

NEW-TEX LAB

P. O. BOX 1181
HOBBS, N.M. 88240

CERTIFICATE OF ANALYSIS

No. 5467
Run No. _____
Date of Run 8-21-81
Date Secured 8-20-81

Sample of Cities Service Company Brantley "A" #1
Secured from John West Engineering
412 No. Dal Paso St. Secured by _____
Hobbs, New Mexico 88240 Time _____ Date _____
Sampling conditions _____ Press _____
Temp. _____

FRACTIONAL ANALYSIS

Percentage Composition

	MOL %	LIQ. %	G.P.M.
Carbon Dioxide	<u>1.436</u>		
Hydrogen	<u>.750</u>		
Hydrogen sulfide			
Propane	<u>94.668</u>		
Butane	<u>2.760</u>		<u>.736</u>
Pentane	<u>.267</u>		<u>.073</u>
Hexane			
Heptane	<u>.033</u>		<u>.011</u>
Octane	<u>.032</u>		<u>.010</u>
Nonane			
Decane	<u>.016</u>		<u>.006</u>
Undecane	<u>.009</u>		<u>.003</u>
Dodecane	<u>.003</u>		<u>.001</u>
Tridecane	<u>Plus .026</u>		<u>.012</u>
Sum	<u>100.000</u>		<u>.852</u>

Calc. Sp. Gr. 0.5891
Calc. A.P.I. _____
Calc. Vapor Press. _____ PSIA
Sp. Gr. _____
Mol. Wt. 17.07

LIQUID CONTENT (GAL./MCF)

Propane Calc. G.P.M. .073
Butanes Calc. G.P.M. .021
Pentanes Plus. G.P.M. .022
Ethane Calc. G.P.M. .736
*RVP Gasoline G.P.M. _____
B.T.U./Cu. Ft. @ 14.696 P.S.I.A.
Dry Basis 1016
Wet Basis 998
Sulfur Analysis by Titration
Gr./100 Cu. Ft.
Hydrogen Sulfide _____
Mercaptans _____
Sulfides _____
Residual Sulfur _____
Total Sulfur _____

by R. H. Hamilton Checked by Deane Simpson Approved by Deane Simpson

Additional Data and Remarks

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

Form C-122
Revised 9-1-65

RECEIVED

Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 4-16-81		APR 28 1981	
Company CITIES SERVICE CO. /				Connection TO AIR		O. C. S. ARTIFICIAL LIFT	
Pool North Loring Morrow				Formation MORROW		Unit	
Completion Date 4-15-81		Total Depth 12,545		Plug Back TD 12,505		Elevation 3039 Gr.	
Farm or Lease Name BRANTLEY "A" Com.				Well No. 1			
Csg. Size 7" 5" Liner	Wt. 23# 18#	d 6.366 2.441	Set At 10940 10614-12543	Perforations: From 12132 To 12143			
Tbg. Size 2 7/8	Wt. 6.5	d 2.441	Set At 12121	Perforations: From OPEN To Ended			
Type Well - Single - Bradenhead - G.G. or G.O. Multiple SINGLE 12113				Packer Set At		County EDDY	
Producing Thru TUBING		Reservoir Temp. °F 197 @ 12,138		Mean Annual Temp. °F 60°		Baro. Press. - P _a 13.2	
State New Mexico							
L 12,150	H 12,150	G _g .5803	% CO ₂ .834	% N ₂ .308	% H ₂ S -0-	Prover	Meter Run 4" Taps flange

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			S.I.				3670		PKR	CHOKE	72 Hr.
1.	4"	x	2"	540	15	51	3624	66		10/64	45 Min.
2.	4"	x	2"	540	28	46	3590	67		13/64	30 Min.
3.	4"	x	2"	550	59	37	3503	68		15/64	60 Min.
4.	4"	x	2"	550	96	31	3429	70		17/64	30 Min.
5.											

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1	19.81	91.09	553.2	1.009	1.313	1.047	2503
2	19.81	124.46	553.2	1.014	1.313	1.049	3443
3	19.81	182.29	563.2	1.023	1.313	1.053	5108
4	19.81	232.52	563.2	1.029	1.313	1.057	6578
5							

NO.	P _t	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
1.	.820	511	1.47	.912	A.P.I. Gravity of Liquid Hydrocarbons 53.5 @ 60°
2.	.820	506	1.45	.908	Specific Gravity Separator Gas .5803
3.	.834	497	1.43	.902	Specific Gravity Flowing Fluid X X X X X
4.	.834	491	1.41	.895	Critical Pressure 675 P.S.I.A.
5.					Critical Temperature 348 R

$P_c = 3683.2$ $P_c^2 = 13,566$					$(1) \frac{P_c^2}{P_c^2 - P_w^2} = 2.0728$	$(2) \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2.0278$
NO	P _t ²	P _w	P _w ²	P _c ² - P _w ²		
1		2799	7834	5732		
2		2766	7651	5915		
3		2688	7225	6341		
4		2622.2	6876	6690		
5						

$Q = 13.338$			$\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 13.338$
Absolute Open Flow 13.338 Mcfd @ 15.025		Angle of Slope 45°	Slope, n 1.000

Remarks: Plot too flat had to use 45° thru high rate of flow.

Approved By Commission:	Conducted By:	Calculated By:	Checked By:
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