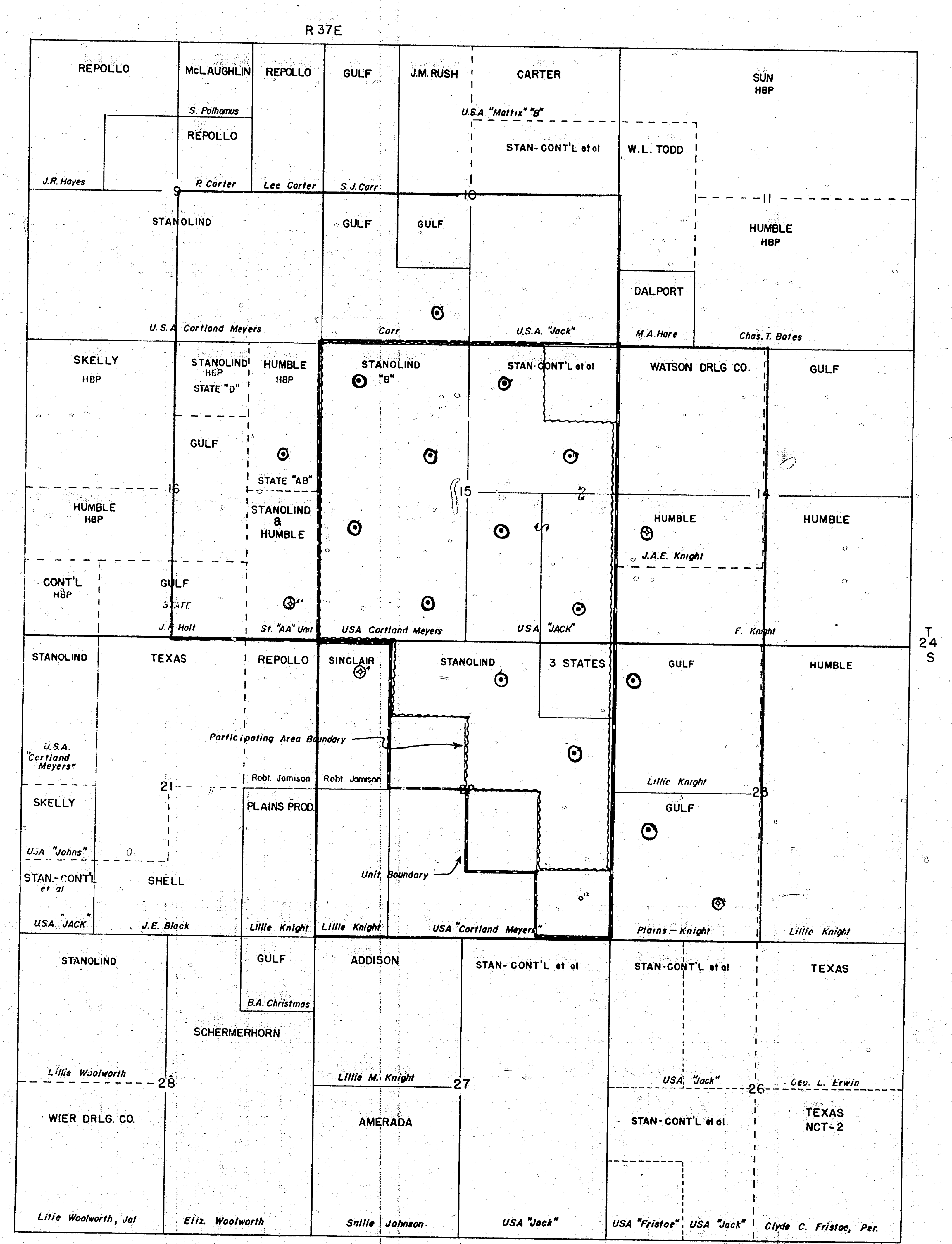
Case No.

391

Large Exhibits


R 37E
REPOLLO
McLAUGHLIN
REPOLLO
GULF
J.M. RUSH
CARTER
SUN
HBP
S. Polhamus
U.S.A "Mattix" "B"
REPOLLO
STAN-CONT'L et al
W.L. TODD
J.R. Hayes
P. Carter
Lee Carter
S.J. Carr
9
10
11
STANOLIND
GULF
GULF
HUMBLE
HBP
DALPORT
U.S.A Cortland Meyers
Carr
U.S.A. "Jack"
M.A. Hare
Chas. T. Bates
SKELLY
HBP
STANOLIND
HEP
STATE "D"
HUMBLE
HBP
STANOLIND
"B"
STAN-CONT'L et al
WATSON DRLG CO.
GULF
GULF
STATE "AB"
16
15
14
HUMBLE
HBP
STANOLIND
&
HUMBLE
HUMBLE
J.A.E. Knight
HUMBLE
CONT'L
HBP
GULF
STATE
J.F. Holt
St. "AA" Unit
USA Cortland Meyers
USA "JACK"
F. Knight
T
24
S
STANOLIND
TEXAS
REPOLLO
SINCLAIR
STANOLIND
3 STATES
GULF
HUMBLE
Participating Area Boundary
U.S.A.
"Cortland
Meyers"
Robt. Jamison
Robt. Jamison
Lillie Knight
21
23
SKELLY
PLAINS PROD.
GULF
Unit Boundary
USA "Johns"
STAN.-CONT'L
et al
SHELL
USA "JACK"
J.E. Black
Lillie Knight
Lillie Knight
USA "Cortland Meyers"
Plains – Knight
Lillie Knight
STANOLIND
GULF
ADDISON
STAN-CONT'L et al
STAN-CONT'L et al
TEXAS
B.A. Christmas
SCHERMERHORN
Lillie Woolworth
28
Lillie M. Knight
27
USA "Jack"
26
Geo. L. Erwin
WIER DRLG. CO.
AMERADA
STAN-CONT'L et al
TEXAS
NCT-2
Litie Woolworth, Jal
Eliz. Woolworth
Sallie Johnson
USA "Jack"
USA "Fristoe"
USA "Jack"
Clyde C. Fristoe, Per.

FOWLER FIELD
LEA COUNTY, NEW MEXICO
SCALE 1" = 1000'

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
Stanolind EXHIBIT No. 1
CASE 391

Case 391
Stanolind Exhibit No. 1
8-18-54

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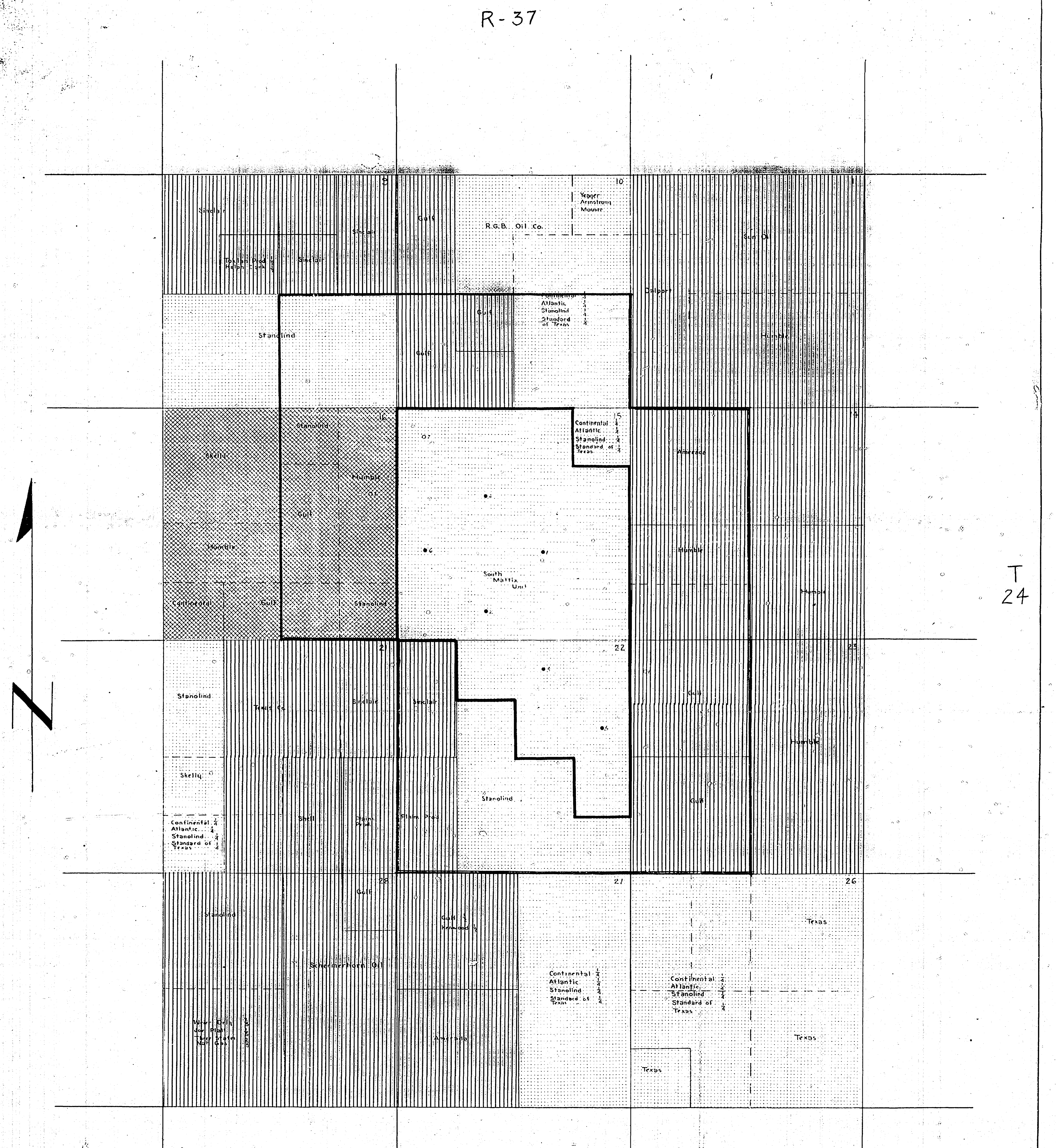

R-37
T
24
9
10
11
Sinclair
Gulf
Sinclair
Tosten Prod ½
Helen Clark ½
Sinclair
R.G.B. Oil Co.
Yeager
Armstrong
Mouser
Sun Oil
Dalport
Stanolind
Gulf
Gulf
Continental
Atlantic
Stanolind
Standard of Texas
Humble
16
15
14
Stanolind
Skelly
Humble
Gulf
Humble
Continental
Gulf
Stanolind
Continental ¼
Atlantic ¼
Stanolind ¼
Standard of Texas ¼
Amerada
Humble
Humble
South Mattix Unit
21
22
23
Stanolind
Texas Co.
Sinclair
Sinclair
Skelly
Continental ¼
Atlantic ¼
Stanolind ¼
Standard of Texas ¼
Shell
Plain Prod.
Plain Prod.
Stanolind
Gulf
Humble
Gulf
28
27
26
Gulf
Stanolind
Gulf ½
Kenwood ½
Schermerhorn Oil
Weir Drlg.
Joe Platt
Inter State Nat. Gas
Amerada
Continental ¼
Atlantic ¼
Stanolind ¼
Standard of Texas ¼
Continental ¼
Atlantic ¼
Stanolind ¼
Standard of Texas ¼
Texas
Texas
Texas

## LEASE OWNERSHIP (DEEP RIGHTS)
## AND
## LAND STATUS PLAT
## SOUTH MATTIX UNIT
## FOWLER POOL

T24S – R37E

Lea County, N.M.

Fee ▥ Federal ⬚ State ▩

Stanolind Oil & Gas Co. 8-1-52 Scale: 1" = 1,000'

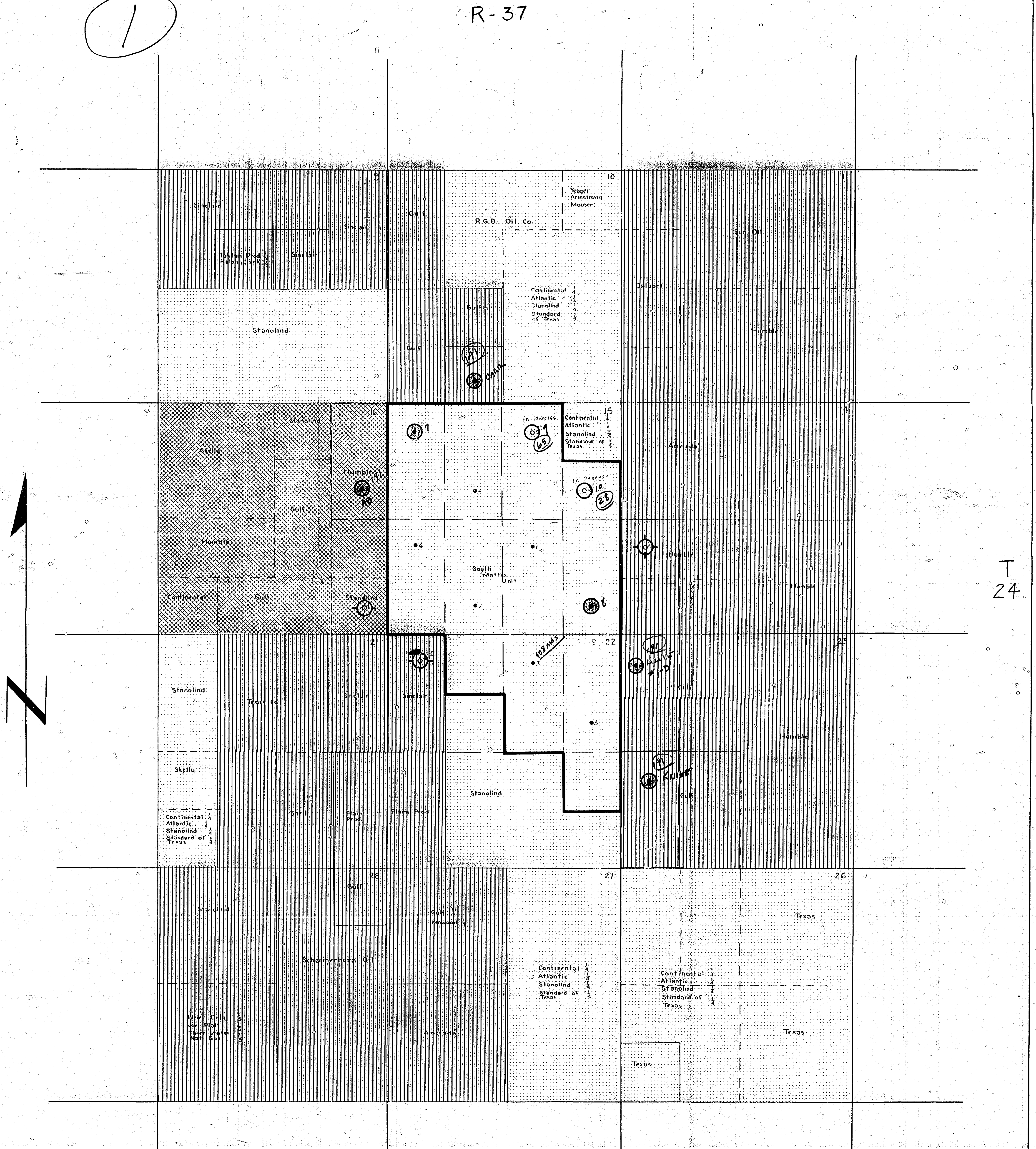
Case 391

Stanolind Ex ①

① Case 391
R.W. 8-19-52

129

①

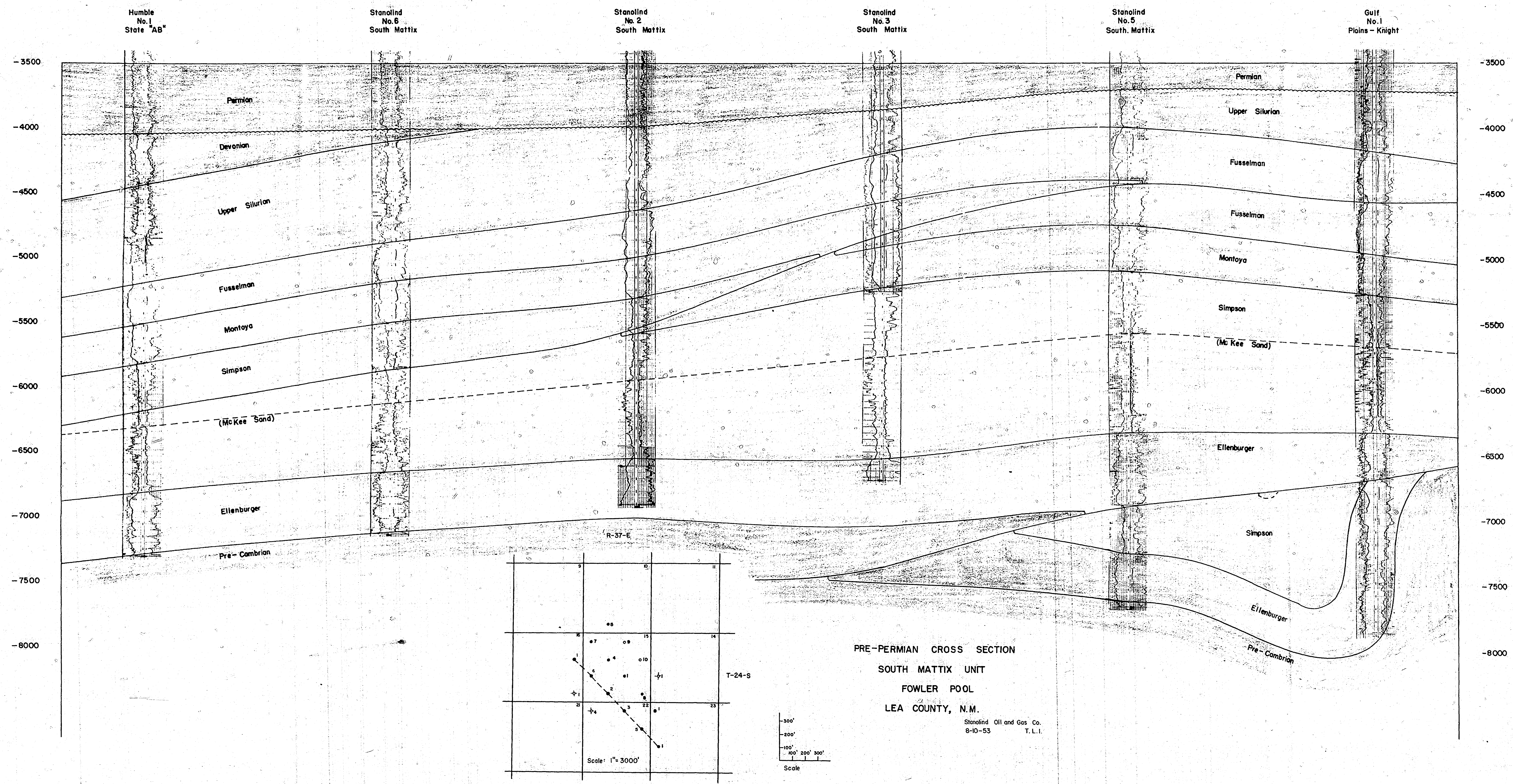

R-37
T 24
N
8
9
10
11
15
14
16
21
22
23
28
27
26
Sinclair
Toxlan Prod.
Helen Clark
Gulf
R.G.B. Oil Co.
Yeager
Armstrong
Mouser
Sun Oil
Stanolind
Continental
Atlantic
Standard of Texas
Calbert
Humble
Skelly
Amerada
South Mattix Unit
In Process
Texas Co.
Shell
Rhim Prod.
Schermerhorn Oil
Kenwood
Texas
108 mds
Humble 191
191
Killer
Humble #1-D

### LEASE OWNERSHIP (DEEP RIGHTS)
### AND
### LAND STATUS PLAT
### SOUTH MATTIX UNIT
### FOWLER POOL

T24S – R37E
Lea County, N.M.

Fee ▥ Federal ⬚ State ▩

Stanolind Oil & Gas Co. 8-1-53 Scale: 1" = 1,000'


Humble
No. 1
State "AB"
Stanolind
No. 6
South Mattix
Stanolind
No. 2
South Mattix
Stanolind
No. 3
South Mattix
Stanolind
No. 5
South. Mattix
Gulf
No. 1
Plains - Knight
-3500
-4000
-4500
-5000
-5500
-6000
-6500
-7000
-7500
-8000
Permian
Devonian
Upper Silurian
Fusselman
Montoya
Simpson
(McKee Sand)
Ellenburger
Pre-Cambrian
Permian
Upper Silurian
Fusselman
Fusselman
Montoya
Simpson
(Mc Kee Sand)
Ellenburger
Simpson
Ellenburger
Pre-Cambrian
R-37-E
T-24-S
Scale: 1" = 3000'
300'
200'
100'
100' 200' 300'
Scale

PRE-PERMIAN CROSS SECTION
SOUTH MATTIX UNIT
FOWLER POOL
LEA COUNTY, N.M.

