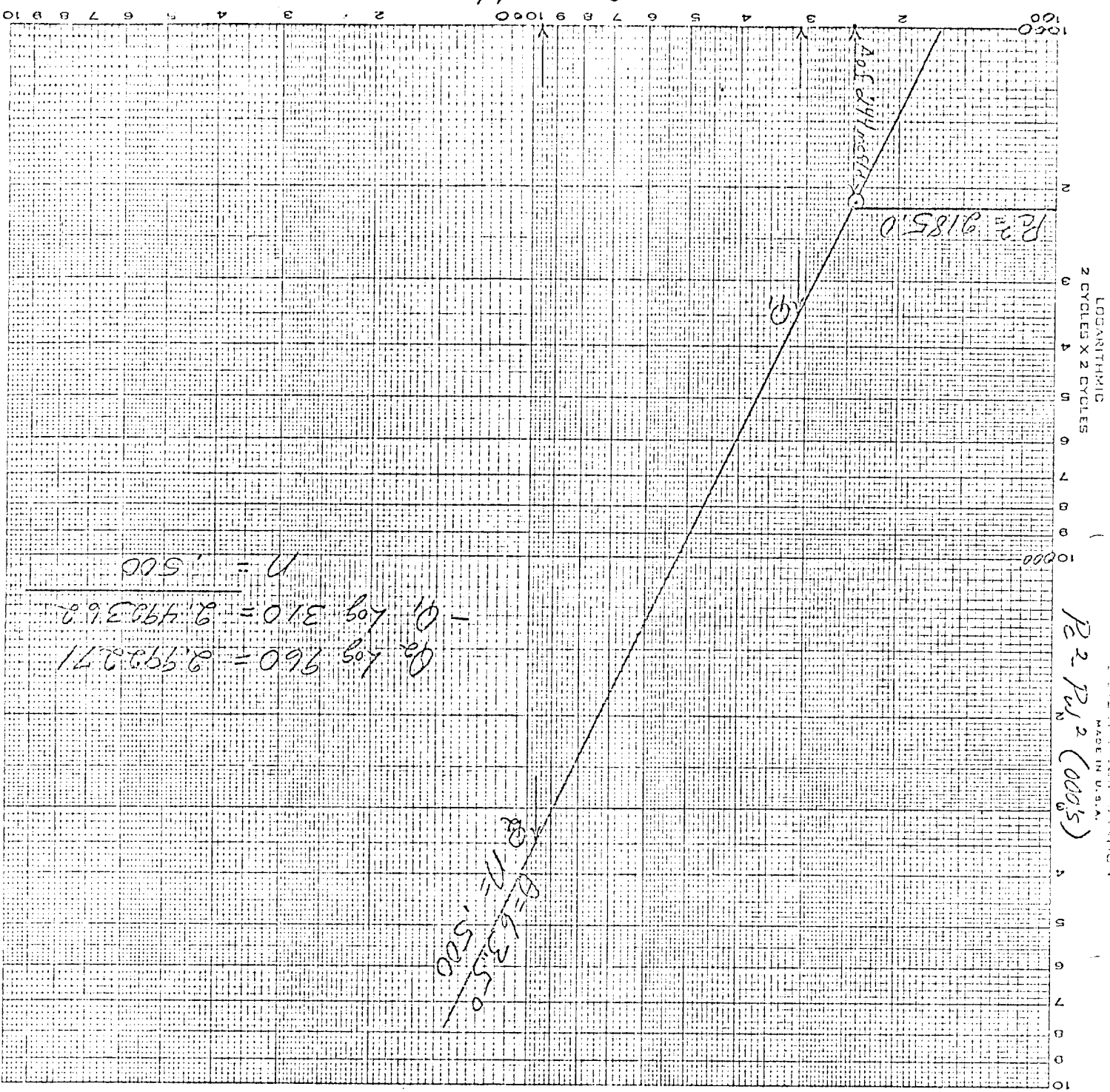


NOV 5 1979

NEW MEXICO OIL CONSERVATION COMMISSION
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELLForm C-122
Revised 9-1-65O. C. C.
ARTIFICIAL OFFICE55-
File -
122

Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 10/22/79	
Company CITIES SERVICE COMPANY			Connection TO AIR		
Pool WILDCAT MORROW			Formation MORROW		Unit
Completion Date 10-20-79		Total Depth 7,968		Plug Back TD 7,923 7924	Elevation 4616.7 GL
Farm or Lease Name GOVERNMENT "AJ"					
Csg. Size 4 1/2	Wt. 11.6	d 4.000	Set At 7,968	Perforations: From 7,604 To 7617	Well No. 1
Tub. Size 2 3/8	Wt. 4.7	d 1.995	Set At 7,497	Perforations: From OPEN To END	Unit Sec. Twp. Rge. F 8 20S 21E
Type Well - Single - Bradenhead - G.C. or G.O. Multiple SINGLE				Packer Set At 7,481	County EDDY
Producing Thru TUBING		Reservoir Temp. °F 150 @ 7,610		Mean Annual Temp. °F 60°	Baro. Press. - P _a 13.2
State NEW MEXICO					
L 7,610	H	Gg 700	% CO ₂	% N ₂	% H ₂ S
Prover 2" ORIFICE WELL TESTER					
FLOW DATA					
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	BHH +w- Temp. °F
1.	2 x .750		12	20"	60°
2.					
3.					
4.					
5.					
TUBING DATA					
NO.	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
1.	1465				
2.					
3.					
4.					
5.					
CASING DATA					
NO.	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
1.					
2.					
3.					
4.					
5.					
RATE OF FLOW CALCULATIONS					
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor Fg
1.					
2.					
3.					
4.					
5.					
NO.	P _t	Temp. °R	T _t	Z	Gas Liquid Hydrocarbon Ratio Mcf/bbl.
1.					A.P.I. Gravity of Liquid Hydrocarbons Deg.
2.					Specific Gravity Separator Gas 700 XXXXXXXXXX
3.					Specific Gravity Flowing Fluid XXXXX
4.					Critical Pressure 668 P.S.I.A. P.S.I.A.
5.					Critical Temperature 392 R R
$P_c = 1478.2$ $P_c^2 = 2185.0$					
NO.	BHP	P _w	P _w ²	P _c ² - P _w ²	(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.024$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.012$
1.	274.2	228.4	52.1	2132.9	
2.					
3.	1817.2	S.I.P.			LOG = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = .244$
4.					
5.					
Absolute Open Flow 244 Mcfd @ 15.025 Angle of Slope 63.5° Slope, n 1.00					
Remarks:					

Approved by Commission:	Conducted by:	Calculated by:	Checked by:
	M. A. T.	H. J. F.	A. V. L.



Q mch/d

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

COMPANY Cities Service Co. LEASE West AT WELL NO. 1 DATE 10/22/79

LOCATION: Unit _____ Section 8 Township 20 Range 21

L 7610 H 7610 LH 1000 G 700 % CO₂ _____ % N₂ _____ % H₂S _____

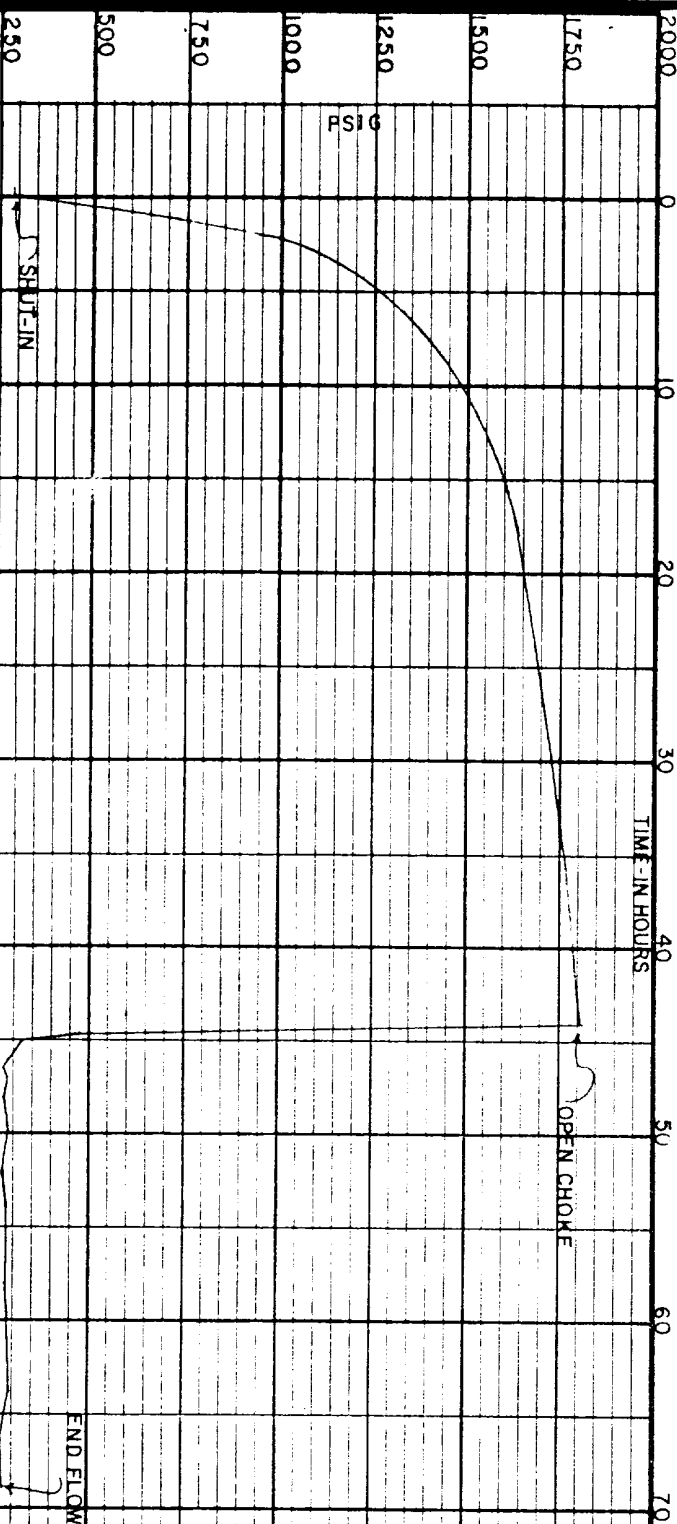
GH 5327 P_{cr} 668 T_{cr} 392
TABLE IX B X TABLE IX B X

