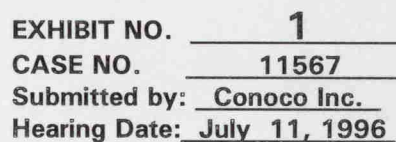


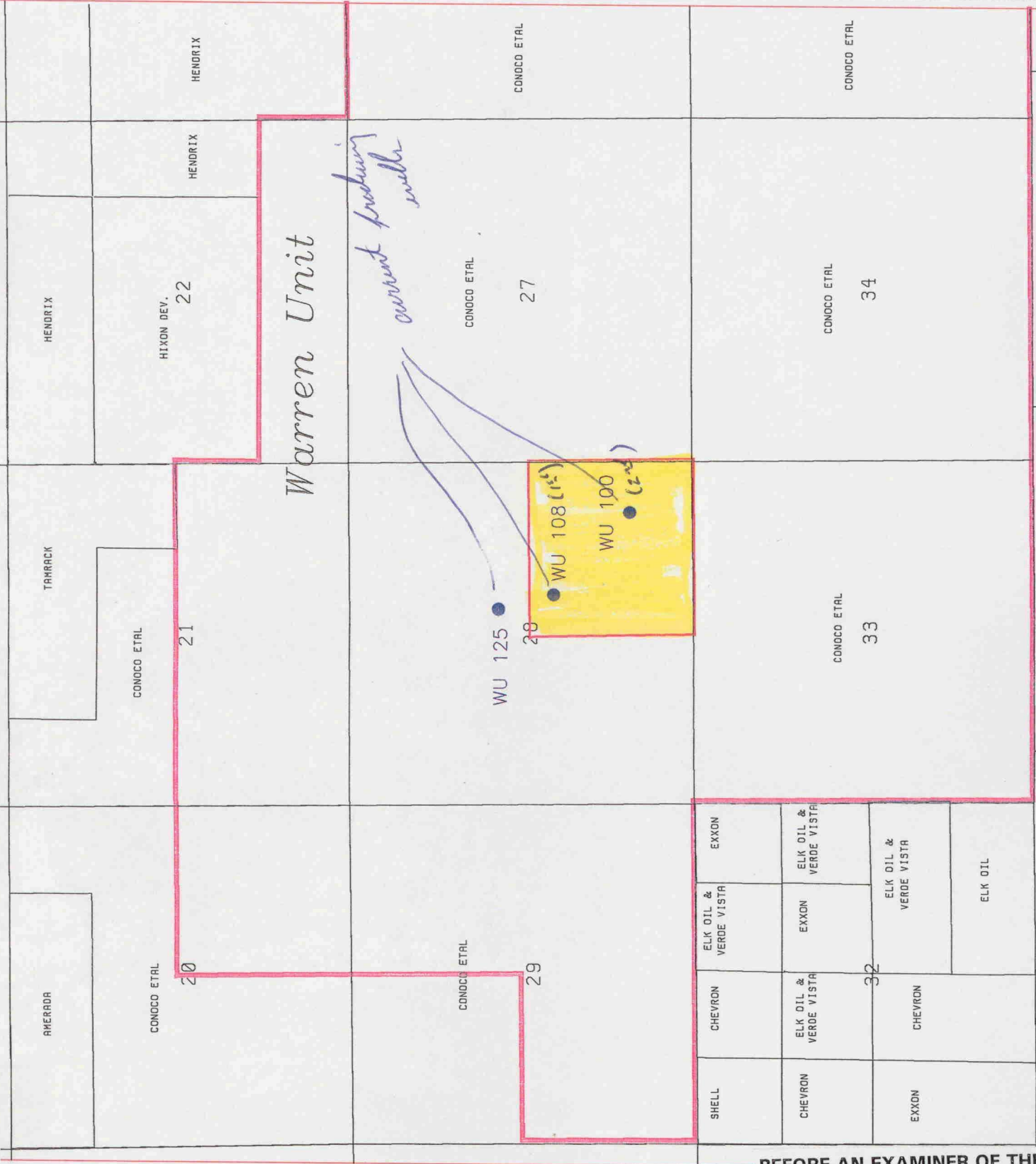
sl1538





Hearing Date: July 11, 1996





LEGEND

- CURRENT POOL LIMITS OF WARREN SAN ANDRES POOL
- CURRENT PRODUCER FROM GRAYBURG/SAN ANDRES



1:24000  
FEET 0 2000 FEET

Conoco Inc. Midland, TX	
Offset Operators & Current Pool Limits of Warren San Andres Pool Warren Unit Lea County, NM T20S, R38E	
SCALE 1:24000	DRAWN David Nelson
DATE 10-JUN-96	
DRAWING Offset Operator	

BEFORE AN EXAMINER OF THE  
OIL CONSERVATION DIVISION

EXHIBIT NO. 3  
CASE NO. 11567  
Submitted by: Conoco Inc.  
Hearing Date: July 11, 1996

# LEGEND

- PROJECTED LIMITS OF WARREN GRAYBURG - SAN ANDRES POOL
- 1996 DRILLING PROGRAM
- 1997 DRILLING PROGRAM
- CURRENT PRODUCER
- PROJECTED ULTIMATE POOL LIMIT



