Case No.

841

Application, Transcript,
Small Exhibits, Etc.

CASE 841: (Upon OCC Motion) For revision of limits of Jalmat Gas Pool and Cooper-Jal & Langlie-Mattix Oil Pools (T 24 & 25S, R. 36 & 37E.)

BEFORE THE

Oil Conservation Commission

SANTA FE, NEW MEXICO

IN THE MATTER OF:

CASE NO. 841

TRANSCRIPT OF PROCEEDINGS

ADA DEARNLEY AND ASSOCIATES
COURT REPORTERS
ROOMS 105, 106, 107 EL CORTEZ BUILDING
TELEPHONE 7-9546
ALBUQUERQUE, NEW MEXICO

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
February 17, 1955

IN THE MATTER OF:

The application of the Oil Conservation Commission, upon its own motion, for an order amending or revising the existing vertical and horizontal limits of the Jalmat Gas Pool, the Langlie-Jal Oil Pool, and the Langlie-Mattix Oil Pool to prevent inequities within proration units and to establish rules governing the completion and production of oil wells and gas wells within the area.

Case 611

Applicant, in the above-styled cause, seeks an order extending and/or revising the vertical and horizontal limits of the above-named gas and oil pools in the area of Townships 24 and 25 South, Ranges 36 and 37 East, Lea County, New Mexico.

BEFORE:

Honorable John [illegible], Jr.
Mr. A. L. (Jack) Walker
Mr. [illegible]

[illegible]

Mr. [illegible]: [illegible]

[illegible]

[illegible]

[illegible]

A Yes, sir, I have.

MR. STANLEY : Are his qualifications acceptable?

MR. WALKER : [illegible] have any objections to the witness's qualifications?

Q Have you prepared these exhibits, Mr. Montgomery, that you will introduce?

A Yes, sir, I have, with the exception of the cross-section here which is labeled New Mexico Oil Conservation Commission Stratigraphic Nomenclature Committee, Sheet Two of Ten.

Q But you served on that committee and you are familiar with that cross-section?

A Yes, sir, I did.

Q Would you proceed with your testimony, please?

A This particular area [illegible] has raised difficulty in the classification of the wells [illegible] previous to the time that order R-[illegible] was written, we were on the assumption that the lower part [illegible] Townships 24 and 25 South, Ranges 36 and 37 East, in the area more familiarly known as the [illegible] area was in the [illegible] Formation. I was not aware it was not in the [illegible] Formation until a later date [illegible] R-[illegible] [illegible] of [illegible] [illegible] the production [illegible] [illegible] Oil Conservation [illegible] [illegible] Committee [illegible] [illegible] [illegible] [illegible]

There were at least ten or more [illegible] on the Committee and we oftentimes had ten different picks with ten different tops, but we more or less reached a compromise and picked points which we hope have been correlated throughout the entire area and are now correlative picks.

There is some disagreement among some of these that possibly it isn't the exact top but we feel that they are within a few feet. It was very difficult to correlate the different tops in many of these areas due to the very rapid changes in lithology due to structures and due particularly to the type of environment we have in this area, one which was changing very rapidly in phases and in the transgressing and regressing of the differences during the Guadalupe Period.

We feel that we have made a very successful attempt in correlating this. This particular cross-section here is not meant as an Exhibit but only to show the Commission and the members of the audience how large an area that our work covered and to leave no doubt that we have covered a large area and not isolated our opinion just to the small area in question here today. Exhibit No. [illegible] is a southwest northeast cross-section through [illegible], northeast [illegible]. The cross-section starts out [illegible] 21, 28, [illegible] tops established [illegible] the Commission Committee [illegible]

the best of my ability to correlate in this very difficult area, Amarada Falby No. One which appears on Exhibit One is the same well that appears on Exhibit No. Two, which is one of the cross-sections published by this Committee. The points were correlated from that log.

One will note that the top of the queen in the Amarada Falby No. One was picked at 3619. The top of the Seven Rivers at 3220 and the top of the Yates at 2990. The lower main pay in the Falby Area has been established to be in a queen sand that is in the middle Seven Rivers or anywhere from one hundred to one hundred fifty feet above the top of the queen.

The vertical limits of the Cooper-Jal and Langlie-Mattix Pools which this area falls into is the queen and the lower hundred feet of the Seven Rivers, therefore this pay falls into the Jalmat Gas Pool therefore making the Yates Oil production in the middle Seven Rivers, oil production falling into the Jalmat Gas Pool. The accumulation of oil in the Yates formation appears to be or seems to be a synclinal accumulation. This is partially illustrated by the cross-section coming from [illegible] on the Seven River [illegible] [illegible] in a northerly direction.

Q Would you name the well, please?

[illegible]

occurs [illegible]

[illegible]

a gas pool.

Due to the excellent cementing that has been involved in drilling in this particular area, it is our opinion that we can separate the zones easily and this should be done in order to give the operator two allowables. Many operations have drilled two wells on forty and are presently receiving an allowable for each well. The vertical communication does not exist in this immediate area and this is borne out by drill stem tests from the top of the Yates clear down into the two hundred feet of the queen or the Arrauda Falby No. One.

The drill stem test No. 5 which is in the upper portion of the Seven Rivers and is immediately above the lower accumulation of oil and one hundred feet or so below the Yates accumulation of oil. This particular drill stem test had gas at the surface in forty-five minutes and recovered two hundred twenty feet of heavy gas cut mud. And drill stem test No. 4 which was just above it in the upper part of the Seven Rivers had gas to the surface in two minutes, mud two hours and flowed one million four hundred thousand and recovered one hundred eighty feet of drilling mud. This proves to us that there is no vertical communication in this immediate area.

We have been limited in drawing the borders, that we will propose as the Falby-Yates Oil Pool, to include only the area that is presently developed. There are other areas that the structure map indicates is very favorable to the accumulation of Yates oil but has not been developed. We feel that this Falby area should be designated as a separate pool and taken from the Jalmat Gas Pool. The orange line which runs through the middle here is the common boundary of the Cooper Jal Oil Pool and Langlie-Mattix Oil Pool, the vertical limits being the Queen and all but the lower hundred feet of the Seven Rivers. It is proposed that we leave that boundary as it is and then the middle Seven Rivers Oil will fall in the Jalmat Gas Pool and, by dedicating the Falby area here, we will have a new pool to take care of the Yates oil.

Q What do you propose as the vertical limits of the Falby-Yates Pool?

A The Yates formation. Those are all the recommendations I have at the present time for the Falby-Yates area. The advertisement read also Township 25 South, Range 36 and 37 East which I studied very extensively. My studies consisted of examining all the well records in this area with the exception of some of the wells in the eastern portion of Township 25 South, Range 37 East. Examination of all electric logs available, [illegible] data [illegible] information [illegible].

[illegible]

cross-section starting with the Oliver Drexel No. 1 across section 20, Township 25 South, Range 37 East where there is a log, back up on a high to the Phillips Petroleum Company No. 1 Knolworth.

The Anderson-Prichard Lawsley No. 1 which appears on this cross-section is an oil well that is completed in the Seven Rivers section. There are also other wells completed in this area in the middle Seven Rivers and in the Yates.

At the present time, we do not have any two wells on 40 acres and we do not have the depressive problem in that area that we do have in the Falby Yates.

I do want to point out that there are two wells that are dually completed in the middle Seven Rivers and in the Yates for gas. There are several wells in the area that have the Yates and the Seven Rivers open in one well bore. The area is relatively old, the engineering is very poor and it is very difficult to make any concrete recommendations at this time as to how to handle the area. The only recommendation that I do have is that no one will be allowed to dedicate acreage that is productive of oil.

Q Mr. Montgomery, for the sake of the record, these cross-sections defined as the New Mexico Oil Conservation Commission Stratigraphic Correlation Section,

A Yes.

Q [illegible]

A [illegible]

Q [illegible]

A [illegible]

Q [illegible]

A Yes, it is [illegible]

Q Sheet No. Three of four, I would like to ask at this particular time that these cross-sections, the entire group, consisting of ten cross-sections, are available to every operator.

A Yes, sir.

Q You may explain how they can obtain them.

A They can be obtained by writing to me at Hobbs, New Mexico, Box 2045. They are available for the cost of reproduction.

MR. STANLEY : That is all.

MR. MACEY : Mr. Montgomery, you have one exhibit you forgot to put a number on.

A Thank you.

MR. MACEY : What is that one, there?

A I didn't intend it as an exhibit.

MR. MACEY : No, if you don't intend to put it in, all well and good.

