

**CASE 5190: Application of UNION
OIL OF CALIF. FOR POOL CREATION
AND SPECIAL RULES, LEA COUNTY.**

CASE No.

5190

Application,
Transcripts,

Small Exhibits

ETC.

EXAMINER HEARING

Case No. 5190

TRANSCRIPT OF HEARING

A P P E A R A N C E S

Sumner Buell, Esq.
MONTGOMERY, FEDERICI,
ANDREWS, HANNAHS & BUELL
350 E. Palace Avenue
Santa Fe, New Mexico

CASE 5190

Page.....2

I N D E X

PAGE

J.B. JORDAN

Direct Examination by Mr. Buell	3
Cross Examination by Mr. Stamets	7

ALAN G. SMITH

Direct Examination by Mr. Buell	18
Cross Examination by Mr. Stamets	25

E X H I B I T S

Marked

Admitted

Applicant's Exhibits Nos. 1 and 2	--	7
--------------------------------------	----	---

Applicant's Exhibits Nos. 3 through 8	--	24
------------------------------------------	----	----

JORDAN-DIRECT

CASE 5190

Page.....3

MR. STAMETS: We'll take next Case 5190, being Application of Union Oil Company of California for pool creation and special rules, Lea County, New Mexico.

MR. BUELL: Mr. Examiner, my name is Sumner Buell, with the firm of Montgomery, Federici, Andrews, Hannahs & Buell, appearing on behalf of the Applicant. We have two witnesses, Mr. Smith and Mr. Jordan, and ask that they be sworn.

MR. STAMETS: No other appearances? The Witnesses will stand and be sworn, please.

(Witnesses sworn.)

J.B. JORDAN

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

DIRECT EXAMINATION

BY MR. BUELL:

Q Would you state your name, please?

A My name is J.B. Jordan.

Q By whom are you employed, in what capacity, and where?

A I'm employed by the Union Oil Company of California and Roswell, New Mexico, as a Development Geologist.

Q Have you previously testified before the

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JORDAN-DIRECT

Page.....4

Commission or one of the Examiners and had your qualifications accepted as a matter of record?

A Yes, I have.

Q Are you familiar with this Application, Case 5190?

A Yes, I am. Case 5190 seeks to establish a new Morrow gaspool for it's Pipeline Deep Unit No. 1, and create 640-acre spacing and special field rules.

Q I hand you what has been marked for identification as Applicant's Exhibit No. 1 and ask you to please explain this Exhibit and what it shows?

A Exhibit No. 1 is a structure contour map; contoured on top of the lower Morrow sand, contoured on the interval of 50 feet. The scale of the map is 2000 feet to the inch, and has the wells color coded as to producing horizons and all the wells in the area are shown thereon. The map shows a porosity permeability barrier. This has pretty well controlled the Union Pipeline Federal A in Section 8, was tied in the Morrow, and the Union No. 1 Pipeline Federal No. 4 was a good Morrow well, and the Pipeline Deep Unit in Section 17 is a fairly good Morrow well and the Sinclair Mescalero Ridge in the Northwest 21 made water from the lower Morrow, and then down in Section 20 the Pennzoil Mescalero Ridge was a good lower Morrow well.

JORDAN-DIRECT

CASE 5190

Page.....5

North of Section 33 Union just built a No. 1 Pipeline State; the lower Morrow is real tight in it. To the East, in Section 2, Texas Oil and Gas drilled a well as --

MR. STAMETS: (Interrupting) Mr. Jordan, is that last well you referred to along the northern boundary of your plat?

MR. JORDAN: Yes.

MR. STAMETS: That was "tight in the Morrow"?

MR. JORDAN: Tight in the Morrow.

BY MR. BUELL:

A (Continuing) As you see, I have drawn my porosity barrier south of that well and west of the well in Section 2. Also, we have another well in Section 6, the Humble Mescalero Ridge Unit which is tight in the Morrow, and down in Section 21 the Sinclair Mescalero Ridge Unit made water at a higher elevation than the Pinto Mescalero Ridge in 20. Therefore, I conclude that it's not a continuous sand, they had different water levels, so there has to be a porosity barrier between those two wells.

Q I direct your attention to the orange line marked A-A'. Would you explain what that is going to show?

A The orange line is a line of cross section which will be Exhibit 2; its north south section extended from

Union Pipeline Federal No. 1 in Section 4 through the Pipeline Federal A in Section 8, Pipeline D Unit in Section 17, Sinclair Mescalero Ridge in northwest 21 and the Pennmoil in Section 20.

Q In the Unit outline shown --

A (Interrupting) Unit outline shown in red.

Q I refer you to what has been marked for identification as Exhibit No. 2. Would you please explain that Exhibit?

A Exhibit No. 2 is a north-south structural cross section as drawn and shown on the orange line, Exhibit No. 1, the color yellow is lower Morrow sand where it is clean. I show the pinch-out and where it is white is what I postulate to be the porosity barriers. Tests and perforations on all the wells are shown and completion data on the Morrow gas well is shown.

Q This log reflects that the Union Well in Section 8 was tight.

A Yes it does, and the zone in question was peried and tested and got nothing out of it.

Q And have you marked on there your pick for the oil-gas contact in the two southern wells?

A Yes. In the Sinclair Mescalero Region, Section

JORDAN-DIRECT
CROSS

CASE 5190

Page 7

21 approximate gas-water contact, and that is probably high, it could be just a little bit lower. From the logs in the Pennzoil Well, Section 20, at the point that I showed approximate gas water is the point that I thought that it was.

Q Were Exhibits 1 and 2 prepared by you or under your supervision?

A Yes, they were.

MR. BUELL: At this time I move the introduction of Exhibits 1 and 2.

MR. STAMETS: Exhibits 1 and 2 will be admitted.

(Whereupon, Applicant's Exhibits 1 and 2 were admitted into evidence.)

MR. BUELL: I have no other questions of this Witness.

CROSS EXAMINATION

BY MR. STAMETS:

Q Mr. Jordan, we are discussing Section 17 here, referring to Exhibit No. 1 is the Union Pipeline Federal Well in the southwest quarter of Section 4, 1934 NA designated pool?

