Submit in duplicate to appropriate district office.
See Rule 401 & Rule 1122

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505

Form C-122
Revised October, 1999

30-025-36597

# MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

| | | | | | |
|---|---|---|---|---|---|
| Operator | CONOCO PHILLIPS | | | Lease or Unit Name | J.F. COOPER 19 ST. |
| Type Test: ☑ Initial ☐ Annual ☐ Special | | | | Test Date: 10/8/04 | Well No.: 1 |
| Completion Date: 08/28/04 | Total Depth: 13710 | | Plug Back TD: 13592 | Elevation: 4112' GR | Unit Ltr - Sec - TWP - Rge: 19 17 33 |
| Csg. Size: 5 1/2 / Wt.: 17# / d: / Set At: 13710 | | | Perforations: From: 13466 To: 13563 | | County: LEA |
| Tbg. Size: 2 7/8 / Wt.: 6.5 / d: 2.441 / Set At: 13368 | | | Perforations: From: To: | | Pool: Wildcat; Morrow |
| Type Well-Single-Bradenhead-G.G. or G.O. Multiple: SINGLE | | | Packer Set At: 13368 | | Formation: MORROW |
| Producing Thru: TBG | Reservoir Temp.°F: 162.4 @ 13466 | Mean Annual Temp. °F: 60 | Baro. Press.-$P_a$: 13.2 | | Connection: Duke Energy Field Svcs. |

| L | H | Gg | %$CO_2$ | %$N_2$ | %$H_2S$ | Prover | Meter Run | Taps |
|---|---|---|---|---|---|---|---|---|
| *** 13466 | *** 13466 | 0.717 | 1.069 | ..792 | N/A | N/A | 3.068 | FLG |

| | FLOW DATA | | | | TUBING DATA | | CASING 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. | Temp. °F | Duration of Flow |
| SI | | | | | 3133 | | PKR | | 48 hrs |
| 1 | 3 X 2.000 | 31.9 | 12.5 | 85 | 2956 | | " | | 1 hr |
| 2 | 3 X 2.000 | 33.6 | 20.1 | 98 | 2715 | | " | | 1 hr |
| 3 | 3 X 2.000 | 35.6 | 26.8 | 89 | 2546 | | " | | 1 hr |
| 4 | 3 X 2.000 | 36.8 | 29.8 | 82 | 2460 | | " | | 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 $F_g$ | Super Compress Factor F pv | Rate of Flow Q. Mcfd |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | | 547 |
| 2 | | | | | | | 701 |
| 3 | METERED | | BY | | TOTAL | FLOW | 832 |
| 4 | | | | | | | 931 |
| 5 | | | | | | | |

| No. | $P_r$ | Temp. °R | $T_r$ | Z |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | N/A | | |
| 4 | | | | |
| 5 | | | | |

| | | |
|---|---|---|
| Gas Liquid Hydrocarbon Ratio | 62.729 | Mcf bbl. |
| A.P. I. Gravity of Liquid Hydrocarbons | 50.1 @ 60 | Deg. |
| Specific Gravity Separator Gas | 0.717 | XXXXXXX |
| Specific Gravity Flowing Fluid | XXXXX | Gmix= .765 |
| Critical Pressure | * 672 P.S.I.A. | P.S.I.A. |
| Critical Temperature | * 394 R. | R |

$P_c$ ** 3416.5 $P_c^2$ ** 11672.5

| No. | $P_t^2$ | $P_w$ | $P_w^2$ | $P_c^2 - P_w^2$ |
|---|---|---|---|---|
| 1 | | 3304.5 | 10919.7 | 752.8 |
| 2 | | 3161.1 | 9992.6 | 1679.9 |
| 3 | | 3055.2 | 9334.2 | 2338.3 |
| 4 | | 2973.3 | 8840.5 | 2832 |
| 5 | | | | |

(1) $\dfrac{P_c^2}{P_c^2 - P_w^2} =$ 15.505 (2) $\left[\dfrac{P_c^2}{P_c^2 - P_w^2}\right]^n =$ 3.927

AOF = Q $\left[\dfrac{P_c^2}{P_c^2 - P_w^2}\right]^n =$ 2.148

79825

| | | | | | |
|---|---|---|---|---|---|
| Absolute Open Flow | 2,148 | Mcfd @ 15.025 | Angle of Slope Θ: | 63.5 | Slope n: 0.499 |

Remarks: *= corrected to 1.069 % C02 **= cal. From known bhps ***= bhp instrument set at this depth

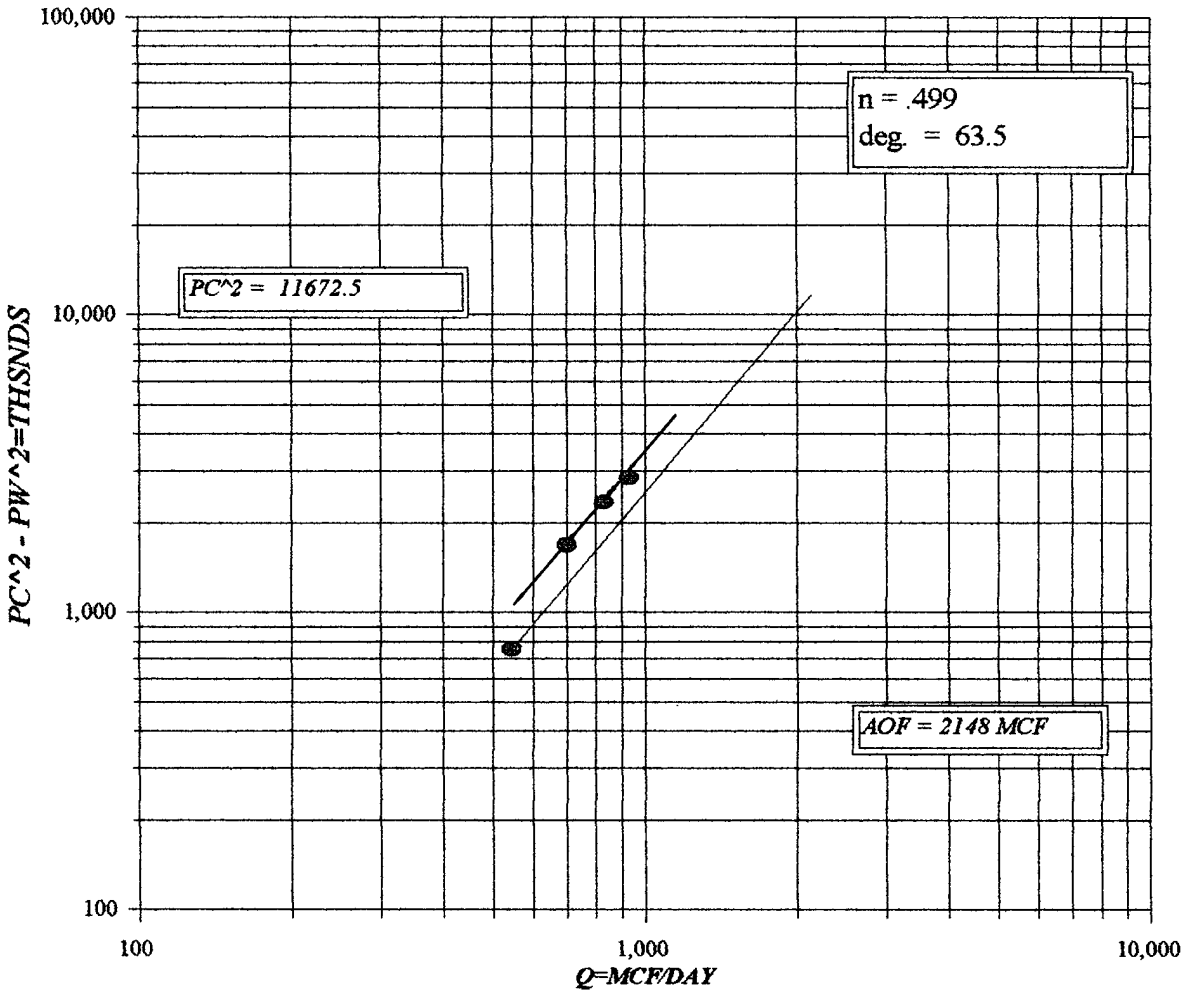
| Approved By Division: | Conducted By: | Calculated By: | Checked By: |
|---|---|---|---|
| | Metering & Testing Serv., Inc. | BM | BM |

## NEW MEXICO G.O.R./G. MIX

| | | |
|---|---|---|
| NO. OF BBLS PRODUCED | = | 2.0 |
| API GRAVITY @ 60 DEG. | = | 50.1 |
| SPECIFIC GRAVITY OF GAS | = | 0.7170 |
| TOTAL GAS PRODUCED | = | 125 |
| G.O.R. | = | 62.729 |
| G.MIX | = | 0.765 |