Stanolind Oil and Gas Co.
8-10-53 T. L. I.

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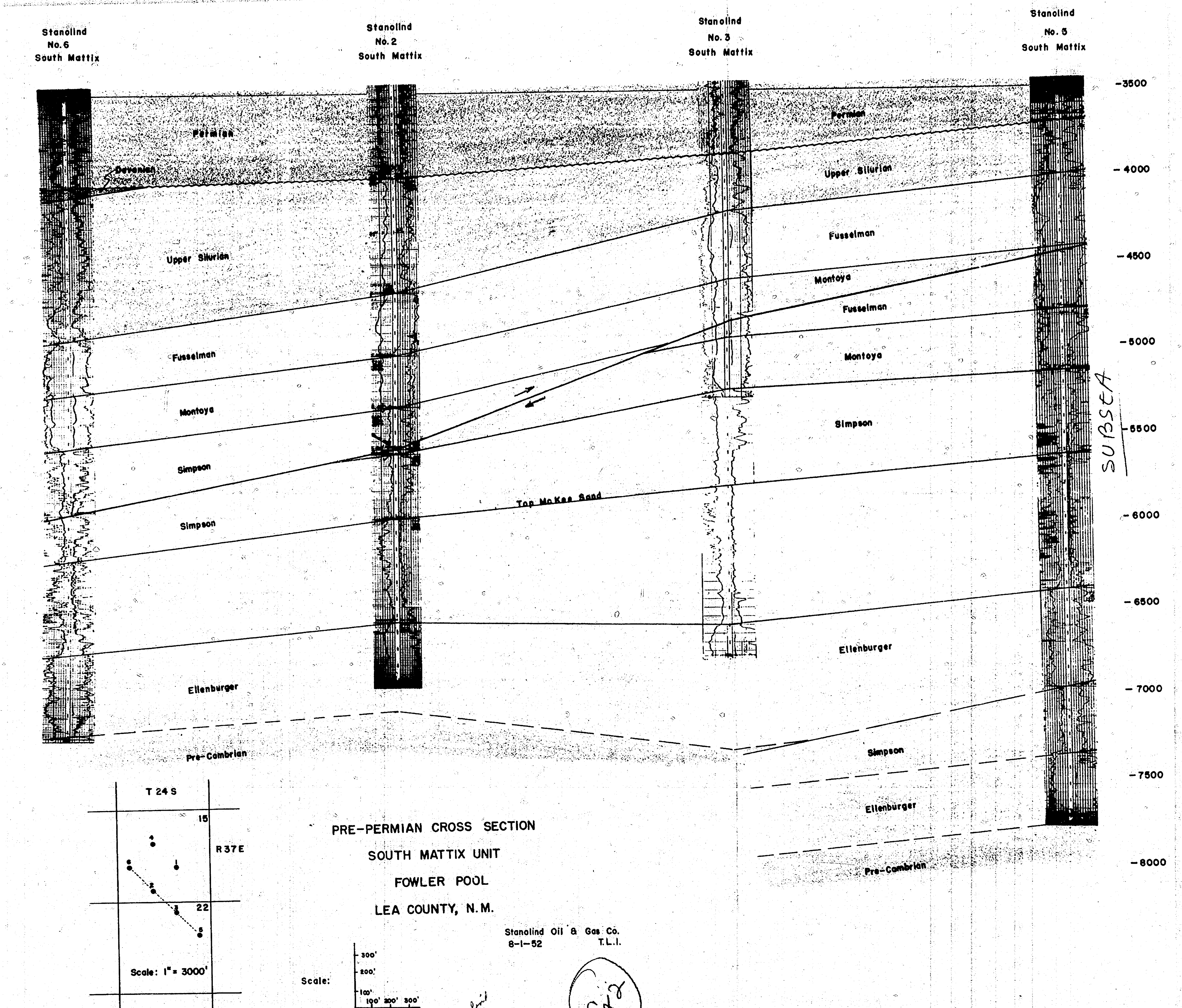
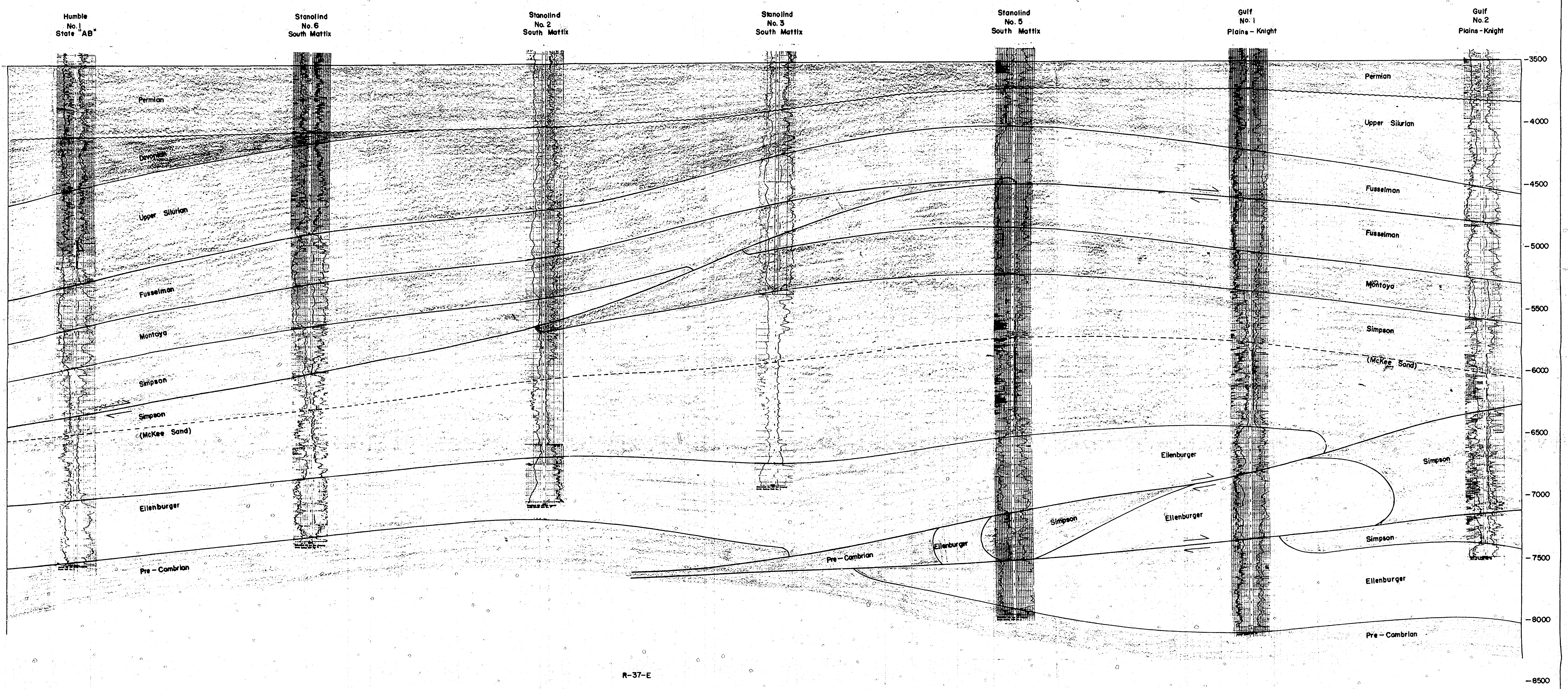

Stanolind
No. 6
South Mattix
Stanolind
No. 2
South Mattix
Stanolind
No. 3
South Mattix
Stanolind
No. 5
South Mattix
Permian
Devonian
Upper Silurian
Fusselman
Montoya
Simpson
Simpson
Top McKee Sand
Ellenburger
Pre-Cambrian
Permian
Upper Silurian
Fusselman
Montoya
Fusselman
Montoya
Simpson
Ellenburger
Simpson
Ellenburger
Pre-Cambrian
-3500
-4000
-4500
-5000
-5500
-6000
-6500
-7000
-7500
-8000
SUBSEA
T 24 S
R 37 E
15
22
4
6
1
2
3
5
Scale: 1" = 3000'
Scale:
300'
200'
100'
100' 200' 300'

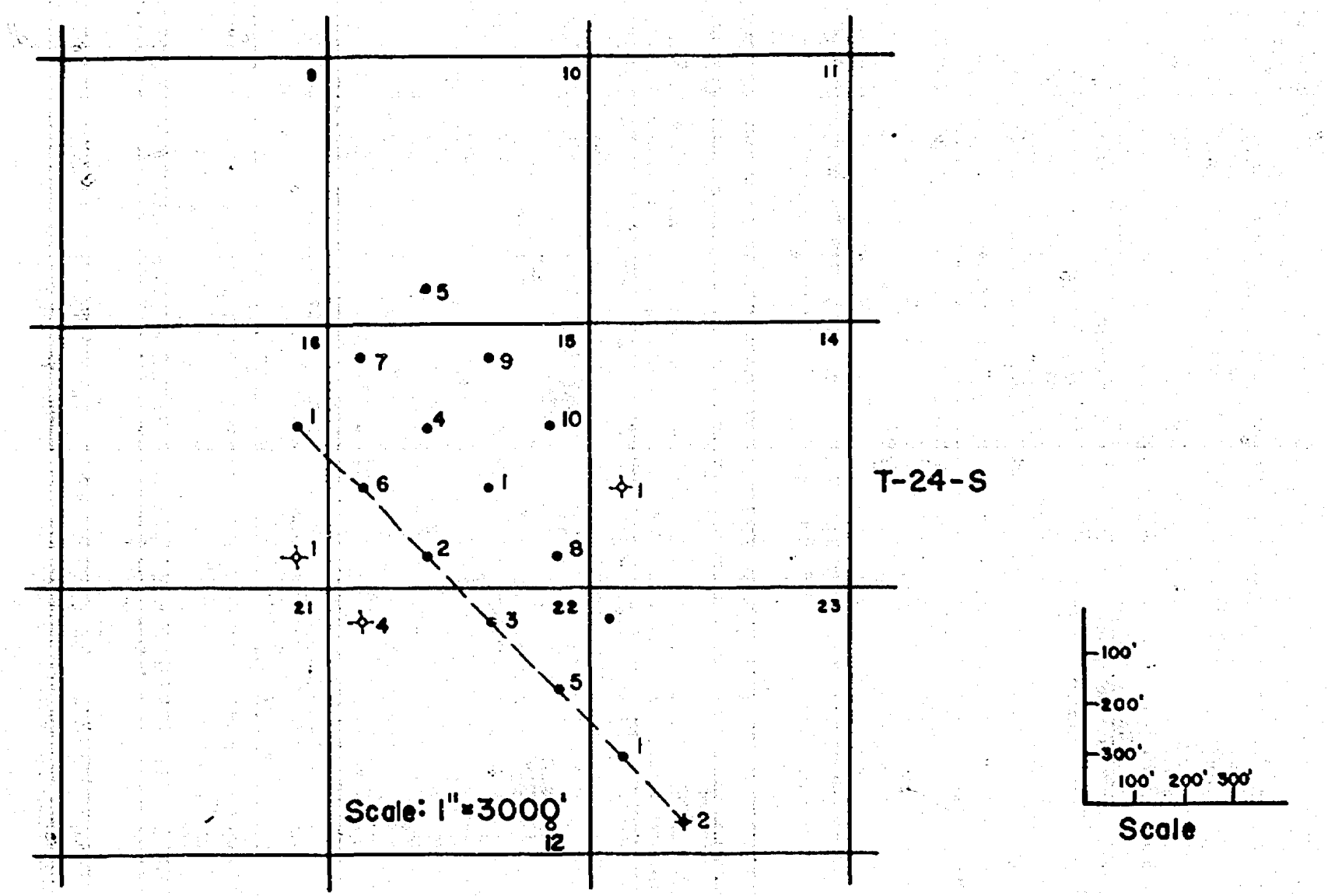
## PRE-PERMIAN CROSS SECTION
## SOUTH MATTIX UNIT
## FOWLER POOL
## LEA COUNTY, N.M.

Stanolind Oil & Gas Co.
8-1-52
T.L.I.

Case 391 Stanolind ②

Ex 2


Humble No. 1 State "AB"
Stanolind No. 6 South Mattix
Stanolind No. 2 South Mattix
Stanolind No. 3 South Mattix
Stanolind No. 5 South Mattix
Gulf No. 1 Plains - Knight
Gulf No. 2 Plains - Knight
-3500
-4000
-4500
-5000
-5500
-6000
-6500
-7000
-7500
-8000
-8500
Permian
Devonian
Upper Silurian
Fusselman
Montoya
Simpson
Simpson
(McKee Sand)
Ellenburger
Pre-Cambrian
Pre-Cambrian
Ellenburger
Simpson
Ellenburger
Ellenburger
Simpson
Permian
Upper Silurian
Fusselman
Fusselman
Montoya
Simpson
(McKee Sand)
Simpson
Simpson
Ellenburger
Pre-Cambrian


R-37-E
9
10
11
16
15
14
T-24-S
21
22
23
Scale: 1"=3000'
100'
200'
300'
100' 200' 300'
Scale

PRE-PERMIAN CROSS SECTION

SOUTH MATTIX UNIT

FOWLER POOL

LEA COUNTY, N.M

Stanolind Oil and Gas Co.
8-1-54 T.L.I.

Case 391
Stanolind Exhibit No. 2
8-18-54

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
Stanolind EXHIBIT No. 2
CASE 391

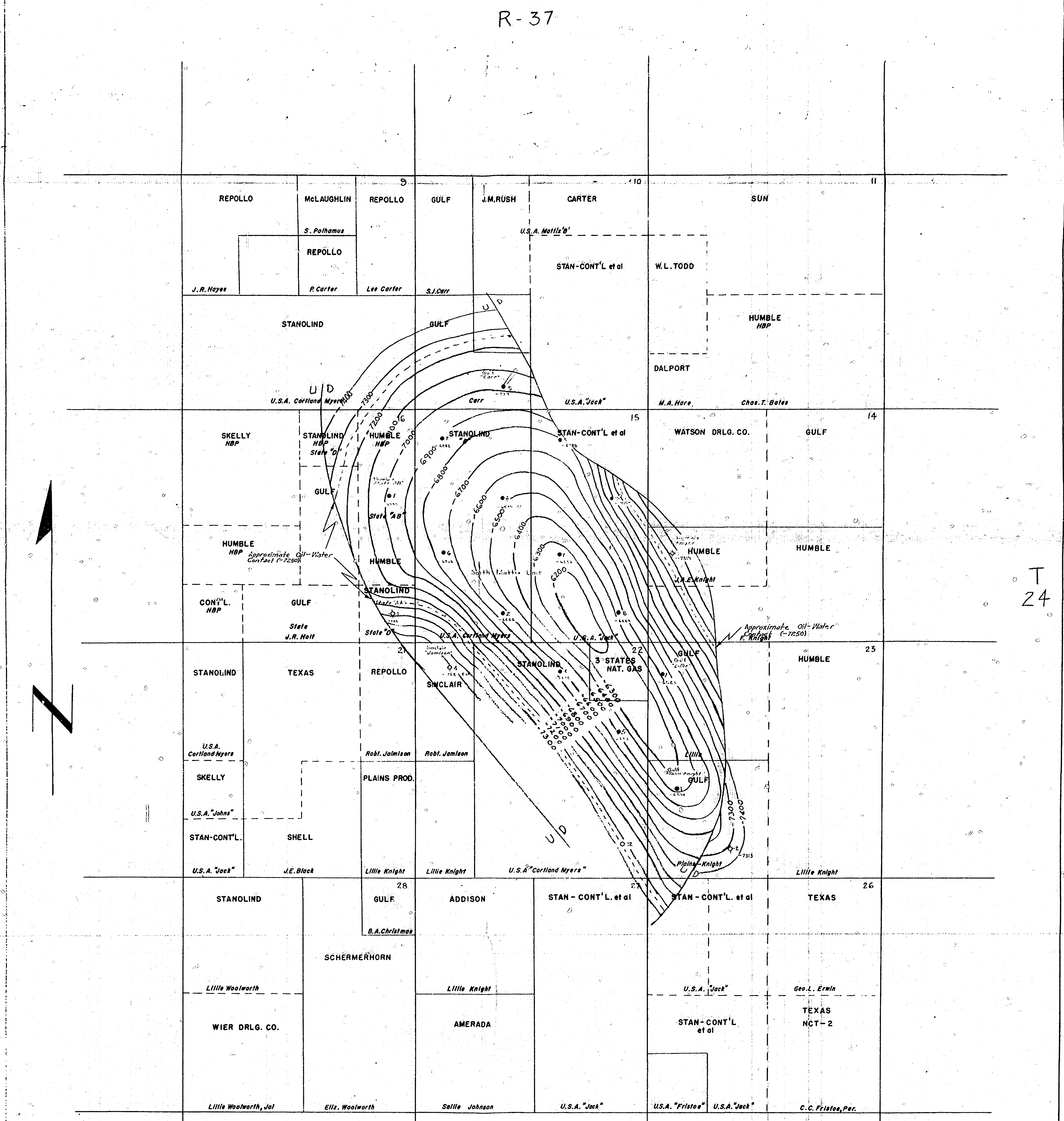
132

**Memo** From
WILLIAM B. MACEY
Chief Engineer

To Completion Dates

#1. - 5-6-49
2 - 4-12-50
3- 12-13-50
4- 4-20-51
5- 12-6-51
6- 4-27-52

133


R-37
T 24
N
9
10
11
REPOLLO
McLAUGHLIN
REPOLLO
GULF
J.M.RUSH
CARTER
SUN
S. Polhamus
U.S.A. Mattix'B'
REPOLLO
STAN-CONT'L et al
W.L.TODD
J.R. Hayes
P. Carter
Lee Carter
S.J.Carr
STANOLIND
GULF
HUMBLE
HBP
DALPORT
U D
U.S.A. Cortland Myers
Carr
U.S.A."Jack"
M.A. Hare
Chas.T. Bates
15
14
SKELLY
HBP
STANOLIND
HBP
State "D"
HUMBLE
HBP
STANOLIND
"B"
STAN-CONT'L et al
WATSON DRLG. CO.
GULF
GULF
State "AB"
HUMBLE
HBP
Approximate Oil-Water Contact (-7250)
HUMBLE
South Mattix Unit
HUMBLE
HUMBLE
J.A.E. Knight
STANOLIND
State "AA"
CONT'L.
HBP
GULF
State
J.R. Holt
State "D"
U.S.A. Cortland Myers
U.S.A. "Jack"
Approximate Oil-Water Contact (-7250)
F. Knight
7400
7300
7200
7100
7000
6900
6800
6700
6600
6500
6400
6300
6200
21
22
23
STANOLIND
TEXAS
REPOLLO
Sinclair "Jamison"
SINCLAIR
STANOLIND
3 STATES NAT. GAS
GULF
Gulf "Lillie"
HUMBLE
U.S.A. Cortland Myers
Robt. Jamison
Robt. Jamison
Lillie
SKELLY
PLAINS PROD.
Gulf Plains-Knight
GULF
U.S.A."Johns"
U D
STAN-CONT'L.
SHELL
Plains-Knight
U D
U.S.A. "Jack"
J.E. Black
Lillie Knight
Lillie Knight
U.S.A."Cortland Myers"
Lillie Knight
28
27
26
STANOLIND
GULF
ADDISON
STAN-CONT'L. et al
STAN-CONT'L. et al
TEXAS
B.A. Christmas
SCHERMERHORN
Lillie Woolworth
Lillie Knight
U.S.A. "Jack"
Geo.L. Erwin
WIER DRLG. CO.
AMERADA
STAN-CONT'L et al
TEXAS
NCT-2
Lillie Woolworth, Jal
Eliz. Woolworth
Sallie Johnson
U.S.A. "Jack"
U.S.A. "Fristoe"
U.S.A."Jack"
C.C. Fristoe, Per.

# SUBSURFACE STRUCTURE MAP
# CONTOURED ON TOP OF PRODUCING ELLENBURGER
## SOUTH MATTIX UNIT
## FOWLER POOL

T-24-S R-37-E
Lea County, N. M.

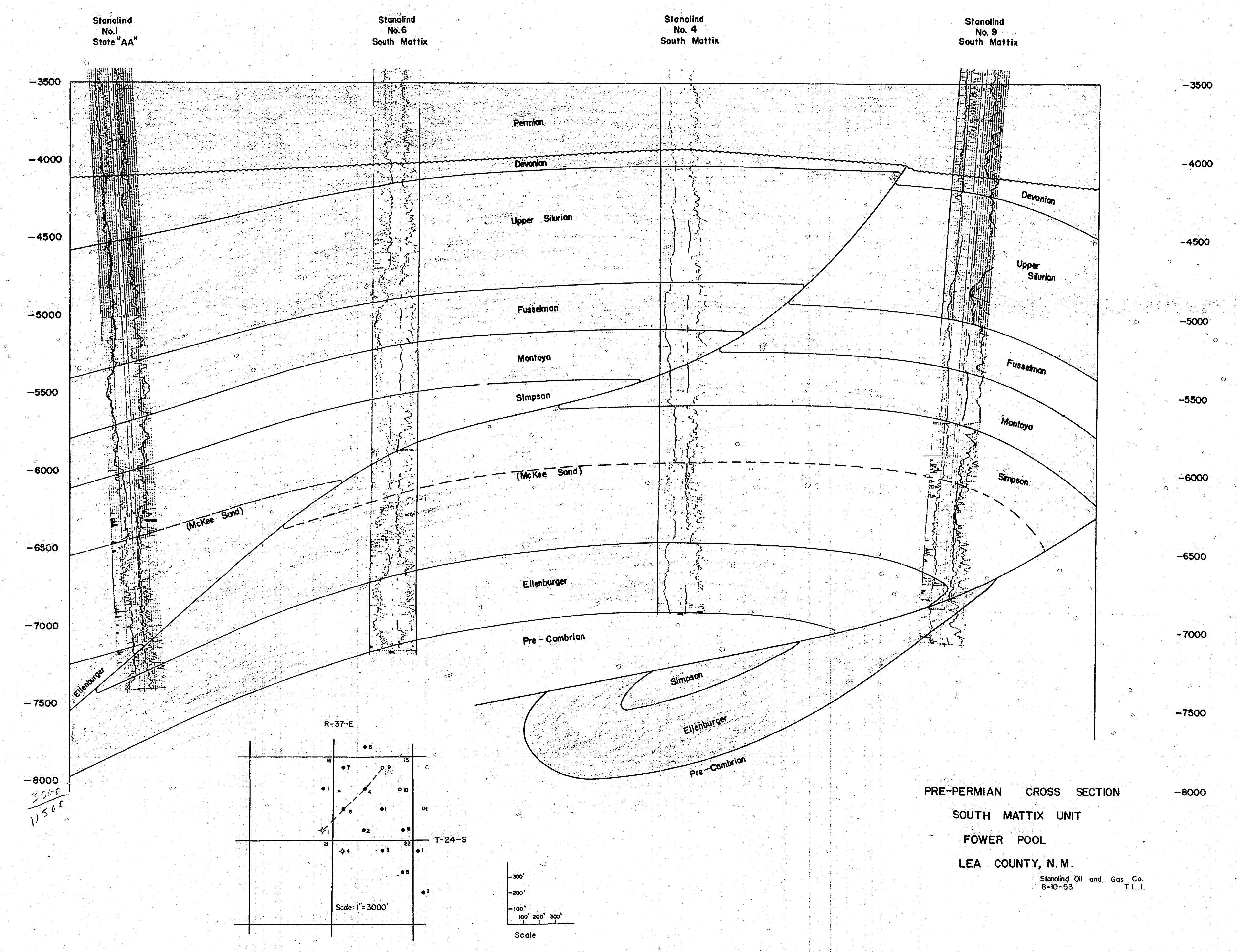
Contour Interval: 100'
Scale: 1" = 1,000'

8-10-54
T.L.I.

Stanolind Oil and Gas Co.

Case 391
Stanolind Exhibit No. 3
8-18-54

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
Stanolind EXHIBIT No. 3
CASE 391


Stanolind No.1 State "AA"
Stanolind No.6 South Mattix
Stanolind No. 4 South Mattix
Stanolind No. 9 South Mattix
-3500
-4000
-4500
-5000
-5500
-6000
-6500
-7000
-7500
-8000
Permian
Devonian
Upper Silurian
Fusselman
Montoya
Simpson
(McKee Sand)
Ellenburger
Pre-Cambrian
3500
11500
R-37-E
T-24-S
16
15
21
22
Scale: 1"=3000'
300'
200'
100'
100' 200' 300'
Scale

PRE-PERMIAN CROSS SECTION
SOUTH MATTIX UNIT
FOWER POOL
LEA COUNTY, N.M.

Stanolind Oil and Gas Co.
8-10-53 T.L.I.

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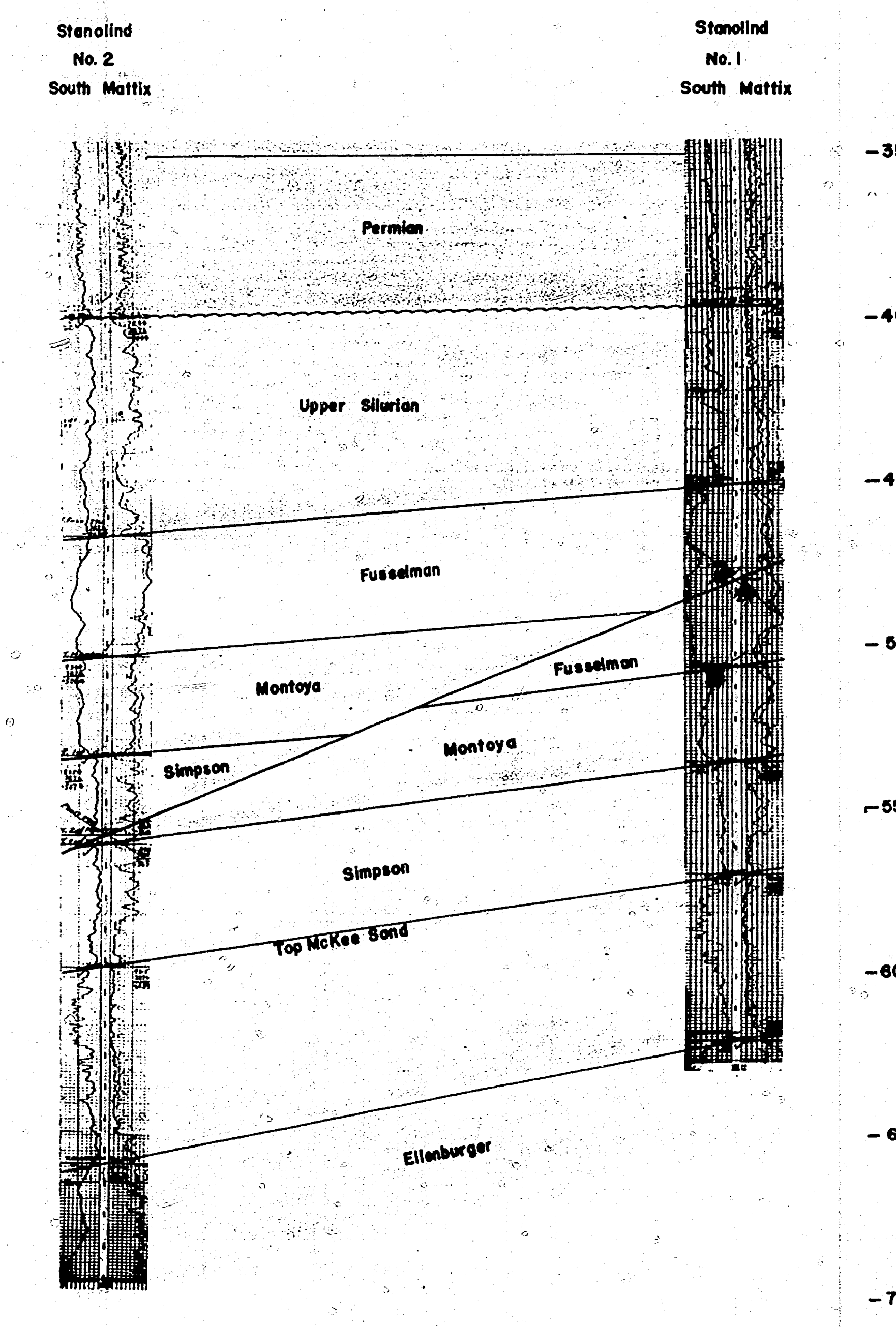
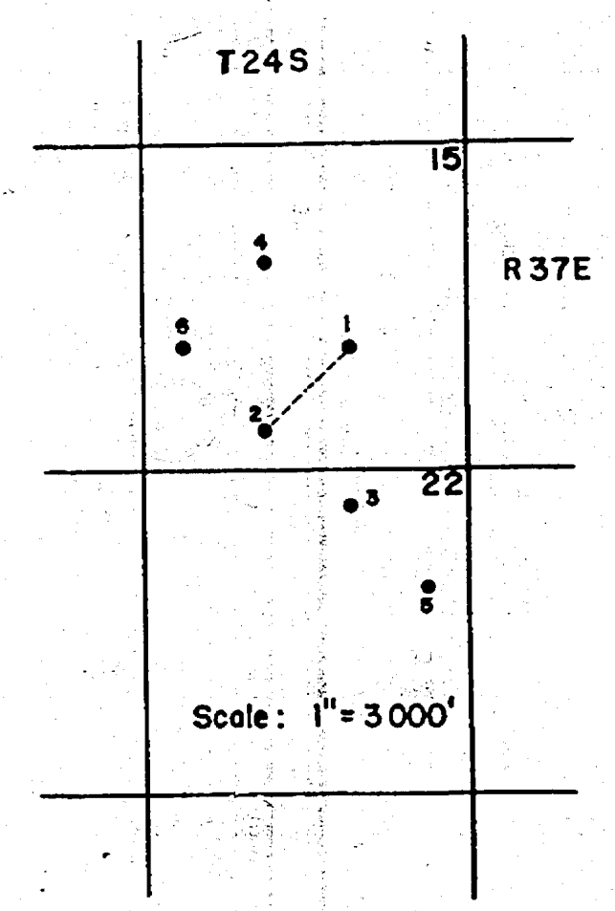
135



Stanolind No. 2 South Mattix
Stanolind No. 1 South Mattix
-3500
-4000
-4500
-5000
-5500
-6000
-6500
-7000
Permian
Upper Silurian
Fusselman
Montoya
Simpson
Fusselman
Montoya
Simpson
Top McKee Sand
Ellenburger



T24S
R37E
15
22
1
2
3
4
5
6
Scale: 1" = 3000'

PRE-PERMIAN CROSS SECTION

SOUTH MATTIX UNIT

FOWLER POOL

LEA COUNTY, N.M.

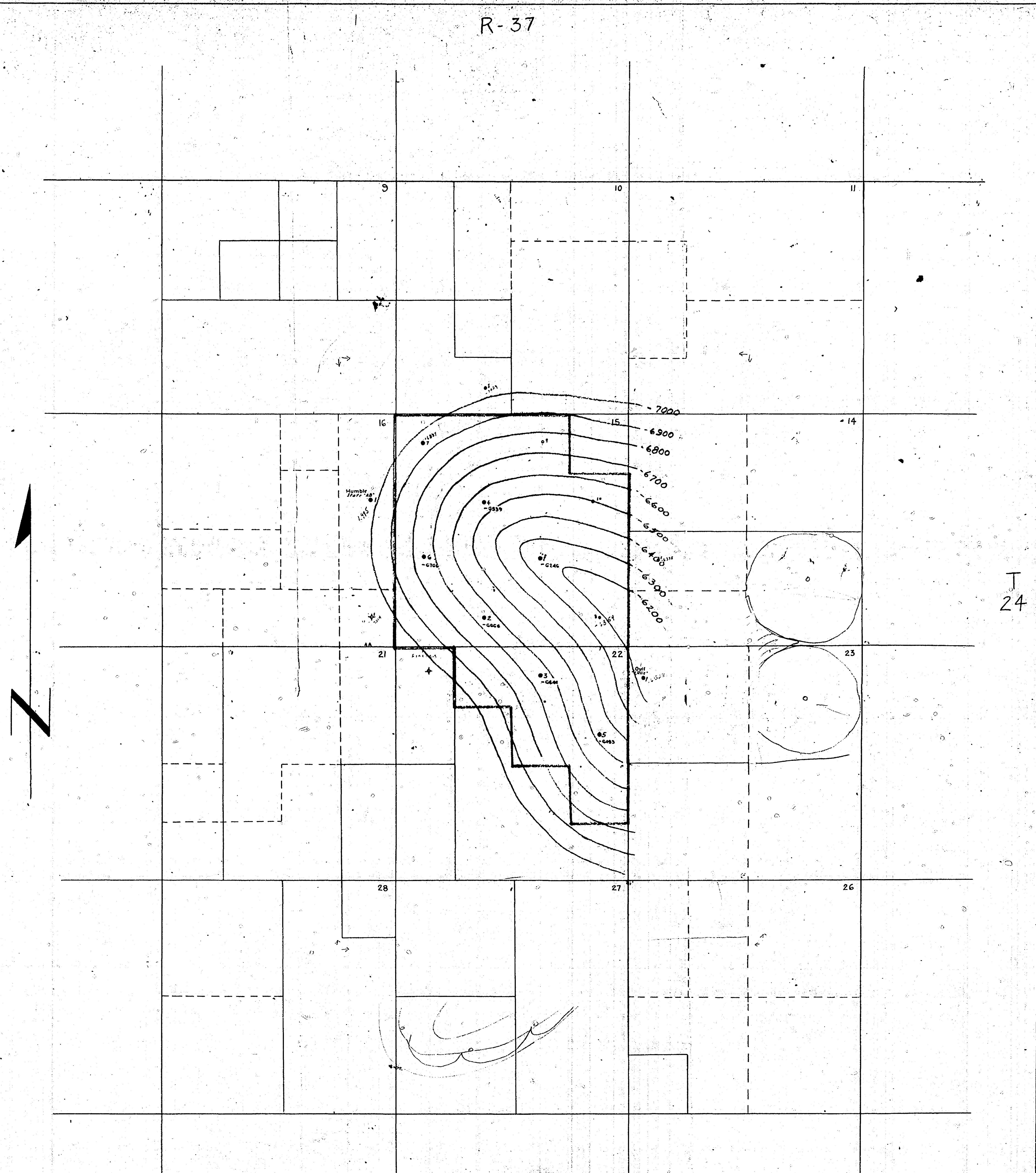
Stanolind Oil & Gas Co.
8-1-52
T.L.I.

Scale:
100
200
300
100 200 300

Case 391
Stanolind
(3)

Ex 3

136


R-37
T
24
9
10
11
16
15
14
21
22
23
28
27
26
-7000
-6900
-6800
-6700
-6600
-6500
-6400
-6300
-6200
N

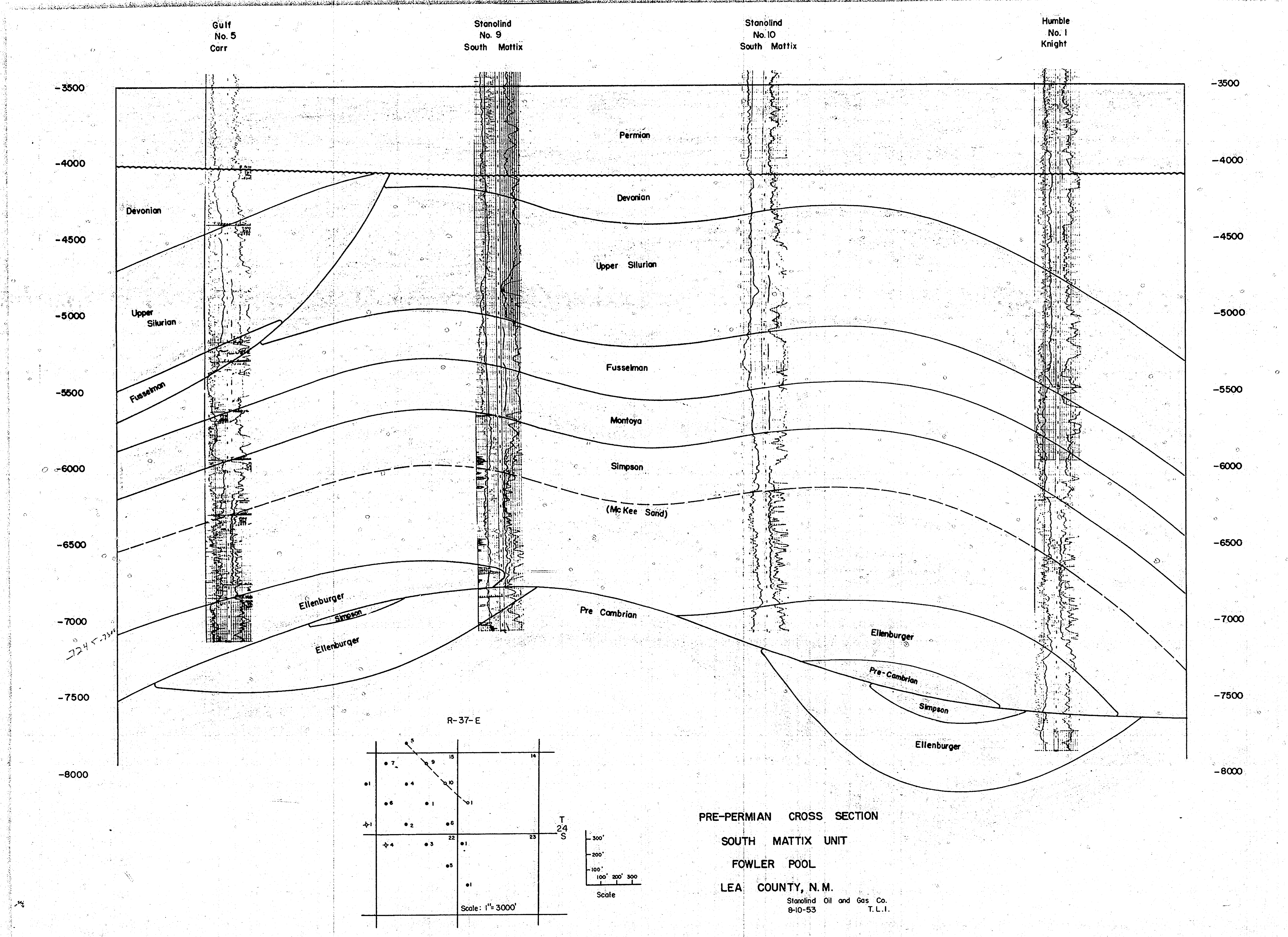
SUBSURFACE STRUCTURE MAP
CONTOURED ON TOP OF ELLENBURGER
SOUTH MATTIX UNIT
FOWLER POOL
T24S - R37E
Lea County, N.M.

Contour Interval: 100'
Scale: 1" = 1,000'

Stanolind Oil & Gas Co.

8-1-52
T.L.I.

Case 391
Stanolind
④
Ex 4


Gulf
No. 5
Carr
Stanolind
No. 9
South Mattix
Stanolind
No. 10
South Mattix
Humble
No. 1
Knight
-3500
-4000
-4500
-5000
-5500
-6000
-6500
-7000
-7500
-8000
Permian
Devonian
Upper Silurian
Fusselman
Montoya
Simpson
(McKee Sand)
Ellenburger
Simpson
Pre Cambrian
Pre-Cambrian
-7245 -7300
R-37-E
T
24
S
15
14
22
23
Scale: 1" = 3000'
300'
200'
100'
100' 200' 300
Scale

PRE-PERMIAN CROSS SECTION
SOUTH MATTIX UNIT
FOWLER POOL
LEA COUNTY, N.M.
Stanolind Oil and Gas Co.
8-10-53 T.L.I.

