

RECEIVED

DEC 17 1980

O. C. D.
ADJUTANT GENERAL

NEW MEXICO OIL CONSERVATION COMMISSION
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

Type Test ☒ Initial		Test Date 12-11-80	
Company Cities Service		El Paso	
Pool Undesignated Burton Flat		Strawn	
Completion Date 12-11-80	Field No. 11,750	Well No. 10,950	Elevation State "CP" Com
Seq. Size 5" finger	Wt. 23#	d 6.366"	Set At 10,155
18#	4.276"	9945-11479	10,529 to 10,555
Tbg. Size 2 7/8"	Wt. 6.5#	d 2.441"	Set At 10,446
Type Well - Single - Bradenhead - G.G. or G.O. Manifold Single		Packer Set At 10,420	
Producing Thru Tubing	Reservoir Temp. °F 180 @ 10,542	Baro. Press. - P _a 13.2	State New Mexico
L 10,446	H 10,446	Cg .6664	% CO ₂ .3%
		% N ₂ 1.4%	% H ₂ S -0-
		Prevar 4"	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. in W	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	
SI										
1.	4"	x	.625	490	1.0	60°	2080		pk.	choke
2.	4"	x	.625	490	12.25	62°	2011			4/64
3.	4"	x	.625	490	30.25	72°	1865			5/64
4.	4"	x	.625	490	56.25	74°	1680			6/64
5.							1410			7.5/64

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super. Comp. Factor, Fpv	Rate of Flow Q, Mcfd
1	1.845	22.43	503.2	1.0	1.25	1.051	53.3
2	1.845	78.51	503.2	.99808	1.25	1.051	186.12
3	1.845	123.38	503.2	.9887	1.25	1.049	295.07
4	1.845	168.24	503.2	.9868	1.25	1.049	401.64
5							

NO.	P _t	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	API Gravity of Liquid Hydrocarbons	Specific Gravity Separator Gas	Specific Gravity Flowing Fluid	Critical Pressure	Critical Temperature
1	.75217	510	1.39	.905	131				669	373
2	.75217	515	1.39	.905						
3	.75217	516	1.40	.905						
4	.75217	520	1.43	.908						
5										

NO.	P _t	P _w	P _w ²	P _t ² - P _w ²	1/P _t ²	1/P _w ²	1/P _t ² - 1/P _w ²
1	2886.8	8333.61	2829.9	8008.3	325.28		
2			2710.2	7345.3	988.32		
3			2548.6	6495.4	1838.2		
4			2323.3	5397.7	2935.9		
5							

Absolute Open Flow 786 Mcfd @ 15.0% Angle of Slope 57° 16' Slope 693

Remarks: Bottom Hole Pressures measured with Amerada Gauge @ 10,542'.
* Calculated from known Bottom Hole Pressures

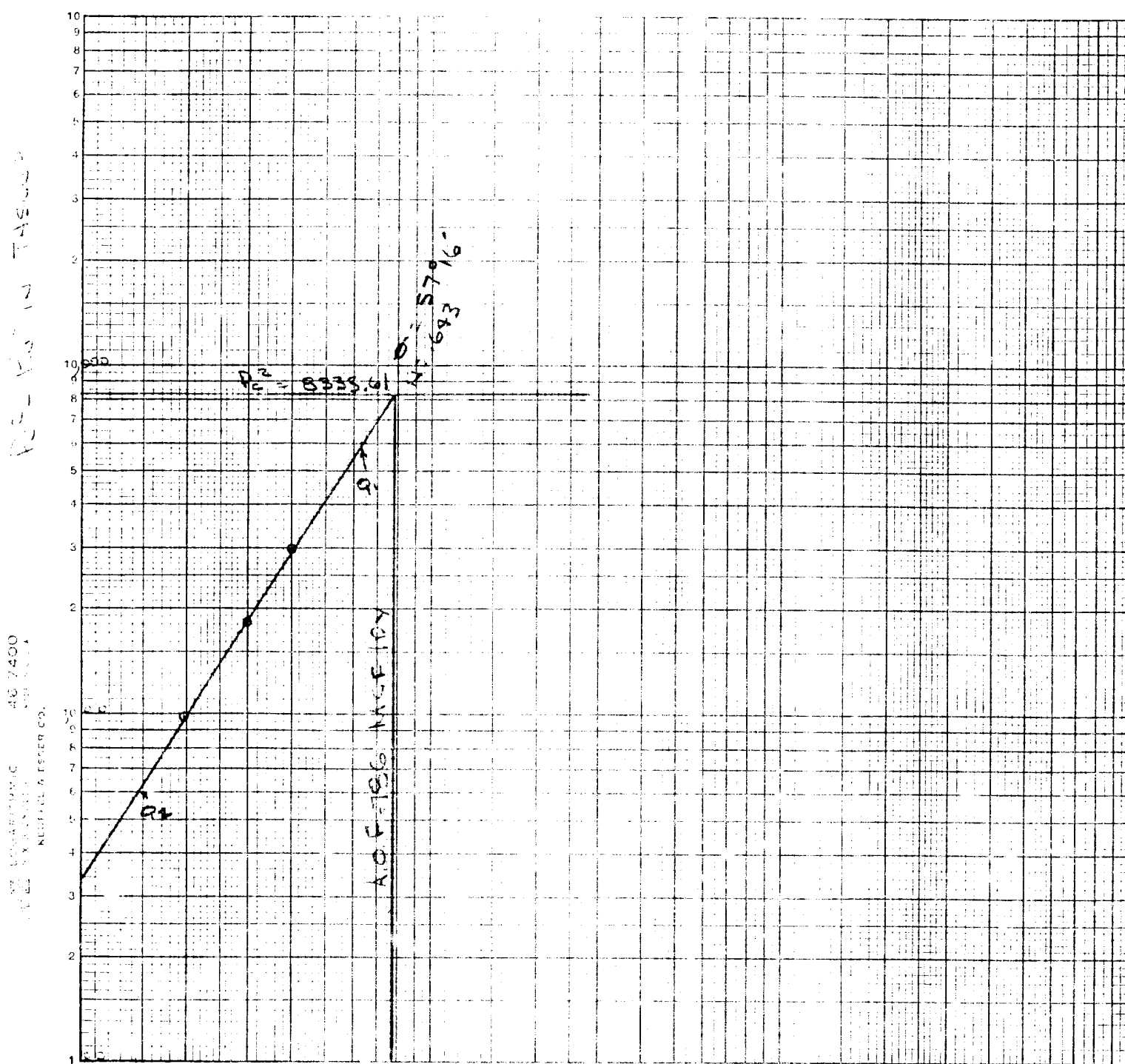
Approved By Commission:	Conducted By: M.D.	Calculated By: M.K.	Checked By: M.K.
-------------------------	-----------------------	------------------------	---------------------

Cities 500

$$A_{20}(N) = Q_1 - 625 = 279588 + 0.64 \left(\frac{8333.61}{2935.86} \right)^{.643} = 786 \text{ Mcf/DY}$$

$$Q_2 = 142 = 2 \cdot 15229$$

N = 64359



LOCATION: Unit _____ Section _____ Township _____ Range _____

69

One copy to be filed in District Office (Work copy acceptable)

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

FROM KNOWN BOTTOM HOLE PRESSURE (P_f or P_s)

COMPANY CONOCO INCORPORATED LEASE 10542 WELL NO. 10542 DATE 10-5-65

LOCATION: Unit L/H Section 1 Township G Range 6664

10542 H 10542 L/H 1 G 6664 % CO₂ 3.90 % N₂ 1.470 % H₂S 0

GH 1025 P_{CT} 664 T_{CT} 213

504

LINE	1	2	3	4	5	6	7	8
1	T _w (W.H. #R)	504						
2	T _s (S.H. #R)	504						
3	$T = \frac{T_w + T_s}{2}$	504						
4	Z (Table I)	1.101						
5	TZ	557.11						
6	GH/TZ	15.353						
7	e ^S (Table XIV)	1.004						
8	P _f or P_s	3011.2						
9	P _f ² or P _s ²	14525.2						
10	$P_c^2 = P_f^2/e^S$ or $P_w^2 = P_s^2/e^S$	9704.04						
11	P _c or P_w	2954.5						
12	$P_c \left(\frac{P_w + P_s}{2} \right)$ or $\left(\frac{P_c + P_f}{2} \right)$	3282.55						
13	P _f = (P/P _{CT})	5.06						
14	T _f = (T/T _{CT})	1.54						
15	Z (Table XI)							

NEW-TEX LAB

P. O. BOX 1161
HOBBS, N.M. 88240

CERTIFICATE OF ANALYSIS

No. 4269
Run No.
Date of Run 12-11-80
Date Secured 12-11-80

A Sample of Cities Service Oil Company State "CP" #1
Secured from John West Engineering
At 412 N. Dal Paso Secured by
Hobbs, N. M. 88240 Date
Sampling conditions Press
Temp.