FEET 0 1000 2000 FEET  
1:16920

*performed drilling program*

CONOCO INC.  
MIDLAND, TX

PROPOSED DEVELOPMENT OF  
WARREN GRAYBURG SAN ANDRES POOL  
WARREN UNIT  
LEA COUNTY, NM  
T20S, R38E

DATE 24-JUN-96

NAME DAVID NELSON

SCALE

REVISION

Warren Unit

22

27

34

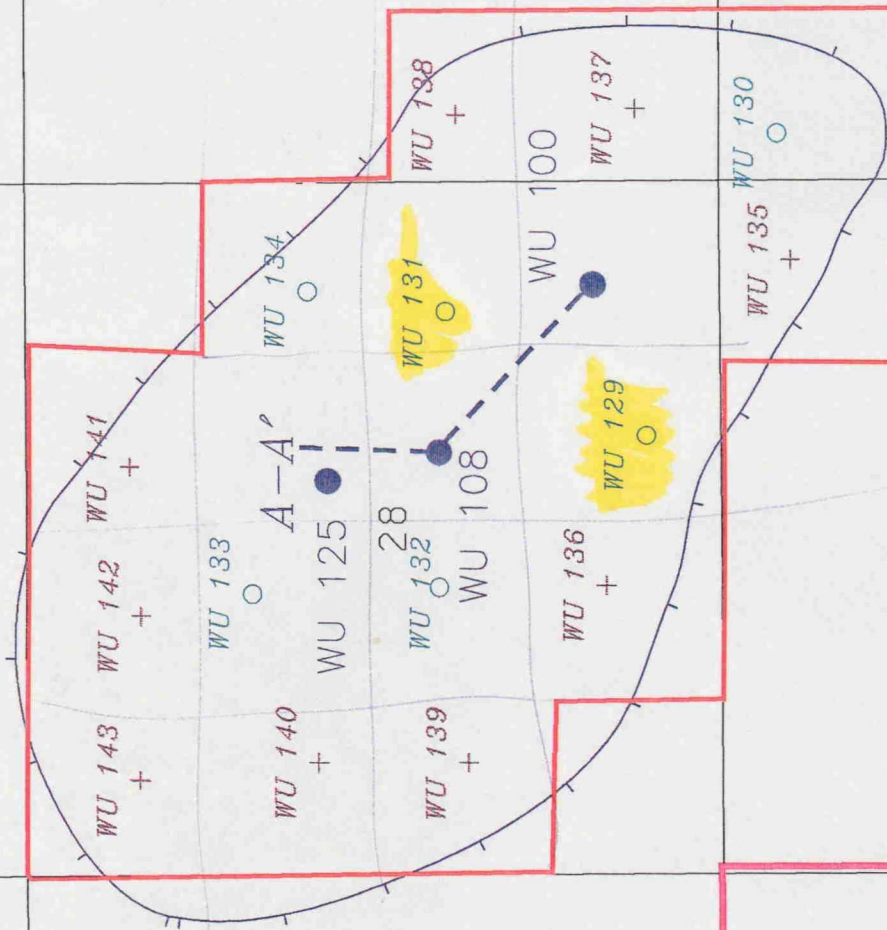
21

33

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BEFORE AN EXAMINER OF THE  
OIL CONSERVATION DIVISION

EXHIBIT NO. 4  
CASE NO. 11567  
Submitted by: Conoco Inc.  
Hearing Date: July 11, 1996