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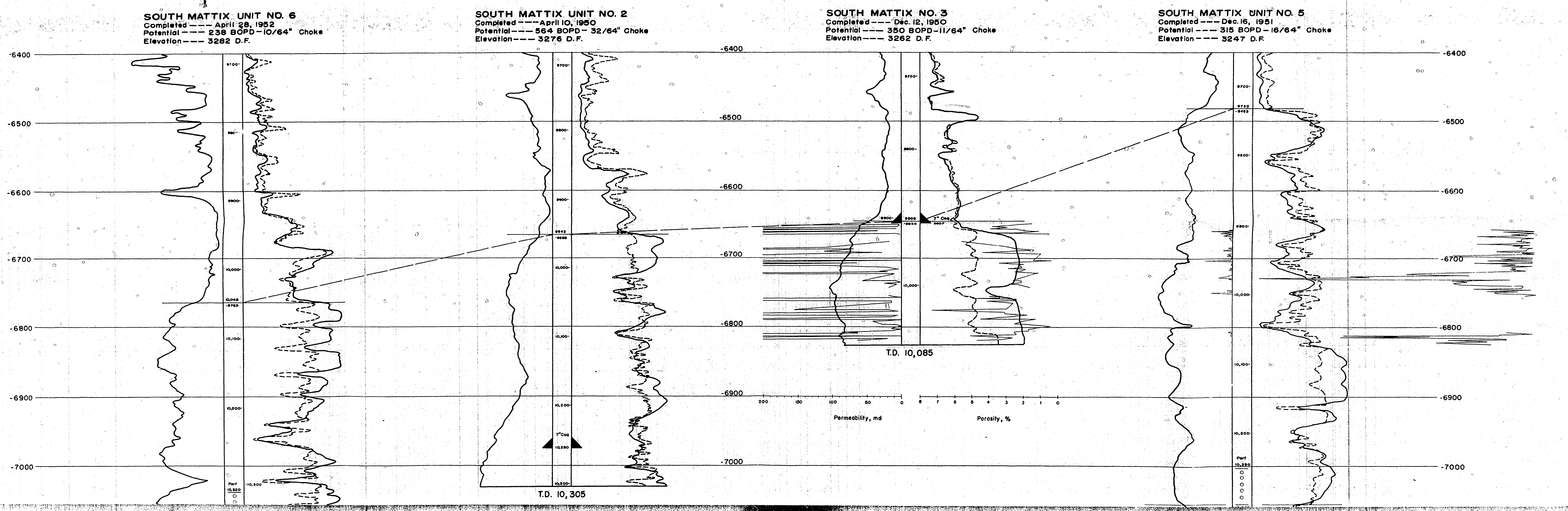
Exhibit 5 — Case 391
Stans

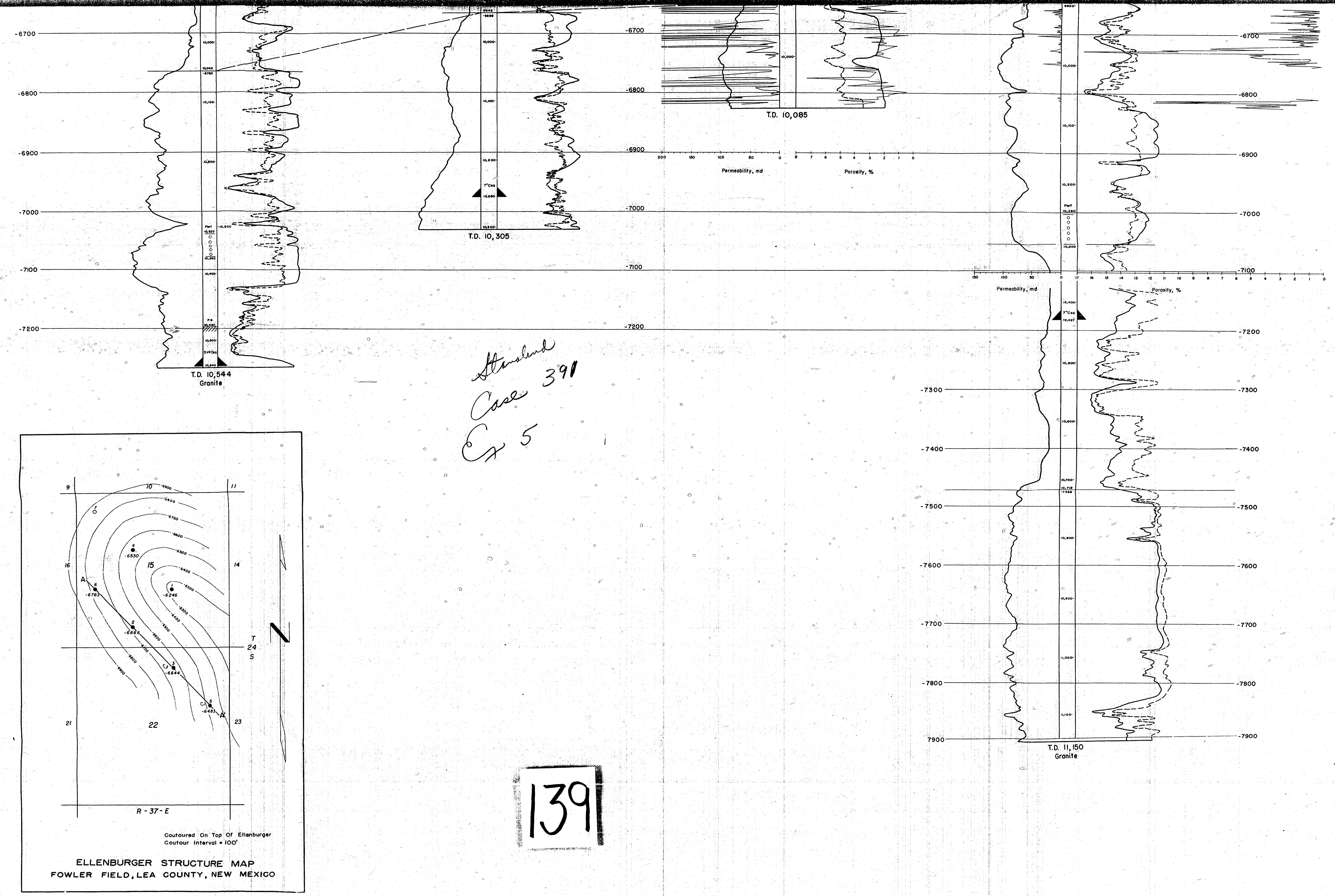
# CROSS SECTION A-A'

## FOWLER FIELD, LEA COUNTY NEW MEXICO

T-24-S; R-37-E

VERTICAL SCALE 2" = 100'    HORIZONTAL SCALE 1" = 100'


SOUTH MATTIX UNIT NO. 6
Completed --- April 28, 1952
Potential --- 238 BOPD - 10/64" Choke
Elevation --- 3282 D.F.
SOUTH MATTIX UNIT NO. 2
Completed --- April 10, 1950
Potential --- 564 BOPD - 32/64" Choke
Elevation --- 3276 D.F.
SOUTH MATTIX NO. 3
Completed --- Dec. 12, 1950
Potential --- 350 BOPD - 11/64" Choke
Elevation --- 3262 D.F.
SOUTH MATTIX UNIT NO. 5
Completed --- Dec. 16, 1951
Potential --- 315 BOPD - 16/64" Choke
Elevation --- 3247 D.F.
-6400
-6500
-6600
-6700
-6800
-6900
-7000
9700
9800
9900
10,000
10,100
10,200
10,048
-6763
Perf
10,320
-10,300
9942
-6666
7" Csg
10,250
10,300
T.D. 10,305
9908
-6644
9900
9907
7" Csg
T.D. 10,085
200
150
100
50
0
8
7
6
5
4
3
2
1
0
Permeability, md
Porosity, %
9730
-6483
Perf
10,280



Stanolind
Case 391
Ex 5

Coutoured On Top Of Ellenburger
Coutour Interval = 100'

## ELLENBURGER STRUCTURE MAP
## FOWLER FIELD, LEA COUNTY, NEW MEXICO

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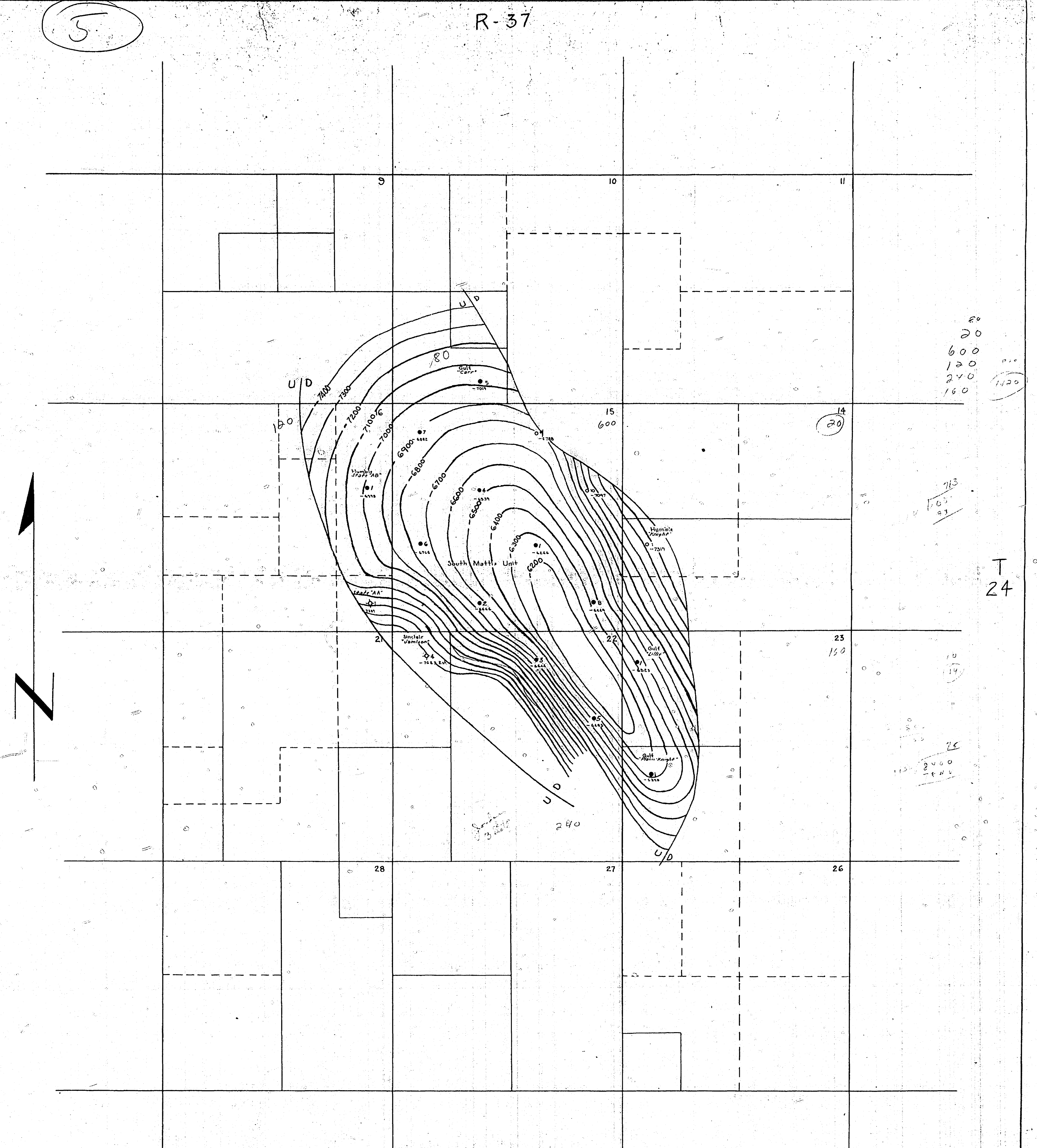
⑤

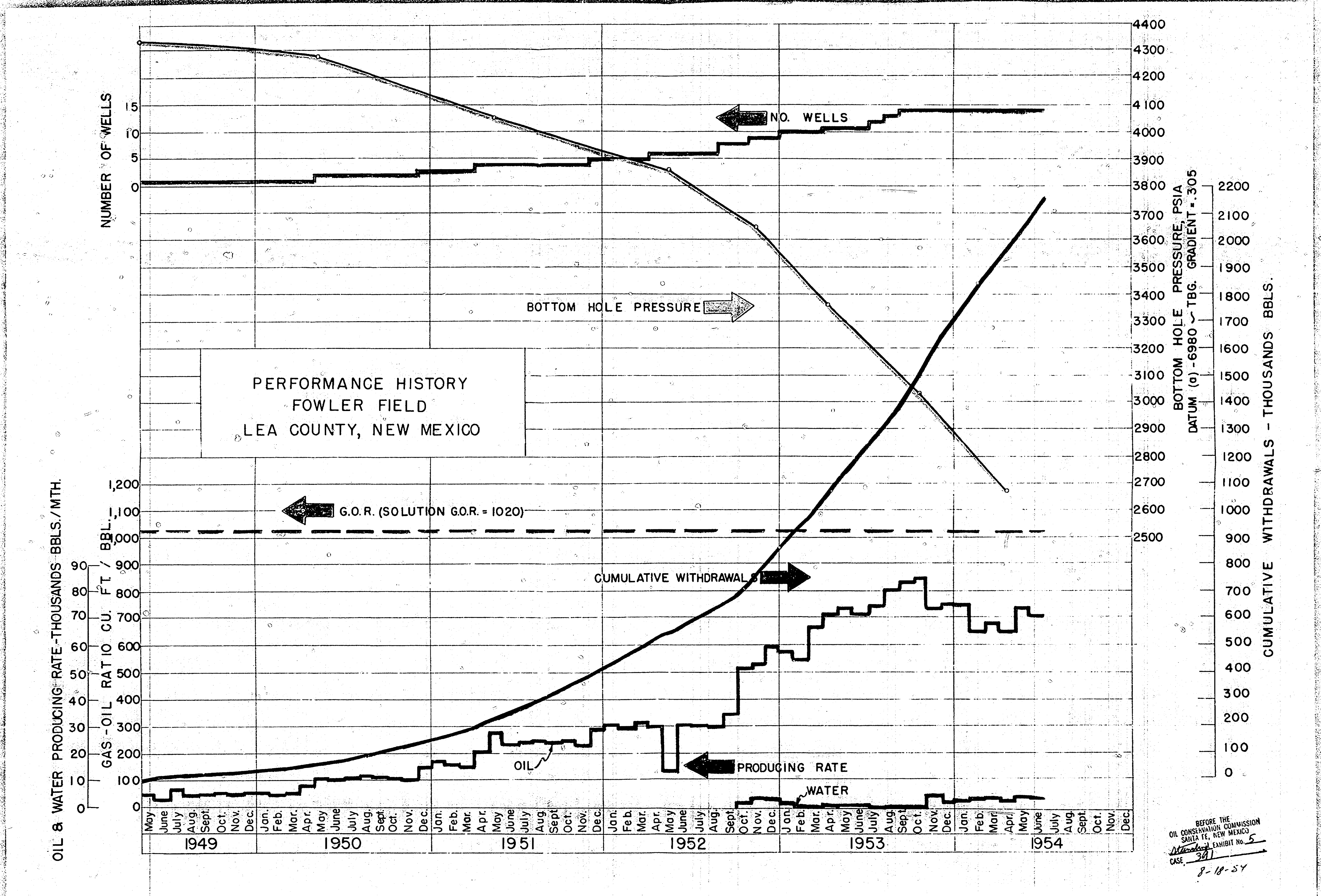

R-37
T
24
N
9
10
11
15
14
22
23
21
28
27
26
U/D
7400
7300
7200
7100
7000
6900
6800
6700
6600
6500
6400
6300
6200
Gulf "Carr"
Humble State "AB"
South Mattix Unit
Humble "Knight"
State "AA"
Sinclair "Jamison"
Gulf "Lillie"
Gulf "Plain-Knight"
-7019
-6788
-7097
-7319
-6666
-6666
-6523
-6398
-7683 Est.
-6766
-6882
-6539
80
180
15
600
20
20
600
120
240
160
1120
20
713
130
240

SUBSURFACE STRUCTURE MAP
CONTOURED ON TOP OF ELLENBURGER
SOUTH MATTIX UNIT
FOWLER POOL
T-24-S R-37-E
Lea County, N. M.

Contour Interval: 100'
Scale: 1"= 1,000'

8-10-53
T. L. I.

Stanolind Oil and Gas Co.



PERFORMANCE HISTORY
FOWLER FIELD
LEA COUNTY, NEW MEXICO

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
Stanolind EXHIBIT No. 5
CASE 391
8-18-54

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# CROSS SECTION B-B'

