

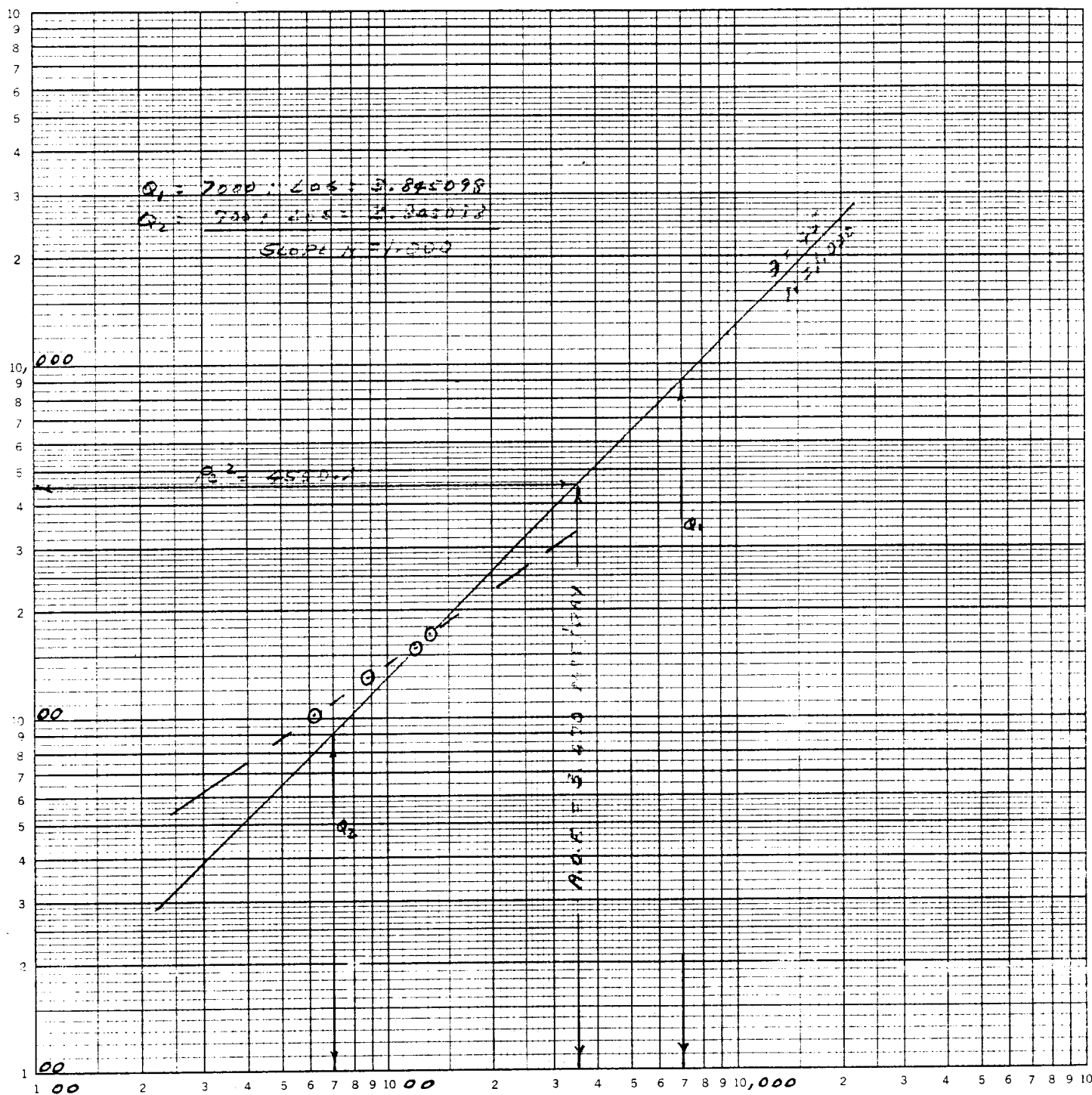
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MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test ☒ Initial ☐ Annual ☐ Special		Test Date 1-12-90		JAN 24 '90							
Company Samedan Oil Corp. ✓		Connection Vented		O. C. D.							
Formation Montoya		Unit ARTESIA, QUINCY		N							
Completion Date 11-11-90		Total Depth 6635		Plug Back TD 6590							
Elevation 3697.4 GR		Form or Lease Name St. 25 Comm.		Well No. 1							
Casing Size 5 1/2		Wt. 15.5		Set At 6158 To 6177							
Thq. Size 2 3/8		Wt. 4.7		Set At 1.995 5969							
Type Well - Single - Bradenhead - G.C. or G.O. Multiple Single		Packer Set At 5969		County Chaves							
Producing Thru Tbg.		Reservoir Temp. °F 136 # 6168		Mean Annual Temp. °F 60							
Baro. Press. - P _a 13.2		State NM									
L *6168		H 6168		G _g .644							
% CO ₂ 1.92		% N ₂ 3.24		% H ₂ S ---							
Prover 3.826		Meter Run 3.826		Taps Flg.							
FLOW DATA											
TUBING DATA											
CASING DATA											
Duration of Flow											
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h _w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
SI							2045		Pkr.		48 Hrs.
1.	4 x	1.250		300	14.00	62	1330		Pkr.		1 Hr.
2.	4 x	1.250		300	28.00	54	1210		Pkr.		1 hr.
3.	4 x	1.250		300	50.00	59	1060		Pkr.		1 hr.
4.	4 x	1.250		300	60.00	62	910		Pkr.		1 hr.
5.											
RATE OF FLOW CALCULATIONS											
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor F _g	Super Compress. Factor, F _{sp}	Rate of Flow Q, Mcfd				
1	7.483	66.22	313.2	.9981	1.246	1.028	634				
2	7.483	91.68	313.2	1.006	1.246	1.030	886				
3	7.483	125.14	313.2	1.001	1.246	1.030	1,203				
4	7.483	137.08	313.2	.9981	1.246	1.028	1,311				
5.											
NO.	R	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio Gas H ₂ O Ratio 3.428 Mcf/bbl.						
1.	.46	522	1.45	.947	A.P.I. Gravity of Liquid Hydrocarbons No oil or condensate Deg.						
2.	.46	514	1.42	.942	Specific Gravity Separator Gas .644 x x x x x x x x						
3.	.46	519	1.44	.942	Specific Gravity Flowing Fluid x x x x x						
4.	.46	522	1.45	.947	Critical Pressure **673 P.S.I.A. P.S.I.A.						
5.					Critical Temperature **360 °R °R						
*** P _c 2133.1 P _c ² 4550.1											
NO.	P _c ²	P _w	R _c ²	P _c ² - R _w ²	(1) $\frac{P_c^2}{P_c^2 - R_w^2} = 2.647$ (2) $\left[\frac{P_c^2}{P_c^2 - R_w^2} \right]^n = 2.647$						
1		1883.4	3547.2	1002.9	AOF = Q $\left[\frac{R_c^2}{P_c^2 - R_w^2} \right]^n = 3.470$						
2		1803.0	3250.8	1299.3							
3		1722.4	2966.7	1583.4							
4		1682.6	2831.1	1719.0							
5											
Absolute Open Flow 3,470 Mcfd @ 15.025					Angle of Slope @ 45		Slope, n 1.000				
Remarks: * = BHP instrument set @ this depth. A of Cal. from known BHP's - pressure obtained with Amerada RPG-3 instrument. Well made 49 bbls. H ₂ O during test.											
** = corrected to 1.92% CO ₂ & 3.24% N ₂ *** = Static BHP cal. back to surface											
Approved By Division			Conducted By: John West Engineering			Calculated By: JBM			Checked By: JBM		

