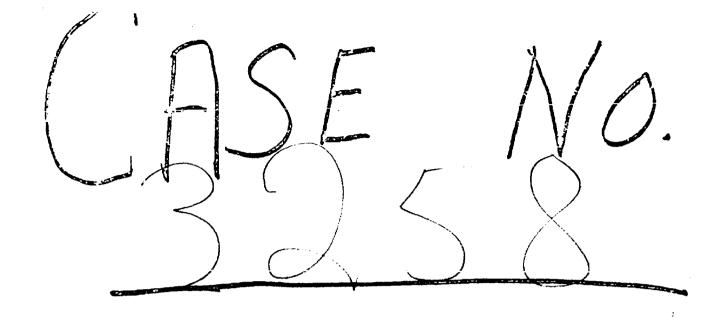
CASE 3258: Application of MIDWEST OIL CORP. for dual completion of its STATE "C" WELL NO. 1.



APPlication,
Transcripts,
SMAIL Exhibits
ETC.

GOVERNOR JACK M. CAMPBELL CHAIRMAN

State of New Mexico

Bil Conservation Commission

LAND COMMISSIONER GUYTON B. HAYS MEMBER

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

P. O. BOX 2088 SANTA FE

June 15, 1965

Mr. Richard S. Morris

Seth, Montgomery, Pederici & Andrews
Attorneys at Law

Post Office Box 2307

Santa Fs. New Mexico

3259
Case No. 3258
Order No. R-2929 & R-2930
Applicant:

MIDWEST OIL CORPORATION

Dear Sir:

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

Very truly yours,

A. L. PORTER, Jr. Secretary-Director

Carbon copy of order also sent to:

Hobbs OCC
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. 3258 Order No. R-2930

APPLICATION OF MIDWEST OIL CORPORATION FOR A DUAL COMPLETION, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. cm June 9, 1965, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 15th day of June, 1965, 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, Midwest Oil Corporation, seeks authority to complete its State "C" Well No. 1, located in Unit K of Section 32, Township 13 South, Range 34 East, NMPM, Lea County, New Mexico, as a dual completion (conventional) to produce oil from the Nonombre-Upper Pennsylvanian Pool and the Nonombre-Lower Pennsylvanian Pool through parallel strings of 2 1/16-inch tubing, with separation of zones by a packer set between the producing intervals.
- (3) That the mechanics of the proposed dual completion are feasible and in accord with good conservation practices.
- (4) That approval of the subject application will prevent waste and protect correlative rights.

-2-CASE No. 3258 Order No. R-2930

IT IS THEREFORE ORDERED:

(1) That the applicant, Midwest Oil Corporation, is hereby authorized to complete its State "C" Well No. 1, located in Unit K of Section 32, Township 13 South, Range 34 East, NMPM, Lea County, New Mexico, as a dual completion (conventional) to produce oil from the Nonombre-Upper Pennsylvanian Pool and the Nonombre-Lower Pennsylvanian Pool through parallel strings of 2 1/16-inch tubing, with separation of zones by a packer set between the producing intervals;

PROVIDED HOVEVER, that the applicant shall complete, operate, and produce said well in accordance with the provisions of Rule 112-A of the Commission Rules and Regulations insofar as said rule is not inconsistent with this order;

PROVIDED FURTHER, that the applicant shall take packer-leakage tests upon completion and annually thereafter during the Annual Gas-Oil Ratio Test Period for the Nonombre-Lower Pennsylvanian Pool.

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

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

STATE OF NEW MEXICO

QIL CONSERVATION COMMISSION

JACK M. CAMPEELL, Chairman

GUNTON B. HAYS, Member

A. L. PORTEN, Jr., Member & Secretary

esr/

Case 375 &
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2. Completin is conventional.

7-3-58

NEW MEXICO OIL CONSERVATION COMMISSION

SANTA FE, NEW MEXICO

APPLICATION FOR DUAL COMPLETION

Field Nan	ne			County		Date	
Wildcat				Lea		May 10, 1965	
Operator Mi	idwest Oil Corporati	.on	Lease State	יייי		Well No.	
Location	Unit	Section		Township		Range	
of Well	K	3:	2	13 s		34E	
1. Has th	ne New Mexico Oil Conservat	ion Commissi	ion heretofore	authorized the dual co	ompletion of a well	l in these same pools or in the same	
zones	within one mile of the subject	et well? YE	ES NO _	X			
2. If ansi	wer is yes, identify one such	instance: O	rder No.	; Opera	ator, Lease, and W	Vell No.:	
3. The fo	ollowing facts are submitted:		Uppe	r Zone	-	Lower Zone	
	me of reservoir		<u>ennsylvani</u>	an	1 -	lvanian	
	p and Bottom of	10	0,344		10,	694	
	Pay Section	10	0 360				
	(Perforations)		0,360		, ,	719	
	pe of production (Oil or Gas)	· 	011		<u>01</u>	<u> </u>	
	thod of Production	{	n1				
	(Flowing of Artificial Lift) ollowing are attached. (Plea		Flowing		FTO	wing	
			•				
5. List a Su		ell or other action available se on which to be Box 18:	at the time applications well is located to the same application of the same at the same a	plication is filed, it s rated together with the id, Texas	shall be submitted eir correct mailing		
	tiph howe, i. o. no.	. 030, FIL	diand, lex				
	outhern Minerals Cor						
Ke	ern County Land Co.	407 V. &	J. Tower,	Midland, Texa	S		
Ph	illips Petroleum Co	. 4th an	d Washingt	on, Odessa, Te	xas		
Но	ondo Oil & Gas, P. C	Box 66	n Roswell	New Mevico			
					cation? YES	NO If answer is yes, give date	
	h notification			·	carrou: 100	. It answer is yes, give take	
	IFICATE: I, the undersigned	-		gent	of the	Midwest Oil ort; and that this report was prepared	
	supervision and direction and						
				11	CO TUM	tellusa	
					S	ignature/	
						I, the New Mexico Oil Conservation	
C	commission will hold the appl	ication for a	period of twen	ty (20) days from date	of receipt by the	Commission's Santa Fe office. If,	

Commission will hold the application for a period of twenty (20) days from date of receipt by the Commission's Santa Fe office. If, after said twenty-day period, no protest nor request for hearing is received by the Santa Fe office, the application will then be processed.

NOTE: If the proposed dual completion will result in an unorthodox well location and/or a non-standard proration unit in either or both of the producing zones, then separate application for approval of the same should be filed simultaneously with this application.

CLASS OF SERVICE

This is a fast message unless its deferred character is indicated by the

proper symbol.

WESTERN UNION

TELEGRAM

1201 (4-60)

DL = Day Letter

NL=Night Letter

LT=International

The filing time shown in the date line on domestic telegrams is LOCAL TIME at point of origin. Time of receipt is LOCAL TIME at

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D MDA127 PD=MIDLAND TEX 7 303P CST=

A L PORTER, SECTY DIRECTOR=

NEW MEXICO OIL CONSERVATION COMM STATE LAND OFC

BLDG SANTA FE NMEX=

CONCERNING CASE #3259 FIELD RULES PROPOSED BY MIDWEST

FOR NEW POOLS IN T-13-S R-34-E LEA COUNTY NEW MEXICO. I

CONCUR WITH TEMPORARY FIELD RULES PROPOSED BY MIDWEST.

AND RECOMMEND THEIR ADOPTION BY THE COMMISSION=

RALPH LOWE=:

|=#3259 T-13-8 R-34-E=

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM: ITS PATRONS CONCERNING ITS SERVICE

CLASS OF SERVICE
This is a fast message unless its deferred char-

acter is indicated by the

proper symbol.

WESTERN UNION

TELEGRAM

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01 (4-60)

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Letter Telegram

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D MDA033 PD=MIDLAND TEX 8 101CA CST=
NEW MEXICO OIL CONSERVATION COMM=

STATE LAND OFFICE BLDG SANTA FE NMEX=

ATTN "A "L" PORTER:

IN REFERENCE DOCKETT #3258 AND 3259. CACTUS DRILLING CORP. OPERATOR OF DRILLING WELL IN SE/4 OF SE/4 OF SECTION 30 T-13-S R-34-E LEA COUNTY NEW MEXICO APPROVES IN THEIR ENTIRETY THE APPLICATIONS OF MID WEST OIL CORP FOR SPECIAL FIELD RULES IN THE ABOVE TOWNSHIP AND RANGE CACTUS DRILLING CORP D G STEVENS==

#3258 3259 SE/4 SE/4 30 T-13-S R-34-E=

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

CLASS OF SERVICE This is a fast message unless its deferred character is indicated by the proper symbol.

ESTERN UNION TELEGRAM

SYMBOLS DL = Day Letter NL=Night Letter

The filing time show

LA025 SSF032

TL HBA005 PD=HOBBS NMEX 9 826A NST= NEW MEXICO OIL CONSERVATION COMMISSION=

STATE LAND OFFICE BLDG SANTA FE NELEN S LAND -REFERENCE NMOCC CASE NUMBER 3259 TODAY AND MY LETTER OF JUNE 7TH 1965, I UNDERSTAND MIDWEST WILL RECOMMEND 160 ACRE SPACING WITH LOCATION TO BE NOT GREATER THAN 150 FEET FROM THE CENTER OF ANY QUARTER QUARTER SECTION 1 CONCUR IN THIS RECOMMENDATION=

C W TRAINER ==

NMOCC 3259 7 1965 160 150=

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

BEFORE THE NEW MEXICO OIL CONSERVATION COMMISSION Santa Fe, New Mexico May 26, 1965

EXAMINER HEARING

IN THE MATTER OF:

APPLICATION OF MIDWEST OIL CORPORATION FOR A DUAL COMPLETION, LEA COUNTY, NEW MEXICO

APPLICATION OF MIDWEST OIL CORPORATION FOR THE CREATION OF TWO NEW OIL POOLS, AND FOR SPECIAL POOL RULES, LEA COUNTY, NEW MEXICO

Case No. 3259

BEFORE:

DANIEL S. NUTTER

TRANSCRIPT OF HEARING

DEARNLEY-MEIER REPORTING SERVICE, Inc.

NEV/ MEXICO

1092 • PHONE 243-6691 • ALBUQUERGUE.

SIMMS BIDG. . P. O. BOX

MR. DURRETT: Application of Midwest Oil Corporation for a dual completion, Lea County, New Mexico. If the Examiner please, I'd like to state for the record that Mr. Dick Morris, attorney for the applicant in this case, has contacted me requesting that this case be continued, as it is a companion case with Number 3259, and Midwest has amended their application and requested that Case Number 3259 and this case be continued, and that Case Number 3259 be re-advertised.

MR. NUTTER: Call Case Number 3259.

MR. DURRETT: Application of Midwest Oil Corporation for the creation of two new oil pools, and for special pool rules, Lea County, New Mexico.

MR. NUTTER: We will continue Cases Number 3258 and 3259 to June 9th at nine A. M. at the same place, with Case Number 3259 being re-advertised for an amendment.

STATE OF NEW MEXICO) COUNTY OF BERNALILLO)

1, EMZABETH K. HALE, Notary Public and Court Reporter, do hereby certify that the proceedings in these cases were taken and transcribed by me, and that the foregoing is a



truc and correct transcript of proceedings to the best of my knowledge, skill and ability.

IN WITNESS WHEREOF, my hand and seal of office this 4th day of June, 1965.

Square Chec

My commission expires

May 23, 1968.

I do hereby pertify that the foregoing in a complete record of the proceedings to the Standard hearing of Case No. 3258 \$ 3259 beard by me on 1965

Accession Exeminer Bay Lexico Cil Conservation Commission

DOCKET: EXAMINER HEARING- WEDNESDAY - JUNE 9, 1965

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

The following cases will be heard before Elvis A. Utz, Examiner, or Daniel S. Nutter, Alternate Examiner:

CASE 3251: (Continued from the May 26, 1965 Examiner Hearing)

Application of Continental Oil Company for a waterflood project, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Rattlesnake Dakota Pool, San Juan County, New Mexico, by the injection of water into the upper and middle zones of the Dakota formation, through three injection wells in Sections 12 and 13, Township 29 North, Range 19 West.