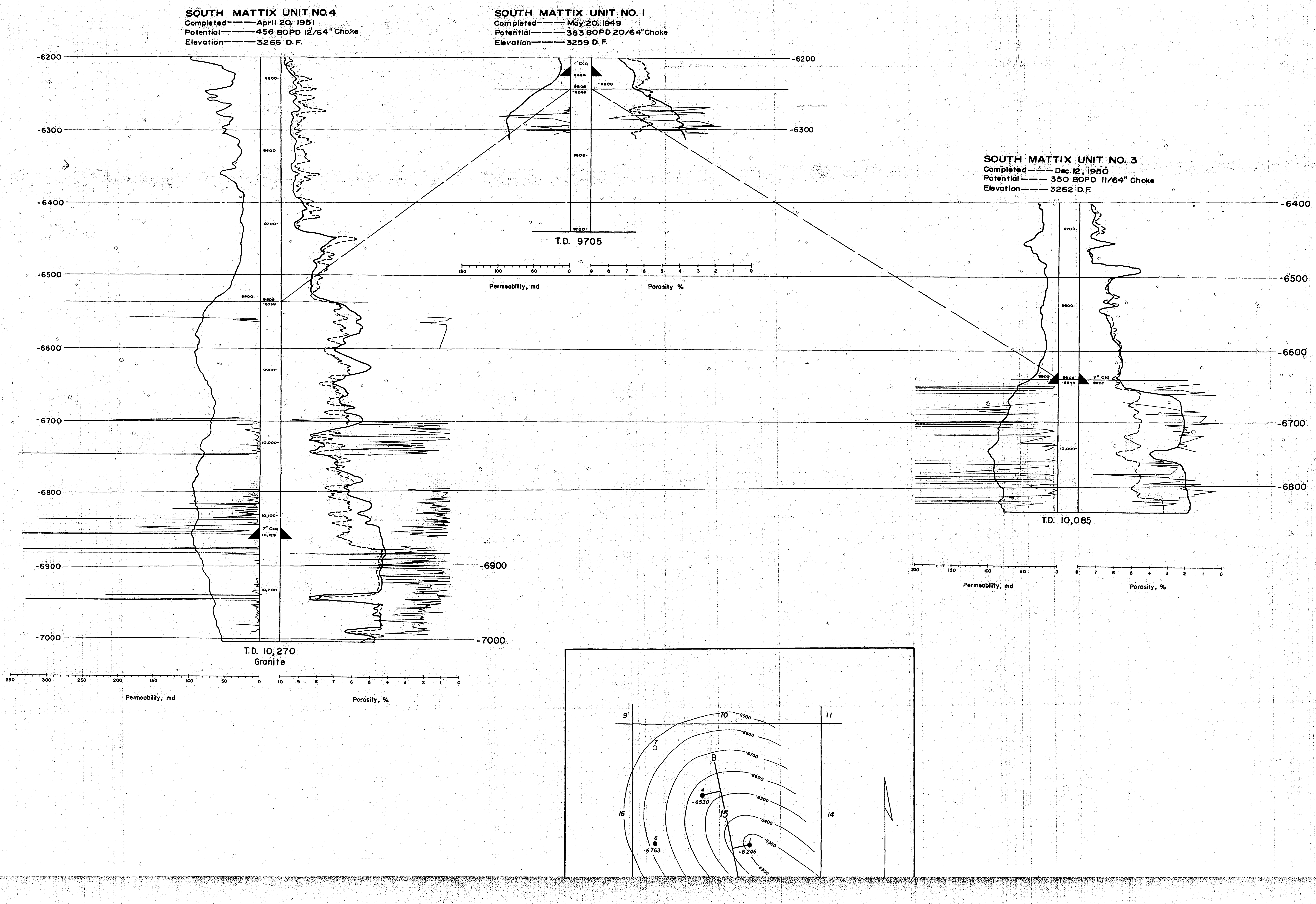
## FOWLER FIELD, LEA COUNTY NEW MEXICO

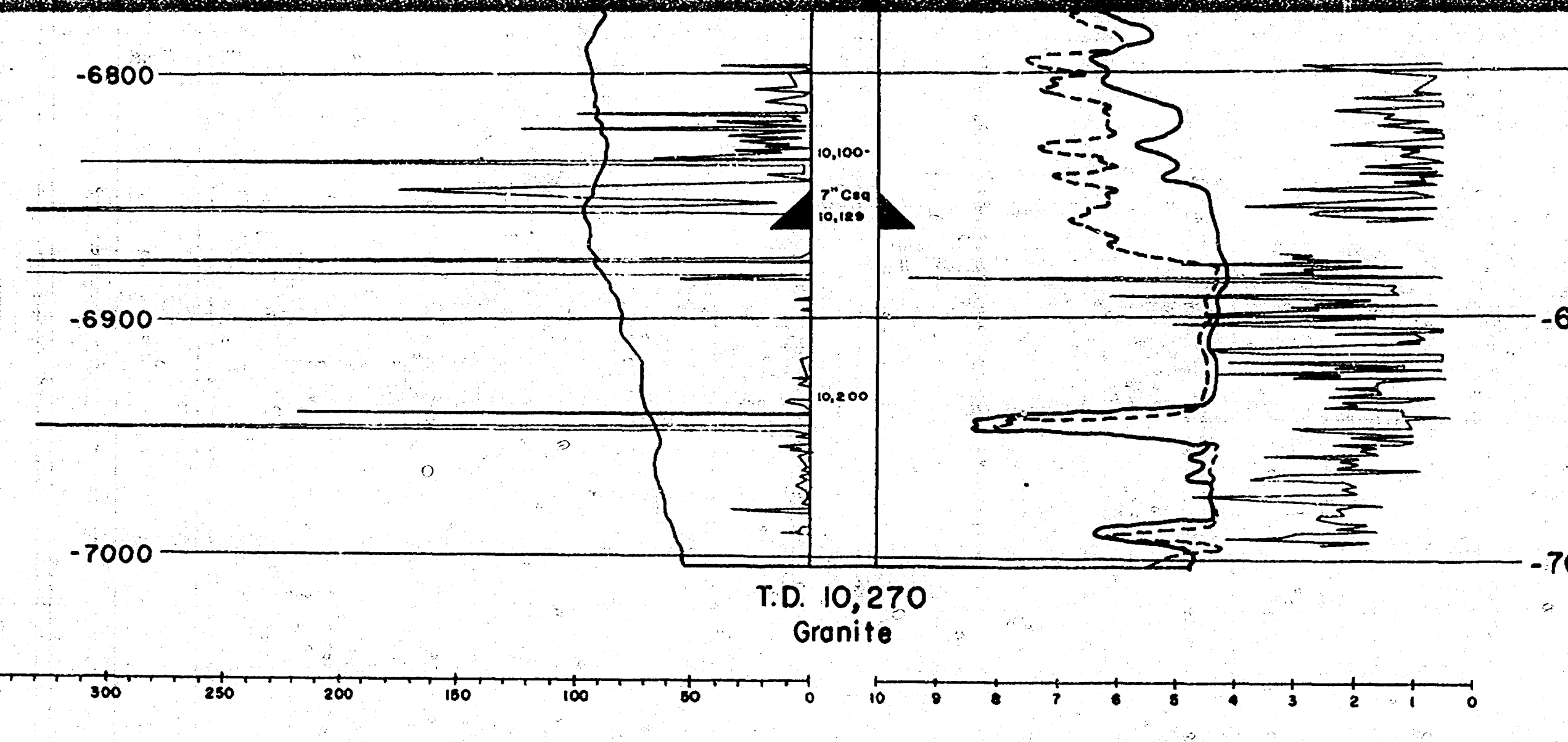
T-24-S; R-37-E

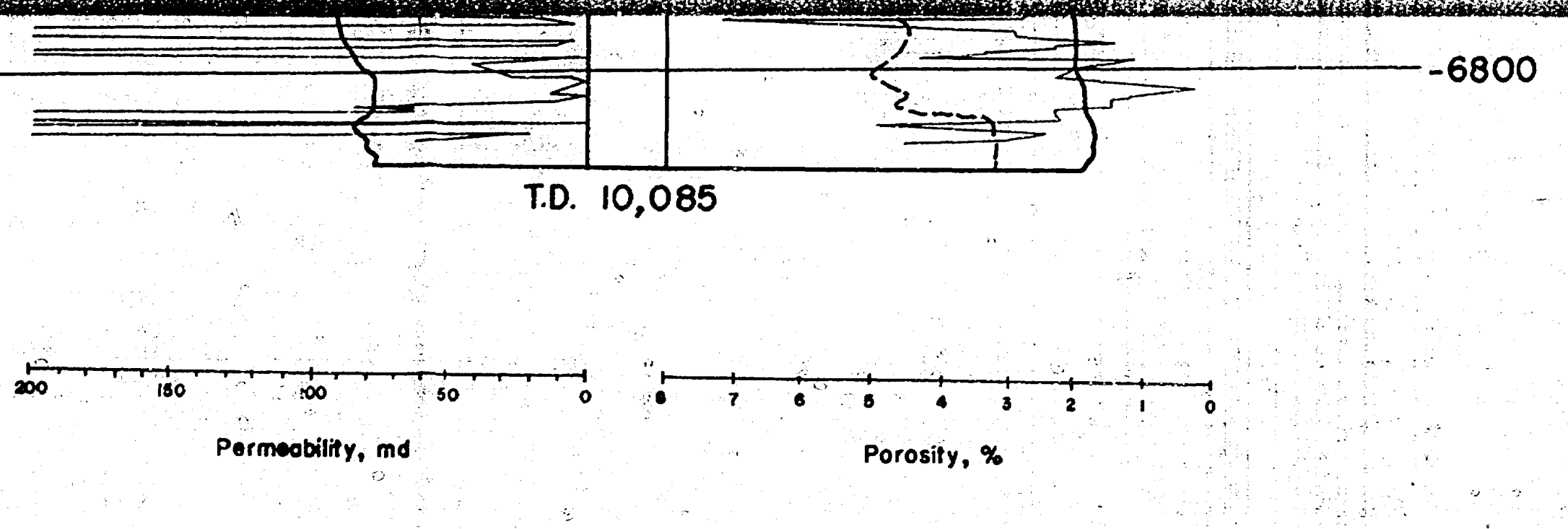
VERTICAL SCALE 2"=100'  HORIZONTAL SCALE 1"=100'

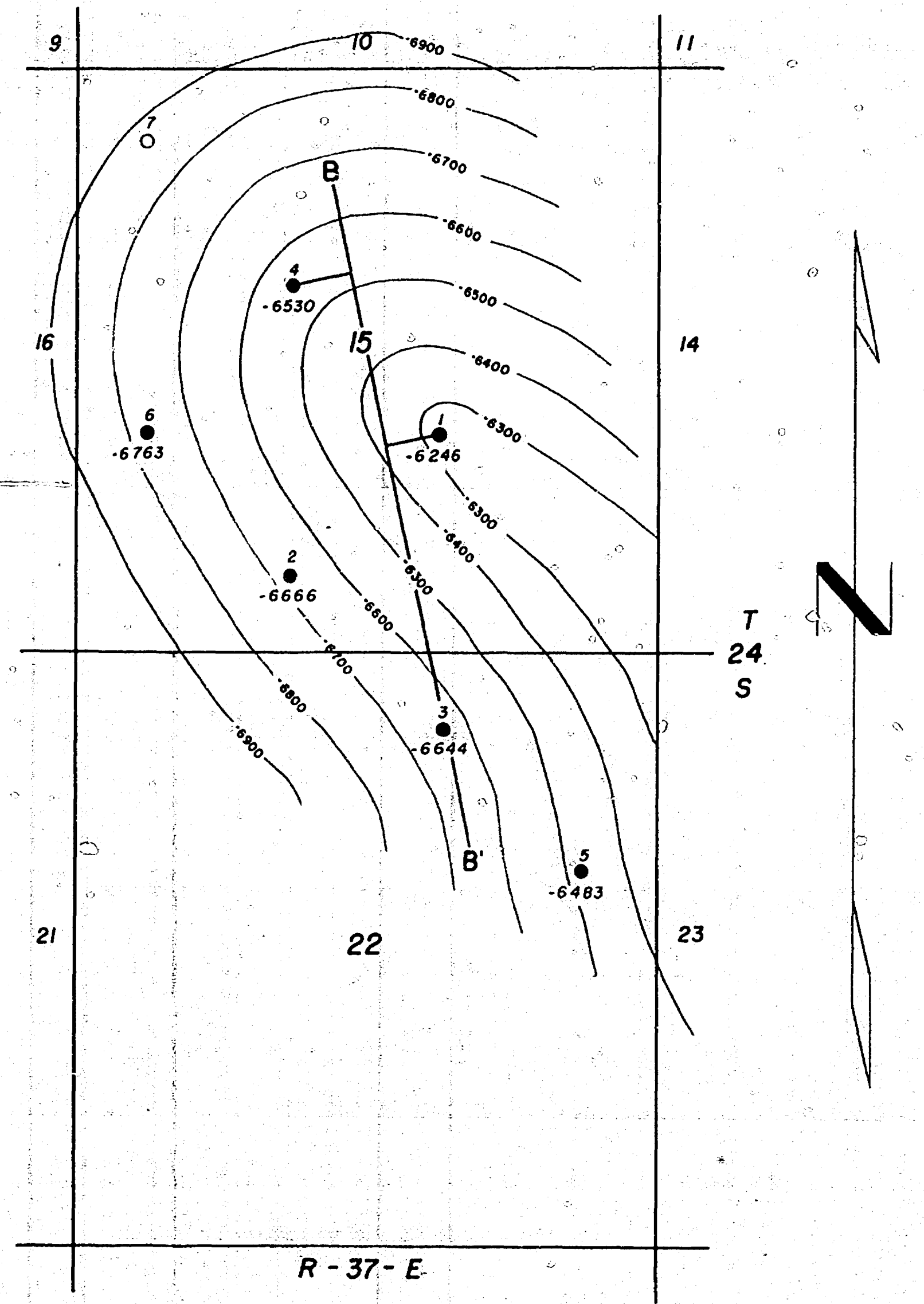
Ex 6
Case 391
Stano

142


SOUTH MATTIX UNIT NO.4
Completed———April 20, 1951
Potential———456 BOPD 12/64" Choke
Elevation———3266 D.F.
SOUTH MATTIX UNIT NO. 1
Completed——— May 20, 1949
Potential———383 BOPD 20/64" Choke
Elevation———3259 D.F.
SOUTH MATTIX UNIT NO. 3
Completed———Dec. 12, 1950
Potential——— 350 BOPD 11/64" Choke
Elevation———3262 D.F.
-6200
-6300
-6400
-6500
-6600
-6700
-6800
-6900
-7000
9500
9600
9700
9800
9900
10,000
10,100
10,200
7" Csg
9458
9506
-6246
-9500
7" Csg
T.D. 10,270
Granite
T.D. 9705
T.D. 10,085
Permeability, md
Porosity, %
350
300
250
200
150
100
50
0
10
9
8
7
6
5
4
3
2
1
9
10
11
16
15
14
B
7
4
-6530
6
-6763
1
-6246
-6900
-6800
-6700
-6600
-6500
-6400
-6300





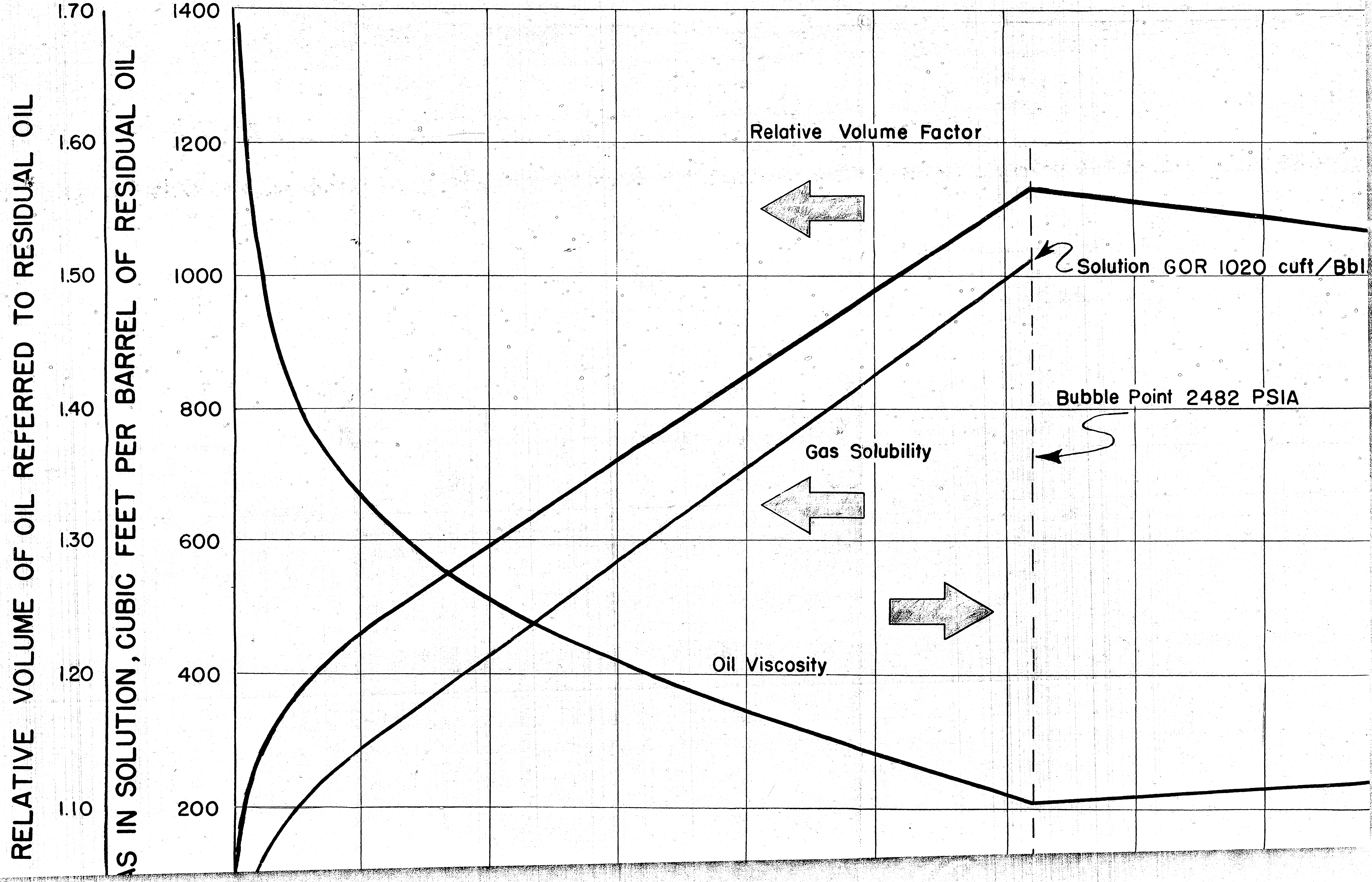

9
10
11
-6900
-6800
-6700
-6600
-6500
-6400
-6300
7
B
4
-6530
16
15
14
6
-6763
1
-6246
-6300
-6400
-6500
2
-6666
-6600
-6700
-6800
-6900
T
24
S
3
-6644
B'
5
-6483
21
22
23
R-37-E

Contoured On Top Of Ellenburger
Coutour Interval = 100'