A Yes, that is in the Larecum Morrow pool.

Q What is the spacing?

A The spacing there is 640 acres.

Q Is the Pennzoil Mescalero Ridge Well in Section 20 of that same Township, in a designated Morrow gas pool?

A Yes, it is. It's a Quail Ridge Morrow.

Q What is the spacing?

A The spacing there is 320 acres

Q You have drawn a gas-water contact on this Exhibit between the Quail Ridge Morrow pool or well and Union's well in Section 17. What is the basis for that contact?

A The basis for that is the testing on the well in northwest 21 in the southwest of Section 16. The well in the southwest of 16, I believe we covered 360 feet of water on drill-stem test, and the top of that sand, the datum on it is 9709, and therefore I concluded that the oil-water contact should be maybe slightly above that; it's hard to pin down exactly from the information we have.

Q Is that gas-water contact in the same Morrow sands that are producing in these two wells?

A Are you referring to the well in 16 and one in 21?

Q Yes. In otherwords, I am talking about Section 17 and 20, 16 and 21 now.

A Yes. Now we have not established a gas-water

JORDAN-CROSS

CASE 5190

9

Page.....

contact in the well in 17, we do not know where it is, but in Section 21, it tested gas, condensate, and water; water in such quantities that they couldn't produce the well.

Q Was that in the same Morrow zone that's productive in the Pipeline Morrow?

A Well, it appears to be the same Morrow zone that's productive in the Pipeline.

Q I notice also that you have drawn your porosity pinch-outs in a rather circular fashion. What's the reason that's been done?

A Well, that's from the control in Section 8. We know it's tight there because of the different water levels between the Pennzoil in Section 20 and the other wells; I feel there has to be a porosity pinch out there.

Q You've simply joined the wells that have porosity pinch-outs?

A Yes, tight wells.

Q Would it be possible, for instance, to, say in Section 6 up in the northwest corner of our Exhibit No. 1, to take the No. 3 Mescalero Ridge Unit and instead of connecting that to the other tight spots, to draw a tight streak running diagonally through that well, say northeast southwest?

A I'm sure you could probably postulate another porosity streak. We don't have any control --

Q (Interrupting) Is it possible that that porosity pinch-out could be isolated from these other porosity pinch-outs?

A It's possible, and, of course, I drew my line at the maximum distance I could draw it from the control. In other words, it's possible that it would be a little farther south.

Q Is it possible that each of these wells which is drilled into a tight zone has found a completely separate tight zone which is not connected to any other well?

A That would be pretty hard to answer. In the Morrow you have strange things happening. In other words, with widely scattered control it is difficult to postulate many things that could have happened there, I mean as far as pinch-outs, there could be more than one.

Q It would be just as fair to postulate that kind of a situation as to postulate a porosity pinch-out such as you have here?

A Well, I feel that this well in Section 7 possibly is porous, so I wouldn't want to, you know, get inside of

that.

Q I don't believe you answered my question. Would it be possible to draw what you have drawn here with a series of non-connected porosity pinch-outs and have them be just as good at this stage of the game as what you have drawn here?

A That's entirely possible.

Q Now, referring to the contouring in Section 20 where the Pennzoil Well is located, would it be possible to contour the 9750 foot contour in such a manner that you wouldn't have two isolated highs there but rather an elongated high?

A Well, I think that you could contour it, and it is contoured in essentially one elongated high, but it has a higher spot here than it does to the north. I think that you would have to keep that idea in your contouring here that you couldn't pull your lines in enough to -- contouring's all the same height there.

Q If we took out that little saddle, or let's not take it out, but let's eliminate the break in the line. If we eliminate the porosity barrier, is there any reason why the Pennzoil Mescalero Ridge Well in 20 and the Union Pipeline Well in 17 couldn't be producing from the same

Morrow reservoir?

A I think that the Pipeline Deep in Section 17, because of the similarities of the log between it and the one in northwest 21 are probably continuous, that the porosity is probably continuous, and therefore we would have, if we could establish it at a different water table in Section 17 than we have in Section 20 in Pennzoil.

Q There is a water table for the well in Section 20?

A Oh, yes. I had it on the cross section there, I don't have the datum figured, but it would be 40 to 50 foot load to the well in 21, see.

Q Now which well do you have the water column in that determines the water-gas contact of the Pennzoil Well in Section 20?

A In Section 20 I determined that from the logs, resistivity of the log. It does produce some water.

Q Are you talking about resistivity in that well itself?

A In that well itself within what I call the porous sand.

Q Mr. Jordan, is the Morrow sand in this area one nice, thick, uniform sand body that can be predicted over

great areal distance?

A No, I don't think there is anywhere in New Mexico that you could predict the areal distribution of the Morrow. I mean you have a nice, clean, thick sand in some wells and an off-set will be thin and tight.

Q Is it possible to drill wells in very close proximity to one another in the Morrow Formation and get wells with widely varying potentials and get wells actually producing from different stringers in the Morrow?

A That does happen. Of course, we do have other stringers in the Morrow which produce in this area, or have produced. For instance, the--what I call the middle Morrow--has produced in the northwest 21 and has been depleted, but the zone which we have had the best luck with in the area appears to be the zone which is more commercial is the lower Morrow sand and it made water in the northwest of 21.

Q With the Morrow situation being what it is, is it possible that drilling on wide spacing you would miss productive sands all together and that these would not be drained?

A Well, I'm sure that that's possible and we do not have any, as I understand it, test in this well to

establish the areal distribution and up in Section 4 we do have the test in that well which establishes what we think is probably an areal extent there. I think our engineers probably could explain that better than I could, but we don't have those limit tests in this well.

Q Mr. Jordan, is the red outline on Exhibit No. 1, containing about six sections, a unit boundary of some sort?

A That's just the outline of the Pipeline Deep Federal Unit, that's all Federal lands and has been approved by the USGS.

Q Within this unit do you have a unit plan of operation that provides for the orderly development of wells?

A We have not filed it as yet but we are due to file it shortly.

Q So at the present time, is it possible that you could file a plan of development which would call for the drilling of wells on 640 acre spacing even though 320 acre units might be called for by Commission rules and regulations so far as dedication of wells?

A I don't quite understand your question, but at the present time we have filed, and it has been approved,

JORDAN-CROSS

CASE 5190

Page.....15

a participating area which includes all of Section 17, and that has been approved by the USGS.

Q I think what I was getting at, Mr. Jordan, would be, if this Application were denied, would it force Union immediately to drill wells, or drill a second well on Section 17, or could you go out and drill one in Section 8 and another one in Section 5 and continue to evaluate what you have before having to go in and drill wells on 320s?

A I'm sure that we could, at this point, because it's all Federal land, see, there is no one else involved, that we could drill one to the section before we start infilling. Of course, that would be up to the USGS whether they want to force us to do that or not.

Q At the present time is there any evidence that shows exactly what the extent of the Morrow sands is that this pipeline was completed in?

A The only evidence that we have is the fact that, I think at present in the northwest quarter of 21 it's present here, and I think it is probably present in Section 7, and that's the extent of our knowledge. We know it isn't present in Section 8 there where that well was drilled and that's the extent of our control on that.

Q Is there any concrete evidence, any good evidence that this well is capable of draining that entire section?

A I believe I'll leave that question to our Engineer. I believe he is better qualified to answer that.

Q Referring to your Exhibit No. 2 and the Pennzoil Mescalero Ridge Well, I see a number of drill-stem tests on the right-hand side, indicating that some other zones may be productive in there although they are not very good.

A Those zones are actually completed along with the lower zone. They're all commingled.

Q I see, so there are a number of zones which might potentially be productive in this area?

A Right. These zones which I called the middle Morrow, you notice in Section 21 this Sinclair was completed from zones in this Morrow and depleted after making -- I don't remember the exact production -- but it wasn't a lot of gas.

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

MR. PORTER: You don't think that other zones in the Morrow would be worth isolating?

MR. JORDAN: At the present time, right in this

immediate area, the zones above the lower haven't been very good. Now, as you move on to the west, there are some fairly good middle Morrow wells.

MR. PORTER: In this area you wouldn't expect a commercial well from any of those zones?

MR. JORDAN: So far I don't believe that there has been a well that, you know, would be commercial from the upper-middle zones there.

MR. PORTER: Thank you.

MR. STAMETS: The name you propose was the Pipeline Morrow Gas Pool?

MR. JORDAN: Pipeline Deep Morrow Gas Pool, yes.

MR. STAMETS: At the present time this well has 320 acres dedicated to it?

MR. JORDAN: It's statewide, yes.

MR. STAMETS: Is that the south half or the east half?

MR. JORDAN: It's the east half I believe.

MR. STAMETS: We can get that from our record if necessary.

MR. JORDAN: Yes, I think it is, but I'm not sure at this point.

SMITH-DIRECT

CASE 5190

Page 18

MR. STAMETS: If there is nothing further, this
Witness may be excused.

(Witness previously sworn.)

ALAN G. SMITH

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

DIRECT EXAMINATION

BY MR. BUELL:

Q Would you state your name, please, by whom you
are employed, in what capacity and where?

A My name is Alan G. Smith, I'm a Petroleum
Engineer employed by Union Oil Company in our Midland
District Office.

Q Have you previously testified before this Com-
mission or one of its Examiners and had your qualifications
accepted as a matter of record?

A Yes, sir.

Q Are you familiar with the Application in
cause 5190?

A Yes, sir.

Q Would you give the Examiner a brief history of
the Pipeline Federal Deep Unit No. 1 Well?

A Pipeline Federal Deep Unit No. 1 Well is located

SMITH-DIRECT

Page 19

in Section 17, Township 19 South, Range 34 East, in Lea County, New Mexico. Completion as a Morrow producer from the intervals 13,456 occurred in 1970; initial production tests on the well were 4.7 million a day and the condensate ratio of 71.6 barrels per minute. The well is currently shut-in and we're waiting a pipeline connection and installation of production equipment.

Q I refer you to what has been marked as Exhibit No. 3. Would you go through that, please?

A Exhibit No. 3 is the result of an analysis we ran on a sample of the gas, top part here in A. The pertinent things to notice here, of course, is the initial producing GOR and the fact that it is a sweet gas. And the second part, Part B, is the reservoir properties of this particular sand. We have a porosity of 13 percent or saturation of 14 percent, only five foot of sand, and a reservoir temperature of 184 degrees fahrenheit and initial reservoir pressure of 5639. Both of these final two values were measured with a bottom hole-pressure bomb after we had the well shut-in about three or four weeks.

Q I'm referring you to what has been marked as Exhibit No. 4. Would you go through that?

A Exhibit No. 4 is the standard volumetric reserve

calculation assuming a 320-acre drainage and a five-foot sand and 640-acre drainage and a 75-percent recovery factor. Those values are 2.3 billion cubic feet for 320 acres original gas in place and 4.56 billion cubic feet for 640 and then the recoverable gas would be 1.7 million cubic feet for 320 and 3.4 billion cubic feet for 640 acres.

Q Referring to what's been marked as Exhibit No. 5, would you please explain that?

A Exhibit No. 5 is a summary of some economic data with income using a heavy gas price of \$.35 mcf and a condensate price of \$7.50 a barrel, and then a well cost of \$440,000, which is what we drilled the Pipeline Deep Unit Well for, and what we've done here is projected a production history based on initial tests and based on the reserves for 320 acres; gas reserves at 1.7 billion cubic feet, condensate reserves of 42,000 barrels. This gives us an undiscounted profit, at 100 percent working interest, \$279,000, and if we discount this profit at 10 percent, which is kind of a standard number that Union uses, this gives us \$217,000 and we convert this to a profit to investment ratio on an undiscounted value, this 63.63, which means that for every dollar we invest we get \$1.63 back. This is before Federal income tax. Now, after

Federal income tax on an undiscounted basis it's .41.

Q Is this acceptable to the industry considering the risk involved?

A No, sir.

Q And have you done some economics on the profit investment figures of 640 acres?