A It doesn't pertain to the immediate area. I wanted to show how large an area we are [illegible].

MR. STANLEY: Isn't [illegible] the area actually [illegible] on any of these sheets and one of your exhibits marked No. 7, sheet [illegible] actually portrays the [illegible] area on the [illegible] map?

A Yes, sir, it does.

MR. MACEY : [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Q Essentially overlying the Jalmat Gas Pool or coincidental therewith?

A Yes.

Q Do you recommend the assignment or dedication of the acreage to a Jalmat Gas Well and Falby Yates Oil well?

A No, sir. I recommend that no well be permitted more than forty acres if completed within the horizontal boundaries of the Falby Yates.

Q No oil well be permitted?

A That no gas well.

Q Restate the answer.

A That no gas well be allowed forty acres if completed within the boundaries of the Falby Yates oil pool.

MR. RHODES: Thank you.

REDIRECT EXAMINATION

By Mr. [illegible]:

Q In other words, your point is that within the defined limits of the Falby Yates Pool as you have it on Exhibit No. Three that that is entirely productive of oil?

A Yes, sir, [illegible].

Q [illegible]?

A Yes, sir, [illegible] gas well within the horizontal boundaries, [illegible] proper completion [illegible] it would [illegible] [illegible] oil wells.

MR. MACEY : Which well are you referring to?

A The Humble Hunter No. One.

MR. MACEY : Where is it located?

A In the northwest of the northwest of Section 24, Township 24 South, Range 36 East.

MR. MACEY : Anyone have a question of Mr. Montgomery?

By MR. MANKIN:

Q I notice in drawing your limits there of the pool, that you left out one of the duals that you spoke of which was the Olson Van Sam in the southeast quarter of section 25, is there any reason for that, the southeast quarter of Section 25, a dual completion as a Yates and also in the Middle Rover Rivers?

A Yes, sir, it is.

Q Why?

A The Yates is not productive in that particular spot. It seems that actually the only commercial Yates oil in this area is not necessarily controlled by plus 300 foot contour, but there is no Yates oil that falls above the contour, since this 350 foot contour barely touches the [illegible] and possibly penetrates it [illegible]

are. Wait a minute, I'm not sure. I had better check. I do not have a log available on that well, that was it.

Q Did it make oil in the tests?

A No, sir.

Q It is strictly gas?

A Yes, in my opinion.

Q So that type of completion is proper as a gas-oil dual rather than an oil-oil dual?

A Yes, sir, it is in my opinion.

MR. ROSS MALONE WITH SHELL:

Q I would like to be certain the witness' statement with reference to 25,37 that you are not making any recommendations at this time and expect to continue your study on that?

A I do not expect to continue my study. I have made an adequate study of the area. There has been no operator that has felt that at this time that it was practical for him to drill a twin well. I would suggest to the Commission that until such a time that the operator requests it that we set it aside until he does request it.

Q That will be the [illegible] completion at this time.

A Yes, sir.

MR. MACEY: You did have a recommendation as to the [illegible]

A Yes, sir, I recommendation was that it [illegible] oil.

MR. MACEY:

[illegible]

oy at all or just some part?

A Possibly we should use a definition in order to--

Q One hundred thousand to one.

A Yes, sir.

Q In other words, if it doesn't produce in excess of one barrel to one hundred thousand it is still a gas well?

A Yes, sir, sometimes in undeveloped areas that may be a key, to say in the Yates where the lower structure is not developed where you may have a good Yates oil well.

Q I am not sure that I understand the vertical limits in the Falby Yates?

A The Falby limits would be the Yates formation.

Q All Yates, not Seven Rivers?

A No.

Q Is there oil production in the Seven Rivers?

A Yes.

Q It would be, however, in the Jalmat Gas Pool?

A Yes.

Q And would be prorated as a gas well?

A Yes, sir. As an oil well in a gas pool.

Q As an oil well in the gas pool?

A Yes, as provided by Rule [illegible],

[illegible]

I would [illegible] appreciated, approximately what [illegible] would be [illegible]?

[illegible]

[illegible]

A Yes, sir.

Q What would be the total depth of feet that you might expect in the Yates?

MR. STANLEY: You might use your cards on well completion there.

A I am not sure I understand the question, Mr. Christy.

Q What is the total depth of the Yates?

A It will vary on the structure.

Q The lowest?

A The lowest point, well, the lowest contour I have on here is the plus three hundred elevation is roughly three thousand in that area.

Q Practically thirty-three hundred feet?

A Yes, Mr. Christy.

Q Your outline then is probably included within your three hundred fifty foot contour?

A Yes, sir, as much as is practical except for this low that goes off in a northwesterly direction and that three fifty contour goes on up here and off the map and then swings back around on the lime build up in the southwestern portion of the area and through here we do have Yates oil wells. This R. Olsen well here in section 1[illegible].

MR. STANLEY: Would you locate the well, please?

A I don't have a number on it, [illegible].

MR. STANLEY: Well, can you describe its location?

A The location is in the [illegible] of [illegible] Section 1[illegible], Township 11 South, Range 38 East, [illegible] gas well but it does make [illegible] [illegible] off structure here and [illegible]

produce [illegible] in the Section the next well up [illegible] Olsen No. [illegible]

in the northwest of the northeast is producing oil from the Upper

Seven Rivers and as we continue to go off structure we have oil in

the Yates formation. The particular well that is producing from the

Yates and Seven Rivers is, I believe, in the southeast, southeast of

Section Ten, Township 24 South, Range 36 East. That condition exists

throughout the area.

BY MR. [illegible]:

Q How would those wells be prorated?

A We have no particular problem there, Mr. Christy, because

there will be no dual completion and they will be prorated as oil

wells in the Jalmat Gas Pool. All the oil wells that are shown on

here in the Cooper-Jal when we get through classifying them will

actually be in the Cooper-Jal in this immediate area. There probably

wouldn't be over five and six of the oil wells shown in here that

will be in Cooper-Jal, the others will be put in the Cooper-Jalmat

Oil Pool.

MR. HINKLE: Mr. Hinkle representing Humble Oil and Refining.

BY MR. HINKLE:

Q It is our understanding that a large majority of the oil

wells in this area, that is the Jalmat, are now prorated as the

Cooper-Jal, Langlie-Mattix oil wells and [illegible] producing from the

[illegible] formation. What effect will there be on the

[illegible]

Jalmat gas proration [illegible] oil [illegible]

into the Jalmat Gas Pool?

[illegible]

[illegible]

[illegible]

will recall people's attention to it immediately. However, if we work from the bottom, and raise the vertical limits of the Jalmat, we would have to raise the vertical in the Cooper-Jal and Langlie-Mattix. We plead be confusing to people that are not familiar with the immediate area.

Q You are attempting to reclassify it and admitting the Seven Rivers Oil Wells to the Jalmat?

A That was done by Order R-520. It just so happens that we have not had time to get to that particular area to put them in the Jalmat Pool. That is where they belong, yes, sir, today.

MR. UTZ: I see, thank you.

MR. KELLAHIN: Kellahin representing Continental.

BY MR. KELLAHIN:

Q Mr. Montgomery, did you find any communication between the gas in the Yates and the oil in the Yates?

A I did not make a study of the pressures. That was an engineering problem. I do feel that they are connected.

Q You don't know of any effective barrier then?

A No, sir, not regionally, no, sir.

Q Then is that correct, it is one pool horizontally?

A Yes, sir, that is true.

MR. KELLAHIN: That is all.

[illegible]

BY MR. UTZ:

Q You [illegible]

A Yes, sir. [illegible]

communication between the Seven Rivers oil pay and the Yates oil pay.

MR. KELLAHIN: Mr. Montgomery, perhaps you didn't understand my question. It was directed only to the Yates?

A Yes, I was answering it alone the Yates.

MR. MACEY : Anyone else?

MR. CHRISTY: Do you have any recommendation as to the limiting gas-oil ratio in the Falby Yates Area?

A I have an opinion, Mr. Christy. Not being an engineer, there are probably many things I might be overlooking. I do have an opinion.

MR. STANLEY: Express that opinion.

A I do not feel that it should be any greater than ten thousand to one, Mr. Christy. I feel that is more than adequate.

MR. CHRISTY: That is the ratio of the other wells in the general area?

A Yes, sir, the Cooper-Jal and Langlie-Mattix have a ten thousand to one. It will fit into the pattern very nicely. With the ten thousand to one ratio assuming that the well would be a top allowable, it would be permitted to produce a million six hundred thousand cubic feet of gas and plus its forty barrels of oil whereas the average top allowable in the pool is only six hundred [illegible] per day.

