

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

RECEIVED

*clp
P. 10*

Test Type: ☒ Initial ☐ Annual ☐ Special		Test No. 2-17-83	MAR 02 1983
Company: Perry R. Bass		Operator: N.G.P.L.	
Well: W. Indian Flat		Location: ARTESIA, OFFICE	
Completion Date: 2-12-82		Total Length: 12686	Elevation: 3112 GL
Perforations: From 10845 To 10850		Unit or Lease Name: Big Eddy Unit	
Well No.: 68		Unit Sec. Twp. Rge.: K 10 22s 28e	
Type Well: Single		State: N.M.	
Producing Thru: Tbg.		Reservoir Temp. °F: 182	
Mean Annual Temp. °F: 60		Baro. Press. - P _d : 13.2	
L: 10848	H: 10848	G _g : .6707	% CO ₂ : 1.483
% H ₂ : 1.038	% H ₂ S: 0	Prover: 3	Meter Run: 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
51							2260				24 hrs.
1.	3 X .625			560	.5	64	2135				1 hr.
2.	3 X .625			560	6.1	62	1930				1 hr.
3.	3 X .625			560	8.0	62	1750				1 hr.
4.	3 X .625			560	11.5	60	1530				1 hr.
5.	3 X .625			560	1.4	60	870				4 hrs.

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w F_{m1}}$	Pressure P _m	Flow Temp. Factor F _t	Gravity Factor F _g	Super Comp. Factor, F _{pv}	Rate of Flow Q, Mhd
1	1.850	16.93	573.2	.9962	1.221	1.065	41
2	1.850	59.13	573.2	.9981	1.221	1.065	142
3	1.850	67.72	573.2	.9981	1.221	1.065	163
4	1.850	81.19	573.2	1.000	1.221	1.067	196
5	1.850	28.33	573.2	1.000	1.221	1.067	68

NO.	P ₁	Temp. °F	T _r	Z	Gas Liquid Hydrocarbon Ratio	A.P.I. Gravity of Liquid Hydrocarbons	Specific Gravity Separator Gas	Specific Gravity Flowing Fluid	Critical Pressure	Critical Temperature
1	.86	524	1.37	.882	dry		.6707		669	382
2	.86	522	1.37	.882						
3	.86	522	1.37	.882						
4	.86	520	1.36	.878						
5	.86	520	1.36	.878						

NO.	BHP*	P _w	P ₁	P ₂ - P _w
1	3968.2	2991.3	8948.0	5382.2
2	3777.2	2835.4	8039.5	6290.7
3	3604.2	2695.9	7267.7	7062.5
4	3370.2	2509.7	6298.6	8031.6
5	2919.2	2162.3	4675.4	9654.8

$\frac{P_c^2}{P_c^2 - P_w^2} = 1.784$

$\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.784$

$\frac{P_c^2}{P_c^2 - P_w^2} = .350$

Part ID-2

4-1-83

Comp. & BK

(S. G. H.)

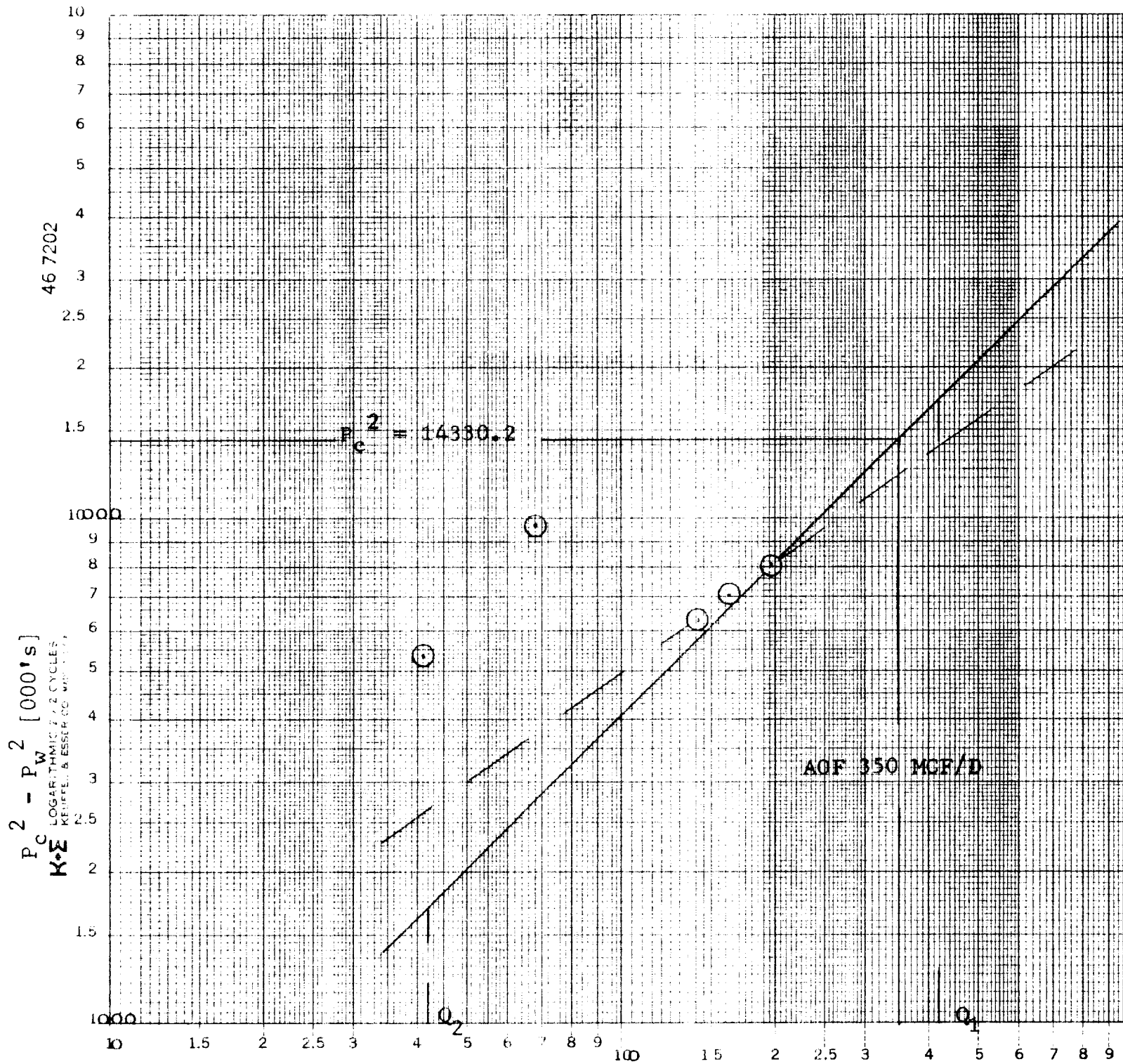
Absolute Open Flow: 350	Mele 15.025	Angle of Slope: 45°	Slope, n: 1.000
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Remarks: **The well produced 3 bbls. of H₂O during the test.**

**** Calculated from bottom-hole pressures**

Approved By: Davis Services, Inc.	Conducted By: Rick Pagan	Calculated By:	Checked By:
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COMPANY : PERRY R. BASS
 LEASE : BIG EDDY UNIT # 68
 LOCATION : SEC. 10, TWP. 22s, RGE. 28e
 COUNTY : EDDY
 AOF : 350 MCF/D
 n : 1.000



$$\begin{aligned}
 Q_1 \text{ LOG } 420 &= 2.623242 \\
 -Q_2 \text{ LOG } 42 &= 1.623249 \\
 n &= 1.000 \\
 \theta &= 45^\circ
 \end{aligned}$$

