

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test ☒ Initial ☐ Annual				Test Date 06/04/87	
Company MCKAY OIL CORPORATION				Connection AIR	
Pool West Pecos Slope				Formation Abo	
Completion Date 06-04-87		Total Depth 3400		Plug Back TD 3201	
Csg. Size 4-1/2		Wt. 9.5		Set At 3337	
Thg. Size 2-3/8		Wt. 4.7		Set At 2771	
Perforations: From 2827 To 3106				Well No. #3	
Perforations: From -- To --				Unit K	
Type Well - Single - Drdhead - G.G. or G.O. Multiple Single				Packer Set At	
Producing Thru Tubing				Baro. Press. - P _a 13.2	
Reservoir Temp. °F 92		Mean Annual Temp. °F 60		State N.M.	
L 2966.5		H 2966.5		G _g 0.628	
% CO ₂ 0.215		% N ₂ 5.487		% H ₂ S 0	
Prover 2.00		Meter Run --		Taps ---	

FLOW DATA						TUBING DATA		CASING DATA		Duration of Flow	
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
SI							898		903		SI 72 HRS
1.	2.000		.375	166	--	51	862	51	867	51	60 MIN
2.	2.000		.500	141	--	46	821	46	828	46	60 MIN
3.	2.000		.625	110	--	43	776	43	786	43	60 MIN
4.	2.000		1.000	66	--	41	678	41	697	41	60 MIN
5.											

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 Compress. Factor F _{sp}	Rate of Flow Q, Mscf
1	2.378	--	179.2	1.0088	1.262	1.015	551
2	4.279	--	154.2	1.0137	1.262	1.014	856
3	6.473	--	123.2	1.0168	1.262	1.011	1035
4	17.090	--	79.2	1.0188	1.262	1.007	1752
5							

NO.	P _r	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	0.27	511	1.46	.970	0	0	0.628	X X X X X	662	351
2	0.23	506	1.44	.973						
3	0.19	503	1.43	.979						
4	0.12	501	1.43	.987						
5										

NO.	P _r	P _w	P _r ²	P _w ²	P _r ² - P _w ²
1	916.2	880.2	839.4	774.8	64.6
2		841.2		707.6	131.8
3		799.2		638.7	200.7
4		710.2		504.4	335.0
5					

$$(1) \frac{P_r^2}{P_r^2 - P_w^2} = 6.369$$

$$AOF = Q \left[\frac{P_r^2}{P_r^2 - P_w^2} \right]^n = 3071$$

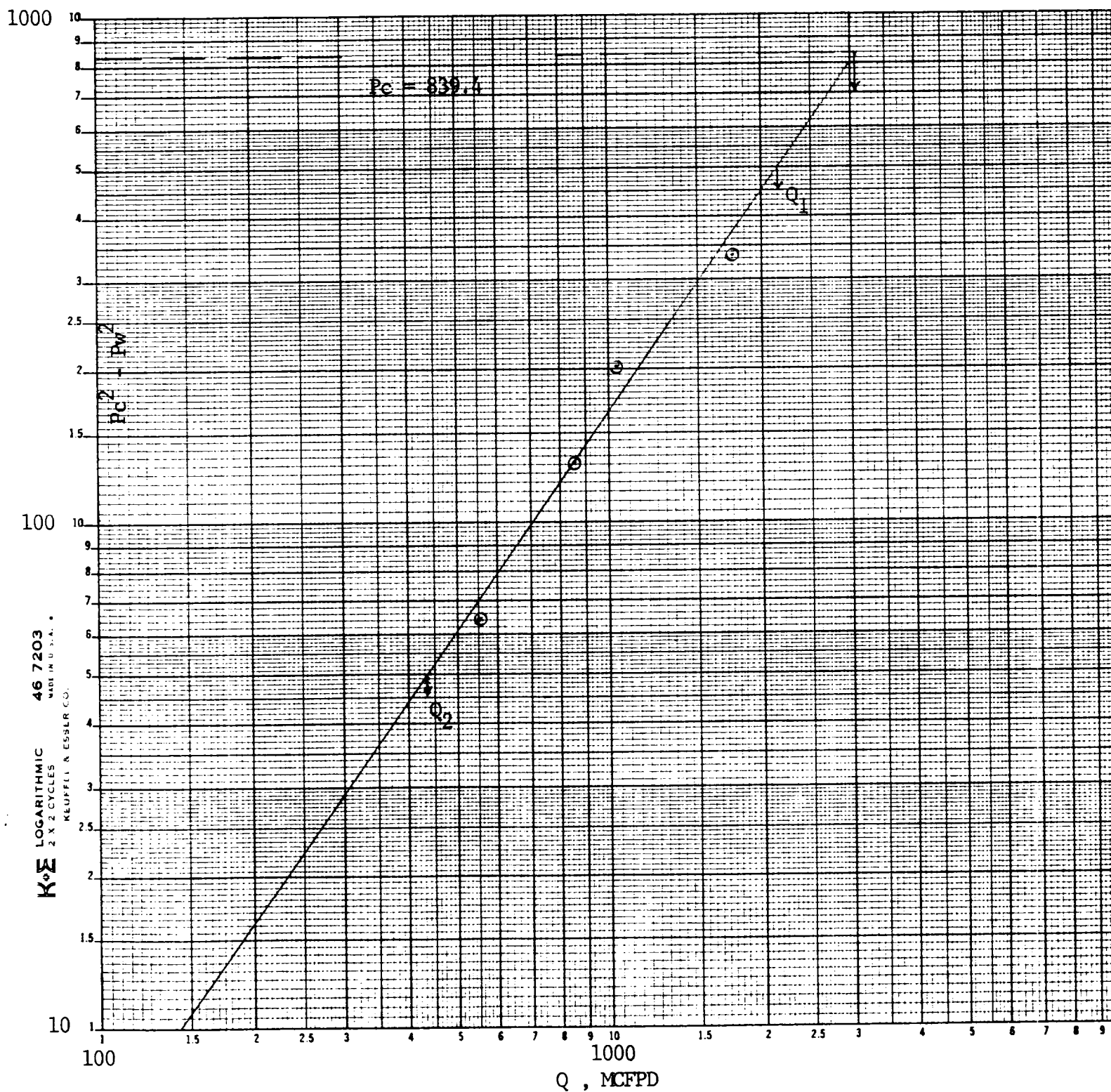
$$(2) \left[\frac{P_r^2}{P_r^2 - P_w^2} \right]^n = 3.588$$

Absolute Open Flow	3071	Mscf @ 15.025	Angle of Slope @	55.241	Slope, n	0.69
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Remarks: No fluid produced during test.

Approved By Division	Conducted By: R. Snyder	Calculated By: C. Sanders	Checked By: P. Stewart
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MCKAY OIL CORPORATION
 Lookout Federal #3
 SEC. 10, T6S, R22E
 06-04-87



$$Q_1 = 2150 \text{ MCFPD; } \log = 3.33244$$

$$Q_2 = 435 \text{ MCFPD; } \log = 2.63849$$

$$n = 0.69395$$

$$AOF = 3071 \text{ MCFPD} \quad n = 0.69$$

"Let your Interest in Measurement be our Concern"



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

Run No. 615-2
Date Run 06/15/87
Date Sampled 06/04/87

Analysis For: MCKAY OIL CORPORATION

Lease: LOOKOUT FEDERAL #3

Producer MCKAY OIL CORP.

Location CHINA DRAW

County CHAVES State NEW MEXICO

Purpose WELL TEST

Sampled By K. ESSLINGER

Sampling Temp. 46 °F

Atmos Temp. °F

Volume/day

Formation

Pressure on Bomb 135

PSIG; Line Pressure 148.2 PSIA PSIG

Gas Component

Analysis

Press. Base: 14.73

	Mol. %	Liq. %	GPM Per MCF
Carbon Dioxide CO ₂	<u>1.029</u>		
Oxygen O ₂			
Nitrogen N ₂	<u>5.410</u>		
Hydrogen Sulfide H ₂ S			
Methane C ₁	<u>88.000</u>		<u>14.916</u>
Ethane C ₂	<u>2.789</u>		<u>.746</u>
Propane C ₃	<u>1.202</u>		<u>.331</u>
Iso-Butane IC ₄	<u>.189</u>		<u>.062</u>
Nor-Butane NC ₄	<u>.513</u>		<u>.162</u>
Iso-Pentane IC ₅	<u>.133</u>		<u>.049</u>
Nor-Pentane NC ₅	<u>.208</u>		<u>.075</u>
Hexanes plus	<u>.528</u>		<u>.243</u>
Hexanes C ₆			
Heptanes			
Heptanes Plus C ₇ +			
Total	<u>100.000</u>		<u>16.583</u>
Pentane + G.P.M.			<u>.367</u>
Propane + GPM			<u>.922</u>
26-lb Gasoline			<u>.590</u>

BTU Dry 1039
BTU Wet 1021
Calc. Specific Gravity .645

@ Std. Press. 14.696

BTU Dry 1036
BTU Wet 1018

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

Reid Vap. Press. #/Sq.In.

Z Factor .9977
N Value 1.3032
Ave Mol Wt 18.6374
Ave Cu Ft/Gal

Run by JEFFREY A. PROFF

Calculated By JEFFREY A. PROFF

Ethane + GPM 1.668

Remarks:

Distribution: