

NEW MEXICO OIL CONSERVATION COM. SIO
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

RECEIVED BY Form 6-122
SEP 22 1983 Revised 9-1-65

Type Test ☒ Initial 4-POINT ☐ Annual ☐ Special				Test Date 8-29-83		O. C. D. ARTESIA, OFFICE	
Company SUN OIL COMPANY				Connection AIR NEW WELL			
Pool PENN				Formation CISCO		Unit	
Completion Date 7-7-82		Total Depth 5197		Plug Back To 5159		Elevation 3588	
Flow Size 5.500		Wt. 14.0		Set At 5197		Form or Lease Name CHAVES A FEDERAL	
Flow Size 2.375		Wt. 4.7		Set At 4914		Well No. #3	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple DUAL				Packoff Set At 4914		County CHAVES	
Producing Thru TUBING		Reservoir Temp. °F 124 @ 4970		Mean Annual Temp. °F 60.0		State NEW MEXICO	
L 4970		H 4870		Cq 0.611		Motor Run 2.1	
% CO ₂ 0.01		% N ₂ 4.05		% H ₂ S 0		Provor 0	
FLANGE		FLANGE		FLANGE		FLANGE	

FLOW DATA						TUBING DATA		GASING DATA		Duration of Flow
NO.	Provor 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.	
1	2.067	X	1.000	312	9.0	82	1770	92	0	72.0
2	2.067	X	1.000	396	18.5	72	1727	92	0	10.5/64
3	2.067	X	1.000	422	36.0	63	1671	90	0	12.5/64
4	2.067	X	1.000	477	67.2	67	1562	90	0	14/64
5							1410	90	0	16.5/64

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor F _t	Gravity Factor F _g	Super Compens. Factor, F _{sp}	Rate of Flow Q, Mcfd
1	4.946	54.07	324.9	.9795	1.279	1.023	343
2	4.946	87.03	409.6	.9887	1.279	1.031	561
3	4.946	125.23	435.6	.9971	1.279	1.035	818
4	4.946	181.51	490.0	.9933	1.279	1.039	1185

NO.	H	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	A.P.I. Gravity of Liquid Hydrocarbons	Specific Gravity Separator Gas	Specific Gravity Flowing Fluid	Critical Pressure	Critical Temperature
1	.49	542	1.54	.955	0	0	.611	.611	664	351
2	.62	532	1.52	.940						
3	.66	523	1.49	.933						
4	.74	527	1.50	.927						

P _c 1783.2 P _w 3179.8				(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 2.8105$		(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.8609$	
NO.	P _c ²	P _w ²	P _c ² - P _w ²	P _c ²	P _w ²	P _c ² - P _w ²	
1	3028.3	1740.7	3030.2	149.6			
2	2836.5	1685.8	2841.6	338.2			
3	2481.3	1578.6	2492.0	687.8			
4	2025.5	1431.2	2048.4	1131.4			

Absolute Open Flow 2205 Mcfd @ 15.025				Angle of Slope @ 59.0		Slope, n = 601	
Remarks							

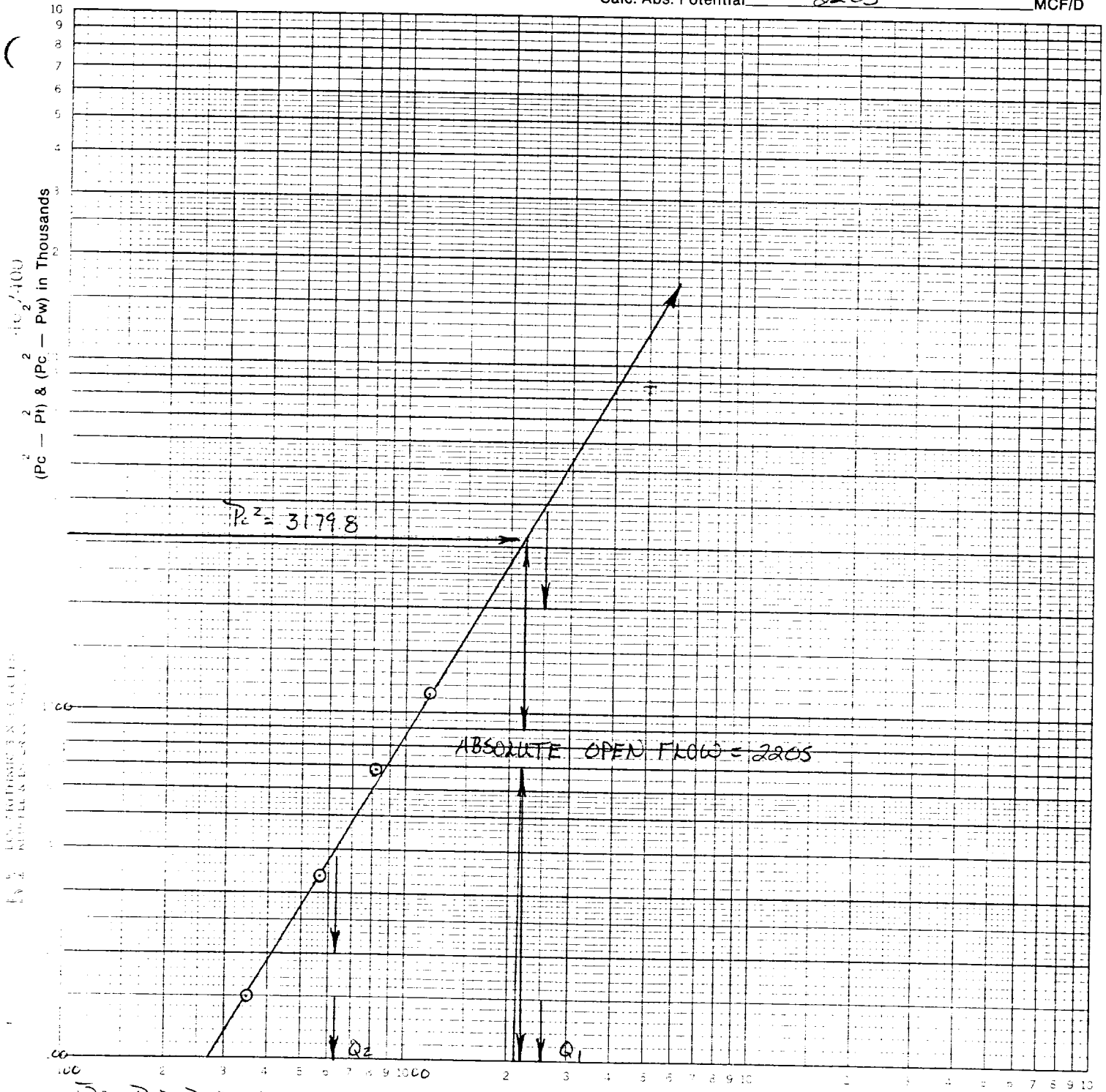
Approved By Commission:	Conducted By: RICHARD TOWNLEY	Calculated By: BENNETT & CATHEY	Checked By:
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BENNETT & CATHEY PRODUCTION TESTING BACK PRESSURE CURV.

Operator Sun Oil Co. Lease Charles A. Farnham Well No. 3
 County Charles Field Reas Slope 410 (Waco) Location _____
 Date of Test 8-29-83 Slope "n" 59.0 Angle of Slope .601

Calc. Abs. Potential 2205 MCF/D



$\Delta P \frac{1}{2} P_c^2 - P_w^2 = 4000$
 $\Delta P \frac{1}{2} P_c^2 - P_w^2 = 400$
 $Q_1 = 2514$
 $Q_2 = 630$

Q in MCF/Day

$\log Q_1 = 3.4004$
 $\log Q_2 = 2.7994$
 $n = 0.601$

Chaves A' Fedora (#3

C .o

477.12 TZ
6.365274983 GH1Z
1.269594822 ES
.2123471342 -E1S
3028.29604 PPR
8.69837472 FC
2.983542529 FCOM
8.901526022 L/H
1.890213541 FM
3030.186254 PPR
3847.108778 PPR
1961.404797 PS
1850.002398 P
2.78735301 PR
475.984 TZ
6.38046657 GH1Z
1.270318297 ES
.2127957201 -E1S
3028.29604 PPR
8.677664304 FC
2.976438856 FCOM
8.859188265 L/H
1.885197346 FM
3030.181237 PPR
3849.294668 PPR
1961.961944 PS
1851.080972 P
2.787772548 PR

