NEW MEXICO OIL CONSERVATION COMMISSION

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

RECEIVED BY
JAN 17 1984
O. C. D.
ARTESIA, OFFICE

Type Test: [X] Initial [ ] Annual [ ] Special				Test Date: 2-6-84		
Company: Herman V. WALLIS		Connection: TO AIR				
Pool: SAMS RANCH Grayburg		Formation: GREYBERG			Unit: ~~M~~	
Completion Date: 1-29-84	Total Depth: 1800	Plug Back T.D.: ~~1772.~~ 1727	Elevation: 3572.		Farm or Lease Name: LURA FEDERAL	
Csg. Size: 4.500	Wt.: 10.5	d: 4.052	Set At: 1658.	Perforations: From 1658. OH To 1727.	Well No.: #1	
Tbg. Size: 2.375	Wt.: 4.7	d: 1.995	Set At: 1664.	Perforations: From 0 To 0	Unit: M, Sec.: 10, Twp.: 14S, Rge.: 28E	
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: SINGLE			Packer Set At: 0		County: CHAVES	
Producing Thru: TUBING	Reservoir Temp. °F: 80 @ 1664.	Mean Annual Temp. °F: 60.0	Baro. Press. – P_a: 13.2		State: NEW MEXICO	
L: 1693.	H: 1664.	Gg: 0.771	% CO_2: 0.01	% N_2: 26.44	% H_2S: 0	Prover: 0 / Meter Run: 3.1 / Taps: FLANGE

FLOW DATA / TUBING DATA / CASING DATA

NO.	Prover Line Size X Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Tubing Press. p.s.i.g.	Tubing Temp. °F	Casing Press. p.s.i.g.	CHOKE	Duration of Flow
SI					613.		795.		122.0
1.	3.07 X 0.500	40.	3.0	69.	232.	0	676.	10/64	1.0
2.	3.07 X 0.500	40.	6.0	69.	380.	0	523.	6/64	1.0
3.	3.07 X 0.500	40.	10.0	70.	277.	0	431.	7/64	1.0
4.	3.07 X 0.500	40.	20.0	67.	175.	0	310.	9/64	1.0
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	1.18	12.63	53.2	0.9915	1.1389	1.0039	17.
2	1.18	17.87	53.2	0.9915	1.1389	1.0039	24.
3	1.18	23.07	53.2	0.9905	1.1389	1.0039	31.
4	1.18	32.62	53.2	0.9933	1.1389	1.0039	44.
5							

NO.	P_r	Temp. °R	T_r	Z
1	0.09	529.	1.56	0.992
2.	0.09	529.	1.56	0.992
3.	0.09	530.	1.56	0.992
4.	0.09	527.	1.55	0.992
5				

Gas Liquid Hydrocarbon Ratio 1.3 Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons 40.0 Deg.
Specific Gravity Separator Gas 0.771 XXXXXXXXXX
Specific Gravity Flowing Fluid XXXXX 1.992
Critical Pressure 618. P.S.I.A. 557. P.S.I.A.
Critical Temperature 340. R 721. R

P_c 808.2 P_c^2 653.

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1	475.	688.	473.	180.
2	288.	536.	287.	366.
3	197.	444.	197.	456.
4	104.	323.	104.	549.
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2}$ = 1.1900

(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n$ = 1.1603

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n$ = 51.

Post ID-2
2-24-84
Comp & BK

Absolute Open Flow 51. Mcfd @ 15.025 Angle of Slope θ 49.5 Slope, n 0.855

Remarks:

Approved By Commission:	Conducted By:	Calculated By:	Checked By:
	RICHARD TOWNLEY	BENNETT & CATHEY	

2987

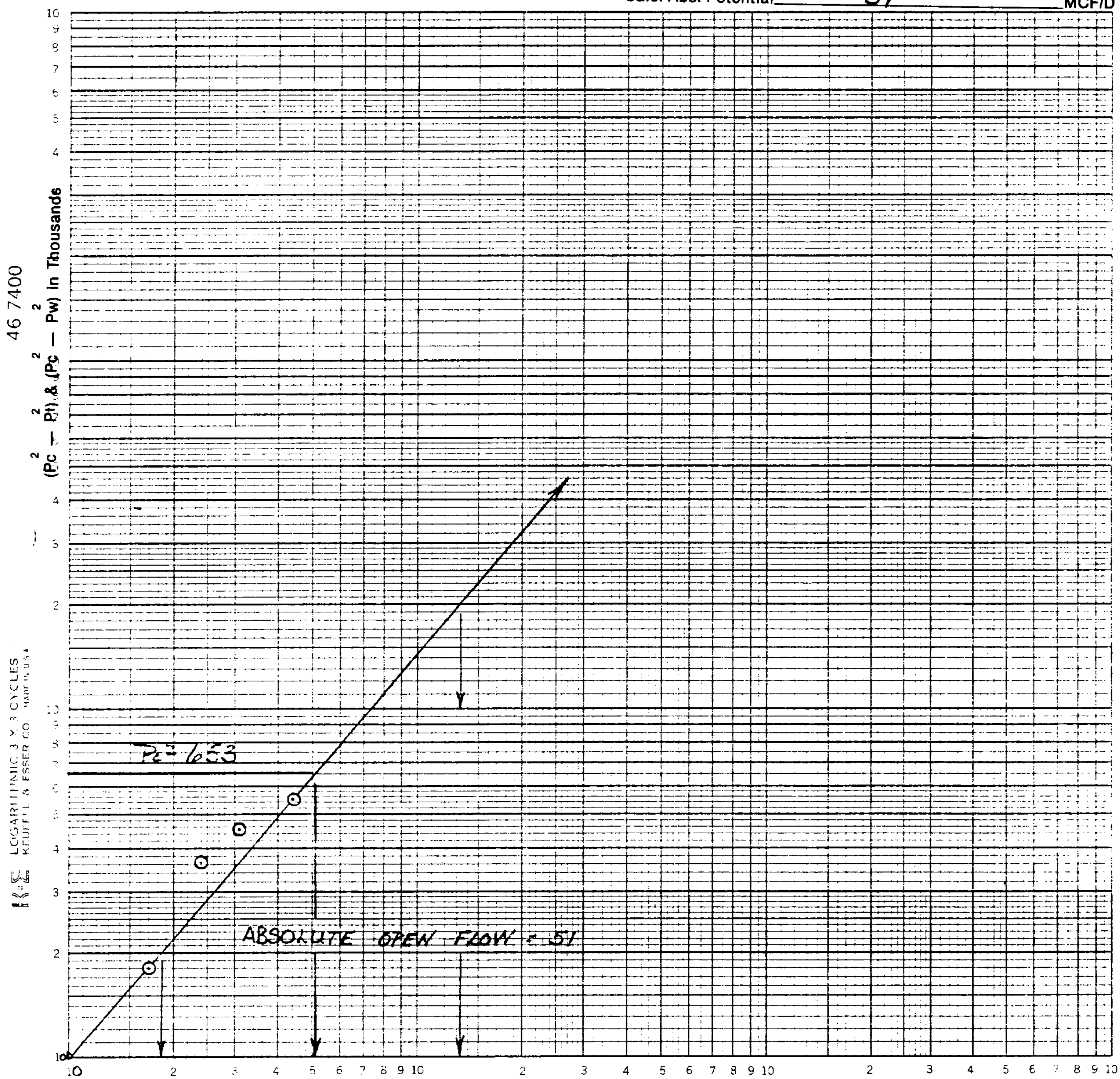
BENNETT & CATHEY PRODUCTIO[illegible] TESTING
BACK PRESSURE CU[illegible]E

Operator [illegible] Lease LURA FEDERAL Well No. 1

County Chaves Field Sams Ranch Location 10 14S 28E

Date of Test 2-6-[illegible] Slope "n" 0.839 Angle of Slope 50°

Calc. Abs. Potential 51 MCF/D



$\overline{\Delta P_1^2}$ $Pc^2 - Pw^2 =$ 2000

$\overline{\Delta P_2^2}$ $Pc^2 - Pw^2 =$ 200

$Q_1 =$ 134

$Q_2 =$ 18.7

LOG $Q_1 =$ 2.1271

LOG $Q_2 =$ 1.2718

$n =$ 0.8553 = 0.855

"... your Interest in Measurement be our Concern"

PRECISION SERVICE INC.
Flow Measurement Engineers
Analysis Results Summary
Casper, WY 82601

Run No. 207-3
Date Run 02/07/84
Date Sampled 02/06/84

Analysis For: BENNETT & CATHEY WRLN.
Lease: Lara Federal #1 — Producer: Grayberg
Location: Sams Ranch — County: Chaves — State: New Mexico
Purpose: Well Test — Sampled By: B & C WRLN.
Sampling Temp. 70 °F — Atmos Temp. 70 °F
Volume/day 33 MCF — Formation
Pressure on Bomb 40 PSIG; Line Pressure 53.2 PSIA PSIG

Gas Component Analysis — Press. Base: 14.73

	Mol. %	Liq. %	GPM Per MCF
Carbon Dioxide CO_2	.010		
Oxygen O_2	.014		
Nitrogen N_2	26.439		
Hydrogen Sulfide H_2S			
Methane C1	64.460		10.901
Ethane C2	3.359		.896
Propane C3	2.157		.593
Iso-Butane IC4	.539		.176
Nor-Butane NC4	1.220		.384
Iso-Pentane IC5	.487		.178
Nor-Pentane NC5	.412		.149
Hexanes plus	.903		.416
Hexanes C6			
Heptanes			
Heptanes Plus C7+			
Total	100.000		13.692
Pentane + G.P.M.			.742
Propane + GPM			1.895
26-lb Gasoline			1.506

Ethane + GPM 2.791

BTU Dry	912
BTU Wet	905
Calc. Specific Gravity	.771

@ Std. Press. 14.696

BTU Dry	910
BTU Wet	894
Calc. Vap. Press. #/Sq.In.	
Reid Vap. Press. #/Sq.In.	
Z Factor	.9979
N Value	1.3159
Ave Mol Wt	22.2937
Ave Cu Ft/Gal	

Run by Jeffrey A. Propp
Calculated By Jeffrey A. Propp

Remarks: BTU Wet adjusted to flowing conditions as established by FERC Order #93/93-A and calculated per GPA Reference Bulletin 181-82.

Distribution: