, George Ford.

(Witness sworn.)

(Whereupon, Applicant's Exhibits 1 through 6 were marked for identification.)

MR. BUELL: May it please the Examiner, this application relates to the Milnesand-San Andres Oil Pool in Roosevelt County, New Mexico. This pool is along a line of west to east trend of the San Andres Pool. It starts on the far west with Cato, then we pick up Tom-Tom, Chaveroo, Milnesand, and it ends on the east with Todd. Most all of the operators in the San Andres Pools are deeply concerned about whether or not waterflooding will be feasible and practical. Their concern is certainly justified in that unless we can successfully flood the majority of these San Andres properties, we're not going to make any money on our investment, but in some cases we probably will not get our investment back. For that reason Pan American, along with other operators, is intensely interested in whether or not these San Andres Pools

can be successfully flooded.

Insofar as I know, the first attempt to inaugurate any type of a pilot program is when Pan American, in the Milnesand Field on the Horton Federal Lease, which is the subject lease of this application, we converted a well to salt water disposal. It was salt water disposal but we were injecting it into the producing San Andres formation. This was done in June of 1966.

We have injected considerable volumes of water into this well into the producing zone, and while the results are not completely clear-cut either way as to whether or not we can successfully flood the Milnesand-San Andres, it is our intention here today that in addition to this one well in which we have been injecting, to add another injection well in order that we can further evaluate the prospects of a waterflood at least in the Milnesand-San Andres Oil Pool.

GEORGE H. FORD

called as a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BUELL:

Q Mr. Ford, would you state your complete name, by whom you are employed and in what capacity and what location,

please?

A George H. Ford, Staff Engineer for Pan American Petroleum Corporation in Fort Worth, Texas.

Q Mr. Ford, you have testified at many previous Commission hearings, have you not, and your qualifications as a petroleum engineer are a matter of public record?

A Yes, sir.

Q With respect to the subject application, would you look first at what has been identified as Pan American's Exhibit 1? What is that exhibit?

A Exhibit 1 is a plat of the southeast portion of the Milnesand Pool. We have Pan American's three-section Horton Federal lease, stippled, small black dots, over three sections, Sections 29, 30 and 31, in Township 8 South, Range 35 East, Roosevelt County, New Mexico.

We have completed 29 wells as producers on that three-section lease from a period the first of '64 up to the early part of 1966. These wells have produced one and a half million barrels up to May 1, 1968. Our best estimate of ultimate primary recovery is two million barrels of oil from this lease. We cannot tell now how much additional recovery we might get by waterflooding. We hope that we'll have a full-scale, lease-wide waterflood program that might recover

as much as 75 percent of ultimate primary, or about one and a half million barrels.

We have shown with a red dot a proposed water injection well in this pressure maintenance project, our Horton Federal Number 30, with a blue dot our Horton Federal Number 31, that is now classified as a salt water disposal well. It is injecting into the pay formation, as Mr. Buell pointed out.

I would like to correct a date, it started in January of '66 instead of June. We would like that reclassified as a water injection well to fit in with our ultimate program for this pressure maintenance project. I have shown with a red outline the recommended project area of 14 40-acre units. Some of them may be slightly less than 40 acres, roughly 560 acres.

Q Do you have any other comments on Exhibit 1, Mr. Ford?

A No, sir.

Q Let's look now at Exhibit 2, what is that exhibit?

A Exhibit 2 is a gamma ray neutron log for Horton Federal Number 30. I'd like to make one comment, that the top of the producing zone is at about 4683, very near the bottom of the log.

Q Is that a log on the well that we're getting ready

to convert or requesting authority to convert to injection at this time?

A Yes, sir.

Q Look at Exhibit 3, what is that exhibit?

A That is a gamma ray neutron log for our Horton Federal Number 31, the well that is already on injection. The top of the producing zone there is at about 4677.

Q Let's look now at Exhibit 4, what is it?

A Exhibit 4 is a diagrammatic sketch of our proposed injection Well Number 30. I would like to point out a few items on this exhibit. Our perforations are 4696 to 4716. We will use two-inch OD plastic-coated tubing set at 4650 on a packer at that depth. The annulus between the tubing and casing will be filled with an inhibited fluid to prevent corrosion. There will be a pressure gauge on that annulus so that we can observe pressure.

Q Look now at Exhibit 5, what is that exhibit?

A That is a similar exhibit for Well Number 31, our diagrammatic sketch for Well Number 31. It's perforated from 4696 to 4700. We are using 2-7/8ths OD plastic-coated tubing set on a packer at 4670 feet. The casing tubing annulus is filled with inhibited fluid and a pressure gauge is used on that annulus.

