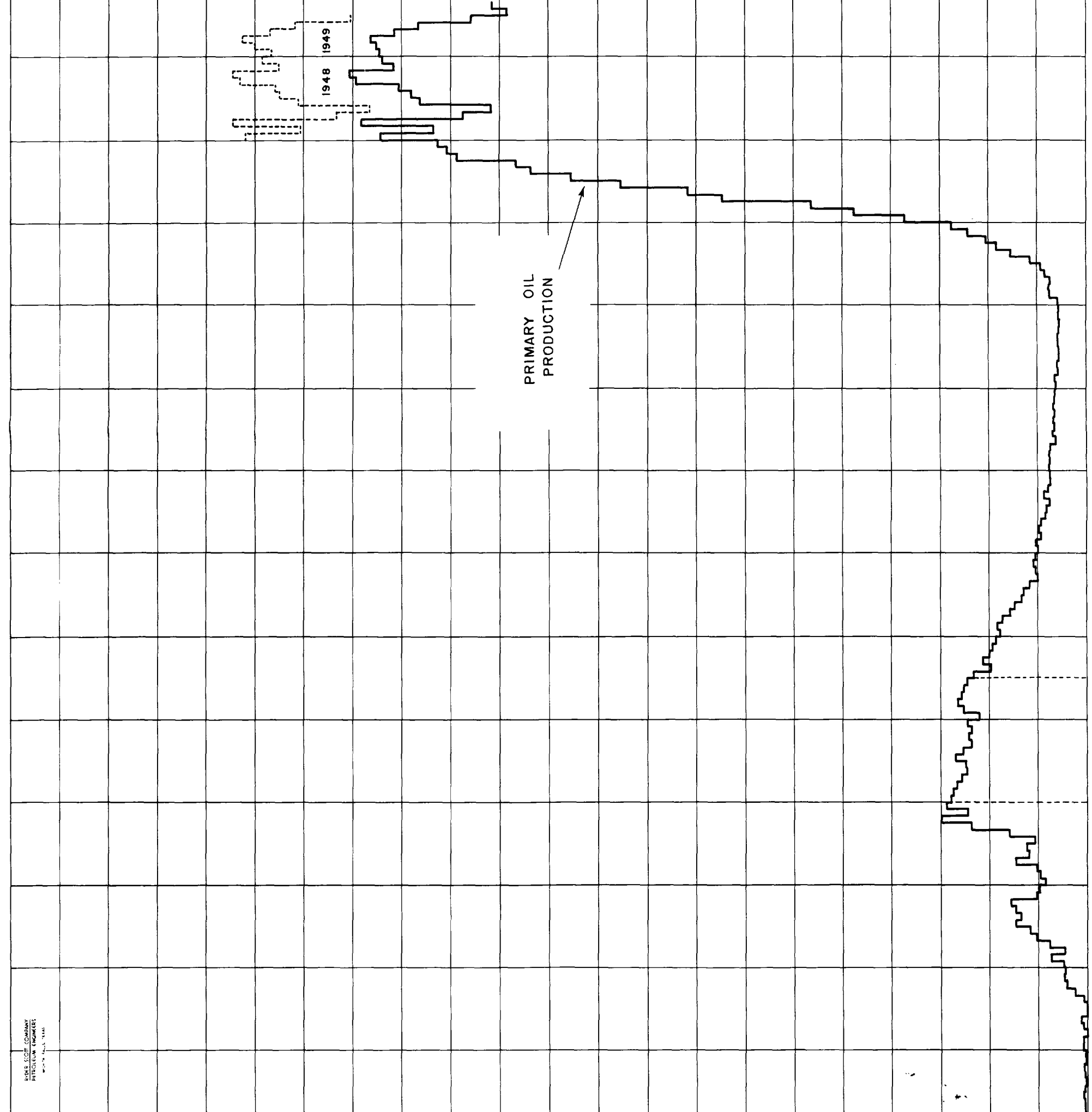
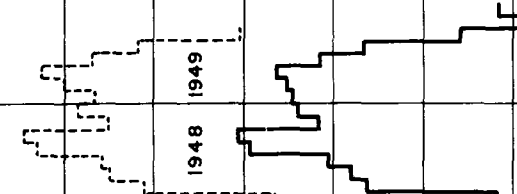


SHIRLEY COIT COMPANY
PETROLEUM ENGINEERS
400 N. 10TH AVE.

OIL PRODUCTION RATE — BARRELS PER DAY



PRIMARY OIL PRODUCTION



ESTIMATED WATERFLOOD OIL PRODUCTION
400 B/D WATER INJECTION PER IN-TAKE WELL.
CONSTANT RATE OF DEVELOPMENT AT 4480 ACRES PER YEAR.
5 YEARS TO DEVELOP 22,400 ACRES STARTING JANUARY 1, 1958.

ESTIMATED WATERFLOOD OIL PRODUCTION

80 B/D WATER INJECTION PER INTAKE WELL.
CONSTANT RATE OF DEVELOPMENT AT 4480 ACRES PER YEAR.
5 YEARS TO DEVELOP 22,400 ACRES STARTING JANUARY 1, 1958.

2x10

GRARIDGE CORPORATION OIL PRODUCTION RATE FOR ENTIRE CAPROCK FIELD

LEA AND CHAVES COUNTIES, NEW MEXICO

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
CASE 1328
EXHIBIT No. 10

1973

1972

1971

1970

1969

1968

1967

1966

1965

1964

1963

1962

1961

1960

1959

1958

1957

1956

1955

1954

1953

1952

1951

1950

1949

1948

1947

1946

1945

1944

Grady Ex 11

RYDER SCOTT COMPANY
PETROLEUM ENGINEERS
WICHITA FALLS, TEXAS

RATE OF OIL PRODUCTION

VS.

CUMULATIVE OIL RECOVERY

FOR

ELEVEN DIFFERENT FLOODS

IN

SOUTH WARD FIELD

WATER FLOOD OIL PRODUCTION RATE

BARRELS PER BARREL OF TOTAL PRIMARY PRODUCTION

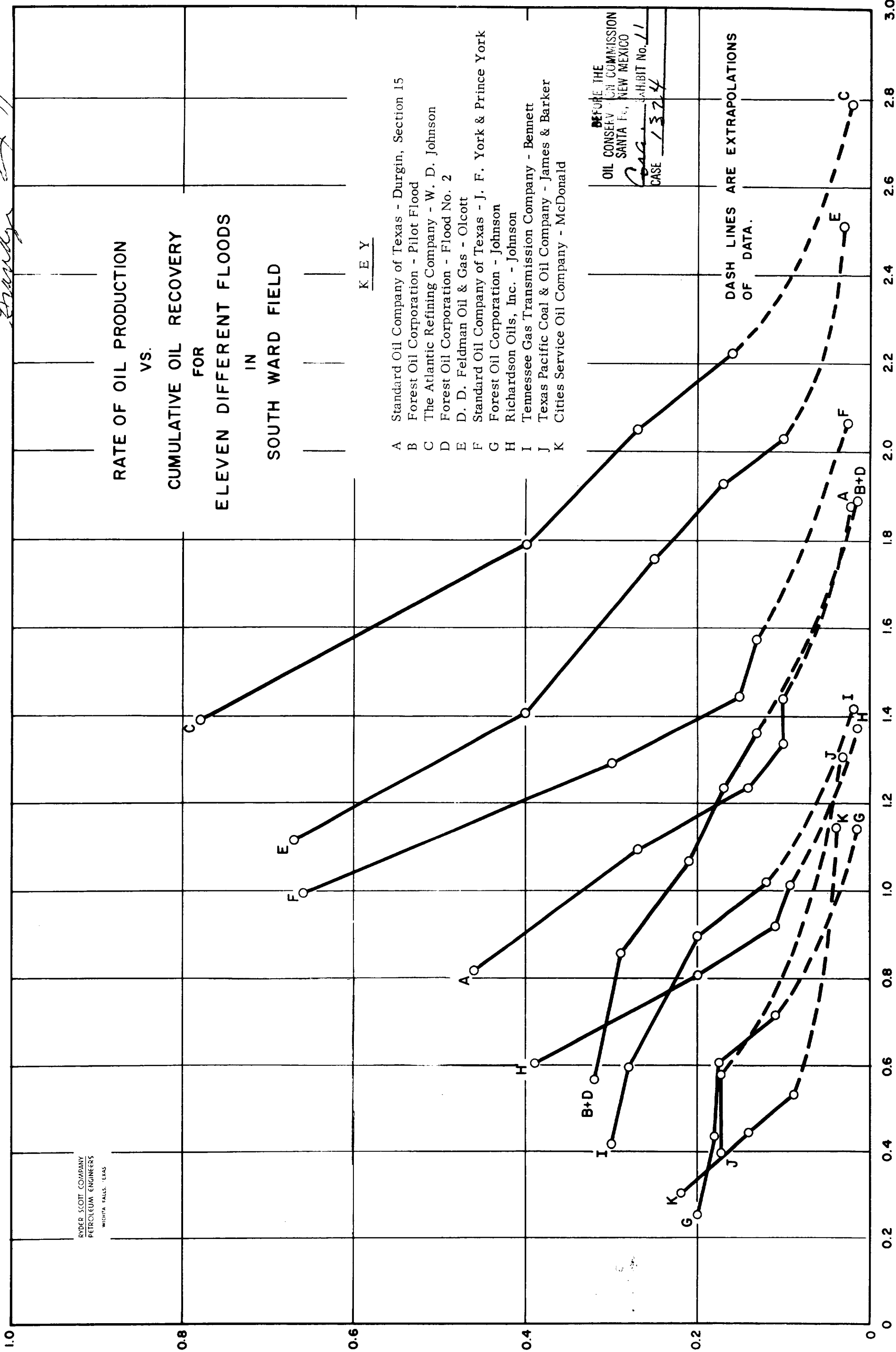
K E Y

- A Standard Oil Company of Texas - Durgin, Section 15
- B Forest Oil Corporation - Pilot Flood
- C The Atlantic Refining Company - W. D. Johnson
- D Forest Oil Corporation - Flood No. 2
- E D. D. Feldman Oil & Gas - Olcott
- F Standard Oil Company of Texas - J. F. York & Prince York
- G Forest Oil Corporation - Johnson
- H Richardson Oils, Inc. - Johnson
- I Tennessee Gas Transmission Company - Bennett
- J Texas Pacific Coal & Oil Company - James & Barker
- K Cities Service Oil Company - McDonald

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
Case 1374
EXHIBIT No. 11

DASH LINES ARE EXTRAPOLATIONS
OF DATA.

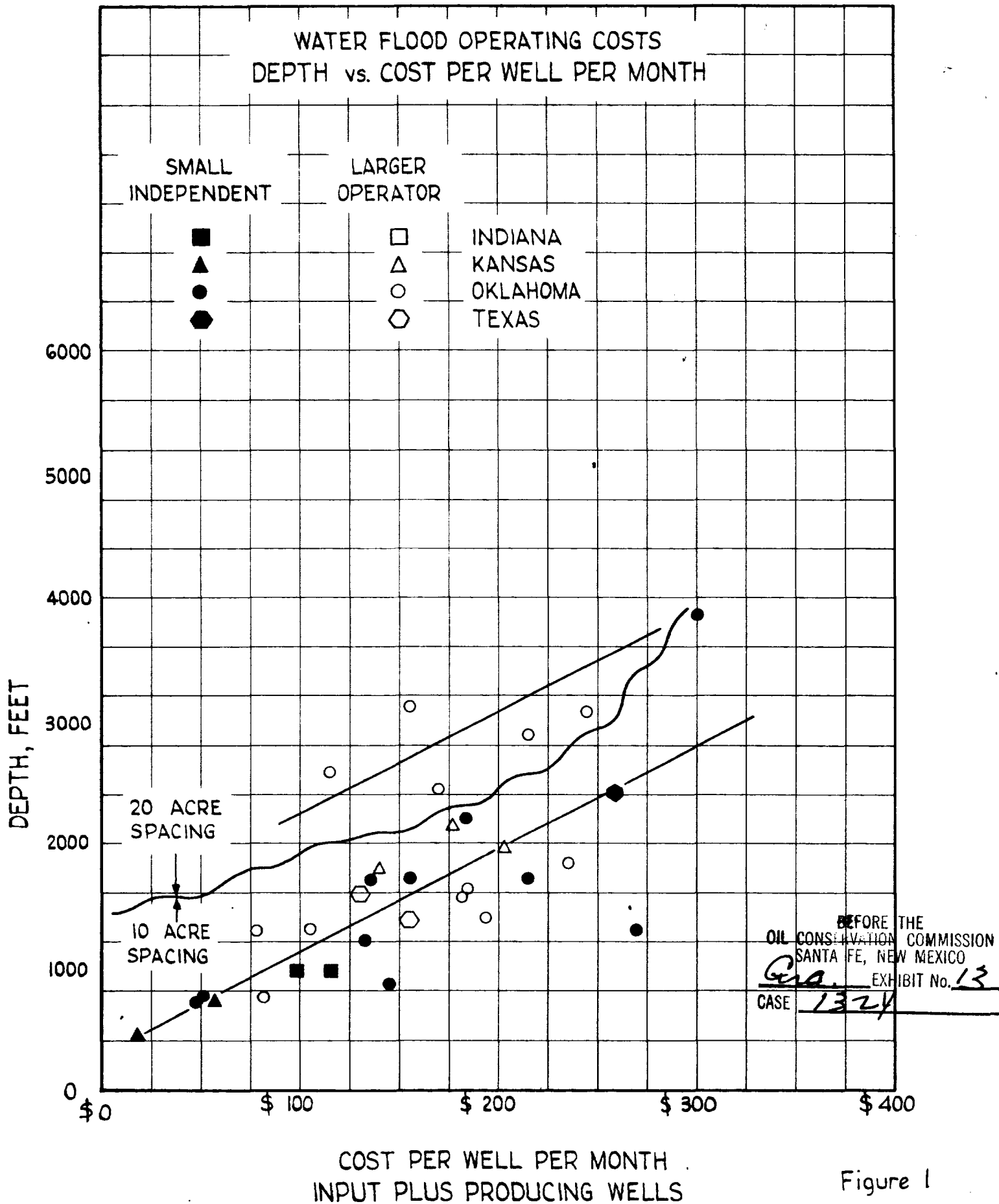
CUMULATIVE WATER FLOOD OIL PRODUCTION
BARRELS PER BARREL OF TOTAL PRIMARY PRODUCTION