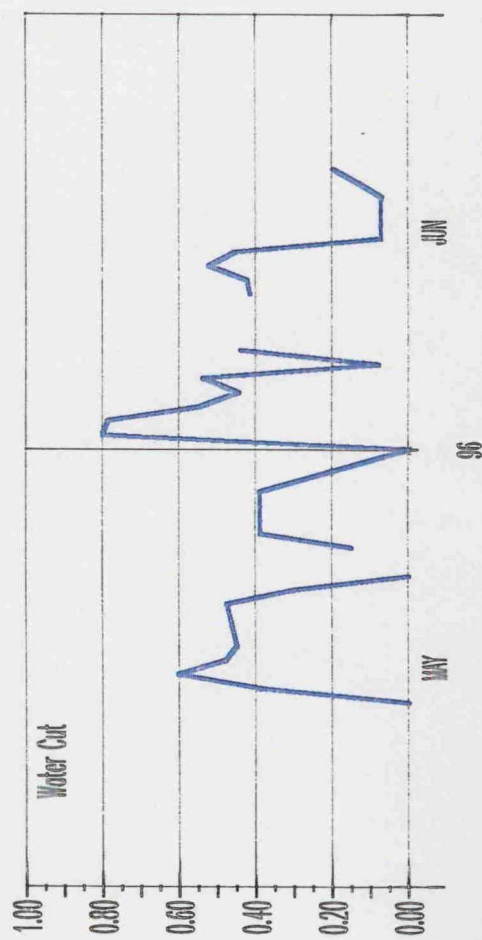
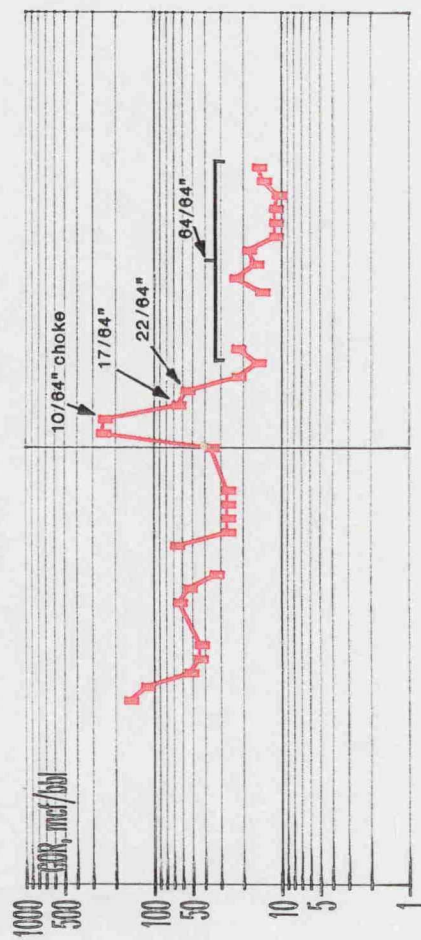
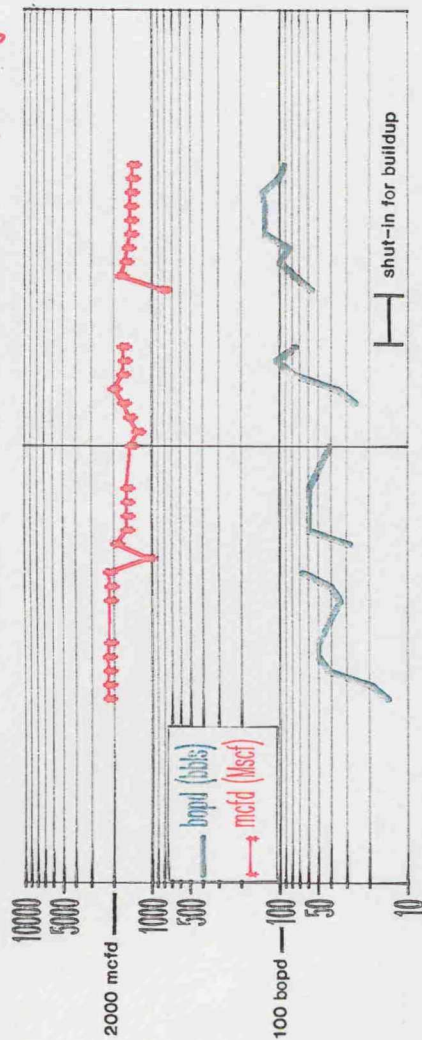
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BEEN REMOVED  
AND IS LOCATED  
IN THE NEXT FILE

LARGE FORMAT  
EXHIBIT HAS  
BEEN REMOVED  
AND IS LOCATED  
IN THE NEXT FILE



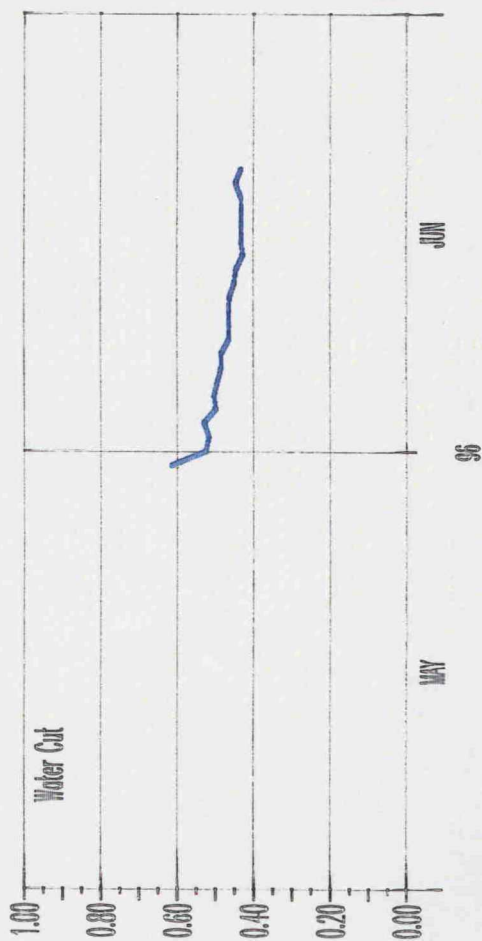
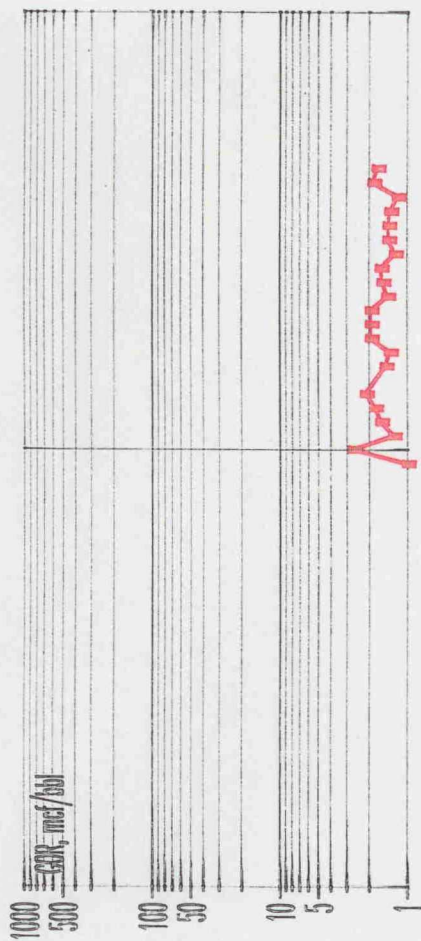
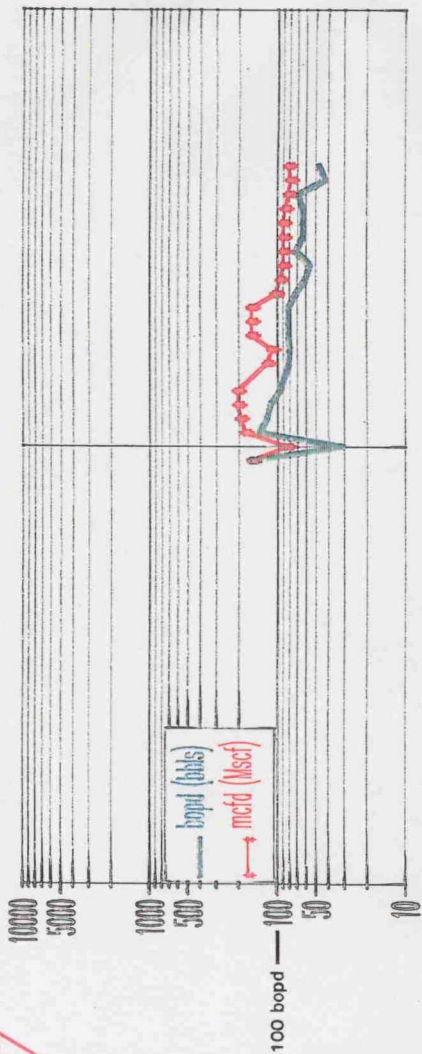
WELL: WARREN UNIT 100-SA

