c/SF

RECEIVED
MAY 28 1982
O. C. D.
ARTESIA, OFFICE

Type Test: ☒ Initial ☐ Annual ☐ Special FOUR POINT		Test Date: 5-17-82	1980 FSL
Company: SANDERS PETROLEUM CORP.	Connection: AIR NEW WELL		1980 FWL
Pool: PECOS SLOPE Abo	Formation: ARTESIA, OFFICE ABO (GAS)		Unit: K
Completion Date: 12-3-81	Total Depth: ~~4,215~~ 4215	Plug Back TD: 3705 ~~4,215~~ ~~4193~~	Elevation: 4,159 KB
			Farm or Lease Name: HUGGINS DRAW

Csg. Size	Wt.	d	Set At	Perforations	Well No.
4.50	10.5	4.052	~~4,215~~ 4212	From 3,642 To 3,669	1

Tbg. Size	Wt.	d	Set At	Perforations	Unit	Sec.	Twp.	Rge.
2.375	4.7	1.995	3,600	From OPEN To ENDED	K	29	5S	24E

Type Well – Single – Bradenhead – G.G. or G.O. Multiple	Packer Set At	County
SINGLE	NONE	CHAVES

Producing Thru	Reservoir Temp. °F	Mean Annual Temp. °F	Baro. Press. – P_a	State
TUBING	95 @ 3655	60	13.2	NEW MEXICO

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
3655	3655	.7566	6.956	18.271			3.026	

NO	FLOW DATA: Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	TUBING DATA: Press. p.s.i.g.	Temp. °F	B.H.P. DATA: Press. p.s.i.g.	CHOKE	Duration of Flow
SI							953	80	1064		115 1/4
1	3.068	X	1.00	400.	2.0	96	918	82	1021	8/64	1 HR.
2	3.068	X	1.00	410.	4.2	78	861	80	945	9/64	1 HR.
3	3.068	X	1.00	417.	12.0	74	762	78	774	11/64	1 HR.
4	3.068	X	1.00	420.	18.0	70	607	78	701	12.5/64	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 Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	4.789	28.75	413.2	.9671	1.149	1.026	157
2	4.789	42.16	423.2	.9831	1.149	1.030	235
3	4.789	71.85	430.2	.9868	1.149	1.032	403
4	4.789	88.30	433.2	.9905	1.149	1.033	497
5							

NO	P_t	Temp. °R	T_f	Z
1	.62	556	1.59	.950
2	.63	538	1.54	.942
3	.65	534	1.53	.939
4	.65	530	1.52	.938
5				

Gas Liquid Hydrocarbon Ratio _____ Mcf/bb
A.P.I. Gravity of Liquid Hydrocarbons _____ De
Specific Gravity Separator Gas _____ XXXXXXXXX
Specific Gravity Flowing Fluid XXXXX _____
Critical Pressure 666 P.S.I.A. _____ P.S.I.A
Critical Temperature 349 R _____ R

P_c^2 936.0

NO	P_t	P_w	P_w^2	$P_c^2 - P_w^2$
1			863.6	72.4
2			742.4	193.6
3			503.2	432.8
4			414.8	512.2
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2}$ = 1.7958 (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n$ = 1.5668

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n$ = 778.7

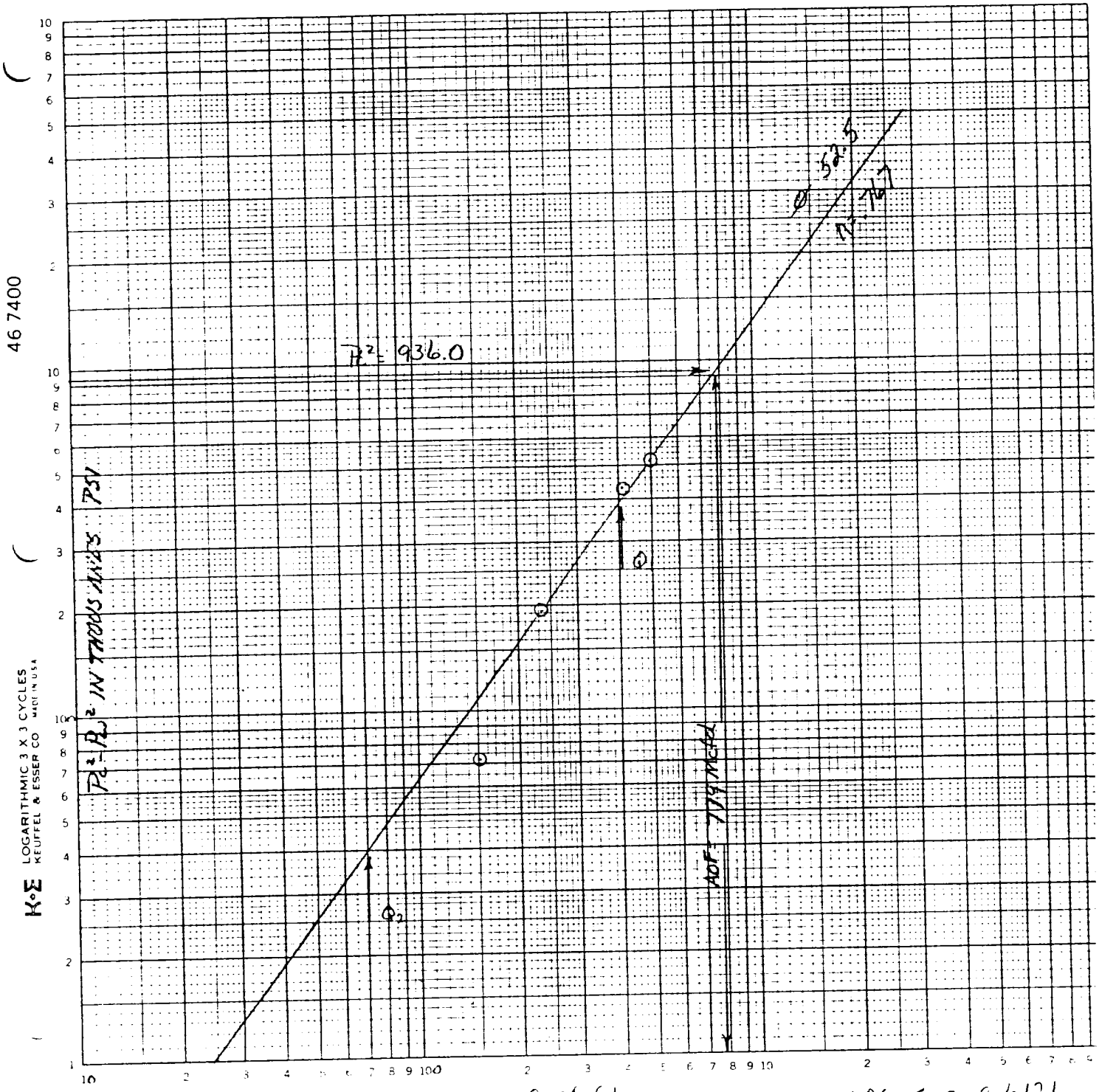
Posted ID-2
6-11-82
comp & BK

Absolute Open Flow 779 Mcfd @ 15.025 | Angle of Slope @ 52.5 | Slope, n .767

Remarks: BOTTOM HOLE PRESSURE MEASURED WITH AMERADA PRESSURE ELEMENTS.

Approved By Commission:	Conducted By:	Calculated By:	Checked By:
	RICHARD TOWNLEY	BENNETT-CATHEY	Charles W. Sanders

HUGGINS DRAW #1
UNIT K SEC 11 T12SS R31E
CHAVES COUNTY
5-17-82



ΔP_1^2 $P_c^2 - P_w^2$ 400
ΔP_2^2 $P_c^2 - P_w^2$ 40

Q_1 409.3
Q_2 70

LOG Q_1 = 2.6121
LOG Q_2 = 1.8451

n = .767

FROM KNOWN BOTTOM HOLE PRESSURE (P_f or P_s)

COMPANY SANDERS PETROLEUM LEASE HUGGINS DRAW WELL NO. 1 DATE 5-17-82

LOCATION: Unit K Section 29 Township 5S Range 23E

L 3655 H 3655 L/H 1.000 G .757 % CO_2 6.956 % N_2 18.27 % H_2S

GH 2767 P_{CT} 666 (TABLE IX & X) T_{CT} 349 (TABLE IX & X)

		RATE #1		RATE #2		RATE #3		RATE #4	
LINE		1	2	3	4	5	6	7	8
1	T_w(W.H. °R)	534	534	534	534	534	534	534	534
2	T_s(B.H. °R)	555	555	555	555	555	555	555	555
3	$T=(\frac{T_w + T_s}{2})$	544.5	544.5	544.5	544.5	544.5	544.5	544.5	544.5
4	Z (Est.)	.886	.891	.893	.897	.911	.915	.919	.922
5	TZ	482.4	485.1	486.2	488.4	496.0	498.2	500.4	502.0
6	GH/TZ	5.735	5.703	5.691	5.665	5.578	5.554	5.530	5.512
7	e^s(Table XIV)	1.240	1.238	1.238	1.237	1.234	1.231	1.230	1.229
8	P_f or P_s	1034.2	1034.2	958.2	958.2	787.2	787.2	714.2	714.2
9	P_f^2 or P_s^2	1069.6	1069.6	918.1	918.1	619.7	619.7	510.1	510.1
10	$P_c^2 - P_f^2/e^s$ or $P_w^2 = P_s^2/e^s$	862.6	863.6	741.7	742.4	502.7	503.2	414.6	414.8
11	P_c or P_w	928.7	928.3	861.2	861.6	709.0	709.3	643.9	644.1
12	$P\ (\frac{P_w + P_s}{2})$ or $(\frac{P_c + P_f}{2})$	981.5	981.7	909.7	909.9	748.1	748.3	679.0	679.1
13	$P_t = (P/P_{CT})$	1.47	1.47	1.37	1.37	1.12	1.12	1.02	1.02
14	$T_t = (T/T_{CT})$	1.56	.156	1.56	1.56	1.56	1.56	1.56	1.56
15	Z (Table XI)	.891	.891	.897	.897	.915	.915	.922	.922

(Work copy or equivalent)

FROM KNOWN BOTTOM HOLE PRESSURE (P_f or P_s)

COMPANY SANDERS PETROLEUM LEASE HUGGINS DRAW WELL NO. 1 DATE 5-17-82

LOCATION: Unit K Section 29 Township 5S Range 23E

L 3655 H 3655 L/H 1.000 G .757 % CO_2 6.956 % N_2 18.27 % H_2S _____

GH 2767 P_{CT} 666 (TABLE IX & X) T_{CT} 349 (TABLE IX & X)

SHUT IN

LINE		1	2	3	4	5	6	7	8
1	T_w(W.H. °R)	534	534						
2	T_s(B.H. °R)	555	555						
3	$T=(\frac{T_w + T_s}{2})$	544.5	544.5						
4	Z (Est.)	.881	.887						
5	TZ	479.7	482.9						
6	GH/TZ	5.768	5.729						
7	e^s(Table XIV)	1.242	1.240						
8	P_f or P_s	1077.2	1077.2						
9	P_f^2 or P_s^2	1160.3	160.3						
10	$P_c^2 - P_f^2/e^s$ or $P_w^2 = P_s^2/e^s$	934.7	936.0						
11	P_c or P_w	966.8	967.5						
12	$P=(\frac{P_w + P_s}{2})$ or $(\frac{P_c + P_f}{2})$	1022.0	1022.3						
13	$P_r = (P/P_{CT})$	1.53	1.53						
14	$T_r = (T/T_{CT})$	1.56	1.56						
15	Z (Table XI)	.887	.887						

NEW-TEX LAB

PHONE 505/393-3561 • P. O. BOX 1161 • 611 W. SNYDER • HOBBS, NEW MEXICO 88240

ANALYSIS CERTIFICATE

CLIENT: BENNETT & CATHEY
ADDRESS: BOX 787
CITY, STATE: ARTESIA NM 88210

ANALYSIS NUMBER : 7464
DATE OF RUN : 5 20 82
DATE SECURED : 5 19 82

SAMPLE IDENT: SANDERS PETROLEUM - HUGGINS DRAW #1
SAMPLING PRESS: SAMPLING TEMP:

********* GAS ANALYSIS *********

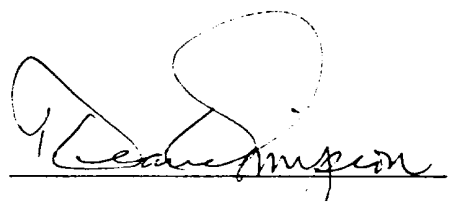
	MOLE PERCENT	GAL/ MCF
NITROGEN	18.270	
CARBON DIOXIDE	6.956	
METHANE	67.960	
ETHANE	3.710	0.989
PROPANE	1.606	0.441
ISO-BUTANE	0.275	0.090
NORMAL BUTANE	0.567	0.178
ISO-PENTANE	0.178	0.065
NORMAL PENTANE	0.198	0.072
HEXANES	0.155	0.064
HEPTANES PLUS	0.125	0.058
TOTAL	100.000	1.957

PROPANE GPM: 0.44 BUTANES GPM: 0.27
ETHANE GPM: 0.99 PENTANES PLUS GPM: 0.26

SPECIFIC GRAV (CALC): 0.7566
MOLE WEIGHT: 21.93

HHV-BTU/CU FT PRESSURE (PSIA)	WET	DRY
14.696	835	850
14.650	832	847
14.730	837	851
14.735	837	852

ANALYZED BY: R H HAMILTON

APPROVED BY 

SUGGESTED FIELD DATA SHEET (Not Required to File)

Type Test: 4 POINT ☐ Initial ☐ Annual ☒ Special	Test Date: 5-17-82
Company: SANDERS PETROLEUM CORP.	Connection: AIR NEW WELL
Field: UNDESIGNATED	Reservoir: ABO
Location: UNIT L	
Completion Date: 12-3-81	Total Depth: 4,215
Plug Back TD: 4,215	Elevation: 4,159 KB
Csg. Size: 4.5	Wt.: 10.5
d: 4.052	Set At: 4,215
Perforations: From 3,642	To 3,669
Tbg. Size: 2.375	Wt.: 4.7
d: 1.995	Set At: 3,600
Perforations: From OPEN	To ENDED
Packer Set At: NONE	Type Completion (Describe): SINGLE
Producing Thru: TUBING	Reservoir Temp. F:
Mean Annual Temp. F: 60	Baro. Press. P_a: 13.2
L: 3655	H: 3655
G_g: .7566	% CO_2: 6.956
% N_2: 18.271	% H_2S:
Prover:	Meter Run: 3.026

1980 FSL

1980 FWL

Lease No. or Serial No.:

Allottee:

Unit: K

Farm or Lease Name: HUGGINS DRAW

Well No.: 1

Sec.: 29 Twp. Blk: 5S Rge.-Sur.: 23E

County or Parish: CHAVES

State: NEW MEXICO

Taps:

DATE Time of Reading	ELAPSED TIME Hrs.	Wellhead Working Pressure Tbg. Psig.	Csg. Psig.	Temp. F	METER OR PROVER Pressure Psig.	Diff.	Temp. F	Orifice	REMARKS (Include liquid production data Type—A.P.I. Gravity Amount)
EXTENDED FLOW RATES AFTER FOUR POINT TEST									
1800	4.25	628		79	405	9.5	74	1.000	354 MCFD
1815	4.50	637		79	400	10.0	74	1.000	311 MCFD
1830	4.75	639		80	400	10.0	71	1.000	311 MCFD
1845	5	640		78	407	10.0	72	1.000	363 MCFD
1900	5.25	637		75	404	10.0	73	1.000	363 MCFD
1915	5.50	634		71	404	10.0	70	1.000	363 MCFD
1930	5.75	629		70	404	10.0	68	1.000	363 MCFD
1945	6	625		68	402	9.5	64	1.000	355 MCFD
2000	6.25	622		66	402	9.0	63	1.000	348 MCFD
2015	6.50	616		65	400	9.0	61	1.000	345 MCFD
2030	6.75	612		64	405	9.3	60	1.000	353 MCFD
2045	7	607		63	403	9.0	60	1.000	347 MCFD
2100	7.25	617		63	402	6.0	59	1.000	283 MCFD
2115	7.50	638		62	404	6.0	58	1.000	284 MCFD
2130	7.75	645		62	400	6.3	58	1.000	290 MCFD
2145	8	669		62	397	4.5	58	1.000	212 MCFD

Page ____ of ____ Data By ________

BENNET · CATHEY
(505) 748—3354 / Artesia, New Mexico 88210

SUBSURFACE PRESSURE MEASUREMENTS

COMPANY SANDERS PETROLEUM CORP. WELL NAME HUGGINS DRAW WELL NO. 1
DATE OF TEST 5-17-82 - 5-19-82 FORMATION ABO
COMPANY MAN CHARLES SANDERS

CHART READINGS AND CALCULATIONS FOR BUILDUP OR DRAWDOWN TEST

ELEMENT NUMBER RPG3 #7201B RANGE 3,200 LBS.
CLOCK NUMBER 27192 RANGE 72 HOURS
TIME WELL SHUT IN 1900 HOURS 5-19-72 PRIOR TO 4 POINT TEST
TIME CLOCK STARTED 1258 HOURS
DEAD WEIGHT ELEMENT ON SURFACE 972 LBS.
TIME ELEMENT REACHED BOTTOM 1317
DEAD WEIGHT ELEMENT ON BOTTOM 972 LBS.
ELEMENT SET AT 3,655 FEET.
TEMPERATURE 3,655 FT. 95 °F.
DEAD WEIGHT AT THE END OF HOURS MINUTES.

DATE	HOUR	TIME	DEFLECTION in/inches	CALCULATED PRESSURE psig	CORRECTION P ± PC psig	CORRECTED PRESSURE psia	PRESSURE AT MID-POINT OF PERFORATIONS psia
5-17-82	0	1330		1064	13.2		1077
STATE TEST	0	1345		1064	13.2		1077
	1/4	1400		1054	13.2		1067
	1/2	1415		1051	13.2		1064
	3/4	1430		1038	13.2		1051
END RATE 1	1	1445		1021	13.2		1034
	1-1/4	1500		996	13.2		1009
	1-1/2	1515		987	13.2		1000
	1-3/4	1530		980	13.2		993
END RATE 2	2	1545		945	13.2		958
	2-1/4	1600		909	13.2		922
	2-1/2	1615		878	13.2		891
	2-3/4	1630		830	13.2		843
END RATE 3	3	1645		774	13.2		787
	3-1/4	1700		746	13.2		759
	3-1/2	1715		724	13.2		737
	3-3/4	1730		709	13.2		722
END RATE 4	4	1745		701	13.2		714
EXTENDED	4-1/4	1800		728	13.2		741
FLOW	4-1/2	1815		748	13.2		761
	4-3/4	1830		754	13.2		767
	5	1845		756	13.2		769
	5-1/4	1900		757	13.2		770
	5-1/2	1915		758	13.2		771
	5-3/4	1930		758	13.2		771
	6	1945		759	13.2		772
	6-1/4	2000		761	13.2		774
	6-1/2	2015		761	13.2		774
	6-3/4	2030		762	13.2		775
	7	2045		762	13.2		775
	7-1/4	2100		777	13.2		790
	7-1/2	2115		791	13.2		804
	7-3/4	2130		809	13.2		822
	8	2145		820	13.2		833
SHUT WELL IN	0	2200		830	13.2		843
	1/4	2215		895	13.2		908
	1/2	2230		942	13.2		955
	3/4	2245		970	13.2		983

Bryan Printers & Stationers, Inc

BENNETT WIRE LINE SERVICE
Artesia, New Mexico 88210

SUBSURFACE PRESSURE MEASUREMENTS

COMPANY SANDERS PETROLEUM CORP. WELL NAME HUGGINS DRAW WELL NO. 1
DATE OF TEST 5-17-82 - 5-19-82 LOCATION ABO PAGE 2 OF 2

CHART READINGS AND CALCULATIONS FOR BUILDUP OR DRAWDOWN TEST

DATE	HOUR	TIME	DEFLECTION in/inches	CALCULATED PRESSURE psig	CORRECTION P ± PC psig	CORRECTED PRESSURE psig	PRESSURE AT MID-POINT OF PERFORATIONS psig
5-17-82	1	2300		991	13.2		1004
	1-1/4	2315		997	13.2		1010
	1-1/2	2330		1006	13.2		1019
	1-3/4	2345		1013	13.2		1026
	2	2400		1019	13.2		1032
	2-1/4	2415		1022	13.2		1035
	2-1/2	2430		1027	13.2		1040
	2-3/4	2445		1030	13.2		1043
5-18-82	3	0100		1032	13.2		1045
	3-1/2	0130		1039	13.2		1052
	4	0200		1042	13.2		1055
	4-1/2	0230		1046	13.2		1059
	5	0300		1049	13.2		1062
	6	0400		1053	13.2		1066
	7	0500		1056	13.2		1069
	8	0600		1058	13.2		1071
	9	0700		1059	13.2		1072
	10	0800		1060	13.2		1073
	15	1300		1062	13.2		1075
	20	1800		1065	13.2		1078
	25	2300		1065	13.2		1078
5-19-82	30	0400		1065	13.2		1078
	35	0900		1066	13.2		1079
	40	1400		1066	13.2		1079
	45	1900		1066	13.2		1079
	47-1/4	2115		1066	13.2		1079

TEST DATE: 5-17-82
TEST DEPTH: 3,655

ELEMENT NO.: RPG3 #7201B
RANGE: 3,200 LBS.

CLOCKS: 27192
RANGE: 72 HOURS

OPERATOR: STEVE HARWELL

Note: See Attached Sheet for Tabulation of Pressure And Time.