LINE		1	2	3	4	5	6	7	8
1	$T_w(W.H. \cdot R)$	534	534						
2	$T_s(B.H. \cdot R)$	610	610						
3	$T = \frac{T_w + T_s}{2}$	572	572						
4	Z (Est.)	.953	.956						
5	TZ	545.1	546.8						
6	GZ/TZ	9.7722	9.7416						
7	e^s (Table XIV)	1.443	1.441						
8	P_f or P_s	274.2	274.2						
9	P_f^2 or P_s^2	75.2	75.2						
10	$P_c^2 = P_f^2/e^s$ or $P_w^2 = P_s^2/e^s$	52.1	52.2						
11	P_c or P_w	228.3	228.4						
12	$P_c \cdot (\frac{P_w + P_s}{2})$ or $(\frac{P_c + P_f}{2})$	251.2	251.3						
13	$P_r = (P/P_{cr})$	.38	.38						
14	$T_r = (T/T_{cr})$	1.46	1.46						
15	Z (Table XI)	2.1	2.1						

TEST DATE: OCTOBER 20 TO 23, 1979
TEST DEPTH: 7,610 FEET

ELEMENT NO.: 14659-N
RANGE: 0-3700 PSI
CLOCK NO.: 10835
RANGE: 0-72 HOUR

NOTE: SEE TABULATION OF PRESSURE AND TIME ON ATTACHED SHEET.



CITIES SERVICE COMPANY

GOVERNMENT "A.J." NO. 1

BOTTOM HOLE PRESSURE BUILD-UP CURVE AND PRESSURE
DRAW-DOWN FOR 1-POINT BACK PRESSURE TEST

JOHN W. WEST ENGINEERING CO. HOBBS, NEW MEXICO

Date: 10-26-79 Drawn by: L.H. Scale: AS SHOWN

CITIES SERVICE COMPANY
 GOVERNMENT "AJ" No. 1
 BOTTOM HOLE PRESSURE BUILD-UP TEST AND PRESSURE
 DRAW-DOWN FOR 1-POINT BACK PRESSURE TEST
 TABULATION OF PRESSURE AND TIME

TEST CONDUCTED BY:
 JOHN WEST ENGINEERING CO.

TEST DATE: OCTOBER 20 TO 23, 1979
 TEST DEPTH: 7,610 FEET
 ELEMENT NO.: 14659-N (0-3700 PSI)
 OPER.: J.W.W. & M.C.T.

<u>DATE</u>	<u>TIME</u>	<u>CUM. HRS./MIN.</u>		<u>PSIG @ 7,610 FEET</u>
10-20-79	1:45 PM			284 GAUGE REACHED 7,610', FLOWING
10-20-79	2:00 PM	00 HRS.	00 MIN.	284 SHUT-IN, BEGIN BUILD-UP
		00	15	498
		00	30	546
		00	45	619
		01	00	715
		01	15	794
		01	30	850
		01	45	883
		02	00	951
		02	15	1000
		02	30	1029
		02	45	1066
		03	00	1110
		03	15	1147
		03	30	1167
		03	45	1183
		04	00	1214
		04	30	1247
		05	00	1282
		05	30	1313
		06	00	1332
		07	00	1379
10-20-79	10:00 PM	08	00	1421
10-21-79	12:00 MN	10	00	1478
	2:00 AM	12	00	1535
		14	00	1584
		16	00	1614
		18	00	1637
	10:00 AM	20	00	1658
	3:00 PM	25	00	1698
10-21-79	8:00 PM	30	00	1729
10-22-79	1:00 AM	35	00	1756
		40	00	1775
10-22-79	11:30 AM	45 HRS.	30 MIN.	1804 END BUILD-UP, OPEN CHOKE

CITIES SERVICE COMPANY
GOVERNMENT "AJ" No. 1

CON'T FROM PAGE 1

<u>DATE</u>	<u>TIME</u>	<u>CUM. HRS./MIN.</u>	<u>PSIG @ 7,610 FEET</u>
10-22-79	11:30 AM	00 HRS. 00 MIN.	1804 OPEN CHOKE, BEGIN TEST
	11:45 AM	00 15	613
	12:00 NOON	00 30	476
	12:15 PM	00 45	422
		01 00	322
		01 15	312
		01 30	306
		01 45	299
		02 00	286
		02 30	263
		03 00	272
		03 30	268
		04 00	261
		05 00	271
		06 00	277
		08 00	257
		10 00	275
10-22-79	11:30 PM	12 00	275
10-23-79	1:30 AM	14 00	274
		16 00	277
		18 00	281
		20 00	290
	9:30 AM	22 00	255
10-23-79	12:30 PM	25 HRS. 00 MIN.	261 END FLOW TEST