STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION COMMISSION
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO

8 June 1988

EXAMINER HEARING

IN THE MATTER OF:

Application of Exxon Corporation for downhole commingling, simultaneous dedication, and an unorthodox gas well location, Lea County, New Mexico.	CASE 9398
and	
Application of Exxon Corporation to amend Division Administrative Order DHC-195, as amended, Lea County, New Mexico.	9399

BEFORE: David R. Catanach, Examiner

A P P E A R A N C E S

For the Division: Robert G. Stovall
Attorney at Law
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico

For the Applicant: James Bruce
Attorney at Law
HINKLE ,COX,EATON, COFFIELD & HENSLEY
P.O. Box 2208
Santa Fe, New Mexico 87504

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MR. CATANACH; Call next Case 9398.

MR. STOVALL: Application of Exxon Corporation for downhole commingling, simultaneous dedication and an unorthodox gas well location, Lea County, New Mexico.

MR. CATANACH: Are there appearances in this case?

MR. BRUCE: Mr. Examiner, my name is James Bruce from the Hinkle Law Firm in Santa Fe, representing Exxon Corporation in this matter, and if I can go find my witnesses, and I would also like to consolidate this case with 9399.

MR. CATANACH: Okay.

MR BRUCE: They concern the same subject matter.

MR. CATANACH: Let's call Case 9399.

MR. STOVALL: Application of Exxon Corporation to amend Division Administrative Order DHC 195, as amended, Lea County, New Mexico.

MR. CATANACH: Any other appearances in this case besides Exxon?

Let's take about a 10-minute break, Jim, so you can go get organized.

(Thereupon a recess was taken.)

MR. CATANACH: All right, let's call this hearing back to order and Mr. Bruce, you may proceed.

W. T. (BILL) DUNCAN, JR.,

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. BRUCE:

Q Mr. Duncan, will you please state your full name and city of residence?

MR. STOVALL: Excuse me, Mr. Bruce. May we swear him in first, please?

MR. BRUCE: Oh, forgot.

(Witnesses sworn.)

Q Would you please state your name and city of residence?

A William T. Duncan, Junior, and I reside in Midland, Texas.

Q And what is your occupation and who are

you employed by?

A I'm a petroleum engineer working for Exxon Corporation in Midland, Texas.

Q And have you previously testified before the OCD as an engineer?

A Yes, I have.

Q And are you familiar with the engineering matters related to the applications in Case Numbers 9398 and 9399?

A Yes, I am.

MR. BRUCE: Mr. Examiner, is the witness acceptable?

MR. CATANACH: He is.

Q Mr. Duncan, please refer to Exhibit Number One and summarize what Exxon Corporation seeks in these two applications.

A Exxon seeks Division approvals to obtain the optimum wellbore configurations to achieve ultimate depletion of remaining oil and gas reserves penetrated by N. G. Penrose Lease wells.

To this end, and shown on this exhibit, we have asked on the N. G. Penrose Wells 1 and 2 to downhole commingle the Drinkard, Blinebry, and the gas completion in the Tubb without the need to separately test each zone.

We've also asked for simultaneous dedication of Wells 1, 2, and 4 to a 160-acre Tubb gas proration unit.

This downhole commingling involves a gas zone with the lowest pressured zone less than 50 percent of the pressure in the highest pressured zone.

N. G. Penrose 2 is the same type request, same number of requests.

The N. G. Penrose 3, we are requesting to amend our current downhole commingling permit No. DHC-195 to allow the Drinkard, Blinebry and Wantz Granite Wash Pools to be commingled without separately testing the Blinebry.

The N. G. Penrose No. 4 is requested to be downhole commingled in the Drinkard, Blinebry, Tubb, as a gas completion, and the Wantz Granite Wash Pools.

For this well the location is unorthodox for a Tubb 160-acre gas completion. Again we request no requirement to separately test each zone and we ask for simultaneous dedication to a 160-acre Tubb gas proration unit for Wells 1, 2, and 4.

This downhole commingling also involves a gas zone with the lowest pressured zone less than 50 percent of the pressure in the highest pressured zone.

I'd like to point out that the NMOCD ad-

vertisement had included that the N. G. Penrose No. 3 would also be simultaneously dedicated to the 160-acre Tubb gas proration unit and this is not correct.

The simultaneous dedication would only involve the Penrose Wells 1, 2, and 4. The Penrose Well No. 3 is not completed in the Tubb Pool, as such.

Q Would you please now refer to Exhibits Two-A, Two-B, Two-C and Two-D and describe them?

A This series of four exhibits labeled Exhibits Two-A through D are copies of the applications filed by Exxon for each of the four wells.

Two-A is for the N. G. Penrose Well No. 1.

Two-B, the Well No. 2.

Two-C, the Well No. 3.

And Two-D is the application for Well No. 4.

Excuse me, I meant -- I would like to point out on Exhibit Two-C that the N. G. Penrose Well No. 3 letter of application incorrectly requested that the -- that we be given an exception to separately testing the Granite Wash before commingling. That letter should have said Blinebry and the Exhibit Two-C has the Granite Wash corrected to show Blinebry.

The notice was corrected by the NMOCD

before it was advertised.

Q Will you please now identify Exhibit Number Three?

A Exhibit Number Three is a copy of Administrative Order No. DHC-195, which granted permission to downhole commingle the Granite Wash, Drinkard and Blinebry Pools in Well No. 3.

We are asking for an exemption from requirement number one, which specifies that the newly completed zone, in this case the Blinebry, be separately tested for a minimum of 30 days or until production is stabilized.

Q Was notice of the applications in Case Numbers 9398 and 9399 sent to all offset operators by certified mail?

A Yes, and copies of the certified return receipts are submitted as Exhibit Number Four.

Q Would you please repeat what the basic purpose of these applications are?

A Exxon is making these applications to enable us to recover the maximum amount of remaining reserves in the N. G. -- on the N. G. Penrose Lease.

Q In your opinion are the granting of these applications in the interest of conservation and the prevention of waste?

A Yes, they are.

Q And were Exhibits One through Four prepared by you, under your direction, or compiled from company records?

A Yes.

MR. BRUCE: At this time I move the admission of Exhibits One through Four.

MR. CATANACH: Exhibits One through Four will be admitted as evidence.

MR. BRUCE: I have nothing further of this witness, Mr. Examiner.

MR. CATANACH: Bruce, are you going to have a witness that goes into each of these zones and wells in more detail and what you intend to do?