MR. CHRISTY: You are in favor of that as an open spacing?

A Yes, sir, I am.

MR. [illegible]:

Q I have [illegible] questions. [illegible]

is the red boundary on this Exhibit No. Three?

A Yes.

Q And that the vertical limits of the Paddy-Yates be all of the Yates formation?

A Yes.

Q You are still recommending that the Jalmat Pool cover the same area and include the Seven Rivers formation with the exception of the lower 100 feet of the Seven Rivers?

A Yes, sir.

Q In other words, the wells presently completed in the middle Seven Rivers oil pay will be classified as oil wells in the Jalmat Pool?

A Yes, sir.

Q They would be prorated with a ten thousand to one ratio limit and their classification depending upon the ratio, is that correct?

A Yes, sir.

Q In the same area you are not recommending any changes in the vertical limits of the Cooper-Jal or Langlie-Mattix area?

A No, sir, I am not.

Q That will include the 100 feet of Seven Rivers, lower 100 feet and the Grayburg?

A Yes, sir.

Q That is your recommendation if a Yates well in a Paddy-Yates pool goes in and encounters a gas zone at the top of the Yates to one ratio?

A All, if the wells in the [illegible] are still classified as oil well, I recommend they [illegible]

Q. What if the well to the east are classified as gas wells in the Yates zone - -

A. That would be all right.

Q. I know, but what about it?

A. Well, as I say, the one well would still be cross-drilled because of the high limiting ratio and the low allowables that the gas wells receive. I don't feel there would be any drainage due to a gas well being offset by a base. Actually, it is less gas than what an oil well in the Falby area -

Q. If a well in the Falby Yates Pool is reclassified and becomes a gas well by definition you still recommend that it be limited by the top allowable times 1.5 pursuant to one well limit, is that what you are - -

A. Yes, sir, until such a time that the offset wells are also no longer classified as oil wells, then we could dedicate that acreage.

Q. In that event we could shut in the wells in the Falby Yates and put those wells back into the Falby Gas Pool?

A. Yes, which I suspect will happen.

REDIRECT EXAMINATION

BY MR. KELLAHIN:

acreage crossing this boundary, is that right?

A Yes, sir, that is right.

Q And conceivably as you lay down the [illegible] perhaps [illegible] years [illegible] with the withdrawals from now that expanding gas cap and due to volumetric [illegible] of these wells in the proposed boundary of the [illegible] Pool, the [illegible] section could eventually be a gas pool?

A Yes.

Q With efficient drainage [illegible] could happen?

A Yes.

Q Until such a time as that happens, you are going to favor the oil wells in that area?

A Very definitely.

MR. MALONE: What is the south boundary of the oil pool as you have it delineated?

A East half of the northeast of Section [illegible], Township 21 South, Range 38 East, north half of Section 28 and the northwest quarter of Section 30 in Township 21 South, Range [illegible] East.

MR. MALONE: Thank you.

MR. MAC[illegible]: Mr. [illegible].

MR. [illegible]: [illegible], representing El Paso Natural [illegible] [illegible] [illegible]

[illegible]

[illegible]

[illegible]

[illegible] well, [illegible]

[illegible]

[illegible]

[illegible]

receive gas allowables.

MR. [illegible] : You didn't mean that well [illegible] receive gas allowable, you meant that proration unit?

A Yes, that proration unit.

MR. MACEY : Anyone else?

MR. KELLAHIN: Jason Kellahin for Phillips Petroleum Company, if the Commission please.

CROSS EXAMINATION

By MR. KELLAHIN:

Q Mr. Montgomery, due to the recent questions asked you, is it your idea to allow two gas allowables as the gas cap encroaches there from the upper and the lower formations?

A Two oil allowables with a limiting ratio, Kellahin.

Q Would you have any gas allowable?

A No, sir, you wouldn't.

Q As the gas cap encroaches in the Paddy [illegible], then what are you going to do?

A Then, as brought out by Mr. Stanley's and Mr. [illegible] interrogation there it was [illegible] as the well reaches over one hundred thousand to one ratio, we will be able to [illegible] that [illegible] to a gas well.

Q [illegible] what pool?

A [illegible]

[illegible]

[illegible]

[illegible]

A [illegible]

[illegible]

Q Would you recommend that?

A Well, the Commission does not approve [illegible] gas wells in an oil pool, so they would be limited to the [illegible] ratio.

MR. [illegible]: Thank you.

BY MR. MAC[illegible]Y:

Q I think maybe, Mr. Montgomery, you partially got off the track there a little bit, [illegible] Under-neath the Fally Yates Pool between the top of the Cooper-Jal and Langlie-Mattix, and the base of the [illegible] Yates in that interval of approximately about two hundred feet --

A (Interrupting) About three hundred feet.

Q (Continuing) -- in that interval there, is this entirely productive of oil under the Fally Yates?

A No, sir, a portion is productive of gas.

Q Now, as the [illegible] Yates pool shrinks in size, which it undoubtedly appears that it will do, you [illegible] on the same forty acres or a possibility of well[illegible] in the lower zone which we would be calling the [illegible] and also in the upper zone which would be called the [illegible] Yates, [illegible] would [illegible] two allowables, one on the forty acres and [illegible] would [illegible]?

A [illegible], sir.

Q [illegible]

A [illegible]

allow[illegible].

[illegible]

Q [illegible]

[illegible],

that is vertically within the [illegible] Gas Pool [illegible] Oil Pool.

MR. BATTS: Just a matter of observation, what is the matter between two allowables for oil and two allowables for gas?

A It has been said a million times. I will say it once more. It is a very difficult case and it is difficult to produce by conventional methods. We have wells [illegible] the boundaries, that have the Yates, Seven Rivers and [illegible] open. We have wells all the way up all through the gas area that have Yates and Seven Rivers open. If we start trying to break down each little oil zone and [illegible] a gas zone to double, triple, or quadruple, we would get in an administrative tangle we would never get out of it. I don't know how we are going to get out of the minor one we are in now.

MR. [illegible]: If there is no further testimony, I would like to make a statement for the purpose of the record.

MR. [illegible]: I want to ask [illegible] question. Mr. Montgomery, do you [illegible] delineated as the [illegible] within the horizontal limits that is delineated by a [illegible] well [illegible]

A [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

ADA DEARNLEY & ASSOCIATES
ALBUQUERQUE NEW MEXICO

to have [illegible] testimony [illegible]

to [illegible] Mr. [illegible] to [illegible]

out before the order will be entered.

MR. MACEY : Mr. [illegible], [illegible] I know that there

are some people in this particular area that are being drained

at the present time and that is one of the reasons why we brought

the [illegible], because [illegible] to

dispose of the matter as quickly as possibly can. I don't think

it is out of order for [illegible] to [illegible]

on what they think of the proposal and what they think of the

idea with the possibility that the [illegible], if they don't

think this is the answer, why we would bring it [illegible] on our

own motion. We are certainly looking for a solution that will

give equity to everyone. We realize that we are going to have

to change it later on, there is no question about that.

MR. SMITH: Do you [illegible]

the briefs or statements?

MR. MACEY : [illegible]

[illegible]

MR. MACEY : [illegible]

[illegible]

priority as far as I am concerned. There is a question of what the Texas Company and others are going to be affected by the present rules. If you think you could get it in, say, by the tenth of March, I don't see how we could possibly get it done by then.

MR. SMITH: The tenth of March will be quite satisfactory.

MR. MACEY: [illegible] Anyone else [illegible] things will have an opportunity to present a brief in the case.

MR. [illegible]: Kenneth A. [illegible] for J. M. Kelly. As an operator in the Falby Yates Area, we wish the following statement entered into the record:

1. We recommend that the original Falby Yates Field be re-created and the vertical limits to include the top of the Yates to the top of the Seven-Rivers inclusive.

2. We recommend that the Seven-Rivers and Queen completions in the Falby Yates Area be classified in the [illegible]-Mattix Field. The vertical limits of the [illegible]-Mattix Field be revised only in the Falby Yates Area to include the entire Seven-Rivers and Queen formations.

3. [illegible] oil wells in the [illegible] Field [illegible]

[illegible]

The oil in this reservoir should be produced [illegible] ratios before the reservoir pressure is depleted. Otherwise, the pressure will be dissipated resulting in a high residual oil saturation with no reservoir gas energy to deplete the [illegible]. This situation would result in subsurface waste of oil in the [illegible] Yates Field. We also wish to make the conclusion that no surface waste will occur since all gas is processed through a gasoline plant.

