CASE 4355: Application of PAN AM. FOR POOL CONSOLIDATION, LEA COUNTY, NEW MEXICO.

Lase Number

Application
Transcripts.

Small Exhibits

ETC

209 SIMMS BLDG. . P.O. BOX 1097. . PHONE 243-6691 . ALBUQUERQUE, NEW MEXICO

BEFORE THE NEW MEXICO OIL CONSERVATION COMMISSION Santa Fe, New Mexico May 13, 1970

EXAMINER HEARING

IN THE MATTER OF:

Application of Pan American Petroleum Corporation, for pool ) Case No. 4355 consolidation, Lea County, New ) Mexico.

BEFORE: Daniel S. Nutter, Examiner.

TRANSCRIPT OF HEARING



MR. NUTTER: We will call next Case No. 4355.

MR. HATCH: Case 4355. Application of Pan American Petroleum Corporation for pool consolidation, Lea County, New Mexico.

MR. BUELL: For Pan American Petroleum Corporation, Guy Buell. We have one witness, Mr. Hosford.

MR. HATCH: I do have a note that Mr. Charles White, of White, Gilbert, Koch and Kelly, has made an appearance for Mr. Guy Buell.

MR. NUTTER: Thank you. Mr. Buell, will you proceed? You have one witness to be sworn?

MR. BUELL: Yes.

(Whereupon, Applicant's Exhibits 1 through 3 were marked for identification.)

(Witness sworn.)

## PATRICK E. HOSFORD

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

## DIRECT EXAMINATION

#### BY MR. BUELL:

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

A Patrick E. Hosford, employed as a staff engineer with Pan American Petroleum Corporation, Fort Worth, Texas.

- Q Mr. Hosford, you have testified before this

  Commission on previous occasions and your qualifications as
  a petroleum engineer are a matter of public record, are they
  not?
  - A Yes, sir, they are.
- Q All right, sir. In connection with your testimony here today, would you look first at what has been identified as Pan American's Exhibit No. 1; what is that Exhibit?
- A Exhibit No. 1 is a map of the North Bagley Pool area color coated to show Upper Penn completions and Lower Penn completions.

The Upper Penn completions are identified by orange dots, the Lower Penn completions by brown dots. There are thirty-five producing wells in the Upper Penn, 108 producing wells in the Lower Penn.

- Q Mr. Hosford, looking at Exhibit No. 1, I don't believe that I see any dually completed wells in each of these pools or any twin wells to the pools; is that observation correct?
- A To the best of my knowledge, we have not been able to find any examples or instances of dual or twin completions in this pool.
- Q How do you account for that, Mr. Hosford, at least as far as Pan American is concerned?
  - A These wells are deep and expensive to drill. The

economics of this entire play are somewhat questionable.

The operators have gone to small casing sizes in making completions, four and a half, five and a half inch casings with a few exceptions of seven inch casing.

The well for the most part must be artificially lifted and they do produce quite a bit of water, so there is a lift problem involved in a completion in the North Bagley Pool area.

The problem as far as a dual completion is concerned is that it just physically isn't possible to make a good dual completion and lift it economically.

- Q What appears to be the common practice of Pan

  American and other operators in attempting to deplete these

  two pools through single completions?
- A For the most part, the operators appear to make a completion in one zone or the other. They are not really consistent in their approach.

Some have perforated the Upper Penn as a completion; others have perforated the Lower Penn and then at some point in the life of a well, when its producing capacity drops to a level in the range of twenty to thirty barrels a day, it becomes more economical to abandon the particular zone and go to the other zone and make another single completion.

Q Has Pan American recently re-completed one of its wells in the manner that you just outlined?

A Yes, sir, we have. And, at the time that we did leave this one particular well, it was making about thirty barrels a day in the Upper Penn, but because of the incentive to go to the Lower Penn, we did leave this thirty barrel a day zone and re-complete.

- Q Would you name that well for the record and also give its location?
- A Yes, sir, just one moment. This particular well is Pan American's DC Well No. 1 located in the southeast of the southeast of Section 16.
- Q What was that well making in the Upper when we left the Upper and went to the Lower?
- A To the best of our knowledge, it was making right at thirty barrels a day in the Upper.
- Q All right, sir. Under these circumstances and these conditions that you outlined, is there an opportunity not only for violation of correlative rights, but also when you abandon a well when it's making thirty barrels a day, the opportunity to leave oil in the ground that it won't be recovered?
- A Yes, sir. I would say that the opportunity for waste is probably a little stronger than the opportunity for a violation of correlative rights since each operator does have this opportunity to re-complete at his discretion, but there is definitely an opportunity for waste in the

event of prematurely abandoning a zone that could be depleted to a lower limit and recover additional oil.

- Q What is the significance of the red line that connects several wells on our Exhibit No. 1?
- A This red line is a trace of a cross section which we have labeled Exhibit No. 2.
- Q Before we go to that, Mr. Hosford, I recall at one time didn't we also have a North Bagley-Middle Penn oil pool?
- A Yes, sir. At one time, there were actually three pools and the Middle Penn was combined with the Lower Penn at a Nomenclature Hearing.
- Q Do you recall about when that happened? Wasn't that in the fall of 1967?
  - A Thank you, I believe it was.
- Q All right, sir. Are you ready for the cross section now?
  - A I am ready.
- Q Will you turn to it, please? It's been identified as our Exhibit No. 2.

MR. NUTTER: What was your Middle Penn combined with?

THE WITNESS: The Middle Penn was combined with the Lower Penn.

MR. BUELL: September 1, 1967, Order R-3295.

THE WITNESS: This is the long cross section.

Q (By Mr. Buell) Would you comment, now, briefly on Exhibit No. 2, Mr. Hosford?

A Exhibit No. 2 is the cross section tracing which is shown on Exhibit No. 1. This particular cross section appears to run backwards. It's D Prime D, but this is just one of these circumstances.

