BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
SEPTEMBER 30, 1959.

IN THE MATTER OF:

Application of El Paso Natural Gas Company for an exception to the overproduction shut-in provisions of Order R-520, as amended by Order R-967, for two wells in the Jalmat Gas Pool. Applicant, in the above-styled cause, seeks an order allowing its E. J. Wells Lease Well No. 13, Unit L, Section 5, and its Wells B-4 Lease Well No. 1, Unit D, Section 4, both in Township 25 South, Range 37 East, Jalmat Gas pool, Lea County, New Mexico, to compensate for their over-produced status without being completely shut-in in order to prevent possible waste.

CASE NO. 1777

BEFORE:

Mr. Daniel S. Nutter, Examiner

TRANSCRIPT OF PROCEEDINGS

MR. NUTTER: The hearing will come to order, please. We will take next case #1777.

MR. PAYNE: Case Number 1777. Application of El Paso Natural Gas Company for an exception to the overproduction shut-in provisions of Order R-520, as amended by Order R-967, for two wells in the Jalmat Gas Pool.

MR. HANNAHS: Fred Hannahs, Seth, Montgomery, Federici, and Andrews, Santa Fe, representing El Paso Natural Gas Company, the applicant. Garrett Whitworth of El Paso who will make the interrogation.

MR. WHITWORTH: We have one witness to be sworn, Mr.

Dave Rainey.

(Witness sworn.)

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D A V I D H. R A I N E Y, a witness called by and on behalf of the Applicant, being first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. WHITWORTH:

Q Will you state your name, and by whom and in what capacity you are employed, Mr. Rainey?

A David H. Rainey, administrative assistant in the Proration Department for El Paso Natural Gas Company.

Q Are you familiar with El Paso's application in this case, and the wells involved?

A Yes, sir, I am.

Q Where are these wells located, Mr. Rainey?

A Both of these wells are located in the Jalmat Gas Pool. The first one is our Wells Federal Number 17, located in Unit L of Section 5, 25 South, 37 East; and our Wells B-4 Number 1, which is located in Unit D of Section 4, 25 South, 37 East.

Q Now, prior to proceeding with the rest of the testimony, have you previously testified before this Commission as an expert proration engineer?

A Yes, sir.

MR. WHITWORTH: We ask that the witness' qualifications

as an expert proration engineer be accepted.

MR. NUTTER: They are accepted. Proceed.

Q (By Mr. Whitworth) Mr. Rainey, would you describe to the Examiner the condition of these two wells at the present time?

A Both of these wells are in substantially overproduced condition due to the fact that for a considerable period of time they were classified as marginal; during that period of time they were produced essentially 100 percent of the time, and in July I believe, in June or July of 1959, the wells were reclassified to non-marginal, retroactive to July 1st, 1958, and their allowable and status corrected accordingly. As a result, as I stated previously, they are considerably overproduced. The Wells B-4 Number 1 had a net allowable in September 1959 of 75,200 MCF. The well B -- excuse me -- the Wells Number 13 had a net allowable for September 1959 of 69,978 MCF. Excuse me, that's a -- it is a negative allowable figure, I stated a minus figure in each case.

Based on the last six months' allowables which have been granted to each of these wells, and taking a rough approximation as an average, the Wells B-4 Number 1 is from 12 to 15 months overproduced, and the Wells Number 13 is from 16 to 18 months overproduced. That is the net overproduction, cumulative overproduction. Both of these wells are presently tied into our intermediate gathering system at approximately 250 pounds.

The Wells Number 13 is at the present time logged off and will not produce at all. The Wells B-4 Number 1 has an accumulation

of liquids in the well bore and has a paraffin plug at approximately 1678 feet from the surface, and we were unable to obtain the exact fluid level below that paraffin plug. However, there is apparently enough permeability, if you want to call it that, in that paraffin plug that that well will produce very small quantities. However, we are afraid that if it is shut off any longer, it will log off completely too.

