

DEARNLEY-MEIER REPORTING SERVICE, Inc.

PHONE CH 3-6691

ALBUQUERQUE, NEW MEXICO

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

IN THE MATTER OF:

CASE 1909: Application of Pan American Petroleum Corporation for a 386-acre non-standard gas unit in the Dakota Producing Interval. Applicant, in the above-styled cause, seeks the establishment of a 386-acre non-standard gas unit in the Dakota Producing Interval consisting of all of partial Section 7 and the W/2 of partial Section 8, Township 28 North, Range 10 West, San Juan County, New Mexico, said unit to be dedicated to the J. F. Day "F" Well No. 1, to be located in the E/2 of said partial Section 7.

State Conservation Commission
Hearing Room
State Capitol Building
Santa Fe, New Mexico
February 25, 1960

BEFORE:

Elvis A. Utz, Examiner

TRANSCRIPT OF HEARING

MR. UTZ: Case 1909.

MR. FLINT: Case 1909. Application of Pan American Petroleum Corporation for a 386-acre non-standard gas unit in the Dakota Producing Interval.

MR. NEWMAN: Kirk Newman of Atwood and Malone, Roswell, New Mexico, and Guy Buell of Fort Worth, Texas, a member of the



Texas bar, appearing on behalf of the applicant.

(Witness sworn.)

MR. BUELL: We have one witness, Mr. Marshall.

CHARLES R. MARSHALL

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

DIRECT EXAMINATION

BY MR. BUELL:

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

A Charles R. Marshall. I'm employed by Pan American Petroleum Corporation in their Farmington area offices.

Q Now, that area office has supervision of Pan American's operations in the area of the Angel Peak-Dakota Pool, does it not?

A It does.

Q Mr. Marshall, have you testified before prior Commission hearings?

A Yes, sir.

Q Are your qualifications as a petroleum engineer a matter of public record?

A Yes, sir.

MR. BUELL: Any questions, Mr. Examiner?

MR. UTZ: No, sir.

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MR. BUELL: At the outset, Mr. Examiner, I might point out for the record that the well which we intend to drill on this proposed unit in our application was called the Day F No. 1. Since we'll call this unit the Davis Gas Unit, we will name the well the Davis Gas Unit No. 1.

A Day.

MR. BUELL: Day all the way through, instead of Davis.

Q (By Mr. Buell) Mr. Marshall, I direct your attention to what has been marked as Pan American's Exhibit Number 1. What is that Exhibit?

A Exhibit 1 is a map of a portion of the San Juan Basin, more particularly, the area around the Angels Peak-Dakota Field.

Q Do you have the proposed Day gas unit outlined in this Exhibit?

A Yes, the proposed unit is outlined in green.

Q What is the significance of the area outlined in orange?

A These are the field limits as defined by the Commission, horizontal field limits as defined by the Commission for the Angels Peak Dakota Field.

Q Do you have the proposed location of the Day Well No. 1 marked on this Exhibit?

A Yes, this well is--proposed well is indicated as a green dot on the Exhibit within the unit. It will be located



eleven hundred and ninety feet from the west line, east line, excuse me, of Section 7, and nine hundred and ninety feet from the south line of Section 7, Township 28 North, Range 10 West.

Q Is that an orthodox location under the Angels Peak-Dakota Pool?

A Yes, it is.

Q What is the significance of the wells that you have colored in red?

A These are wells that are completed in the Dakota formation, wells in the vicinity of the proposed well which are completed in Dakota formation.

Q Will the Day gas unit No. 1 be located within a mile of the well that is currently classified as being in the Angels Peak-Dakota Pool?

A Approximately within one mile, and less than one mile from the presently defined limits of the Angels Peak-Dakota Field.

Q In your opinion, will the Dakota reservoir that the well will be completed in, is it the same Dakota reservoir that the Angels Peak-Dakota wells are producing from?

A Yes, sir.

Q Why is a hearing for approval of this unit necessary, Mr. Marshall?