A Yes, sir. The profit investment undiscounted is 2.25 and the after-tax-profit-to-investment is 1.50.

MR. PORTER: You haven't asked Senator Jackson if he is going to let you get $7\frac{1}{2}$ for condensate, have you?

MR. SMITH: Yes, when we ran these economics we ran them before all this business came up.

(Whereupon, a discussion was held off the record.)

BY MR. BUELL:

Q Referring you to what has been marked as Exhibit No. 6, would you briefly outline what is in that?

A Okay. In conjunction with this I also look at Exhibit 7 which is a map of the area and what this Exhibit 6 shows is the wells and some production and pressure data on these wells. The important columns to look at on these wells are Initial Condensate Reservoir, Initial Shut-In

SMITH-DIRECT

CASE 5190

Page.....22

Tubing Pressure, Latest Condensate Ratio and Latest Shut-in Tubing Pressure. I would like to just look for a minute at the shut-in tubing pressures which, on Exhibit 7, this little map are underlined in red. Our Pipeline Federal Well in Section 4, the latest shut-in tubing pressure was 2323 pounds; our Pipeline Deep Unit Well had a shut-in tubing pressure of 3703 -- that's in Section 17; the Sinclair Mescalero Ridge No. 1 Well in Section 21, was abandoned in 1966 or temporarily abandoned, was a shut-in tubing pressure of 1363 pounds, and the Pennzoil Mescalero Ridge Unit Well in Section 20 had a shut-in tubing pressure of 2992 pounds, and this is a 1972 pressure. Then referring to the condensate ratios, these are underlined in blue on Exhibit 7, our Union Pipeline Federal Well in Section 4, the latest condensate producing ratio is 38.5 barrels for condensate per million cubic feet of gas; our Pipeline Deep well came on at 71.6; the Sinclair Well in Section 21, at the time it was abandoned, was producing 22.2, and the Pennzoil Well currently produces 58.5 barrels per day. We infer from this differences in the shut-in tubing pressure and the differences in the condensate ratios, that our Pipeline Deep Unit Well is in a separate field from either the Pennzoil

Well in Section 20 or the Pipeline Federal Well in Section 4.

Q Referring you to what has been marked as Exhibit No. 8, would you briefly explain that?

A Exhibit No. 8 is a comparison between the Pipeline Federal Unit No. 1 Well located in Section 4 and the Pipeline Deep Unit Federal Well in Section 17. Remember we had a hearing on the Pipeline Federal No. 1 Well and received 640-acre spacing on the basis of some audible pressure build-ups which indicated we had adequate permeability to drain 640 acres. That well had a calculated open flow of 26.4 million cubic feet from 23 feet of sand. The Pipeline Deep Federal No. 1 had a calculated open flow of 13.8 from only 5 feet of sand. We had the shut-in tubing pressures listed here and we also had the flow rate at 1000 pounds draw-down. The Pipeline Federal Unit No. 1 Well flowed 8 million cubic feet a day from 23 feet of sand and the Pipeline Deep Unit No. 1 flowed 4.7 million from 5 foot of sand and then we have made some permeability calculations down here. On the Pipeline Federal Unit No. 1 Well we had 50 millidarcies as demonstrated from a bottom-hole-pressure-reservoir-limit test and in our Pipeline Deep Federal Unit No. 1 it looks like it's

SMITH-DIRECT

CASE 5190

Page..... 24

about 3 times as good as far as permeability goes, or about 150 millidarcies.

Q Are you of the opinion that, with those reservoir characteristics, that this one well can efficiently and effectively drain 640 acres?

A Yes, sir.

Q Were Exhibits 3 through 8 prepared by you or under your supervision?

A Yes, sir.

MR. BUELL: At this time I would move the introduction of the Exhibits.

MR. STAMETS: That's Exhibits 3 through 8 and they will be admitted.

(Whereupon, Applicant's Exhibits

Nos. 3 through 8 were admitted into evidence.)

BY MR. BUELL:

Q Is it your opinion that the grant of this Application would prevent waste and protect correlative rights?

A Yes, sir.

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

CROSS EXAMINATION

BY MR. STAMETS:

Q Mr. Smith, referring to Exhibit No. 4, am I right in interpreting this that you have assumed that that five feet of pay extends over first 320 acres and then in the second case over 640 acres?

A Yes, sir.

Q Is there any reason, knowing the Morrow Formation, to assume that this five feet of pay would extend over an area that large?

A No, sir, this is, of course, the advantage of running a reservoir limit test. These are just some standards that we try to look at.

Q Okay, referring to your Exhibit No. 5, you calculated the cost of the individual wells and profit ratios and so on. If a second well were drilled in the other half of Section 17 and you got a tremendously good well, that would throw these economics into a cock's hat?

A Yes, sir.

Q Of course, conversely, if you got a dry hole it would not improve the economics at all?

A Yes, sir. All we did on this thing was assume

that we had a well that had a sand thickness that extended over 640 acres so that our second well would recover 1.7 billion cubic feet, to generate these economics.

Q Referring then to Exhibit No. 7, the Sinclair Mescalero Ridge Well located in the northwest corner of Section 21, is about what, a half a mile from the Pipeline Deep Well?

A Yes, sir.

Q And its final shut-in pressure -- is that shut-in pressure or flowing tubing pressure?

A No, shut-in tubing pressure.

Q 1363 pounds. The shut-in pressure on the well in question, 3703, it doesn't look like that well has drained across the line there a half a mile away?

A If you recall from Mr. Jordan's testimony, this Sinclair Well is not completed in the same zone as what our Pipeline Deep Unit Well is.

Q Okay. So, anyhow, looking at this Exhibit, there is nothing on here which tends to indicate that these wells are in communication with one another?

A Yes, that's right.

Q They all appear to be isolated?

A Yes.

Q Mr. Smith, is there any hard evidence to show that this well that's currently completed can drain 640 acres?

A We feel, from the permeability indications, that if the gas is there you can drain 640 acres.

Q If the gas is there?

A If the gas is there.

Q Is there any indication at this time that the gas is indeed there?

