Case No.
4089

Large Exhibits

N.M.R.C.F. MICROGRAPHICS

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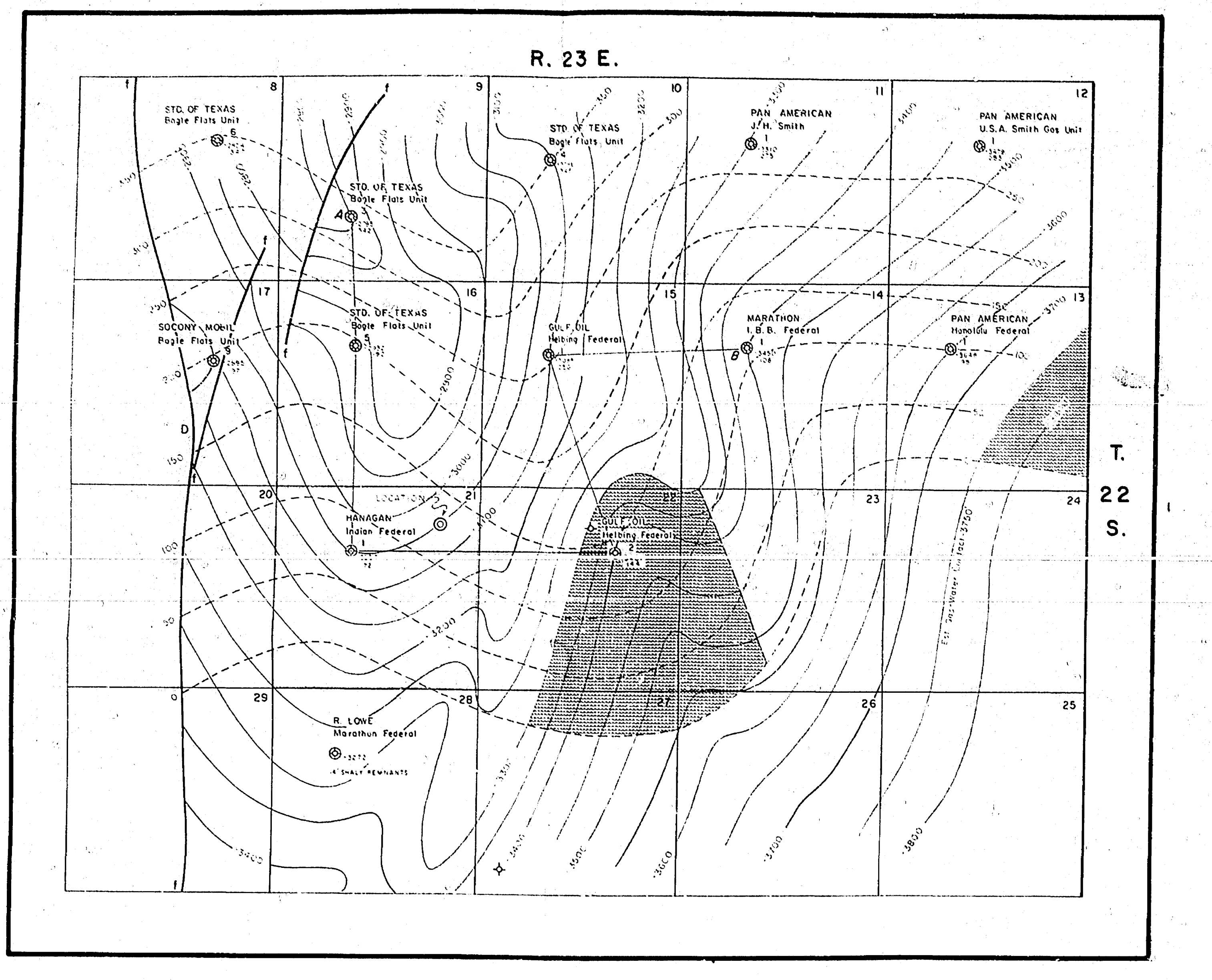
R. 23 E.
T. 22 S.
STD. OF TEXAS Bogle Flats Unit 6
STD. OF TEXAS Bogle Flats Unit 3
STD. OF TEXAS Bogle Flats Unit 4
STD. OF TEXAS Bogle Flats Unit 5
SOCONY MOBIL Bogle Flats Unit 9
PAN AMERICAN J. H. Smith 1
PAN AMERICAN U.S.A. Smith Gas Unit 1
GULF OIL Helbing Federal 1
GULF OIL Helbing Federal 2
MARATHON I. B. B. Federal 1
PAN AMERICAN Honolulu Federal 1
HANAGAN Indian Federal 1
LOCATION
R. LOWE Marathon Federal
4' SHALY REMNANTS
Est. Gas-Water Contact -3750
A
B
D
f
8
9
10
11
12
17
16
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21
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23
24
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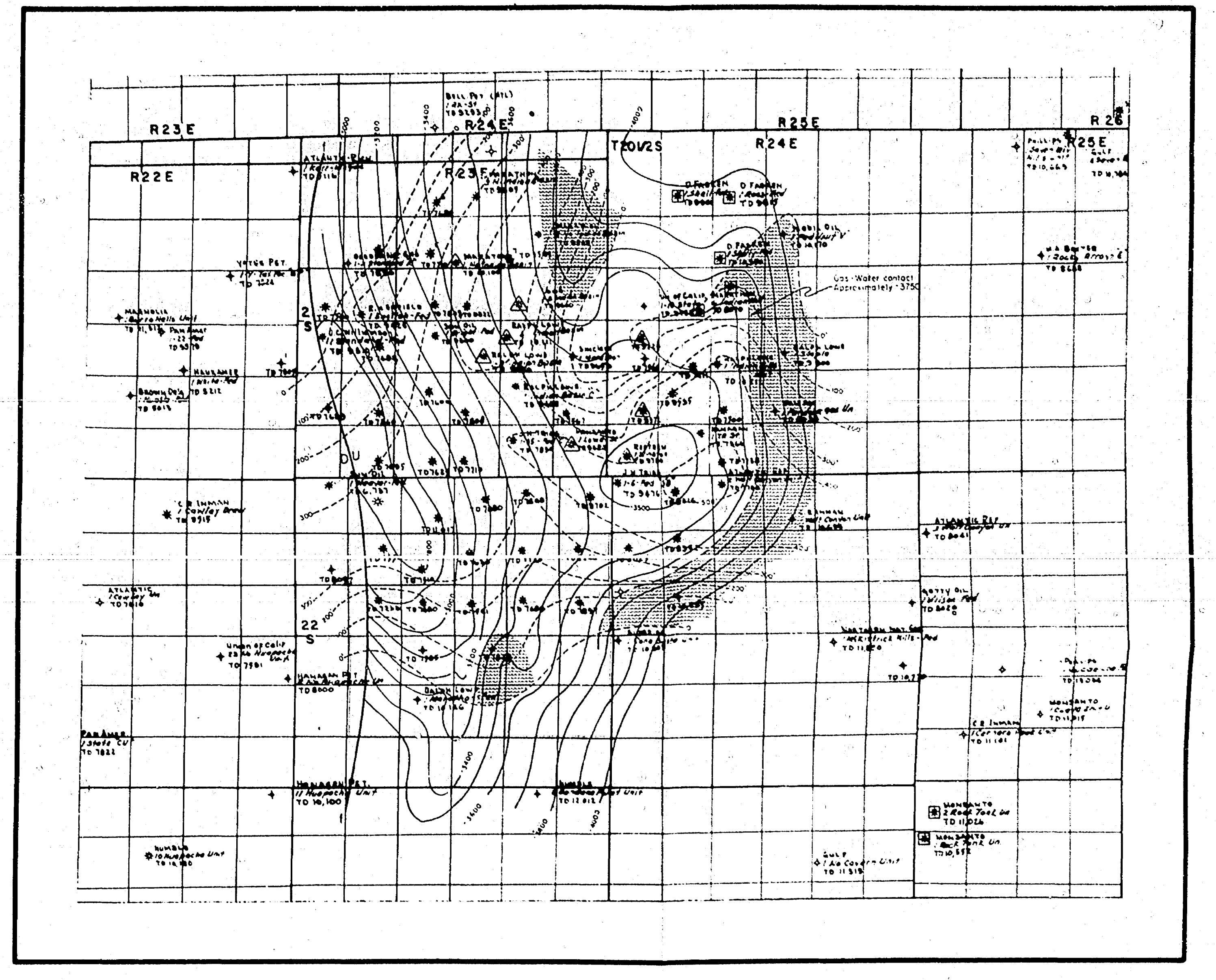
3400
3500
3600
3700
3800


R23E
R24E
R25E
R26E
R22E
R23E
R24E
R25E
T20 1/2 S
Gas-Water contact Approximately -3750

LEGEND

CI= 50' SCALE 1"=2000'
- ⊛ UPPER PENNSYLVANIAN PRODUCTION
- ⊛ UPPER PENNSYLVANIAN PENETRATION
- ✧ SHALLOW DRY HOLE

LEGEND

CI=100' SCALE 1"=8000'
- ✲ UPPER PENNSYLVANIAN PRODUCTION
- ▣ MORROW PRODUCTION
- △ DUAL UPPER PENN.-MORROW PRODUCTION

INDIAN BASIN GAS FIELD

EDDY COUNTY NEW MEXICO
~ STRUCTURE ON UPPER PENNSYLVANIAN "REEF"
-.-- ISOPACH-GROSS PRODUCING ZONE
▭ GAS PRODUCTION
▨ WATER PRODUCTION

PAUL M. MERSHON, JR. NOVEMBER, 1968

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
Appl EXHIBIT NO. 1
CASE NO. 4059

EXHIBIT 1

[illegible] MICROGRAPHICS
BEST AVAILABLE COPY

C.I. MICROGRAPHICS W.N.M.C.F.
P.O. DRAWER 35[illegible]
[illegible], NEW MEXICO [illegible]

DOCUMENT WITHDRAWAL SHEET

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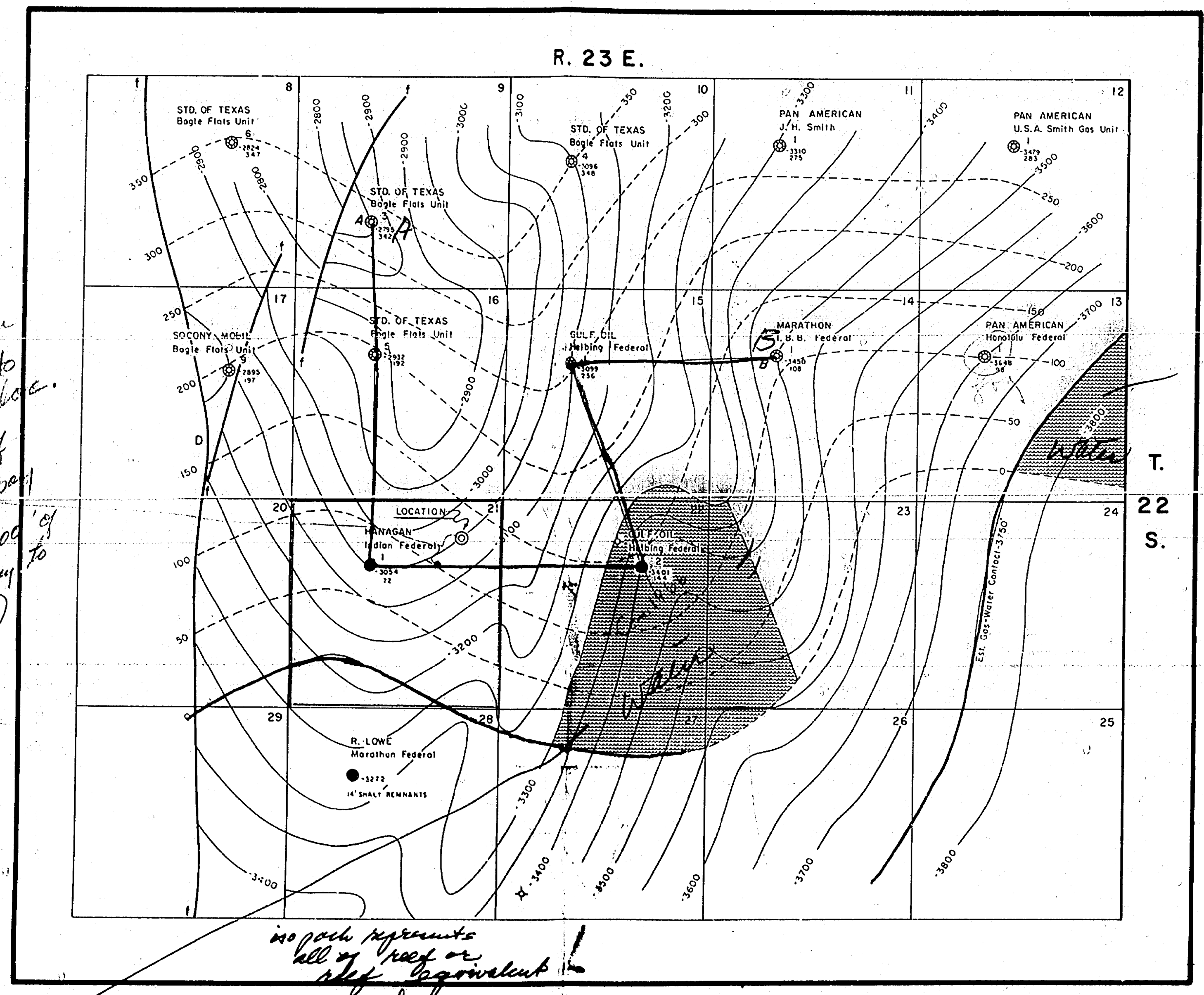
✓ Other Water Damaged Documents

DOCUMENT NUMBER 4089
REEL NUMBER 24
FRAME NUMBER 213
DATE 12-22-87
FILMED OUT BY J. Blea

---

going from std loc to proposed loc. gains 30' of gross pay (from 100' of gross pay to 130')

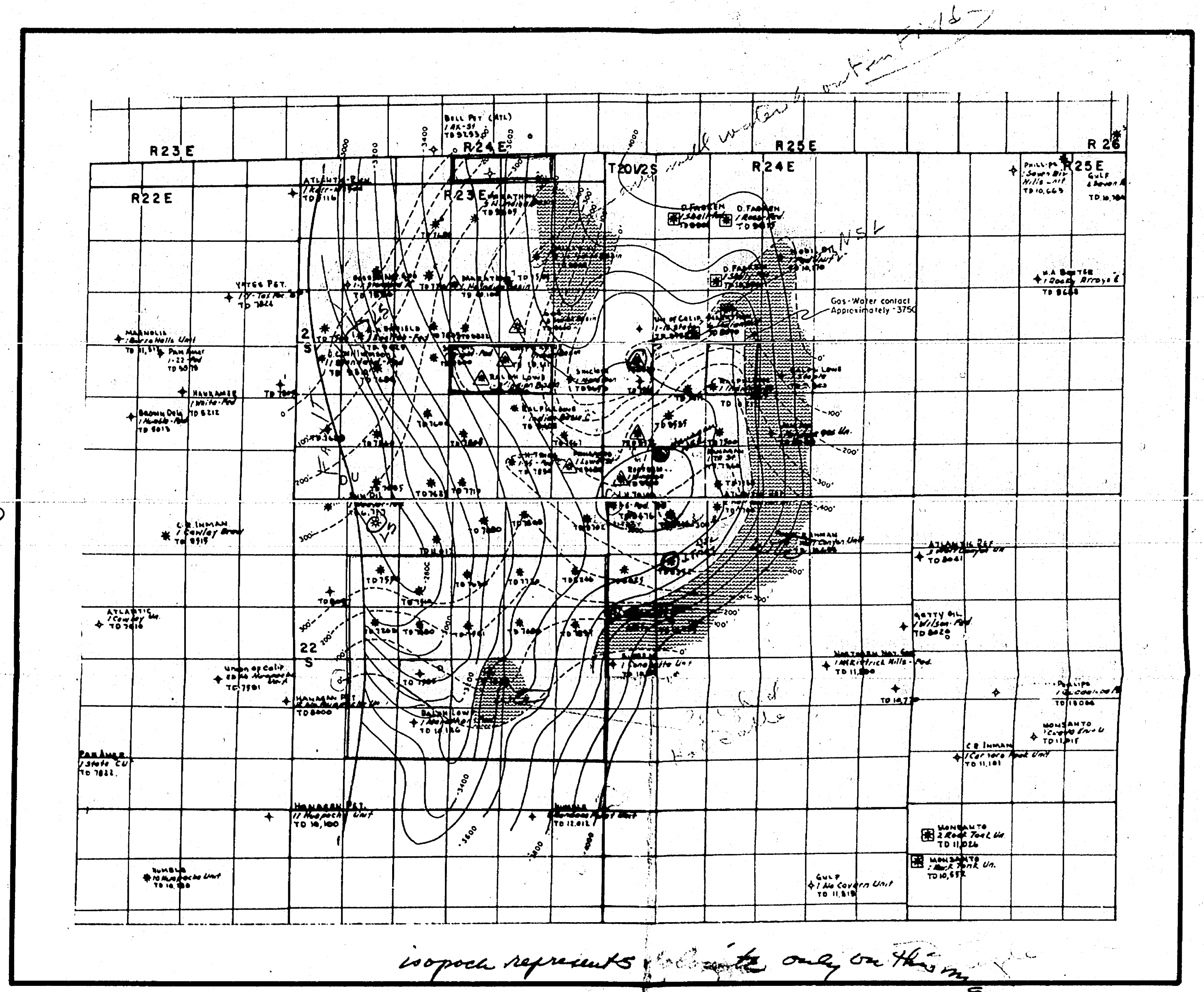

R. 23 E.
T. 22 S.
STD. OF TEXAS Bogle Flats Unit 6
STD. OF TEXAS Bogle Flats Unit 3
STD. OF TEXAS Bogle Flats Unit 4
STD. OF TEXAS Bogle Flats Unit 5
SOCONY MOBIL Bogle Flats Unit 9
PAN AMERICAN J. H. Smith 1
PAN AMERICAN U.S.A. Smith Gas Unit 1
GULF OIL Helbing Federal 1
GULF OIL Helbing Federal 2
MARATHON I. B. B. Federal 1
PAN AMERICAN Honolulu Federal
LOCATION
HANAGAN Indian Federal 1
R. LOWE Marathon Federal
14' SHALY REMNANTS
Est. Gas-Water Contact -3750
Water
Water
A
B
D
8
9
10
11
12
13
14
15
16
17
20
21
22
23
24
25
26
27
28
29

This wtr is to be expected this area is below gas-wtr contact

isopach represents all of reef or reef equivalent on this map.

perched wtr above gas wtr contact.

