OIL CONSERVATION COMMISSION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

July 18, 1974

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5264 Exhibit No. # 1
Submitted by O. C. C.
Hearing Date 7/13/74

COPY

Federal Power Commission
825 North Capitol Street, N.E.
Washington, D. C. 20426

ATTENTION: Commissioner Rush Moody, Jr.

Re: Commission Opinion No. 699
Docket No. R-389-B

Gentlemen:

A question has arisen in connection with your recent opinion and order entered in the captioned case which could bear on an important case pending before the New Mexico Oil Conservation Commission. We therefore request an opinion clarifying one aspect of the subject order. In order that your Commission fully understands what information is requested a discussion of the case now before the New Mexico Oil Conservation Commission would be pertinent.

El Paso Natural Gas Company is the largest owner and operator of natural gas leases in the Blanco-Mesa Verde Pool in San Juan and Rio Arriba Counties, New Mexico. This pool presently has some 2,058 producing gas wells, each located on a 320-acre spacing and proration unit. The total production allowable for the pool is divided among the wells under a rather complex allowable formula which considers both the acreage dedicated to the well and the well's pipeline deliverability. The spacing rules for this pool and the allowable formula have been in effect for approximately 23 years and 20 years, respectively.

El Paso is seeking to increase deliverability from the pool by the drilling of additional wells. However rather than petition this Commission to change the spacing for the pool from 320 acres to 160 acres, El Paso seeks an order permitting the drilling of a second well on any 320-acre unit and amending the proration formula so that the acreage factor for the wells would not be affected but the deliverability of the two wells would be

additive. (Normally under New Mexico practice, the drilling of a second well would require the formation of two non-standard 160-acre proration units, each with an acreage factor of 0.5 to be applied to the allowable formula which tends to reduce the allowable for the well because of its shortage of acreage.) Thus we see that a proration unit upon which the operator elects to drill a second well would receive a larger allowable than a proration unit the operator of which would not or could not drill the additional well.

Under such a rule there is a very real liklihood of drainage of gas underlying units with one well to units with two wells. Other operators in the pool, therefore, realize that if the rule is adopted, they will be obligated under their leases to drill additional wells to prevent such drainage even though the pool spacing rules would not require additional drilling.

A critical issue to those operators in their decision whether or not to oppose El Paso's proposal is whether the gas from such additional wells, drilled in units the reserves of which have already been dedicated to the interstate market, will qualify for the uniform national rate for new gas prescribed in Opinion No. 699, Docket No. R-389-B.

The New Mexico Oil Conservation Commission therefore requests that the Federal Power Commission issue a clarifying opinion addressed to the following question:

> Is the national rate for sales of natural gas from wells commenced after January 1, 1973 applicable to sales of gas from wells drilled after January 1, 1973 on leases the reserves of which have already been dedicated to the interstate market by pre-existing contracts?

If the answer to this question is affirmative, another question arises:

> Shall the proportion of gas from the lease to receive the new rate be determined on the basis of actual measured production from the new well or on the basis of that well's proportional deliverability?

We believe that the speedy resolution of these questions is vital to the outcome of the case presently before the Oil Conservation Commission, which case also has significance to the Federal Power Commission in that El Paso's proposal, if

OIL CONSERVATION COMMISSION
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approved, could substantially increase the deliverability of gas from an important source of supply to the interstate market. Our hearing is scheduled for August 13, 1974. Your earliest response would be appreciated.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/TWD/jr

COPY

EPNG Exhibit No. 10

BLANCO MESAVERDE GAS POOL

ESTIMATE OF TOTAL POOL PRODUCTION UNDER PRESENT AND PROPOSED RULES AND THE INCREASE IN GROSS INCOME UNDER PROPOSED RULES

Gas Volumes in Bcf at 15.025 psia and 60° F.

Years (a)	Annual Production: Present Rules (b)	Annual Production: Proposed Rule (c)	Increased Prod. Under Proposed Rules (d)	Increase in Gross Income Under Proposed Rule, M $ (e)
1	229.9	253.7	23.8	14,710
2	221.5	285.1	63.6	42,350
3	212.4	316.0	103.6	70,550
4	203.0	345.1	142.1	98,180
5	193.7	383.7	190.0	129,570
6	184.3	415.3	231.0	157,800
7	175.4	439.9	264.5	182,360
8	166.8	457.5	290.7	202,820
9	158.3	467.9	309.6	219,270
10	150.3	470.2	319.9	230,630
11	142.8	456.8	314.0	230,020
12	135 7	427.0	291.3	216,820
13	129.1	396.1	267.0	202,460
14	122.8	368.2	245.4	189,280
15	116.9	343.0	226.1	177,830
16	110.8	321.2	210.4	168,020
17	104.8	300.1	195.3	158,260
18	99.2	280.8	181.6	149,240
19	94.0	262.1	168.1	140,530
20	89.1	244.4	155.3	132,340
Total for Period	3,040.8	7,234.1	4,193.3	3,113,040

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5264 Exhibit No. 10
Submitted by El Paso
Hearing Date 7/13/74

Southern Union Production Company exhibits 1 through 7

Aztec exhibit 2.

El Paso Natural Gas Company exhibits 1,2,4 through 21.

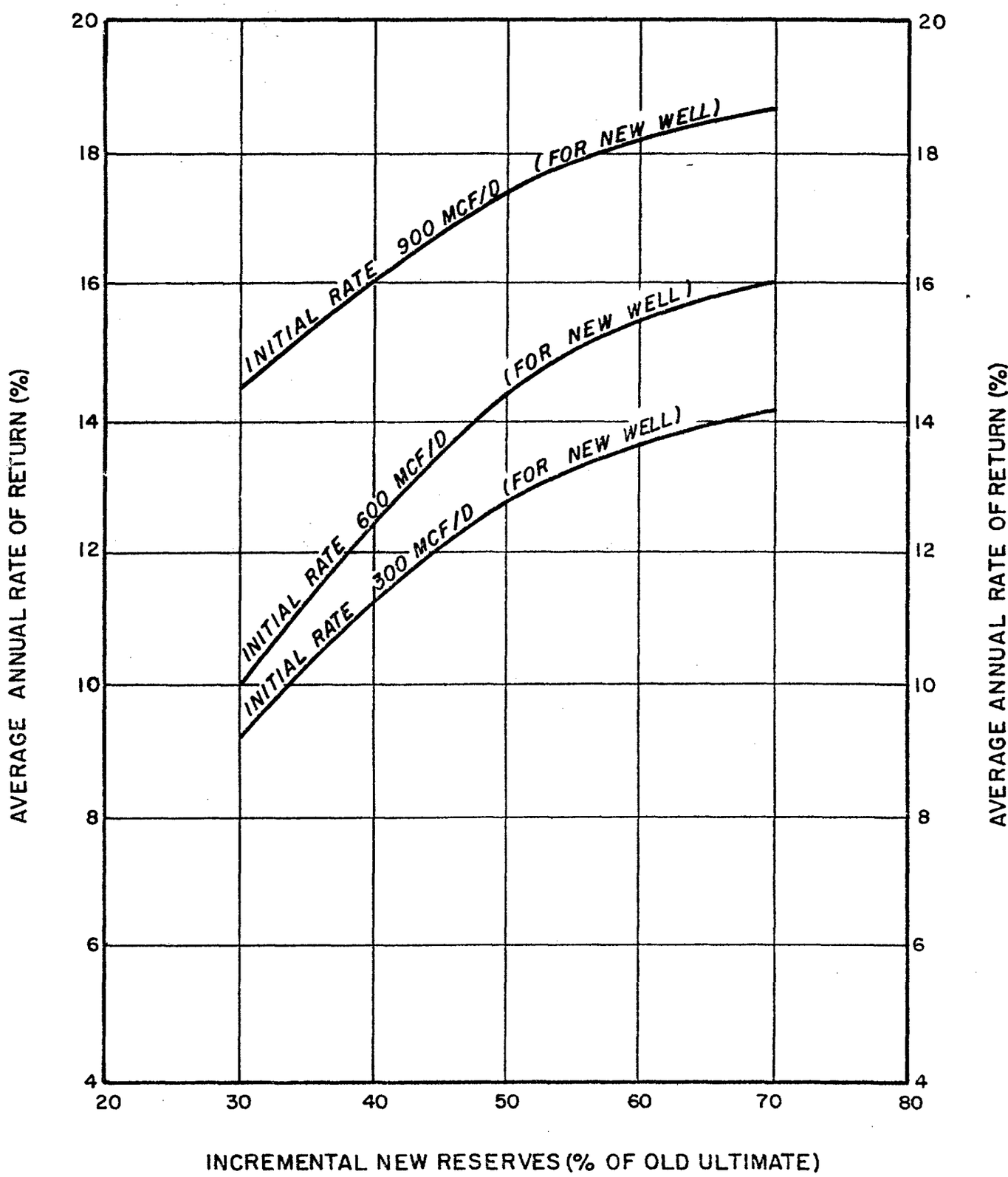
Exhibit 3 missing

OCC exhibit 1

NEW WELL ECONOMICS
BLANCO MESAVERDE POOL—NEW MEXICO
AVERAGE ANNUAL RATE OF RETURN
VS.
NEW WELL INCREMENTAL RESERVES

Mesa EXHIBIT #2

GL 5266



EPNG Exhibit No. 4

BLANCO MESAVERDE GAS POOL

SCHEDULE SHOWING THE NUMBER OF WELLS, REMAINING RESERVE AND YEARS TO DEPLETION FOR THE ABOVE AVERAGE, THE BELOW AVERAGE AND THE POOL AVERAGE WELL AS OF JANUARY 1, 1974

Gas Volumes at 15.025 psia and 60° F.

Reserve Group (a)	Number of Producing Wells in Group (b)	Remaining Reserve Per Group, M^3cf (c)	Remaining Reserve Per Well, M^2cf (d)	Per Cent of Remaining Reserve Per Group (e)	Years to Depletion Per Group (f)
Above Average	693	3,624	5,229	73	101
Below Average	1,362	1,318	968	27	40
Pool Average	2,055	4,942	2,405	100	73

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5264 Exhibit No. 4
Submitted by El Paso
Hearing Date 9/13/74

EPNG Exhibit No. 11

FEDERAL POWER COMMISSION PRESCRIBED
PRIORITIES OF SERVICE

Priority 1: Residential, small commercial (less than 50 Mcf on a peak day) and residential needs associated with industrial requirements served directly or indirectly.

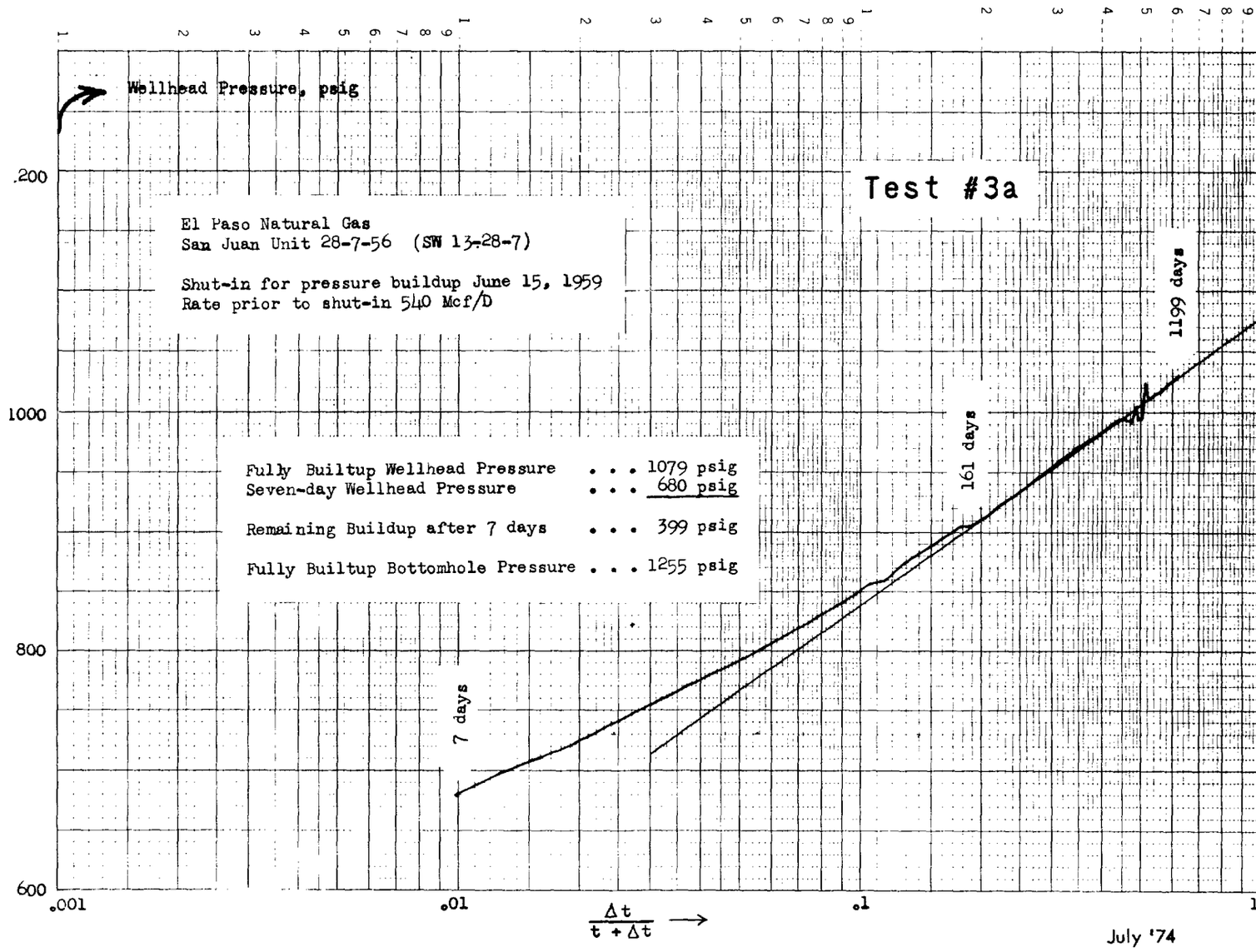
Priority 2: Large commercial requirements and industrial requirements, served directly or indirectly, for plant protection, feedstock and process needs.

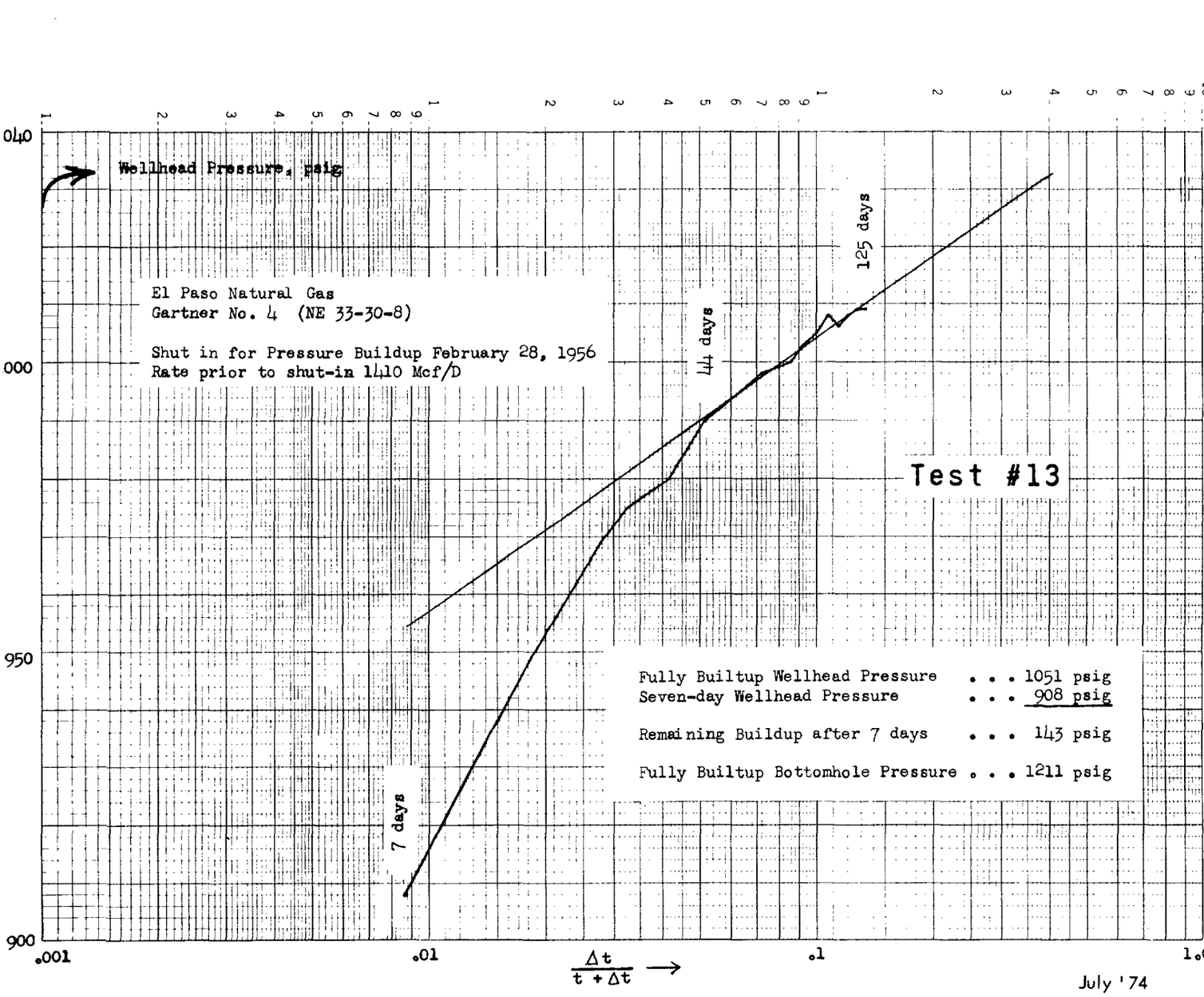
Priority 3: All industrial requirements not specified in Priorities 2, 4 and 5.

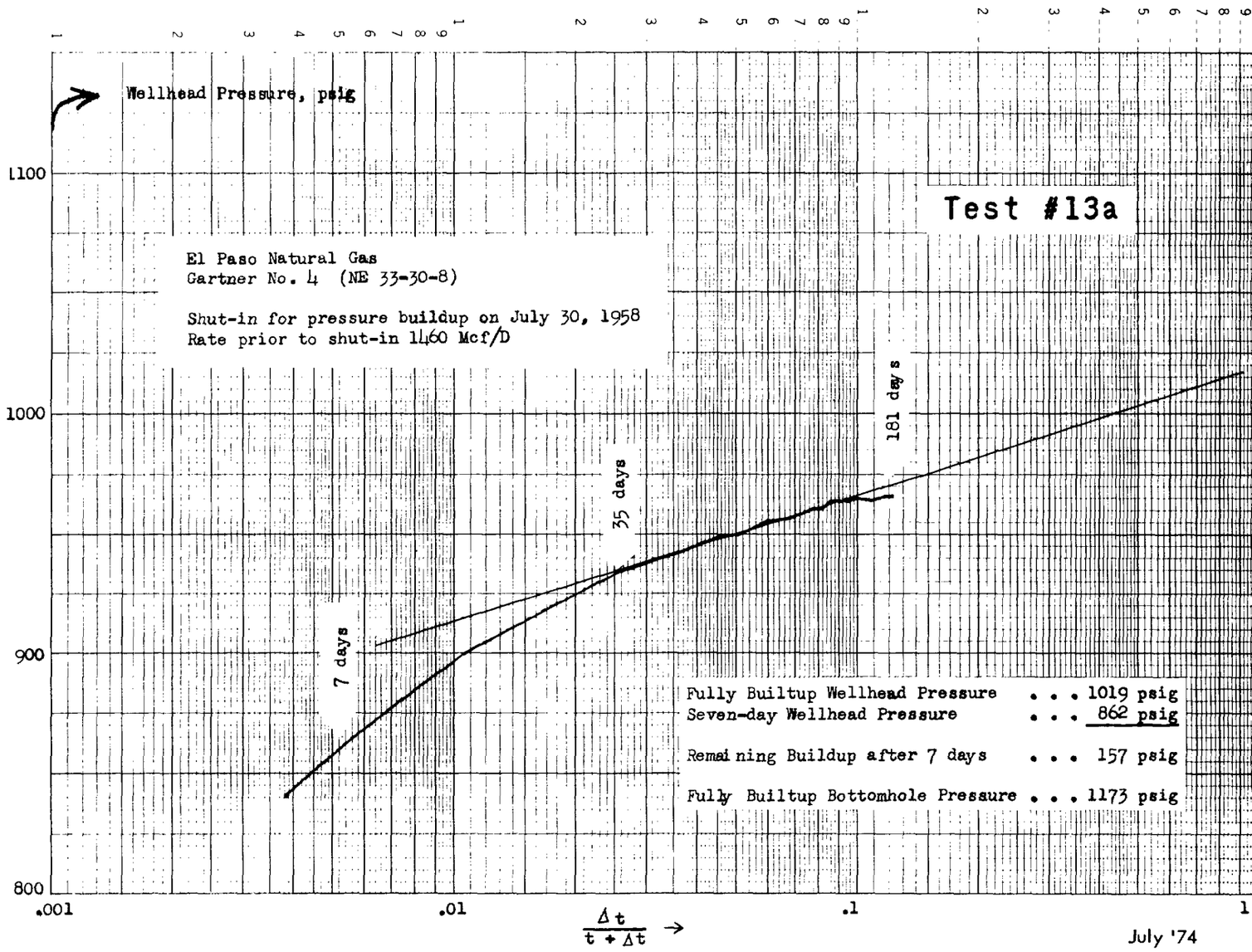
Priority 4: Industrial requirements for boiler fuel use at less than 3,000 Mcf on a peak day, but more than 1,500 Mcf on a peak day, where existing alternate fuel facilities are present.

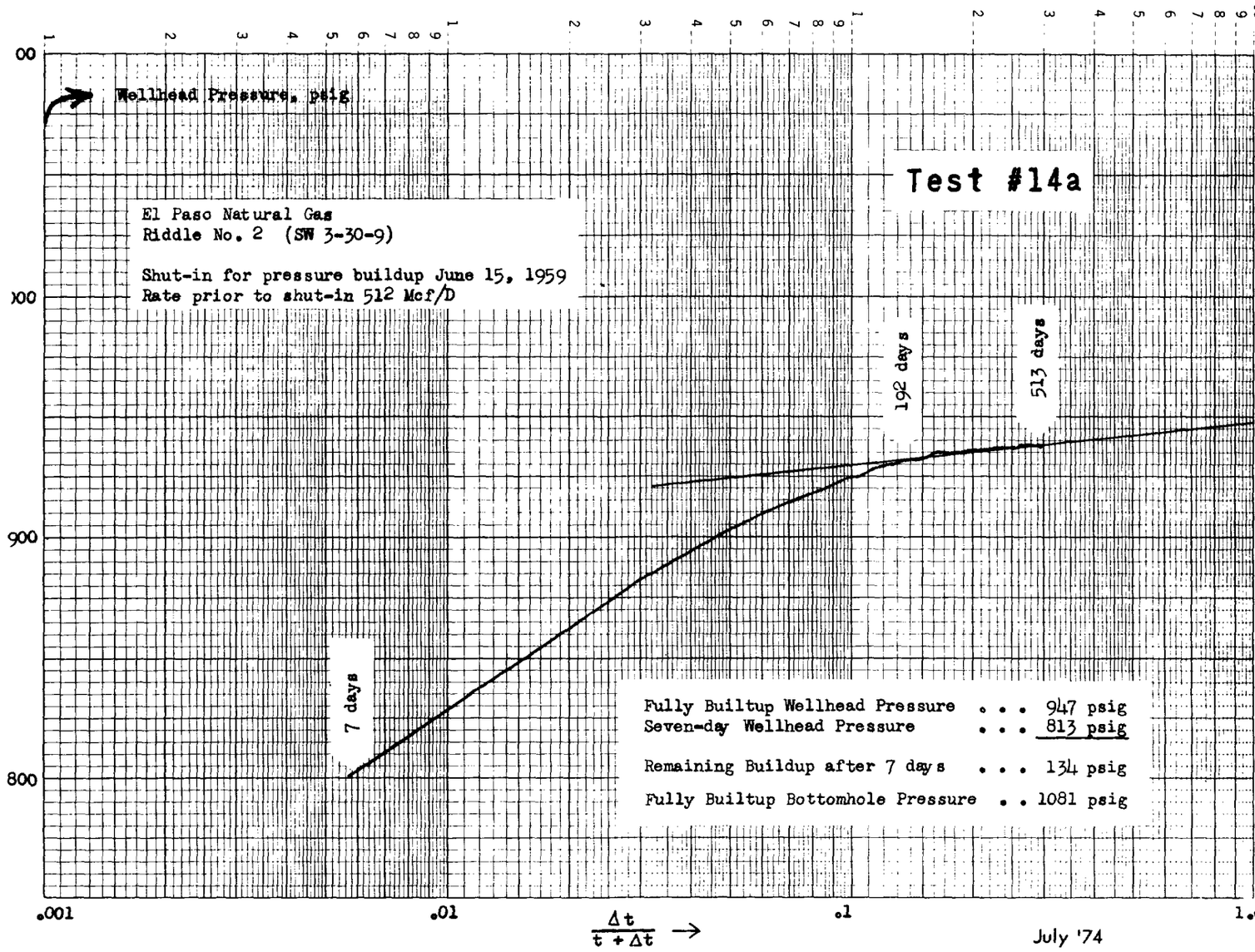
Priority 5: Industrial requirements for large volume (in excess of 3,000 Mcf on a peak day) boiler fuel use where existing alternate fuel facilities are present.

