

El Paso Natural Gas Company
MINIMUM CONTRACT TEST
 Form 15-30 (10-67)

Start Date of Test
12/30/88

Company PHILLIPS PETROLEUM COMPANY					Lease STATE 22 NO. 1			
Unit D	Sec. 22	Twp. 17 S.	Rge. 35E	County LEA	Pool SOUTH SHOEBAR (ATOKA)			
Type Well SINGLE		Producing Thru		Tubing TBG.	Casing	Top of Pay 12,004	Bar. Pressure 13.2	Compressor
Date of Previous Minimum Contract Test				n ₁ of Previous Back Pressure Test .839		Gravity .643	Meter Sta. No.	Acre Factor

FLOW DATA						FLOWING PRESSURES, PSIA		DURATION OF FLOW HOURS	
Prover Line Size	X	Choke Orifice Size	Static Pressure Psig.	Diff. h _w	Temp. °F	Tubing	Casing		
4	X	1.000	315	19.00	80	355.2	PFF.	1	HR.

VOLUME CALCULATIONS

Coefficient (24 - Hour)	$\sqrt{h_w P_m}$	Pressure P _{sia} .	Flow Temp. Factor F _t	Gravity Factor F _g	Super Compress. Factor F _{pv}	Rate of Flow Q-MCFPD @ 15.025 P _{sia} .
4.753	78.97	328.2	.9813	1.247	1.030	473

$$D_t = Q \left[\frac{P_c^2 - P_d^2}{P_c^2 - P_t^2} \right]^{n_t}$$

P _r	Temp. R	T _r	Z
.49	540	1.45	.943

SHUT-IN DATA, PSIA

DURATION	TUBING	CASING
24 Hour	1349.8	PICF.
48 Hour		
72 Hour		

LINE	ITEM	SOURCE	113.2	263.2	613.2	863.2
1	P _c ²		1822.0	1822.0	1822.0	
2	P _d ²		12.8	45.5	98.1	
3	P _t ²		126.2	126.2	126.2	
4	P _c ² - P _d ²	1 - 2	1809.2	1776.5	1723.9	
5	P _c ² - P _t ²	1 - 3	1695.8	1695.8	1695.8	
6	B	4 - 5	1.067	1.048	1.017	
7	Log δ		.0281644	.0203613	.007321	
8	n _t		.839	.839	.839	
9		7 x 8	.0236299	.0170831	.0061423	
10	B ^{n_t}	Antilog 9	1.056	1.040	1.014	
11	Q.MCF/D		473	473	473	
12	D _t	10 x 11	499	492	480	

- n_t = Slope of Wellhead Deliverability Curve (P_c² - P_t² vs Q)
 Q = Actual flow @ end of Flow Period at Wellhead Press., P_t.
 P_c = Maximum Shut-in Pressure, Psia Observed in a 72 Hour Period
 P_t = Flowing Wellhead Pressure (tubing if flowing thru tubing and vice versa), Psia
 P_d = Deliverability Pressure, Psia
 D_t = Wellhead Deliverability @ Deliverability Pressure (P_d), MCF/Day

Witnessed By: (Name)	WINN SUTTON
Company:	JOHN WEST ENGINEERING CO.
Tested By:	WINN SUTTON
Calculated By:	BOB MURRAY