

**PIPER SURVEYING COMPANY**

P. O. Box 6432-ATS  
MIDLAND, TEXAS 79711  
(915) 561-9025

JOB Section 20 T-16-S R-37-E LEA CO. NM

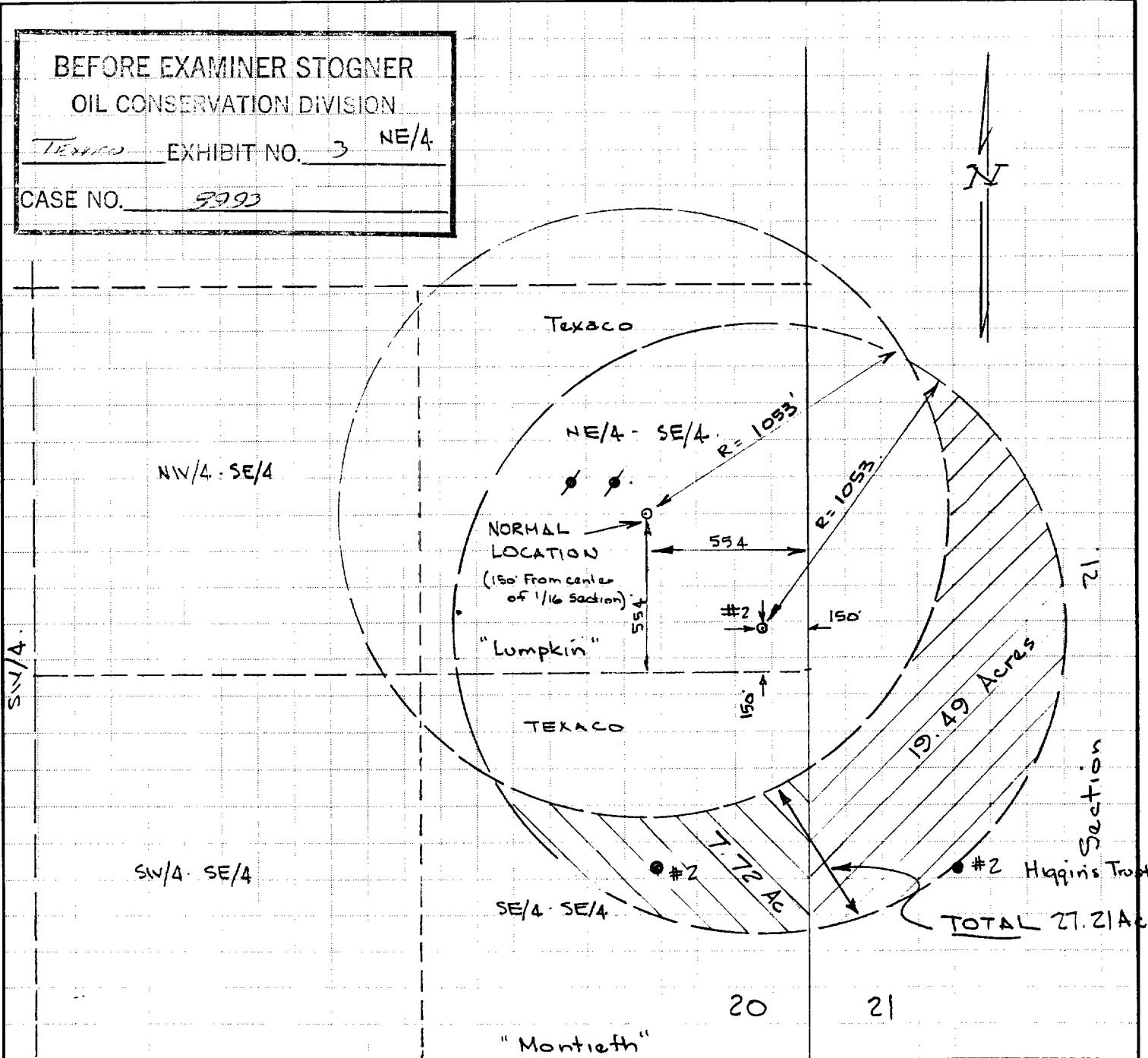
SHEET NO. 1 For B.L. Eiland of Texaco

CALCULATED BY J.S. Piper DATE 10/3/86

CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_

SCALE 1" = 500'

BEFORE EXAMINER STOGNER  
OIL CONSERVATION DIVISION  
TEXACO EXHIBIT NO. 3 NE/4  
CASE NO. 9993



Summary of Areas

7.72 Acres in Montieth. lse (Texaco)  
19.49 Acres in Section 21 (others)  
27.21 Acres Total

Note  
Circle w/ radius of  
1053' contains:  
80.00 Acres

PROPOSED LUMPKIN "20" WELL NO. 2  
Lovington Penn, Northeast Pool  
Lea County, New Mexico

PROPOSED OIL ALLOWABLE

Top allowable oil well = 534 BOPD

Location of closest orthodox location: 554' FSL and 554' FEL of  
N/2 SE/4, Section 20 (150' from center of 1/4 1/4 Section as per  
order Number 3816)

North-South limitation factor:  $150/554' = .27$  or 73% closer than  
standard location

East-West limitation factor:  $150/554' = .27$  or 73% closer than  
standard location

Additional Acreage drained by proposed well over standard location:  
 $27.21 \text{ acres}/80 \text{ acres} = 34\%$  additional drained area