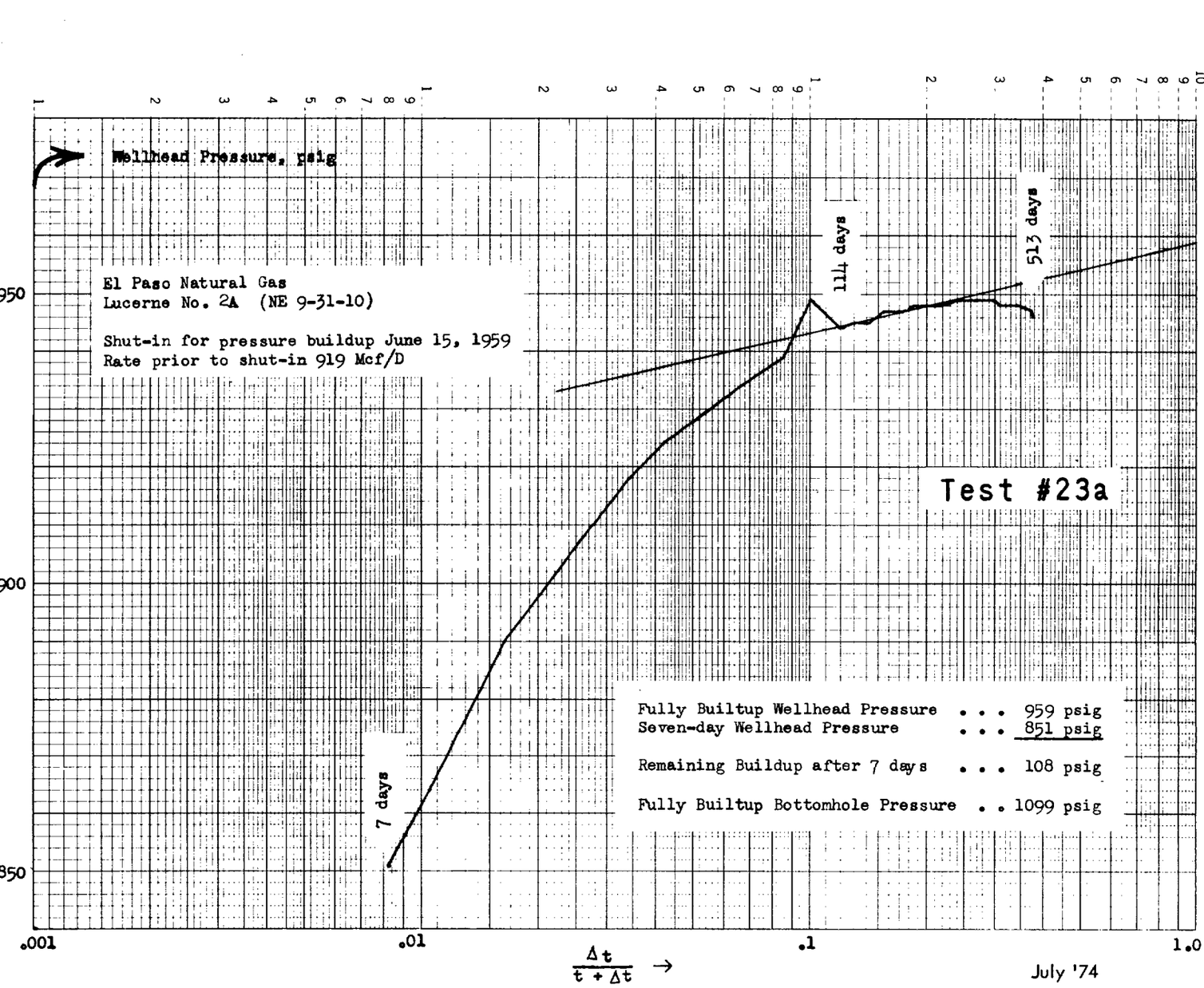
Note: Extracted from El Paso's FPC Gas Tariff, Original Volume No. 1, First Revised Sheet No. 63-A, Section 11.2. Effective: February 20, 1973.

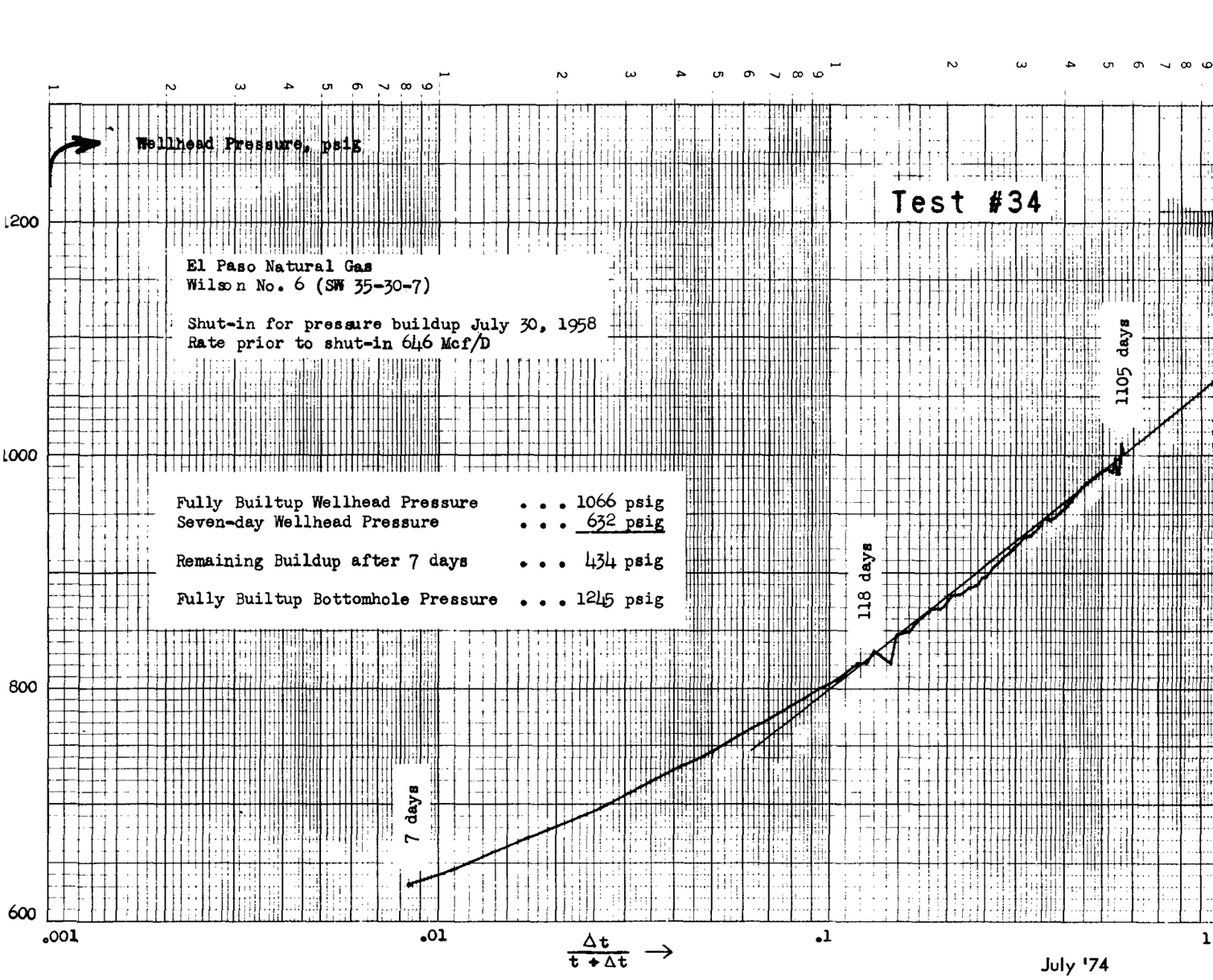

Wellhead Pressure, psig
Test #3a
El Paso Natural Gas
San Juan Unit 28-7-56 (SW 13-28-7)
Shut-in for pressure buildup June 15, 1959
Rate prior to shut-in 540 Mcf/D
Fully Builtup Wellhead Pressure . . . 1079 psig
Seven-day Wellhead Pressure . . . 680 psig
Remaining Buildup after 7 days . . . 399 psig
Fully Builtup Bottomhole Pressure . . . 1255 psig
7 days
161 days
1199 days
1200
1000
800
600
.001
.01
.1
Δt / t + Δt
July '74

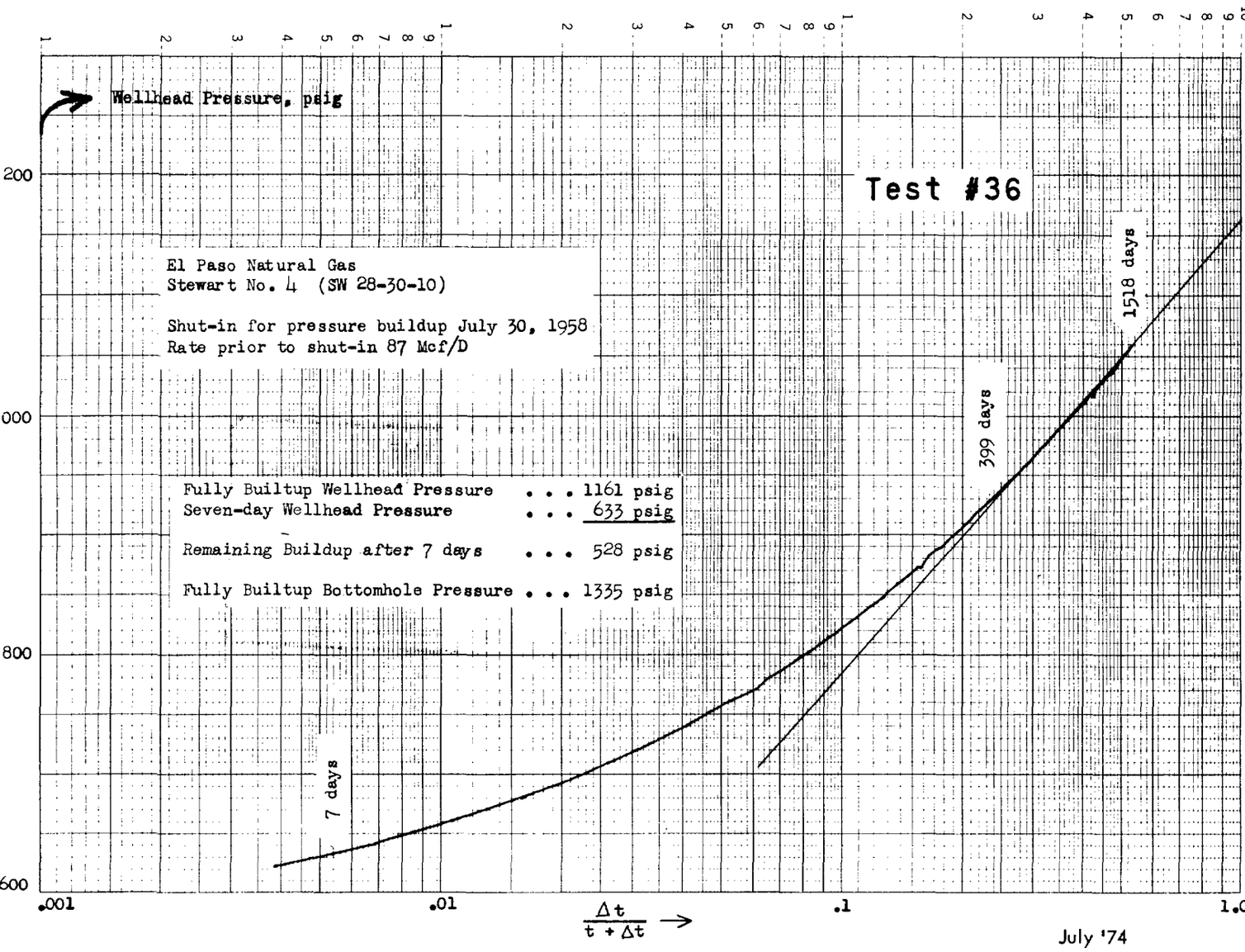

Wellhead Pressure, psig
040
000
950
900
El Paso Natural Gas
Gartner No. 4 (NE 33-30-8)
Shut in for Pressure Buildup February 28, 1956
Rate prior to shut-in 1410 Mcf/D
7 days
44 days
125 days
Test #13
Fully Builtup Wellhead Pressure . . . 1051 psig
Seven-day Wellhead Pressure . . . 908 psig
Remaining Buildup after 7 days . . . 143 psig
Fully Builtup Bottomhole Pressure . . . 1211 psig
.001
.01
.1
Δt / t + Δt
July '74


Wellhead Pressure, psig
1100
1000
900
800
Test #13a
El Paso Natural Gas
Gartner No. 4 (NE 33-30-8)
Shut-in for pressure buildup on July 30, 1958
Rate prior to shut-in 1460 Mcf/D
7 days
35 days
181 days
Fully Builtup Wellhead Pressure . . . 1019 psig
Seven-day Wellhead Pressure . . . 862 psig
Remaining Buildup after 7 days . . . 157 psig
Fully Builtup Bottomhole Pressure . . . 1173 psig
.001
.01
.1
1
Δt / t + Δt →
July '74


Wellhead Pressure, psig
Test #14a
El Paso Natural Gas
Riddle No. 2 (SW 3-30-9)
Shut-in for pressure buildup June 15, 1959
Rate prior to shut-in 512 Mcf/D
7 days
192 days
513 days
Fully Builtup Wellhead Pressure . . . 947 psig
Seven-day Wellhead Pressure . . . 813 psig
Remaining Buildup after 7 days . . . 134 psig
Fully Builtup Bottomhole Pressure . . 1081 psig
00
900
800
.001
.01
.1
1.
Δt / t + Δt →
July '74


Wellhead Pressure, psig
El Paso Natural Gas
Lucerne No. 2A (NE 9-31-10)
Shut-in for pressure buildup June 15, 1959
Rate prior to shut-in 919 Mcf/D
Test #23a
7 days
114 days
513 days
Fully Builtup Wellhead Pressure . . . 959 psig
Seven-day Wellhead Pressure . . . 851 psig
Remaining Buildup after 7 days . . . 108 psig
Fully Builtup Bottomhole Pressure . . 1099 psig
950
900
850
.001
.01
.1
1.0
Δt / t + Δt →
July '74


Wellhead Pressure, psig
Test #34
El Paso Natural Gas
Wilson No. 6 (SW 35-30-7)
Shut-in for pressure buildup July 30, 1958
Rate prior to shut-in 646 Mcf/D
Fully Builtup Wellhead Pressure . . . 1066 psig
Seven-day Wellhead Pressure . . . 632 psig
Remaining Buildup after 7 days . . . 434 psig
Fully Builtup Bottomhole Pressure . . . 1245 psig
7 days
118 days
1105 days
1200
1000
800
600
.001
.01
.1
1
Δt / t + Δt →
July '74

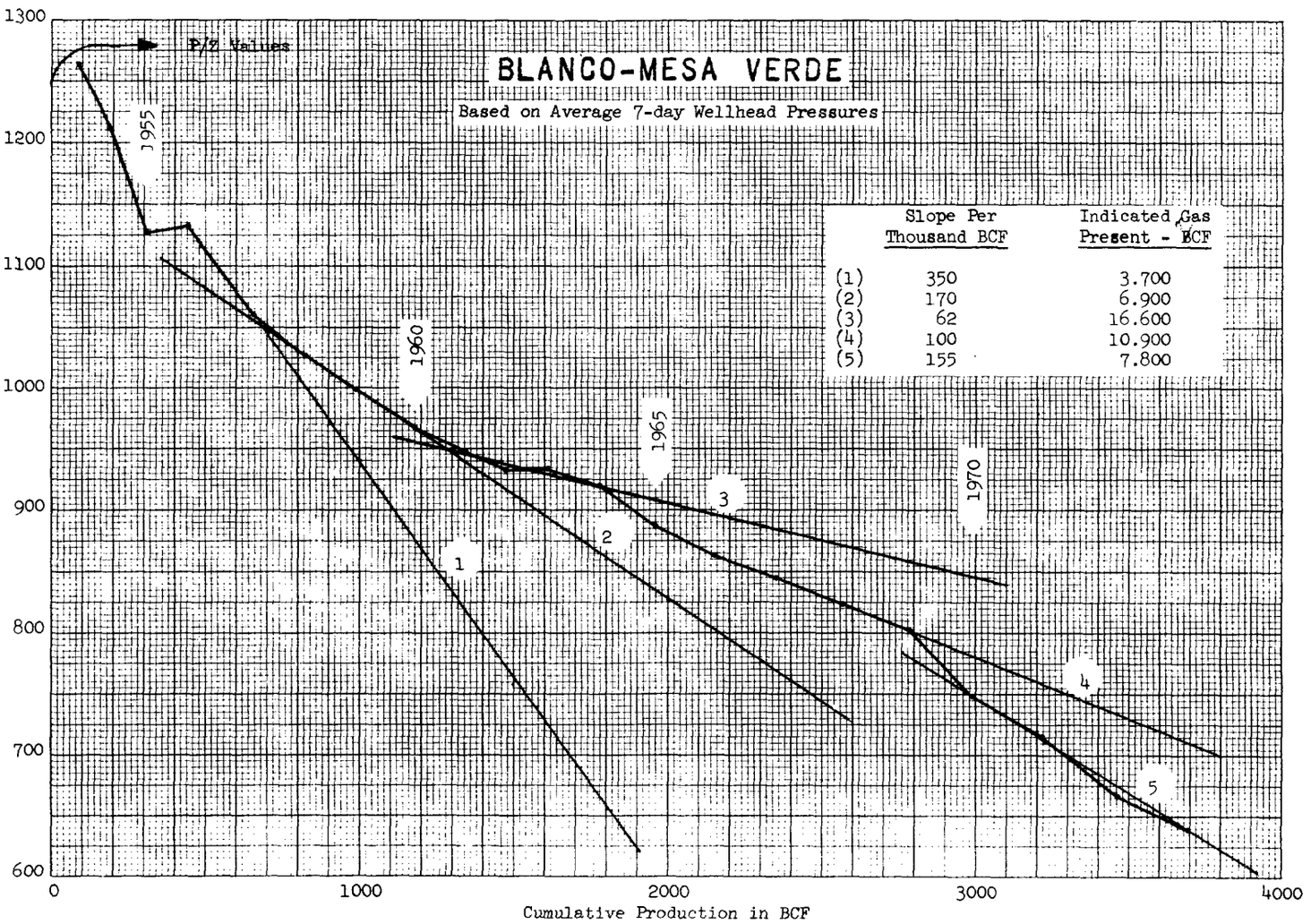

Wellhead Pressure, psig
Test #36
El Paso Natural Gas
Stewart No. 4 (SW 28-30-10)
Shut-in for pressure buildup July 30, 1958
Rate prior to shut-in 87 Mcf/D
Fully Builtup Wellhead Pressure . . . 1161 psig
Seven-day Wellhead Pressure . . . 633 psig
Remaining Buildup after 7 days . . . 528 psig
Fully Builtup Bottomhole Pressure . . . 1335 psig
7 days
399 days
1518 days
200
000
800
600
.001
.01
.1
1.0
Δt / t + Δt
July '74

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

Case No. 5264 Exhibit No. 18

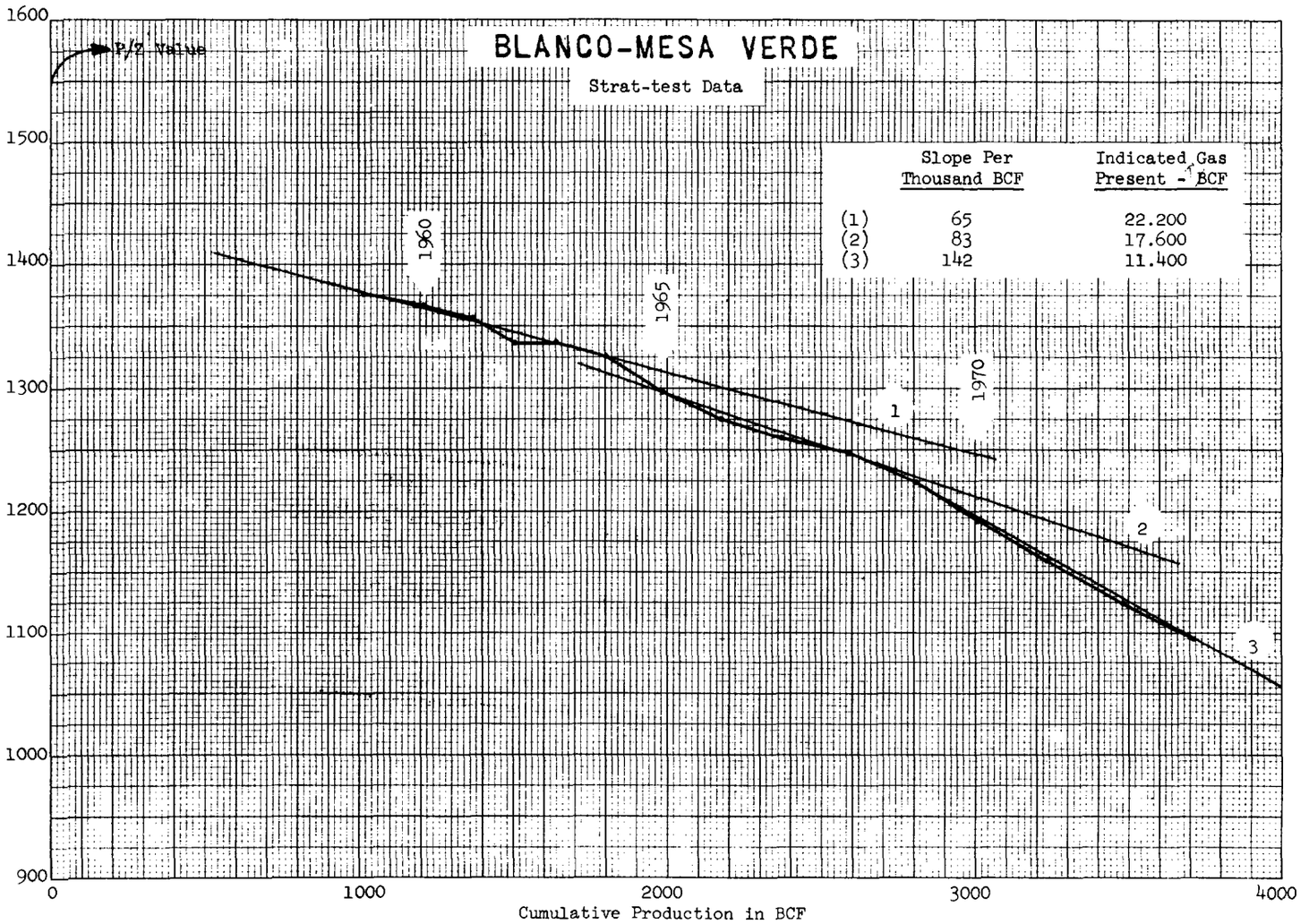
Submitted by EPNG Co.