GRAYBURG SAN ANDRES ZONE 1



WELL: WARREN UNIT 125-SA

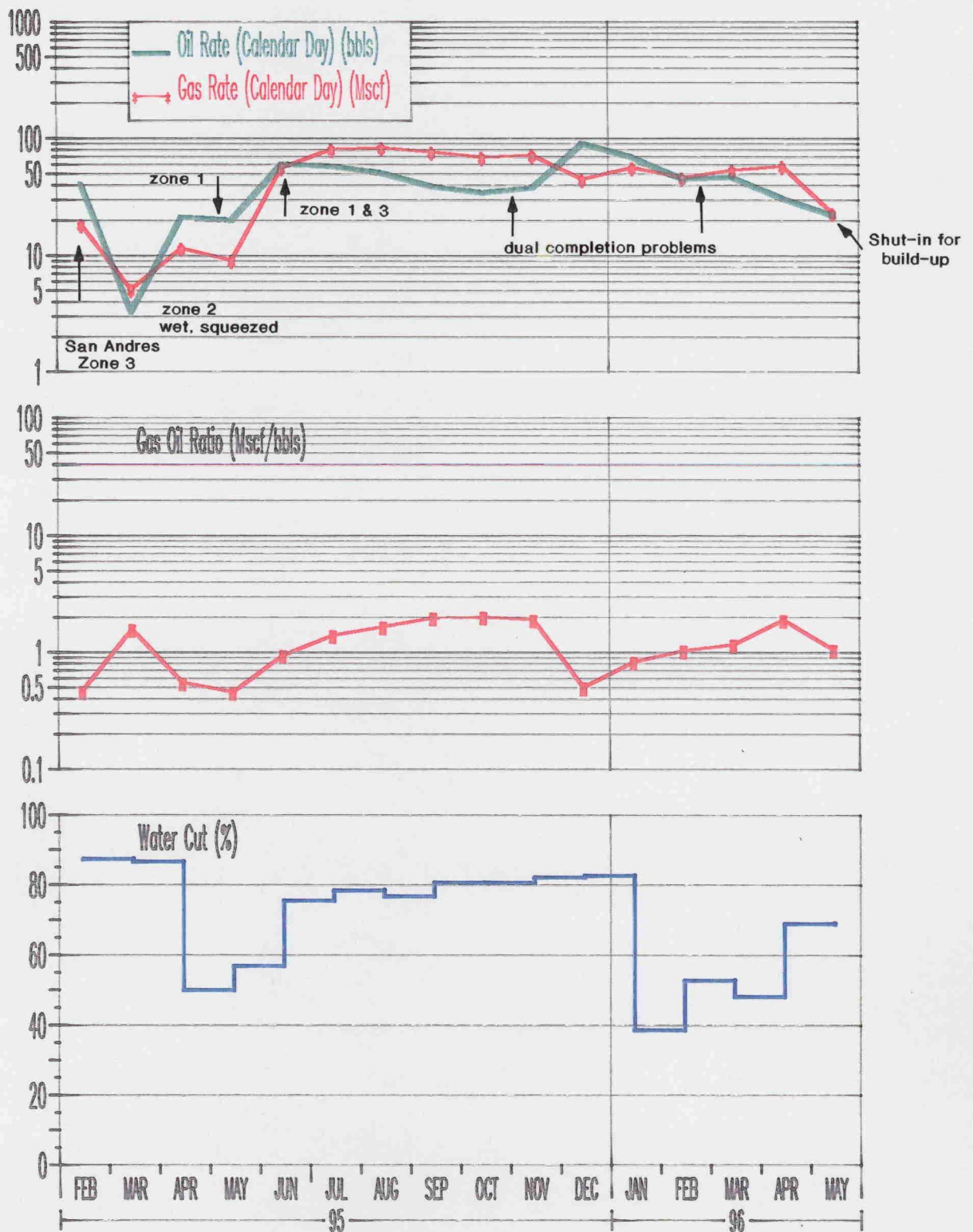
GRAYBURG SAN ANDRES ZONE 2



BEFORE AN EXAMINER OF THE  
OIL CONSERVATION DIVISION

EXHIBIT NO. 7  
CASE NO. 11567  
Submitted by: Conoco Inc.  
Hearing Date: July 11, 1996

WELL: WARREN UNIT 108:SA  
SAN ANDRES ZONES 1 & 3



SAN ANDRES CUMULATIVE PRODUCTION: 19 MBO, 60 MBW, 23 MMCF

BEFORE AN EXAMINER OF THE  
OIL CONSERVATION DIVISION

EXHIBIT NO. 8  
CASE NO. 11567  
Submitted by: Conoco Inc.  
Hearing Date: July 11, 1996



## Development Plan Under Allowables of Current Rules

Oil Depth Allowable:	80 BOPD
2000 Limiting GOR:	160 MCFD

### DEVELOPMENT PLAN UNDER CURRENT ALLOWABLES:

- |      |   |
|------|---|
| 1996 | <ul style="list-style-type: none"><li>● Drill 6 Grayburg San Andres wells.<br/>Complete in San Andres Zone 3 <i>only</i>.</li><li>● Shut-in Warren Unit No. 100 to make up overproduced gas.</li></ul>  |
| 1997 | <ul style="list-style-type: none"><li>● Drill 9 Grayburg San Andres wells.<br/>Complete in San Andres Zone 3 <i>only</i>.</li><li>● Squeeze off Warren Unit No. 100.<br/>Complete in San Andres Zone 3 <i>only</i>.</li></ul>                                   |
| 1998 | <ul style="list-style-type: none"><li>● As wells decline, plug out of Zone 3 and<br/>Complete into Grayburg and San Andres Zone 1.</li><li>● As wells further decline, re-open San Andres Zone 3 and<br/>Combine with Grayburg and San Andres Zone 1.</li></ul> |

### IMPACT OF CURRENT ALLOWABLES UPON DEVELOPMENT PLAN:

- ⊖ Three-plus years to complete field development.
- ⊖ Delays recovery of primary and secondary reserves.
- ⊖ Requires Warren Unit No. 100 to be shut-in for 11 months  
to make up overproduced gas
- ⊖ Wastes reservoir energy in Warren Unit No. 100.
- ⊖ Staggered completions increases mechanical risk.  
Requires a minimum of 2 additional workovers per well  
to deplete all productive intervals.
- ⊖ Increases health, safety and environmental risk from exposure  
to sour crude.
- ⊖ Adds \$900,000 to total development cost.

BEFORE AN EXAMINER OF THE  
OIL CONSERVATION DIVISION

EXHIBIT NO. 9  
CASE NO. 11567  
Submitted by: Conoco Inc.  
Hearing Date: July 11, 1996

## **Development Plan Under Allowables of Proposed Rules**

**Proposed Oil Depth Allowable: 200 BOPD**  
**Proposed 10,000 Limiting GOR: 2000 MCFD**

### **DEVELOPMENT PLAN UNDER PROPOSED ALLOWABLES:**

- 1996
- Drill 6 Grayburg San Andres wells.  
Complete in all productive zones.
  - Return San Andres Zone 3 to production in  
Warren Unit No. 100.
  - Complete San Andres Zone 3 in Warren Unit No. 125.
- 1997
- Drill 9 Grayburg San Andres wells.  
Complete in all productive zones.

### **IMPACT OF PROPOSED ALLOWABLES UPON DEVELOPMENT PLAN:**

- ☺ Two years to complete field development.
- ☺ Accelerates recovery of primary and secondary reserves.
- ☺ Avoids the shut-in of Warren Unit No. 100 for 11 months.
- ☺ Results in most efficient use of reservoir energy in No. 100.
- ☺ Single completions decreases mechanical risk.  
No workovers needed to add additional zones.
- ☺ Decreases exposure to health, safety and environmental risks.
- ☺ Cuts \$900,000 from total development cost.

**BEFORE AN EXAMINER OF THE  
OIL CONSERVATION DIVISION**

**EXHIBIT NO. 10**  
**CASE NO. 11567**  
**Submitted by: Conoco Inc.**  
**Hearing Date: July 11, 1996**



LARGE FORMAT  
EXHIBIT HAS  
BEEN REMOVED  
AND IS LOCATED  
IN THE NEXT FILE

# Warren Grayburg San Andres

## Fluid Data

WU 125      WU 108      WU 100  
GB/SA 1      SA 1/SA 3      GB/SA 1

Gravity	34	35	33
Sulfur %	1.52	1.43	1.88
Sweet/Sour	Sour	Sour	Sour
Methane %	66.1	63.4	72.6
BTU/cu.ft.	1253	1269	1170
GPM	6.85	7.34	5.08
Sp Gr	.855	.867	.780
H2S, ppm	28082	31728	16356
TDS, ppm	30872	51575	14114