A The sections which are located along the north Township 28 North, Range 10 West are irregular. It is an irregu-

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larity of the public land survey, and as the Rules which are in effect in this area provide for three hundred twenty acre spacing, three hundred twenty acre unit to consist either of east half, west half, or north half, or south half of the Section, this was not possible in this particular case, and, consequently, a non-standard unit is necessary.

Q Approximately how many acres are in this proposed unit?

A There are three hundred and eighty-five point eight nine exact acres, or approximately three hundred eighty-six acres.

Q All right, sir. Directing your attention to the proposed unit as outlined on Exhibit 1, does it appear to you that the well is located as near the center of the unit as is possible under the Angel Peak-Dakota Pool Rules?

A Yes. To make it an orthodox location under those Rules, it is located as near the center as possible.

Q In your opinion, Mr. Marshall, is all the acreage dedicated to this unit productive of gas from the Dakota formation?

A Yes, by virtue of the production which has been established by the four surrounding wells, they are essentially surrounded. These wells are shown in red. The well in Section 12, 28, 11, was completed in the Dakota and potentialled for forty-nine hundred and six m.c.f. of gas daily. The well in Section 25, of Township 29, Range 11, was completed in the Dakota for a



potential of forty-seven hundred and ninety-one m.c.f. of gas daily. The well in the Northwest, Northeast of the Section 17, 28, 10, was completed in the Dakota for eighty-one hundred seventy-nine m.c.f. gas daily, and the well in the Southwest quarter of 17 was completed in Dakota for forty-four ten m.c.f. of gas daily.

Q It appears pretty conclusive, then, does it not, Mr. Marshall, that all this acreage is productive?

A Yes, sir.

Q Now, you know, do you not, Mr. Marshall, that the Commission, after hearing, found that a well in the Angels Peak-Dakota Pool would effectively drain in excess of three hundred twenty acres?

A Yes, sir.

Q All right, sir. Since this unit will consist of three hundred and eighty-six acres, let me ask you whether or not, in your opinion, a well in this area located on this unit will effectively drain in excess of three hundred eighty-six acres?

A Yes, sir, I believe that it will.

Q I direct your attention now to what has been marked as Pan American's Exhibit No. 2. What is that Exhibit, Mr. Marshall?

A Exhibit 2 is a plot of observed shutin pressures as measured by dead weight test gauge versus time for Pan American's



Day No. 1 located in the Southeast quarter of Section 17, Township 28 North, Range 10 West. These pressures were measured during the period of time that the well was awaiting connection to a gas sales line and the well had only been completed and shutin and had not been produced.

Q You mean to say-- Your southeast quarter or northeast quarter?

A The southwest quarter of 17.

Q Your time scale there, Mr. Marshall, is in days, I notice. At what time does this scale start, the month and day of the year?

A The zero day on this curve is August the 18th, 1959. The last pressure point available was taken October 22, 1959.

Q All right, sir, and this Day E No. 1 well which, let's call it the control well, it was completed, was not connected to a pipe line and did not produce during this interval of time shown on Exhibit 2?

A That is correct. Between the interval of time from zero, and the last pressure point.

Q All right, sir. What do you notice, Mr. Marshall, when you observe the pressure performance as plotted on Exhibit 2?

A It is evident from this plot that this shutin well was experiencing interference as a result of other production in this reservoir.

Q What is the nearest well producing from the Dakota



during this interval of time, Mr. Marshall?

A The nearest producing well was the Sunset International Petroleum Company, which is Federal E Number 1 located in the Northeast quarter of Section 17. This well is twenty-five hundred and fifty feet from the control well.

Q Are both of these wells, the control well and the producing well, both of them colored in red on Exhibit 1?

A Yes, sir.

Q And, do you feel the surface distance between the two--

A Yes, this distance is indicated on the arrow between the two wells.

Q So we know, then, do we not, Mr. Marshall, that we observed interference on the control well and the nearest producing well in the same pool was twenty-five hundred and fifty feet away; is that right?

A That is correct.

Q What is the area of the circled radius of which is twenty-five hundred fifty feet?

A Approximately four hundred sixty-nine acres.

Q Do these data, then, indicate that a well completed in this area of the Angel Peak and Angel Peak-Dakota Pool will effectively drain, then, in excess of three hundred eighty-six acres?

A Yes, this proves that interference is being experienced



at a radius of twenty-five hundred fifty feet, and, consequently, a minute area of four hundred eighty-six acres.

Q Directing your attention to Exhibit No. 1, and, particularly, the row of irregular or partial Sections at the north end of that survey, let me ask you this: Is there any way that a regular proration unit, and I mean standard regular under the pool Rules, could be formed for these series of irregular Sections?

A No, sir, you cannot form a regular unit as defined in either Section through 12.

Q You are faced with one of two things, Mr. Marshall, are you not? You either have a non-standard unit that is under-sized, or you can form a non-standard unit that is over-sized?

A That is correct.

Q And I mean over and under with respect to three hundred twenty acres?

A That is correct. There is three hundred sixty-seven acres in Township 27, Range 25, 6.

Q How much is that less than three twenty?

A Sixty-four acres.

Q And we are approximately sixty-six acres over three hundred twenty in the unit?

A Three hundred-- Sixty-six it would be, sixty-six over the three twenty, yes, sir.

Q If Pan American would form a non-standard unit of



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approximately one hundred sixty acres, being that acreage that we own in this present unit, what would happen to the Southern Union acreage in the western half of Marshall Section 7?

A You mean, if Pan American farmed that which exists of two hundred fifty acres?

Q Two hundred fifty acres.

A It would leave this tract, the west half of Section 7, more or less ~~individing~~ in that it would be difficult to assign it to any other, and since the units to the south would be standard units anyway.

Q It would be an island acreage, would it not, Mr. Marshall?

A Yes.

Q The only way to develop would be to drill a well and complete it on that western portion of the partial Section 7?

A And that half-section, I believe, is in the neighborhood, yes, half-section, one hundred twenty-five to thirty acres.

Q If it would be necessary in order to develop the acreage which we propose to assign to this non-standard unit with two wells instead of one, in your opinion, would that be economic waste?

A Definitely, yes, sir. As I said, the indicated drainage is certainly in excess of three hundred eighty acres, consequently, drilling to a density of less than that would be economic waste.



Q All right, sir. In your opinion, Mr. Marshall, the proposed unit which we have formed, will it fit in with current development in the field and will also lend itself to future development of these irregular or partial sections?

A Yes, sir. To me it is the most logical way to develop these series of Sections in that if this area to the east along this line of narrow Sections is proven production in the future, it will be possible to build a series of units comparable to the one that Pan American is proposing clear across those Sections, and you will come out to where there will be essentially three of these less than quarter Sections in each unit across the Township.

Q Well, more or less in summary, Mr. Marshall, do you feel that approval of this unit as you propose here today will serve conservation as well as protect the correlative rights of all parties or interest?

A Yes, sir, it will.

Q Do you have anything further to add, Mr. Marshall?

A No, sir, I believe not.

MR. BUELL: That's all we have at this time, Mr. Examiner, and I would like to formally offer Pan American's Exhibit 1 and 2.

MR. UTZ: Without objection, they will be accepted.

CROSS-EXAMINATION



BY MR. UTZ:

Q Mr. Marshall, is it not true that the spacing in the Dakota formation in the San Juan Basin is three hundred twenty acres?

A I believe that is correct, yes, sir.

Q If you were to dedicate the partial Section 7 and the west half of the west half of Section 8, how many acres would you have?

A You would have approximately, would be two five eight plus six four, which is--

Q Three two one nine seven?

A Three two one nine five.

Q What would be the objection to dedicating three hundred twenty-one point ninety-five acres to this well?

A Well, sir, in my opinion, it is more desirable if, and where possible, in the case of these irregular surveys which we have in this case, to keep the units on a more or less--~~pro-~~ properties in contact. In other words, if you did what you say, what you suggest, we would have part of Section 8, or part of the west half of Section 8 in one unit, and then, if the other further east proves productive, that part would be in another unit. That, to me, is an undesirable feature of it, further split than it is.