Hearing Date 8-13-74



	Slope Per Thousand BCF	Indicated Gas Present - BCF
(1)	350	3.700
(2)	170	6.900
(3)	62	16.600
(4)	100	10.900
(5)	155	7.800

Exhibit No. 20


BLANCO-MESA VERDE
Strat-test Data
P/Z Value
Slope Per Thousand BCF
Indicated Gas Present - BCF
(1) 65 22.200
(2) 83 17.600
(3) 142 11.400
1960
1965
1970
1
2
3
1600
1500
1400
1300
1200
1100
1000
900
0
1000
2000
3000
4000
Cumulative Production in BCF

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

Case No. 5264 Exhibit No. 20

Submitted by EPNG

Hearing Date 2-13-74

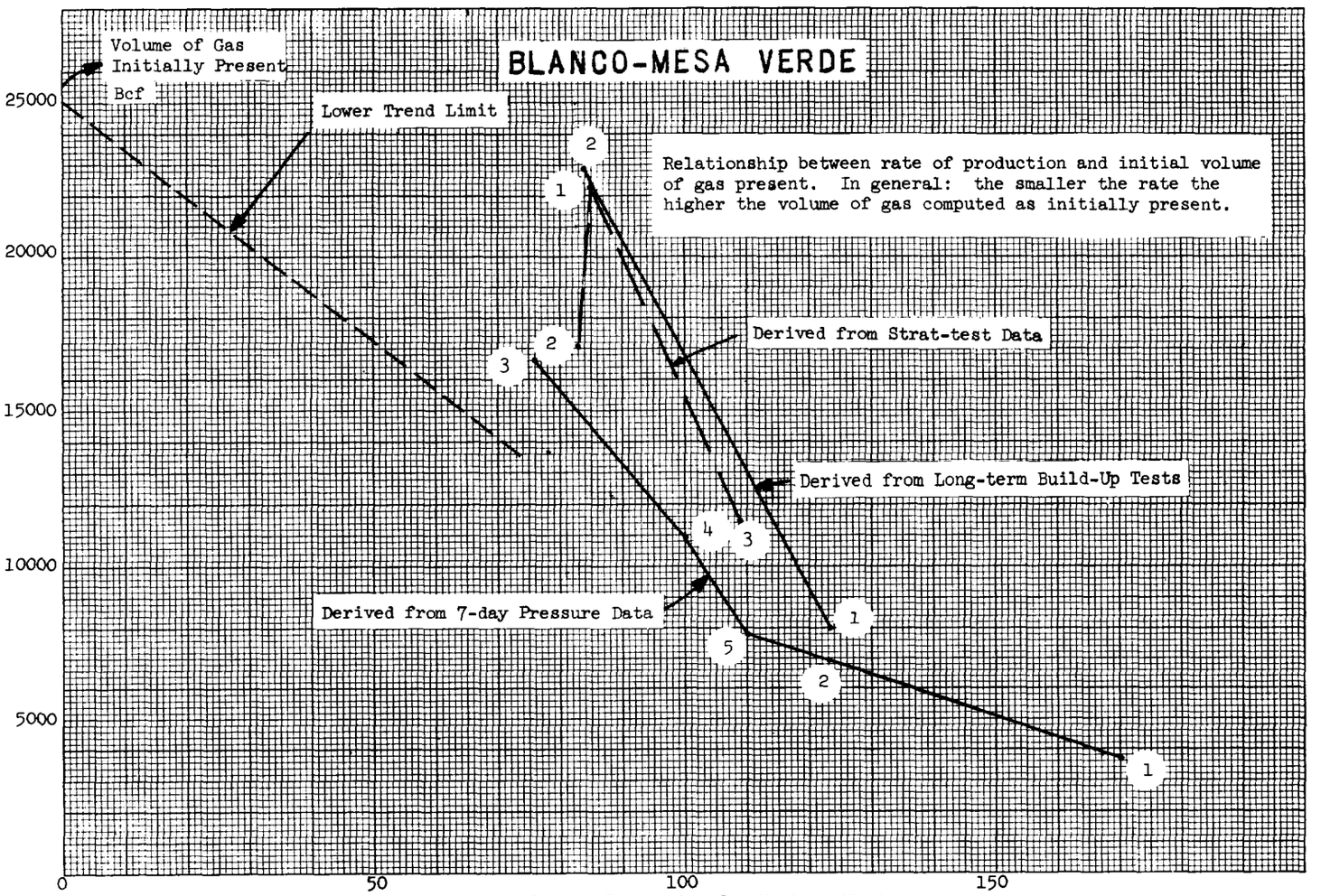


EXHIBIT NO. 21

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5764 Exhibit No. 17
Submitted by El Paso
Hearing Date 7/13/74

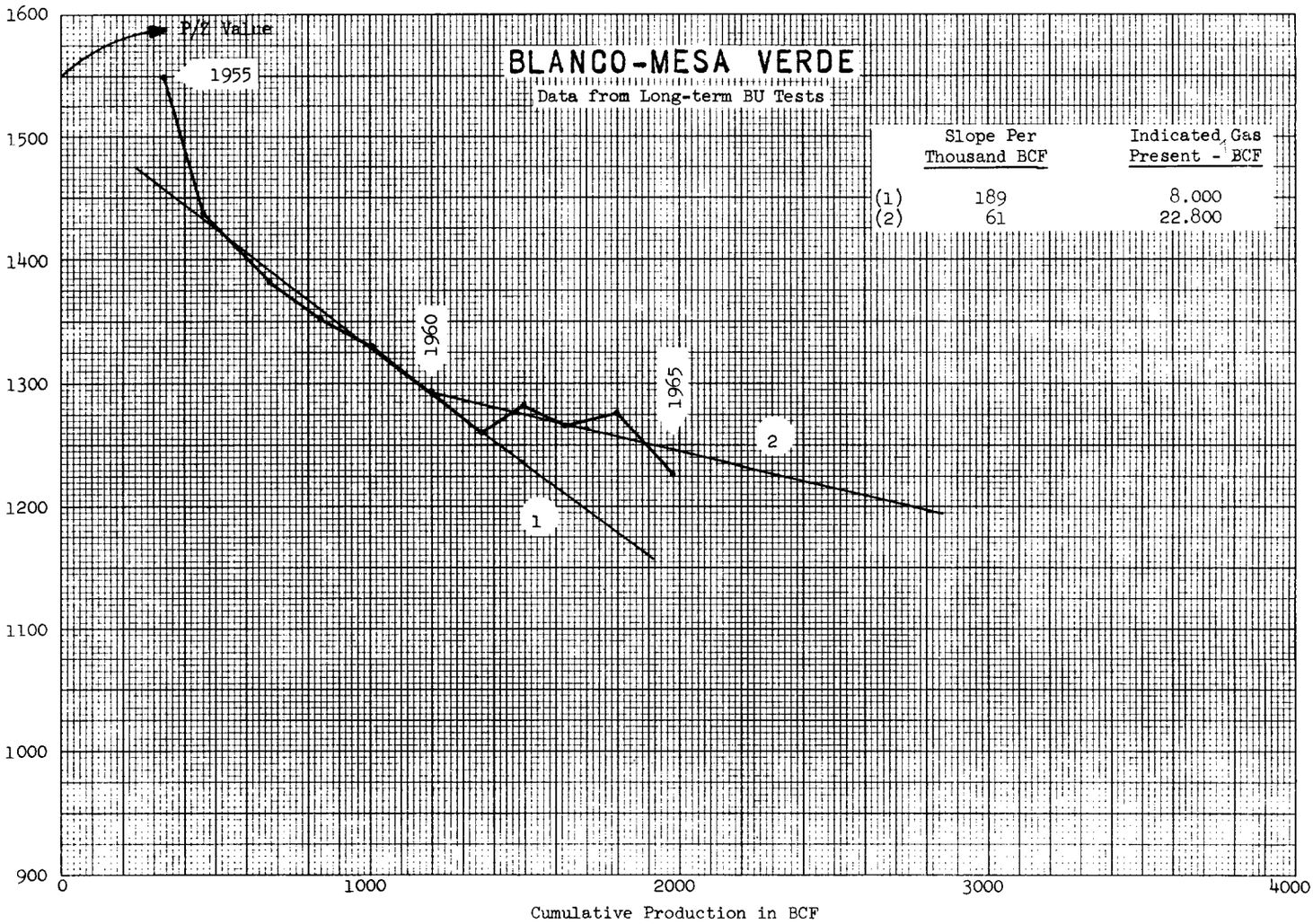
BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

BLANCO-MESA VERDE
PRESSURE DATA in PSIA
at
MID-YEAR POINTS

Year	Average Number of Producing Wells*	Average Yearly Production per Well in MMcf	Total Field Average 7-Day Wellhead Pressure	Average Bottom-Hole Pressures		
				Total Field 7-Day Tests	3 Strat Tests	Long-term BU Tests on 38 Wells
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1953	344	196.1	966	1110	–	–
1954	574	180.1	931	1069	–	–
1955	761	153.6	873	1002	–	1328
1956	920	144.0	879	1009	–	1250
1957	1202	176.8	829	950	–	1199
1958	1522	110.1	805	922	–	1176
1959	1703	97.9	785	899	1197	1163
1960	1798	107.1	763	873	1191	1132
1961	1872	85.9	750	858	1183	1107
1962	1920	68.3	740	846	1167	1123
1963	1953	67.1	742	847	1167	1111
1964	1970	84.0	730	835	1160	1118
1965	1986	91.0	707	808	1137	1081
1966	2005	95.8	691	789	1119	–
1967	2024	99.2	677	772	1109	–
1968	2037	108.8	667	755	1100	–
1969	2046	105.4	647	738	1082	–
1970	2059	99.9	608	693	1058	–
1971	2068	109.8	582	663	1033	–
1972	2076	119.9	544	618	1003	–
1973	2072	111.3	525	593	980	–

* Number of wells producing at beginning and end of year divided by 2.

EXHIBIT NO. 17


BLANCO-MESA VERDE
Data from Long-term BU Tests
P/Z Value
1955
1960
1965
1
2
Slope Per Thousand BCF
Indicated Gas Present - BCF
(1) 189 8.000
(2) 61 22.800
1600
1500
1400
1300
1200
1100
1000
900
0
1000
2000
3000
4000
Cumulative Production in BCF

Submitted by E O Case
Hearing Date 7/13/74

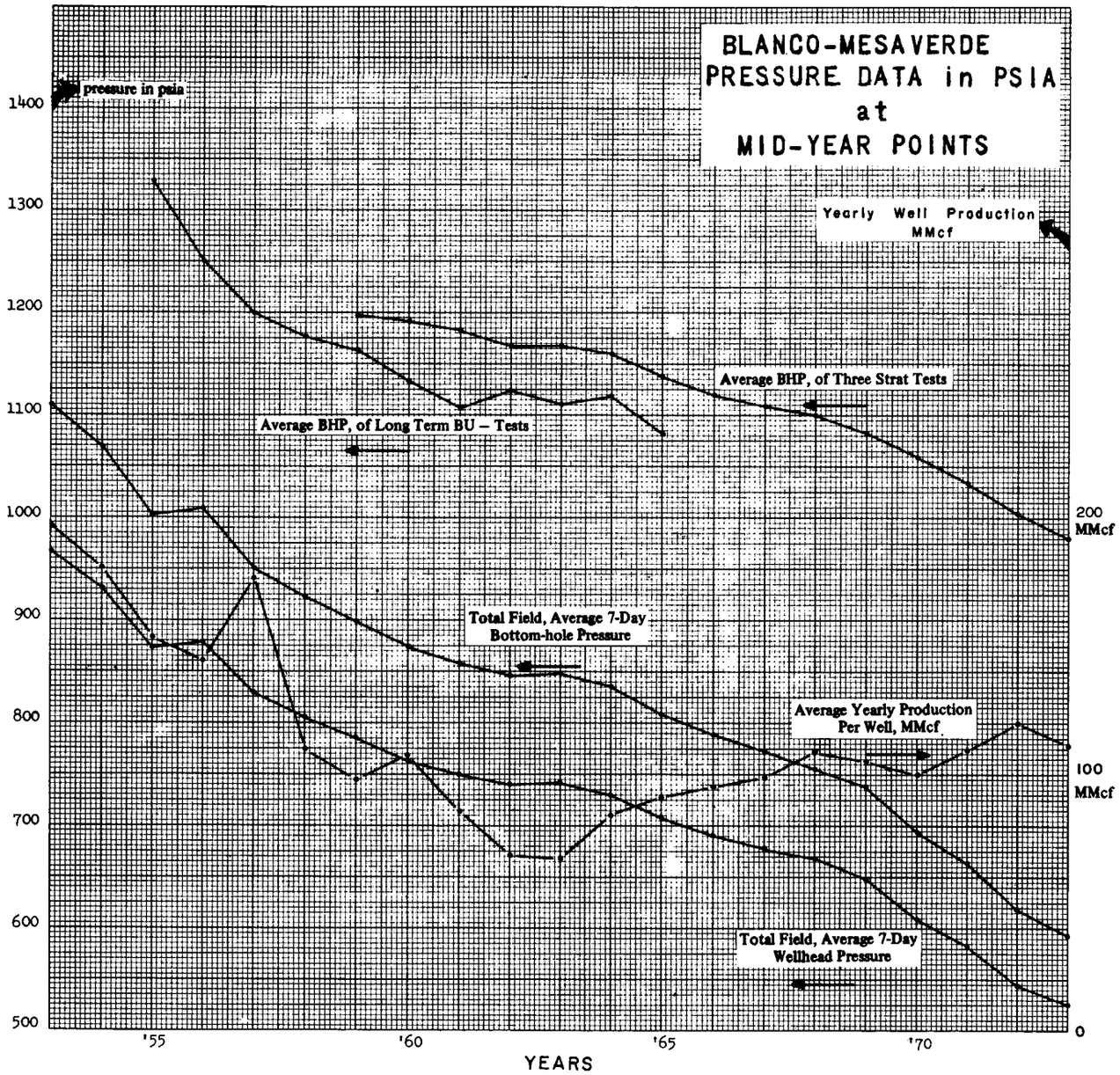


Exhibit No. 16

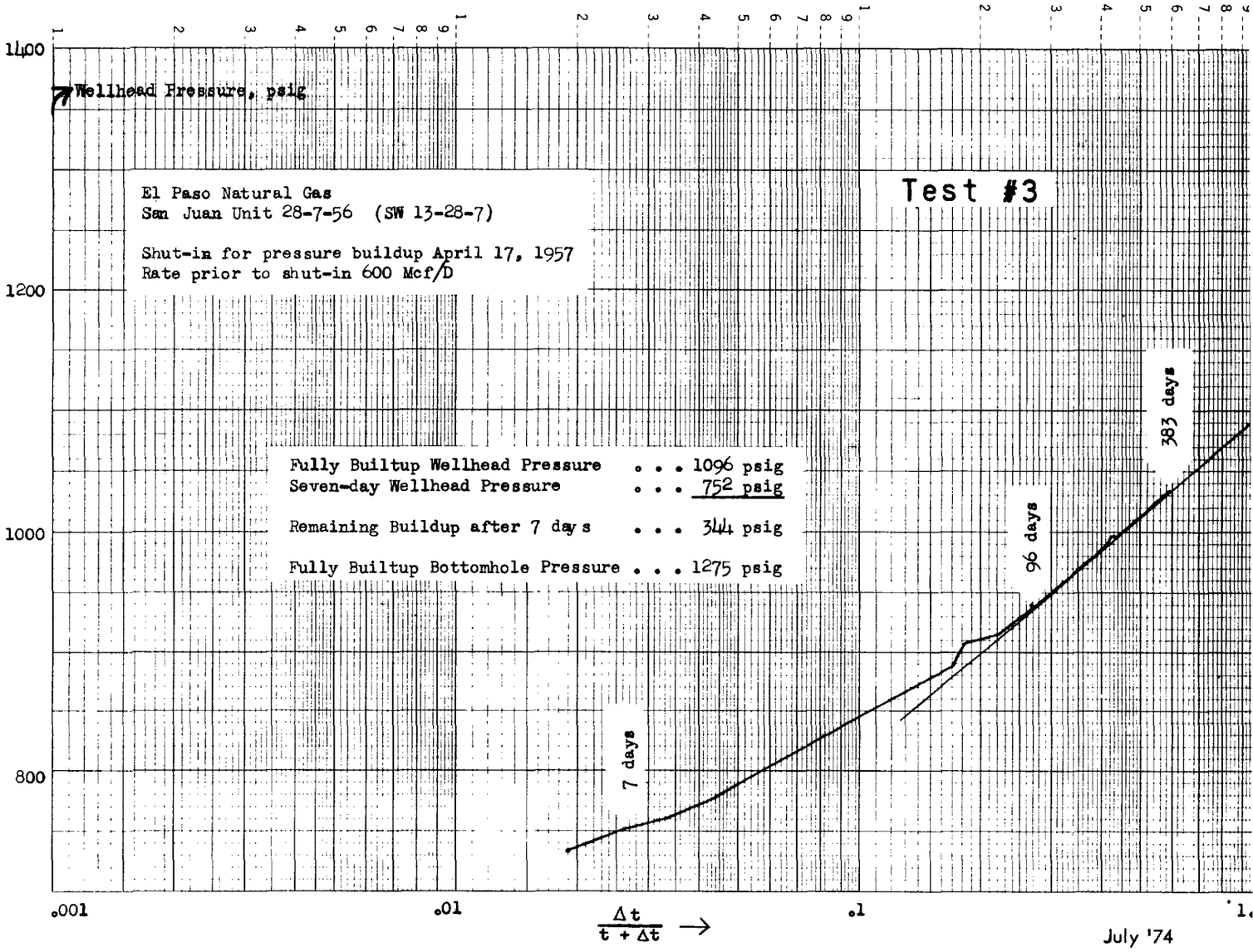


EXHIBIT NO. 18

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5264 Exhibit No. 13
Submitted by Ee Nez
Hearing Date 3/13/74

Copy of page 109 from, "Geometry of Producing Mesaverde Sandstones, San Juan Basin," by Charles T. Hollenshead and Roy L. Pritchard appearing in Geometry of Sandstone Bodies, published by The American Association of Petroleum Geologists in September 1961.

Note that contours are above sea level.

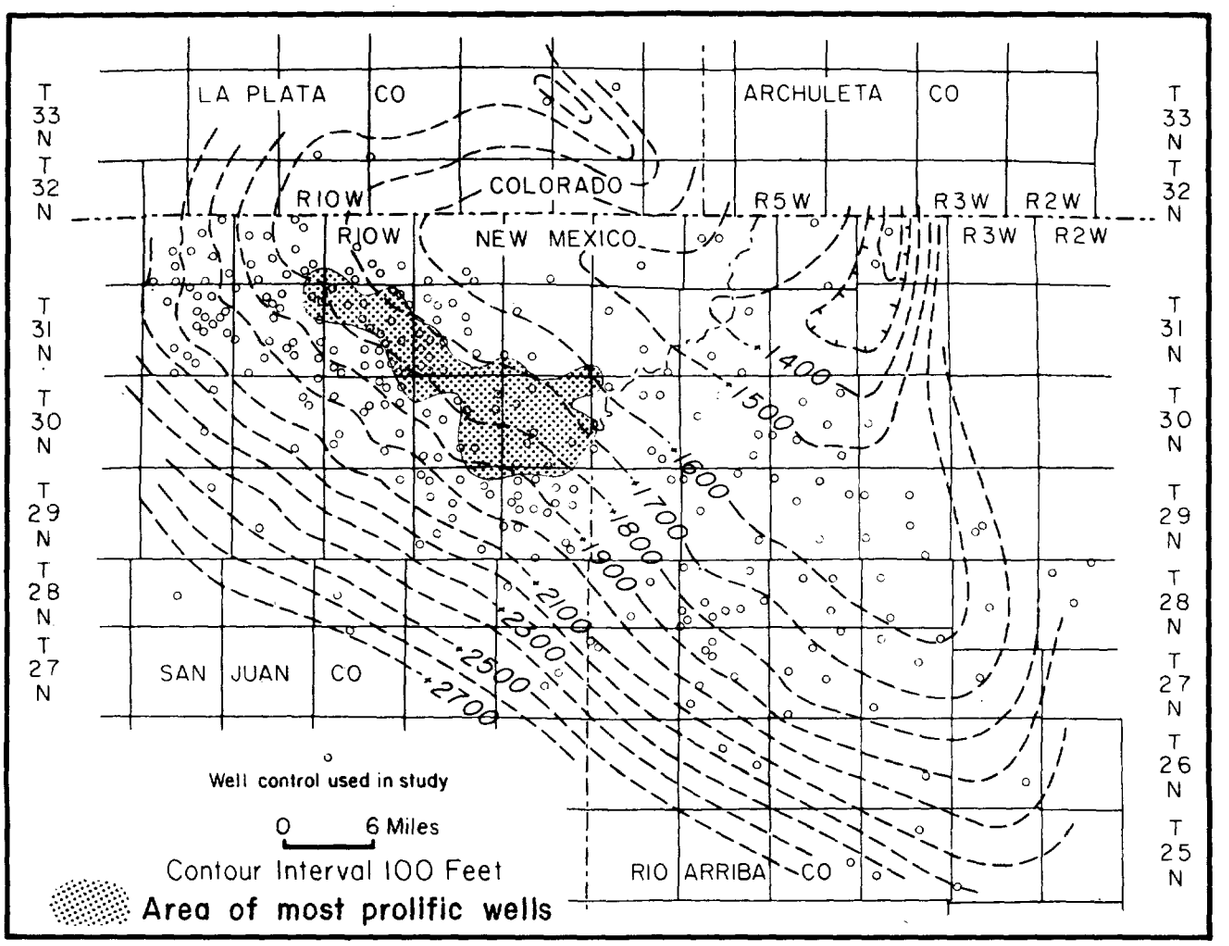


FIG. 10.—Structure map drawn on "Green Marker Horizon."

Exhibit No. 13

SUPCO EXHIBIT NO. _____

SUPCO NORDHAUS #5
(M - Section 12-31N-9W)
San Juan County, New Mexico

Pi = Initial Reservoir Pressure, 1009 Psig
Well Shut-in on 6-25-74 - Well Shut-in for 31 Days
Cumulative Production = 5,894,591 MCF (As of 6-25-74)

a) Drainage Area = 320 Acres

P* = 596 Psig

$\bar{P}$, Average Reservoir Pressure = 444 Psig

Abandonment Conditions:

Q = 20 MCFD: Line Pressure = 50 Psig

$\bar{P}$, Abandonment = 103 Psig

b) Drainage Area = 160 Acres

P* - 580 Psig (Pressure distribution curve)

$\bar{P}$ = 395 Psig

$\bar{P}$ (abandonment) = 91 Psig

Ultimate recoverable reserves (one well on 320 acres) = 8.75 BCF

Ultimate recoverable reserves (two wells on 320 acres) = 8.92 BCF

Increase in recoverable gas reserves = 0.17 BCF (2.0%)

Reservoir and Fluid Characteristics Used:

K, Formation Permeability = 1.1 MD

h, Formation Thickness = 108 Ft.

Porosity = 0.10;
Viscosity = 0.0133 CP

C = Compressibility, Psi^{-1} (Varying with pressure)

T = 600° R

NOTES ON ECONOMIC EVALUATION OF MESAVERDE GAS

Table 1:

a) One producing well on 320 acres.

b) Initial production rate 310 MCFD. Decline rate 7% per year to depletion. Abanonment @ 20 MCFD.

c) Remaining producing life of well estimated at 39 years.

d) Gross revenue based upon 82.5 percent average net interest leases.

e) Price of gas computed @ 24.0¢/MCF plus BTU adjustment (1150 BTU/cu. ft. @ 14.73 psia) and tax reimbursement. Escalation one-half cent per MCF (plus adjustments) every year.

f) Recoverable gas reserves: 1,521,082 MCF

Table 2:

a) Two wells on 320 acres.

b) Initial production rate 540 MCFD allocated equally to two wells. Decline rate 10% per year to depletion. Abandonment @ 20 MCFD/well.

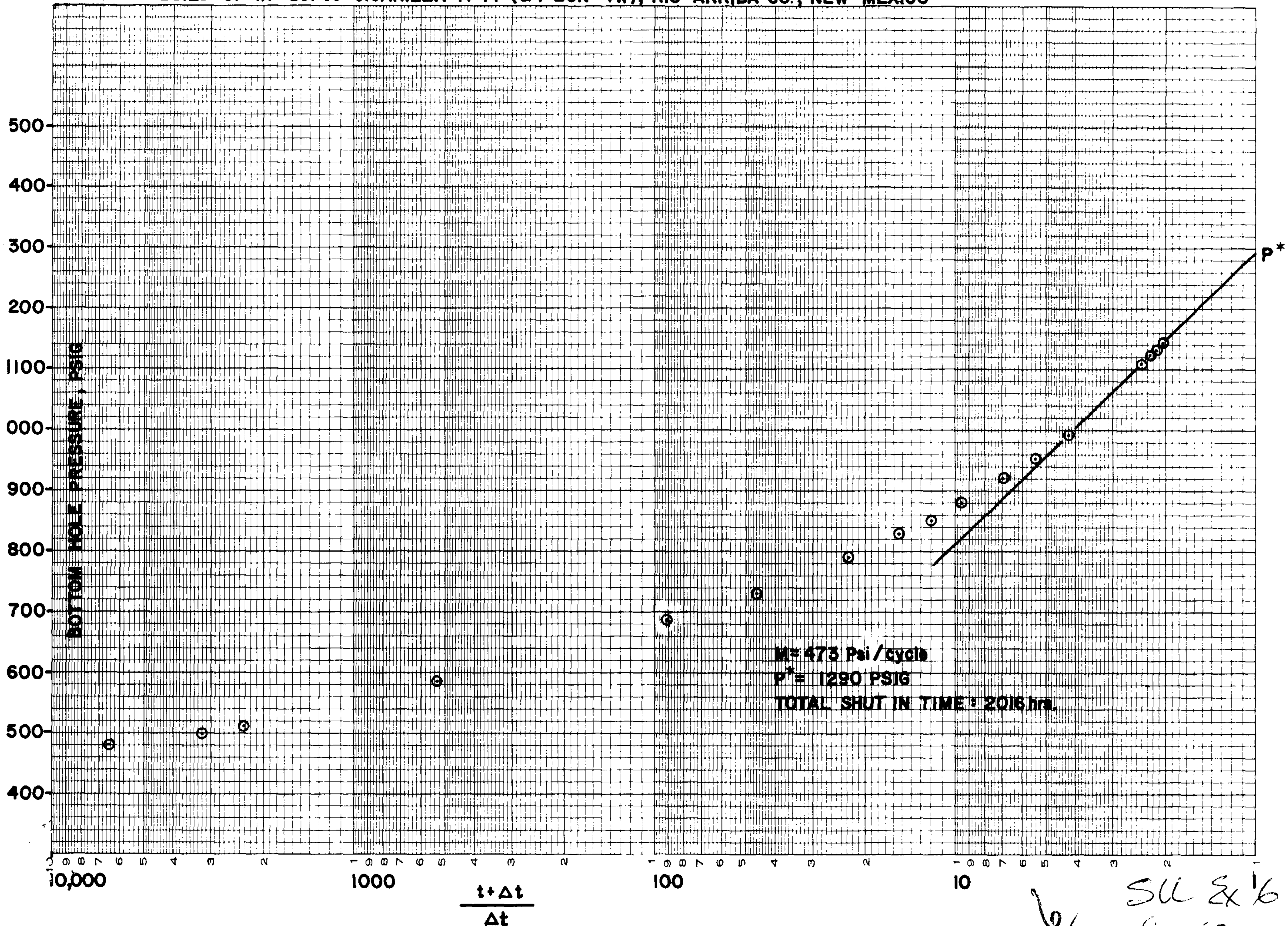
c) Producing life of wells estimated @ 25 years.

d) Gross revenue based upon 82.5 percent average net interest.

e) Price of gas for well No. 1 same as in Table 1. Price of gas for well No. 2 computed @ 43.0¢/MCF plus BTU adjustment (1150 BTU/cu. ft. @ 14.73 psia) and tax reimbursement. Escalation one cent per MCF (plus adjustments) every year.

f) Recoverable gas reserves: 1,836,448 MCF
Increase in reserves: 315,366 MCF

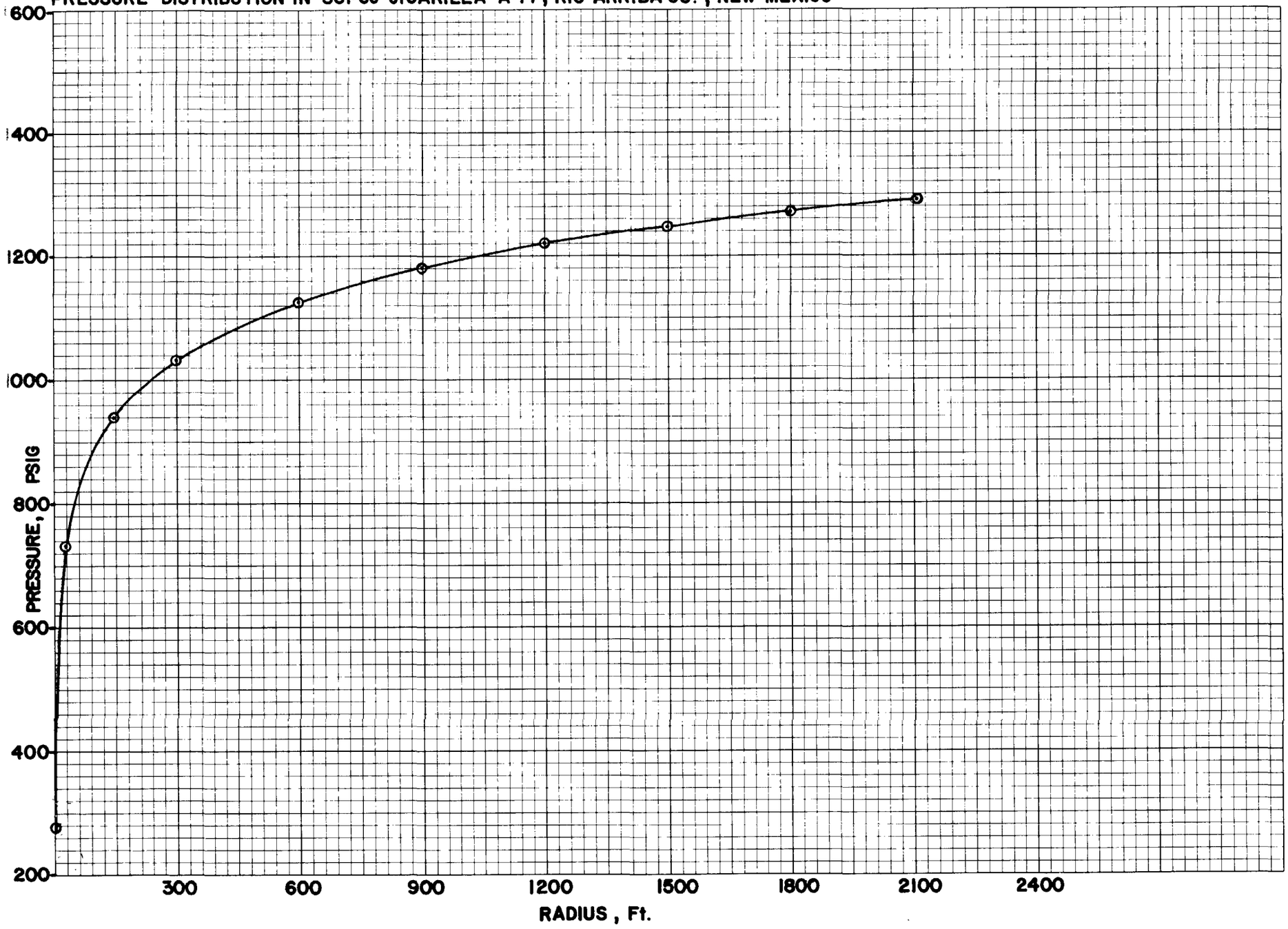
PRESSURE BUILD UP IN SUPCo JICARILLA A-14 (24-26N-4W), RIO ARRIBA CO., NEW MEXICO



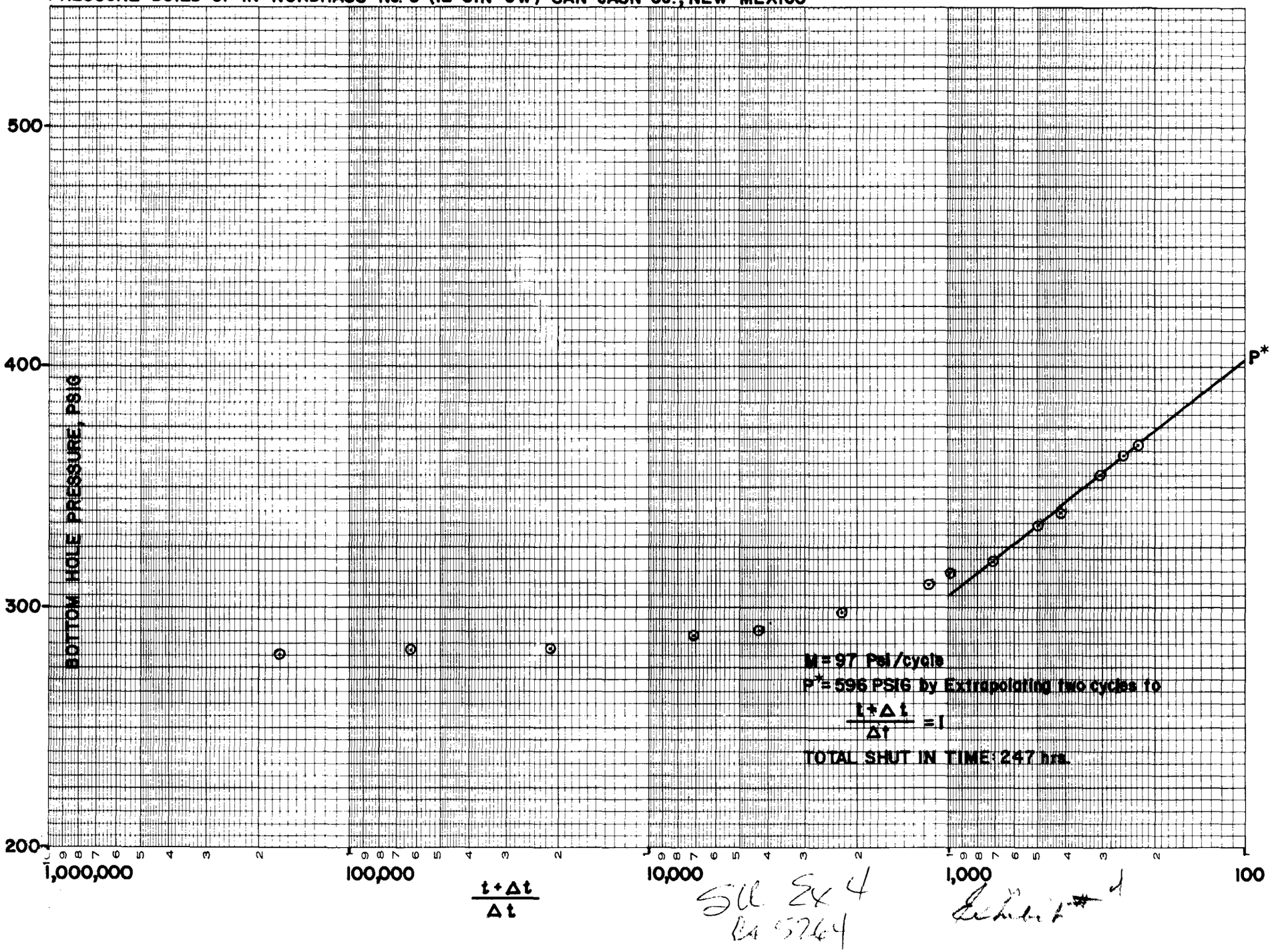
6/

SUL Ex 16
Ca 5264

PRESSURE DISTRIBUTION IN SUPCo JICARILLA A-14, RIO ARRIBA CO., NEW MEXICO

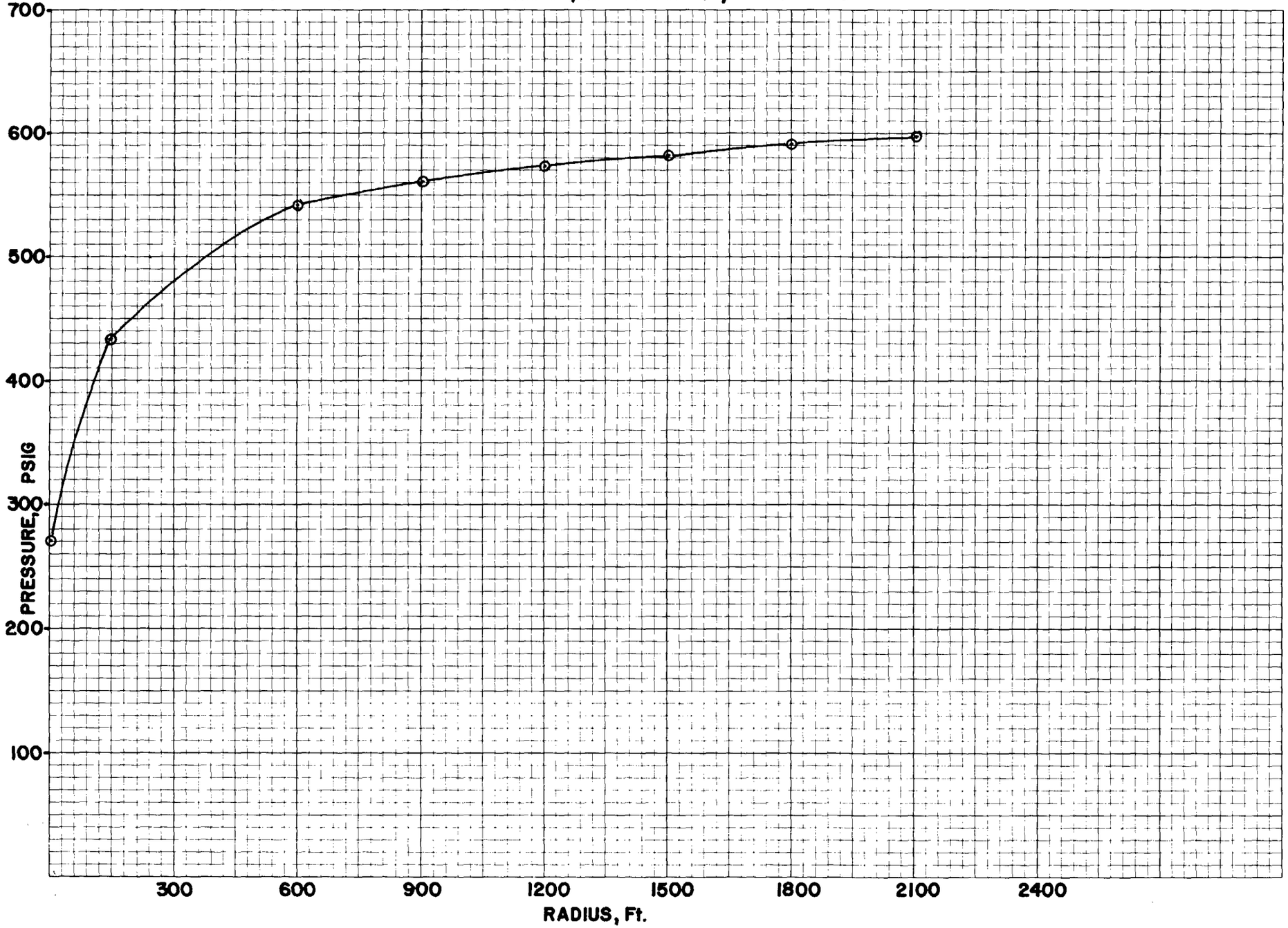


PRESSURE BUILD UP IN NORDHAUS No. 5 (12-31N-9W) SAN JAUN Co., NEW MEXICO

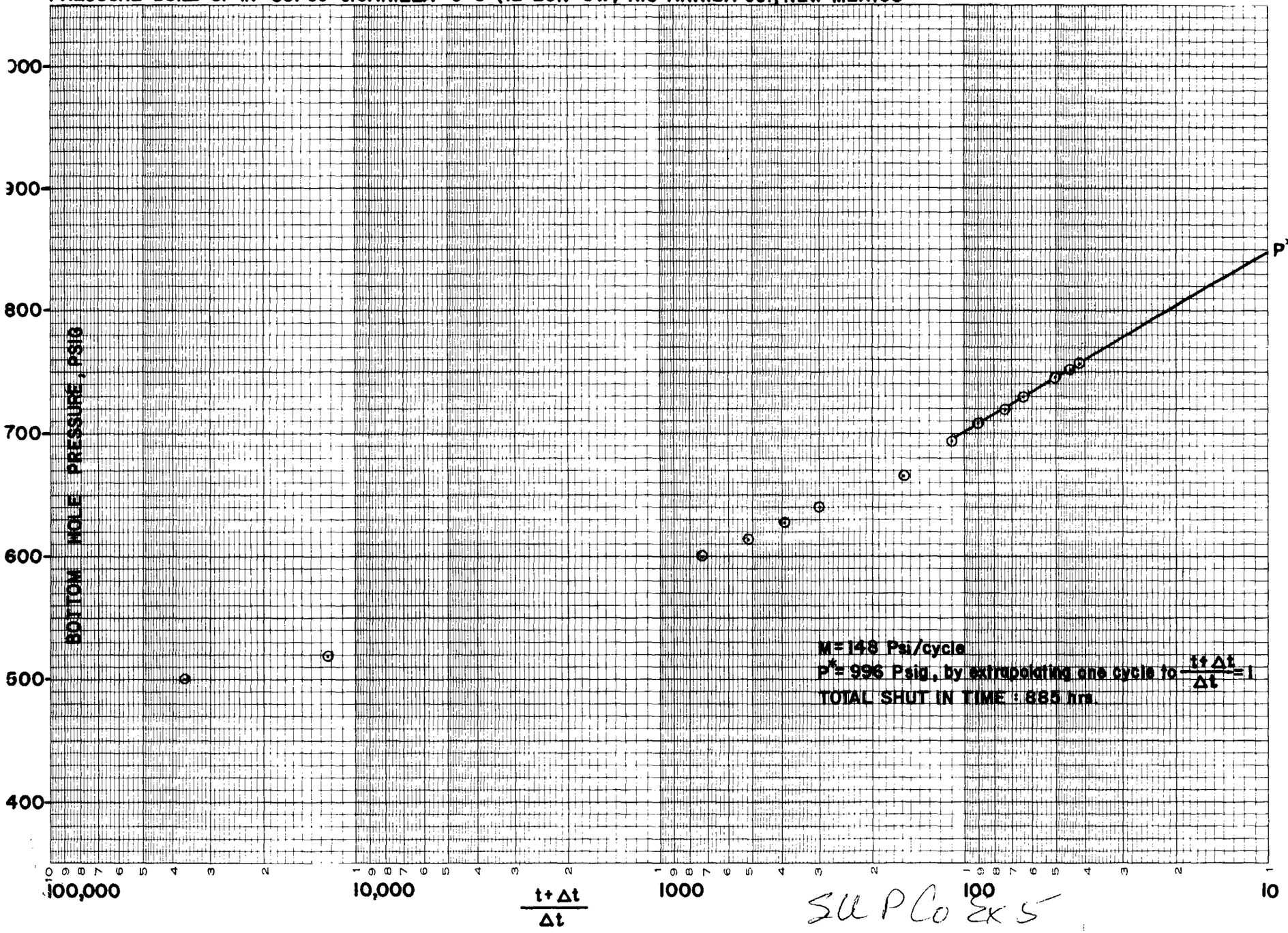


SW Ex 4
BA 5764

PRESSURE DISTRIBUTION IN SUPCo NORDHAUS No. 5 , SAN JUAN CO., NEW MEXICO

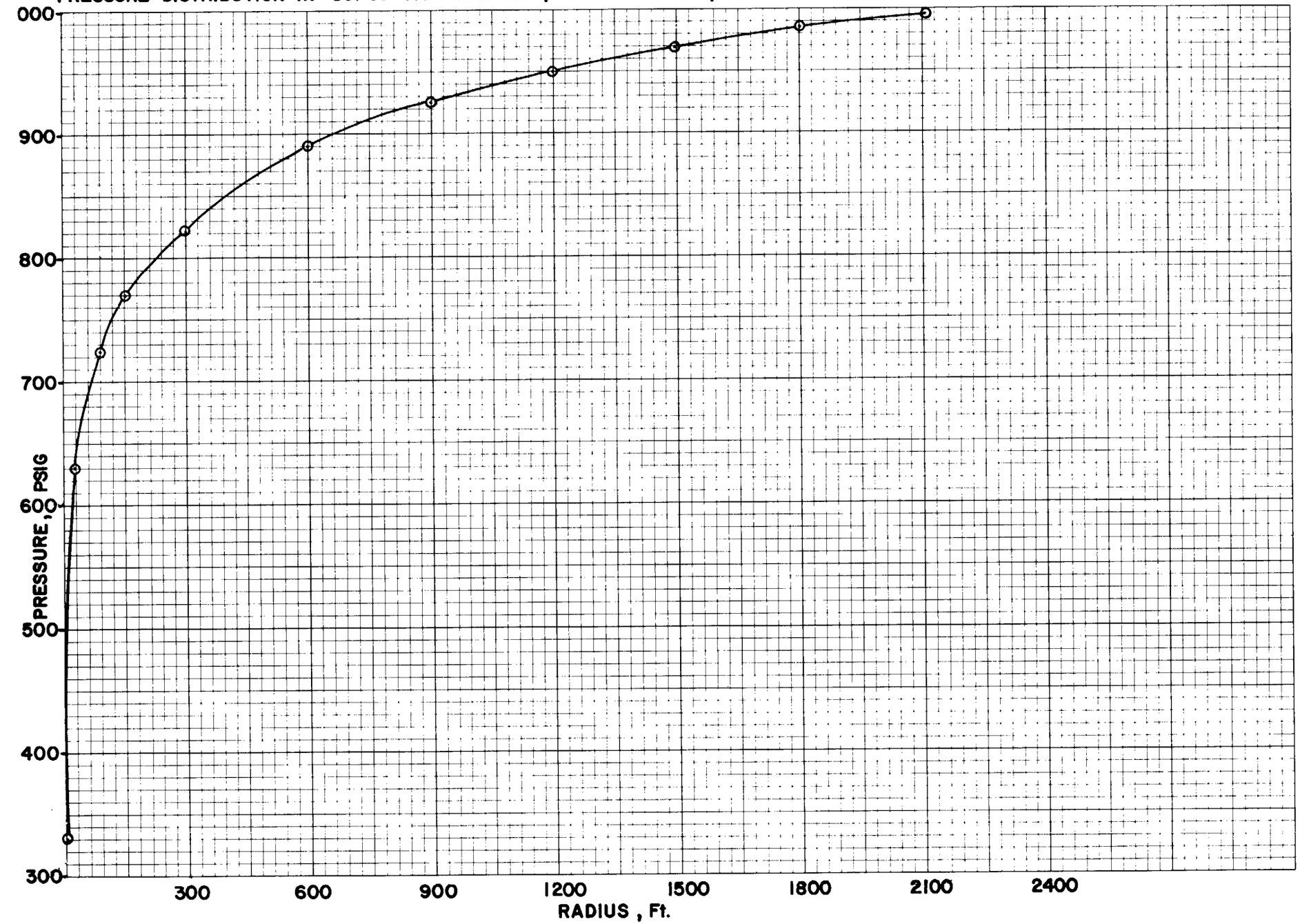


PRESSURE BUILD UP IN SUPCo JICARILLA G-5 (12-26N-5W) RIO ARRIBA CO., NEW MEXICO



SUPCo Ex 5
Cn 5264

PRESSURE DISTRIBUTION IN SUPCo JICARILLA G-5, RIO ARRIBA CO., NEW MEXICO



SUPCO Exhibit No. _____

SUPCO JICARILLA G-5
(L - Section 12-26N-5W)
Rio Arriba County, New Mexico

Pi = Initial Reservoir Pressure, 1325 Psi
Well Shut-in on 7-3-74 - Well Shut-in for 37 Days
Cumulative Production = 1,018,406 MCF (As of 7-3-74)

a) Drainage Area = 320 Acres

P* = 996 Psig

$\bar{P}$ = Average Reservoir Pressure = 888 Psig

Abandonment Conditions:

Q = 20 MCFD; Line Pressure = 50 Psig

$\bar{P}$ (abandonment) = 250 Psig (Radial flow, unsteady state; n = 0.75)

b) Drainage Area = 160 Acres

P* (radius 1489 Ft.) = 967 Psig (Pressure distribution curve)

$\bar{P}$ = 825 Psig

$\bar{P}$ (abandonment) = 207 Psig

Ultimate recoverable reserves (one well on 320 acres) = 3.7 BCF

Ultimate recoverable reserves (two wells on 320 acres) = 3.87 BCF

Increase in recoverable gas reserves = 0.17 BCF (4.6%)

Reservoir and Fluid Characteristics Used:

K, Formation Permeability = 0.436 MD

h, Formation Thickness, 96 Ft.

Porosity = 0.10
Viscosity = 0.0133 CP

C = Compressibility, Psi^{-1} (Varying with Pressure)

T = 620° R

NOTES ON ECONOMIC EVALUATION OF MESAVERDE GAS

Table 1:

a) One producing well on 320 acres.

b) Initial production rate 310 MCFD. Decline rate 7% per year to depletion. Abanonment @ 20 MCFD.

c) Remaining producing life of well estimated at 39 years.

d) Gross revenue based upon 82.5 percent average net interest leases.

e) Price of gas computed @ 24.0¢/MCF plus BTU adjustment (1150 BTU/cu. ft. @ 14.73 psia) and tax reimbursement. Escalation one-half cent per MCF (plus adjustments) every year.

f) Recoverable gas reserves: 1,521,082 MCF

Table 2:

a) Two wells on 320 acres.

b) Initial production rate 540 MCFD allocated equally to two wells. Decline rate 10% per year to depletion. Abandonment @ 20 MCFD/well.

c) Producing life of wells estimated @ 25 years.

d) Gross revenue based upon 82.5 percent average net interest.

e) Price of gas for well No. 1 same as in Table 1. Price of gas for well No. 2 computed @ 43.0¢/MCF plus BTU adjustment (1150 BTU/cu. ft. @ 14.73 psia) and tax reimbursement. Escalation one cent per MCF (plus adjustments) every year.

f) Recoverable gas reserves: 1,836,448 MCF
Increase in reserves: 315,366 MCF

Table 1

ECONOMIC EVALUATION OF MESAVERDE GAS
Basis: One Well on 320 Acres

Yr.	Gross Prod. MCF	Gross Revenue	Prod. & Ad Val Tax	Operating Costs	Net Operating Revenue
1	113,150	28,378	2,242	1,200	24,936
2	105,229	26,912	2,126	1,200	23,586
3	97,863	25,513	2,016	1,200	22,297
4	91,013	24,253	1,916	1,200	21,137
5	84,642	22,974	1,815	1,200	19,959
6	78,717	21,755	1,719	1,200	18,836
7	73,207	20,595	1,627	1,200	17,768
8	68,082	19,490	1,540	1,200	16,750
9	63,317	18,492	1,461	1,200	15,831
10	58,884	17,489	1,382	1,200	14,907
11	54,763	16,536	1,306	1,200	14,030
12	50,929	15,630	1,235	1,200	13,195
13	47,364	14,770	1,167	1,200	12,403
14	44,049	13,991	1,105	1,200	11,686
15	40,965	13,214	1,044	1,200	10,970
16	38,097	12,478	986	1,200	10,292
17	35,430	11,780	931	1,200	9,649
18	32,951	11,118	878	1,200	9,040
19	30,644	10,517	831	1,200	8,486
20	28,499	9,922	784	1,200	7,938
Sub Total	1,237,795	355,807	28,111	24,000	303,696
Remaining 19 Years	283,287	109,879	8,681	22,800	78,398
TOTAL	1,521,082	465,686	36,792	46,800	382,094

Table 2

ECONOMIC EVALUATION OF MESAVERDE GAS
Basis: Two Wells on 320 Acres
Well No. 1 - Existing Well
Well No. 2 - New Well

Yr.	Gross Prod. Well No. 1	Gross Revenue	Prod. & Ad Val Tax	Operating Costs	Net Operating Revenue, Well #1	Gross Prod. Well No. 2	Gross Revenue	Prod. & Ad Val Tax	Operating Costs	Net Operating Revenue, Well #2
1	99,000	24,829	1,961	1,200	21,668	99,000	44,431	3,510	1,200	39,721
2	89,100	22,787	1,800	1,200	19,787	89,100	40,870	3,229	1,200	36,441
3	80,190	20,906	1,652	1,200	18,054	80,190	37,643	2,974	1,200	33,469
4	72,170	19,232	1,519	1,200	16,513	72,170	34,593	2,733	1,200	30,660
5	64,953	17,630	1,393	1,200	15,037	64,953	31,830	2,515	1,200	28,115
6	58,458	16,156	1,276	1,200	13,680	58,458	29,226	2,309	1,200	25,717
7	52,613	14,801	1,169	1,200	12,432	52,613	26,868	2,123	1,200	23,545
8	47,351	13,555	1,071	1,200	11,284	47,351	24,650	1,947	1,200	21,503
9	42,616	12,446	983	1,200	10,263	42,616	22,642	1,789	1,200	19,653
10	38,354	11,391	900	1,200	9,291	38,354	20,757	1,640	1,200	17,917
11	34,519	10,423	823	1,200	8,400	34,519	18,825	1,487	1,200	16,138
12	31,067	9,534	753	1,200	7,581	31,067	17,454	1,379	1,200	14,875
13	27,960	8,719	689	1,200	6,830	27,960	15,985	1,263	1,200	13,522
14	25,164	7,993	631	1,200	6,162	25,164	14,657	1,158	1,200	12,299
15	22,648	7,306	577	1,200	5,529	22,648	13,416	1,060	1,200	11,156
16	20,383	6,676	527	1,200	4,949	20,383	12,276	970	1,200	10,106
17	18,345	6,099	482	1,200	4,417	18,345	11,245	888	1,200	9,157
18	16,510	5,571	440	1,200	3,931	16,150	10,059	795	1,200	8,064
19	14,859	5,099	403	1,200	3,496	14,859	9,402	743	1,200	7,459
20	13,373	4,656	368	1,200	3,088	13,373	8,606	680	1,200	6,726
Sub Total	869,633	245,809	19,417	24,000	202,392	869,633	445,435	35,192	24,000	386,243
Remaining 5 years	48,591	17,595	1,391	6,000	10,203	48,591	32,595	2,574	6,000	24,021
TOTAL	918,224	263,404	20,808	30,000	212,595	918,224	478,030	37,766	30,000	410,264

ECONOMIC EVALUATION OF MESAVERDE GAS

Yr.	Total Net Revenue Well #1 + Well #2	Total Net Revenue Well #1	Increase in Net Revenue
1	61,389	24,936	36,453
2	56,228	23,586	32,642
3	51,523	22,297	29,226
4	47,173	21,137	26,036
5	43,152	19,959	23,193
6	39,397	18,836	20,561
7	35,977	17,768	18,209
8	32,787	16,750	16,037
9	29,916	15,831	14,085
10	27,208	14,907	12,301
11	24,538	14,030	10,508
12	22,456	13,195	9,261
13	20,352	12,403	7,949
14	18,461	11,686	6,775
15	16,685	10,970	5,715
16	15,055	10,292	4,763
17	13,574	9,649	3,925
18	11,995	9,040	2,955
19	10,955	8,486	2,469
20	9,814	7,938	1,876
Sub Total	588,635	303,696	284,939
Remaining	34,224	78,398	(44,174)
TOTAL	622,859	382,094	240,765

Investment (A) $154,315

Cumulative Present Worth of Increase in Net Revenue (B) @ 10% ---- $175,506
25% ---- $113,150
40% ---- $ 84,900

Rate of Return (Before Income Tax) ------ 13.0%

ECONOMIC EVALUATION OF MESAVERDE GAS

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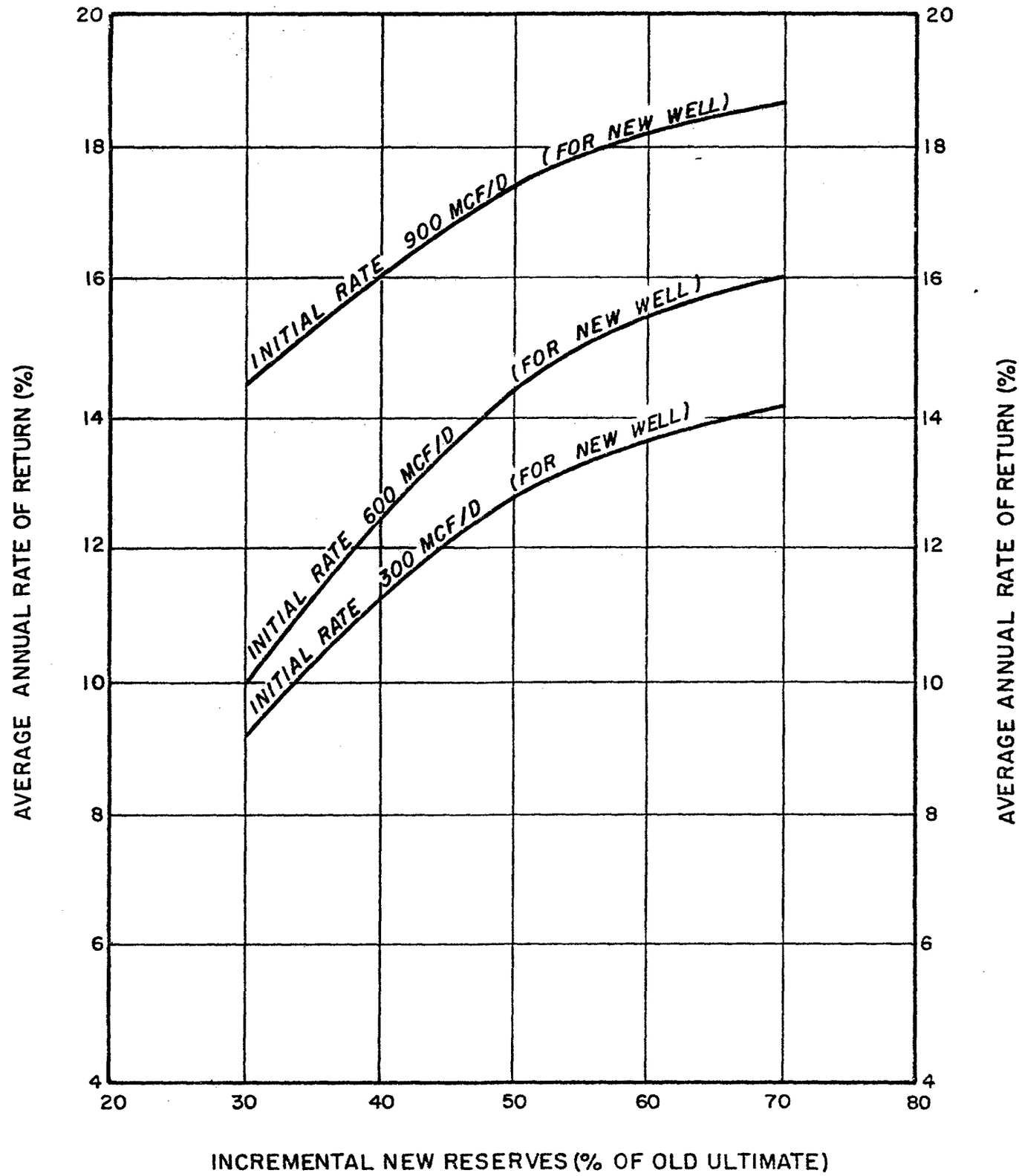
Mesa Exhibits 1,2,3.

NEW WELL ECONOMICS
BLANCO MESAVERDE POOL—NEW MEXICO
AVERAGE ANNUAL RATE OF RETURN
VS.
NEW WELL INCREMENTAL RESERVES

Mesa EXHIBIT # 2



OIL CONSERVATION COMMISSION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

July 18, 1974

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5441 Exhibit No. #1
Submitted by CCC
Hearing Date 7/23/74

COPY

Federal Power Commission
825 North Capitol Street, N.E.
Washington, D. C. 20426

ATTENTION: Commissioner Rush Moody, Jr.

Re: Commission Opinion No. 699
Docket No. R-389-B

Gentlemen:

A question has arisen in connection with your recent opinion and order entered in the captioned case which could bear on an important case pending before the New Mexico Oil Conservation Commission. We therefore request an opinion clarifying one aspect of the subject order. In order that your Commission fully understands what information is requested a discussion of the case now before the New Mexico Oil Conservation Commission would be pertinent.

El Paso Natural Gas Company is the largest owner and operator of natural gas leases in the Blanco-Mesa Verde Pool in San Juan and Rio Arriba Counties, New Mexico. This pool presently has some 2,058 producing gas wells, each located on a 320-acre spacing and proration unit. The total production allowable for the pool is divided among the wells under a rather complex allowable formula which considers both the acreage dedicated to the well and the well's pipeline deliverability. The spacing rules for this pool and the allowable formula have been in effect for approximately 23 years and 20 years, respectively.

El Paso is seeking to increase deliverability from the pool by the drilling of additional wells. However rather than petition this Commission to change the spacing for the pool from 320 acres to 160 acres, El Paso seeks an order permitting the drilling of a second well on any 320-acre unit and amending the proration formula so that the acreage factor for the wells would not be affected but the deliverability of the two wells would be

additive. (Normally under New Mexico practice, the drilling of a second well would require the formation of two non-standard 160-acre proration units, each with an acreage factor of 0.5 to be applied to the allowable formula which tends to reduce the allowable for the well because of its shortage of acreage.) Thus we see that a proration unit upon which the operator elects to drill a second well would receive a larger allowable than a proration unit the operator of which would not or could not drill the additional well.

Under such a rule there is a very real liklihood of drainage of gas underlying units with one well to units with two wells. Other operators in the pool, therefore, realize that if the rule is adopted, they will be obligated under their leases to drill additional wells to prevent such drainage even though the pool spacing rules would not require additional drilling.

A critical issue to those operators in their decision whether or not to oppose El Paso's proposal is whether the gas from such additional wells, drilled in units the reserves of which have already been dedicated to the interstate market, will qualify for the uniform national rate for new gas prescribed in Opinion No. 699, Docket No. R-389-B.

The New Mexico Oil Conservation Commission therefore requests that the Federal Power Commission issue a clarifying opinion addressed to the following question:

> Is the national rate for sales of natural gas from wells commenced after January 1, 1973 applicable to sales of gas from wells drilled after January 1, 1973 on leases the reserves of which have already been dedicated to the interstate market by pre-existing contracts?

If the answer to this question is affirmative, another question arises:

> Shall the proportion of gas from the lease to receive the new rate be determined on the basis of actual measured production from the new well or on the basis of that well's proportional deliverability?

We believe that the speedy resolution of these questions is vital to the outcome of the case presently before the Oil Conservation Commission, which case also has significance to the Federal Power Commission in that El Paso's proposal, if

OIL CONSERVATION COMMISSION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

approved, could substantially increase the deliverability of gas from an important source of supply to the interstate market. Our hearing is scheduled for August 13, 1974. Your earliest response would be appreciated.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/TWD/jr

EPNG Exhibit No. 5

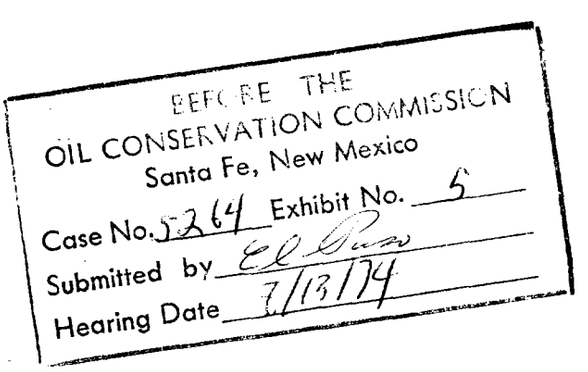
BLANCO MESAVERDE GAS POOL

ESTIMATE OF PRODUCTION AND INCOME FOR AN
AVERAGE DRILLSITE UNDER PRESENT FIELD RULES

Gas Volumes in M^2cf at 15.025 psia and 60^o F.

Years (a)	Annual Production Gas, M^2cf (b)	Annual Production Oil, Bbls. (c)	Income After Royalty and Prod. Tax, $ 1/ (d)	Operating Expenses, $ (e)	Net Income, $ (f)	Net Income Discounted at 8%, $ (g)
1	111.9	511	29,190	1,680	27,510	26,450
2	107.8	493	28,730	1,680	27,050	24,050
3	103.3	472	27,970	1,680	26,290	21,610
4	98.8	452	27,140	1,680	25,460	19,350
5	94.3	431	26,430	1,680	24,750	17,390
6	89.7	410	25,520	1,680	23,840	15,490
7	85.4	390	24,770	1,680	23,090	13,870
8	81.2	371	23,890	1,680	22,210	12,330
9	77.1	352	23,050	1,680	21,370	10,970
10	73.2	334	22,240	1,680	20,560	9,760
11	69.5	318	21,470	1,680	19,790	8,680
12	66.1	302	20,680	1,680	19,000	7,710
13	62.9	287	20,030	1,680	18,350	6,880
14	59.8	273	19,300	1,680	17,620	6,110
15	56.9	260	18,690	1,680	17,010	5,450
16	53.9	247	17,930	1,680	16,250	4,820
17	51.0	233	17,170	1,680	15,490	4,240
18	48.3	221	16,530	1,680	14,850	3,760
19	45.8	209	15,840	1,680	14,160	3,320
20	43.4	198	15,270	1,680	13,590	2,940
Total for Period	1,480.3	6,764	441,840	33,600	408,240	225,180

1/ Gas price at 25¢/Mcf, escalating 0.5¢/Mcf per year, adjusted for BTU content.
Oil price at $6.29/Bbl.



EPNG Exhibit No. 7

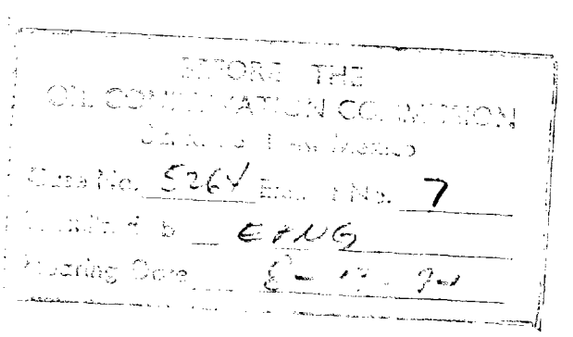
BLANCO MESAVERDE GAS POOL

ESTIMATE OF PRODUCTION AND INCOME FOR THE AVERAGE INFILL WELL UNDER PROPOSED RULES ASSUMING INFILL DEVELOPMENT

Gas Volumes in M^2cf at 15.025 psia and 60^o F.

Years (a)	Annual Production Gas, M^2cf (b)	Annual Production Oil, Bbls. (c)	Income After Royalty and Prod. Tax, $ 1/ (d)	Operating Expenses, $ (e)	Net Income, $ (f)	Net Income Discounted at 8%, $ (g)
1	248.1	1,134	119,710	1,680	118,030	113,490
2	222.2	1,015	109,350	1,680	107,670	95,720
3	199.6	912	100,330	1,680	98,650	81,080
4	179.8	821	92,130	1,680	90,450	68,730
5	166.2	760	87,080	1,680	85,400	60,000
6	153.7	703	82,040	1,680	80,360	52,200
7	142.4	651	77,360	1,680	75,680	45,450
8	132.0	603	72,990	1,680	71,310	39,600
9	122.4	559	69,000	1,680	67,320	34,560
10	113.7	520	65,400	1,680	63,720	30,240
11	106.3	486	62,190	1,680	60,510	26,550
12	98.9	452	58,730	1,680	57,050	23,150
13	92.1	421	55,670	1,680	53,990	20,250
14	85.9	393	52,780	1,680	51,100	17,720
15	80.3	367	50,250	1,680	48,570	15,580
16	75.2	344	47,780	1,680	46,100	13,670
17	70.5	322	45,480	1,680	43,800	12,000
18	66.2	302	43,320	1,680	41,640	10,550
19	61.9	283	41,200	1,680	39,520	9,260
20	57.9	265	39,170	1,680	37,490	8,120
Total for Period	2,475.3	11,313	1,371,960	33,600	1,338,360	777,920

1/ Gas price at 44.9¢/Mcf, escalating 1¢/Mcf per year, adjusted for BTU content. Oil price at $9.23/Bbl.



EPNG Exhibit No. 6

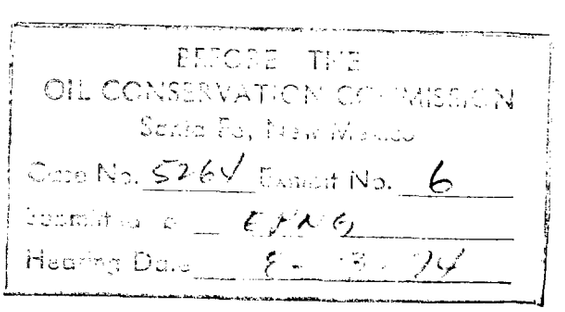
BLANCO MESAVERDE GAS POOL

ESTIMATE OF PRODUCTION AND INCOME FOR THE CURRENT AVERAGE WELL UNDER PROPOSED RULES ASSUMING INFILL DEVELOPMENT

Gas Volumes in M^2cf at 15.025 psia and 60^o F.

Years (a)	Annual Production Gas, M^2cf (b)	Annual Production Oil, Bbls. (c)	Income After Royalty and Prod. Tax, $ 1/ (d)	Operating Expenses, $ (e)	Net Income, $ (f)	Net Income Discounted at 8%, $ (g)
1	110.8	506	28,890	1,680	27,210	26,170
2	101.0	462	26,930	1,680	25,250	22,440
3	92.3	422	24,970	1,680	23,290	19,140
4	84.4	386	23,180	1,680	21,500	16,340
5	82.6	377	23,160	1,680	21,480	15,090
6	79.8	364	22,690	1,680	21,010	13,650
7	76.7	350	22,240	1,680	20,560	12,350
8	73.4	335	21,590	1,680	19,910	11,060
9	70.0	320	20,940	1,680	19,260	9,890
10	66.7	305	20,280	1,680	18,600	8,830
11	63.5	290	19,620	1,680	17,940	7,870
12	60.3	276	18,870	1,680	17,190	6,980
13	57.2	262	18,230	1,680	16,550	6,210
14	54.4	248	17,540	1,680	15,860	5,500
15	51.7	236	16,960	1,680	15,280	4,900
16	49.1	225	16,330	1,680	14,650	4,340
17	46.7	214	15,720	1,680	14,040	3,850
18	44.4	203	15,200	1,680	13,520	3,430
19	42.0	192	14,540	1,680	12,860	3,010
20	39.6	181	13,930	1,680	12,250	2,650
Total for Period	1,346.6	6,154	401,810	33,600	368,210	203,700

1/ Gas price at 25¢/Mcf, escalating 0.5¢/Mcf per year, adjusted for BTU content.
Oil price at $6.29/Bbl.



SUPCO Exhibit No. _____

SUPCO JICARILLA A-14
(A - Section 24-26N-4W)
Rio Arriba County, New Mexico

Pi = Initial Reservoir Pressure, 1325 Psig
Well Shut-in on 4-10-74 - Well Shut-in for 84 Days
Cumulative Production = 58,278 MCF (As of 4-10-74)

a) Drainage Area = 320 Acres

P* = 1290 Psig

$\bar{P}$, Average Reservoir Pressure = 1269 Psig

Abandonment Conditions:

Q = 20 MCFD, Line Pressure = 50 psig

$\bar{P}$ abandonment = 456 Psig

b) Drainage Area = 160 Acres

P* = 1245 Psig (Pressure distribution)

$\bar{P}$ = 1224 Psig

$\bar{P}$ abandonment = 240 Psig

Ultimate recoverable reserves (one well on 320 acres) = 660 MMCF

Ultimate recoverable reserves (two wells on 320 acres) = 814 MMCF

Increase in recoverable gas reserves = 154 MMCF (23.3%)

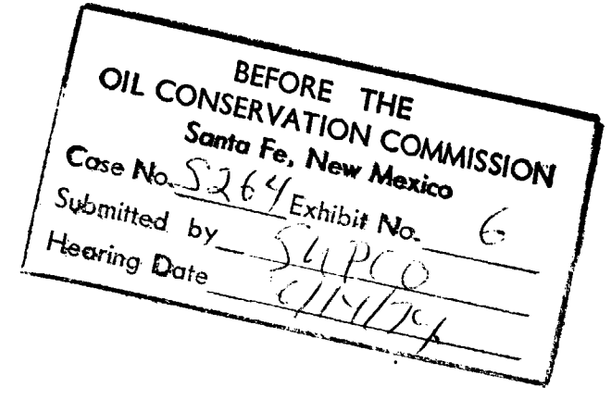
Reservoir and Fluid Characteristics Used:

K, Formation Permeability = 0.122 MD

h, Formation Thickness = 88 Ft.

Porosity = 0.10
Viscosity = 0.0133 CP

T = 620° R


BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5264 Exhibit No. 6
Submitted by SUPCO
Hearing Date 11-17-74

EPNG Exhibit No. 9

BLANCO MESAVERDE GAS POOL

ESTIMATE OF PRODUCTION FROM AN AVERAGE DRILLSITE UNDER PRESENT AND PROPOSED RULES AND THE INCREASE IN NET INCOME UNDER PROPOSED RULES ASSUMING INFILL DEVELOPMENT

Gas Volumes in M^2cf at 15.025 psia and 60^o F.

Years	Annual Production: Present Rules	Annual Production: Proposed Rule	Increased Prod. Under Proposed Rules	Increase in Net Income Under Proposed Rules, $	Net Income Discounted at 8%, $
(a)	(b)	(c)	(d)	(e)	(f)
1	111.9	358.9	247.0	117,730	113,210
2	107.8	323.2	215.4	105,870	94,120
3	103.3	291.9	188.6	95,650	78,610
4	98.8	264.2	165.4	86,490	65,720
5	94.3	248.8	154.5	82,120	57,700
6	89.7	233.5	143.8	77,530	50,360
7	85.4	219.1	133.7	73,160	43,930
8	81.2	205.4	124.2	69,020	38,330
9	77.1	192.4	115.3	65,220	33.480
10	73.2	180.4	107.2	61,770	29,320
11	69.5	169.8	100.3	58,660	25.750
12	66.1	159.2	93.1	55,240	22,410
13	62.9	149.3	86.4	52,190	19,580
14	59.8	140.3	80.5	49,340	17,110
15	56.9	132.0	75.1	46,850	15,030
16	53.9	124.3	70.4	44,500	13,190
17	51.0	117.2	66.2	42,350	11,610
18	48.3	110.6	62.3	40,310	10,220
19	45.8	103.9	58.1	38,220	8,950
20	43.4	97.5	54.1	36,150	7,830
Total for Period	1.480.3	3.821.9	2,341.6	1,298,370	756.460

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5264 Exhibit No. 9
Submitted by EPNG
Hearing Date 8-13-74

EPNG Exhibit No. 8

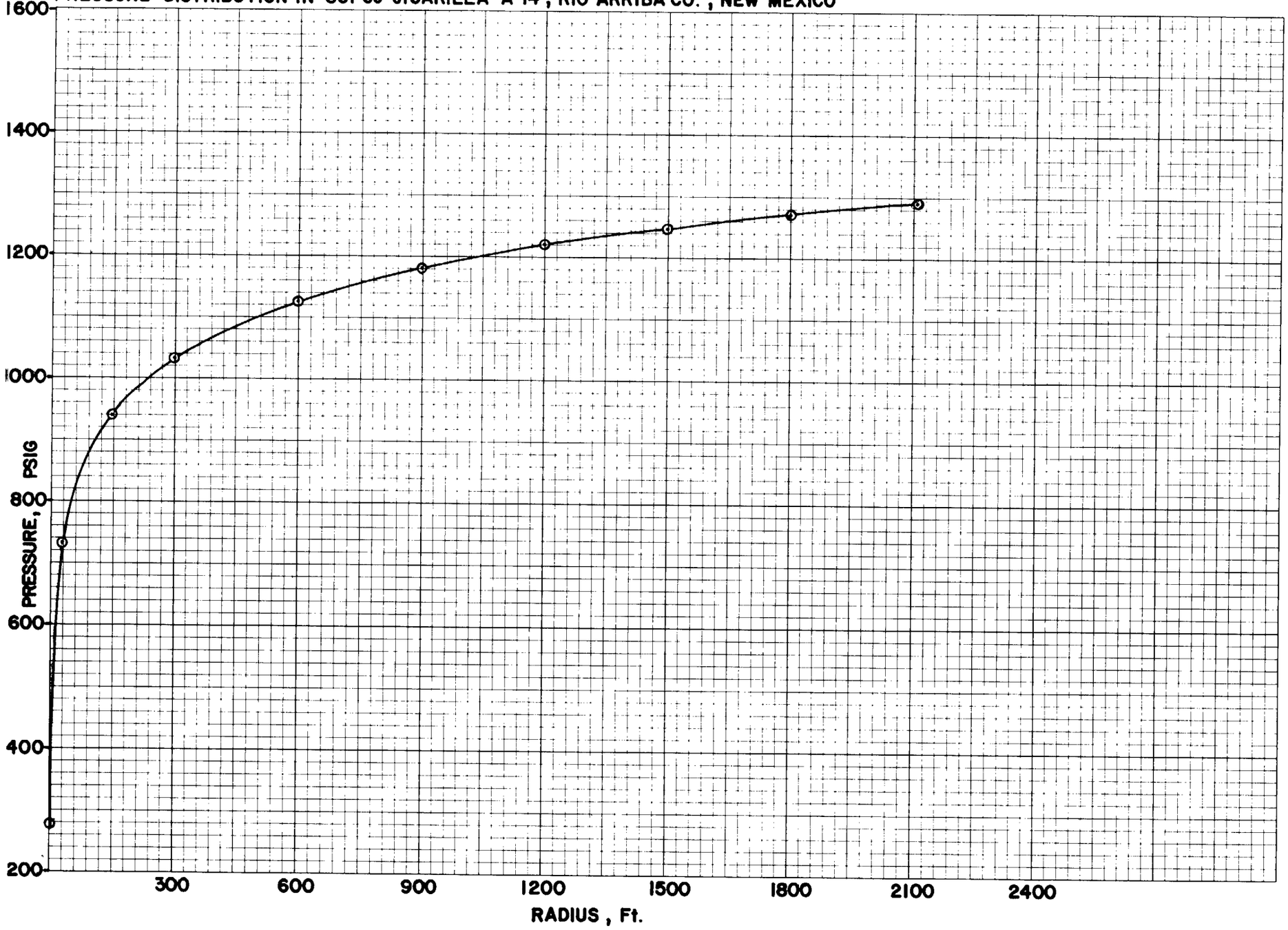
BLANCO MESAVERDE GAS POOL

ESTIMATE OF PRODUCTION AND INCOME FOR AN AVERAGE
DRILLSITE UNDER PROPOSED RULES ASSUMING INFILL DEVELOPMENT

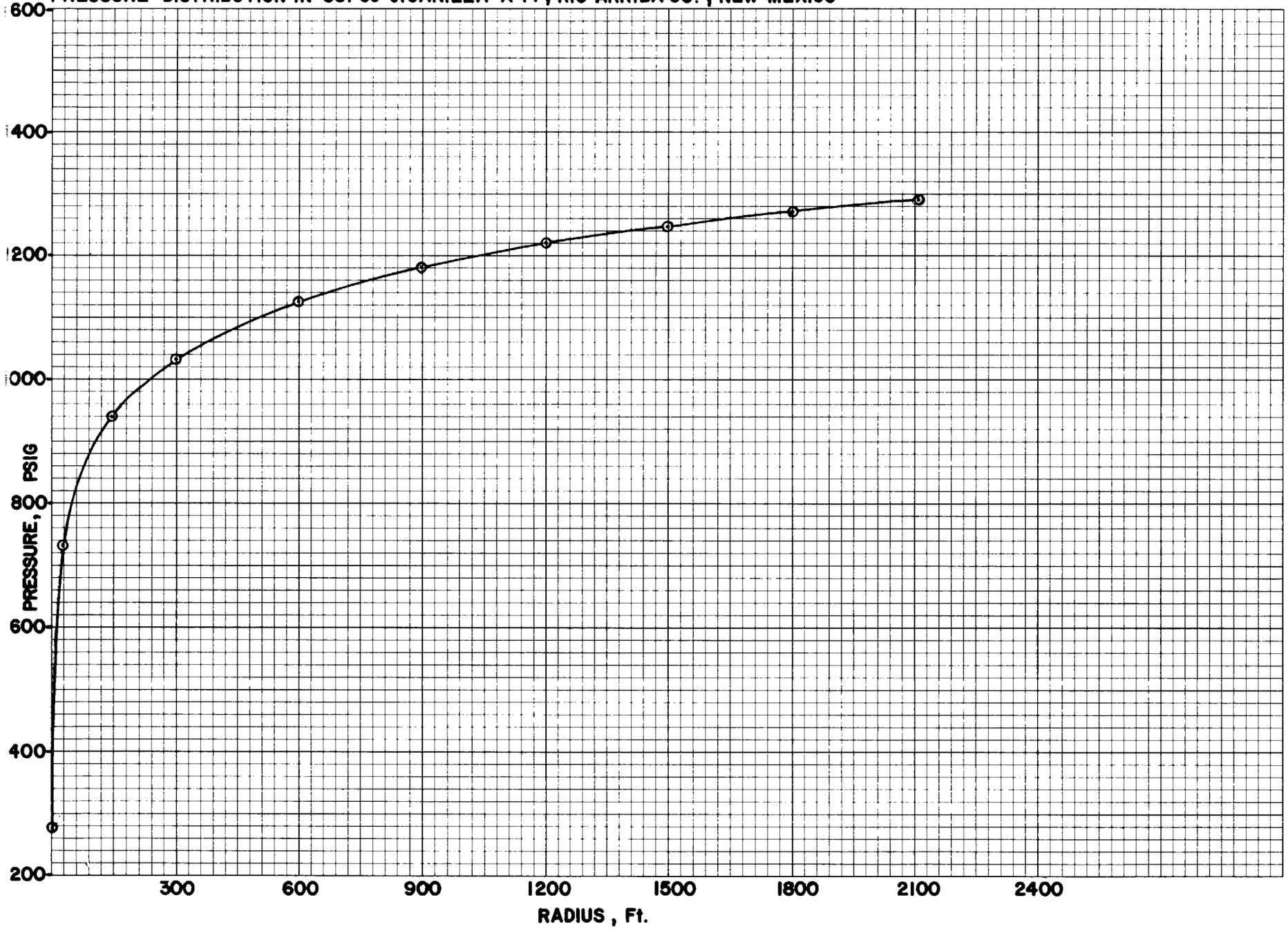
Gas Volumes in M^2cf at 15.025 psia and 60^o F.

Years (a)	Annual Production Gas, M2cf (b)	Annual Production Oil, Bbls. (c)	Income After Royalty and Prod. Tax, $ (d)	Operating Expenses, $ (e)	Net Income, $ (f)	Net Income Discounted at 8%, $ (g)
1	358.9	1,640	148,600	3,360	145,240	139,660
2	323.2	1,477	136,280	3,360	132,920	118,160
3	291.9	1,334	125,300	3,360	121,940	100,220
4	264.2	1,207	115,310	3,360	111,950	85,070
5	248.8	1,137	110,240	3,360	106,880	75,090
6	233.5	1,067	104,730	3,360	101,370	65,850
7	219.1	1,001	99,600	3,360	96,240	57,800
8	205.4	938	94,580	3,360	91,220	50,660
9	192.4	879	89,940	3,360	86,580	44,450
10	180.4	825	85,680	3,360	82,320	39,070
11	169.8	776	81,810	3,360	78,450	34,420
12	159.2	728	77,600	3,360	74,240	30,130
13	149.3	683	73,900	3,360	70,540	26,460
14	140.3	641	70,320	3,360	66,960	23,220
15	132.0	603	67,210	3,360	63,850	20,480
16	124.3	569	64,110	3,360	60,750	18,010
17	117.2	536	61,200	3,360	57,840	15,850
18	110.6	505	58,520	3,360	55,160	13,980
19	103.9	475	55,740	3,360	52,380	12,270
20	97.5	446	53,100	3,360	49,740	10,770
Total for Period	3,821.9	17,467	1,773,770	67,200	1,706,570	981,620

PRESSURE DISTRIBUTION IN SUPCo JICARILLA A-14, RIO ARRIBA CO., NEW MEXICO



PRESSURE DISTRIBUTION IN SUPCo JICARILLA A-14, RIO ARRIBA CO., NEW MEXICO



SUPCO Exhibit No. _____

SUPCO JICARILLA A-14
(A - Section 24-26N-4W)
Rio Arriba County, New Mexico

Pi = Initial Reservoir Pressure, 1325 Psig
Well Shut-in on 4-10-74 - Well Shut-in for 84 Days
Cumulative Production = 58,278 MCF (As of 4-10-74)

a) Drainage Area = 320 Acres

P* = 1290 Psig

$\bar{P}$, Average Reservoir Pressure = 1269 Psig

Abandonment Conditions:

Q = 20 MCFD, Line Pressure = 50 psig

$\bar{P}$ abandonment = 456 Psig

b) Drainage Area = 160 Acres

P* = 1245 Psig (Pressure distribution)

$\bar{P}$ = 1224 Psig

$\bar{P}$ abandonment = 240 Psig

Ultimate recoverable reserves (one well on 320 acres) = 660 MMCF

Ultimate recoverable reserves (two wells on 320 acres) = 814 MMCF

Increase in recoverable gas reserves = 154 MMCF (23.3%)

Reservoir and Fluid Characteristics Used:

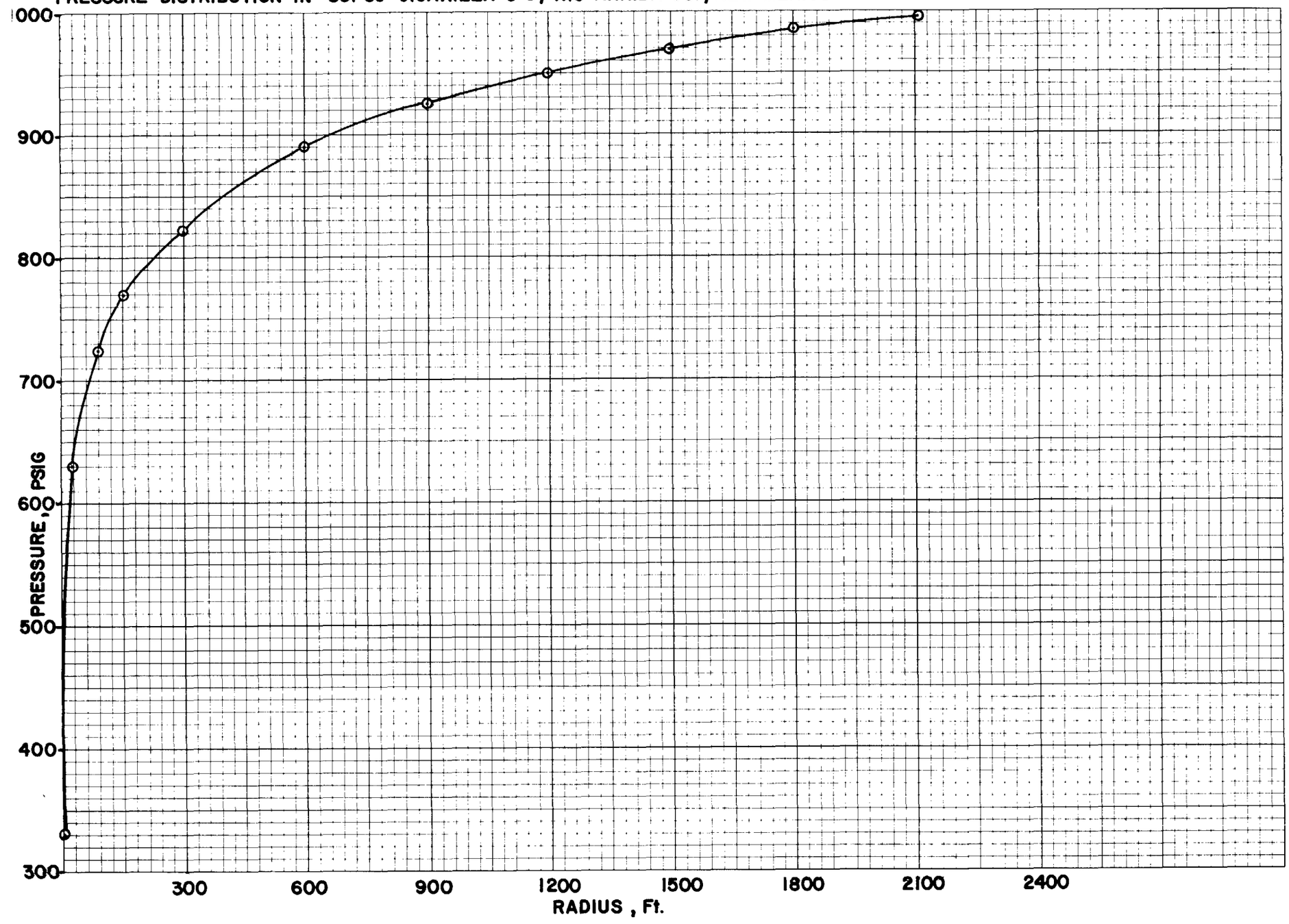
K, Formation Permeability = 0.122 MD

h, Formation Thickness = 88 Ft.

Porosity = 0.10
Viscosity = 0.0133 CP

T = 620° R

PRESSURE DISTRIBUTION IN SUPCo JICARILLA G-5, RIO ARRIBA CO., NEW MEXICO



SUPCO Exhibit No. _____

SUPCO JICARILLA G-5
(L - Section 12-26N-5W)
Rio Arriba County, New Mexico

Pi = Initial Reservoir Pressure, 1325 Psi
Well Shut-in on 7-3-74 - Well Shut-in for 37 Days
Cumulative Production = 1,018,406 MCF (As of 7-3-74)

a) Drainage Area = 320 Acres

P* = 996 Psig

$\bar{P}$ = Average Reservoir Pressure = 888 Psig

Abandonment Conditions:

Q = 20 MCFD; Line Pressure = 50 Psig

$\bar{P}$ (abandonment) = 250 Psig (Radial flow, unsteady state; n = 0.75)

b) Drainage Area = 160 Acres

P* (radius 1489 Ft.) = 967 Psig (Pressure distribution curve)

$\bar{P}$ = 825 Psig

$\bar{P}$ (abandonment) = 207 Psig

Ultimate recoverable reserves (one well on 320 acres) = 3.7 BCF

Ultimate recoverable reserves (two wells on 320 acres) = 3.87 BCF

Increase in recoverable gas reserves = 0.17 BCF (4.6%)

Reservoir and Fluid Characteristics Used:

K, Formation Permeability = 0.436 MD

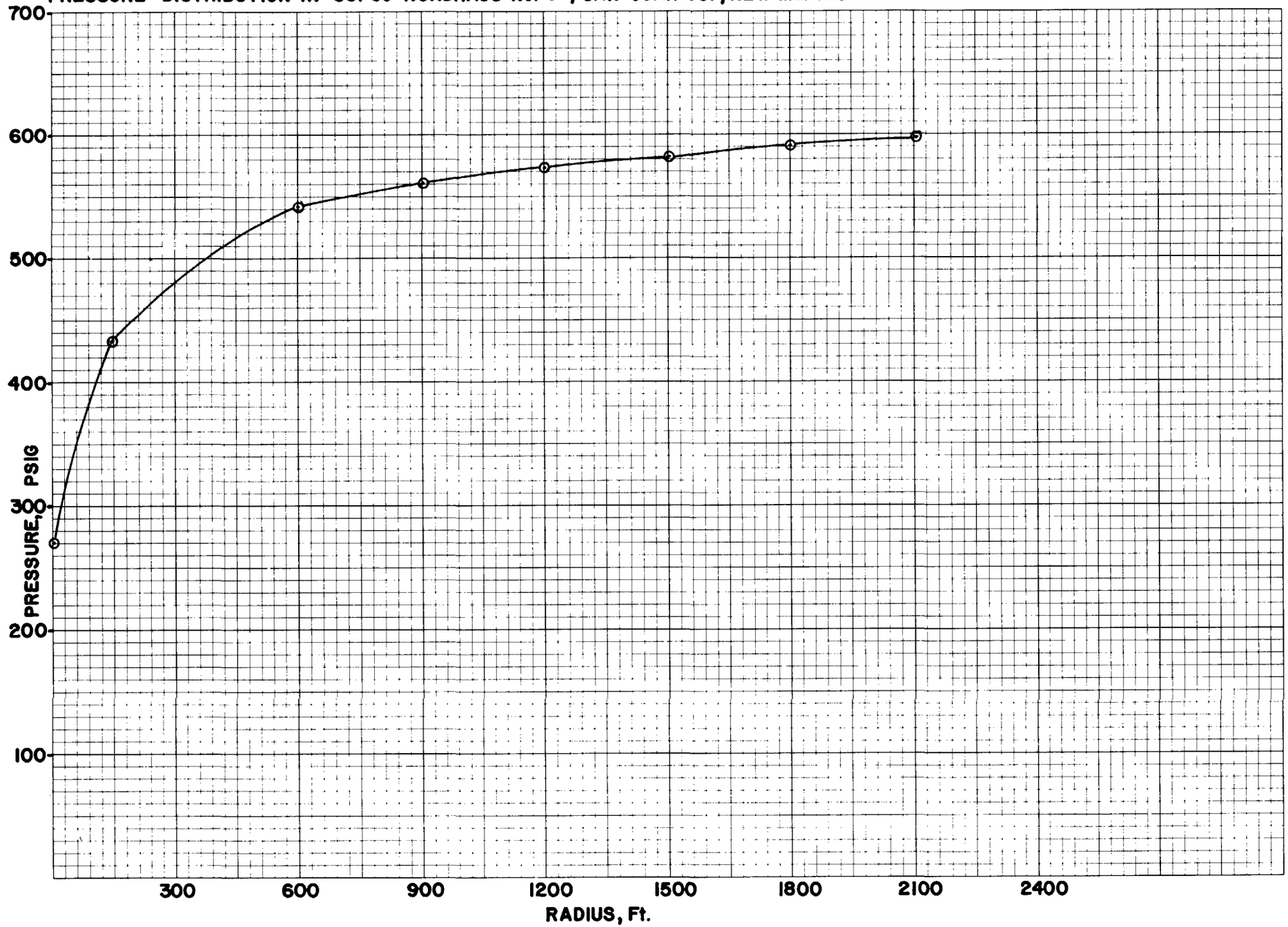
h, Formation Thickness, 96 Ft.

Porosity = 0.10
Viscosity = 0.0133 CP

C = Compressibility, Psi^{-1} (Varying with Pressure)

T = 620° R

PRESSURE DISTRIBUTION IN SUPCo NORDHAUS No. 5 , SAN JUAN CO., NEW MEXICO



5.11.

NOTES ON ECONOMIC EVALUATION OF MESAVERDE GAS

Table 1:

a) One producing well on 320 acres.

b) Initial production rate 310 MCFD. Decline rate 7% per year to depletion. Abanonment @ 20 MCFD.

c) Remaining producing life of well estimated at 39 years.

d) Gross revenue based upon 82.5 percent average net interest leases.

e) Price of gas computed @ 24.0¢/MCF plus BTU adjustment (1150 BTU/cu. ft. @ 14.73 psia) and tax reimbursement. Escalation one-half cent per MCF (plus adjustments) every year.

f) Recoverable gas reserves: 1,521,082 MCF

Table 2:

a) Two wells on 320 acres.

b) Initial production rate 540 MCFD allocated equally to two wells. Decline rate 10% per year to depletion. Abandonment @ 20 MCFD/well.

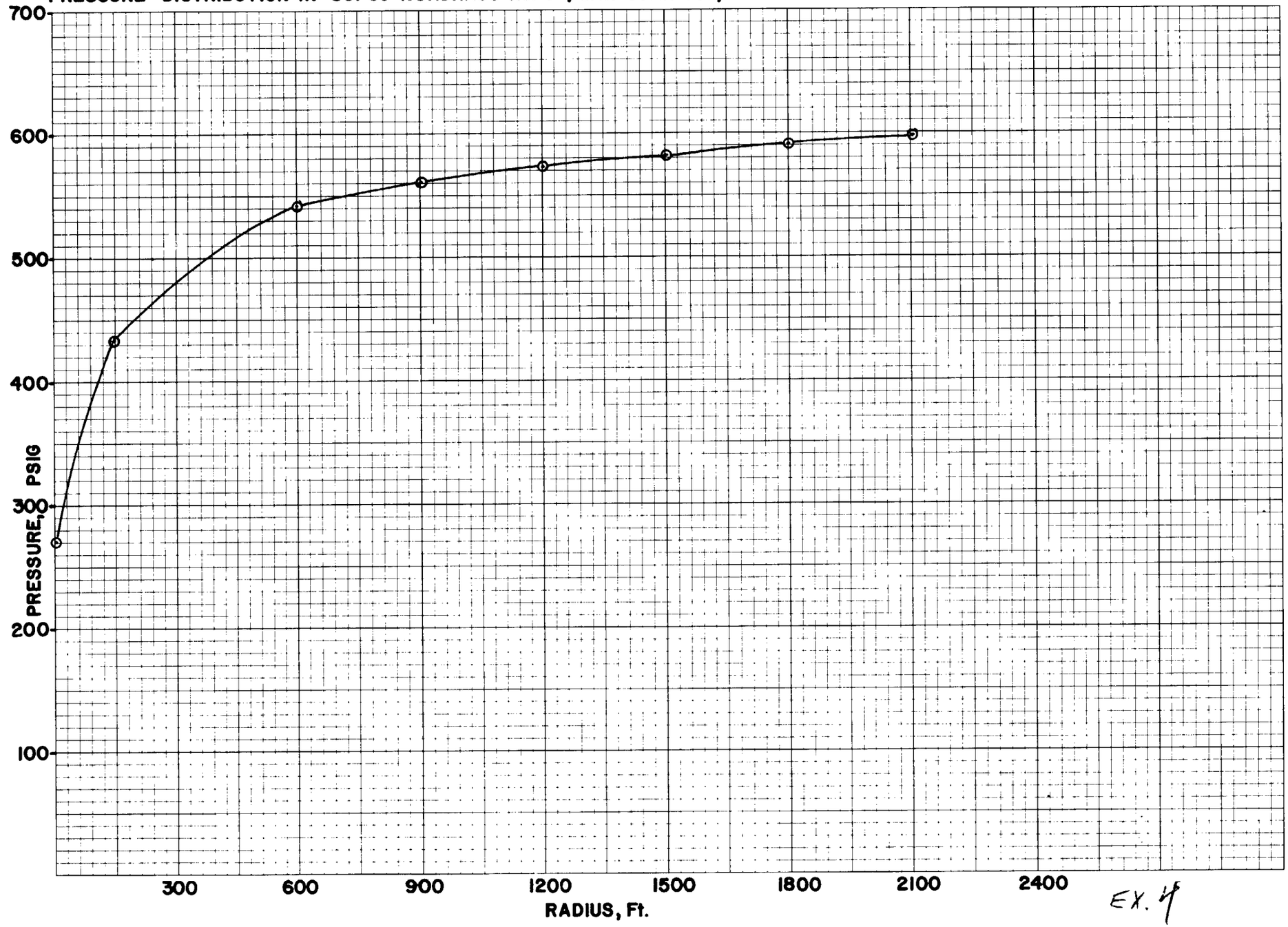
c) Producing life of wells estimated @ 25 years.

d) Gross revenue based upon 82.5 percent average net interest.

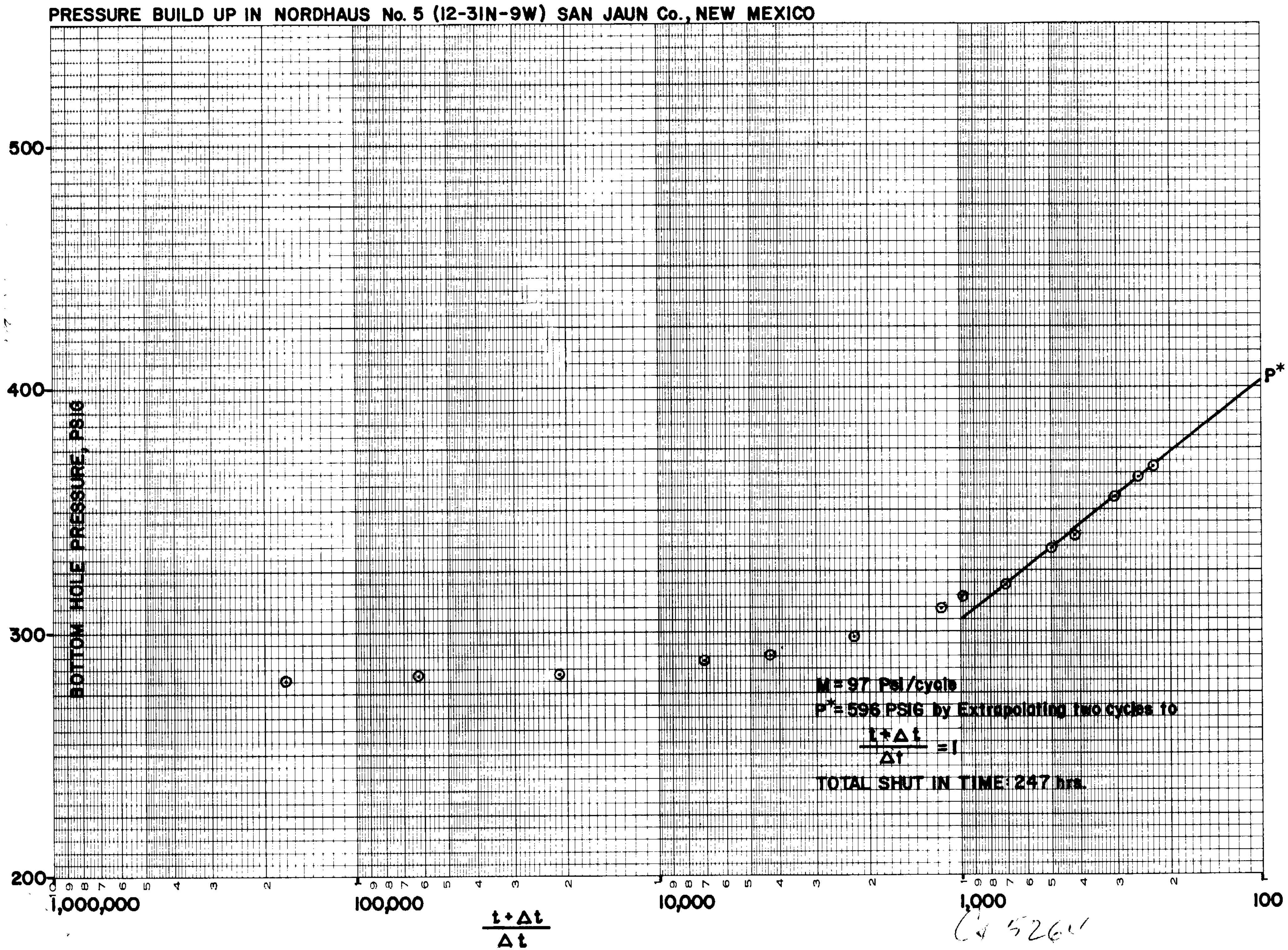
e) Price of gas for well No. 1 same as in Table 1. Price of gas for well No. 2 computed @ 43.0¢/MCF plus BTU adjustment (1150 BTU/cu. ft. @ 14.73 psia) and tax reimbursement. Escalation one cent per MCF (plus adjustments) every year.

f) Recoverable gas reserves: 1,836,448 MCF
Increase in reserves: 315,366 MCF

PRESSURE DISTRIBUTION IN SUPCo NORDHAUS No. 5 , SAN JUAN CO., NEW MEXICO



EX. 4



Cs 5264

S.U. Prod Ex. A

ECONOMIC EVALUATION OF MESAVERDE GAS
Basis: One Well on 320 Acres

Yr.	Gross Prod. MCF	Gross Revenue	Prod. & Ad Val Tax	Operating Costs	Net Operating Revenue
1	113,150	28,378	2,242	1,200	24,936
2	105,229	26,912	2,126	1,200	23,586
3	97,863	25,513	2,016	1,200	22,297
4	91,013	24,253	1,916	1,200	21,137
5	84,642	22,974	1,815	1,200	19,959
6	78,717	21,755	1,719	1,200	18,836
7	73,207	20,595	1,627	1,200	17,768
8	68,082	19,490	1,540	1,200	16,750
9	63,317	18,492	1,461	1,200	15,831
10	58,884	17,489	1,382	1,200	14,907
11	54,763	16,536	1,306	1,200	14,030
12	50,929	15,630	1,235	1,200	13,195
13	47,364	14,770	1,167	1,200	12,403
14	44,049	13,991	1,105	1,200	11,686
15	40,965	13,214	1,044	1,200	10,970
16	38,097	12,478	986	1,200	10,292
17	35,430	11,780	931	1,200	9,649
18	32,951	11,118	878	1,200	9,040
19	30,644	10,517	831	1,200	8,486
20	28,499	9,922	784	1,200	7,938
Sub Total	1,237,795	355,807	28,111	24,000	303,696
Remaining 19 Years	283,287	109,879	8,681	22,800	78,398
TOTAL	1,521,082	465,686	36,792	46,800	382,094

ECONOMIC EVALUATION OF MESAVERDE GAS
Basis: Two Wells on 320 Acres
Well No. 1 - Existing Well
Well No. 2 - New Well

Yr.	Gross Prod. Well No. 1	Gross Revenue	Prod. & Ad Val Tax	Operating Costs	Net Operating Revenue, Well #1	Gross Prod. Well No. 2	Gross Revenue	Prod. & Ad Val Tax	Operating Costs	Net Operating Revenue, Well #2
1	99,000	24,829	1,961	1,200	21,668	99,000	44,431	3,510	1,200	39,721
2	89,100	22,787	1,800	1,200	19,787	89,100	40,870	3,229	1,200	36,441
3	80,190	20,906	1,652	1,200	18,054	80,190	37,643	2,974	1,200	33,469
4	72,170	19,232	1,519	1,200	16,513	72,170	34,593	2,733	1,200	30,660
5	64,953	17,630	1,393	1,200	15,037	64,953	31,830	2,515	1,200	28,115
6	58,458	16,156	1,276	1,200	13,680	58,458	29,226	2,309	1,200	25,717
7	52,613	14,801	1,169	1,200	12,432	52,613	26,868	2,123	1,200	23,545
8	47,351	13,555	1,071	1,200	11,284	47,351	24,650	1,947	1,200	21,503
9	42,616	12,446	983	1,200	10,263	42,616	22,642	1,789	1,200	19,653
10	38,354	11,391	900	1,200	9,291	38,354	20,757	1,640	1,200	17,917
11	34,519	10,423	823	1,200	8,400	34,519	18,825	1,487	1,200	16,138
12	31,067	9,534	753	1,200	7,581	31,067	17,454	1,379	1,200	14,875
13	27,960	8,719	689	1,200	6,830	27,960	15,985	1,263	1,200	13,522
14	25,164	7,993	631	1,200	6,162	25,164	14,657	1,158	1,200	12,299
15	22,648	7,306	577	1,200	5,529	22,648	13,416	1,060	1,200	11,156
16	20,383	6,676	527	1,200	4,949	20,383	12,276	970	1,200	10,106
17	18,345	6,099	482	1,200	4,417	18,345	11,245	888	1,200	9,157
18	16,510	5,571	440	1,200	3,931	16,150	10,059	795	1,200	8,064
19	14,859	5,099	403	1,200	3,496	14,859	9,402	743	1,200	7,459
20	13,373	4,656	368	1,200	3,088	13,373	8,606	680	1,200	6,726
Sub Total	869,633	245,809	19,417	24,000	202,392	869,633	445,435	35,192	24,000	386,243
Remaining 5 years	48,591	17,595	1,391	6,000	10,203	48,591	32,595	2,574	6,000	24,021
TOTAL	918,224	263,404	20,808	30,000	212,595	918,224	478,030	37,766	30,000	410,264

SUPCO Exhibit No. _____

SUPCO JICARILLA A-14
(A - Section 24-26N-4W)
Rio Arriba County, New Mexico

Pi = Initial Reservoir Pressure, 1325 Psig
Well Shut-in on 4-10-74 - Well Shut-in for 84 Days
Cumulative Production = 58,278 MCF (As of 4-10-74)

a) Drainage Area = 320 Acres

P* = 1290 Psig

$\bar{P}$, Average Reservoir Pressure = 1269 Psig

Abandonment Conditions:

Q = 20 MCFD, Line Pressure = 50 psig

$\bar{P}$ abandonment = 456 Psig

b) Drainage Area = 160 Acres

P* = 1245 Psig (Pressure distribution)

$\bar{P}$ = 1224 Psig

$\bar{P}$ abandonment = 240 Psig

Ultimate recoverable reserves (one well on 320 acres) = 660 MMCF

Ultimate recoverable reserves (two wells on 320 acres) = 814 MMCF

Increase in recoverable gas reserves = 154 MMCF (23.3%)

Reservoir and Fluid Characteristics Used:

K, Formation Permeability = 0.122 MD

h, Formation Thickness = 88 Ft.

Porosity = 0.10
Viscosity = 0.0133 CP

T = 620° R

ECONOMIC EVALUATION OF MESAVERDE GAS

Yr.	Total Net Revenue Well #1 + Well #2	Total Net Revenue Well #1	Increase in Net Revenue
1	61,389	24,936	36,453
2	56,228	23,586	32,642
3	51,523	22,297	29,226
4	47,173	21,137	26,036
5	43,152	19,959	23,193
6	39,397	18,836	20,561
7	35,977	17,768	18,209
8	32,787	16,750	16,037
9	29,916	15,831	14,085
10	27,208	14,907	12,301
11	24,538	14,030	10,508
12	22,456	13,195	9,261
13	20,352	12,403	7,949
14	18,461	11,686	6,775
15	16,685	10,970	5,715
16	15,055	10,292	4,763
17	13,574	9,649	3,925
18	11,995	9,040	2,955
19	10,955	8,486	2,469
20	9,814	7,938	1,876
Sub Total	588,635	303,696	284,939
Remaining	34,224	78,398	(44,174)
TOTAL	622,859	382,094	240,765

Investment (A) $154,315

Cumulative Present Worth of Increase in Net Revenue (B) @ 10% ---- $175,506
25% ---- $113,150
40% ---- $ 84,900

Rate of Return (Before Income Tax) ------ 13.0%

Table 1

ECONOMIC EVALUATION OF MESAVERDE GAS
Basis: One Well on 320 Acres

Yr.	Gross Prod. MCF	Gross Revenue	Prod. & Ad Val Tax	Operating Costs	Net Operating Revenue
1	113,150	28,378	2,242	1,200	24,936
2	105,229	26,912	2,126	1,200	23,586
3	97,863	25,513	2,016	1,200	22,297
4	91,013	24,253	1,916	1,200	21,137
5	84,642	22,974	1,815	1,200	19,959
6	78,717	21,755	1,719	1,200	18,836
7	73,207	20,595	1,627	1,200	17,768
8	68,082	19,490	1,540	1,200	16,750
9	63,317	18,492	1,461	1,200	15,831
10	58,884	17,489	1,382	1,200	14,907
11	54,763	16,536	1,306	1,200	14,030
12	50,929	15,630	1,235	1,200	13,195
13	47,364	14,770	1,167	1,200	12,403
14	44,049	13,991	1,105	1,200	11,686
15	40,965	13,214	1,044	1,200	10,970
16	38,097	12,478	986	1,200	10,292
17	35,430	11,780	931	1,200	9,649
18	32,951	11,118	878	1,200	9,040
19	30,644	10,517	831	1,200	8,486
20	28,499	9,922	784	1,200	7,938
Sub Total	1,237,795	355,807	28,111	24,000	303,696
Remaining 19 Years	283,287	109,879	8,681	22,800	78,398
TOTAL	1,521,082	465,686	36,792	46,800	382,094

ECONOMIC EVALUATION OF MESAVERDE GAS
Basis: Two Wells on 320 Acres
Well No. 1 - Existing Well
Well No. 2 - New Well

Yr.	Gross Prod. Well No. 1	Gross Revenue	Prod. & Ad Val Tax	Operating Costs	Net Operating Revenue, Well #1	Gross Prod. Well No. 2	Gross Revenue	Prod. & Ad Val Tax	Operating Costs	Net Operating Revenue, Well #2
1	99,000	24,829	1,961	1,200	21,668	99,000	44,431	3,510	1,200	39,721
2	89,100	22,787	1,800	1,200	19,787	89,100	40,870	3,229	1,200	36,441
3	80,190	20,906	1,652	1,200	18,054	80,190	37,643	2,974	1,200	33,469
4	72,170	19,232	1,519	1,200	16,513	72,170	34,593	2,733	1,200	30,660
5	64,953	17,630	1,393	1,200	15,037	64,953	31,830	2,515	1,200	28,115
6	58,458	16,156	1,276	1,200	13,680	58,458	29,226	2,309	1,200	25,717
7	52,613	14,801	1,169	1,200	12,432	52,613	26,868	2,123	1,200	23,545
8	47,351	13,555	1,071	1,200	11,284	47,351	24,650	1,947	1,200	21,503
9	42,616	12,446	983	1,200	10,263	42,616	22,642	1,789	1,200	19,653
10	38,354	11,391	900	1,200	9,291	38,354	20,757	1,640	1,200	17,917
11	34,519	10,423	823	1,200	8,400	34,519	18,825	1,487	1,200	16,138
12	31,067	9,534	753	1,200	7,581	31,067	17,454	1,379	1,200	14,875
13	27,960	8,719	689	1,200	6,830	27,960	15,985	1,263	1,200	13,522
14	25,164	7,993	631	1,200	6,162	25,164	14,657	1,158	1,200	12,299
15	22,648	7,306	577	1,200	5,529	22,648	13,416	1,060	1,200	11,156
16	20,383	6,676	527	1,200	4,949	20,383	12,276	970	1,200	10,106
17	18,345	6,099	482	1,200	4,417	18,345	11,245	888	1,200	9,157
18	16,510	5,571	440	1,200	3,931	16,150	10,059	795	1,200	8,064
19	14,859	5,099	403	1,200	3,496	14,859	9,402	743	1,200	7,459
20	13,373	4,656	368	1,200	3,088	13,373	8,606	680	1,200	6,726
Sub Total	869,633	245,809	19,417	24,000	202,392	869,633	445,435	35,192	24,000	386,243
Remaining 5 years	48,591	17,595	1,391	6,000	10,203	48,591	32,595	2,574	6,000	24,021
TOTAL	918,224	263,404	20,808	30,000	212,595	918,224	478,030	37,766	30,000	410,264

sumer interests are concerned; and they are the ones the Act was designed to protect.[3] The ruling sacrifices these interests in the cause of those who exploit this field. Now the regulatory agency is left powerless to prevent a selling company, after the 30-day waiting period, from making consumers pay immediately whatever rate the company fixes. There is power in the Commission to suspend the new rate for five months; but in case of industrial rates even that limited power of suspension is absent. If the Commission should ultimately decide in a § 4 (e) proceeding that the new rates are not just and reasonable, the victory for the consumers may be an illusory one, for administrative difficulties make it doubtful that they will receive the benefit of any refunds.[4] And if the increases are in industrial rates, it appears that the Commission has no authority to require a refund of any unjustified increase collected before its order setting aside the increase. Even when the Commission catches up with the new high rate fixed by the selling company at its will and strikes it down, its action promises to have only a fleeting effect. The pipeline company can now in its unfettered discretion raise the rates again simply by

[3] See *Federal Power Comm'n* v. *Hope Natural Gas Co.*, 320 U. S. 591, 610. Protection of the consumer interest was to be done through occupying a field from which the States had been barred. H. R. Rep. No. 709, 75th Cong., 1st Sess., p. 2.

[4] In its 1953 report to Congress the Commission recognized that "the collection of higher rates under bond, while providing protection to the pipeline company against ultimate loss in revenues, is unsatisfactory, burdensome, and presents many difficult problems for the company as well as for the distribution utilities which must pay the higher rates. The problem of distributing impounded funds to consumers in the event that proposed rate increases are denied even in part is time-consuming and expensive." Report, Federal Power Commission, 1953, p. 101.

478812 O—59——14

1796 disc.

EMD - 2 sets

AG —

Stuff - 2 sets

N-Pen - at least 2

CASE No.

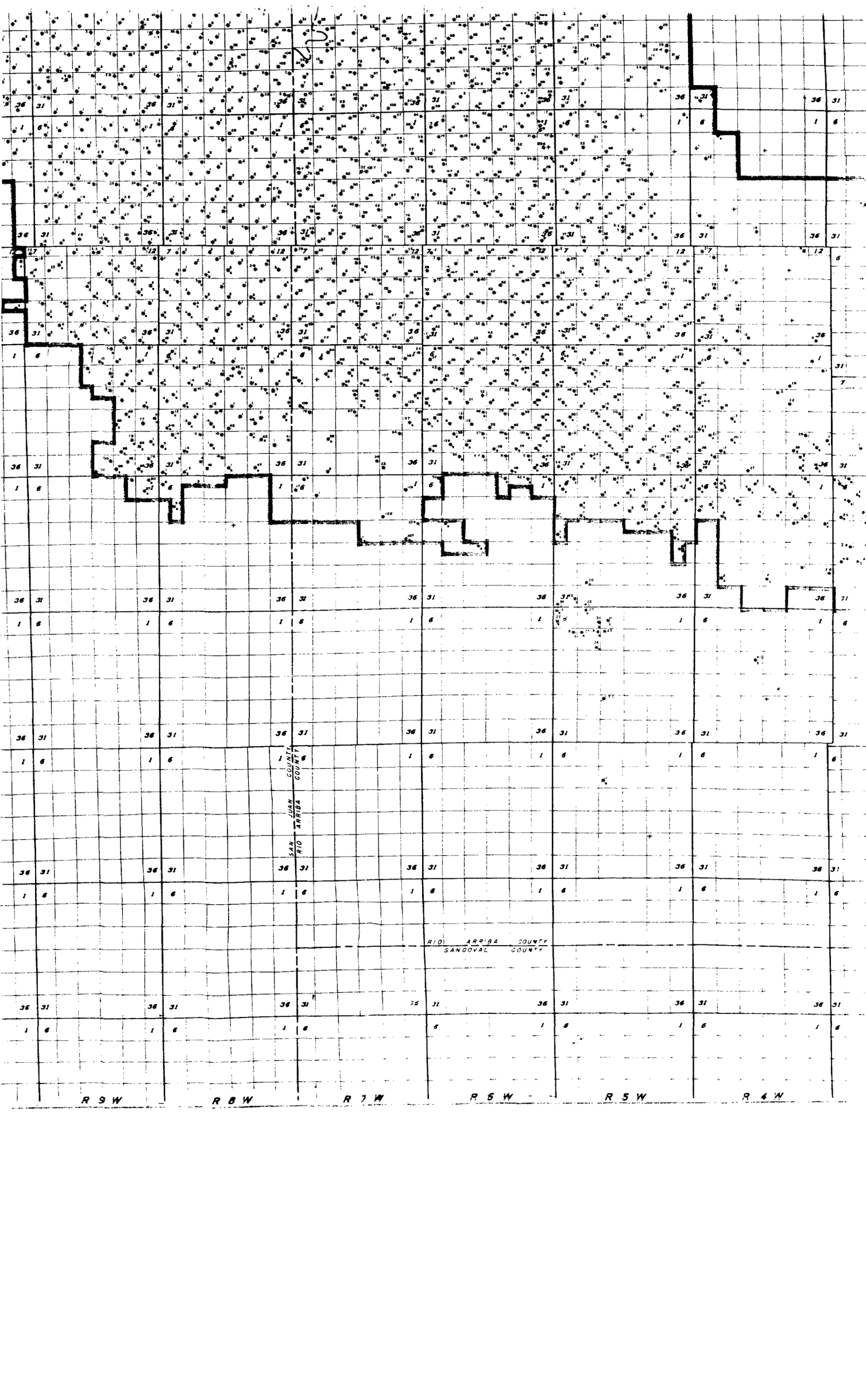
5264

Application,

Transcripts,

Small Exhibits

ETC.


SAN JUAN COUNTY
RIO ARRIBA COUNTY
RIO ARRIBA COUNTY
SANDOVAL COUNTY
R 9 W
R 8 W
R 7 W
R 6 W
R 5 W
R 4 W

SUPCO EXHIBIT NO. 6

SUPCO NORDHAUS #5
(M - Section 12-31N-9W)
San Juan County, New Mexico

Pi = Initial Reservoir Pressure, 1009 Psig
Well Shut-in on 6-25-74 - Well Shut-in for 31 Days
Cumulative Production = 5,894,591 MCF (As of 6-25-74)

a) Drainage Area = 320 Acres

P* = 596 Psig

$\bar{P}$, Average Reservoir Pressure = 444 Psig

Abandonment Conditions:

Q = 20 MCFD: Line Pressure = 50 Psig

$\bar{P}$, Abandonment = 103 Psig

b) Drainage Area = 160 Acres

P* - 580 Psig (Pressure distribution curve)

$\bar{P}$ = 395 Psig

$\bar{P}$ (abandonment) = 91 Psig

Ultimate recoverable reserves (one well on 320 acres) = 8.75 BCF

Ultimate recoverable reserves (two wells on 320 acres) = 8.92 BCF

Increase in recoverable gas reserves = 0.17 BCF (2.0%)

Reservoir and Fluid Characteristics Used:

K, Formation Permeability = 1.1 MD

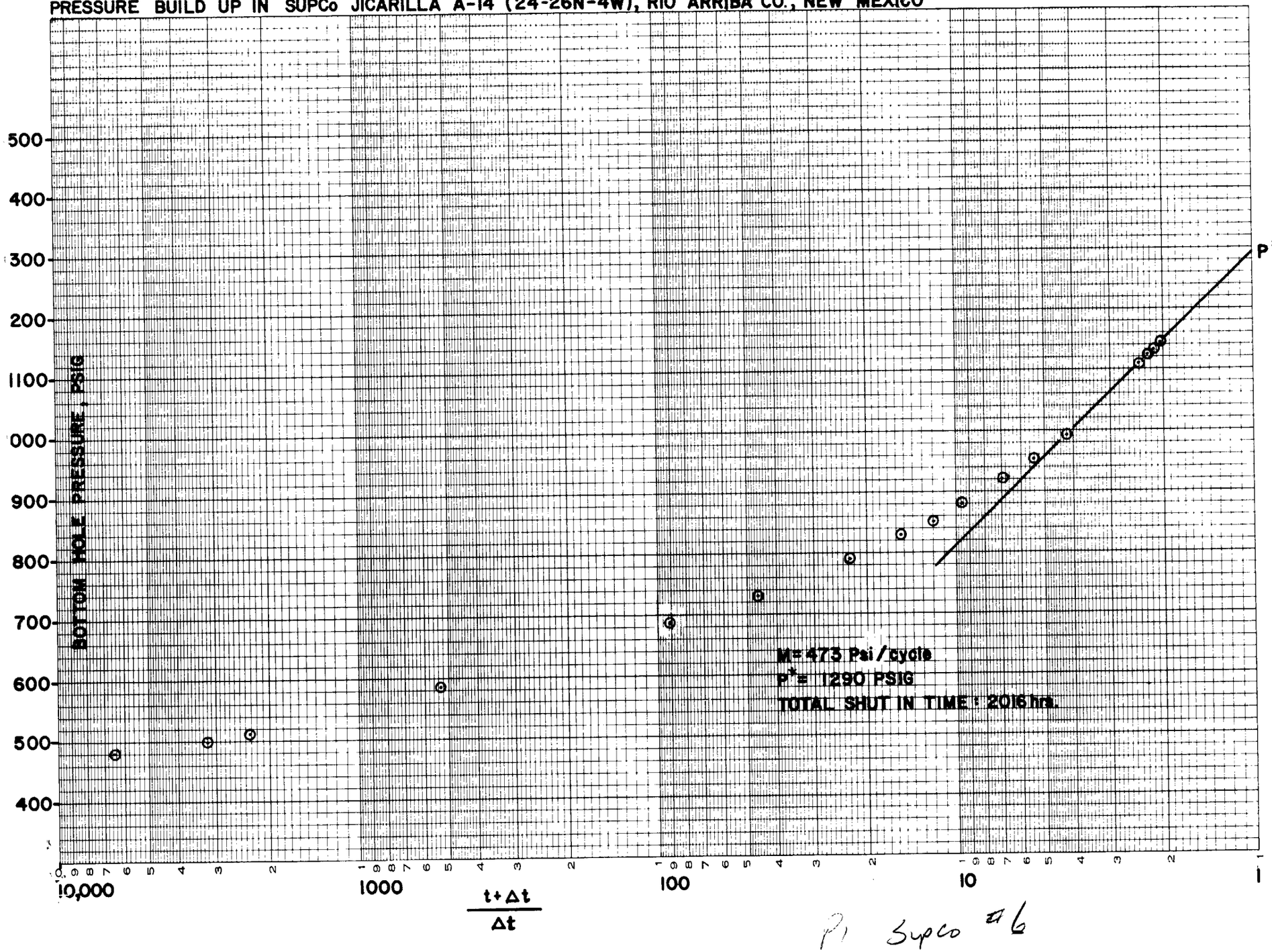
h, Formation Thickness = 108 Ft.

Porosity = 0.10;
Viscosity = 0.0133 CP

C = Compressibility, Psi^{-1} (Varying with pressure)

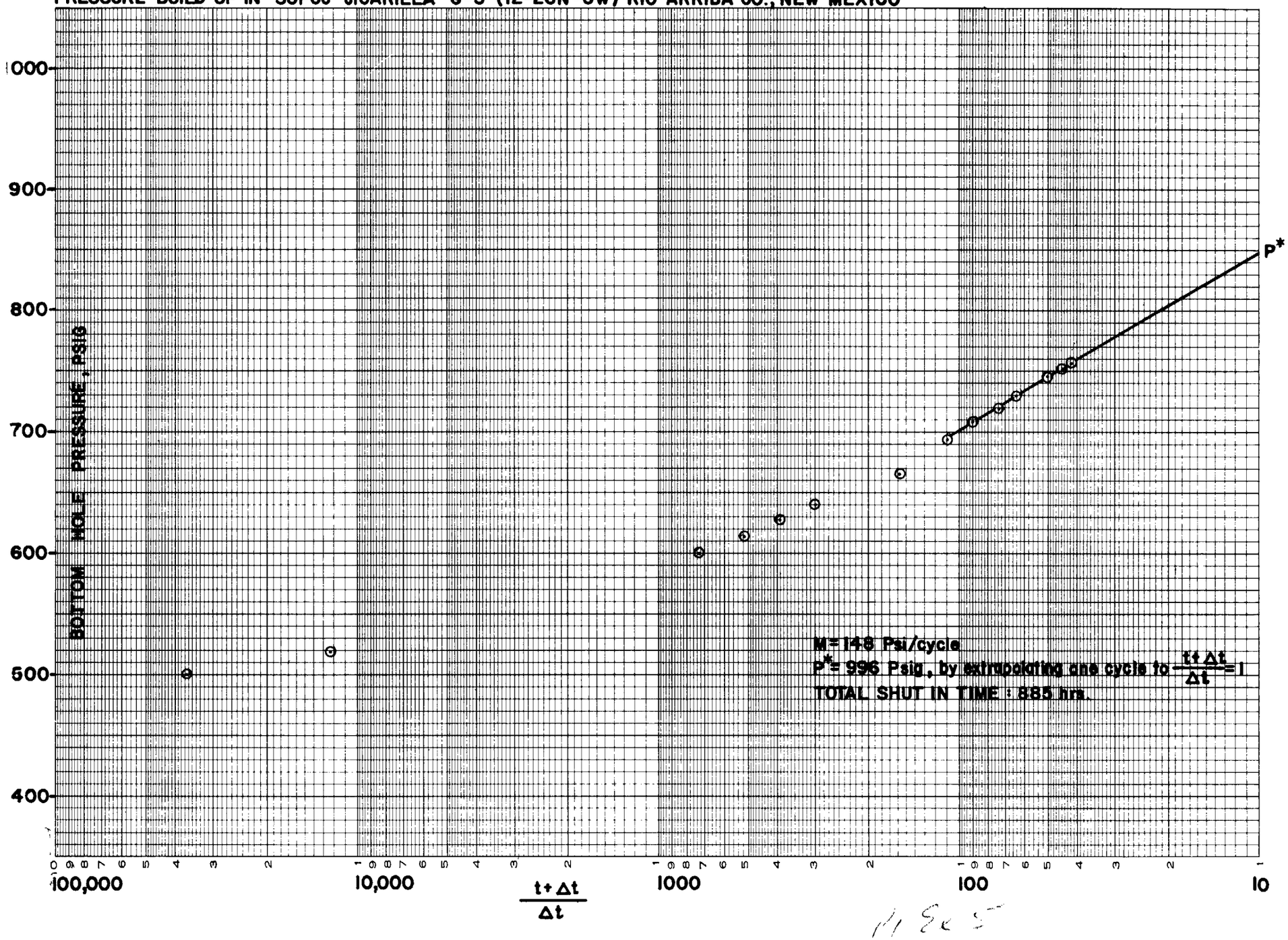
T = 600° R

PRESSURE BUILD UP IN SUPCo JICARILLA A-14 (24-26N-4W), RIO ARRIBA CO., NEW MEXICO

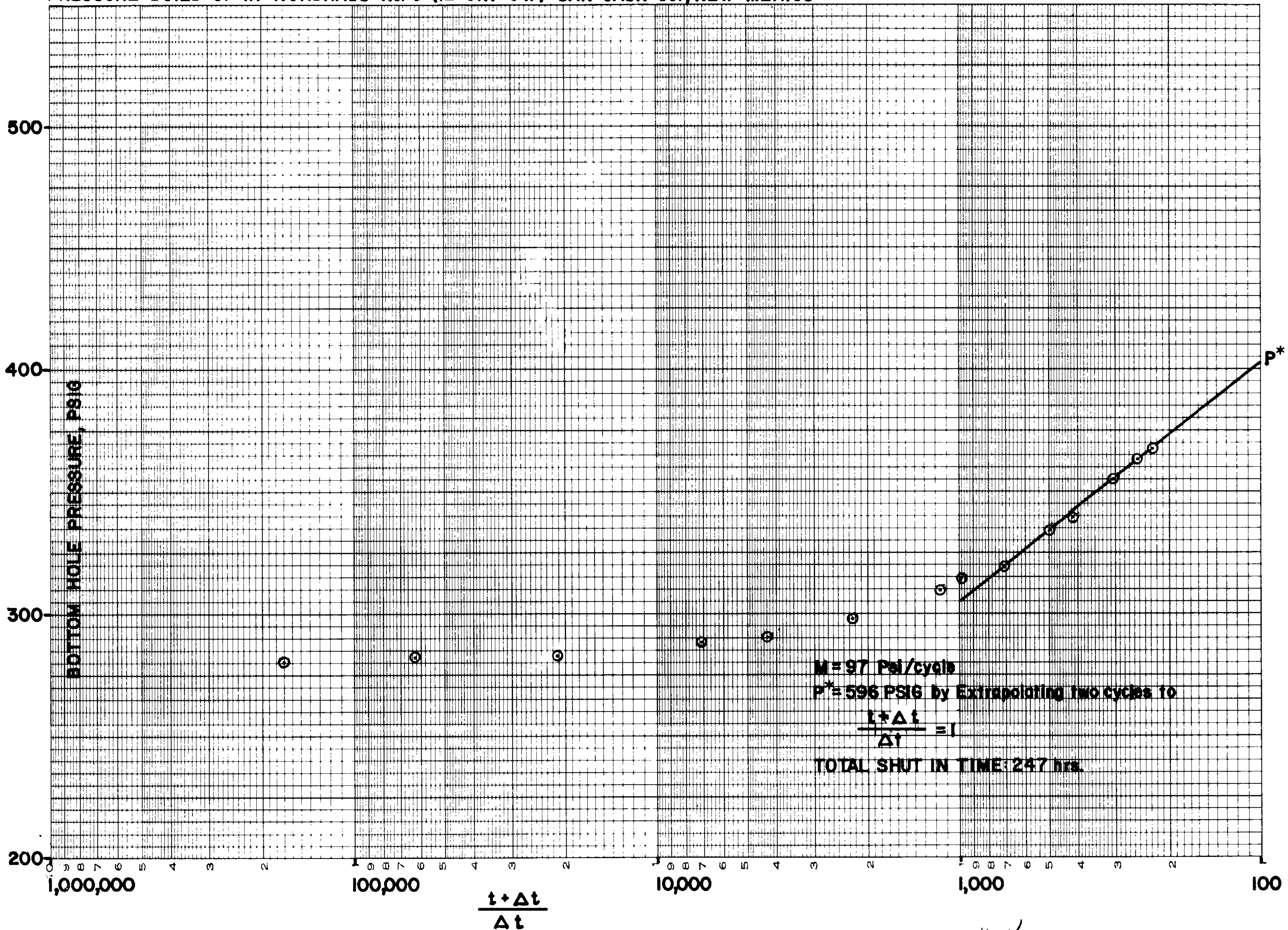


P1 Supco #6

PRESSURE BUILD UP IN SUPCo JICARILLA G-5 (12-26N-5W) RIO ARRIBA CO., NEW MEXICO

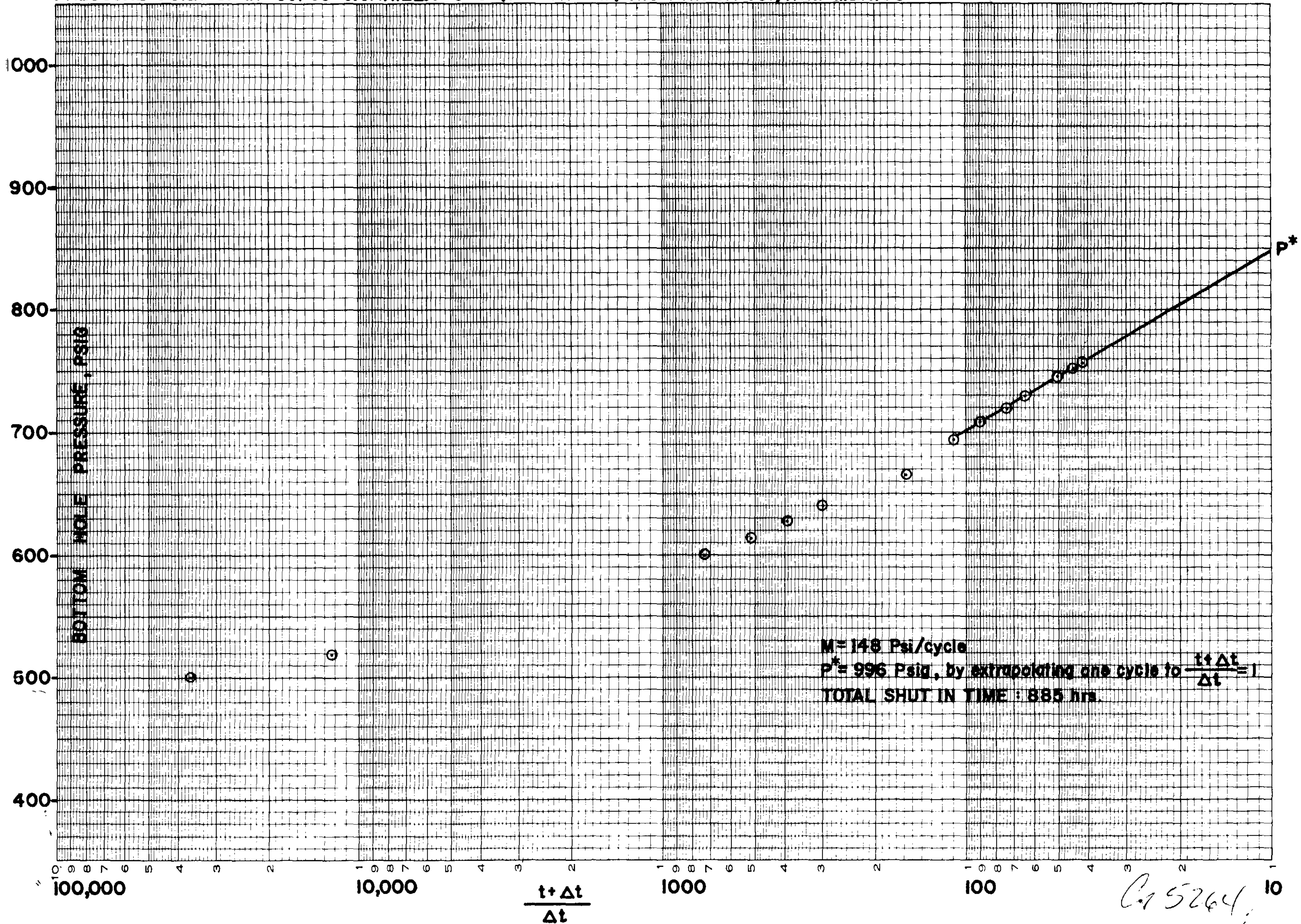


PRESSURE BUILD UP IN NORDHAUS No. 5 (12-31N-9W) SAN JAUN Co., NEW MEXICO

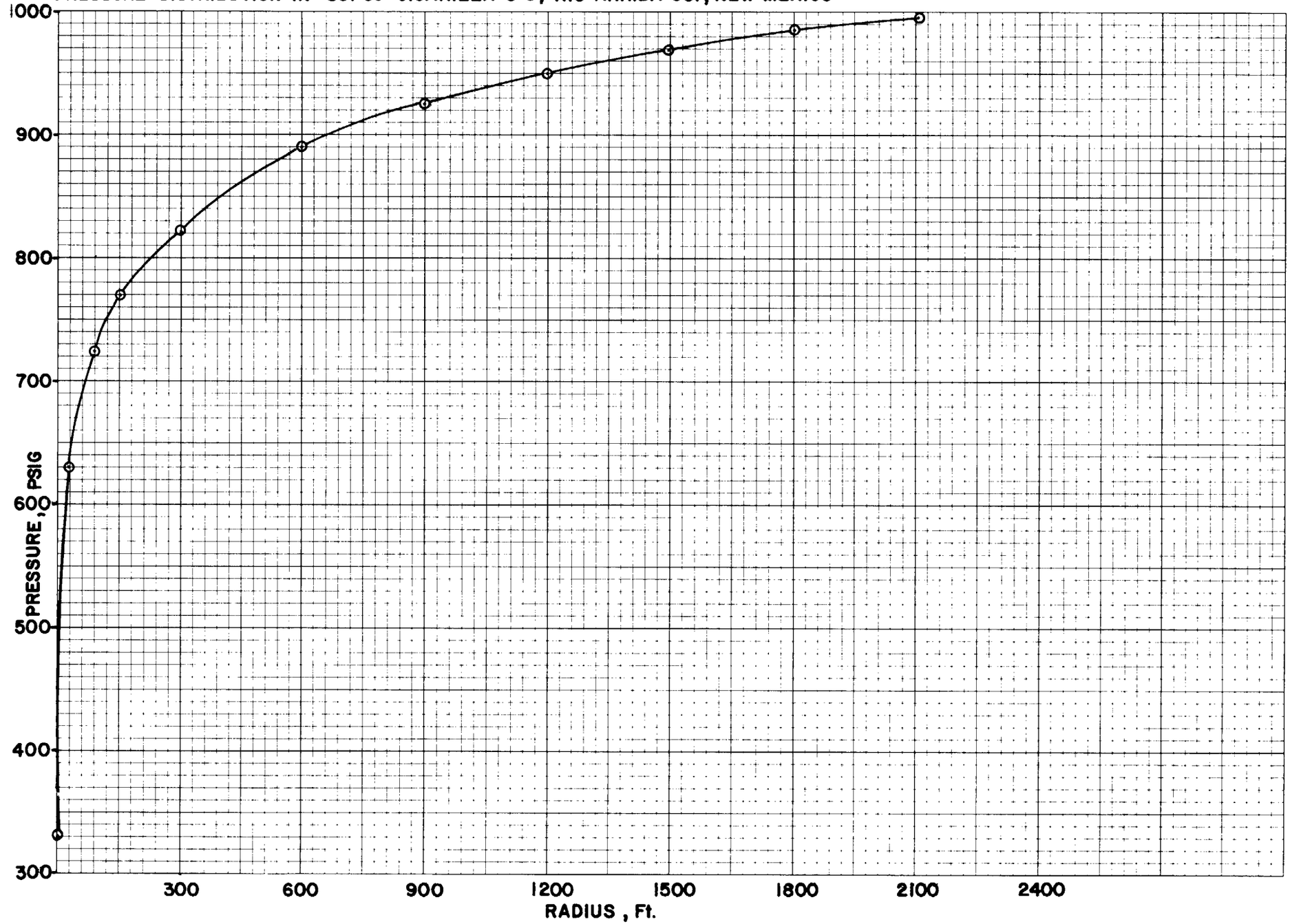


Supco # 4

PRESSURE BUILD UP IN SUPCo JICARILLA G-5 (12-26N-5W) RIO ARRIBA CO., NEW MEXICO



PRESSURE DISTRIBUTION IN SUPCo JICARILLA G-5, RIO ARRIBA CO., NEW MEXICO



SUPCO Exhibit No. 5

SUPCO JICARILLA G-5
(L - Section 12-26N-5W)
Rio Arriba County, New Mexico

Pi = Initial Reservoir Pressure, 1325 Psi
Well Shut-in on 7-3-74 - Well Shut-in for 37 Days
Cumulative Production = 1,018,406 MCF (As of 7-3-74)

a) Drainage Area = 320 Acres

P* = 996 Psig

$\bar{P}$ = Average Reservoir Pressure = 888 Psig

Abandonment Conditions:

Q = 20 MCFD; Line Pressure = 50 Psig

$\bar{P}$ (abandonment) = 250 Psig (Radial flow, unsteady state; n = 0.75)

b) Drainage Area = 160 Acres

P* (radius 1489 Ft.) = 967 Psig (Pressure distribution curve)

$\bar{P}$ = 825 Psig

$\bar{P}$ (abandonment) = 207 Psig

Ultimate recoverable reserves (one well on 320 acres) = 3.7 BCF

Ultimate recoverable reserves (two wells on 320 acres) = 3.87 BCF

Increase in recoverable gas reserves = 0.17 BCF (4.6%)

Reservoir and Fluid Characteristics Used:

K, Formation Permeability = 0.436 MD

h, Formation Thickness, 96 Ft.

Porosity = 0.10
Viscosity = 0.0133 CP

C = Compressibility, Psi^{-1} (Varying with Pressure)

T = 620° R

PRESSURE BUILD UP IN SUPCo JICARILLA A-14 (24-26N-4W), RIO ARRIBA CO., NEW MEXICO