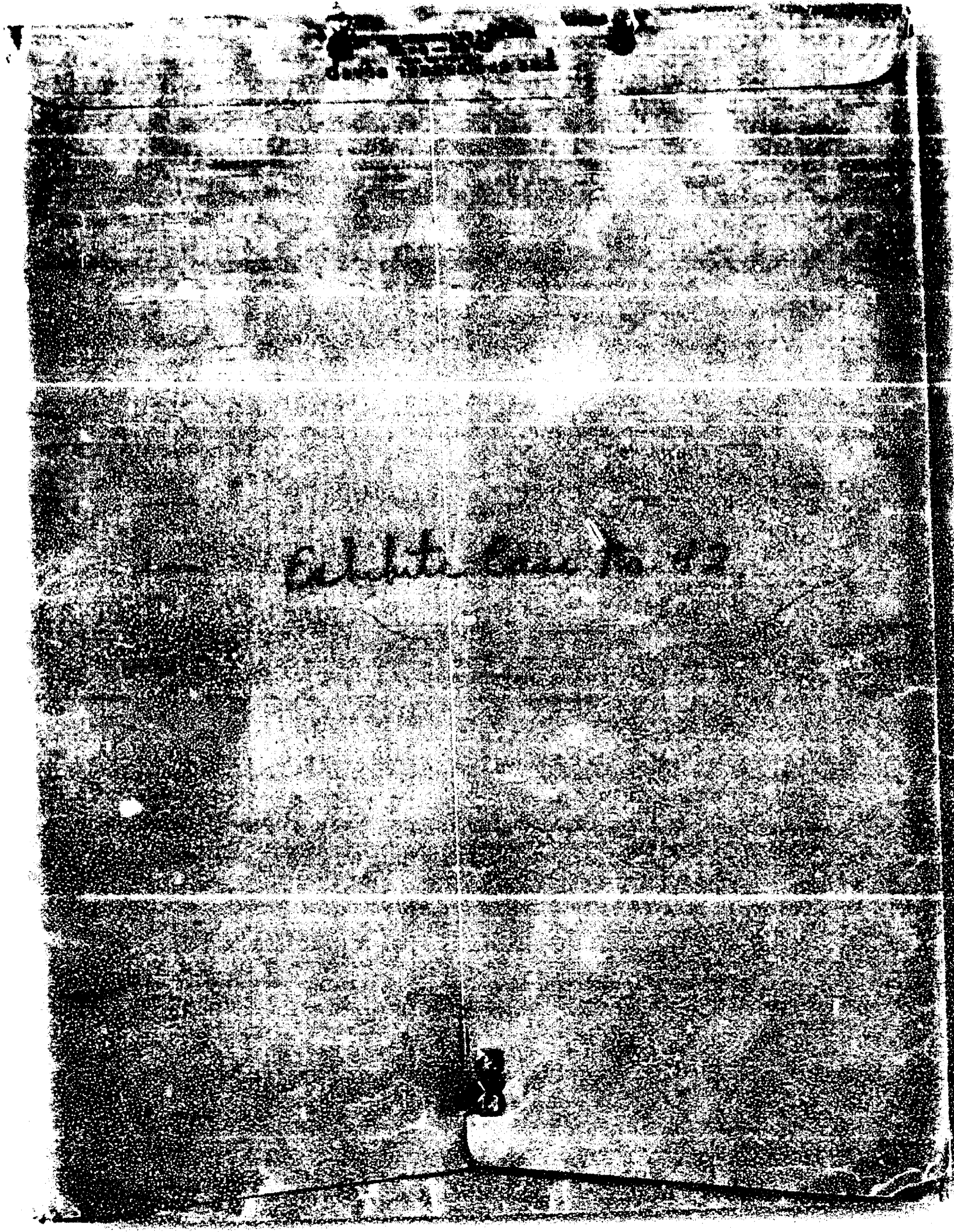


CASE No.

42

Large Exhibits
OCD



12-D

The above recommendation has been carried out to a limited extent during the year 1942 as shown by the following tabulation and is being carried out to a much greater extent in 1943:

(These figures do not include Maljamar Field or gas run to El Paso Plant No. 1 dry gas)

Total casinghead gas received in Lee County Plants	69,754,102 MCF
Total casinghead gas consumed as plant & lease fuel	7,551,431 "
Total casinghead gas shrinkage	4,132,172 "
Total casinghead gas vented	44,504,791 "
Total casinghead gas sold commercially	10,950,407 "
Barrels gasoline	1,743,375 "
Barrels butane, etc.	184,977 "
Total estimated casinghead gas (less Maljamar Field) prod.	84,767,118 "
Lee County 1942	66.67
The percentage of gas vented from gasoline plants in 1942, as above described, was	66.67

As a result of installation of additional lines and compressors by one of the major natural gasoline plants late in 1942, the percentage of gas vented in January, 1943 is indicative of a vast improvement in the picture as revealed by the following figures:

(Figures do not include Maljamar Field or dry gas from El Paso Plant No. 1)

Total casinghead gas received	6,023,159 MCF
Total casinghead gas consumed as plant & lease fuel	689,703 "
Total casinghead gas shrinkage	61,732 "
Total casinghead gas vented	2,495,704 "
Total casinghead gas sold commercially	2,273,486 "
Barrels gasoline	363,461 "
Barrels butane, etc.	30,421 "
Percentage of gas vented from gasoline plants during January, 1943 as above described, was	44.75

The committee appointed for studying and proposing the experimental work to be done in the Maljamar and Monument fields with regard to transfer of allowable from high gas-oil ratio wells to lower gas-oil ratio wells has used the information available in the periodic reports of Mr. Staley's office to compile the theoretical effect of transferring. These compilations are:

TABLE I. Wells shut in due to high gas-oil ratio

TABLE II. Wells which have been granted exception to Order No. 250 of the Commission.

TABLE III. Maximal well limitations as submitted by the operators

TABLE IV. List of leases composing only one well and production information.

TABLE V. List of two unit leases and the calculated effect of transferring allowable to wells having lower gas-oil ratios.

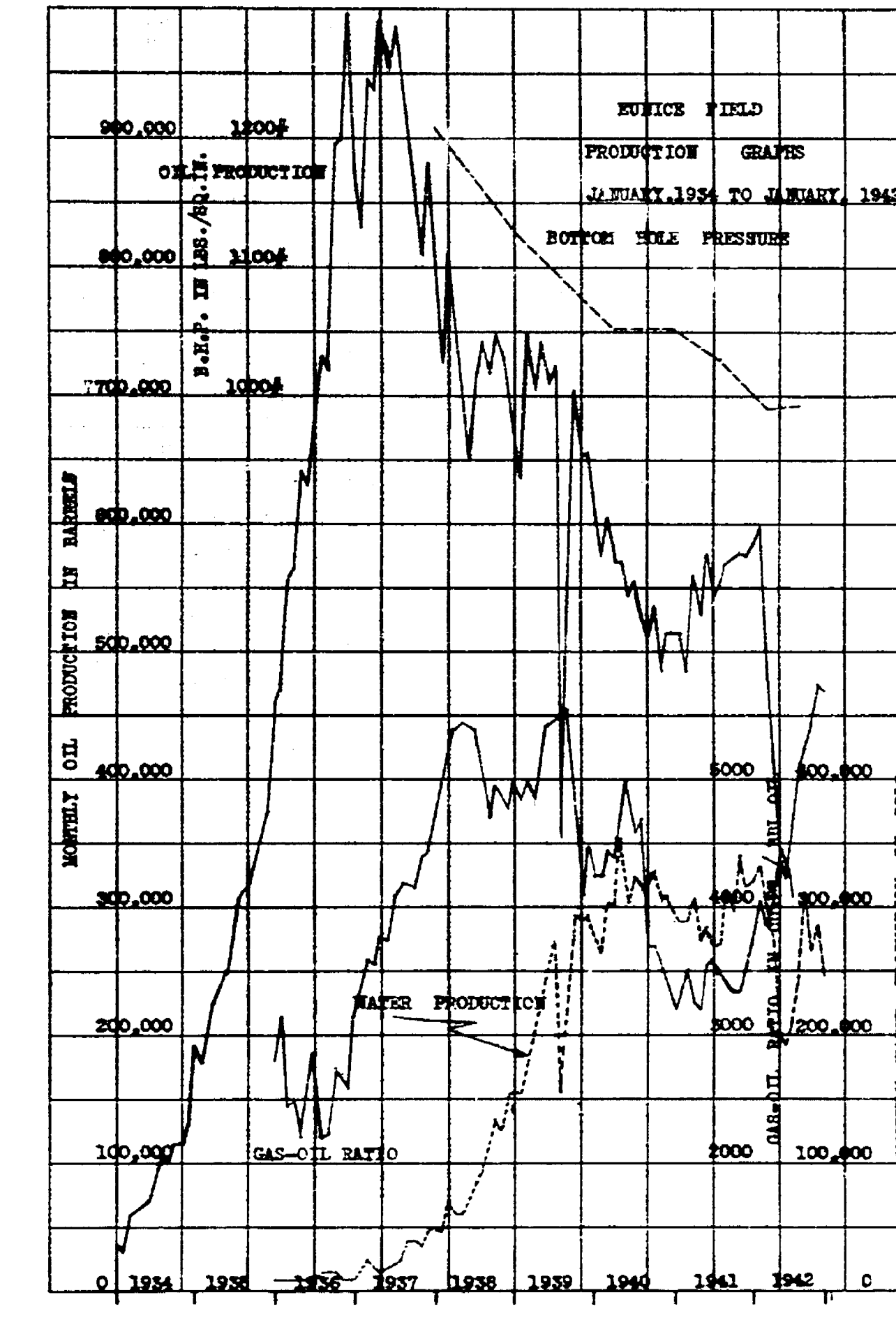
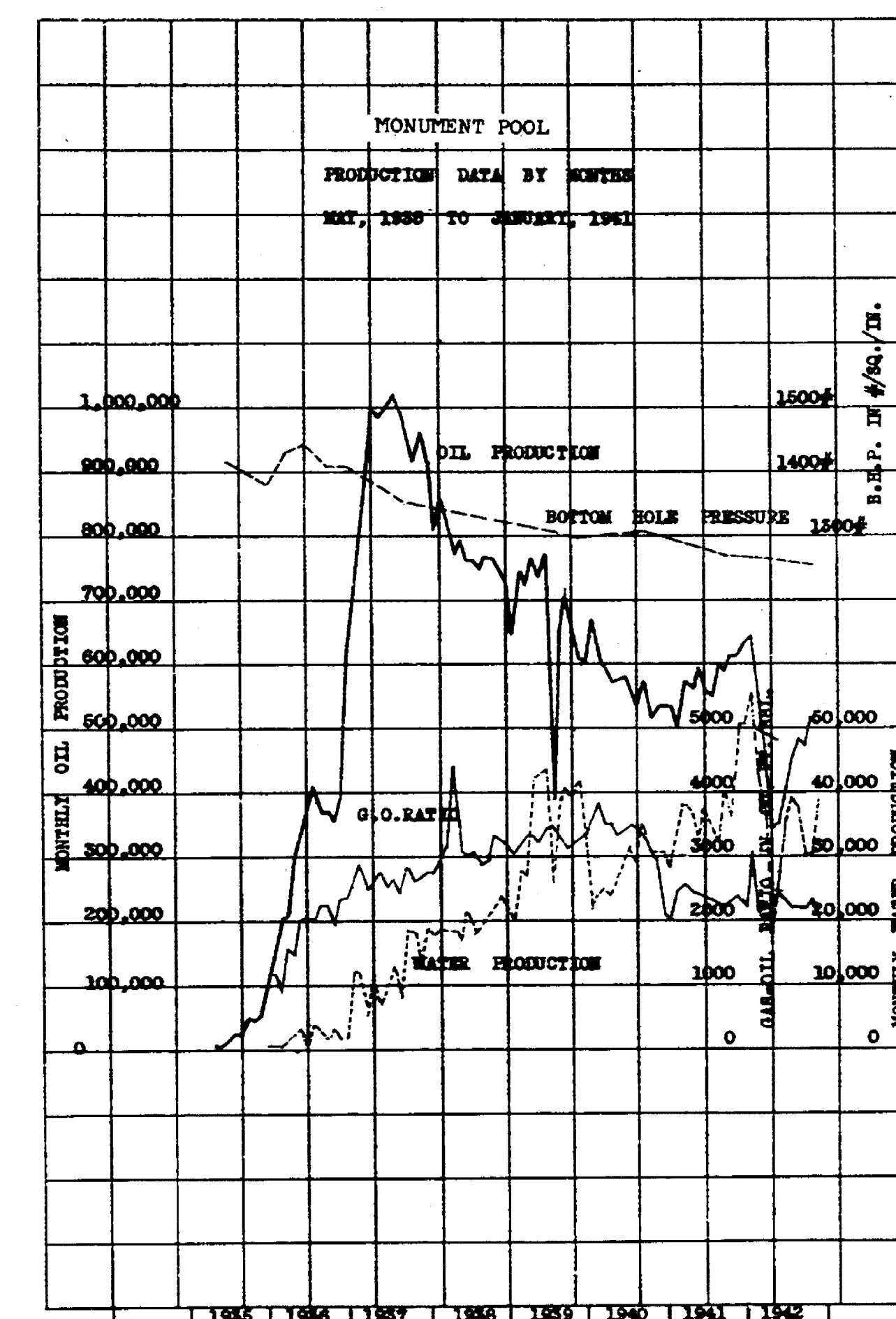
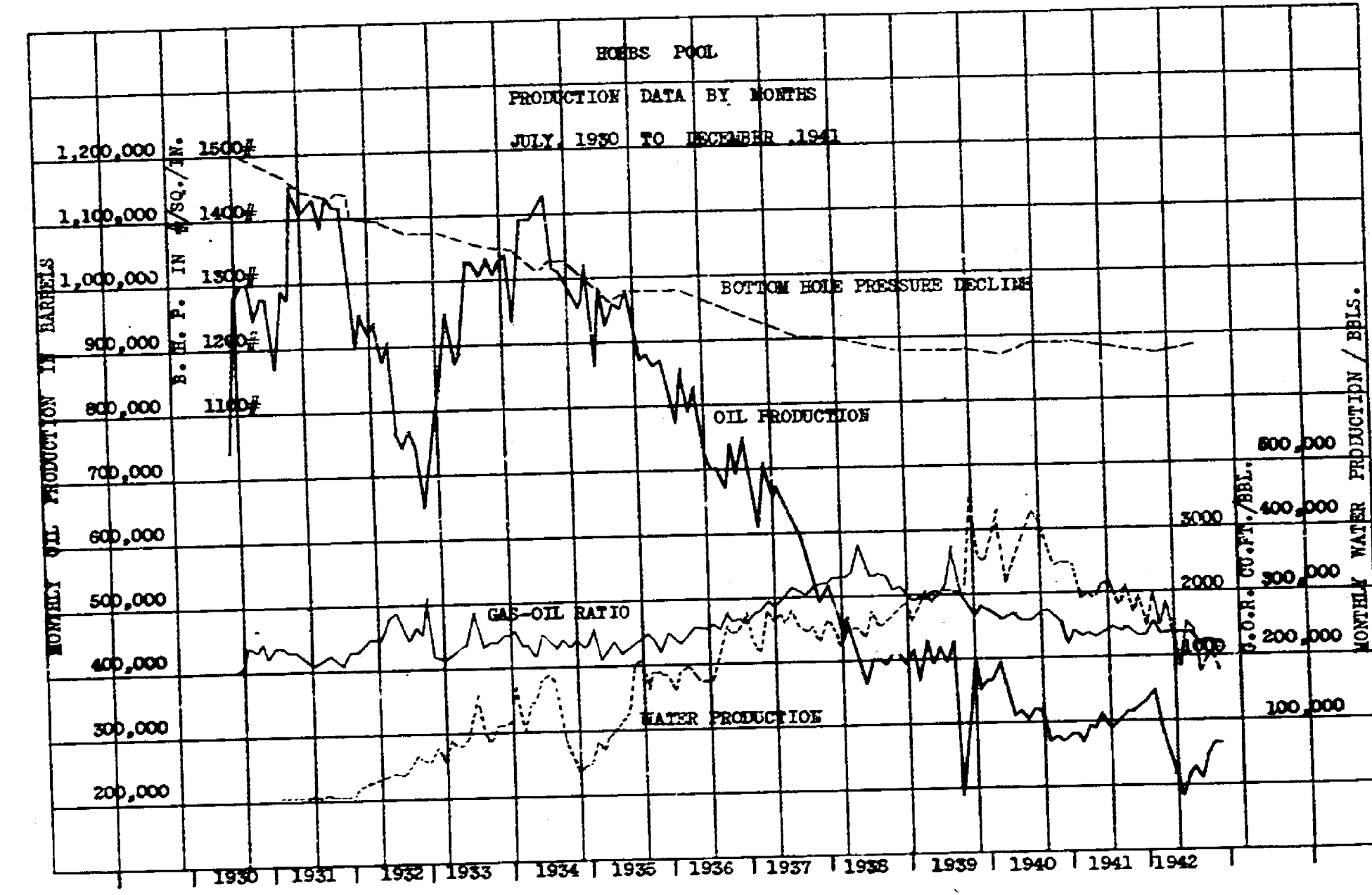
TABLE VI. List of leases having three or more wells on contiguous portions of the lease and the calculated effect of transferring allowable to wells having lower gas-oil ratios.

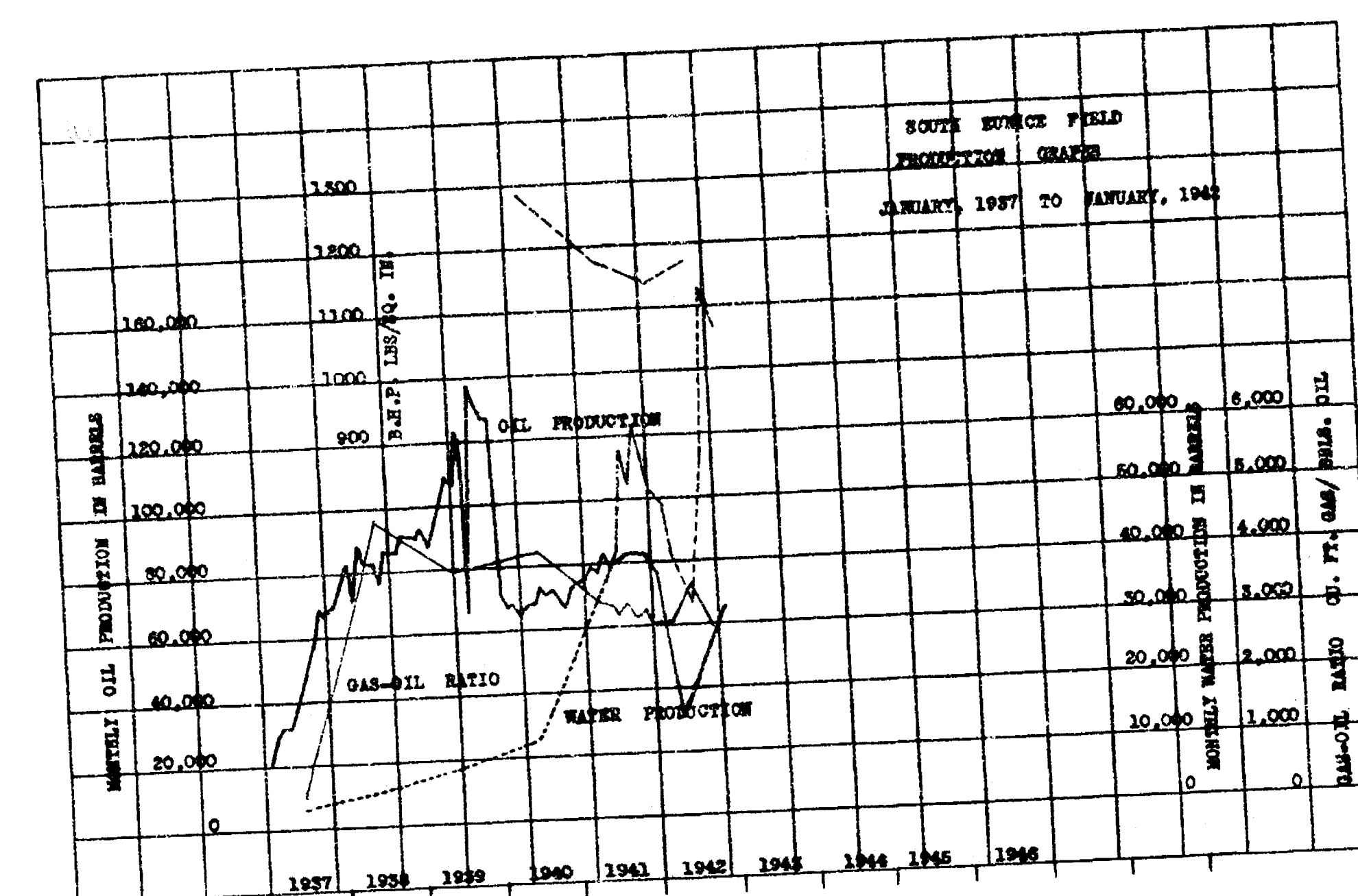
TABLE VII. Summary of Tables IV, V and VI.

In calculating the effect of the transfers the committee used only information submitted by the operators on Form O-115 or recent tests by Mr. Staley's office. No consideration was given to any changes in gas-oil ratio for better transfer was made from such transfer, also in making the calculations no well received more than two allowables (since gas-oil ratios were available only in conjunction with operator's report in Form O-115 on monthly production, their figures were used in all tables). While in these calculated transfers, the entire allowable of higher ratio wells was made to another well, it is of course, possible and probably desirable to distribute such transferred allowable to several wells where feasible.

Provided the operator recommend the adoption of a plan to transfer allowables the committee submit the following suggestions:

1. Transfer of allowable will be permitted only after application to and approval by the Commission. The application shall show 48-hour individual tests of production of oil, gas and water of the well from which transfer is requested and the well or wells receiving the transferred allowable. Such tests shall have been made within 30 days of date of submitting request. Such tests a list of the wells involved shall be attached and the amount of oil to be transferred to each such well. Vote A-4.
2. Permits to transfer shall be in force for a period of one year from date of approval. Renewals may be obtained at the discretion of the Commission only upon resubmission of the information as shown in (1) above.
3. Transfer of oil from one unit to another or others will be permitted only with contiguous portions of the same basic royalty provided the area involved shall not exceed 320 acres.
4. Transfer of allowable oil can be made to a well or wells with a lower gas-oil ratio.

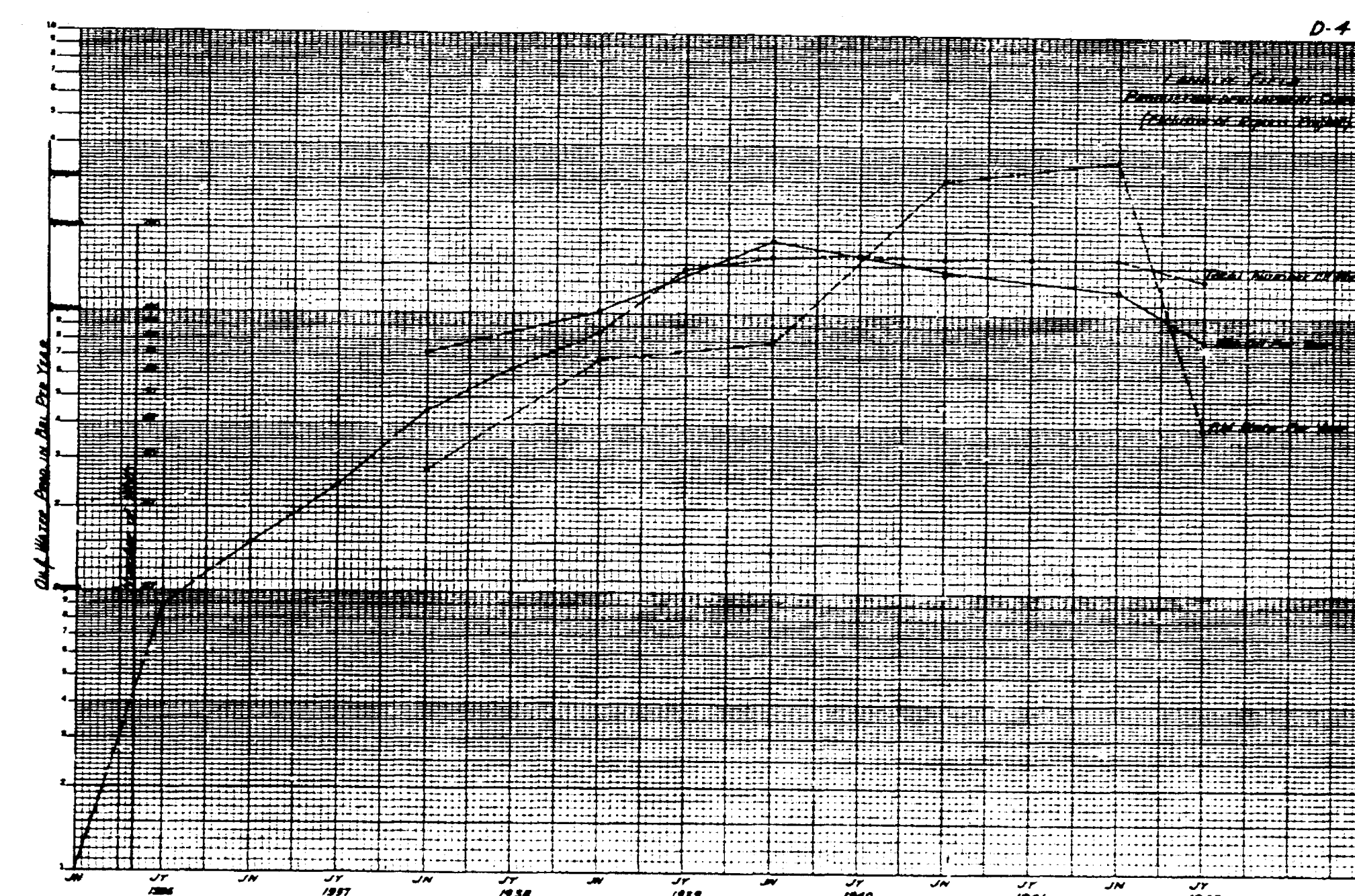
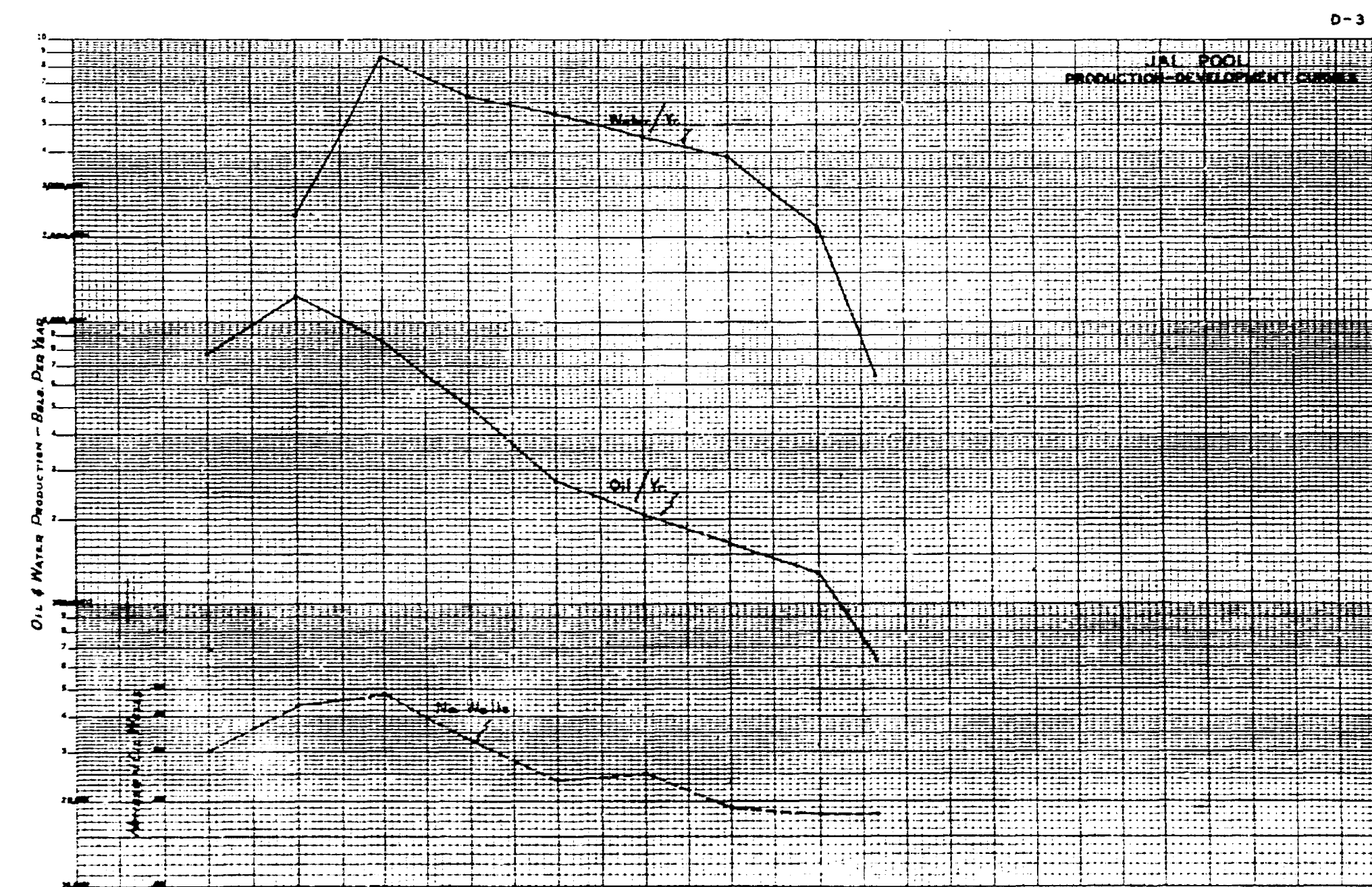
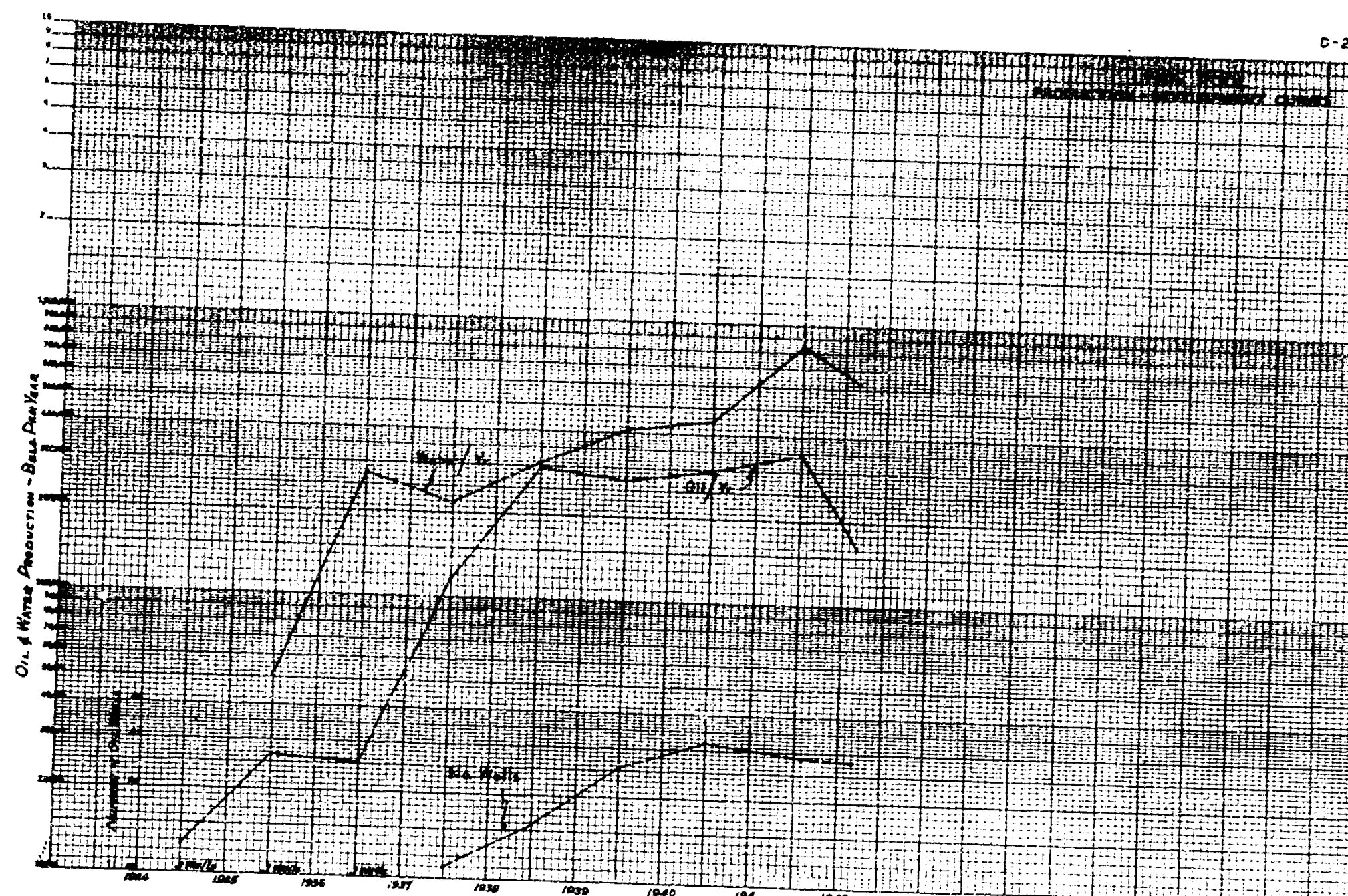
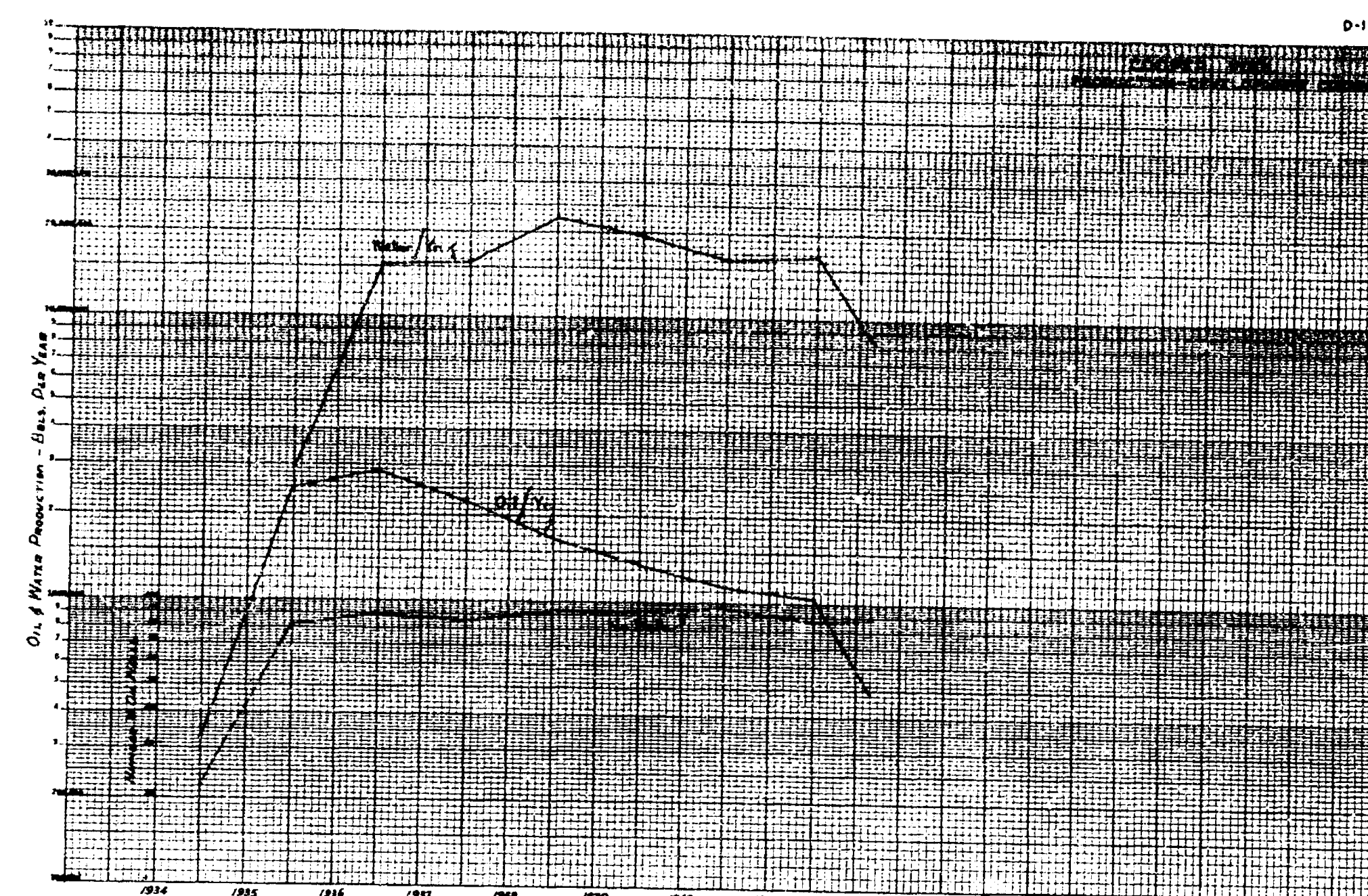


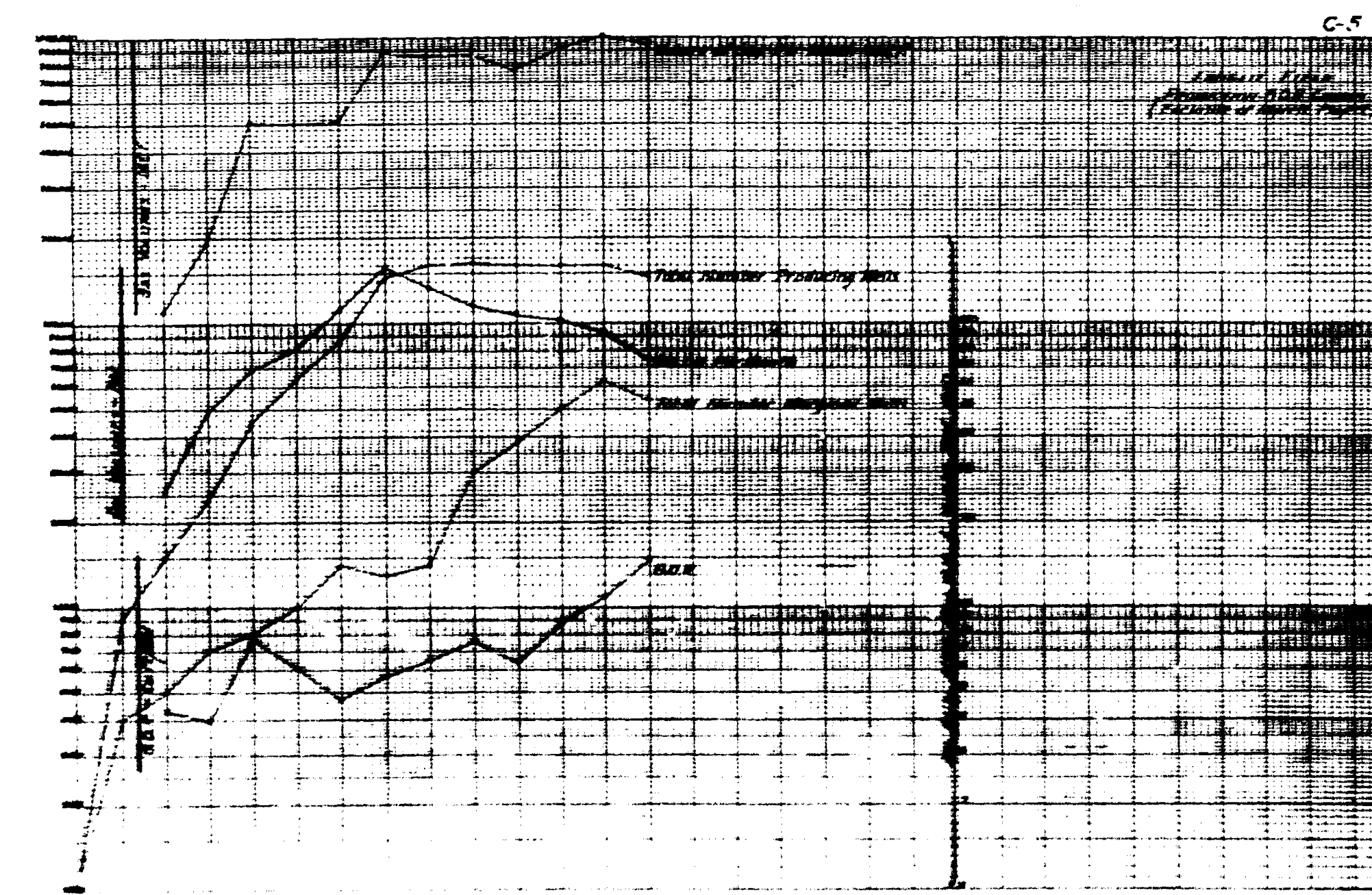
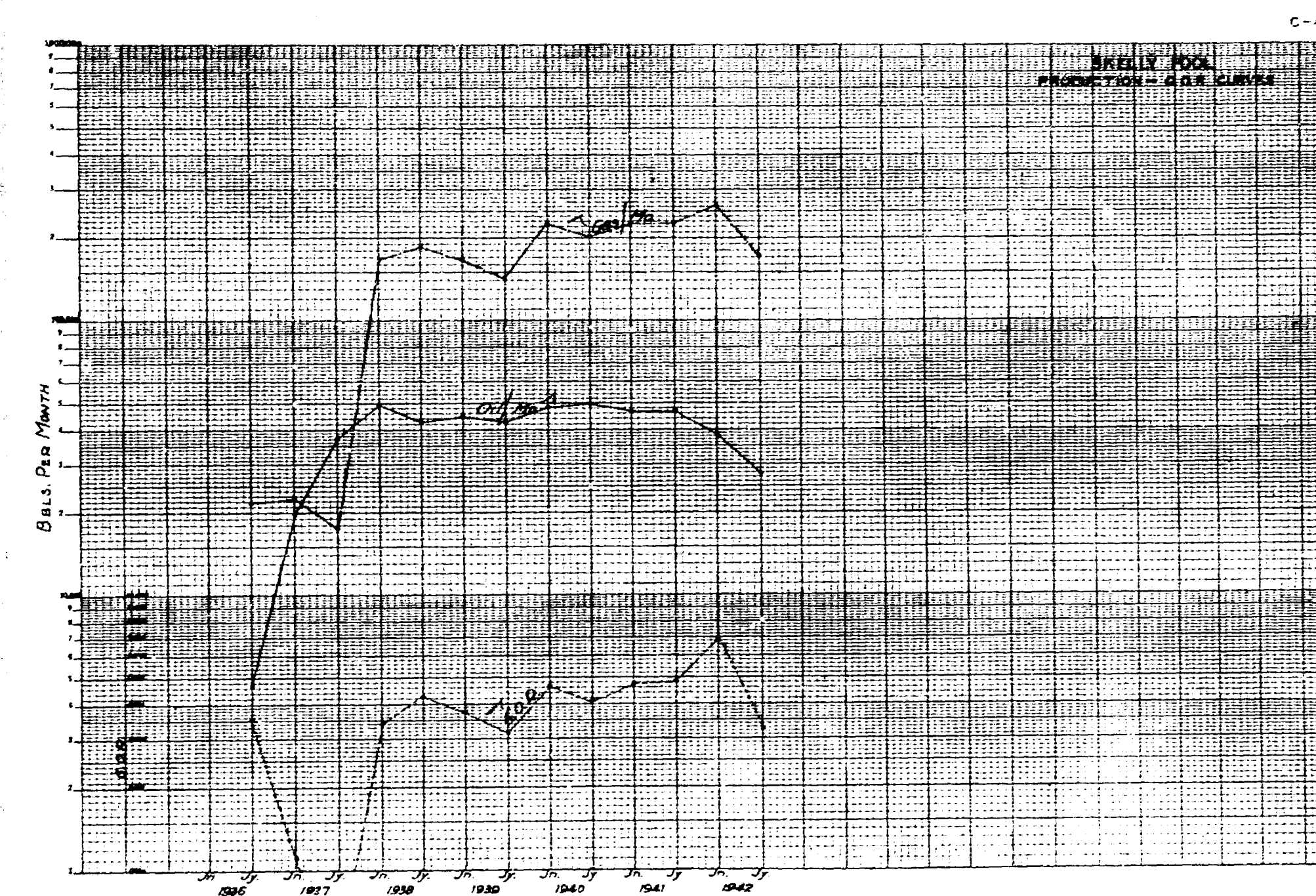
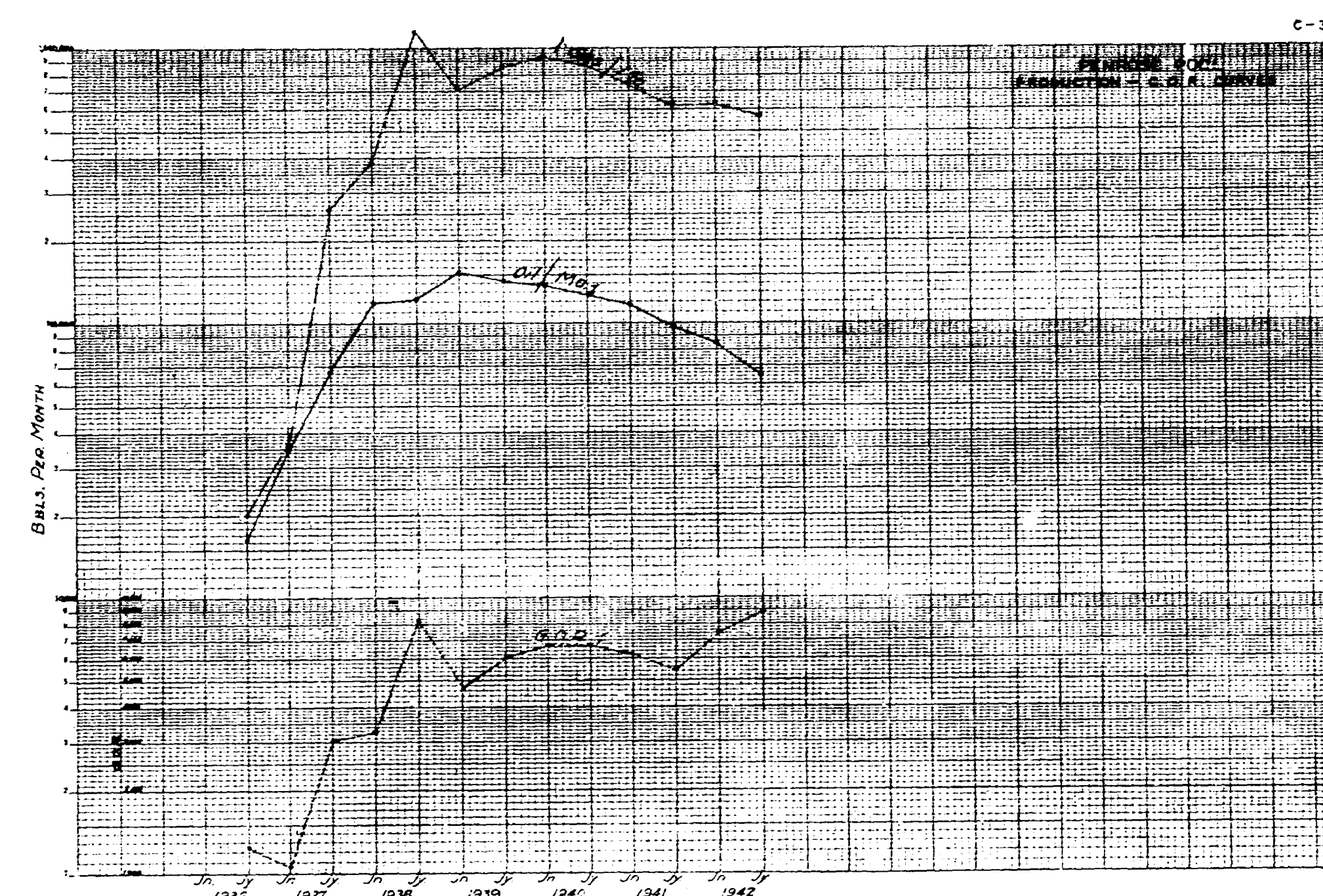
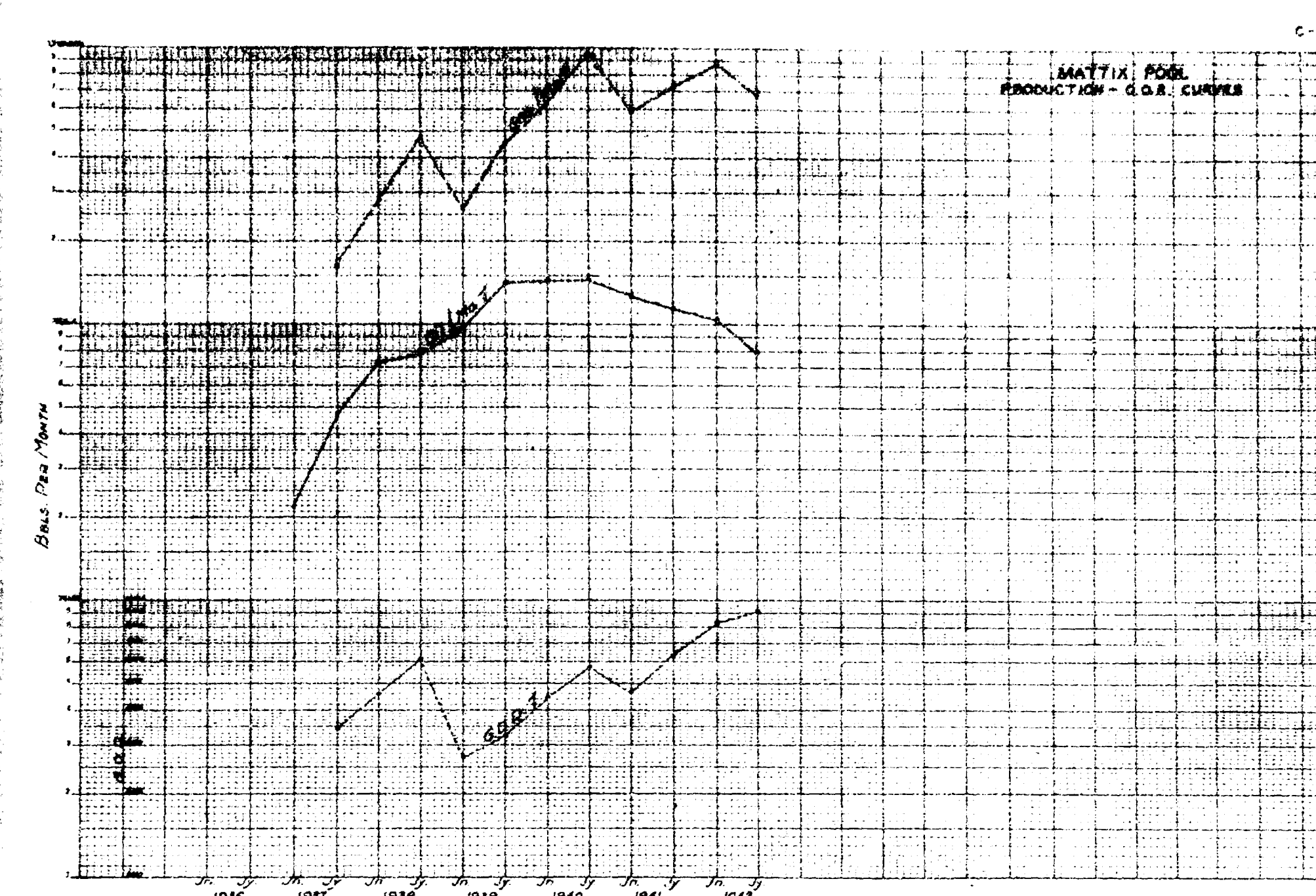
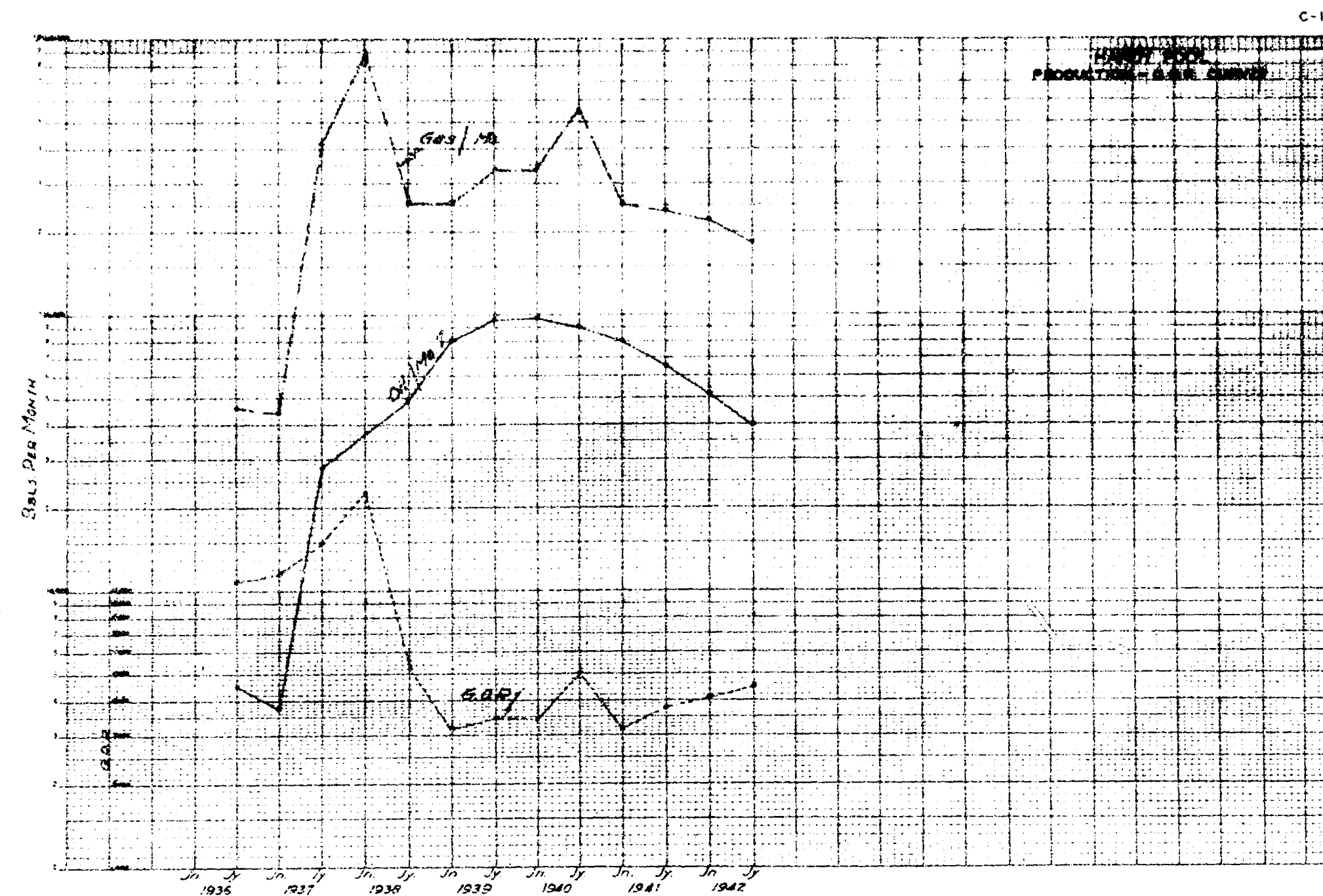


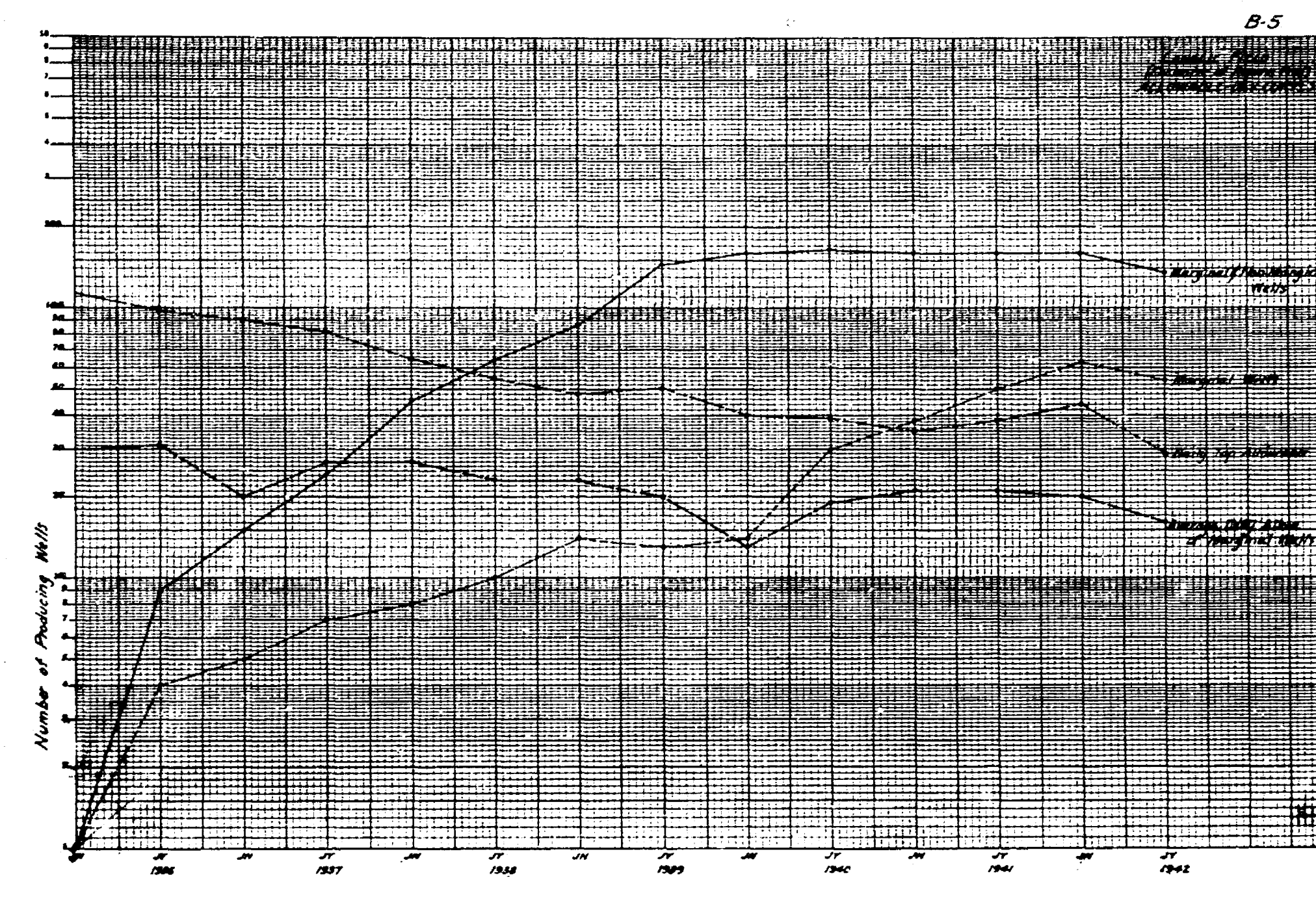
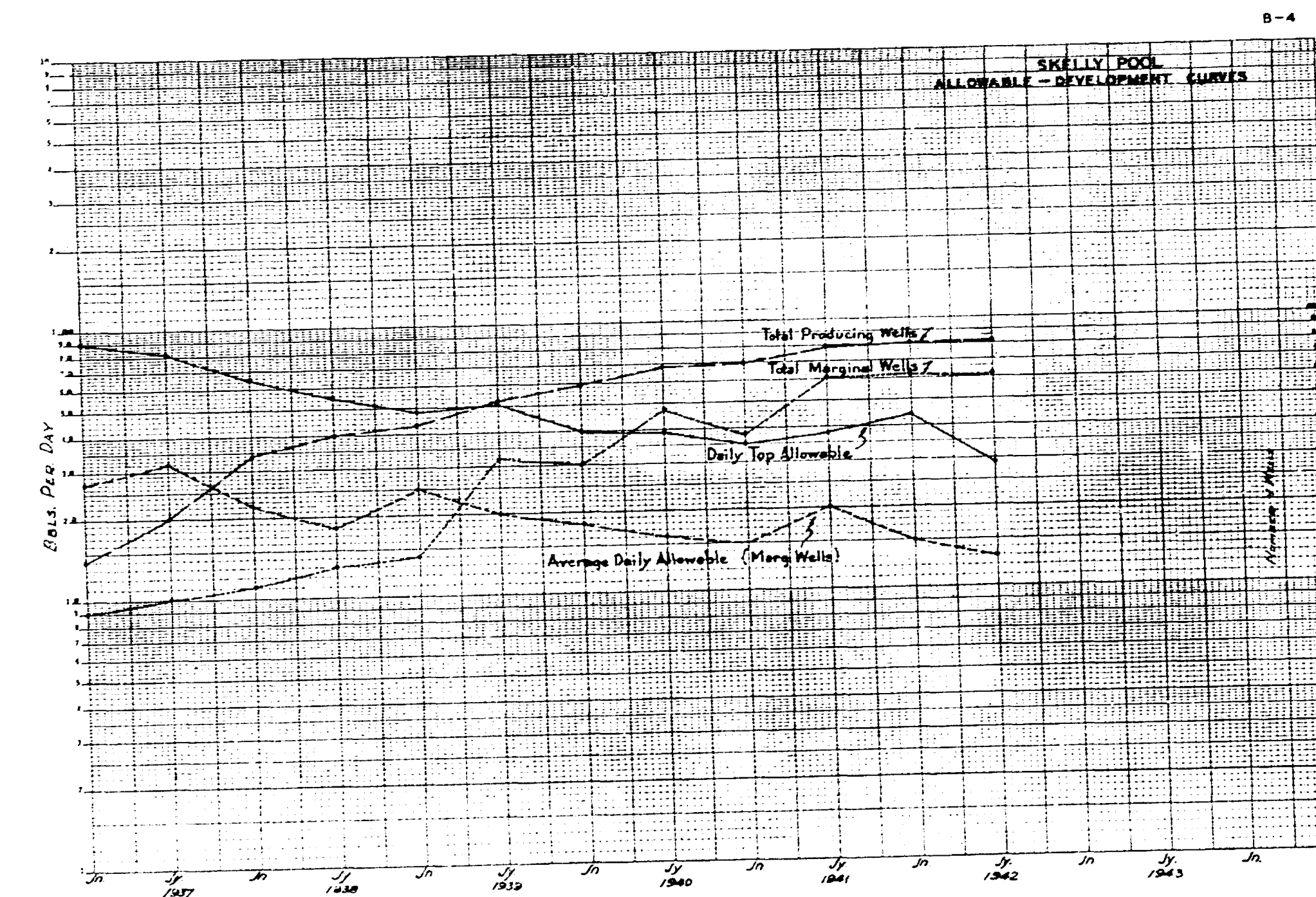
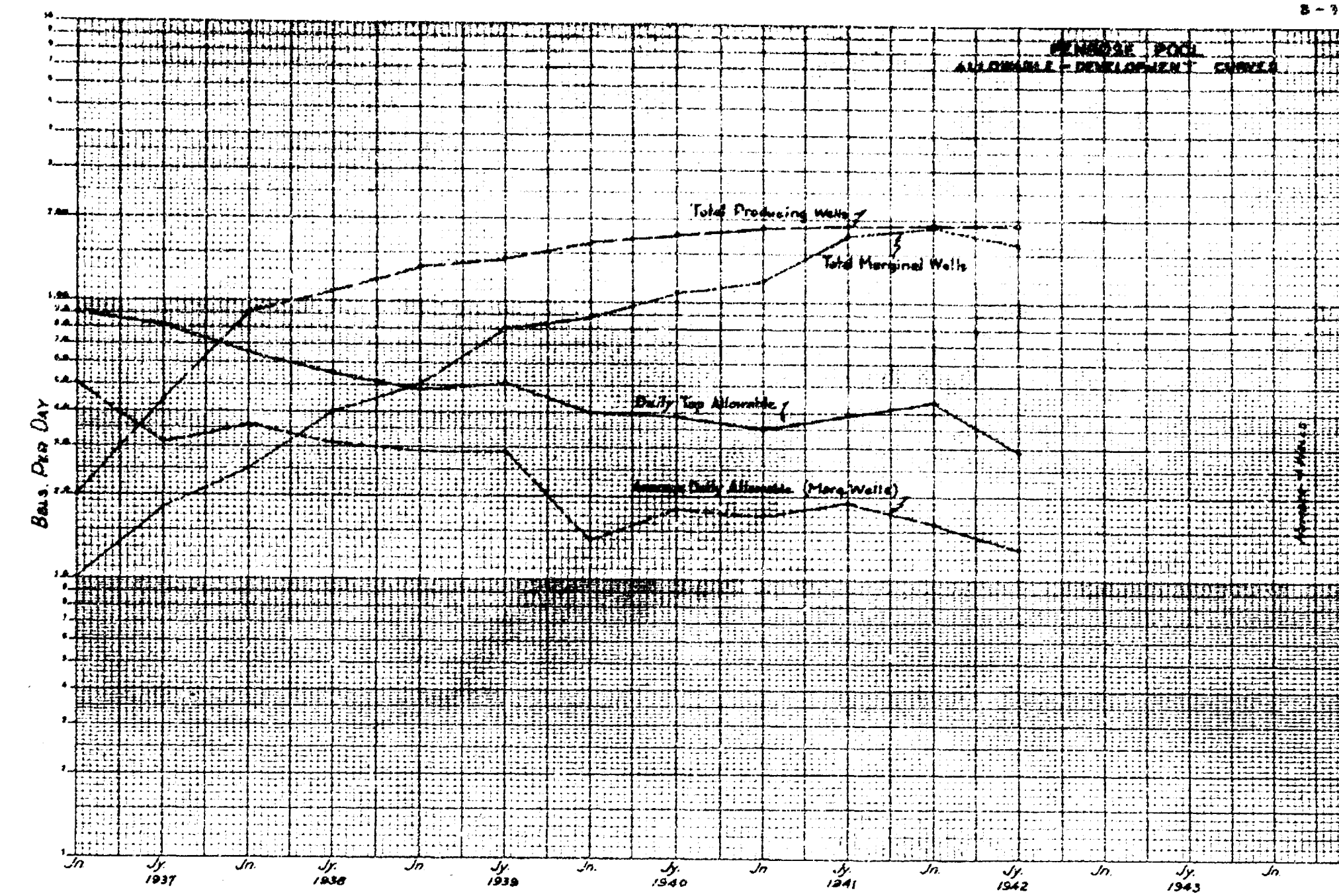
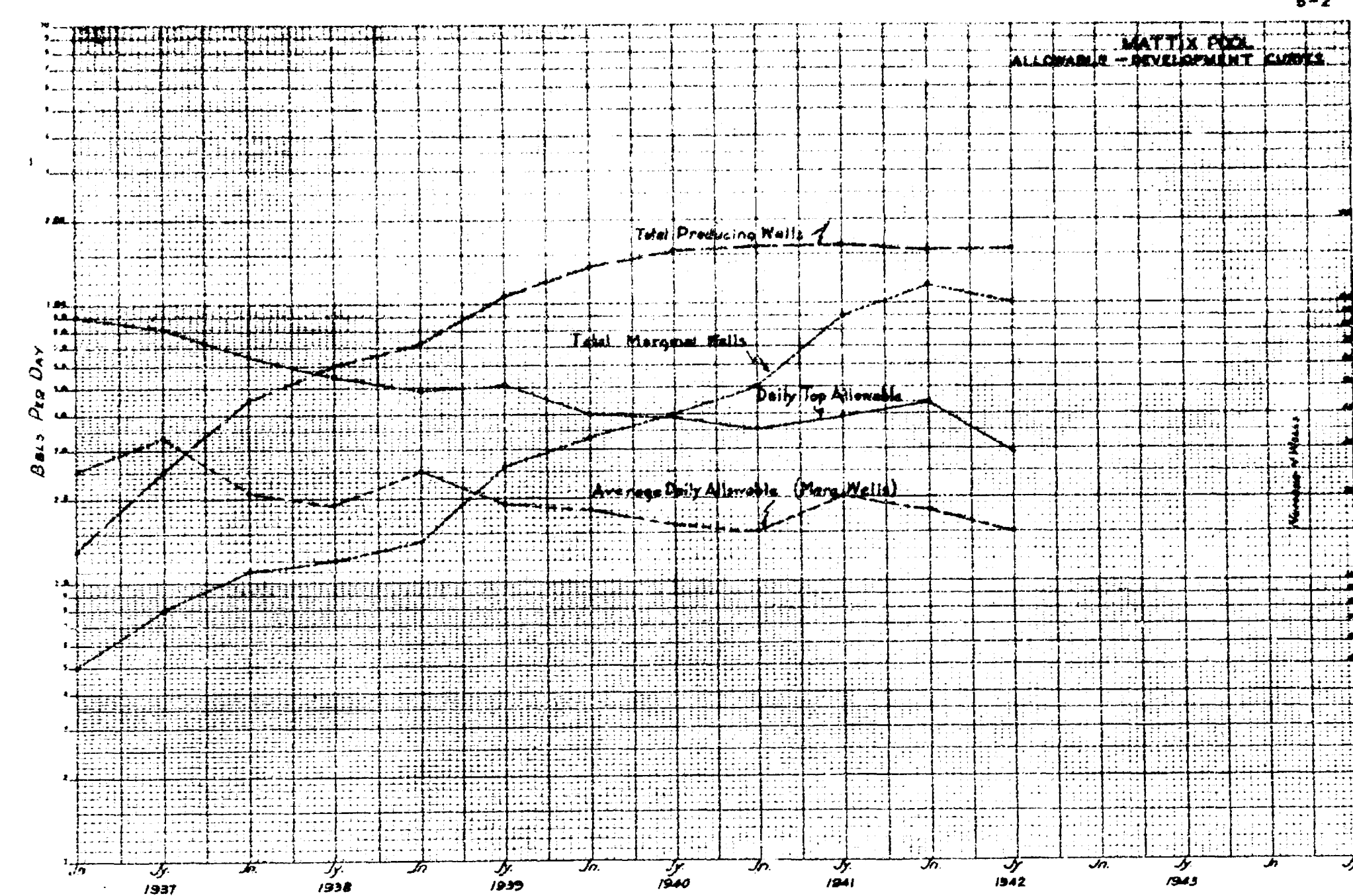
COMPANY	WELL UNIT S.I.N.	REQUESTED NOMINATION	PENALTY		GAS-OIL	GAS	WATER	REMARKS
			DAILY	MONTHLY	BARREL	CU. FT.		
Atlantic Ref. Co.	1	F 30-20-37	23	590	4959	3422		
"	2	E 30-20-37	23	690	1159	864		
State B	1	I 8-21-36	23	190	917	633		
"	2	T 5-21-36	21	930	5321	4949		
"	3	D 3-21-36	19	570	2071	1180		
"	4	F 3-20-37	7	210	932	192		Gas lift
"	5	D 3-20-37	25	750	29518	7970		Pump
United Service Oil Co.	1	C 28-21-36	14	420	36707	15434	10	Exemption
"	2	B 32-21-36	23	750	5250	3938		Gas lift
"	3	G 32-21-36	20	600	5030	2006		Gas lift
"	4	A 32-21-36	10	300	39775	7163		Gas lift
"	5	H 82-21-36	5	150	4000	600		Gas lift
"	6	O 30-20-37	20	600	5960	4716		Exemption
"	7	I 30-20-37	20	600	25756	14480	429	
"	8	P 30-20-37	15	450	5170	2327	30	
Continental Oil Co.	1	H 30-21-36	7	210	400	64	327	Gas lift
"	2	A 30-21-36	9	270	400	108	1950	Gas lift
"	3	B 30-21-36	10	300	400	120	3100	Pump
"	4	G 30-21-36	16	480	400	192	26500	Gas lift
"	5	F 30-21-36	6	180	400	72	248	Gas lift
"	6	M 14-21-36	27	810	6632	5372	310	
Petroleum, N.M.	1	G 32-20-37	10	300	1800	540		Gas lift
Turner Oils	2	C 30-20-37	13	390	1930	769		Gas lift
"	3	F 32-20-37	4	120	4380	1183		
Getty Oil Co.	1	H 32-20-37	7	210	962	198	22	
State D	1	O 19-20-37	28	840	1353	1145	72	
Wolf Oil Co.	2	J 14-20-37	27	810	2860	2317	62	
"	3	L 14-21-36	16	480	63321	30394		Shut in
"	4	M 23-20-37	16	480	2354	1116	31	Pump
"	5	N 7-21-36	19	570	9311	5307	4899	Gas lift