Oil

Gas

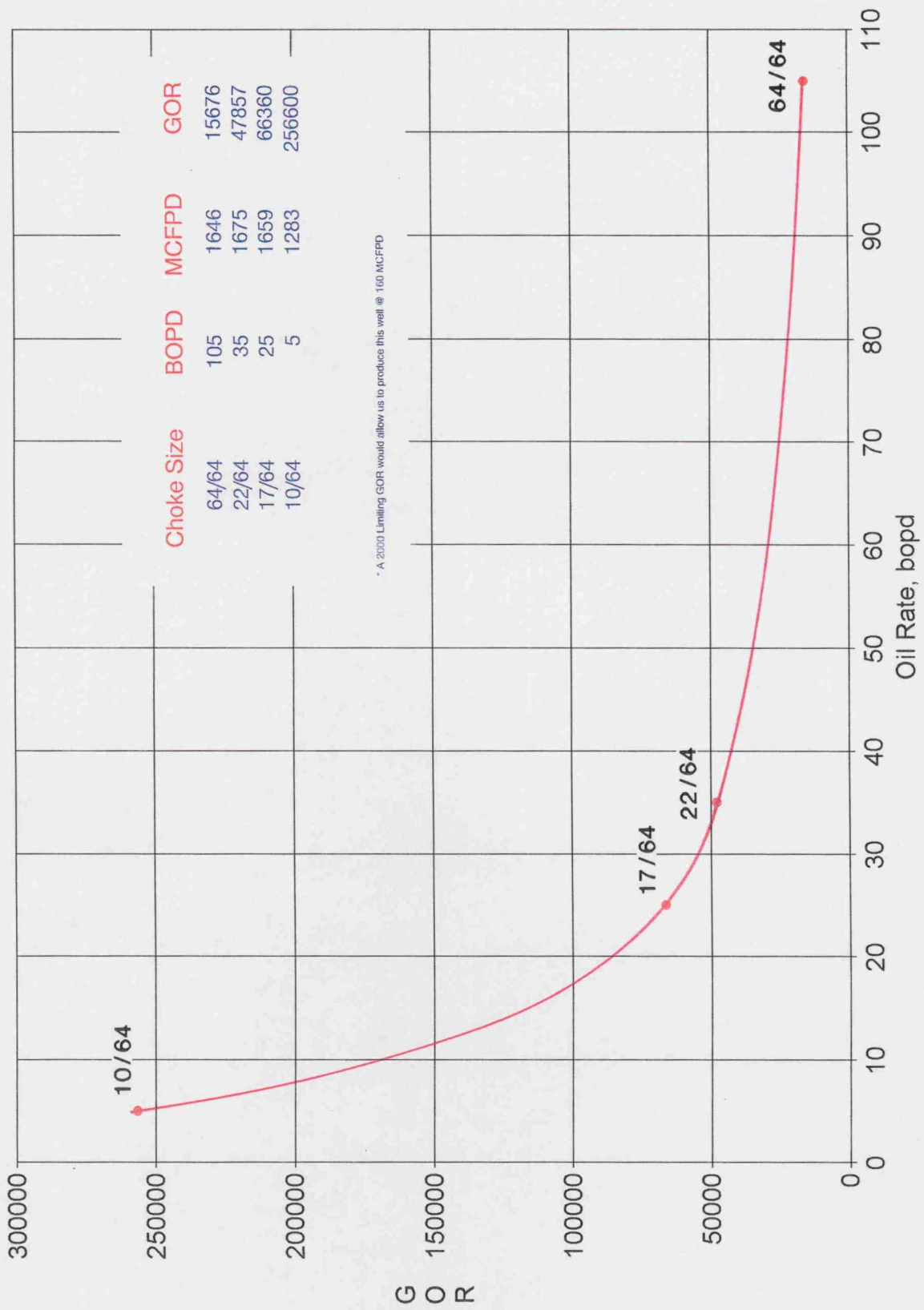
Water

BEFORE AN EXAMINER OF THE  
OIL CONSERVATION DIVISION

EXHIBIT NO.      12  
CASE NO.      11567  
Submitted by:      Conoco Inc.  
Hearing Date:      July 11, 1996



**Warren Unit No. 100 GOR Testing**  
Grayburg San Andres, May 1996



BEFORE AN EXAMINER OF THE  
OIL CONSERVATION DIVISION

EXHIBIT NO. 13  
CASE NO. 11567  
Submitted by: Conoco Inc.  
Hearing Date: July 11, 1996

STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION

APPLICATION OF CONOCO INC.  
TO EXTEND THE VERTICAL LIMITS FOR THE  
WARREN-SAN ANDRES POOL, AND FOR  
SPECIAL RULES AND REGULATIONS  
LEA COUNTY, NEW MEXICO.

