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See Rule 401 & Rule 1122

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-122
Revised 4-1-91

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator PHILLIPS PETRO CO.				Lease or Unit Name TO MAHAWK ST.			
Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 8-4-99			
Completion Date				Well No. 29 #1			
Csg. Size 5 1/2		Wc 17 1/4		Plug Back TD 13452		Elevation	
Tbg. Size 2 7/8		Wc 6.5		Perforations: From 13254 To 13458		Unit Ltr. - Sec. - TWP. - Rge. H 19 17 34	
Type Well SINGLE		Bradenhead - G.G. or G.O. Multiple		Packer Set At 13060		Formation	
Producing Thru TBC		Reservoir Temp. °F 60		Baro. Press. - P. 13.2		Connection	
L 692		H 1532		Gg 1.692		% CO ₂ 15.32	
				N ₂ 7.54		H ₂ S	
				Prover		Meter Run 41026	
						Taps 156	

FLOW DATA						TUBING DATA		CASING DATA		Duration of Flow
NO.	Prover Line Size	Orifice Size	Press. p.s.i.g.	D.H. in.	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	
1.	4 X	1.250	425		74	2049		PKR		48 HRS
2.	4 X	1.250	425		97	1745		"		1 HR
3.	4 X	1.250	425		89	1275		"		1 1/4
4.	4 X	1.250	425		92	910		"		1 1/4
5.	4 X	1.250	425		94	450		"		1 1/4

RATE OF FLOW CALCULATIONS							
NO.	COEFFICIENT (24 HOUR)	$\sqrt{P_1 P_2}$	Pressure P _a	Flow Temp. Factor Ft	Gravity Factor Fg	Super Compress. Factor, F _{sp}	Rate of Flow Q, Mcfd
1.							352
2.							643
3.							661
4.							510
5.							

NO.	P ₁	Temp. °R	T ₁	Z	Gas Liquid Hydrocarbon Ratio DRY GAS	Mcf/bbl
1.					A.P. I. Gravity of Liquid Hydrocarbons DRY	Deg.
2.					Specific Gravity Separator Gas 1.692	XXXXXXX
3.					Specific Gravity Flowing Fluid XXXXX	XXXXXXX
4.					Critical Pressure 669	PSIA
5.					Critical Temperature 38.8	R

P ₁ 2062.2	P ₂ 4252.7			
NO.	P ₁	P ₂	P ₁ - P ₂	P ₁ / P ₂
1.		1758.7	3092.9	1.159.8
2.		1290.4	1665.1	2587.6
3.		827.1	624.1	3568.6
4.		447.8	200.6	4052.1
5.				

Absolute Open Flow **758** Mcfd @ 15.025 Angle of Slope θ **59.42** Slope α **1.5907**

Remarks: **770 Plug**

Approved By Division _____ Conducted By: **BN** Checked By: **BM**

METERING & TESTING

0 COMPANY : PHILLIPS PETR. CO LEAST TOMAHAWK ST. WELL NO. : 19 Pc = 2062.2 Pc2 = 4252.7 *
 UNIT : SECTION 19 TOWNSHIP : 17 *
 L : 13060 H : 13060 L/H : 1 G/GMIX : 0.692 Pt2 = 3091.3 Pw = 1758.7 *
 %CO2 : 0.532 %N2 : 0.754 H2S : DATE : 8 4 99 1659.5 1290.4 *
 d : 2.441 Pr : 0.010763 GH : 9037.5 RANGE : 34 677.7 827.1 *
 196.4 447.8 *

VOL 1 : 352 PSIA 1 : 1758.2 RESV.TEMP 204.6 Pc2-Pw2= 1159.8 Pw2 = 3092.9 *
 VOL 2 : 643 PSIA 2 : 1288.2 2587.6 1665.1 *
 VOL 3 : 661 PSIA 3 : 823.2 SHUT-IN PR= 2062.2 3568.6 684.1 *
 VOL 4 : 510 PSIA 4 : 443.2 4052.1 200.6 *

PCR : 669

n = 0.591

TCR : 388

Pc2/(Pc2-Pw2) = 3.667

LINE	RATE 1		RATE 2		RATE 3		RATE 4	
	1ST	2ND	1ST	2ND	1ST	2ND	1ST	2ND
1 QM	0.352	0.352	0.643	0.643	0.661	0.661	0.510	0.510
2 TW	534	534	534	534	534	534	534	534
3 Ts	664.6	664.6	664.6	664.6	664.6	664.6	664.6	664.6
4 T	599.3	599.3	599.3	599.3	599.3	599.3	599.3	599.3
PR (est)	2.63		1.93		1.23		0.66	
5 Z(est)	0.791	0.778	0.824	0.803	0.872	0.854	0.918	0.907
6 TZ	474.0	466.5	493.8	481.3	522.5	511.8	550.1	543.9
7 GH/TZ	19.067	19.374	18.302	18.779	17.297	17.658	16.429	16.618
8 eS	2.044	2.068	1.986	2.022	1.913	1.939	1.852	1.865
9 l-e-S	0.511	0.516	0.497	0.505	0.477	0.484	0.460	0.464
10 Pt	1758.2	1758.2	1288.2	1288.2	823.2	823.2	443.2	443.2
11 Pt2 /1000	3091.3	3091.3	1659.5	1659.5	677.7	677.7	196.4	196.4
12 Pr	0.010763	0.010763	0.010763	0.010763	0.010763	0.010763	0.010763	0.0107631
13 Pc=PrTZ	5.102	5.021	5.315	5.180	5.624	5.509	5.921	5.854
14 PcQm	1.80	1.77	3.42	3.33	3.72	3.64	3.02	2.99
15 L/H(PcQm)	3.2	3.1	11.7	11.1	13.8	13.3	9.1	8.9
16 Pw	1.647273	1.612951	5.799348	5.607681	6.594540	6.420603	4.193823	4.1330080
17 Pw2	3092.9	3092.9	1665.3	1665.1	684.3	684.1	200.6	200.6
18 Ps2	6322.5	6395.7	3307.9	3367.2	1308.9	1326.4	371.5	374.0
19 Ps	2514.5	2529.0	1818.8	1835.0	1144.1	1151.7	609.5	611.6
20 P	2136.3	2143.6	1553.5	1561.6	983.6	987.5	526.3	527.4
21 Pr	3.19	3.20	2.32	2.33	1.47	1.48	0.79	0.79
22 Tr	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54
23 Z	0.778	0.778	0.803	0.802	0.854	0.854	0.907	0.907

[Pc2/Pc2-Pw2]n = 2.154

AOF= Q 0.758

FORM C122-D



Laboratory Services, Inc.

4016 Fleeta Drive
Hobbs, New Mexico 88240

Telephone: (505) 397-3713

FOR: Metering & Testing Services, Inc.
Attention: Mr. Floyd Davis
2807 West County Road
Hobbs, New Mexico 88240

SAMPLE:
IDENTIFICATION: Tomahawk St. 19
COMPANY: Phillips Petroleum Co.
LEASE:
PLANT:

SAMPLE DATA: DATE SAMPLED: 8/4/99 12:43 pm
ANALYSIS DATE: 8/5/99
PRESSURE - PSIG 680
SAMPLE TEMP. °F
ATMOS. TEMP. °F 81

GAS (XX) LIQUID ()
SAMPLED BY: Floyd Davis
ANALYSIS BY: Vickie Walker

REMARKS:

COMPONENT ANALYSIS

COMPONENT	MOL PERCENT	GPM
Hydrogen Sulfide (H2S)		
Nitrogen (N2)	0.754	
Carbon Dioxide (CO2)	0.532	
Methane (C1)	84.065	
Ethane (C2)	7.533	2.010
Propane (C3)	3.764	1.035
I-Butane (IC4)	0.681	0.222
N-Butane (NC4)	1.494	0.470
I-Pentane (IC5)	0.383	0.140
N-Pentane (NC5)	0.385	0.121
Hexane Plus (C6+)	0.459	0.188

100.000

4.186

BTU/CU.FT. - DRY 1199
AT 14.650 DRY 1193
AT 14.650 WET 1174
AT 14.73 DRY 1201
AT 14.73 WET 1180

MOLECULAR WT. 20.0322

SPECIFIC GRAVITY -
CALCULATED 0.692
MEASURED