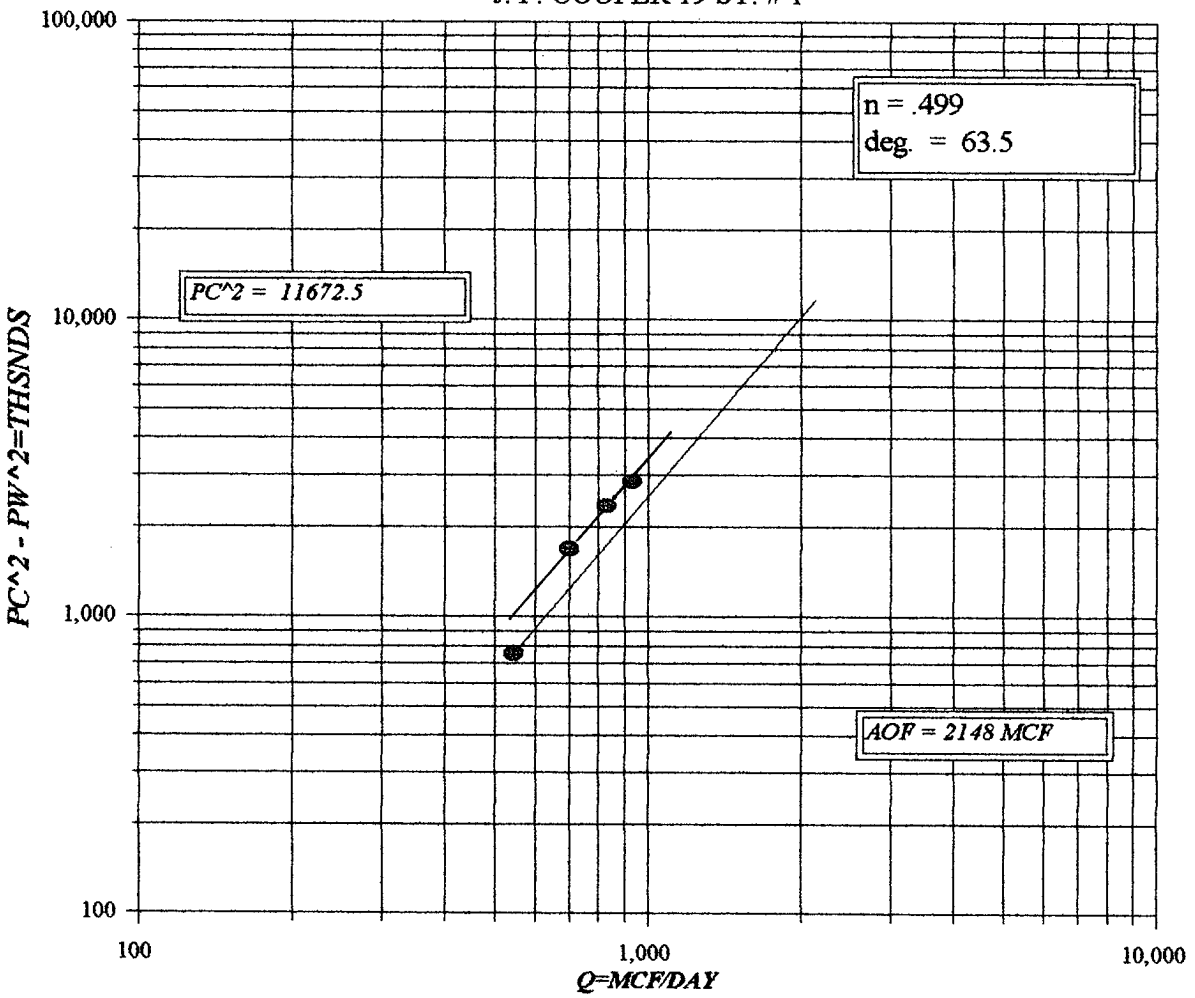
# CONOCO PHILLIPS

J. F. COOPER 19 ST. # 1



# CONOCO PHILLIPS

J. F. COOPER 19 ST. # 1



WORK SHEET FOR CALCULATION OF WELLHEAD PRESSURE (Pc ~~or Pw~~) FORM C-122F
FROM KNOWN BOTTOM HOLE PRESSURE (Pf ~~or Ps~~)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| COMPANY | CONOCO PHILLIPS | | LEASE : | JFC 19 ST. | WELL NO. : | 1 | DATE | 10-8-04 |
| UNIT | | | SECTION : | 19 | TWNSHP : | 17 | RANGE : | 33 |
| L | 13466 | | H : | 13466 | L/H : | 1 | G/GMIX : | 0.7170 |
| | | | CO2 : | 1.069 | N2 : | 0.792 | H2S : | |
| | | | GH : | 9655.1 | PCR : | 672 | TCR : | 394 |