Q Mr. Rainey, do you have any opinion as to the cause of the condition of these wells?

A I'm afraid I don't understand your question.

Q Why are the wells in the logged off condition?

A These wells, at the time we were advised that they were going to be reclassified, were severely curtailed and the Wells B-4 Number 1 was essentially shut in on May 8th, 1959; produced for a period of about two days in June of 1959; to obtain a G. P. M. settlement test on the well, during July and August it was produced for approximately one day in each month, in accordance with our practice of trying to obtain at least one day's production per month from our wells: In September 1959 the well was also on for two and a half to three days to obtain the quarterly G. P. M. settlement test on it. The Wells Number 13 was shut in on June 5th, 1959, and a settlement test was obtained during the month of June, which the well was on for about three days; since that time the well has been completely logged off and unable to produce.

Q Would you say that because these wells have been shut in in conformance with Rule 520 as amended by Rule 967 of the Rules and Regulations of New Mexico Commission, would you say that is the reason that the wells are in the present condition?

A Yes, sir.

Q How long have the wells been in that condition, Mr. Rainey?

A Well, as I just stated, the B-4 Number 1 has been essentially shut in since the 8th of May, and the Wells Number 13 nas been shut in since June 5th, just a very short period of production in each one of the wells.

Q Now,do you know when these wells were reclassified as non-marginal?

A Yes, sir, they were reclassified as non-marginal, as I recall, in June, May or June of this year, with the classification effective retroactive to July 1st, 1958.

Q Is that the reason for their overproduction status?

A Well, that's partly the cause of their overproduction. The wells, as I stated previously, were classified as marginal sometime prior to July 1958, and from that time until June or July of 1959, were produced essentially all the time.

When the retroactive classification was made on the basis of a deliverability formula, it was determined that the wells were capable of producing considerably in excess of their calculated allowable under the deliverability formula, whereas in truth they

had been marginal under the old acreage formula in existence in the Jalmat Pool prior to July 1st, 1958.

Q Now, what remedial efforts have been made with respect to these two wells?

A First, we ran a bomb, a bottom hole pressure bomb on each well in an effort to determine the fluid level. In Wells Number 13 the fluid level was determined to be at 1730 feet from the surface; the shut-in surface pressure was 140.2 P.S.I.A.; and bottom hole pressure obtained from the bomb was 633.2 P.S.I.A. On the Wells B-4 Number 1 the bomb was ran to a depth of 1678 feet and at that point it encountered a paraffin plug, that I mentioned previously, and was unable to penetrate it. It is my understanding from talking to personnel that they broke two paraffin plugs because the bomb stopped when they went through the hole, but they were unable to penetrate that hole.

On the B-4 Number 1, we last week went out and blew the well through a 4-inch manifold into the atmosphere, and in five minutes the pressure was reduced to 20 pounds on the casing because -- excuse me, on the tubing, and the casing pressure went from 590 pounds to 545 pounds in five minutes. We continued to blow the well, and after another 20 minutes, the tubing pressure remained at 20 pounds, and the casing pressure had dropped off to 395 pounds. At that point they apparently stabilized in their pressure, there was no further reduction. However, we didn't flow the thing any extended period of time and apparently that paraffin bridge was

restricting the tubing and wouldn't equalize. It was an effective bridge there to a certain extent, and the volume of gas was not sufficient to unload any fluid in that paraffin plug up the tubing.

The Wells Number 13 had a tubing pressure of 190 P.S.I.G., with a casing pressure of 475 P.S.I.G. The tubing was opened to the atmosphere in an effort to unload it; the pressure on the casing was not sufficient to unload the volume of liquid in the well bore. We then, with an equalizer, backed the line pressure up, which at that time was about, oh, 225 pounds, I believe, backed the line pressure up on the casing in an effort with that additional pressure to unload the tubing, and it still would not unload. We then reversed the thing and put the additional pressure on the tubing in an effort to unload the casing, and the well is just flat dead.

