

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

Form C-122
Revised 1-65
SEP 22 1983

Type Test ☒ Initial 4-POINT ☐ Annual ☐ Special					Test Date 8-29-83		O. C. D. ARTESIA OFFICE	
Company SUN OIL COMPANY ✓					Connection TRANSWESTERN			
Pool PECOS SLOPE UD <i>Hbo</i>					Formation ABO			
Completion Date 7-7-82		Total Depth 5197		Plug Back To 5159		Elevation		Farm or Lease Name CHAVES A FEDERAL
Well Size 5.500	Wt. 14.0	d 5.012	Set At 5197	Perforations: From 3956 To 4302		Well No. #3		
Log Size 2.375	Wt. 4.7	d 1.995	Set At 4914	Perforations: From 0 To 0		Unit Sec. Twp. Hqs. D 2-4-3		
Type Well - Single - Broadhead - G.G. or G.O. Multiple DUAL					Packer Set At 4914		County CHAVES	
Producing Thru CASING		Reservoir Temp. °F 115° 4129		Mean Annual Temp. °F 60°		Baro. Press. - P _a 13.2		State NEW MEXICO
L 4129	H 4129	Cg .629	% CO ₂ .02	% N ₂ 5.05	% H ₂ O 0	Provs 0	Motor Run 2.067	Temp FLANGE

FLOW DATA							TUBING DATA		CASING DATA		Duration of Flow
NO.	Provs Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h.w.	Temp. °F	Temp. °F	Press. p.s.i.g.	Temp. °F		
1	2.067	X	.625	312	7.84	84	6/64	0	808	92	72.0
2	2.067	X	.625	396	16.0	80	8/64	0	779	90	1.0
3	2.067	X	.625	422	36.0	80	10/64	0	731	90	1.0
4	2.067	X	.625	477	72.2	80	14/64	0	638	90	1.0

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor F _{sp}	Rate of Flow Q, Mcfd
1	1.866	50.47	324.9	0.9777	1.261	1.024	119
2	1.866	80.95	409.6	0.9813	1.261	1.031	193
3	1.866	125.23	435.6	0.9813	1.261	1.033	299
4	1.866	188.16	490.0	0.9813	1.261	1.036	450

NO.	P _t	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	544	1.54	.954	0	0	.629	XXXXXXX	661	354
2	.62	540	1.53	.941						
3	.66	540	1.53	.938						
4	.74	540	1.53	.931						

NO.	P _c	P _w	P _w ²	P _c ² - P _w ²
1	674.4	821.2	674.4	33.2
2	611.8	782.2	611.8	95.8
3	553.8	744.2	553.8	153.8
4	424.1	651.2	424.1	283.5

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 2.4959$

(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2.0428$

AOR = 0 $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 919$

Absolute Open Flow 919 Mcfd @ 15.025

Angle of Slope 52.0

Slope, n 781

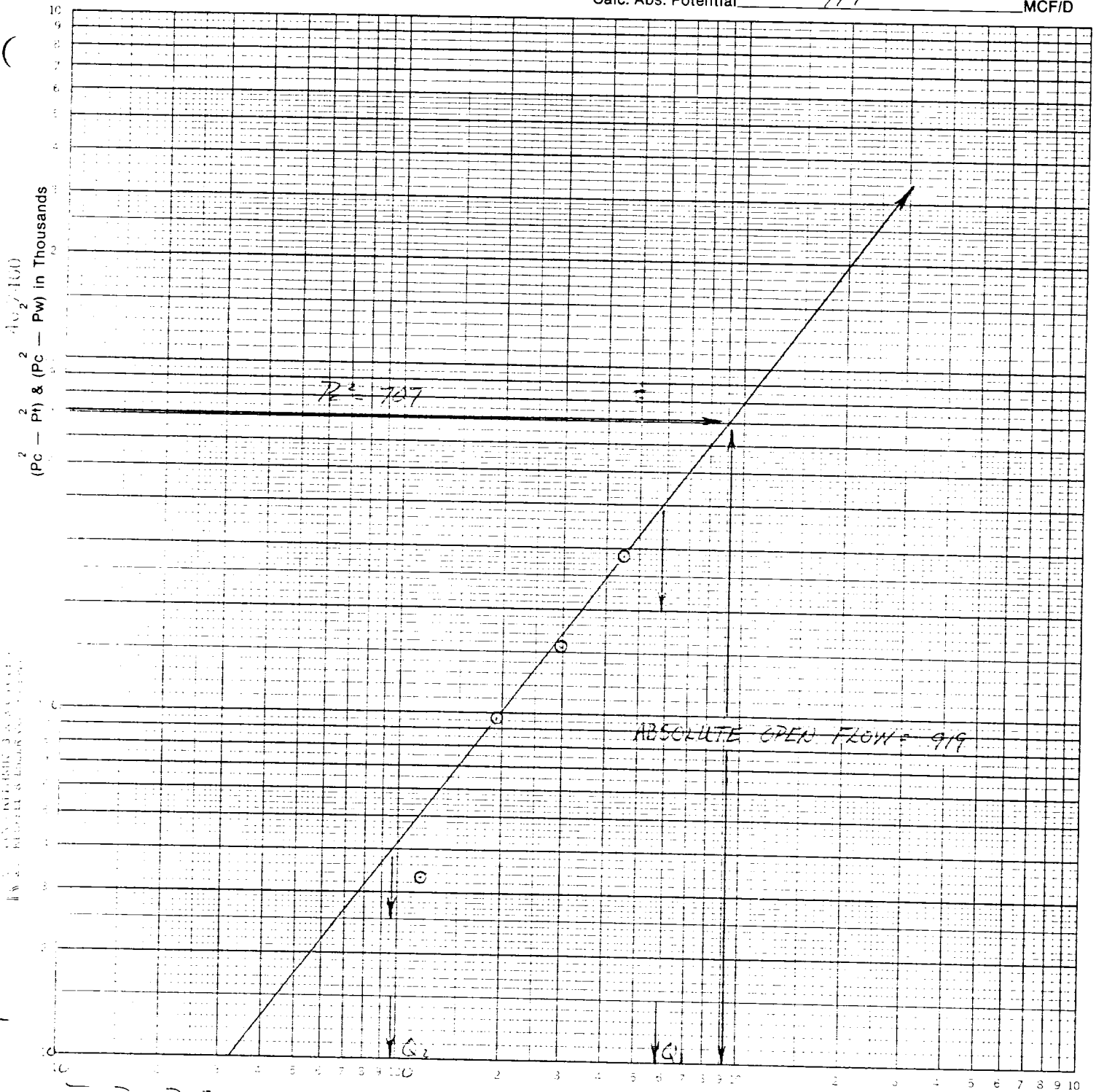
Remarks:

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 Amoco Oil Co. Lease Charles A. Federal Well No. 3
 County Clay Field Prospect UH 1000 Location _____
 Date of Test 3-29-83 Slope "n" 0.781 Angle of Slope 52

Calc. Abs. Potential 919 MCF/D



$$\Delta P_1: P_c^2 - P_w^2 = 400$$

$$\Delta P_2: P_c^2 - P_w^2 = 40$$

$$Q_1 = 586$$

$$Q_2 = 97$$

Q in MCF/Day

$$\log Q_1 = 2.7679$$

$$\log Q_2 = 1.9868$$

$$n = 0.7811 = .781$$

RATE #1

DATE 2

RATE #3
G

RATE#4
G

"Let Accuracy and Interest in Measurement be our Concern"



PRECISION SERVICE INC.

Flow Measurement Engineers

Analysis Results Summary

Casper, WY 82601

Run No. 822-1
Date Run 08/29/83
Date Sampled 08/26/83

Analysis For: BENNETT & CATHEY WRLN.
Lease: Chaves Federal #3
Location: Pecos Slope
Purpose: Well Test
Sampling Temp. 83 °F
Volume/day 1000 MCF
Pressure on Bomb 500
Producer: Sun Oil Corp.
County: Chaves State: New Mexico
Sampled By: B & C WRLN.
Atmos Temp. 94 °F
Formation: ABO
PSIG: Line Pressure 500 PSIG

Gas Component

Analysis

Press. Base: 14.73

Mol. %

Liq. %

GPM
Per MCF

Carbon Dioxide CO ₂	.021		
Oxygen O ₂	.071		
Nitrogen N ₂	5.049		
Hydrogen Sulfide H ₂ S			
Methane C ₁	88.410		14.950
Ethane C ₂	3.929		1.048
Propane C ₃	1.328		.365
Isobutane iC ₄	.240		.078
Normal Butane nC ₄	.460		.145
Isopentane iC ₅	.154		.056
Normal Pentane nC ₅	.147		.053
Hexanes plus	.191		.083
Hexanes C ₆			
Heptanes			
Heptanes Plus C ₇ +			
Total	100.000		16.779
Pentane + G.P.M.			.192
Propane + GPM			.780
Oil-b Gasoline			.726

BTU Dry 1045
BTU Wet 1044
Calc. Specific Gravity .622

@ Std. Press. 14.696

BTU Dry 1043
BTU Wet 1041

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

Reid Vap. Press. #/Sq. In.

Z Factor .9978
N Value 1.3067
Ave Mol Wt 18.1994
Ave Cu Ft/Gal

Run by Jeffrey A. Propp

Calculated By Jeffrey A. Propp

Ethane + GPM 1.828

Remarks: BTU Wet adjusted to flowing conditions as established by FERC Order #93/93-A and calculated per GPA Reference Bulletin 191-82.

Distribution