Q Wouldn't it be just as feasible to form units across this top tier of Sections in 28 North on the basis they are near three twenty acres than it is feasible to spacing them to three



hundred eighty acres?

A Well--

Q In other words, that could be divided up into units closer to three hundred twenty acres than three hundred eighty acres, could it not?

A I have not divided it out to see just exactly what it would be left, or how much would be left if we put it on three hundred and twenty acres. Of course, the acreage in each one of these Sections varies, Section 9 does not contain exactly the same acreage as Section 8, but in dividing the three hundred twenty acres, of course, the reason that in my opinion that it is advisable to do that, is to go in line with divisions in the surveys. The reason we didn't assign three hundred twenty-five or three hundred thirty, by having three hundred eighty-six, we could continue in more or less orderly development in accordance with the way the survey exists.

Q Is there any difference in a quarter Section and half Section survey? Those are survey lines, aren't they?

A Yes, sir, that is correct.

Q Who owns the acreage in the east half of Section 8, 9, and 10, do you know?

A The east half of 8, I believe, I do know the east half of 8 is owned by Sunset International, and in regard to Section 9, I'm not sure who owns that Section. Skelly, according to my information right here, and Southern Union the remainder of

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those Sections.

Q Any way you go about dedicating this tier of partial Sections is going to have some communitization of some nature?

A Yes, sir.

MR. UTZ: Any questions of the witness?

MR. FLINT: Yes, sir.

BY MR. FLINT:

Q Mr. Marshall, what size unit is dedicated to the well in the east half of Section 12, 28, 11?

A I believe that in accordance with the dedicated acreage in the form that is filed it is about two hundred fifty-four, two hundred fifty-five. That's Section 12.

Q That's the partial section dedicated to that well?

A Yes.

Q There has been at least one well drilled along this line of partial sections smaller than three twenty spacing?

A There has been three hundred twenty acres dedicated to this well. Now, I don't know, of course, what the operator plans to do or where he plans to, if, in the case of proration, we are integrated or something. It is quite possible that he may desire to assign the additional acreage, but for the present time, there are three hundred fifty-five acres. That is correct.

Q Your proposal is based ~~not so much~~ on the size of the unit as uniform development of that line of irregular sections?

A Yes, we felt---



Q Like going one full partial section and then half the next partial section all the way across so that you will come out even?

A You will come out even with three in each one. As I said before to Mr. Utz' question, I have not figured out as to what other combinations we could use. I'm sure we could split it down finer and come out with other combinations. I don't know what they are. I doubt if we would come out exactly. I would like to add one more point in regard to a question previously asked on this three hundred twenty versus three hundred eighty acre spacing. As we've shown by this information, this interference data, the well will definitely drain three hundred seventy-six acres, and in view of the other complication of this irregular survey, I would like to reiterate my point: That I feel it would be justified to develop these Townships, these narrow sections, on the basis that we propose.

Q You are actually asking here for not only a non-standard unit, but then, exception to the Dakota space Rules?

A Well, sir, in that the non-standard unit is slightly over the tolerance for the spacing that is set in the Dakota. It is a non-standard sized unit so it is an exception to the spacing for this particular case.

MR. UTZ: Any other questions of the witness?

The witness may be excused.

(Witness excused.)



MR. UTZ: Any statement to be made in this case?

MR. BUELL: I would like to say in closing, Mr. Examiner, that these irregular or partial sections do make a complicated problem from the standpoint of unit, and we feel by dedicating an entire partial section and half of another, that it will result in more orderly and uniform development of that northern tier or irregular sections.

MR. UTZ: Case will be taken under advisement.

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C E R T I F I C A T E

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 15th day of March, 1960, 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. 1809, heard by me on Feb 28, 1960.

Thos. A. W., Examiner
 New Mexico Oil Conservation Commission

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