MR. BRUCE: Yes, sir.

MR. CATANACH: In that case I have no questions of the witness.

ROBERT C. ASREEN,

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. BRUCE:

Q Would you please state your full name

and city of residence?

A My name is Robert Charles Asreen, Junior. I'm a resident of the City of Midland, Texas.

Q And what is your occupation and who are you employed by?

A I am a production geologist currently employed by Exxon Company, USA, Southwestern Division.

A And have you previously testified before the Division?

A No, I have not.

Q Please summarize your educational and employment background.

A I would like to briefly summarize my education and employment background in that order.

I received an Associate of Arts degree from the Kingsborough Community College in Brooklyn, New York.

In 1971 I earned a Bachelor of Arts degree with a major in geography from Hunter College of the City University of New York, and in 1985 I received a Master of Science in the geological sciences from the University of Tennessee at Knoxville.

My employment experience includes a job as a summer geologist with the Minerals Division of Getty Oil Company in Knowxville, Tennessee, during the summer of

1981, and I have been employed by Exxon Company, USA, in Midland, Texas, as a production geologist for approximately the last four and a half years.

During the first two years, two and a half years of my Exxon employment I was assigned to the Reservoir Technology Group, whre I conducted geologic evaluation of several Permian Basin reservoirs for potential enhanced oil recovery projects.

My last two years have been spent in the Production Operations Group, where I've been responsible for the stewardship of Exxon's acreage in southeast Lea County, New Mexico, specifically that acreage which Exxon has on the Central Basin Platform Area.

Q And are you familiar with the geological matters relating to these two cases?

A Yes, I am.

MR. BRUCE: Mr. Examiner, are the witness' credentials acceptable?

MR. CATANACH: Yes, they are.

Robert, can you spell your last name for me?

A A-S-R-E-E-M.

MR. CATANACH: Thank you.

Q Mr. Asreen, please refer to Exhibit Number Five and briefly discuss its contents.

A Exhibit Number Five is a locator map which shows the N. G. Penrose Lease and its relationship t the State of New Mexico and specifically its place geographically within Lea County.

The N. G. Penrose Lease is a 160-acre lease located in the eastern portion of southern Lea County, which is shown on the enlargement on the righthand side of the exhibit.

The lease covers the northeast quarter of Section 13, Township 22 South, Range 37 East, in Lea County, and lies about two and a half miles southeast of Eunice, New Mexico.

Geologically the lease is located on the northwestern portion of the Central Basin Platform of the Permian Basin.

Q Thank you. Would you please now refer to the log marked Exhibit Six, which is also taped onto the wall, and describe its contents for the Examiner?

A Okay. Exhibit Six is a type log for the N. G. Penrose Lease. This log is an open hole, gamma ray, compensated neutron formation density log from the N. G. Penrose -- N. G. Penrose Well No. 3, which is located in the southwest corner of the N. G. Penrose Lease.

This log shows the vertical intervals from which the four wells on the N. G. Penrose Lease pro-

duce.

The gamma ray and caliper logs are shown on the lefthand side of the log; the neutron and density porosity on the righthand side of the log, and the depth track is in the center.

The vertical scale is one inch equals 20 feet. The horizontal scales are as follows:

The gamma ray scale is at zero to 100 API units and the porosity index is from 30 to -10 for the neutron and density porosity curves.

The compensated neutron porosity curve is shown as a dashed line, whereas the density porosity curve is shown as a solid line.

Present completion intervals are indicated by open circles along the righthand side of the depth track. The proposed completion intervals are shown by the shading along the lefthand side of the depth track.

The pool tops are shown along the lefthand side of the log in bold print, while formational tops are shown in lighter print along the same side of the log.

I would now like to point out these tops in reverse stratigraphic order, starting out with the Blinebry Pool top at 5500 feet; the Tubb Pool top at 6000 feet; the Drinkard Pool top at 6300 feet; the Abo forma-

tional top at about 6570 feet; the Wantz Granite Wash Pool top at 7230; the Granite Wash formational top at 7370; and the PreCambrian top at 7440.

This well was drilled to a total depth of 7500 feet, where 5-1/2 inch casing was set.

Q Would you please refer to the cross section marked Exhibit Seven a discuss its contents?

A I'd now like to turn your attention to Exhibit Seven, which is a structural cross section running north/south through the Penrose Lease and offsetting acreage.

The vertical scale is one inch to 100 feet. The horizontal scale is one inch to 200 feet. The cross section has been datumed on -2000 feet subsea depth.

Wells in the cross section are shown in the index map on the righthand side of the exhibit. The outline -- the Penrose Lease has been outlined by a cross-hatched pattern.

Depth tracks, pool tops, and formational tops are indicated on both the right and the lefthand sides of the log -- of the cross section.

The northernmost well on the cross section is -- the cross section line is marked A to A' running from north to south across there. The northernmost well on this cross section is the Zachary Hinton No. 4 Well and is

shown on the far lefthand side of the exhibit.

Moving to the -- to the south, the wells illustrated on the cross section line are the Zachary Hinton No. 5 Well, the Zachary Hinton No. 6 Well, and the N. G. Penrose No. 4 Well, operated by Exxon.

Moving to the southwest from the N. G. Penrose No. 4 is the N. G. Penrose No. 1 Well.

South of the N. G. Penrose 1 is the N. G. Penrose No. 3.

Due east of the N. G. Penrose No. 3 is Exxon's N. G. Penrose No. 2 Well.

Moving south from the N. G. Penrose 2 we find the Marathon Edith Butler 1-B Well, and then southwest from the Edith Butler well is the Hendrix F. J. Danglade No. 3 Well, which appears on the righthand side of the cross section.

Shown at the top of each wellbore are the operator, the lease, the well name and number, and the Kelly -- Kelly bushing elevation.

The Blinebry gas/oil contact at -2250 is shown by this dashed line. The gas cap has been stippled in.

All the wellbores show present completion intervals as open circles and squeezed perforations as cross hatched areas along the righthand side of the well-

bore.

Proposed completion intervals for the four Penrose -- for the four Exxon Penrose wells are indicated by shading along the lefthand side of each wellbore.

IP dates and rates are included within boxes along the righthand side of each well for those appropiate zones, here and here.

At the base of each wellbore the TD depth and subsea, as well as the average 1986 daily production for each of the producing pools is shown in a boxed in area.

I would like to turn your attention now to the four Exxon wells and start with the Exxon N. G. Penrose No. 4, briefly review its present completion and what we propose to -- what intervals we propose to complete in.