N - 25 - 10S - 26E
Chaves County, NM
1-12-90

K₃ LOGARITHMIC 3 X 3 CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.



Q - MCF / DAY

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JAN 23 1990

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Form C-122F
Adopted 9-1-65

WORK SHEET FOR CALCULATION OF WELLHEAD PRESSURES (P_{wf} or P_w) FROM KNOWN BOTTOM HOLE PRESSURE (P_{res} or P_s)

COMPANY Shell LEASE Block 10 WELL NO. 10-5 DATE 1-10-60

LOCATION: Unit A Section 7 Township 10-5 Range 26-E

L 0158 H 0158 L/H 0158 G 0158 % CO₂ 0.72 % N₂ 0.24 % H₂S 0

* 2000 2000 2000 GH 2000 1672 260
P_{cr} 1672 T_{cr} 260
TABLE IN 8.8

(1) 1672

(2) 260

(3) 1672

(4) 1672

LINE	1	2	3	4	5	6	7	8
1	$T_w(W.H. \cdot R)$							
2	$T_g(B.H. \cdot R)$							
3	$T = \left(\frac{T_w + T_g}{2} \right)$							
4	Z (Est.)							
5	TZ							
6	GH/TZ							
7	e^S (Table XIV)							
8	P_f or P_s							
9	P_f^2 or P_s^2							
10	$P_c^2 = P_f^2 / e^S$ or $P_w^2 = P_s^2 / e^S$							
11	P_c or P_w							
12	$P_c \left(\frac{P_w + P_s}{2} \right)$ or $\left(\frac{P_c + P_f}{2} \right)$							
13	$P_f = (P/P_{cr})$							
14	$T_f = (T/T_{cr})$							
15	Z (Table XI)							

** = P_{wf}

SECTION BNP

WORK SHEET FOR CALCULATION OF WELLHEAD PRESSURES (P_c or P_w)
FROM KNOWN BOTTOM HOLE PRESSURE (P_f or P_g)

Form C-122F
Adopted 9-1-65

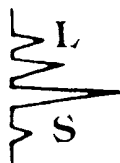
COMPANY Standard Oil (Ind.) LEASE ST 25 1104111 WELL NO. 1 DATE 1-12-60

LOCATION: Unit N Section 25 Township 10-S Range 26-E

L 6168 H 6168 L/H 1.000 G .844 %CO₂ 1.92 %N₂ 3.24 %H₂S —

BNP 3772.19 P_{cr} 673 T_{cr} 360
TABLE IX & X

LINE		1	2	3	4	5	6	7	8
1	$T_w (W.H. \cdot R)$	534	534						
2	$T_s (B.H. \cdot R)$	596	596						
3	$T = \frac{T_w + T_s}{2}$	565	565						
4	Z (Est.)	1.790	.818						
5	TZ	446.3	462.1						
6	GH/TZ	8.899	8.594						
7	e^s (Table XIV)	1.396	1.380						
8	P_f or P_g	2506.2	2506.2						
9	P_f^2 or P_g^2	6281.0	6281.0						
10	$P_c^2 = P_f^2 / e^s$ or $P_w^2 = P_g^2 / e^s$	4498.8	4550.4						
11	P_c or P_w	2121.0	2133.1 = P_c						
12	$P_c \cdot \frac{(P_w + P_s)}{2}$ or $(\frac{P_c + P_f}{2})$	2313.6	2319.6						
13	$P_f = (P/P_{cr})$	3.44	3.44						
14	$T_r = (T/T_{cr})$	1.88	1.56						
15	Z (Table XI)	.818	.818						



LABORATORY SERVICES

1331 Tasker Drive
Hobbs, New Mexico 88240

Telephone: (505) 397-3713

FOR: John West Engineering Co.
Attention: Mr. Buz Thomason
412 N. Dal Paso
Hobbs, New Mexico 88240

SAMPLE
IDENTIFICATION: State 25 Com #1
COMPANY: Samedan Oil Corp.
LEASE:
PLANT:

SAMPLE DATA: DATE SAMPLED: 1/12/90 3:30 PM GAS (XX) LIQUID ()
ANALYSIS DATE: 1/13/90 SAMPLED BY: John West Eng. Co.
PRESSURE — PSIG ANALYSIS BY: Rolland Perry
SAMPLE TEMP. °F:
ATMOS. TEMP. °F:

REMARKS:

COMPONENT ANALYSIS

COMPONENT		MOL PERCENT	GPM	LIQ. VOL. PERCENT
Hydrogen Sulfide	(H ₂ S)	---		
Nitrogen	(N ₂)	3.24		
Carbon Dioxide	(CO ₂)	1.92		
Methane	(C ₁)	87.77		
Ethane	(C ₂)	4.36	1.112	
Propane	(C ₃)	1.42	0.391	
I-Butane	(C ₄)	0.24	0.079	
N-Butane	(NC ₄)	0.44	0.139	
I-Pentane	(C ₅)	0.16	0.059	
N-Pentane	(NC ₅)	0.15	0.054	
Hexane	(C ₆)	0.30	0.138	
Heptanes Plus	(C ₇ +)			
		<u>100.00</u>	<u>1.972</u>	