This operator has performed selective fracturing treatments on three wells in the proposed [illegible] Yates Pool, utilizing packers to isolate zones which were suspected of having high gas saturation. Only temporary relief of high gas-oil-ratios was obtained. We feel that as an operator we have made an honest attempt to lower the gas-oil-ratios before submitting this recommendation and feel that our workovers have substantiated an unlimited gas-oil-ratio provision.

We respectfully submit these recommendations and will appreciate your favorable consideration of the same when acting on this case.

MR. KELLAHIN: Jason Kellahin for Continental Oil Company. Perhaps I misunderstood the testimony, if I am correct, Mr. [illegible], indicates there is no [illegible] [illegible] [illegible] [illegible] [illegible] pool.

[illegible]

recognize the complexity of the problems involved in the [illegible] generally

Calby Yates area and we recognize the desirability of allowing

the oil that occurs in the [illegible] to be produced as

efficiently and expeditiously as good regulatory practices would

allow.

We would like to point out that apparently the Calby oil accumulation is connected to the surrounding gas, and we feel that the testimony indicates that, and is affected by the withdrawals from the oil accumulation. With these facts in mind, we feel that the oil operators should not be given any more advantage over the gas operators. Recognition of a separate pool for the Calby oil and granting of an oil allowable thereto in addition to the gas or oil allowable for wells on the same acreage in the Jalmat pool results in multiple allowables in the same areas, while offsets can receive only a single allowable. This will result in inequity and [illegible] of correlative rights. We would favor a system of handling this matter where either (1), the casinghead gas produced from oil wells is charged against the gas allowable of the Jalmat gas well on the same acreage or (2), the forty acre wells assigned to the oil wells are deleted from the acreage [illegible] the Jalmat [illegible]

[illegible]

I would like to [illegible] Phillips Petroleum Company. [illegible] feel that an operator should [illegible] to a gas well, or to have [illegible] source of supply which we feel [illegible] nicates we have in the present situation.

MR. [illegible] : Anyone else? Mr. Christy.

MR. CHRISTY: Generally we [illegible] recommendations, however, we would [illegible] to study his testimony and we will [illegible] opportunity to submit a brief later.

MR. WHITE: The Texas Company [illegible] subject area. The Texas Company concurs with the Commission's proposal as to the vertical and horizontal limits of the proposed [illegible] of the Palby Gator Oil Pool. We also strongly recommend that the Commission accept a gas-oil ratio of [illegible] in order to put this oil pool on a competitive basis with other oil pools within the area. Texas Company also recommends that the Commission take early action in this matter, based upon the [illegible] introduced here and whatever statements may be [illegible].

[illegible] : [illegible]

area to be approximately the plus 300 contour on the Yates top, which approximately agrees with what he has outlined. We feel gas oil ratio limit of more than twenty thousand to one should be retained and we do not object to the retention of the present ten thousand to one.

Observation of our Yates oil wells in the area indicate that generally by the time a well reaches a gas oil ratio of fifteen to twenty thousand to one the oil production has decreased to where it is not going to be greatly penalized by that ratio. We have performed large fracture treatments on three Yates wells across the Falby Yates area spaced from south to north and results indicated we got a variety of gas oil ratios from those. Our Van Sant No. One which is in the northwest quarter of the northeast quarter of Section 25, 24, 36 near the south in the Falby Yates originally resulted in about twelve thousand to one ratio of production of 76 barrels. A little further north the Thomas Four the northeast quarter of the southwest quarter of 24, 24, 36 resulted in a 81 hundred gas oil ratio production rate of forty-six barrels per day. More recently our No. One near the north end of the area in the southeast quarter of the northeast quarter of 11, 24, 36 resulted in only [illegible] hundred gas oil ratio [illegible] barrels per day rate.

We would like to further [illegible] a study [illegible] [illegible]

this area. I think our Van Sant No. 1 is a new well that has gas in the Jalmat pool. It is near the east end of the Yates area. It makes only a spray, a very little spray of oil from the Yates two or three barrels a day.

MR. MACEY : Anyone else?

MR. MALONE: Gulf would like to request permission to put a statement in this record immediately after lunch if that would be permissible.

MR. MACEY : We will continue Case 941 to March. If there is nothing further in the case and the Commission feels it is necessary we will take the case under advisement at that time. We don't intend to put on any testimony. If there is any further testimony brought up at that time and the interested parties are not here, we will continue the case further but I do want to get the matter settled once and for all and certainly feel that we have to get into some fast action. There is no question in my mind there are benefits to be gained.

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

I, ADA DEARNLEY, Court Reporter, do hereby certify that the foregoing and attached transcript of proceedings before the New Mexico Oil Conservation Commission, Santa Fe, New Mexico, is a true and correct record to the best of my knowledge, skill and ability.

[illegible], 1962,

Ada Dearnley

My Commission expires:
June 4, 1963

BEFORE THE

Oil Conservation Commission

SANTA FE, NEW MEXICO

IN THE MATTER OF:

CASE NO. 521

TRANSCRIPT OF PROCEEDINGS

ADA DEARNLEY AND ASSOCIATES
COURT REPORTERS
ROOMS 105, 106, 107 EL CORTEZ BUILDING
TELEPHONE 7-9546
ALBUQUERQUE, NEW MEXICO

BEFORE THE
OIL CONSERVATION COMMISSION
STATE OF NEW MEXICO
Santa Fe, New Mexico

March 16, 1955

IN THE MATTER OF: Application of the Commission upon its own motion for an order amending or revising the existing vertical and horizontal limits of the Jalmat Gas Pool, the Cooper-Jal Oil Pool and the Langlie-Mattix Oil Pool to prevent inequities within proration units and to establish rules governing the completion and production of oil and gas wells within the area (Townships 24 and 25 South, Ranges 36 and 37 East).	Case No. 841 (Continued.)

Before: Honorable John F. Simms, A. L. (Johnny) Walker, and William B. Macey.

TRANSCRIPT OF HEARING

MR. MACEY: The next case is Case 841.

The conclusion of this case last month, we made the statement that we would hold it on the docket for the purpose of anyone presenting any further testimony. Does anyone have any further testimony or statements they would like to make in connection with Case 841? Anyone else besides the [illegible] have a statement?

MR. WOODWARD: We have a statement for Amerada.

MR. MACEY: Anyone else? Mr. Walker, do you want to proceed with your statement?

MR. WALKER: [illegible] have no objection to the [illegible] Oil Pool generally along the [illegible] representatives at the last [illegible]. However, [illegible] and gas producing [illegible] in the [illegible]

6,000 to 1 should be established for this proposed Falby-Yates Oil Pool. That is all.

MR. McPETERS: H. D. McPeters for John M. Kelly. We request that the transcript of 579 which created the Falby-Yates Pool be entered into the record of Case 841.

MR. MACEY: Is there objection? If not we will incorporate the transcript of the original Falby-Yates Case 579 in this case.

Mr. Woodward.

MR. WOODWARD: I am John Woodward representing Amerada Petroleum Corporation. Our witness in this case will be Mr. Christie.

[illegible]. S. C H R I S T I E

having first been duly sworn, testified as follows:

DIRECT EXAMINATION

By MR. WOODWARD:

In this case Amerada is offering some recommendations with respect to the problems created by the existence of the Falby oil area within the vertical and horizontal limits of the Jalmat Pool. The testimony has been introduced in this case that oil has accumulated as being produced from the relatively small syncline in the Yates formation of the Jalmat Pool. Underlying the aerial limits of the Falby Pool, oil is also being produced from the [illegible] Rivers formation in the [illegible] [illegible] position and recommendation.

[illegible]

Langlie-Mattix. The green dotted line will be explained by Mr. Christie in his testimony.

Q Will you state your name and where you live?

A R. S. Christie, Tulsa, Oklahoma.

Q By whom are you employed and in what capacity?

A Amerada Petroleum Corporation, engineer.

Q You have previously testified before this Commission on many occasions as a petroleum engineer and as an expert on the production of oil and gas in New Mexico, have you not?

A Yes, sir.

MR. WOODWARD: Are Mr. Christie's qualifications accepted?

MR. MACEY: Yes, sir.

Q Mr. Christie, do you have a recommendation concerning any change in the limits of the Jalmat Pool?

A Yes, sir. We would like to change the vertical interval as now set up by the Commission one hundred feet above the base of the Seven Rivers to 250 feet above the base of the Seven Rivers underlying the present or the old Fally-Yates area.

Q What are the aerial limits of this Fally-Yates area?

