NEW MEXICO OIL CONSERVATION COMMSSION

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

Type Test: [X] Initial [ ] Annual [ ] Special				Test Date: 2-06-86	
Company: SHELL WESTERN E&P INC.		Connection: NONE			
Pool: ANTELOPE RIDGE DEVONIAN		Formation: DEVONIAN			Unit: ANTELOPE RIDGE UNIT
Completion Date: 1-28-86	Total Depth: 17,787'	Plug Back TD: 15,650'	Elevation: 3392.1' GL		Farm or Lease Name: ANTELOPE RIDGE
~~XXX~~ Size: 5-1/2"	Wt.: 17. 20#	d: ----	Set At: 15,916'	Perforations: From 14,647' To 14,840'	Well No.: 9
Tbg. Size: 2-7/8"	Wt.: 6.5#	d: 2.441	Set At: 13,900'	Perforations: From ---- To ----	Unit: P Sec.: 33 Twp.: 23S Rge.: 34E
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: SINGLE			Packer Set At: 13,900'		County: LEA
Producing Thru: TBG	Reservoir Temp. °F: 195 @ 13,821'	Mean Annual Temp. °F: 82	Baro. Press. – P_a: 13.2		State: NEW MEXICO

L	H	G_g	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
14.743	14.743	0.666	1.70	1.40	-----	----	4.026	FLG

	FLOW DATA					TUBING DATA		CASING DATA		
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	Duration of Flow
SI	4.026	X 1.250				4234	36			
1.	"	"	750	95	87	947	70	PACKER		1 HR
2.	"	"	750	75	82	995	72			"
3.	"	"	750	30	74	1545	72			"
4.	"	"	600	20	86	2169	72			"
5.										

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	7.469	269.27	763.2	.9750	1.225	1.069	2.568
2	"	239.25	"	.9795	"	1.068	2.290
3	"	151.31	"	.9868	"	"	1.459
4	"	110.74	613.2	.9759	"	1.054	1.042
5							

NO.	P_t	Temp. °R	T_t	Z
1	7.68	496	1.37	.952
2	3.05	530	1.41	.714
3	3.44	532	1.41	.710
4	4.30	532	1.41	.732
5	5.82	532	1.41	.819

Gas Liquid Hydrocarbon Ratio: 20,333 Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons: 55.2 Deg.
Specific Gravity Separator Gas: 0.666 XXXXXXXXX
Specific Gravity Flowing Fluid: XXXXX .808
Critical Pressure: 673 P.S.I.A. 668 P.S.I.A.
Critical Temperature: 374 R 420 R

P_c 4101.5 P_c^2 16,822.3

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1	6164.5			
2	2563.4	1511.8	2285.6	14536.7
3	2894.7	1702.2	2897.4	13924.7
4	3597.2	2151.3	4628.0	12194.3
5	4765.6	3009.8	9052.9	7769.4

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.157$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.157$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 2.971$

Absolute Open Flow: 2,971 Mcfd @ 15.025 Angle of Slope θ: 45 Slope, n: 1.000

Remarks: *BHP AMERADA BOMB

Approved By Commission:	Conducted By:	Calculated By:	Checked By:
	C. S. ROBERTSON	C. S. ROBERTSON	

WORK SHEET FOR CALCULATION OF WELLHEAD PRESSURES (P_c or P_w)

Form C-122F
Adopted 9-1-65

FROM KNOWN BOTTOM HOLE PRESSURE (P_f or P_s)

COMPANY SWEPI LEASE ANTELOPE RIDGE WELL NO. 9 DATE 2-6-86

LOCATION: Unit P Section 33 Township 23-S Range 34-E

L 14743 H 14743 L/H 1.000 G 0.808 % CO_2 1.7 % N_2 1.4 % H_2S ____

GH 11912 P_{cr} 668 (TABLE IX & X) T_{cr} 420 (TABLE IX & X)

LINE		1	2	3	4	5	6	7	8
1	T_w(W.H. °R)	496							
2	T_s(B.H. °R)	655							
3	$T=(\frac{T_w + T_s}{2})$	575.5							
4	Z (Est.)	.950	.952						
5	TZ	546.7	547.9						
6	GH/TZ	21.789	21.741						
7	e^S(Table XIV)	2.264	2.259						
8	P_f or ~~P_s~~	6164.5	6169.5						
9	P_f^2 or ~~P_s^2~~	38001.1	38001.1						
10	$P_c^2 = P_f^2/e^S$ or $P_w^2 = P_s^2/e^S$	16784.9	16822.1						
11	P_c or P_w	4096.9	4101.5						
12	$P=(\frac{P_w + P_s}{2})$ or $(\frac{P_c + P_f}{2})$	5130.7	5133						
13	$P_r = (P/P_{cr})$	7.68	7.68						
14	$T_r = (T/T_{cr})$	1.37	1.37						
15	Z (Table XI)	.952	.952						

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WORK SHEET FOR CALCULATION OF WELLHEAD PRESSURES (P_c or P_w)

Form C-122F
Adopted 9-1-65

FROM KNOWN BOTTOM HOLE PRESSURE (P_f or P_s)

COMPANY SWEPI LEASE ANTELOPE RIDGE WELL NO. 9 DATE 2-6-86

LOCATION: Unit P Section 33 Township 23-S Range 34-E

L 14773 H 14773 L/H _____ G 0.808 % CO_2 1.7 % N_2 1.4 % H_2S _____

GH 11912 P_{cr} 668 (TABLE IX & X) T_{cr} 420 (TABLE IX & X)

LINE		1 (1)	2	3	4 (2)	5	6 (3)	7	8
1	T_w(W.H. °R)	530			532		532		
2	T_s(B.H. °R)	655			655		665		
3	$T=(\frac{T_w + T_s}{2})$	592.5			593.5		593.5		
4	Z (Est.)	.910	.710	.714	.720	.710	.700	.731	.732
5	TZ	539.2	420.7	423.1	427.1	420.7	415.5	433.9	434.4
6	GH/TZ	22.092	28.314	28.154	27.890	28.315	28.669	27.453	27.422
7	e^S(Table XIV)	2.313	2.892	2.875	2.846	2.892	2930	2.801	2.796
8	P_f or P_s	25634	25634	1563.4	2894.7	2894.7	35972	3597.2	3597.2
9	P_f^2 or P_s^2	6571.0	6571.0	6571.0	8379.3	8379.3	12939.9	12939.9	12939.9
10	$P_c^2 = P_f^2/e^S$ or $P_w^2 = P_s^2/e^S$	2840.9	2272.1	2285.6	2944.3	2897.4	4416.4	4617.7	4628.0
11	P_c or P_w	1686	1507.3	(1511.8)	1715.9	(1702.2)	2101.5	2149.3	(2151.3)
12	$P=(\frac{P_w + P_s}{2})$ or $(\frac{P_c + P_f}{2})$	2124.2	2035.4	2037.6	2305.3	2298.5	2847.4	2873.3	2874.3
13	$P_r = (P/P_{cr})$	3.18	3.05	3.05	3.45	3.44	4.27	4.30	4.30
14	$T_r = (T/T_{cr})$	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41
15	Z (Table XI)	.710	.714	.714	.710	.710	.731	.732	.732

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WORK SHEET FOR CALCULATION OF WELLHEAD PRESSURES (P_c or P_w)

Form C-122F
Adopted 9-1-65

FROM KNOWN BOTTOM HOLE PRESSURE (P_f or P_s)

COMPANY SWEST LEASE ANTELOPE RIDGE WELL NO. 9 DATE 3-6-86

LOCATION: Unit P Section 33 Township 23-S Range 34-E

L 14743 H 14743 L/H 1.000 G 0.808 % CO_2 1.7 % N_2 1.4 % H_2S ____

GH 11912 P_{cr} 668 (TABLE IX & X) T_{cr} 420 (TABLE IX & X)

LINE		1 & 4	2	3	4	5	6	7	8
1	T_w(W.H. °R)	532							
2	T_s(B.H. °R)	665							
3	$T=(\frac{T_w + T_s}{2})$	5935							
4	Z (Est.)	.820	.819						
5	TZ	496.7	486.1						
6	GH/TZ	24.475	24.505						
7	e^S(Table XIV)	2.504	2.507						
8	P_f or P_s	476.4	476.6						
9	P_f^2 or P_s^2	22710.9	22710.9						
10	$P_c^2 = P_f^2/e^S$ or $P_w^2 = P_s^2/e^S$	9070.0	9059.0						
11	P_c or P_w	3011.6	3009.8						
12	$P=(\frac{P_w + P_s}{2})$ or $(\frac{P_c + P_f}{2})$	3888.5	3887.7						
13	$P_r = (P/P_{cr})$	5.82	5.82						
14	$T_r = (T/T_{cr})$	1.41	1.41						
15	Z (Table XI)	.819	.819						

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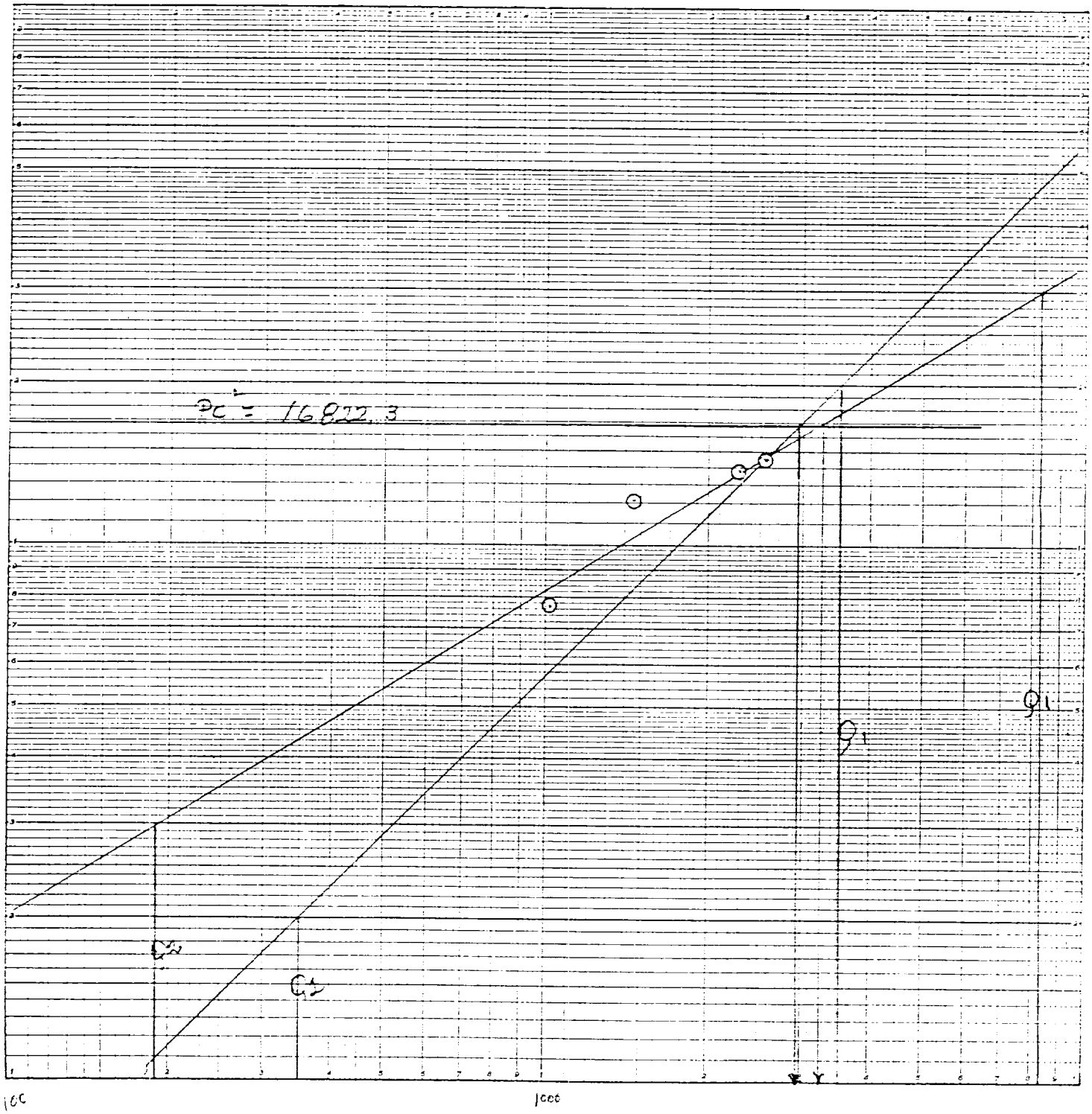
GAS WELL
BACK PRESSURE CURVE

POOL ANTELOPE RIDGE
County LEA XXX DEVONIAN
Operator SHELL WESTERN E&P INC.
Lease ANTELOPE RIDGE Well No. 9
Volume 2971 MCF/24 hr.
Date 2-06-86



#1 q_2 8150 = 3.911158
q_1 190 = 2.278754
1.632047

#2 q_2 3500 = 3.544068
q_1 350 = 2.544068
1.0000