LEGEND
CI= 50' SCALE 1"=2000'
⊛ UPPER PENNSYLVANIAN PRODUCTION
⊗ UPPER PENNSYLVANIAN PENETRATION
✧ SHALLOW DRY HOLE


R23E
R22E
R24E
R25E
R26
T20/21S
Gas-Water contact Approximately -3750
NSL

isopach represents [illegible] only on this map

LEGEND
CI=100' SCALE 1"=8000'
✲ UPPER PENNSYLVANIAN PRODUCTION
■ MORROW PRODUCTION
▲ DUAL UPPER PENN.-MORROW PRODUCTION

INDIAN BASIN GAS FIELD
EDDY COUNTY NEW MEXICO
STRUCTURE ON UPPER PENNSYLVANIAN "REEF"
ISOPACH-GROSS PRODUCING ZONE
▭ GAS PRODUCTION
▨ WATER PRODUCTION
PAUL M. MERSHON, JR. NOVEMBER, 1968

Indian Hills Upper Penn R2516 7-9-63 21-21-24

Indian Basin Upper Penn R-2440 2-2-63 22 & 23 21-23

Case 4089 De Novo
EXHIBIT 1
6/26/69

W.N.M.C.F. MICROGRAPHICS
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C.I. MICROGRAPHICS N.M.R.C.F.
P.O. DRAWER 250
GRANTS, NEW MEXICO 87020

DOCUMENT WITHDRAWAL SHEET

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DOCUMENT NUMBER 4089
REEL NUMBER 24
FRAME NUMBER 213-214
DATE 12-22-87
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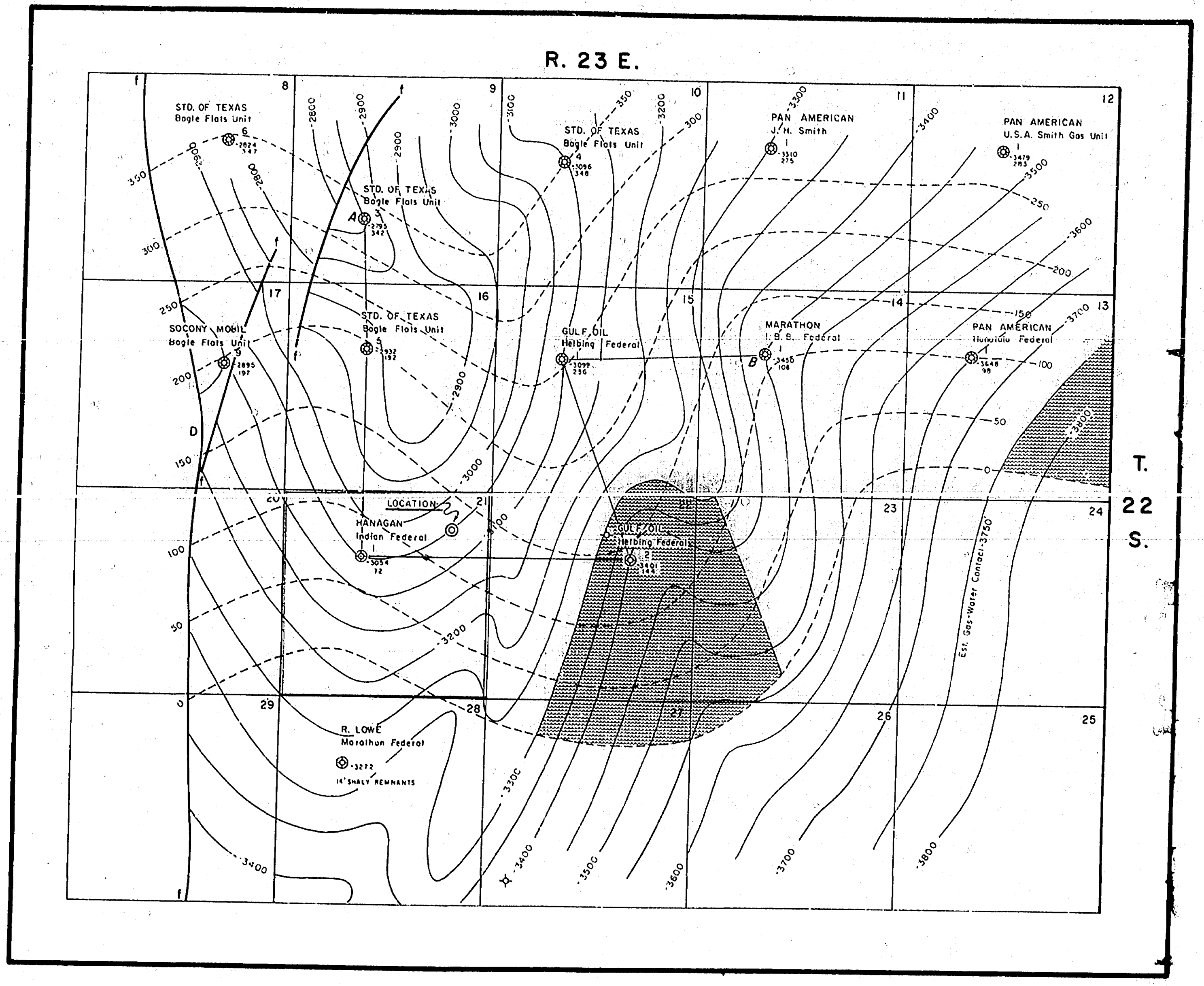
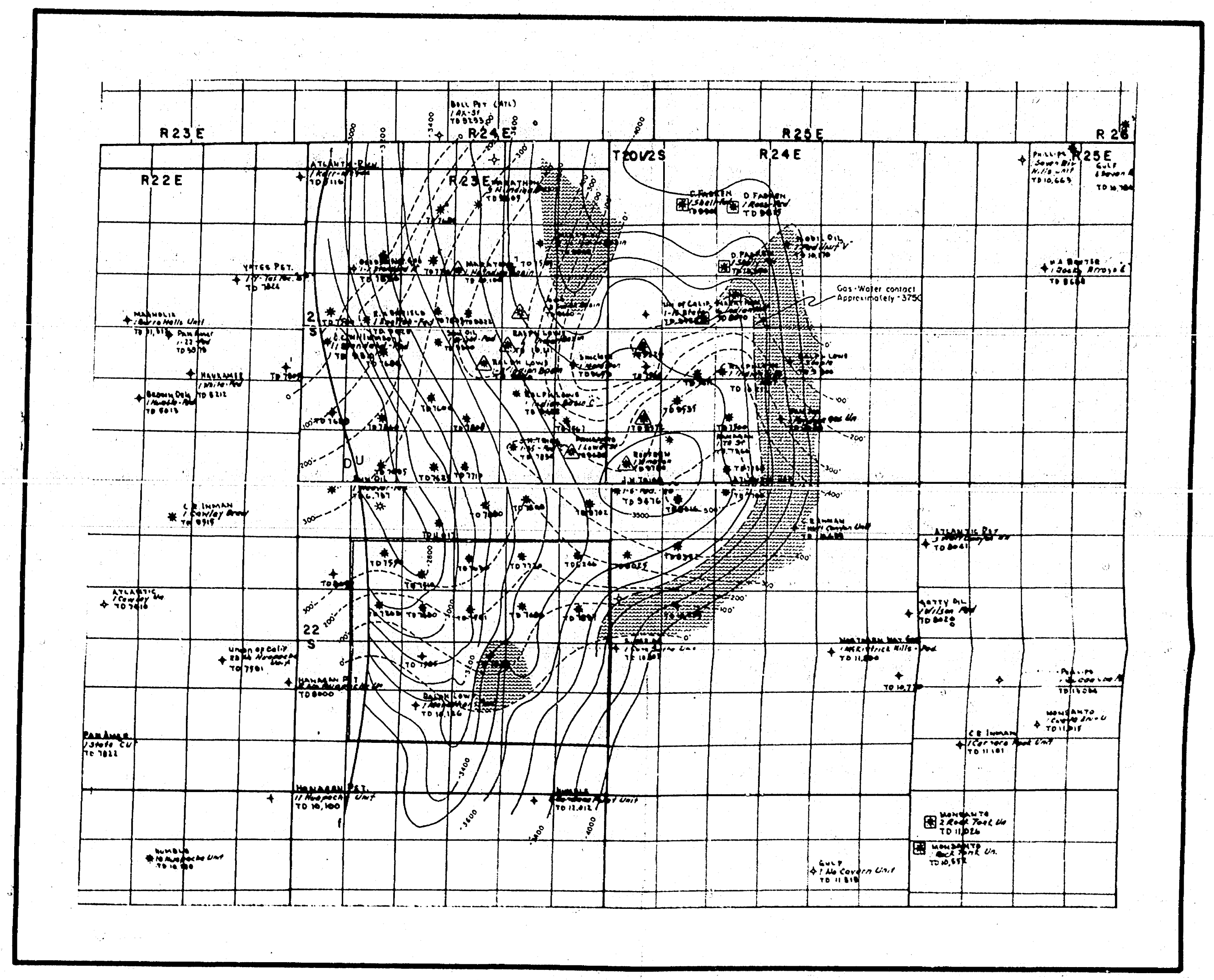

R. 23 E.
T. 22 S.
STD. OF TEXAS Bogle Flats Unit 6
STD. OF TEXAS Bogle Flats Unit 3
STD. OF TEXAS Bogle Flats Unit 4
STD. OF TEXAS Bogle Flats Unit 5
SOCONY MOBIL Bogle Flats Unit 9
GULF OIL Helbing Federal
GULF OIL Helbing Federal 2
PAN AMERICAN J. H. Smith 1
PAN AMERICAN U.S.A. Smith Gas Unit 1
PAN AMERICAN Honolulu Federal 1
MARATHON I. B. S. Federal 1
LOCATION
HANAGAN Indian Federal 1
R. LOWE Marathon Federal
14' SHALY REMNANTS
Est. Gas-Water Contact -3750
A
B
D
f

LEGEND
CI= 50' SCALE 1"=2000'
● UPPER PENNSYLVANIAN PRODUCTION
⊕ UPPER PENNSYLVANIAN PENETRATION
✧ SHALLOW DRY HOLE


R 23 E
R 24 E
R 25 E
R 22 E
T 20 S
Gas-Water contact Approximately -3750

LEGEND
C.I.=100' SCALE 1"=8000'
✻ UPPER PENNSYLVANIAN PRODUCTION
■ MORROW PRODUCTION
▲ DUAL UPPER PENN.-MORROW PRODUCTION

INDIAN BASIN GAS FIELD

EDDY COUNTY NEW MEXICO
〰 STRUCTURE ON UPPER PENNSYLVANIAN "REEF"
- - - ISOPACH-GROSS PRODUCING ZONE
▭ GAS PRODUCTION
▨ WATER PRODUCTION

PAUL M. MERSHON, JR. NOVEMBER, 1968

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Mershon Exhibit No. 1
Case No. 4089

Case 4089 De Novo
EXHIBIT 1

N.M.R.C.F. MICROGRAPHICS

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N.M.O.C.C. MICROGRAPHICS

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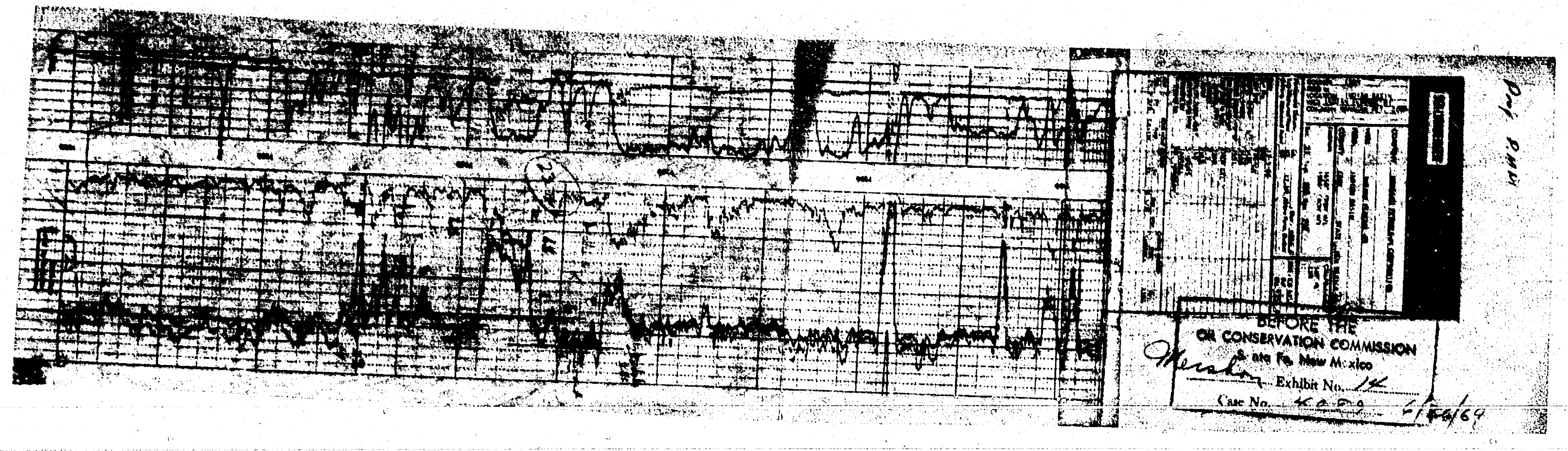
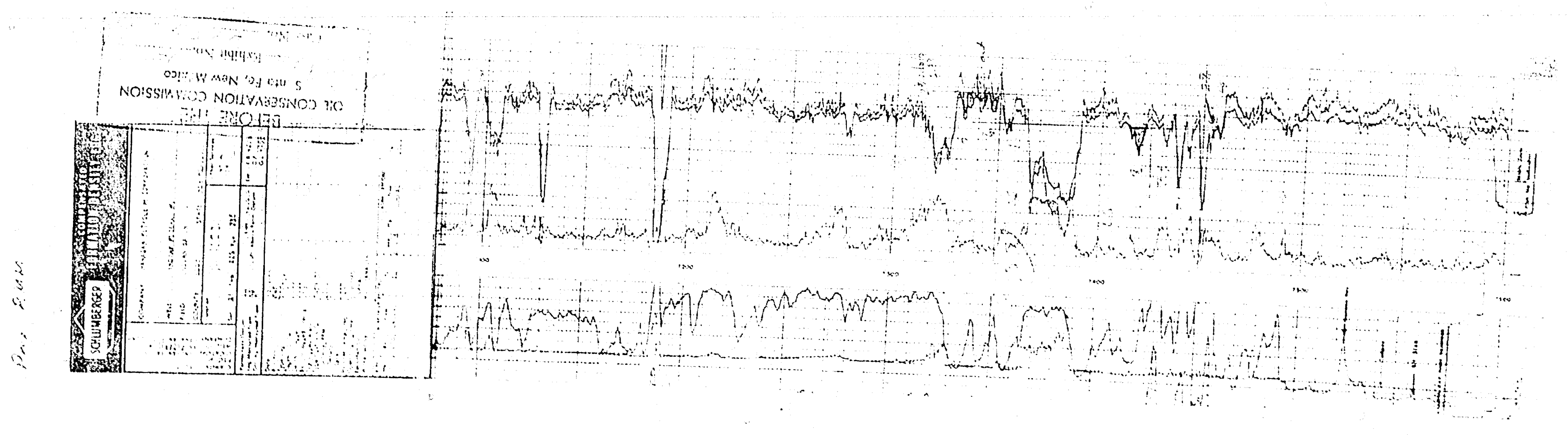


BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
[illegible] Exhibit No. 14
Case No. [illegible] 6/[illegible]/69

Orig. RMH



BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Exhibit No.
Case No.

N.M.O.C.D. MICROGRAPHICS

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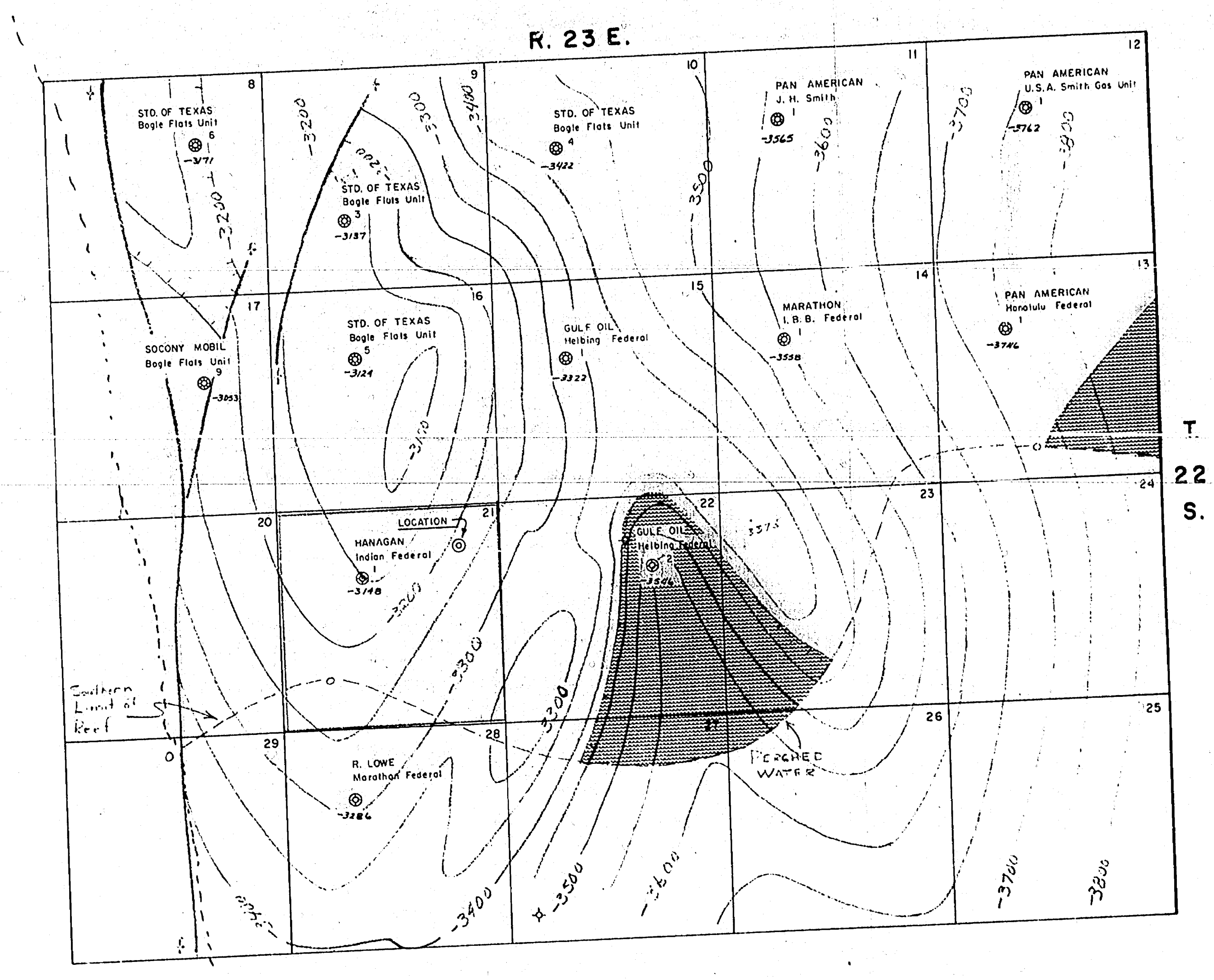
R. 23 E.
T. 22 S.
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STD. OF TEXAS Bogle Flats Unit 6 -3171
STD. OF TEXAS Bogle Flats Unit 3 -3137
STD. OF TEXAS Bogle Flats Unit 4 -3422
PAN AMERICAN J. H. Smith 1 -3565
PAN AMERICAN U.S.A. Smith Gas Unit 1 -3762
SOCONY MOBIL Bogle Flats Unit 9 -3053
STD. OF TEXAS Bogle Flats Unit 5 -3124
GULF OIL Helbing Federal 1 -3322
MARATHON I. B. B. Federal 1 -3558
PAN AMERICAN Honolulu Federal 1 -3746
LOCATION
HANAGAN Indian Federal 1 -3148
GULF OIL Helbing Federal 2 -3546
R. LOWE Marathon Federal -3286
-3200
-3300
-3400
-3500
-3600
-3700
-3800
3575
Southern Limit of Reef
Perched Water

INDIAN BASIN UPPER PENNSYLVANIAN GAS FIELD

STRUCTURE MAPPED ON BASE OF REEF

Scale 1" = 2000'

CI = 50'

PAUL M. MERSHON Jr.
JUNE 1969

Exhibit 6

Case 40[illegible]

N.M.R.C.P. MICROGRAPHICS

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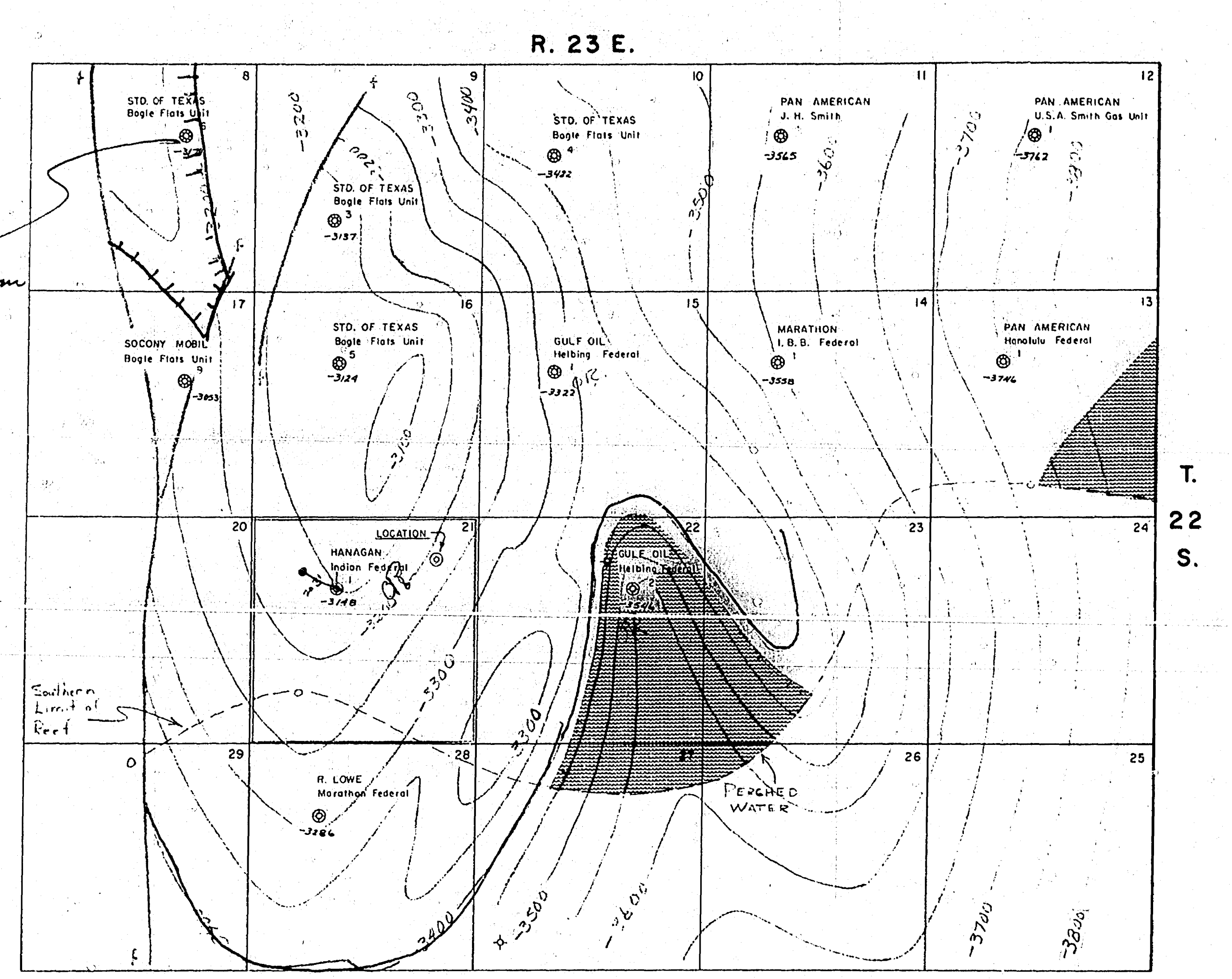
R. 23 E.
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26
25
STD. OF TEXAS
Bogle Flats Unit
6
-3177
STD. OF TEXAS
Bogle Flats Unit
3
-3137
STD. OF TEXAS
Bogle Flats Unit
4
-3432
PAN AMERICAN
J. H. Smith
-3565
PAN AMERICAN
U.S.A. Smith Gas Unit
1
-3762
SOCONY MOBIL
Bogle Flats Unit
9
-3053
STD. OF TEXAS
Bogle Flats Unit
5
-3124
GULF OIL
Helbing Federal
1
-3322
MARATHON
I. B. B. Federal
1
-3558
PAN AMERICAN
Honolulu Federal
1
-3746
LOCATION
HANAGAN
Indian Federal
1
-3148
GULF OIL
Helbing Federal
2
-3546
R. LOWE
Marathon Federal
-3286
-3200
-3250
-3300
-3400
-3100
-3500
-3600
-3700
-3800
Southern Limit of Reef
PERCHED WATER

DST in bottom 40' of reef produced wtr in this well.

INDIAN BASIN UPPER PENNSYLVANIAN GAS FIELD

STRUCTURE MAPPEP ON BASE OF REEF

Scale 1" = 2000'
C.I = 50'

PAUL M. MERSHON Jr.
JUNE 1969

Exhibit 6
Case [illegible] De Novo
6/26/69

N.M.O.C.D. MICROGRAPHICS
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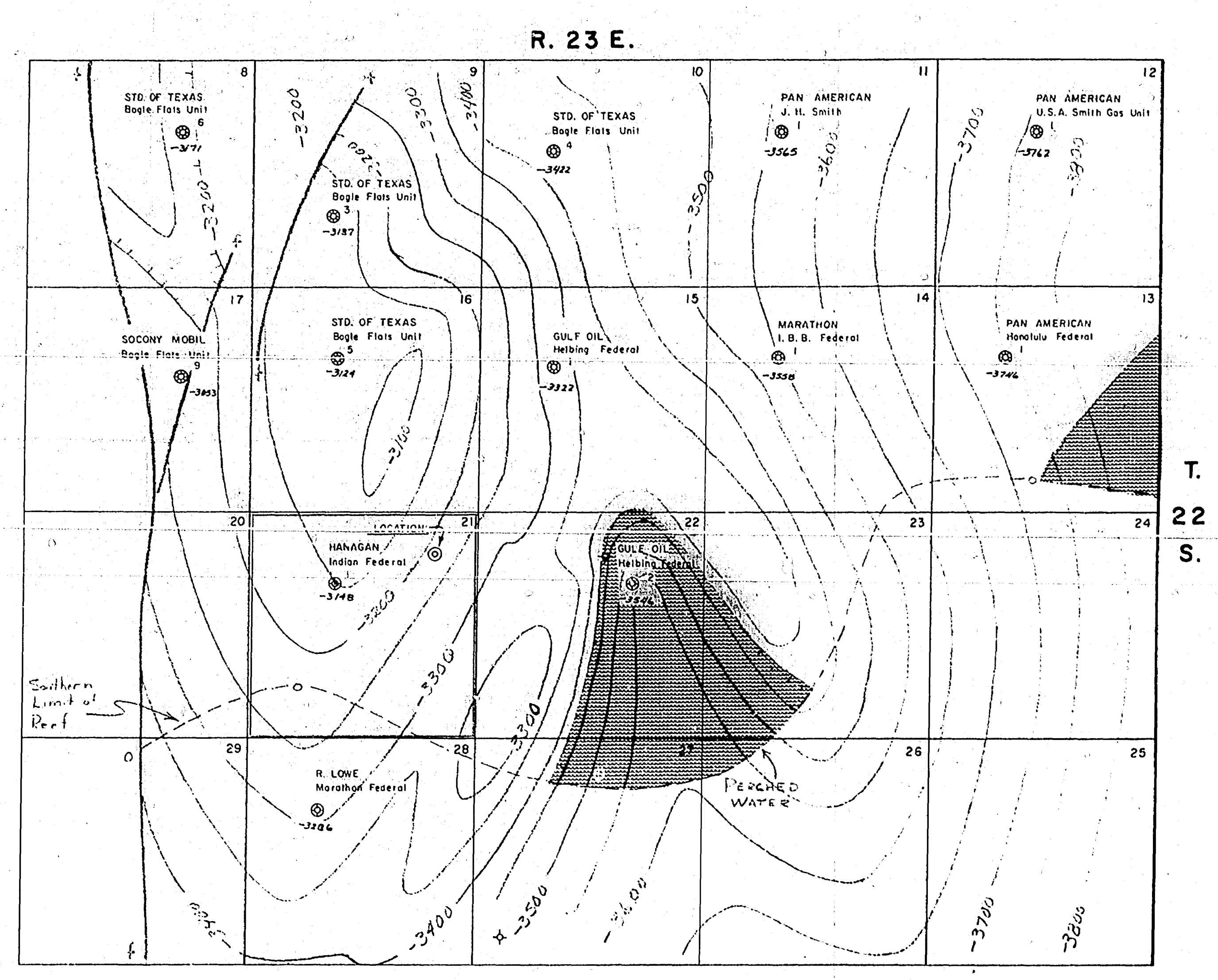
R. 23 E.
T. 22 S.
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25
STD. OF TEXAS Bogle Flats Unit 6 -3171
STD. OF TEXAS Bogle Flats Unit 3 -3137
STD. OF TEXAS Bogle Flats Unit 4 -3422
PAN AMERICAN J. H. Smith 1 -3565
PAN AMERICAN U.S.A. Smith Gas Unit 1 -3762
SOCONY MOBIL Bogle Flats Unit 9 -3053
STD. OF TEXAS Bogle Flats Unit 5 -3124
GULF OIL Helbing Federal 1 -3322
MARATHON I. B. B. Federal 1 -3558
PAN AMERICAN Honolulu Federal 1 -3746
LOCATION
HANAGAN Indian Federal 1 -3148
GULF OIL Helbing Federal 2 -3546
R. LOWE Marathon Federal -3286
Southern Limit of Reef
Perched Water
-3200
-3100
-3300
-3400
-3500
-3600
-3700
-3800

INDIAN BASIN UPPER PENNSYLVANIAN GAS FIELD

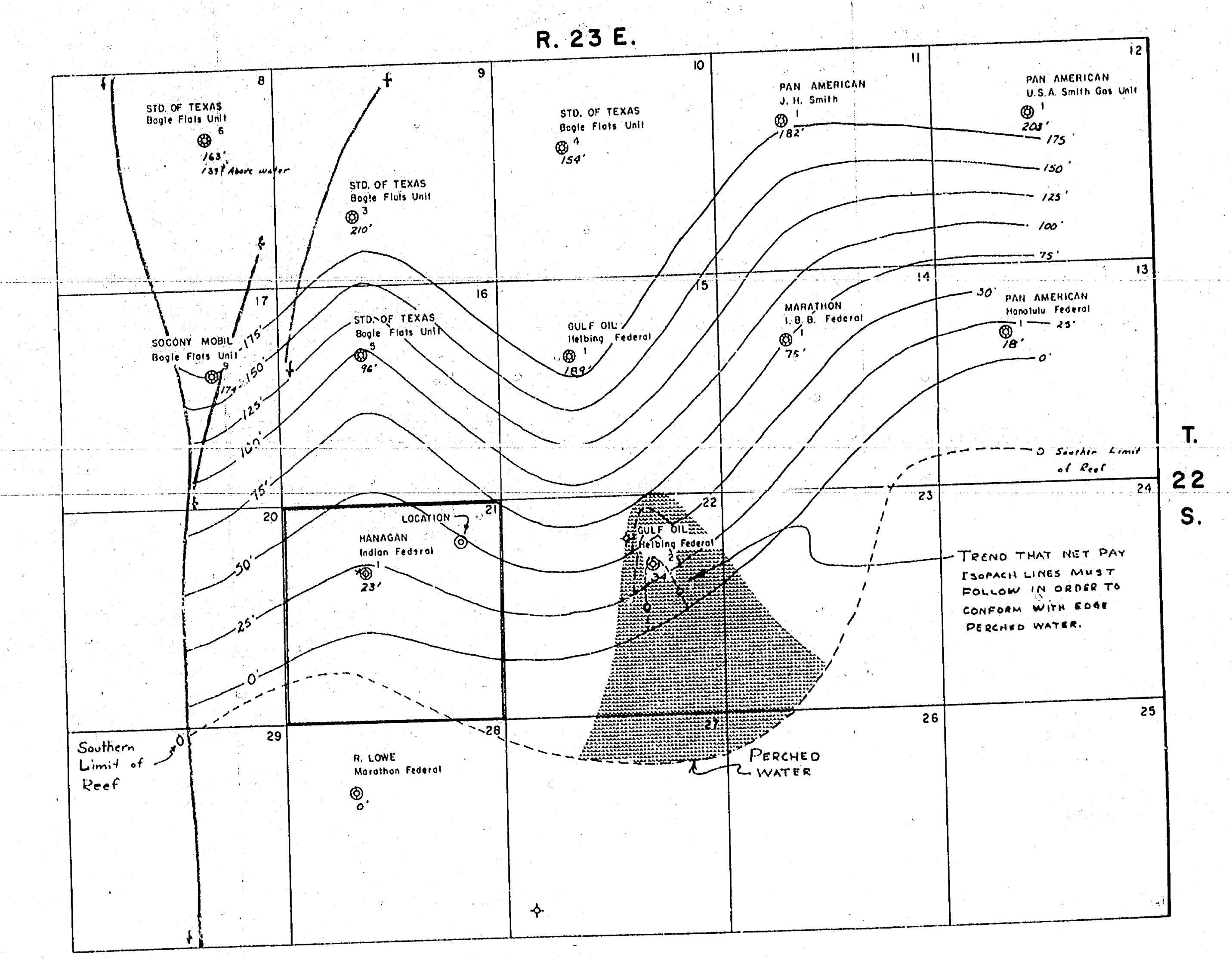
STRUCTURE MAPPED ON BASE OF REEF

Scale 1" = 2000'
CI = 50'

PAUL M. MERSHON Jr. JUNE 1969

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Exhibit No. 6
Case No. 4089

Exhibit 6
Case 4089 De Novo


R. 23 E.
T. 22 S.
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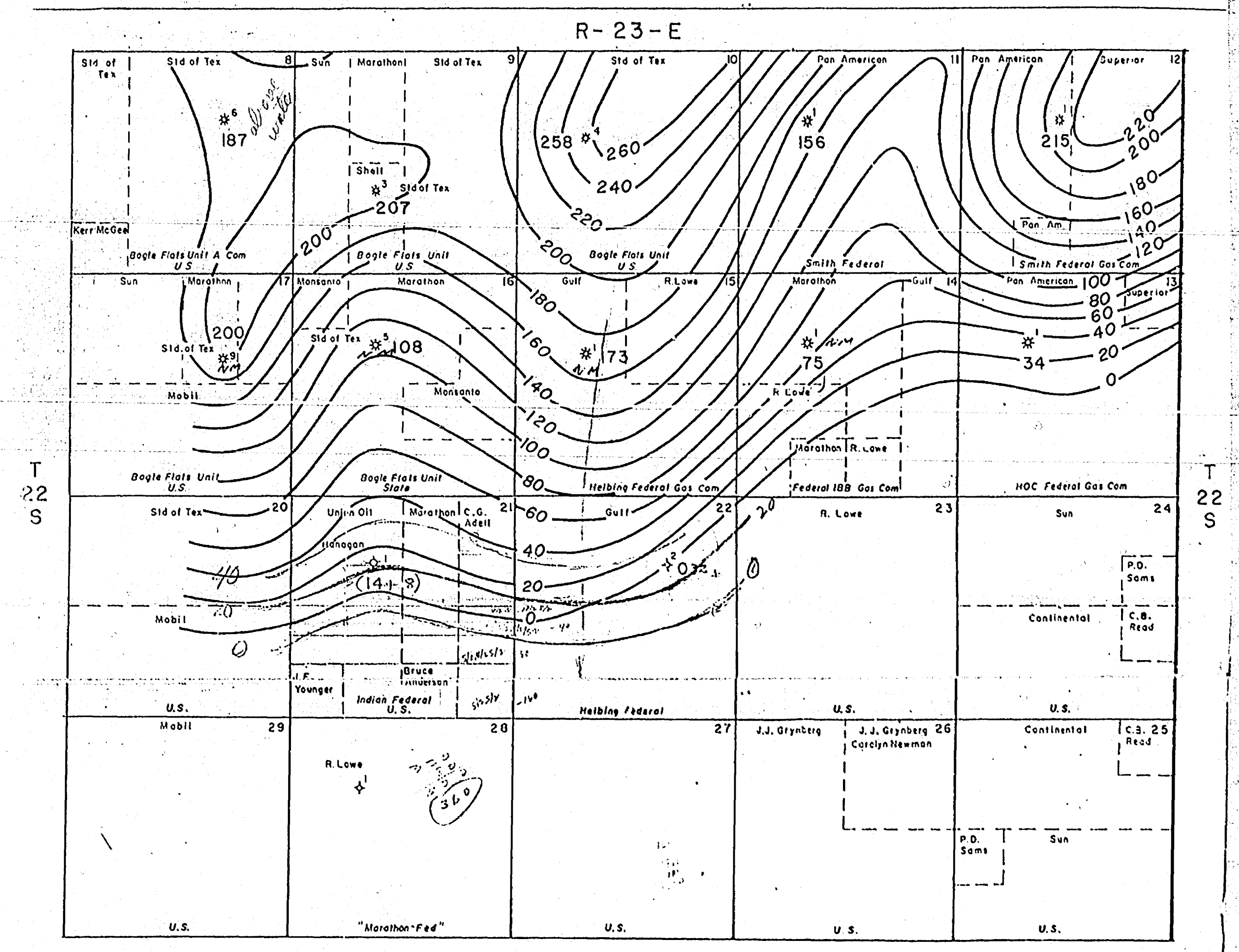
27
28
29
STD. OF TEXAS Bogle Flats Unit 6
163'
139' Above water
STD. OF TEXAS Bogle Flats Unit 3
210'
STD. OF TEXAS Bogle Flats Unit 4
154'
PAN AMERICAN J. H. Smith 1
182'
PAN AMERICAN U.S.A. Smith Gas Unit 1
203'
175'
150'
125'
100'
75'
50'
25'
0'
SOCONY MOBIL Bogle Flats Unit 9
174'
STD. OF TEXAS Bogle Flats Unit 5
96'
GULF OIL Helbing Federal 1
189'
MARATHON I. B. B. Federal 1
75'
PAN AMERICAN Honolulu Federal 1
18'
0 Southern Limit of Reef
LOCATION
HANAGAN Indian Federal 1
23'
GULF OIL Helbing Federal 2
34
Trend that net pay isopach lines must follow in order to conform with edge perched water.
Southern Limit of Reef
0
R. LOWE Marathon Federal
0'
Perched water

INDIAN BASIN UPPER PENNSYLVANIAN GAS FIELD
ISOPACH of REEF POROSITY GREATER THAN 2%
Scale 1" = 2000'
CI • 25'
PAUL M. MERSHON Jr.
JUNE 1969

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Mershon Exhibit No. 7
Case No. 4089

Exhibit 7
Case 4089 De Novo


R-23-E
T 22 S
T 22 S
Std of Tex
Std of Tex
8
Sun
Marathon
Std of Tex
9
Std of Tex
10
Pan American
11
Pan American
Superior
12
187
above water
Shell
Std of Tex
207
258
260
240
220
200
156
215
220
200
180
160
140
120
100
80
60
40
20
0
Kerr McGee
Bogle Flats Unit A Com U.S.
Bogle Flats Unit U.S.
Bogle Flats Unit U.S.
Smith Federal
Pan Am.
Smith Federal Gas Com
Sun
Marathon
17
Monsanto
Marathon
16
Gulf
R. Lowe
15
Marathon
Gulf
14
Pan American
Superior
13
Std. of Tex
Std of Tex
108
73
75
34
N.M.
Mobil
Monsanto
R. Lowe
Marathon
R. Lowe
Bogle Flats Unit U.S.
Bogle Flats Unit State
Helbing Federal Gas Com
Federal 188 Gas Com
HOC Federal Gas Com
Std of Tex
20
Union Oil
Marathon
C.G. Adell
21
Gulf
22
R. Lowe
23
Sun
24
Hanagan
(14.8)
032
P.O. Sams
Continental
C.B. Read
Mobil
J.E. Younger
Bruce Anderson
Indian Federal U.S.
Helbing Federal
U.S.
Mobil
29
28
27
J.J. Grynberg
J.J. Grynberg Carolyn Newman
26
Continental
C.B. Read
25
R. Lowe
360
P.O. Sams
Sun
U.S.
"Marathon-Fed"
U.S.
U.S.
U.S.
SCALE
1000
0
2000

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Exhibit No. 15
Case No.
6-26-69

(adapted from Marathon Ex. # 2
Cs. 4088-89
6-26-69

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 5
CASE NO. 4088-4089

ISOPACH OF NET GAS PAY
CONTOUR INTERVAL — 20'

INDIAN BASIN GAS FIELD

EDDY COUNTY, NEW MEXICO

MARATHON OIL COMPANY ——— MIDLAND, TEXAS
Marathon Exhibit No. ______
NMOCC Case No. ______
Date: ______

C.I. MICROGRAPHICS N.M.R.C.F.
P.O. DRAWER 250
[illegible], NEW MEXICO [illegible]

DOCUMENT WITHDRAWAL SHEET

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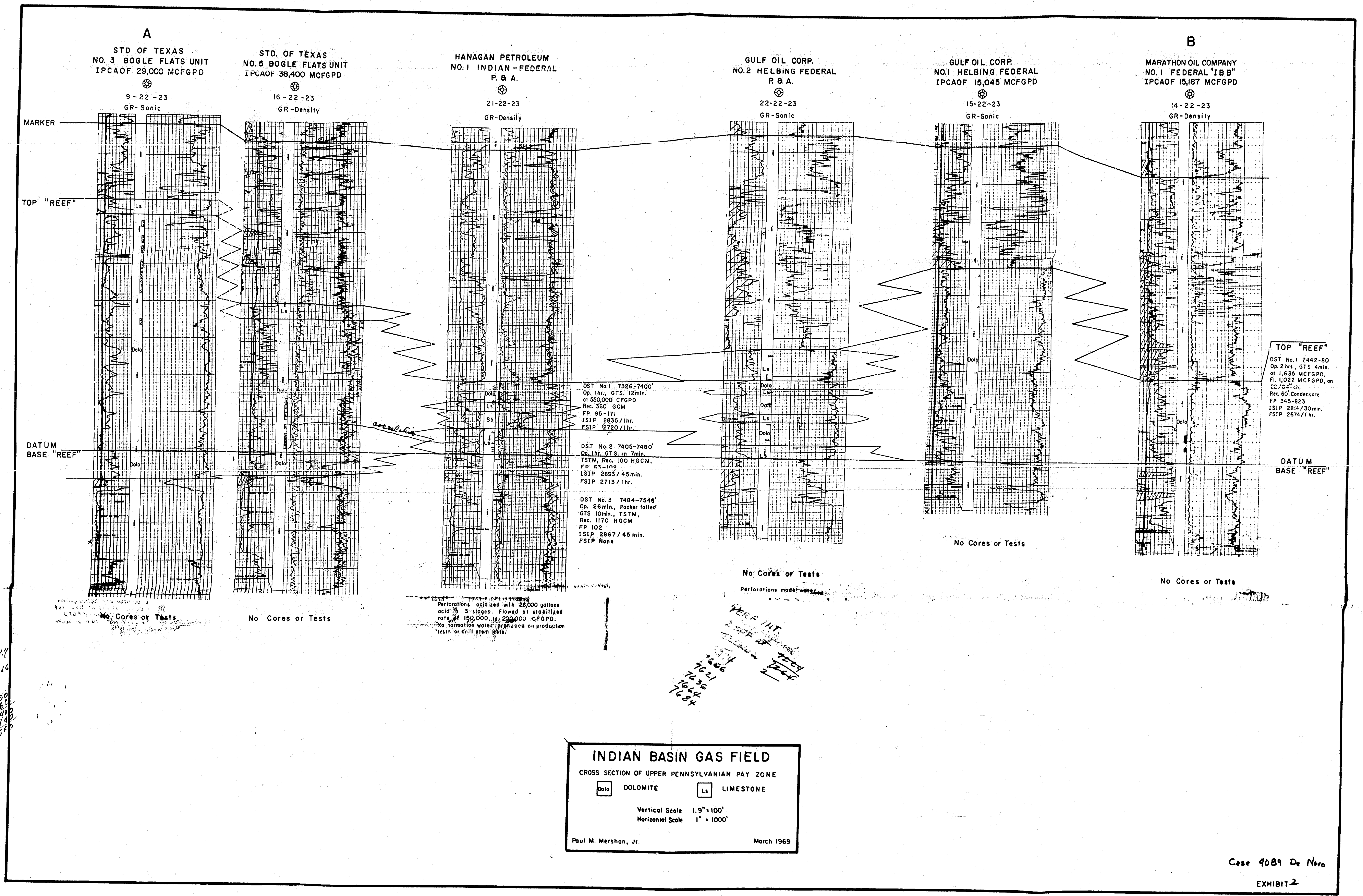
✓ Other Water Damaged Documents

DOCUMENT NUMBER 4089
REEL NUMBER 24
FRAME NUMBER 213-214-222
DATE 12-22-87
SIGNED OUT BY L. Blea


A
STD OF TEXAS
NO. 3 BOGLE FLATS UNIT
IPCAOF 29,000 MCFGPD
9-22-23
GR-Sonic
STD. OF TEXAS
NO. 5 BOGLE FLATS UNIT
IPCAOF 38,400 MCFGPD
16-22-23
GR-Density
HANAGAN PETROLEUM
NO. 1 INDIAN-FEDERAL
P. & A.
21-22-23
GR-Density
GULF OIL CORP.
NO. 2 HELBING FEDERAL
P. & A.
22-22-23
GR-Sonic
GULF OIL CORP.
NO. 1 HELBING FEDERAL
IPCAOF 15,045 MCFGPD
15-22-23
GR-Sonic
B
MARATHON OIL COMPANY
NO. 1 FEDERAL "IBB"
IPCAOF 15,187 MCFGPD
14-22-23
GR-Density
MARKER
TOP "REEF"
DATUM
BASE "REEF"
Ls
Dolo
Sh
correlation
TOP "REEF"
DATUM
BASE "REEF"

DST No. 1 7326-7400'
Op. 1hr., GTS. 12min.
at 550,000 CFGPD
Rec. 360' GCM
FP 95-171
ISIP 2835/1hr.
FSIP 2720/1hr.

DST No. 2 7405-7480'
Op. 1hr. GTS. in 7min.
TSTM, Rec. 100 HGCM.
FP 63-102
ISIP 2893/45min.
FSIP 2713/1hr.

DST No. 3 7484-7540'
Op. 26min., Packer failed
GTS 10min., TSTM,
Rec. 1170 HGCM
FP 102
ISIP 2867/45min.
FSIP None

DST No. 1 7442-80
Op. 2hrs., GTS 4min.
at 1,635 MCFGPD,
Fl. 1,022 MCFGPD, on
22/64" ch.
Rec. 60' Condensate
FP 345-823
ISIP 2814/30min.
FSIP 2674/1hr.

No Cores or Tests

No Cores or Tests

Perforations acidized with 26,000 gallons acid in 3 stages. Flowed at stabilized rate of 150,000 to 200,000 CFGPD. No formation water produced on production tests or drill stem tests.

No Cores or Tests

Perforations made water.

No Cores or Tests

No Cores or Tests

PERF INT.
7606
7621
7636
7664
7684

INDIAN BASIN GAS FIELD

CROSS SECTION OF UPPER PENNSYLVANIAN PAY ZONE

Dolo DOLOMITE
Ls LIMESTONE

Vertical Scale 1.9" = 100'
Horizontal Scale 1" = 1000'

Paul M. Mershon, Jr.
March 1969

Case 4089 De Novo

EXHIBIT 2

640 [4/40

N.M.R.C.F. MICROGRAPHICS

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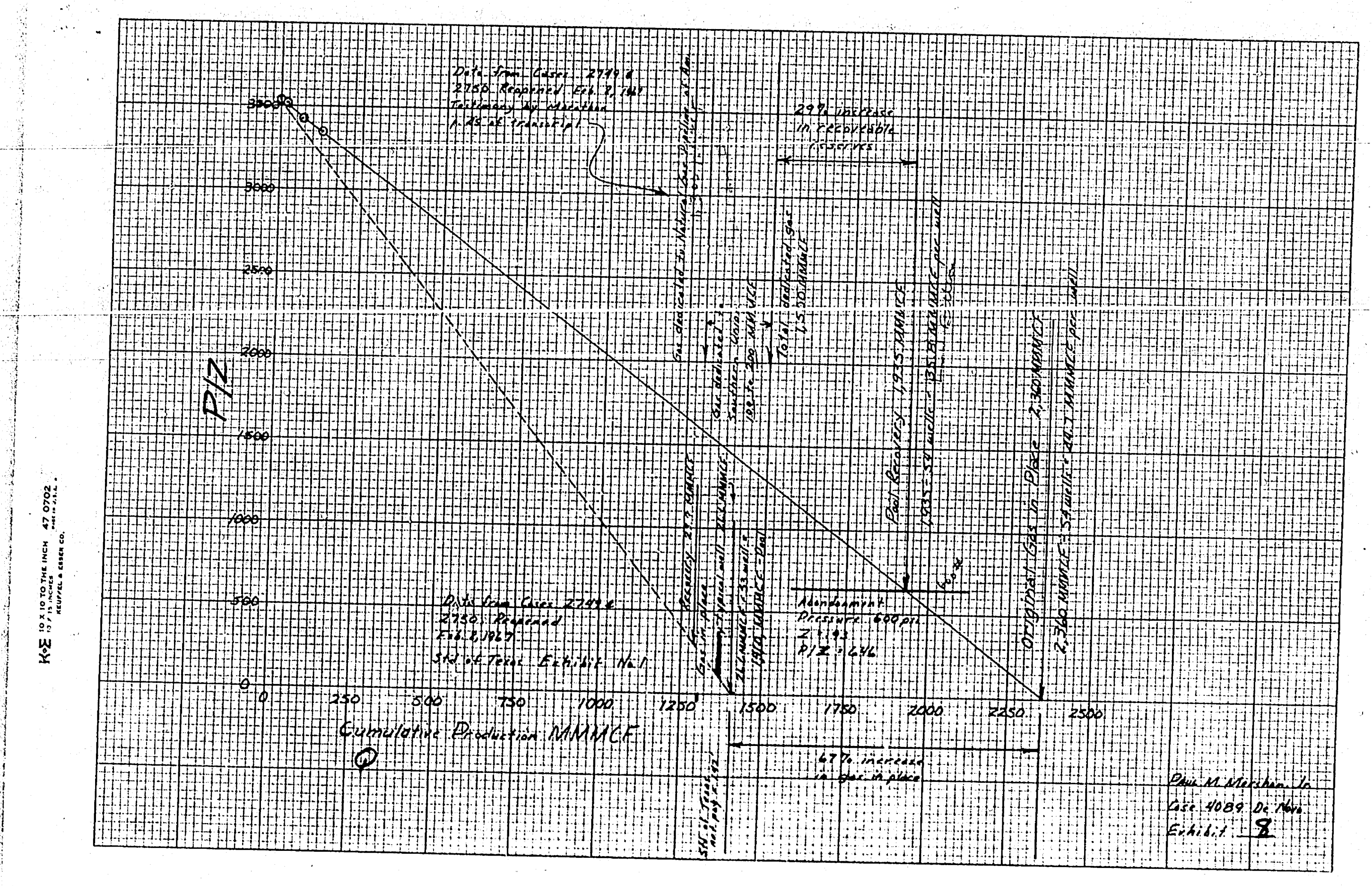

Paul M. Mershon, Jr.
Case 4089 De Novo
Exhibit 8

N.M.M.C.E. MICROGRAPHICS
BEST AVAILABLE COPY

C.I. MICROGRAPHICS V.R.C.F.
P.O. DRAWER 57
[illegible], NEW MEXICO [illegible]

DOCUMENT WITHDRAWAL SHEET

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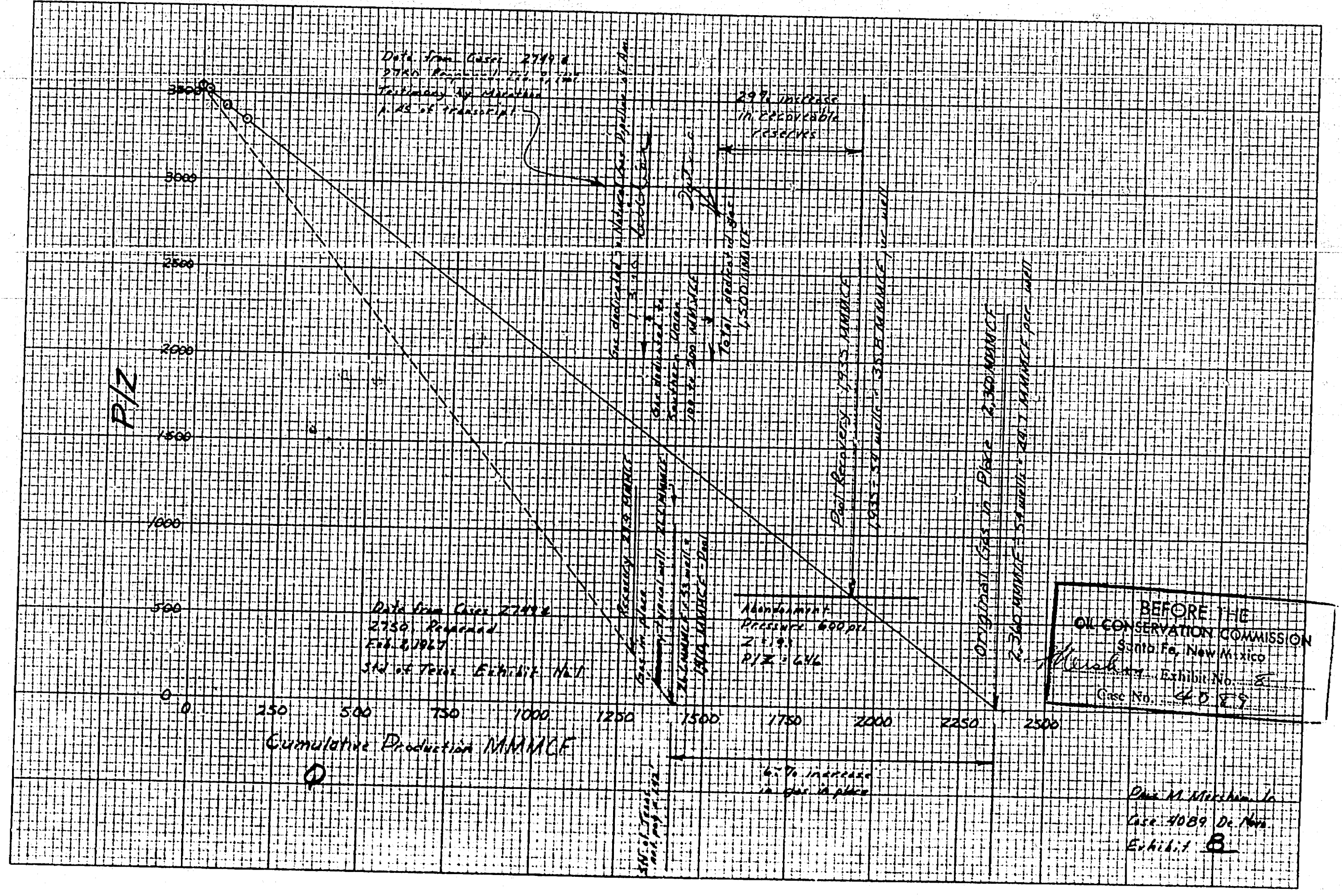
✓ Other Water Damaged Documents

DOCUMENT NUMBER 4089
REEL NUMBER 24
FRAME NUMBER 213-214-222-224
DATE 12-22-87
PULLED OUT BY J. Blea

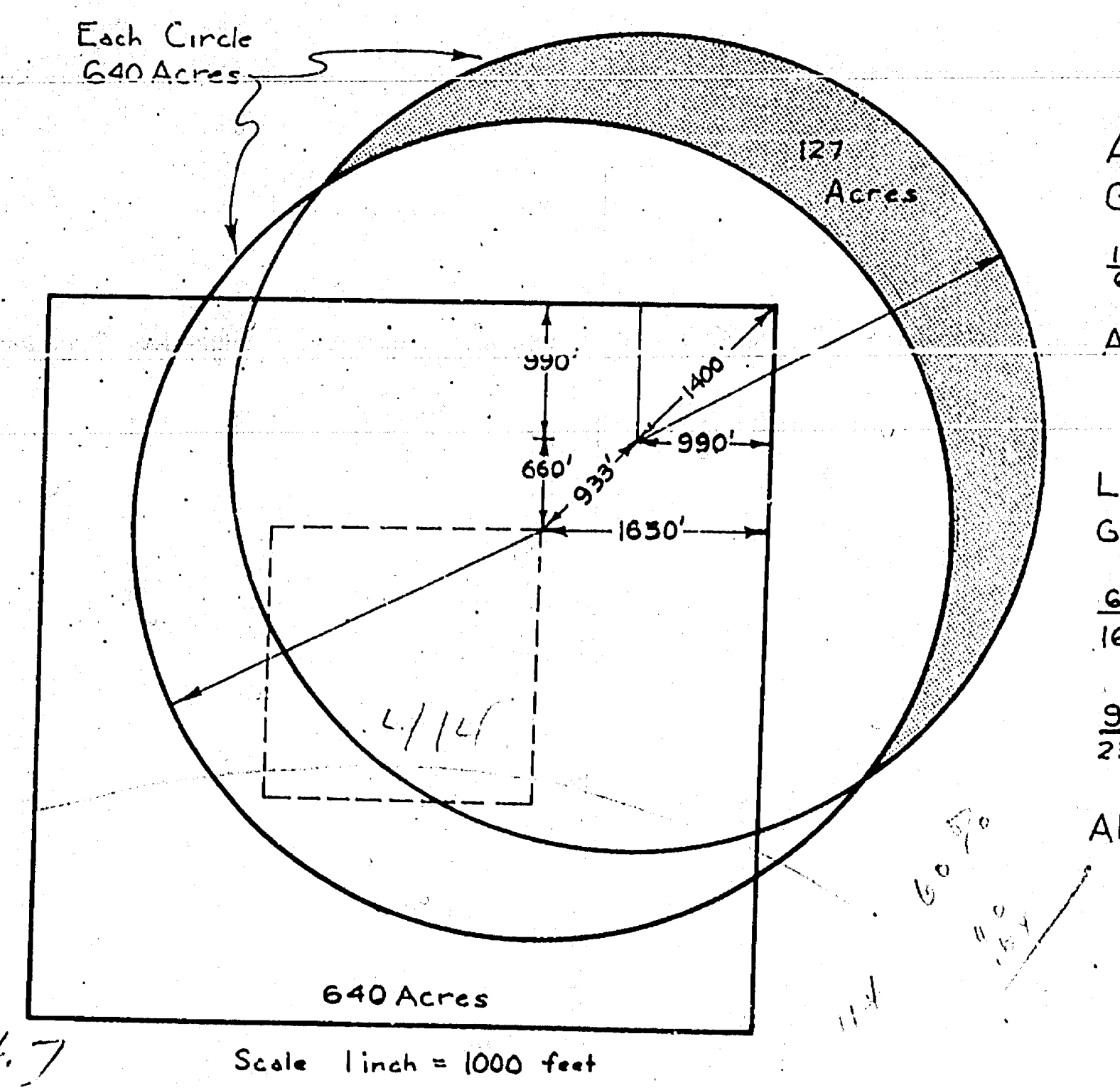


BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Marathon Exhibit No. B
Case No. 4089

Chas M. Mirchan Jr.
Case 4089 De Novo
Exhibit B

V.R.C.F. MICROGRAPHICS

BEST AVAILABLE COPY


Each Circle
640 Acres
127
Acres
990'
1400'
660'
933'
990'
1650'
4/14
640 Acres

Scale 1 inch = 1000 feet

Area Advantage Gained:

$\frac{127}{640} = 20\%$

Allowable should be 80%

Linear Advantage Gained:

$\frac{660'}{1650'} = 40\%$

$\frac{933'}{2333'} = 40\%$

Allowable should be 60%

60%

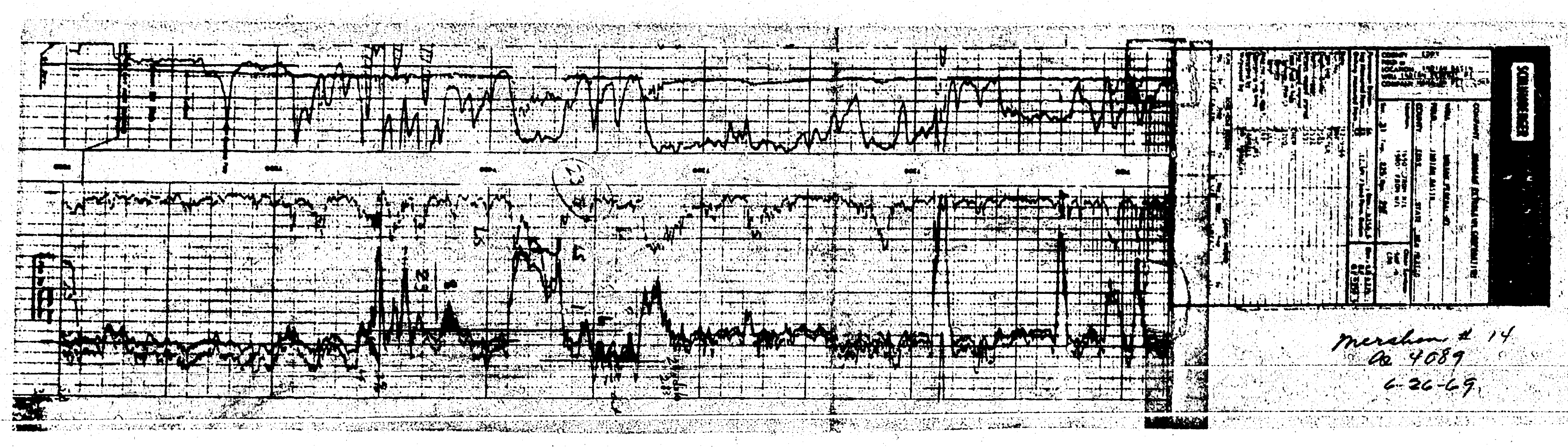
1400
933
2333

3
64.7
70
45290 %

70

Paul M. Mershon, Jr.
Case 4089 De Novo
Exhibit 9

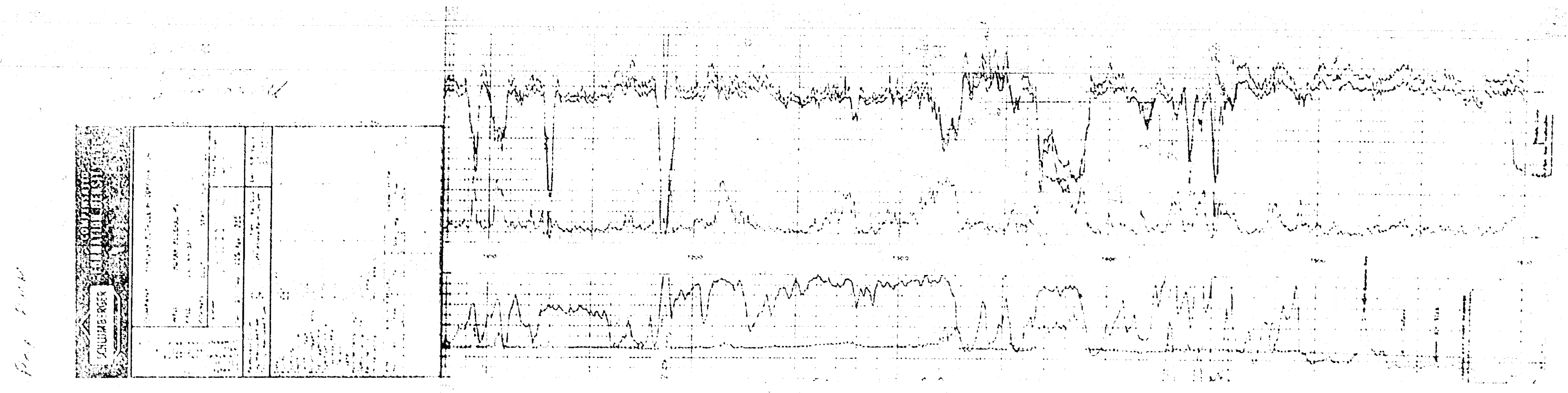
[illegible] MICROGRAPHICS
[illegible]

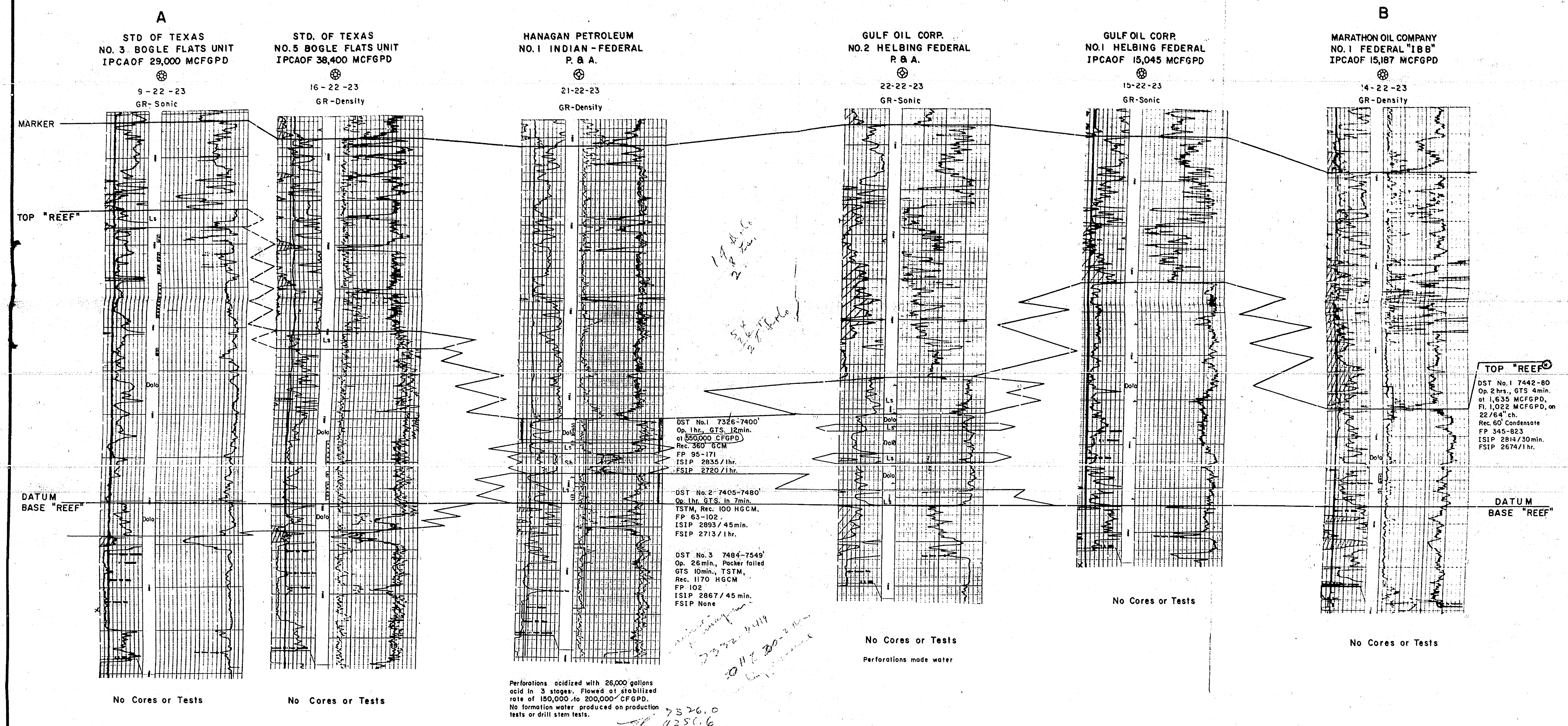


Mershon # 14
Co 4089
6-26-69

Orig PMN

V.N.R.C.F. MICROGRAPHICS
BEST AVAILABLE COPY


SCHLUMBERGER


A
STD OF TEXAS
NO. 3 BOGLE FLATS UNIT
IPCAOF 29,000 MCFGPD
9-22-23
GR-Sonic
STD. OF TEXAS
NO. 5 BOGLE FLATS UNIT
IPCAOF 38,400 MCFGPD
16-22-23
GR-Density
HANAGAN PETROLEUM
NO. 1 INDIAN-FEDERAL
P. & A.
21-22-23
GR-Density
GULF OIL CORP.
NO. 2 HELBING FEDERAL
P. & A.
22-22-23
GR-Sonic
GULF OIL CORP.
NO. 1 HELBING FEDERAL
IPCAOF 15,045 MCFGPD
15-22-23
GR-Sonic
B
MARATHON OIL COMPANY
NO. 1 FEDERAL "IBB"
IPCAOF 15,187 MCFGPD
14-22-23
GR-Density
MARKER
TOP "REEF"
DATUM
BASE "REEF"
Dolo
Ls
TOP "REEF"
DATUM
BASE "REEF"
No Cores or Tests
No Cores or Tests
No Cores or Tests
Perforations made water
No Cores or Tests
No Cores or Tests

DST No. 1 7326-7400'
Op. 1hr., GTS. 12min.
at 550,000 CFGPD
Rec. 360' GCM
FP 95-171
ISIP 2835/1hr.
FSIP 2720/1hr.

DST No. 2 7405-7480'
Op. 1hr. GTS. in 7min.
TSTM, Rec. 100 HGCM.
FP 63-102.
ISIP 2893/45min.
FSIP 2713/1hr.

DST No. 3 7484-7549'
Op. 26min., Packer failed
GTS 10min., TSTM,
Rec. 1170 HGCM
FP 102
ISIP 2867/45min.
FSIP None

Perforations acidized with 26,000 gallons acid in 3 stages. Flowed at stabilized rate of 150,000 to 200,000 CFGPD. No formation water produced on production tests or drill stem tests.

7326.0
4256.6
-3070.6

DST No. 1 7442-80
Op. 2hrs., GTS 4min.
at 1,635 MCFGPD,
Fl. 1,022 MCFGPD, on
22/64" ch.
Rec. 60' Condensate
FP 345-823
ISIP 2814/30min.
FSIP 2674/1hr.

INDIAN BASIN GAS FIELD

CROSS SECTION OF UPPER PENNSYLVANIAN PAY ZONE

Dolo DOLOMITE
Ls LIMESTONE

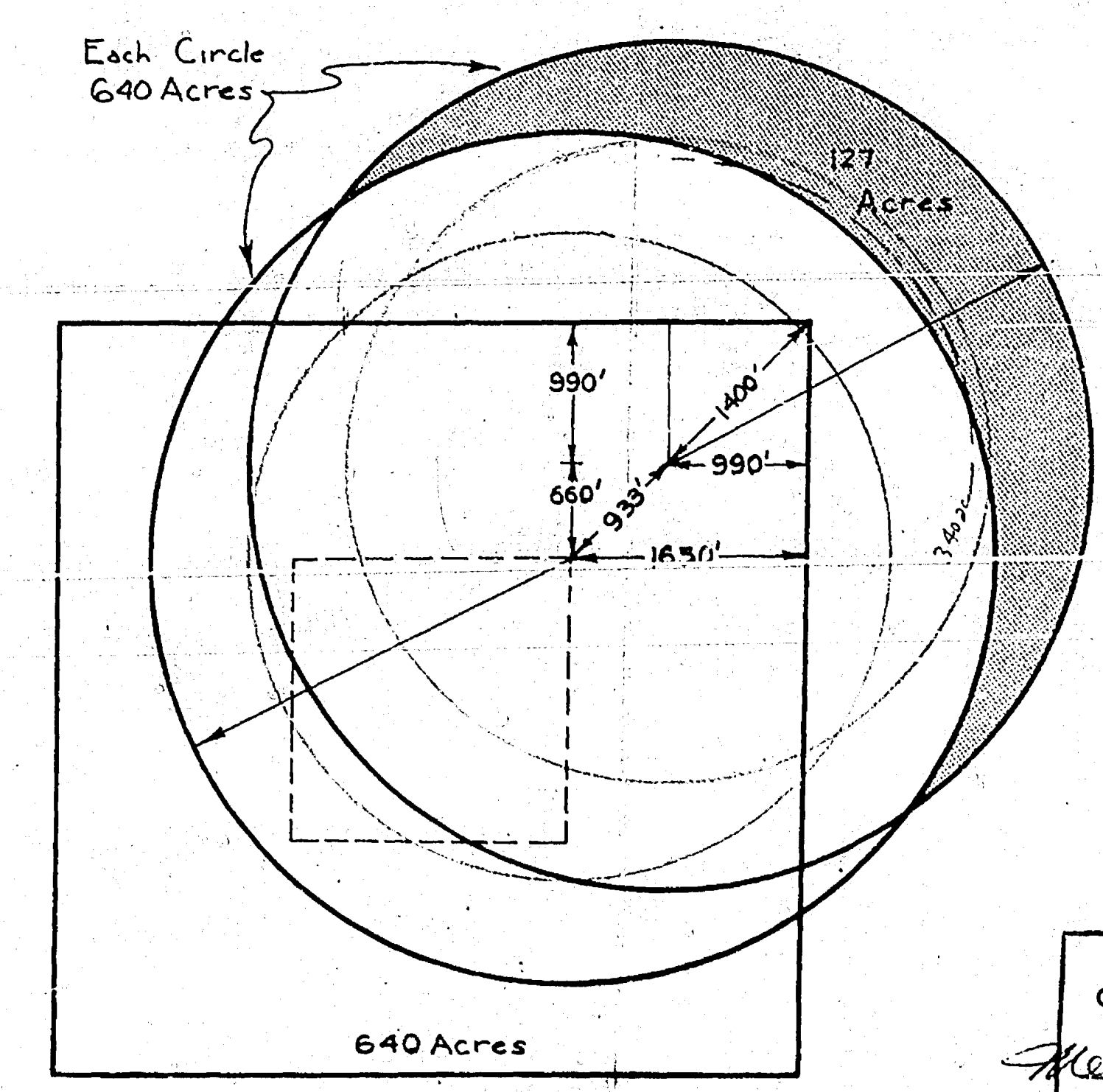
Vertical Scale 1.9" = 100'
Horizontal Scale 1" = 1000'

Paul M. Mershon, Jr.

March 1969

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 2
CASE NO. 4089

EXHIBIT-2


Each Circle
640 Acres
127
Acres
990'
1400'
660'
990'
933'
1650'
3402'
640 Acres

Scale 1 inch = 1000 feet

Area Advantage Gained:

$\frac{127}{640} = 20\%$

Allowable should be 80%

Linear Advantage Gained:

$\frac{660'}{1650'} = 40\%$

$\frac{933'}{2333'} = 40\%$

Allowable should be 60%

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Mershon Exhibit No. 9
Case No. 4089

Paul M. Mershon, Jr.
Case 4089 De Novo
Exhibit 9

[illegible]

C.I. MICROGRAPHICS N.M.R.C.F.
P.O. DRAWER 350
GRANTS, NEW MEXICO 87020

DOCUMENT WITHDRAWAL SHEET

The document listed below has been withdrawn for the purpose as follows:

___ No acknowledgement

✓ Water Damaged Documents

DOCUMENT NUMBER 4089

REEL NUMBER 24

FRAME NUMBER 213-214-222-224-230

DATE 12-22-87

WITHDRAWN BY J. Blea

Std Ex 4 Cs 4089

SCHLUMBERGER

BOREHOLE COMPEN
SONIC LOG GAMMA
SCHLUMBERGER WELL

COMPANY STANDARD OIL COMPANY OF TEXAS

FINAL PRINT

WELL BOGLE FLATS UNIT # 5

FIELD INDIAN BASIN

COUNTY EDDY STATE NEW MEXICO

LOCATION 1650' FROM N/L
1980' FROM W/L

Sec. 16 Twp. 22S Rge. 23E

Other Services:
FDC, SNP, IIL

COUNTY EDDY
FIELD or LOCATION INDIAN BASIN
WELL BOGLE FLATS UNIT # 5
COMPANY STANDARD OIL CO OF TEXAS

Permanent Datum: GL, Elev. 4159
Log Measured From KB, 13.25 Ft. Above Perm. Datum
Drilling Measured From KB

Elev.: K.B. 4172.2
D.F. 4171
G.L. 4159

Date	9-6-65	
Run No.	ONE	
Depth—Driller	7480	
Depth—Logger	7481	
Btm. Log Interval	7472	
Top Log Interval	2250	
Casing—Driller	8 5/8 @ 2250	
Casing—Logger	2250	
Bit Size	7 7/8"	
Type Fluid in Hole	GEL, CAUSTIC, CMC, OIL	
Dens. | Visc.	8.8 | 46	
pH | Fluid Loss	10 | 15.4 ml	
Source of Sample	PIT	
R_m @ Meas. Temp.	1.82 @ 84 °F	
R_{mf} @ Meas. Temp.	.43 @ 74 °F	
R_{mc} @ Meas. Temp.	2.29 @ 78 °F	
Source: R_{mf} | R_{mc}	M | M	
R_m @ BHT	1.15 @ 132 °F	
Time Since Circ.	14½ HOURS	
Max. Rec. Temp.	132 °F	
Equip. | Location	3701 | HOBBS	
Recorded By	LEFLER	
Witnessed By	MR. DRYDEN	

Spud date: 8-11-65
Comp. date: 10-7-65

SPRING GUIDE & CALIPER

GAMMA RAY 48 432 82.5 600 300 1 40

Velocity (feet per second) = 1,000,000 / Interval Transit Time (microseconds per foot)

INTERVAL TRANSIT TIME
MICROSECONDS PER FOOT

T 3 R, 2 R,

40 70 100
100 130 160

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
Standard EXHIBIT NO. 4
CASE NO. 4089

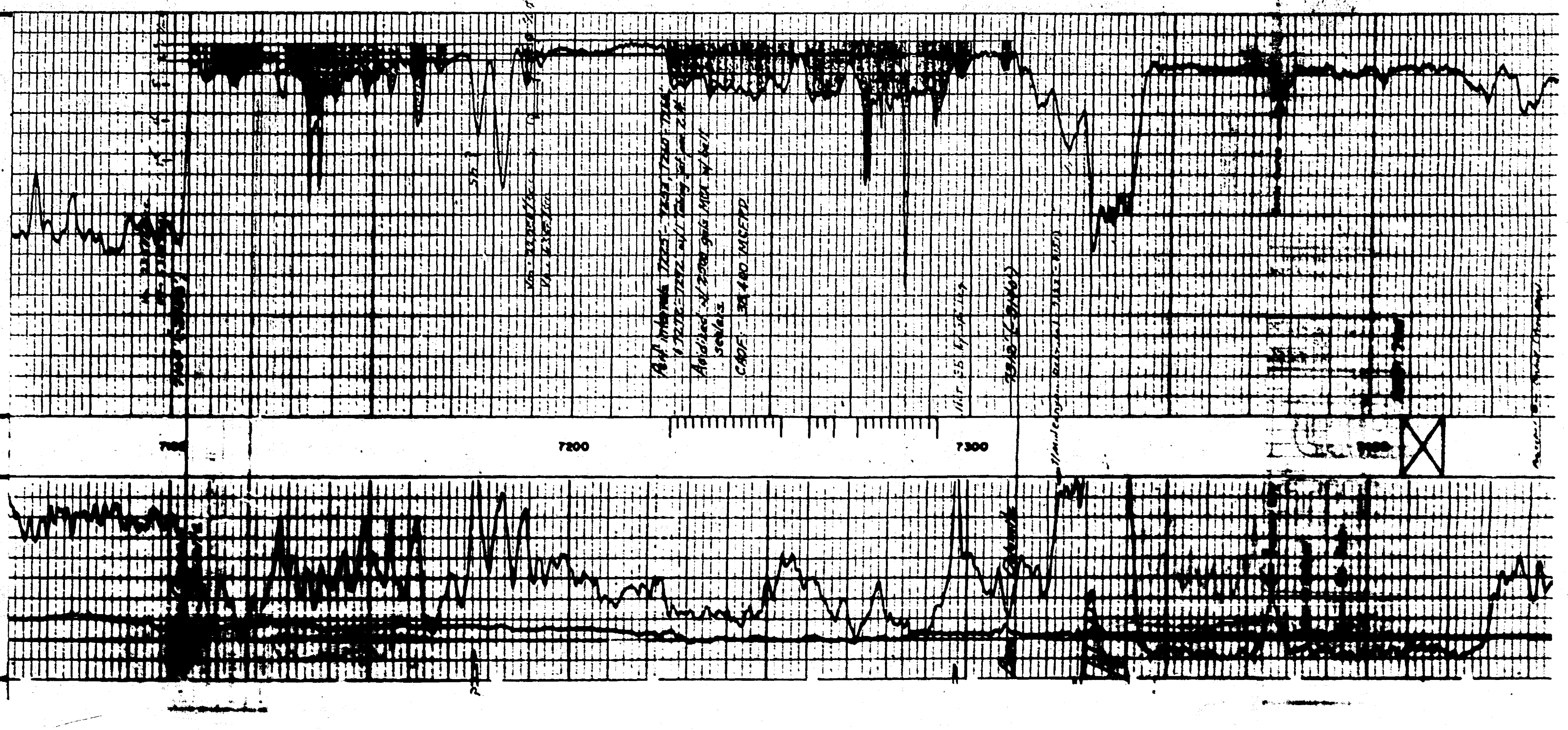
DEPTHS

GAMMA RAY
API UNITS

0 100
100 200

CALIPER
HOLE DIAM. IN INCHES

6" 7' SHALLOW 16"



N.M.R.C.F. MICROGRAPHICS

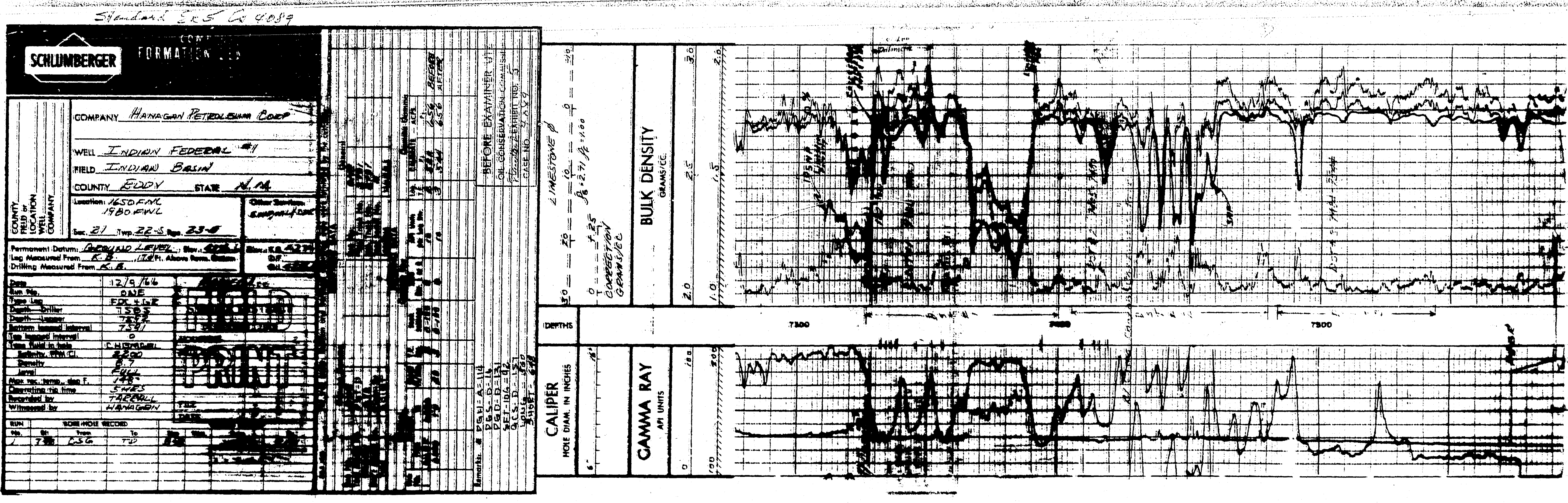
BEST AVAILABLE COPY

213 - 214 - 222 - 224 - 230 - 231

12-22-87

J. Blea

Standard Ex 5 Co 4089



SCHLUMBERGER

FORMATION DENSITY LOG

COMPANY Hanagan Petroleum Corp

WELL Indian Federal #1

FIELD Indian Basin

COUNTY Eddy STATE N.M.

Location: 1650 FNL
1980 FWL

Sec. 21 Twp. 22-S Rge. 23-E

Permanent Datum: Ground Level

Log Measured From K.B.

Drilling Measured From K.B.

Date	12/9/66
Run No.	ONE
Type Log	FDC & GR
Depth—Driller	7585
Depth—Logger	7572
Bottom logged interval	7591
Top logged interval	0
Salinity, PPM Cl.	2200
Density	8.7
Level	Full
Max rec. temp., deg F.	148°
Operating rig time	5 HRS
Recorded by	Tarbell
Witnessed by	Hanagan

RUN No.	Bit	From	To
1	7 7/8	CSG	TD

FIELD PRINT

Remarks: # PGH = A = 114
PGS - D = 14
PGD - D = 131
SET - 106 = 92
GCS - D - 153
Long = 580
Short = 648

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
Hanagan EXHIBIT NO. 5
CASE NO. 4089

LIMESTONE ø
30
20
10
0
-10
0
+.25
CORRECTION GRAMS/CC
ρB = 2.71 ρF = 1.00
BULK DENSITY
GRAMS/CC
2.0
2.5
3.0
1.0
1.5
2.0
DEPTHS
7300
7400
7500
CALIPER
HOLE DIAM. IN INCHES
6"
16"
GAMMA RAY
API UNITS
0
100
200