**CASE NO. 11567**


CERTIFICATE OF MAILING  
AND  
COMPLIANCE WITH ORDER R-8054

STATE OF NEW MEXICO   )  
                                  ) SS.  
COUNTY OF SANTA FE   )

Jerry Hoover, being first duly sworn, hereby certifies that he is an employee of the Applicant and responsible for notification in this matter and that the notice provisions of Division Rule 1207 (Order R-8054) have been complied with, that Applicant has caused to be conducted a good faith diligent effort to find the correct addresses of all interested parties entitled to receive notice, that on June 9, 1996, he caused to be mailed by certified mail return-receipt requested the attached notice of this hearing and a copy of the application for the above referenced case, at least twenty days prior to the continued hearing of this case set for July 11, 1996, to the parties shown in said application and as evidenced by the attached copies of return receipt cards and/or receipts of certified mailing, and that pursuant to Division Rule 1207, notice has been given at the correct addresses provided by such rule.

  
JERRY HOOVER

SUBSCRIBED AND SWORN to before me this 10th day of July 1996, by Jerry Hoover.

  
\_\_\_\_\_  
W. Thomas Kellahin, Notary Public  
My Commission Expires:  
April 17, 2000



# OFFSET OPERATORS

Within 1 mile of the

## WARREN SAN ANDRES POOL BOUNDRY

Chevron USA, Inc.  
P.O. Box 1150  
Midland, TX 79701

Elk Oil Co.  
P.O. Box 310  
Roswell, NM 88202

Exxon Corporation  
P.O. Box 1600  
Midland, TX 79702

Hixon Development Co.  
% Giant Explor. & Prod.  
P.O. Box 2810  
Farmington, NM 87499

### Copies of Certified Mail Receipts

Is your RETURN ADDRESS completed on the reverse side?

**SENDER:**  
 • Complete items 1 and/or 2 for additional services.  
 • Complete items 3, 4a, and 4b.  
 • Print your name and address on the reverse of this form so that we can return this card to you.  
 • Attach this form to the front of the mailpiece, or on the back if space does not permit.  
 • Write "Return Receipt Requested" on the mailpiece below the article number.  
 • The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):  
 1. ☐ Addressee's Address  
 2. ☐ Restricted Delivery  
 Consult postmaster for fee.

3. Article Addressed to:  
 Chevron USA, Inc.  
 P.O. Box 1150  
 Midland, TX 79701

4a. Article Number  
 2-111-000-228

4b. Service Type  
☐ Registered ☒ Certified  
☐ Express Mail ☐ Insured  
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery  
 JUN 20 1996

5. Received By: (Print Name)  
 [Signature]

6. Signature: (Addressee or Agent)  
 X [Signature]

PS Form 3811, December 1994 Domestic Return Receipt

Is your RETURN ADDRESS completed on the reverse side?

**SENDER:**  
 • Complete items 1 and/or 2 for additional services.  
 • Complete items 3, 4a, and 4b.  
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 • Write "Return Receipt Requested" on the mailpiece below the article number.  
 • The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):  
 1. ☐ Addressee's Address  
 2. ☐ Restricted Delivery  
 Consult postmaster for fee.

3. Article Addressed to:  
 Elk Oil Co.  
 P.O. Box 310  
 Roswell, NM 88202

4a. Article Number  
 2-111-000-227

4b. Service Type  
☐ Registered ☒ Certified  
☐ Express Mail ☐ Insured  
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery  
 JUN 20 1996

5. Received By: (Print Name)  
 [Signature]

6. Signature: (Addressee or Agent)  
 X [Signature]

PS Form 3811, December 1994 Domestic Return Receipt

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**SENDER:**  
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 • Attach this form to the front of the mailpiece, or on the back if space does not permit.  
 • Write "Return Receipt Requested" on the mailpiece below the article number.  
 • The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):  
 1. ☐ Addressee's Address  
 2. ☐ Restricted Delivery  
 Consult postmaster for fee.

3. Article Addressed to:  
 Exxon Corporation  
 P.O. Box 1600  
 Midland, TX 79702

4a. Article Number  
 2-111-000-230

4b. Service Type  
☐ Registered ☒ Certified  
☐ Express Mail ☐ Insured  
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery  
 JUN 20 1996

5. Received By: (Print Name)  
 [Signature]

6. Signature: (Addressee or Agent)  
 X [Signature]

PS Form 3811, December 1994 Domestic Return Receipt

Is your RETURN ADDRESS completed on the reverse side?

**SENDER:**  
 • Complete items 1 and/or 2 for additional services.  
 • Complete items 3, 4a, and 4b.  
 • Print your name and address on the reverse of this form so that we can return this card to you.  
 • Attach this form to the front of the mailpiece, or on the back if space does not permit.  
 • Write "Return Receipt Requested" on the mailpiece below the article number.  
 • The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):  
 1. ☐ Addressee's Address  
 2. ☐ Restricted Delivery  
 Consult postmaster for fee.

3. Article Addressed to:  
 Hixon Development Co.  
 % Giant Explor. & Prod.  
 P.O. Box 2810  
 Farmington, NM 87499

4a. Article Number  
 2-111-000-229

4b. Service Type  
☐ Registered ☒ Certified  
☐ Express Mail ☐ Insured  
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery  
 JUN 21 1996

5. Received By: (Print Name)  
 Tracy McClure

6. Signature: (Addressee or Agent)  
 X Tracy McClure

PS Form 3811, December 1994 Domestic Return Receipt

BEFORE AN EXAMINER OF THE  
OIL CONSERVATION DIVISION

EXHIBIT NO. 14  
 CASE NO. 11567  
 Submitted by: Conoco Inc.  
 Hearing Date: July 11, 1996



Edinburgh Petroleum Services Ltd.

