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See Rule 401 & Rule 1122

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-122
Revised 4-1-91

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator Great Western Drilling Company						Lease or Unit Name Hay Hollow "25" State Com.					
Type Test ☒ Initial ☐ Annual ☐ Special						Test Date 8-26-96		Well No. 1			
Completion Date		Total Depth 12989		Plug Back TD 11695		Unit Ltr. - Sec. - TWP - Rge. 25-25-27					
Csg. Size 7 1/2"		Wt. 23&26		Set At 10420		Perforations: From: 11065 To: 11069		County Eddy			
Tbg. Size 2-7/8"		Wt. 6.5		Set At 10879		Perforations: From:		Pool Wolfcamp			
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single						Packer Set At 10889		Location Hay Hollow			
Producing Thru Tbg		Reservoir Temp. °F 182.9@10889		Mean Annual Temp. °F 60°		Baro. Press - P _a 13.2		Connection Vented			
L 10889	H 10889	Gg 616	% CO ₂ .29	% N ₂ .42	% H ₂ S	Prover		Meter Run 4.026		Taps Flg.	

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							3141		Pkr		24 Hrs.
1.	4	X	1.500	240	4.00	82	2470		"		1 Hr.
2.	4	X	1.500	240	9.00	84	1882		"		1 Hr.
3.	4	X	1.500	250	11.00	90	1240		"		1 Hr.
4.	4	X	1.500	251	24.00	77	885		"		1 Hr.
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, F _{pv}	Rate of Flow Q, Mcfd
1.	10.84	31.82	253.2	.9795	1.274	1.020	439
2.	10.84	47.74	253.2	.9777	1.274	1.020	658
3.	10.84	53.81	263.2	.9723	1.274	1.020	737
4.	10.84	79.63	264.2	.9840	1.274	1.022	1,106
5.							

NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	Mcf/bbl.
1.	.37	542	1.49	.961	122.5	
2.	.37	544	1.50	.962	49.9 @ 60	
3.	.39	550	1.51	.961	Specific Gravity Separator Gas .616	XXXXXXXXXX
4.	.39	537	1.48	.958	Specific Gravity Flowing Fluid XXXXX	GMIX=.641
5.					Critical Pressure 671 P.S.I.A.	670 P.S.I.A.
					Critical Temperature 362 R	372 R

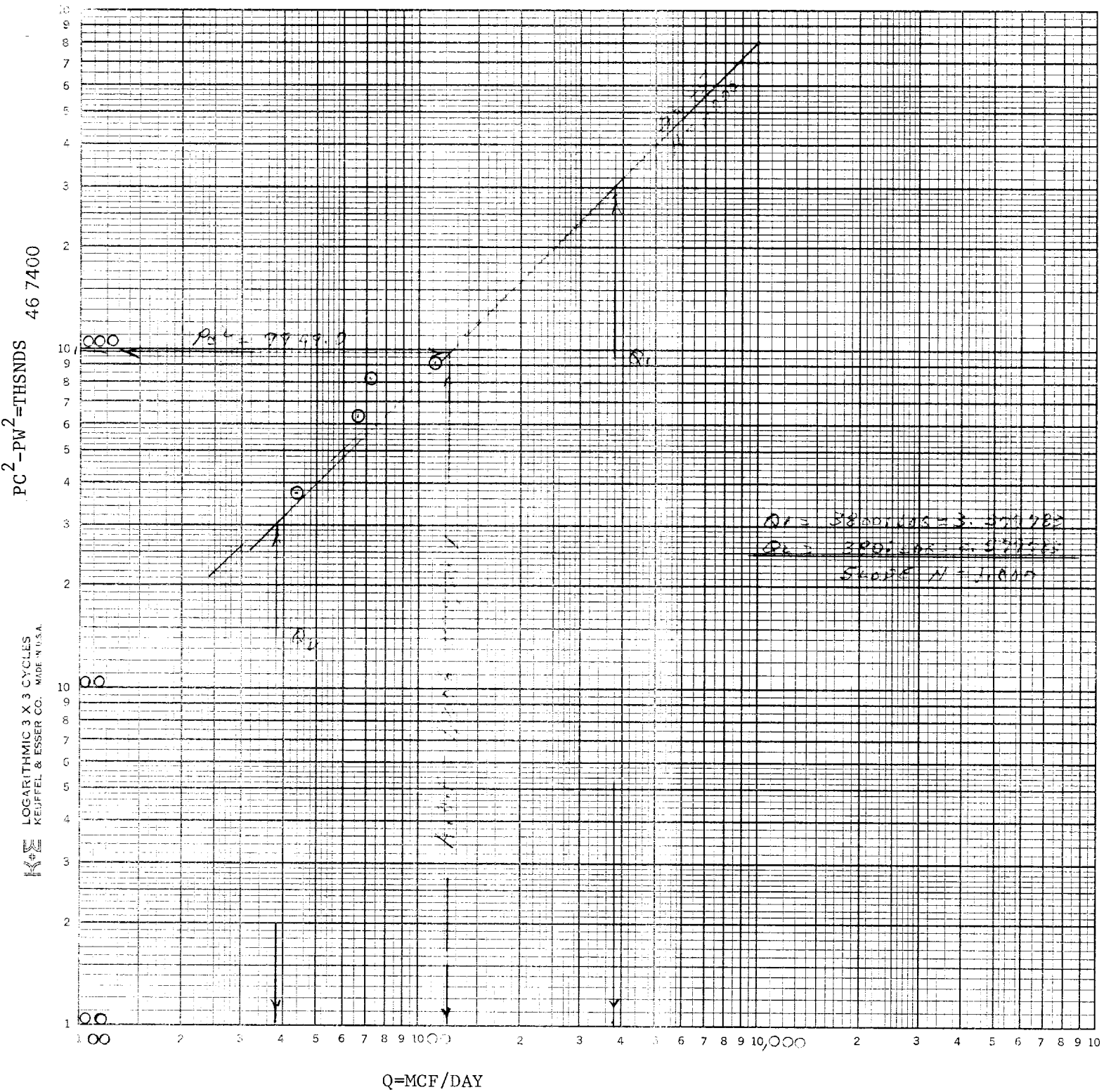
P _c 3154.2 P _c ² 9949.0				1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.090$		(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.090$	
NO.	P _t ²	P _w	P _w ²	P _c ² - P _w ²			
1.		2483.6	6168.4	3780.6			
2.		1896.4	3596.5	6352.5			
3.		1255.7	1576.7	8372.3			
4.		906.3	821.4	9127.6			
5.							

