## NEW MEXICO OIL CONSERVATION COMMISSION HOBBS OFFICE OCC

Formation Queen

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Form C-122

MULTI-POINT BACK PRESSURE TEST FOR CASSWELLEN 3:45 Revised 12-1-55

Flow Data   Tubing Data   Casing Data   Ca	Init	ial		_Annual		Spec	cial	X	Date of	Test	9-12-56	
Casing 5 1/2" wt. 176	Company Astec Oil & Gas Company Lease State Gas Unit "E" Well No. 1											
Tubing 2 3/4" wt. 4.7" I.D. 1.995" Set at 3611' Perf. 3602' To 2611'  Gas Pay: From 3565 To 3650 L 3602 xG 0.665 -GL 2395 Bar.Press. 13.2  Froducing Thru: Casing Tubing X Type Well 3tngle  Bate of Completion: 3-27-54 Packer Kone Reservoir Temp.  OBSERVED DATA  Tested Through (1980) Press. Diff. Temp. Press. Temp. Press. Plas  OCSERVED DATA  Tested Through (1980) Press. Diff. Temp. Press. Temp. Press. Press. Of Flow Size Size psig h, Op. psig Op. psig Op. psig Op. hir.  SI	Unit	<u> </u>	Sec3	Twp.	<b>205</b> Rg	ge <b>3</b> ′	75 Purc	haserl	Permian Bo	sin Pip	eline Co.	
Gas Pay: From 3565 To 3650   3602   36 0.665   GL 2395   Bar.Press. 13.2												
Producing Thru: Casing	Tubing 2 3/8" Wt. 4.7# I.D. 1.995" Set at 3611' Perf. 3602' To 3611'											
Date of Completion: 3-27-34   Packer   Rose   Reservoir Temp.	Gas Pay: From 3565 To 3650 L 3602 xG 0.665 -GL 2395 Bar. Press. 13.2											
Continue	Producing Thru: Casing Tubing I Type Well Single											
Type Taps   Pipe   Flow Data   Tubing Data   Casing Data	Date of Completion: 3-27-54 Packer None Reservoir Temp.											
Flow Data	OBSERVED DATA											
No.   Contine	Tested Through (Meter) Type Taps Pipe											
No.   Cline   Size   psig   hw   OF   psig   OF   psig   OF   Hr.	Flow Data					Tubing Data			Casing Data			
1.   1.50   473.4   5.6   64.695.0   23 11/2     2.   4   1.50   487.0   10.4   75   630.5   24     3.   4   1.50   487.2   16.7   74   556.7   24     4.   4   1.50   462.4   19.7   74   526.7   24     5.	No.	(Line)	(Orifi	ce)		1			į.	j i		
1.   4   1.50   477.4   5.6   64   692.0   21 1/2     2.   4   1.50   447.2   16.7   74   556.7   24     4.   4   1.50   42.4   19.7   74   526.7   24     4.   4   1.50   42.4   19.7   74   526.7   24     5.	CT	Size	Siz	e psi	g h <sub>w</sub>	°F.	<del></del>	°F.	psig	°F∙		
1.50		- L	1.40	473	4 5.6	#L				<del> </del>		
1.50	2.	4						· · · · · · <del>- · · · ·</del> · ·		<del> </del>	-	
	<b>3.</b>	4		487.	2 16.7							
Pressure   Flow Calculations   Flow   Factor	4.		1.50	462.	4 19.7	74	526.7				21	
Coefficient   Pressure   Flow Temp.   Gravity   Compress.   Rate of Flow Q-MCFPD   Factor	<u> </u>								<del></del>	1		
No. (24-Hour)	FLOW CALCULATIONS											
(24-Hour)		Coeffici	Lent			Flow	Temp.					
1. 15.26 52.20 .9777 94.98 1.042 777. 2. 15.26 72.12 .9859 .94.98 1.044 1076 3. 15.26 91.42 .9868 .94.98 1.044 1368 4. 15.26 96.79 .9868 .94.98 1.044 1445  PRESSURE CALCULATIONS  as Liquid Hydrocarbon Ratio	No.	(2) 110	\	/ \					Factor			