GRARIDGE
EXHIBIT 12

PRODUCTION HISTORY SHOWN GRAPHICALLY FOR OLYMPIA POOL, OKLAHOMA

Grandy hr 13



Grainidge No. 14

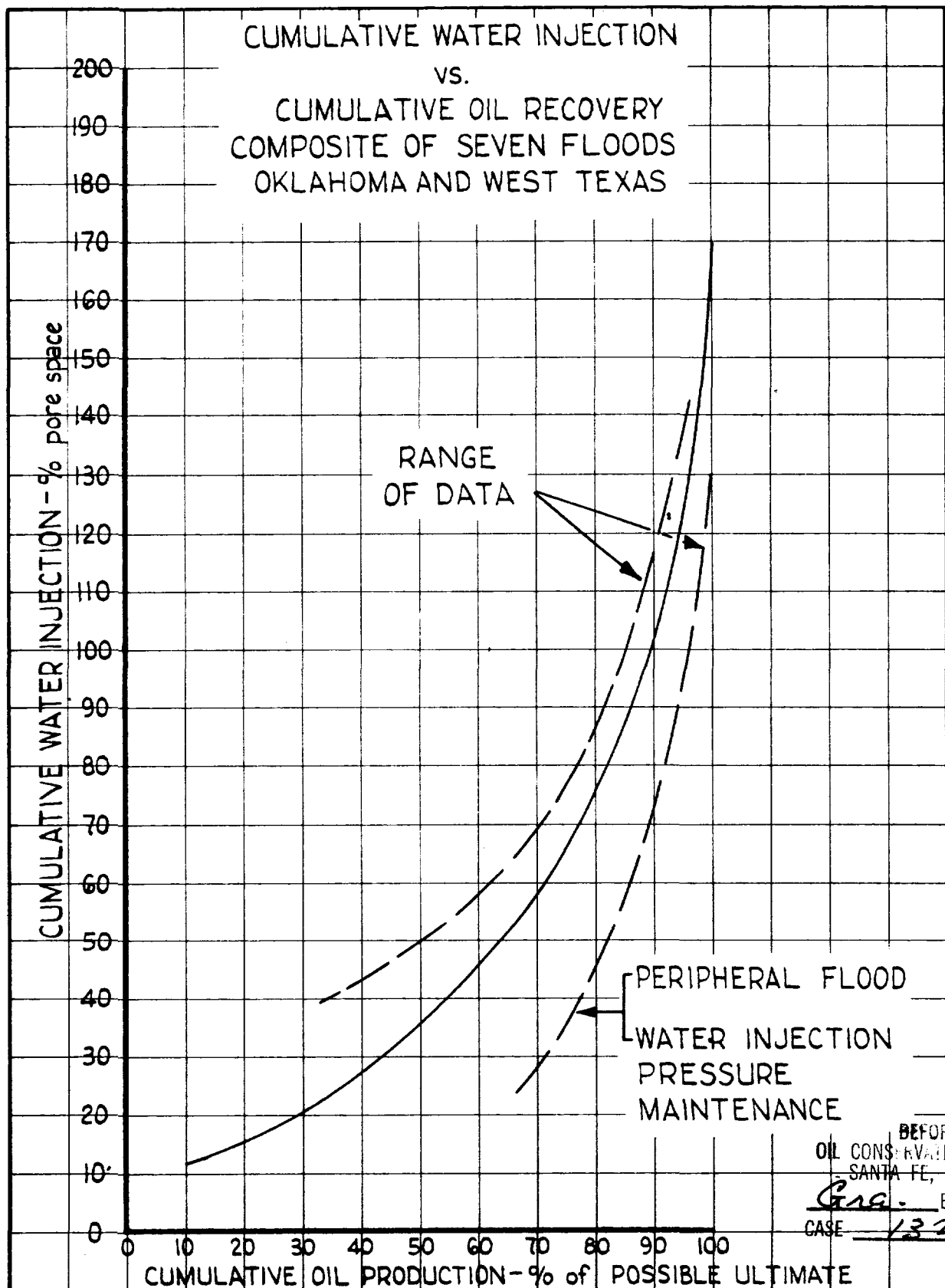


Figure 2

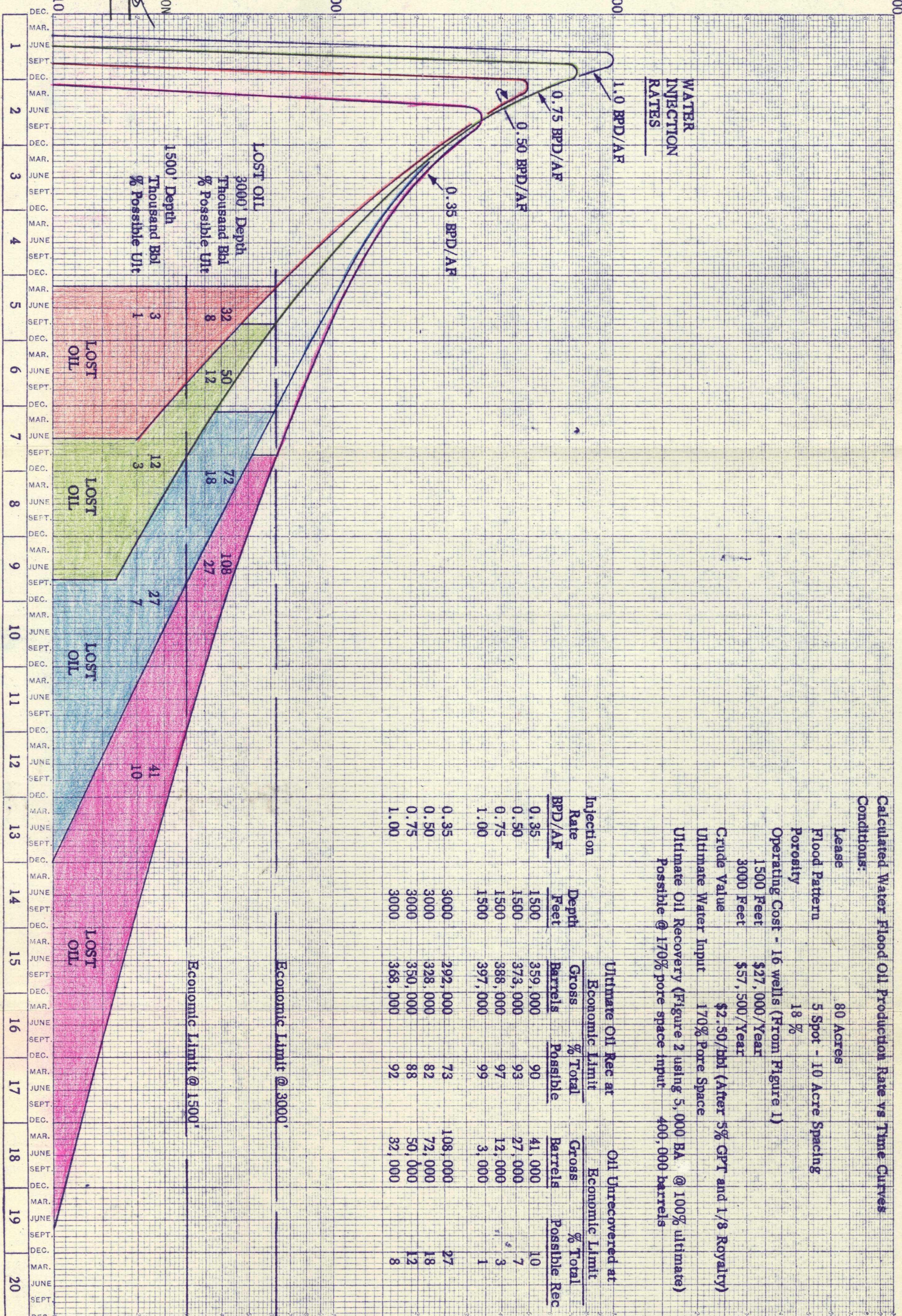
Gravidge No. 15

CODER BOOK COMPANY, INC. NORWOOD, MASSACHUSETTS



BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
CASE No. 1324
EXHIBIT No. 15

Gross Barrels Per Day



Calculated Water Flood Oil Production Rate vs Time Curves

Conditions:

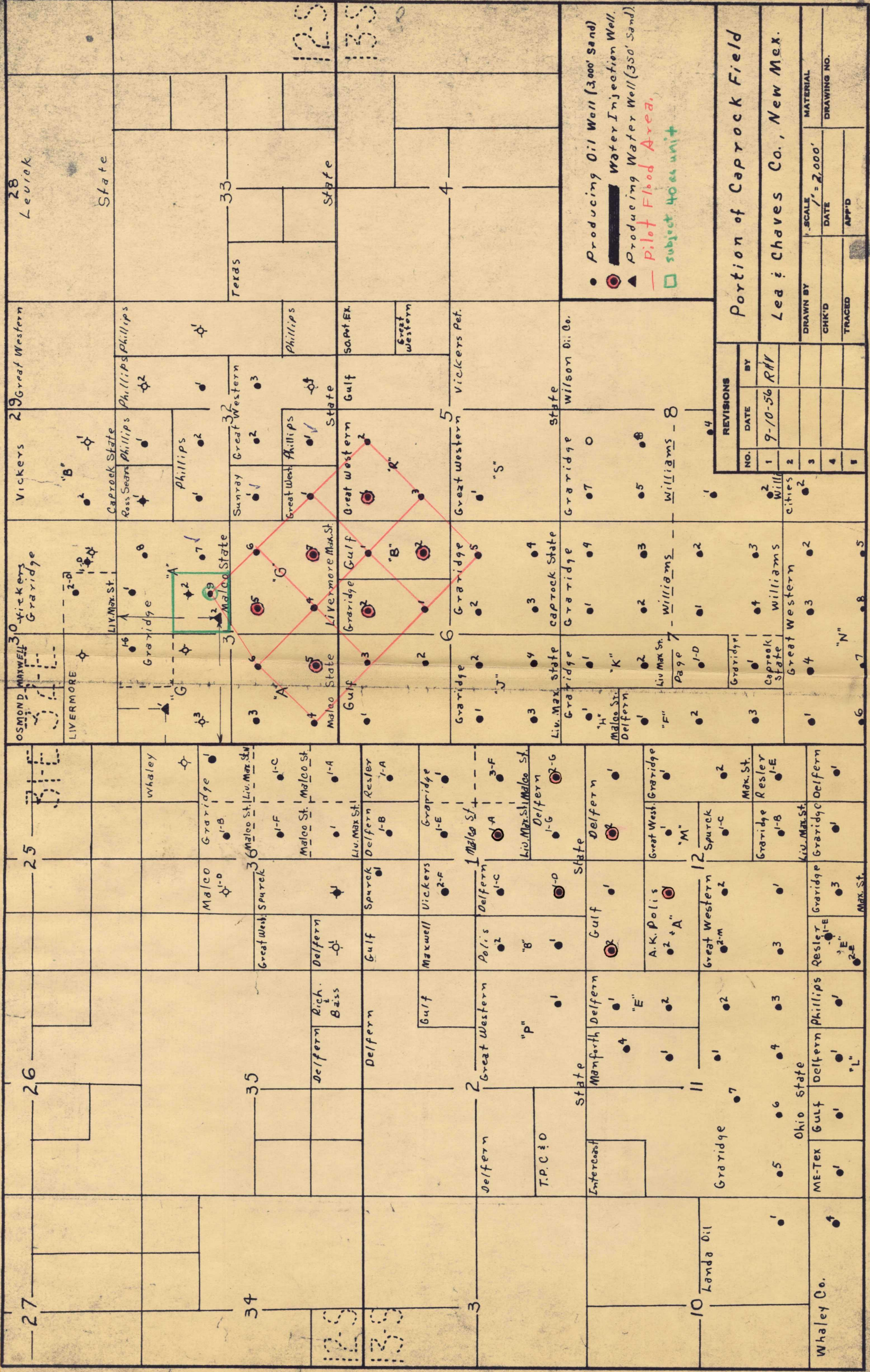
- Lease: 80 Acres
- Flood Pattern: 5 Spot - 10 Acre Spacing
- Porosity: 18 %
- Operating Cost - 16 wells (From Figure 1)
 - 1500 Feet: \$27,000/Year
 - 3000 Feet: \$57,500/Year
- Crude Value: \$2.50/bbl (After 5% GPT and 1/8 Royalty)
- Ultimate Water Input: 170% Pore Space
- Ultimate Oil Recovery (Figure 2 using 5,000 BA @ 100% ultimate)
Possible @ 170% pore space input: 400,000 barrels

Injection Rate BPD/AF	Depth Feet	Ultimate Oil Rec at Economic Limit		Oil Unrecovered at Economic Limit	
		Gross Barrels	% Total Possible	Gross Barrels	% Total Possible Rec
0.35	1500	359,000	90	41,000	10
0.50	1500	373,000	93	27,000	7
0.75	1500	388,000	97	12,000	3
1.00	1500	397,000	99	3,000	1
0.35	3000	292,000	73	108,000	27
0.50	3000	328,000	82	72,000	18
0.75	3000	350,000	88	50,000	12
1.00	3000	368,000	92	32,000	8

YEARS

FIGURE 3

Earlougher Engineering Oct., 1957



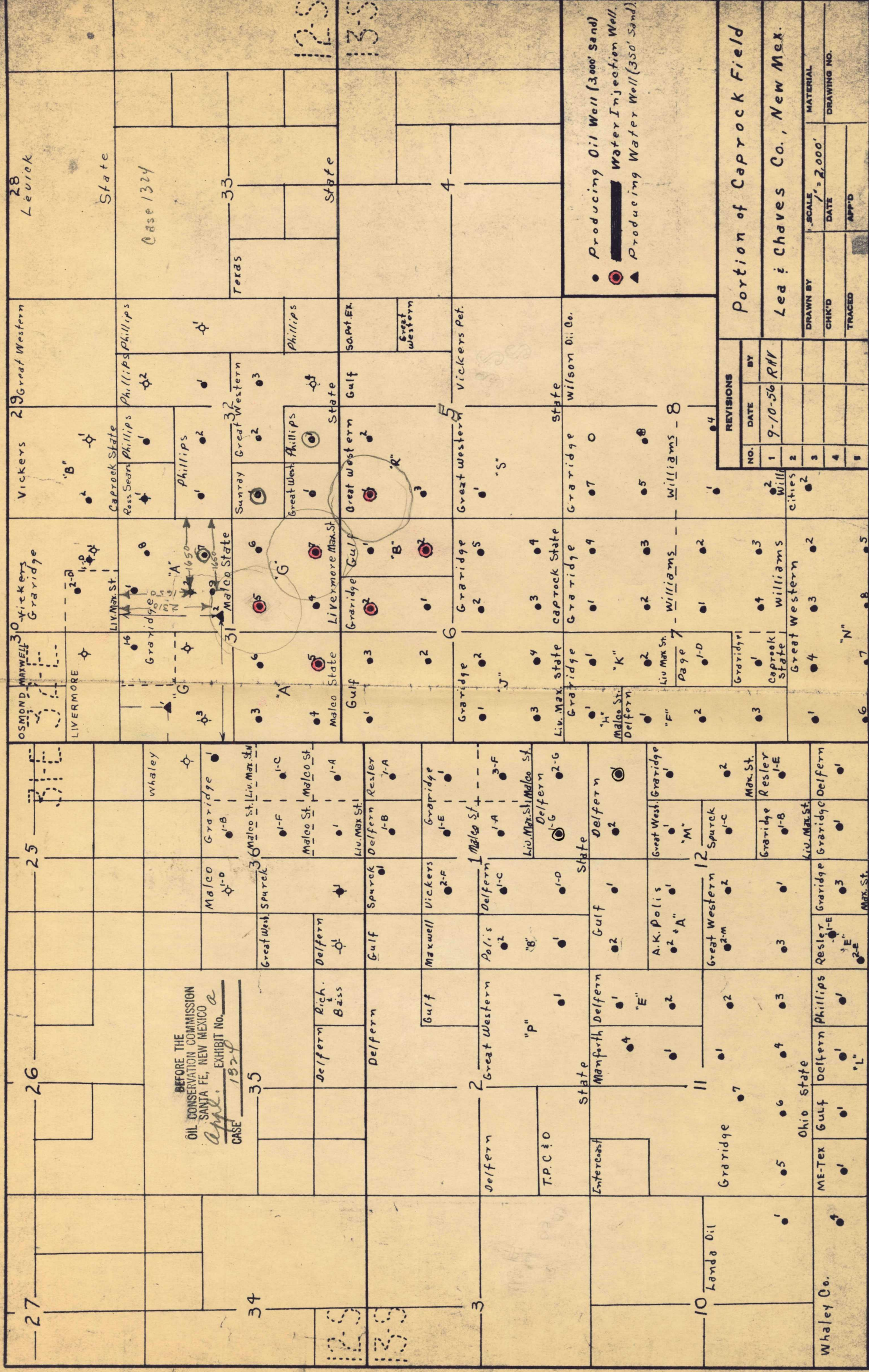
- Producing Oil Well (3,000' Sand)
- Water Injection Well
- ▲ Producing Water Well (350' Sand)
- Pilot Flood Area
- Subject 4000 unit

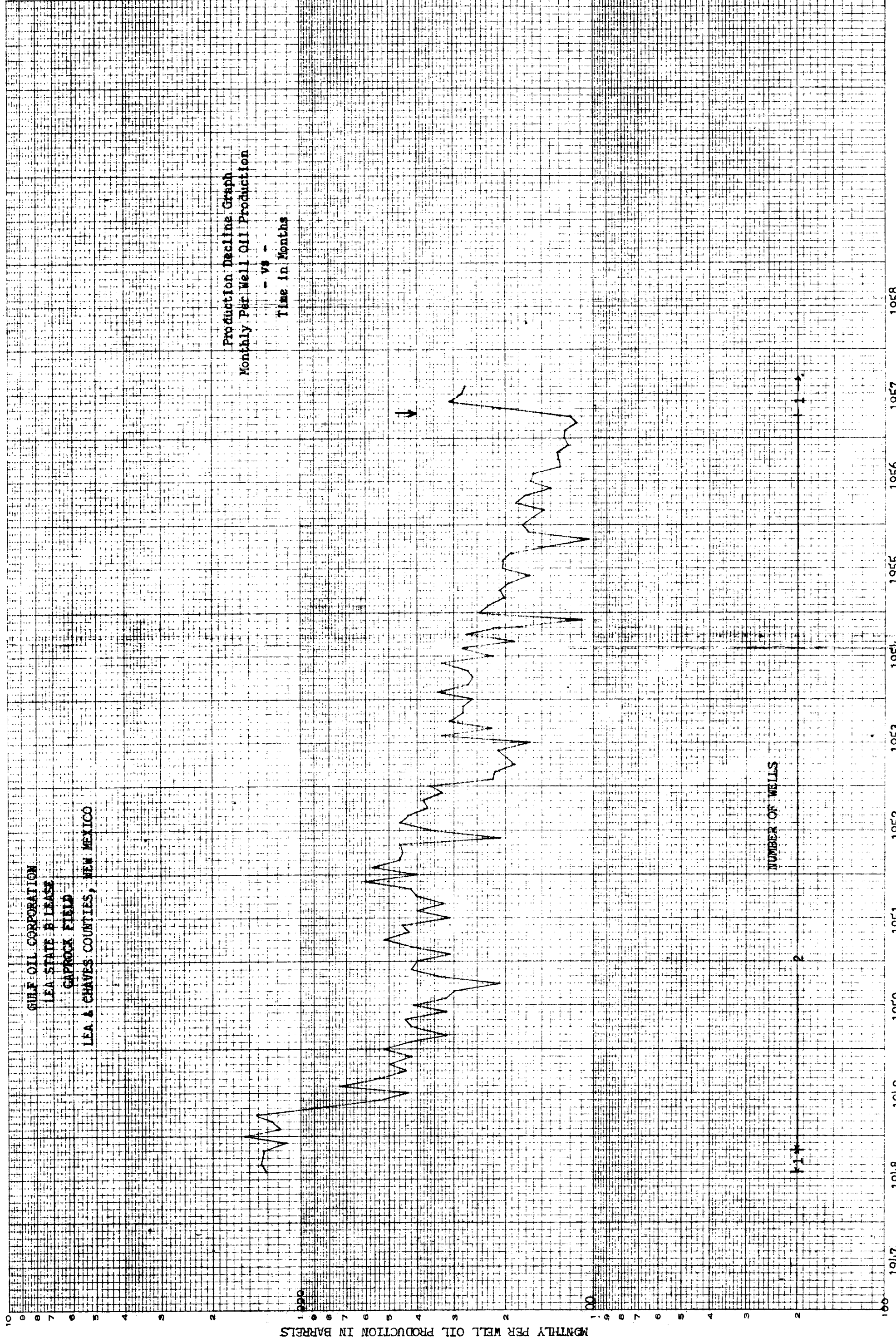
REVISIONS		
NO.	DATE	BY
1	9-10-56	RHV
2		
3		
4		
5		

Portion of Caprock Field

Lea & Chaves Co., New Mex.

DRAWN BY	SCALE	MATERIAL
CHK'D	DATE	DRAWING NO.
TRACED	APP'D	





GULF OIL CORPORATION

LEA STATE B LEASE

CAPROCK FIELD

LEA & CHAVES COUNTIES, NEW MEXICO

Production Decline Graph
Monthly Per Well Oil Production

-- V --

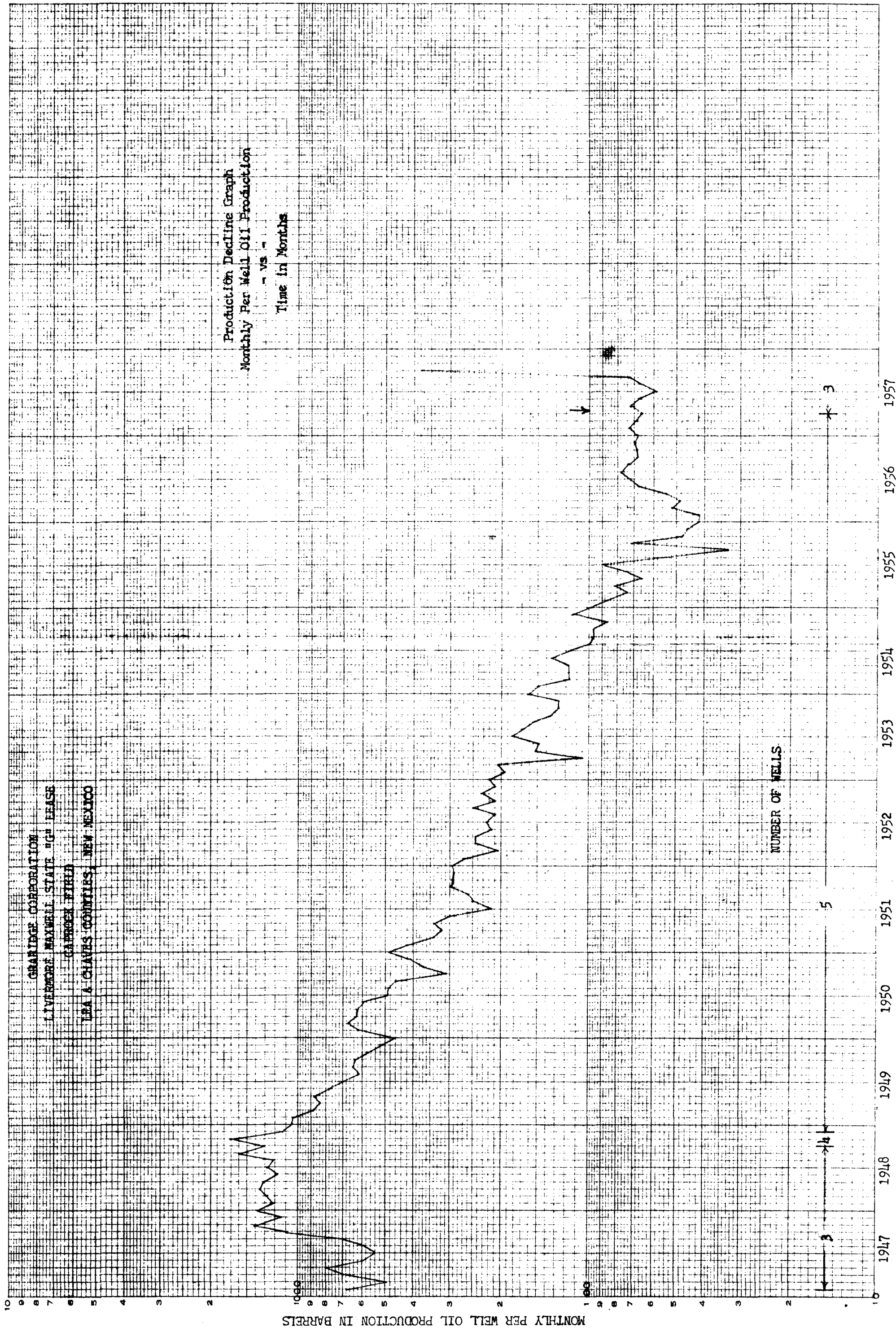
Time in Months

NUMBER OF WELLS

MONTHLY PER WELL OIL PRODUCTION IN BARRELS

EUGENE DIEZGEN CO.
MADE IN U.S.A.