Q Which well is that now?

A Number 13, that is completely dead.

Q In your opinion, what would it take to return this well to production?

A Well, at the present time we have some plans to lay a short temporary line from our high pressure system, which is fairly close to this well, and we are going to try to pressure up on the casing with an additional 600 pounds, and see if we can unload the tubing strings with that, and possibly rock the thing back and forth, putting that pressure on the casing and tubing, and see if it can blow clear. If that won't do it, it will be

necessary to move a swabbing unit and swab it off before obtaining production.

Q Do you have any data, Mr. Rainey, reflecting any history of deliverability of these two wells?

A Yes, sir, both of these wells have continuously shown the fluid condition. The Wells B-4 Number 1 was completed originally as an oil well in 1939, and was depleted and plugged back in 1948 to the Jalmat gas zone; and by communitization and operating agreement we obtained this well from Western States Petroleum Corporation, which is now Hamilton Oil Company and Indiana Petroleum. Prior to the time that this well was hooked into the intermediate system, which was December 9, 1958, it had a continuous history of fluid trouble. We managed to maintain production on it sufficiently to keep it unloaded, but it did display fluids every time we blew it.

The well Number 13 logged off quite frequently on the high pressure system. It was obtained from Anderson-Pritchard under an operating agreement whereby we took over gas wells from them after payout and we took over operation of this particular well on March 20th, 1955. This well is also an old one, it was completed in 1947, I believe. Both of these wells are pretty old, and fairly well depleted.

We have -- Exhibit 1 is the 1959 deliverability test on the Wells Number 13, and if you will notice the shut-in pressure history, it will be noted that the shut-in pressure dropped off both

fromthe 24-hours to the 48-hour shut-in, and from the 48 to the 72-hour shut-in, indicating the press of fluid in this well. I might also add that there was a test taken by Anderson-Pritchard on this well as far back as 1951, which indicated pretty conclusively the press of fluid. They took a 24-hour shut-in in April of 1951 and got a shut-in well head pressure of 856 P.S.I.G. In October of 1951, after a 146-day shut-in - now why the well was shut in, I don't know but that was the indication on the test report - the well indicated only 237 pounds P.S.I.G. So it's had a long history of fluid problems.

Now, to pass on to Exhibit 2-A and 2-B, which are the 1958 and 1959 tests, State deliverability tests on the Wells B-4 Number 1, between the 24 and 48-hour shut-in on the 1958 test the well's pressure increased; however, on the 48 to 72-hour shut-in, it decreased from 663 to 68.2. On the 1959 State deliverability test, the well dropped off 1 pound each 24 hours from the 24-hour shut-in to the 72-hour shut-in, which is general evidence of fluid. Apparently this well does not log up very rapidly, as evidenced by that fairly slight drop in pressure. However, it is our opinion that if the well is shut in for any extended period of time, it may log off and may become as bad a condition as well Number 13.

Q What is your opinion as to what would be necessary to maintain these wells as producers?

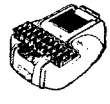
A In the letter that we filed as an application in this case, and I'll have to confess I have not seen the formal applica-

tion on the thing yet, we requested that we be permitted to produce the B-4 Number 1 at a rate not to exceed 25 percent of its monthly allowable; and the Wells Number 13 at not to exceed 50 percent of its monthly allowable. I'm in accord with the testimony that Mr. Queen gave in the previous case, that it is pretty hard to pick a definite percentage before you test these wells to some extent.

I think I am prepared to state that we feel the B-4 Number 1 can probably remain unloaded at the rate of 25 percent of the allowable that it has been receiving in the past few months; however, if we have any real low months like May 1959, where the well had an allowable, calculated allowable of 673 MCF, it is conceivable that a volume of that size would not be sufficient to keep the well unloaded, and we would request, if it is necessary to make a formal amendment to the application, I would like to do so at this time.

We would request that we be permitted to test these wells for a short period of time to determine what their optimum rate would be.

Now, on this Wells Number 13, we have no idea what the rate would be; it is logged off completely at the present time, and we don't know what it is going to take to unload it, or what it is going to take to keep it unloaded, because prior to July 1959 it had been on continuous production, which of course was sufficient to keep it unloaded. It may be necessary to produce the well at a reduced rate continuously, or we may need to produce the well for



two or three days a month, or two or three days twice a month, or we may even find that the most efficient way to produce the thing is to put an intermitter; but at the present time, in the well's condition, we have no way of knowing what rate it will take to keep that well unloaded..

To a lesser degree, we are in the dark on the B-4 Number 1, but as I say, it is capable of a producing rate now, and if we take that paraffin out and produce it at the rate of something over 25 percent of average allowable for the last six months which would be, oh, approximately a million cubic feet per month, why it would keep it unloaded.

Q To your knowledge, does El Paso have any other wells that are in a similar status at this time?

A Well, several other wells that are shut in for being more than six times overproduced, however, the liquid problem is not particularly acute, and we have not requested relief on those wells because we don't think it is, the liquid is sufficient to permanently damage the well. On these wells, if the liquid stands against the face of the producing zone for any extended period of time, it is quite possible it might plug those wells and lose them completely.

Q Is it your opinion that if an exception to the rule is not granted, or some relief granted to allow these wells to produce, that it is likely that it will result in permanent loss of the wells, is that right?

A That is right; if not permanent loss, very definitely damage to the well. Until such a thing has happened, it is pretty hard to determine just exactly how much damage, or whether you would actually lose a well or not.

Q In your opinion, Mr. Rainey, would the granting of this application prejudice or violate any correlative rights, to your knowledge?

A No, sir, we are not requesting that the overproduction be wiped out, or that we be granted any special allowable to take care of the old production. We are merely requesting, in accordance with the existing rules in the field, permission to make up overproduction at a lesser rate than absolute shut-in.

Q Is it your opinion that to grant relief requested by El Paso in this case, would have the effect of preventing waste?

A Yes, sir, unquestionably; as I previously stated, it is highly probable that these wells will be permanently damaged, if not absolutely lost, through extensive periods of shut-in because they are not, they are not real pool wells, but at the same time they are not extra good wells, and if we had to go in and rework the well and refrack it to bring it back to production, if it has plugged the formation sufficiently with fluids, it is possible that the cost of that reworking job would not be justified by the potential deliverability of these wells, and there would be premature abandonment of these wells.

Q Now, if the wells are prematurely abandoned, would you say that there would be waste to the whole pool, not on just these wells?

A It is quite possible. There again that's a little bit argumentative, but it is highly probable that all the gas that lies under the acreage dedicated to these wells would not be produced by some offsetting wells, so it would be lost to the pool in general.

Q Will you state to the Examiner the conditions under which El Paso's Exhibits in this case have been prepared?

A These exhibits were furnished to me by our gas engineering department in Jal, and are not exact copies of the deliverability tests that were filed with the Commission, because as you'll note, they have the El Paso heading on the test form. However, it is the identical information that was filed with the Commission, and should be on file in the Commission office.

MR. WHITWORTH: We ask that El Paso's Exhibits 1 and 2-A and 2-B be admitted into evidence.

MR. NUTTER: El Paso's Exhibits 1, and 2-A and 2-B will be entered into evidence.

Q (By Mr. Whitworth) Do you have anything else you would like to add to your testimony, Mr. Rainey?

A No, sir, I believe not.

MR. WHITWORTH: That's all I have.

CROSS EXAMINATION

BY MR. PAYNE:

Q Mr.Rainey, are both of these wells single completions?

A Yes, sir.

Q And are both of them tubed?

A Yes, sir, as are all our wells, I might add.