A No, sir.

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

MR. BUELL: Just something for clarification. Exhibit No. 5, which is the economic work-up on this, is based on 320-acre spacing, is that correct?

MR. SMITH: Yes, sir.

MR. BUELL: I have nothing else, Mr. Examiner.

MR. STAMETS: If there are no further questions, the Witness may be excused.

Anything further in this Case?

MR. BUELL: I have nothing further.

MR. STAMETS: We do have a letter from Richard L. White, of Getty Oil Company, advising that Getty is an

interest owner in the well and that they support Union in their effort to establish a new gas pool and the adoption of temporary pool rules.

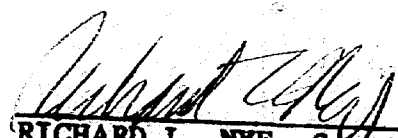
I don't believe that a particular period of temporary rules has been discussed. Do you seek for one year?

MR. SMITH: One year, yes.

MR. STAMETS: We will take this Case 5190 under advisement.

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

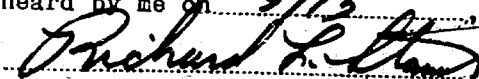
I, RICHARD L. NYE, Court Reporter, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me, and the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.


RICHARD L. NYE, Court Reporter

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 5190, heard by me on 3/13, 1974.

_____, Examiner
New Mexico Oil Conservation Commission

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 5190, heard by me on 3/13, 1974.


Richard L. Nye, Examiner
New Mexico Oil Conservation Commission

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BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

CASE NO. 5190
Order No. R-4758

APPLICATION OF UNION OIL COMPANY
OF CALIFORNIA FOR POOL CREATION
AND SPECIAL POOL RULES, LEA
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on March 13, 1974, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 26th day of March, 1974, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, 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 applicant, Union Oil Company of California, seeks the creation of a new Morrow Gas Pool for its Pipeline Deep Unit Well No. 1 located in Unit J of Section 17, Township 19 South, Range 34 East, NMPM, Lea County, New Mexico, and for the promulgation of special rules therefor including a provision for 640-acre spacing.

(3) That the subject well is located within one mile of the horizontal limits of the Quail Ridge-Morrow Gas Pool, Lea County, New Mexico.

(4) That the evidence presently available does not indicate that the subject well has discovered a separate common source of supply or that the subject well can efficiently and economically drain 640 acres.

(5) That in order to prevent the reduced recovery occasioned by the drilling of an insufficient number of wells, and to otherwise prevent waste and protect correlative rights, the subject application should be denied.

-2-

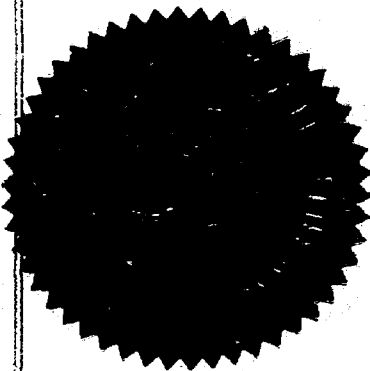
CASE NO. 5190
Order No. R-4758

IT IS THEREFORE ORDERED:

(1) That the application of Union Oil Company of California in the subject case is hereby denied.

(2) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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



STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

I. R. Trujillo
I. R. TRUJILLO, Chairman

ALB J. ARMILLO, Member

A. L. Porter, Jr.
A. L. PORTER, JR., Member & Secretary

S E A L

jr/

Application of Union Oil Company of California
for pool creation and special rules, Lea
County, New Mexico.

Case No. 5190

Mar. 13 - R.H.S

FINDS

(1) Jurisdiction

(2) That the applicant, Union Oil Company of California, seeks the creation of a new Morrow Gas pool for its Pipeline Deep Unit Well No. 1, located in Unit 1 of Section 17 Township 19 South, Range 34 East, NMPM, Lea County, New Mexico, and for the promulgation of special rules therefor including a provision for 640-acre spacing.

(3) That the subject well is within one mile of the horizontal limits of the Quail Ridge Morrow Gas Pool, Lea County, New Mexico.

(4) That the evidence presently available does not indicate that the subject well has discovered a separate common source of supply.

(5) That in order to avoid the economic loss caused by the drilling of unnecessary wells ^{W. 0115} the augmentation of risk arising from the drilling of an excessive number of wells to prevent the reduced recovery occasioned

or that the subject well can
efficiently and economically drain
640 acres.

by the drilling of an insufficient number of wells,
and to otherwise prevent waste and protect cor-
relative rights, the subject application should
be denied.

Ordered

1) That the application of Union Oil Company
of California in the subject case is hereby
denied.

2) Jurisdiction

DONE

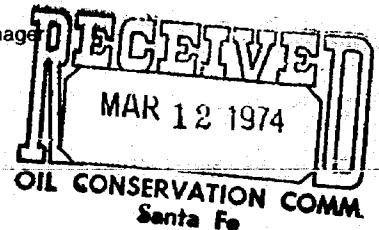


Getty Oil Company

P.O. Box 1231, Midland, Texas 79701

Mid-Continent Exploration and Production Division Richard L. White, Midland District Production Manager

March 11, 1974



New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

Attn: Mr. D. S. Nutter

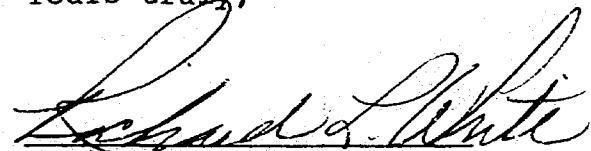
Re: Case 5190

Gentlemen:

This is to advise that Getty Oil Company, a 12.5 percent owner in the Pipeline Deep Unit Federal No. 1 will, support Union Oil Company of California in their effort to establish a new gas pool and the adoption of temporary pool rules in the forthcoming hearing on March 13, 1974.

Your consideration will be appreciated.

Yours truly,


Richard L. White

WJN:ge

cc: Mr. L. F. Thompson
Union of California

Docket No. 6-74

DOCKET: EXAMINER HEARING - WEDNESDAY - MARCH 13, 1974

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

The following cases will be heard before Richard L. Stamets, Examiner, or Daniel S. Nutter, Alternate Examiner:

- ALLOWABLE:**
- (1) Consideration of the allowable production of gas for April, 1974, from seventeen prorated pools in Lea, Eddy, Roosevelt and Chaves Counties, New Mexico;
 - (2) Consideration of the allowable production of gas from five prorated pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico, for April, 1974.

CASE 5179: Application of HNG Oil Company for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the Dogie Draw Unit Area comprising 5,122 acres, more or less of State, Federal, and fee lands in Township 26 South, Range 36 East, Lea County, New Mexico.

CASE 5180: Application of Amoco Production Company for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Rock Lake Unit Area comprising 5760 acres, more or less, of State and fee lands in Township 22 South, Range 35 East, Lea County, New Mexico.

CASE 5181: Application of Amoco Production Company for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Trail Canyon Unit Area comprising 5758 acres, more or less, of State, Federal and fee lands in Township 24 South, Range 23 East, Eddy County, New Mexico.

CASE 5182: Application of Perry R. Bass for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the W/2 of Section 15, Township 21 South, Range 27 East, adjacent to the Burton Flats Field, Eddy County, New Mexico, to be dedicated to a well to be drilled at a standard location in the W/2 of said Section 15. Also to be considered will be the cost of drilling and completing said well and the allocation of such costs, as well as actual operating costs and charges for supervision. Also to be considered is the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

- CASE 5183:** Application of Amini Oil Company for an unorthodox oil well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks, as an exception to the North Vacuum Abo Pool rules, authority to drill its Pennzoil State Well No. 2 at an unorthodox location for said pool 1780 feet from the South line and 460 feet from the West line of Section 36, Township 16 South, Range 34 East, Lea County, New Mexico.
- CASE 5184:** Application of Mountain States Petroleum Corporation for an unorthodox gas well location, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks, as an exception to the Buffalo Valley-Pennsylvanian Pool rules, approval for an unorthodox gas well location for a well to be drilled at a point 990 feet from the South and West lines of Section 36, Township 14 South, Range 27 East, Chaves County, New Mexico.
- CASE 5185:** Application of Rice Engineering & Operating, Inc. for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Abo formation in the open-hole and perforated interval from 8442 feet to 9150 feet in its Abo SWD Well No. 2 located in Unit C of Section 2, Township 17 South, Range 36 East, Lovington Abo Pool, Lea County, New Mexico.
- CASE 5186:** Application of Amerada Hess Corporation for an unorthodox oil well location and two non-standard oil proration units, Lea County, New Mexico. Applicant, in the above-styled cause, seeks, as an exception to the Bagley Siluro-Devonian Pool rules, the formation of two non-standard proration units in Section 35, Township 11 South, Range 33 East, Lea County, New Mexico, the first being a 40-acre unit comprising the NW/4 SE/4 to be dedicated to applicant's State BTW Well No. 2, and the second being an 80-acre unit comprising the SE/4 SW/4 and the SW/4 SE/4 to be dedicated to applicant's State BTW Well No. 1, proposed to be drilled at an unorthodox location for said pool 660 feet from the South line and 1900 feet from the East line of said Section 35.
- CASE 5187:** Application of Inexco Oil Company for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying Section 17, Township 21 South, Range 26 East, Eddy County, New Mexico, adjacent to the Catclaw Draw-Morrow Gas Pool, to be dedicated to a well to be drilled at a standard location for said pool. Also to be considered will be the cost of drilling and completing said well and the allocation of such costs, as well as actual operating costs and charges for supervision. Also to be considered is the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 5188: Application of Continental Oil Company for downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle Drinkard and Blinbry production in the wellbore of its Lockhart B-1 Well No. 8 located in Unit II of Section 1, Township 22 South, Range 36 East, Lea County, New Mexico.

CASE 5189: Application of Craig Folsom for an unorthodox oil well location, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of a well proposed to be drilled at a point 1340 feet from the South line and 1300 feet from the East line of Section 12, Township 13 South, Range 31 East, Caprock-Queen Pool, Chaves County, New Mexico.

CASE 5190: Application of Union Oil Company of California for pool creation and special rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Morrow gas pool for its Pipeline Deep Unit Well No. 1 located in Unit J of Section 17, Township 19 South, Range 34 East, Lea County, New Mexico, and for the promulgation of special rules therefor including a provision for 640-acre spacing.

CASE 5191: Application of Murphy Minerals Corporation for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water through two wells into the Grayburg-San Andres formation on its Gissler "B" lease in Sections 11 and 12, Township 17 South, Range 30 East, Square Lake Pool, Eddy County, New Mexico.

CASE 5192: In the matter of the application of the Oil Conservation Commission of New Mexico upon its own motion for the extension of the following pools in Lea County:

Antelope Ridge-Morrow Gas Pool
EK Yates-Seven Rivers-Queen Pool
House-San Andres Pool
Humble City-Atoka Pool
North Shoe Bar-Wolfcamp Pool
Tres Papalotes-Pennsylvanian Pool
Wantz-Granite Wash Pool

CASE 5124: (Continued from the February 13, 1974 Examiner Hearing)

Application of Belco Petroleum Corporation for compulsory pooling and an unorthodox gas well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests underlying the S/2 of Section 30, Township 20 South, Range 33 East, South Salt Lake-Morrow Gas Pool, Lea County, New Mexico, to be dedicated to a well to be drilled at an unorthodox location 660 feet from the South line and 1300 feet from the East line of said Section 30. Also to be considered will be the cost of drilling and completing said well and the allocation of such costs, as well as actual operating costs and charges for supervision. Also to be considered is the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 5140: (Continued from the February 13, 1974, Examiner Hearing)

Application of Pierce & Dehlinger for compulsory pooling, Vada-Pennsylvanian Pool, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Vada-Pennsylvanian Pool underlying the NW/4 of Section 24, Township 9 South, Range 33 East, Lea County, New Mexico, to be dedicated to the King Resources Sheridan Well No. 1-A located in Unit C of said Section 24. Also to be considered is designation of the applicant as operator of the NW/4 of said Section 24 and the well located thereon, provision for allocation of actual operating costs and charges for supervision, and allocation of costs for reworking said well including a 200% charge attributable to any non-consenting working interest owner's pro rata share of said workover costs, for the risk involved in said workover.

