~~13-09~~

32 W-27

OILFIELD RESEARCH LABORATORIES

700 North Mission
Ochelata, Oklahoma
Phone: [illegible]

July [illegible], 1952

Phillips Petroleum Company
Production Department
Bartlesville, Oklahoma

Gentlemen:

Enclosed herewith are the results of permeability and porosity tests run on [illegible] core taken in the North Burbank Unit, [illegible] County, Oklahoma, and submitted to us [illegible] Dowell [illegible] 1952.

This core was taken on [illegible] by a representative of the Phillips Petroleum Company.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Fred O. Stenger

FOS:rf

16 c.

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Phillips Petroleum Co. Lease N.B.U. Well No. 32-W-27

Location SW¼

Section 14 Twp. 27N Rge. 5E County Osage State Oklahoma

Name of Sand	Burbank
Top of Core	2998.0
Bottom of Core	3042.0
Top of Sand	?
Bottom of Sand (Good)	3015.0
Total Feet of Permeable Sand	39.0
Total Feet of Floodable Sand	-

Distribution of Permeable Sand:

Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 10	17.0	17.0
10 - 50	9.0	26.0
50 - 100	3.0	29.0
100 & above	10.0	39.0

Average Permeability Millidarcys	115.
Average Percent Porosity	12.8
Average Percent Oil Saturation	
Average Percent Water Saturation	
Average Oil Content, Bbls./A. Ft.	
Total Oil Content, Bbls./Acre	
Average Percent Oil Recovery by Laboratory Flooding Tests	
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	
Total Calculated Oil Recovery, Bbls./Acre	
Packer Setting, Feet	
Viscosity, Centipoises @	
A. P. I. Gravity, degrees @ 60 °F	
Elevation, Feet	

OILFIELD RESEARCH LABORATORIES

-LOG-

Company Phillips Petroleum Co. Lease N.B.U. Well No. 32-W-2

Depth Interval, Feet	Description
2998.0 - 3006.4	Soft light brown sandstone containing a vertical fracture
3006.4 - 3012.0	Light brown sandstone.
3012.0 - 3021.0	Brown sandstone.
3021.0 - 3040.0	Brown to dark carbonaceous sandstone containing a vertical fracture.
3040.0 - 3041.6	Dark carbonaceous sandstone.
3041.6 - 3042.0	Shale.

Oilfield Research Laboratories

RESULTS OF PERMEABILITY AND POROSITY TESTS

TABLE I A

Company Phillips Petroleum Co. Lease N.B.U. Well No. 33-W-27

Sample No.	Depth Feet	Permeability Millidarcys	Feet of Core		Permeability Capacity Ft. x Md.	Percent Porosity
			Ft.	Cum. Ft.		
1	2998.5	427.	1.0	1.0	427.00	17.0
2	2999.5	530.	1.0	2.0	530.00	17.7
3	3000.5	146.	1.0	3.0	146.00	16.2
4	3001.5	316.	1.0	4.0	316.00	17.1
5	3002.5	760.	1.0	5.0	760.00	16.9
6	3003.5	344.	1.0	6.0	344.00	17.4
7	3004.5	134.	1.0	7.0	134.00	16.9
8	3005.5	813.	1.4	8.4	1140.00	16.8
9	3006.5	217.	0.6	9.0	130.00	15.7
10	3007.5	73.	1.0	10.0	73.00	15.1
11	3008.5	73.	1.0	11.0	73.00	15.7
12	3009.5	66.	1.0	12.0	66.00	15.3
13	3010.5	114.	1.0	13.0	114.00	14.1
14	3011.5	40.	1.0	14.0	40.00	13.[illegible]
15	3012.5	11.	1.0	15.0	11.00	12.0
16	3013.5	20.	1.0	16.0	20.00	13.[illegible]
17	3014.5	20.	1.0	17.0	20.00	12.2
18	3015.5	2.1	1.0	18.0	2.10	10.4
19	3016.5	3.2	1.0	19.0	3.20	12.0
20	3017.5	1.0	1.0	20.0	1.00	9.9
21	3018.5	1.8	1.0	21.0	1.80	10.9
22	3019.5	20.	1.0	22.0	20.00	12.5
23	3020.5	20.	1.0	23.0	20.00	12.2
24	3021.5	25.	1.0	24.0	25.00	12.2
25	3022.5	16.	1.0	25.0	16.00	11.[illegible]
26	3023.5	1.6	1.0	26.0	1.60	10.6
27	3024.5	14.	1.0	27.0	14.00	11.9
28	3025.5	3.2	1.0	28.0	3.20	11.3
29	3026.5	6.4	1.0	29.0	6.40	11.6
30	3027.5	6.0	1.0	30.0	6.00	11.2
31	3028.5	9.4	1.0	31.0	9.40	11.5
32	3029.5	2.4	1.0	32.0	2.40	10.4
33	3030.5	2.2	1.0	33.0	2.20	10.3
34	3031.5	.43	1.0	34.0	0.43	9.4
35	3032.5	.03	1.0	35.0	0.03	8.8
36	3033.5	Imp.	1.0	36.0	0.00	-
37	3034.5	Imp.	1.0	37.0	0.00	-
38	3035.5	Imp.	1.0	38.0	0.00	-
39	3036.5	.07	1.0	39.0	0.07	9.0
40	3037.5	.05	1.0	40.0	0.05	9.2
41	3038.5	Imp.	1.0	41.0	0.00	-
42	3039.5	.04	1.0	42.0	0.04	10.0
43	3040.5	.02	1.0	43.0	0.02	9.6
44	3041.5	Imp.	0.6	43.6	0.00	-

Oilfield Research Laboratories

SUMMARY OF PERMEABILITY & POROSITY TESTS

TABLE II A

Company Phillips Petroleum Co. Lease N.B.U. Well No. 32-W-27

Depth Interval, Feet	Feet of Core Analyzed	Average Air Permeability, Millidarcys	Average Effective Permeability, Millidarcys	Permeability Capacity Ft. x Md.	Average Percent Porosity
2998.0 - 3015.0	17.0	256.	-	4445.00	15.5
3015.0 - 3041.0	22.0	6.1	-	134.20	10.9
2998.0 - 3041.0	39.0	135.	-	4579.20	13.5