| LINE | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|---|
| 1 | TW(W.H. R) | 534 | 534 | 534 | 534 | 534 | 534 | 534 | 534 |
| 2 | Ts(B.H. R) | 668.7 | 668.7 | 668.7 | 668.7 | 668.7 | 668.7 | 668.7 | 668.7 |
| 3 | T=(Tw+Ts/2) | 601.3 | 601.3 | 601.3 | 601.3 | 601.3 | 601.3 | 601.3 | 601.3 |
| 4 | Z (EST.) | 0.986 | 0.863 | ERR | ERR | ERR | ERR | ERR | ERR |
| 5 | TZ | 593 | 519 | ERR | ERR | ERR | ERR | ERR | ERR |
| 6 | GH/TZ | 16.292 | 18.606 | ERR | ERR | ERR | ERR | ERR | ERR |
| 7 | eS(TABLE XIV) | 1.842 | 2.009 | ERR | ERR | ERR | ERR | ERR | ERR |
| 8 | Pf or Ps | 4842.8 | 4842.8 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | Pf2 or Ps2 | 23452.7 | 23452.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10 | Pc2=Pf/eS or Pw2=Ps2/eS | 12731.1 | 11672.7 | ERR | ERR | ERR | ERR | ERR | ERR |
| 11 | Pc or Pw | 3568 | 3417 | ERR | ERR | ERR | ERR | ERR | ERR |
| 12 | P=(Pw+Ps/2)or(Pc+Pf/2) | 4205 | 4130 | ERR | ERR | ERR | ERR | ERR | ERR |
| 13 | Pr=(P/Pcr) | 6.26 | 6.15 | ERR | ERR | ERR | ERR | ERR | ERR |
| 14 | Tr(T/Tcr) | 1.53 | 1.53 | 1.53 | 1.53 | 1.53 | 1.53 | 1.53 | 1.53 |
| 15 | Z (TABLE XI) | 0.863 | 0.857 | ERR | ERR | ERR | ERR | ERR | ERR |

~~Pc~~ 1 : 3416.5 PW 2 : ERR PW 3 : ERR PW 4 : ERR

WORK SHEET FOR CALCULATION OF WELLHEAD PRESSURE ([redacted] Pw) FORM C-122F
FROM KNOWN BOTTOM HOLE PRESSURE ([redacted] Ps)

COMPANY - CONOCO PHILLIPS LEASE :JFC 19 ST.WELL NO. : 1 DATE 10-8-04
UNIT SECTION : 19 TWNSHP : 17 RANGE : 33
L 13466 H : 13466 L/H : 1 G/GMIX : 0.7170
CO2 : 1.069 N2 : 0.792 H2S :
GH : 9655.1 PCR : 672 TCR : 394

| LINE | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|---|
| 1 | TW(W.H. R) | 534 | 534 | 534 | 534 | 534 | 534 | 534 | 534 |
| 2 | Ts(B.H. R) | 668.7 | 668.7 | 668.7 | 668.7 | 668.7 | 668.7 | 668.7 | 668.7 |
| 3 | T=(Tw+Ts/2) | 601.3 | 601.3 | 601.3 | 601.3 | 601.3 | 601.3 | 601.3 | 601.3 |
| 4 | Z (EST.) | 0.972 | 0.853 | 0.890 | 0.837 | 0.879 | 0.828 | 0.870 | 0.822 |
| 5 | TZ | 585 | 513 | 535 | 503 | 528 | 498 | 523 | 494 |
| 6 | GH/TZ | 16.517 | 18.832 | 18.034 | 19.177 | 18.272 | 19.385 | 18.458 | 19.545 |
| 7 | eS(TABLE XIV) | 1.858 | 2.026 | 1.967 | 2.053 | 1.984 | 2.069 | 1.998 | 2.081 |
| 8 | Pf or Ps | 4703.8 | 4703.8 | 4528.9 | 4528.9 | 4394.4 | 4394.4 | 4289.3 | 4289.3 |
| 9 | Pf2 or Ps2 | 22125.7 | 22125.7 | 20510.9 | 20510.9 | 19310.8 | 19310.8 | 18398.1 | 18398.1 |
| 10 | Pc2=Pf/eS or Pw2=Ps2/eS | 11909.8 | 10919.5 | 10429.8 | 9992.4 | 9732.4 | 9334.4 | 9208.0 | 8840.4 |
| 11 | Pc or Pw | 3451 | 3304 | 3230 | 3161 | 3120 | 3055 | 3034 | 2973 |
| 12 | P=(Pw+Ps/2)or(Pc+Pf/2) | 4077 | 4004 | 3879 | 3845 | 3757 | 3725 | 3662 | 3631 |
| 13 | Pr=(P/Pcr) | 6.07 | 5.96 | 5.77 | 5.72 | 5.59 | 5.54 | 5.45 | 5.40 |
| 14 | Tr(T/Tcr) | 1.53 | 1.53 | 1.53 | 1.53 | 1.53 | 1.53 | 1.53 | 1.53 |
| 15 | Z (TABLE XI) | 0.853 | 0.847 | 0.837 | 0.835 | 0.828 | 0.826 | 0.822 | 0.819 |

PW 1 : 3304.5 PW 2 : 3161.1 PW 3 : 3055.2 PW 4 : 2973.3