480.816 TZ
6.316345546 GH1Z
1.267267437 ES
.2109005796 -E1S
2481.25504 PPR
8.765756496 FC
7.170888814 FCOM
51.41447574 L/H
10.84334273 FM
2492.098383 PPR
3158.15513 PPR
1777.119898 PS
1676.159949 P
2.524837272 PR
478.548 TZ
6.346280883 GH1Z
1.268690886 ES
.2117859045 -E1S
2481.25504 PPR
8.724408588 FC
7.166566225 FCOM
50.73057748 L/H
10.78637842 FM
2490.041418 PPR
3161.130111 PPR
1778.097329 PS
1676.848664 P
2.52507329 PR

477.981 TZ
6.353809048 GH1Z
1.269049048 ES
.2120083921 -E1S
2836.52964 PPR
8.714071611 FC
4.888594174 FCOM
23.898353 L/H
5.066651393 FM
2841.596291 PPR
3606.125069 PPR
1898.980008 PS
1791.590004 P
2.698177717 PR
474.579 TZ
6.399356061 GH1Z
1.271218453 ES
.2103531434 -E1S
2836.52964 PPR
8.652049749 FC
4.853799909 FCOM
23.55937356 L/H
5.026466406 FM
2841.556106 PPR
3612.238557 PPR
1900.589003 PS
1792.394501 P

485.519 TZ
6.250012862 GH1Z
1.264119057 ES
.2089352707 -E1S
2025.49824 PPR
8.858789289 FC
10.49766531 FCOM
110.2009769 L/H
23.02487094 FM
2048.523111 PPR
2589.577104 PPR
1609.216301 PS
1516.208151 P
2.28344601 PR
483.084 TZ
6.286091341 GH1Z
1.265858977 ES
.2100225872 -E1S
2025.49824 PPR
8.807104404 FC
10.43641872 FCOM
108.9188357 L/H
22.87541566 FM
2048.373656 PPR
2592.952181 PPR
1610.264631 PS
1516.732315 P

"Let your Interest in Measurement be our Concern"



PRECISION SERVICE INC.
Flow Measurement Engineers
Analysis Results Summary
Casper, WY 82601

Run No. 000-3
Date Run 08/29/83
Date Sampled 08/26/83

Analysis For: BENNETT & CATHEY WRLN.

Lease: <u>Chaves Federal #3</u>	Producer: <u>Sun Oil Corp.</u>
Location: <u>Pecos Slope</u>	County: <u>Chaves</u> State: <u>New Mexico</u>
Purpose: <u>Well Test</u>	Sampled By: <u>B & C WRLN.</u>
Sampling Temp.: <u>83</u> °F	Atmos Temp.: <u>94</u> °F
Volume/day: <u>300 MCF</u>	Formation: <u>PENN.</u>
Pressure on Bomb: <u>500</u>	PSIG: Line Pressure <u>500</u> PSIG

Gas Component

Analysis

Press. Base: 14.73

Mol. % Liq. % GPM
Per MCF

Carbon Dioxide CO ₂	<u>.007</u>		
Oxygen O ₂	<u>.079</u>		
Nitrogen N ₂	<u>4.048</u>		
Hydrogen Sulfide H ₂ S			
Methane C ₁	<u>90.846</u>		<u>15.362</u>
Ethane C ₂	<u>3.387</u>		<u>.904</u>
Propane C ₃	<u>.823</u>		<u>.226</u>
Iso-Butane IC ₄	<u>.188</u>		<u>.061</u>
Normal-Butane NC ₄	<u>.274</u>		<u>.086</u>
Iso-Pentane IC ₅	<u>.098</u>		<u>.036</u>
Normal-Pentane NC ₅	<u>.103</u>		<u>.037</u>
Hexanes plus	<u>.147</u>		<u>.064</u>
Hexanes C ₆			
Heptanes			
Heptanes Plus C ₇ +			
Total	<u>100.000</u>		<u>16.776</u>
Pentane + G.P.M.			<u>.137</u>
Propane + GPM			<u>.510</u>
16-lb Gasoline			<u>.535</u>

BTU Dry 1033
BTU Wet 1032
Calc. Specific Gravity .611

@ Std. Press. 14.696

BTU Dry 1031
BTU Wet 1029

Calc. Vap. Press. #/Sq.In.

Reid Vap. Press. #/Sq.In.

Z Factor .9979
N Value 1.3083
Ave Mol Wt 17.6687
Ave Cu Ft/Gal

Run by Jeffrey A. Prapp

Calculated By Jeffrey A. Prapp

Ethane + GPM 1.414

Remarks: BTU Wet adjusted to flowing conditions as estab-
lished by FERC Order #93/93-A and calculated per
GPA Reference Bulletin 161-82.

Distribution