3 CYCLES X 12 DIVISIONS PER INCH
SEMI-LOGARITHMIC
7.5A00R-1212 DIEZGEN GRAPH PAPER

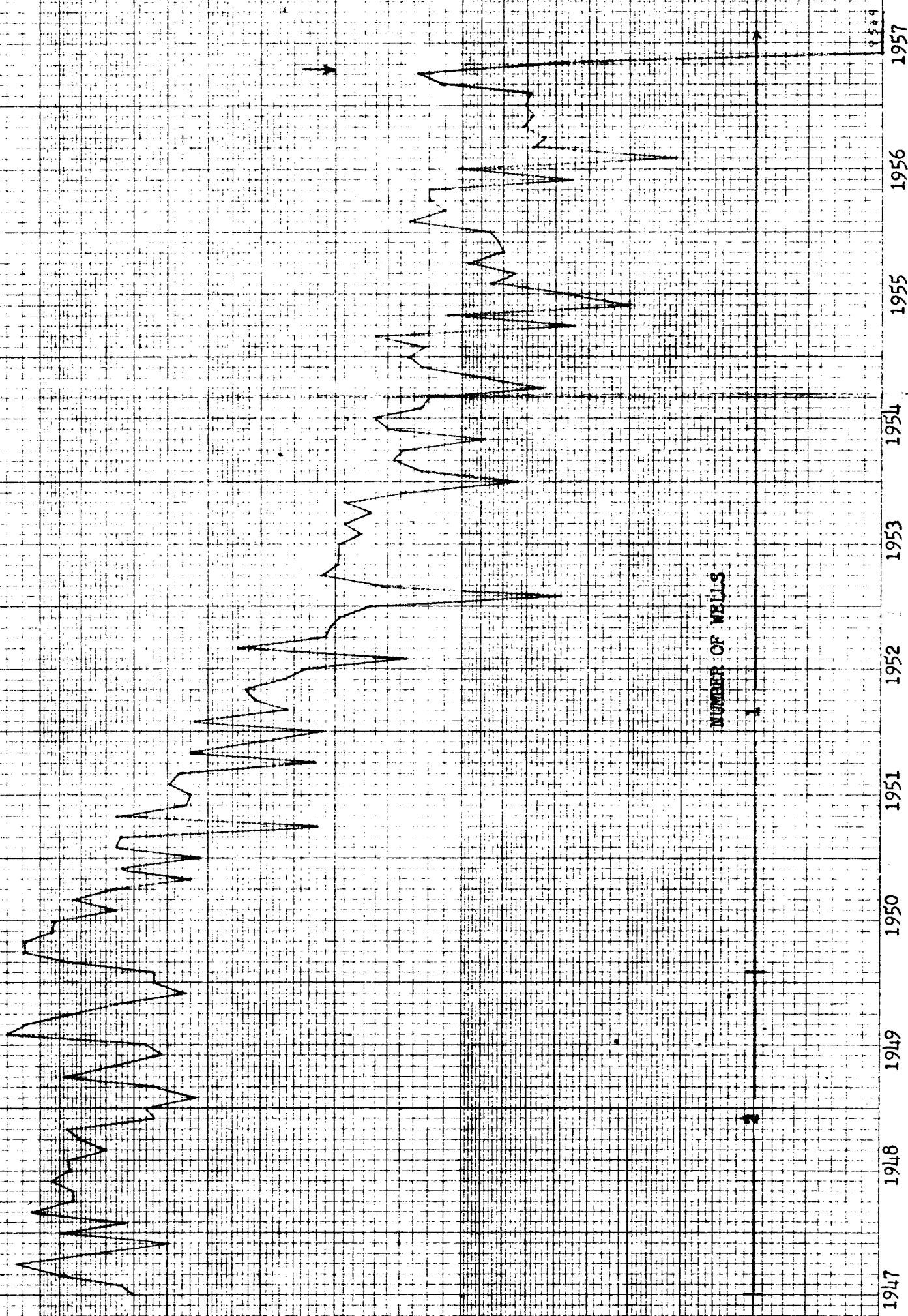


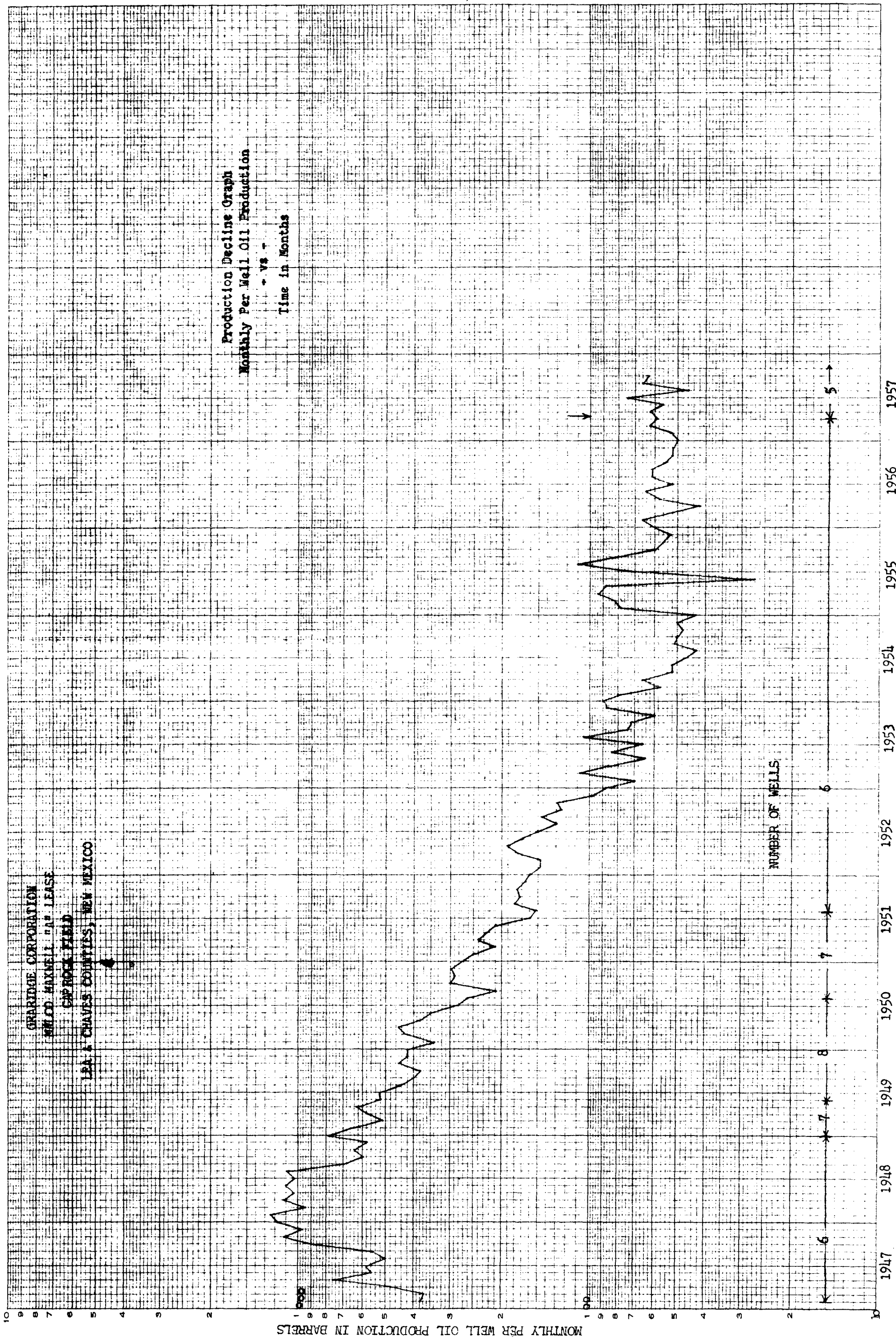
GRADGE CORP.
MANNY STATE "A" LEASE
SEC. 6, 13-S, 32-E
CAPROCK FIELD
LEA & CHAVES COUNTIES, NEW MEXICO