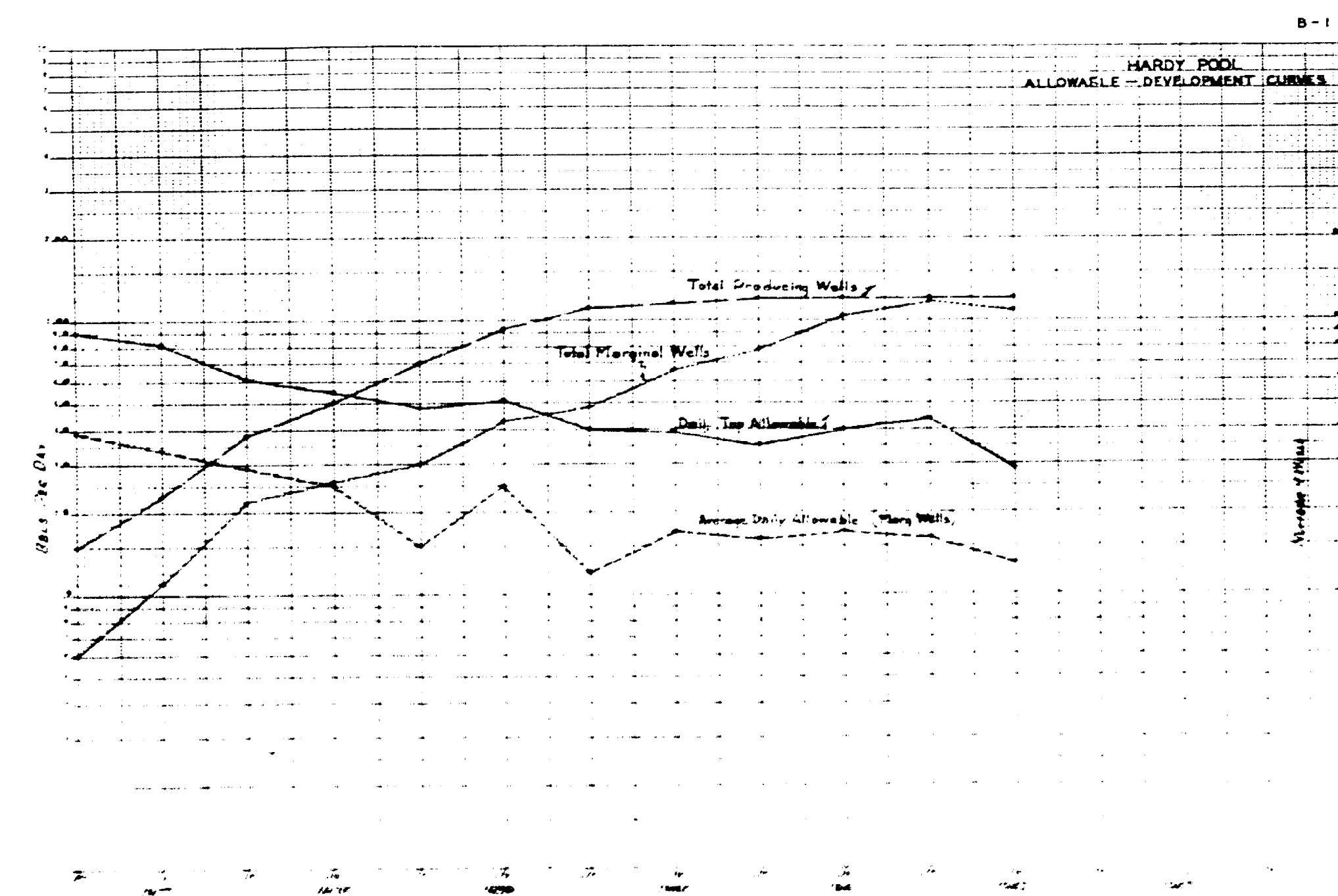
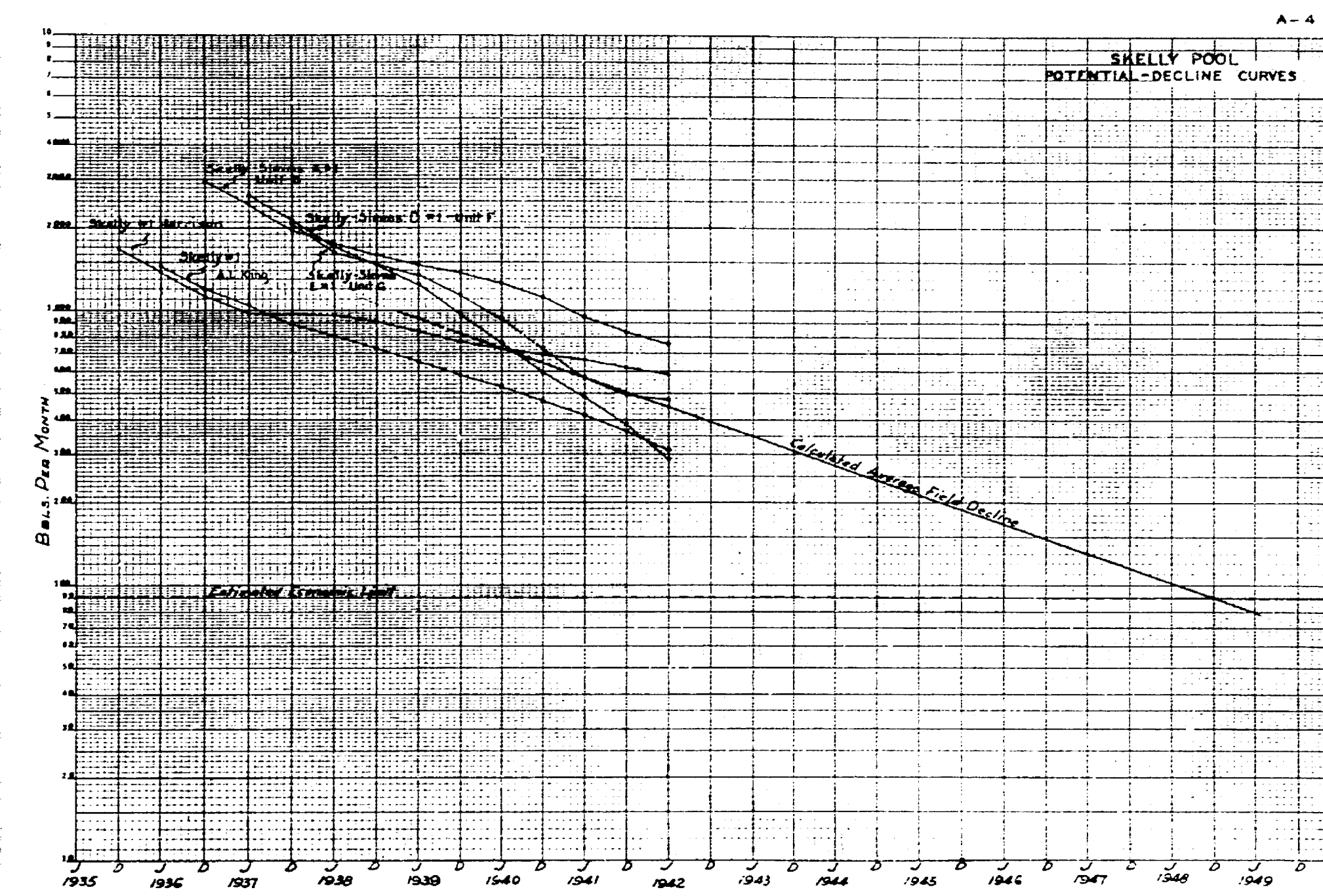
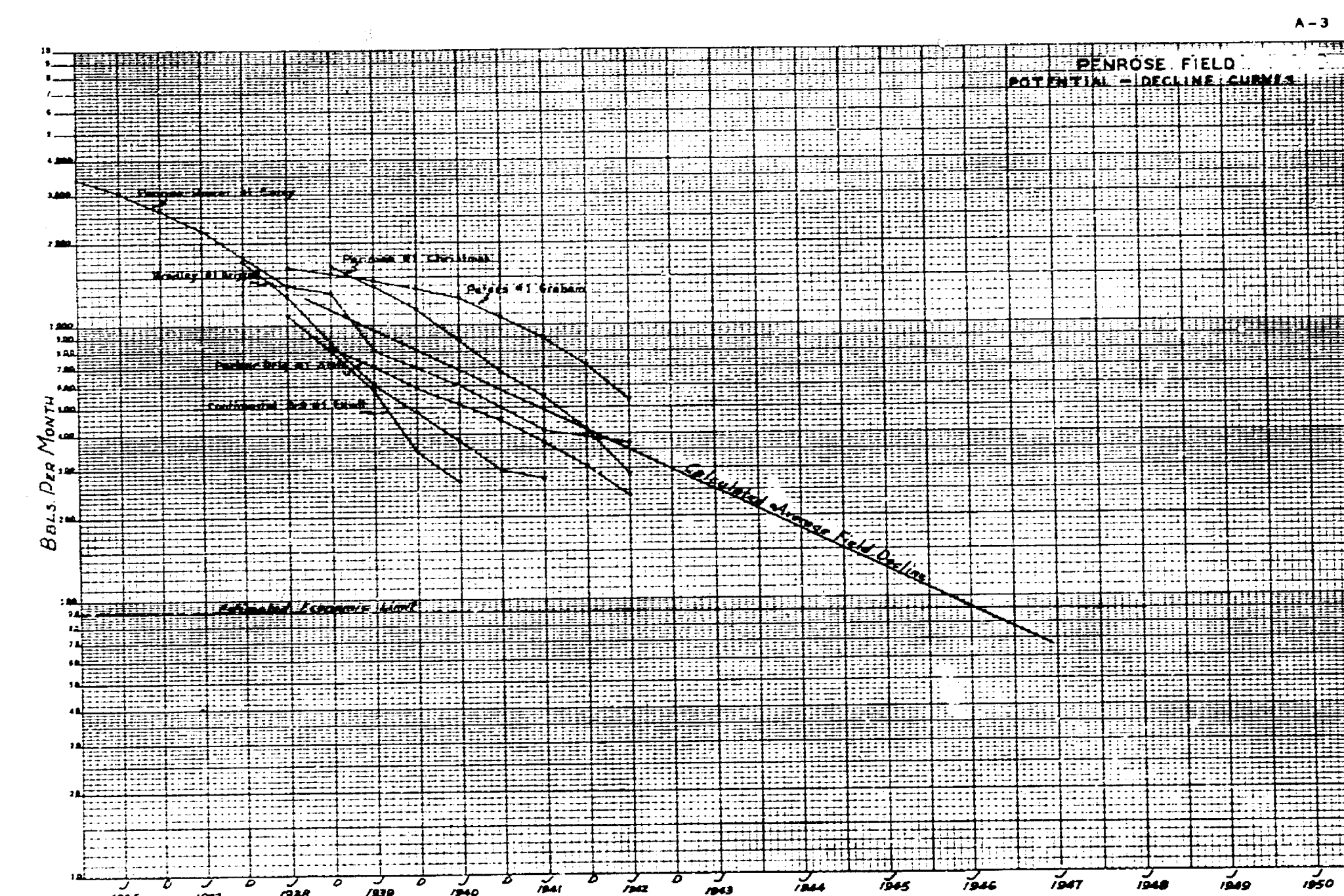
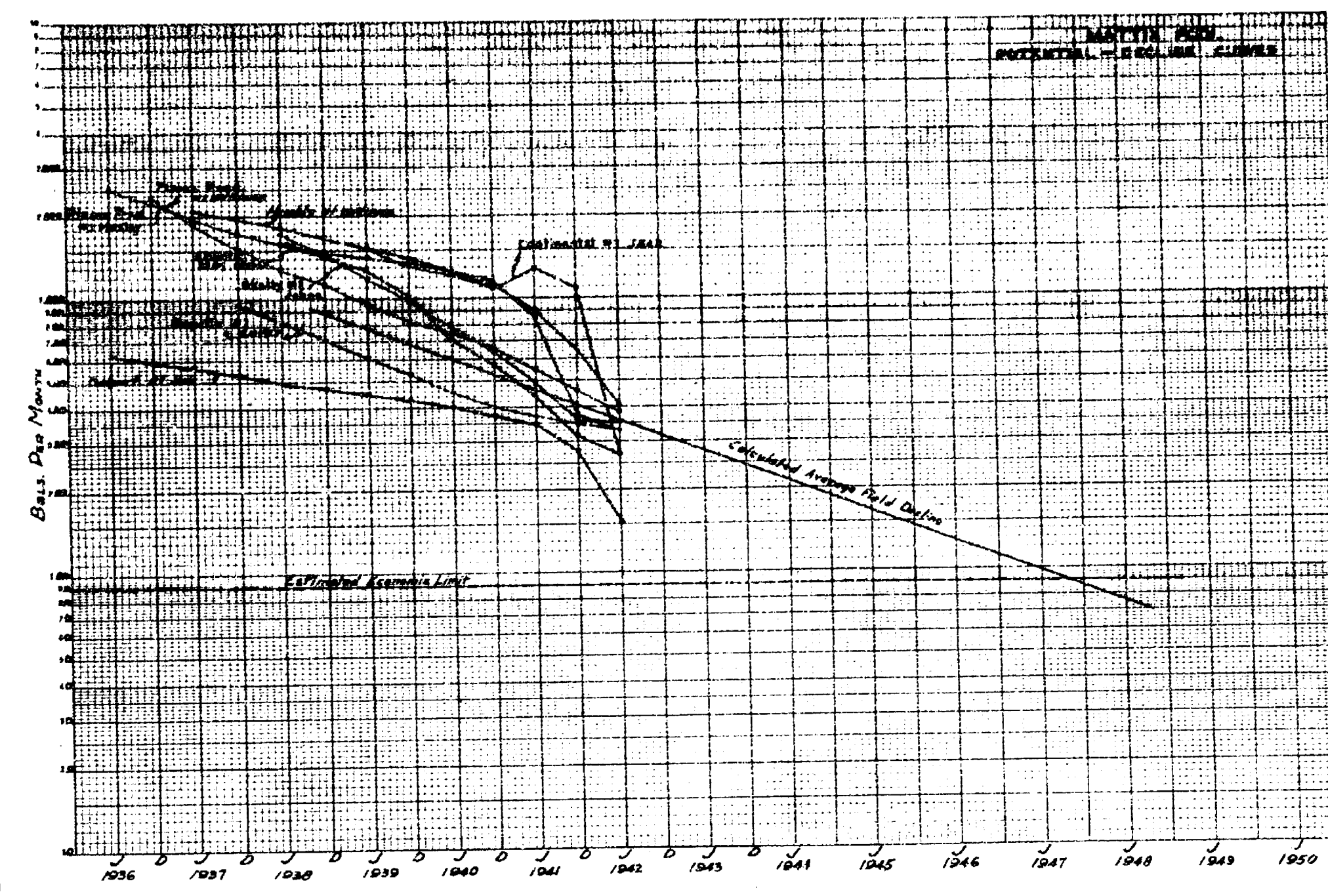
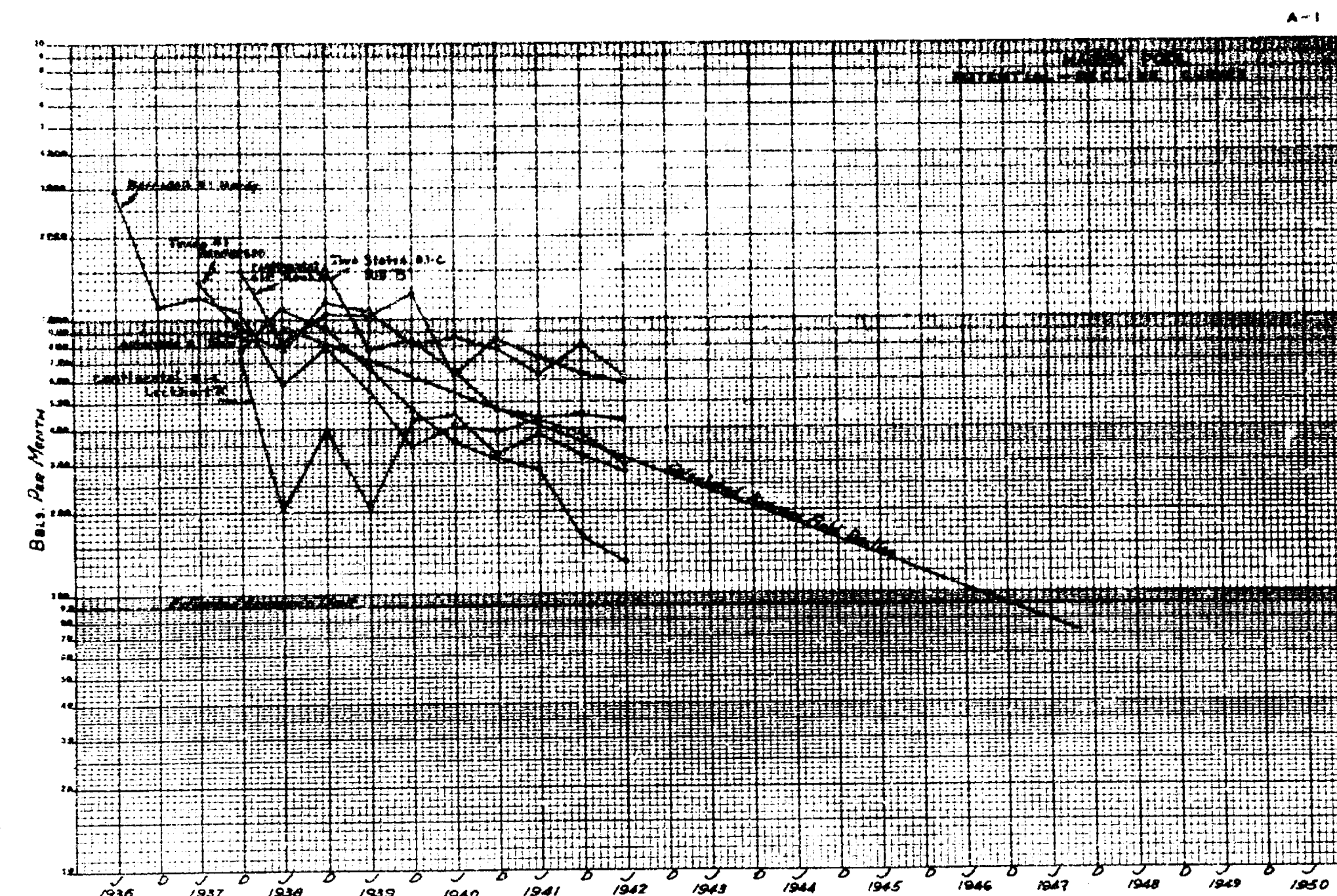
COMPANY	WELL UNIT S.I.N.	REQUESTED NOMINATION	PENALTY		GAS-OIL	GAS	WATER	REMARKS
			DAILY	MONTHLY	BARREL	CU. FT.		
Camocoll	3	M 7-21-36	6	180				
"	4	L 7-21-36	16	480				
Collins	1	F 14-21-36	26	780	11599	5568	31	
"	2	E 14-21-36	13	390	3067	2377		
Janda B	1	J 30-21-36	19	570	5160	2005	180	
"	2	T 2-21-36	14	420	3107	1771	15934	Gas lift
Leck	1	B 14-21-36	23	690	8352	3908		
Reeves	1	L 29-20-37	14	420	3523	2231		
"	2	E 29-20-37	5	150	1254	527		
Sunshine	2	M 30-20-37	28	840	600	90		Pump
"	3	K 30-20-37	21	630	16100	15206	67	Exemption
White B	1	P 35-20-36	26	780	3815	2400		
Wormley Oil & Prod. Co.	2	H 35-20-36	10	300	10715	7372		
"	3	O 26-20-36	8	240	8000	2406	68	
State B	5	O 29-21-36	20	600	10810	2596	265	
Midcontinent Pet. Corp.	2	I 11-21-36	21	630	2466	1568	265	Gas lift
Marshall	1	M 3-21-36	29	870	9500	5985	30	
Murray et al.	1	L 3-21-36	18	540	5150	4421		
"	2	F 3-21-36	14	420	5090	2449		
"	3	E 3-21-36	25	750	4490	2034		
Phillips Pet. Co.	1	D 20-20-37	25	750	5110	3703		Gas lift
"	2	B 30-20-37	12	360	3477	6255		Gas lift
Radon	1	A 30-20-37	16	480	1766	719	287	Pump
Reynolds	1	A 26-20-36	16	480	4288	2317		
"	2	H 26-20-36	14	420	7875	3750		
Rollins, C.C.	1	P 19-20-37	18	540	40347	16062		Exemption
"	2	L 29-21-36	14	420	687	330	9	
State	1	O 11-21-36	21	630				
Sevillo Oil Co.	2	L 30-20-37	12	360	880	554	15	Pump
Berryman	1	I 35-20-36	25	750	47880	7197	4	
Ida White A	1	I 35-20-36	25	750	13588	7745	104	

COMPACT LEASE	WELL	UNIT	S.T.R.	AUG. NO.	OPERATORS REPORTED DATE	WOMENT-CONV.		PLANT		MO. NO.	DAILY DATA				REMARKS
						GAS PLANT	PLANT	OF CRT. G.C.H.	OF CRT. G.C.H.		1,000	1,000	1,000	1,000	
CONCHO OIL & GFC. CO.															
State #	1	L	21-19-37	840	2175		2159		168	F					
LASS, J.F.										F					
Williams	1	M	36-19-37	847	1053		1251			F					
ORIO OIL CO.										F					
McGraw	3	H	27-19-37	859	2422		2820			F					
GO FISO OIL CO.										F					
Tate	1	L	3-20-37	325						F					
PHILLIPS PET. CO.										F					
Culpe	1	D	10-19-37	717	6012	8032	8985	11302		F					26*
Land Office	1	E	10-19-37	1692	418	434	2535	268		F					
Paley	1	B	16-20-37	1496	356					F					
REDFORD OIL CO.										F					
Burgess	1	M	28-19-37	583	356		610		104	F					
ARLEY OIL CO.										F					
Crittenden	1	H	30-19-37	821	970	10038	1122	11795		F					
SPRING OIL CO.										F					
Geever A	1	B	4-20-37	1364	1756	819	1165	703		F					
State #	1	P	3-20-37	1014	1398	1023	1074	1068	65	F					
State #	1	I	10-19-37	796	1042	1363	1401	1968		F					
State #	1	I	16-20-37	1179	1709	625	1450	590		F					8
State #	1	I	2-20-37	961	3162	3662	3901		40	F					
ARLEY OIL CO.										F					
Christman	1	M	25-19-36	212	1264	5590	5964	28254		F					
SOUTHERN PET. MARKING CO.										F					
Kilgus	1	P	20-19-37	1582	1582		1506			F					
Kilgus										F					
STANFORD OIL & GAS CO.										F					
Quilley A	1	M	8-20-37	961	104	116			121	F					
SUN OIL CO.										F					6*
State #	1	M	24-19-36	121	5642		65590			F					
BARRETT OIL CO.										F					
State #	5	I	11-20-36	934	413	413	442			F					
THE TEXAS CO.										F					
Oil & Gas, Inc.	1	C	10-17-37	1036	2139	2623	239	2322	70	F					
Cook	1	A	3-10-37	832	379	526	655	966		F					
Cochran	1	A	10-19-37	993	212		2145			F					
Schnee B	1	C	10-19-37	1167	1072					F					









At a special meeting of the Sub-Advisory and Engineering Advisory Committees of the Lea County Operators Committee held at Midland, Texas on November 26, certain committees were appointed to study various recommendations made at this meeting. One of these committees, composed of W.K. Davis of the El Paso Natural Gas Company, F.W. Croshaw of the Texas Company, and J.W. Keeler of the Continental Oil Company, was instructed to study "the adoption of a permanent gas-oil ratio order with changes after study of suggested limiting values for various fields." The attached report consists of the recommendations made by this committee.

It was thought advisable to explain the methods used in arriving at the recommended maximum permissible gas-oil ratios for the various Lea County fields. In the case of the more prolific fields such as Hobbs, Monument, and Scurie the maximum ratios were established at a level whereby each field would have approximately the same percentage of high ratio wells. From ten to fifteen percent of the total number of wells in each of these fields will be above the recommended maximum permissible ratios.

In recommending maximum ratios for the sand fields it was found necessary to use a different method. In these fields a large percentage of wells with high ratios would not be penalized because of the small amount of oil they produce. Consequently the percentage of wells had to be considered that would actually be penalized rather than the number of high ratio wells. This system resulted in the setting of maximum permissible ratios in the sand fields that are below the average field ratio while in the better areas the maximum permissible ratios are higher than the field average. However, the percentage of penalized wells in all fields will be fairly constant.

In regard to these sand areas it might be noted that the maximum ratios as recommended by this committee are made with the line that the present system of applying penalties on a gas withdrawal basis will be continued. The recommended ratios could not be used if this system of computing penalties is changed.

In the case of the Cooper and Jal fields the committee decided that they were unable to set a maximum gas-oil ratio that would be fairly adaptable to all wells in the field. As a result of this decision no maximum ratios were recommended.

The Cooper and Jal fields differ from most other fields in the county in that large quantities of water are produced from most of the wells. There are several wells in these fields that have gas-oil ratios from 20,000 to 50,000 and yet have gas-fluid ratios of less than 1,000. If such wells were penalized it would be necessary to shut them in as they could not be produced at a reduced rate.

In order to avoid this we would be forced to recommend a maximum gas-oil ratio of 50,000 or change to a gas-fluid ratio basis.

Both Jal and Cooper are old fields rapidly approaching depletion. Due to the native water drive the conservation of gas energy would not be as important as in other fields. The present problem is to enable continued production from these wells as long as it is profitable. If a low maximum gas-oil ratio is applied to these fields a large percentage of wells will be shut in and most of the remaining recoverable oil will never be produced. Because of these conditions the committee recommends that no maximum gas-oil ratios be applied to these two fields.

The recommended changes in maximum permissible ratios for the various Lea County fields could be summed up as follows:

1. Two fields, Rhodes and Longlie had their maximum ratios increased.
2. Seven fields, Arrowhead, Eaves, Runice, Hobbs, Monument, Fairness and Skelly had their maximum ratios reduced.
3. Two fields, Jal and Cooper had no limit set for maximum gas-oil ratios.

J.P. Keeler
W.K. Davis
F.W. Croshaw

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19. In all cases where gas is sold, the gas volumes reported on Hooker Form 3115 shall be based upon the quantities by individual customers of gas. In cases where the gas is sold by individual volumes from a unit, the gas volume shall be the unit volume and not the Form 3115 gas volume for the basis for taxation. These unit volumes reported on Form 3115 will be based upon a conversion factor of the Canadian and American gas volumes which shall be based on these Official letters rather than on the tables reported on Form 3115.

Fields in Lea County New Mexico which are, within this report, considered to have made the nearest approach of any to depletion acc:

1. Sand Pay types
 - a. Hardy
 - b. Mattix
 - c. Penrose
 - d. Skelly
2. Dolomitic limestone pay type
 - a. Cooper
 - b. Jal
 - c. Lynn

Monthly production decline curves which show the calculated average field decline for the Hardy Field (Graph A-1); the Mattix Field (Graph A-2); the Penno Field (Graph A-3) and the Skelly Field (Graph A-4) reflect the future recoverable oil (depleted to a monthly rate of 90 barrels) from these fields. The figures obtained are as follows:

<u>FIELD</u>	<u>FUTURE RECOVERABLE OIL PER ACRE (BBL)</u>	<u>FUTURE RECOVERABLE OIL PER 40 ACRES</u>
Hardy	163	6520 bbls.
Mattix	216	8640
Penrose	158	6320
Skelly	346	13840

Average per acre recovery for each of the above listed fields, and its age as of July 1, 1942 is as follows:

FIELD	PER ACRE RECOVERY TO 7-1-42	AGE OF FIELD AS OF 7-1-42
Hardy	882 bbls.	6 1/2 yrs.
Mattix	1055 "	7 "
Petrouse	974 "	6 1/2 "
Skelly	883 "	6 1/2 "

The calculated ultimate recovery from these fields, based upon the foregoing tabulations is as follows:

<u>FIELD</u>	<u>TOTAL PER ACRE RECOVERED</u>
Hardy	1045 bbls.
Mattix	1271 "
Penrose	1132 "
Skelly	1229 "

Although reservoir pressure data on the above listed fields is not as complete as can be desired, that which is available shows an average decline of 900 pounds to data with an average reservoir pressure of 400 pounds remaining.

Reservoir conditions within the Mattix Field are believed to be representative of those in the other three sand fields being considered. Therefore, a condition within the field can be accepted for the others.

Calculations show that within the Mattix Field 83 percent of ultimate oil recovery has been obtained with 68 percent of the effective reservoir pressure drop.

Production - Gas-oil ratio curves of the Hardy Field (Graph C-1), the Mattix Field (Graph C-2), the Penrose Field (Graph C-3) and the Skelly Field (Graph C-4), when extrapolated to the gas-oil ratio of a defined flowser trend in the total volume of gas being produced although gas-oil ratios are increasing. Such condition suggests a much more rapid depletion of oil than gas and when considered in light of the fact that, as stated above, 83 percent of the ultimate oil recovery has been made with 68 percent of the effective reservoir pressure, it leads to the question as to whether or not the rate of gas production and corresponding reservoir pressure drop will noticeably affect ultimate recovery of oil.

The ability of each field to produce is reflected graphically by allowable development curves on the Harry Field (Graph B-1), Matix Field (Graph B-2), Peconas Field (Graph B-3) and Shelly Field (Graph B-4). These curves show the continuous decline of the daily top allowable per well the average daily allowable per marginal well and the rapidly approaching marginal condition of all the sand fields.

A tabulation is presented herewith to show the relationship of water to total fluid produced to date in each of the sand fields.

JULY 1, 1942				
	TOTAL OIL	TOTAL WATER	TOTAL FLUID	% OF WATER TO TOTAL FLUID
Harry	4,222,320	24,105	4,246,425	0.7
Matix	6,581,969	127,647	6,709,616	1.9
Peconas	7,322,293	73,507	7,395,800	0.99
Shelly	2,995,123	43,104	3,038,227	1.53
			Ave.	1.27

Estimated average field reservoir pressure drop = 900 pounds

The relationship of water produced to total fluid together with consideration of the reservoir pressure drop justifies the opinion that the sand fields are dominantly volumetric drive reservoirs.

An exact count of the number of sand field wells which have been shot is not readily available. However, it is believed that 75 percent of total completions is a conservative estimate.

In as much as calculations have shown that 17 percent of the future recoverable oil can be produced by 32 percent of the effective remaining reservoir energy, it is apparent that a surplus of flooding energy exists. However, it is also apparent that the future recoverable oil is so small that the expenditure necessary for remedial work in pay sections that have been shot is not economically justified.

If, as stated above, the relationship of water produced to total fluid together with consideration of reservoir pressure drop can be used as a means of identifying the type of reservoir drive within a field it is then evident, as shown by the following tabulation, that the Cooper, Jai and Lynn dolomitic-limestone fields are dominantly hydrostatic drive reservoirs.

SEPTEMBER 1, 1942				
	TOTAL OIL	TOTAL WATER	TOTAL FLUID	% WATER TO TOTAL FLUID
Cooper	13,493,313	152,425,722	165,919,035	89.48
Jai	4,109,609	34,487,548	38,597,157	89.16
Lynn	1,542,440	3,134,240	4,676,680	82.14
			Ave.	87.22

Estimated average field reservoir pressure drop = 150 pounds

Production-development curves on the Cooper Field (Graph D-1) the Lynn Field (Graph D-2) and the Jai Field (Graph D-3) show the rapid rate of increase of water during the early lives of the dolomitic-limestone fields. Such an increase possibly reflects the inability of operators to segregate, by manual work, water from the oil.

A tabulation is herewith presented to show water and oil production per well per year in the three dolomitic-limestone fields.

HERE

PAGES 1-6 Report of Committee Number One: Adoption of a permanent gas-oil ratio order with changes after study of suggested limiting ratios for various fields.

PAGES 7-12 Report of Committee Number Two: A presentation of data relative remedial work in fields nearing depletion in Lea County, New Mexico (Graphs opposite page 8)

PAGES 13-58 Report of Committee Number Three: Studying and proposing a definite plan for transfer of allowable oil from high gas-oil units to units with low gas-oil ratios on the same basic lease.

Mr. A.M. McCord
Chairman Lea County Operators' Committee
Standing Oil & Gas Co.
P.O. North, Texas

Dear Sirs:

Submitted herewith is a compilation of reports by the committees listed below which were appointed at a meeting of the Subadvisory Executive Committee and the Engineering Advisory Committee at Midland, November 20.

Committee No. 1: Ken Davis - El Paso Natural Gas Co.
P.D. Grooman - The Texas Co.
Ed Aseler - Continental Oil Co.

To study a permanent gas-oil ratio order and give suggested limiting gas-oil ratios for the various fields of Lea County.

Committee No. 2: C.F. Miller - Lea County Operators' Committee
E.D. Mitchell - Gulf Oil Corp.
G.M. Gray - Apollo Oil Co.

Which was appointed to prepare material supporting the contention that no beneficial action is practicable in the older fields of Lea County which are nearing depletion.

Committee No. 3: Don Topper - Amerasia Pet. Corp.
L.L. Gray - Gulf Oil Corp.
Representative - Phillips Pet. Co.
S.V. McCallum - Continental Oil Co.
R.L. Newey - Humble Oil & Ref. Co.

Which, after study, was to submit a definite plan indicating the effect of using a transfer of allowable plan in Monument and Sandee fields.

The various reports present considerable detailed information. Of especial interest are the following:

A suggested gas-oil ratio order is presented which recommends revised maximum limiting ratios for the fields of Lea County, the principal changes from present values being several reductions. No provision has been made in the suggested order for the granting of exceptions to it.

Considerable pertinent data is presented supporting the contention that certain fields of Lea County nearing depletion cannot be materially or economically benefited by remedial work or the imposition of drastic gas-oil ratios, limitations which would result in greatly curtailed production.

The heading of this report is in error in that it reads "fields having depletion" and should read "fields nearing depletion".

The report indicates that 12,738,000 cubic feet per day would be saved in Monument and Sandee alone if exemptions of the present gas-oil ratio order in those fields were cancelled. This figure cannot be taken as absolutely accurate but is a general approximation.

The report also analyzes the effect of a possible "transfer of allowable plan" covering Monument and Sandee, whereby the allowances from high ratio wells would be transferred to lower ratio wells on units not exceeding 320 acres in size, and under

the same basic lease. In the plan as worked out, the intention is to transfer the total unpermitted allowable rather than any percentage of it. Under these conditions, it is estimated that there would be a saving at Monument of 9,817,000 cubic feet per day and at Sande of 11,369,322 cubic feet per day.

Maps have been prepared graphically giving information concerning the distribution of water wells, marginal wells, one and two unit leases and the location of the high gas-oil ratio wells. Because of the nature of the exhibits, they cannot be readily duplicated but will be made available at any of the operators' meetings and hearings which may be held.

Engineering studies are going forward on two "transfer of allowable" experimental projects, one each at Monument and Sande, and data will be available before the time of the proposed hearing on both of these.

Glenn Staley,
Chairman

Mr. A.J. McDermis,
Chairman, Lea County Operators Committee,
Hamling Oil & Gas Co.,
P.O. Box 100,
Fort Worth, Texas

Dear Sir:

Submitted herewith is a compilation of reports by the Committees listed below which were appointed at a meeting of the sub-Advisory Committee on the Engineering Advisory Committee at Midland November 24, 1942; also reports by the Committee appointed on January 28, 1943 by the Lea County Operators Committee to work out, from an engineering standpoint, reasons for all limiting gas-oil ratios in excess of 2000 cu/ft. per barrel for various fields of Lea County.

Committee No. 1: Ken Davis - El Paso Natural Gas Co.
Ed. Greenman, Jr. - The Texas Co.
J.D. Leeler - Continental Oil Co.

Assignment: To study a permanent gas-oil ratio order and give suggested limiting gas-oil ratios for the various fields of Lea County.

Committee No. 2: C.F. Miller - Lea County Operators Committee
F.D. Mitchell - Gulf Oil Corp.
G.H. Gray - Mayfield Oil Co.

Assignment: To prepare material supporting the contention that no beneficial action (from remedial work) is practicable in the older fields of Lea County, which are nearing depletion.

Committee No. 3: Don Dwyer - Amerasia Petroleum Corp.
L.H. Gray - Gulf Oil Corp.
H.L. O'Neil - Phillips Pet. Co.
G.V. McCallum - Continental Oil Co.
H.B. Dewey - Humble Oil & Ref. Co.

Assignment: To submit a definite plan indicating the effect of using a transfer of allowable plan in Monument and Sande fields.

Committee No. 1 & 2 combined: Kenneth Davis - El Paso Natural Gas Co.
George Gray - Mayfield Oil Co.
F.D. Mitchell - Gulf Oil Corp.
F.D. Greenman, Jr. - The Texas Co.
C.F. Miller - Lea County Operators Committee

Assignment: To work out, from an engineering standpoint, reasons for all limiting gas-oil ratios in excess of 2000 cu/ft. per barrel of oil for the various fields of Lea County not covered by committees previously named.

The various reports present considerable detailed information. Of especial interest are the following:

A suggested gas-oil ratio order is presented by Committee No. 1 which recommends revised limiting ratios for the fields of Lea County, the principal changes from present values being several reductions. No provision has been made in the suggested order for the granting of exceptions to it.

Considerable pertinent data is presented by Committee No. 2 supporting the contention that certain fields of Lea County nearing depletion cannot be materially or economically benefited by remedial work or the imposition of drastic gas-oil ratios, limitations which would result in greatly curtailed production.

The report of Committee No. 3 indicates that 12,738,000 cubic feet per day would be saved in Monument and Dunice alone if exceptions of the present gas-oil ratio order in those fields were cancelled. This figure cannot be taken as absolutely accurate but is a general approximation.

The report also analyzes the effect of a possible "transfer of allowable plan" covering Monument and Dunice, whereby the allowables from high ratio wells would be transferred to lower ratio wells on units not exceeding 300 acres in size, and under the same basic lease. In the plan as worked out, the intention is to transfer the total unpermitted allowable rather than any percentage of it. Under these conditions, it is estimated that there would be a saving at Monument of 5,517,000 cubic feet per day and at Dunice of 11,749,322 cubic feet per day.

Maps have been prepared graphically giving information concerning the distribution of water wells, marginal wells, one and two unit leases and the location of the high gas-oil ratio wells. Because of the nature of the exhibits, they cannot be readily duplicated but will be made available at any of the operators' meetings and hearings which may be held.

Engineering studies are going forward on three "transfer of allowable" experimental projects, one at Monument and two at Dunice, and data will be available before the time of the proposed hearing on both of these.

Olson Staley,
Chairman

MINUTES OF SUB-ADVISORY & ENGINEERING ADVISORY COMMITTEES

Midland, Texas
November 24-1942

A special meeting of the Sub-Advisory and Engineering Advisory Committees of the Lee County Operators Committee was held in Midland, Texas, November 24 at the Boharbauser Hotel at 10 A.M. The following men were present:

Edgar Kraus	Atlantic Ref. Co.	Carlshed, N.M.
G.H. Card	Stearns Oil & Gas Co.	Fort Worth, Texas
G.H. Gray	Repollo Oil Co.	Midland, Texas
H.C. Evers	Tidewater Assoc. Oil Co.	"
K.S. Larch	Repollo Oil Co.	"
D.A. Jordan	Atlantic Ref. Co.	"
J.H. Moore	Shell Oil Co., Inc.	Hobbs, N.M.
J.R. House	Humble Oil & Ref. Co.	Midland, Texas
W.D. Mitchell	Gulf Oil Corp.	Hobbs, N.M.
W.C. Davis	El Paso Natural Gas Co.	Jal, N.M.
R.S. Dewey	Humble Oil & Ref. Co.	Midland, Texas
P.O. Cronson, Jr.	The Texas Co.	"
R.W. O'Neill	Phillips Pet. Co.	Odessa, Texas
H.L. Johnston	Continental Oil Co.	Fort Worth, Texas
H.J. Humler	Shell Oil Co., Inc.	Midland, Texas
J.M. Dunlavey	Skelly Oil Co.	Hobbs, N.M.
James Fitzcerald, Jr.	Skelly Oil Co.	Midland, Texas
L.F. Shiplet	The Texas Co.	"
A.G. Willis	"	Fort Worth, Texas
Ed Warren	Carl B. King	Midland, Texas
H.W. Deaux	Amerada Pet. Corp.	"

Mr. E.A. Wahlstrom of the Goldsmith Pool Engineering Committee explained in detail the "Molokini Plan" of transferring allowables from high gas-oil ratio wells to low ratio wells. Mr. Wahlstrom pointed out that the plan has worked very successfully; much more so than a lot of repair jobs that were tried. This plan was discussed with the idea of trying it in some of the fields south of Hobbs in Lee County and Monument being especially considered. A committee of five men was appointed to study the problem of the high gas-oil ratio situation in Lee County fields, and if possible, present suggestions as to how the situation might be remedied. This committee was asked to report back to the meeting later in the afternoon; members of this committee are:

R.S. Dewey	Edgar Kraus	W.D. Mitchell
J.H. Moore	A.G. Willis	"

The report of the committee was as follows:

1. Recommend adoption of permanent gas-oil ratio order with changes, after study, of suggested limiting ratios for various fields.
 - a. Such order to provide for no exceptions.
2. Prepare material for presentation supporting contention that no beneficial action is practicable in older fields nearing depletion.
3. Proposal A. Ask for permission to use transfer of allowable plan in one field in Lee County on experimental basis for one year. After brief study, a specific plan be presented indicating desirable transfers and conditions under which experiment should be made.

Proposal B. By using a stringent gas-oil ratio penalty on true displacement basis with no exceptions, no further transfer of allowables would be needed.

4. All studies mentioned above be expedited with a view of having a hearing before January 1, 1943.

Each recommendation was discussed separately and voted upon in that same manner. Results of such vote are as follows:

No. 1. Recommendation carried.

No. 2. Recommendation carried.

No. 3. Proposal A. Recommendation carried 6 vote yes; 1 no. Vote held on to whether to use one field only (Gulch) as experimental field or Gulch and Mesquite. Vote carried 5 to 2 in favor of Gulch and Mesquite.

A committee consisting of the following was appointed to study Recommendation No. 1:

Mr. Davis - El Paso Natural Gas Co.
Mr. Brown - The Texas Co.
Mr. Smith - Continental Oil Co.

A committee consisting of the following was appointed to study Recommendation No. 2:

C.F. Miller - Lea County Operators Committee
W.D. Mitchell - Gulf Oil Corp.
C.W. Gray - Republic Oil Co.

A committee was then appointed for studying and proposing the experimental work to be done in the Gulch and Mesquite fields with regard to transfer of allowable from high gas-oil ratio wells to low gas-oil ratio wells. Members of this committee are as follows:

Don Tooper - Amerasia Pet. Corp.
L.H. Ray - Gulf Oil Corp.
Representative - Phillips Pet. Co.
S.V. McGowan - Continental Oil Co.
H.S. Deacy - Humble Oil & Refg. Co.

It was decided that these committees would meet in Hobbs in the near future, after which their report would be sent to Mr. J.H. McCorley, Chairman of the Executive Committee of the Lea County operators, who in turn would submit the information to the members of the Executive Committee. This Committee will then petition the Oil Conservation Commission for a hearing on the matter. It has been suggested that this hearing be held in Santa Fe on December 17, if possible. An operators meeting will be held December 16 in Santa Fe.

The question was brought up of using gasoline plant figures on Operators Monthly Report of Operations (M.R.) instead of company figures. Mr. Willing of The Texas Company made a motion that the group present recommend that the operators be notified of the conditions and ask for their cooperation in making their gas figures coincide with figures they receive from the gasoline plant. That they adopt that method of reporting gas-oil ratios on form O-10. Motion was seconded by Mr. Moore and carried.

H.J. Kessler
SUB-ADVISORY COMMITTEE
Glenn Staley
ENGINEERING ADVISORY BOARD

The New Mexico Federal Unit (a name used for convenience to describe an operation conducted by Continental Oil Company for itself and the other joint owners, Standard Oil and Gas Company, Standard Oil Company of Texas and Atlantic Refining Company, of certain Federal leases in Lea County) supervises the operation of 223 wells and considerable undeveloped acreage. The U. S. F. U. recommends the enactment and enforcement of stringent rules and regulations for the conservation of oil and gas in New Mexico and suggests the following procedures:

- The establishment of a reasonable gas oil ratio limit for each pool.
- The penalizing of the allowable of each well exceeding that limit so that no well be permitted to produce more gas than an amount equal to the normal oil allowable multiplied by such gas oil ratio limit.
- That no exceptions from this procedure be granted, regardless of supposedly peculiar conditions affecting any particular well or operation.
- That accurate gas oil ratio measurements be made at periodic intervals and that sworn reports be required from the operators through the U. S. mails.
- That state authorities test a sufficient number of wells to insure reasonably accurate reports and enable them to detect inequities.
- That consideration be given to a production unit plan in those cases where additional conservation may be achieved by the use of such a plan, but that the tentative or final application of such plan be not permitted to alter the procedure here suggested or delay putting it into effect.

INDEX

- PAGE 1-4 Report of Committee Number One: Adoption of a permanent gas-oil ratio order with change after study of suggested limiting ratios for various fields.
- PAGE 7-12D Report of Committee Number Two and Report of Committees No. 1 & No. 2 Combined: A presentation of data relative remedial work in fields nearing depletion in Lea County, New Mexico (Gulch) opposite pages 8 and 12D.
- PAGE 13-58 Report of Committee Number Three: Studying and proposing a definite plan for transfer of allowable oil from high gas-oil units to units with low gas-oil ratios on the same basic lease.

TO ALL OPERATORS:

Attached to this report and made a part thereof will be found data in connection with the transfer of allowable from high gas-oil ratio wells to low gas-oil ratio wells on the same basic leases.

The data is necessarily incomplete, due to the lack of time allocated for the tests. It is felt, however, that the results herewith presented may be indicative of that which can be expected from more extensive tests.

Glenn Staley

The New Mexico Federal Unit (a name used for convenience to describe an operation conducted by Continental Oil Company for itself and the other joint owners, Standard Oil and Gas Company, Standard Oil Company of Texas and Atlantic Refining Company, of certain Federal leases in Lea County) supervises the operation of 223 wells and considerable undeveloped acreage. The U. S. F. U. recommends the enactment and enforcement of stringent rules and regulations for the conservation of oil and gas in New Mexico and suggests the following procedures:

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- That consideration be given to a production unit plan in those cases where additional conservation may be achieved by the use of such a plan, but that the tentative or final application of such plan be not permitted to alter the procedure here suggested or delay putting it into effect.

STANDARD (WORKING) UNIT.

Wells with producing ratios above 6000 cu ft/bbl.

LEASE	WELL	DATE	PROD. (CU FT)	PERM. (CU FT)	PERM. (CU FT)	PERM. (CU FT)
"	"	"	"	"	"	"
"	"	"	"	"	"	"
"	"	"	"	"	"	"
"	"	"	"	"	"	"

Proposed allowable transfer plan

Transfer Allow. From	Transfer Allow. To	Oil to Gas Conserved Day
Gulch #1	Gulch #2	215,288
Gulch #3	Gulch #4	175,000
Gulch #5	Gulch #6	170,856

LEASE	DAILY ALL. (CU FT)	DAILY ALL. (CU FT)	DAILY ALL. (CU FT)	DAILY ALL. (CU FT)	DAILY ALL. (CU FT)	DAILY ALL. (CU FT)
"	"	"	"	"	"	"
"	"	"	"	"	"	"
"	"	"	"	"	"	"
"	"	"	"	"	"	"

Total saving of gas/day by trans. 331,100 cu ft.

SUN OIL COMPANY

WARRANTY 10-52

LEASE	DAILY ALL. (CU FT)	DAILY ALL. (CU FT)	DAILY ALL. (CU FT)	DAILY ALL. (CU FT)	DAILY ALL. (CU FT)	DAILY ALL. (CU FT)
"	"	"	"	"	"	"
"	"	"	"	"	"	"
"	"	"	"	"	"	"
"	"	"	"	"	"	"

Total daily gas savings 111,400 cu ft.

10 bbl. per day transferred from #1 to #4

11 bbl. per day transferred from #1 to #3

Exhibit C

STANLEY OIL & GAS COMPANY
AMICK

DATE		TEST DATE	INNOVING
TIME	S.F.A.	1945/507	MS 816 AM 10
GILBERT A 2	"	25-25-30	1243
" " "	"	"	52
" " A 4	"	"	5208
" " "	"	"	1243
" " A 8	"	24-20-35	4779
" " A 10	"	"	1238
" " A 11	"	"	5468
" " A 12	"	"	2601
" " A 14	"	"	3321

LEASE	TEST DATE	PRODUCING	PERMITS ALL
WELL	RBL/DAV	GAS OIL RATIO	RBL/DAV BASED ON LATEST TEST
Shiloh A 7	24-10-86	19	2778
			7

Transfer allowable plan

Transfer allowable from	Transfer Allowable To	Cu/ft. gas Conserved/day
Shiloh A 7	Shiloh A 14	24,339

LEASE	WELL	S.T.R.	TEST RATE BBL/DAY	PRODUCING GAS OIL RATIO
Shirley	A 2	24	111	853
"	A 9	"	113	403
"	A 12	"	63	463

EXHIBIT "B"

1. Operation

The operator shall: Upon request of the Deputy of the Commission

- Equip each well to make conveniently a gas-oil ratio test;
- furnish the Deputy of the Commission a gas-oil ratio test; showing the type and dimensions of metering equipment used, wells for accurate gas measurement in accordance with rules contained herein; furnish sufficient and qualified lease labor to install and maintain all lease equipment in preparation for and during gas-oil ratio tests conducted in accordance with this order.

The Council shall: (a) Assemble the information supplied by the operators as recommended above, and arrange best schedules; (b) assign engineers to make tests, and act as official witnesses; (c) in the event of an emergency shall company engineers and field witnesses; (d) instruct all personnel in the proper operation of the equipment and procedure in conducting the tests; (e) calibrate all meters and equipment; (f) furnish, collect, record and file all gas measurement charts and records; (g) compute all gas-oil ratios.

The official witness shall take such action as may be necessary to accomplish the desired purpose.

(a) The flow period shall be 48 hours, except as hereinafter stated. The first 24 hours shall be the stabilization period and the last 24 hours shall be the flow period.

(5) Oil shall be gauged at the beginning and ending of each 24 hour period and gas shall be measured during the period wherein the well is tested. No change in the rate of flow shall be made during the last 16 hours of the 48 hour flow period and no steam shall

(c) Should an operator elect to flow a well at a rate less than the unadjusted current allowable then, and in that event, the rate of flow for proration purpose on said wells shall not exceed the rate at which the gas-oil ratio test was made.

(e) For gas lift or jetted wells the total volume of gas to be used in computing the operating gas/oil ratio is the total output volume minus the total input volume.

9. Identify the components

(a) All tanks shall be gauged and total volume of fluids determined according to accepted oil field practices.

(2) Fluid level in the separator must be maintained relatively constant so that the oil dump valve is operated at a constant

(d) If it is necessary to use a flowline for the transport of water the water shall be covered at all times by at

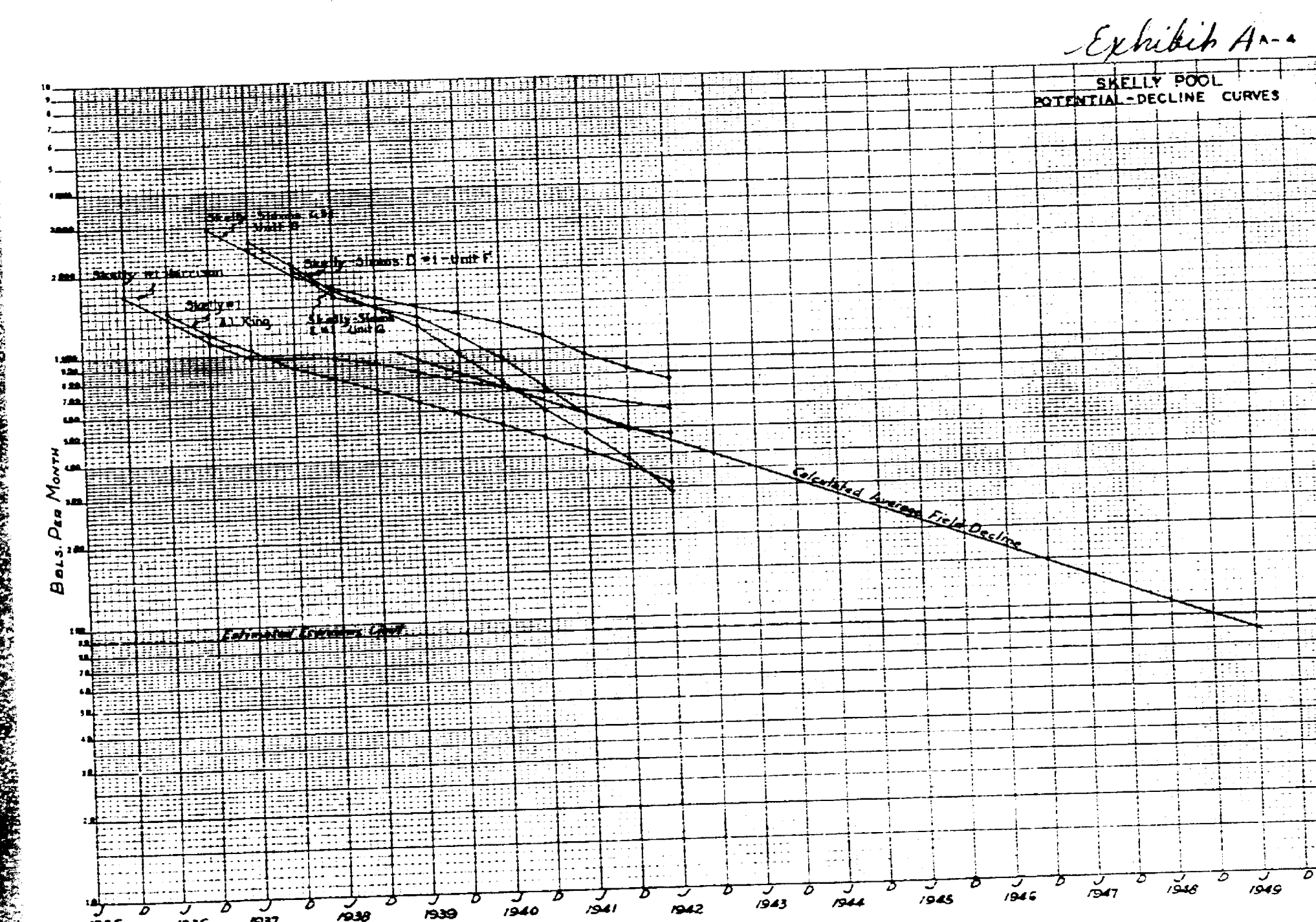
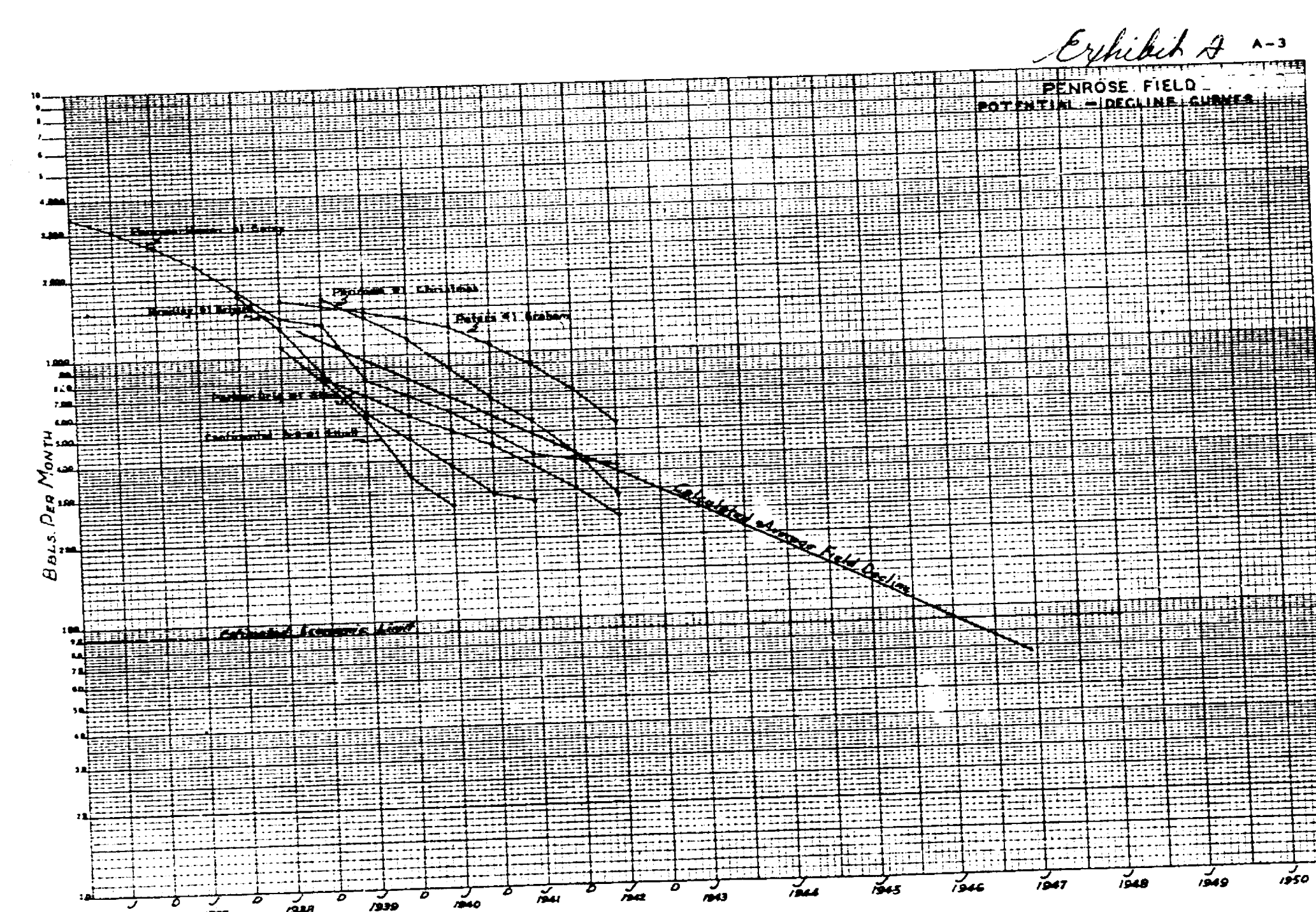
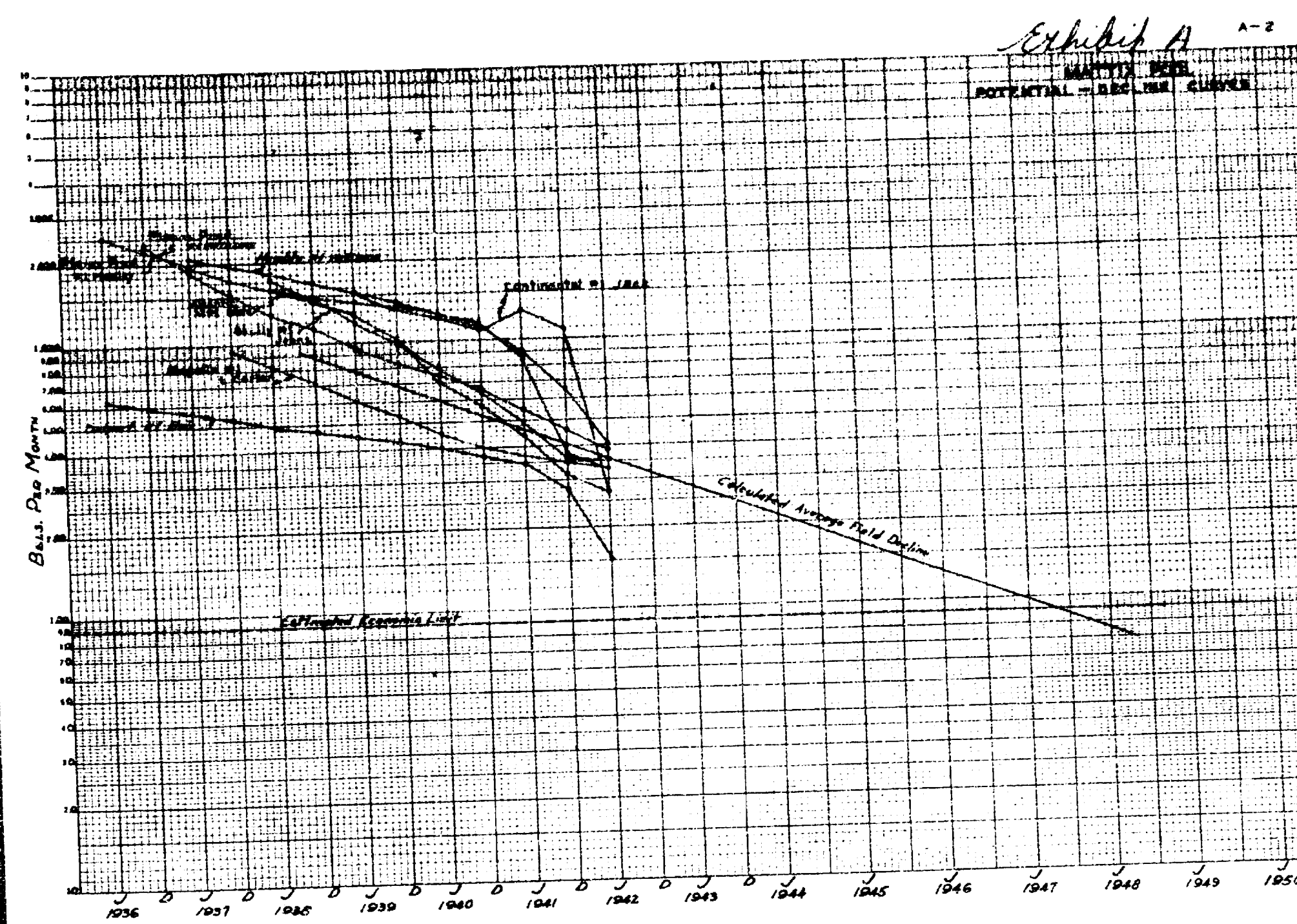
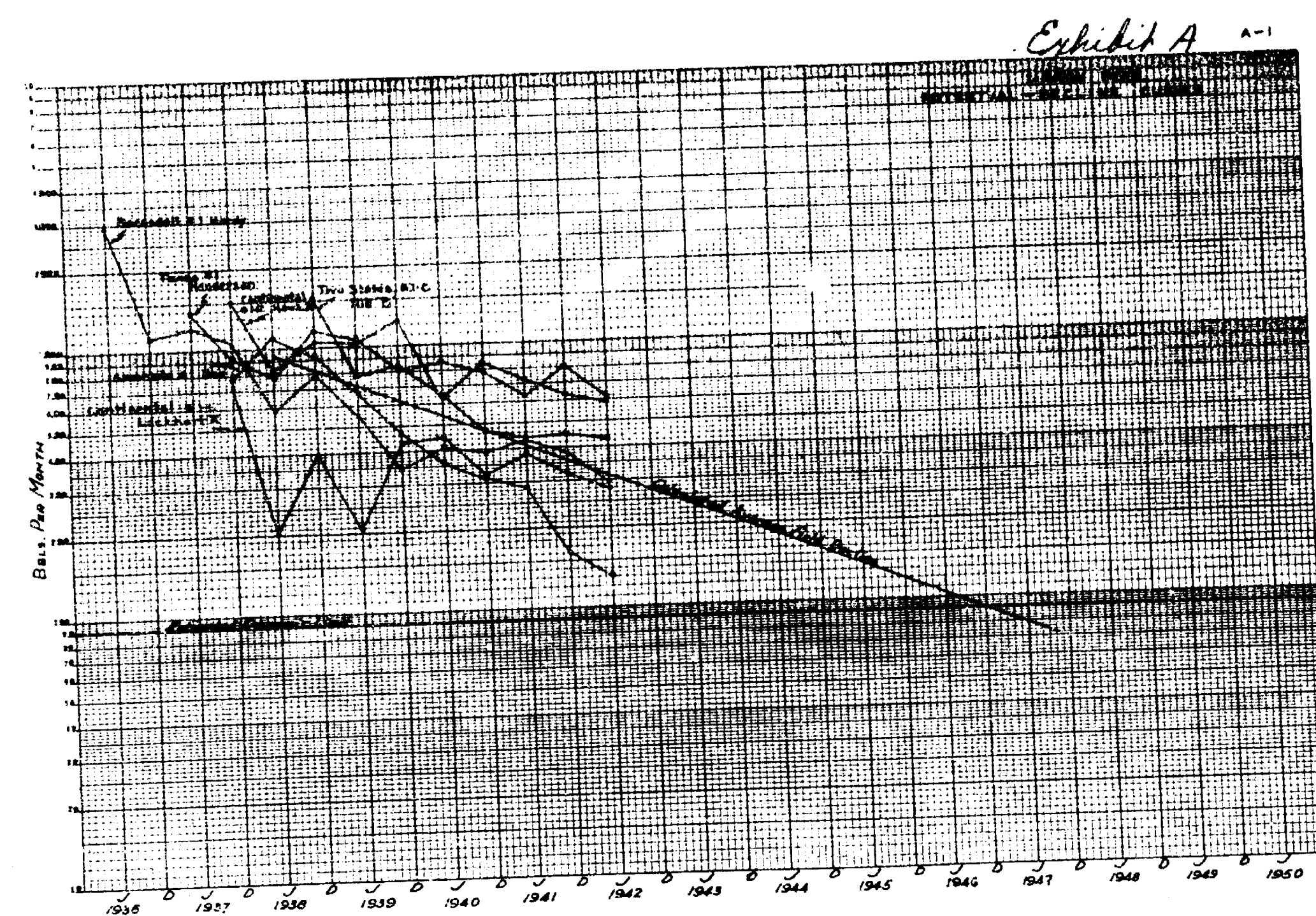
end of the test.

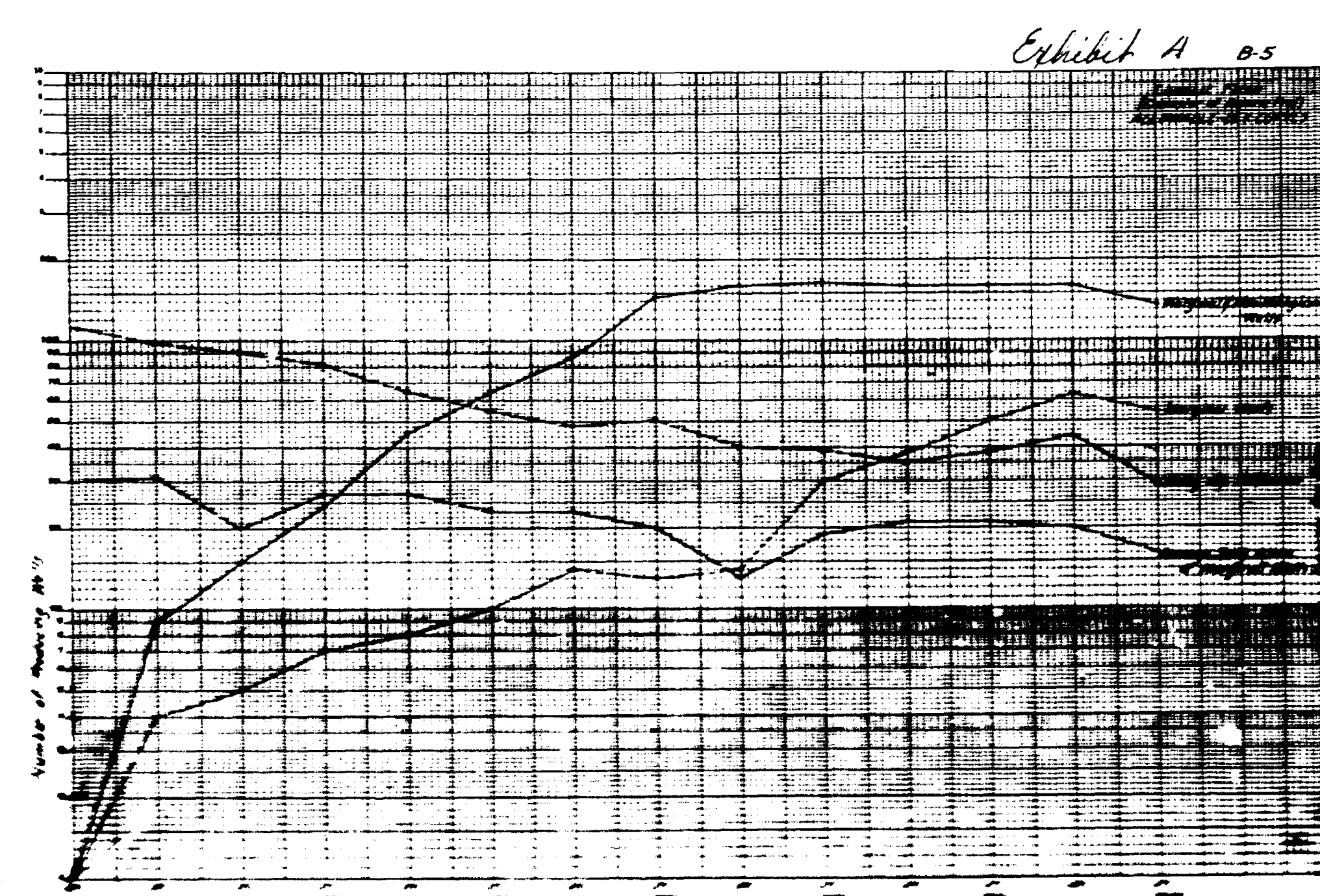
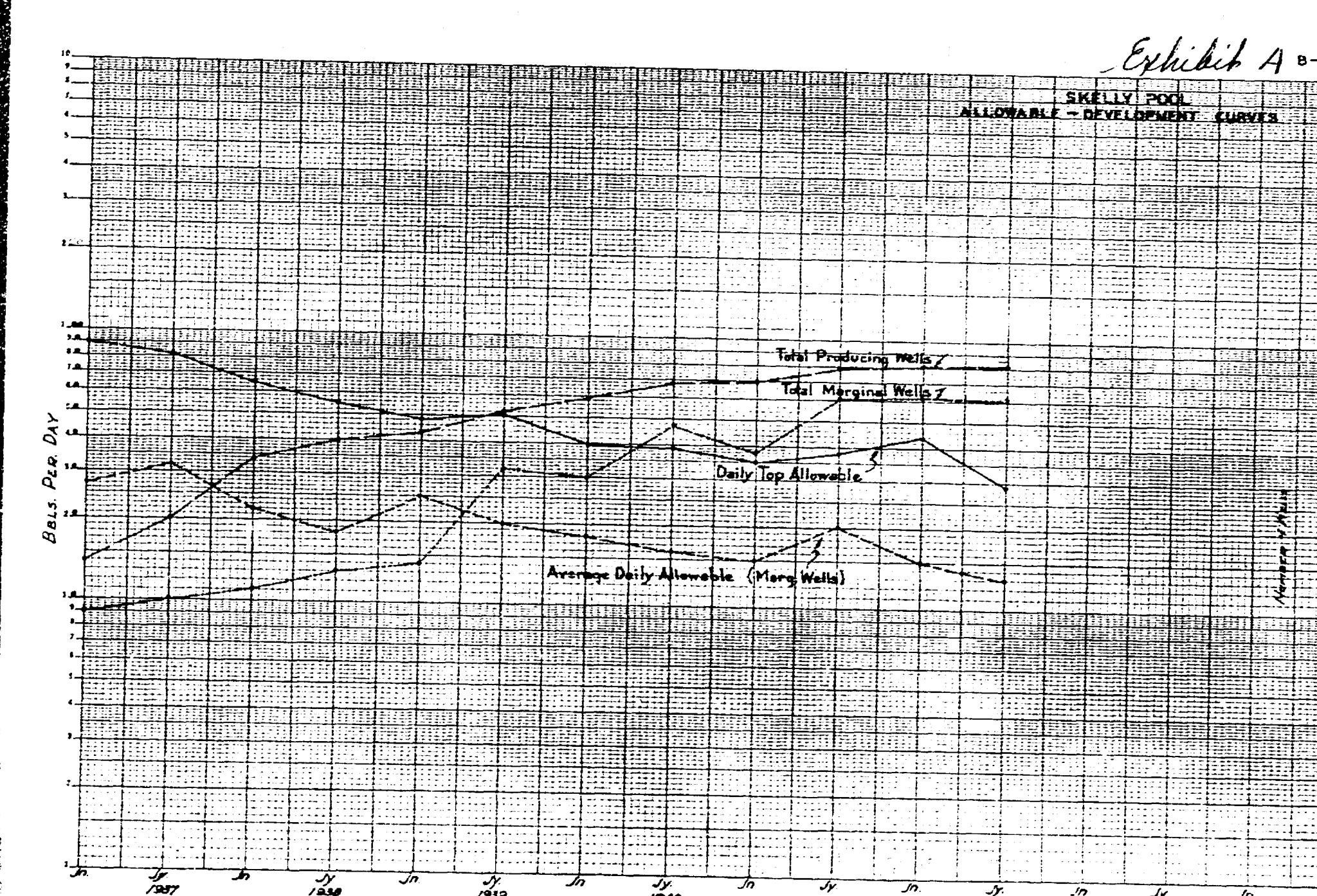
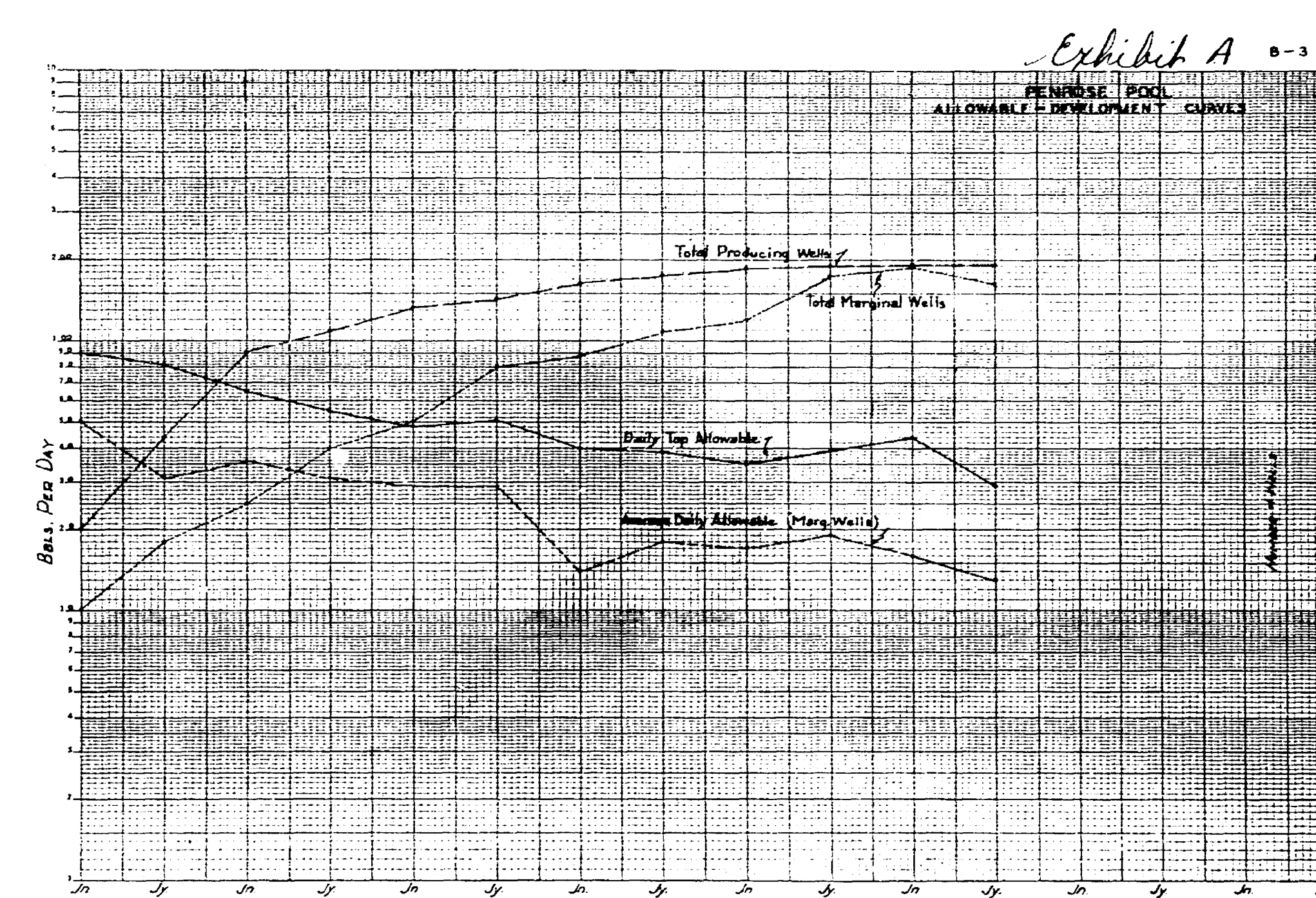
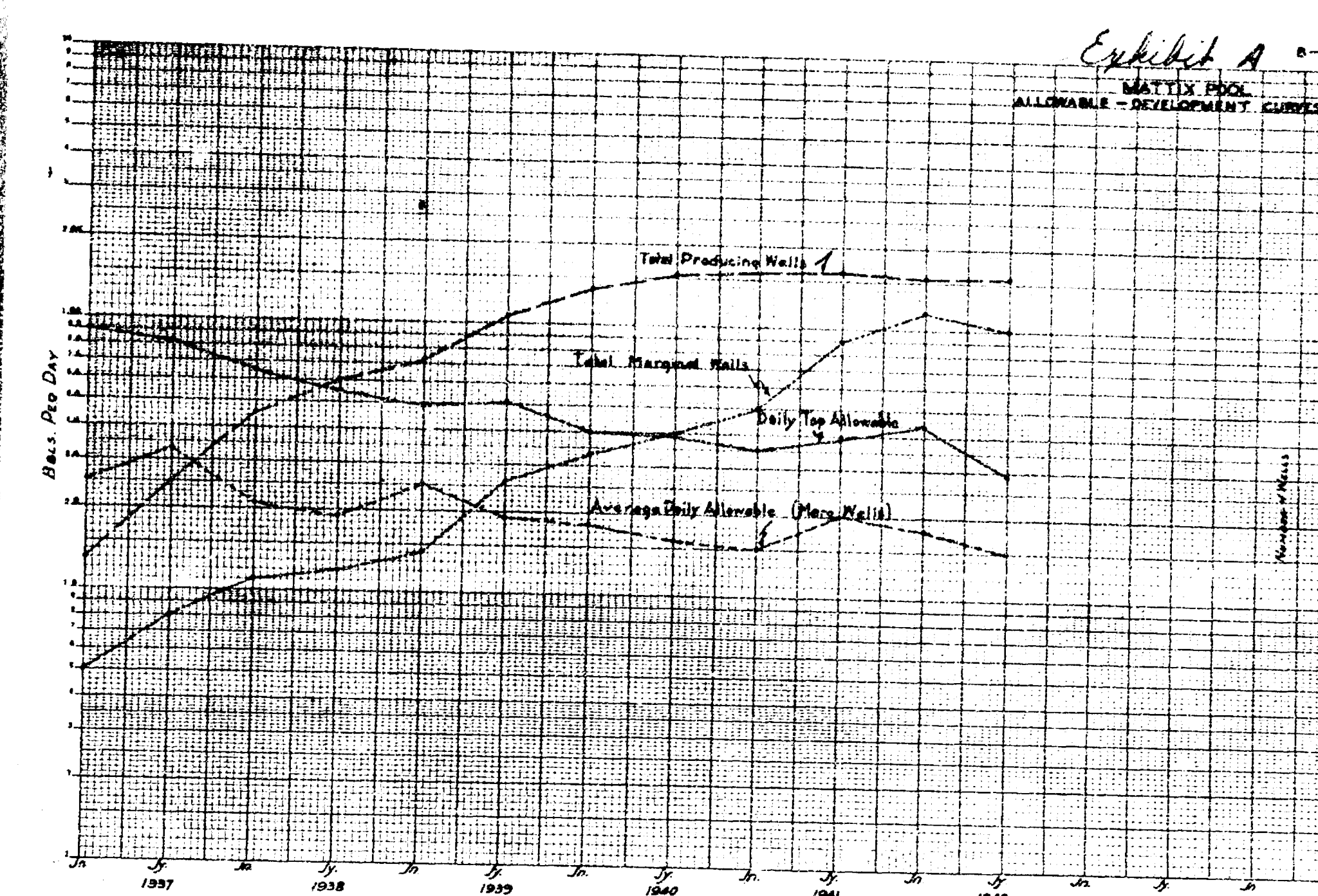
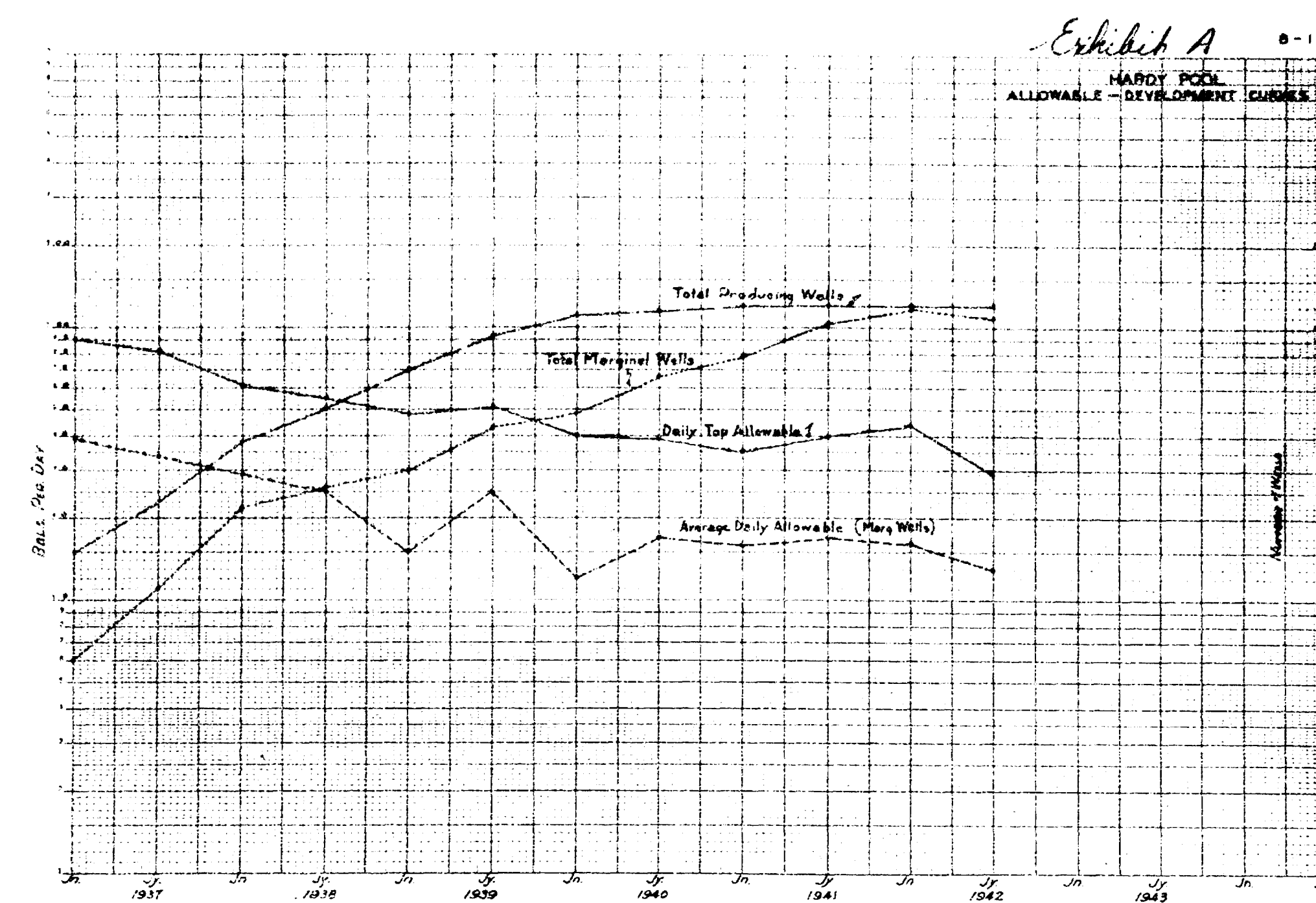
(a) A pressure gauge shall be installed on each separator and readings to be taken periodically. In the event the operator chooses to conduct the test on a separator pressure in stress of 10 pounds a recording pressure gauge shall be installed on the separator and the measured gas shall be increased by the measured or calculated volume going to the tanks. Calculated volume shall be based on the gas-solubility versus pressure curves for the field or area in which the well is located.

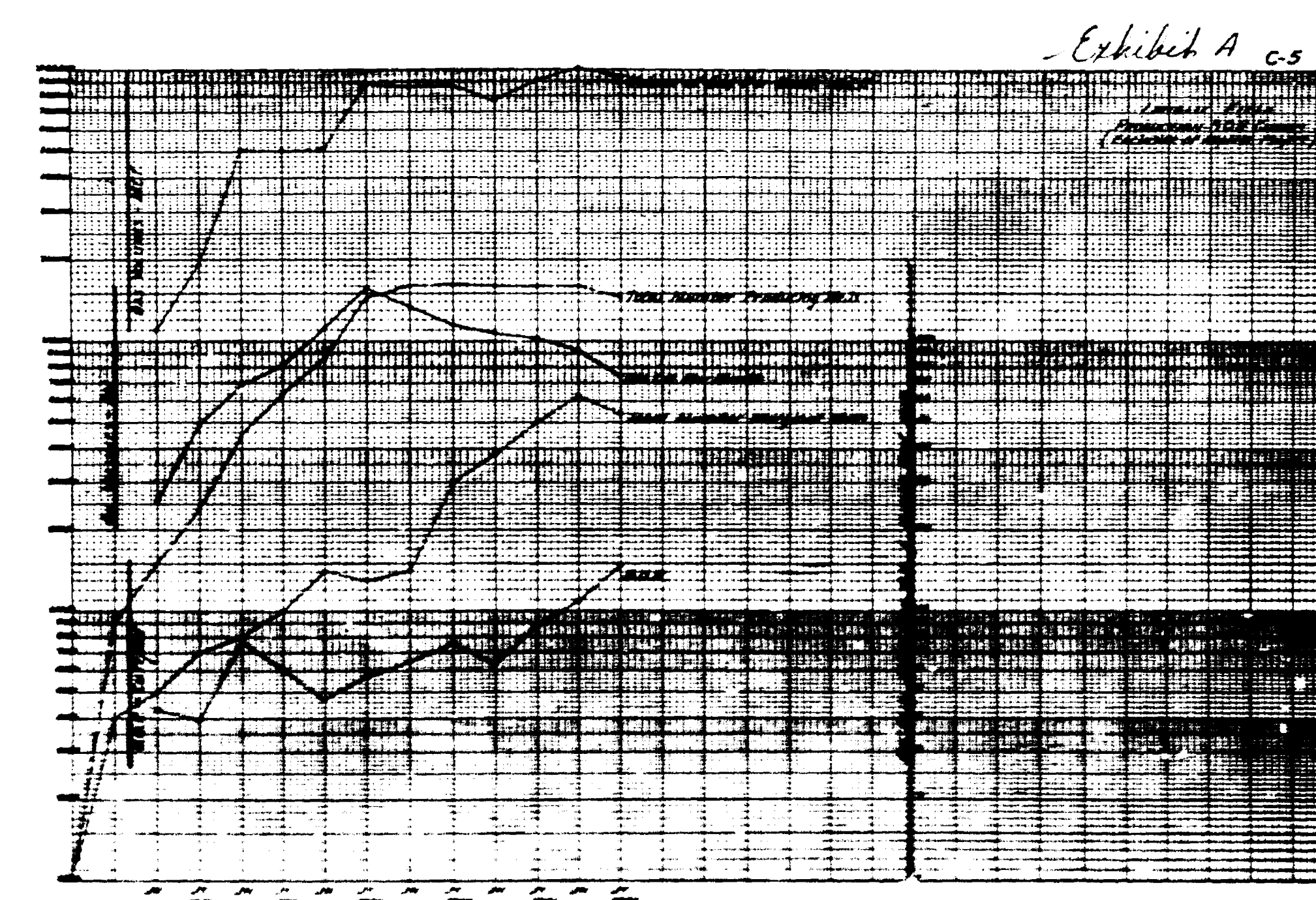
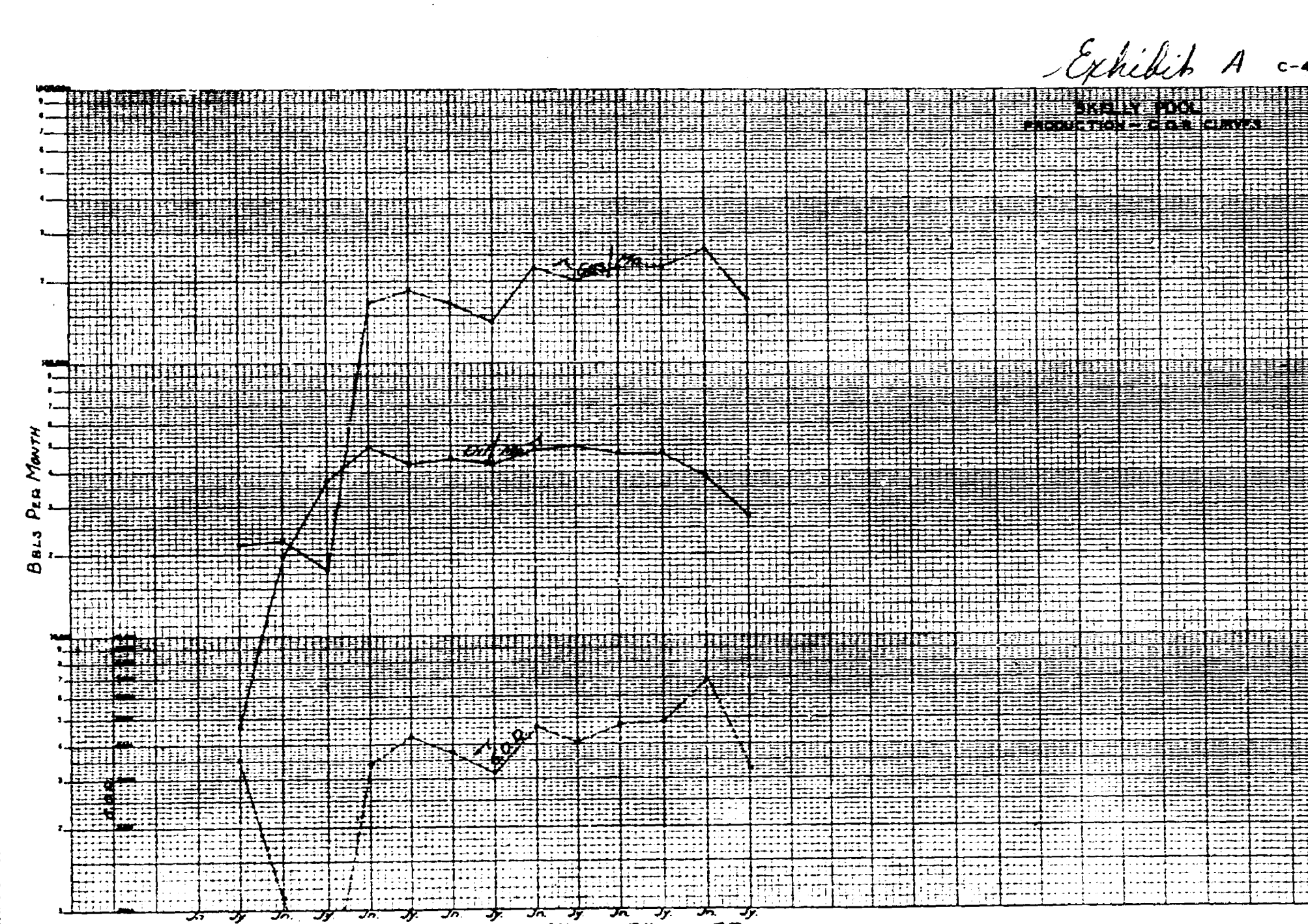
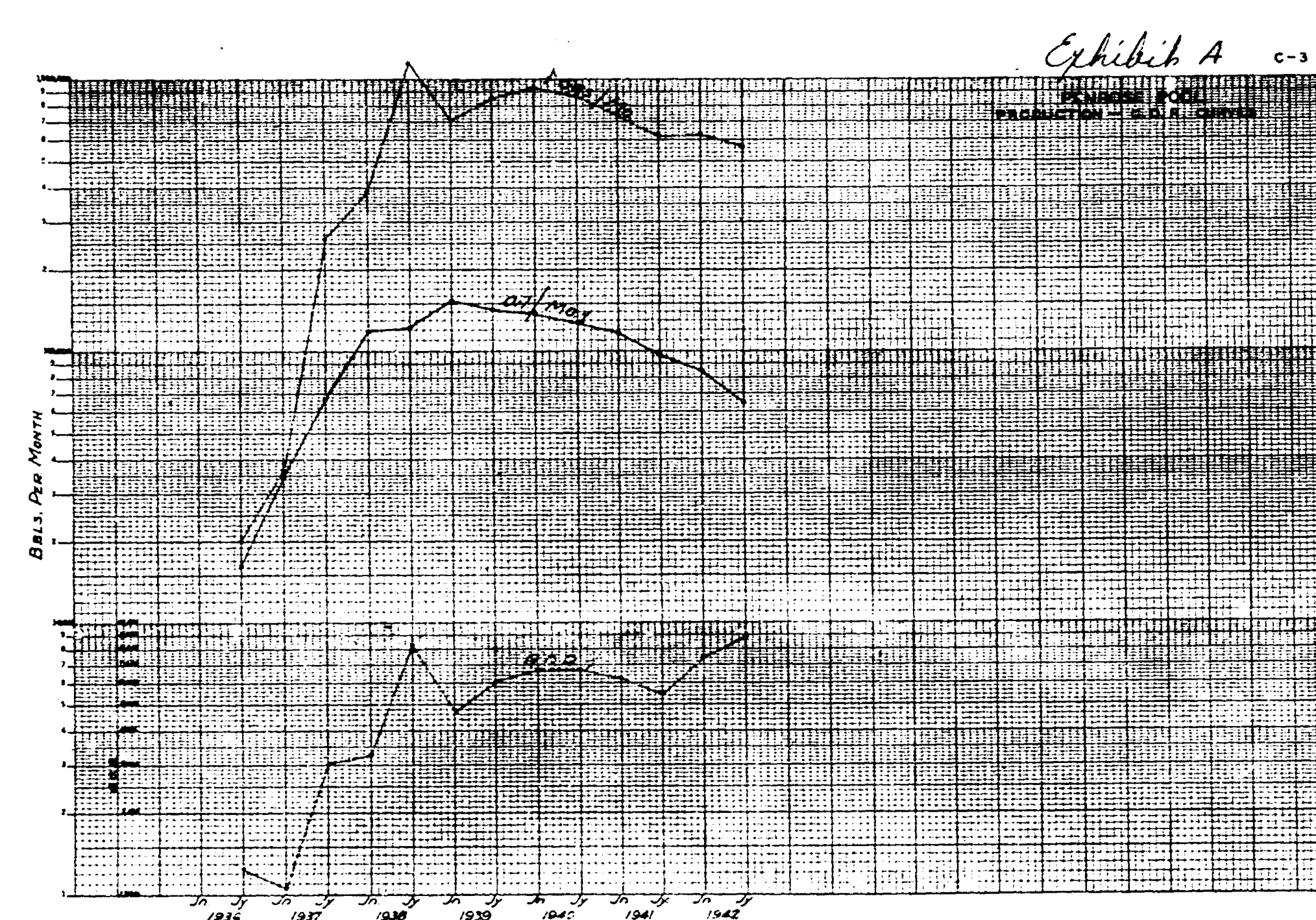
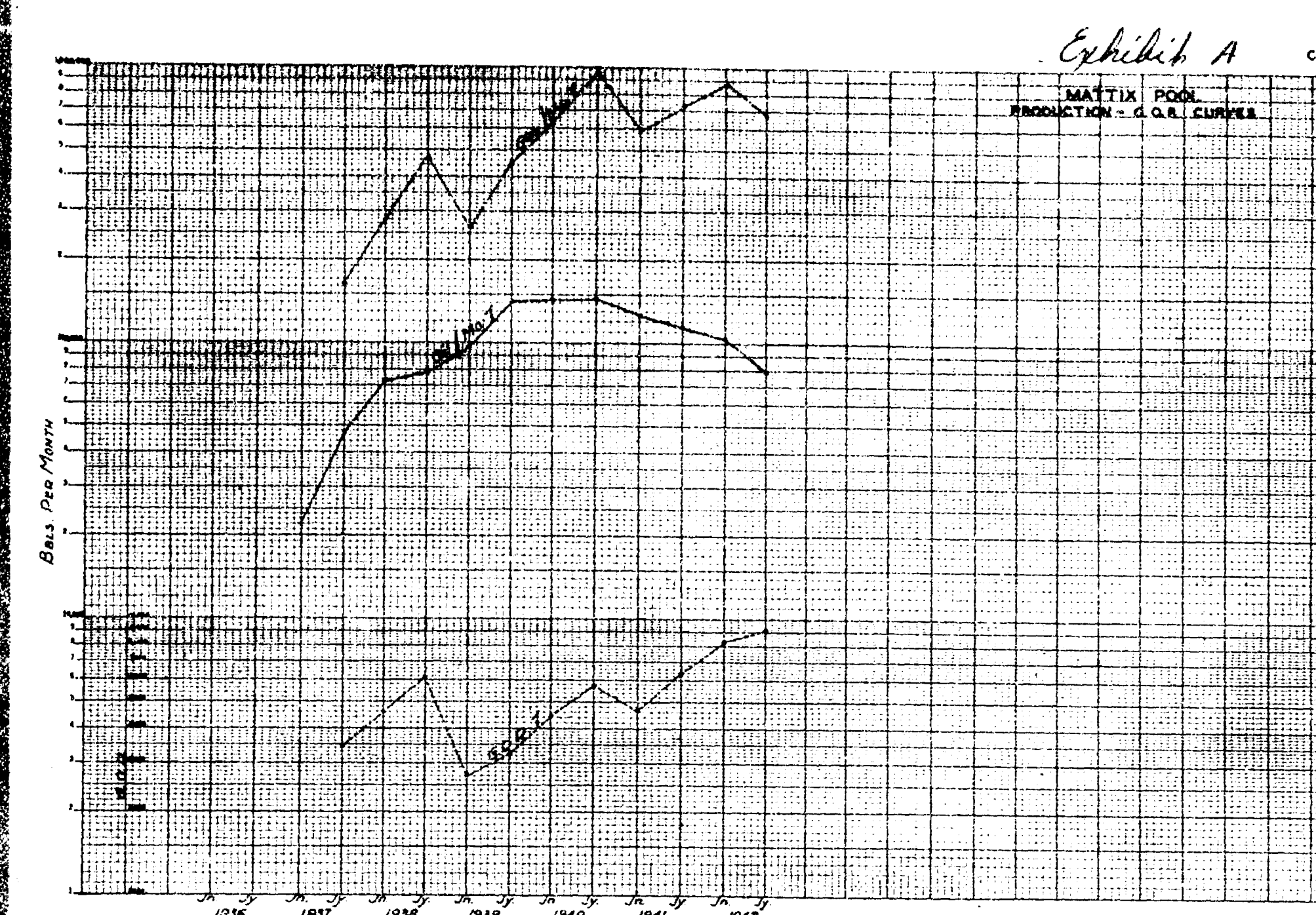
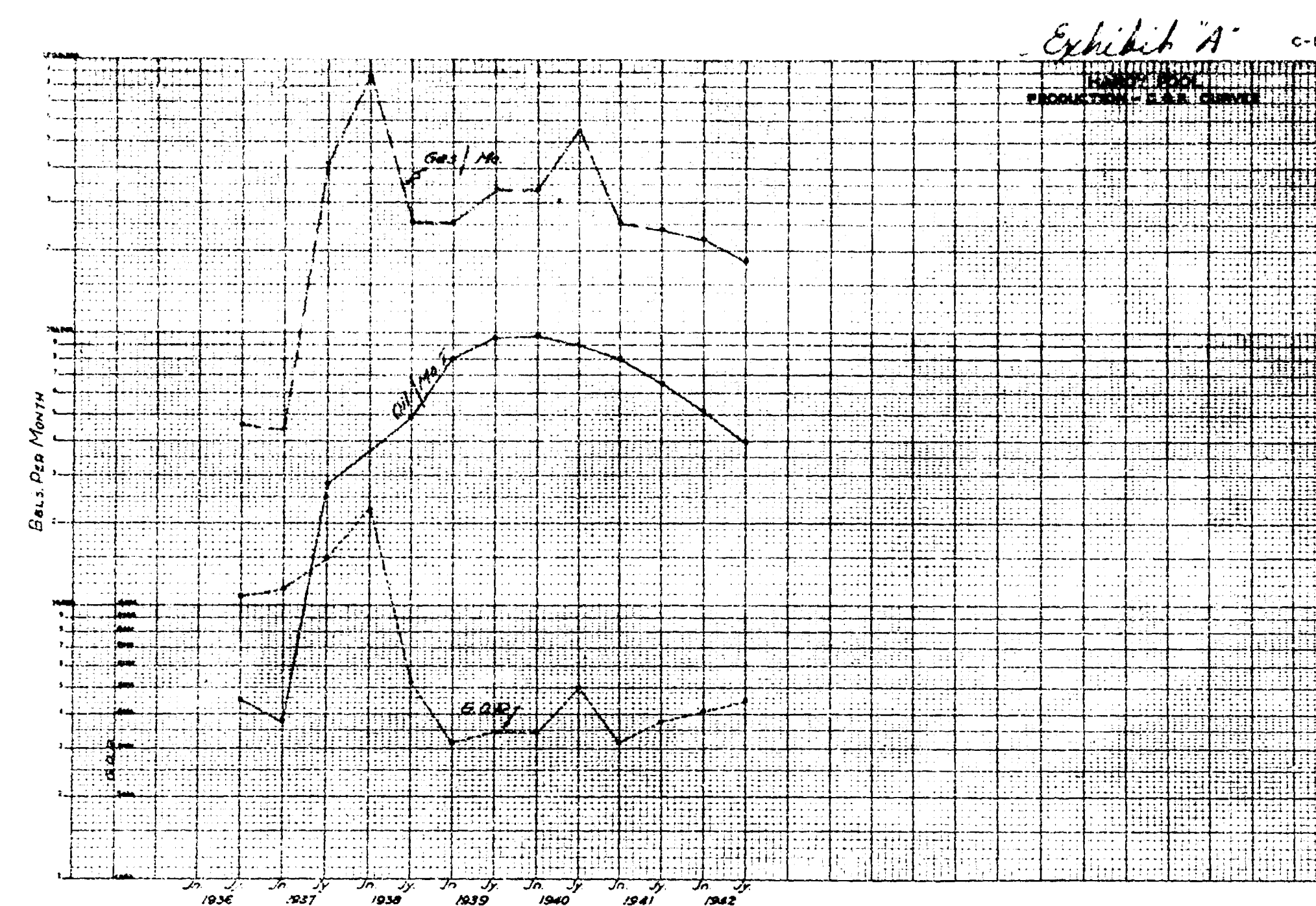
When computing the volume of all gas produced the following standards shall be used: Pressure - 10 pounds above the atmospheric pressure of local conditions per square inch; temperature - 60 degrees Fahrenheit; specific gravity - 0.85 as compared to air. In the case of measurements made at other pressure in excess of 100 pounds, the Boyle Law. The gas volumes shall be corrected to deviation from gas-oil ratios in cubic feet per barrel of oil.
(c) Orifice well testers, orifice meters and standard

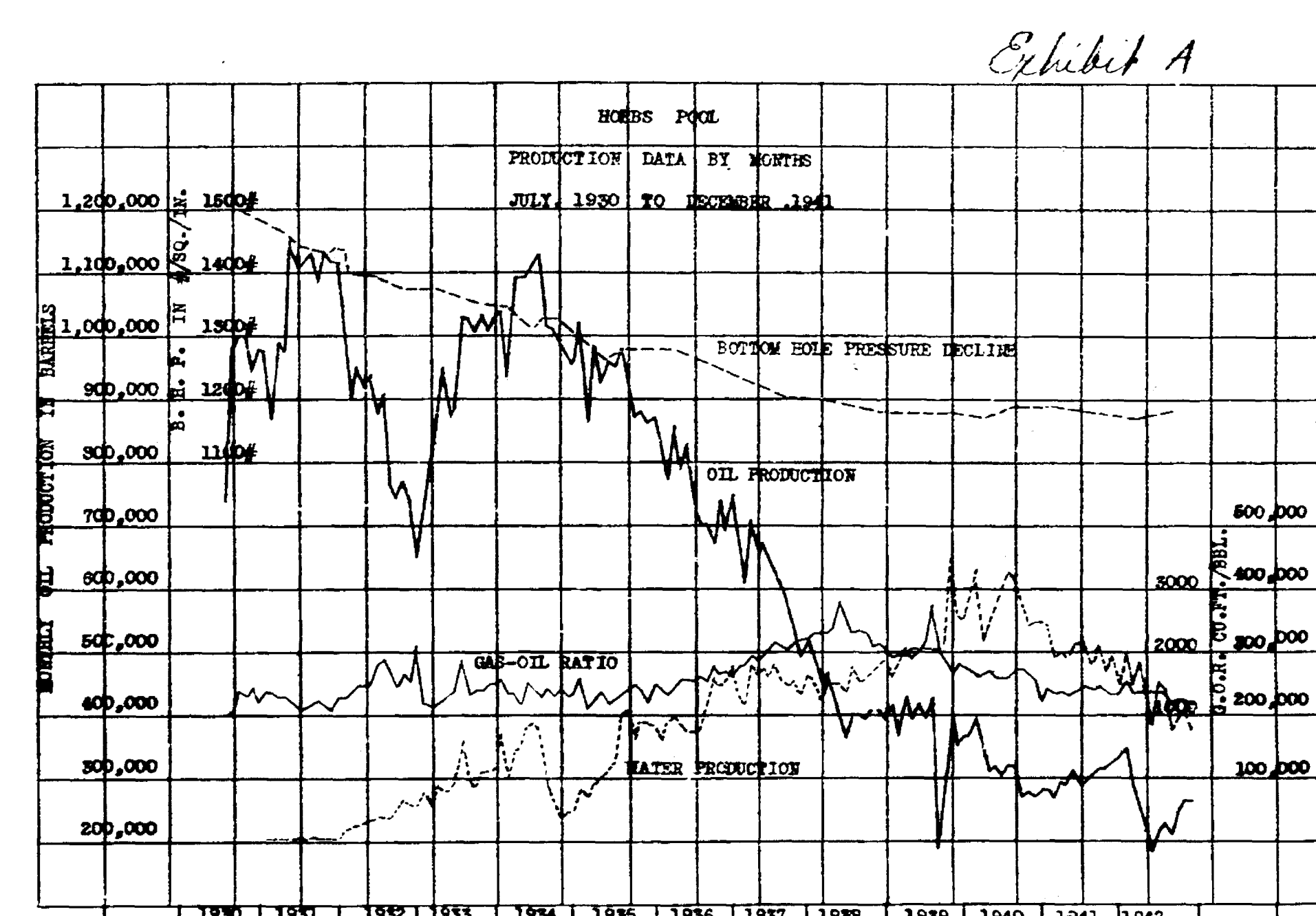
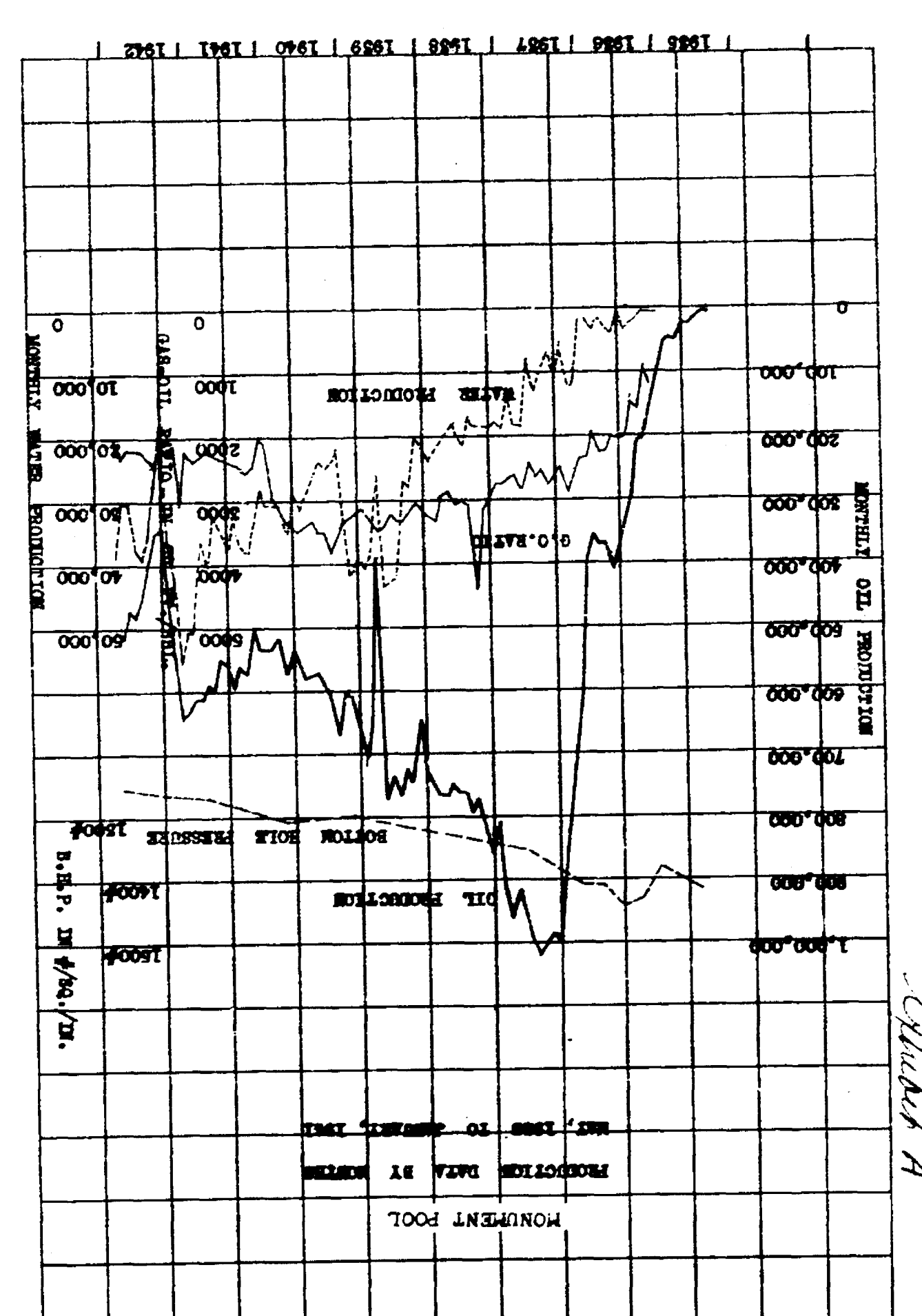
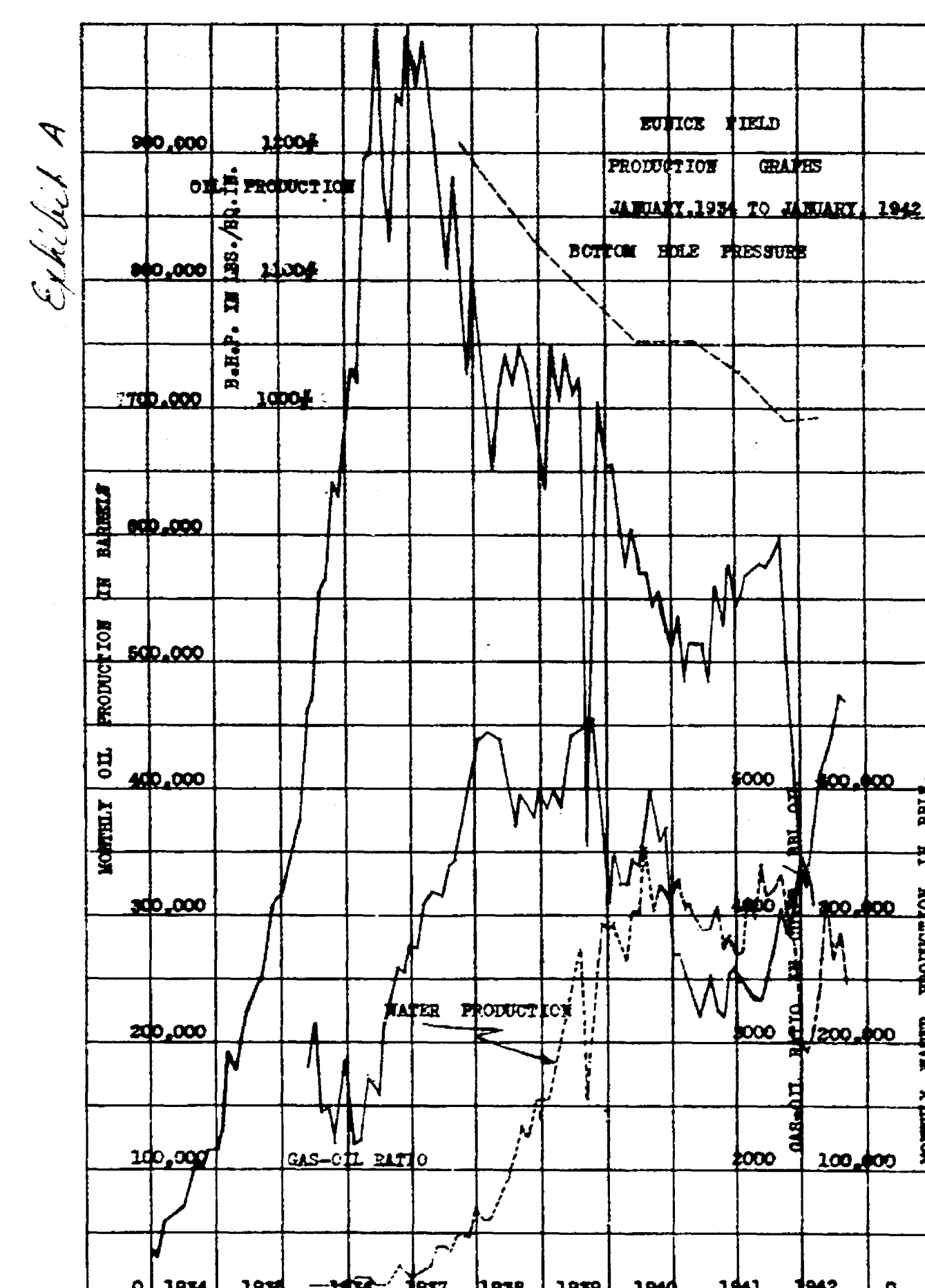
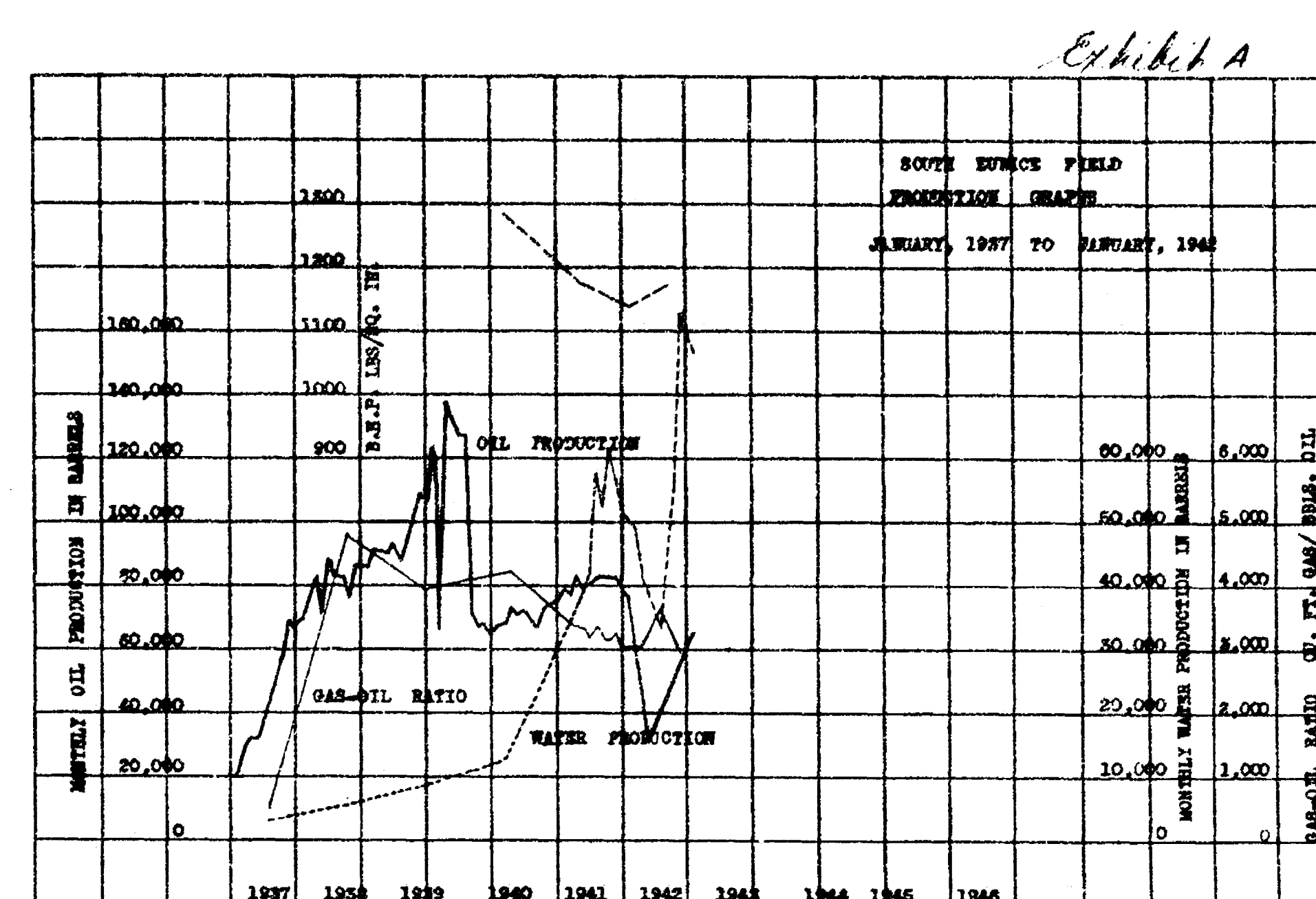
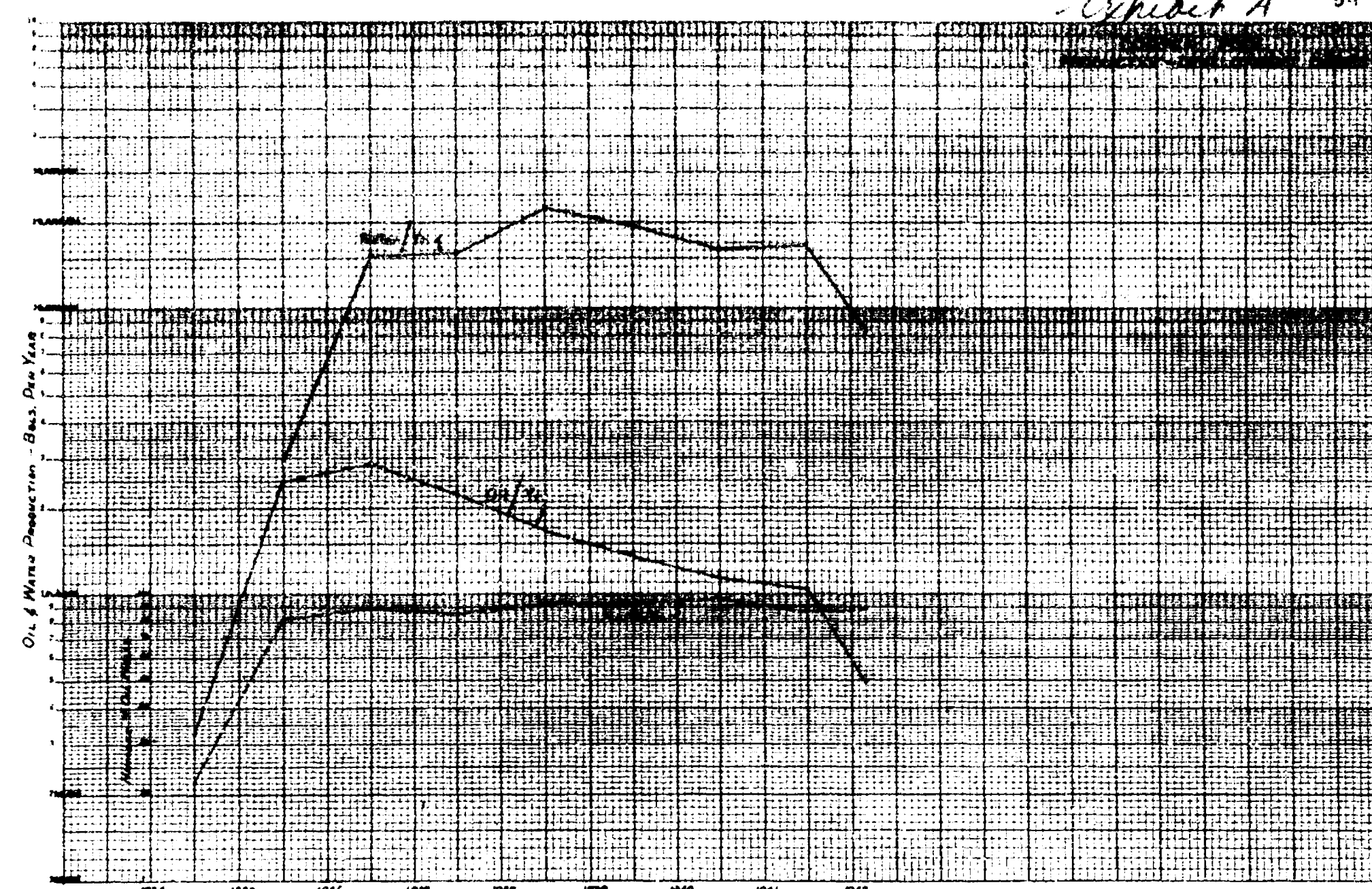
It is necessary to measure volumes larger than can conveniently be measured by orifice meters. A standard set of tables for each device will be on file in the office of the Deputy of the Commission.

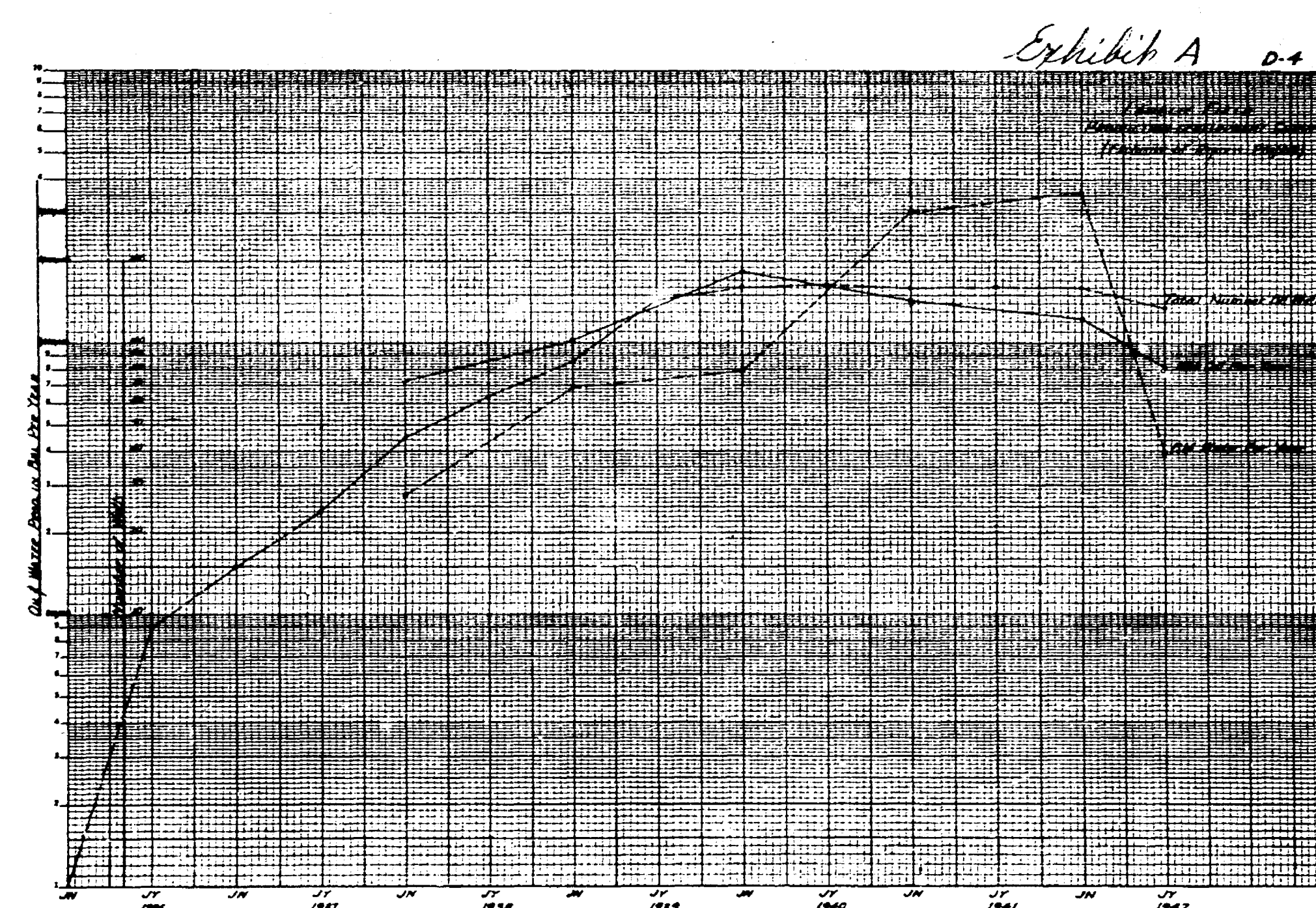
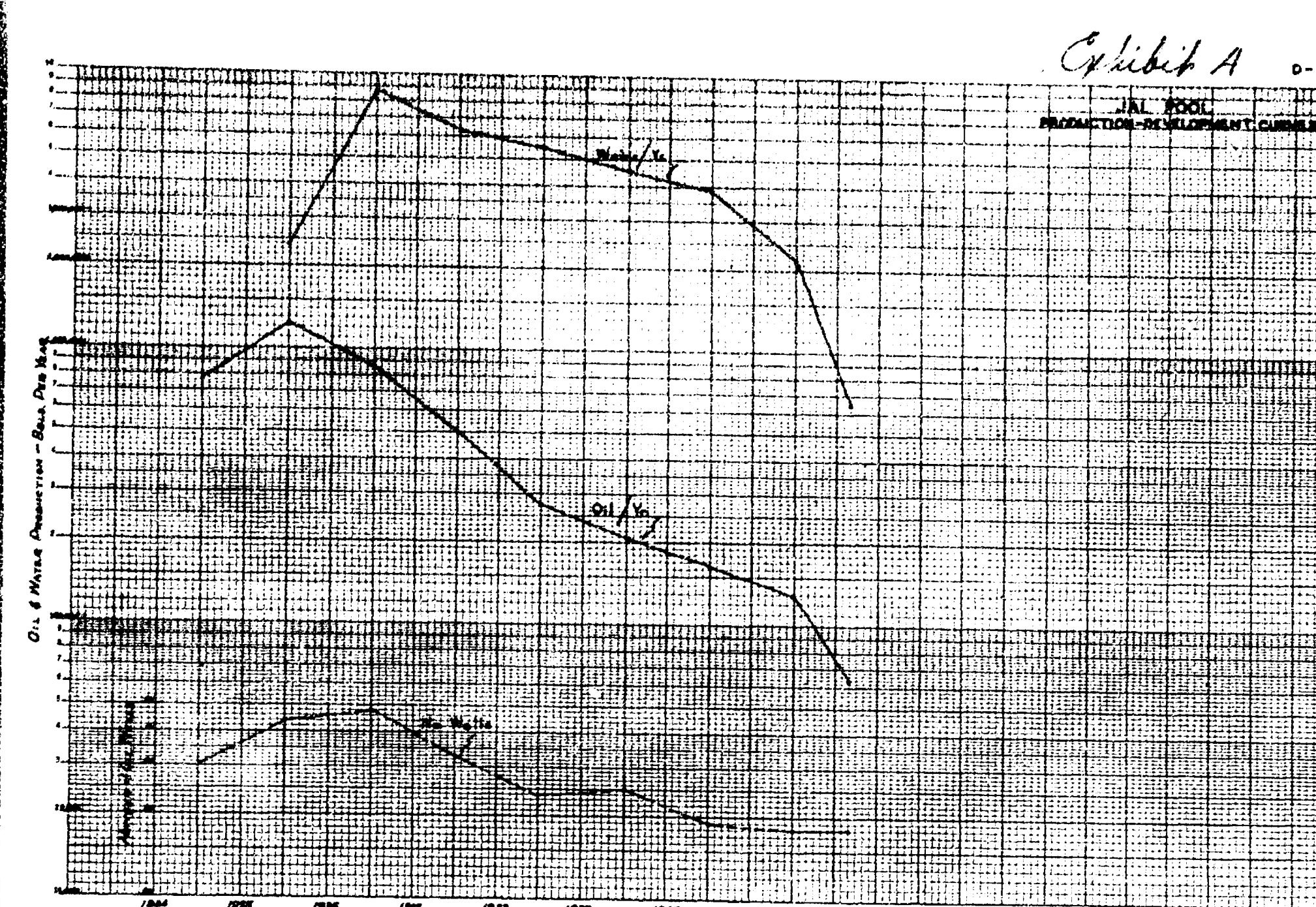
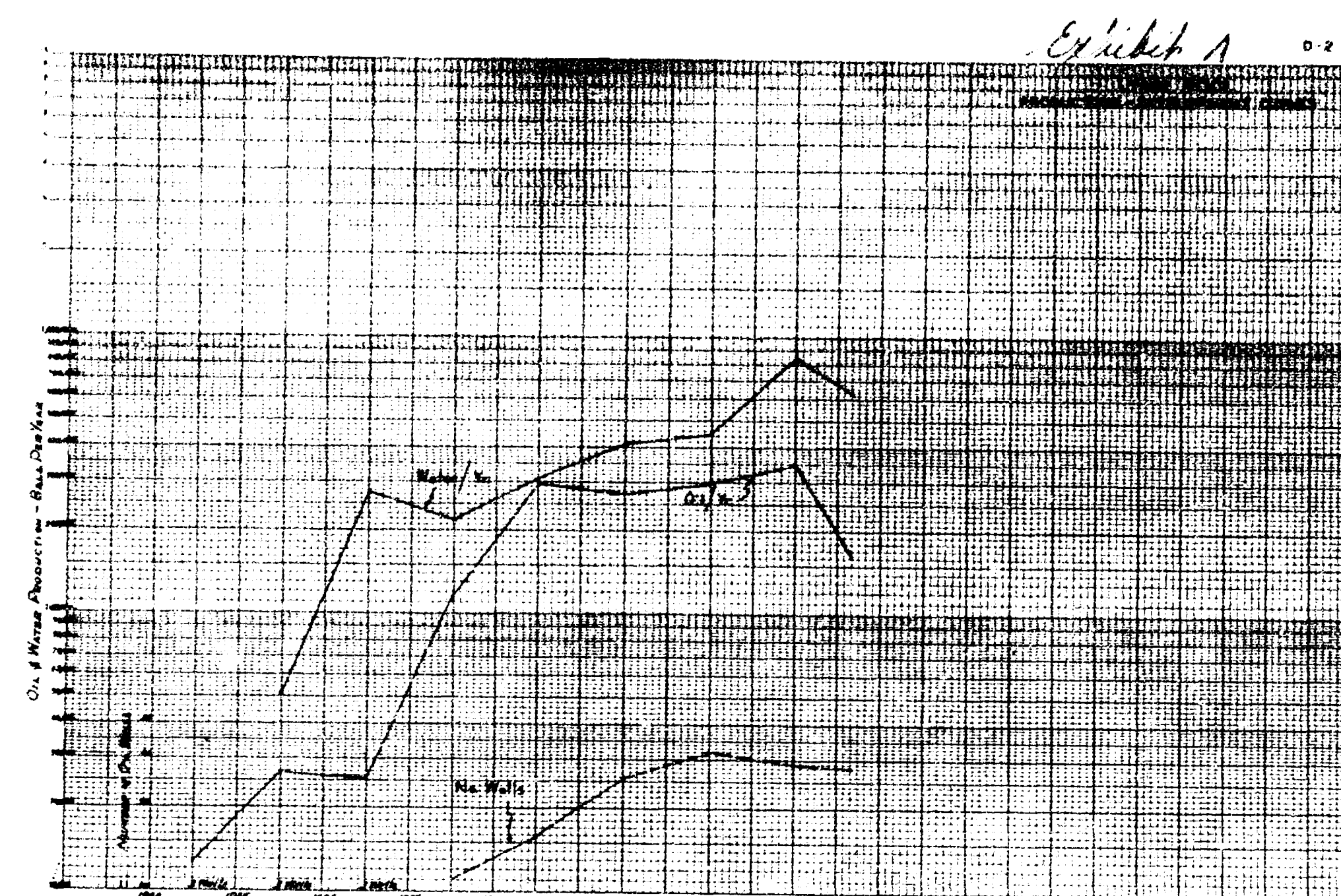
17. Any well that cannot be tested under the preceding rules shall be referred to the Commission for special consideration and rules.











P. No 1

April 26, 1943

At a meeting of the Lee County Operators Committee called on April 12, 1943, and held in Santa Fe on April 26, 1943, representatives of twenty-three operators were present of approximately ninety-eight operators who are members of the Lee County Operators Committee. The operators were polled and a majority of those present agreed that the following recommendations be presented to the Conservation Commission at its hearing called to consider "The application of the Lee County Operators Committee for a permanent gas-oil ratio order for the various fields located in Lee County; including a plan to permit the transfer of allowable from high gas-oil ratio wells to low gas-oil ratio wells, to prevent waste and to protect property rights", to be held at Santa Fe, April 27, 1943:

1. That a permanent gas-oil ratio order be promulgated.
2. That such permanent gas-oil ratio order provide for no exceptions without due notice and public hearing.
3. That no limiting gas-oil ratio be applied in Hardy, Penrose, Skelly, Mattiz, Langille, Rhodes, Lynn, Cooper and Fal Fields, for the following reasons:
 - (a) Two types of waste must be considered -- subsurface and surface. All fields mentioned above are showing depletion and adequate reservoir energy exists to produce the remaining recoverable oil without subsurface waste. (See Exhibit "A" attached).
 - (b) In the case of the sand belt fields, namely, Hardy, Penrose, Skelly, Mattiz, Langille and Rhodes, approximately 5% of the gas is being utilized at present, and plans are completed and priorities have been granted for the equipment to make possible the utilization of approximately 10% of the gas, which will bring the total to approximately 6%.
 - (c) The Lynn, Cooper and Fal Fields have a very active water drive. There are several wells which have high gas-oil ratios, but when the volume of fluid lifted is considered, the ratios are quite low considering the existing conditions in the reservoirs. Both from a geological study and results of remedial work, it can be stated that oil, gas and water are so closely associated within the reservoir that the segregation of one from the other two is very hazardous. Attempted remedial work in the three dolomitic limestone fields has usually proven unsuccessful and ultimately led to the abandonment of the well.
4. That the following limiting ratios be set for the other fields in Lee County, to-wit:

POOL OR AREA

GAS-OIL RATIO LIMIT

Arrowhead	3500
Cortis	2000
Laves	4000
Dunlap	1500
Halfway	2000
Seabe	2500
Lynn	2000
Maljamar	4000
Monument	4000
North Lynn	2000
North Maljamar	2000
Skaggs	5000-4000
South Dunlap	7000
South Lovington	2000
South Maljamar	2000
Tatum	2000
West Dunlap	2000
New and undesignated pools	2000

Wells in newly discovered or undesignated pools shall be allowed to produce with a limiting gas-oil ratio of 2,000 cubic feet per barrel for purposes of allocation until a hearing shall have been called and testimony presented upon which a ratio can be set. Such hearing shall be called and rules issued within six months after the completion of the discovery well or upon the completion of ten producing wells in the new pool, whichever occurs first.

No substantial subsurface waste exists in the fields listed above. In order to accomplish progress in the elimination of surface waste a mathematical approach was used in determining the limiting ratios. These limiting ratios were set so as to affect approximately the same percentage of units in each field.

That testing procedure for measuring gas-oil ratios, appended hereto as Exhibit "B", be adopted as Rules and Regulations of the Commission and not included as part of the gas-oil ratio order.

It is further recommended that in order to reduce the volume of gas produced, that the transfer of allowable from high to low gas-oil ratio units be permitted in all Lee County fields under the following provisions:

- (a) Transfer of allowable will be permitted only after application to and approval by the Commission. The application shall show 48-hour individual tests of production of oil, gas and water of the well from which transfer is requested and the well or wells receiving the transferred allowable. Such tests shall have been made within 30 days of date of submitting request for transfer. A plat of the wells involved shall be attached and also a statement of the amount of allowable to be transferred

-3-

to each such well. A copy of the application shall be furnished all offset operators by the applicant at the time same is submitted to the Conservation Commission.

Permits to transfer shall be in force for a period of one year from date of approval, unless rescinded by the Commission. Renewals or changes may be obtained at the discretion of the Commission only upon submission of the information as shown in (a) above.

Transfer of oil from one unit to another or others will be permitted only within contiguous abutting portions of the same basic lease or unitized area provided the areas involved shall not exceed 200 acres.

Transfers of allowable oil can be made only to a unit or units with a lower gas-oil ratio.

The amount of allowable transferred shall be the marginal or adjusted allowable for the unit, whichever is the smaller.

No unit shall be permitted to produce an allowable in excess of the allowable for two units.

Test data supporting the above recommendations are submitted as Exhibit "C".

CONTINENTAL OIL COMPANY
NOTES A-17 LEASE
SHUT-IN

Exhibit C

WELL	MARCH ALLOWABLE	FEB. 1943 G.O.D.	MARCH TOTAL GAS MCF	(if each well produced at top allowable rate)
3	1209	1209	1209	
5	1209	11700	11700	
6	1209	1790	2164	
TOTAL	3627		17927	
3	1209	1207	1822	(if each well produced at assigned allowable rate)
5	558	11200	6250	
6	1209	1770	2164	
TOTAL	2976		10236	
3	1643	1293	2124	(top allowable transferred from No. 5 to Nos. 3 & 6)
5	1984	1425	2827	
TOTAL	3627		4951	

Gas saved during March, 1943 (MCF)
Based on top allowable 12776
Based on penalized allowable 5285

LEASE	DAILY ALLOW.	TOTAL GAS	3-1943 #4	G.O.D.	TOTAL GAS
WELL	MARCH-1943	G.O.D.	1-2-3	1-2-3	1-2-3
State # 1	39	11200	43600	52	11200
" 2	39	2065	8035	52	2065
" 3	39	9370	36440	52	9370
" 4	39	2770	28900	S.I.	S.I.
			1,768,025		1,777,020
Total gas savings/day =			394,680 cu/ft		
Coleman # 1	39	11200	43600	#1 ALL TO #2	S.I.
" 2	39	2065	8035	78	980
			471,120		76440
			76,440		
Total gas savings/day =			394,680 cu/ft		

LEASE	DAILY ALLOW.	TOTAL GAS	3-1943 #4	G.O.D.	TOTAL GAS
WELL	MARCH-1943	G.O.D.	1-2-3	1-2-3	1-2-3
State B # 1	40	1140	45600	54	1140
" 2	37	2280	34360	51	2280
" 3	39	389	15171	53	389
" 4	42	15400	64800	S.I.	S.I.
			78,471		198,437
Total gas savings/day =			393,474 cu/ft		

CONTINENTAL OIL COMPANY
NOTES A-17 LEASE
SHUT-IN

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			76,440		
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WELL	MARCH-1943	G.O.D.	1-2-3	1-2-3	1-2-3
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" 2	37	2280	34360	51	2280
" 3	39	389	15171	53	389
" 4	42	15400	64800	S.I.	S.I.
			78,471		198,437
Total gas savings/day =			393,474 cu/ft		

GULF OIL CORPORATION
BELL RANNEY LEASE
BRIDGE

Total allow. 12-19-42 to 1-2-43	G.O.R. GAS	TOTAL	Total prod. 12-19-42 to 1-2-43	G.O.R. GAS	TOTAL
Bell Ranney #7 224 bbl.	1910	2,361,260 cu/ft.	1195 bbl.	1910	7,343,650
Bell Ranney #8 1540 bbl.	108,987	167,839,980 cu/ft.	Shut in		

* = assume allowable of 20 bbl/day
Production from #7 for period 12-1-42 to 1-2-43 over and above its normal daily allowable = 1195 bbl.
Production of 1195 bbls. from #7 transferred to #8
G.O.R. #8 (108,987) x 1195 bbl. = 130,239,665 cu/ft. gas
G.O.R. #7 (1910) x 1195 bbl. = 2,361,260 cu/ft. gas
Saving in gas by transfer of all. 127,977,015 cu/ft. gas = 1,660,000 cu/ft. gas/day
Allowable from #8 transferred to #7 3-0-43 to 4-1-43 but #9 produced only 1,219 bbl. of oil during this period, or 10 bbl. in excess of its own allowable.

STANDARD OIL & GAS COMPANY
BRIDGE

Production and allowable transfer data from high to low ratio wells.
Wells with producing ratios below 7000 cu/ft./bbl.

LEASE	S.T.R.	TEST RATE BBL/DAY	PRODUCING GAS OIL RATIO
Gilluly A 3	25-20-36	46	1243
" A 5	"	53	6208
" A 6	"	48	1243
" A 8	24-20-36	74	4779
" A 10	"	47	1838
" A 11	"	14	6548
" A 13	"	24	2031
" A 14	"	67	3321

Wells with producing gas oil ratios above 7000 cu/ft./bbl.

LEASE	S.T.R.	TEST RATE BBL/DAY	PRODUCING GAS OIL RATIO	FINALIZED ALL. BBL/DAY BASED ON LATEST TEST
Gilluly A 7	24-20-36	15	5778	7

Proposed transfer allowable plan

Transfer allowable from	Transfer Allowable to	Cu/ft. gas Conserved/day
Gilluly A 7	Gilluly A 14	24,339

PRODUCTION
Production and allowable transfer data from high to low ratio wells
Wells with producing ratios below 6000 cu/ft./bbl.

LEASE	S.T.R.	TEST RATE BBL/DAY	PRODUCING GAS OIL RATIO
Gilluly A 2	24-20-36	111	553
" A 9	"	113	409
" A 12	"	63	663

STANDARD (CONTRACT) - 2000.
 Wells with production ratios above 6000 cu ft/bbl.

LEASE	DATE	TEST RATE	PRODUCED	PERMITTED	ALLOWED
WELL	DATE	PER DAY	CU FT	PER DAY	CU FT
Gilluly #1	21-20-27	17	3455	9	9
"	"	53	8655	27	27
"	"	46	13647	7	7
"	"	17	37001	6	6

Proposed allowable transfer plan

Transfer Allow. from	Transfer allow. to	CU FT GAS CONSERVED DAY
Gilluly #1	Gilluly #2	215,359
Gilluly #4	Gilluly #2	175,596
Gilluly #5	Gilluly #2	170,896

OHIO OIL COMPANY

STATE HANSEN LEASE

REMARKS

LEASE	DAILY ALL. G.O.L.	TOTAL GAS	PER. TRANSFERRED	CU FT. OF	COEFF.
WELL	DATE	CU FT/DAY	TO NO. 1 & 2	TO PER/DAY	DAY
St. Hansen #1	10	770	14800	52	370
St. Hansen #2	41	370	10170	53	370
St. Hansen #4	24	990	20000	53	370
		Total gas	250,000		3880

Total saving of gas/day by trans. 211,150 cu ft.

SUN OIL COMPANY

MAVRETT LEASE

REMARKS

Lease #5 daily allowable 23 bbl. Gas oil ratio October, 1942 = 50,500

LEASE	DAILY ALLOW.	TOTAL GAS	DAILY ALLOW. 1/15	TOTAL GAS
WELL	DATE	CU FT/DAY	(From 100,000 cu ft. allow.)	CU FT/DAY
Lease #1	21	3823	110,513 cu ft.	3823
Lease #4	31	4136	110,513 cu ft.	4136
Lease #5	23	27,000	110,513 cu ft.	27,000
Daily total gas from 1, 4 & 5		31,459	332,536 cu ft.	31,459

Total daily gas savings 1,059,791

12 bbl. per day transferred from #1 to #4

11 bbl. per day transferred from #5 to #3

Langile Field

Surface boundaries of the Langile Field have not been established in conformity with a variety of structural and depositional conditions within the area covered. For example, several narrow units within one field are known to be producing oil from a dolomite limestone section while others produce from sand bodies of various stratigraphic positions. The distinct structural folds add to the complexity of problems within the field.

In order to avoid any undue confusion the Committee has deemed it advisable to exclude production data on approximately 500 acres which are included in a repressuring project within the Langile Field.

A few observations which have been made from a study of the following data are herewith presented. It will be noted from a study of the Allowable Development Curve Graph B-3 that the field attained its maximum development about January, 1940. The average daily allowable of marginal wells, six months prior to this time had shown a pronounced decline as also had the average daily top allowable per well to a lesser degree. Immediately following this period the number of marginal wells increased sharply although the average daily allowable or potential of such wells increased only eight barrels. In as much as the daily top allowable per unit decreased some during this period while the average daily allowable of marginal wells increased only slightly it is evident that the reservoir from which the marginal wells were producing had no reserve oil and that such oil as remained was being rapidly withdrawn. Further evidence in support of this statement can be drawn from a study of the Production Development Curve B-5.

The relative constant volume of gas produced per month from July, 1939 to present date, as shown on Graph C-1 when compared to the increase in gas-oil ratio for the same period might be interpreted as representing a decrease in the efficiency of the rate of flow except that at the same time this was occurring, the total amount of oil being produced was on the decrease and the total number of marginal wells was on the increase. It is apparent that the reservoir was being worked at a much greater rate than it was of gas.

Graph B-4 Production Development Curve, shows a rapid increase in the amount of water being produced after January, 1940. This fact is misleading in that it might be interpreted as reflecting a condition for the entire field where actually it is primarily the result of performance of only a few wells that produce from dolomite limestone.

Structural and stratigraphic conditions which, in the Langile Field, appear to be controlling factors in production problems, can perhaps best be described by the following quotation, namely, "the factors of structure and stratigraphy are heterogeneous in their interrelationship". It is the opinion of the Committee that extensions within the Langile Field do not necessarily determine the rule. It believes, further, that in considering the field as a unit there is evidence of the existence of gas in the reservoir in quantities more than sufficient to produce the oil associated with it. The problem, therefore, resolves itself into one of surface rather than subsurface matter.

Much has been done in the past to deliver gas to a commercial market from the Langile Field and assurance has been given that much more will be done in an effort to increase the deliveries as soon as necessary materials can be made available.

REPORT OF COMMITTEES 1 & 2

The Committee named herewith was appointed by the Lea County Engineering Committee on January 28, 1943 to work out, from an engineering standpoint, reasons for all existing gas-oil ratios for the various fields of Lea County in excess of 2000 cubic feet per barrel of oil:

Samuel Davis P.D. Grounsey, Jr.
George Gray Charles F. Miller
Hub. Stimmel

The Committee met in Hobbs on February 4, 1943 and again on February 19, 1943. It is composed of two former committees which were appointed by the Sub-Committee Engineering Committee, in Hobbs on November 24, 1942, to study problems relative to limiting gas-oil ratios and possibility of beneficial action resulting from repressuring work in fields nearing depletion. Findings of these committees are incorporated and enlarged in the report of the present Committee.

Determination of a direct mathematical solution to the problem of limiting ratios with the information at hand, has not appeared feasible. An approach to the problem, however, has been made through a study of present day reservoir conditions in the following major fields of Lea County: Hobbs, Monument, Monica and South Monica. Many of the Committee's conclusions are based upon evidence found in the attached graphs.

Hobbs

The Hobbs Field in December, 1942 possessed the same reservoir pressure as that which it showed in December, 1937 even though during this five year period the field had yielded 18,660,823 barrels of oil, 17,807,896 barrels of water and 35,233,099 BCF gas. It is the opinion of the Committee, therefore, that because the field has been able to maintain its reservoir pressure under present producing conditions there is no subsurface waste.

Monument

The Monument Field has five years less production than the Hobbs Field and may, therefore, be expected to show slightly different reservoir conditions from those found in the Hobbs Field at the present time. The Monument Field had a calculated reservoir pressure of 1243 lbs. as of January 1, 1943. The total reservoir drop, from date of discovery, is therefore, calculated to have been 770 lbs. Forty-five pounds of the drop occurred between the dates of January 1, 1940 and January 1, 1943.

Total oil production between the date of discovery in 1935 and January 1, 1940 was 12,420,916 barrels. The reservoir pressure drop for the same period was 227 lbs. or at a rate of seven pounds per million barrels of oil produced. A total of 10,559,790 barrels of oil was produced between January 1, 1940 and January 1, 1943. Reservoir pressure drop during this period amounted to 45 lbs. and was at a rate of 2,500 lbs. per million barrels of oil produced. The productivity ratios between the two periods was, therefore, approximately one to three.

If it can be supposed that the future rate of reservoir decline in the Monument Field will be not greater than 2,500 lbs. per million barrels of oil and that the field will be producing oil when it has, for the sake of argument, retained a reservoir pressure of 600 lbs. then, on the basis of 17,720 productive acres and a future recovery of 64% x 1,000,000, we can expect a future recovery of 14,202 barrels per acre. In as much as the per acre recovery as of January 1, 1943 has been 2635 barrels, the indicated total recovery per acre will be 16,837 barrels. This figure seems unduly optimistic in light of other estimates which have seldom exceeded 10,000 barrels per acre. There is, therefore, evidence to establish a belief that

12-2
flowing energy will remain in the Monument Field long after said field has attained its ultimate recovery of oil.

ANICE

Within the Anice Field original reservoir pressure has been estimated as having been 1559 lbs. This value had decreased to 1360 lbs. on January 1, 1940 and, during said period the field had produced 40,176,106 barrels of oil or with a pressure decline rate of 21.07 lbs. per million barrels of oil produced. The field produced 18,979,355 barrels of oil between the period of January 1, 1940 to January 1, 1943, and in so doing reflected a reservoir pressure drop of 70 lbs. The pounds pressure drop per million barrels of oil produced, was therefore, 3.69.

The reservoir has shown a very slight pressure increase during the six months period ending July, 1942. This change may reflect a decrease in oil runs or the appearance of an effective water drive or possibly a combination of both factors.

There is reason to believe that, regardless of the cause of pressure increase, under present rates of production no subsurface waste exists in the Anice Field.

SOUTH ANICE

A record of reservoir pressures in the South Anice Field is limited to the period July 1, 1940 to present date. The Committee is therefore, somewhat handicapped by indefinite pressure trends in its study of reservoir conditions.

It has been found that some insight into the problem can be gained by comparing a period in the South Anice Field records pressure data is available with a corresponding period in the Anice Field. In so doing, a greater efficiency for the rate of flow in the South Anice Field has been found than has been determined for the Anice Field.

The increase in reservoir pressure shown in the South Anice Field for the period February 1, 1942 to July 1, 1942 suggests that, under the rates of production then existing, water may have been entering the reservoir at a sufficient rate to produce an effective water drive. If such is the case, subsurface waste in the field cannot be admitted.

GENERAL DISCUSSION

The Committee states again its inability to determine by a mathematical formula, a specific limiting gas-oil ratio for any field in Lea County. It feels, however, that although lacking evidence of subsurface waste it need not recommend lower limiting ratios for any field than those now in force by virtue of Oil Conservation Order No. 750.

The Committee, in approaching the problem, has considered oil to be the commodity of prime importance and gas as incidental to the production thereof. (If the opposite of this assumption is true the necessity for conserving the gas until such time as a commercial market is developed for all of it becomes of the greatest importance). The Committee believes that especially under present day conditions, oil is a commodity of prime importance and its production is essential to the national welfare. The Committee admits that with production of oil there is surface waste of gas in believes that such should be prevented. It, therefore, makes the following recommendation: that all gas produced with oil be returned to the reservoir from which it originated, or that it be sold for commercial consumption.

Table A

YEAR	NO.	WATER	OIL	NO.	WATER	OIL	NO.	WATER	OIL
1914	22	no rel.	326710	30	no rel.	326710	30	no rel.	326710
1915	82	2901850	2499310	44	2607895	2222712	3	no rel.	11053
1916	89	10200776	2885068	48	8780463	633235	3	276900	23617
1917	86	12404465	2237273	33	6369118	497722	11	216763	101808
1918	93	22024755	1622176	24	9719849	271075	16	308952	295299
1919	93	19718658	1374726	25	4222287	207395	26	442288	271593
1920	97	16114950	1151197	19	3871676	124424	32	444523	299676
1921	87	16707986	1032739	18	2162822	129471	29	833554	247384
8 no.									
1922	89	2172413	434522	18	653938	63846	28	624713	102240
		11545927	1370115		3448748	418269		312430	154340

Decline of water production in the Jal Field as shown on Graph D-3 coincides with abandonment of certain oil wells. Decline of oil production within the Jal and Cooper Fields, as shown on Graph D-3 and Graph D-1, coincides with a period of one year of carrying with the greatest yearly increase of water.

Attempted remedial work in the three dolomitic limestone fields has often proven unsuccessful and ultimately led to complete abandonment. Both from a geologic study and results of remedial work it can be stated that all gas and water are so closely associated within a common reservoir that the segregation of one from the other two is very difficult and certainly exceedingly unjustified.

Appended hereto will be found a partial list of remedial work performed in sand and dolomitic-limestone fields.

C. P. Miller
J. D. Gray
W. D. Mitchell

Exhibit A

TYPICAL REMEDIAL RESULTS-GRAND FIELDS
 HALL
 Gulf Oil Corp. No. 1 Matern C 16-213-372
 1941 set packer @ 3700 2000 acid below
 before gas-oil ratio 2992
 After " " " " 5998
 PHILLIPS
 Continental Elliott Bay No. 1 9-223-372
 1938 packer @ 3524
 Before gas-oil ratio 15454
 After " " " " 18231
 LOW
 WOODS REFINED TIST AFRIK
 Acid 1000 gal. (3040-3714) Oil 2 Gal LIT 826
 Shot 30 cts. (3714-3724) " 23 " 961
 Set pipe 13 times in zone " 123 " 971 best test
 (3550-3600)
 1000 gal. formation plug " 4 " 808
 (cap-3550)
 Shot well in account of high gas-oil ratio
 Continental Elliott A-15 No. 2 15-225-372
 1938 packer @ 3524
 Before gas-oil ratio 35000
 After " " " " 14000
 Reset packer 3508
 Before gas-oil ratio 14200
 After " " " " 16669
 Present gas-oil ratio 24320
 MATIN
 Phillips Oil Co. Mosely #4 14-245-372
 1940 shut 200 cts. 3355-3435 (lower pay)
 solid stemmer; packer @ 3354
 Before workover 20 oil; gas-oil ratio 44000
 After workover 72 " " " 28353
 Present production 11 " " " 59978
 Anderson Prichard Oil Co. State A #1 32-243-372
 1941 Shot 90 cts. 3210-3540 solid stemming
 Before 65 oil; gas-oil ratio 27000
 After " " " " 7853
 Now " " " " 37351
 Anderson Prichard State A No. 2 20-245-372
 1941 set per. 4 times with no beneficial results
 Shot 120 cts. 3507-36 solid stemming
 Before 105 oil; 1000 LIT gas
 After 108 " 7350 gas-oil ratio
 Now 31482 " " "
 Stanolind Oil & Gas Co. Meyers A-2 22-245-372
 1941 treated with 1500 gal. formation plug
 Before gas-oil ratio 29200
 After " " " " 46000
 Since increased gas-oil ratio 39780 now
 SHULM
 Anderson Prichard Blinberry No. 1 29-235-372
 March 1941 set packer @ 3540 - no change in
 oil or gas production - no suitable packer seat
 was available below 3540, therefore, further
 attempts were not made.
 Present gas-oil ratio 20799

Examination of remedial work aimed at reducing gas-oil ratios in the sand areas
 revealed that:
 1. The close association of the gas with oil in the gas expansion type reservoir in narrow producing zones has offered little or no chance for the successful application of mechanical separation methods.
 2. A large percentage of the wells were shot heavily on completion to obtain production from the tight formation, therefore, mechanical control is impossible.
 3. In general, the few jobs that have been effective or partially effective have only been temporarily so.
 TYPICAL REMEDIAL RESULTS-DELMONTE LIME FIELDS
 COOPER
 Phillips Pet. Co. Woolworth #12 26-24-36
 1941 7-11-35
 Packer 3311 - after GL above packer 90 bbl water/hr
 Packer 3274 - after GL above packer 54 bbl water/hr
 Packer 3237 and 100 sax cement. After dewatered dry
 200 acid after - no oil, gas or water G.I.
 Gulf Oil Corp. Am. Mosely #2 2-255-362
 1941 Spurred 120 sax below retainer @ 3411
 Before GL 25 oil; 10000 water
 After pumped 20 oil; 10 water
 5000 acid; pumped 21 oil; 100 water
 Lewis Pet. Corp. Everett #2 34-24-36
 1941 3150 PGT
 50 sax below retainer @ 3275
 Before raising 100% water
 After dewatered dry - shut in and abandoned
 Gulf Oil Corp. G.B. Cooper No. 1 11-245-362
 Completed 6-1-35 Initial potential 1122 oil; no water
 on 11-14-35 started making 100% water and died.
 Perf. upper zone to obtain more gas and put on gas
 lift. Made 121 oil.
 Present production 70 oil; 5400 water on gas lift.
 If shut in the well must be flowed from one to two
 weeks before oil is obtained
 HIL
 Continental C. Shales 3 13-250-362
 Completed 2-26-33 Initially no water
 4-4-33 378 water
 5-1-33 207 "
 10-4-33 258 "
 10-12-33 335 "
 12-7-33 702 "
 12-31-33 802 "
 1-4-34 802 "
 3-10-34 802 "
 3-25-34 FB 15 sax, 3770-3843
 5-4-34 test 70 oil 360 water
 5-21-34 FB 20 sax, 3843-3935
 6-26-34 FB 20 sax, 3843-3935
 8-11-34 FB for gas well
 LIT
 Shell Oil Co. Whitten No. 1 33-230-362
 1940 packer @ 3378 reduced gas-oil ratio
 from 5100 to 731

Exhibit A 11

Exhibit A

Continental Farm No. 2 5-238-365
 1941 before 13 oil; 7 water; 23018 gas-oil ratio
 Factor set at 3704
 Below packer 0 oil; 4 water; 186 MCF
 Above packer 41 oil; 7 water; 20688 gas-oil ratio
 Factor: 3660
 Below 0 oil; 12 water; 200 MCF
 Above 38 oil; 17 water; 24210 gas-oil ratio
 Now 12 oil; no water; 38075 gas-oil ratio

DISCUSSION OF REMEDIAL RESULTS IN THE COVERED, LYNN AND JAL FIELDS

The study of numerous remedial jobs performed in the dolomitic lime fields in the southern portion of the county of which a few typical examples have been outlined above, brings forth the general conclusions:

1. The particular fields are characterized by early water invasion, control of which has been proven futile in the history of many wells. Water shut off has been accomplished almost universally at the cost of the entire oil production capacity of the well, resulting in many abandonments.
2. High gas-oil ratios in these fields are the necessary evil which must accompany natural flow of large fluid volumes only a small portion of which is oil.

A SUMMARY OF DATA RELATIVE TO FUTURE RESERVOIR WORK IN FIELD-ENTRANCE NEARBY
DEPLETION IN LASA COUNTY, NEW MEXICO

Fields in Las County New Mexico which are, within this report, considered to have made the nearest approach of any to depletion are:

1. Sand Pay types
 - a. Hardy
 - b. Matix
 - c. Penrose
 - d. Skelly
2. Dolomitic limestone pay type
 - a. Cooper
 - b. Jai
 - c. Lynn

Monthly production decline curves which show the calculated average field decline for the Hardy Field (Graph A-1), the Matix Field (Graph A-2), the Penrose Field (Graph A-3) and the Skelly Field (Graph A-4) reflect the future recoverable oil (depleted to a monthly rate of 50 barrels) from these fields. The figures obtained are as follows:

FIELD	FUTURE RECOVERABLE OIL PER ACRE (BBL.)	FUTURE RECOVERABLE OIL PER AC. (BBL.)
Hardy	163	6320 bbls.
Matix	216	8640
Penrose	158	6320
Skelly	246	13540

Average per acre recovery for each of the above listed fields, and its age as of July 1, 1942 is as follows:

FIELD	PER ACRE RECOVERY BBL. PER AC.	AGE OF FIELD AS OF 7-1-42
Hardy	862 bbls.	61 yrs.
Matix	1022 "	"
Penrose	776 "	64 "
Skelly	883 "	62 "

The calculated ultimate recovery from these fields, based upon the foregoing tabulations is as follows:

FIELD	TOTAL PER ACRE RECOVERY
Hardy	1045 bbls.
Matix	1271 "
Penrose	1122 "
Skelly	1229 "

Although reservoir pressure data on the above listed fields is not as complete as can be desired, that which is available shows an average decline of 900 pounds to date with an average reservoir pressure of 500 pounds remaining.

Reservoir conditions within the Matix Field are believed to be representative of those in the other three sand fields being considered. Therefore, a condition within the field can be accepted for the others.

Calculations show that within the Matix Field 83 percent of ultimate oil recovery has been obtained with 68 percent of the effective reservoir pressure drop.

Production - Gas-oil ratio curves of the Hardy Field (Graph C-1), the Matix Field (Graph C-2), the Penrose Field (Graph C-3) and the Skelly Field (Graph C-4) show, with exception of the Skelly Field, a definite downward trend in the total volume of gas being produced although gas-oil ratios are increasing. Such condition suggests a much more rapid depletion of oil than gas and when considered in light of the fact that, as stated above, 83 percent of the ultimate oil recovery has been made with 68 percent of the effective reservoir pressure, it leads to the question as to whether or not the rate of gas production and corresponding reservoir pressure drop will materially affect ultimate recovery of oil.

The ability of each field to produce is reflected graphically by allowable development curves on the Harry Field (Graph B-1), Matlin Field (Graph B-2), Fecore Field (Graph B-3) and Shelly Field (Graph B-4). These curves show the continuous decline of the daily allowable per well the average daily allowable per marginal well and the rapidly approaching marginal condition of all the sand fields.

A tabulation is presented herewith to show the relationship of water to total fluid produced in date in each of the sand fields.

JULY 1, 1942				
FIELD	TOTAL OIL	TOTAL WATER	TOTAL FLUID	% OF WATER TO TOTAL FLUID
Harry	4,731,922	24,408	4,756,330	0.5
Matlin	6,851,459	127,107	6,978,566	1.8
Fecore	7,824,993	79,407	7,904,400	0.9
Shelly	2,898,103	45,106	2,943,209	1.5
			Ave.	1.27

Estimated average field reservoir pressure drop = 900 pounds.

The relationship of water produced to total fluid together with consideration of the reservoir pressure drop, justifies the opinion that the sand fields are dominantly volumetric drive reservoirs.

An exact count of the number of sand field wells which have been shut is not readily available. However, it is believed that 75 percent of total completions is a conservative estimate.

In as much as calculations have shown that 17 percent of the future recoverable oil can be produced by 25 percent of the effective remaining reservoir energy, it is apparent that a surplus of finding energy exists. However, it is also apparent that the future recoverable oil is so small that the expenditure necessary for remedial work in pay sections that have been shut is not economically justified.

If, as stated above, the relationship of water produced to total fluid together with consideration of reservoir pressure drop can be used as a means of identifying the type of reservoir drive within a field it is then evident, as shown by the following tabulation, that the Cooper, Dal and Lynn dolomitic-limestone fields are dominantly hydrostatic drive reservoirs.

SEPTEMBER 1, 1942				
FIELD	TOTAL OIL	TOTAL WATER	TOTAL FLUID	% WATER TO TOTAL FLUID
Cooper	1,460,135	116,425,197	117,885,332	80.6
Dal	4,129,629	36,477,445	40,607,074	89.15
Lynn	1,543,148	3,151,340	4,694,488	61.2
			Ave.	81.22

Estimated average field reservoir pressure drop = 150 pounds.

Production development curves on the Cooper Field (Graph D-1) the Lynn Field (Graph D-2) and the Dal Field (Graph D-3) show the rapid rate of increase of water during the early lives of the dolomitic-limestone fields. Such an increase possibly reflects the inability of operators to segregate, by remedial work, water from the oil.

A tabulation is herewith presented to show water and oil production per well per year in the three dolomitic-limestone fields.

OIL				
NO.	WATER	OIL	NO.	WATER
1941	2,116,884	1,116,116	1942	2,116,884
1942	2,116,884	1,116,116	1943	2,116,884
1943	2,116,884	1,116,116	1944	2,116,884
1944	2,116,884	1,116,116	1945	2,116,884
1945	2,116,884	1,116,116	1946	2,116,884
1946	2,116,884	1,116,116	1947	2,116,884
1947	2,116,884	1,116,116	1948	2,116,884
1948	2,116,884	1,116,116	1949	2,116,884
1949	2,116,884	1,116,116	1950	2,116,884
1950	2,116,884	1,116,116	1951	2,116,884
1951	2,116,884	1,116,116	1952	2,116,884
1952	2,116,884	1,116,116	1953	2,116,884
1953	2,116,884	1,116,116	1954	2,116,884
1954	2,116,884	1,116,116	1955	2,116,884
1955	2,116,884	1,116,116	1956	2,116,884
1956	2,116,884	1,116,116	1957	2,116,884
1957	2,116,884	1,116,116	1958	2,116,884
1958	2,116,884	1,116,116	1959	2,116,884
1959	2,116,884	1,116,116	1960	2,116,884
1960	2,116,884	1,116,116	1961	2,116,884
1961	2,116,884	1,116,116	1962	2,116,884
1962	2,116,884	1,116,116	1963	2,116,884
1963	2,116,884	1,116,116	1964	2,116,884
1964	2,116,884	1,116,116	1965	2,116,884
1965	2,116,884	1,116,116	1966	2,116,884
1966	2,116,884	1,116,116	1967	2,116,884
1967	2,116,884	1,116,116	1968	2,116,884
1968	2,116,884	1,116,116	1969	2,116,884
1969	2,116,884	1,116,116	1970	2,116,884
1970	2,116,884	1,116,116	1971	2,116,884
1971	2,116,884	1,116,116	1972	2,116,884
1972	2,116,884	1,116,116	1973	2,116,884
1973	2,116,884	1,116,116	1974	2,116,884
1974	2,116,884	1,116,116	1975	2,116,884
1975	2,116,884	1,116,116	1976	2,116,884
1976	2,116,884	1,116,116	1977	2,116,884
1977	2,116,884	1,116,116	1978	2,116,884
1978	2,116,884	1,116,116	1979	2,116,884
1979	2,116,884	1,116,116	1980	2,116,884
1980	2,116,884	1,116,116	1981	2,116,884
1981	2,116,884	1,116,116	1982	2,116,884
1982	2,116,884	1,116,116	1983	2,116,884
1983	2,116,884	1,116,116	1984	2,116,884
1984	2,116,884	1,116,116	1985	2,116,884
1985	2,116,884	1,116,116	1986	2,116,884
1986	2,116,884	1,116,116	1987	2,116,884
1987	2,116,884	1,116,116	1988	2,116,884
1988	2,116,884	1,116,116	1989	2,116,884
1989	2,116,884	1,116,116	1990	2,116,884
1990	2,116,884	1,116,116	1991	2,116,884
1991	2,116,884	1,116,116	1992	2,116,884
1992	2,116,884	1,116,116	1993	2,116,884
1993	2,116,884	1,116,116	1994	2,116,884
1994	2,116,884	1,116,116	1995	2,116,884
1995	2,116,884	1,116,116	1996	2,116,884
1996	2,116,884	1,116,116	1997	2,116,884
1997	2,116,884	1,116,116	1998	2,116,884
1998	2,116,884	1,116,116	1999	2,116,884
1999	2,116,884	1,116,116	2000	2,116,884
2000	2,116,884	1,116,116	2001	2,116,884
2001	2,116,884	1,116,116	2002	2,116,884
2002	2,116,884	1,116,116	2003	2,116,884
2003	2,116,884	1,116,116	2004	2,116,884
2004	2,116,884	1,116,116	2005	2,116,884
2005	2,116,884	1,116,116	2006	2,116,884
2006	2,116,884	1,116,116	2007	2,116,884
2007	2,116,884	1,116,116	2008	2,116,884
2008	2,116,884	1,116,116	2009	2,116,884
2009	2,116,884	1,116,116	2010	2,116,884
2010	2,116,884	1,116,116	2011	2,116,884
2011	2,116,884	1,116,116	2012	2,116,884
2012	2,116,884	1,116,116	2013	2,116,884
2013	2,116,884	1,116,116	2014	2,116,884
2014	2,116,884	1,116,116	2015	2,116,884
2015	2,116,884	1,116,116	2016	2,116,884
2016	2,116,884	1,116,116	2017	2,116,884
2017	2,116,884	1,116,116	2018	2,116,884
2018	2,116,884	1,116,116	2019	2,116,884
2019	2,116,884	1,116,116	2020	2,116,884
2020	2,116,884	1,116,116	2021	2,116,884
2021	2,116,884	1,116,116	2022	2,116,884
2022	2,116,884	1,116,116	2023	2,116,884
2023	2,116,884	1,116,116	2024	2,116,884
2024	2,116,884	1,116,116	2025	2,116,884
2025	2,116,884	1,116,116	2026	2,116,884
2026	2,116,884	1,116,116	2027	2,116,884
2027	2,116,884	1,116,116	2028	2,116,884
2028	2,116,884	1,116,116	2029	2,116,884
2029	2,116,884	1,116,116	2030	2,116,884
2030	2,116,884	1,116,116	2031	2,116,884
2031	2,116,884	1,116,116	2032	2,116,884
2032	2,116,884	1,116,116	2033	2,116,884
2033	2,116,884	1,116,116	2034	2,116,884
2034	2,116,884	1,116,116	2035	2,116,884
2035	2,116,884	1,116,116	2036	2,116,884
2036	2,116,884	1,116,116	2037	2,116,884
2037	2,116,884	1,116,116	2038	2,116,884
2038	2,116,884	1,116,116	2039	2,116,884
2039	2,116,884	1,116,116	2040	2,116,884
2040	2,116,884	1,116,116	2041	2,116,884
2041	2,116,884	1,116,116	2042	2,116,884
2042	2,116,884	1,116,116	2043	2,116,884
2043	2,116,884	1,116,116	2044	2,116,884
2044	2,116,884	1,116,116	2045	2,116,884
2045	2,116,884	1,116,116	2046	2,116,884
2046	2,116,884	1,116,116	2047	2,116,884
2047	2,116,884	1,116,116	2048	2,116,884
2048	2,116,884	1,116,116	2049	2,116,884
2049	2,116,884	1,116,116	2050	2,116,884
2050	2,116,884	1,116,116	2051	2,116,884
2051	2,116,884	1,116,116	2052	2,116,884
2052	2,116,884	1,116,116	2053	2,116,884
2053	2,116,884	1,116,116	2054	2,116,884
2054	2,116,884	1,116,116	2055	2,116,884
2055	2,116,884	1,116,116	2056	2,116,884
2056	2,116,884	1,116,116	2057	2,116,884
2057	2,116,884	1,116,116	2058	2,116,884
2058	2,116,884	1,116,116	2059	2,116,884
2059	2,116,884	1,116,116	2060	2,116,884
2060	2,116,884	1,116,116	2061	2,116,884
2061	2,116,884	1,116,116	2062	2,116,884
2062	2,116,884	1,116,116	2063	2,116,884
2063	2,116,884	1,116,116	2064	2,116,884
2064	2,116,884	1,116,116	2065	2,116,884
2065	2,116,884	1,116,116	2066	2,116,884
2066	2,116,884	1,116,116	2067	2,116,884
2067	2,116,884	1,116,116	2068	2,116,884
2068	2,116,884	1,116,116	2069	2,116,884
2069	2,116,884	1,116,116	2070	2,116,884
2070	2,116,884	1,116,116	2071	2,116,884
2071	2,116,884	1,116,116	2072	2,116,884
2072	2,116,884	1,116,116	2073	2,116,884
2073	2,116,884	1,116,116	2074	2,116,884
2074	2,116,884	1,116,116	2075	2,116,884
2075	2,116,884	1,116,116	2076	2,116,884
2076	2,116,884	1,116,116	2077	2,116,884
2077	2,116,884	1,116,116	2078	2,116,884
2078	2,116,884	1,116,116	2079	2,116,884
2079	2,116,884	1,116,116	2080	2,116,884
2080	2,116,884	1,116,116	2081	2,116,884
2081	2,116,884	1,116,116	2082	2,116,884
2082	2,116,884	1,116,116	2083	2,116,884
2083	2,116,884	1,116,116	2084	2,116,884
2084	2,116,884	1,116,116	2085	2,116,884
2085	2,116,884	1,116,116	2086	2,116,884
2086	2,116,884	1,116,116	2087	2,116,884
2087	2,116,884	1,116,116	2088	2,116,884
2088	2,116,884	1,116,116	2089	2,116,884
2089	2,116,884	1,116,116	2090	2,116,884
2090	2,116,884	1,116,116	2091	2,116,884
2091	2,116,884	1,116,116	2092	2,116,884
2092	2,116,884	1,116,116	2093	2,116,884
2093	2,116,884	1,116,116	2094	2,116,884
2094	2,116,884	1,116,116	2095	2,116,884
2095	2,116,884	1,116,116	2096	2,116,884
2096	2,116,884	1,116,116	2097	2,116,884
2097	2,116,884	1,116,116	2098	2,116,884
2098	2,116,884	1,116,116	2099	2,116,884
2099	2,116,884	1,116,116	2100	2,116,884

Decline of water production in the Dal Field as shown on Graph D-3 coincides with abandonment of certain oil wells. Decline of oil production within the Dal and Cooper Fields, as shown on Graph D-3 and Graph D-4, coincides with a period of one year of courting with the greatest yearly increase of water.

Attempted remedial work in the three dolomitic limestone fields has often proven unsuccessful and ultimately led to complete abandonment. Both from a geologic study and results of remedial work it can be stated that oil, gas and water are so closely associated within a common reservoir that the segregation of one from the other is very difficult and certainly economically unjustified.

TYPICAL REMEDIAL RESULTS-AND FIELD
 1941 Gulf Oil Corp. No. 1 Western C 18-215-372
 1941 set packer @ 2750 2.00 acid below
 before gas-oil ratio 2958
 after " " 3498
 FLOWING
 Continental Elliott No. 1 9-225-372
 1938 packer @ 3524
 before gas-oil ratio 3544
 after " " 18231
 1942
 1942 PERFORMED TEST AFTER
 Acid 1000 gal. (3540-3714) Oil 11 Gas 307 326
 Shut 20 cts. (3714-3715) " 23 " 761
 set pkr. 13 times in some " 124 " 971 best test
 (3715-3800)
 1942 gal. formation plug " 4 " 848
 (cage-3556)
 Shut well in account of high gas-oil ratio
 Continental Elliott A-15 No. 2 15-225-372
 1938 packer @ 3524
 before gas-oil ratio 35000
 after " " 14000
 Reset packer 3638
 before gas-oil ratio 14000
 after " " 16663
 Present gas-oil ratio 26320
 MATTIE
 Repollo Oil Co. No. 1 34-245-372
 1940 shut 200 cts. 3355-3435 (lower pay)
 solid stemming; packer @ 3324
 before workover 30 oil; gas-oil ratio 44000
 after workover 72 " " 19153
 Present production 11 " " 59778
 Anderson Frickard Oil Co. State A #1 32-245-372
 1941 Shut 90 cts. 3310-3540 solid stemming
 before 65 oil; gas-oil ratio 27000
 after 61 " " 7685
 Now " " 37301
 Anderson Frickard State A No. 2 32-245-372
 1941 set pkr. 6 times with no beneficial results
 Shut 120 cts. 3207-34 solid stemming
 before 105 oil; 1000 set gas
 after 105 " 7250 gas-oil ratio
 Now " 31182 " " "
 Stanolind Oil & Gas Co. Meyers A-2 22-245-372
 1941 treated with 1500 gal. formation plug
 before gas-oil ratio 28200
 after " " 16200
 Since increased gas-oil ratio 39780 now
 SKULLM
 Anderson Frickard Blinberry No. 1 29-235-372
 March 1941 set packer @ 3540 - no change in
 oil or gas production - no suitable packer seat
 was available below 3540, therefore, further
 attempts were not made.
 Present gas-oil ratio 20799

DISCUSSION OF REMEDIAL WORK

Examination of remedial work aimed at reducing gas-oil ratios in the sand areas revealed that:
 1. The close association of the gas with oil in the gas expansion type reservoir in narrow producing zones has offered little or no chance for the successful application of mechanical separation methods.
 2. A large percentage of the wells were shut heavily on completion to obtain production from the tight formation, therefore, mechanical control is impossible.
 3. In general, the few jobs that have been effective or partially effective have only been temporarily so.

TYPICAL REMEDIAL RESULTS COLOMBIAN LIME FIELDS

COOPER
 Phillips Pet. Co. No. 1 26-24-36
 1941 T.O. 3225
 Packer 3311 - after 61 above packer 50 bbl water/hr
 Packer 3284 - after 61 above packer 54 bbl water/hr
 before 2207 and 100 sax cement. After swabbed dry
 200 acid after - no oil, gas or water S.I.
 3000 acid poured 21 oil; 120 water
 Gulf Oil Corp. Ann. Ramsey #2 2-255-362
 1941 Seeded 150 sax below retainer @ 3411
 before 25 oil; 1000 water
 after pumped 10 oil; 10 water
 3000 acid poured 21 oil; 120 water
 Isarado Pet. Corp. Everett #2 34-24-36
 1941 3350 PSTD
 30 sax below retainer @ 3275
 before raising 100% water
 after swabbed dry - shut in and abandoned
 Gulf Oil Corp. G.E. Cooper No. 1 11-245-365
 Completed 6-15-35 Initial potential 1122 oil; no water
 on 11-14-35 started saving 100% water and died.
 Perf. upper zone to obtain more gas and put on gas
 lift. Made 121 oil.
 Present production 70 oil; 5400 water on gas lift.
 If shut in the well must be flowed from one to two
 weeks before oil is obtained
 J.E.
 Continental C. Sholes B 13-235-368
 Completed 2-26-33 Initially no water
 5-4-33 238 " "
 5-11-33 238 " "
 10-2-33 238 " "
 10-13-33 376 " "
 12-7-33 205 " "
 12-31-33 756 " "
 1-4-34 806 " "
 3-19-34 806 " "
 3-25-34 PB 15 sax, 3710-3943
 4-sax test 70 oil 245 water
 5-21-34 PB 50 sax, 3347-1315
 6-28-34 50 sax. Fluid: 100% water
 S.I. PB for gas well
 L.H.
 Shell Oil Co. Thittin No. 1 33-235-362
 1940 packer @ 3278 reduced gas-oil ratio
 from 5100 to 731

Continental Farm No. 2 4-12-48
 1941 before 12 oil; 7 water; 2518 gas-oil ratio
 Factor set at 1000
 Below meter 0 oil; 4 water; 186 MCF
 Above meter 41 oil; 7 water; 3048 gas-oil ratio
 Factor 360
 Below 0 oil; 12 water; 200 MCF
 Above 16 oil; 17 water; 2420 gas-oil ratio
 Now 12 oil; no water; 3875 gas-oil ratio

DISCUSSION OF REMEDIAL RESULTS IN THE COOPER, LIME AND JAL FIELDS

The study of numerous remedial jobs performed in the dolomitic lime fields in the southern portion of the county of which a few typical examples have been outlined above, brings forth the general conclusions:

1. The particular fields are characterized by early water invasion, control of which has been proven futile in the history of many wells. Water shut off has been accomplished almost universally at the cost of the entire oil production capacity of the well, resulting in many abandonments.
2. High gas-oil ratios in these fields are the necessary evil which must accompany natural flow of large fluid volumes only a small portion of which is oil.

TABLE NO. 3
MARGINAL WELLS AS SUBMITTED BY THE OPERATING NOVEMBER, 1942

COMPANY	WELL	UNIT	S.T.R.	REQUESTED MONTHLY PRODUCTION	MONTHLY TO	PERMITTED MONTHLY PRODUCTION	GAS-OIL RATIO	GAS VOLUME	GAS RATE	REMARKS
ANDERSON PET. CO.	1	L	25-19-36	4	120	3214	386			Gas lift & flow
ANDERSON PET. CO.	1	N	5-20-37	23	690	37058	25570			Exemption
CITIZEN SERVICE OIL CO.	1	P	27-19-36	12	360	750	270	22		Gas lift
CONTINENTAL OIL CO.	1	I	7-19-37	19	570	400	228			Gas lift
State A	1	M	26-19-36	25	750	3681	29011	25		Exemption
OLDF OIL CO.	1	L	33-19-37	33	990	2124	2103	44		Pump
Olthett	2	E	33-19-37	8	240	1400	136	71		Pump
Olthett	1	H	34-19-36	14	420	20980	10006	35		Exemption
Olthett	2	A	34-19-36	10	300	9740	2922	139		Exemption
Olthett	1	A	35-19-36	17	510	5270	2680	229		
Olthett	1	J	26-19-36	8	240	3258	782	31		
Olthett	2	B	6-20-37	22	660	22773	6892	27		
GREAT EASTERN PROD. CO.	2	F	33-19-37	15	450	1211	545	15		Pump
State B	1	D	33-19-37	15	450	1204	387			
HUMBLE OIL & REF. CO.	1	H	20-19-37	25	750	2165	1624	18		Pump
State B	2	A	20-19-37	20	600	2060	1224	19		Pump
OLIO OIL CO.	3	H	27-19-37	19	570	2890	1607			
McGrail	1	A	33-19-37	21	630	387	264	89		Pump
McGrail	1	M	25-19-36	8	240	574	1411			
McGrail	1	P	13-19-36	18	540	5763	2112	1867		Pump
STANFORD OIL & GAS CO.	4	B	26-20-36	17	510	5207	2556			
Gilluly	6	D	35-19-36	7	210	260	55			
THE TEXAS CO.	1	X	21-19-36	20	600	10342	6025			
State J	2	N	24-19-36	10	300	3067	6446	177		

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TABLE 3 COMPARISON BETWEEN OPERATIONS AND GASOLINE PLANT GAS VOLUMES ON SINGLE WELL UNITS MAY 1950													
COMPANY	WELL	NO.	DATE	OPERATIONS GAS VOL.	OPERATIONS GAS VOL.	OPERATIONS GAS VOL.	OPERATIONS GAS VOL.	OPERATIONS GAS VOL.	OPERATIONS GAS VOL.	OPERATIONS GAS VOL.	OPERATIONS GAS VOL.	OPERATIONS GAS VOL.	OPERATIONS GAS VOL.
ATLANTIC													
Colman	1 C	17-21-50	854	550	759	558	821	-	F				
State P	1 J	20-21-50	1115	1470	2218	238	1082	-	F				
"	J	1 H	21-21-50	1185	977	4825	775	8895	296	F			
"	L	1 E	11-21-50	1071	2087	1958				F			
"	2 F	21-21-50	1064	1987	1808					F			
"	5 O	2-21-50	584	1183	2071					OL			
CITIZEN SERVICE													
Fulton	1 C	28-21-50	300	3690	18980	32300	63100	10	F	14***			
CONTINENTAL													
Lechman's	1 D	13-21-50	2027	410		400		558	OL				
Elliot's	1 B	26-20-50	778	4883		6280		500	F				
Deby	1 A	18-21-50	385	218		650		40	F				
"	1 A	16-21-50	787	729		980		231	F				
"	1 H	16-21-50	755	3354	2986	4598		5935	F				
"	1 H	32-20-50	186	156		942		22	F	7			
Elf													
Fulton	1 F	28-21-50	1083	5859	28628	5430	26866	24300	F				
Junco	1 J	30-21-50	567	1768	12415	2187	21890	15954	OL	15			
"	1 T	1-21-50	434	5415	3043	6552	7705		F	14***			
Leak	1 E	14-21-50	702	2294	6382	7798	8995		F	22***			
Wal. Roney	1 M	27-21-50	2022	715		780			F				
Hall Roney	1 M	33-20-50	587	1294		2324		31	F	16			
White	1 F	35-20-50	245	7193	524	30715	1150		F	26	8*		
WHITE													
State C	1 A	27-21-50	1021	480	375	421	358	54	F				
MUSKOGEE													
Revere	1 D	29-20-50	247	8960	6215	26595	24081		F		10*		
PHILLIPS													
Shaw, Sta.	1 D	30-20-50	783	7230	11536	2477	15232		F	22***			
Madison	1 H	30-20-50	287	578		1998		287	F	22			
Map	1 A	30-20-50	291	1888	2562	6028	8041		F	18			
Deepen	1 F	13-20-50	535	299	865	587	1988	9	F	16			

TABLE 4 COMPARISON BETWEEN OPERATIONS AND GASOLINE PLANT GAS VOLUMES ON SINGLE WELL UNITS MAY 1950													
COMPANY	WELL	NO.	DATE	OPERATIONS GAS VOL.	OPERATIONS GAS VOL.	OPERATIONS GAS VOL.	OPERATIONS GAS VOL.	OPERATIONS GAS VOL.	OPERATIONS GAS VOL.	OPERATIONS GAS VOL.	OPERATIONS GAS VOL.	OPERATIONS GAS VOL.	OPERATIONS GAS VOL.
ATLANTIC													
Revere	1 L	29-21-50	175										
Revere	1 C	11-21-50	666	588	3544	890	1305	15	F	21			
Revere	1 E	21-20-50	1764	542	686				F				
State 198	1 L	30-20-50	1050	3135	225				F				
Map White	1 L	30-20-50	869	7189	5821	13088	9925	101	F	25	19*		
State B	1 D	29-21-50	1308	462	2187	459	1970	2380	F				
"	1 L	28-21-50	236	720					F	7			
REDELL													
Revere	1 C	10-21-50	753	560	219				F				
Revere	1 J	3-21-50	729	451	415	755	557		F				
Revere	1 D	11-21-50	588	660	591	1154	1015		F				
State C	1 C	27-21-50	1083	2987		2752		12	F				
"	1 J	30-20-50	686	3445	20610	5879	35000	12	F	20			
STANDARD													
State 26	1 C	30-21-50	907	2696	2215	2876	2442		F				
STANDARD													
State 2	1 E	22-21-50	1058	855					F				
STANDARD													
Revere	1 C	13-21-50	54	81	1523				F	2			
State 2	1 H	21-21-50	854	1028	30	8348		268	F	31*			
TRC S. A. H.													
Alta	1 H	31-21-50	489	2271	4553			582	F	10			
State	1 F	11-21-50	592	1187	1018	1191		1089	F				
TOTAL													
44 wells													
65 "													
30 identical wells													
117 wells													
115 wells													
52 identical wells													
CITIZEN SERVICE													
Fulton	1 C	28-21-50	300		18980		63100	10	F				

TABLE 4 CONT'D SINGLE WELL UNITS WITH GAS-OIL RATIO IN EXCESS OF 6500 CONT'D											
COMPANY	WELL	DATE	MO.	DAY	WELL	DATE	MO.	DAY	WELL	DATE	MO.
LEASE	NO.	S.T.R.	PROD.	GAS VOL.	PROD.	GAS VOL.	PROD.	GAS VOL.	PROD.	GAS VOL.	PROD.
Single well units with gas oil ratio in excess of 6500 (Total Tests)											
GULF	1	F	24-21-36	1083	26653	26458	251	6590			
Fulton	1	J	30-21-36	587	16432	16390	304	6590			
Jacks	1	T	2-21-36	424	3625	3302	436	3828			
Leak	1	S	14-21-36	703	7464	30715	783	6322			
White B	1	P	15-20-36	243		217	6650				
HIDGOUTIDENT	1	D	29-20-37	247	6594	26095	247	6594			
Reeves	1	D	30-20-37	964	11637	13232	437	6590			
Phillips	1	I	15-20-36	529	7188	13668	489	6650			
Edna W.	1	I	24-21-36	255	7030	27833	243	6650			
Shelly St. G	1	J	30-20-37	586	20510	30000	191	6650			
Flower	1	B	21-21-36	854	7129	6848	757	6530			
State G	1	B	21-21-36	854	7129	6848	757	6530			
TOTAL	12	Wells		6565	33010	38474	17923	20535	4118	76391	17221
If these wells limited to the gas volume production based upon top allowable (85 bbls) times 31 days times 6500 gas-oil ratio or 2,500,000 cu ft. per month											
There is an approximate gas volume saving per mo. of 61083											
or saving per operating day of 1971											
Approximate gas volume saving per month											
Approximate gas volume saving per day											
Document & Sample											

TABLE NO. 5 TENTATIVE TRANSFER OF ALLOWABLE FROM A HIGHER GAS-OIL RATIO WELL TO A LOWER GAS-OIL RATIO WELL ON TWO WELL UNITS											
COMPANY	WELL	UNIT	S.T.R.	PROD.	GAS	PROD.	GAS	PROD.	GAS	PROD.	GAS
LEASE	NO.	S.T.R.	PROD.	GAS	PROD.	GAS	PROD.	GAS	PROD.	GAS	PROD.
Atlantic Ref. Co.											
Houston	1	D	7-22-36	880	353	435	46	GL	1905	435	830
State B	1	E	8-21-36	1025	552	539	342	GL			
"	2	"	"	510M	559	517		F			
"	C	1	W	5-21-36	990	4788	4936	F	2209	4836	10700
"	E	2	X	"	1219	8077	6646	F	2309	3990	9220
"	E	1	S	"	1413	5638	3940	F			
"	G	2	T	"	896M	4768	5321	F			
"	G	1	U	"	1064	5303	3640	F	2128	3769	8920
"	G	2	V	"	1064	4010	3769	F			
"	K	1	V	6-21-36	1425	738	408	GL			
"	L	3	E	"	840	314	475	F	1699	1171	1898
"	L	3	E	"	840	314	475	F			
"	M	1	I	36-20-36	1067	3962	3713	F	2134	1179	2516
"	O	1	E	12-20-37	1067	1238	1179	F			
"	O	1	E	"	250M	228	912	GL			
"	P	1	F	25-20-36	1034	1206	1165	F	2089	1165	2440
"	P	2	C	"	1055	5022	4760	F			
CITIES SERVICE OIL CO.	1	U	2-21-36	1079	159	147		F	2156	147	318
State G	1	U	"	1079	1283	1189		F			
COMBINATION OIL CO.	1	X	17-21-36	741	1890	2551		F			
Meyers B	1	X	"	739	1128	1527		F	1480	1527	2260
WELLS & EXPLORATION CO.	1	E	19-21-36	588	4704	8000		F			
State F	1	E	"	900	6120	6600		F			
"	2	L	"					F			

COMPANY	WELL	UNIT	S.T.R.	AUG.	MO.	PROD.	GAS.	NO.	WATER	METHOD	OIL	G.O.R.	GAS	WATER	REMARKS
ELLIOTT	1	I	26-20-36	846	3520	4200	100	GL							Can not make allow.
"	2	J	"	857				F							"
GULF OIL CO.	1	O	6-21-36	1066	2145	2080	28	F							
"	2	F	"	1071	1605	1469	126	F							
"	1	I	6-21-36	1070	4570	4271		F							
"	2	C	"	1071	3877	3630		F							
"	1	T	"	1054	991	960	531	F							
"	2	O	"	1055	979	949	574	F							
"	1	D	11-21-36	1055	4876	4622		F							
"	2	C	"	1055	5318	5000		F							
Bakler	1	O	19-20-37	8136	1107	1363	72	F							Marg. well 28
"	2	J	"	7964	2277	2860	62	F							" 27
Grabas St. E.	1	K	6-21-36	1048	3526	3863		F							
"	2	R	"	1041	1064	1025		F							
Janis	1	P	29-21-36	1010	478	473		F							
"	2	I	"	1007	1317	1395		F							
Orcutt	1	G	5-21-36	1096	1376	1310		F							
"	2	H	"	1050	1701	1686		F							
A. Ramsey D	1	D	33-21-36	1060	4015	3861	7600	GL							No transfer-too much water
"	2	A	"	1060	7713	7416	6300	GL							
Reeves	1	L	29-20-37	1484	953	1254		F							Marginal 14 Wils.
"	2	E	"	1304	78	600		F							" 5 "
PHILLIPS PET. CO.	1	A	26-20-36	4224	3323	7875		F							" 16 "
"	2	H	"	3834	15376	40127		F							" 14 "
REDFORD OIL CO.	1	C	7-21-36	1053	1000	950	122	F							No advantage
"	2	F	"	1054	1008	975	941	F							
State 196	1	M	32-20-37	411	1971	47965	62	F							Marginal 12 Wils.
"	2	L	"	4104	19072	47980	6	F							Penal. to 5
White	1	P	24-20-36	1054	2161	2000	31	F							
"	2	I	"	1054	2171	2060	31	F							

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COMPANY	WELL	UNIT	S.T.R.	AUG.	MO.	PROD.	GAS.	NO.	WATER	METHOD	OIL	G.O.R.	GAS	WATER	REMARKS
SHILL OIL CO. INC.	1	J	17-21-36	1028	2276	7078	130	F							
"	2	C	"	1029	2009	1949	88	F							
State C	1	A	21-31-35	914	11783	13111	175	F							No transfer
"	2	M	"	935	8754	9032	146	F							
SHILL OIL CO.	1	E	25-20-36	1137	3900	3445	55	F							" "
"	2	D	"	1131	3911	3458		F							
STANGLING OIL & GAS CO.	1	A	11-21-36	1079	5591	5274	27	F							" "
"	2	B	"	1079	5584	5175		F							
McQuatters	1	A	11-21-36	2124	369	1646	15	F							Marg. 19 Wils.
State C-11	1	I	2-21-36	3324	423	1455	16	F							" 11 "
"	2	D	"	965	2226	2267	50	F							No transfer
"	1	D	"	965	2234	2315	10	F							
"	2	C	22-21-36	965	2234	2315	10	F							
THIRWATER ASSOC. OIL CO.	1	J	15-21-36	1083	1602	1479		F							" "
"	2	O	"	1083	1384	1278	20	F							" "
"	1	T	"	1081	1463	1393		F							" "
"	2	F	"	1081	1367	1299		F							
WHEELER-HOOK ENGINEERING CO.	1	R	5-21-36	1054	1717	1600		F							
"	2	Q	"	1054	1717	1600		F							
SHILL OIL CO. INC.	1	I	6-21-36	979	6231	6365	10	F							
"	2	J	"	979	835	853	640	F							
"	1	M	"	995	688	692	525	F							
"	2	M	"	995	688	692	525	F							
"	1	K	"	1135	525	463	114	F							
"	2	L	"	1136	609	612	1375	F							
"	1	Q	2-21-35	1035	24649	24782	260	F							
"	2	X	"	60	5811	6887	20	F							
TOTAL 11 units 80 wells				7514	370378	4685	23872								
19 units 19 wells transferred				150179	3990	2423									
gas saving 57,110 cu ft															
gas saving per operating day 1,204,000 cu ft															
water increase 413 bbls. per month															

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TENTATIVE TRANSFER OF ALLOWABLE FROM A HIGHER GAS-OIL RATIO WELL TO A LOWER GAS-OIL RATIO WELL ON TWO WELL UNITS											
DATE: 10-1-57											
WELL UNIT S.T.B.											
COMPANY	WELL UNIT S.T.B.	ANG. PROD. G.O.	MO. G.O.	WATER	METHOD	TRANSFERRED ALLOWABLE	REMARKS				
LEAS	WELL UNIT S.T.B.	ANG. PROD. G.O.	MO. G.O.	WATER	METHOD	TRANSFERRED ALLOWABLE	REMARKS				
ANDERSON PET. CO.											
Anderson	1 K 8-20-37	1104	2302	2085	F	2203 536 1182	All				
"	2 N " 1105	134	485	207	F						
Byrd A	1 E 12-20-36	1108	907	819	F						
"	2 E " 1049	434	434		F	2157 434 893					
Phillips A	1 G 31-19-37	1187	872	735	F						
"	2 H " 1222	568	793		F						
S. Phillips	1 N 33-19-37	1330	877	622	F						
"	2 K " 970	619	698		F						
State G	1 M 10-19-37	1095	898	850	F						
"	2 L " 1165	77	66	61	F						
"	3 U 1-20-36	1119	557	458	F						
"	4 J " 1115	619	523		F						
"	5 K " 962	292	34	66	F	1724 334 585 132					
"	6 C " 962	475	702	131	F						
"	7 L " 1204	596	430		F						
"	8 P " 1217	2596	2133		F						
"	9 M " 1184	1010	853		F	2101 853 2048					
"	10 J " 1109	2004	1814	123	F	2241 1814 4043 245					
"	11 I " 1136	4426	3896	284	F						
"	12 A " 1122	1731	1721	280	F						
"	13 N " 1157	835	720	385	F	2279 720 1641 772					
"	14 S " 993	812	618		F						
"	15 T " 595	472	474	111	F	1877 944 1772 136					
"	16 C " 998	885	944	68	F						
"	17 U " 929	2226	2371	49	F						
"	18 D " 1204	2221	1845		F	2409 491 1183					
"	19 Y " 1202	132	451		F						
"	20 J " 1108	509	459		F						
"	21 Z " 1078	478	443		F						
"	22 A " 1097	177	161		F						
"	23 H " 1039	625	602		F						
"	24 G " 614	691	1049		F						
"	25 F " 611	1763	2122		F	144 2122 3066	Penal. well 8/15/57				

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TENTATIVE TRANSFER OF ALLOWABLE FROM A HIGHER GAS-OIL RATIO WELL TO A LOWER GAS-OIL RATIO WELL ON TWO WELL UNITS											
DATE: 10-1-57											
WELL UNIT S.T.B.											
COMPANY	WELL UNIT S.T.B.	ANG. PROD. G.O.	MO. G.O.	WATER	METHOD	TRANSFERRED ALLOWABLE	REMARKS				
LEAS	WELL UNIT S.T.B.	ANG. PROD. G.O.	MO. G.O.	WATER	METHOD	TRANSFERRED ALLOWABLE	REMARKS				
AMERICAN REPUBLIC CORP.											
Harvey	1 F 25-17-36	1146	2944	2568	F						
"	2 F " 1135	1798	1575	28	F	2281 1575 3593 56					
ANDERSON PETROLEUM OIL CORP.											
Britt A	1 N 8-20-37	1309	415	317	F						
"	2 K " 1308	334	255		F						
CLARK, E.B.	1 C 3-20-37	1015			F						No. inform. new well.
Cooper	2 F " "				F						
CONTINENTAL OIL CO.											
Britt A	1 N 6-20-37	929	416	448	F						
"	2 L " 927	431	484		F						
Reed B	1 A 23-20-36	494	1555	3087	F						Marginal
"	4 B " 493	1348	2775		F						
SHULSKY OIL CORP.											
Walt State	1 D 17-20-37	1061	1720	1549	F						
"	2 E " 1062	533	480		F	2123 533 1132					
GREAT WESTERN OIL CO.											
Bordages	1 D 13-19-37	365	430	1074	F						
"	2 F " 423	560	1211	15	F						
GULF OIL CORP.											
Bell	1 F 13-20-36	1147	440	386	F	2046 440 900					
"	2 O " 892	1078	1199		F						
Graham St. B	1 F 2-20-36	733	380	246	20	F	1743 246 429 46				
"	2 I " 1010	4477	4433	67	F						
"	3 O 19-19-37	1117	503	450	F						
"	4 P " 1118	790	707		F						
"	5 L 13-20-36	998	1265	1720	F	1792 1320 2365					
"	6 M " 834	1614	1935		F						
"	7 B 13-20-36	1117	523	468	F						
"	8 G " 1054	612	581		F						
"	9 B 13-19-37	1695	1285	2156	46	F					
Hatchett	2 E " 543	760	1400	71	F	2023 402 637 106	Marginal 8 blks.				
"	3 O 20-19-37	1082	437	402	53	F					
"	4 J " 935	5829	5929	99	F						
"	5 P 7-17-37	1114	276	218	F						
"	6 O " 834	377	452	75	F						
"	7 O 32-19-37	1043	2188	2096	39	F					
Love	1 O " "				F						

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MONTGOMERY - C-60									
COMPANY	WELL	UNIT	ST. P.	ACQ.	MO.	PRD.	MO.	WTRD	TRANSFERS
LEASE	NO.			SRB.	SRB.	SRB.	SRB.	ACQ.	OIL
									G.O.R.
									434 3/4
									WTR. RES.
									NONWAS
Monstate	1	F	13-19-36	437	2518	1763	1867	F	
"	2	F	"	662	3609	2447	4292	F	
State D	1	F	1-20-36	1261	400	257		F	2652 325 607
"	2	F	"	1241	1101	887		F	
"	2	F	"	972	1886	1869	50	F	
"	2	F	"	1025	2133	2100		F	
"	F	1	17-40-39	1415	654	462		F	
"	2	F	"	1434	733	547		F	
SOUTHERN PET. ASSOCIATION CO.									
State	1	F	2-19-37	762	2929	3900		F	
"	2	F	"	762	2929	3900	30	F	
SUN OIL CO.									
Lauphin	1	F	4-20-37	1115	314	382		F	2231 202 629
"	2	F	"	1006	1116	2700		F	
"	1	F	25-19-36	1054	4206			F	1756 1820 320
"	2	F	"	704	1263	400		F	
THE TEXAS CO.									
St. Univ.	A		19-20-37	497	3445	6398		F	
"	B	F	"	499	4315	9321		F	992 - 688 687A
State F	1	F	24-19-36	1406	2750	194		F	
"	2	F	"	1393	608	4300		F	2799 1956 5475
"	G	F	19-19-37	1207	4250	348		F	
"	H	F	"	1207	4008	430		F	
"	M	10	D	"	641	2336	576		
"	M	2	D	"	641	2336	577	26	F
"	J	K	24-19-36	530	4700	7987		F	
"	K	R	"	531	6448	25470	177	F	
"	X	1	F	18-19-37	1158	611	787	F	
"	2	F	"	1158	608	668		F	
Weir	1	F	25-19-36	86	9779	45100	3	F	
"	2	F	23-19-36	1440	2595	72500		F	78754 72500
WATERBURY ASSOC. OIL CO.									
Waterston	2	F	8-30-37	97	1066	1472	184	F	
"	2	F	"	1026	1232	1181		F	
Lauphin	1	F	4-20-37	1216	656	625		F	
"	2	F	"	1213	729	277		F	

Marginal 20 bbls.
 Perm. well (29-7)
 20 bbls.

COMPANY	WELL	DATE	APL	NO.	GAS	WATER	METHOD	TRANSFERRED	REMARKS
INDUSTRIAL-CONV.									
State F	1	D	20-10-37	1085	1334	1230	F		
"	2	C	"	1086	1484	1371	F		
"	3	L	30-10-37	1086	1384	1321	F		
"	4	E	"	1087	1375	1314	F		
"	5	H	10-10-37	1167	547	544	F		
"	6	E	"	1223	788	647	F		
"	7	K	10-10-36	999	2356	2125	F		
"	8	"	"	998	2277	2128	F		
TWO STATES OIL CO.									
Recovery	1	S	10-10-36	228	565	24578	F		Penal. applied (20-4) 20 bbls.
"	2	J	"	152	5611	38211	F		Penal. applied (20-4) 20 bbls.
TOTAL 66 units 136 wells (134) 138146									
(137) 126 267 254177									
25 units 50 wells 50645 465 13885 2218									
(137) 126 267 254177									
25 units 25 wells transferred									
gas saving 48,252 MCF									
water reduction 2084 bbls. per month									
gas saving per operating day 1,557,000 cu/ft.									

TABLE V - C
Tentative transfer of allowable from a higher gas-oil ratio well to a lower gas-oil ratio well on three or more units per lease

COMPANY	WELL	DATE	APL	NO.	GAS	WATER	METHOD	TRANSFERRED	REMARKS
STATE									
State A	1	E	7-1-36	1142	377	505	F	2288	1154 505
"	2	A	"	1142	1025	898	F	1142	1285 898
"	3	B	"	1142	835	825	F	1142	945 825
"	4	C	"	1144	2102	1537	F		
State W	1	E	20-10-37	1279	7289	27024	F	279	7289 27024
"	2	F	"	729	2515	4359	F	729	3515 4359
"	3	E	"	729	845	1159	F	729	145 1159
ATLANTIC									
State H	1	O	5-1-36	991	1554	1596	F	1977	1178 596
"	2	P	"	991	1312	1369	F	991	1712 1369
"	3	J	"	863	5115	2196	F	965	2115 2196
"	4	I	"	1048	2211	2205	F		
CITIZEN SERVICE									
State C	1	L	10-11-36	885	1853	1619	F	1770	2865 1619
"	2	M	"	885	3096	4175	F		
"	3	I	"	886	4991	5539	F		
"	4	E	"	885	480	544	F	1771	963 544
State D	1	E	22-11-36	659	3413	5250	GL	850	3413 5250
"	2	O	"	759	3603	5610	GL	759	4803 5610
"	3	A	"	312	957	2100	F	312	967 2100
"	4	E	"	158	635	4000	GL	158	635 4000
State F	1	O	20-10-37	1375	6945	5540	F	1325	6945 5540
"	2	I	"	775	1975	2550	F	775	1975 2550
"	3	P	"	630	3006	5170	F	630	3006 5170
COLLIERIES									
Leahurst	1	P	10-11-36	1097	3702	3375	GL	3190	7391 3375 128
"	2	O	"	1094	435	400	GL	1094	435 400 2790
"	3	K	"	1076	345	400	GL	1076	435 400 3100
"	4	M	"	1098	12179	11455	F	1098	12179 11455 685
"	5	U	"	1075	435	400	GL	1075	435 400 3100
"	6	L	"	1093	10790	9872	F		
"	7	E	"	255	1075	840	GL	255	107 470 327
"	8	A	"	318	1572	400	GL	318	157 470 1555

TABLE NO. 6 - BUREAU CONT'D														CO	
COUNTY	WELL	DATE	DEPTH	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY		
DEPT.	NO.	DATE	FEET	PROD.	G.O.P.	WATER	METHOD	USED	WELL	WELL	WELL	WELL	WELL		
Lockhart A	3 B	30-21-36	370	1488	400	3100	P	370	148	400	3100				
"	4 B	"	349	2122	400	24800	GL	349	212	400	24800				
"	6 F	"	212	854	400	248	GL	212	85	400	248				
"	1 B	12-21-36	944	5844	8191	858	F	944	5844	8191	858				
"	2 D	"	941	5302	8134		F	941	5302	8134					
"	3 A	"	1028	6286	8135		F	1028	6286	8135					
"	4 H	"	1028	6286	8135		F	1028	6286	8135					
"	5 L	"	610	4228	6821	496	F	610	4228	6821	496				
"	6 M	"	946	6274	6822	510	F	946	6274	6822	510				
"	1 D	12-21-36	1007	3912	8085		F	1007	3912	8085					
"	2 E	"	1009	3461	8460	504									
"	3 L	"	1008	402	400	980	GL	1005	402	400	980				
"	4 M	"	1008	402	400	280	GL	2017	807	400					
"	1 D	12-21-36	180	13711	14761	217									
"	2 E	"	821	3488	3727	248		1801	6982	3727	496				
"	3 O	"	829	3488	4271	248		1801	7020	4271	496				
"	4 P	"	902	6400	7096	12400									
Mayer A	1 E	8-21-36	1066	3310	4972		2 MRO	844	3767						
"	2 S	"	1064	4008	2767										
"	3 H	"	1065	6796	6382			2132	6989	3260					
"	4 L	"	1067	3468	3200			969	1186	1772					
"	1 H	12-21-36	669	1186	2773			1253	1261	1262	124				
"	2 F	"	671	629	2042	62									
"	3 E	"	687	2527	2789										
"	4 I	"	678	270	400	620	GL	674	270	400	620				
"	5 L	"	686	4476	15170	124									
"	6 N	"	686	1211	1819			961	1748	1819					
"	1 A	12-21-36	1071	3006	2731										
"	2 J	"	1069	428	400	24800	GL	1069	428	400	24800				
"	3 I	"	1071	1049	1025	88		2142	2176	1018	88				
"	4 O	"	1070	428	400	9300	GL	1070	428	400	9300				
"	5 H	"	1072	2396	2338	185		1072	2396	2338	186				
"	6 S	"	1076	420	400	12400	GL	1075	420	400	12400				
"	1 V	4-21-36	1082	3963	3033			1082	3963	3033					
"	2 W	"	1084	6645	6028										
"	3 Q	"	1080	2776	2270			2164	5561	2570					
"	4 S	"	1086	2317	2622			2166	5677	2622					

TABLE NO. 6 CONT'D - WYOMING														CO	
COUNTY	WELL	DATE	DEPTH	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY		
DEPT.	NO.	DATE	FEET	PROD.	G.O.P.	WATER	METHOD	USED	WELL	WELL	WELL	WELL	WELL		
Mayer A	5 I	4-21-36	1078	3286	3018										
"	6 J	"	1070	3798	3017										
"	7 K	"	1064	3011	3553										
"	8 O	"	1068	3016	3089										
"	9 L	"	1053	4132	3777										
"	10 I	"	1087	2363	2174										
"	11 K	"	1089	2366	2869										
"	12 F	"	1079	5687	5271										
"	13 J	"	1046	2130	1970										
"	14 G	"	1078	2879	2871										
"	15 C	"	1078	3058	2637										
"	16 B	"	1078	4948	4900										
"	17 A	"	1051	2117	1916										
"	18 S	"	1082	3046	3087										
"	1 F	8-21-37	1110	1928	1737										
"	2 C	"	1112	1794	1315										
"	3 E	"	1108	7691	6941										
"	4 D	"	1111	2816	3536										
"	1 K	8-21-36	1102	4223	2101										
"	2 F	"	1108	6911	6349										
"	3 J	"	1102	7676	6931										
"	4 C	"	1104	7259	6676										
"	1 P	10-21-36	1157	401	400	10850	GL	1157	401	400	10850				
"	3 D	"	1155	1315	1231	51									
"	4 E	"	1120	3623	3616										
"	2 E	"	841	670	1646										
"	5 P	"	533	2172	5222										
"	6 I	"	642	925	931										
"	6 O	"	542	2187	5880	186									
"	7 J	"	810	2182	4002										
"	8 G	"	544	2024	5919										
"	1 H	12-20-36	610	218	1482										
"	2 E	"	612	277	270	62	GL	612	277	270	62				
"	2 H	"	641	2171	3347										
"	4 L	"	677	918	950										
State B	1 D	12-21-3	1400	2561	2825										
"	2 S	"	1401	1208	6192	106									

[illegible]

TABLE NO. 6 CONT'D - SUNBELT											
COMPANY LEASE	WELL NO.	S.T.R.	MONTHLY		WATER PROD.	METHOD USED	TRANS.		ALL WATER SOL.	REMARKS	
			PROD.	G.O.R.			OL	G.O.R.			
White											
Growth C	1 A	6-21-36	1048	2641	2580	179	1048	2641	2580	179	
	2 A		1049	2632	2700		1049	2632	2700		
	3 G		1050	1528	1590	585	1050	1528	1590	575	
	4 T		1050	1500	1348	38	1050	1490	1229	38	
	5 P	36-20-36	1049	2380	2250		1100	1775	2250	38	
	6 C	6-21-36	1047	1120	1070	58	1047	1120	1070	58	
	7 O	36-20-36	1050	308	293	129	1050	308	293	129	
	8 S	6-21-36	1051	3689	3700						
Armstrong Ramsey	9 M	21-31-36	1047	612	585		1047	612	585		
	10 D		1047	582	374		2093	783	374		
	11 L		1053	2190	2019	2217					
	12 E		1048	522	498	427		2101	1046	498	874
	13 H		1048	3603	3328	2109	OL	1048	3603	3328	2109
	14 C		1048	523	796		1048	523	796		
	15 O		1048	1009	831		1048	1009	831		
	16 S		1048	3689	3518	453					
	17 A		1048	919	877	62	1048	919	877	62	
	18 G		1047	694	585	66	1047	694	585	66	
	19 I		1051	817	477		2132	1017	477		
	20 J		1048	2777	2650	596	1048	1309	1251		
Bell Ramsey	21 F		1046	1309	1251		2095	735	351		
	22 K		1047	574	351						
	23 E	9-21-36	1040	4604	4077	75					
	24 M		970	5322	5328						
	25 S		920	6376	6060	24					
	26 D		967	1241	1490		1933	2880	1490		
	27 A	6-21-36	1039	2192	2110	288	1039	2192	2110	288	
	28 T		1065	1651	1568		1065	1651	1568		
	29 M		1023	1666	1637	63	1068	3336	1637	126	
	30 L		534	1004	970						
Dunham	31 S		1018	3178	3120	63	1018	3178	3120	63	
	32 U	36-20-37	1047	7004	6590		1047	7004	6590		
	33 V		632	14578	20100		632	14578	20100		
	34 X		609	32305	8310	87	609	32305	8310	87	
White											

TABLE NO. 6 SUNBELT - CONT'D											
COMPANY LEASE	WELL NO.	S.T.R.	MONTHLY		WATER PROD.	METHOD USED	TRANS.		ALL WATER SOL.	REMARKS	
			PROD.	GAS			OL.	G.O.R.			
White											
2 I	25-20-36		1039	4250	4090						
3 H			1039	2976	2860						
4 G			987	3879	3930	478					
5 A			1038	3815	3740	63					475
6 J			988	1480	1468						
Humble											
1 N	10-21-36		738	4190	5678						
2 M			560	2335	4169						
3 P			850	3760	4911						
4 L			560	3831	5773						
5 R			560	2770	3946						
6 S			560	2855	3904						
7 T			738	2820	3516						
8 U	25-20-36		608	4038	5724						
9 V	36-20-36		175	1385M	7914	68					68
10 W	25-20-36		609	4054	6544						
11 X	25-20-36		609	6750	11084						
Knox											
1 Y	10-21-36		140	1450M	10646						
2 Z			678	4310	6209						
3 AA			678	4190	6158						
4 AB			498	3190	6345						
5 AC			498	3145	6315						
6 AD			678	4037	5999						
7 AE			678	4022	6617						
8 AF			498	3230	5606						
9 AG			498	3231	5609						
10 AH	31-20-37		698	3920	5656						
11 AI			698	3125	4496						
12 AJ			624	4040	6372						
13 AK			624	3926	6177						
14 AL			653	3830	5811						
15 AM			615	3240	5253						
16 AN			615	3110	8056						
17 AO			145	9980	96976	8					
18 AP			653	3083	4431						
19 AQ			615	3592	3640						
20 AR			654	3333	4942						
21 AS			695	2950	4311						
22 AT			615	3592	3640						
23 AU			624	3916	6177						
24 AV			624	3917	6178						
25 AW			624	3917	6178						
26 AX			624	3917	6178						
27 AY			624	3917	6178						
28 AZ			624	3917	6178						
29 BA			624	3917	6178						
30 BB			624	3917	6178						
31 BC			624	3917	6178						
32 BD			624	3917	6178						
33 BE			624	3917	6178						
34 BF			624	3917	6178						
35 BG			624	3917	6178						
36 BH			624	3917	6178						
37 BI			624	3917	6178						
38 BJ			624	3917	6178						
39 BK			624	3917	6178						
40 BL			624	3917	6178						
41 BM			624	3917	6178						
42 BN			624	3917	6178						
43 BO			624	3917	6178						
44 BP			624	3917	6178						
45 BQ			624	3917	6178						
46 BR			624	3917	6178						
47 BS			624	3917	6178						
48 BT			624	3917	6178						
49 BU			624	3917	6178						
50 BV			624	3917	6178						
51 BW			624	3917	6178						
52 BX			624	3917	6178						
53 BY			624	3917	6178						
54 BZ			624	3917	6178						
55 CA			624	3917	6178						
56 CB			624	3917	6178						
57 CC			624	3917	6178						
58 CD			624	3917	6178						
59 CE			624	3917	6178						
60 CF			624	3917	6178						
61 CG			624	3917	6178						
62 CH			624	3917	6178						
63 CI			624	3917	6178						
64 CJ			624	3917	6178						
65 CK			624	3917	6178						
66 CL			624	3917	6178						
67 CM			624	3917	6178						
68 CN			624	3917	6178						
69 CO			624	3917	6178						
70 CP			624	3917	6178						
71 CQ			624	3917	6178						
72 CR			624	3917	6178						
73 CS			624	3917	6178						
74 CT			624	3917	6178						
75 CU			624	3917	6178						
76 CV			624	3917	6178						
77 CW			624	3917	6178						
78 CX			624	3917	6178						
79 CY			624	3917	6178						
80 CZ			624	3917	6178						
81 DA			624	3917	6178						
82 DB			624	3917	6178						
83 DC			624	3917	6178						
84 DD			624	3917	6178						
85 DE			624	3917	6178						
86 DF			624	3917	6178						
87 DG			624	3917	6178						
88 DH			624	3917	6178						
89 DI			624	3917	6178						
90 DJ			624	3917	6178						
91 DK			624	3917	6178						
92 DL			624	3917	6178						
93 DM			624	3917	6178						
94 DN			624	3917	6178						
95 DO			624	3917	6178						
96 DP			624	3917	6178						
97 DQ			624	3917	6178						
98 DR			624	3917	6178						
99 DS			624	3917	6178						
100 DT			624	3917	6178						

TABLE NO.	6	REFUGEE-NO	NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	12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TABLE 5
Tentative transfer of allowable from a higher gas-oil ratio well to a lower gas-oil ratio well on
three or more units per lease

COMPANY LEASE	WELL NO.	S.T.R.	AUGUST MONTHLY PROD.	MONTHLY GAS MCF	MONTHLY G.O.R.	WATER ENTR. PROD.	THRU- PUT OIL GAS	ALL WATER ENTR. DRAINS
Andrews	1 D	10-20-36	1073	520	484	-	1901 939	494
"	2 A	11-20-36	820	1728	2168	-	-	-
"	3 H	11-20-36	981	1270	1300	-	981 1170	1300
"	4 L	12-20-36	1018	184	162	-	1018 164	162
"	5 B	12-20-36	828	418	608	-	828 418	608
"	6 H	"	868	370	429	-	868 370	429
Byrd	1 E	"	1106	904	277	-	1106 904	277
"	2 G	"	1106	230	215	-	1106 230	215
"	3 J	"	1106	370	330	-	1106 370	330
"	4 C	"	1110	801	632	-	1110 801	632
"	6 D	"	1119	480	384	-	1119 480	384
"	5 F	"	1108	172	156	-	1108 172	156
Lockhart	1 B	6-20-37	1250	828	500	-	1250 828	500
"	2 G	"	1206	1048	951	-	1206 1048	951
"	3 A	"	1250	870	490	-	1250 870	490
"	4 C	"	1250	514	411	-	1250 514	411
Larsen	1 F	12-19-37	992	3560	3599	-	992 3560	3599
"	2 C	"	1088	1783	1639	121	1088 1783	1639
"	3 D	"	992	354	377	-	992 354	377
"	4 G	"	991	960	999	-	991 960	999
Laughlin	1 D	9-20-37	1139	1239	1000	-	1139 1239	1000
"	2 C	"	1107	531	488	-	1107 531	488
"	3 B	"	1107	511	4619	-	1107 511	4619
Phillips	1 A	1-20-36	1139	708	93	-	1139 708	93
"	2 E	"	1106	1000	904	-	1106 1000	904
"	3 D	"	1106	344	311	-	1106 344	311
"	4 B	"	1106	188	170	-	1106 188	170
State D	1 D	"	1119	365	326	23	1119 365	326
"	2 E	"	1061	587	553	22	1061 587	553
"	3 F	"	1119	152	138	-	1119 152	138
"	4 G	"	1119	144	129	-	1119 144	129
State F	1 W	30-10-36	1104	487	441	-	1104 487	441
"	2 L	"	1104	857	840	276	1104 857	840

TABLE 5a 6 CONT'D - MONROVIA

COMPANY LEASE	WELL NO.	S.T.R.	AUGUST MONTHLY PROD.	MONTHLY GAS MCF	MONTHLY G.O.R.	WATER ENTR. PROD.	THRU- PUT OIL GAS	ALL WATER ENTR. DRAINS
State F	3 X	30-10-36	1104	416	377	-	1104 416	377
"	4 N	"	1106	466	421	-	1106 466	421
State J	1 C	2-20-36	1084	459	419	23	1084 459	419
"	2 C	"	1084	2028	2070	-	1084 2028	2070
"	3 X	"	1084	728	708	-	1084 728	708
State O	1 B	30-10-37	1212	754	576	-	1212 754	576
"	2 G	"	1277	444	348	-	1277 444	348
"	3	"	1277	2098	1642	-	1277 2098	1642
"	4	"	1290	859	546	-	1290 859	546
State T	1 N	25-10-36	1077	960	899	-	1077 960	899
"	2 R	"	1159	2118	1947	127	1159 2118	1947
"	3 F	"	1170	2563	2171	130	1170 2563	2171
"	4 C	"	1170	1541	1490	95	1170 1541	1490
State V	1 A	30-10-36	1289	7081	1199	-	1289 7081	1199
"	2 B	"	1220	902	739	-	1220 902	739
"	3 U	"	1248	571	445	-	1248 571	445
"	4 G	"	1255	182	106	-	1255 182	106
Wair	1 M	30-10-36	983	151	1000	-	983 151	1000
"	2 D	2-20-36	984	893	1009	41	984 893	1009
"	3 L	30-10-36	923	1447	1568	-	923 1447	1568
"	4 F	"	923	1109	1201	-	923 1109	1201
"	5 L	"	984	1241	1251	-	984 1241	1251
"	6 C	"	923	1362	1451	-	923 1362	1451
"	8 D	"	923	1043	1028	-	923 1043	1028
ANDERSON FRANKLIN	1 F	7-20-37	1348	258	191	-	1348 258	191
"	2 C	"	1348	769	585	-	1348 769	585
"	3 G	"	1348	890	660	-	1348 890	660
"	4 B	"	1348	264	195	-	1348 264	195
"	5 X	"	1308	623	478	-	1308 623	478
"	6 H	"	1209	711	589	-	1209 711	589
"	7 J	"	1209	467	331	-	1209 467	331
"	8 O	"	1208	237	195	-	1208 237	195
BARNESDALE	1 A	12-20-36	1113	335	301	-	1113 335	301
Cooper	2 E	7-20-37	1125	482	432	-	1125 482	432

MONTHLY TABLE NO. 6 - CONT'D - MONTHLY														ALL	
COMPANY	WELL	DATE	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	WATER	REMARKS
NAME	NO.	ST. NO.	PROD.	MEP	G.O.R.	PROD.	PROD.	PROD.	PROD.	PROD.	PROD.	PROD.	PROD.	GALE	
State C	4	8	10-19-37	1289	771	698								2843	1381 698
State C	1	0	8-20-37	1106	168	148								1106	168 148
Anderson	2	0	18-20-37	1106	122	110								2210	148 110
"	3	0	8-20-37	1103	428	397								1103	428 397
"	4	2	17-20-37	1073	849	808								1073	849 808
"	5	2	"	1106	1365	1148									
"	6	2	"	1106	408	368								1106	408 368
"	7	2	"	1103	469	416								1103	469 416
"	8	0	"	1103	215	193								1106	215 193
Chap	1	0	16-19-37	1126	1179	1088								1126	1179 1088
"	2	2	"	1186	1204	1089									
"	3	2	"	1107	1583	1508									
"	4	0	"	1106	1993	1900									
"	5	2	"	1106	979	886								2212	1063 886
"	6	2	"	1109	177	160								2216	188 160
"	7	2	"	1106	619	560								2212	1239 560
Chap	1	0	21-19-37	1117	715	640								2234	1480 640
"	2	2	"	1081	728	690								1081	728 690
Graham St. C	3	2	24-19-36	1117	2906	2606									
"	2	2	"	827	385	423								1727	711 423
"	3	0	"	850	828	1113									
"	4	0	"	858	857	1036									
"	5	2	25-19-36	1048	2070	2580									
"	6	0	"	1206	105	149								2153	321 149
"	7	0	"	890	531	572								1700	590 572
"	8	2	"	1094	322	300								1874	327 300
"	9	2	26-19-36	1137	420	369								1137	420 369
"	10	2	"	1106	403	364								1106	403 364
"	11	2	"	1138	139	122								1138	139 122
"	12	0	"	1106	405	421								1106	405 421
"	13	0	17-19-37	1109	866	819								2219	1158 819
"	14	0	"	1109	3076	3438									
"	15	0	"	1106	2218	2000								1109	2218 2000
Enter B	1	0	21-19-37	885	2762	3304								1873	555 3304
"	2	2	21-19-36	886	1410	1745								886	1410 1745
"	3	0	"	837	4279	5112									

MONTHLY TABLE NO. 6 - CONT'D															
COMPANY	WELL	DATE	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY
NAME	NO.	ST. NO.	PROD.	MEP	G.O.R.	PROD.	PROD.	PROD.	PROD.	PROD.	PROD.	PROD.	PROD.	PROD.	PROD.
ENTER C	1	8	15-19-37	1147	717	628								2263	1414 628
"	2	0	"	1116	4045	3623									
"	3	2	"	839	1874	2234									
"	4	2	"	839	886	1111								1878	1869 1111
William	1	0	8-20-37	1116	131	665								1319	1023 665
"	2	2	"	1084	949	878								1084	949 878
"	3	2	"	1083	1711	1580									
"	4	2	"	837	114	375								837	114 375
"	5	2	"	1087	3864	3070									
William	1	0	8-20-37	1116	131	665								1319	1023 665
"	2	2	"	1084	949	878								1084	949 878
"	3	2	"	1083	1711	1580									
"	4	2	"	837	114	375								837	114 375
"	5	2	"	1087	3864	3070									
William	1	0	8-20-37	1116	131	665								1319	1023 665
"	2	2	"	1084	949	878								1084	949 878
"	3	2	"	1083	1711	1580									
"	4	2	"	837	114	375								837	114 375
"	5	2	"	1087	3864	3070									
William	1	0	8-20-37	1116	131	665								1319	1023 665
"	2	2	"	1084	949	878								1084	949 878
"	3	2	"	1083	1711	1580									
"	4	2	"	837	114	375								837	114 375
"	5	2	"	1087	3864	3070									
William	1	0	8-20-37	1116	131	665								1319	1023 665
"	2	2	"	1084	949	878								1084	949 878
"	3	2	"	1083	1711	1580									
"	4	2	"	837	114	375								837	114 375
"	5	2	"	1087	3864	3070									
William	1	0	8-20-37	1116	131	665								1319	1023 665
"	2	2	"	1084	949	878								1084	949 878
"	3	2	"	1083	1711	1580									
"	4	2	"	837	114	375								837	114 375
"	5	2	"	1087	3864	3070									
William	1	0	8-20-37	1116	131	665								1319	1023 665
"	2	2	"	1084	949	878								1084	949 878
"	3	2	"	1083	1711	1580									
"	4	2	"	837	114	375								837	114 375
"	5	2	"	1087	3864	3070									
William	1	0	8-20-37	1116	131	665								1319	1023 665
"	2	2	"	1084	949	878								1084	949 878
"	3	2	"	1083	1711	1580									
"	4	2	"	837	114	375								837	114 375
"	5	2	"	1087	3864	3070									
William	1	0	8-20-37	1116	131	665								1319	1023 665
"	2	2	"	1084	949	878								1084	949 878
"	3	2	"	1083	1711	1580									
"	4	2	"	837	114	375								837	114 375
"	5	2	"	1087	3864	3070									
William	1	0	8-20-37	1116	131	665								1319	1023 665
"	2	2	"	1084	949	878								1084	949 878
"	3	2	"	1083	1711	1580									
"	4	2	"	837	114	375								837	114 375
"	5	2	"	1087	3864	3070									
William	1	0	8-20-37	1116	131	665								1319	1023 665
"	2	2	"	1084	949	878								1084	949 878
"	3	2	"	1083	1711	1580									
"	4	2	"	837	114	375								837	114 375
"	5	2	"	1087	3864	3070									
William	1	0	8-20-37	1116	131	665								1319	1023 665
"	2	2	"	1084	949	878								1084	949 878
"	3	2	"	1083	1711	1580									
"	4	2	"	837	114	375								837	114 375
"	5	2	"	1087	3864	3070									
William	1	0	8-20-37	1116	131	665								1319	1023 665
"	2	2	"	1084	949	878								1084	949 878
"	3	2	"	1083	1711	1580									
"	4	2	"	837	114	375								837	114 375
"	5	2	"	1087	3864	3070									
William	1	0	8-20-37	1116	131	665								1319	1023 665
"	2	2	"	1084	949	878								1084	949 878
"	3	2	"	1083	1711	1580									
"	4	2	"	837	114	375								837	114 375
"	5	2	"	1087	3864	3070									
William	1	0	8-20-37	1116	131	665								1319	1023 665
"	2	2	"	1084	949	878								1084	949 878
"	3	2	"	1083	1711	1580									
"	4	2	"	837	114	375								837	114 375
"	5	2	"	1087	3864	3070									
William	1	0	8-20-37	1116	131	665								1319	1023 665
"	2	2	"	1084	949	878								1084	949 878
"	3	2	"	1083	1711	1580									
"	4	2	"	837	114	375								837	114 375
"	5	2	"	1087	3864	3070									
William	1	0	8-20-37	1116	131	665								1319	1023 665
"	2	2	"	1084	949	878								1084	949 878
"	3	2	"	1083	1711	1580									
"	4	2	"	837	114	375								837	114 375
"	5	2	"	1087	3864	3070									
William	1	0	8-20-37	1116	131	665								1319	1023 665
"	2	2	"	1084	949	878								1084	949 878
"	3	2	"	1083	1711	1580									
"	4	2	"	837	114	375								837	114 375
"	5	2	"	1087	3864	3070									
William	1	0	8-20-37	1116	131	665								1319	1023 665
"	2	2	"	1084	949	878								1084	949 878
"	3	2	"	1083	1711	1580									
"	4	2	"	837	114	375								837	114 375
"	5	2	"	1087	3864	3070									
William	1	0	8-20-37	1116	131	665								1319	1023 665
"	2	2	"	1084	949	878								1084	949 878
"	3	2	"	1083	1711	1580									
"	4	2	"	837	114	375								837	114 375
"	5	2	"	1087	3864	3070									
William	1	0	8-20-37	1116	131	665								1319	1023 665
"	2	2	"	1084	949	878								1084	949 878
"	3	2	"	1083	1711	1580									
"	4	2	"	837	114	375								837	114 375
"	5	2	"	1087	3864	3070									
William	1	0	8-20-37	1116	131	665								1319	1023 665
"	2	2	"	1084	949	878								1084	949 878
"	3	2	"	1083	1711	1580									
"	4	2	"	837	114	375								837	114 375
"	5	2	"	1087	3864	3070									
William	1	0	8-20-37	1116	131	665								1319	1023 665
"	2	2	"	1084	949	878								1084	949 878
"	3	2	"	1083	1711	1580									
"	4	2	"	837	114	375								837	114 375
"	5	2	"	1087	3864	3070									
William	1	0	8-20-37	1116	131	665								1319	1023 665
"	2	2	"	1084	949	878								1084	949 878
"	3	2	"	1083	1711	1580									
"	4	2	"	837	114	375								837	114 375
"	5	2	"	1087	3864	3070									
William	1	0	8-20-37	1116	131	665								1319	1023 665

MONUMENT - TABLE NO. 6 - CONT'D												
COMPANY	WELL	NO.	DATE	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY
NAME	NO.	DATE	PROD.	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
				PROD.	PROD.	PROD.	PROD.	PROD.	PROD.	PROD.	PROD.	PROD.
Harvey	3 H	35-10-36	888	2890	3340	19	1437	474	3330	86		
"	4 J	"	928	2455	2476	01	1208	2392	2476	122		
"	5 G	"	589	28735	50800							
"	6 B	"	214 M	1185	2650							
Superior St.	1 A	2-20-36	971	2541	2617		971	2541	2617			
"	2 B	"	1003	2618	2610		1003	2618	2610			
"	3 H	"	1003	2618	2610		1003	2618	2610			
"	4 G	"	971	2541	2617		971	2541	2617			
TEXAS												
Cooper	1 B	5-20-37	1296	1104	882		1296	1104	882			
"	2 A	"	1297	1097	845		1297	1097	845			
"	3 G	"	1298	1089	838		1298	1089	838			
"	4 H	"	1299	1115	831		1299	1115	831			
Matthorn	1 L	20-10-37	982	932	948		982	932	948			
"	2 M	"	987	1107	1127		987	1107	1127			
"	3 N	"	969	1098	1133		969	1098	1133			
"	4 E	"	974	982	1008	41	974	982	1008	41		
Phillips	1 D	6-20-37	1198	702	659	37	1198	702	659	37		
"	2 C	"	1193	712	697		1193	712	697			
"	3 E	"	1192	688	676		1192	688	676			
"	4 F	"	1192	776	631		1192	776	631			
Sammons	1 M	12-10-37	1103	1219	1106		1103	1219	1106			
"	2 C	"	1133	1368	1408		1133	1368	1408			
"	3 J	"	1064	1355	1271		1064	1355	1271			
"	4 K	"	1108	1173	1072		1108	1173	1072			
State E	1 M	1-20-36	1046	523	500		1046	523	500			
"	2 L	"	1046	512	518	44	1046	512	518	44		
"	3 E	"	1047	554	519		1047	554	519			
"	4 K	"	1047	547	522		1047	547	522			
State H	6 A	20-20-37	1223	1608	1312		1223	1608	1312			
"	6 B	"	1226	1399	1141		1226	1399	1141			
"	7 C	"	1230	1423	1040		1230	1423	1040			
"	11 D	"	840	1289	1073		840	1289	1073			
INDIANAPOLIS												
State J	1 E	17-10-37	1116	1479	1325		1116	1479	1325			
"	2 D	"	1147	888	754		1147	888	754			
"	3 F	"	837	1272	1020	83	837	1272	1020	83		

TABLE NO. 6 - MONUMENT - CONT'D												
COMPANY	WELL	NO.	DATE	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY
NAME	NO.	DATE	PROD.	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
				PROD.	PROD.	PROD.	PROD.	PROD.	PROD.	PROD.	PROD.	PROD.
State J	4 C	17-10-37	889	943	889		889	943	889			
Grand Total			35088	35960	308		35088	35960	308			
			32115	31997	16071		32115	31997	16071			
			171031				171031					
				171031	5617,000 Cu. Ft./ Day			171031	5617,000 Cu. Ft./ Day			

[illegible]