- CASE 3260: Application of Delawage-Apache Corporation for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the West Lusk Deep Unit Area comprising 1920 acres, more or less, of State and Federal lands in Township 19 South, Range 31 East, Eddy County, New Mexico.
- Application of Delaware Apache Corporation for a pool extension and special rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the extension of the Jenkins-cisco Pool to include the S/2 of Section 19 and the NW/4 of Section 30, Township 9 South, Range 35 East, Lea County, New Mexico, and the SE/4 of Section 24, and the NE/4 of Section 25, Township 9 South, Range 34 East. Applicant further seeks the promulgation of special rules for said pool including a provision for 80-acre proration units.
- CASE 3262: Application of Monsanto Company for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Cueva Unit Area comprising 12,489 acres, more or less, of State, Federal and fee lands in Townships 22 and 23 South, Range 25 East, Eddy County, New Mexico.
- CASE 3263: Application of Jake L. Hamon for the creation of a new gas pool and for special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Morrow Gas Pool for his Hamon State E-8913 Well No. 1 located in Unit A of Section 20, Township 20 South, Range 36 East, Lea County, New Mexico, and the promulgation of special pool rules including a provision for 640-acre spacing.
- CASE 3264: Application of Carl Engwall for an exception to Commission Order R-111-A, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to the potash-oil area casing and cementing rules as set forth in Commission Order R-111-A. Applicant

-2-Docket No. 16-65

proposes to drill and complete a well in Unit L of Section 14, Township 20 South, Range 33 East, Teas Pool, Lea County, New Mexico, with surface casing set at approximately 950 feet, cement circulated, and production casing set at approximately 3400 feet and cemented to approximately 2500 feet above the casing point. The well would be plugged and abandoned in accordance with the provisions of Order R-111-A.

CASE 3265: Application of Coastal States Gas Producing Company for salt water disposal, Iea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the San Andres formation through perforations from 4545 feet to 4590 feet in its Southern Minerals State

Well No. 1-15 located in Unit L of Section 15, Township 9 South, Range 33 East, Flying "M" San Andres Pool, Lea County, New Mexico.

CASE 3112: (Reopened)

In the matter of Case 3112 being reopened pursuant to the provisions of Order No. R-2824, which order authorized Gallup-Dakota commingling in the wellbore by means of a dual-flow downhole choke assembly in its Jicarilla 28 Well No. 1 located in Unit J of Section 28, Township 25 North, Range 4 West, Rio Arriba County, New Mexico. All interested parties may appear and show cause why the authority granted under this order should not be terminated.

CASE 3266: Application of Pan American Petroleum Corporati

Application of Pan American Petroleum Corporation for a dual completion and commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the dual completion (conventional) of its Federal "A" Well No. 4 located in Unit L of Section 13, Township 9 South, Range 35 East, Lea County, New Mexico, to produce oil from the Bough Permo-Penn and an undesignated Devonian pool through parallel strings of tubing. Applicant further seeks authority to commingle the production from said pools on said lease after separately metering the production from each pool.

CASE 3258: (Continued from the May 26th examiner hearing)

Application of Midwest Oil Corporation for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the dual completion (conventional) of its State "C" Well No. 1 located in Unit K of Section 32, Township 13 South, Range 34 East, Lea County, New Mexico, to produce oil from the Upper and Lower Pennsylvanian formations through parallel strings of tubing. Docket No. 16-65

CASE 3259: (Continued and readvertised from the May 26th examiner hearing)

Application of Midwest Oil Corporation for the creation of two new oil pools, and for special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of two new oil pools for Pennsylvanian production for its dually completed State "C" Well No. 1 located in Unit K of Section 32, Township 13 South, Range 34 East, Lea County, New Mexico, and for the establishment of special pool rules, including a provision for 160-acre proration units, and fixed well locations.

CASE 3267:

Application of Ted Collins, Jr., for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Zia Unit Area comprising 1440 acres of State land in Township 13 South, Range 32 East, Lea County, New Mexico.

J. O. SETH (1883-1963)

A. K. MONTGOMERY
WH. FEDERICI
FRANK ANDREWS
FRED C. HANNAHS
RICHARD S. MORRIS
JOHN G. JASPER
SUMNER G. BUELL

SETH, MONTGOMERY, FEDERICI & ANDREWS

ATTORNEYS AND COUNSELORS AT LAW 350 EAST PALACE AVENUE SANTA FE, NEW MEXICO 87501

May 20, 1965

AREA CODE 505 TELEPHONE 982-3876

New Mexico Oil Conservation Commission State Land Office Building Santa Fe, New Mexico

Re: Cases Nos. 3258 and 3259

Gentlemen:

The application of Midwest Oil Corporation for the creation of two new Pennsylvanian oil pools for its dually completed state "C" Well No. 1, unit K, Sec. 32, T. 13 S., R. 34 E., Lea County, New Mexico, has been set for hearing on May 26, 1965 as Case No. 3259. In the original application filed for Midwest Oil Corporation special pool rules were requested including a provision for 80-acre proration units and well location requirements specifying the location of the initial well on any 80-acre proration unit to be within 150 feet of the center of either quarter quarter section.

Midwest Oil Corporation wishes to amend its application for special rules and regulations for each of the pools to include provisions for 160-acre proration units and well location requirements specifying that the initial well on any 160-acre proration unit shall be located within 150 feet of the center of either the $(NE\frac{1}{4})$ or the $SW\frac{1}{4}$ of the quarter section.

We suggest that Case 3259 be dismissed and that a new case be advertised upon this amendment to the original application. We also request a continuance of Case 3258 involving the dual completion of the subject well to the same date as the hearing on the amended application which we understand will be early in June, 1965.

Very truly yours,

Richard S. Morre

RSM: LHS

cc: Mr. Bill Baker
Midwest Oil Corporation
1500 Wilco Building
Midland, Texas

DOCKER MALED

5/21/6

BEFORE THE OIL CONSERVATION COMMISSION OF NEW MEXICO

APPLICATION OF MIDWEST OIL CORPORATION FOR APPROVAL OF A DUAL COMPLETION, LEA COUNTY, NEW MEXICO.

Case No. 3759

APPLICATION

Comes now Midwest Oil Corporation, by its attorneys, and seeks approval of the dual completion of its state "C" well No. l located in the center of the NE $\frac{1}{4}$ SW $\frac{1}{4}$, Section 32, T. 13 S., R. 34 E., Lea County, New Mexico. Said well has been completed as an oil-oil dual completion in the Upper Pennsylvanian formation in the interval 10,344-10,360 feet and in the Lower Pennsylvanian formation in the interval 10,694-10,719 feet. By a separate application filed coincident herewith applicant has sought the creation of new oil pools for Upper Pennsylvanian and Lower Pennsylvanian production in the area of this well. Approval of the subject application will neither cause waste nor impair correlative rights.

WHEREFORE, Midwest Oil Corporation requests that this application be set for hearing before the Commission or one of its examiners and that the Commission enter its order approving the dual completion of the subject well.

SETH, MONTGOMERY, FEDERICI & ANDREWS

DOCKET MAILED

P. O. Box 2307

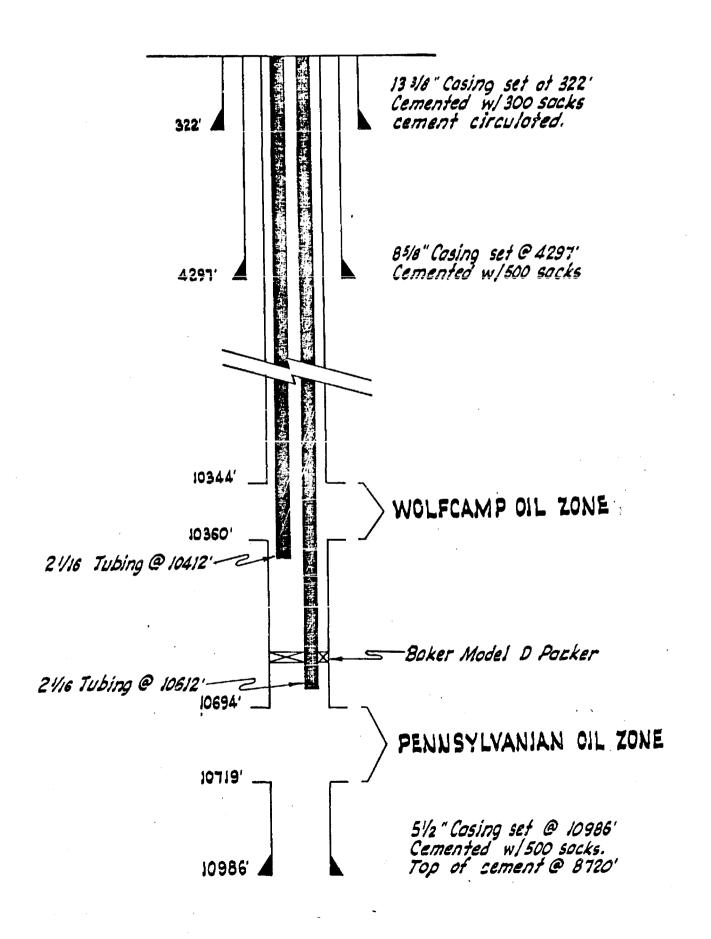
Santa Fe, New Mexico Attorneys for Midwest Oil

Corporation.

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MIDWEST OIL CORPORATION STATE "C" NO. I

MIDWEST OIL CORPORATION STATE "C" WELL NO. 1 DUAL COMPLETION INSTALLATION



WELL DATA

MIDWEST OIL CORPORATION STATE "C" NO. 1

LOCATION:

Unit K, Section 32, T-13-S, R-34-E, Lea County, New Mexico

COMPLETION DATE:

April 30, 1965

TOTAL DEPTH

10,987

	Upper Zone	Lower Zone
Top of Pay	10,343'	10,692'
Perforated Interval	10,344' - 10,360'	10,694' - 10,719'
Treatment	500 gal M. A.	500 gal M. A.
Initial Potential	i i	Joo gai n. A.
Oil Production	340 ьь1.	504 ьь1.
Water Production	0	0
Gas-Oil Ratio	946	280
Choke	16/64"	16/64"
Tubing Pressure	475 psig	500 psig

RESERVOIR PROPERTIES

MIDWEST OIL CORPORATION STATE "C" NO. 1

•	UPPER ZONE	LOWER ZONE 23'
Net Pay	6.6%	6.3%
Porosity	30.7%	31.6%
Water Saturation	9 md	430 md
Permeability Formation Volume Factor	1,507	1.21
Original Reservoir Pressure	3,868 psig	4,068 psig
Reservoir Temperature	156° F.	161° F. 38.9° API
Stock Tank Oil Gravity	43° F.	1,153 psig
Saturation Pressure	2,202 psig	1,035 cp
Fluid Viscosity at Original Pressure	0.319 cp	

RESERVE ESTIMATES

MIDWEST OIL CORPORATION STATE "C" NO. 1

DATE		UPPER ZONE	LOWER ZONE
Net Pay, feet		14	23
Porosity, percent		6.6	6.3
Water Saturation, percent		30.7	31,6
Formation Volume Factor		1,507	1.21
Recovery Factor, percent	•	25	25
VOLUMETRIC CALCULATIONS	.*		
Upper Zone			
Oil In Place	= (7758) (0.066) (0.693) 1.507		
	= 236 bbl/acre = foot		
Ultimate Recovery	= (236) (0.25)	•	
	= 59 bbl/acre - foot		
Ultimate Recovery	= (59) (14)		
	= 826 bbl/acre		
Lower Zone		•	
Oil In Place	= (<u>7758) (0.063) (0.684</u> 1.21) <u> </u>	
	= 276 bb1/acre = foot		<i>,</i>
Ultimate Recovery	= (276) (0.25)		
	= 69 bbl/acre-foot		
Ultimate Recovery	= (69) (23)	•	

± 1587 bb1/acre

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ECONOMICS

MIDWEST OIL CORPORATION STATE "C" NO. 1

Uppe	r	Zone

Crude price per barrel	\$2.86
Casinghead gas revenue per barrel	\$0.13
Total income per barrel	\$2,99
Production tax (6.5%)	\$0.19
Royalty (12.5%)	\$0.35
Lifting cost per barrel	\$0.25
Net income per barrel	\$2.20

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	40 acre	80 acre	160 acre
Gross recovery, barrels	33,000	66,000	132,000
Net income	\$72,600	\$145,200	\$290,400
Well cost	\$190,000	\$190,000	\$190,000
Net profit	(\$117,400)	(\$44,800)	\$100,400
Ratio of profit to investment	-		0.53:1