BTU/CU. FT.—DRY 1054
AT 14.650 WET 1033

SPECIFIC GRAVITY—CALCULATED 0.644
MEASURED

VAPOR PRESSURE (ABSOLUTE)—CALCULATED

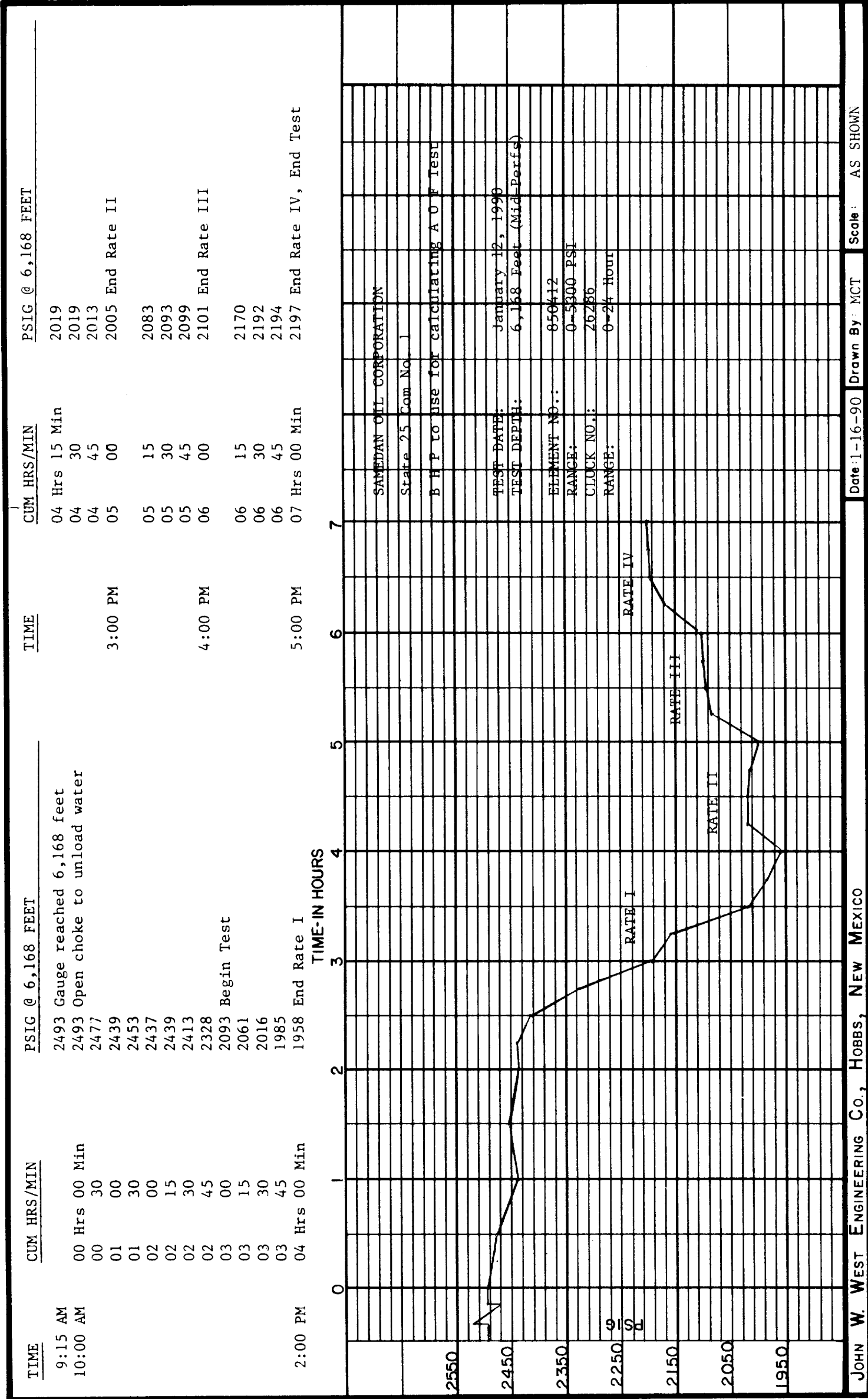
26# GASOLINE— 0.300

CU. FT./GAL. —

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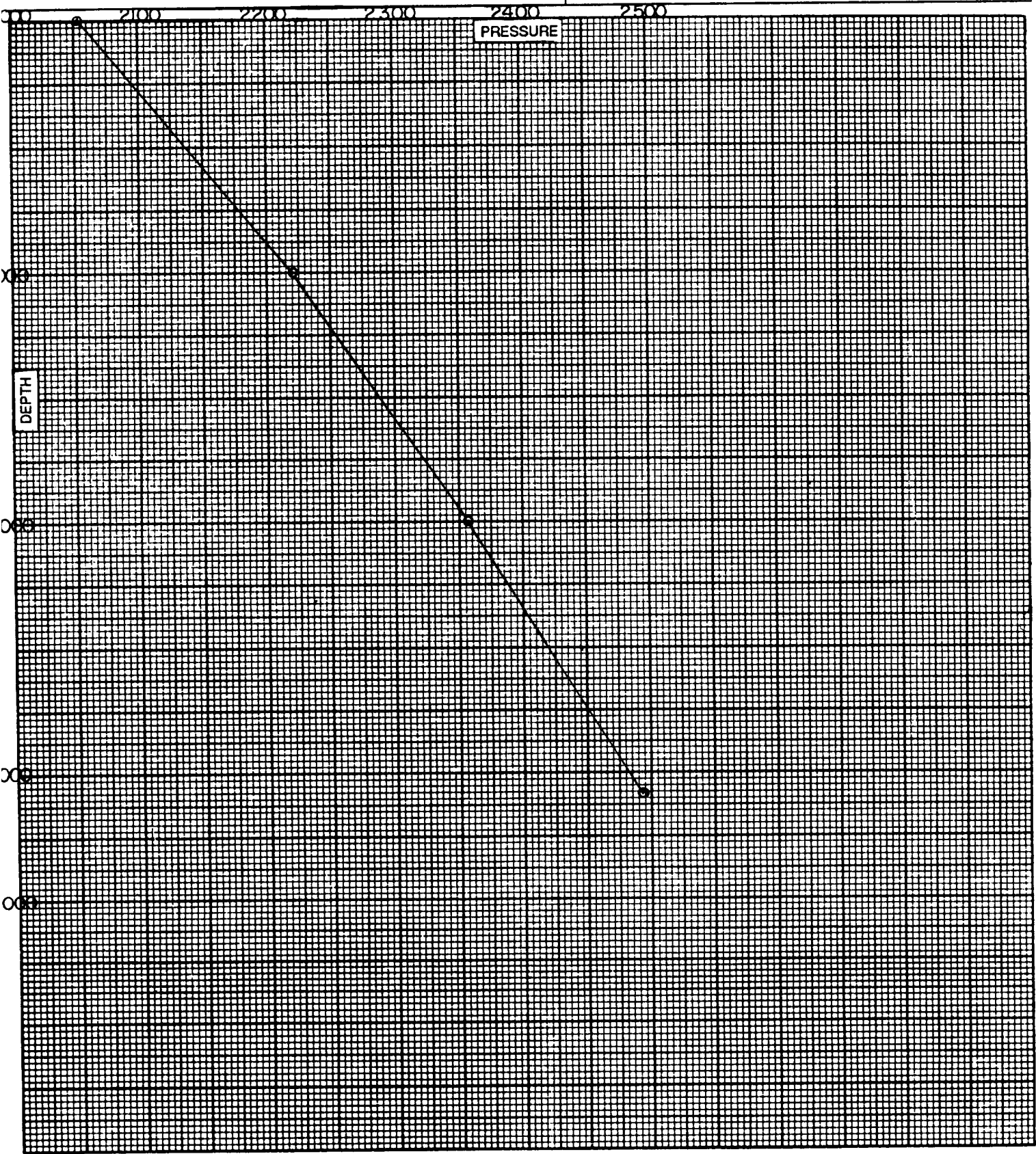
BOTTOM HOLE PRESSURE SURVEY REPORT

OPERATOR SAMEDAN OIL CORPORATION
LEASE State 25 Com
WELL NO. 1
FIELD _____
DATE 1-12-90 TIME 9:15 A.M.

STATUS Shut-in TEST DEPTH 6,168 Feet
TIME S.I. _____ LAST TEST DATE _____
CAS. PRES. _____ BHP LAST TEST _____
TUB. PRES. 2053 psig BHP CHANGE _____
ELEV. _____ FLUID TOP _____
DATUM _____ WATER TOP _____
TEMP. _____ RUN BY W.S.
CLOCK NO. 26286 GAUGE NO. 19389
ELEMENT NO. 850412 (0-5300 PSI)

DEPTH	PRESSURE	GRADIENT
000	2053	
2000	2221	.084
4000	2357	.068
6168*	2493	.063

*Mid-perfs.



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JAN 28 1990
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