A The aerial limits are as follows -- In Township 2[illegible] South, Range 36 East, the east half of the southeast quarter of Section 2[illegible], the northeast quarter of [illegible] quarter and the north east quarter of [illegible] half and the south half of [illegible]. The north half of Section 25, the [illegible] quarter of Section [illegible], and in Township 2[illegible] South, Range 37 East, the [illegible] half of [illegible] the north [illegible] [illegible].

Q Mr. [illegible], why do you [illegible] the vertical limits of the Jalmat [illegible] underlying the [illegible] oil area?

A There is two primary [illegible] is that the present vertical limits does not [illegible] of the oil in the lower Seven Rivers. The second is that it appears to be a more logical separation of the upper Seven Rivers gas and the lower Seven Rivers oil.

Q Are you recommending any change in the vertical limits of the Jalmat outside of this [illegible]? A No, sir.

Q You feel that this present [illegible] is working satisfactorily as it is? A Yes, I believe it is.

Q You have sufficient information to speculate on what the result of trying to go beyond this limit [illegible] is?

A I think it probably would just complicate proration, the production of gas.

Q To your knowledge, are there any producing zones underlying the Falby oil area above the top of the [illegible] production and below the base [illegible] 250 feet above the base of the Seven Rivers in this area [illegible]?

A No, sir, I don't believe there is.

Q As a practical matter, would it make any difference whether the horizontal [illegible] extended laterally to a point [illegible] vertically to a point on the [illegible] present vertical limits [illegible]?

A [illegible]

[illegible]

Q [illegible]

[illegible]

underlying the Falby area and defining that area, are you suggesting that the Falby area be designated an oil pool separate from the Jalmat Pool? A No, sir.

Q At a previous hearing in this matter did you feel that this area deserves special study and consideration?

A Yes, I believe it does since it is local accumulation of oil in a syncline in the Jalmat Field, I think it should deserve special consideration.

Q After giving it this special consideration do you now feel that the problem can be handled by leaving the Falby oil area within the vertical and aerial limits of the Jalmat Pool?

A Yes, I believe it can. I might state that at the last hearing I made the statement that I thought, I generally agreed with the Commission's recommendations, but with the provision that I had time to study their testimony and so forth. I now feel that our recommendations are probably more appropriate.

Q What are your reasons for that recommendation that the Falby area remain within the Jalmat Pool?

A In my opinion these oil wells in this area will or are now going to higher ratio and will eventually be gas wells anyway, and to set up a separate oil area which is constantly changing because of the [illegible] that you would eventually have to [illegible] anyway. I think it is better to leave it [illegible] it is.

Q In addition to the [illegible], does the production of gas in the Jalmat [illegible] ultimate recovery of oil? A [illegible].

Q [illegible]

the Jalmat Pool to regulate it to that [illegible]?

A Yes, sir.

Q On the other hand, the production of excessive gas from the Kelly oil area will affect the production of gas from the wells outside that area in the Jalmat Pool?

A Yes, it does.

Q Do you think that an operator of an oil well should be permitted to produce unlimited quantities of gas from the oil well while offset operators in the same pool are limited to some gas allowable as fixed by the Commission?

A No, I do not think they should be allowed to produce unlimited quantities of gas. I think it should be in a reasonable amount.

Q What limitation do you recommend be placed on the gas produced from the oil wells?

A I would recommend 10,000 cubic feet per barrel of oil-gas ratio.

Q This 10,000 to 1 gas-oil ratio would not necessarily result then in equal volumetric withdrawals of gas from gas and oil wells in the Jalmat Pool?

A No. In this particular instance where the ratios are already high, I think probably there would be slightly greater [illegible]

[illegible]

[illegible]

Then assume that the operator [illegible] has one gas well with an allowable of 1 million cubic feet; under these circumstances it would seem that the oil allowable is permitted to produce 16% more gas than the offsetting oil-gas operator. How do you justify this difference in the withdrawals?

A It seems to me in a situation of this kind that you should have a slight differential from the gas area to the oil area so that the operators will be afforded the opportunity to recover more oil. If the situation were reversed you would lose oil into the dry gas sand flowing from your high pressure area into your low pressure area. For that reason I think some special consideration should be given to the oil operators to recover a larger percentage of oil than they otherwise would.

Q Let me correct my statement, that should be 6% increase. From the standpoint of preventing waste of oil and promoting the greatest recovery of oil, is it desirable that the oil-producing area have a slightly lower pressure differential than the surrounding gas areas?

A Yes, I think so.

Q You feel that your recommendation is as fair as it can be without risking the [illegible] waste of oil?

A It seems reasonable to me, yes, sir.

[illegible]

Q That necessarily is based upon the [illegible] gas from oil and gas wells located within the vertical limits of the gas proration unit in the Inland Pool?

A I believe it would be my recommendation that the operator not be allowed to produce from a gas well any more than the difference between what his oil well casinghead gas would be and the gas allowable of the gas well. In other words, if his casinghead gas is less than the allowable for a gas well, then he could make up the difference by producing the gas well. If the production from the oil well is greater than the allowable for the gas well he would have to have it shut in and not a gas well allowable.

Q Under present gas and oil allowables in the hypothetical situation we just considered, it is probable that the casinghead gas production will exceed the gas allowable for let's say 160 acres?

A At the present time I think it will, yes, sir. There was a time, of course, when the ratios were lower that that wouldn't be the case. It may be later on that it wouldn't be the case, but at the present time I think the production of gas, casinghead gas is probably larger than the production from the gas well.

Q In the [illegible] oil wells and one gas well, [illegible]

[illegible]

[illegible]ition to [illegible].

Q [illegible]

[illegible]

A [illegible], [illegible].

MR. [illegible]: [illegible] further [illegible] of Mr. Christie at this time. At the conclusion of [illegible] cross examination [illegible] would like to make a statement.

MR. [illegible]: Mr. [illegible].

[illegible]

By MR. [illegible]:

MR. [illegible]: Jason [illegible] for Continental Oil.

Q As I understand your recommendation, would [illegible] result in a possibility of additional [illegible] allowable for any one?

A No.

Q To raise the limits of the Jalmat in this area?

A The vertical limits?

Q Yes.

A [illegible], I don't think [illegible].

Q Do you know of any wells that are completed in what is now the Jalmat, the area you are talking about, in the Middle [illegible] [illegible] and also in the Queen or [illegible] formation?

A Yes, we have one [illegible] in the [illegible]. The [illegible].

Q [illegible].

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Q [illegible] to indicate that [illegible] the middle Seven Rivers oil from the surrounding pool?

A In what formations?

Q In the middle Seven Rivers I am referring to.

A [illegible] to know that. I don't think anyone would probably believe.

Q What you are doing is just shifting the problem from the lower end of horizon instead of the upper as Mr. Montgomery did?

A Actually all we are doing is changing the vertical limits and the one advantage in that, as we see it, in preference to the Commission's recommendation, is that you have only two reservoirs or at least two intervals there instead of the three.

Q I would subscribe to that.

A I think it is a [illegible] that we don't think is necessary.

Q In your opinion is there a difference between Mr. Montgomery's proposal for the creation of one unit [illegible] to be under three [illegible]

[illegible] Seven Rivers and we [illegible].

Q The area I was referring to [illegible] 250 feet above the base rather than the [illegible].

A Yes, sir.

[illegible]

MR. [illegible]: [illegible].

By MR. WALKER:

Q Don Walker for [illegible]. Mr. Carlisle, assuming a little bit ago on the production of the Yates gas wells and the Jalmat assumed by Mr. Woodward as a million cubic feet, I believe last year's average was [illegible] or slightly less, which would give the oil wells a two to one rather than a 4:1 advantage of no withdrawals. In case that the Commission accepts the former recommendation of the Fully-Yates [illegible], we [illegible], because we thought a [illegible] would be approximately a million [illegible] the gas would [illegible] for the gas wells. I wonder if you could [illegible] advantage for the oil wells [illegible].

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] the daimut gas pool?

A It is my opinion that we will run into drilling problems over the entire area.

Q Do you think that we might possibly [illegible] little bit of an administrative problem if we were to make the lower limits on the pool in a number of areas?

A It is quite possible, yes, sir. I believe this example of Stanolind might be the case [illegible] here. We may have to change it there. There are local conditions that you have to take care of as they develop.

Q Do you think there is any possibility that we might just eventually wind up raising the lower limit of the Jalmat gas pool as a whole?

A It is quite possible. At this time I won't know how far to raise it. To consider some kind of an [illegible] that would take in the whole structure. If [illegible] to me, it is limited to the salty area.

MR. MORRIS: That is all.