N. G. Penrose No. 4 was drilled and completed -- at thee end of 1987; therefore you will note that there is no 1986 average production for that well.

It was completed originally as a Granite -- Granite Wash well, and we propose to add perforations in the Blinebry, the Tubb, and the Drinkard in the well. This well has additional perforations in the Wantz Granite Wash Pool.

The N. G. Penrose No. 3, which is also our type log, is presently downhole commingled in the

Drinkard Pool and the Wantz Granite Pool.

The N. G. Penrose No. 2 is currently a dual gas completion similar to the N. G. Penrose No. 1. It's currently open in the Blinebry and the Tubb and we have proposed to add perforations in the Blinebry Pool. It will remain open in the Tubb Gas Pool, and we will add additional perforations in the Drinkard Pool.

And that's the end of the Exxon wells.

As illustrated on this cross section, the Blinebry had a gas/oil contact of -2250 subsea in the study area -- in the study area, which includes this acreage surrounding N. G. Penrose.

I'd like to turn your attention to the fact now that wells which were completed above this -2250 subsea depth were completed as gas wells in the Blinebry and had GOR's of greater than 50,000.

For example, the N. G. Penrose, was completed in 1946 and the perforations were totally above the gas/oil contact of -2250 subsea and it had a GOR of 200,000.

In addition, wells which were perforated across this gas/oil contact, such as the Hendrix F. J. Danglade No. 3, had GOR's substantially lower than 50,000 and were prorated as -- and were completed as oil wells. This Hendrix Danglade well was completed in the Blinebry in

1968 with perforations across the gas/oil contact, and had a GOR of 881 upon initial potential.

Q Mr. Asreen, before you step down would you describe the current completion of the N. G. Penrose No. 1 and the proposed perforations?

A Okay. The N. G. Penrose No. 1 is a dual completion. It's dualed as a gas well in the Blinebry and the Tubb gas Pools.

We propose to add perforations -- additional perforations in the Blinebry, and to have the remaining Tubb -- to have the perforations in the Tubb remain open and to add perforations in Drinkard Pool.

Q Mr. Asreen, referring to the Penrose No. 3 Well, as shown on the cross section, it appears that it is completed partially in the Tubb formation.

Would you explain that, what -- what it is considered as completed in by the OCD?

A It is currently considered to be completed as a Drinkard Pool well. The perforations which have extended into the Tubb formation were grandfathered into the Drinkard Pool in 1987.

Q By the Division?

A By the Division.

Q Would you please now move on to Exhibit Number Eight and discuss its contents?

A Exhibit Number Eight is a tabulation of Blinebry Well status as a function of completion interval in the N. G. Penrose Lease area.

It includes all Blinebry completions in the 1440-acre area surrounding the N. G. Penrose Lease.

The purpose of this exhibit is to illustrate that completion intervals determine whether a well completed in the Blinebry will be a gas well or an oil well.

I'd like to start by showing you the arrangement of the table. On the far lefthand column we have the operator, followed by the lease, followed by the well, followed by the well location; then completion interval, initial GOR, completion status, and completion date.

I'd like to now turn your attention to the column marked Completion Interval. In this area we have broken the perforations in the Blinebry out into three groupings, perforations entirely above -2250 subsea depth; perforations which occurred across -2250 subsea depth; and perforations which occurred entirely below -2250 subsea depth.

You will note that for the 19 wells which have been completed in the Blinebry, 6 wells were completed entirely, or perforated entirely above -2250 subsea. Their GOR's were substantially higher than 50,000

and they were completed as oil wells -- I mean as gas wells in the Blinebry Pool.

In all instances all wells which were perforated across -2250 subsea or entirely below -2250 subsea, had GOR's substantially below 50,000 and were completed as oil wells in the Blinebry Pool

Q And what conclusions do you reach from this exhibit?

A From this exhibit we can conclude that by adding perforations below or across -2250 subsea in the N. G. Penrose No. 1, No. 2, and No. 3 Wells, they will be completed as oil wells in the Blinebry Pool.

Q Okay. Thank you. Would you please now move on to Exhibits Nine-A and Nine-B and discuss them?

A Exhibit Nine-A and Nine-B -- I'd like to start with Exhibit Nine-A first.

Exhibit Nine-A is a production map for Blinebry completions in the vicinity of the N. G. Penrose Lease. Once again the N. G. Penrose Lease outline has been stippled. Blinebry producers are shown by shaded circles around the wellbore. The average 1986 daily production rate in barrels of oil, barrels of water, and MCF of gas, are shown above the solid line and below the solid line are shown the cums as of 1-1-87 in thousands of barrels of oil, thousands of barrels of water, and millions of cubic feet

of gas.

Exxon currently has two wells which are completed in the Blinebry formation. They are the No. 2 Penrose Well, which has been shut in since 1977 after cuming only .3 million cubic feet of gas, and Exxon's N. G. Penrose No. 1, which has also been shut in since 1977 after cuming 25,000 barrels of condensate, and almost 5 BCF of gas.

Exhibit Nine-B is a tabular presentation of the '86 production data for the wells which are shown on the map in Exhibit Nine-A. The arrangement of the table is similar to that in Exhibit Eight, in which operator is shown on the far lefthand side of the exhibit, followed by lease, followed by well, unit, section, township and range, and the average 1986 daily production rates are then shown on the righthand side.

For the 13 active Blinebry completions n the study area, the 1986 daily production was 4.6 barrels of oil per day, 4.5 barrels of water, and 84.9 MCF of gas.

The conclusion one can make from this table is that production in the area in the Blinebry formation is marginal.

Q And to reiterate your conclusion in -- from Exhibit Number Eight, all of the four Penrose wells will be oil completions in the Blinebry, is that correct?

A Yes. I think I neglected to mention the Penrose Four.

Q Would you please now move on to the plat and table marked Ten-A and Ten-B and describe them?

A Ten-A and Ten-B are similar exhibits to Nine-A and Nine-B. The format of the exhibits is the same.

Ten-A and Ten-B show Tubb production, whereas Nine-A and Nine-B showed Blinebry production.

Exxon currently has two Tubb wells on its N. G. Penrose Lease, the N. G. Penrose No. 2, which flowed at a daily rate of .4 MCF of gas in 1986 and the N. G. Penrose No. 1, which flowed at a daily rate of .1 MCF in 1986.

The tabular arrangement of the same data is shown in Figure Ten-B. I'd like to go down to the bottom line and the average production for the active completions, which were 14 Tubb completions in the study area, was only .8 barrels of oil per day, .7 barrels of water per day, and 54.8 MCF of gas per day.

From this table I can conclude that Tubb production in the area is also marginal.

Q Would you then move on to Exhibits Eleven-A and Eleven-B and discuss them?

A Exhibits Eleven-A and Eleven-B are in a similar format to the two previous exhibits, except that

this exhibit shows Drinkard oil production.

On the map we see that Exxon has only one Drinkard completion currently and that is the N. G. Penrose No. 3, which produced at a daily rate in 1986 of 6.1 barrels of oil, .7 barrels of water, and 43 MCF of gas per day.

Turning to Eleven-B we see that the average production for 1986 for the 29 active Drinkard wells in the study area was 3.5 barrels of oil, 1.2 barrels of water, and 68.3 MCF of gas per day.

The conclusion one can make from this table is that Drinkard production in this area is also marginal.

Q And overall, regarding the N. G. Penrose Lease, how do you classify production from that lease?

A It is marginal production.

Q From all zones.

A From all zones.

Q In your opinion will the granting of these applications be in the interest of conservation, the prevention of waste, and the protection of correlative rights?

A Yes, it will.

Q And a final question, Mr. Asreen, approximately how many wells in this general area are completed

in these -- the pools which are the subject of these applications?

A The completions in the area are -- roughly number 1000, and that would include Drinkard, Blinebry, Wantz Granite Wash wells.

Q And how many other wells does Exxon have in this area?

A Exxon operates about 50 or 60 completions in this area.

Q And is Exxon reviewing similar workovers on some of these wells?

A Yes, we are.

Q Were Exhibits Five through Eleven-B prepared by you, under your direction, or compiled from company records?

A Yes, they were.

MR. BRUCE: At this time, Mr. Examiner, I move the admission of Exhibits Five through Eleven-B.

MR. CATANACH: Exhibits Five through Eleven-B will be admitted as evidence.

CROSS EXAMINATION

BY MR. CATANACH:

Q You submitted data on the -- showing

that the Drinkard and the Tubb and Blinebry are all marginal in this area.

Do you have any similar data from the Granite Wash?

A No, I don't.

Q Is that also fairly marginal in this -- in this area?

A It depends.

Q On what?

A The Wantz Granite Wash play is a rather -- it's a stratigraphic trap and our completion in the N. G. Penrose No. 4, for example, potentialed at a rate of 260 barrels of oil per day in September of '87. We ran a bottom hole pressure test in the well and found out the reservoir was quite limited and by January of 1988 the well had quite flowing, and before it quit flowing it was averaging roughly about 15 or 16 barrels of oil per day.

Most -- there are some Granite Wash wells out here which are by far exceptional Granite Wash wells, as far as field-wide production goes, but for the most part the Granite Wash is a -- can -- most of the Granite Wash wells are fairly marginal.

Q Did I understand that you propose to -- the Penrose No. 3, is that currently not completed in the Granite Wash?

A It is currently completed in the Granite Wash.

Q It is.

A It is downhole commingled in the Drinkard and the Granite Wash Pools.

Q Are you adding the Granite Wash to any of these wells?

A No. The Granite Wash is currently open only in the N. G. Penrose No. 3 and the N. G. Penrose No. 4. The wellbores for the N. G. Penrose No. 1 and N. G. Penrose No. 2 do not penetrate the Granite Wash.

Q You testified that you've got pretty much control in determining whether you complete the Blinebry oil or gas. Do you feel pretty comfortable with that?

A Yes, I do.

Q You feel that you can do that fairly well and fairly (inaudible).

A Yes.

Q And you do intend to complete only in the Blinebry oil zone.

A Well, we will add perfs in both zones but we feel that by adding the majority of the perfs in the Blinebry oil zone, that these wells will be oil productive and classify as oil completions.

Q So you do intend to perforate also in

the gas zone?

A Yes, I believe in the N. G. Penrose No. 4, but based on the data which I have looked at, my present feeling is that the Blinebry gas cap is pretty well pressure depleted in this area of the field.

Q How did you arrive at that conclusion?

A The exhibit which I presented for Number Eight, Exhibit Number Eight, shows that completion intervals which were strictly above this -2250 subsea depth were oil -- were classified as gas wells versus every other well -- every other completion across that interval or strictly below, which were all oil productive, oil completions.

Now, there -- there -- I could not find any exceptions in the study area to that -- to that rule.

Q Okay. In the -- as I understand it, in the No. 4 Well you propose to add Tubb and that -- that's the only well that you propose to Tubb, also?

A Yes, to add the Tubb. The other ones are completed in the Tubb.

Q Okay. What's your -- is the Tubb also separated as having a gas cap and an oil zone?

A Not in this area. I couldn't find any evidence to indicate that it was.

Q So you don't --

A As a matter of fact, most of the wells which I looked at out here were classified as gas wells.

Q So you're really not going to have as much control as you would in the Blinebry in this area of the Tubb.

A Probably not. We are -- we believe that the Tubb formation here will be gas productive, will be a gas completion.

Q That's the experience you've had in the other wells, that the Tubb was -- was gas, mostly gas producing?

A Yes.

Q In the Well No. 2, do you know if that Blinebry zone in that well is currently classified as gas?

A In the No. 2? Yes, it is.

Q And the Tubb is also?

A Yes. It's a dual completion in the Blinebry and Tubb as a gas well.

All the perfs in the No. 2 are above -2250 subsea.

Q How about the No. 1? Is it the same situation?

A Same situation exists for the No. 1 and all the perfs in the No. 1 are above -2250 subsea.

Q Your application requests simultaneous

dedication of the Tubb production. What about Blinebry gas production?

A We do not request simultaneous dedication for Blinebry because we believe that these completions will be oil completions.

Q But you've got -- you've already got the No. 1 and 2 Wells classified as Blinebry gas.

A After the -- at the addition of the perfs they will no longer be classified as Blinebry gas wells.

MR. CATANACH: I think that's all I have of the witness at this time.

The witness may be excused.

LAWRENCE JOHN SOHANEY,

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. BRUCE:

Q Would you please state your name and where you reside?

A My name is Lawrence John Sohaney. I reside in Midland, Texas.

Q And who are you employed and in what

occupation?

A I'm employed by Exxon Corporation as a Staff Reservoir Engineer.

Q And have you previously testified before the OCD as an engineer?

A Yes, I have.

Q And are you familiar with the engineering matters relating to these two cases?

A Yes, I am.

MR. BRUCE: Mr. Examiner, are the witness' credentials acceptable?

MR. CATANACH: They are.

Q Mr. Sohaney, would you please refer to Exhibit Number Twelve and describe its contents?

A Exhibit Number Twelve is a current lease status map for Exxon's N. G. Penrose Lease.

The lease is shown at the top of the exhibit. It's 160-acre lease located in the northeast quarter of Section 13.

There are four wells on the lease. I'd like to review each of the four wells in the current status.

Well No. 1 is located in the northwest corner of the lease. That well was drilled in 1945. It is currently a dual completion. The upper completion is in

the Blinebry and it is dead. The lower completion is in the Tubb and during the year 1987 it produced zero barrels of condensate, zero barrels of water, and 5.8 MCF per day, on average.

Both of these completions will probably benefit by the installation of artificial lift.

Well No. 2 is located in the southeast corner of the lease. Well No. 2 was drilled in 1953. It is also a dual similar to Well No. 1.

The upper completion is in the Blinebry. It is a gas completion made in 1977. It has been shut in since 1977.

The lower completion is in the Tubb and during 1987 it produced an average of zero barrels of condensate, zero barrels of water, and 42.8 MCF per day of gas.

Well No. 3 is located in the southwest corner of the lease. It was drilled in 1975. It is currently a downhole commingled completion.

The upper completion is in the Drinkard Pool. During 1987 it averaged 7.7 barrels of oil per day, 0.8 barrels of water per day, and 13.9 MCF per day of gas.

The lower completion is completed in the Wantz Granite Wash Pool and during 1987 it averaged 3.3 barrels of oil per day, zero barrels of water per day, and

10.3 MCF per day.

The last well on the lease is the Penrose No. 4, located in the northeast corner. The well was drilled in 1987. During 1987 it averaged 15.2 barrels of oil per day, zero barrels of water, and 82.1 MCF per day of gas.

Currently that well is dead. It ceased to flow on or about January 28th, 1988. It needs artificial lift.

Just prior to ceasing to flow that well was producing at a rate of about 14 barrels of oil per day and 85 MCF per day of gas.

I'd like to address now your question that you had to Mr. Asreen concerning the Wantz Granite Wash production.

Certainly in the No. 3 Well it is very marginal and in the No. 4 Well it is marginal also with a rate of about 14 barrels of oil per day and 85 MCF per day.

The center part of the exhibit summarizes the production for the lease on a total lease basis and on a per completion basis.

The average total lease production during 1987 was 26 barrels of oil, .9 barrels of water, and 118.4 MCF per day.

On a per average completion, of which

there were seven, it's only 3.7 barrels of oil per day, 0.1 barrels of water per day, and 22 MCF per day, and if we put that on a per active completion basis, of which there only five, it's only 5.2 barrels of oil per day, .2 barrels of water, and 31 MCF per day of gas.

Q Thank you. Would you now move on to Exhibit Thirteen and briefly describe it?

A Exhibit Thirteen is a production plot for the Penrose Lease. It shows total gas production, that would be casinghead gas and gas well gas, as well as condensate and oil production, the Y axis scale is semilogarithmic, going from 1 to 10 to 100 to 1000 in units of barrels of per day and MCF per day, and we show production for the years 1977 through current.

Gas production on this lease has been on a 6 percent decline and oil and condensate production has been on a 9 percent decline.

The sharp spike that you see in September of 1987 was the drilling of the No. 4 Well, which potentialed in the Wantz Granite Wash. You can see how production skyrocketed and then fell back down and currently that completion is dead.

Q Would you please now move on to Exhibit Fourteen and discuss Exxon's proposed allocation formulas for this lease?

A Exhibit Number Fourteen is entitled Penrose Allocation Formulas. It contains the proposed allocation formulas for all four wells.

I'd like to turn our attention to the Penrose No. 4 at the bottom of the table and by going through the Penrose No. 4 we can understand what we're proposing for the 1, 2 and 3.

The Penrose No. 4 Well will be commingled in four zones, the Blinebry oil and gas, the Drinkard, the Tubb oil and gas, and the Wantz Granite Wash.

Starting with the Wantz Granite Wash on the No. 4 Well, the projected producing rate for the Wantz Granite Wash would be 14 barrels of oil per day, and 85 MCF per day of gas. That was the reported production rate just prior to the well dying.

For the Tubb oil and gas the expected production is 0.8 barrels of condensate per day and 54.8 MCF per day. That number was the average taken from Exhibit Number 10-B.

For the Drinkard, the projected production is 3.5 barrels of oil per day and 68.3 MCF per day. That is the number projected from Exhibit Number Eleven-B.

And for the Blinebry oil and gas the production will be 4.6 barrels of oil per day and 84.9 MCF

per day of gas. And that was the calculated average from Exhibit Number Nine-B.

So the total production out of the Penrose No. 4 will be approximately 22.9 barrels of oil per day and 293 MCF per day of gas.

The percent columns are simply taking the expected producing rates out of each zone and dividing by the total to come up with the percents.

Looking at the bottom line in this table, and at the grand -- grand sum total, the expected producing rate out of all four wells is 56 barrels of oil per day and 816 MCF per day of gas. That's roughly double the daily oil producing rate and about 7 times the amount of gas.

Q In your opinion is this allocation formula fair and reasonable?

A Yes, it is.

Q Will you please now describe Exhibit Fifteen?

A Exhibit Fifteen is entitled Incremental Reserve Summary.

The purpose of this exhibit is to show the incremental reserves that will be recovered by the granting of the commingling applications that we seek here today, and let's turn to the bottom line number, which I've

boxed off in the lower righthand corner of the exhibit, at the bottom. The grand sum total for all four wells that we project is approximately 58,000 barrels of additional oil recovery and a little over 2-billion cubic feet of gas.

What I'd like to do now is is to go through this table with one well to explain how these numbers were calculated to arrive at that bottom line number.

Let's start with the Penrose No. 1 Well at the top of the table and turn our attention to the line titled Sequential Single Completions With Lift. What I mean by sequential single completions is to produce each pool separately in this well to depletion, plug back the well to the next higher pool, produce it to depletion, plug it back and go on to the next pool.

So there are three pools involved with the Penrose No. 1, the Blinebry oil and gas, the Drinkard, and the Tubb oil and gas.

For the Blinebry oil and gas the expected beginning rate is 4.6 barrels of oil per day and 84.9 MCF per day of gas.

And the economic limit is .5 barrels of oil per day and 20 MCF per day of gas.

The life of that completion would be 23.3 years. The calculated remaining reserves are approxi-

mately 16,000 barrels of oil and 383-million cubic feet of gas.

Similarly I performed the same calculations for the Drinkard and the Tubb.

To summarize the Drinkard, the life of the Drinkard completion will be 19.8 years. The remaining reserves out of the Drinkard Pool will be 11,610 barrels and the reserves are 285-million cubic feet of gas.

And for the Tubb zone the remaining life is 16.3 years. The reserves are about 2.3-thousand barrels of condensate and 205-million cubic feet of gas.

So the total reserves, by producing this well as sequential single completions is 29,799 barrels of oil and 873-million cubic feet of gas, and the time that it would take to do that, is approximately 60 years.

Next we have the proposed commingle operation drawing. This is what we propose to do with the well. The expected producing rate is 8.9 barrels of oil per day and 208 MCF per day of gas. The calculated remaining life is 37.8 years. The calculated remaining reserves are approximately 33,000 barrels of oil and a little over 1.1-billion cubic feet of gas.

Now I'd like to turn your attention to the continued operations case at the top.

If the commingling applications that we

seek are not granted, this is what Exxon will do.

We will plug back the well and produce only one single completion, which is the Blinebry and when the Blinebry is produced the well will be plugged. So in that case the remaining life would be 23.3 years and the calculated reserves are about 16,000 barrels of oil and 383-million cubic feet of gas.

So under the proposed commingling operations shown in the farmost right column, the incremental reserves to be produced versus the continued operations case, is 17,000 barrels of oil and 726-million cubic feet of gas.

The same calculations were performed on the Penrose No. 2, No. 3, and No. 4 Wells.

The summary at the bottom of the table shows what one would expect for all four wells. Under continued operations the average remaining life is about 37-1/2 years. The remaining reserves are 149,000 barrels of oil, and approximately 2.2-billion cubic feet of gas.

With the proposed operations that we seek here today, the reserves are 208,000 barrels of oil and approximately 4.3-billion cubic feet of gas.

That's about a doubling in the amount of remaining gas reserves to be produced and about 30 or 40 percent increase in the barrels of oil and condensate to be

produced.

Q So your estimate is that the incremental reserves recoverable by the proposed workovers are approximately 15,000 barrels of oil per well and one-half BCF of gas per well, is that correct?

A That is correct.

Q And the proposed workovers would gain additional reserves, even over and above the -- what you set out as the sequential single completions, is that correct?

A That is correct. If we look at the bottom line under the sequential single completions with lift, for instance, the oil reserves are 179,000 barrels versus the commingling of all three zones is 208.

Q Do you consider the sequential single completions as on option in this case?

A No, they are not an option.

Q Would you please set forth a few reasons why Exxon does not consider that an option?

A Well, due to the additional cost involved for one to produce these marginal wells as single completions and the risk involved in doing that, and the additional years that you can see that it takes to produce those reserves sequentially, it is just not economically feasible at this point to produce them separately, and the

riskier zones are the zones that are more difficult to reach, and can't be, will simply be plugged back and never be produced. We will go to those zones that I have listed under the continued operations case.

Q Thank you. Would you please now refer to the cost estimate marked Exhibit Sixteen and describe that?

A Exhibit Number Sixteen is entitled Cost Estimate Summary.

The purpose of this exhibit is to show the cost in dollars of satisfying two NMOCD requirements from which we seek relief on all four wells.

And the two requirements from which we seek relief are, first of all, the separately testing requirement for each new zone to be opened up in these wells.

And the second requirement that we seek relief from is the isolating of any prorated gas pool completion. As we've stated earlier, we believe that the Tubb completions will be gas completions.

Let's look at the Penrose No. 1 Well, for instance.

The workover cost as we propose it on the Penrose No. 1 is $40,700. In addition to that will be the cost of installing artificial list on the well of $35,000, bringing the total cost to $75,700.

Listed below are the additional requests that would be necessary, or potentially necessary, to meet the two requirements from which we seek relief.

There would be a requirement to separately test the Drinkard because this zone is not currently open in the well. That would cost an additional $11,400.

There would be no cost to separately test the Tubb because that zone is currently open in the well.

But there would be a cost to separately test the Blinebry to prove by test that it is indeed an oil completion, and that would be $8600.

In addition there would be the cost of dualing the well to separate out the Tubb gas completion. That would cost at lest $6600 additional. And there would be the cost of additional dual flow line facilities of $9200, bringing the total additional costs, if the relief is not granted, of $27,200, raising the total cost from $75,700 to $102,900.

I've performed these same calculations on the other three wells and in the rightmost column summarized the total on all four wells.

The total cost of all the workovers comes to $190,000. The artificial lift cost comes to approximately $104,000, for a grand sum total as proposed by

Exxon of $294,000.

Total potential additional cost that would be required if the relief is not granted, is $160,000 which would raise the cost from $294,000 to $454,000. That's about a 55 percent cost increase.

Q In your opinion is that additional expense necessary to better produce these wells or to better allocate production?

A No, it is not.

Q Has Exxon management approved the $294,000 expenditure for the workover of these four wells?

A They have approved the $294,000 but I might add that the approval was extremely difficult and very lengthy.

Q And will Exxon approve the workover if costs are increased by approximately $160,000?

A No, they will not.

Q Would you please now refer to Exhibit Number Seventeen and discuss the Tubb gas production in these wells?

A Exhibit Number Seventeen is entitled Likelihood of Shut-in Tubb Gas Pool.

This exhibit addresses the likelihood of gas production from the three wells exceeding the top allowable out of the Tubb Gas Pool.

will be about 90 psia because it's in a pumped off -- pumped off mode of operation.

Now what happens when the well is shut in is shown on the righthand side of the exhibit, and this represents a worst case scenario. When a well is shut in completely, that will represent the maximum potential cross flow that could occur.

When the wellbore is shut in the first thing that happens is that pressure within the wellbore has to rise and the pressure has to rise to at least the bottom hole pressure of the lowest pressure zone, which in this case is the Tubb and the Tubb pressure was 474 psia. So the pressure in the wellbore has to rise from 90 to 474.

Now when that pressure rises, of course, that backs off the rates coming out of the other zones that continue to produce in the cross flow, so for instance, in the Blinebry, the Blinebry now only produces 1-1/2 barrels of oil per day versus the 4.6 it was producing before, and looking down at the Drinkard zone, it now only produces 2.3 barrels of oil per day versus the 3.5 before.

So if we look at the total cross flow rate flowing into the lowest pressure zone, which is the Tubb, the total cross flow rate is 3.8 barrels of oil per day.

And I summarize this in the box in the lower lefthand corner of this exhibit by the ratio of cross flow rate of -- producing rate, and for the oil it's the 3.8 barrels divided by 8.9 and .43 and for the gas it's 0.35. So if we average the oil and the gas the cross flow rate divided by the producing rate is about .39 or .4.

The point to be made here is that a well does not cross flow at a rate anywhere close to its producing rate in a pumped off mode.

Q Would you please now discuss the cross flow exposure and discuss Exhibit Twenty?

A Exhibit Number Twenty is entitled Maximum Potential Cross Flow Exposure and we're going to use Exhibit Number Nineteen and build upon it in Exhibit Number Twenty and to try and quantify what -- what potential cross flow exposure could be.

Now, exposure can be quantified by the quotient of reserves lost to reserves produced, and I give the equation down below: Quotient equals reserves lost divided by reserves produced.

Now the numerator, reserves lost, is simply the time the well is cross flowing, which is the percent time that the well is shut in, times the rate at which it cross flows, times the percent of that cross flow that is lost. What I mean by the percent of cross flow

that is lost is that it simply -- simply cross flowing does not equate to loss.

If you -- if you cross flow gas into a gas reservoir, you can produce that gas back, as you know. So cross flow by and of itself does not necessarily equate to loss. Reserves produced, the denominator, is simply the time the well is left producing, which is 1 minus the percent time it was shut in, times the producing rate.

Below that equation I've built a quotient table for the quotient of reserves lost divided by reserves produced for various percent shut-in time and various percents of cross flow lost, and this table was built for a cross flow rate of a producing rate of .4, which we calculated in the prior exhibit for the Penrose No. 1 Well.

So, for instance, if we read across that table with a 20 percent shut-in time and a 30 percent cross flow lost, the quotient that is calculated is .03, which basically means about 3 percent of the reserves to be potentially lost with cross flow, given those circumstances.

Now below I performed an example calculation. Using 20 percent shut-in time and a 30 percent cross flow loss from that table, which gave the quotient of .03.

From Exhibit Number Fifteen, a summary of all four wells, we saw earlier that under continued operations the reserves were 149,772 barrels of oil.

Under the proposed commingling operations the reserves are 208,602 barrels, and that assumed no shut-in and consequently no cross flow.

What we're now going to do is adjust that 208,000 barrels for cross flow, and so the reserves will actually produce simply the 208,602 barrels divided by 1 plus the quotient of .03, or 202,526 barrels.

That's about 6000 barrels less than the 208,000 barrels, but it is still significantly larger than the 149,000 barrels under continued operations.

And I might also point out, although it's not shown here, that 202,000 barrels is also larger than the sequential single completions with lift.

And basically -- the basic conclusion is that recovery under the proposed operation significantly exceeds recovery under continued operations even when adjusted for any potential cross flow.

Q In your opinion what is the likelihood of Penrose wells being shut in?

A Well, as we showed on Exhibit Number Seventeen, we don't believe that the wells will be shut in at all for proration reasons due to the Tubb gas, and based

on our marketing arrangements for the gas, we also do not believe that it will be shut in on the purchasing.

Q Would you please now refer to Exhibit Number Twenty-one and summarize the last three exhibits?

A Exhibit Twenty-one is entitled Cross Flow Summary and it basically lists the major points pertaining to this cross flow, or potential cross flow situation.

The first major point is that cross flow does not necessarily equate to loss of reserves. Loss depends upon what fluid is flowing into what zone and what the abandomment pressure of each zone will be with commingling versus without commingling, and I've listed the five possibilities that could take place here with the Penrose wells.

The first possibility is dry gas flowing into a gas reservoir and that results in little to no loss. It can be produced back.

Dry gas flowing into -- the second is dry gas flowing into an oil reservoir results in very minor gas loss but probably some gain in oil production. It's more or less similar to a small gas drive open (unclear).

The third situation is oil flowing into an oil zone and that results in little to no loss. It can be produced back.

The fourth situation is oil flowing into a gas zone for the first time. That results in about a 43 percent loss. That is the most significant potential loss.

The last situation is similar to number four but it is oil flowing into a gas zone that was previously saturated with oil, and in that case that results in little to no loss as long as the oil flowed in the second time or the third time does not exceed what was flowed in the first time.

The second major point is that commingling, even with potential shut-in, recovers significant additional reserves and we show this by the example calculation in the prior exhibit.

The third major point is that the probability of both shut-in and cross flow decreases with time as the producing rate declines.

The last point is that the expected producing rates are low and as we showed, the potential cross flow rates are even lower; furthermore, as the wells are produced, pressures in the commingled zones will approach a common value and therefore the magnitude of any cross flow will continue to decline with time.

Q In your opinion, Mr. Sohaney, will the granting of these applications be in the interests of conservation, the prevention of waste, and the protection of

correlative rights?

A Yes, it is.

Q And were Exhibits Twelve through Twenty-one prepared by you or under your direction?

A Yes, they were.

MR. BRUCE: Mr. Examiner, I move the admission of Exhibits Twelve through Twenty-one.

MR. CATANACH: Exhibits Twelve through Twenty-one will be admitted into evidence.

CROSS EXAMINATION

BY MR. CATANACH:

Q Mr. Sohaney, artificial lift will be utilized on all four of these wells?

A That is correct.

Q How did you arrive at your reserve calculations for these wells?

A The -- the first thing I had to arrive at was a decline, which I took from Exhibit Number Thirteen, which is a production plot.

As I mentioned, the gas was on a 6 percent decline and the oil and condensate was on a 9 percent decline. This was the best data that I had available.

Now turning to Exhibit Number Fifteen, to calculate the reserves, beginning in column number two I

show a beginning rate for each zone, and that is the starting rate column number (unclear due to tape turning).

Q Turning to your Exhibit Number Sixteen you've got additional costs as if we -- if we require separately testing of the zones. The -- you've got costs down there of dualing the well. What -- when would that -- when would that situation arise if you had tested the zone?

A Well, dualing would arrive -- would arise when we would have to satisfy the requirement of separately producing a prorated gas zone, which in this case would be the Tubb in the Penrose No. 1 and the Penrose No. 2 and the Penrose No. 4.

There's -- there's also the potential that the cost of dualing these wells could significantly exceed the cost that you see here. The $6600 is very low and that assumes that we could dual the well in the fashion by flowing one zone up the annulus and producing the other oil zones by pump through the tubing. Now if two strings are necessitated for the dualing, is a little more complicated. That number could easily go up to $30,000.

Q Okay, the costs that you've outlined there are only assuming that we don't let you commingle the prorated gas zone after you test it, is that correct?

A That is correct, except in the Penrose No. 3. That -- that case there is a contingency which we

-- we really don't feel is probable of dualing the well for the Blinebry.

Q Okay. Does Exxon actually object to testing each zone separately or to the time period which is stipulated for testing each zone?

A Really to testing each zone separately. The time is probably appropriate if one were to test each zone. In fact, it might could even be argued that 60 days might be more appropriate than 30.

Some of these zones after they've been worked on take several months to recover.

Other zones, when they're first perforated may come on very strong for the first week or two and then take another six or eight weeks to settle down to stable producing rates.

So one could -- could possibly argue that even 60 days might be more appropriate than 30.

What we really object to is the cost and the effort that it takes to separately produce each zone.

And not only that, but we -- we even question the reliability. For instance, if we have to test a zone that is deeper than two zones that are currently open, for instance, in the Penrose No. 1 Well to test the Drinkard zone, which is deeper than the Blinebry or Tubb, the first thing we'll have to do is spend the $35,000 to

put a pumping unit on the well before we even know that we have a well, and then we'll have to pump that well from below a packer to isolate off the upper zones from the deeper zone, and the Drinkard is expected to be very gassy, and all these zones are very gassy, high GOR. As we all know, it's -- it's very difficult to pump a well below a packer when it's high GOR and I'm not sure that we really get a very representative pumping rate.

In other words, the accuracy of the test that we might get, even after pumping, say for 60 days or 120 days, may be no more better than the proposed allocation formula based on statistical averages.

Q What would -- what would be involved in the typical workover when you -- when you do one of these wells, generally just go in and perforate the gas and other (unclear)?

A What we plan to do is perforate all interval and then acidize the perforations in stages, or perhaps even one by one with a pinpoint packer.

So there's -- there's a lot of cost involved in the perforating and the acidizing.

Q Okay, in your allocation formulas you've used -- your zones are currently producing in each of these wells. You've used current producing rates?

A In some cases I have and in some I have

not.

Q Okay, in the cases that you have would your -- would your stimulation of the well result in a possible increase in production from these zones which might throw off your whole allocation formula?

A Well, that -- that raises a good question; not only could stimulation affect the rates out of one zone, it could affect, of course, the rates out of the other zones, so the assumption is if it increases it in one zone, that it will increase if proportionately in the other zones.

You can even make a -- or raise another question. When you put these wells on lift will the production after it's on artificial lift, necessarily be identical to what it was prior to lift.

And in some cases it may be and in other cases it may not be.

MR. STOVALL: Once you do that, if you had -- if you put it on to a -- don't separately test, complete the well as you propose and put it on some sort of artificial lift, you wouldn't really have any way then of determining whether there's been any significant change in production ratios within that -- between the zones, would you?

A Not between the zones, we would not.

Q So you couldn't prove there was a proportional increase in some --

MR. STOVALL: I think what he means is relationship, in the same relationship.

A You could not -- you could not prove it by test, no. You would not have actual proof by test.

I would expect it to be proportional.

Q Why is that?

A Well, I'm not -- well, I guess basically to answer that question, looking at it on a statistical basis, there's no reason to believe why one zone should respond necessarily better to a stimulation than another zone, at least on a statistical basis.

MR. STOVALL: Let me ask another question, bearing in mind, of course, that I'm not an engineer in this.

If you are producing these commingled zones by common artificial lift mechanism, you equalize the pressure in the -- in the casing or tubing, is that not correct?

A That is correct.

MR. STOVALL: Would you not expect a greater drawdown of pressure than from a -- the higher pressure zones? Would that affect that production?

Do you understand what I'm

saying? In terms of -- if you're equalizing the pressure in the -- in the casng or tubing, are you not getting a greater flow from the high pressure zones than you would from the low pressure zones if a differential is created, or proportion?

A That's -- that's basically correct.

MR. STOVALL: And would that -- would that not, then, affect the flow from those zones relative to the other zones if there -- if the reduction is greater from the zones to the -- to the tubing or casing, would not there be a greater flow from those zones?

A Well, I think Exhibit Number Nineteen addresses your question. The lefthand part of that exhibit shows that we've drawn the casing down to 90 pounds in a pumped off mode and you can see the drawdown, for instance is greater in the Blinebry zone than it is for the lower pressure Tubb.

MR. STOVALL: Well, let me ask you another question, then, and perhaps -- perhaps you have answered it.

Are your calculations based upon this analysis? Have you made your allocations based upon the effects of what you've demonstrated in -- in Exhibit Nineteen?

A Yes.

MR. STOVALL: I'm through.

MR. CATANACH: Okay, are there any other questions of this witness?

If not, he may be excused.

Is there anything further in Case 9398 or 9399?

MR. BRUCE: Mr. Examiner, I would -- I would merely like to state that Exxon believes that the granting of these two applications is necessary to enable it to obtain the maximum economically recoverable reserves from the subject lease and formations.

It should be noted that the incremental reserves per well which can be recovered by Exxon's proposed workovers are approximately 15,000 barrels of oil per well and 1/2 BCF of gas per well.

There are about 1000 wells in this area which have similar workover potential and Exxon itself operates 50 or 60 of these wells and it is looking at additional workover operations on these.

We're just playing this out to show that the incremental reserves are quite large and we believe that this aids in the recovery of additional reserves and the prevention of waste.

MR. CATANACH: So I assume if we approved these we will be looking forward to approving

--

MR. BRUCE: Well, that's not certain.

MR. CATANACH: These two cases will be taken under advisement.

MR. STOVALL: Wait a minute, one question before we -- before we do that.

You've indicated that some how the notice was incorrect, Mr. Bruce, is that --

MR. BRUCE: Yeah, I don't think it requires a re-notice because it merely -- the advertisement stated that the Penrose No. 3 would also be completed in the Tubb and that is not correct.

MR. STOVALL: I agree it isn't. Okay.

MR. CATANACH: Then we won't need to readvertise them.

These two cases will be taken under advisement.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C. S. R. DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division (Commission) was reported by me; that the said transcript is a full, true and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 738, 739 heard by me on June 6 19 61.

David F. Cotanch, Examiner
Oil Conservation Division