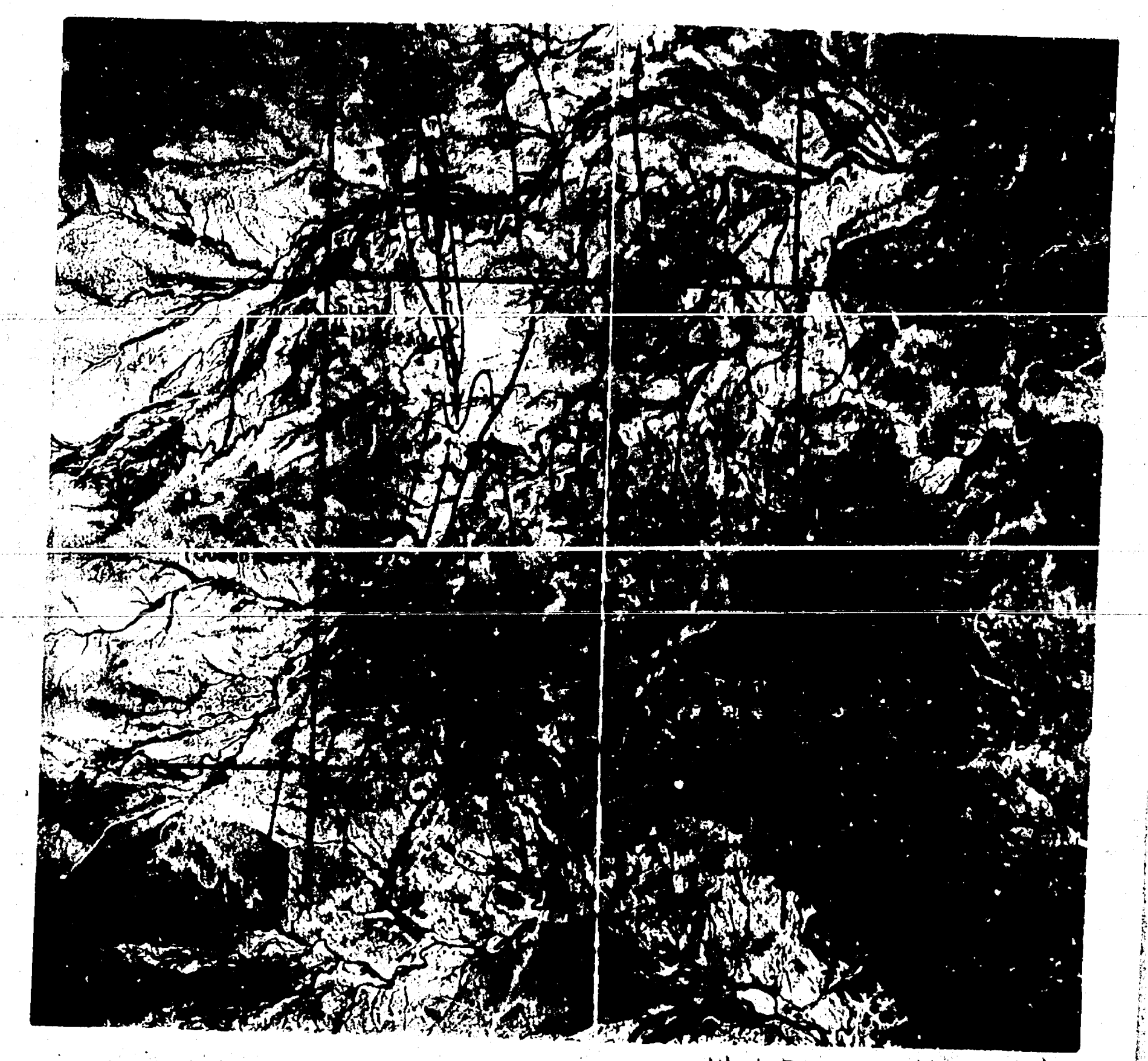


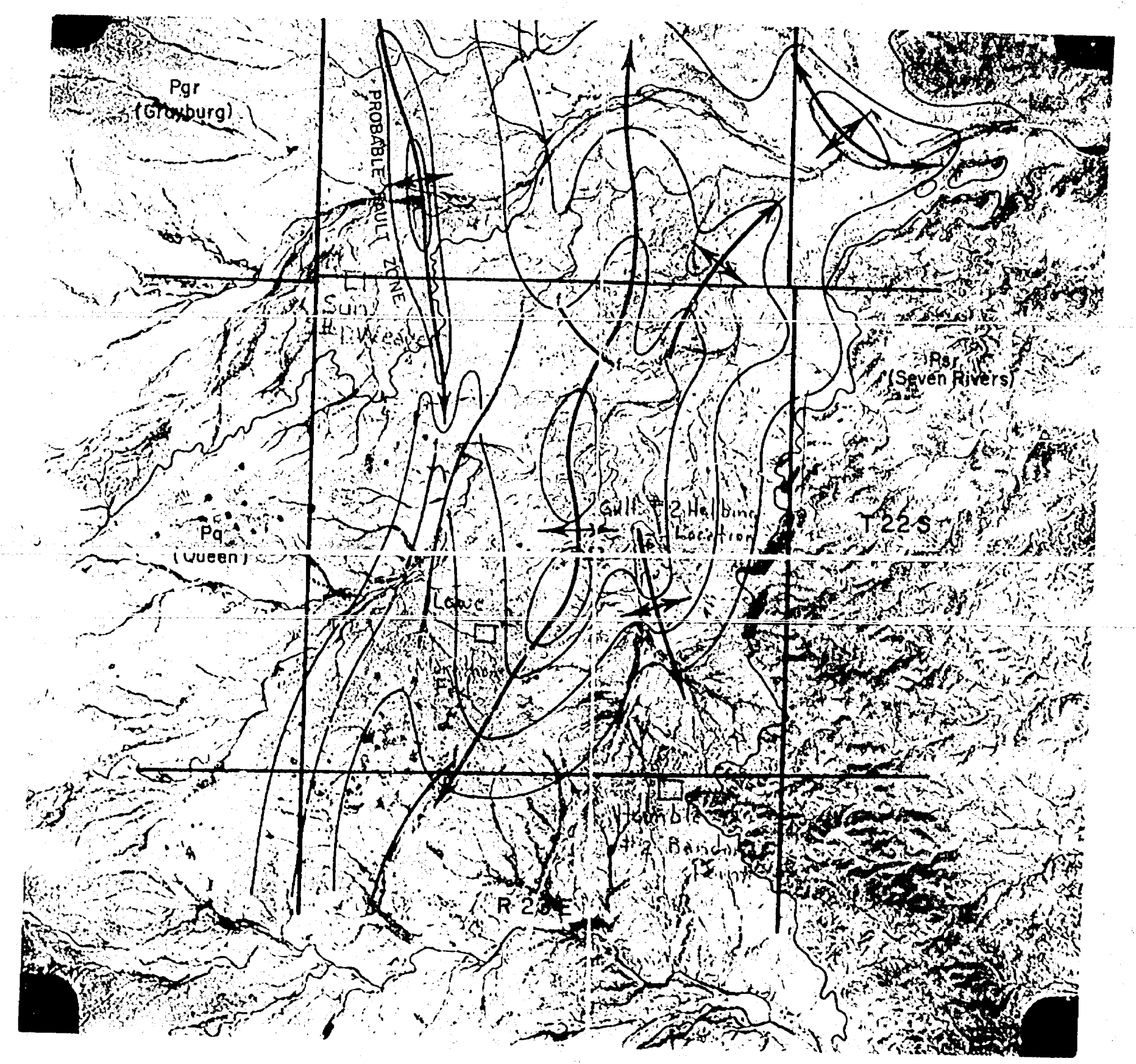
FIGURE 2C
INDIAN BASIN

West Texas Geological Society
Guidebook
1968

Case 4089 De Novo Exhibit 5
6-26-69

N.M.O.C.D. MICROGRAPHICS

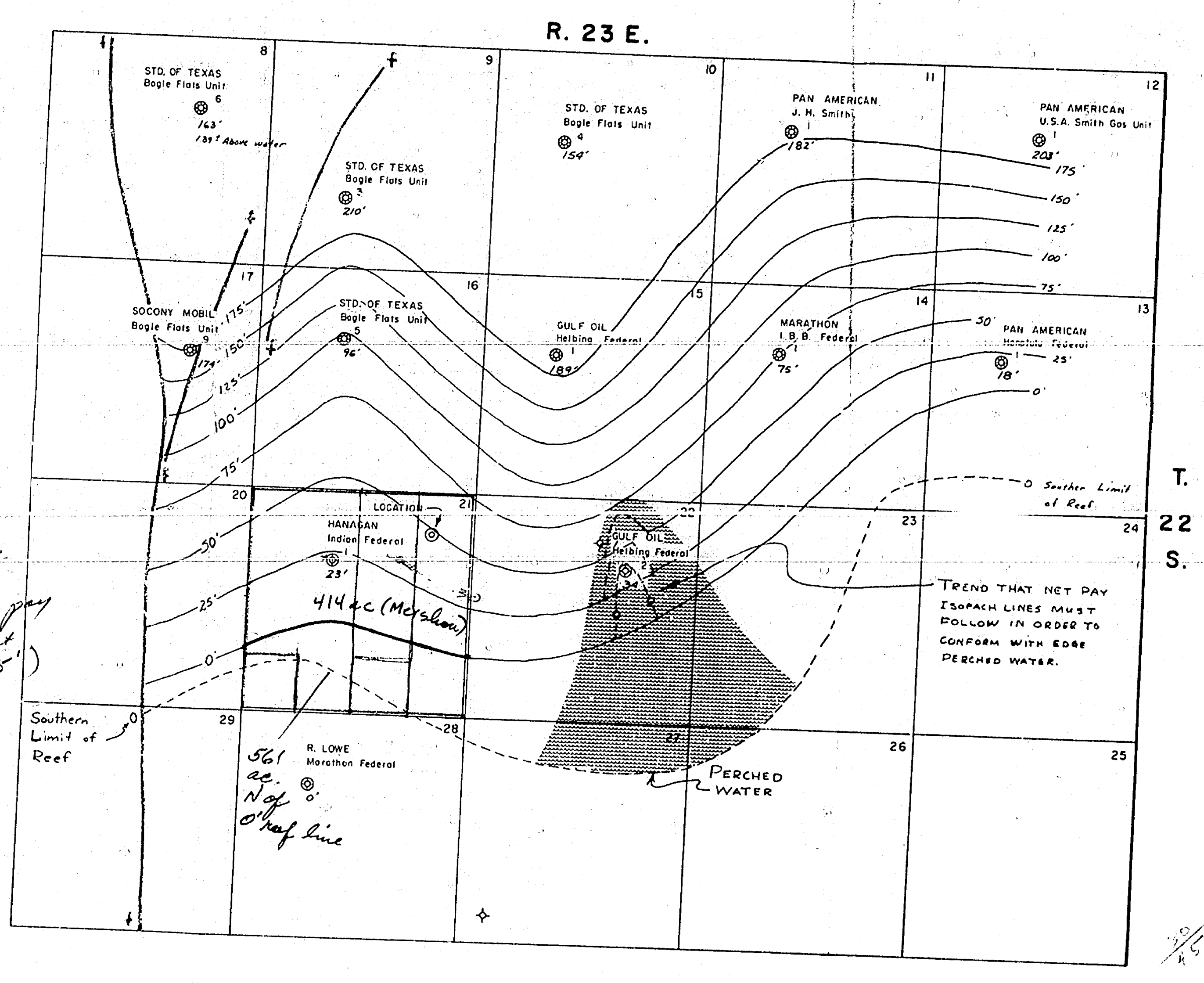
BEST AVAILABLE COPY


Pgr
(Grayburg)
PROBABLE FAULT ZONE
Sun
#1 Weaver
Psr
(Seven Rivers)
Pq
(Queen)
Gulf #2 Hellbing Location
T22S
Lowe
Humble
#2 Bandana Point
R 23 E

West Texas Geological Society
Guidebook
1968

Case 4089 De Novo Exhibit 5
6-26-69

going from
std loc to
proposed loc.
gains about
15' of net pay
(from 30' of net
pay to about 45')


R. 23 E.
T. 22 S.
8
9
10
11
12
17
16
15
14
13
20
21
22
23
24
29
28
27
26
25
STD. OF TEXAS
Bogle Flats Unit
6
163'
139' Above water
STD. OF TEXAS
Bogle Flats Unit
3
210'
STD. OF TEXAS
Bogle Flats Unit
4
154'
PAN AMERICAN
J. H. Smith
1
182'
PAN AMERICAN
U.S.A. Smith Gas Unit
1
203'
175'
150'
125'
100'
75'
50'
25'
0'
SOCONY MOBIL
Bogle Flats Unit
9
174'
STD. OF TEXAS
Bogle Flats Unit
5
96'
GULF OIL
Helbing Federal
1
189'
MARATHON
I. B. B. Federal
1
75'
PAN AMERICAN
Honolulu Federal
1
18'
0 Souther Limit of Reef
LOCATION
HANAGAN
Indian Federal
1
23'
414 ac (Mershon)
GULF OIL
Helbing Federal
2
34'
Trend that net pay isopach lines must follow in order to conform with edge perched water.
Southern Limit of Reef
0
R. LOWE
Marathon Federal
0'
561 ac. N of 0' reef line
Perched Water

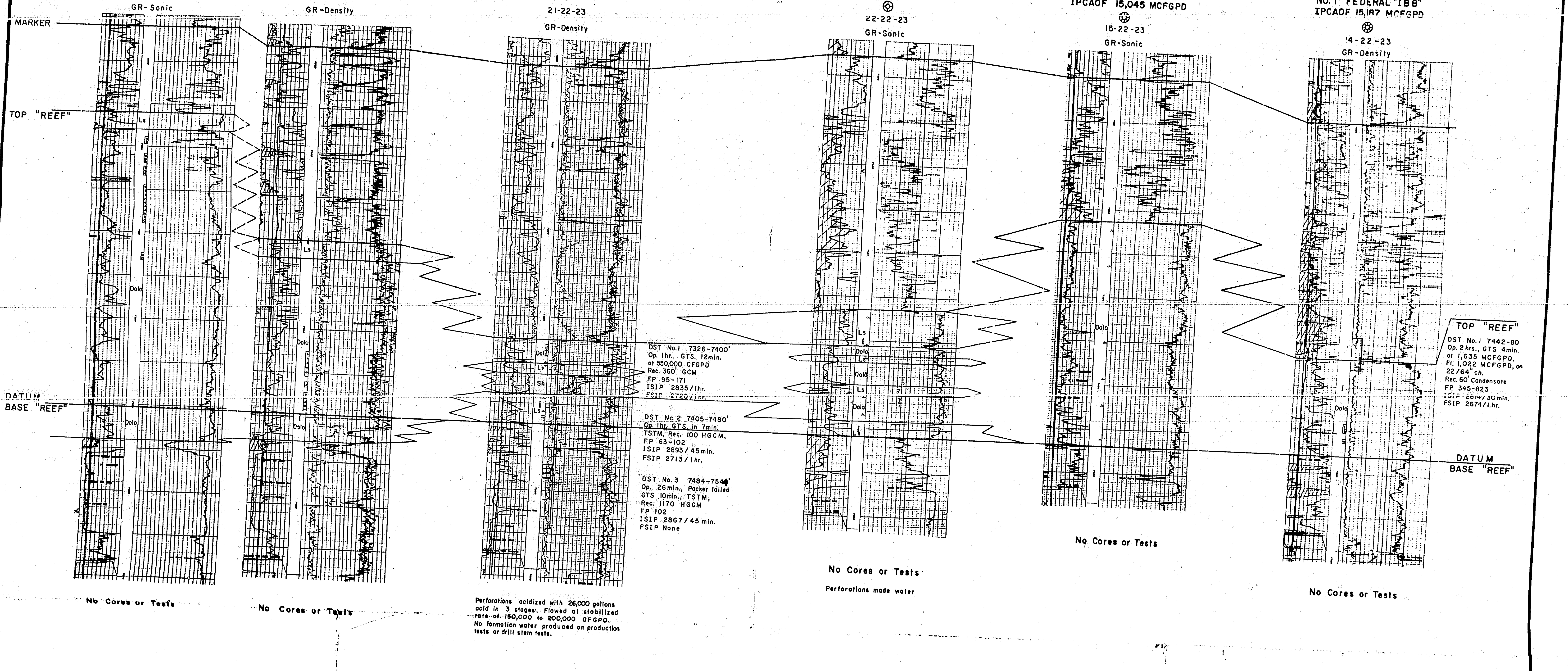
INDIAN BASIN UPPER PENNSYLVANIAN GAS FIELD
ISOPACH of REEF POROSITY GREATER THAN 2%
Scale 1" = 2000'
CI = 25'
PAUL M. MERSHON Jr.
JUNE 1969

493
226

30
45
61%

Exhibit 7
Case 4081: De Novo

N.M.O.C.C. MICROGRAPHICS
BEST AVAILABLE COPY


A
STD OF TEXAS
NO. 3 BOGLE FLATS UNIT
IPCAOF 29,000 MCFGPD
9-22-23
GR-Sonic
STD. OF TEXAS
NO. 5 BOGLE FLATS UNIT
IPCAOF 38,400 MCFGPD
16-22-23
GR-Density
HANAGAN PETROLEUM
NO. I INDIAN-FEDERAL
P. & A.
21-22-23
GR-Density
GULF OIL CORP.
NO. 2 HELBING FEDERAL
P. & A.
22-22-23
GR-Sonic
GULF OIL CORP.
NO. I HELBING FEDERAL
IPCAOF 15,045 MCFGPD
15-22-23
GR-Sonic
B
MARATHON OIL COMPANY
NO. I FEDERAL "IBB"
IPCAOF 15,187 MCFGPD
14-22-23
GR-Density
MARKER
TOP "REEF"
DATUM
BASE "REEF"
Ls
Dolo
Sh
TOP "REEF"
DATUM
BASE "REEF"

No Cores or Tests

No Cores or Tests

Perforations acidized with 26,000 gallons acid in 3 stages. Flowed at stabilized rate of 150,000 to 200,000 CFGPD. No formation water produced on production tests or drill stem tests.

DST No. I 7326-7400'
Op. 1hr., GTS. 12min.
at 550,000 CFGPD
Rec. 360' GCM
FP 95-171
ISIP 2835/1hr.
FSIP 2720/1hr.

DST No. 2 7405-7480'
Op. 1hr. GTS. in 7min.
TSTM, Rec. 100 HGCM.
FP 63-102
ISIP 2893/45min.
FSIP 2713/1hr.

DST No. 3 7484-7544'
Op. 26min., Packer failed
GTS 10min., TSTM,
Rec. 1170 HGCM
FP 102
ISIP 2867/45 min.
FSIP None

No Cores or Tests

Perforations made water

No Cores or Tests

DST No. I 7442-80
Op. 2 hrs., GTS 4min.
at 1,635 MCFGPD.
Fl. 1,022 MCFGPD, on
22/64" ch.
Rec. 60' Condensate
FP 345-823
ISIP 2814/30min.
FSIP 2674/1 hr.

No Cores or Tests

INDIAN BASIN GAS FIELD

CROSS SECTION OF UPPER PENNSYLVANIAN PAY ZONE

Dolo DOLOMITE
Ls LIMESTONE

Vertical Scale 1.9" = 100'
Horizontal Scale 1" = 1000'

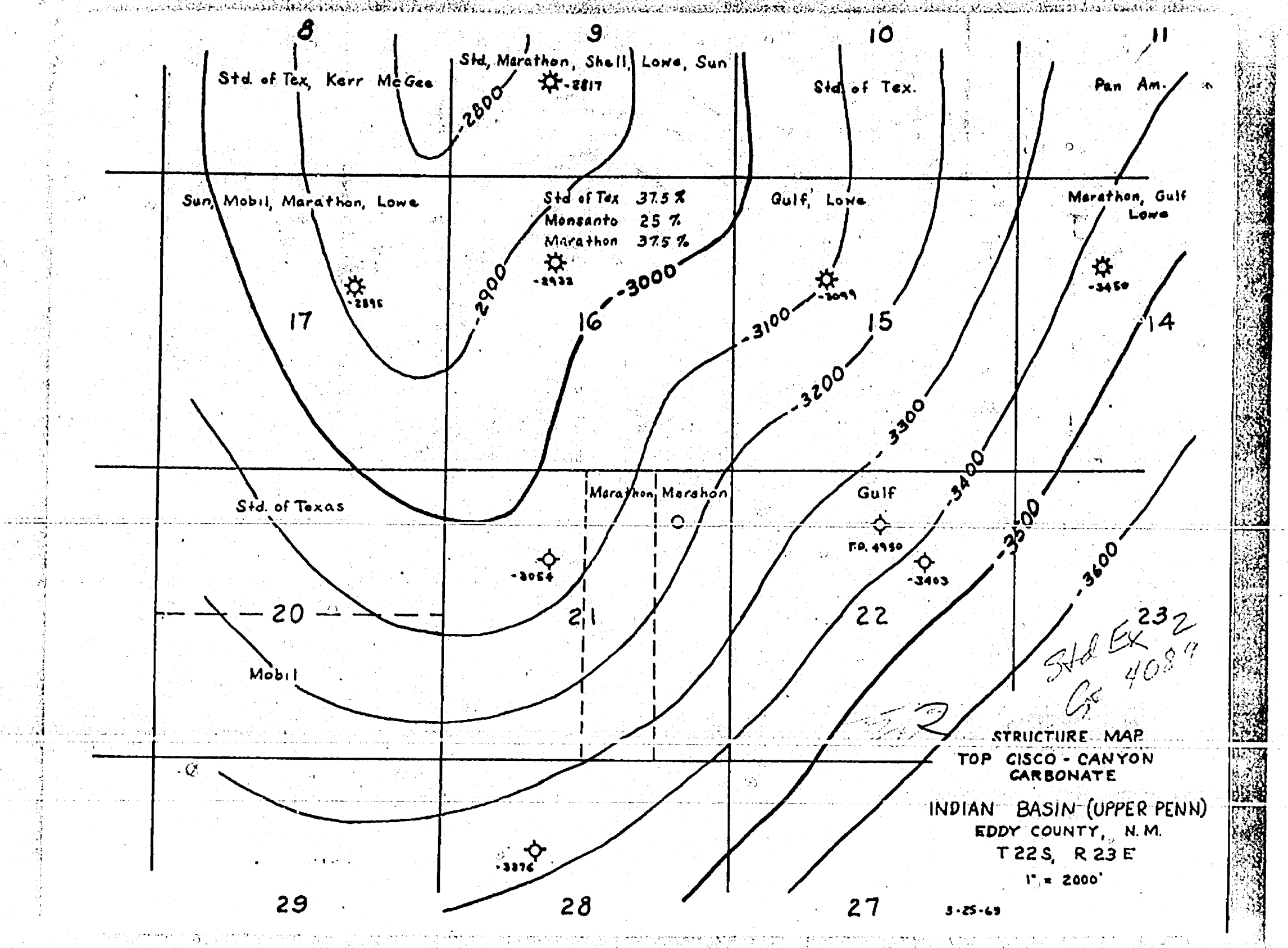
Paul M. Mershon, Jr.