The intent of this cross section is to reflect the nomenclature limits of the Upper Penn and the Lower Penn as they are now described by the NMOCC. These are identified by two horizontal lines on this cross section. The Upper Penn nomenclature limit is a minus 4783 subsea. The Lower Penn upper limit is a minus 5397 and these are just straight, horizontal subsea lines.

The purpose of this particular cross section is to reflect how across the pool, with the difference in structure that exists, you already have a situation of a commingling or combining of the reservoir insofar as some producing zones are concerned.

For instance, starting at the left-hand side, the D Prime side, we have color coated two correlative zones that have been traced across the section from left to right. One zone is color coated yellow, one blue.

These zones make up a vertical section of about

175 to 200 feet and in tracing this it becomes very obvious,

as you move from left to right, that these particular zones move from the Upper Penn Pool to the Lower Penn Pool; yet, these are exactly the same correlative zones, so you have in a sense here a situation of commingling or combining of the two reservoirs already.

One other point that I might make in looking at this cross section, looking at the second well from the right on the cross section, note that there is a completion interval and this is an example of what can happen through just perforating from correlative well to well where you have a change in section.

This is a well that is actually already perforated across the Lower Penn and is classified as a Lower Penn completion and yet it also has, by nomenclature definition, some Upper Penn formations or pay producing in the well.

This is strictly an accident. We are confident of this and there are opportunities for other examples of this in the field.

- Q Of course, if the Commission merges the two pools as we are recommending, that will eliminate this confusion, if confusion is a good word, that we operators in the pool are encountering at this time?
  - A Yes, sir, it would.
- Q All right, sir. Do you have any other comments on this cross section?

- A No, sir, I don't.
- Q Would you turn, then, please, to what has been identified as Pan American's Exhibit No. 3; what is that Exhibit?
- A Exhibit No. 3 is a production tabulation for the North Bagley Pools, the Lower Penn production tabulation being on the left-hand side, the Upper Penn being on the right-hand side.
- Q These data appear to be self-explanatory. Do you want to comment or draw any conclusions from the data? I don't think you need to read them into the record.
- A I think probably the most important point, looking at the latest production information we have available for the month of February, 1970, the Lower Penn Pool produces about 15,500 barrels of oil per day and 21,190 barrels of water per day. This is, for 108 producers, an average of 143 barrels of oil per day per well and an average of 196 barrels of water per day per well.

This adds up on an average of 58% water cut in the Lower Penn.

In the Upper Penn formation, using the same approach and thirty-five producing wells, the average oil producing rate is 95 barrels of oil per day per well. The average water production is 152 barrels of water per day per well.

This adds up to a 62% water cut, compared to the 58% water cut in the Lower Penn.

This is significant to me in that these two pools' nature of pay seems to be about the same; it appears to be interstitial water or free water within the formation itself, not connected with an aquifer as such and it's just a mobile water with both formations producing at about the same water cut.

- Q What about fluids? Are they compatible from one pool to the other?
- A Yes, sir, the oil gravities are in the range of 46 to 47 degrees API in each pool and actually there are examples of these commingling permits in existence already.
- with the gravities almost identical, there would be no decrease in the value of the produced oil if the two pools were merged?
  - A No, sir.
- Q All right, sir, I believe you have already commented on the increase in recovery that could occur through the merging of the two pools. Do you want to elaborate on that any?
- A About the only thing that could be pointed out here, it does cost about \$1200 to \$1500 per month per well operating expense in this pool and that through the merger of these two pools, it will provide an opportunity for

additional oil to be produced at about the same operating cost without any sharp increase. You have so many fixed charges in an operating cost just for your personnel and running pumping units and such and this would allow some increased oil production at a less per barrel cost.

- Q And certainly with all operators in the merged pool having the opportunity to open both zones, do you see any opportunity for violation of anyone's correlative rights?
  - A No, sir, I cannot.
- Q Do you have any recent bottom hole pressure data on either of these pools, Mr. Hosford?
- A No, sir, the bottom hole pressure data out here is extremely peer, extremely slim. It's just not available. The depth of the wells, the cost of obtaining this information has prohibited a good collection of bottom hole pressure data.
- Q Would you have an opinion or maybe I should say an educated guess, do you think there would be any great variance in the pressures between the two pools?
- A No, sir, I can't feature where there would be any significant difference in pressure. There might be at a particular location as you open up a zone that has not been opened up. This would, through producing of the well, keeping the fluid level down, be the only problem.

- Q There are many operators in this pool, are there not, Mr. Hosford? Do you recall offhand just numerically how many?
- A I think there are about twenty-two operators in this pool, maybe a few more since my last count.
- Q Has Pan American, through correspondence, discussed this merger that we are recommending here today?
- A We, in May of 1969, approached other operators in the pool by letter, proposing the merger of the Upper Penn and Lower Penn Pools into the Lower Penn, with the Lower Penn rules to prevail, and, out of the twenty-two operators that were contacted, including Pan American, there were sixteen approvals and no disapprovals.
- Q In other words, everyone that we heard from agreed with the merger?
  - A Yes, sir, they did.
- Q All right, sir. And, subsequently, one that we hadn't heard from, Bell Petroleum, I believe they have furnished a letter to the Commission saying that they support it?
  - A Yes, sir, they have.
- Q Precisely, what is your recommendation to the Commission, Mr. Hosford?
- A My recommendation to the Commission is that the Upper Penn be combined into the Lower Penn Pool in the North

Bagley field area, and that the Lower Penn rules would prevail, that the death acreage factor for the Lower Penn would be the surviving factor and that proration would be on this basis.

- Actually, the pool rules, other than the allowable factor, are identical now, are they not?
  - A Yes, sir, they are.
- Do you have anything else that you care to add at this time, Mr. Hosford?
  - A No, sir, I don't.

MR. BUELL: May it please the Examiner, that's all we have by way of direct testimony. I would like to formally offer Pan American's Exhibits 1, 2 and 3.

MR. NUTTER: Pan Am's Exhibits 1, 2 and 3 will be admitted in evidence.

(Whereupon, Pan American's Exhibits 1 through 3 were offered and admitted in evidence.)

## CROSS EXAMINATION

## BY MR. NUTTER:

- Q Mr. Hosford, what is the reason that you don't have any pressure information available on this pool?
- A The pressure information out here is pretty expensive to get, Mr. Nutter, and the operators just have not seen fit to go to the expense, we'll say, in collecting this pressure.

The wells are extremely deep. For the most part, they are all on artificial lift now. This would require some pulling of rods and pumps and such to get good bottom pressures and it's not too likely that some bottom pressures at this depth would be too reliable.

- Q You don't have any measure of any fluid levels or anything in there?
- A No, sir, not that I have my hand on that would be representative of the entire pool.
- Q There weren't even any original reservoir pressures available?
- A I'm sure there were some when the reservoir was first discovered. I don't have the exact numbers on those pressures at the hearing but I'm sure the discovery well, through BST's and such as this, would have had pressures.

MR. BUELL: There was some earlier pressure data, Mr. Nutter, and if you like, we can furnish that to you.

MR. NUTTER: I think we should have some pressure information on this reservoir. I don't know if there was a similarity between the original pressures or not.

- Q (By Mr. Nutter) What percentage of depletion has each of the reservoirs reached, Mr. Hosford? Do you have any estimate on that?
- A This would be extremely hard to guess at this time because of the mixture that we see between intervals being

produced across the field. In some places you have a little patch of Upper and a little patch of Lower.

- Q Are the pays present throughout the entire area?
- A Yes, sir, they appear to be present throughout the entire area.
  - Q Are they productive throughout the entire area?
- A Yes, sir. Looking at Exhibit 1, there appears to be a real fine scattering of Upper and Lower Penn completions across the field.

It just appears to be that the operator made his choice, made a selection and said I am going to complete the Upper here or the Lower here.

- Q But, there hasn't been a dual completion affected?
- A There has not been a dual completion to our knowledge.
- Q Now, you mentioned there weren't any twin wells.

  Did you mean twin wells on a forty or twin wells on an

  eighty?
- A No, what I meant was the completion on an eighty acre proration unit of two wells, one to the Upper and one to the Lower.
- Q So, there is no eighty in here that has a well in each pool, either dual or single?
  - To my knowledge, that's correct.

    MR. NUTTER: Does anyone else have any questions

of Mr. Hosford?

MR. RAMEY: Mr. Hosford, you said that these pool limits or tops were just a plane across it --

THE WITNESS: Yes, sir, this is the way they were described and are described in the nomenclature of the NMOCC.

MR. RAMEY: -- rather than being a correlative point tied to some log?

THE WITNESS: That's right.

MR. RAMEY: This is just a plane?

THE WITNESS: They are not tied to any log. They are just a horizontal plane with subsea value.

MR. BUELL: That's in Order R-2313

MR. NUTTER: Is that that same order you mentioned that changed the --

MR. BUELL: No, that was a Commission Order. This is the new one there. It's the Nomenclature Order for both the Upper and the Lower.

MR. NUTTER: What is that number?

MR. BUELL: Order R-2313.

UNIDENTIFIED: Does 2313 refer to a type log?

THE WITNESS: No, sir, it does not; no type log

given.

MR. BUELL: We had better say this. The only portion of that order we have seen is in Byron's Rule Book.

I have not seen the original order, but the portion of Byron's Rule Book does not refer to a log.

MR. NUTTER: But that is the order that defines production limits?

THE WITNESS: Yes, sir.

MR. NUTTER: Any further questions? If there are no further questions, the witness may be excused.

Mr. Buell, I think that we will request that you obtain and furnish to us as much pressure information that is available. I am sure that some original pressures are available and I would request those.

I would like to also request that a fluid level be obtained, either a bottom hole pressure or a fluid level in two adjoining wells, that would be offset locations from each other, in each of the two pools.

THE' WITNESS: Did you have any particular preference in the wells?

MR. TTER: No, just two representative wells offsetting each other.

THE WITNESS: Okay.

MR. NUTTER: Does anyone have anything further they wish to offer in this case?

MR. HOOVER: John Hoover, Gulf. Gulf supports the consolidation of these two pools, the Upper and the Lower Penn into one pool.

MR. NUTTER: Thank you.

MR. HATCH: The Commission has received letters from Texaco and Bell Petroleum Company supporting the Applicant in this case.

MR. NUTTER: Does anyone else have anything to offer in Case 4355? We will take the case under advisement.

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STATE OF NEW MEXICO )

COUNTY OF BERNALILLO )

I, GLENDA BURKS, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.

My Commission Expires:

March 12, 1973

I do hereby partify that the foregoing is a complete record of the production in the Exercise hearing of Case 1. 1955, hearing to continue to Consider the Review Conservation Considerion



## OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO P. O. BOX 2068 - SANTA FE 87801 GOVERNOR
DAVID F. CARGO
CHAIRMAN

LAND COMMISSIONER ALEX J. ARMIJO MEMBER

STATE GEOLOGIST A. L. PORTER, JR. SECRETARY - DIRECTOR

	4315
Res	Case No. 4355
Mr. Guy Buell	Order No. R-3987 & R-3988
Pan American Petroleum Corporation	Applicants
Post Office Box 1410	Applicance
Fort Worth, Texas 76101	Pan American Petroleum Corp.

Dear Sir:

Enclosed herewith are two copies of the above-referenced Commission order recently entered in the subject case.

A. L. PORTER, Jr.
Secretary-Director

nut/ ++			
Copy of order also sent	to:		
Hobbs OCC X			
Artesia OCC		•	
Aztec OCC			
Other			 

#### 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. 4355 Order No. R-3988 NOMENCLATURE

APPLICATION OF PAN AMERICAN PETROLEUM CORPORATION FOR POOL CONSOLIDATION, LEA COUNTY, NEW MEXICO.

