BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
June 19, 1974

EXAMINER HEARING

IN THE MATTER OF: Application of Texas Pacific Oil Company for two waterflood projects and downhole commingling or dual completions, Lea County, New Mexico.	Case No. 5258

BEFORE: Richard L. Stamets, Examiner.

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the New Mexico Oil Conservation Commission:	Thomas Derryberry, Esq. Legal Counsel for the Commission State Land Office Bldg. Santa Fe, New Mexico
For the Applicant:	John F. Russell, Esq. Counsel for Texas Pacific Oil Company Roswell, New Mexico

I N D E X

E X H I B I T S

	Marked	Admitted
Applicant's Exhibits Nos. 1 through 9	--	18

MR. STAMETS: Call the next case, Case 5258.

MR. DERRYBERRY: Application of Texas Pacific Oil Company for two waterflood projects and downhole commingling or dual completions, Lea County, New Mexico.

MR. RUSSELL: John F. Russell, Roswell, New Mexico, appearing on behalf of the Applicant and I have one witness.

MR. STAMETS: Are there any other appearances in this Case? The Witness will stand and be sworn, please.

(Witness sworn.)

ALLEN A. WICKE

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

DIRECT EXAMINATION

BY MR. RUSSELL:

Q Will you please state your name, address, the name of your employer, and the capacity in which you are employed?

A My name is Allen Wicke, I live at 3318 Windsor Drive in Midland, Texas, I'm employed by Texas Pacific Oil Company as Senior Engineer.

Q And have you previously qualified to testify before this Commission?

A I have.

Q Are you familiar with the Application of Texas Pacific Oil Company in Case No. 5258?

A I am.

Q And what were you seeking by this Application?

A Texas Pacific was seeking authority to institute two waterflood projects, one in the Jalmat Oil Pool and one in the Langlie-Mattix Pool on the State "A" Account 1 Lease insofar as this Lease covers the Northeast quarter of Section 4, Township 23 South, Range 36 East, Lea County, New Mexico. Authority was requested to commingle water downhole for injection into these two zones and State "A" Account 1 Well No. 42, and to commingle production from these zones and the wellbore of State "A" Account 1 Wells No. 44, 45, and 87, or in the alternative, to dual and complete the injection of producing wells through parallel strings of tubing.

Q Now, since the filing of this Application, have you given this matter further study and wish to modify your Application?

A Yes.

Q In what respect?

A In the event that downhole commingling was not

approved, TP would abandon the Jalmat waterflood and inject only into the Langlie-Mattix.

Q That would be the downhole commingling of both the injection water and the production, is that correct?

A We would inject only into the Langlie Mattix.

Q Yes, unless you got the commingling in both production and injection wells?

A Right.

Q All right. In connection with this Case, have you prepared some Exhibits?

A Yes, I have.

Q I will refer you to what has been marked as TP Exhibit No. 1 and ask you what that is and what it reflects?

A Exhibit 1 is a map of the proposed project area showing the location of the proposed injection well indicated by the red arrow and also showing all wells and operators within a radius of two miles of this area.

Q Now, the proposed injection well is the one where the red arrow is pointing, is that correct?

A Correct.

Q Will you give the location of that well?

A This well, Well No. 42 on the State "A" Account 1

Lease is located in Unit A, Section 4, Township 23 South, Range 36 East.

Q And it also shows your production Wells 44, 45 and 87. Will you give those locations?

A Well No. 44 is located in Unit B, Section 4; Well No. 87 is in Unit G and Well No. 45 in Unit H of this Section.

Q Now, on this Exhibit, the yellow is your State "A"Account No. 1 Well?

A The yellow represents State "A" Account 1 Lease, correct.

Q Now, the black dots represent producing oil wells, is that correct?

A Correct.

Q What does that "jo" under your Well 87 mean?

A The "jo" means that these oil wells are producing or have produced from the Jalmat Oil Pool.

Q All right, and directly to the North of your proposed location is the Continental South Eunice Unit, is it not?

A Correct.

Q What are the black dots with triangles around them, what do they mean?

A The dots with triangles represent locations of injection wells, either proposed or currently injecting.

Q And to the right of the South Eunice Unit is the Atlantic Seven-Rivers Queen Unit, is that correct?

A Correct.

Q And the same designations apply to that Unit as to South Eunice and yours?

A Correct.

Q All right. I'll refer you to what has been marked as TP's Exhibit No. 2 and ask you what that Exhibit is.

A Exhibit No. 2 is a log of Well No. 42, the proposed injection well.

Q What does it reflect?

A At the bottom of the log, indicated on the log, is the estimated gas-oil contact at 150 feet below sea level, indicated by the dashed line, and also indicated is the estimated water-oil contact at 170 feet below sea level, indicated by the lower dashed line, and also indicated is the statutory limits of Jalmat and Langlie-Mattix falling at 3700 feet here, the Jalmat Pool being above this point and Langlie-Mattix below. The present perforations are also indicated on the log from 3718 feet to

3738 feet. Also the proposed additional perforations in two zones of the Jalmat interval are indicated from 3650 feet to 3684 feet.

Q All right. Now I refer you to TP Exhibit No. 3 and ask you what that is.

A Exhibit No. 3 is the wellbore sketch of the proposed injection well No. 42. This sketch indicates that in this well 9-5/8th inch surface casing set at 316 feet with 300 sacks of cement which was circulated to the surface; it indicates the 7 inch production casing set at 3794 feet with 200 sacks of cement and the cement top at 2850 feet. Shown on the sketch are present perforations at 3718 to 3738 feet, and the locations of our proposed Jalmat perforations, two intervals from 3650 feet to 3684 feet.

Q Now, in the event your Application is approved, how do you intend to complete this injection well and how do you intend to inject the water?

A We would inject through 2-3/8th inch plastic coated tubing set on a tension factor of approximately 3600 feet.

Q And would the space between the casing and the plastic coated tubing be filled with an inert fluid?

A Yes, it would.

Q And would you maintain at the surface such monitoring type system as the Commission might require to determine leakage?

A Yes.

Q Now, where will the water for this flood come from?

A The water source is Capitan Reef and it's supplied by Continental as operator of the South Eunice Unit.

Q At what rate do you initially intend or anticipage injecting this water?

A We anticipate an injection rate of from 200 to 400 barrels a day.

Q Will it be injected under pressure or gravity?

A Yes, we expect that eventually it will require pressure to inject.

Q All right. I refer youto what has been marked as TP Exhibit No. 4 and ask you to say what it is and show the information set out there?

A Exhibit No. 4 is the wellbore sketch of producing Well No. 44. It indicates that this well has 8-5/8th inch surface casing at 328 feet cemented with 300 sacks of

cement which was circulated to the surface and it indicates 5-1/2 inch production casing at 3800 feet cemented with 250 sacks of cement with top of the cement at 2785 feet. It indicates our present perforations in two zones from 3700 feet to 3750 feet and the locations of our proposed Jalmat perforations, two zones from 3628 feet to 3658 feet.

Q And through what type of tubing is this well producing at this time?

A It's producing through 2-3/8th inch tubing with seating nipple at 3700 feet.

Q All right. Turn to TP Exhibit No. 5 and give the same type of information for this Exhibit as the prior one.

A Exhibit No. 5 is a wellbore sketch of producing Well No. 45. It indicates that this well has 9-5/8th inch surface casing set at 315 feet cemented with 300 sacks. The cement was circulated to the surface. It indicates 7 inch production casing at 3799 feet cemented with 250 sacks of cement. The top of the cement is at 2315 feet. This sketch indicates our present perforations in two zones of the Langlie-Mattix from 3706 to 3750 feet; it indicates the locations of our proposed Jalmat perforations

in two zones from 3636 to 3668 feet; it indicates we're presently producing through 2-3/8th inch tubing at 3710 feet.

Q All right. Now I refer you to TP Exhibit No. 6 and give the same information on it.

A Exhibit No. 6 is a wellbore sketch of Well No. 87. This sketch indicates that the well has 9-5/8th inch surface casing at 316 feet cemented with 300 sacks. The cement was circulated to the surface. It indicates 7 inch casing set at 3777 feet with 250 sacks of cement. The top of the cement is 2360 feet. It is indicated that originally this well was perforated at 3763 feet to 3768 feet but these perforations were squeezed off with 250 sacks of cement and the well is presently perforated at two intervals from 3646 feet to 3675 feet. This sketch also indicates that the well is producing through 2-7/8 inch tubing on a tension anchor with the seating nipple at 2300 feet.

Q Now, this well is producing from the Jalmat Pool, is it not?

A Correct.

Q And Wells 44 and 45 are producing from the Langlie-Mattix?

A Correct.

Q And unless the downhole commingling of the injection water in Well 42 and the commingling of production down in the wellbore in Wells 44, 45 and 87 are authorized, you are abandoning your plans to, at this time, open and flood the Jalmat Pool, is that correct?

A Correct.

Q Therefore, unless it were approved, this Well would not be affected by your present amended request which would only include the Langlie-Mattix?

A Correct.

Q All right. Now I refer you to what has been marked as TP Exhibit No. 7 and ask you what that is?

A Exhibit No. 7 is a copy of the well log of producing Well No. 44. Indicated on this log again is the location of the estimated oil-water contact at 150 feet below sea level, indicated by the dashed line. Also indicated is the top of the Queen formation at the bottom of the log at 3780 feet, and 100 feet above this is indicated the statutory limits of the Jalmat and Langlie-Mattix Pool at 3680 feet. Also indicated on this log is the present perforations in the Langlie-Mattix interval from 3700 to 3750 feet and also the location of the proposed Jalmat perforations two zones from 3628 to 3658 feet.

Q All right. Now refer to what has been identified as TP Exhibit No. 8 and explain that Exhibit?

A Exhibit 8 is a copy of the well log of producing Well No. 45. Again, indicated on this log is the location of the estimated gas-oil contact at 150 feet below sea level; the top of the Queen is indicated at 3782 feet and 100 feet above this point is indicated the statutory limit of the Jalmat and Langlie-Mattix intervals at 3682 feet. Also indicated are locations of the present Langlie-Mattix perforations from 3706 to 3750 feet, and the proposed Jalmat perforations are also indicated from 3636 feet to 3668 feet, two intervals.

Q Now go to TP Exhibit No. 9 and explain it?

A Exhibit No. 9 is a copy of the log of producing Well No. 87. Indicated on this log is again the estimated gas-oil contact at 150 feet below sea level, the estimated statutory limits of the Jalmat and Langlie-Mattix Pool is indicated at 3698 feet. Indicated on this log is original perforations from 3763 to 3768 feet, which were squeezed off. These perforations have produced water and the well was subsequently completed in the present perforations indicated that 3646 to 3675 feet.

Q At the present time, if the Commission approves

your amended request, you do not have plans for additional perforations in the Langlie-Mattix Pool, is that correct?

A Not at this time, no. It was indicated to be water production.

Q Now, do you have the figures on the cumulative production from these wells and present production?

A Yes. Cumulative production up to April 1st, '74, has been: Well No. 42, 98,268 barrels, Well No. 44, 98,241 barrels, Well No. 45, 85,458 barrels, and all three of these Wells have produced only from the Langlie-Mattix Pool. Well No. 87, however, has produced 59,463 barrels from the Jalmat Oil Pool. The latest well tests indicate Well No. 42 to have a capacity of 3 barrels of oil, 8 barrels of water and 31 mcf gas per day. Well No. 44 produces 8 barrels of oil, 40 barrels of water, 88 mcf gas per day. Well No. 45 produces 5 barrels of oil, 8 barrels of water 56 mcf gas per day. Well No. 87, from the Jalmat interval, produces 12 barrels of oil, 410 barrels of water and 46 mcf gas per day.

Q These wells are now approaching their economic limitations of continuation and are getting into stripper stage, are they not?

A That is correct.

Q All right. Now I want to refer you back to TP's Exhibit No. 1. Now your Lease which is State "A" Account 1 is all a State lease and there is no variation in ownership between the two zones or pools, the Jalmat and the Langlie-Mattix, is that correct?

A That's correct.

Q Now, this South Eunice Unit which you referred to previously, that is the Unit which has been approved by this Commission, has it not?

A That is correct.

Q Do you know the intervals covered by that Unit Agreement?

A Yes. The unitized interval for the South Eunice Unit is all the formation from the base of the Queen to a point 232 feet above the top of the Queen formation.

Q And is that interval, does that cover the proposed and present perforations in the Jalmat and Langlie-Mattix Pools in your Application?

A Yes. This unitized interval covers the interval we propose to flood.

Q Do you know whether the production from the Jalmat and the Langlie-Mattix in the South Eunice Unit

are commingled in the wellbore?

A Yes, I understand that production from the majority of the wells is commingled downhole.

Q And where did you get your information?

A Through conversations with Continental Engineers.

Q And where else? Have you checked any statistical reports on production?

A Okay. Well, as we have covered before, the unitized interval overlaps, covers, the Langlie-Mattix interval and overlaps into the Jalmat, and all proration and production reports are carried in the South Eunice field which is correlative to the Langlie-Mattix interval.

Q Now--

A (Interrupting) With no production carried as to the Jalmat production.

Q (Continuing) From your three wells being 44, well actually at this point, 42, 44, 45, and 87, is production from those four wells being commingled at the surface at this time?

A Yes, production is commingled at the surface and TP has authorization to do so.

Q Have you entered into or in the process of negotiating lease-line agreements with Continental and

Atlantic?

A Yes. Texas Pacific has entered into a three-party-cooperative lease-line agreement with the South Eunice Unit and with the Seven-Rivers Queen Unit. This Agreement states in essence that, in order to balance the flood across the lease line, Continental, as operator of the South Eunice Unit, will convert Well 62 for injection; Atlantic Richfield, as operator of the Seven-Rivers Queen Unit, will convert Well No. 49, and Texas Pacific will convert Well No. 42 on our State "A" Account 1 Lease.

Q Let me recap your position once more. It's your present position, is it not, that unless you are authorized to commingle the water for injection into the Jalmat and Langlie-Mattix Pools and are authorized to commingle in the wellbore production from the Langlie-Mattix and Jalmat Pools, that you will abandon your request for flooding of the Jalmat Pool and restrict it to the Langlie-Mattix?

A That is correct.

Q Now, in your opinion, will the approval of your Application prevent waste from premature abandonment of wells and also protect the correlative rights and let you acquire your fair share of the oil from these two pools?

A Yes, it will.

Q Were Exhibits 1 through 9 prepared by you or under your supervision and direction?

A Yes.

MR. RUSSELL: Mr. Examiner, I offer Exhibits 1 through 9 into evidence at this time.

MR. STAMETS: These Exhibits will be admitted into the record.

(Whereupon, Applicant's Exhibits Nos. 1 through 9 were admitted into evidence.)

MR. RUSSELL: I have nothing further of this Witness.

CROSS EXAMINATION

BY MR. STAMETS:

Q Mr. Wicke, do you have any casings at the Jalmat zone in the 44 and 45 Wells that are productive?

A I certainly anticipate that they would be productive. First of all they produced in Well No. 87 and they look comparative on the logs of the other wells and they fall below what is recognized as gas-oil contact for this field.

Q Mr. Wicke, most times when downhole commingling is authorized there is some formula set out for accounting for the production so that a portion of the production, in

this case, would be assigned to the Jalmat Oil Pool and another portion of it would be assigned to the Langlie-Mattix Oil Pool. You have not proposed that here. Is there any reasonable way that that could be done?

A The best way would be to base it on a net-pay relationship for the two zones.

Q The Langlie-Mattix zone has been subject to drainage for some time; the Jalmat zone and these two Wells, 44 and 45,has not been drained, at least as much; do you think that that would be a fair way to work that out at this time, with one zone being drained and the other zone not being drained?

A I think it is the best way we have to go by at this point.

Q Would say a 30 day or 60 day production test after perforation of the Jalmat zone would maybe give you a little bit better information?

A Possibly, yes.

Q If an accounting of production from the two separate zones would be required, would Texas Pacific be willing to go along with that and flood both zones?

A By downhole commingling?

Q Yes?

A Yes.

Q Now, you show injection wells in the Continental South Eunice Unit and Arco Seven-Rivers Queen Unit. To your knowledge, are any of these injection wells off-setting your property, one at two locations injecting into the Jalmat oil zone as well as the Langlie-Mattix oil zone?

A I know specifically Well No. 62, which is the direct off-set of Well No. 44, is, and I understand, although I don't have any direct knowledge, the majority of the wells, both producing and injection wells in this Unit, are open to both zones, and they had been throughout the primary production.

Q Is this possibly in an old area where the zones had been commingled before the pools were established as they are today?

A It is possible but I really don't know when most of these wells were completed, myself.

Q Our records would reflect that.

A Yes.

Q Do you plan to conduct any injectivity tests to see what the Jalmat zone and the Langlie-Mattix zone might be taking in there?

A We would run periodic tracer surveys.

Q And that would give you a rough idea?

A Correct.

Q You discussed things that you would do to try and insure that there was no leak in the tubing or the packer or the casing on the injection well. Will you have people in the field who will be inspecting these injection wells on a regular basis?

A Yes, sir.

Q And would they report any leakage from the well or around the well to the appropriate District Office?

A Yes, they would.

Q I would like to refer to your Exhibit No. 6, Well No. 87? I note that the tubing is set at 2300 feet; the uppermost perforation is 3646 feet; that's about 1300 feet from the base of the tubing to the perforations which is considerably more than the minimum set out in the Commission Rules and Regulations. Has a tubing exception been applied for on that well and granted?

A I don't know.

Q Do you know why the tubing is that far above perforations?

A Well, as the well test indicates, this well is producing 410 barrels of water a day, and I would guess

that this area we're close to the reef where some of the Jalmat wells have experienced or have produced under water drive mechanism. This well has a high water level and lowering the tubing would possibly only increase water production, although I have no direct knowledge of what the situation is.

Q Can you efficiently produce this well under waterflood conditions with the tubing that high?

A I don't know, it would have to be looked into. We generally like to set the tubing below the perforations where possible.

Q I would point out at this time then that if this is where you intend to leave the tubing upon completion you should request an exception to the tubing requirements of the Rules and Regulations.

MR. STAMETS: Are there any other questions of the Witness?

MR. RUSSELL: I have nothing further, Mr. Examiner.

MR. STAMETS: He may be excused. Is there anything further in this Case? We will take the Case under advisement.

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

I, RICHARD L. NYE, Court Reporter, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me, and the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.

Richard L. Nye
RICHARD L. NYE, Court Reporter

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 5258, heard by me on 6-19, 1974.

Richard L. Stamets, Examiner
New Mexico Oil Conservation Commission

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