Form. PO 214 Sheet 1 12-25-10m

LOG OF WELL

R. J. Baker
12-7-26

SHEET 1

OWNER The Texas Company (lewis O.Co.) DIVISION Oklahoma DATE MADE 12-8-1926

DISTRICT Osage LEASE L.Kennedy WELL NO. 9

STATE Oklahoma COUNTY OR PARISH Osage TWP. 26 RANGE 6 SEC. 21

LOCATION OF WELL 300' N. of S line and 300' E. of west line NE/4

COMMENCED RIGGING UP _____ COMMENCED DRILLING July 12,1925 COMPLETED DRILLING 8-21-1925

DAY DRILLER _____ NIGHT DRILLER _____ CONTRACTOR A. Brewer & Co.

CABLE FROM _____ TO _____ ROTARY FROM _____ TO _____ COMPANY RIG No. _____

TOTAL DEPTH 2980' MEASURED BY _____ ELEVATION _____

CASING RECORD

SIZE	WEIGHT	PUT IN WELL		PULLED OUT		LOST IN WELL		SHOES		PACKERS		
		FEET	INS.	FEET	INS.	FEET	INS.	LENGTH	MAKE	KIND	LENGTH	SET AT
15½"	70#	824		824								FT.
12½	50	1130		1130								FT.
10"	40	1535		1535								FT.
8¼	32	2320										FT.
6-5/8"	26	2790										FT.
5-3/16"	17 liner	122										FT.
												FT.
												FT.
												FT.
												FT.

LINER: STATE SIZE AND WEIGHT _____ WHERE SET _____ FT. AND INS. BLANK _____ FT. AND INS. PERFORATED _____

HOW PUT TOGETHER _____ COUPLING _____ FLUSH-JOINT _____ INSERTED _____

REMARKS: _____

EQUIPMENT RECORD

TUBING				SUCKER RODS			PUMPING OUTFIT
SIZE	WEIGHT	FEET	INS.	FEET	INS.	SIZE AND KIND	DESCRIPTION, KIND, SIZE, ETC.

FLOWING, PUMPING, GASSER OR DRY oil PRODUCTION FIRST 24 HOURS 25 PRODUCTION SETTLED _____

IF GAS WELL, OPEN FLOW CAPACITY _____ SHUT IN PRESSURE _____ ROCK PRESSURE _____

KIND OF SHOT _____ SIZE OF SHOT, QUARTS 140

NUMBER OF SHELLS _____ SIZE OF SHELLS _____ INCHES, DIAMETER _____

LENGTH OF SHELLS _____ FEET _____ INCHES _____ TOP OF SHOT 2920

BOTTOM OF SHOT 2975 ANCHOR _____ WELL BRIDGED TO _____

TOTAL DEPTH OF WELL 2980 NUMBER OF SHOT _____ PRODUCTION BEFORE SHOT 25 BBLS. PER DAY

PRODUCTION AFTER SHOT 447 BBLS. PER DAY. SHOT FURNISHED BY _____

NAME OF SHOOTER _____ SHOT INSPECTED _____ BY _____ (COMPANY EMPLOYEE)

COMMENCED DRILLING DEEPER _____ COMPLETED _____ DRILLING DEEPER _____

TOTAL DEPTH _____ PRODUCTION FIRST 24 HOURS _____ PRODUCTION SETTLED _____

REMARKS: _____

2333-31324

NOTE: IF WELL WAS DRY, STATE UNDER REMARKS, WHEN, HOW, AND BY WHOM PLUGGED.
STATE UNDER REMARKS ANYTHING OF INTEREST NOT COVERED IN LOG.
IF THE SPACE PROVIDED FOR REMARKS IS NOT SUFFICIENT WRITE ON BOTTOM OF LAST SHEET OF LOG.

26

Form- PO 214 Sheet 2 10-26-10m

LOG OF WELL

SHEET No. 2

District Osage Owner The Texas Co. Farm L. Kennedy Well No. 9

FORMATION	BOTTOM	AMOUNT	COLOR	HARD or SOFT	DEPTH CORES TAKEN	REMARKS
cellar	8	8				
lime	20	12	light	hard		
shale	92	72	light	soft		
lime	117	25	light	hard		
shale	177	60	light	soft		
red rock	197	20	red soct			
lime	217	20	light	hard		
shale	270	53	light	soft		
red rock	280	10	red	soft		
lime	300	20	light	hard		
shale	400	100	light	soft		
lime	430	30	light	hard		
shale	460	30	light	soft		
red mud	475	15	red	soft		
lime	490	15	light	hard		
shale	520	30	light	soft		
lime	545	25	light	hard		
shale	620	75	light	soft		
lime	675	55	light	hard		
shale	690	15	light	soft		S[illegible] water 693'
sand	700	10	light	soft		
shale	770	70	light	soft		
sand	800	30	light	soft		[illegible] 770'
shale	805	5	dark	soft		
sand	825	20	light	soft		
shale	860	35	dark	soft		
lime	925	65	light	hard		
shale	1055	130	dark	soft		
sand	1075	20	light	soft		[illegible] 1075'
shale	1080	5	dark	soft		
sand	1100	20	light	soft		[illegible]
shale	1115	15	dark	soft		
sand	1130	15	light	soft		
shale	1230	100	dark	soft		
sand	light	1250	20	soft		S[illegible]
shale	1260	10	light	soft		
lime	1275	15	light	hard		
shale	1335	60	light	soft		
lime	1345	10	light	hard		
shale	1495	150	light	soft		
sand	1530	35	light	soft		
shale	1630	100	dark	soft		
sand	1655	25	light	soft		
shale	1715	60	dark	soft		
shale	1750	35	light	soft		
lime	1785	35	light	hard		
shale	1805	20	dark	soft		
lime	1910	105	light	hard		
shale	2085	175	dark	soft		
sand	2190	105	light	hard		
shale	2245	55	dark	soft		
sand	2310	65	light	soft		
shale	2450	140	dark	soft		
lime	2465	15	dark	hard		
shale	2475	10	dark	soft		
lime	2495	20	dark	hard		
shale	2565	70	dark	soft		
lime	2595	30	dark	hard		
shale	2610	15	dark	soft		
lime	2620	10	dark	hard		
shale	2640	20	dark	soft		
lime	2670	30	dark	hard		
continued						

LOG OF WELL

SHEET NO. 3

District Osage Owner The Texas Co. Farm L. Kennedy Well No. 9

FORMATION	BOTTOM	AMOUNT	COLOR	HARD or SOFT	DEPTH CORES TAKEN	REMARKS
shale	2690	20	dark	soft		
lime	2735	45	dark	hard		
shale	2745	10	dark	soft		
lime	2755	10	rark	hard		
shale	2760	5	dark	soft		
lime	2770	10	grey	hard		
shale	2778	8	grey	soft		
lime	2790	12	grey	hard		
shale	2810	20	dark	soft		
lime	2825	15	dark	hard		
shale	2845	20	dark	soft		
lime	2850	5	dark	soft		
shale	2860	10	dark	soft		
lime shells	2880	20	dark	soft		
stray oil sand	2885		5	soft		
shale	2902	17				
broken sand	2920	18	light	soft		
oil sand	2975	55	light	soft		
shale	2980	5	dark	soft		
total depth	2980					

PLUG AND ABD.

Well: N. B. U. 131-9 E.P.A. No. _____

Legal: 300 FT. F.S.L. AND 300' F.W.L. NE/4 SECTION 21-26N-6E. OSAGE COUNTY.

Details:

Casing: 4 1/2" OD, 9.5 # Set at 2942 ft.
w/125 sks. cement.

Surface: 8 5/8" OD, 32 # Set at 2320 ft.
w/ 0 sks. cement.

Open hole from 2942 ft. to 2980 ft.

History: THIS WELL WAS DRILLED IN 1925. IT WAS CONVERTED TO AN INJECTION WELL IN 1951. THE 5½" LINER AND THE 7" CASING WAS PULLED AND 4½" CASING WAS RUN AND CEMENTED WITH 125 SACKS. THE WELL WAS CONVERTED BACK TO A PRODUCING WELL IN 1989. THIS WELL HAS BEEN IDLE FOR SEVERAL MONTHS. THE LAST TEST WAS ½ BBL. OF OIL AND 89 BBL. WATER. WELL WAS PUMPED OFF. WELL IS NOW SURFACING WITH CASING LEAKS.

103MA 4-25 3M 12-49

DOWELL INCORPORATED

DOWELL

ELECTRIC PILOT Water Locator SERVICE

32w-27

METHOD: Photo Cell

DISTRICT: #3 Okla. City STATION: Hominy DATE: 2-17-54 TREATMENT NO. 2375

OWNER: Phillips Petroleum Co. LEASE: NBU WELL NO. 130 - 17 POOL: N. Burbank

STATE: Okla. COUNTY: Osage LOCATION: ~~XXX~~ 20-26-6

T. D. DOWELL: 2992 ~~Ground Level~~
ZERO POINT: ~~2992~~
T. D. OPERATOR: ~~Ground Level~~
ZERO POINT: ~~2992~~
T. D. USED: ~~Ground Level~~
ZERO POINT:

TUBING SIZE: N
TUBING DEPTH: O
SEATING NIPPLE AT: N E

CASING SIZE: 7"
CASING WEIGHT: ~~23#~~
CASING DEPTH: ~~2946~~
CASING CEMENTED: yes
NUMBER SACKS: 180

LINER SIZE: N
LINER TOP: O
LINER BOTTOM: N
LINER CEMENTED: E

Mr. Austin
OWNER REPRESENTATIVE

TITLE

INTERPRETATION

PURPOSE: Determine Water Intry

RESULTS: Under present well conditions found water entry from ~~2966'~~ to 2973'.

METHOD USED: Dye Method

FLUID USED: GALLONS ACID USED:

DEPTH	PRESSURE	RATE

INITIAL PRODUCTION: 500 BWPD
PRESENT PRODUCTION:

ACIDIZING & SHOOTING RECORD
NONE

HOLE DIA.	FROM	TO
6½	2946	2992

FORMATION: Burbank

PERFORATING DATA

SHOTS FT	FROM	TO

INSTRUMENT NOS: Photo Cell(44) 8027
FLOWMETER NOS:
GAGE NOS:

INSULATION TEST BEFORE: Inf.
AFTER: Inf.

Goodpasture
PILOT ENGINEER

L. A. COURTER

103TA 4-25 1M 3-49

WATER LOCATING SURVEY

#2375

OWNER Phillips Petroleum Company LEASE N.B.U. 130-17 WELL NO. 2

RUN NO.	1	2	3	4
TIME OF RUN	1:45	1:50	1:55	2:10
FLUID MOVED—BBLS.				
FLUID MOVED—LIN. FT.				
TOP OF WATER				
TOP OF ELECTROLYTE				

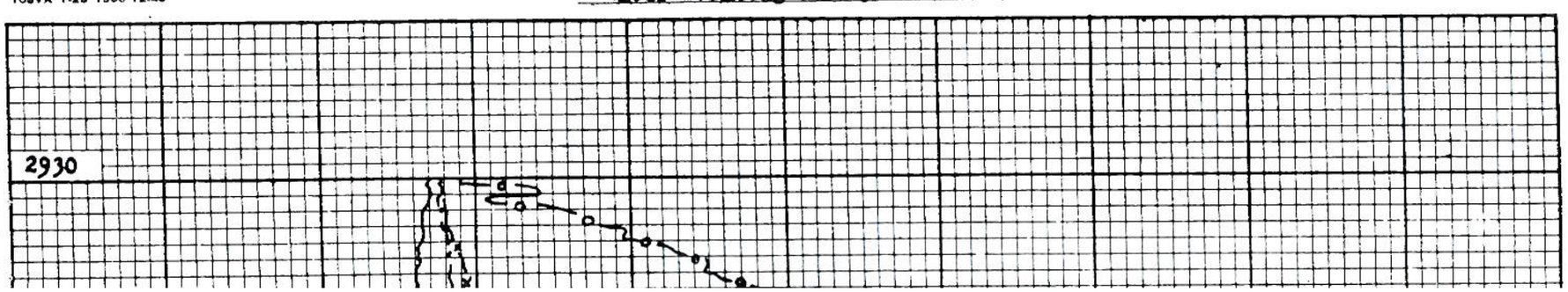
RUN NO.				
TIME OF RUN				
FLUID MOVED—BBLS.				
FLUID MOVED—LIN. FT.				
TOP OF WATER				
TOP OF ELECTROLYTE				

