CORE LABORATORIES, INC.

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Petroleum Reservoir Engineering DALLAS. TEXAS

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			FileRFL_78	875
		D to Compled	November 21. 197	8
Company_	Morris R. Antweil	Date Sampled.	Lon	
Well	Landlady No. 1	County	Lea New Mexico	
	Wildcat	State	New Mexico	
Field		TTERISTIC	S	
	FORMATION C	CHARACTERISTIC	Morrow	
Formation	n Name			, 19
	st Well Completed		4171PSIG @	11146 Ft.
Original	Reservoir Pressure	-		SCF/BDI
Original I	Produced Gas-Liquid Ratio			Bbls/Day
Dr	oduction Rate		PSIG	° F.
Se	parator Pressure and Temperature	_		° API
Li	quid Gravity at 60° F.	-		Ft. Subsea
Datum	WELL CH	ARACTERISTICS		Ft.
Elevation		-	11120-11171	Ft. Ft.
Total De				
	ng Interval		In. to	Ft. MMSCF/Day
Tubing	Size and Depth			11146 EY
Open Fl	ow Potential		4025 PSIG @	<u>1078</u>
	servoir Pressure		December 11	11146 Ft
)ate		<u>181</u> • F. @	<u> </u>
	Reservoir Temperature		Buildup - 233 1	
	Status of Well		Amerada	· · · · · · · · · · · · · · · · · · ·
F	Pressure Gauge SAMPLI	NG CONDITIONS	1559 (SI=23 <u>20)</u>	PSIG
				PSIG
Flowing	Tubing Pressure (7/64" choke)		3479	
Flowing	g Bottom Hole Pressure		395	
Primar	y Separator Pressure		96	PSIG
Primar	y Separator Temperature			910 ° F.
Second	ary Separator Pressure			_° API @ 60° F.
Second	ary Separator Temperature		0(40.9*	_• API @ 00 F. MSCF
Field S	tock Tank Liquid Gravity		2648.8*	MOOI
Prima	ry Separator Gas Production Rate	14.65 PSIA		
	Pressure Base	<u> 60 </u>		
	Temperature Base			
	Compressibility Factor (\mathbf{F}_{pv})	0.717		
	Gas Gravity (Field)			Bbls/Day
.	Gas Gravity Factor (F _g) <u>k_TankLiquid Production Rate @</u> 60	° F.	583.05*	BOIS/Day
Stoc	<u>k Tank Liquid Floduction Ruse (</u> ary Separator Gas/ <u>Stock Tank Li</u> qui	d Ratio	4543	SCF/BB Bbls/MMSCI
Prima	ary Separator Gas/	or		
Comp	led by		Tefteller, In	
gamp				

REMARKS:

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*Gross gas and liquid production for 220 hours during flowing test from November 20, 1978 to December 1, 1978.

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Hydrocarbon Analyses of Separator Products and Calculated Well Stream

	Separator Liquid	Separator	Gas	Well Stre	am *
Component	Mol Percent	Mol Percent	GPM	Mol Percent	GPM
Hydrogen Sulfide	Ni1	Nil		Nil 0.46	
Carbon Dioxide	0.03	0.53			
Nitrogen Methane	0.03 1.70	1.22 80.08		1.06 69.85	
Ethane	0.97	10.24		9.03	
Propane iso-Butane	2.71 1.35 4.27	5.18 0.70 1.25	1.417 0.228 0.392	4.86 0.78 1.64	1.330 0.254 0.514
n-Butane iso-Pentane n-Pentane Hexanes Heytanes plus	$ \begin{array}{r} 4.27\\ 2.70\\ 3.25\\ 4.31\\ \underline{78.68}\\ 100.00 \end{array} $	$ \begin{array}{r} 0.25\\ 0.20\\ 0.13\\ \underline{0.22}\\ 100.00\\ \end{array} $	$\begin{array}{r} 0.091 \\ 0.072 \\ 0.053 \\ \underline{0.099} \\ 2.352 \end{array}$	$\begin{array}{r} 0.57 \\ 0.60 \\ 0.68 \\ \underline{10.47} \\ 100.00 \end{array}$	0.207 0.216 0.276 7.577 10.374

Properties of Heptanes plusAPI gravity @ 60° F.Specific gravity @ 60/60° F.Molecular weight	<u>0.817</u> <u>103 (</u> assumed) <u>183</u>
Calculated separator gas gravity (air = 1.000) = $\frac{0.7}{12}$ Calculated gross heating value for separator gas = $\frac{12}{12}$ per cubic foot of dry gas @ 14.65 psia and 60° F.	710 217 BTU
Primary separator gas collected @	
Primary separator gas/separator liquid ratio Primary separator liquid/stock tank liquid ratio Primary separator gas/well stream ratio Stock tank liquid/well stream ratio	<u>4463</u> SCF/Bbl @ 60 ° F. <u>1.018</u> Bbls @ °F./Bbl <u>869.34</u> MSCF/MMSCF <u>191.3</u> Bbls/MMSCF

*Fluid exists in two-phase at reservoir conditions of 4171 psig & 181°F.

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Pressure-Volume Relations of Reservoir Fluid at 181 °F. (Constant Composition Expansion)

Pressure PSIG	Relative Volume	Liquid Volume, Percent of <u>Total Volume</u>
6000 5500 4500 4300 <u>4171</u> Reservoir Pressure 4000 3805 3500	0.8705 0.8947 0.9254 0.9659 0.9865 1.0000 1.0205 1.0505 1.1049	33.5 39.0 40.7 40.7 40.4 40.1 39.5 39.0 38.2

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