## ELLENBURGER STRUCTURE MAP
## FOWLER FIELD, LEA COUNTY, NEW MEXICO

# RESERVOIR FLUID CHARACTERISTICS
## FOWLER FIELD
## LEA COUNTY, NEW MEXICO
## SOUTH MATTIX UNIT NO. 1

Exh. No 7
Case 391
RW 8-9-52

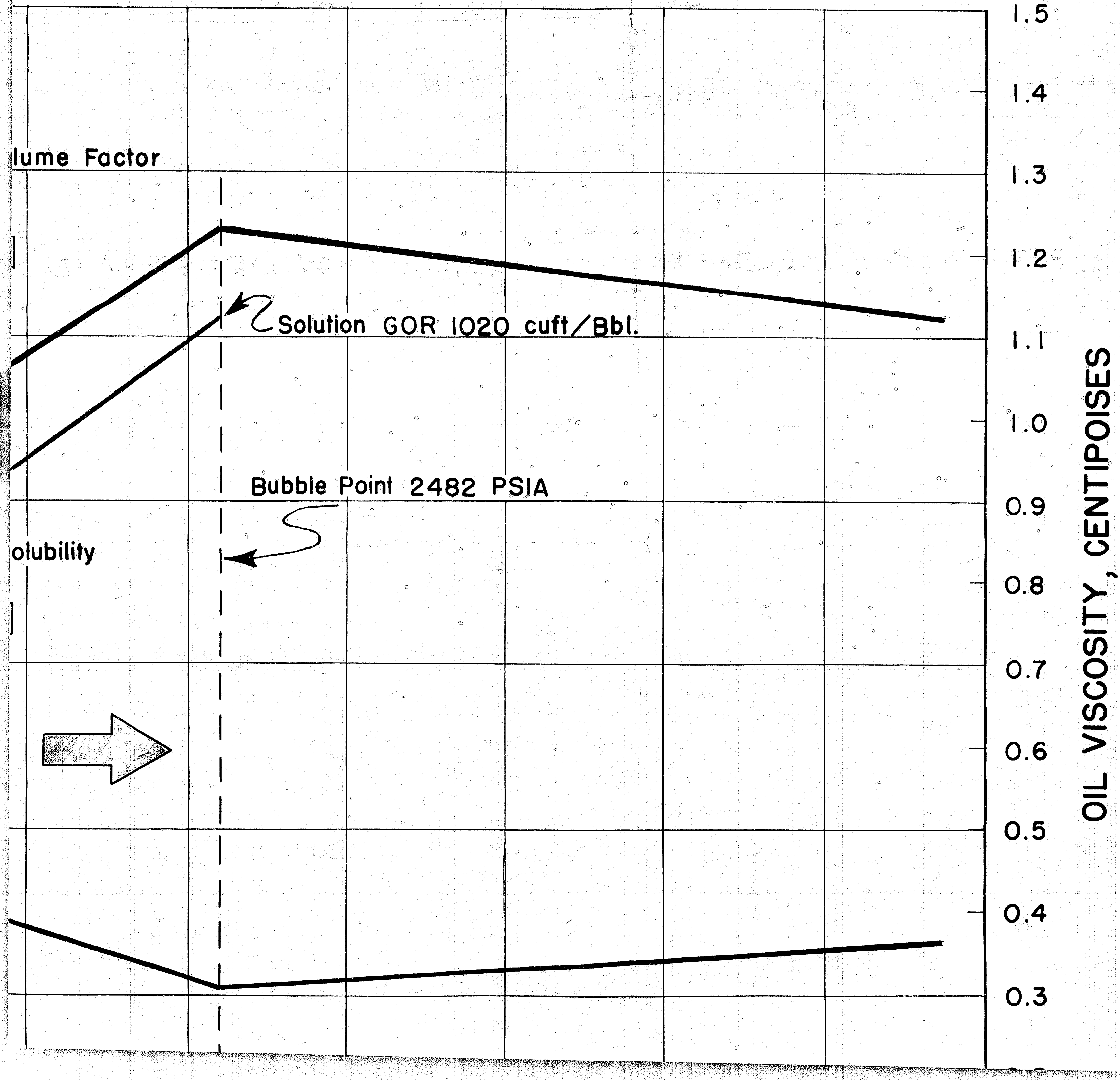


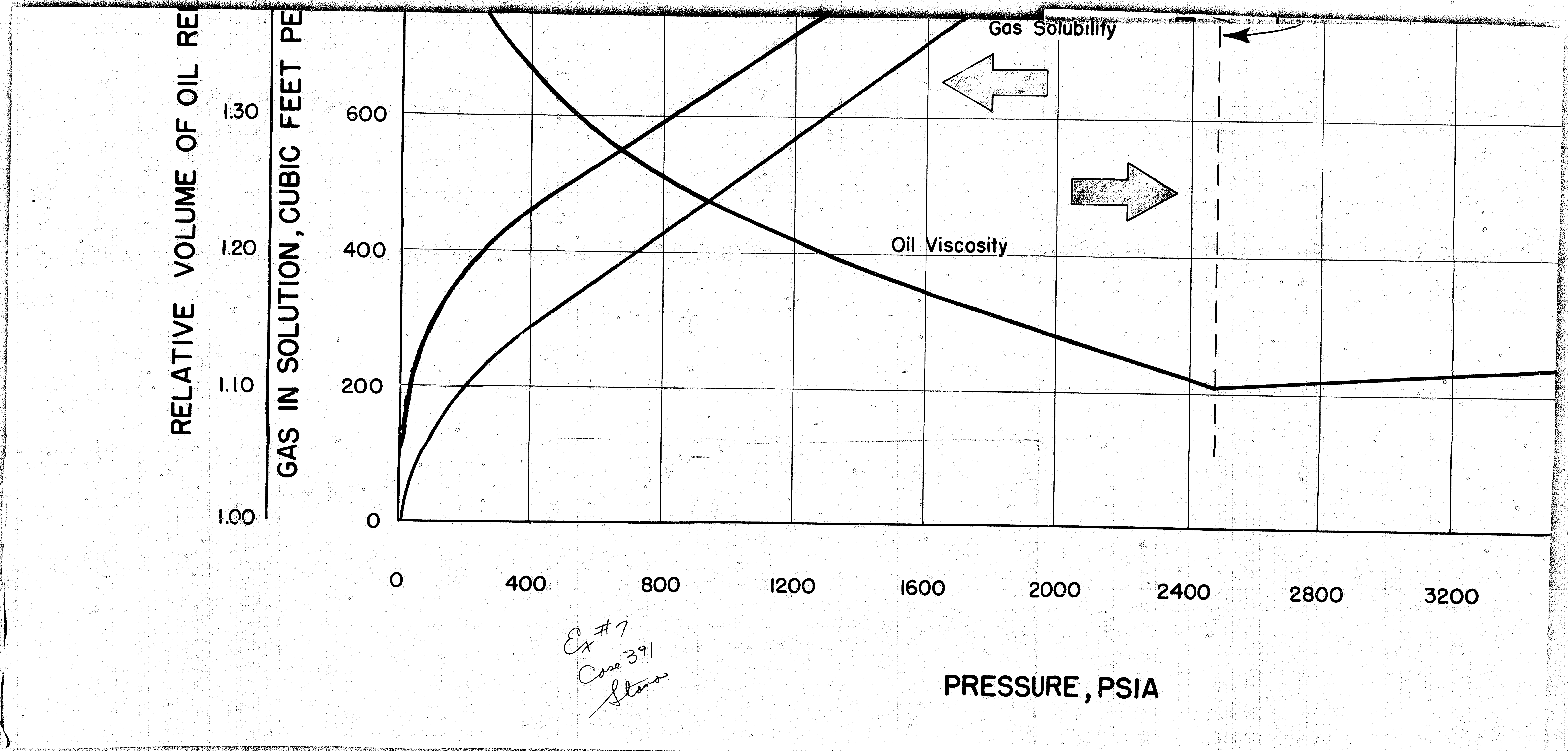
144

LUID CHARACTERISTICS
VLER FIELD
NTY, NEW MEXICO
ATTIX UNIT NO. I

Exh. No 7
Case 391
RW 8-9-52

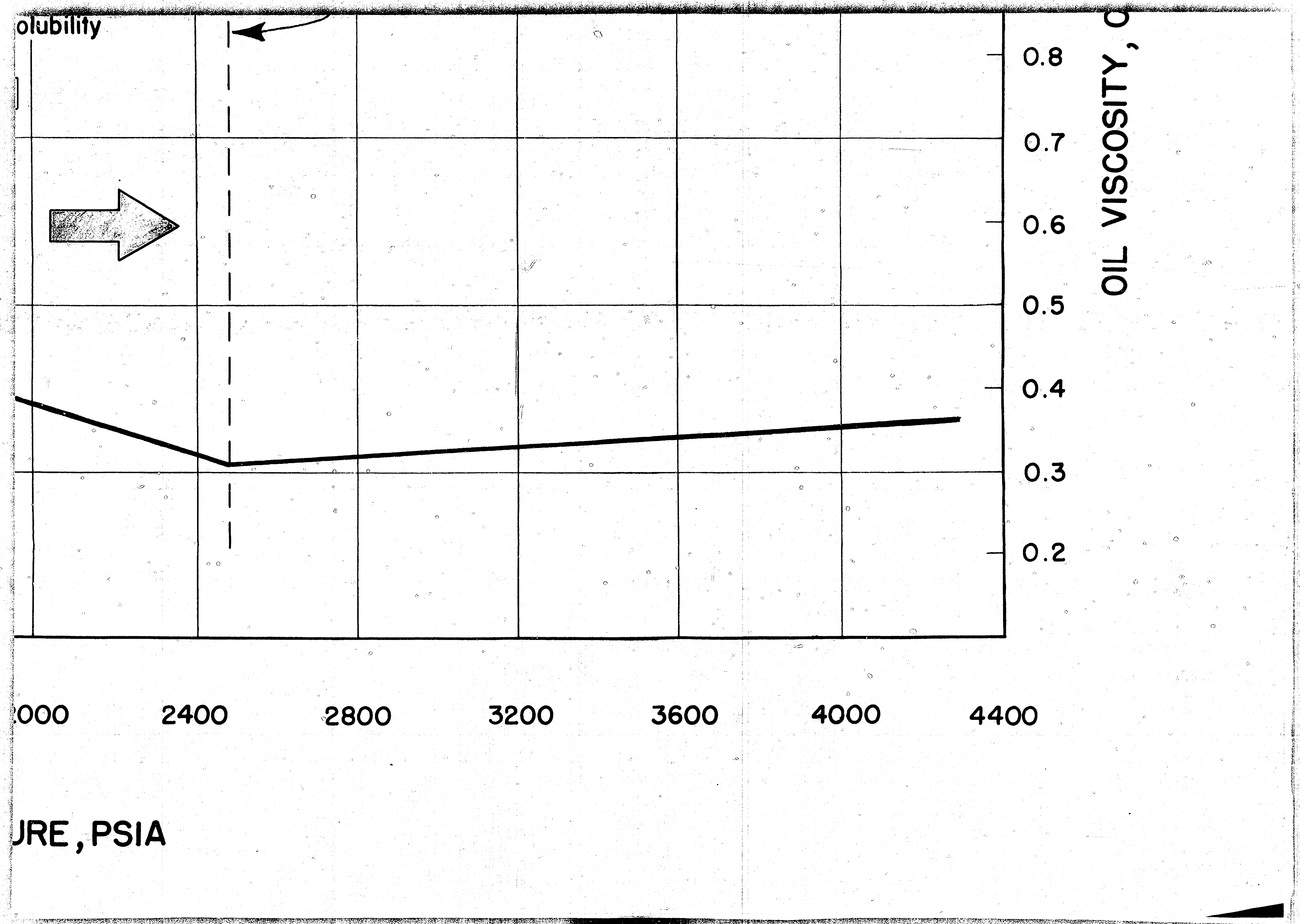
145



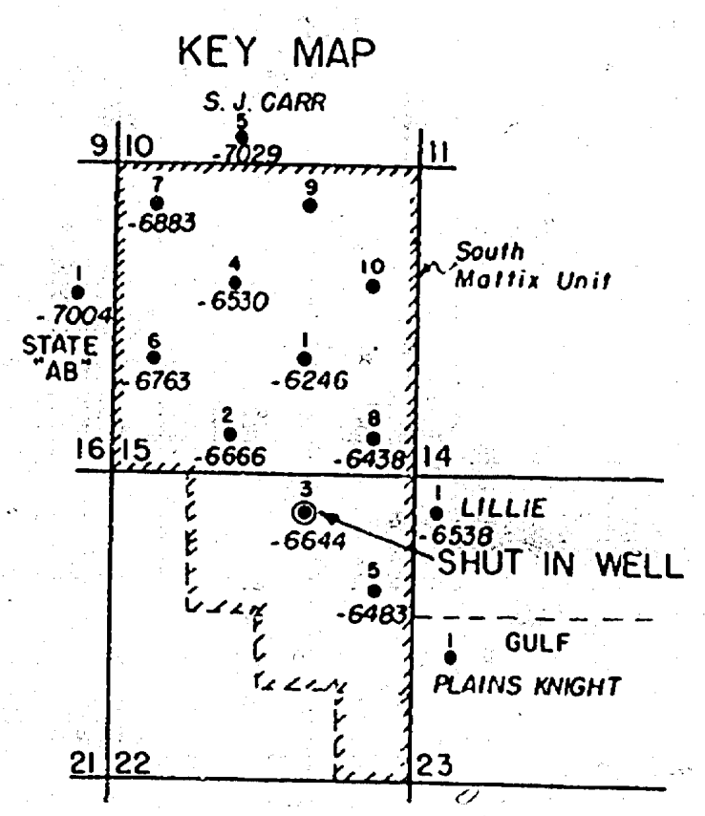


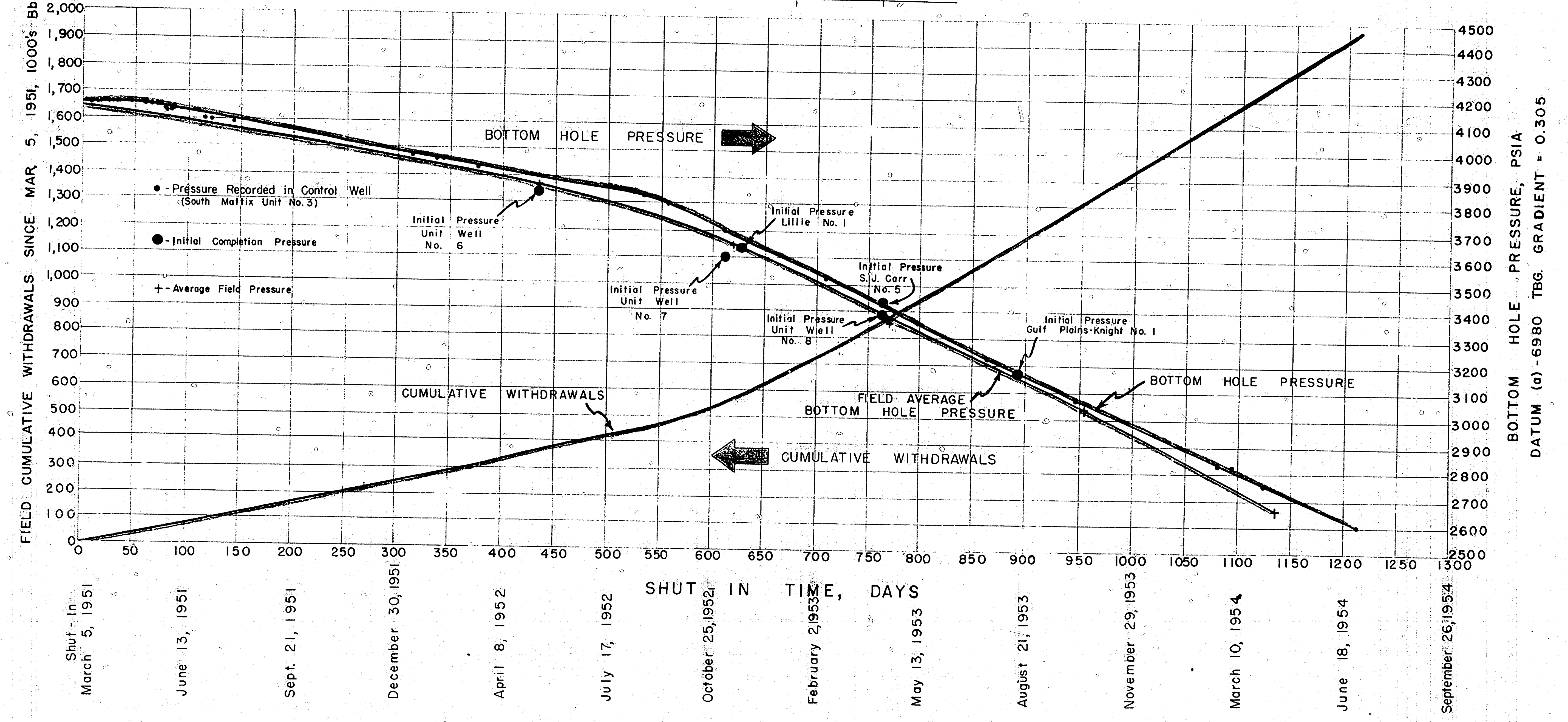
Ex #7
Case 391
Stano

146


olubility
OIL VISCOSITY, C
0.8
0.7
0.6
0.5
0.4
0.3
0.2
,000
2400
2800
3200
3600
4000
4400
JRE, PSIA

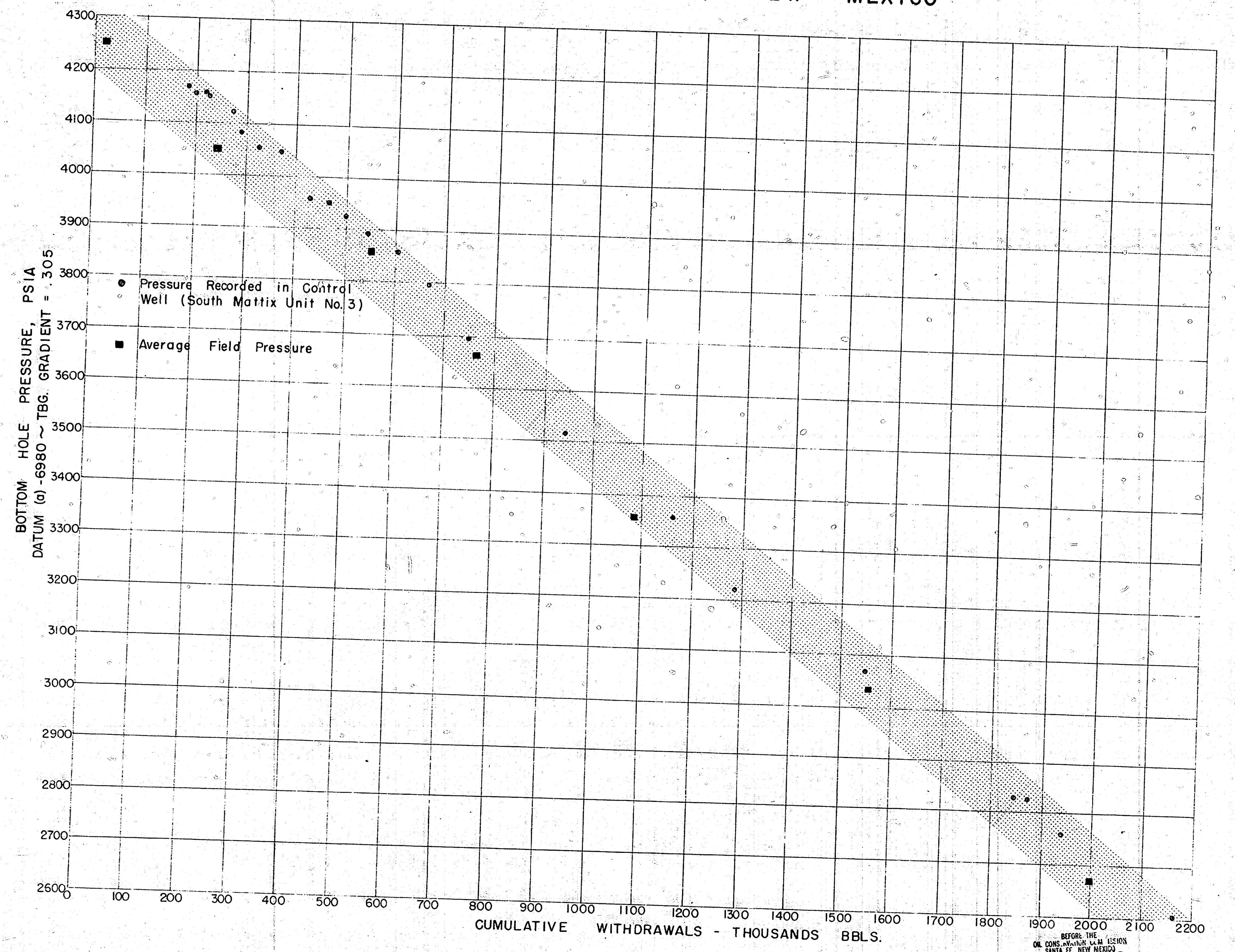
# INTERFERENCE TEST DATA
# FOWLER FIELD, LEA COUNTY, NEW MEXICO
# BOTTOM HOLE PRESSURE SOUTH MATTIX NO. 3
# & CUMULATIVE WITHDRAWALS TOTAL FIELD
# VS. SHUT-IN TIME


KEY MAP
S. J. CARR
5
-7029
9
10
11
7
-6883
9
South Mattix Unit
4
-6530
10
1
-7004
STATE "AB"
6
-6763
1
-6246
2
-6666
8
-6438
16
15
14
3
-6644
1
LILLIE
-6538
SHUT IN WELL
5
-6483
1
GULF
PLAINS KNIGHT
21
22
23

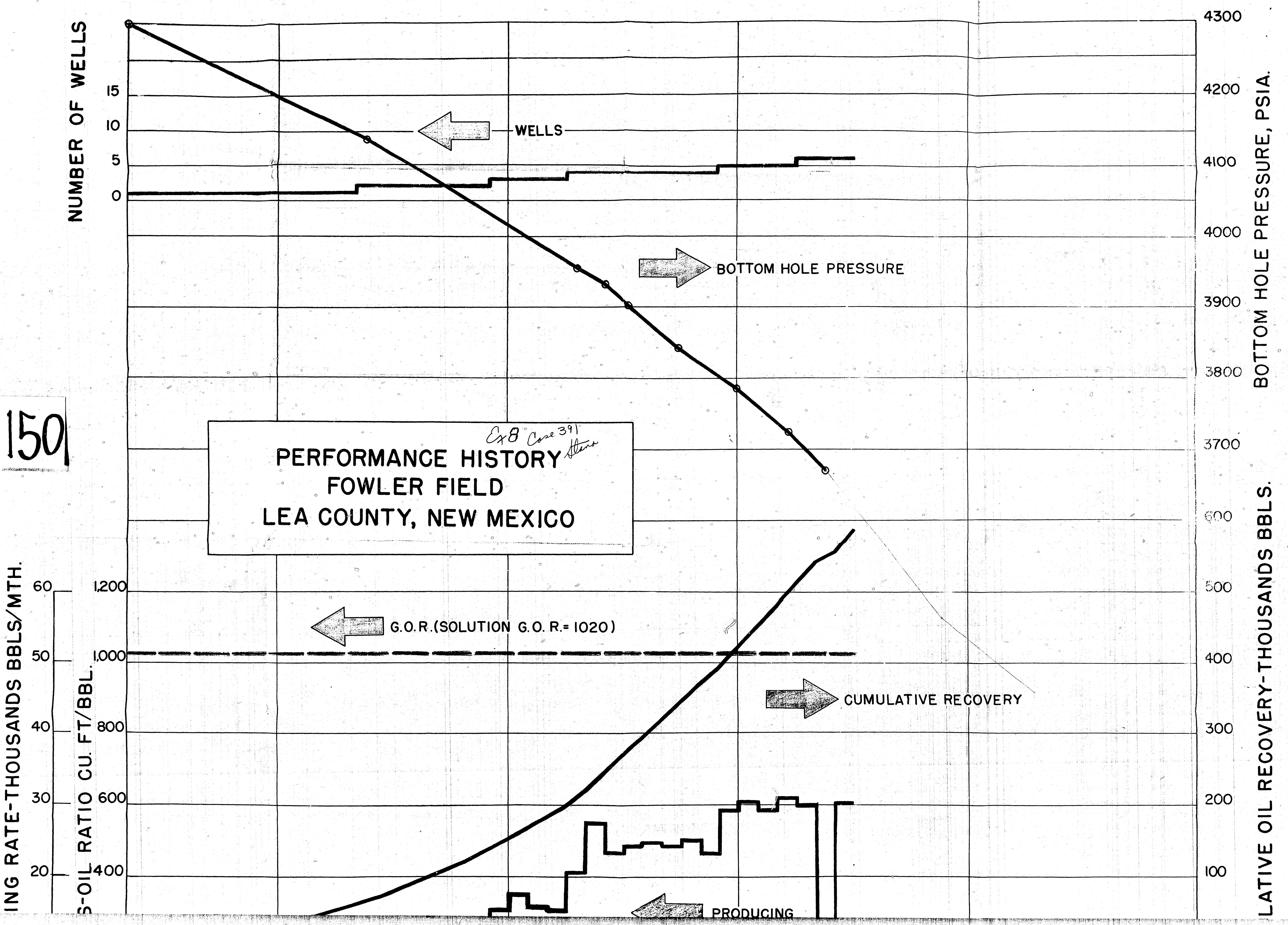


BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
Stanolind EXHIBIT No. 7
CASE 391

# BOTTOM HOLE PRESSURE VS. CUMULATIVE WITHDRAWALS – FOWLER FIELD, LEA COUNTY, NEW MEXICO

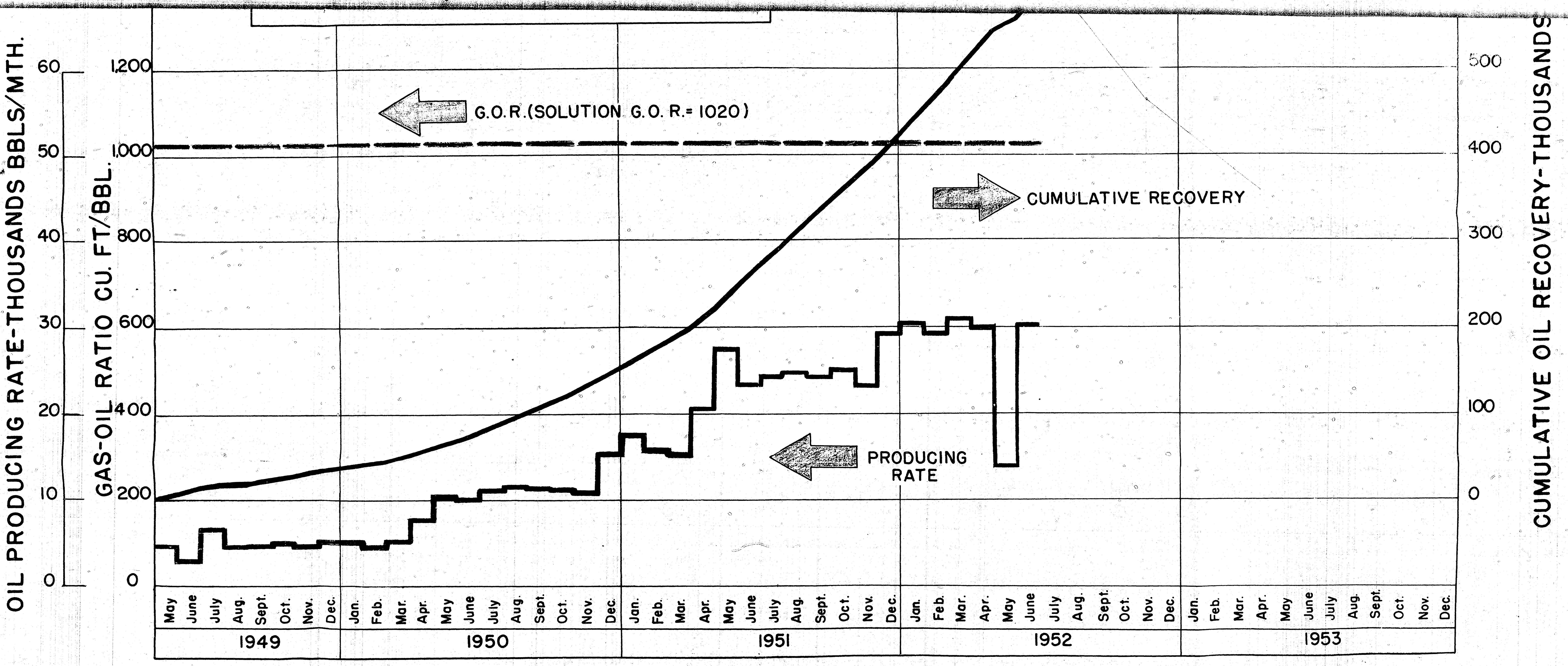


BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
Stanolind EXHIBIT No. 8
CASE 391