2. 15.26 72.12 .9659 .9498 1.044 1076 3. 15.26 91.42 .9688 .9498 1.044 1368 4. 15.26 96.79 .9868 .9498 1.044 1445 5. PRESSURE CALCUIATIONS  as Liquid Hydrocarbon Ratio c_f/bbl. Specific Gravity Separator Gas ravity of Liquid Hydrocarbons deg. Specific Gravity Flowing Fluid P_c _ 793.5 P_c 294.  No. P_w		_			psia	- I					15.025 psia	
PRESSURE CALCULATIONS  as Liquid Hydrocarbon Ratio cf/bbl. Specific Gravity Separator Gas					<del></del>	.977						
PRESSURE CALCULATIONS  as Liquid Hydrocarbon Ratio cf/bbl. Specific Gravity Separator Gas	3°				<del></del>							
PRESSURE CALCULATIONS  as Liquid Hydrocarbon Ratio cf/bbl. Specific Gravity Separator Gas	4.											
Assolute Potential: 2,412  Assolute Potential: 2	5.											
Pw	T.	enika milaili		D. 4.	PRI		ALCUIATIO					
C. 9.936 (1-e-s) .152 P <sub>C</sub> 793.5 P <sub>C</sub> 629.6  No. P <sub>W</sub> P <sub>t</sub> (psia) P <sub>t</sub> F <sub>c</sub> Q (F <sub>c</sub> Q) <sup>2</sup> (F <sub>c</sub> Q) <sup>2</sup> P <sub>w</sub> Q P <sub>c</sub> <sup>2</sup> -P <sub>w</sub> Cal. P <sub>w</sub> P <sub>c</sub> 1. 706.2 501.5 7.661 58.69 8.921 510.4 119.2 714.4 90  2. 643.7 414.3 10.69 114.3 17.37 431.7 197.9 657.0 83  3. 569.9 324.8 13.59 184.7 28.07 352.9 276.7 594.1 75  4. 539.9 291.5 14.36 206.2 31.34 322.8 306.8 568.2 72  Absolute Potential: 2.412 MCFPD; n 69  COMPANY Astec 011 & Gas Company  ADDRESS Box 847, Hobbs, New Mexico  AGENT and TITLE Company  COMPANY R. L. West  COMPANY Permian Basin Pipeline Company												
No.   P <sub>W</sub>						uoe•						
No. Pt (psia) Pt FcQ (FcQ)2 (FcQ)2 Pw2 Pc-Pw Cal. Pw Fc  1. 708.2 501.5 7.661 58.69 8.921 510.4 119.2 714.4 90  2. 643.7 414.3 10.69 114.3 17.37 431.7 197.9 657.0 83  3. 569.9 324.6 13.59 184.7 28.07 352.9 276.7 594.1 75  4. 539.9 291.5 14.36 206.2 31.34 322.8 306.8 568.2 72  Absolute Potential: 2,412 MCFPD; n 69  COMPANY Astec Oil & Gas Company  ADDRESS Box 847. Hobbs, New Mexico  AGENT and TITLE Company  Charles M. Cole, Petroleum Engineer  COMPANY Permian Basin Pipeline Company	·							· C		C		
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1. 708.2 501.5 7.661 58.69 8.921 510.4 119.2 714.4 90 2. 643.7 414.3 10.69 114.3 17.37 431.7 197.9 657.0 48 3. 569.9 324.8 13.59 184.7 28.07 352.9 276.7 594.1 .75 4. 539.9 291.5 14.36 206.2 31.34 322.8 306.8 568.2 .72  Absolute Potential: 2.412 MCFPD; n .69  COMPANY Astec Cil & Gas Company  ADDRESS Box 847, Hobbs, New Mexico  AGENT and TITLE Charles M. Cole, Petroleum Engineer  COMPANY Permian Basin Pipeline Company  Permian Basin Pipeline Company	No.		₽ŧ	F <sub>c</sub> Q	$(F_cQ)^2$	(F	$c_{\alpha-s}^{Q)^2}$	P <sub>w</sub> 2	$P_c^2 - P_w^2$	Cal	P <sub>W</sub>	
2. 643.7 414.3 10.69 114.3 17.37 131.7 197.9 657.0 83 3. 569.9 324.8 13.59 184.7 28.07 352.9 276.7 594.1 75 4. 539.9 291.5 14.36 206.2 31.34 322.8 306.8 568.2 72  Absolute Potential: 2.412 MCFPD; n 69  COMPANY Astec 011 & Gas Company  ADDRESS Box 847, Hobbs, New Mexico  AGENT and TITLE Company  Conducted by: R. L. West  COMPANY Permian Basin Pipeline Company	1.		501.5	7.661	54.60			530 4	330.0	T W	<del>'</del>	