#### ORDER OF THE COMMISSION

#### BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on May 13, 1970, at Santa Fe, New Mexico, before Examiner Daniel S. Mutter.

MOW, on this 7th day of July, 1970, 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,

#### PINDS:

- (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, Pan American Petroleum Corporation, seeks consolidation of the North Bagley-Upper Pennsylvanian Pool and the Morth Bagley-Lower Pennsylvanian Pool, Lea County, New Mexico, into a single pool to be spaced, drilled, operated, and produced in accordance with the existing rules for the North Bagley-Lower Pennsylvanian Pool.
- (3) That the reservoir information presently available establishes that the North Bagley-Upper Pennsylvanian and the North Bagley-Lower Pennsylvanian Pools constitute a common source of supply.

-2-CASE No. 4355 Order No. R-3988

- (4) That in order to prevent waste and protect correlative rights, the North Bagley-Upper Pennsylvanian Pool and the North Bagley-Lower Pennsylvanian Pool should be abolished, and a new pool designated the North Bagley-Pennsylvanian Pool should be created.
- (5) That said newly created North Bagley-Pennsylvanian Pool should be governed by all previous rules, regulations, and orders of the Commission applicable to the aforesaid North Bagley-Lower Pennsylvanian Pool.

#### IT IS THEREFORE ORDERED:

- (1) That the North Bagley-Upper Pennsylvanian Pool, as heretofore classified, defined, and described, is hereby abolished.
- (2) That the Morth Bagley-Lower Pennsylvanian Pool, as heretofore classified, defined, and described, is hereby abolished.
- (3) That a new pool in Lea County, New Mexico, classified as an oil pool for Jennsylvanian production, is hereby created and designated the Borth Bagley-Pennsylvanian Pool with vertical limits comprising the Pennsylvanian formation and horizontal limits as follows:

#### TOWESHIP 11 SOUTH, RANGE 33 EAST, IMPN

Section 2: SW/4

Section 3: 8/2

Section 4: SE/4 and S/2 SW/4

Section 5: 8/2 SE/4

Section 7: 8/2

Sections 8, 9, and 10: All

Section 11: W/2

Section 14: W/2

Sections 15, 16, 17, and 18: All

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Sections 20, 21, and 22: All

Section 23: W/2

Sections 27, 28, 29, and 30: All

Section 31: N/2 and SE/4

Sections 32 and 33: All

## TOWNSHIP 12 SOUTH, RANGE 33 BAST, NMPM

Section 4: N/2 and SW/4

Section 5: NE/4

Section 9: W/2

-3-CASE No. 4355 Order No. R-3988

- (4) That the North Bagley-Pennsylvanian Pool as herein created and defined and as may be hereafter extended shall be governed by all previous rules, regulations, and orders of the Commission applicable to the North Bagley-Lower Pennsylvanian Pool.
  - (5) That this order shall become effective July 15, 1970.
- (6) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DOME at Santa Pe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO OIL CONSERVATION COMMISSION

DAVID E CARGO, Chairman

ALM J. ARMITTO HOMBOGI

X. L. PORTER, Jr., Member & Secretary

TEXACO

PRODUCING DEPARTMENT -UNITED STATES MIDLAND DIVISION PETROLEUM PRODUCT

May 7, 1970

TEXACO ING.
P. O. BOX 3109

MIDLAND, TEXAS 79701

POOL CONSOLIDATION

NORTH BAGLEY (UPPER & LOWER PENN) POOLS
LEA COUNTY, NEW MEXICO

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

Attention: Mr. A. L. Porter, Jr.

Gentlemen:

Pan American Petroleum Corporation has filed an application with the Oil Conservation Commission which seeks authority to consolidate the North Bagley (Upper & Lower Penn) Pools, Lea County, New Mexico. This is Case No. 4355 scheduled to be heard May 13, 1970 in Santa Fe, New Mexico.

Texaco Inc. supports Pan American Petroleum Corporation in this endeavor. It is our opinion that this application will be in the interest of conservation, protection of royalty interests and prevention of waste.

Yours very truly,

Darrell Smith Division Manager

y www

Assistant Division Manager

CHF/pw

cc: Pan American Petroleum Corporation
P. 0. Box 1410

Fort Worth, Texas 76101 Attention: Mr. D. L. Ray



(213) 629-3143

May 11, 1970

Mr. A. L. Porter, Jr., Secretary-Director Oil Conservation Commission Santa Fe, New Mexico

Reference is made to the application of Pan American Petroleum Corporation which appears on Docket #12-70 - Case 4355.

Please be advised that Bell Petroleum Company is in complete agreement with Pan American Petroleum Corporation that the combination of the North Bagley Upper and Lower Penn Pools combination of the most accommic method of operations of the most accommic method of the most accommic would provide for the most economic method of operations of these pools and would prevent waste.

Yours very truly,

BELL PETROLEUM COMPANY

O. M. Salman, Vice President

OMS/h

FORM 446 8-66

## PAN AMERICAN PETROLEUM CORPORATION

OIL AND GAS BUILDING

D. L. RAY DIVISION ENGINEER

FORT WORTH, TEXAS-76101 June 30, 1970

File:

PEH-327-986.510.1

Subject: Field Combination, North

Bagley Upper and Lower Penn Pools, Lea County, New Mexico

New Mexico Oil Conservation Commission (3) P. O. Box 871 Santa Fe, New Mexico 87501

Attention: Mr. Dan Nutter

Gentlemen:

°70 JUL 1 AH 10 25

Reference is to the hearing (Case 4355) held on May 13, 1970, at which Pan American recommended consolidation of the North Baoley Unner Penn into the North Bagley Lower Penn Pool.

As you requested, we have obtained bottom hole pressure data on both the Upper and Lower Penn. Drillstem test pressures from 39 wells in each horizon indicated an average bottom hole pressure in the Upper Penn of 3130 psi compared to an average pressure of 3440 psi in the Lower Penn. When the hydrostatic gradient is applied (0.45 psi/ft. and approximately 570 feet between the datums of each of the respective pays), the Upper Penn pressure becomes 3386 psi. These data indicate initial pressures in the Upper and Lower Penn were within approximately 55 psi.