Lower Zone

Crude price per barrel	\$2.84
Casinghead gas revenue per barrel	\$0.07
Total income per barrel	\$2.91
Production tax (6.5%)	\$0.19
Royalty (12.5%)	\$0.34
Lifting cost per barrel	\$0.25
Net income per barrel	\$2.13

	S P A C I N G U N I T S		
	40 acre	80 acre	160 acre
Gross recovery, barrels	63,500	127,000	254,000
Net income	\$135,250	\$270,500	\$541,000
Well cost	\$190,000	\$190,000	\$190,000
Net Profit	(\$54,750)	80,500	\$351,000
Ratio of profit to investment	-	0.42:1	1.8:1

·	SPACING UNITS		
	40 acre	80 acre	160 acre
Dual Completion			
Net income, Upper Zone	\$72,600	\$145,200	\$290,400
Net income, Lower Zone	\$135,250	\$270,500	\$541,000
Total net income	\$207,850.	\$415,700	\$831,400
Well cost	\$230,000	\$230,000	\$230,000
Net profit	(\$22,150)	\$185,700	\$601,400
Ratio of profit to investment	•	0.81:1	2.61:1

1120 SIMMS BLDG.

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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
June 9, 1965

EXAMINER HEARING

IN THE MATTER OF: Application of Midwest Oil Corporation for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the dual completion (conventional) of its State "C" Well No. 1 located in Unit K of Section 32, Township 13 South, Range 34 East, Lea County, New Mexico, to produce oil from the Upper and Lower Pennsylvanian formations through parallel strings of tubing; and application of Midwest Oil Corporation for the creation of two new oil pools, and for special rules, Lea County, New Mexico, including a provision for 160-acre proration units, and fixed well locations.

Case No. 3258

3259

BEFORE: ELVIS A. UTZ, Examiner

TRANSCRIPT OF HEARING



SIMMS BLDG. • P.O. 10X 1092 • PHONE 243-669] • ALBUQUERQUE, NEW MEXICO FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

Midwest Oil Corporation for a dual completion, Lea County, New Mexico; and application of Midwest Oil Corporation for the creation of two new oil pools, and for special pool rules, Lea County, New Mexico.

MR. MORRIS: If the Examiner please, I'm Richard Morris of Seth, Montgomery, Federici and Andrews, Santa Fe, appearing on behalf of the Applicant, Midwest Oil Corporation. We will have two witnesses, Mr. Norbert McIntyre and Mr. Bill Baker.

(Witnesses sworn.)

MR. MORRIS: At the outset, Mr. Examiner, may I state that Midwest Oil Corporation is seeking the creation of two new oil pools for Pennsylvanian production, on the basis of its dually completed State "C" Well Number 1 located in Unit K of Section 32, Township 13 South, Range 34 East, Lea County, New Mexico. We're also seeking the establishment of special pool rules in each of these two pools, including a provision for 160-acre proration units.

Now, in our original application we asked for a provision for fixed well locations. Our testimony here today will show that we are amending our request in this regard to permit flexible well locations rather than fixed well locations, with a well to be located within 150 feet from the center of any



quarter-quarter section. With that preliminary I'll call my first witness.

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

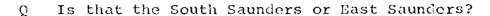
DIRECT EXAMINATION

BY MR. MORRIS:

- What is your name, please?
- Norbert McIntyre.
- By whom are you employed and in what capacity, and where are you located?
- Employed by Midwest Oil Corporation as a geologist in Midland.
- Have you previously testified before the Commission, or one of its examiners?
 - Yes, sir, I have.
- Referring to the brochure that has been marked as an exhibit in this case, Mr. McIntyre, would you turn to Page 1 of that brochure and state what it is and what it shows?
- This Page 1 is simply a land plat showing in the green Midwest acreage; the red arrow indicating Midwest Number 1 State "C" discovery well and the proposed Midwest Oil Pennsylvanian Pool. It also shows geographically actually the position of the well in relation to the South Saunders Pool some two and a half miles to the south.







East Saunders, I beg your pardon. It is also located approximately three miles east southeast of the Lazy J Pool which produces from the Pennsylvanian much higher in the section and is separated by a dry hole further to the west, off of this map.

The only other production which would be associated with this would be seven miles to the northeast in the Ranger Lake Pool, which produces from a zone comparable to our lower zone in this well. Then, of course, you have the High Plains Unit which also produces from our upper zone approximately four miles to the southeast. It might be pointed out that in the case of a High Plains and the East Saunders, these fields are being developed on 160s.

MR. MORRIS: In that regard, Mr. Examiner, I would ask the Commission and the Examiner to take administrative notice of the order establishing special rules and regulations including provisions for 160-acre oil proration units in the East Saunders Permo Pennsylvanian Pool, and the High Plains Pennsylvanian Pool which are Orders R-2359-B establishing permanent rules in the East Saunders and Order R-2874 establishing rules in the High Plains Pennsylvanian.

(By Mr. Morris) Mr. McIntyre, coming back to Page 1 of this exhibit, is this area of the discovery well predominately



earnley-meier

State acreage?

- A Yes, it is.
- Q Are there other wells, other than the discovery well that have been completed in this pool so far?

A No, they have not. At the present there are two wells being drilled in the area, namely the Midwest 1 State "D", which is in the southwest northeast of the same section, and the Cactus Number 1 State Number 1 U. S. Smelting State, which is located in the southeast southeast of Section 30 to the northwest.

There are also -- There has been a well staked by Sun
Oil Company that will be in the northeast southeast of Section
31, one-half mile west of the discovery well.

- Q I see no geological structure depicted on this plat, Mr. McIntyre. Do you have any such structure map to show to the Commission at this time?
- A I do not. Actually a structure map would only be related to the one well; the well control or density in this area is not sufficient that a structure map would likely show very much.
- Q Do you have a log section of the well that would show the intervals in which you are completed, and other information on your State "C" Number 1?
- A Yes. The second page is a log section showing the drillstem test and completion information on our 1-C State "A"



gamma ray neutron log.