FRACTIONAL ANALYSIS

Percentage Composition

	MOL %	LIQ. %	G.P.M.
Carbon Dioxide	.253		
Air			
Nitrogen	1.361		
Oxygen			
Hydrogen sulfide			
Hydrogen			
Methane	87.052		
Ethane	6.474		1.227
Propane	1.896		.520
Butanes			
Iso-Butane	.555		.131
N-Butane	.908		.235
Pentanes			
Iso-Pentane	.391		.143
N-Pentane	.323		.117
Hexanes	.347		.142
Heptanes	.440		.202
Octanes			
TOTAL	100.000		2.317

Calc. Sp. Gr. 0.6664
Calc. API
Calc. Vapor Press. PSIA
Sp. Gr.
Mol. Wt. 19.36

LIQUID CONTENT (GAL/MCF)

Residue, Gas G.P.M. .520
Residue, Liquid G.P.M. .466
Residue, Total G.P.M. .604
Ethane, Gas G.P.M. 1.727
Ethane, Liquid G.P.M.
Total Gas G.P.M.
Total Liquid G.P.M.
Total G.P.M. 1159
Wet Basis 1139
Sulfur Analysis by Titration
Sulfur, Tot. Cal. Fr.
Hydrogen Sulfide
Mercaptans
Sulfides
Residual Sulfur
Total Sulfur

Run by Deane Simpson

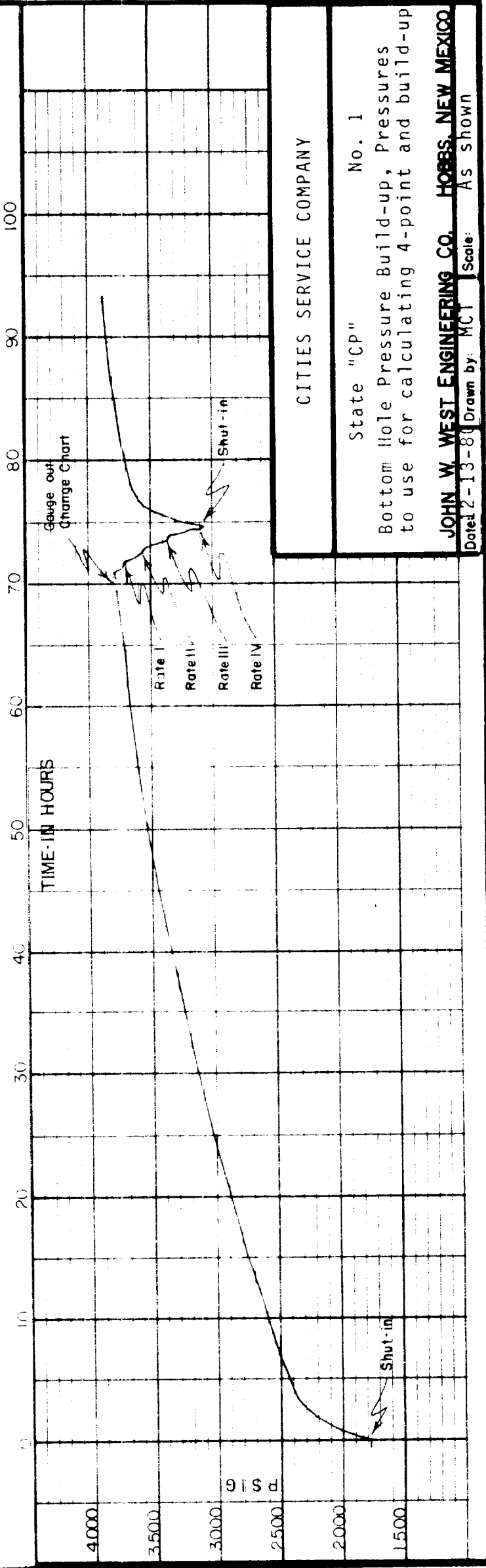
Checked by

Approved by

Additional Data and Remarks

Test Date: December 8 to 12, 1980
 Test Depth: 10,542 feet
 Element No.: 8534
 Range: 0-5750 psi
 Clock No.: 20439
 Range: 0-72 Hour
 Clock No.: C-4020
 Range: 0-24 Hour