BY MR. [illegible]:

Q [illegible]

Q. Give the operator the opportunity to [illegible] complete it at a later date?

A. Yes, sir.

Q. It would eliminate that possibility?

A. As the oil wells are completed he will probably want to do that.

MR. KELLY: Anyone else? Mr. Gardner?

MR. GARDNER: Gardner representing [illegible]. I would like to direct the Commission's attention to case [illegible] Jack - No. 2 which Mr. Montgomery has, we have noted that the gas in the upper Seven Rivers is not developed in that particular realm. We don't think it is of any great consequence in this area.

A. I believe we drill stem tested one of our wells. I'm not sure, but maybe Mr. Montgomery showed it on his cross section to Mr. Abbott just told me, it tested at the rate of two million.

MR. KELLY: Anyone else have any questions of Mr. Gardner?

MR. MORRIS: I have a few questions.

BY MR. MORRIS:

Q. Mr. [illegible],

production [illegible] six hundred thousand?

A Yes, if you [illegible].

Q We realize there is [illegible] of production [illegible] that situation largely obtains as a result of [illegible]. Just from the standpoint of [illegible] operate his well [illegible] some relevancy. Do you have some recommendation you would make to the [illegible]?

A Yes, sir. Most of these have been covered in my testimony. I will read them into the record. [illegible] the vertical limits of the Jalmat gas pool underlying the [illegible] area extend from the top of the [illegible] formation to a point [illegible] feet above the base of the Seven Rivers formation. That the horizontal limits of the [illegible] -- in Township 2[illegible] north, Range [illegible] east, the [illegible] quarter of Section 23, the [illegible] quarter of the [illegible] quarter of the northeast quarter of the northeast quarter and the south half of the north half and the [illegible] of Section [illegible]. The north half of Section 2[illegible], [illegible]

[illegible]

allowable, whichever is greater.

MR. WOODWARD: Gentlemen, in conclusion, I think it is apparent that this is a rather knotty [illegible] problem and we have tried to steer what we consider a reasonable course between two extremes. One extreme would involve turning the oil wells loose and allowing them to produce unlimited quantities of gas. This, we feel, is unfair. The other possibility [illegible] the volumetric displacement regardless of whether oil or gas were being produced. This would be unfortunately and also quite wasteful. We further feel that the volumetric rule is not essential to a valid waste prevention order. That is, the correlative rights doctrine is not an absolute concept which would require absolutely equal withdrawals if pursuing such a policy resulted in waste.

On the other hand the Commission's power to regulate the prevention of waste isn't absolute either. I think the [illegible] be reasonable and not arbitrary, [illegible] conflicting considerations, I think [illegible] reasonable to permit a [illegible] [illegible]

[illegible]. The [illegible]

oil pool [illegible]

higher and [illegible]

recovery of the oil.

MR. MACEY: Does anyone have anything further in this case? Mr. Montgomery.

MR. MONTGOMERY: [illegible] the vertical limits of the Langlie-Mattix, [illegible] boundary that runs through there which is the Cooper-Jal, it would propose raising the limits of the Cooper-Jal and the Langlie-Mattix.

A It wasn't our intention of changing the vertical limits except in [illegible].

Q Of both the Cooper-Jal? A Yes.

MR. MACEY: We will take the case under advisement.

C E R T I F I C A T E

I, ADA DEARNLEY, Court Reporter, do hereby certify that the foregoing and attached transcript of proceedings in the matter of Case No. 841 were taken by me on [illegible]; that the same is a true and correct record to the best of my knowledge, skill and ability.

Ada Dearnley

SOUTHERN CALIFORNIA PETROLEUM CORPORATION
SUITE 905 PETROLEUM LIFE BUILDING . . . MIDLAND, TEXAS
PHONE 4-8044

February 24, 1955

Mr. W. B. Macey, Secretary
Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Re: Case No. 841
Falby-Yates

Dear Mr. Macey:

The Southern California Petroleum Corporation would like to submit further testimony in Case No. 841, expanding their statement of February 17, 1955, on this case.

The Southern California Petroleum Corporation agrees with the Commission Staff that the Falby-Yates Field should be delineated from the Jalmat and set up as a separate field encompassing just the Yates formation. We believe that unless this separation is allowed inefficient and reduced recoveries will result, thereby causing waste of the oil and gas resources.

Coring by the Southern California Petroleum Corporation within the area of the Falby-Yates Field has emphasized the desirability of separating the Yates and the Seven Rivers formations. In coring the Seven Rivers in our Thomas No. 5, the upper Seven Rivers showed an average porosity of 2½% and effective permeability of less than 0.01 md, as compared with the middle Seven Rivers pay section of 17% and an average permeability of 18.6 md. In coring the Yates at our Thomas No. 6, we had an average porosity of 21.1% and an average permeability of 37 md. This same ratio has been borne out at our Dunn and Harrison leases.

A significant difference in the gravity of the oil is noted in the two reservoirs; Yates 34-36 API; middle Seven Rivers 36-38 API.

One of the most significant differences in the two reservoirs lies in the difference in bottom hole pressure. The Southern California Petroleum Corporation, Thomas No. 5 drilled in February, 1954, with an initial bottom hole pressure in the middle Seven Rivers of 978 p.s.i. compared to 1260 p.s.i. taken in the Yates in the same bore hole. Thomas No. 5 was the first of four middle Seven Rivers wells completed on our Thomas lease in Section 24, Township 24 South, Range 36 East, Lea County, New Mexico. This lease has four old Yates producers completed in 1949 and 1950. The high Yates pressure in the Thomas No. 5 is interesting, as the pressure existing five months previously in the four year old Yates wells, 825' and 990' away, were only 338 p.s.i. and 476 p.s.i. respectively. This indicates that the Yates wells

are draining a very limited area.

There is a significant difference in the gas-oil ratio between the two reservoirs; the Yates being two to three times as great originally as the middle Seven Rivers reservoirs. The Southern California Petroleum Corporation feels that in order to conserve reservoir pressure, a gas-oil ratio of no greater than 20,000-1 should be retained in the Falby-Yates reservoir and we do not object to a 10,000-1 gas-oil ratio limit. Observation of our Yates wells in this area indicate that by the time a gas-oil ratio reaches 15,000 to 20,000-1, its oil production will have declined to a point where the well is incapable of making a full allowable. For example: Dunn No. 1, SW¼ of the NE¼ of Section 24, Township 24 South, Range 36 East, 96.5 barrels, 24 hours, GOR 4100-1; Van Zandt No. 2, NE¼ of the NE¼ of Section 25, Township 24 South, Range 36 East, 37 barrels, 24 hours, GOR 19,921-1.

The Southern California Petroleum Corporation has used three large fracture treatments in the Falby-Yates area which treatments have considerably lowered the gas-oil ratio by greatly increasing the oil produced. For example: Van Zandt No. 1, NW¼ of the NE¼ of Section 25, Township 24 South, Range 36 East, 78 barrels, 24 hours, 12,500-1 GOR; Thomas No. 4, NE¼ of the SW¼ of Section 24, Township 24 South, Range 36 East, 46 barrels, GOR 6400-1; Dunn No. 1, SW¼ of the NE¼ of Section 24, Township 24 South, Range 36 East, 96.5 barrels, GOR 4100-1.

Thus it appears that our Yates wells can have considerably lower gas-oil ratios than are now recorded by working the wells over with larger fracture treatments. These three large fracture treatments have fairly well proven to us that there is no vertical separation in the Yates formation, as we have found better than 200' of fill up after these treatments which fill up has left just the top Yates sand stringer open to the well bore and the wells have still produced mainly oil exhibiting no gas cap.

The Southern California Petroleum Corporation would like to suggest or recommend that a study be undertaken regarding the feasibility of injecting gas in the high gas-oil ratio wells to put the Falby-Yates wells on a net gas-oil ratio basis in the interest of conservation of reservoir pressure and the prevention of waste. We feel there is need of immediate action on this matter in light of very rapid drops in bottom hole pressures in both the Yates and Seven Rivers wells in this area. These drops will be noted on the attached list of twenty-one wells on which bottom hole pressures were run February 14, 1955.

Respectfully submitted,

SOUTHERN CALIFORNIA PETROLEUM CORP.

W. S. Caldwell
Division Geologist

WSC:dcf

enc.