- Q What are the intervals in which each of these two sources of production are perforated?
- A Our upper zone in this well is between 10,344 and 10,360, and the lower zone was perforated from 10,694 to 10,719.
- Q Is there evidence available to you from which you have concluded that there is separation between these two zones?
- A Yes. On our drill stem test information on the test conducted between 10,325 and 10,382, which takes in the producing zone we encountered the water table in the bottom of that zone, which would indicate the upper zone has reached the water table in this well.

Then farther down the log, aside from the numerous shale breaks and impermeable beds, we once again encountered oil and gas, water free, with different pressures, different gravities on drill stem, the Number 1 between 10,491 and 10,509. That interval would appear to indicate the possible production there.

Then the lower zone having tested water free from a dolomite section, the lithology is completely different from the upper section, we also have a difference in lithology from the upper zone.

- Q There are also different reservoir characteristics between the two zones?
 - A Yes, there are, and later in the testimony by Mr. Baker



IZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIO

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he should point out the differences between the reservoirs.

- Q This Page 2 of the exhibit shows the drillstem test information and the perforated intervals, is that correct?
 - A That's correct.

MR. MORRIS: If the Examiner please, that's all that I will have of this witness. We will ask Mr. Baker to testify on the engineering consideration of the case.

CROSS EXAMINATION

BY MR. UTZ:

- Q Does this log show your completion intervals?
- A Yes, sir.
- Q In this well?
- A In the depth column the perforations are shown on the left-hand side, and then on the right-hand side of the column the completion information as pertains to treatment and the initial potential from each zone.
 - Q These are both in the Pennsylvanian right?
 - A Yes.
 - Q And you show three completion areas here?
- A No, we show two. There is the interval between 10,491 and 10,509 which was drillstem tested but no attempt was made to complete from that interval.
 - Q That's the upper one?
 - A The upper one is from 10,344 to 10,360; that is our



BOX 1092 . PHONE

upper zone.

- Q You completed in that zone?
- A Yes, sir.
- Q What about the one around 10,700?
- A And we completed from perforations between 10,694 and 10,719, and that completion information is on the right-hand side.
 - Q That's your lower completion?
 - A Yes, sir.
 - Q What zone do you call that?
- A That is the equivalent of the Ranger zone in the Ranger Field that, actually that's the only other place that we feel that produces from this zone, or from this interval.

MR. MORRIS: I might point out, Mr. Examiner, we have called these in our application, Upper Pennsylvanian and Lower Pennsylvanian. Whether the Commission will choose to follow that designation or call it something differently, we're not sure.

MR. UTZ: I'll have to see how they correlate with the areas around them.

- Q (By Mr. Utz) What do you call the upper completion?
- A It would be the Bough Line, within the Bough interval, of which there are in different areas three and four separate zones of porosity.



*

. F. O. BOX



- Q The interval between 10,-- Well, your upper completion and your lower completion is about how many feet?
 - A It would be 340 feet, I believe.
- Q And in your opinion there's no vertical communication between these two zones?
- A No, sir, I don't believe there is. Actually we have different gravities, different reservoir properties.
 - Q That will be shown by your engineering witness?
 - A Yes, sir.
 - Q These lower perforations were squeezed then?
 - A At the bottom, yes, between 10,938 and 10,948, yes.
 - Q And they were non-productive?
 - A Non-productive; recovered water.
 - O Do you intend to recommend a name for these pools?
- A Yes, sir, we have recommended M. W. O. Pennsylvanian Upper and Lower Pennsylvanian to the Commission, but as of two days ago we hadn't received any communication on it, whether that was accepted or denied.
 - Q 11. W. O.?
 - A M. W. O.
 - Q May I inquire as to what that means?
 - A Midwest Oil.
- MR. MORRIS: If the Commission would like to name this one themselves I am sure we would have no objection.

• P. O. BOX 1092 • PHCINE 243-6691 • ALBUQUERQUE, NEW MEXICO

MR. UTZ: I'm sure I have no personal preference.

- Q (By Mr. Utz) And to date you have one completed well?
- A That's correct.
- Q What are your intentions for development?

A At the present we have budgeted money for two more wells in this area, and Ralph Lowe has staked a location; I'm not sure of the exact location, but it will be in the northeast quarter of Section 5, approximately a half a mile southeast of our discovery well. That location has been cleared, and I suppose by now, I have been out of town, but by now I am sure it's been reported. That would be a total of five wells in addition to the two that we, one we completed and one we are presently drilling.

Q And the engineering witness will give testimony as to whether this will drain 160 acres?

MR. MORRIS: Yes, sir.

A Yes, sir.

MR. UTZ: Any other questions of the witness? The witness may be excused.

(Witness excused.)

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



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DIRECT EXAMINATION

BY MR. MORRIS:

- Q Mr. Baker, would you please state your name and position?
- A Bill Baker, petroleum engineer, employed by Midwest Oil Corporation.
 - Q Where are you located, Mr. Baker?
 - A In Midland, Texas.
- Q Have you previously testified before the Commission or one of its Examiners?
 - A Yes, I have.
- Q Referring to Page 3 of the brochure before the Examiner, state what that is and what it shows.
- A This is a diagrammatic sketch of our dual completion installation. It indicates all the strings of casing with perforations shown as were previously pointed out on the log section. It shows two strings of tubing, their setting depths, Baker Model D Packer separating the two zones.
- Q Is this, for all purposes, a standard type conventional dual completion?
- A Yes, this is. This is standard and has been accepted by the Commission in the past.
 - Q Turning to Page 4 of the brochure, what does that show?
- A This is the general well data sheet. It shows the location, completion date and total depth of the well, and a

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comparison of the completion of the two zones. It shows the perforated interval, the treatment and the initial potential which is in barrels per day not shown there. The upper zone produced 340 barrels per day, while the lower produced 504. The gas-oil ratios were different, the chokes were the same, the tubing pressures were different. Something not shown here is a recent test. I might point out that the lower zone is at this time producing water.

MR. UTZ: Now about the gravities, do you have that?

- A That is shown on the following page.
- Q Turn to the following page entitled "Reservoir Properties", and point out the features there, please.

A Again this has the two zones listed side by side for comparison purposes. The net pay, porosity and water saturation are shown and are log interpretations. The permeability shown is nine millidarcies for the upper zone and 430 for the lower zone, and this was arrived at from the pressure build-up calculations. Formation volume factors are shown, which are the results of reservoir fluid analysis.