Report File:

WU100R.PAN

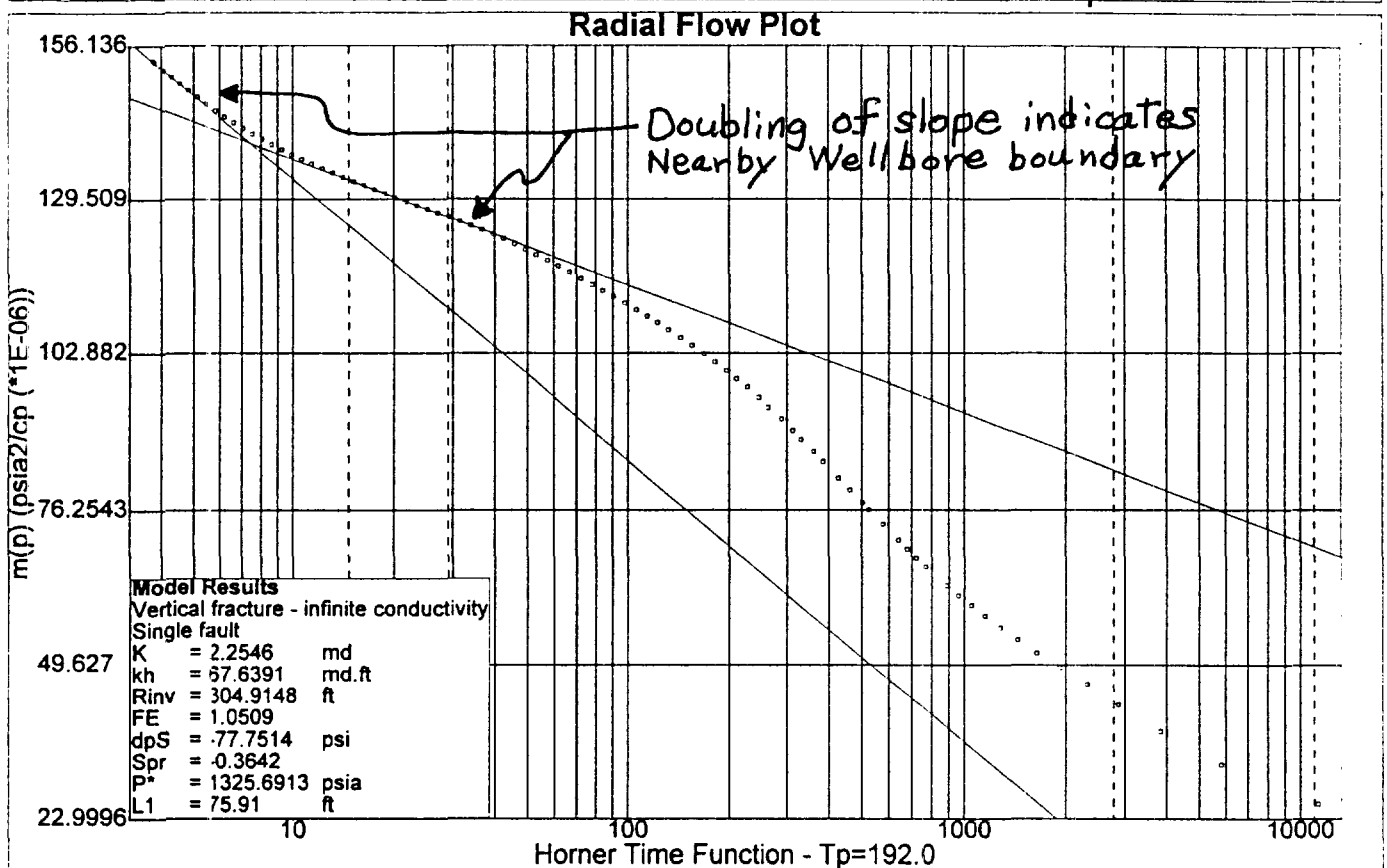
PanSystem Version 2.2

Analysis Date:

6/25/96

Well Test Analysis Report

Warren Unit 100  
Pressure Build-Up Test



#### Radial Flow Plot Model Results

Vertical fracture - infinite conductivity  
Single fault

	Value
Permeability	2.2546 md
Permeability-thickness	67.6391 md.ft
Radius of investigation	304.9148 ft
Flow efficiency	1.0509
dP skin (constant rate)	-77.7514 psi
Pseudo-radial skin factor	-0.3642
Extrapolated pressure	1325.6913 psia
Distance to nearest fault	75.91 ft

#### Radial Flow Plot Line Details

Line type : Late pseudo-radial flow

Slope : -21.8456

Intercept : 158.307

Coefficient of Determination : 0.999868

	Late pseudo-radial flow
Extrapolated m(p)	158.3069 psia2/cp (*1E-06)
Extrapolated pressure	1235.2157 psia
m(p) at dt = 1 hr	108.3775 psia2/cp (*1E-06)
Pressure at dt = 1 hour	1019.3677 psia

BEFORE AN EXAMINER OF THE  
OIL CONSERVATION DIVISION

EXHIBIT NO. 15  
CASE NO. 11567  
Submitted by: Conoco Inc.  
Hearing Date: July 11, 1996