SOUTHERN CALIFORNIA PETROLEUM CORPORATION
Midland, Texas

BOTTOM HOLE PRESSURES @ /300 DATUM

WELL	PAY FORMATION	LAST TEST DATE	PRESSURE	TEST PRESSURE 2-14-55	CHANGE
Dunn No. 1	Yates	10-11-54	479	411	-68
Dunn No. 3	"	10-8-53	692	492	-200
Dunn No. 4	Seven Rivers	5-19-54	726	362	-364
Dunn No. 6	" "	6-28-54	398	301	-97
Harrison No. 4	Yates	6-28-54	308	477	-31
Harrison No. 8	"	8-10-54	597	546	-51
Harrison No. 6	Seven Rivers	8-10-54	828	1129	/301
Hunter No. 1	Yates	6-9-54	792	684	-108
Hunter No. 3	Seven Rivers	10-11-54	336	No run due to paraffin	
Hunter No. 5	" "	10-1-53	858	695	-163
Phillips No. 2	Yates	10-8-53	650	520	-130
Phillips No. 4	Seven Rivers	5-19-54	850	403	-447
Thomas No. 1	Yates	7-24-54	282	No run due to paraffin	
Thomas No. 3	"	10-8-53	476	275	-201
Thomas No. 4	"	10-11-54	320	250	-70
Thomas No. 7	Seven Rivers	5-19-54	723	376	-347
Thomas No. 8	" "	8-23-54	963	431	-532
Van Zandt No. 1	Yates	10-11-54	677	No run due to paraffin	
Van Zandt No. 3	"	10-8-53	702	582	-120
Van Zandt No. 5	Seven Rivers	6-3-54	1015	655	-360
Van Zandt No. 7	" "	6-28-54	794	592	-202

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION FOR THE PURPOSE OF
CONSIDERING:

Case No. 841
Order No. R-640

THE MATTER OF THE APPLICATION
OF THE COMMISSION ON ITS OWN
MOTION FOR AN ORDER AMENDING
OR REVISING THE EXISTING VERTICAL
AND HORIZONTAL LIMITS OF THE JALMAT
GAS POOL, THE COOPER-JAL OIL POOL
AND THE LANGLIE-MATTIX OIL POOL TO
PREVENT INEQUITIES WITHIN PRORATION
UNITS, AND TO ESTABLISH RULES AND
REGULATIONS GOVERNING THE COMPLETION
AND PRODUCTION OF OIL AND GAS WELLS
WITHIN AN AREA SITUATED IN TOWNSHIPS
24 AND 25 SOUTH, RANGES 36 AND 37 EAST,
NMPM, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing on February 16, 1955, and on March 16, 1955, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission".

NOW, on this 31 day of May 1955, the Commission, a quorum being present, having considered the record and testimony adduced and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the Commission did, on August 12, 1954, enter Commission Order R-520, which order set out the vertical limits for the Jalmat Gas Pool, the Cooper-Jal Oil Pool and the Langlie-Mattix Oil Pool.

(3) That a synclinal accumulation of oil exists in the Yates sand in the following described area:

TOWNSHIP 24 SOUTH, RANGE 36 EAST, NMPM
Section 13: SE/4 NW/4, SW/4
Section 23: E/2 E/2
Section 24: All
Section 25: N/2
Section 36: E/2 NE/4

TOWNSHIP 24 SOUTH, RANGE 37 EAST, NMPM
Section 18: SW/4 NW/4, W/2 SW/4
Section 19: W/2
Section 30: NW/4

(4) That the accumulation of oil in the Yates sand in the above-described area is believed to be in direct communication with Yates dry gas known to exist in the immediate surrounding area.

(5) That the above-described Yates oil reservoir is separate and distinct from oil and gas reservoirs encountered in the underlying Seven Rivers formation in that area set out above, and that the Seven Rivers oil reservoir as presently known is separate and distinct from that gas reservoir encountered in the Seven Rivers formation in the area hereinabove described.

(6) That in view of this special geologic situation, it is necessary to re-define the vertical limits of the Jalmat Gas Pool, the Cooper-Jal Oil Pool and the Langlie-Mattix Oil Pool insofar as such pools lie within the area hereinabove set out.

(7) That in order to preserve the equities of operators both within and outside the above-described area, it is necessary to establish a limiting gas-oil ratio for oil wells producing from the Jalmat Gas Pool in the area hereinabove set out.

IT IS THEREFORE ORDERED:

(1) That the vertical limits of the Jalmat Gas Pool shall extend from the top of the Tansill formation to a point 250 feet above the base of the Seven Rivers formation, thereby including all of the Yates formation, and that this redefinition of the vertical limits of the Jalmat Gas Pool shall be confined to an area described as follows:

TOWNSHIP 24 SOUTH, RANGE 36 EAST, NMPM
Section 13: SE/4 NE/4, SE/4
Section 23: E/2 E/2
Section 24: All
Section 25: N/2
Section 26: E/2 NE/4

TOWNSHIP 24 SOUTH, RANGE 37 EAST, NMPM
Section 18: SW/4 NW/4, W/2 SW/4
Section 19: W/2
Section 30: NW/4

(2) That the vertical limits of the Cooper-Jal Oil Pool shall extend from a point 250 feet above the base of the Seven Rivers formation to the base of the Queen formation.

(3) That this redefinition of the vertical limits of the Cooper-Jal Oil Pool shall be confined to an area described as follows:

TOWNSHIP 24 SOUTH, RANGE 36 EAST, NMPM
Section 23: E/2 E/2
Section 24: NW/4, W/2 SW/4
Section 25: NW/4
Section 26: E/2 NE/4

(4) That the vertical limits of the Langlie-Mattix Oil Pool shall extend from a point 250 feet above the base of the Seven Rivers formation to the base of the Queen formation.

(5) That this redefinition of the vertical limits of the Langlie-Mattix Oil Pool shall be confined to an area described as follows:

TOWNSHIP 24 SOUTH, RANGE 36 EAST, NMPM
Section 13: SE/4 NE/4, SE/4
Section 24: E/2, E/2 SW/4
Section 25: NE/4

TOWNSHIP 24 SOUTH, RANGE 37 EAST, NMPM
Section 18: SW/4 NW/4 W/2 SW/4
Section 19: W/2
Section 30: NW/4

(6) That the dual completion of a well so as to produce oil from the Yates and oil from the Seven Rivers or Queen formations is hereby prohibited.

(7) That oil wells producing from the Jalmat Gas Pool and situated within the area described in paragraph (1) above, shall be limited to a producing gas-oil ratio of 10,000 cubic feet of gas per barrel of oil.

(8) That acreage dedicated to a gas well in the Jalmat Gas Pool shall not be simultaneously dedicated to an oil well in the Jalmat Gas Pool.

PROVIDED FURTHER, that the provisions of this order shall become effective on July 1, 1955.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

JOHN F. SIMMS, Chairman

E. S. WALKER, Member

W. B. MACEY, Member and Secretary

ir

		GOR	Acc	CFPD.	Rec. Vol. Voids.
Texas Co.					
Tristoe B	1	52,754	5	263,770	5335 + 28.08
	2	85,632	3	256,896	5196 + 16.85
	3	22,734	11	250,074	5058 + 61.77
	4	7000	35	245,000	4955 + 196.5
	160		54	1,015,740	20,544 303.2 = 20,847.2 = 130.3 cu ft/acre
Kelly					
Jack	1	9930	25	245,750	4971 + 140.4
	2	9600	25	240,000	4854 + 140.4
	3	8790	28	246,120	4978 + 157.2
	4	9800	25	245,000	4955 + 140.4
	160		103	976,870	19,758 578.4 = 20,336.4 = 127.1 cu ft/acre.

$$\frac{15.025 \times 5.76 \times 10^{2}}{5.2 \times 10^{2} \times 8 \times 10^{2}} = \frac{84.14 \times 10^{2}}{41.6 \times 10^{4}} = 2.022596 \times 10^{-2} = .0202226 \text{ (compressibility)}$$

TOTAL Res. SPACE VOIDED = 140,563.24 cu ft.

TOTAL ACREAGE = 1480

SPACE VOIDED PER ACRE = 94.98 cu. ft. per Acre per day (Oil wells + 2 gas wells)

SPACE VOIDED PER ACRE BY GAS WELLS = 78.05 cu. ft. per day, per Acre.

So, ALL WELLS IN "FAIRY YATES" WILL VOID 22% MORE RESERVOIR SPACE PER DAY THAN WILL GAS WELLS IN SURROUNDING AREA — ASSUMING AVERAGE GAS WELL ALLOWABLE OF 617,526* cu ft PER DAY.

* THIS IS 1954 AVERAGE GAS WELL ALLOWABLE.

Hearer Way,

Oil: 1 ratio should equalize withdrawals.

Gas: 1 ratio slows withdrawals by 22%.