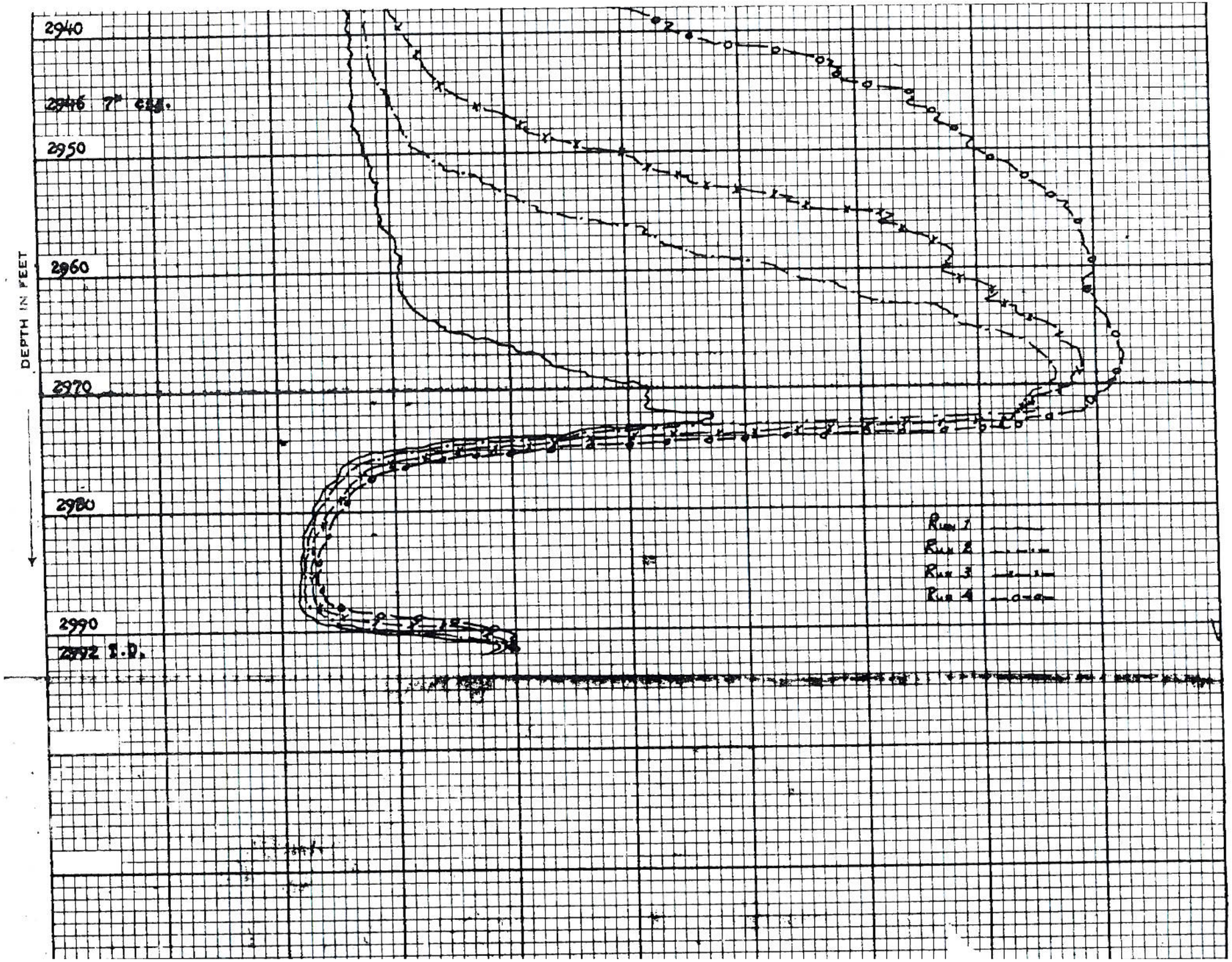
REMARKS

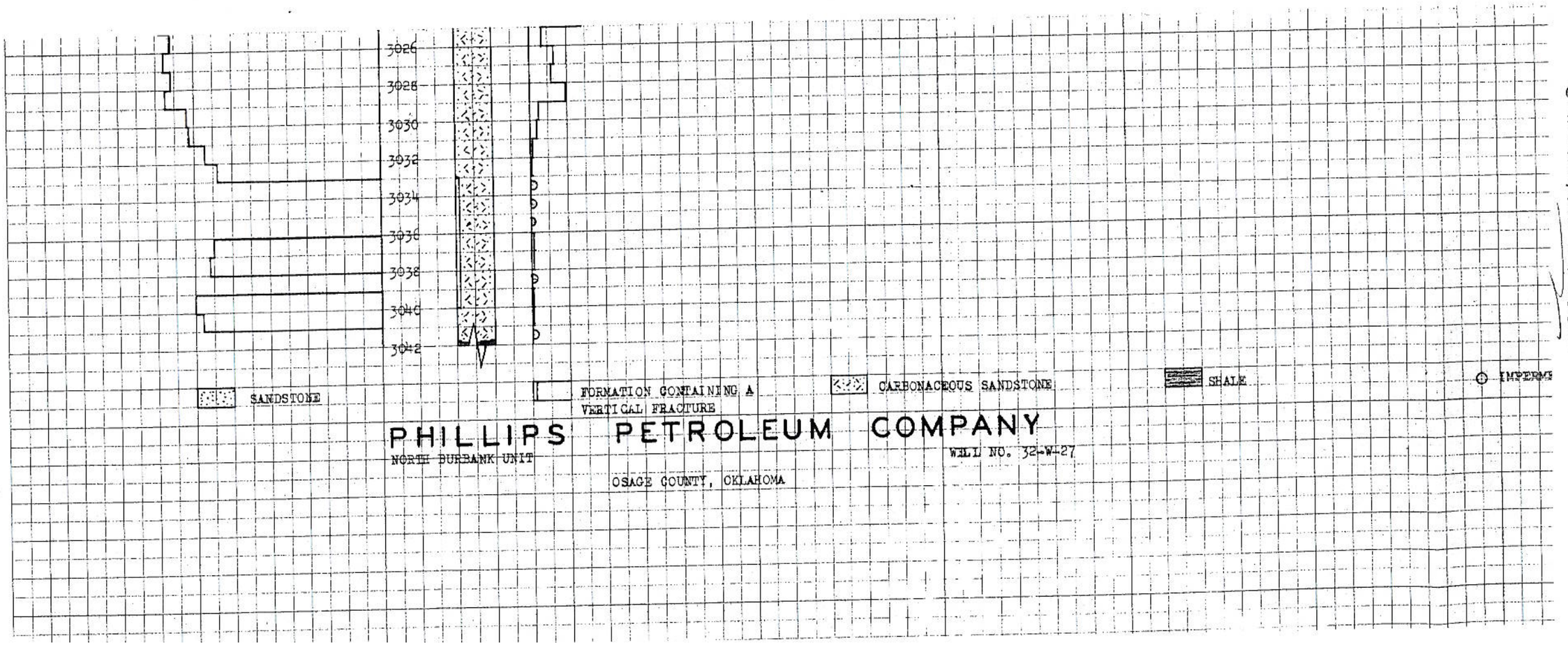
Well was flowing water and was unable to completely black entire section.
We were able to dye enough to locate water entry from 2966' to 2973' and under present