

OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator OXY USA INC					Lease or Unit Name DUKE FEDERAL				
Test Type ☒ Initial ☐ Annual ☐ Special					Test Date 9-SEP-1998		Well No. 1		
Completion Date		Total Depth		Plug Back TD		Elevation		Unit Ltr - Sec - TWP - Rge.	
Csg. Size	Wt.	d	Set At	Perforation: From 9562 To 9573			County EDDY		
Tbg. Size	Wt.	d	Set At	Perforation: From To			Pool Crow Flats Morrow		
Type Well-Single-Bradenhead-G.G. or G.O. Multiple SINGLE					Packer Set At		Formation Morrow		
Producing Thru TUBING		Reservoir Temp.F 156.5		Mean Annual Temp.F 60		Baro. Pressure 14.40		Connection	
L 9567	H 9567	Gg .704	% CO ₂ .88	% N ₂ .90	% H ₂ S	Prover		Meter Run 4.026	Taps FLANGE

FLOW DATA					TUBING DATA		CASING DATA		SIP/FLOW DURATION (HRS.)
NO.	(PROVER) LINE SIZE x ORIFICE SIZE	PRESS. PSIG	DIFF. h _w	TEMP. F	PRESS. PSIG	TEMP. F	PRESS. PSIG	TEMP. F	
SHUT-IN PRESSURE					1950	90	2816	157	68
1.	4.03 x 1.50	726.40	1.00	92	1930	88	2804	157	1
2.	4.03 x 1.50	720.70	4.70	83	1900	86	2766	156	1
3.	4.03 x 1.50	728.70	15.70	83	1820	83	2712	155	1
4.	4.03 x 1.50	742.90	55.80	72	1660	75	2512	149	1

RATE OF FLOW CALCULATIONS

NO.	COEFFICIENT (24 HOUR)	$\sqrt{h_w P_m}$	PRESSURE P _n	FLOW TEMP. FACTOR F _t	GRAVITY FACTOR F _g	SUPER COMPRESS. FACTOR F _{pv}	RATE OF FLOW (Q) MCFD
1.	11.120	27.218	740.8	.9703	1.1918	1.0701	374.6
2.	11.120	58.779	735.1	.9786	1.1918	1.0745	819.1
3.	11.120	108.012	743.1	.9786	1.1918	1.0754	1506.5
4.	11.120	205.566	757.3	.9880	1.1918	1.0834	2916.1

NO.	P _r	TEMP.	T _r	Z
1.	1.107	552	1.430	.8732
2.	1.099	543	1.406	.8661
3.	1.110	543	1.406	.8647
4.	1.132	532	1.379	.8520

Gas-Liquid Hydrocarbon Ratio	79.9	Mcf/bbl
API Gravity of Liquid Hydrocarbons	40.000	Deg.
Specific Gravity Separator Gas	.704	
Specific Gravity Flowing Fluid	.746	
Critical Pressure	669 PSIA	667 PSIA
Critical Temperature	386 R	399 R

P _C =	2830.5	P _C ² =	8011.7
NO.	P _w	P _w ²	P _C ² - P _w ²
1.	2818.8	7945	66.098
2.	2781.0	7733	277.769
3.	2727.0	7436	575.201
4.	2527.3	6387	1624.486

$$(1) \frac{P_C^2}{P_C^2 - P_W^2} = \frac{4.932}{\left[\frac{P_C^2}{P_C^2 - P_W^2} \right]^n} = \frac{2.831}{\left[\frac{P_C^2}{P_C^2 - P_W^2} \right]^n} = \frac{8256}{AOP = Q}$$

Absolute Open Flow		8256	Mcf/d @ 15.025	Angle of Slope -	56.9	Slope, n	.652
Remarks							
Approved By Division:		Conducted By: CHUCK AVERY		Calculated By: BPT System/SCHLUMBERGER		Checked By: D.SYKES-BOOKHAMMER	