March 1969

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Mershon Exhibit No. 2
Case No. 4089

CASE 4089 De Novo

EXHIBIT 2

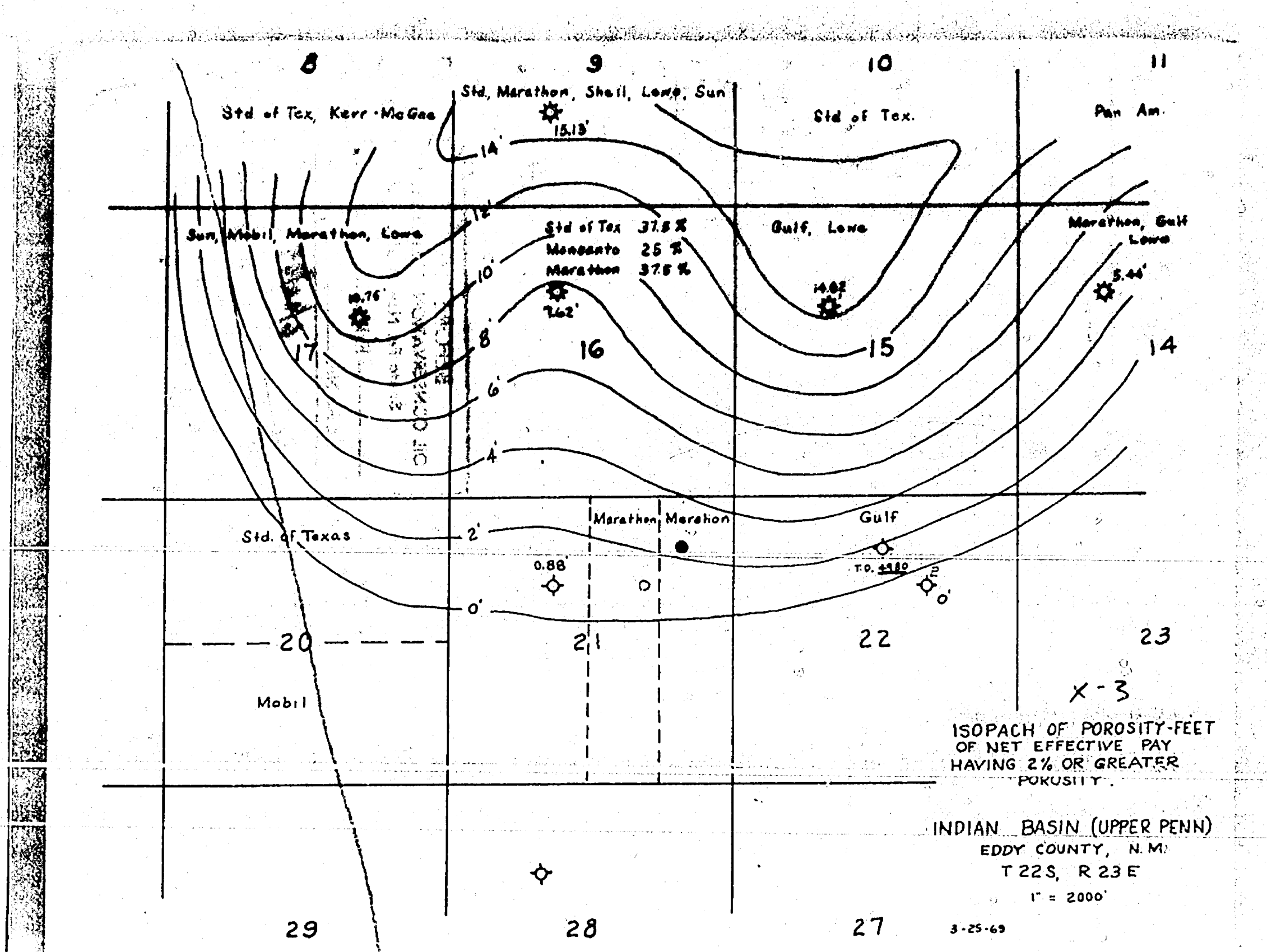

8
9
10
11
Std. of Tex, Kerr McGee
Std, Marathon, Shell, Lowe, Sun
Std. of Tex.
Pan Am.
-2817
-2800
Sun, Mobil, Marathon, Lowe
Std of Tex 37.5 %
Monsanto 25 %
Marathon 37.5 %
Gulf, Lowe
Marathon, Gulf
Lowe
-2895
-2933
-2900
-3000
-3099
-3450
17
16
15
14
-3100
-3200
-3300
-3400
-3500
-3600
Std. of Texas
Marathon
Marathon
Gulf
T.D. 4950
-3054
-3403
20
21
22
23
Mobil
-3376
29
28
27

Std Ex 2
Cf 4089

STRUCTURE MAP
TOP CISCO - CANYON
CARBONATE

INDIAN BASIN (UPPER PENN)
EDDY COUNTY, N.M.
T 22 S, R 23 E
1" = 2000'

3-25-69


8
9
10
11
Std of Tex, Kerr-McGee
Std, Marathon, Shell, Lowe, Sun
Std of Tex.
Pan Am.
15.13'
14'
12'
10'
8'
6'
4'
2'
0'
Sun, Mobil, Marathon, Lowe
Std of Tex 37.5 %
Monsanto 25 %
Marathon 37.5 %
Gulf, Lowe
Marathon, Gulf
Lowe
10.76'
7.62'
14.82
5.46'
17
16
15
14
Std. of Texas
Marathon
Marathon
Gulf
0.88'
T.D. 4980
20
21
22
23
Mobil
29
28
27

X-3

ISOPACH OF POROSITY-FEET
OF NET EFFECTIVE PAY
HAVING 2% OR GREATER
POROSITY.

INDIAN BASIN (UPPER PENN)
EDDY COUNTY, N.M.
T 22 S, R 23 E
1" = 2000'

3-25-69

[illegible] MICROGRAPHICS [illegible]

P.O. DRAWER [illegible]

[illegible], NEW MEXICO [illegible]

[illegible]

The document listed below has been [illegible] as follows:

_____ No acknowledgement

✓ Other Water Damaged Documents

DOCUMENT NUMBER 4039

FILE NUMBER 21

FRAME NUMBER 213-214-222-224-250-231-236

DATE 12-22-87

SIGNED OUT BY J. Blea

N.A.R.C.F. MICROGRAPHICS

C.I. MICROGRAPHICS N.M.C.F.

P.O. DRAWER [illegible]

[illegible], NEW MEXICO [illegible]

DOCUMENT WITHDRAWAL SHEET

The document listed below has been withdrawn for the purpose following:

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✓ Other Water Damaged Documents

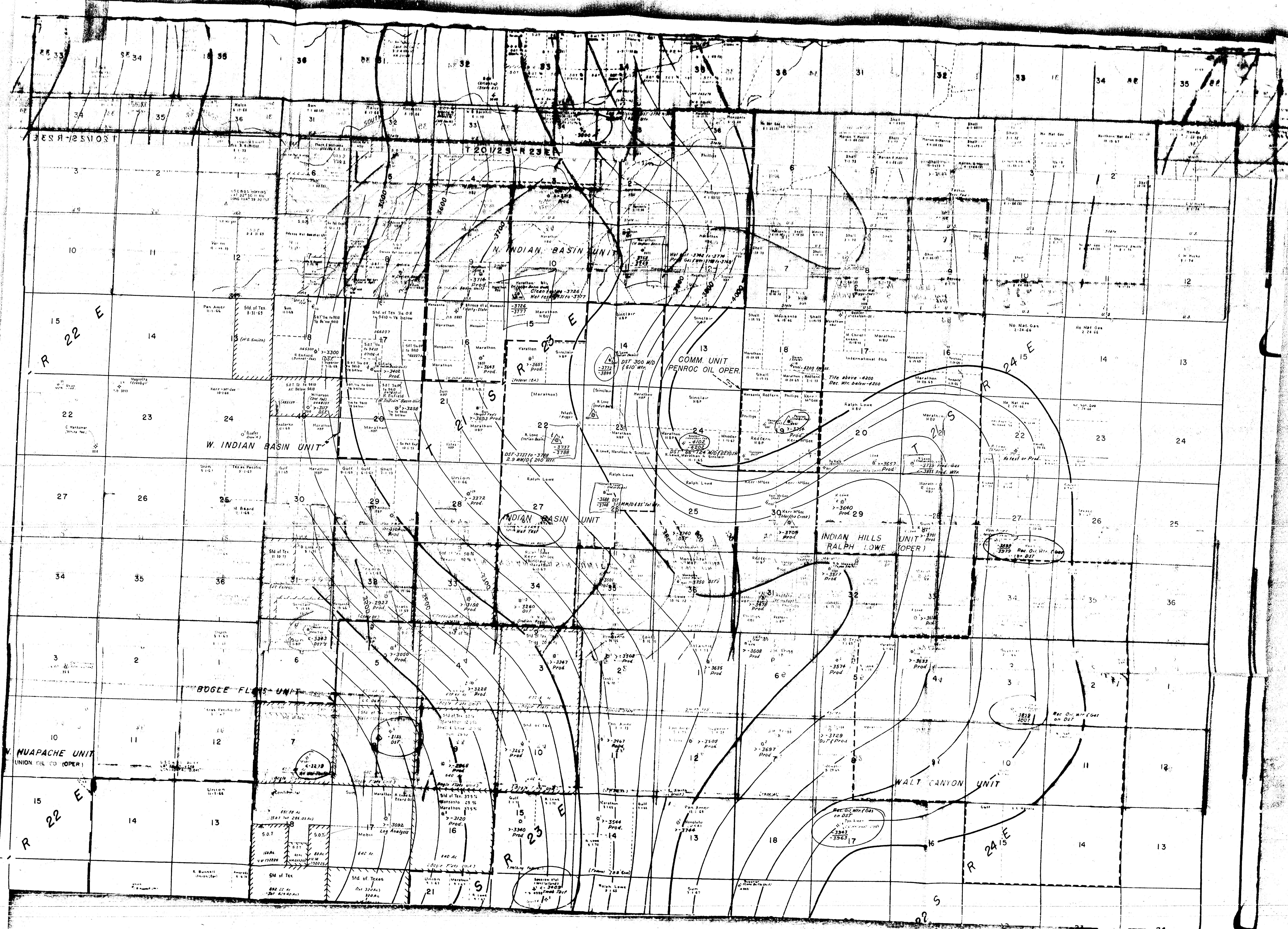
DOCUMENT NUMBER 4089

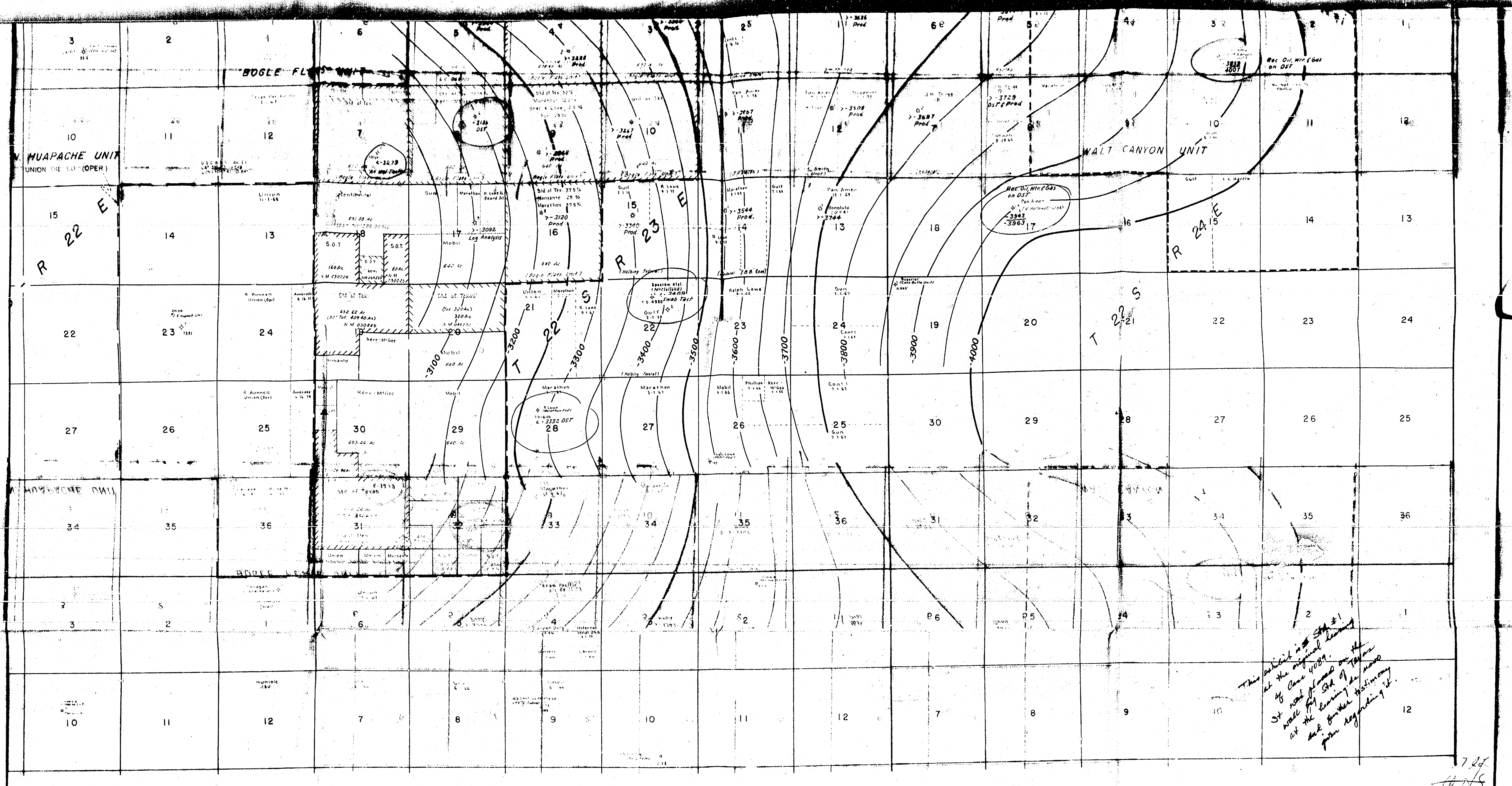
REEL NUMBER 24

FRAME NUMBER 213-214-222-224-230-231-236-237

DATE 12-22-87

CHECKED OUT BY L. Blea


T20S-R23E
T20 1/2 S - R23E
N. INDIAN BASIN UNIT
W. INDIAN BASIN UNIT
INDIAN BASIN UNIT
COMM UNIT PENROC OIL OPER.
INDIAN HILLS UNIT RALPH LOWE (OPER)
BOGLE FLATS UNIT
N. HUAPACHE UNIT UNION OIL CO (OPER)
WALT CANYON UNIT
R 22 E
R 23 E
R 24 E
T 21 S
DST 300 M/D 610' Wtr.
Tite above -4200 Rec. Wtr. below -4200
Rec. Oil, Wtr. & Gas on DST
Wet Test
Prod.
Log Analysis
Marathon
Ralph Lowe
Sinclair
Shell
Monsanto
Gulf
Std of Tex
Pan Amer
Kerr-McGee
Phillips
Union
Sun
No. Nat. Gas


BOGLE FLATS UNIT
N. HUAPACHE UNIT
UNION OIL CO. (OPER.)
WALT CANYON UNIT
R 22 E
R 23 E
R 24 E
T 22 S
-3100
-3200
-3300
-3400
-3500
-3600
-3700
-3800
-3900
-4000
Rec. Oil, Wtr & Gas on DST
Swab Test
Log Analysis
Prod.

This exhibit is ~~#~~ Std #1 at the original hearing of Case 4089. It was placed on the wall by Std of Texas at the hearing de novo and further testimony given regarding it.

- SOTEX CUM. PROD. THRU 4-20-66 -

FORMATION	NO. WELLS	PROD.
CISCO-CANYON	7	N.A.

LEGEND

- ☼ WOLFCAMP PRODUCER
- ☼ CORED CISCO-CANYON
- ⟨☼⟩ ATOKA PRODUCER
- △ CISCO-CANYON-MORROW DUALS
- ☼ CISCO-CANYON GAS WELLS

GAS/WATER CONTACTS IN VARIOUS MORROW SANDS UNKNOWN.

> -3198 G/W CONTACT BELOW THIS ELEVATION FROM DST, PROD. TSTG. ETC.

< -3198 G/W CONTACT ABOVE THIS ELEVATION FROM DST, PROD. TSTG. ETC.

$\frac{-3739}{-3855}$ G/W CONTACT BETWEEN THESE TWO ELEVATIONS FROM DST, PROD. TSTG ETC.

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
Standard EXHIBIT NO. 1
CASE NO. 4089

7-22
CMS

REVISIONS	
DATE	NAME
APPROVED	Original Sign'd by E. C. Wilson

STANDARD OIL CO. OF TEXAS
PRODUCING DEPT.

INDIAN BASIN FIELD
EDDY COUNTY, NEW MEXICO
CONTOUR MAP
GAS/WATER CONTACT
CISCO-CANYON REEF
C.I. = 50'

DATE	SCALE	MAP NO.
6-15-66 J.E.D.	1" = 2000'	A-1113A-1

4-C

C.I. MICROGRAPHICS N.M.R.C.F.
P.O. DRAWER [illegible]
GRANTS, NEW MEXICO [illegible]

DOCUMENT WITHDRAWAL SHEET

The document listed below has been withdrawn for the purpose as follows:

____ No acknowledgement

✓ Other Water Damaged Documents

DOCUMENT NUMBER 4089
REEL NUMBER 24
FRAME NUMBER 213-214-222-224-230-231-236-237-238
DATE 12-22-87
SCANNED OUT BY J. Blea

N.M.R.C.F. MICROGRAPHICS
BEST AVAILABLE COPY