BUILD UP TEST

CHARLES SANDERS

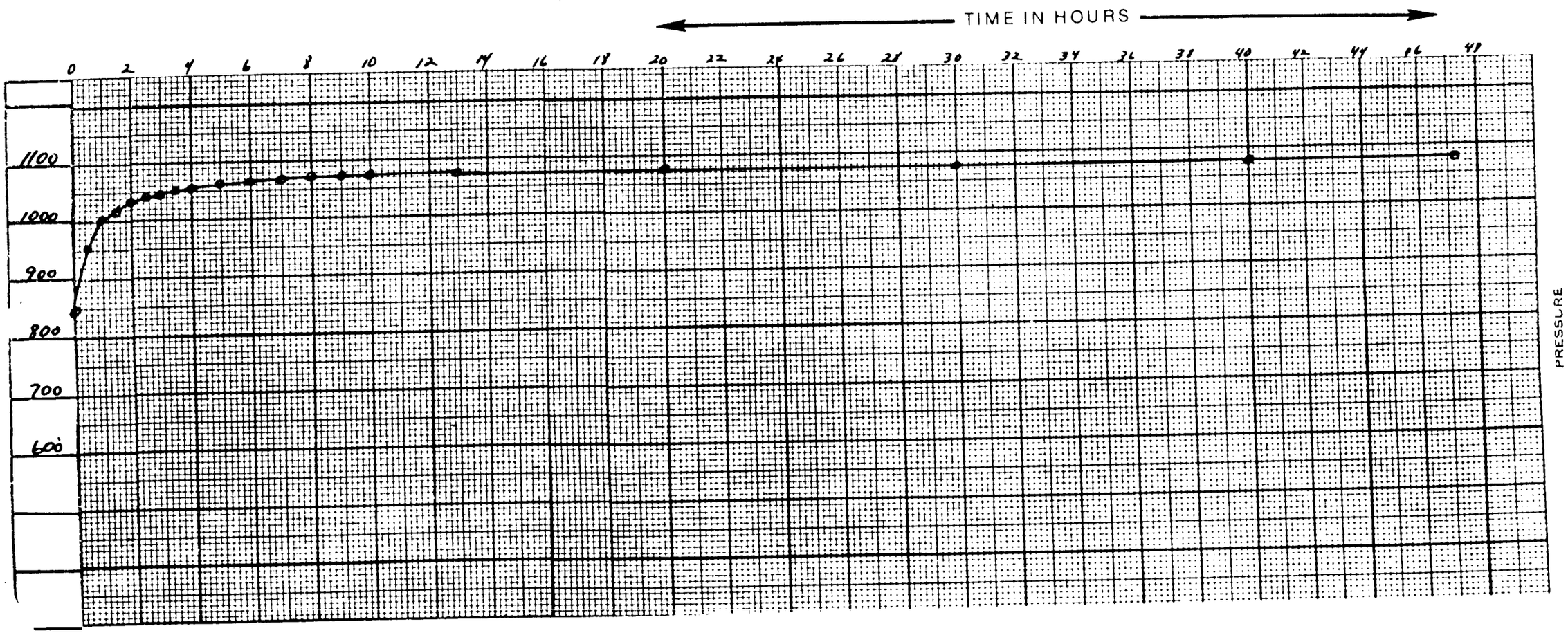
SANDERS PETROLEUM CORPORATION

HUGGINS DRAW WELL NO. 1

BENNETT-CATHEY WIRE LINE SERVICE
Box 787 Artesia, N.M. 88210 505/746-3281

Drawn By Scale: As Shown

BENNETT-CATHEY WELL SERVICES



TEST DEPTH: 3,655

ELEMENT NO.: RPG3 #7201B

RANGE: 3,200 LBS.

CLOCKS: 7201B

RANGE: 72 HOURS

OPERATOR: STEVE HARWELL

Note: See Attached Sheet for Tabulation of Pressure And Time.

CHARLES SANDERS

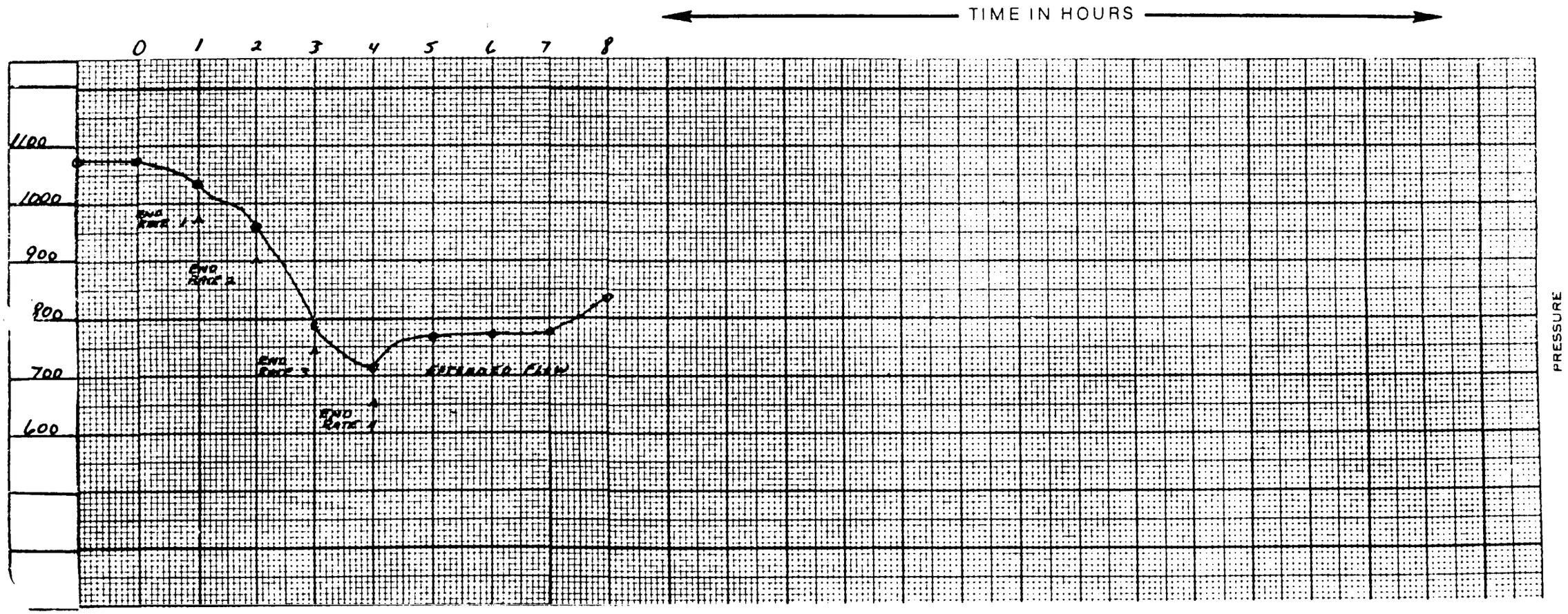
SANDERS PETROLEUM CORPORATION

HUGGINS DRAW WELL NO. 1

BENNETT-CATHEY WIRE LINE SERVICE
Box 787 Artesia, N.M. 88210 505/746-3281

Drawn By Scale: As Shown

BENNETT-
CATHEY
WELL SERVICES



BENNETT-GATHEY WIRE LINE SERVICE
P. O. BOX 787
ARTESIA, NEW MEXICO 88210
Phone (505) 746-3281

BOTTOM HOLE PRESSURE SURVEY REPORT

OPERATOR SANDERS PETROLEUM CORP.
LEASE HUGGINS DRAW
WELL NO. 1
POOL _____ **FORMATION** ABO
DATE 5-19-82 **TIME** 2228 HOURS
CO. MAN CHARLES SANDERS
STATUS SHUT IN **TEST DEPTH** 3,655 FEET
TIME S.I. 2200 HRS. **LAST TEST DATE** 12-12-81
5-17-82 **BHP LAST TEST** 1134
TUB. PRES. 971 **BHP CHANGE** +55
CAS. PRES. _____ **FLUID TOP** _____
DATUM PLANE _____ **WATER TOP** _____
DATUM PSIA 1079 **RUN BY** BO FAULKENBERRY
TEMP 95° **CLOCK #** 27192
PRESSURE RANGE 3,200 LBS
ELEMENT NO. RPG3 #7201B

DEPTH	PRESSURE	GRADIENT
0	971	
1,000	997	2.6
2,000	1027	3.0
3,000	1058	3.1
3,505	1073	3.0
3,655	1079	4.0

TIME B.H.P. MEASURED: 2228 HRS.

LENGHT OF TIME WELL SHUT IN: 48 HRS.
28 MIN.