In addition, recent selective pressures were obtained in June, 1970 on two Upper Penn wells (Pan American's State DG No. 1 F-16-11-3 and the Tom Brown No. 1 A-28-11-33) and two Lower Penn wells (Tipperary's Dolly No. 1 J-17-11-33 and Mable No. 1 A-29-11-33). Attachment No. 1 indicates that the average bottom hole pressure in the Upper Penn wells (Datum -5200) was 1322 psi and the average pressure in the Lower Penn wells (Datum -5771) was 1116 psi.

Average cumulative oil production for the two Lower Penn wells through April, 1970 was approximately 243,000 barrels. The Pan Am State "DG" No. 1 was recompleted in the Upper Penn in early June, 1970 with a flowing potential test of 197 BOPD and 44 BLW. As shown on Attachment 1, the Tom Brown No. 1 had produced a total of 112,000 barrels of oil through April, 1970.

As might be expected, the pressure on the State DG No. 1 was the highest of all four wells tested. However, the 1469 psi on State DG No. 1 is significantly lower than the average initial Upper Penn pressure of 3130 psi, indicating excellent pressure communication in the Upper Penn.

The Tom Brown Well No. 1, on the other hand, indicated a pressure of 1169 psi, which is within approximately 50 psi of the average pressure of the Lower Penn wells tested.

Based on the above pressure data, Pan American believes that no physical waste will occur and correlative rights will better be protected as a result of consolidating these pools. Consolidation should actually increase ultimate recovery by precluding the premature abandonment of the separate zones which is now necessary to protect correlative rights (Operating costs Tum \$1,200 \cdot \cdot 1,500 per well per month and dual completions are not practical due to 4-1/2" and 5-1/2" casing and well depth). We

respectfully urge the approval of this field consolidation recommendation

Yours very truly,

D.L. Ray of

at an early date.

REM: jn Attachment

## NORTH BAGLEY UPPER & LOWER FENN PRESSURE DATA LEA COUNTY, NEW MEXICO

Upper Penn		to a second	10 mm		
Well No. & Location	Bottom Hole Pressure, Psi	Datum <u>Subsea</u>		Cum.	0il Production 5-1-70
Pan Am State DG #1F 16-11	1469	-5200			
Tom Brown #1A 28-11-33	1169	-5200			112,000
Avg. Upper	1322	-5200	: <u></u>		
Tower Penn		vannos en 1940.			
Tiperary Dolly #1J 17-11-33	1221	-5771			272,789
Mable #1A 29-11-33	1011	-5771			214,212
Avg. Lower	1116	-5771		=	243,000

\*This well recompleted in Upper Penn in June, 1970 with bridge plug set at 9700'.

All pressures obtained in June 1970.

# DOCKET: REGULAR HEARING - WEDNESDAY - MAY 13, 1970

# OIL CONSERVATION COMMISSION - 9 A.M. - MORGAN HALL, STATE LAND OFFICE

Consideration of the oil allowable for June, 1970; (1) ALLOWABLE:

Consideration of the allowable production of gas for June, 1970, from fifteen prorated pools in Lea, Eddy, Roosevelt and Chaves Counties, New Mexico; also presentation of purchaser's nominations for said pools for the six-month period beginning July 1, 1970; consideration of the allowable production of gas from nine prorated pools in San Juan, Rio Arriba and Sandoval Counties, New Mexico, for June, 1970.

THE FOLLOWING CASES WILL BE HEARD BEFORE DANIEL S. NUTTER, EXAMINER, OR ELVIS A. UTZ, ALTERNATE EXAMINER:

Application of Michael P. Grace and Corinne Grace for compulsory pooling, Eddy County, New Mexico. Applicants, in the above-styled cause, seek an order pooling all mineral interests from the surface of the ground down to and includ-CASE 4354: ing the Morrow formation underlying the N/2 of Section 11, Township 23 South, Range 26 East, South Carlsbad Field, Eddy County. New Mexico, said acreage to be dedicated to a well to be drilled in either the NE/4 NW/4 or the NW/4 NE/4 of said Section 11. Also to be considered will he the costs of drilling said well, a charge for the risk involved, a provision for the allocation of actual operating costs, and the establishment of charges for supervision of said well.

CASE 4355:

Application of Pan American Petroleum Corporation for pool consolidation, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the consolidation of the North Bagley-Upper Pennsylvanian and North Bagley-Lower Pennsylvanian Pools, Lea County, New Mexico, into one pool. Applicant further requests the Lower Pennsylvanian Allowable Factor be applied to the consolidated pool.

## CASE 3727 (Reopened):

In the matter of Case 3727 being reopened pursuant to the provisions of Order No. R-3428, which order established 640-acre spacing units for the Rock Tank-Upper Morrow and Rock Tank-Lower Morrow Gas Pools, Eddy County, New Mexico, for a period of one year after first pipeline connection in either of the pools. All interested persons may appear and show cause why said pools should not be developed on 320-acre spacing units.

- CASE 4356: Southeastern nomenclature case calling for an order for the creation, abolishment, extension and contraction of certain pools in Lea, Eddy, Chaves and Roosevelt Counties, New Mexico.
  - (a) Create a new pool in Lea County, New Mexico, classified as a gas pool for Morrow production and designated as the Baum-Morrow Gas Pool. The discovery well is the RK Petroleum Corporation State No. 1 located in Unit B of Section 27, Township 13 South, Range 32 East, NMPM. Said pool would comprise:

## TOWNSHIP 13 SOUTH, RANGE 32 EAST, NMPM SECTION 27: N/2

(b) Create a new pool in Lea County, New Mexico, classified as a gas pool for Queen-Penrose production and designated as the East Querecho Plains-Queen Gas Pool. The discovery well is Robert N. Enfield's Hudson Federal No. 1 located in Unit O of Section 30, Township 18 South, Range 33 East, NMPM.