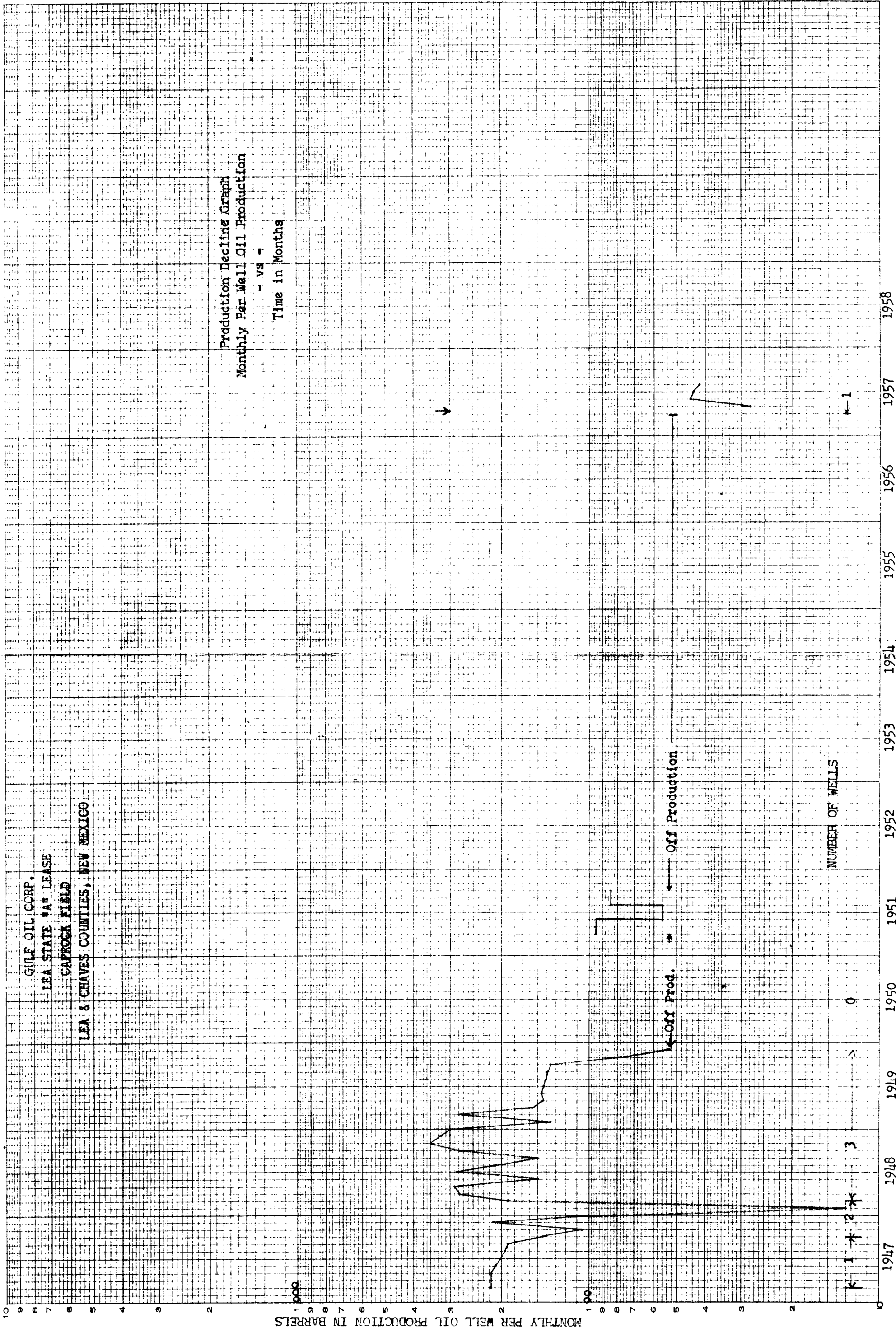
Production Decline Graph
Monthly Per Well Oil Production
vs.
Time in Months

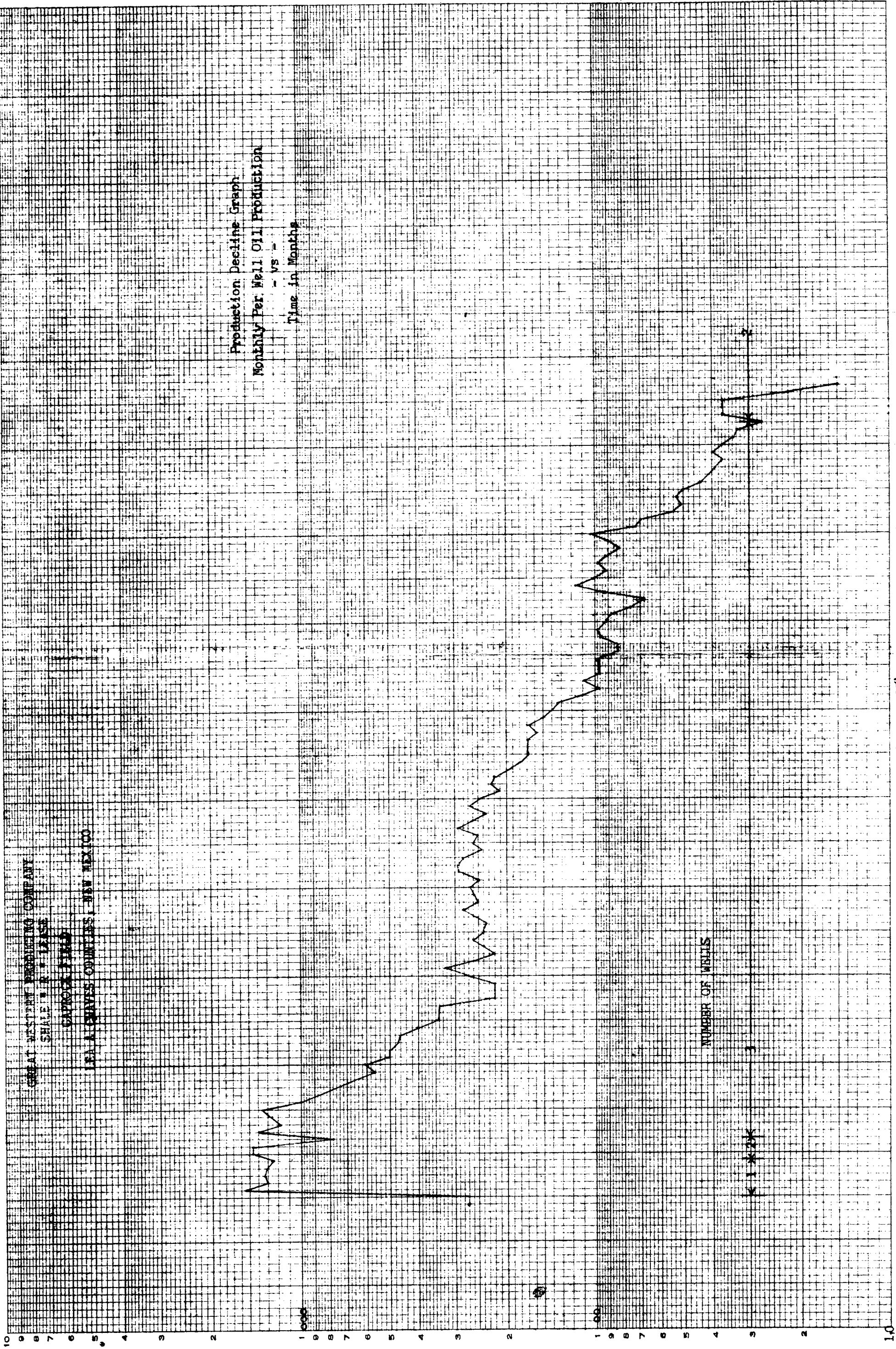
MONTHLY PER WELL OIL PRODUCTION IN BARRELS

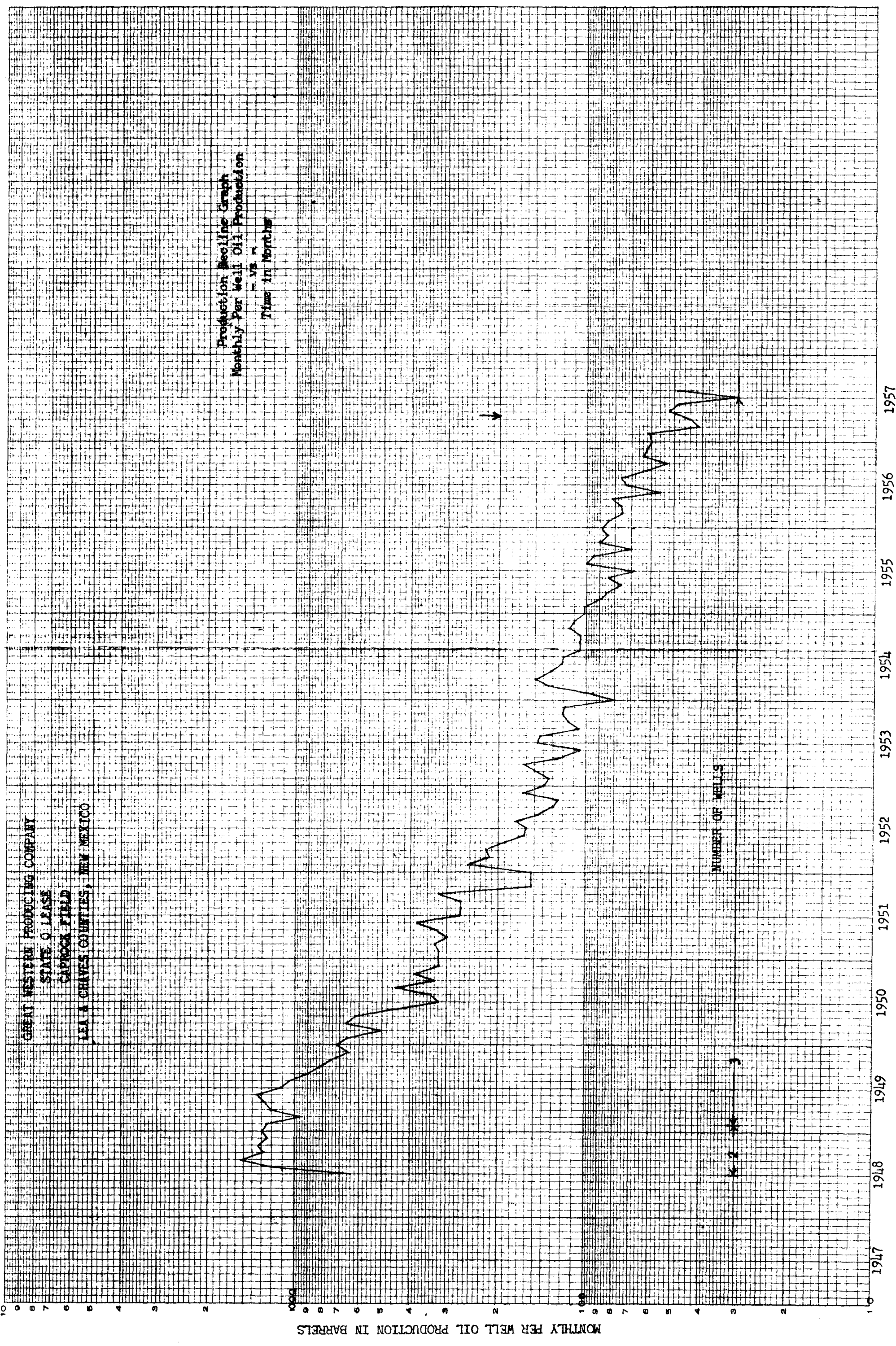
NUMBER OF WELLS











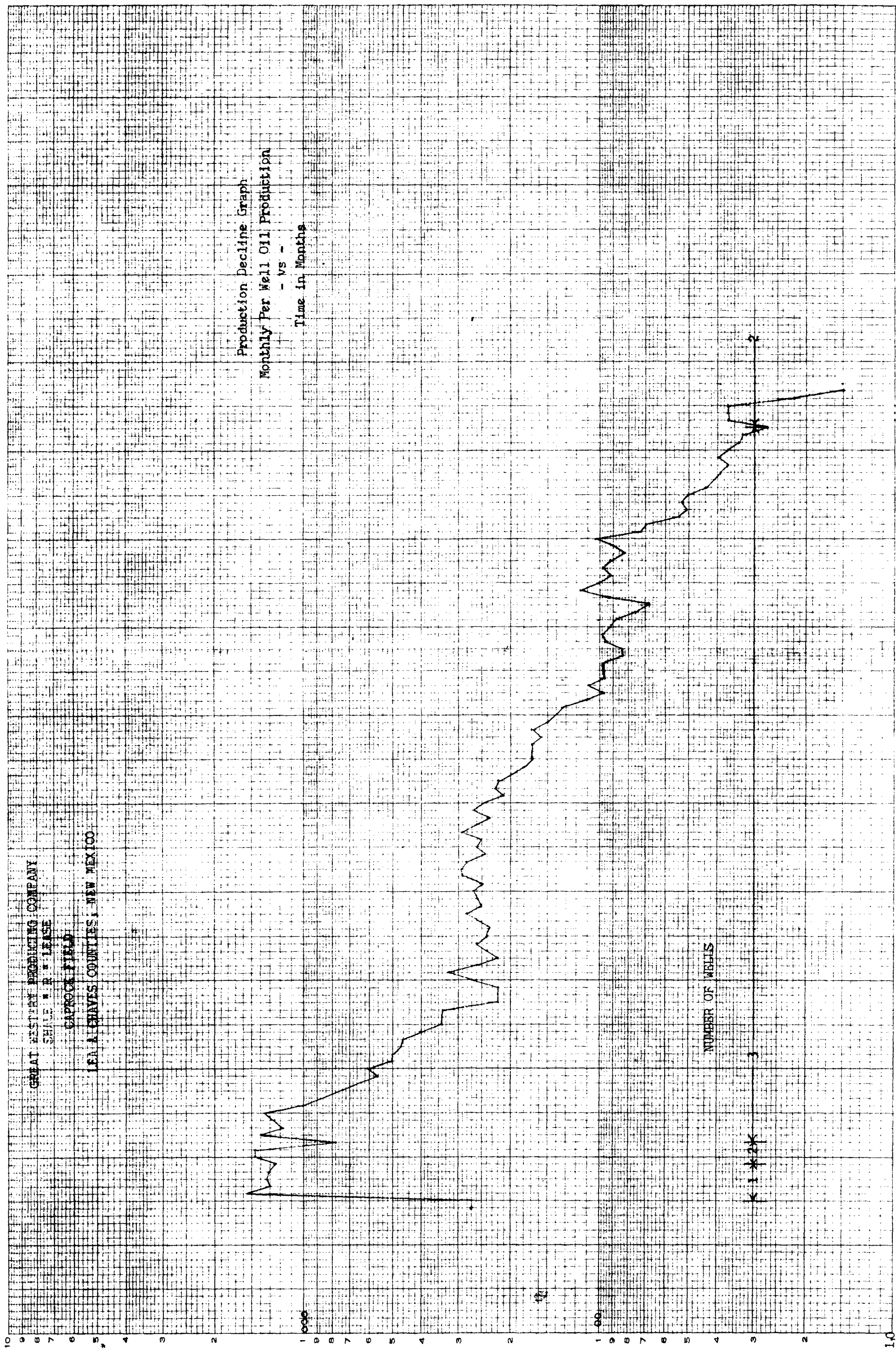
GREAT WESTERN PRODUCING COMPANY
STATE O LEASE
CAPROCK FIELD
LEA & GRAVES COUNTIES, NEW MEXICO

Production Decline Graph
Monthly Per Well Oil Production
VS
Time in Months

MONTHLY PER WELL OIL PRODUCTION IN BARRELS

NUMBER OF WELLS

1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957



GREAT WESTERN PRODUCING COMPANY
SHALE - R - LEASE
CAPROCK FIELD
LEA ALBUQUERQUE COUNTIES, NEW MEXICO

GRARIDGE CORPORATION

Caprock Queen Field, Lea County, New Mexico

Estimated Waterflood Oil Production and Cost Data for 1760 Acres
and 10 Feet of Pay Sand - Assuming the Same Displacement Efficiency

	<u>Faster Flood 400 b/d Water Injection Rate</u>	<u>Slower Flood 80 b/d Water Injection Rate</u>
Cumulative Gross Oil Production (barrels)	2, 900, 000	2, 400, 000
Cumulative Gross Oil Production (barrels/acre)	1, 660	1, 350
Economic Life (years)	8	13
Cumulative Net Oil Production (barrels)	2, 400, 000	1, 900, 000
Yearly Operating Costs (at peak rates)	\$ 132, 000	\$ 106, 000
Total Development Costs	\$ 704, 000	\$ 498, 000
Average Cost of Operating (\$/net bbl.)	\$ 0. 42	\$ 0. 61
Total Development Costs (\$/acre)	\$ 400	\$ 280
Average Total Costs (\$/net bbl.)	\$ 0. 85	\$ 1. 00
Cash Realization at Economic Limit	\$4, 900, 000	\$3, 700, 000
Present Worth of Total Reserves	\$4, 400, 000	\$2, 600, 000
Average Cash Realization (\$/net bbl.)	\$ 2. 05	\$ 1. 90
Average Present Worth (\$/net bbl.)	\$ 1. 84	\$ 1. 34

Loss in Present Worth Value if Operated at a Slower Rate
instead of Faster Rate is \$1, 800, 000 or \$0. 50 per net barrel.