

Gas Production

B.T. Gauge Numbers			7303	7302	Ticket Number		956649
			PRESSURE	PRESSURE			
Initial Hydrostatic			8025.3	8070.0	Elevation		3220 ft.
Final Hydrostatic			8009.4	8035.0	1st Flow		- MCF
1st Flow	Initial	Time	1691.8	1644.4	Production Rate	2nd Flow	4175 MCF
	Final	30	1930.8	1949.2		3rd Flow	- MCF
	Closed In Pressure	59	7418.5	7434.0			
2nd Flow	Initial	Time	1006.2	1098.4	Hole Size		6.5 in.
	Final	90	1827.0	1844.4	Footage Tested		5 ft.
	Closed In Pressure	177	7335.4	7344.0	Mud Weight		13.4 lbs./gal.
3rd Flow	Initial	Time			Gas Viscosity		.031 cp
	Final				Gas Gravity		Est. .65 —
	Closed In Pressure				Gas Compressibility		1.20 —
					Temperature		182 °F
Extrapolated			1st				
Static Pressure			2nd	7447			7460
			3rd	-			
			1st	-			
Slope P/10			2nd	6928			6941
			3rd	-			

Remarks:

SUMMARY		B.T. Gauge No. 7303 Depth 11162'			B.T. Gauge No. 7302 Depth 11230'			
PRODUCT	EQUATION	FIRST	SECOND	THIRD	FIRST	SECOND	THIRD	UNITS
Transmissibility	$\frac{Kh}{\mu} = \frac{1637 Q_r ZT}{m}$		705.742			704.468		md. ft. cp
Theoretical Flow Capacity	$Kh = \frac{Kh}{\mu} \mu$		21.878			21.839		md. ft.
Average Effective	$K = \frac{Kh}{h}$		-			-		md.
Permeability	$K_1 = \frac{Kh}{h_1}$		4.376			4.368		md.
Indicated Flow Capacity	$(Kh)_s = \frac{3200 Q_r \mu ZT \log(0.472 b/r_w)}{P_s^2 - P_r^2}$		10.040			10.012		md. ft.
Damage Ratio	$DR = \frac{\text{Theo. Flow Cap}}{\text{Indicated Flow Cap}} \frac{Kh}{(Kh)_s}$		2.179			2.181		—
Indicated	$OF_1 = \frac{Q_r P_s^2}{P_s^2 - P_r^2}$ Max.		4442			4447		MCFD
Flow Rate	$OF_2 = \frac{Q_r P_s}{\sqrt{P_s^2 - P_r^2}}$ Min.		4307			4309		MCFD
Theoretical	$OF_3 = OF_1 DR$ Max.		9681			9699		MCFD
Potential Rate	$OF_4 = OF_2 DR$ Min.		9385			9398		MCFD
Approx. Radius of Investigation	$b \approx \sqrt{Kt}$ or $\sqrt{Kt_0}$		-			-		ft.
	$b_1 \approx \sqrt{K_1 t}$ or $\sqrt{K_1 t_0}$		23			23		ft.
Potentiometric Surface *	$Pot. = (EI - GD) + (2.319 Ps)$		9328			9290		ft.

NOTICE: These calculations are based upon information furnished by you and taken from Drill Stem Test pressure charts, and are furnished you for your information. In furnishing such calculations and evaluations based thereon, Halliburton is merely expressing its opinion. You agree that Halliburton makes no warranty express or implied as to the accuracy of such calculations or opinions, and that Halliburton shall not be liable for any loss or damage, whether due to negligence or otherwise, in connection with such calculations and opinions.