Grayburg:

no 1 ratio allows should withdrawals to exceed gas withdrawals by 22%.
Actual Break-even ratio would be 1584 cu ft per bbl, more or less.

		GOR	Acc	CFPD.	Res. Vol. Voided.
Texas Co.					
Tristoe B	1	52,754	5	263,770	5335 + 28.08
	2	85,632	3	256,896	5196 + 16.85
	3	22,730	11	250,074	5058 + 61.77
	4	7000	35	245,000	4955 + 196.5
	160		54	1,015,740	20,544 303.2 = 20,847.2 ÷ 130.3 cu ft/acre
Kelly					
Jack	1	9930	25	245,750	4971 + 140.4
	2	9600	25	240,000	4854 + 140.4
	3	8790	28	246,120	4978 + 157.2
	4	9800	25	245,000	4955 + 140.4
	160		103	976,870	19,758 578.4 = 20,336.4 = 127.1 cu ft/acre.

$$\frac{15.025 \times 5.6 \times 10^2}{5.2 \times 10^2 \times 8 \times 10^2} = \frac{84.14 \times 10^2}{41.6 \times 10^4} = 2.022596 \times 10^{-2} = .020226 \text{ (compressibility)}$$

Total Res. space voided = 140,563.24 cu ft.

Total Acreage = 1480

Space voided per Acre = 94.98 cu ft. per Acre per day (oil wells + 2 gas wells)

Space voided per Acre by Gas wells = 78.05 cu ft. per day, per Acre.

∴, All wells in "Fatby Yates" will void 22% more reservoir space per day than will gas wells in surrounding area — assuming average gas well allowable of 617,526* cu. ft. per day.

* This is 1954 average gas well allowable.

Meaning,

[illegible]

[illegible]

Accuracy:

[illegible] by 22%.

∴ [illegible] break-even [illegible] would be 4564 cu ft per bbl, more or less.

Based on 80 BOPD [illegible] GOR.

Amerada	G.O.R.	Allow.	CFPD	[illegible]
Fairy 1	5801	15*	132,025	2670 + 84.23
2	19397	13	252,161	5700 + 73.00
4	4383	40	175,320	3546 + 22.46
120 A.		68	559,496	11,316 + 179.69 = 11,495.69 cu ft.

Haynes & V.T.				
Woolworth 1	1510	4*	6040	122.2 + 22.46 = 144.66 cu ft.

Humble				
Hunter 2	8933	19*	169,727	3433 + 106.7
3	17,657	6	105,942	2143 + 33.70
4	G.W.	0	154,382	3123 + 0.00
Thomas 2	2,933	10*	29,330	593.2 + 56.15
3	1671	12*	20,052	405.6 + 67.38
4	6428	4*	25,712	520.0 + 22.46
240		51	505,145	10,217.8 + 286.39 = 10,504.19

R. Olsen				
Cooper 2	9670	9*	48,350	977.9 + 50.54
Meyer B 1	13200	5*	66,000	1335 + 28.08
80		14	114,350	2312.9 + 78.62 = 2,391.52 cu ft.

So. Cal.				
Dunn 1	4379	40	175,160	3543 + 224.6
2	9501	26	247,026	4996 + 146.0
3	6805	36	244,980	4955 + 202.1
Harrison 1	12,549	16	200,784	4061 + 89.86
2	15,923	7	111,461	2254 + 39.31
3-8	11,195	22	246,290	4981 + 123.5
4	29,418	4	117,672	2380 + 22.46
Phillips 1	11,[illegible]	21	251,574	5094 + 117.9
2	9,[illegible]	27	245,[illegible]	1974 + 151.6
Thomas 1	11,155	21	234,255	[illegible] + 117.9
2	13,[illegible]	15	193,800	3920 + 84.24
3	4,482	40	179,280	3626 + 224.6
4	6,[illegible]	33	244,[illegible]	4947 + 185.3
Van Zandt 1	12,428	24	298,560	[illegible] + 112.3
2	17,[illegible]	13	[illegible]	[illegible] + 73.00
3	35,026	7	245,[illegible]	4960 + 39.31
4	G.W.	0	154,382	3123 + 0.00
680		353	3,165,[illegible]	[illegible] + [illegible] = 74,[illegible]3.58

Volumetric GOR for Fairway Unit:

1. BHP Yates = 800 psi.
2. BH Temp Yates = 120°F
3. Avg. Yates formation oil recovered 617,526 cu. ft/day allowable on 160 acres during 1954. or 154,381 on 40 acres.

$$\frac{P_1V_1}{T_1} = \frac{P_2V_2}{T_2}; \quad \frac{15.025 \times 154,381}{520} = \frac{800\,V_2}{560}$$

$$V_2 = \frac{15.025 \times 1.54381 \times 10^5 \times 5.6 \times 10^2}{5.2 \times 10^2 \times 8 \times 10^2} = \frac{129.8859 \times 10^7}{41.6 \times 10^4}$$

$V_2 = 3,12249 \times 10^3 = 3,122$ cu/ft. res. space per 40 ac.

$\frac{3,122}{5.615} = 556$ bbl per 40 acres.

556 − 40 = 516 bbl × 5.615 = 2897 cu ft. res. space for casinghead on 40 ac.

$\frac{15.025\,V_1}{520} = \frac{800 \times 2897}{560}$;

$V_1 = \frac{5.2 \times 10^2 \times 8 \times 10^2 \times 2.387 \times 10^3}{15.025 \times 5.6 \times 10^2} = \frac{124.259 \times 10^7}{84.14 \times 10^2}$

$V_1 = 1.47681 \times 10^5 = 147,681$ cu ft @ surface on 40 ac.

147,681 : 3692 cu ft per bbl. (approx.)

Note that Z_2 was not considered.

3692 × 1.30 = 4710
3692 × 1.50 = 5538
3692 × 1.66 = 6130

OIL CONSERVATION COMMISSION
P. O. BOX 871
SANTA FE, NEW MEXICO

M E M O R A N D U M

On January 7, 1955, at 10 o'clock a.m., a meeting will be held in the Oil Conservation Commission offices at Hobbs, New Mexico. The purpose of the meeting is to discuss the area surrounding the old Falby-Yates Pool (generally located in Township 24 South, Ranges 36 and 37 East), particularly with reference to the presence of two oil-producing zones within the defined limits of the Jalmat Gas Pool.

Your attendance at the meeting will be sincerely appreciated.

W. B. Macey
Secretary - Director

December 28, 1954
Santa Fe, N. M.

(Please Note Attached Distribution List)

OIL CONSERVATION COMMISSION
P. O. BOX 871
SANTA FE, NEW MEXICO

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Gulf Oil Corporation
Box 2167
Hobbs, New Mexico

Continental Oil Company
Box 427
Hobbs, New Mexico

The Texas Company
Box 1270
Midland, Texas

Cities Service Oil Company
Box 97
Hobbs, New Mexico

Western Natural Gas Company
823 Tower Building
Midland, Texas

Amerada Petroleum Corporation
Box 312
Midland, Texas

John M. Kelly
Box 5671
Roswell, New Mexico

Carper Drilling Company
Carper Building
Artesia, New Mexico

W. S. Paddock
410 N. Texas Street
Odessa, Texas

Cactus Drilling Company
Box 348
San Angelo, Texas

H. Olsen Oil Company
Drawer [illegible]
Jal, New Mexico

Humble Oil & Refining Company
Box [illegible] 2347
Hobbs, New Mexico

Southern California Petroleum Co.
Box 1071
Midland, Texas

Stanolind Oil & Gas Co.
~~Box 68~~
Hobbs, New Mexico

Anderson-Prichard Oil Corp.
Box 2197
Hobbs, New Mexico

Haynes & V. T. Drilling Co.
1725 North Grant Street
Odessa, Texas

Magnolia Petroleum Corp.
Box 633
Midland, Texas

Name	From	Representing
[illegible]	[illegible]	[illegible]
W. S. Colwell	[illegible]	[illegible]
E. O. McPeters	Hobbs	John M. Kelly
John M. Kelly	Roswell	John M. Kelly
[illegible]	[illegible]	[illegible]
W. J. Atkins	Monument	Artesia
[illegible]	Hobbs	[illegible]
W. [illegible] Matthews	[illegible]	[illegible]
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[illegible]	Midland	[illegible]
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J. W. Brown	Roswell	Stanolind
J. D. Albright	[illegible]	[illegible]
C. E. Sperry	Artesia	Carper Drlg.
[illegible]	[illegible]	[illegible]
Paul D. Kerrigan	[illegible]	[illegible]
[illegible] Simpson	Artesia, N. M.	C. C. C.
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]