Formula =  $(.27 + .27 + .66)/3 = .40$

Allowable =  $.40 (534) = 213.6$  BOPD

TEXACO PRODUCING INC.  
Proposed Lumpkin "20" Well No. 2  
Lovington Penn, Northeast Pool  
Lea County, New Mexico

BEFORE EXAMINER STOGNER OIL CONSERVATION DIVISION	
TEXACO	EXHIBIT NO. 4
CASE NO. 922	

(A) COMPARISON OF PRODUCTIVE ACREAGE OR WELLS OFFSETTING THE PROPOSED LUMPKIN "20" WELL NO. 2

Higgins Trust Well No.1  
(Proration Unit N/2, SW/4, Section 21)  
ESTIMATED PRODUCTIVE ACREAGE: 58.1 Acres

Higgins Trust Well No. 2  
(Proration Unit S/2, SW/4, Section 21)  
ESTIMATED PRODUCTIVE ACREAGE: 50.7 Acres

H. T. Montieth Well No. 2  
(Proration Unit S/2, SE/4, Section 20)  
ESTIMATED PRODUCTIVE ACREAGE: 57.8 Acres

Proposed Lumpkin "20" Well No. 2  
(Proration Unit N/2, SE/4, Section 20)  
ESTIMATED PRODUCTIVE ACREAGE: 24.7 Acres

(B) DETERMINATION OF ALLOWABLES BASED ON A COMPARISON OF PRODUCTIVE ACREAGE

- (1) Higgins Trust Well No. 1 = 58.1 Acres  
Lumpkin "20" Well No. 2 = 24.7 Acres  
 $24.7/58.1 \times 534 \text{ bopd (Top Allowable)} = 227 \text{ BOPD}$
- (2) Higgins Trust Well No. 2 = 50.7 Acres  
Lumpkin "20" Well No. 2 = 24.7 Acres  
 $24.7/50.7 \times 534 \text{ bopd (Top Allowable)} = 260 \text{ BOPD}$
- (3) H. T. Montieth Well No. 2 = 57.8 Acres  
Lumpkin "20" Well No. 2 = 24.7 Acres  
 $24.7/57.8 \times 534 \text{ bopd (Top Allowable)} = 228 \text{ BOPD}$

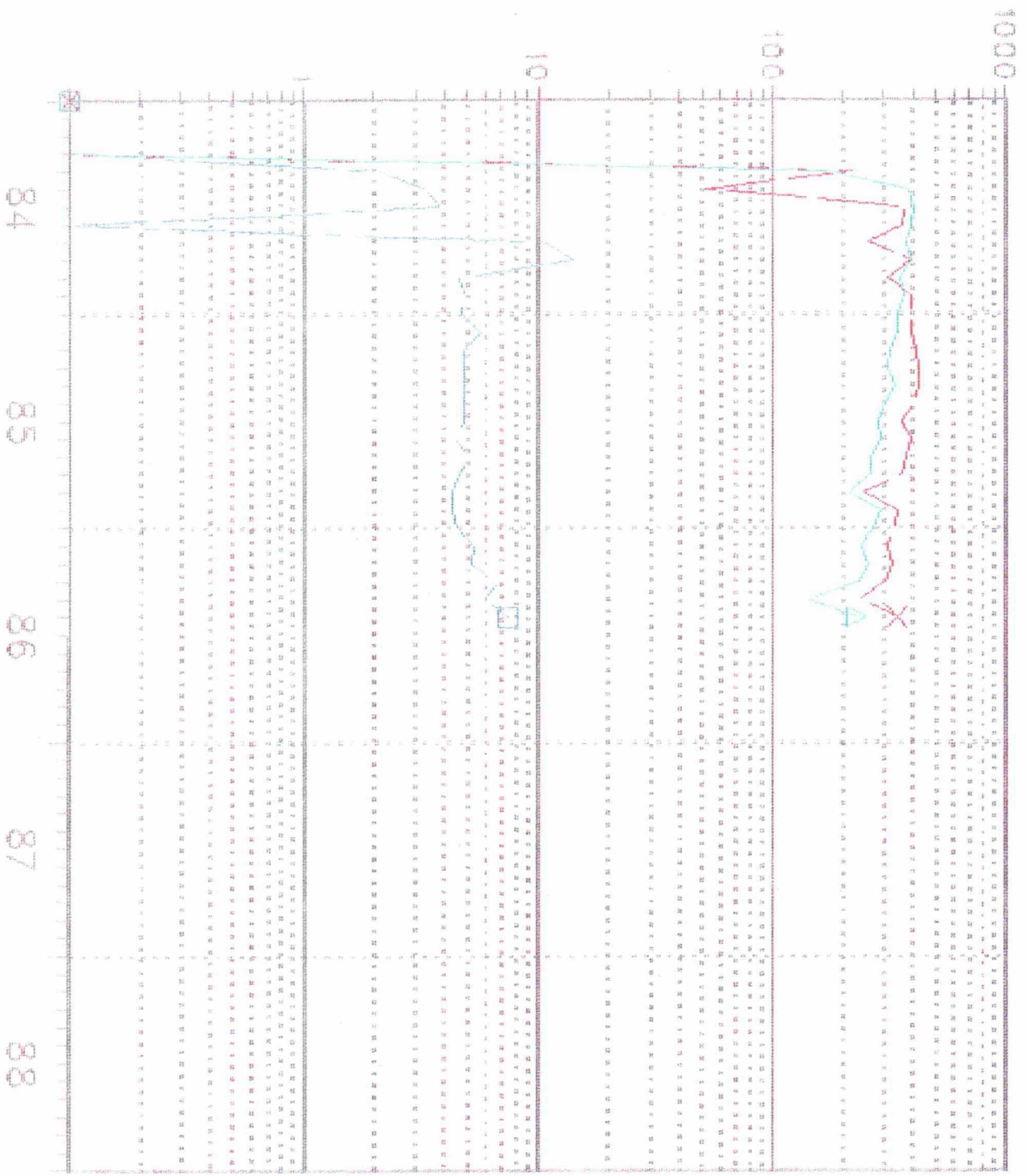
Average = 238 BOPD

STATE: NEW MEXICO  
 REG. DIST: -DIST NOT OBTAINED-  
 COUNTY: LEA  
 FLD: LOVINGTON PENN, NORTHEAST  
 ZONE: DESERT CREEK pennsylvania