# PERFORMANCE HISTORY FOWLER FIELD LEA COUNTY, NEW MEXICO

Ex 8 Case 391 Steno


OIL PRODUCING RATE-THOUSANDS BBLS/MTH.
0
10
20
30
40
50
60
GAS-OIL RATIO CU. FT/BBL.
0
200
400
600
800
1,000
1,200
CUMULATIVE OIL RECOVERY-THOUSANDS
0
100
200
300
400
500
G.O.R. (SOLUTION G.O.R.= 1020)
CUMULATIVE RECOVERY
PRODUCING RATE
May
June
July
Aug.
Sept.
Oct.
Nov.
Dec.
1949
Jan.
Feb.
Mar.
Apr.
May
June
July
Aug.
Sept.
Oct.
Nov.
Dec.
1950
Jan.
Feb.
Mar.
Apr.
May
June
July
Aug.
Sept.
Oct.
Nov.
Dec.
1951
Jan.
Feb.
Mar.
Apr.
May
June
July
Aug.
Sept.
Oct.
Nov.
Dec.
1952
Jan.
Feb.
Mar.
Apr.
May
June
July
Aug.
Sept.
Oct.
Nov.
Dec.
1953

# SUMMARY OF PRODUC

FOWLER FIELD, LEA C

| WELL NO. | OIL STRING CASING | PRODUCING INTERVAL | LENGTH OF PROD. INT. | EST. FORMATION THICKNESS. | % PAY EXPOSED TO WELL BORE | MEASURED P.I. BBLS/DAY/PSI |
|---|---|---|---|---|---|---|
| 1 | 7" @9486 | OPEN HOLE<br>9505 - 9705 | 200' | 400' | 50 | 1.1 |
| 2 | 7" @10,250 | OPEN HOLE<br>10,250 - 10,305 | 55' | 400' | 14 | 0.5 |
| 3 | 7" @9907 | OPEN HOLE<br>9,907 - 10,085 | 178' | 400' | 45 | - - |
| 4 | 7" @10,129 | OPEN HOLE<br>10,129 - 10,270 | 141' | 470' | 30 | 10.0 |
| 5 | 7" @10,427 | CSG. PERF.<br>10,250 - 10,300 | 50' | 585' | 9 | 0.4 |
| 6 | 5 1/2" @10,543 | CSG. PERF.<br>10,320 - 10,360 | 40' | 453' | 9 | 2.7 |

* Qo/Q ( PRODUCING CAPACITY OF COMPLETELY PENETRATING WELL ) / ( PRODUCING CAPACITY OF PARTIALLY PENETRATING WELL )

** ONLY NINE FEET OF CONVENTIONAL CORE RECOVERED AND ANALYSED OUT OF 200 FEET OF SECTION DRILLED.

SAMPLE CAL

K = (PI)(u)(
.(.C

# SUMMARY OF PRODUCTIVITY INDEX TESTS

## FOWLER FIELD, LEA COUNTY NEW MEXICO

| XPOSED L BORE | MEASURED P.I. BBLS / DAY / PSI | CORRECTION FACTOR $Q_o / Q$ * | CORRECTED P.I. (FULL SECTION EXPOSED) BBLS / DAY / PSI | AVERAGE PERMEABILITY, MD. FROM P.I. TEST. | AVERAGE PERMEABILITY, MD. FROM CORE ANALYSIS |
|---|---|---|---|---|---|
| 0 | 1.1 | 1.8 | 2.1 | 2.52 | 31.2 ** |
| 4 | 0.5 | 5.3 | 2.6 | 3.28 | - - |
| 5 | - - | - - | - - | - - | 408 |
| 0 | 10.0 | 3.1 | 31.0 | 32.50 | 37.6 |
| 9 | 0.4 | 10.0 | 4.0 | 3.47 | 4.1 |
| 9 | 2.7 | 10.0 | 27.0 | 29.3 | - - |

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### SAMPLE CALCULATION

$$K = \frac{(PI)(u)(RVF)(\log re / rw)}{(.00307)(h)}$$

(Where) K = permeability, md.

PI = productivity index, bbls / day / psi.

RVF = reservoir volume factor bbl / bbl

re = half the distance between wells, ft.

rw = well bore radius, ft.

h = thickness of producing section, ft.

* Qo/Q ( PRODUCING CAPACITY OF COMPLETELY PENETRATING WELL ) / ( PRODUCING CAPACITY OF PARTIALLY PENETRATING WELL )

** ONLY NINE FEET OF CONVENTIONAL CORE RECOVERED AND ANALYSED OUT OF 200 FEET OF SECTION DRILLED.

## SAMPLE CAL

K = (PI)(u)( / (.C

(Where) K = permeability

PI = productivity

RVF = reservoir vo

re = half the d

rw = well bore

h = thickness of

K = (31.0)(0.3 / (0.0C

K = 32.5 md.

154

Ex. 9
Case 391

## SAMPLE CALCULATION

$$K = \frac{(PI)(u)(RVF)(\log re / rw)}{(.00307)(h)}$$

K = permeability, md.

PI = productivity index, bbls / day / psi.

RVF = reservoir volume factor bbl / bbl

re = half the distance between wells, ft.

rw = well bore radius, ft.

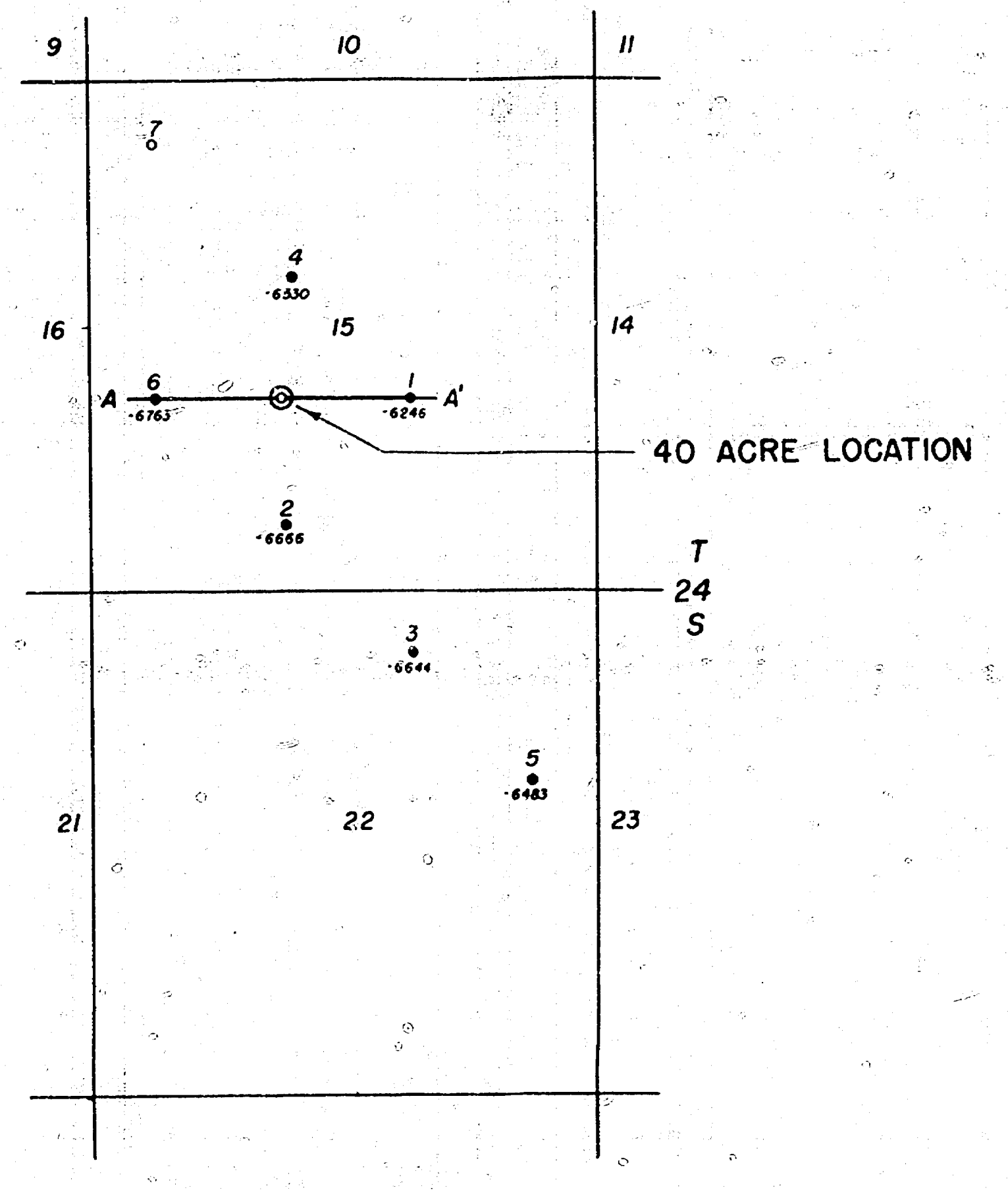
h = thickness of producing section, ft.

$$K = \frac{(31.0)(0.35)(1.5)(2.88)}{(0.00307)(470)}$$

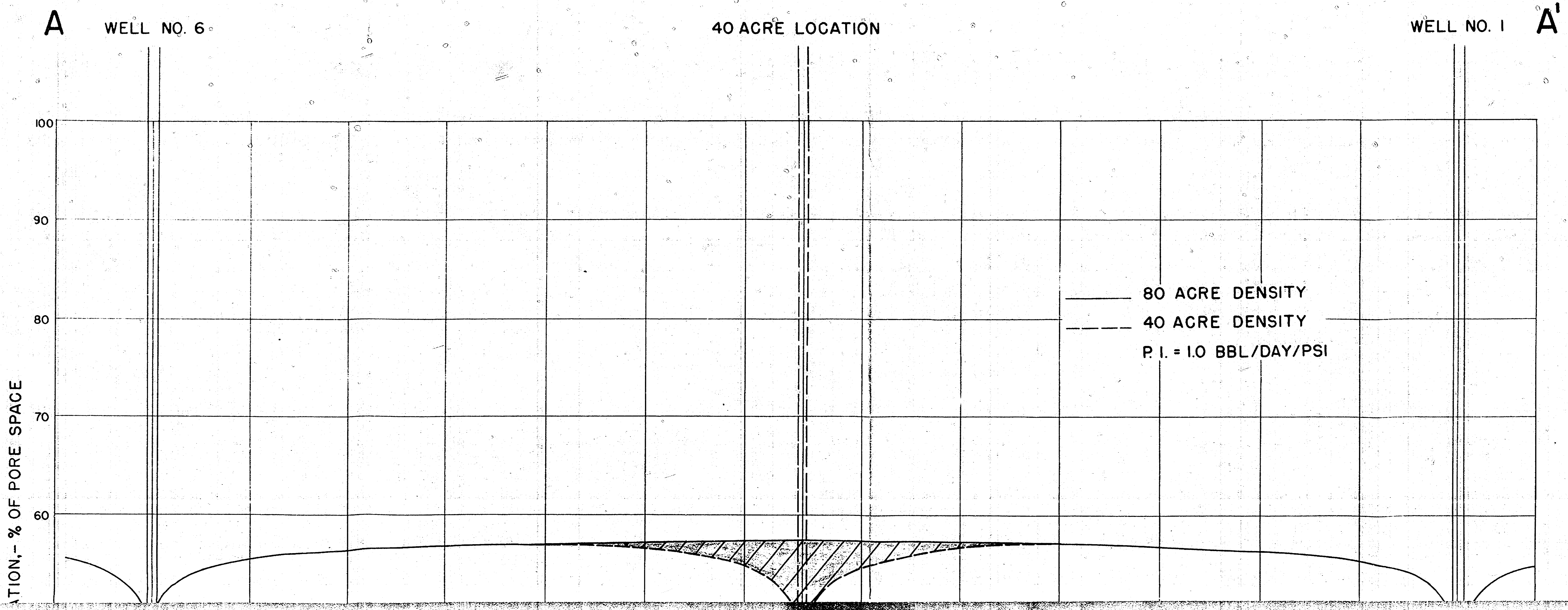
K = 32.5 md.

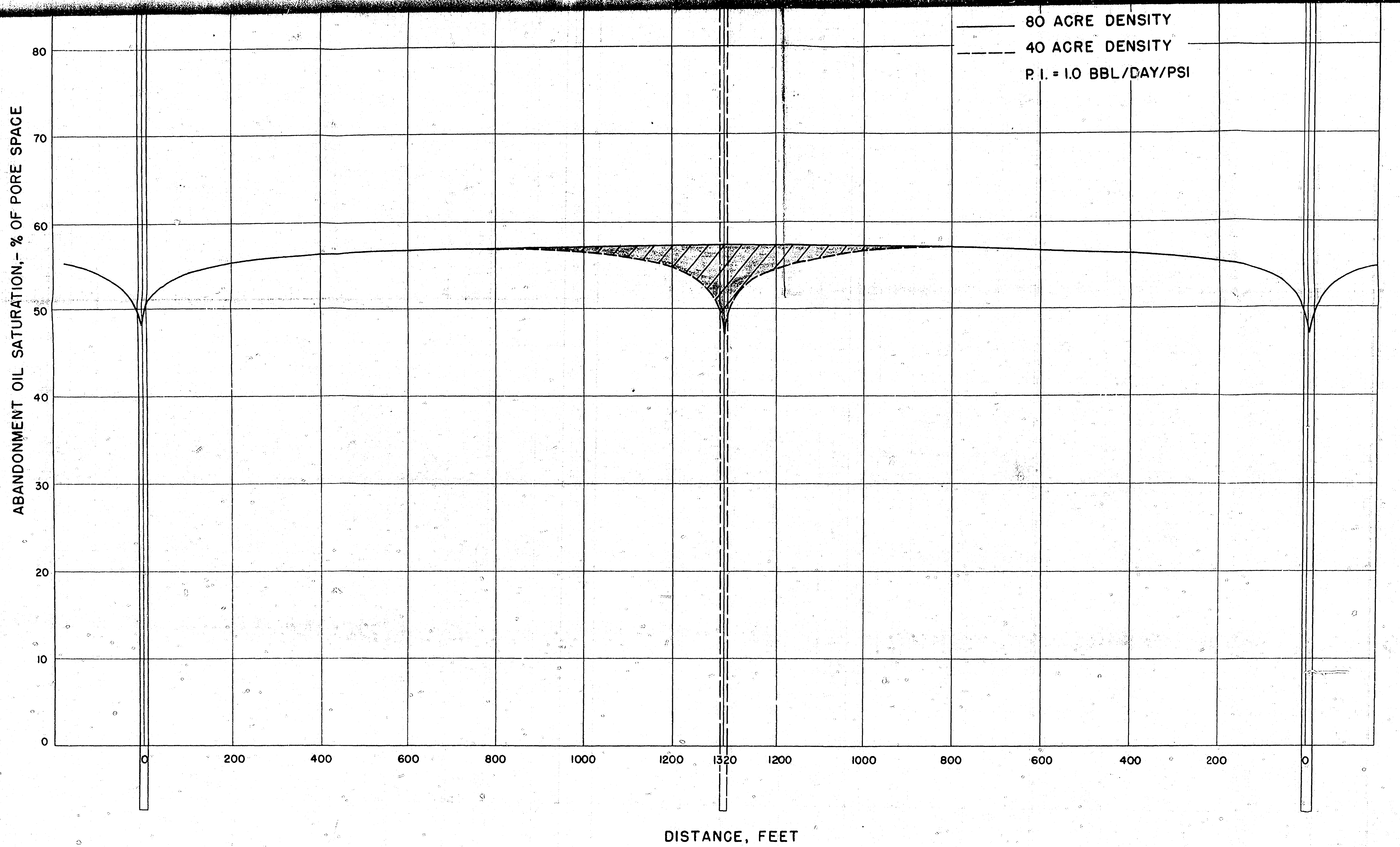
#10
Case 391

# OIL SATURATION DISTRIBUTION
# AT ABANDONMENT CONDITIONS
# FOWLER FIELD, LEA COUNTY, NEW MEXICO


9
10
11
7
4
-6330
16
15
14
A
6
-6763
1
-6246
A'
40 ACRE LOCATION
2
-6666
T
24
S
3
-6644
5
-6483
21
22
23

KEY MAP





CALCULATED VARIATION IN RECOVERY EFFICIENCY WITH WELL DENSITY AND P.I.

| | RECOVERY, % OF ORIGINAL OIL IN PLACE | |
|---|---|---|
| WELL DENSITY | P. I. = 1.0 | P.I. = 10.0 |
| 40 ACRES | 31.82 | 35.42 |
| 80 ACRES | 31.18 | 35.34 |

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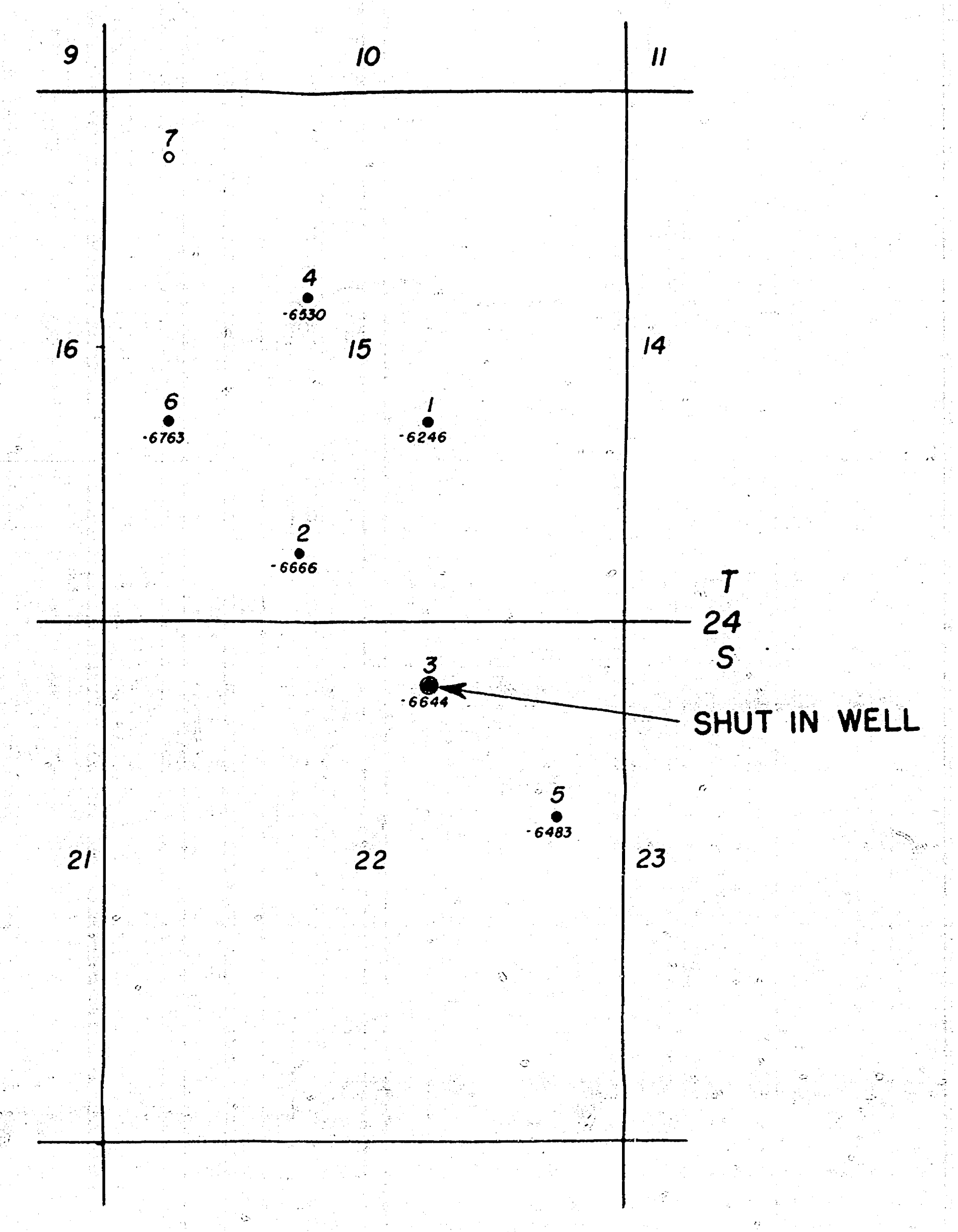
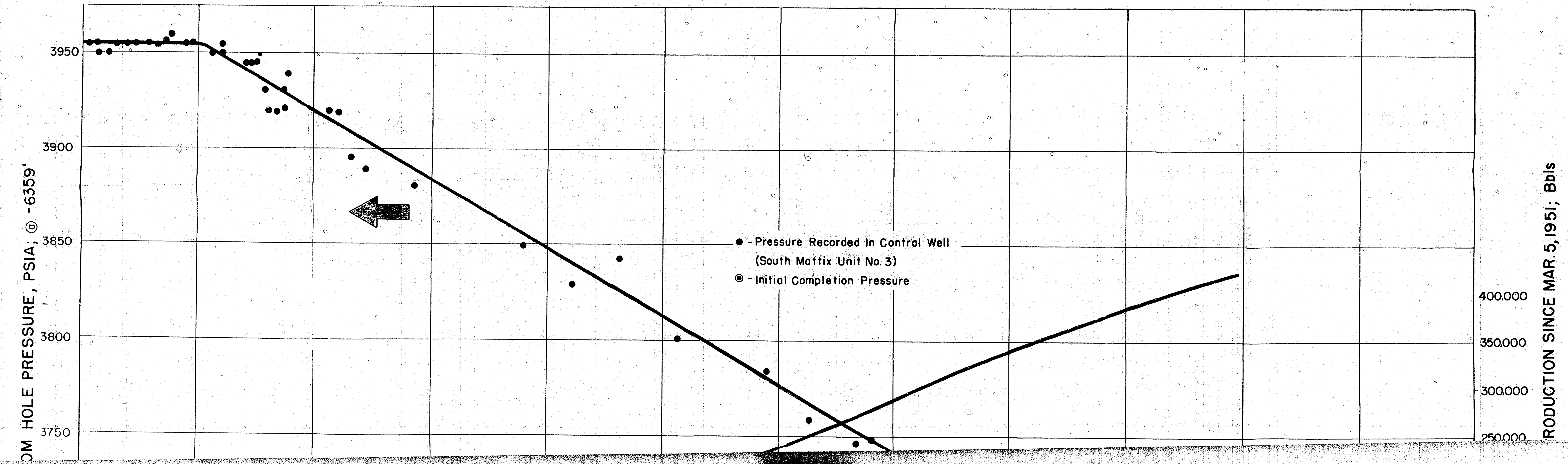
Case 391
Stano

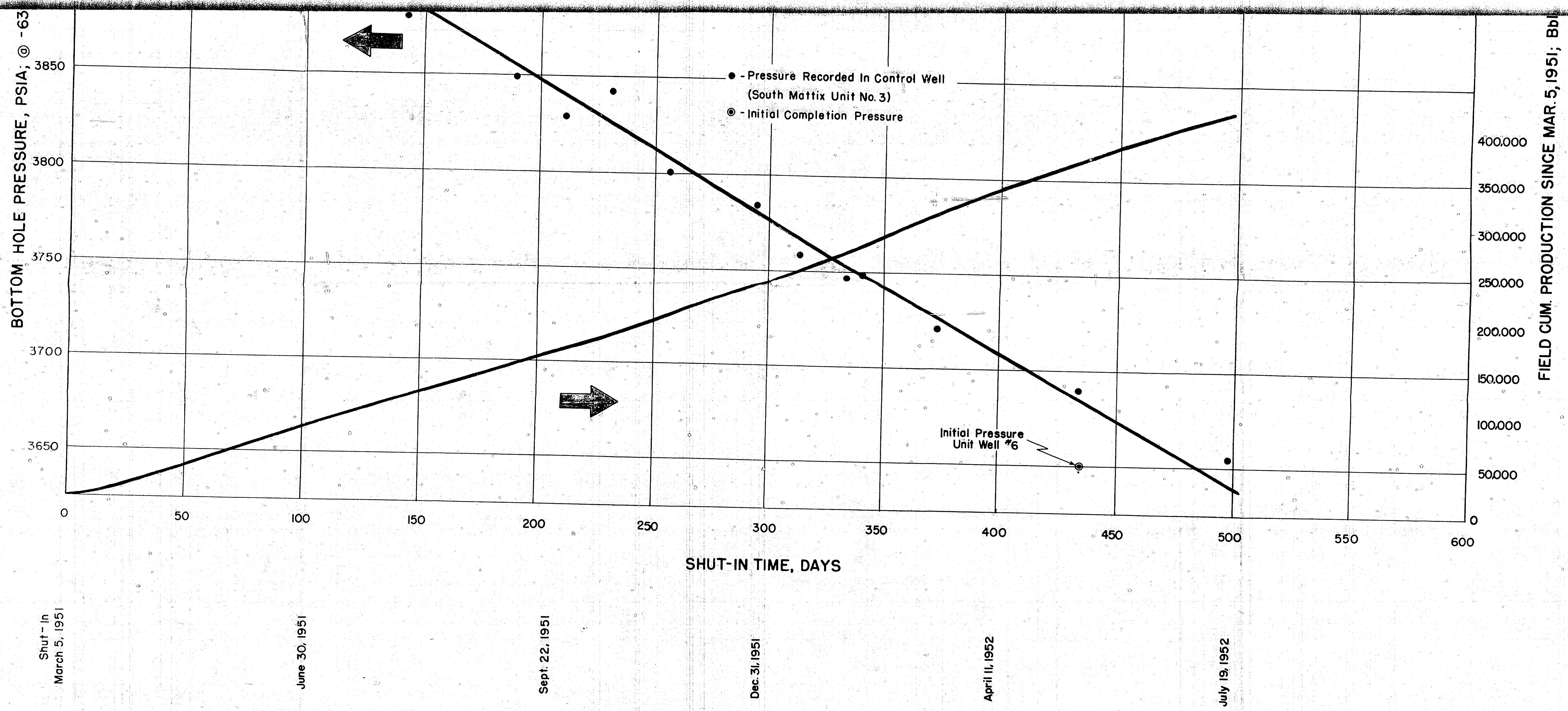
# INTERFERENCE TEST DATA
# FOWLER FIELD, LEA COUNTY, NEW MEXICO
# BOTTOM HOLE PRESSURE SOUTH MATTIX NO. 3
# & CUMULATIVE PRODUCTION TOTAL FIELD
# VS. SHUT-IN TIME


9
10
11
7
4
-6530
16
15
14
6
-6763
1
-6246
2
-6666
T
24
S
3
-6644
SHUT IN WELL
5
-6483
21
22
23

KEY MAP



158


BOTTOM HOLE PRESSURE, PSIA; @ -63
3850
3800
3750
3700
3650
FIELD CUM. PRODUCTION SINCE MAR. 5, 1951; Bbl
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
● - Pressure Recorded In Control Well (South Mattix Unit No. 3)
◉ - Initial Completion Pressure
Initial Pressure Unit Well #6
0
50
100
150
200
250
300
350
400
450
500
550
600
SHUT-IN TIME, DAYS
Shut-In March 5, 1951
June 30, 1951
Sept. 22, 1951
Dec. 31, 1951
April 11, 1952
July 19, 1952

Ex 12
Case 391
Stano

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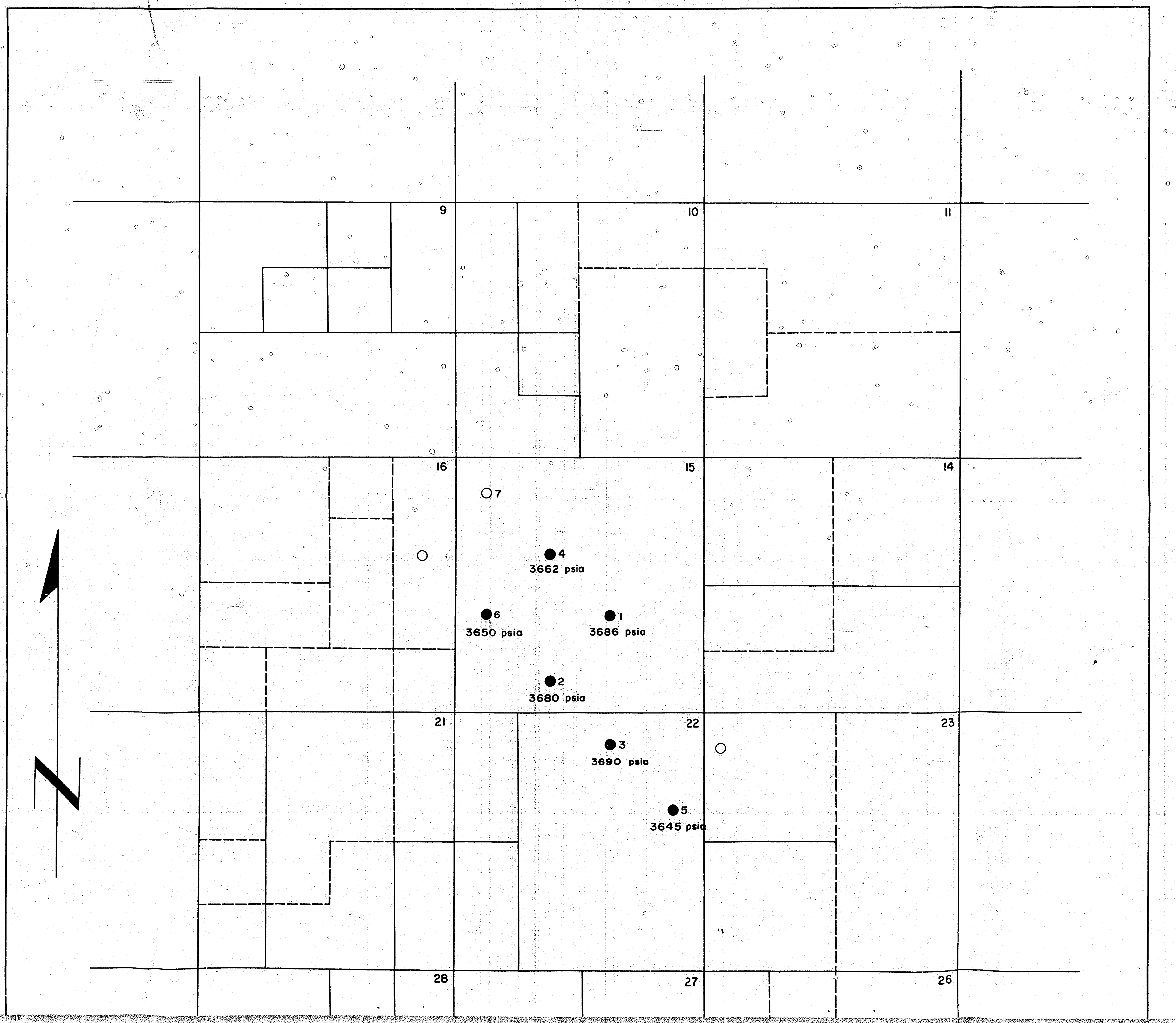
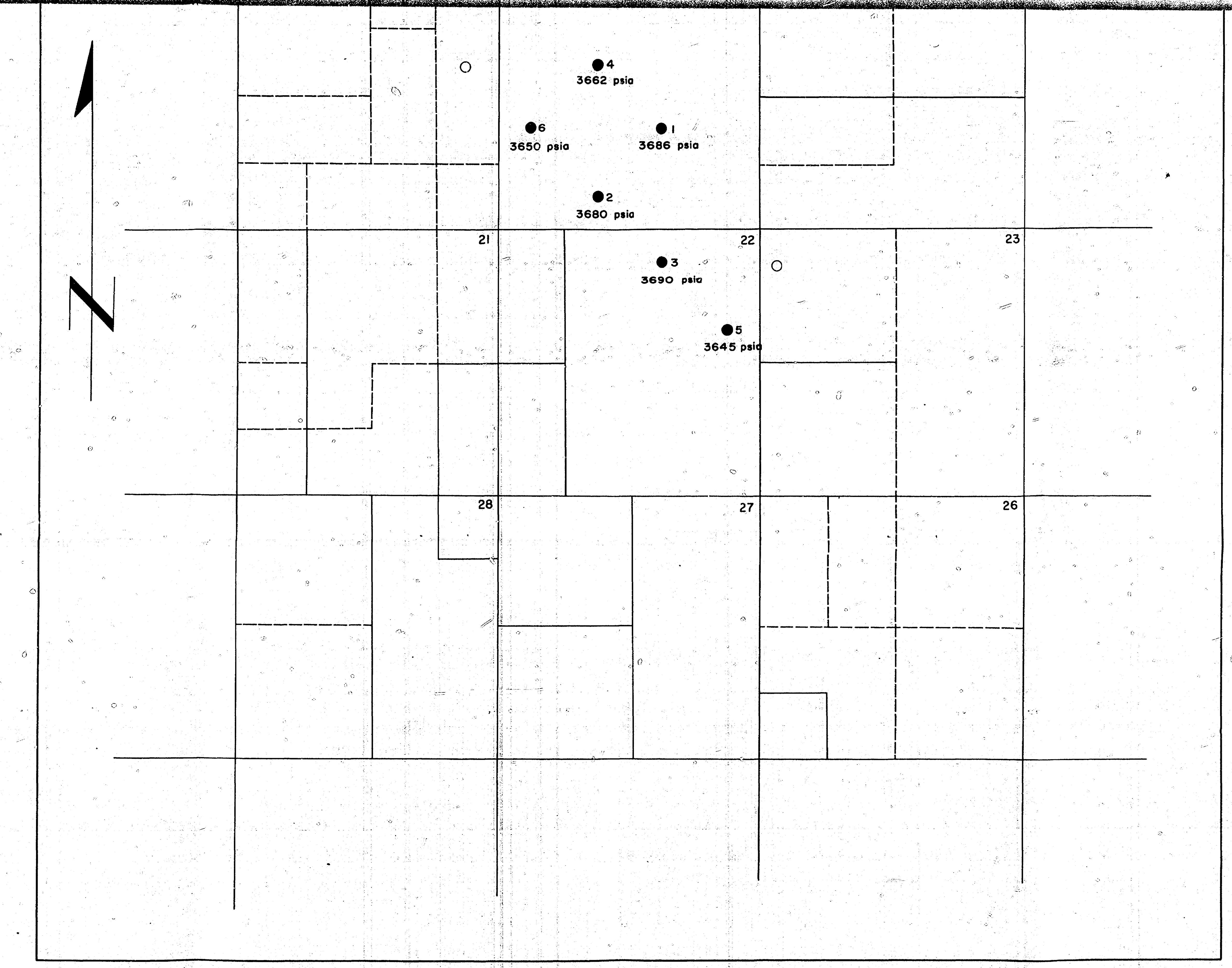
# FOWLER FIELD
LEA COUNTY, NEW MEXICO
BOTTOM HOLE PRESSURE SURVEY
MAY 12-15, 1952
DATUM @ -6359 FT.


9
10
11
16
15
14
7
4
3662 psia
6
3650 psia
1
3686 psia
2
3680 psia
21
22
23
3
3690 psia
5
3645 psia
N
28
27
26


4
3662 psia
6
3650 psia
1
3686 psia
2
3680 psia
21
22
23
3
3690 psia
5
3645 psia
28
27
26

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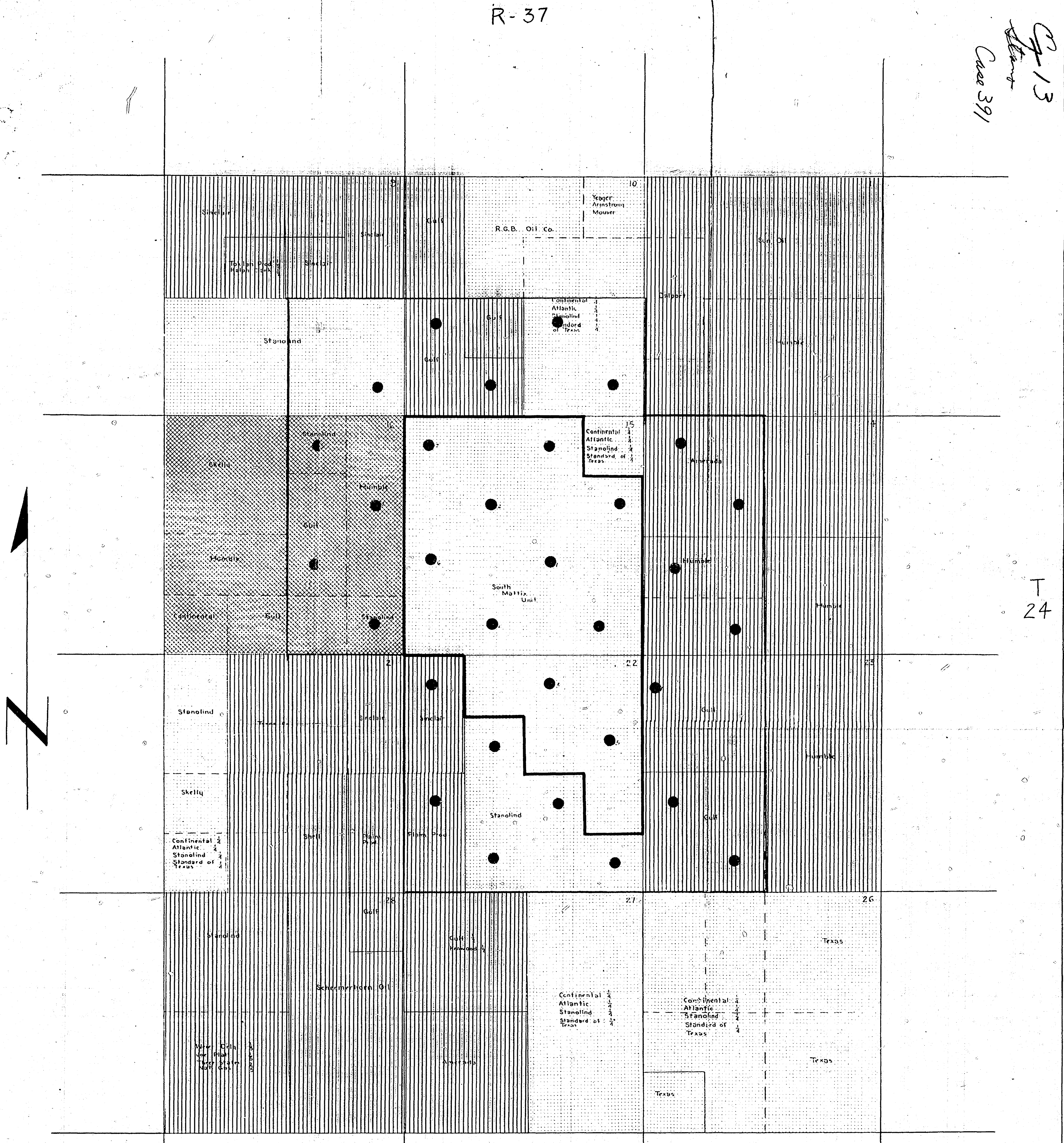
Ex 13
[illegible]
Case 391


R-37
T
24
9
10
15
16
21
22
23
26
27
28
Sinclair
Toklan Prod. ½
Ralph Clark ½
Gulf
R.G.B. Oil Co.
Yeager
Armstrong
Mouser
Sun Oil
Dalport
Humble
Stanolind
Continental ¼
Atlantic ¼
Stanolind ¼
Standard of Texas ¼
Skelly
Amerada
South Mattix Unit
Texas
Shell
Plains Prod.
Gulf ½
Kenwood ½
Schermerhorn Oil
Texas

● WELLS PRESENTLY PRODUCING

● WELLS DRILLING

● LOCATION OF FUTURE WELLS IF ENTIRE AREA IS DETERMINED TO BE PRODUCTIVE

## LEASE OWNERSHIP (DEEP RIGHTS)
## AND
## LAND STATUS PLAT
## SOUTH MATTIX UNIT
## FOWLER POOL

T24S – R37E
Lea County, N. M.

Fee ▥ Federal ⬚ State ▩

Stanolind Oil & Gas Co. 8-1-52 Scale: 1" = 1,000'