Notes: See tabulation of Pressure and Time on attached sheet



CITIES SERVICE COMPANY

State "CP" No. 1
 Bottom Hole Pressure Build-up, Pressures
 to use for calculating 4-point and build-up

JOHN W. WEST ENGINEERING CO. HOBBS, NEW MEXICO
 Date: 2-13-80 Drawn by: MCI Scale: As shown

CITIES SERVICE COMPANY
 STATE "CP" NO. 1
 BOTTOM HOLE PRESSURE BUILD-UP TEST
 4-POINT BACK PRESSURE TEST & BOTTOM
 HOLE PRESSURE BUILD-UP TEST
 TABULATION OF TIMES AND PRESSURES

TEST CONDUCTED BY:
 JOHN WLST ENGINEERING COMPANY

TEST DATE: December 8th thru the 12th, 1980
 TEST DEPTH: 10,543 feet
 ELEMENT NO.: 8534
 OPERATOR: W.S.

DATE	TIME	CUM. HRS. / MIN.		PSIG @ 10,543'
12-8-80	11:00 am			1783 Gauge reached 10,543'
	11:15 am			1780
12-8-80	11:30 am	00 hrs	00 min	1780 Shut-in, Begin Build-up
	11:45 am	00	15	1850
	12:00 noon	00	30	1928
	12:15 pm	00	45	2009
	12:30 pm	01	00	2061
		01	30	2159
	1:30 pm	02	00	2226
		02	30	2284
	2:30 pm	03	00	2330
		03	30	2371
	3:30 pm	04	00	2397
	4:30 pm	05	00	2438
	5:30 pm	05	00	2475
	6:30 pm	07	00	2504
	7:30 pm	08	00	2539
	8:30 pm	09	00	2568
	9:30 pm	10	00	2603
12-8-80	11:30 pm	12	00	2667
12-9-80	2:30 am	15	00	2759
	7:30 am	20	00	2899
	12:30 pm	25	00	3029
	5:30 pm	30	00	3147
12-9-80	10:30 pm	35	00	3257
12-10-80	3:30 am	40	00	3358
	8:30 am	45	00	3451
	1:30 pm	50	00	3535
	6:30 pm	55	00	3607
12-10-80	11:30 pm	60	00	3676
12-11-80	4:30 am	65	00	3734
12-11-80	9:00 am	69	30	3786 Gauge out to change chart
12-11-80	10:00 am			3792 Gauge back to 10,543'
	10:30 am	00	00	3798 open choke, begin test
	11:00 am	00	30	3717
12-11-80	11:15 am	00	45	3725 End Rate I
12-11-80	11:30 am	01	00	3673
	11:45 am	01	15	3621
	12:00 noon	01	30	3592
	12:15 pm	01	45	3569 End Rate II
	12:30 pm	02	00	3509
	12:45 pm	02	15	3454
	1:00 pm	02	30	3405
	1:15 pm	02	45	3367 End Rate III

CITIES SERVICE COMPANY
 STATE "CP" NO. 1
 BOTTOM HOLE PRESSURE BUILD-UP TEST
 4-POINT BACK PRESSURE TEST & BOTTOM
 HOLE PRESSURE BUILD-UP TEST
 TABULATION OF TIMES AND PRESSURES

TEST CONDUCTED BY:
 JOHN WEST ENGINEERING COMPANY

TEST DATE: December 8th thru the 12th, 1980
 TEST DEPTH: 10,543 feet
 ELEMENT NO.: 8534
 OPERATOR: W.S.

DATE	TIME	CUM. HRS./MIN.	PSIG @ 10,543'
	1:30 pm	03 00	3277
	1:45 pm	03 15	3202
	2:00 pm	03 30	3133
12-11-80	2:15 pm	03 45	3075 End Rate IV
12-11-80	2:15 pm	00 00	3075 Shut-in, Begin Build-up
	2:30 pm	00 15	3205
	2:45 pm	00 30	3335
	2:45 pm	00 45	3416
	3:15 pm	01 00	3477
		01 30	3555
	4:15 pm	02 00	3598
		02 30	3627
	5:15 pm	03 00	3647
		03 30	3662
	6:15 pm	04 00	3673
	7:15 pm	05 00	3697
	8:15 pm	06 00	3720
	9:15 pm	07 00	3740
	10:15 pm	08 00	3757
12-11-80	11:15 pm	09 00	3772
12-12-80	12:15 am	10 00	3780
	2:15 am	12 00	3806
	5:15 am	15 00	3841
12-12-80	9:00 am	18 45	3884 Gauge Out, End Test