Q How many wells do you have in the Jalmat?

A I have not the slightest idea; I can counsel with Mr. Balls and find out, I wouldn't hazard a guess.

Q Do both of these wells have blowdown strings?

A No, sir, they have manifold so that we can blow them into pits.

Q Now, you have had this exception for production one month, a month?

A We have taken exceptions to take G. P. M. tests.

Q You feel that this relatively short period of time of shut-in has not caused material damage to the well, or the reservoir?

A I don't know; the Number 13 is completely logged off now, and I don't know what it is going to take to return it to production, and it is highly possible it won't be able to produce at the rate it was producing before it logged off. That is a question, as I say, you can't answer until you get into it and find out.

Q Why did you shut the well in?

A In an effort to conform with the rules and regulations of the Commission. These wells had not logged off since being connected into our intermediate system; they had had a history of liquid problems when we were on the high pressure system.

The Number 13 has been on the intermediate system a number of years and has been logged periodically when it has been shut in. The B-4 Number 1 was only connected to the intermediate system in December '58. Since that time we have had no additional problems because they were marginal wells.

Q The Commission has not issued a shut-in order on either of these wells, has it?

A Not a formal order, however, the wells are more than six times overproduced, and in conformance with the rules and regulations, we cut them back.

Q Now, this 25 and 50 percent of monthly allowable, I believe your application says for the preceding 6-month period; do you mean the preceding 6-month proration period, or do you mean the preceding --

A Well, as far as we are concerned, it is actually immaterial; we are trying to arrive at some average allowable figure to take a realistic look at how much production it would take. As I stated in my direct testimony, I would like at this time, if permitted to do so, to actually amend that thing to allow us to determine what rate it is going to take, and we can notify

the Santa Fe office, or the Hobbs office, of the Commission, what rate we feel it would be necessary to maintain those wells on production.

Q Assuming that the Commission sees fit to grant your application, would you have any objection to an order providing that the one could produce 25 percent, and the other 50 percent, and the order contain a provision for administrative approval for a higher rate, if you satisfied the secretary-director that the optimum rate was somewhat higher than these figures?

A No, we would have no objection to that; that in essence is really what we are asking for. Our best estimate of the picture right now is that 25 percent on the B-4 Number 1, and 50 percent on the other would probably do; until we test, we have no way of knowing. It is probable a lesser rate would do it, and we have no objection to reducing that rate, because as has been previously stated here this morning, it is to the operator's benefit to get a well in balance as rapidly as possible. So if we can get them on production by producing 10 percent of the allowable, we would be glad to do so.

Q The only difficulty would be that you could only produce at 25 and 50 percent?

A Well, that's true; however, if you have an administrative means of granting volumes in excess of that, it would appear to me that it would be relatively simple; one day's notice, or two day's notice, discussion with the secretary-director, to be

permitted to increase that rate somewhat, so that we can get it on the line.

Q There certainly would be no reason to notify offset operators, is there?

A I can see no particular need to do so, because as I say, we are not asking for relief for making up the overproduction, we are just requesting under the rules, permission to do it at a lesser rate rather than absolutely shutting them in.

MR. NUTTER: Any other questions of Mr. Rainey?

QUESTIONS BY MR. NUTTER:

Q Mr. Rainey, what actual evidence is there that this B-4 Number 1 has a liquid problem?

A Well, I never heard of a dry gas well getting a paraffin plug in it. It would seem pretty conclusive since there is paraffin in the well there, there must be some liquid in the well bore.

Q Is it rather unusual for paraffin to form at a depth of 1678?

A 1678. Apparently the well has been making liquid on production, but in not sufficient quantities to keep, I mean, to keep it from producing because, as I have previously stated, we have been producing these wells as marginal wells at a fairly high rate of production; but the paraffin has apparently accumulated, over a period of time and has now gotten to a point where it's got a plug where the bomb won't go through.

Q Has it been established that this was paraffin?

A Yes, sir, there was paraffin on the bomb when it was pulled out.

Q This could have been from those two paraffin plugs that the bomb had there, wouldn't it?

A Well, it was generally concluded that if there were paraffin plugs up above, it was completely conclusive there was a paraffin plug below; I'm also advised that they, the bombardier penetrated the thing, they could tell by the wire line measurement that it was penetrating into something, and if it was a bridge in the casing or the tubing, or that there was some sand in there, it is pretty unlikely that the bomb would have penetrated any considerable distance into it.

MR. PAYNE: You would find out very shortly whether you had a water problem?

A I'm reasonably certain, particularly if the application is granted, we intend to go in with scrapers and clean that well out. It is highly possible even when this 1959 deliverability test was taken, the well was on restricted production because of the paraffin problem.

Q (By Mr. Nutter) Is this what they said in their explanation on this test, that they were unable to obtain a 10 percent drawdown due to restriction on the chokes, was that also paraffin?

A I don't know, factually. I'm just unable to say. It might have been paraffin, and it might not have been, I don't

know.

Q On this Exhibit Number 2-A, this first statement that is given on that shut-in 1959, could that be 1958?

A Excuse me. Yes, sir, it must be.

Q This is a 1958?

A Yes,sir, it is an additional '58 test, just a typographical error when we made up these exhibits.

Q Now has any estimation been made of the actual amount of liquid that one of these wells makes? You heard the Continental witness testify that on a blowdown it recovered 4 barrels of fluid, or 12 barrels of liquid.

A No, sir, we have not because as I stated, these wells have been on the line essentially all the time that they were shut-in because of this excessive overproduction, and the rate of production has been sufficient to keep them unloaded, and apparently this liquid has blown over into the line; we have no measurement of the actual volume that was produced any given day. I might point out that this Number 13 that has the liquid level at 1730, I believe it was, that the well is perforated from 3,000 feet to 3,023 feet, and from 3,048 feet to 3,080 feet, with a plugback total depth of 3246, so there is approximately 1500 feet of fluid in that hole right now.

Now, I realize that in the tubing string and casing string, 1500 feet of fluid is not a substantial quantity of fluid as far as barrels is concerned; nevertheless, it has built up that high

in just a period of about two months.

Q Is the liquid build-up in that well water or hydrocarbon?

A It is water, but I understand there is some water emulsion.

MR. PAYNE: Where are these wells located, in relation to the boundaries of the pool?

A These wells are in the South end of the Jalmat Pool, essentially the South end of the Jalmat Pool, about in the central portion of the South end of the pool. That, as you know, the South end of that pool is the older area of the pool, and there is quite a bit of water problem generally throughout the South end of that pool.

MR. PAYNE: Much more so than the North end, is not that right?

A Yes, sir, that's my understanding.

MR.NUTTER: Any further questions of Mr. Rainey?

(No response.)

MR.NUTTER: The witness may be excused. Do you have anything further, Mr. Whitworth?

MR. WHITWORTH: No, sir, that's all we have.

MR.NUTTER: Does anyone have anything further for Case 1777? We will take this case under advisement, and recess the hearing until 1:30.

I N D E X

NUMBER	EXHIBIT	FOR IDENTIFICATION	OFFERED	ACCEPTED
App.#1	Deliverability Test	8	13	13
App.#2-A	1958 " "	9	13	13
App.#2-B	1959 " "	9	13	13

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

I, J. A. TRUJILLO, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Proceedings before the New Mexico Oil Conservation Commission was reported by me in stenotype and reduced to typewritten transcript by me and/or under my personal supervision, and that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal, this, the 21st day of October, 1959, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Joseph A. Trujillo
NOTARY PUBLIC.

My Commission Expires:

October 5, 1960.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 1777, heard by me on 9-30, 1959.

....., Examiner
New Mexico Oil Conservation Commission