PROP: HIGGINS TRUST INC  
 PROP NO: 319300 ANUM: 001  
 LOCATION: 169 57E 21L  
 OPER: AMERIND OIL COMPANY

BEFORE EXAMINER STOGNER  
 OIL CONSERVATION DIVISION  
 Texaco EXHIBIT NO. 5  
 CASE NO. 8993

### PRODUCTION PER DAY



UPPER PERM:  
 LOWER PERM:

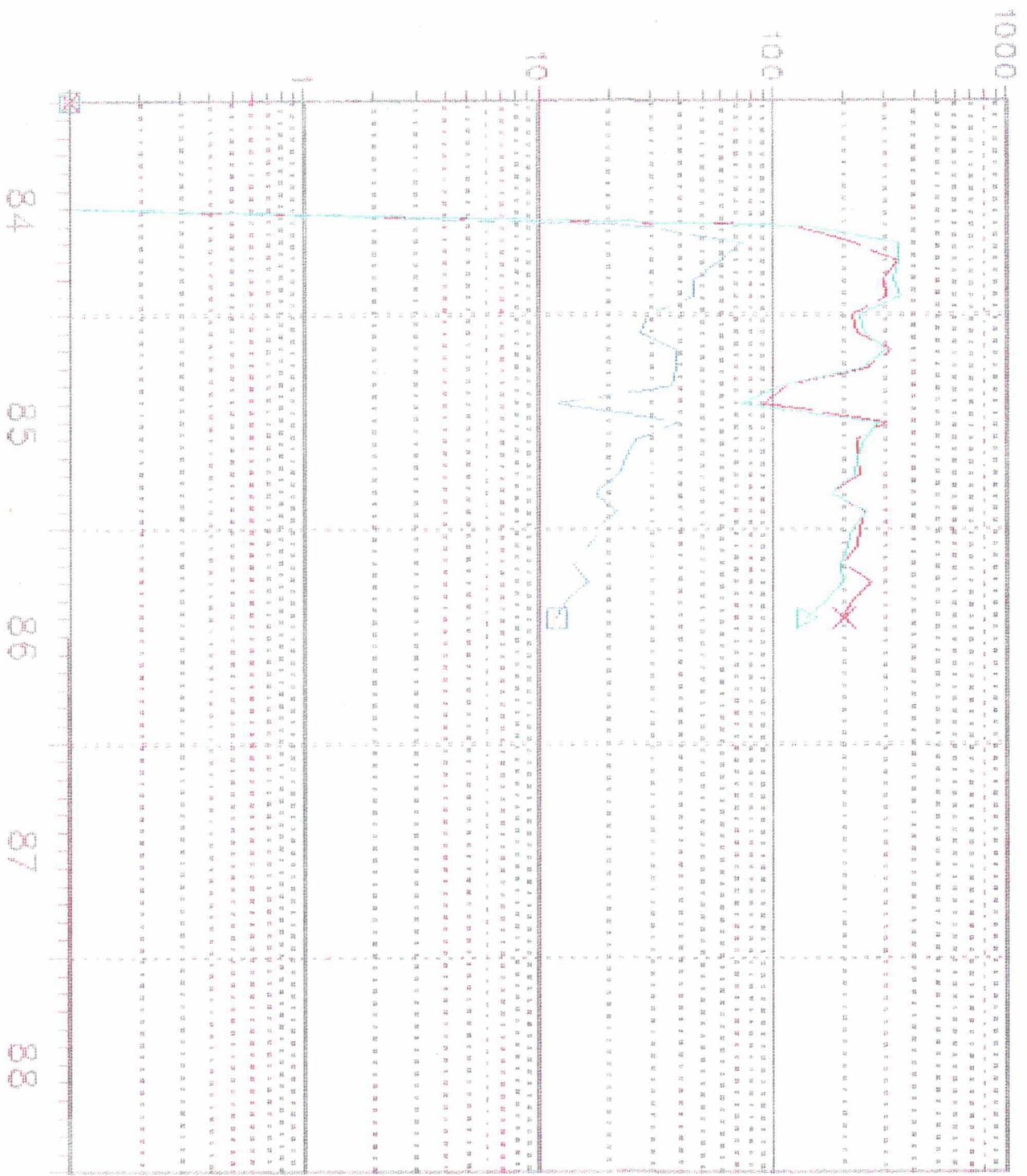
CUM. TOTALS  
 THRU 6/30/88  
 CRUDE: 236819  
 GAS : 266137  
 WATER: 4143

▲ CRUDE (BBLS)  
 X GAS (MCF)  
 □ WATER (BBLS)

STATE: NEW MEXICO  
 REG. DIST: -DIST NOT OBTAINED-  
 COUNTY: LEA  
 FLD: LOVINGTON PENN, NORTHEAST  
 ZONE: DESERT CREEK pennsylvania

PROP: HIGGINS TRUST INC  
 PROP NO: 319300 WNUM: 002  
 LOCATION: 169 37E 21 M  
 OPER: AMERIND OIL COMPANY

### PRODUCTION PER DAY



UPPER PERF:  
 LOWER PERF:

CUM. TOTALS  
 THRU 6/30/86

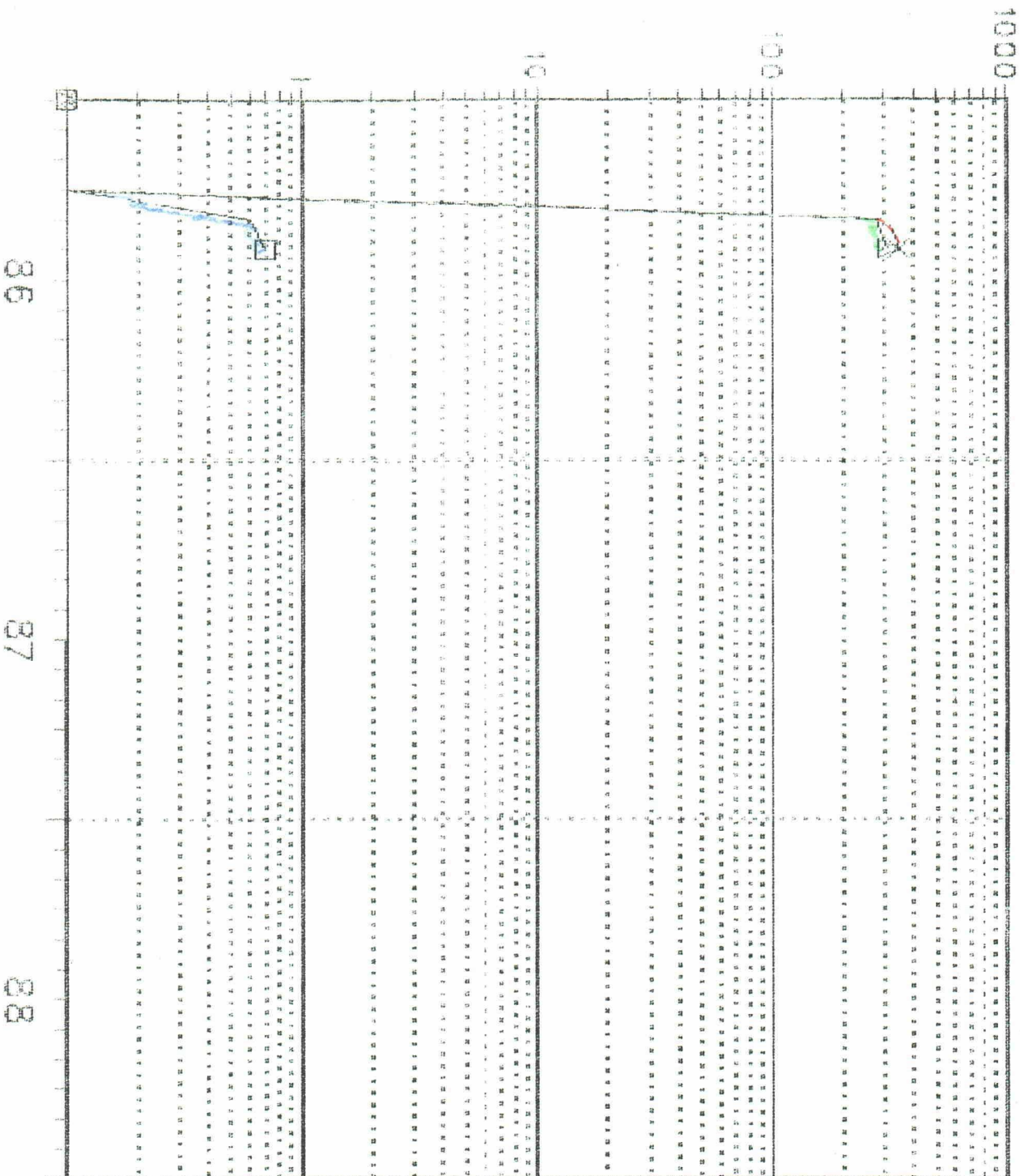
CRUDE: 159050  
 GAS : 160160  
 WATER: 20603

- ▲ CRUDE (BBLS)
- X GAS (MCF)
- WATER (BBLS)

STATE: NEW MEXICO  
 REG. DIST: -DIST NOT OBTAINED-  
 COUNTY: LEA  
 FLD: LOVINGTON PENN, NORTHEAST  
 ZONE: DESERT CREEK PENNSYLVANI

PROP: H T MONTIETH  
 PROP NO: 524695 WNUM: 002  
 LOCATION: 165 37E 20 P  
 OPER: TEXACO PRODUCING CO.

PRODUCTION PER DAY



UPPER PERF:  
 LOWER PERF:

CUM. TOTALS  
 THRU 6/30/86

CRUDE: 17857

GAS : 20036

WATER: 40

Δ CRUDE (BBLs)  
X GAS (MCF)  
□ WATER (BBLs)

CAMPBELL & BLACK, P.A.

LAWYERS

JACK M. CAMPBELL  
BRUCE D. BLACK  
MICHAEL B. CAMPBELL  
WILLIAM F. CARR  
BRADFORD C. BERGE  
J. SCOTT HALL  
PETER N. IVES  
JOHN H. BEMIS

GUADALUPE PLACE  
SUITE 1 - 110 NORTH GUADALUPE  
POST OFFICE BOX 2208  
SANTA FE, NEW MEXICO 87504-2208  
TELEPHONE: (505) 988-4421  
TELECOPIER: (505) 983-6043

August 27, 1986

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Amerind Oil Company  
500 Wilco Bldg.  
Midland, Texas 79701

Re: Application of Texaco, Inc. for an Unorthodox Well Location,  
Lea County, New Mexico

Dear Sirs:

This letter is to advise you that Texaco, Inc. has filed an application with the New Mexico Oil Conservation Division seeking approval of an unorthodox well location for its Lumpkin 20 Well No. 2 at a point 1470 feet from the South line and 150 feet from the East line of Section 20, Township 16 South, Range 37 East, N.M.P.M., Lea County, New Mexico. Texaco, Inc. proposes to complete this well in the Pennsylvanian formation, Northeast Lovington - Pennsylvanian Pool.

This application has been set for hearing before a Division Examiner on September 17, 1986. You are not required to attend this hearing, but as an offsetting interest owner, you may appear and present testimony. Failure to appear at that time and become a party of record will preclude you from challenging the matter at a later date.

Very truly yours,

*William F. Carr/sib*

William F. Carr  
Attorney for Texaco, Inc.

WFC/ko

BEFORE EXAMINER STOGNER	
OIL CONSERVATION DIVISION	
<i>TEXACO</i>	EXHIBIT NO. <u>6</u>
CASE NO.	<u>8993</u>

P 307 895 521  
 RECEIPT FOR CERTIFIED MAIL

U.S.G.P.O. 1985-480-794

PS Form 3800, June 1985

Sender Amerind Oil Company	
500 Wilco Bldg.	
Midland, Texas 79701	
Postage	.22
Postage & Fees	.75
Postage Insurance Fee	
Postage Insurance Fee	
Postage Insurance Fee	.70
Postage Insurance Fee	
Postage Insurance Fee	
Postage Insurance Fee	1.67
8/27/86 pr	

PS Form 3811, July 1983 447-845

DOMESTIC RETURN RECEIPT

**SENDER: Complete items 1, 2, 3 and 4.**  
 Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

- Show to whom, date and address of delivery.
- Restricted Delivery.

3. Article Addressed to:

Amerind Oil Company  
 500 Wilco Bldg.  
 Midland, Texas 79701

4. Type of Service:	Article Number
<input checked="" type="checkbox"/> Registered <input checked="" type="checkbox"/> Certified <input type="checkbox"/> Express Mail	P 307 895 521
<input type="checkbox"/> Insured <input type="checkbox"/> COD	

Always obtain signature of addressee or agent and **DATE DELIVERED.**

5. Signature - Addressee  
 X

6. Signature - Agent  
 X *Phillip Sabott*

7. Date of Delivery  
 8-29-86

8. Addressee's Address (ONLY if requested and fee paid)  
 415 W WALL #900  
 MIDLAND TX 79701



CAMPBELL & BLACK, P.A.

LAWYERS

JACK M. CAMPBELL  
BRUCE D. BLACK  
MICHAEL B. CAMPBELL  
WILLIAM F. CARR  
BRADFORD C. BERGE  
J. SCOTT HALL  
PETER N. IVES  
JOHN H. BEMIS

GUADALUPE PLACE  
SUITE 1 - 110 NORTH GUADALUPE  
POST OFFICE BOX 2208  
SANTA FE, NEW MEXICO 87504-2208  
TELEPHONE: (505) 988-4421  
TELECOPIER: (505) 983-6043

August 27, 1986

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Sohio Petroleum Company  
10 Desta Drive, Suite 600 West  
Midland, Texas 79705

Re: Application of Texaco, Inc. for an Unorthodox Well Location,  
Lea County, New Mexico

Dear Sirs:

This letter is to advise you that Texaco, Inc. has filed an application with the New Mexico Oil Conservation Division seeking approval of an unorthodox well location for its Lumpkin 20 Well No. 2 at a point 1470 feet from the South line and 150 feet from the East line of Section 20, Township 16 South, Range 37 East, N.M.P.M., Lea County, New Mexico. Texaco, Inc. proposes to complete this well in the Pennsylvanian formation, Northeast Lovington - Pennsylvanian Pool.

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Very truly yours,

*William F. Carr/SIB*

William F. Carr  
Attorney for Texaco, Inc.

WFC/ko

P 307 895 520

RECEIPT FOR CERTIFIED MAIL

Sohio Petroleum Company  
10 Desta Drive, Suite 600 West  
Midland, Texas 79705

.22

.75

.70

1.67

8/27/86 pr

PS Form 3811, July 1983 447-845

**SENDER: Complete items 1, 2, 3 and 4.**  
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1.  Show to whom, date and address of delivery.  
2.  Restricted Delivery.

3. Article Addressed to:  
Sohio Petroleum Company  
10 Desta Drive, Suite 600 West  
Midland, Texas 79705

4. Type of Service: <input checked="" type="checkbox"/> Registered <input checked="" type="checkbox"/> Certified <input type="checkbox"/> Express Mail	<input type="checkbox"/> Insured <input type="checkbox"/> COD	Article Number P 307 895 520
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Always obtain signature of addressee or agent and **DATE DELIVERED.**

5. Signature - Addressee  
X *Vanessa J. Harrington*

6. Signature - Agent  
X

7. Date of Delivery

8. Addressee's Address (ONLY if requested and fee paid)  
*Priddy 8-29-86*

DOMESTIC RETURN RECEIPT

CAMPBELL & BLACK, P.A.

LAWYERS

JACK M. CAMPBELL  
BRUCE D. BLACK  
MICHAEL B. CAMPBELL  
WILLIAM F. CARR  
BRADFORD C. BERGE  
J. SCOTT HALL  
PETER N. IVES  
JOHN H. BEMIS

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POST OFFICE BOX 2208  
SANTA FE, NEW MEXICO 87504-2208  
TELEPHONE: (505) 988-4421  
TELECOPIER: (505) 983-6043

August 27, 1986

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Texas Crude, Inc.  
2100 Texas Crude Bldg.  
Houston, Texas 77002

Re: Application of Texaco, Inc. for an Unorthodox Well Location,  
Lea County, New Mexico

Dear Sirs:

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*William F. Carr/SIB*

William F. Carr  
Attorney for Texaco, Inc.

WFC/ko

P 307 895 522

RECEIPT FOR CERTIFIED MAIL

Texas Crude, Inc.  
2100 Texas Crude Bldg.  
Houston, Texas 77002

.22

.75

.70

1.67

8/27/86 pr

PS Form 3811, July 1983 447-845

**SENDER: Complete items 1, 2, 3 and 4.**  
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Texas Crude, Inc.  
2100 Texas Crude Bldg.  
Houston, Texas 77002

4. Type of Service:	Article Number
<input checked="" type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail	P 307 895 522

Always obtain signature of addressee or agent and **DATE DELIVERED.**

5. Signature - Addressee  
X *M. Kuller*

6. Signature - Agent  
X

7. Date of Delivery

8. Addressee's Address (*ONLY if requested and fee paid*)

DOMESTIC RETURN RECEIPT

U.S.G.P.O. 1983 447-845 PS Form 3811 June 1985

CAMPBELL & BLACK, P.A.

LAWYERS

JACK M. CAMPBELL  
BRUCE D. BLACK  
MICHAEL B. CAMPBELL  
WILLIAM F. CARR  
BRADFORD C. BERGE  
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TELEPHONE: (505) 988-4421  
TELECOPIER: (505) 983-6043

August 27, 1986

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Pennzoil Company  
P. O. Box 1828  
Midland, Texas 79702

Re: Application of Texaco, Inc. for an Unorthodox Well Location,  
Lea County, New Mexico

Dear Sirs:

This letter is to advise you that Texaco, Inc. has filed an application with the New Mexico Oil Conservation Division seeking approval of an unorthodox well location for its Lumpkin 20 Well No. 2 at a point 1470 feet from the South line and 150 feet from the East line of Section 20, Township 16 South, Range 37 East, N.M.P.M., Lea County, New Mexico. Texaco, Inc. proposes to complete this well in the Pennsylvanian formation, Northeast Lovington - Pennsylvanian Pool.

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Very truly yours,

*William F. Carr/SIB*

William F. Carr  
Attorney for Texaco, Inc.

WFC/ko

P 307 895 523

RECEIPT FOR CERTIFIED MAIL

Pennzoil Company	
P. O. Box 1828	
Midland, Texas 79702	
Postage	.22
Registration Fee	.75
Insurance	
Delivery Fee	
Postage on Return	
Postage on Return to Agent	
Postage on Return to Addressee	.70
Postage on Return to Post Office	
Postage on Return to Post Office	1.67

8/27/86 pr

PS Form 3811, July 1983 447-945

**SENDER: Complete items 1, 2, 3 and 4.**

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

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- Restricted Delivery.

3. Article Addressed to:

Pennzoil Company  
P. O. Box 1828  
Midland, Texas 79702

4. Type of Service:	Article Number
<input checked="" type="checkbox"/> Registered <input type="checkbox"/> Insured	P 307 895 523
<input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD	
<input type="checkbox"/> Express Mail	

Always obtain signature of addressee or agent and **DATE DELIVERED.**

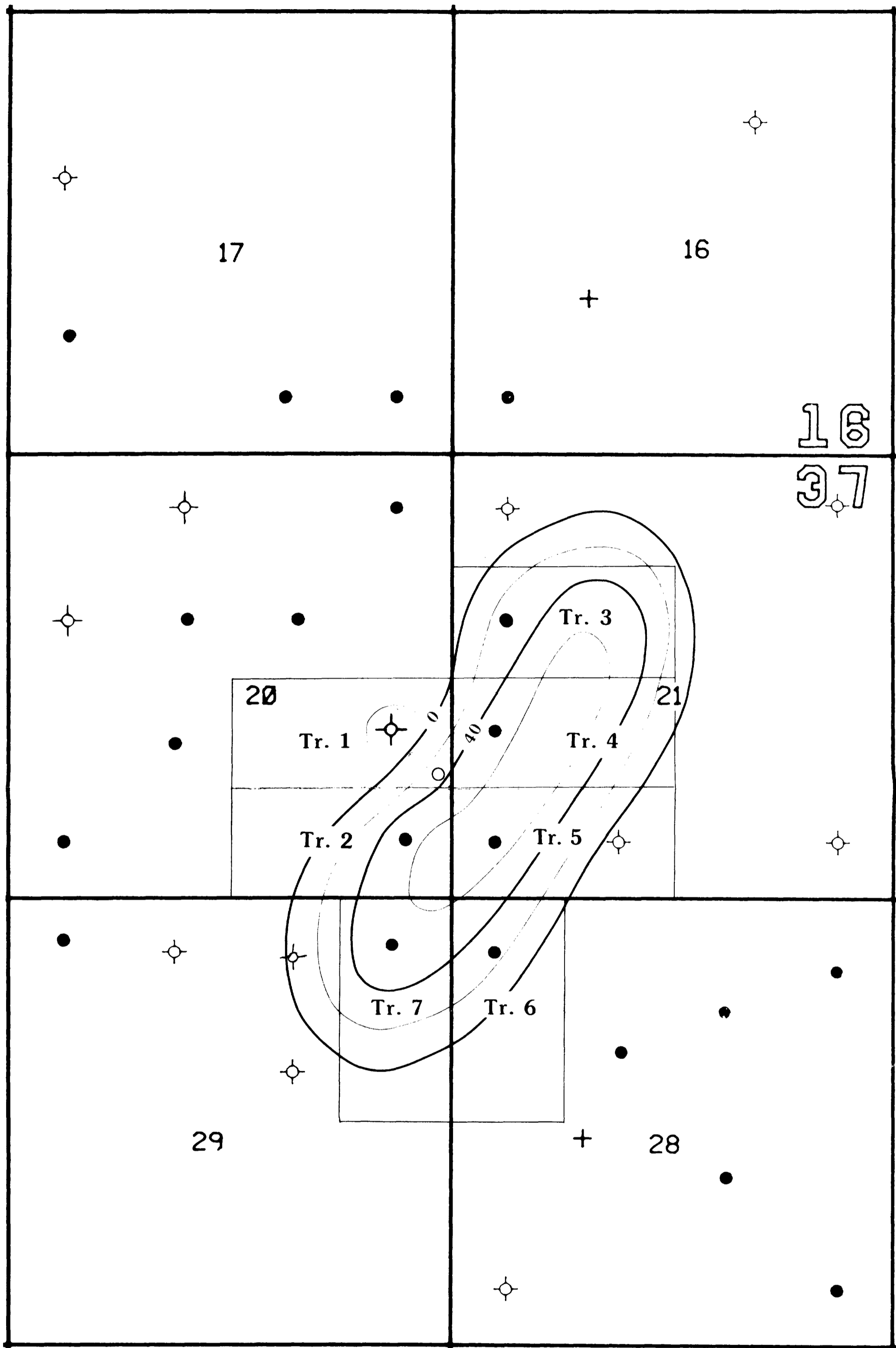
5. Signature - Addressee  
X

6. Signature - Agent  
X *Northampton*

7. Date of Delivery  
8-29-86

8. Addressee's Address (ONLY if requested and fee paid)  
*Box 1828*

DOMESTIC RETURN RECEIPT



Tract #	Ac-Ft	% of Total Ac-Ft
1	220	1.6
2	1859	13.2
3	3145	22.3
4	3384	24.0
5	2300	16.3
6	742	5.3
7	2460	17.3
<b>Total</b>	<b>14110</b>	<b>100</b>

BEFORE EXAMINER STOGNER  
OIL CONSERVATION DIVISION  
*Penner* EXHIBIT NO. 2  
CASE NO. 2093

## Lovington, Northeast Field

Lea County, New Mexico

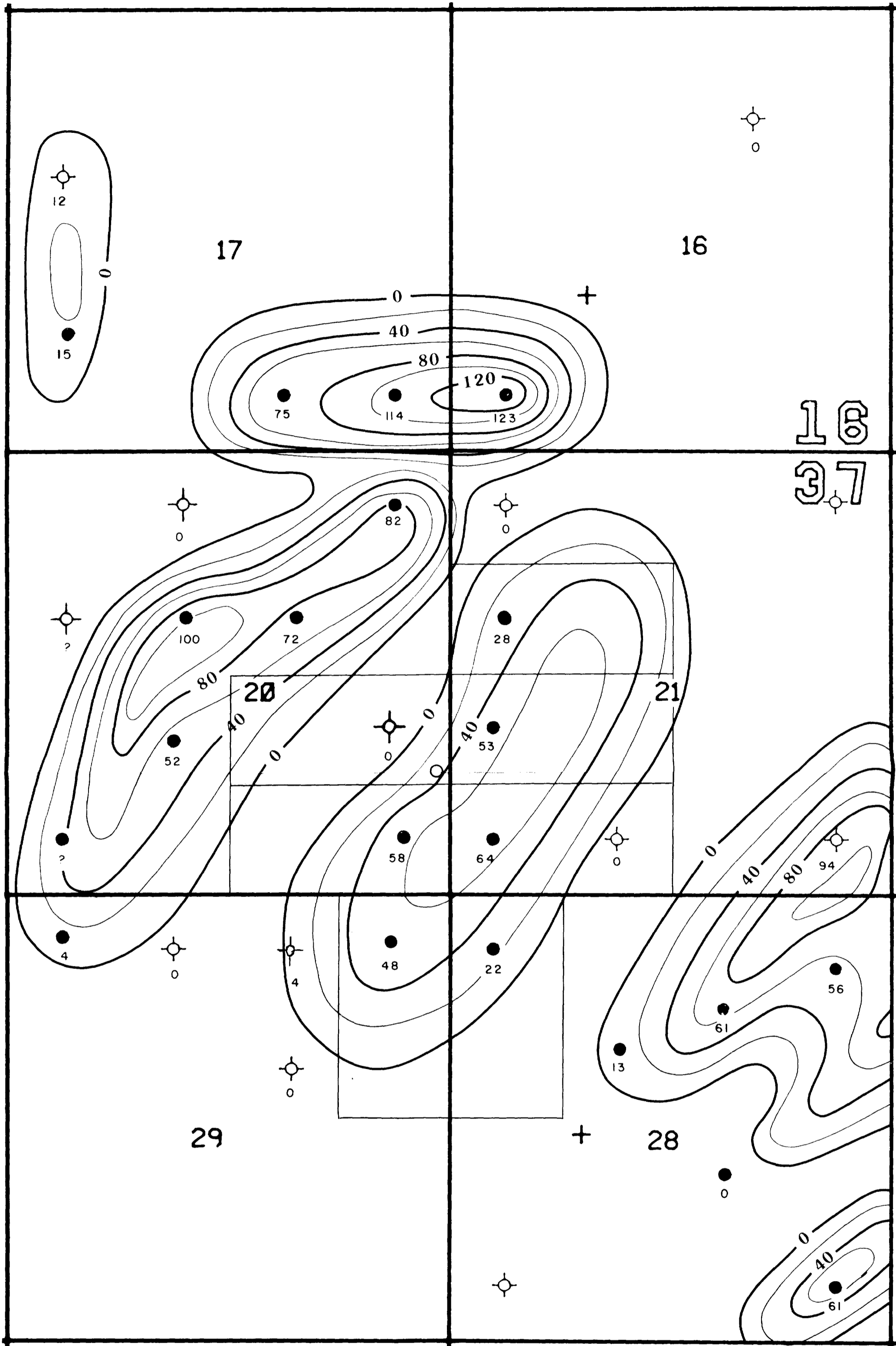
Isopach Map

**Strawn Porosity >4%**

Contour Interval: 20 Feet

Scale: 1 Inch Equals 1000 Feet

September, 1986



**Lovington, Northeast Field**

Lea County, New Mexico

Isopach Map

**Strawn Porosity > 4%**

Contour Interval: 20 Feet

Scale: 1 Inch Equals 1000 Feet

September, 1986

BEFORE EXAMINER STOGNER OIL CONSERVATION DIVISION	
REVISION	EXHIBIT NO. 1
CASE NO.	8993



CASE #8993

EXHIBIT

Reservoir Parameters

Total Acres	410 acres
Average Thickness	34.4 ft.
Total Acre-Feet	14,110 ac-ft.
Initial Reservoir Pressure	2697 psig
Average Reservoir Pressure (5/28/86)	1686 psig
Average Porosity - $\phi$	8%
Average Water Saturation - Sw	15%
Formation Volume Factor - Bo	1.5 $\frac{\text{Reservoir Bbls}}{\text{Stock Tank Bbls}}$
Average Permeability - k	3.0 md
Recovery Factor - R.F.	25%
Current Reservoir Rate	1216 BOPD
Cumulative Production (8/1/86)	652 M bbls oil

*Range 47-1476*

BEFORE EXAMINER STOGNER OIL CONSERVATION DIVISION	
PENNSIL EXHIBIT NO.	<u>3</u>
CASE NO.	<u>8993</u>

CASE #8993

EXHIBIT

VOLUMETRIC CALCULATION OF ORIGINAL OIL IN PLACE,  
ULTIMATE RECOVERY AND REMAINING  
RESERVES OF RESERVOIR

$$OOIP = \frac{7758 \times \emptyset \times (1-S_w)}{B_o} \times \text{acre-feet}$$

$$= \frac{7758 (0.08) (1-0.15)}{1.5} 14,110$$

$$= 4,962 \text{ M bbls}$$

Using a recovery factor of 25%

$$\text{Ultimate Recoverable Reserves} = (4.962 \times 10^6) (0.25)$$

$$= 1,241 \text{ M bbls}$$

$$\text{Cumulative Recovery} = 652 \text{ M bbls}$$

8/1/86

$$\text{Remaining Recoverable Reservoir Reserves} = 589 \text{ M bbls}$$

BEFORE EXAMINER STOGNER OIL CONSERVATION DIVISION	
PENNSYLVANIA EXHIBIT NO.	4
CASE NO.	8993

**TABULATION OF OWNERSHIP BY TRACT**

1.6 (589)

TRACT #	Ac-Ft	% of Total Ac-Ft	Orig. Oil In Place MBO	Init.* Rec. Res. MBO	Rem.* Rec. Res. MBO
1	220	1.6	80	20	9.4
2	1859	13.2	655	164	77.8
3	3145	22.3	1106	277	131.4
4	3384	24.0	1191	298	141.4
5	2300	16.3	808	202	96.
6	742	5.3	263	66	31.
7	2460	17.3	859	215	102.0
<b>TOTAL</b>	<b>14110</b>	<b>100</b>	<b>4962</b>	<b>1240</b>	<b>589</b>

\*USING A 25% R.F.

1.24  
652

BEFORE EXAMINER STOGNER  
 OIL CONSERVATION DIVISION  
 PENNSYLVANIA EXHIBIT NO. 5  
 CASE NO. 8293

Calculation of Proposed Penalty Allowable

Proposed Allowable - 20 BOPD  
Assume constant production for 3 years

20 BOPD x 365 x 3 = 21,900 BBLs

$$\% \text{ Allowable Penalty} = \left( 1 - \frac{\text{Proposed Allowable}}{\text{Top Allowable}} \right) \times 100$$

$$= \left( 1 - \frac{20}{534} \right) 100$$

$$= (1 - .04) 100$$

$$\% \text{ Allowable Penalty} = 96\%$$

BEFORE EXAMINER STOGNER  
OIL CONSERVATION DIVISION  
~~PENNSYLVANIA~~ EXHIBIT NO. 6  
CASE NO. 8993