well conditions there was apparently no movement below 2973'.

103VA 1-25 1500 12-49

Water Locating Survey

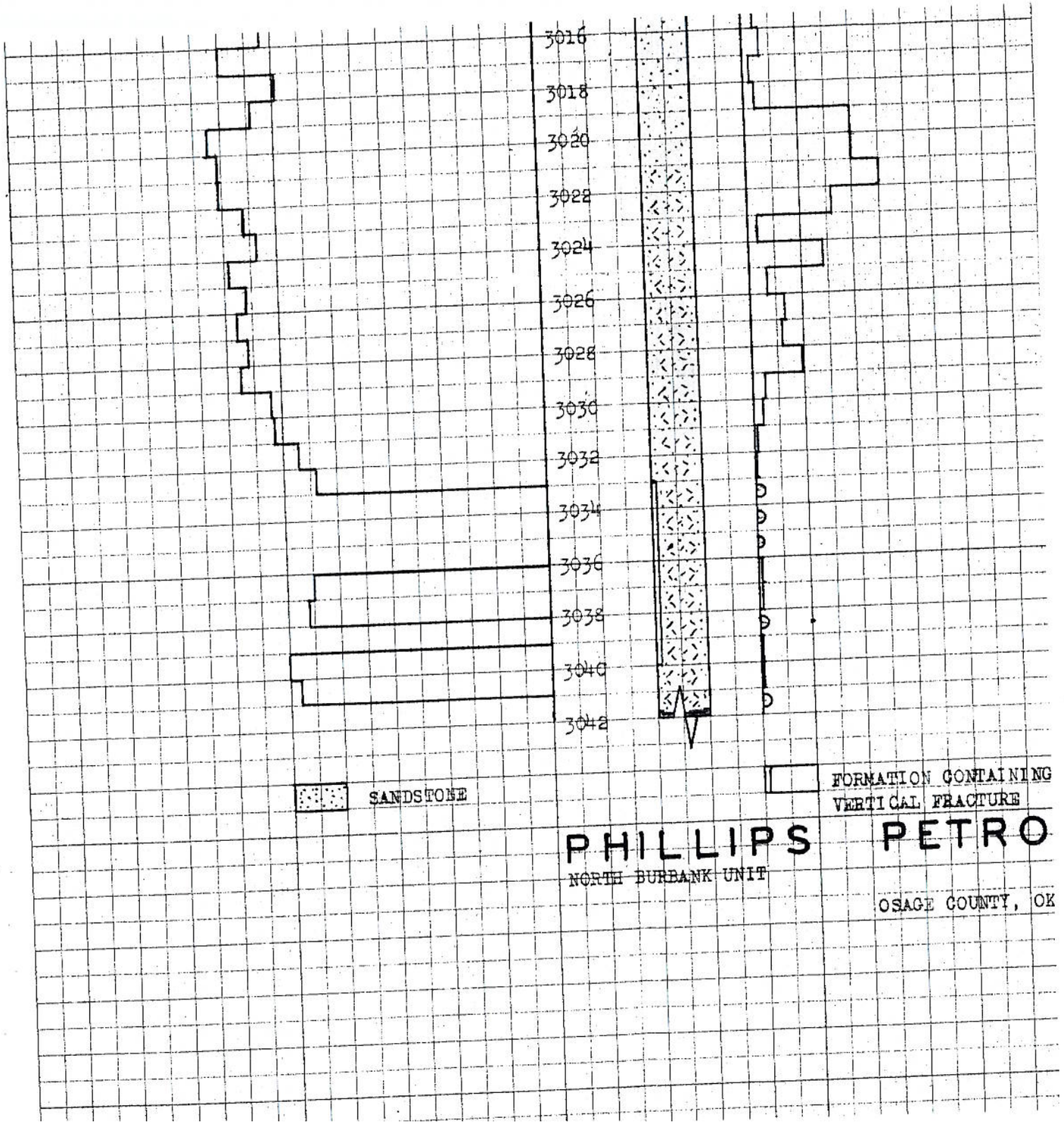



2940
2946 7" csg.
2950
2960
2970
2980
2990
2992 T.D.
DEPTH IN FEET
Run 1
Run 2
Run 3
Run 4