Reservoir pressure is, 72-hour pressure build-up, 3,868 on the upper zone and 4,068 on the lower zone. The reservoir temperatures were measured slightly different. The gravity is shown as 43 for the upper zone, 38.9 for the lower. This is corrected gravity at 60.



Saturation pressures and fluid viscosity are the results of fluid analysis and they show a considerable difference there in the two zones.

Q Turning to your next page entitled "Reservoir Estimates", what are your estimates in barrels per acre for each of the two zones?

A This is a volumetric estimate which is all we have to go on right now. For the upper zone we have estimated 59 barrels per acre foot; for the lower zone, 69 barrels per acre foot. Due to a difference in net pay, we have an estimate of 826 barrels per acre on the upper zone, as opposed to 1,587 barrels per acre on the lower zone.

Q Have you used those reserve estimates in making an analysis and an estimate of the economics of production of each of these two zones?

A Yes, I have. That is shown on the next page. It is shown for an upper zone completion, for a lower zone completion and for a dual completion. I will go through this one for the upper zone, the crude price per barrel is shown, which is \$3.01, less our transportation cost; our casing-head gas revenue is added to give a total income per barrel, the production taxes are deducted along with the royalty and a lifting cost of twenty-five cents a barrel, to give a net income of \$2.20 per barrel.

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Q Let me stop you right there, Mr. Baker. You mentioned a minute ago that you had a water influx in one of your zones. Has that been taken into account in computing the lifting cost?

A No, it has not. That would be in the lower zone. It has not been taken into account. It would increase considerably the lifting cost per barrel estimate that I have here, due to the problem of lifting the water and disposing of it.

Q All right, go ahead.

A Shown are the spacing units of 40-acre, 80-acre, and 160-acre, with gross recovery, net income, well cost, net profit and ratio of profit to investment for each one. The 40-acre shows a loss of income, the 80-acre spacing indicates a loss of income, while the 160-acre spacing indicates a small ratio of profit to investment for the upper zone.

Locking on down the page to the lower zone under the spacing units, again we show a loss of income on 40-acre spacing, a small return on our money on 30-acre spacing, and on 160-acre spacing we show a 1.8 to 1 ratio of profit to investment.

Below that are shown figures for a dual completion which were put in because we do have a dual completion, but I think a dual certainly cannot be anticipated in future drilling in here, and I would think that the figures for either the lower or upper zone would apply rather than the ones I have here for dual completion.

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Your dual completion is the most optimistic picture?

Oh, yes, definitely. It does show again a loss on 40-acre spacing with a small return of your money on 80-acre spacing, and a much better return of money on 160-acre spacing.

Q From an economic standpoint, would you consider, looking at the dual completion, that only on 160-acre spacing would you expect to receive a fair return upon your investment?

A Yes, we would definitely not anticipate a good return on our money on 80-acre spacing, if any at all. I think this will have to be drilled on 160-acre spacing to provide a good return on your money, or a return at all, possibly.

Q In view of the information that you have on this one well, the engineering and geological information, limited though that is at the present time, and in view of the economic picture that you have presented, do you have an opinion concerning the size proration unit which can be efficiently and economically drained and developed by one well in each of these two pools?

A Yes, I do. I think it should be developed on 160-acre spacing in view of the economics, it would definitely be necessary to develop on 160 acres, and in regard to drainage at this time, since we only have one well, we are limited in the amount of information we have; however, I do think from what we have that either of these reservoirs will drain 160 acres, and this conclusion is due to a comparison of our

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reservoir characteristics with the reservoir characteristics in the East Saunders Permo Penn, which is operating under 160-acre spacing and apparently draining much more than 160 acres.

- The application in this case, Mr. Baker, proposes special rules and regulations for these two pools. Would you propose the usual provisions for special rules and regulations for 160-acre proration units?
- A Yes, I'd recommend that the Commission adopt the usual form of the special rules and regulations, with a provision for 160-acre proration units, with wells to be located within 150 feet of the center of any quarter-quarter section, and with an allowable factor of 7.67.
- Q This allowable factor is the same allowable factor as is in effect in the East Saunders Permo Penn and High Plains Penn?
 - A Yes, that is correct.
- Q Under the well spacing or well location requirements that you have just stated, would any exceptions be needed for wells that are, that have been drilled, or are now drilling, or have been staked in this area?
 - A No, sir, there would be no exceptions necessary.
- Q Do I understand that you would ask the Examiner at this time to deem the application that we have made for fixed



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well locations amended to conform to what you have just proposed?

- A That is correct.
- Q What is your proposal concerning the duration of these special rules?

A I would propose that these rules be temporary rules to be in effect for one year's time, which would give us, as well as other operators in the pool, an opportunity with the additional drilling, to gather data in regard to well drainage.

- Q Would you contemplate conducting interference tests between your wells in this pool?
- A Yes. Yes, sir, we will run interference tests when we are able to when we want wells in the pool.
- Q Do you have reasonable assurance of being able to bring in additional information at the end of the one year period to show the effect of these interference tests?

A That is correct. We can bring in information that will show what these interference tests have resulted in, and also additional reservoir information which can be gathered in the next year's time.

Q Was this brochure containing the exhibits we've referred to here prepared at your direction or under your supervision?

A Yes, sir, it was.



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MR. MORRIS: We offer the brochure containing seven pages into evidence as our Exhibit Number 1 in these two cases, Mr. Examiner.

MP. UTZ: Without objection Exhibit Number 1 will be admitted into the record.

(Whereupon, Applicant's Exhibit No. 1 was admitted in evidence.)

MR. MORRIS: That's all I have of Mr. Baker at this

CROSS EXAMINATION

time.

 Ω Mr. Baker, I note that on your diagram you call the BY MR. UTZ: upper completion the Wolfcamp. Is the Wolfcamp considered a

A That is an error, that should be labeled Pennsylvanian. part of the Pennsylvanian? I don't feel I am qualified to interpret between the Wolfcamp and the Penn.

- Q You consider it Upper Penn or Wolfcamp?
 - MR. McINTYRE: Yes, sir, Upper Penn.
- Q You say your permeability figures were determined from calculations, is that correct?
 - A Yes, sir, from pressure build-up data.
- Ω Do you consider nine millidarcies very high for an oil zone?