Absolute Open Flow 1,206 Mcfd @ 15.025		Angle of Slope θ 45		Slope, n 1.000	
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Remarks: **PRODUCED 1.00 BBL 49.9 API GRAVITY CONDENSATE & 4.00 BBLS H2O**

Approved By Division	Conducted By: WEST-TEST, INC.	Calculated By: B.M.	Checked By: B.M.
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GREAT WESTERN DRILLING COMPANY
 HAY HOLLOW "25" STATE COM. NO.1
 G - 25-25-27
 EDDY COUNTY, NEW MEXICO
 AUGUST 26, 1996



COMPANY : G. WESTERN DRL. CO LEASE : HOLLOW 25 COM WELL NO. : 1 Pc = 3154.2 Pc2 = 9949.0
 UNIT : G SECTION : 25 TOWNSHIP : 25
 L : 10889 H : 10889 L/H : 1 G/GMIX : 0.641 Pt2 = 6166.3 Pw = 2483.6
 %CO2 : 0.29 %N2 : 0.42 H2S : DATE : 8 26 96 3591.8 1896.4
 d : 2.441 Fr : 0.010763 GH : 6979.8 RANGE : 27 1570.5 1255.7
 806.8 906.3

VOL 1 : 439 PSIA 1 : 2483.2 RESV.TEMP 182.9 Pc2-Pw2= 3780.6 Pw2 = 6168.4
 VOL 2 : 658 PSIA 2 : 1895.2 6352.5 3596.5
 VOL 3 : 737 PSIA 3 : 1253.2 SHUT-IN PR= 3154.2 8372.3 1576.7
 VOL 4 : 1106 PSIA 4 : 898.2 9127.6 821.4

PCR : 670 n = 1.000
 TCR : 372

Pc2/(Pc2-Pw2) = 2.632
 1.566
 1.188
 1.090

LINE	RATE 1		RATE 2		RATE 3		RATE 4	
	'1ST	'2ND	'1ST	'2ND	'1ST	'2ND	'1ST	'2ND
1 QM	0.439	0.439	0.658	0.658	0.737	0.737	1.106	1.106
2 TW	534	534	534	534	534	534	534	534
3 Ts	642.9	642.9	642.9	642.9	642.9	642.9	642.9	642.9
4 T	588.4	588.4	588.4	588.4	588.4	588.4	588.4	588.4
PR (est)	3.71		2.83		1.87		1.34	
5 Z(est)	0.795	0.804	0.802	0.796	0.840	0.826	0.873	0.860
6 TZ	468.0	473.0	472.2	468.1	494.6	486.1	513.8	506.0
7 GH/TZ	14.915	14.756	14.782	14.911	14.113	14.360	13.586	13.795
8 eS	1.749	1.739	1.741	1.749	1.698	1.713	1.664	1.678
9 l-e-S	0.428	0.425	0.426	0.428	0.411	0.416	0.399	0.404
10 Pt	2483.2	2483.2	1895.2	1895.2	1253.2	1253.2	898.2	898.2
11 Pt2 /1000	6166.3	6166.3	3591.8	3591.8	1570.5	1570.5	806.8	806.8
12 Fr	0.010763	0.010763	0.010763	0.010763	0.010763	0.010763	0.010763	0.0107631
13 Fc=FrTZ	5.037	5.091	5.082	5.038	5.323	5.231	5.530	5.446
14 FcQm	2.21	2.24	3.34	3.32	3.92	3.86	6.12	6.02
15 L/H(FcQm)	4.9	5.0	11.2	11.0	15.4	14.9	37.4	36.3
16 Fw	2.094649	2.122905	4.758745	4.707433	6.324979	6.189689	14.93048	14.651759
17 Pw2	6168.4	6168.4	3596.5	3596.5	1576.8	1576.7	821.7	821.4
18 Ps2	10791.2	10727.3	6260.7	6290.9	2676.9	2701.6	1367.6	1377.9
19 Ps	3285.0	3275.2	2502.1	2508.2	1636.1	1643.7	1169.5	1173.9
20 P	2884.1	2879.2	2198.7	2201.7	1444.7	1448.4	1033.8	1036.0
21 Pr	4.30	4.30	3.28	3.29	2.16	2.16	1.54	1.55
22 Tr	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58
23 Z	0.804	0.804	0.796	0.795	0.826	0.826	0.860	0.860

[Pc2/Pc2-Pw2]n = 2.632
 1.566
 1.188
 1.090

AOF= Q 1.155
 1.031
 0.876
 1.206

FORM C122-D

SEP 10 1996

NEW MEXICO G.O.R./G. MIX

NO. OF BBLS PRODUCED = 1.0

API GRAVITY @ 60 DEG. = 49.9

.....
SPECIFIC GRAVITY OF GAS = 0.6160

XX
TOTAL GAS PRODUCED = 122

G.O.R. = 122.500

G.MIX = 0.641

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22 Tr	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58
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[Pc2/Pc2-Pw2]n = 1.000

AOF= Q 0.439
 0.658
 0.737
 1.106

FORM C122-D

RECEIVED
SEP 10 1986

**Laboratory Services, Inc.**

1331 Tasker Drive
Hobbs, New Mexico 88240
Telephone: (505) 397-3713

FOR: West Test, Inc.
Attention: Mr. Buzz Thomason
412 N. Dal Paso
Hobbs, New Mexico 88240

SAMPLE Hay Hollow "25"
IDENTIFICATION: Comm. State #1
COMPANY: Great Western Drilling
LEASE:
PLANT:

SAMPLE DATA: DATE SAMPLED: 8/26/96
ANALYSIS DATE: 8/27/96
PRESSURE - PSIG
SAMPLE TEMP. °F
ATMOS. TEMP. °F

GAS (XX) LIQUID ()
SAMPLED BY: West Test
ANALYSIS BY: Vickie Walker

REMARKS:

COMPONENT ANALYSIS

COMPONENT	MOL PERCENT	GPM
Hydrogen Sulfide (H2S)		
Nitrogen (N2)	0.42	
Carbon Dioxide (CO2)	0.29	
Methane (C1)	91.06	
Ethane (C2)	5.96	1.589
Propane (C3)	1.29	0.354
I-Butane (IC4)	0.30	0.099
N-Butane (NC4)	0.32	0.102
I-Pentane (IC5)	0.17	0.061
N-Pentane (NC5)	0.09	0.033
Hexane Plus (C6+)	0.10	0.042
	100.00	2.280
BTU/CU.FT. - DRY	1093	MOLECULAR WT. 17.8483
AT 14.650 DRY	1090	
AT 14.650 WET	1071	
AT 14.73 DRY	1096	
AT 14.73 WET	1077	
SPECIFIC GRAVITY -		
CALCULATED	0.616	
MEASURED		