## TOWNSHIP 18 SOUTH, RANGE 33 EAST, NMPM SECTION 30: SE/4

(c) Abolish the Bluitt-San Andres Pool in Roosevelt County, New Mexico, described as:

## TOWNSHIP 8 SOUTH, RANGE 38 EAST, NMPM

SECTION 7: All

SECTION 8: All

SECTION 17: All

SECTION 18: All

(d) Extend the Bluitt-San Andres Associated Pool in Roosevelt County, New Mexico, to include therein:

#### TOWNSHIP 8 SOUTH, RANGE 38 EAST, NMPM

SECTION 8: S/2

SECTION 17: W/2

(e) Contract the Bagley-Pennsylvanian Pool in Lea County, New Mexico, by the deletion of the following described area;

## TOWNSHIP 12 SOUTH, RANGE 33 EAST, NMPM SECTION 4: NE/4

Regular Hearing - May 13, 1970

Docket No. 12-70

(Case 4356 continued)

which are a com-

(f) Extend the North Bagley-Upper Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 11 SOUTH, RANGE 33 EAST, NMPM SECTION 33: E/2

TOWNSHIP 12 SOUTH, RANGE 33 EAST, NMPM SECTION 4: NE/4

(g) Extend the Cerca-Upper Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 13 SOUTH, RANGE 34 EAST, NMPM SECTION 34: NW/4

TOWNSHIP 14 SOUTH, RANGE 34 EAST, NMPM SECTION 8: NW/4

(h) Extend the Double L-Queen Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 15 SOUTH, RANGE 29 EAST, NMPM SECTION 12: E/2 NE/4

(i) Extend the Hobbs-Blinebry Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 38 EAST, NMPM SECTION 33: NE/4

(j) Extend the Lea-Bone Springs Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 34 EAST, NMPM SECTION 35: SE/4

TOWNSHIP 20 SOUTH, RANGE 34 EAST, NMPM SECTION 2: E/2

(k) Extend the Rock Tank-Lower Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 23 SOUTH, RANGE 24 EAST, NMPM SECTION 12: All

(1) Extend the Rock Tank-Upper Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 23 SOUTH, RANGE 24 EAST, NMPM SECTION 12: All

(m) Extend the Tulk-Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 14 SOUTH, RANGE 32 EAST, MMPM SECTION 34: NE/4

(n) Extend the Tulk-Wolfcamp Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 15 SOUTH, RANGE 32 EAST, NMPM SECTION 9: NE/4

## CASE 4301: (Continued from the March 25, 1970, Examiner Hearing)

In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Robert T. Smith and all other interested persons to appear and show cause why the following Robert T. Smith wells located in Section 32, Township 20 North, Range 9 West, McKinley County, New Mexico, should not be plugged and abandoned in accordance with a Commission-approved plugging program:

State Well No. 1 located 487 feet from the North line and 990 feet from the East line;

State "A" Well No. 1 located 400 feet from the North line and 990 feet from the East line;

State Well No. 3 located 330 feet from the North line and 330 feet from the West line;

State Well No. 6 located 220 feet from the North line and 1485 feet from the East line;

State Well No. 6-Y located approximately 5 feet West of the above-described Well No 6;

State Well No. 8 located 1155 feet from the North line and 2475 feet from the East line.

CASE 4337: (Continued from the April 15, 1970, Examiner Hearing)
Application of Petroleum Corporation of Texas for an exception to Order No. R-3221, as amended, Eddy County,
New Mexico. Applicant, in the above-styled cause, seeks an exception to Order No. R-3221, as amended, which order prohibits the disposal of water produced in conjunction with the production of oil on the surface of the ground in Lea, Eddy, Chaves, and Roosevelt Counties, New Mexico. Said exception would be for applicant's Dexter Hanagan Graridge Federal Well No. 1 located in Unit J, Section 22, Township 17 South, Range 30 East, Jackson-Abo Pool, Eddy County, New Mexico. Applicant seeks authority to dispose of salt water produced by said well in an unlined surface pit in the vicinity of said well.

CASE 4336: (Continued from the April 15, 1970, Examiner Hearing)
Application of Byron McKnight for an exception to Order
No. R-3221, as amended, Lea County, New Mexico. Applicant,
in the above-styled cause, seeks an exception to Order No.
R-3221, as amended, which order prohibits the disposal of
water produced in conjunction with the production of oil or
gas on the surface of the ground in Lea, Eddy, Chaves and
Roosevelt Counties. Said exception would be for applicant's
lease comprising all of Section 19, W/2 of Section 20, NW/4
Section 29, and NW/4 Section 30, Township 19 South, Range
34 East, undesignated Yates-Seven Rivers gas pool, Lea County,
New Mexico. Applicant seeks authority to dispose of salt
water produced by wells on said leases in uplined surface
pits on the leases.

CASE 4084: (Reopened) (Continued from the April 15, 1970, Examiner Hearing).

In the matter of Case No. 4084 being reopened pursuant to the provisions of Order No. R-3732, which order established 160-acre spacing units and an 80-acre proportional factor of 4.77 for the Feather-Wolfcamp Pool, Lea County, New Mexico. All interested parties may appear and show cause why the said pool should not be developed on less than 160-acre spacing units and to show cause why the 80-acre proportional factor of 4.77 should or should not be retained.

CASE 4351: (Continued from the April 29, 1970, Examiner Hearing)
Application of Humble Oil & Refining Company for well reclassification and simultaneous dedication of acreage,
Lea County, New Mexico. Applicant, in the above-styled cause, seeks the reclassification of its New Mexico "G"
State Well No. 5 from an oil well in the Fumont Pool to a gas well in said pool. Applicant further seeks the dedication of a standard 640-acre gas proration unit comprising all of Section 23, Township 21 South, Range 36 East, Lea County, New Mexico, to said Well No. 5 and to applicant's New Mexico "G" State Well No. 9, located, respectively in Units E and G of said Section 23, and authority to produce the allowable assigned to said unit from either of said wells in any proportion.