CASE 4956: (Reopened) (Continued from the February 13, 1974, Examiner Hearing)

Application of Pierce & Dehlinger for a determination of well costs, Lea County, New Mexico. Applicant, as operator of the Sheridan Well No. 1 located in Unit M of Section 13, Township 9 South, Range 33 East, Lea County, New Mexico, to which well is dedicated the SW/4 of said Section 13, all mineral interests in the Vada-Pennsylvanian Pool thereunder having been pooled by Commission Order No. R-4560, seeks the determination of reasonable well costs attributable to applicant and to King Resources, including, but not limited to, the costs of reworking and placing said Sheridan Well No. 1 back on production and attorneys fees in connection therewith. Applicant further seeks an order assessing, as a charge for the risk involved in the reworking of the well, 120% of the pro rata share of the reasonable well costs attributable to the working interest of King Resources.

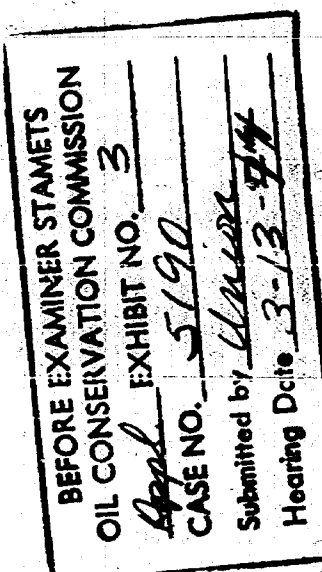
RESERVOIR AND FLUID PROPERTIES
 UNION OIL COMPANY OF CALIFORNIA
 PIPELINE FEDERAL DEEP UNIT NO. 1
 1980' FSL & 1650' FEL Sec. 17, T-19-S, R-34-E
 LEA COUNTY, NEW MEXICO

A. Gas & Condensate Properties

1. Gas Analysis	Mol%
Carbon Dioxide	0.53
Nitrogen	0.68
Methane	83.94
Ethane	9.31
Propane	3.67
Iso-butane	0.47
N-butane	0.81
Iso-pentane	0.25
N-pentane	0.19
Hexanes	0.11
Heptanes	0.04
	<u>100.00</u>
2. Gas Gravity	.670 (meas.)
3. GPM	
Propane	1.007
Butanes	.408
Pentanes	.223
Ethanes	<u>2.482</u>
	4.120
	TOTAL
4. BTU per SCF	1171 Dry 1151 Wet
5. Hydrogen Sulfide	Sweet
6. Condensate Gravity	52.5° API
7. Initial Producing GOR	13.97 MCF/Bbl

B. Reservoir Properties

1. Porosity, ϕ	13% (Logs)
2. Water Saturation	14% (Logs)
3. Pay Thickness	5'
4. Reservoir Temperature	184°F (Meas.)
5. Initial Reservoir Pressure	5639 psia (Meas.)



Reserve Calculations
 Union Oil Company of California
 Pipeline Deep Unit Federal No. 1
 1980' FSL & 1650' FEL Sec. 17, T-19-S, R-34-E
 Lea County, New Mexico

1. Volumetrics

$$\text{Gas in place} = \frac{43,560 (h)(\phi)(1-S_w) T_{sc} P_i}{P_{sc} T_r Z_i \times 10^3}$$

$$= 7130 \text{ MCF/Acre}$$

$$= 2282 \text{ MMCF for 320 Acres}$$

$$= 4563 \text{ MMCF for 640 Acres}$$

Recoverable gas at 75% factor

$$= 1711 \text{ MMCF for 320 Acres}$$

$$= 3422 \text{ MMCF for 640 Acres}$$

43,560 Sq. Ft./Acre

h = 5 Feet

ϕ = 13%

S_w = 14%

T_{sc} = 60°F or 520°R

P_i = 5639 psi

P_{sc} = 15.025 psi

T_r = 184°F or 644°R

Z_i = 1.035 compressibility of reservoir fluid

BEFORE EXAMINER STAMETS
OIL CONSERVATION COMMISSION

EXHIBIT NO. 4

CASE NO. 5190

Submitted by LMH

Hearing Date 3-13-74

*assuming
 a 5 ft sand
 over 320 &
 640*

320

ECONOMICS
UNION OIL COMPANY OF CALIFORNIA
13,400' MORROW DEVELOPMENT WELL
LEA COUNTY, NEW MEXICO

A. Income Data

1. Gross gas price \$.35/MCF
2. Gross condensate price \$7.50/Bbl
3. Royalty 12.5%
4. Working Interest
5. State taxes 6.16% of value

B. Cost and Expense Data

1. Total cost of completed well = \$440,000
(including surface production & storage equipment)
2. Dry hole cost = \$276,000
3. Estimated annual operating cost = \$3,000

C. Economics for 320 acre well of caliper of Pipeline Deep Unit

Gas reserve, MMCF (75% recovery)	1,711
Condensate reserve (24.5 Bbls/MMCF)	42,000
Undiscounted WI profit, \$	279,000
WI profit at 10%, \$	217,000
Profit to investment (Undis.)	.63
AFIT profit to investment (Undis.)	.41

For Dollar invested
get 1.43 w/ Fed tax
back

BEFORE EXAMINER STAMETS OIL CONSERVATION COMMISSION	EXHIBIT NO. 5
CASE NO. 5190	Submitted by <u>Chadler</u>
Hearing Date 3-13-74	

Well	Operator	Location	MMCF Gp	M BBL'S Cp	Initial Condensate Ratio	Initial SITP	Latest Condensate Ratio	Latest SITP	Comments Concerning Well
Pipeline State No. 1	Union	Sec. 33, 18-S, 34-E	-	-	-	-	-	-	In process of completion. Logs look poor.
Pipeline Federal No. 1	Union	Sec. 4, 19-S, 34-E	7765	477	95.6	4407	38.5	2323	Very good well CAOF 24.6 MMCF/D 6,294,950
Pipeline Federal A #1	Union	Sec. 8, 19-S, 34-E	0	0	0	0	0	0	Dry in Morrow
Pipeline Deep Unit #1	Union	Sec. 17, 19-S, 34-E	-	-	71.6	8703	71.6	3703	Good well but only a 5' Zone. CAOF 13.8
Mescalero Unit No. 1	El Paso	Sec. 7, 19-S, 34-E	85	3	-	N/A	68 (1962)	N/A	Well P & A in 1962 \$ 56,145
Lea State ED No. 1	Gulf	Sec. 16, 19-S, 34-E	0	0	0	0	0	0	Non productive in Morrow (wet)
Mescalero Ridge Unit ED No. 1	Arco	Sec. 21, 19-S, 34-E	837	27	41.4	N/A	22.2 (1966)	1363	Well TA in 1966 \$ 49,160
Mescalero Ridge Unit ED No. 2	Arco	Sec. 28, 19-S, 34-E	179	11	80.8	N/A	23.1 (1967)	590 (169)	Well abandoned in 1969 \$ 242,631
Mescalero Ridge Unit #1	Pennzoil	Sec. 20, 19-S, 34-E	2562	189	111.2	3673	58.5	2992 (1972)	Good well \$ 2,316,427

Nine wells drilled. Of the nine, one is very good, two are good, two are marginal, and four are either dry holes or have only a slight amount of production.

AGS:rb
3-6-74

Vol prod to 12-31-73
35 \$ 87,500
9,404,721

BEFORE EXAMINER STAMETS	
OIL CONSERVATION COMMISSION	
CASE NO.	5190
EXHIBIT NO.	6
Submitted by	Lawson
Hearing Date	3-13-74

COMPARISON
PIPELINE FEDERAL UNIT NO. 1 and PIPELINE DEEP UNIT FEDERAL NO. 1
AT TIME OF INITIAL COMPLETION

	Pipeline Federal Unit No. 1 (1970)	Pipeline Deep Unit Federal No. 1 (1974)
CAOF	26.4	13.8
Sand Thickness	23	5
SITP	4407	3703
BHP	6458	5639
Flow Rate at 1000# drawdown	8 MMCF/D	4.7 MMCF/D
Indicated permeability	50 md	150 md

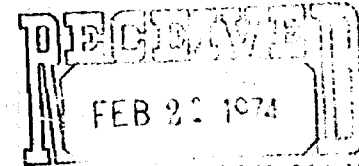
BEFORE EXAMINER STAMETS
OIL CONSERVATION COMMISSION

EXHIBIT NO. 8

CASE NO. 5190

Submitted by Union

Hearing Date 3-13-74



BEFORE THE NEW MEXICO OIL CONSERVATION COMMISSION

IN THE MATTER OF THE DESIGNATION OF
A NEW GAS POOL TO BE DESIGNATED THE
PIPELINE DEEP MORROW GAS POOL AND
LOCATED IN SECTION 17, TOWNSHIP 19 S.,
RANGE 34 E., LEA COUNTY, NEW MEXICO

Case No. 5790

APPLICATION

Comes now the applicant, UNION OIL COMPANY OF CALIFORNIA, and applies to this Commission for the creation of a new gas pool to be designated The Pipeline Deep Morrow Gas Pool, such gas pool comprising all of Section 17, Township 19 S., Range 34 E., Lea County, New Mexico.

1. The applicant has drilled a well, designated Pipeline Deep Unit Federal Well No. 1 1,980 feet from the South line and 1,650 feet from the East line in the above specified section, township and range.

2. The well was completed October 12, 1973 at a total depth of 13,551 feet and is producing from an interval in the Morrow zone from 13,456 to 13,460. Your applicant requests that the new gas pool be designated and that special pool rules be promulgated requiring 640 acre spacing. The special pool rules should also specify that all wells drilled in the Pipeline Deep Morrow Gas Pool be located not nearer than 1,650 feet to any section line and no closer than 330 feet to any quarter quarter section line.

3. One well will economically and efficiently drain the 640 acres and the granting of the application will prevent the drilling of unnecessary wells and will prevent waste and protect correlative rights.

DOCKET MAILED

Date 3-1-74

Case No. 5190

4. The applicant requests that this matter be set for hearing before an examiner at the earliest time as may be necessary with due allowance for the period of publication.

5. At this time, applicant is unaware of any other interested parties in this matter with the exception of the Oil Conservation Commission and its staff.

MONTGOMERY, FEDERICI, ANDREWS,
HANNAHS & BUELL

By

William Buell
Attorneys for Applicant

P. O. Box 2307

Santa Fe, New Mexico 87501

DRAFT

jr/

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

CASE NO. 5190

Order No. R-4758

APPLICATION OF UNION OIL COMPANY
OF CALIFORNIA FOR POOL CREATION
AND SPECIAL RULES, LEA COUNTY,
NEW MEXICO. 2 pool

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on March 13, 1974,
at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this day of March, 1974, the Commission,
a quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, 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 applicant, Union Oil Company of California, seeks
the creation of a new Morrow Gas Pool for its Pipeline Deep Unit
Well No. 1, located in Unit J of Section 17, Township 19 South,
Range 34 East, NMPM, Lea County, New Mexico, and for the promul-
gation of special rules therefor including a provision for 640-acre
spacing.

-2-
CASE NO. 5190
Order No. R-

(3) That the subject well is ^{located} within one mile of the horizontal limits of the Quail Ridge-Morrow Gas Pool, Lea County, New Mexico.

(4) That the evidence presently available does not indicate that the subject well has discovered a separate common source of supply or that the subject well can efficiently and economically drain 640 acres.

(5) That in order to prevent the reduced recovery occasioned by the drilling of an insufficient number of wells, and to otherwise prevent waste and protect correlative rights, the subject application should be denied.

IT IS THEREFORE ORDERED:

(1) That the application of Union Oil Company of California in the subject case is hereby denied.

(2) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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