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A I don't consider it high; I consider it high enough to drain 160 acres. The permeability on the first two wells that Kern County completed in the East Saunders-Permo Penn was slightly above ten millidarcies. They are, very definitely, effectively draining 160 acres or more.

- Q Kern County, Texas?
- A Kern County Land Company who operates two wells in the East Saunders-Permo Penn Pool.
- Q I note that your figures are no different than most other people that come in, that from 40 to 80 you double your reserves; from 80 to 160 you double again. Is that where you think that the drainage efficiency is just as great on 160 as on 40?
 - A I don't feel there is very little difference.
 - Ω Even in a nine millidarcy reservoir?
 - A That is correct. I think time is more of a factor than the radius that you are draining. It will take longer, of course, to drain 160 acres with one well than it would with two.
 - Q Why do you feel that you will not be able to utilize dual completions in these two pools?
 - A I think you could utilize it if the pay zones were there, if two pay zones were there in each well; but from my experience and what I have seen in most of the Pennsylvanian



Pools it is unlikely that the rest of the wells would be dual completions in this pool. For one thing, as I pointed out, we are now making water in our lower zone of our discovery well; which the zone could be completely watered out in another location if it happened to be a little bit lower.

- Q This lower zone is now having water problems?
- A Yes, sir.
- Q In the East Saunders and High Plains, is the spacing there what we commonly call rigid spacing or flexible spacing?

MR. MORRIS: I have those orders available. It's what you would call rigid spacing, reading from Rule 3 of the East Saunders-Permo Penn Pool Rules. Rule 3 is: "Each well completed or recompleted in said pool shall be located within 150 feet of the center of either the northeast quarter or the southwest quarter of the governmental quarter section on which the well is located". This conforms to our original application in this case, but due to the plans of other operators in the pool, primarily we have amended our application to provide for fixed well locations.

I would point out to the Examiner that while it's not in Southeast New Mexico, still up in the Tocito Dome Pennsylvanian Pool in the San Juan County, there's provision for 160-acre oil proration units with flexible location. The only requirement there being that all wells shall be located within

150 feet of the center of a governmental quarter-quarter section.

That is Order Number R-2758. So far as precedent is concerned there is precedent for fixed well locations as well as tiexible locations.

MR. UTZ: How about the High Plains, is it flexible or not?

MR. MORRIS: No, sir, it's fixed.

MR. UTZ: Same location?

MR. MORRIS: Yes.

MR. UTZ: Northeast, southwest?

MR. MORRIS: Yes, sir.

Q (By Mr. Utz) In your opinion, would the so-called fixed locations space—this pool in a little more orderly fashion so that the radius of drainage will be a little more uniform, and prevent so-called wagon-wheeling?

- A Is that question directed to me, Mr. Examiner?
- Q Yes, sir.
- A I don't believe that the fixed well locations would change any of the present development plans. There is presently a well drilling which would not be on this pattern; it would have to be an exception to this.

MR. MORRIS: Where is that well?

A That is the Cactus well which is in the southeast of the southeast of Section 30. That would not fall into the



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fixed location requirements of either the northeast or southwest quarter quarter.

- Your discovery well is on location?
- That is correct. The second well which we are now drilling is on the same pattern.
- Is that the only well, the well now drilling, is that the only well that will be off pattern, the one that's drilling now?
- I do not know the exact location of the well that Ralph Lowe has staked in Section 5. That one possibly would be off pattern; it would be an exception to that also. Other than that the others that I'm familiar with would be on this pattern.
- Do you have any contour control of this pool at all at this time; do you have any idea as to whether it is a structure stratographic trap?

MR. McIntyre: Yes, sir, we have. Of course, with one point you can put a, your reversal or your crestal portion of an anticlinal feature in four directions from that well, so for the Commission we did not prepare one. However, correlating down to the East Saunders Pool we find that the porosity development in our 1-C State is some 58 feet higher, structurally, than the top of the perforated porosity in the Kern Number 1 State Well two miles to the south. Since we got water on



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drill stem test and logs indicated high water saturations within that zone datum somewhat higher than their perforations, it would indicate that there is some vertical separation, or possibly stratographic. However, the vertical separation seems to be easier to explain it by. Actually our relationships are, we are only related to the well a mile and a half to the north and the well two and a half miles to the south, and you are hard put to make any sort of a sub-surface interpretation with that control.

- There actually hasn't been any dry holes drilled between the East Saunders and your area, has there?
 - A No.
 - So it could be that they're the same pool, couldn't it?
- Well, sir, aside from having encountered water in our well at a datum somewhat higher than they encountered oil, that would be hard to explain unless there actually is separation between the two. Actually on the log section basis the producing zones are not comparable. You'll find more shale and more bedded type lime in our 1-C State Well, whereas you find a more massive type lime in the East Saunders Pool, although age-wise I'm sure they're comparable.

MR. UTZ: Are there any other questions of the witness? The witness may be excused.

(Witness excused.)

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MR. UTZ: Are there any statements in this case?

PR. HINKUE: Mr. Examiner, Clarence Hinkle, Hinkle,
Bondurant and Cristy, Roswell, New Mexico appearing on behalf
of Sun. I would like to make a brief statement on behalf of
Sun. Sun concurs in the application of Midwest in connection
with Case 3258 and also with the application of Midwest in
connection with Case Number 3259 as amended; that is to provide
for flexible well locations. The Sun Oil Company has
considerable acreage in the vicinity of the well which is to
be dually completed in the discovery well. It is also the
owner of a half interest in the well which has been mentioned
which would have to be an exception if an order is entered on
a fixed well location.

Sun is very much in favor of the flexible well locations and of the proposed rules that are to be adopted, and feels that the pool or area can be just as effectively and efficiently developed on flexible well locations as on fixed well locations, and that the ultimate oil recovery from the pool will not be affected.

MR. UTZ: Any other statements? The Commission has in its file a telegram from Ralph Lowe, which in effect supports the application; as well as one from C. W. Trainor is an advocate of so-called flexible spacing. The case will be taken under advisement. The hearing is adjourned.



STATE OF NEW MEXICO) SS. COUNTY OF BERNALILLO)

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

IN WITNESS WHEREOF I have affixed my hand and notarial seal this 30th day of June, 1965.

Notary Public - Court Reporter

My Commission expires June 19, 1965



I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 32. F.

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