CASE 4352: (Continued from the April 29, 1970, Examiner Hearing)
Application of Jack L. McClellan for the creation of a new gas pool or, in the alternative, the establishment of pool rules for two existing pools, Chaves and Lea Counties, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Queen gas pool comprising the following-described acreage:

#### CHAVES COUNTY, NEW MEXICO

#### TOWNSHIP 15 SOUTH, RANGE 29 EAST

Section 11: SE/4

Section 12: SW/4

Section 13: NW/4

Section 14: E/2

Section 23: NE/4 and SW/4

In the alternative applicant seeks the promulgation of special rules for the Sulimar-Queen Pool, Chaves County, and Double L-Queen Pool, Chaves and Lea Counties, New Mexico, as separate or as consolidated pools, including provisions for the classification of oil and gas wells, spacing and well location requirements for oil and gas wells, and an allocation formula for withdrawals by oil wells and gas wells.

## NO. BAGLEY PRODUCTION TABULATION

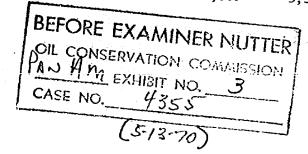
İ		L	ower Penn		#			Upper Penn		
Mo &	Year	во	BW	MCF			во	BW	MCF	
1966	(Total)	193,072	344, 156	233,940			519	**	24,489	
1967	(Total)	1,235,402	1,529,304	1,751,993		844 1	1,071,733	1,418,822	1,474,662	
Jan.	1968	160,760	219,008	225,946	i k	-	118,654	158,480	146,035	
Feb.		164,716	246,511	222,446			117,764	215,948	138,005	
Mar.		194,422	248, 589	261,382			113,576	205,361	139,731	
Apr.	•	214,027	282,218	301,503			116,466	224,759	153,026	·
May		264,048	315,803	359,361			117,898 116,057	233,420 193,202	164,552 160,122	
June		273, 104 310, 404	281,701 322,021	401, 126 444, 896			114,543	180,494	155, 143	
July		354,664	337, 170	506,064			118,688	179,268	165,470	
Aug. Sept.		376,832	398,446	495,181			10,000	149,035	153,052	
Oct.	r de la companya de La companya de la co	407,469	327,865	519,255		42	122,330	165,504	155, 783	
Nov.		397,423	279,732	486,360		1.00	104,835	139,078	130,485	
Dec.		404,366	293,606	491,748	BOPD	BWPD	99,438	126,873	129,946	BOPD
Jan.	1969	401,665	248,957	\$ 504,927	12,957	8,031	100,914	103,797	133, 390	3,255
- Feb.		373,211	280,050	484, 237	13,329	10,002	93,091	141,641	134, 231	3,325
Mar.		415,408	310,468	540,905	13,400	10,015	103,005	139,726	150,682	3,323
Apr.		449,576	292 <b>, 9</b> 80	631,380	14,986	.9,766	96,420	133,823	142,334	3,214
May	•	453,682	386,100	677,788	14,641	12,450	96,017	155,623	155,883	3,097
June	18.	460,424	424,420	743,128	15,347	14, 147	108,760	143,974	170,642	3,625
July		443,311	372,385	722,073	14,300	12,012	108,075	152,051	175,469	3,486
Aug.		438,785	425, 252	708,748	14, 154	13,717	101,782	136,586	169,415	3,283
Sept.	•	456,325	510,302	720,055	15,210	17,010	96,638	128,641	160,091	3,221
Oct.		473,425	528,141	743,937	15,271	17,036	101,430	150,001	157,531	3,272
Nov.	•	462,362	610,023	688,065	15,412	20,341	101,326	136,958	146,833	3,377
Dec.	e Day	467,302	642,735	699,552	15,074	20,733	103,505	147,521	183, 169	3,338
Jan.	1970	475, 392	567,880	687,176	15,335	18,319	100, 126	130, 182	151,290	3,229
Feb.		434,016	593,377	682,959	15,501	21,192	93,504	148,714	159,002	3,339

BEFORE EXAMINER NUTTE OIL CONSERVATION COMMISSION AN AM EXHIBIT NO. 3 CASE NO. 4355

(5-13-70)

NO. BAGLEY PRODUCTION TABULATION

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398,446	495, 181			118,688	179, 268	155,143		
327,865	519,255			104,441	149,035	165,470		
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280,050	484,237	12,957 13,329	8,031	100,914	103,797	129,946 133,390	BOPD	BWPD
310,468	540,905		10,002	93,091	141, 641		3,255	3,348
292,980	631,380	13,400	10,015	103,005	139,726	134,231	3,325	5,059
386, 100	677,788	14,986	9,766	96,420	133,823	150,682	3,323	4,507
424,420	743,128	14,641	12,450	96,017	155,623	142,334	3,214	4,461
372,385	722,073	15,347	14, 147	108,760	143,974	155,883	3,097	5,020
425, 252	708,748	14,300	12,012	108,075	152,051	170,642	3,625	4,799
510,302	720,055	14, 154	13,717	101,782	136,586	175,469	3,486	4,905
528,141	743,937	15,210	17,010	96,638	128,641	169,415	3,283	4,406
610,023	688,065	15,271	17,036	101,430	150,001	160,091	3,221	4,288
642,735	699,552	15,412	20,341	101,326	136,958	157,531	3,272	4,839
567,880	687,176	15,074	20,733	103,505	147,521	146,833	3,377	4,565
593, 377	682,959	15, 335	18,319	100, 126	130, 182	183, 169	3,338	4,759
, -, 1	002,939	15,501	21,192	93,504	148,714	151, 290	3,229	4, 199
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						The state of the s		



PAN AMERICAN PETROLEUM CORPORATION

OIL AND GAS BUILDING

P. O. BOX 1410

FORT WORTH, TEXAS-76101

D. L. RAY DIVISION ENGINEER

April 21, 1970

Case 4355

File: PEH-194-986.510.1

Re:

Field Combination, North

Bagley Upper and Lower Penn Pools

Lea County, New Mexico

New Mexico Oil Conservation Commission (3) Post Office Box 871 Santa Fe, New Mexico 87501

Gentlemen:

Pan American Petroleum Corporation respectfully requests that a hearing be docketed to consider our application for combination of the North Bagley Upper and Lower Penn pools in Lea County, New Mexico. We also request that should our application be approved, the existing Lower Penn pool allowable factor be applied to the combined pools.

