SF file
C-122 file

Type Test: ☒ Initial FOUR POINT ☐ Annual ☐ Special	Test Date: 6-29-82 RECEIVED JUL 12 1982 O. C. D. ARTESIA, OFFICE		660 FNL
Company: STEVENS OPERATING Corp	Connection: AIR NEW WELL		660 FEL
Pool: ~~UNDESIGNATED~~ Pierce Crossing	Formation: ABO		Unit: A
Completion Date: 6-~~28~~-82	Total Depth: 4520	Plug Back TD: ~~4510~~ 4484	Farm or Lease Name: SUN FEDERAL
Csg. Size: 4.5 / Wt.: 10.5 / d: 4.052 / Set At: 4520	Perforations: From 4460 To ~~4476~~ 4472		Well No.: 4
Tbg. Size: 2.375 / Wt.: 4.7 / d: 1.995 / Set At: 4384	Perforations: From OPEN To ENDED		Unit: A / Sec.: 28 / Twp.: 7S / Rge.: 26E
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: SINGLE	Packer Set At: 4384		County: CHAVES
Producing Thru: TUBING	Reservoir Temp. °F: 98 • 4468	Mean Annual Temp. °F: 60°	Baro. Press. – P_a: 13.2	State: NEW MEXICO
L: 4468 / H: 4468	Gg: .6388	% CO_2: .255	% N_2: 7.092	% H_2S:	Prover: 2.000	Meter Run:	Taps:

	FLOW DATA					TUBING DATA		B.H.P. DATA		
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.	CHOKE	Duration of Flow
SI						1079				
1.	2.00	X .0625	980	.00	87	1027	96			1 HR
2.	2.00	X .125	620	.00	95	963	97			1 HR
3	2.00	X .125	825	.00	97	887	99			1 HR
4	2.00	X .025	260	.00	97	818	100			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	0.06405	.00	993.2	.9750	1.252	1.070	83
2	.2648	.00	633.2	.9680	1.252	1.041	211
3	.2648	.00	838.2	.9662	1.252	1.055	283
4	1.087	.00	273.2	.9662	1.252	1.018	366
5							

NO	P_t	Temp. °R	T_r	Z
1	1.51	547	1.55	.873
2	.96	555	1.58	.922
3	1.27	557	1.58	.898
4	.41	557	1.58	.965
5				

Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
Specific Gravity Separator Gas _____ XXXXXXXXXX
Specific Gravity Flowing Fluid XXXXX _____
Critical Pressure 658 P.S.I.A. _____ P.S.I.A.
Critical Temperature 352 R _____ R

P_c 1092.2 P_c^2 1192.9

NO	P_t	P_w	P_w^2	$P_c^2 - P_w^2$
1			1082.1	110.8
2			953.6	239.3
3			811.6	381.3
4			693.0	499.9
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 2.3863$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 2.3863$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 873.4$

Posted to ID-1 Comp Book 7-16-82

Absolute Open Flow 873.4 Mcfd @ 15.025 | Angle of Slope θ 45° | Slope, n 1.000

Remarks: _____

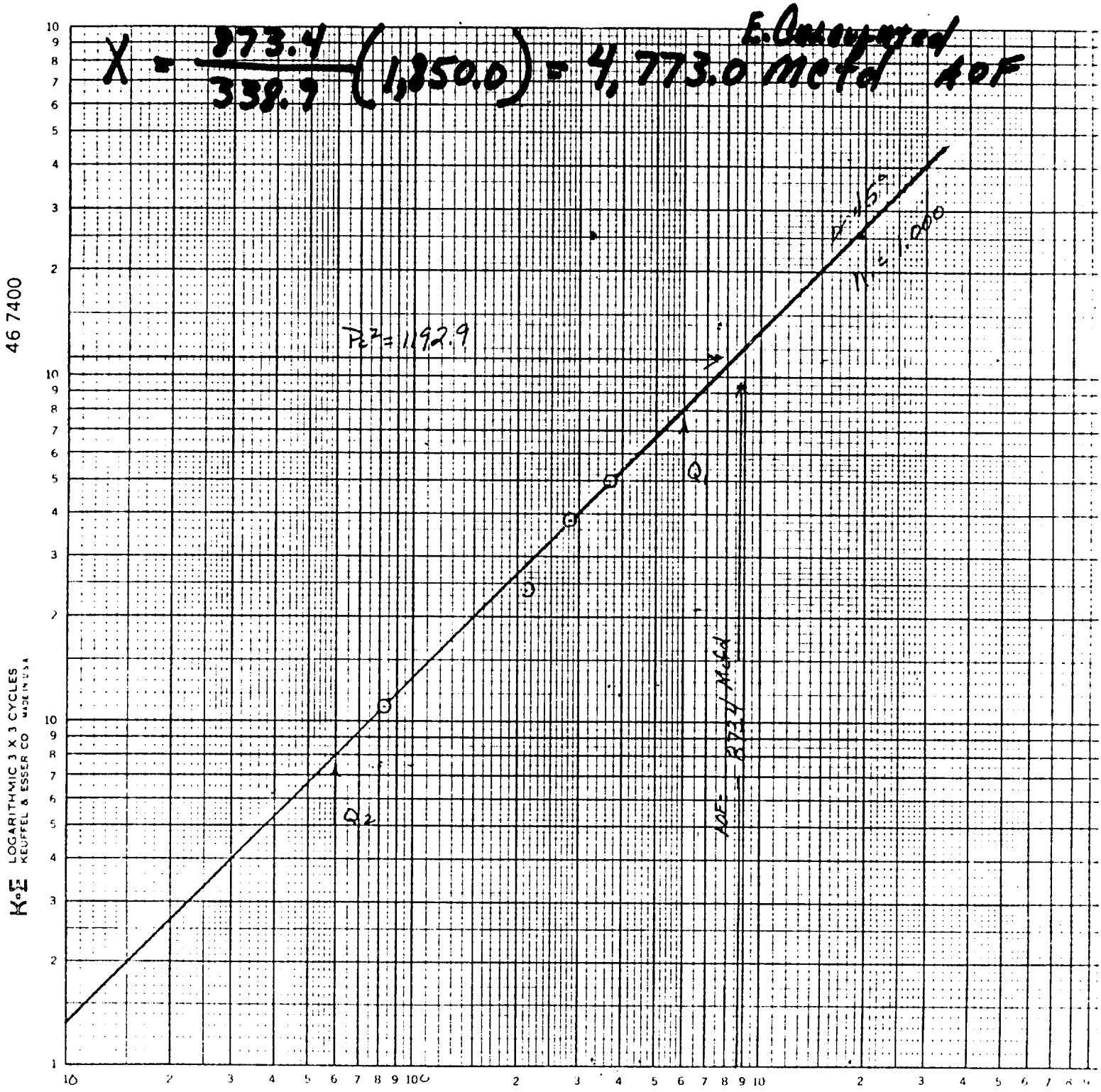
Approved By Commission:	Conducted By:	Calculated By:	Checked By:
	DON BENNETT	BENNETT – CATHEY	

SUN FEDERAL #4

A 32S T 7S R 26E

CHAVES COUNTY

6-29-82



ΔP^2 $P_c^2 - P_w^2 = 800$

ΔP^2 $P_c^2 - P_w^2 = 80$

$Q_1 =$ [illegible]

$Q_2 = 600$

Q, Mcfd

LOG $Q_1 = 2.7781$

LOG $Q_2 = 1.7781$

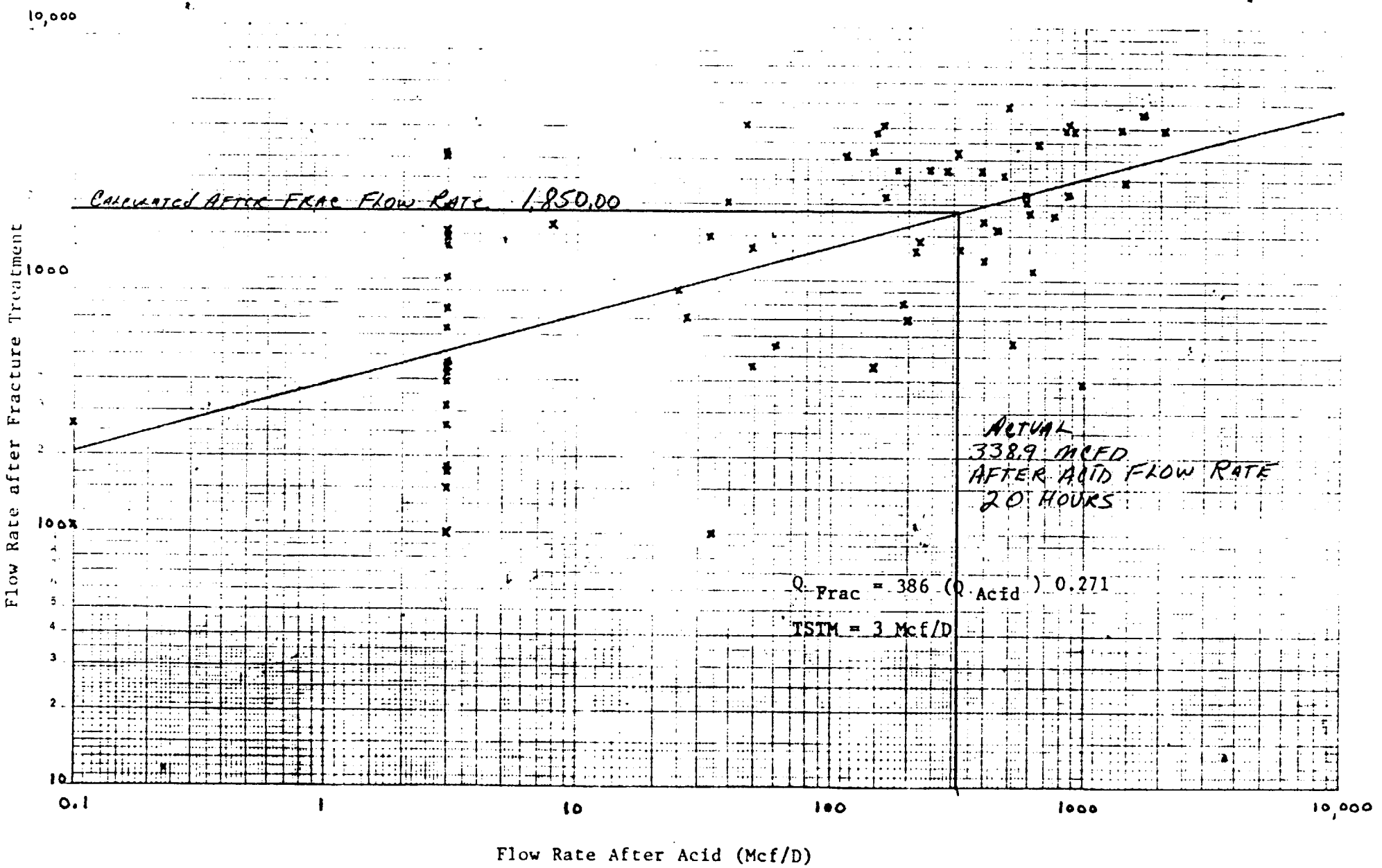
$n = 1.000$

RECEIVED

JUL 12 1982

O. C. D.
ARTESIA, OFFICE

CORRELATION OF FLOW RATES FOR ABO WELLS



LOCATION: Unit _____ Section _____ Township _____ Range _____

L 4468 H 4468 L/H 1.00 G .639 % CO_2 .25 % N_2 7.09 % H_2S _____

d 1.995 F_r .018231 GH 2855. P_{cr} 658 (TABLE IX & X) T_{cr} 352 (TABLE IX & X)

	RATE 1		RATE 2		RATE 3		RATE 4			
LINE	1	2	3	4	5	6	7	8		
1 Q_m	.83	.83	.211	.211	.283	.283	.366	.366		
2 T_w (W.H. °R)	534	534	534	534	534	534	534	534		
3 T_s (B.H. °R)	558	558	558	558	558	558	558	558		
4 $T = (\frac{T_w + T_s}{2})$	546	546	546	546	546	546	546	546		
5 Z (Est.)	.870	.862	.875	.868	.883	.879	.891	.886		
6 TZ	475.0	470.7	477.8	473.9	482.1	479.9	486.5	483.8		
7 GH/TZ	6.0102	6.0661	5.9759	6.0241	5.9218	5.9487	5.8686	5.9017		
8 e^s (Table XIV)	1.2528	1.2554	1.2512	1.2535	1.2486	1.2499	1.2462	1.2477		
9 $1-e^{-s}$ (Table XIV)	.2017	.2035	.2008	.2022	.1991	.1999	.1975	.1985		
10 P_t	1040.2	1040.2	976.2	976.2	900.2	900.2	831.2	831.2		
11 $P_t^2/1000$	1082.	1082.0	953.0	953.0	810.4	810.4	690.9	690.9		
12 F_r (Table XV)	.018231	.018231	.018231	.018231	.018231	.018231	.018231	.018231		
13 $F_c = F_r$ TZ	8.6600	8.5805	8.7099	8.6402	8.7895	8.7497	8.8691	8.8194		
14 $F_c Q_m$	.7187	.7122	1.8378	1.8231	2.4874	2.4761	3.2461	3.2279		
15 $L/H (F_c Q_m)^2$	.5166	.5072	3.3774	3.3236	6.1873	6.1314	10.5372	10.4192		
16 $F_w = L/H (F_c Q_m)^2 (1-e^{-s})$	.1042	.1032	.6781	.6721	1.2321	1.2259	2.0815	2.0686		
17 $P_w^2 = P_t^2 + F_w$	1082.1	1082.1	953.6	953.6	811.6	811.6	693.0	693.0		
18 $P_s^2 = e^s P_w^2$	1355.6	1358.5	1193.2	1195.3	1013.4	1014.4	863.6	864.6		
19 P_s	1164.3	1165.6	1092.3	1093.3	1006.7	1007.2	929.3	929.8		
20 $P = (\frac{P_t + P_s}{2})$	1102.2	1102.9	1034.3	1034.8	953.4	953.7	880.2	880.5		
21 $P_r = (P/P_{cr})$	1.6751	1.676	1.5718	1.5725	1.4489	1.4494	1.3378	1.338		
22 $T_r = (T/T_{cr})$	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55		
23 Z (Table XI)	.862		.868		.879		.886			