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

Form C-1127F
Adopted 8-1-65

COMPANY Perry R. Bass LEASE Big Eddy Unit WELL NO. 68 DATE 2-17-83

LOCATION: Unit K Section 10 Township 22s Range 28e

L 10848 H 10848 L/H 1.000 G .6707 % CO₂ 1.483 % N₂ 1.038 % H₂S

GH 7276 P_{cr} 669 T_{cr} 382

LINE		1st	Rate	2nd	Rate	3rd	Rate	4th	Rate
1	T_w (W.H. °R)	534	534	534	534	534	534	534	534
2	T_s (B.H. °R)	642	642	642	642	642	642	642	642
3	$T = (\frac{T_w + T_s}{2})$	588	588	588	588	588	588	588	588
4	Z (Est.)	.859	.821	.843	.809	.829	.799	.812	.787
5	TZ	505.1	482.7	495.7	475.7	487.5	469.8	477.5	462.8
6	GH/TZ	14.405	15.072	14.679	15.296	14.927	15.487	15.239	15.723
7	e^s (Table XIV)	1.776	1.760	1.734	1.775	1.750	1.787	1.771	1.803
8	P_f or P_s	3968.2	3968.2	3777.2	3777.2	3604.2	3604.2	3370.2	3370.2
9	P_f^2 or P_s^2	15746.6	15746.6	14267.2	14267.2	12990.3	12990.3	11358.2	11358.2
10	$P_c^2 = P_f^2/e^s$ or $P_w^2 = P_s^2/e^s$	9174.6	8948.0	8227.7	8039.5	7421.9	7267.7	6414.0	6298.6
11	P_c or P_w	3029.0	2991.3 *	2868.4	2835.4 *	2724.3	2695.9 *	2532.6	2509.7 *
12	$P = (\frac{P_w + P_s}{2})$ or $(\frac{P_c + P_f}{2})$	3498.6	3479.8	3322.8	3306.3	3164.3	3150.0	2951.4	2940.0
13	$P_r = (P/P_{cr})$	5.23	5.20	4.97	4.94	4.73	4.71	4.41	4.40
14	$T_r = (T/T_{cr})$	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54
15	Z (Table XI)	.821	.820	.809	.808	.799	.798	.787	.787

WORK SHEET FOR CALCULATION OF WELLHEAD PRESSURES (P_c or P_w)

FROM KNOWN BOTTOM HOLE PRESSURE (P_f or P_s)

Form C-122F
Adopted 9-1-65

COMPANY Perry R. Bass LEASE Big Eddy Unit WELL NO. 68 DATE 2-17-83

LOCATION: Unit K Section 10 Township 22S Range 28E

L 10848 H 10848 L/H 1.000 G .6707 % CO₂ 1.483 % N₂ 1.038 % H₂S

GH 7276 P_{cr} 669 T_{cr} 382

		5th Rate		S.I.P.					
LINE		1	2	3	4	5	6	7	8
1	$T_w(W.H. \cdot R)$	534	534					534	534
2	$T_s(B.H. \cdot R)$	642	642					642	642
3	$T = (\frac{T_w + T_s}{2})$	588	588					588	588
4	Z (Est.)	.785	.773					.945	.894
5	TZ	461.6	454.5					555.7	525.7
6	GH/TZ	15.763	16.008					13.094	13.841
7	e^S (Table XIV)	1.806	1.823					1.634	1.680
8	P_f or P_s	2919.2	2919.2					4907.2	4907.2
9	P_f^2 or P_s^2	8521.7	8521.7					24080.6	24080.6
10	$P_c^2 = P_f^2/es$ or $P_w^2 = P_s^2/es$	4718.6	4675.4					14737.3	14330.2
11	P_c or P_w	2172.2	2162.3*					3838.9	3785.5*
12	$P = (\frac{P_w + P_s}{2})$ or $(\frac{P_c + P_f}{2})$	2545.7	2540.7					4373.1	4346.4
13	$P_r = (P/P_{cr})$	3.81	3.80					6.54	6.50
14	$T_r = (T/T_{cr})$	1.54	1.54					1.54	1.54
15	Z (Table XI)	.773	.773					.894	.892

NEW-TEX LAB

PHONE 505/393-3561

P. O. BOX 1161

611 W. SNYDER

HOBBS, NEW MEXICO 88240

ANALYSIS CERTIFICATE

CLIENT: DAVIS SERVICES INC
ADDRESS: P O BOX 2033
CITY, STATE: HOBBS NM 88240

ANALYSIS NUMBER: 9263
DATE OF RUN: 02/23/83
DATE SECURED: 02/17/83

SAMPLE IDENT: PERRY R BASS - DEU #68
SAMPLING PRESS: SAMPLING TEMP:

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

	MOLE PERCENT	GAL/ MOF
NITROGEN	1.030	
CARBON DIOXIDE	1.463	
METHANE	85.139	
ETHANE	7.064	1.884
PROPANE	3.410	0.936
ISO-BUTANE	0.408	0.133
NORMAL BUTANE	0.864	0.272
ISO-PENTANE	0.226	0.083
NORMAL PENTANE	0.190	0.069
HEXANES	0.059	0.024
HEPTANES PLUS	0.119	0.055
TOTAL	100.000	3.456

PROPANE GPM:	0.94	BUTANES GPM:	0.40
ETHANE GPM:	1.88	PENTANES PLUS GPM:	0.23

SPECIFIC GRAV (CALC): 0.6709
MOLE WEIGHT: 19.44

RV-BTU/CU FT	PRESSURE (PSIA)	WET	DRY
14.696		1118	1138
14.650		1115	1135
14.730		1121	1141
14.735		1121	1141

R. F. HAMILTON

[Handwritten Signature]