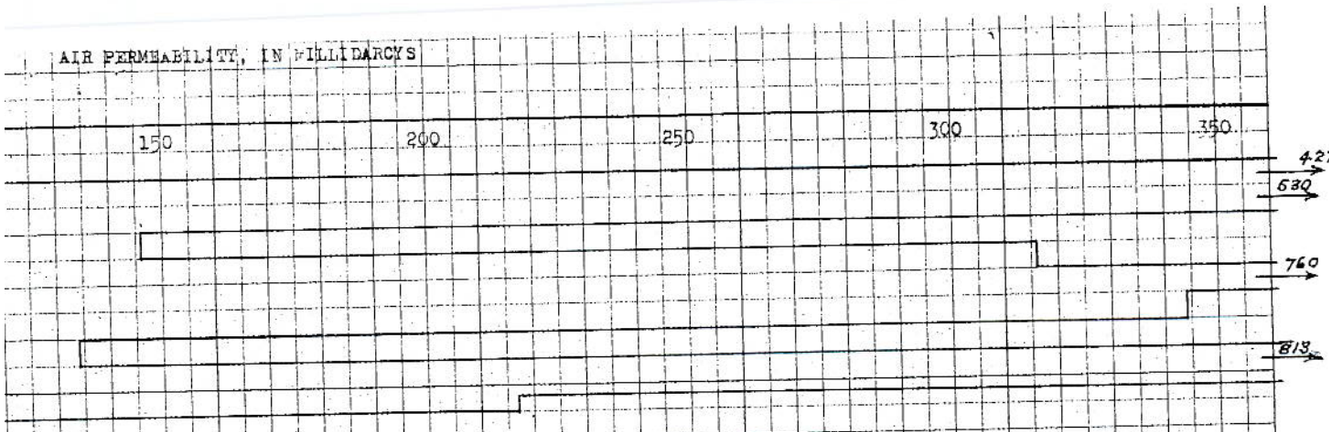


CHALLENGING PUZZLE

KEUFFEL & ESSER CO.



KEUFFEL & ESSER CO.



S SANDSTONE

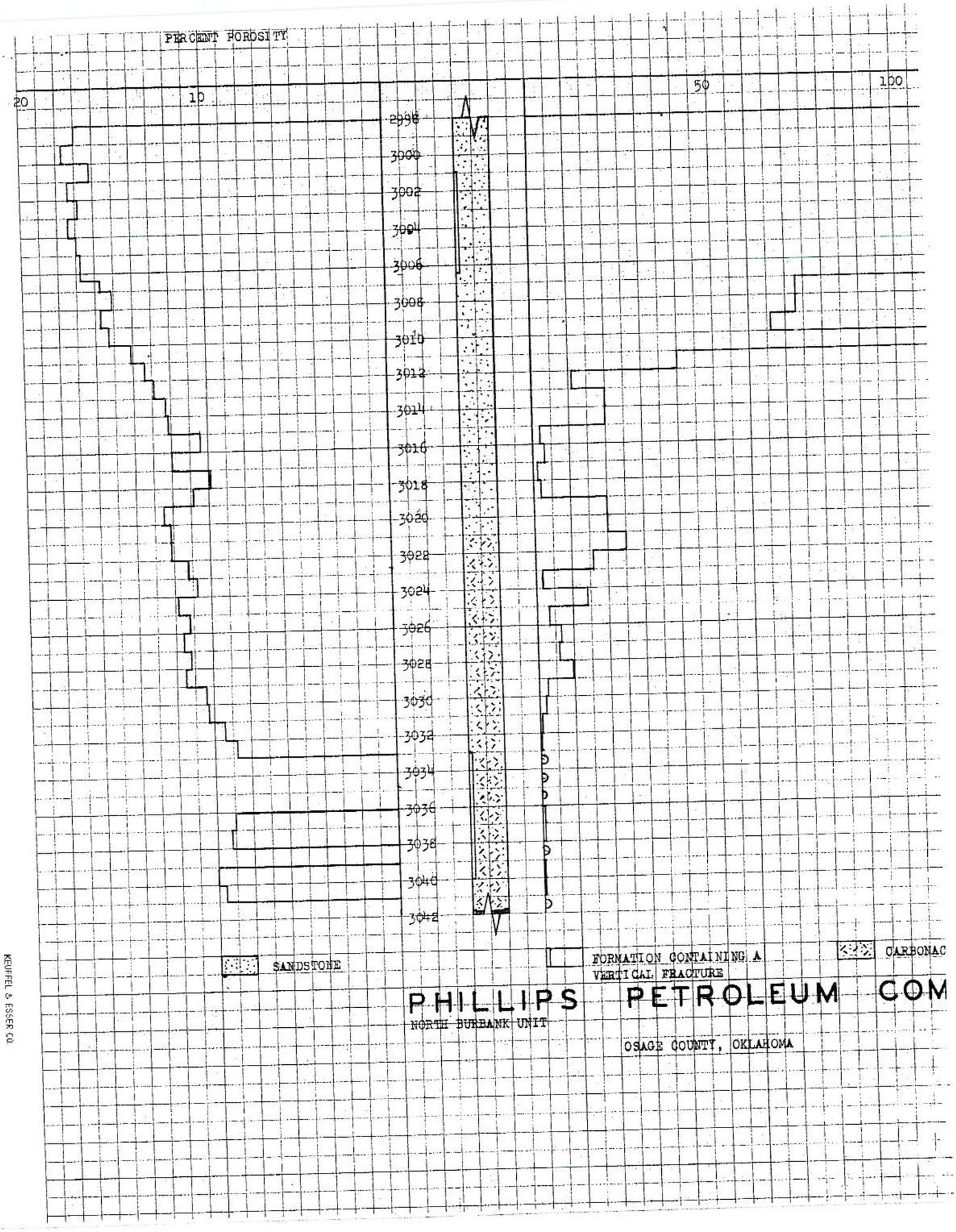
SHALE

IMPERMEABLE TO AIR

ANY

LL NO. 32-W-27

OILFIELD RESEARCH LABORATORIES
CHANUTE, KANSAS
JULY, 1962

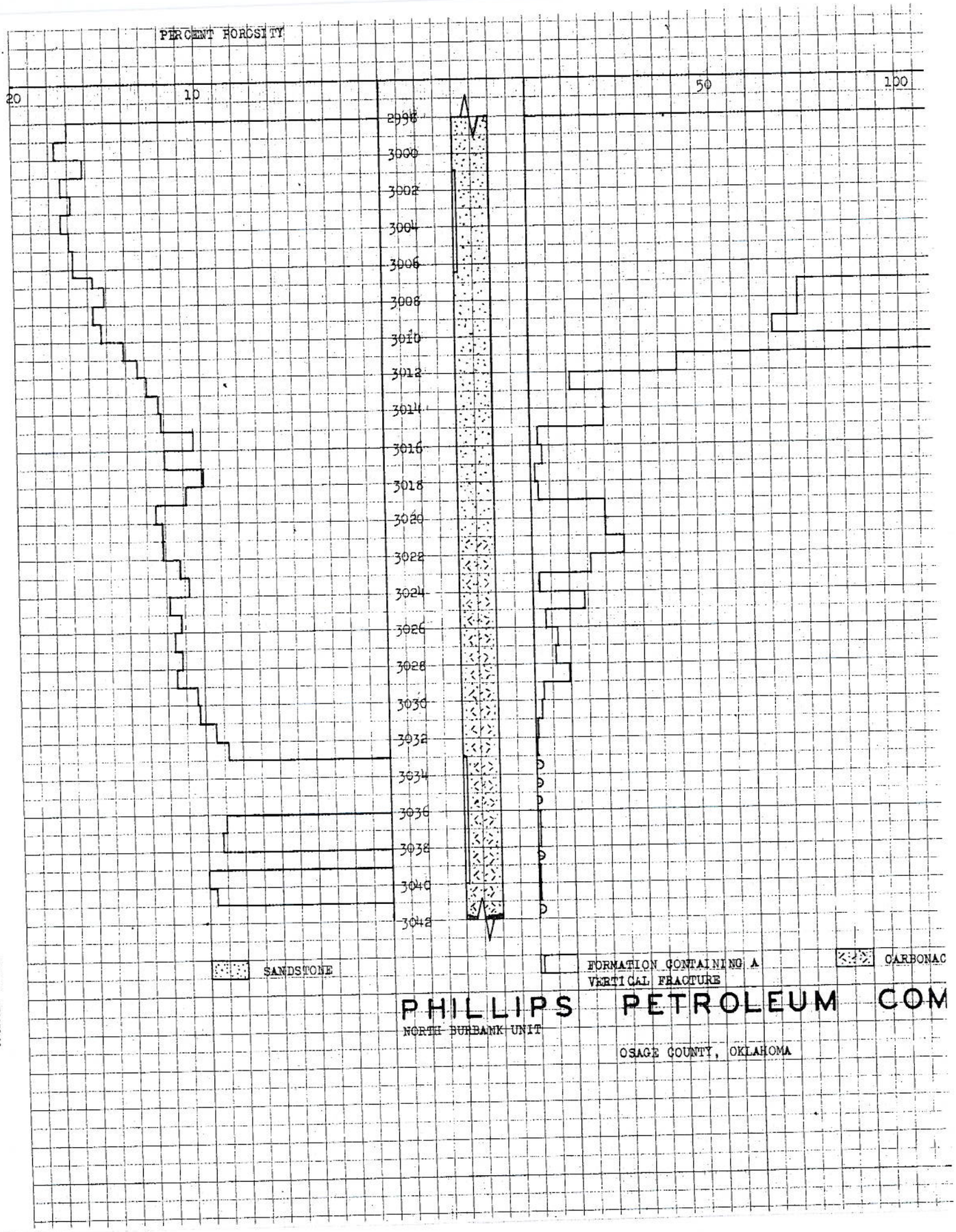


PHILLIPS PETROLEUM COM

NORTH BURBANK UNIT

OSAGE COUNTY, OKLAHOMA

STANDARD 8 CROSS SECTION
KEUFFEL & ESSER CO
MADE IN U.S.A.



PHILLIPS PETROLEUM COM

NORTH BURBANK UNIT

OSAGE COUNTY, OKLAHOMA

KEUFFEL & ESSER CO.