Attached please find a list of all operators in the two pools.

Yours very truly,

DLRAT

WCW: jb

Attachment

DOCKET MAILED

1-30-70

## LIST OF OPERATORS NORTH BAGLEY LOWER AND UPPER PENN POOLS

Amerada Petroleum Corporation Box 312 Midland, Texas 79701

Amini Oil Corporation 400 Wall Towers West Midland, Texas 79701

Bell Petroleum Company Box 1538 Midland, Texas 79701

Sam Boren 4025 West Highway 80 Midland, Texas 79701

Tom Brown Drilling Company, Inc. 315 Midland Tower Midland, Texas 79701

BTA Oil Producers 104 S. Pecos Midland, Texas 79701

John L. Cox 305 V & J Tower Midland, Texas 79701

Paul DeCleva 102 Oil Center Wichita Falls, Texas 76301

Felmont 0il Corporation Box 1855 Midland, Texas 79701

Charles B. Gillespie, Jr. Box 1179 Midland, Texas 79701

Gulf 0il Company Box 670 Hobbs, New Mexico 88240

Major, Giebel & Forster 1126 Vaughn Bldg. Midland, Texas 79701

Southland Royalty Company 1405 Wilco Bldg. Midland, Texas 79701 Meadco Properties, Ltd. 606 Vaughn Bldg. Midland, Texas 79701

National Cooperative Refinery Assoc. 915 Wilco Bldg. Midland, Texas 79701

Charles B. Read Box 2126, 604 Security Natl. Bk. Bldg. Roswell, New Mexico 88201

Read and Stevens (Address Unknown)

Stoltz & Company Box 1714, 226 Central Bldg. Midland, Texas 79701

Sunset International Petroleum Corp. Box 107, 1412 Schofield Lane Farmington, New Mexico 87401

Texaco Inc.
Box 810, Petroleum Club Plaza
Farmington, New Mexico 87401

Texas Pacific Uil Company 200 S. Fowler Hobbs, New Mexico 88240

Tipperary Land & Exploration Corp. (Address Unknown) Believe to be same as Stoltz & Company

Allen K. Trobaugh 509 First Natl. Bk. Bldg. Midland, Texas 79701

Cabot Corporation Wilco Bldg.
Midland, Texas 79701

David Fasken 608 First Natl. Bk. Bldg. Midland. Texas 79701

## 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:

RECORDS CENTER

CASE No. 4355

Order No. R- 398

APPLICATION OF PAN AMERICAN PETROLEUM CORPORATION FOR POOL CONSOLIDATION, LEA COUNTY, NEW MEXICO.

7-6-

ORDER OF THE COMMISSION

### BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on May 13, 1970, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter

NOW, on this \_\_\_\_\_day of \_\_July \_\_\_, 1970, 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, Pan American Petroleum Corporation, seeks consolidation of the North Bagley-Upper Pennsylvanian Pool and the North Bagley-Lower Pennsylvanian Pool, Lea County, New Mexico, into a single pool to be spaced, drilled, operated, and produced in accordance with the existing rules for the North Bagley-Lower Pennsylvanian Pool.
- (3) That the reservoir information presently available establishes that the North Bagley-Upper Pennsylvanian and North Bagley-Lower Pennsylvanian Pools constitute a common source of supply.

- (4) That in order to prevent waste and protect correlative rights, the North Bagley-Upper Pennsylvanian Pool and the North Bagley-Lower Pennsylvanian Pool should be abolished and a new pool designated the North Bagley-Pennsylvanian Pool should be created.
- (5) That said newly created North Bagley-Pennsylvanian Pool should be governed by all previous rules, regulations, and orders of the Commission applicable to the aforesaid North Bagley-Lower Pennsylvanian Pool.

## IT IS THEREFORE ORDERED:

- (1) That the North Bagley-Upper Pennsylvanian Pool, as heretofore classified, defined, and described, is hereby abolished.
- (2) That the North Bagley-Lower Pennsylvanian Pool, as heretofore classified, defined, and described, is hereby abolished.
- (3) That a new pool in Lea County, New Mexico, classified as an oil pool for Pennsylvanian production, is hereby created and designated the North Bagley-Pennsylvanian Pool with vertical limits comprising the Pennsylvanian formation and horizontal limits as follows:

## TOWNSHIP 11 SOUTH, RANGE 33 EAST, NMPM

Section 2: SW/4

Section 3: S/2

Section 4: SE/4 and S/2 SW/4

Section 5: S/2 SE/4

Section 7: S/2

Sections 8, 9, and 10: All

Section 11: W/2

Section 14: NW/4, N/2, SW/4 and SW/4 SW/4 W/2

Sections 15, 16, 17, and 18: All

Section 19: E/2 Sections 20, 21, and 22: All

Section 23: W/2

Sections 27, 28, 29, and 30: All

Section 31: N/2 and SE/4 Sections 32: and Section 33: N/2 and SW/4 All

## TOWNSHIP 12 SOUTH, RANGE 33 EAST, NMPM

Section 4: 11/2 and Sw/4 Section 5: NE/4

Section 9: W/2

- (4) That the North Bagley-Pennsylvanian Pool as herein created and defined and as may be hereafter extended shall be governed by all previous rules, regulations, and orders of the Commission applicable to the North Bagley-Lower Pennsylvanian Pool.
  - (5) That this order shall become effective July 15, 1970.
- (6) 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.