3. 569.9 324.6 13.59 184.7 28.07 352.9 276.7 594.1 75 4. 539.9 291.5 14.36 206.2 31.34 322.8 306.8 568.2 72  Absolute Potential: 2,412 MCFPD; n .69  COMPANY Astec Oil & Gas Company  ADDRESS Box 847, Hobbs, New Mexico  AGENT and TITLE C. C. C. Charles M. Cole, Petroleum Engineer  ADDRESS Conducted by: R. L. West  COMPANY Permian Basin Pipeline Company	2.	643.7	134.3	10.69	114.3	17.	37				A A	
Absolute Potential: 2,412 MCFPD; n .69  COMPANY Astec Oil & Gas Company  ADDRESS Box 847, Hobbs, New Mexico  AGENT and TITLE Company  COMPANY Conducted by: R. L. West  COMPANY Permian Basin Pipeline Company	<del>3.  </del>								276.7	594.1	.75	
Absolute Potential: 2,412 MCFPD; n .69  COMPANY Astec Oil & Gas Company  ADDRESS Box 847, Hobbs, New Mexico  AGENT and TITLE Company  COMPANY Conducted by: R. L. West  COMPANY Permian Basin Pipeline Company	5.	237.7	271.3	14.30	206.2	31.	34	322.8	306.8	568.2	.72	
AST COMPANY Ast Coll & Gas Company  ADDRESS Box 847, Hobbs, New Mexico  AGENT and TITLE Charles M. Cole, Petroleum Engineer  ADDRESSED Conducted by: R. L. West  COMPANY Permian Basin Pipeline Company		ute Parant	ial.	2 132	<del></del>	MODDO	- /a			<u> </u>		
ADDRESS Box 847, Hobbs, New Mexico AGENT and TITLE Control Charles M. Cole, Petroleum Engineer COMPANY Permian Basin Pipeline Company		NY <b>Aste</b>	c 011 &	Gas Compa	ny	_MCFPD;	n07					
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## INSTRUCTIONS

This form is to be used for reporting multi-point back pressure tests on gas wells in the State, except those on which special orders are applicable. Three copies of this form and the back pressure curve shall be filed with the Commission at Box 871, Santa Fe.

The log log paper used for plotting the back pressure curve shall be of at least three inch cycles.

## NOMENCLATURE

- Q  $\equiv$  Actual rate of flow at end of flow period at W. H. working pressure (P<sub>W</sub>). MCF/da. @ 15.025 psia and 60° F.
- Pc 72 hour wellhead shut-in casing (or tubing) pressure whichever is greater. psia
- PwT Static wellhead working pressure as determined at the end of flow period. (Casing if flowing thru tubing, tubing if flowing thru casing.) psia
- Pt Flowing wellhead pressure (tubing if flowing through tubing, casing if flowing through casing.) psia
- Pf Meter pressure, psia.
- hw Differential meter pressure, inches water.
- Fg Gravity correction factor.
- Ft Flowing temperature correction factor.
- $F_{pv}$  Supercompressability factor.
- n I Slope of back pressure curve.

Note: If  $P_W$  cannot be taken because of manner of completion or condition of well, then  $P_W$  must be calculated by adding the pressure drop due to friction within the flow string to  $P_{t}$ .