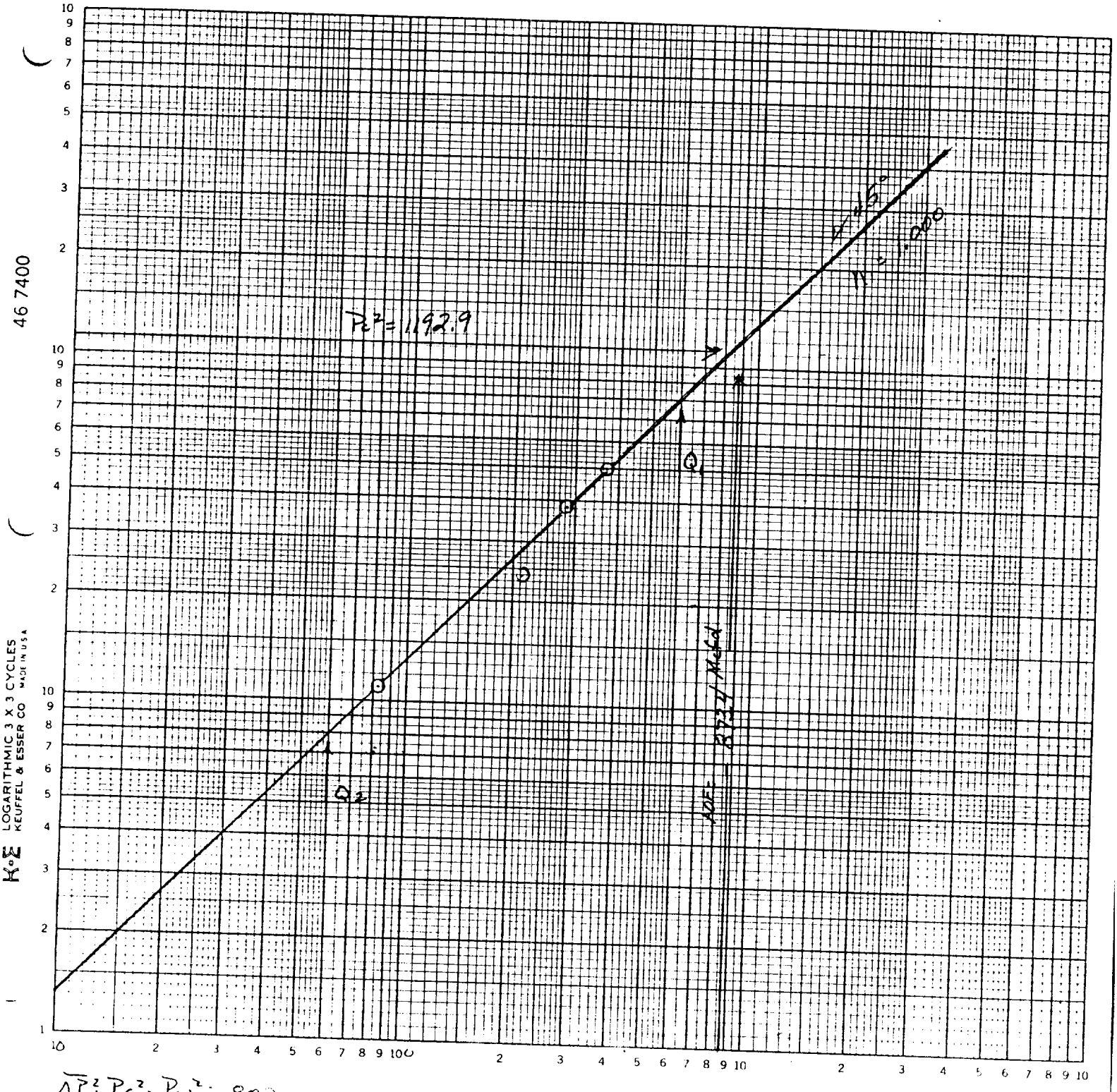
One copy to be filed in District Office (Work copy acceptable)

SUN FEDERAL #4

A 328 T 7S R 26E

CHAVES COUNTY

6-29-82



$\Delta P_1^2\ P_c^2 - P_w^2 = 800$

$\Delta P_2^2\ P_c^2 - P_w^2 = 80$

$Q_1 = 600$

$Q_2 = 60$

LOG $Q_1 = 2.7781$

LOG $Q_2 = 1.7781$

$n = 1.000$

NEW-TEX LAB

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

ANALYSIS CERTIFICATE

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

ANALYSIS NUMBER : 7737
DATE OF RUN : 6 30 82
DATE SECURED : 6 29 82

SAMPLE IDENT: STEVENS OPERATING - SUN FEDERAL #4
SAMPLING PRESS: SAMPLING TEMP:

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

	MOLE PERCENT	GAL/ MCF
NITROGEN	7.093	
CARBON DIOXIDE	0.255	
METHANE	86.368	
ETHANE	3.828	1.021
PROPANE	1.177	0.323
ISO-BUTANE	0.232	0.076
NORMAL BUTANE	0.425	0.134
ISO-PENTANE	0.165	0.060
NORMAL PENTANE	0.182	0.066
HEXANES	0.125	0.051
HEPTANES PLUS	0.150	0.069
TOTAL	100.000	1.800

PROPANE GPM: 0.32 BUTANES GPM: 0.21
ETHANE GPM: 1.02 PENTANES PLUS GPM: 0.25

SPECIFIC GRAV (CALC): 0.6388
MOLE WEIGHT: 18.52

HHV-BTU/CU FT PRESSURE (PSIA)	WET	DRY
14.696	1002	1019
14.650	998	1016
14.730	1004	1022
14.735	1004	1022

ANALYZED BY: DEANE SIMPSON

APPROVED BY J. Deane Simpson