Q Look now at our last exhibit, Exhibit 6. What is that?

A It is pertinent data for our pressure maintenance project. The one item I would like to point out is that right now, and in the immediate future, we will be using produced water from our Horton Federal lease in the Milnesand Field, with a volume range from 400 to 600 barrels of water per day.

Q What recommendations do you have to make to the Commission here today with respect to the rules and regulations that should govern this pressure maintenance program?

A I do recommend approval of our water injection pressure maintenance project for our Horton Federal lease in Milnesand and recommend an order with provisions similar to the Commission's Order R-2026. This order approved a pressure maintenance project for Pan American in the Horseshoe-Gallup Pool in San Juan County, New Mexico.

I will later furnish the Examiner by letter the factors needed to calculate the penalty removal by the water injection so that that can be incorporated into the order for this project.

MR. UTZ: That would be reservoir temperature and Z factors?

THE WITNESS: Yes, sir. Further, I recommend

approval of Pan American's Horton Federal Number 30 for water injection, redesignation of Pan American's Horton Federal Number 31 from salt water disposal to water injection.

In that connection I would like to point out that Well Number 31, in my opinion, is not entitled to an allowable assignment in the project area or the project. It was never completed as a producer.

Well Number 30 was completed as a producer but not Well Number 31. Further, I would recommend approval of a project area of the 14 40-acre units that I had outlined in red on Exhibit 1. That's all my recommendations.

MR. BUELL: May it please the Examiner, that's all we have by way of direct testimony. I would like to formally offer Exhibits 1 through 6, inclusive, for the record.

MR. UTZ: Exhibits 1 through 6 will be entered into the record of this case.

(Whereupon, Applicant's Exhibits 1 through 6 were offered and admitted in evidence.)

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Ford, I didn't reread our rule as to the project area delineation, but isn't it offsets and diagonal offsets to injection wells?

A Sir, that's the project area for the waterflood or stripper type. I believe the project area for the pressure maintenance type is set after notice and hearing, so I would assume it's whatever the evidence shows and whatever the Commission decides they will approve for a project area. I don't really have any experience on how much area the Commission has been approving for a project area for a pressure maintenance project, but what you are referring to is for the waterflood.

MR. BUELL: As I recall, Mr. Examiner, in some of our prior pressure maintenance program applications we have had more units in the project area other than the direct and diagonal offset to an injection well.

THE WITNESS: I would think that would be quite reasonable, Mr. Buell, because there's a special allowable advantage for a project area for a waterflood. I believe you can go up to top normal unit allowable times the number of wells in the project area, whereas for a project area in a pressure maintenance project, you don't have that many allowable advantages, all you can do there is to transfer the allowable from the injection well to other producers in the project area. I think they are two entirely different type project areas. If the Commission feels that this project area

I have recommended is too large, of course, it's not really too critical to our operating our project. We would certainly be agreeable to something smaller than that.

Q (By Mr. Utz) Now, these leases on these Sections 29 and 30, is the interest in both sections and in the area you outlined identical?

A Yes, sir, and also 31; 29, 30 and 31.

Q Which would be equivalent to unitization actually?

A Well, it's now in Commission records as one lease, the three sections are.

MR. BUELL: In a pressure maintenance program all the project area gives you is a more flexible operation in conducting your flood. There's no allowable advantage to it at all.

MR. UTZ: You can transfer some allowable --

A Yes.

MR. BUELL: It just gives you flexibility of where you produce your oil within the project area.

A I think the only extra allowable you might obtain would be the difference between the present allowable of an injection well and top normal unit allowable for an injection well. For example, if the well had 50 barrels limited now the top was 58, you would gain 8 barrels. Whereas on the project

area for a waterflood project it might be much more than that if you had a few high-capacity wells in the project.

MR. UTZ: Are there any other questions of the witness? When do you think we might expect this additional data?

THE WITNESS: You should receive it by Monday morning.

MR. UTZ: All right. The witness may be excused.

(Witness excused.)

MR. UTZ: Any statements in this case? The case will be taken under advisement and the hearing is adjourned.

I N D E X

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, ADA DEARNLEY, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.

Witness my Hand and Seal this 18th day of July, 1968.

Ada Dearnley
NOTARY PUBLIC

My Commission Expires:

June 19, 1971.

I hereby certify that the foregoing ... record of the proceedings ... hearing of Case No. 3804 ... on July 10, 1968

... New Mexico Oil Conservation Commission