N CONTAINING A
FRACTURE

CARBONACEOUS SANDSTONE

SHALE

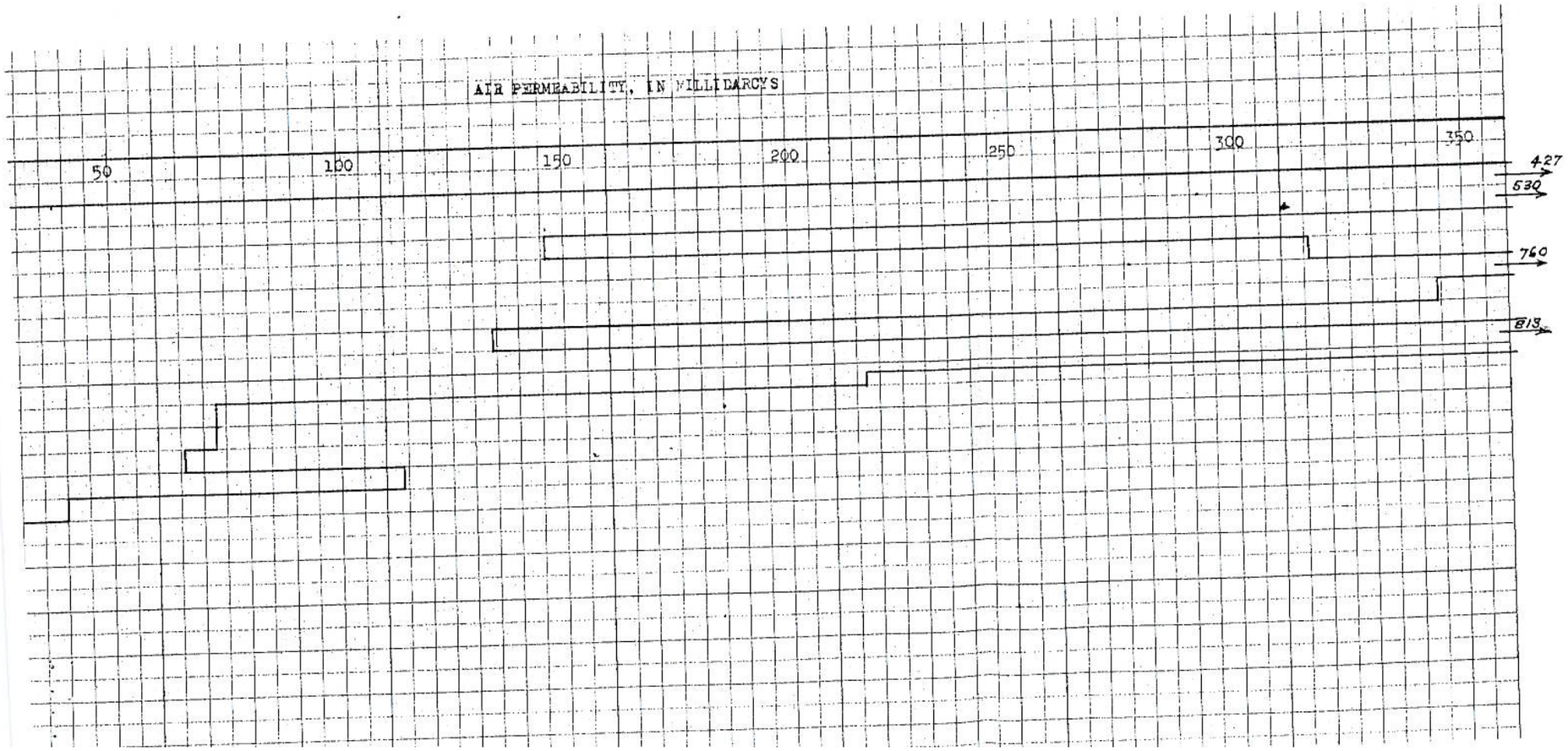
IMPERMEABLE TO AIR

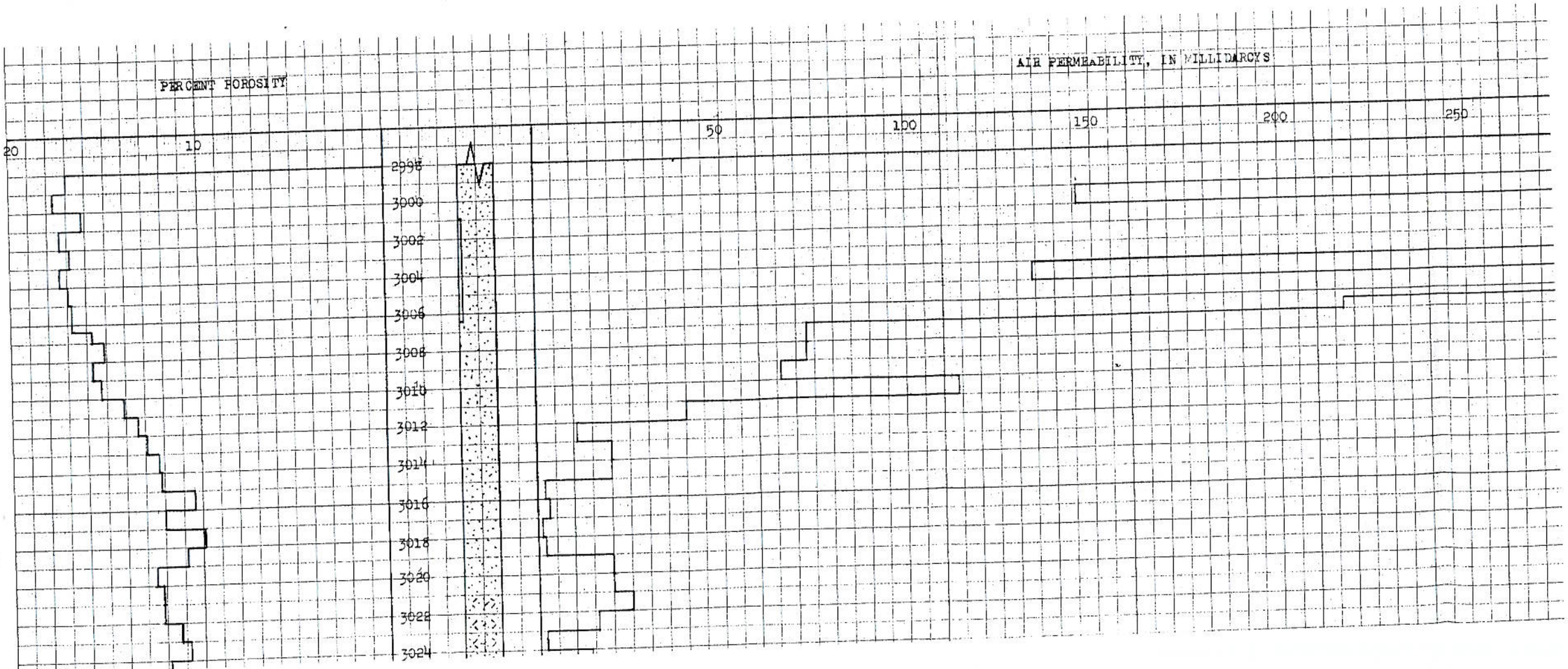
ETROLEUM COMPANY

WELL NO. 32-W-27

E COUNTY, OKLAHOMA

OILFIELD RESEARCH LABORATORIES
CHANUTE, KANSAS
JULY, 1962


AIR PERMEABILITY, IN MILLIDARCYS
50
100
150
200
250
300
350
427
530
760
813



U.S. STANDARD CROSS SECTION