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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

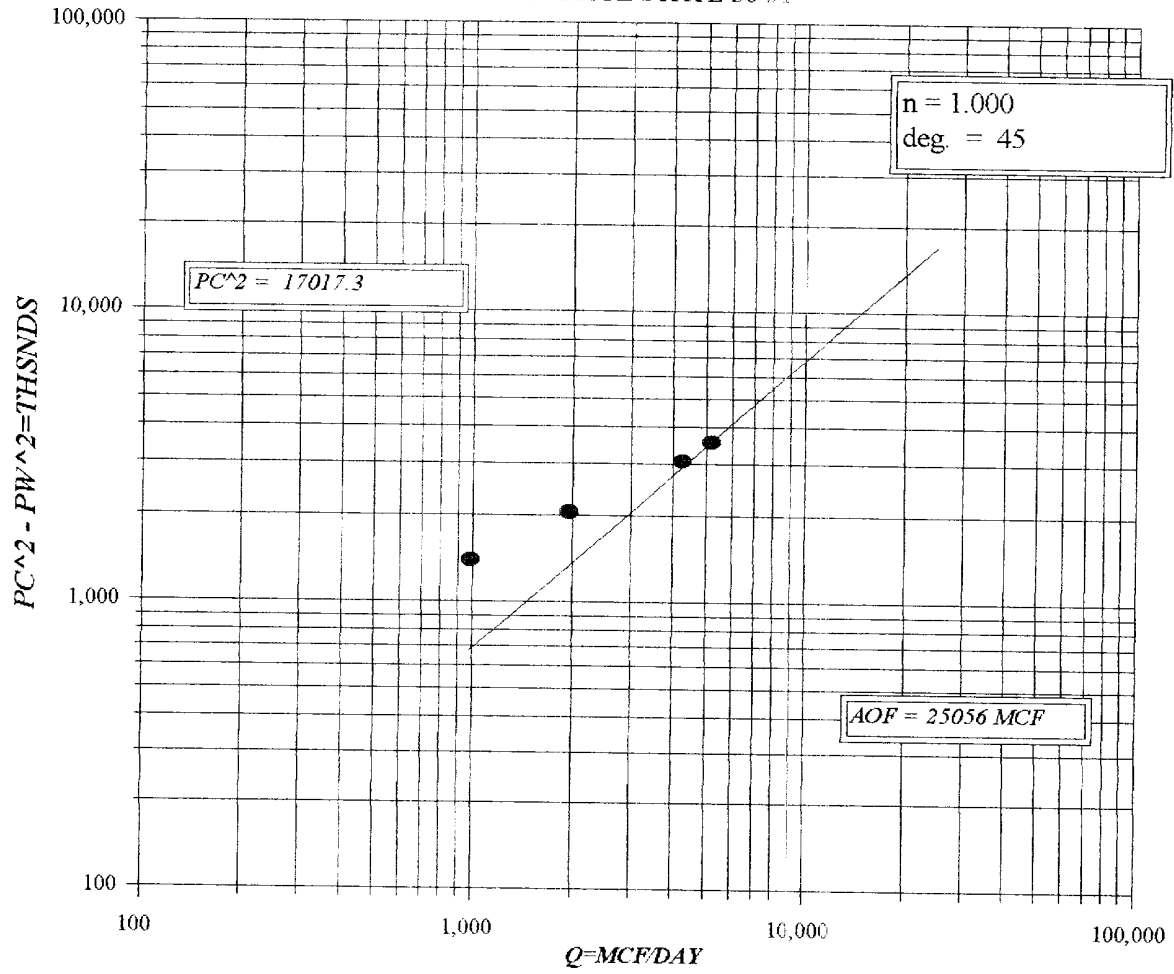
OIL CONSERVATION DIVISION
2040 Pacheco St.
Santa Fe, NM 87505

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator <u>PHILLIPS PETROLEUM CO.</u>					Lease or Unit Name <u>HAWKEYE STATE (30)</u>				
Type Test ☒ Initial ☐ Annual ☐ Special					Test Date <u>3-13-00</u>		Well No. <u>1</u>		
Completion Date <u>2-25-00</u>		Total Depth <u>13518</u>		Plug Back TD <u>13492</u>		Elevation		Unit Ltr. - Sec. - TWP - Rge. <u>30 17 34</u>	
Csg. Size <u>5 1/2</u>	Wt. <u>17 #</u>	d	Set At	Perforations: From: <u>13452</u> To: <u>13470</u>			County <u>LEA</u>		
Tbg. Size <u>2 7/8</u>	Wt. <u>6.5</u>	d <u>2.441</u>	Set At	Perforations: From: To:			Pool		
Type Well - Single - Bradenhead - G.G. or G.O. Multiple <u>SINGLE</u>				Packer Set At <u>13344</u>		Formation <u>MORROW</u>			
Producing Thru <u>784</u>		Reservoir Temp. °F <u>187.6 @ 15452</u>		Mean Annual Temp. °F <u>66</u>		Baro. Press - P _a <u>13.2</u>		Connection	
L <u>13452</u>	H <u>13452</u>	Gg <u>733</u>	% CO ₂ <u>1.712</u>	% N ₂ <u>1.542</u>	% H ₂ S	Prover	Meter Run <u>41"</u>	Taps <u>FL6</u>	
FLOW DATA					TUBING DATA		CASING DATA		Duration of Flow
NO.	Prover Line Size	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						<u>4112</u>		<u>PKR</u>	
1.	<u>4 X 1.500</u>		<u>640</u>	<u>9.00</u>	<u>108</u>	<u>3937</u>		<u>"</u>	
2.	<u>4 X 1.500</u>		<u>640</u>	<u>34.80</u>	<u>100</u>	<u>3845</u>		<u>"</u>	
3.	<u>4 X 2.250</u>		<u>601</u>	<u>29.20</u>	<u>75</u>	<u>3672</u>		<u>"</u>	
4.	<u>4 X 2.250</u>		<u>564</u>	<u>46.20</u>	<u>70</u>	<u>3578</u>		<u>"</u>	
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.	<u>10.84</u>	<u>76.67</u>	<u>653.2</u>	<u>1.9568</u>	<u>1.168</u>	<u>1.066</u>	<u>990</u>		
2.	<u>10.84</u>	<u>150.77</u>	<u>653.2</u>	<u>1.9636</u>	<u>1.168</u>	<u>1.067</u>	<u>1963</u>		
3.	<u>25.64</u>	<u>133.42</u>	<u>614.2</u>	<u>1.9859</u>	<u>1.168</u>	<u>1.083</u>	<u>4,282</u>		
4.	<u>25.64</u>	<u>163.30</u>	<u>577.2</u>	<u>1.9905</u>	<u>1.168</u>	<u>1.078</u>	<u>5,222</u>		
5.									
NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio <u>6.473</u> Mcf/bbl.				
1.	<u>1.97</u>	<u>568</u>	<u>1.41</u>	<u>1.886</u>	A.P.I. Gravity of Liquid Hydrocarbons <u>49.0 @ 60°</u> Deg.				
2.	<u>1.97</u>	<u>560</u>	<u>1.39</u>	<u>1.878</u>	Specific Gravity Separator Gas <u>1.735</u> XXXXXXXXXX				
3.	<u>1.91</u>	<u>535</u>	<u>1.33</u>	<u>1.853</u>	Specific Gravity Flowing Fluid XXXXX <u>G.MIX = 1.162</u>				
4.	<u>1.86</u>	<u>530</u>	<u>1.32</u>	<u>1.860</u>	Critical Pressure <u>668</u> P.S.I.A. <u>649</u> P.S.I.A.				
5.					Critical Temperature <u>40.1</u> R <u>544</u> R				
P _c <u>4125.2</u> P _c ² <u>17017.3</u>									
NO.	P _i ²	P _w	P _w ²	P _c ² - P _w ²	1) $\frac{P_c^2}{P_c^2 - P_w^2} = \frac{17017.3}{17017.3 - 3952.9} = 4.798$				
1.		<u>3952.9</u>	<u>15625.1</u>	<u>1392.2</u>	(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = \frac{4.798}{1} = 4.798$				
2.		<u>3868.8</u>	<u>14967.9</u>	<u>2049.4</u>					
3.		<u>3737.4</u>	<u>13968.4</u>	<u>3048.8</u>	AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = \frac{25.056}{1} = 25.056$				
4.		<u>3670.2</u>	<u>13470.6</u>	<u>3546.7</u>					
5.									
Absolute Open Flow <u>25,056</u> Mcfd @ 15.025					Angle of Slope θ <u>45°</u>		Slope, n <u>1.000</u>		
Remarks: <u>WELL PRODUCED 87.0 BBS OF 49.0 API GR. @ 60°</u>									
Approved By Division <u>CME</u>			Conducted By: <u>METERING & TESTING</u>		Calculated By: <u>BM</u>		Checked By: <u>BM</u>		

PHILLIPS PETROLEUM COMPANY

HAWKEYE STATE 30 #1



1/2

RECEIVED

Hobbs

001

1/2

UNIT :
L : 13452
%CO2 : 0.712
d : 2.441

SECTION :
H : 13452
%N2 : 0.542
Fr : 0.010763

30
L/H : 1
H2S :
GH : 15631.2

WELL NO. :
TOWNSHIP :
DATE : 3 13 00
RANGE : 34

PC = 4125.2
PC2 = 17017.3

Pt2 = *****

Pw = 3952.9
3868.8
3737.4
3670.2

VOL 1 : 990
VOL 2 : 1963
VOL 3 : 4282
VOL 4 : 5222

PSIA 1 : 3950.2
PSIA 2 : 3858.2
PSIA 3 : 3685.2
PSIA 4 : 3591.2

RESV.TEMP 187.6
SHUT-IN PR= 4125.2

PCR : 649
TCR : 544

Pc2-Pw2= 1392.2
2049.4
3048.8
3546.7

Pw2 = 15625.1
14967.9
13968.4
13470.6

n = 1.000 ✓

Pc2/(Pc2-Pw2) = 12.223
8.304
5.582
4.798 ✓

LINE	RATE 1		RATE 2		RATE 3		RATE 4		
	1ST	2ND	1ST	2ND	1ST	2ND	1ST	2ND	
1 QM	0.990	0.990	1.963	1.963	4.282	4.282	5.222	5.222	
2 TW	534	534	534	534	534	534	534	534	
3 Ts	647.6	647.6	647.6	647.6	647.6	647.6	647.6	647.6	[Pc2/Pc2-Pw2]n = 12.223
4 T	590.8	590.8	590.8	590.8	590.8	590.8	590.8	590.8	8.304
PR (est)	6.09		5.94		5.68		5.53		5.582
5 Z(est)	0.766	0.887	0.754	0.884	0.731	0.879	0.718	0.876	4.798 ✓
6 TZ	452.4	524.3	445.7	522.6	432.1	519.5	424.3	517.8	
7 GH/TZ	34.550	29.814	35.070	29.913	36.172	30.090	36.844	30.190	AOF= Q 12.101
8 eS	3.653	3.059	3.725	3.070	3.882	3.091	3.981	3.102	16.300
9 l-e-S	0.726	0.673	0.732	0.674	0.742	0.676	0.749	0.678	23.900
10 Pt	3950.2	3950.2	3858.2	3858.2	3685.2	3685.2	3591.2	3591.2	25.056 ✓
11 Pt2 /1000	15604.1	15604.1	14885.7	14885.7	13580.7	13580.7	12896.7	12896.7	
12 Fr	0.010763	0.010763	0.010763	0.010763	0.010763	0.010763	0.010763	0.010763	
13 Fc=FrTZ	4.869	5.643	4.797	5.624	4.651	5.591	4.566	5.573	
14 FcQm	4.82	5.59	9.42	11.04	19.92	23.94	23.85	29.10	
15 L/H(FcQm)	23.2	31.2	88.7	121.9	396.6	573.2	568.6	846.9	
16 Fw	16.87855	21.00632	64.87461	82.19272	294.4817	337.7389	425.7890	573.88185	
17 Pw2	15621.0	15625.1	14950.6	14967.9	13875.2	13968.4	13322.5	13470.6	
18 Ps2	57067.9	47794.6	55694.9	45953.7	53869.5	43171.4	53042.6	41788.6	
19 Ps	7554.3	6913.4	7462.9	6778.9	7339.6	6570.5	7283.0	6464.4	
20 P	5752.3	5431.8	5660.5	5318.6	5512.4	5127.8	5437.1	5027.8	
21 Pr	8.86	8.37	8.72	8.20	8.49	7.90	8.38	7.75	
22 Tr	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	
23 Z	0.887	0.876	0.884	0.871	0.879	0.862	0.876	0.857	FORM C122-D

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

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NO. OF BBLS PRODUCED = 87.0

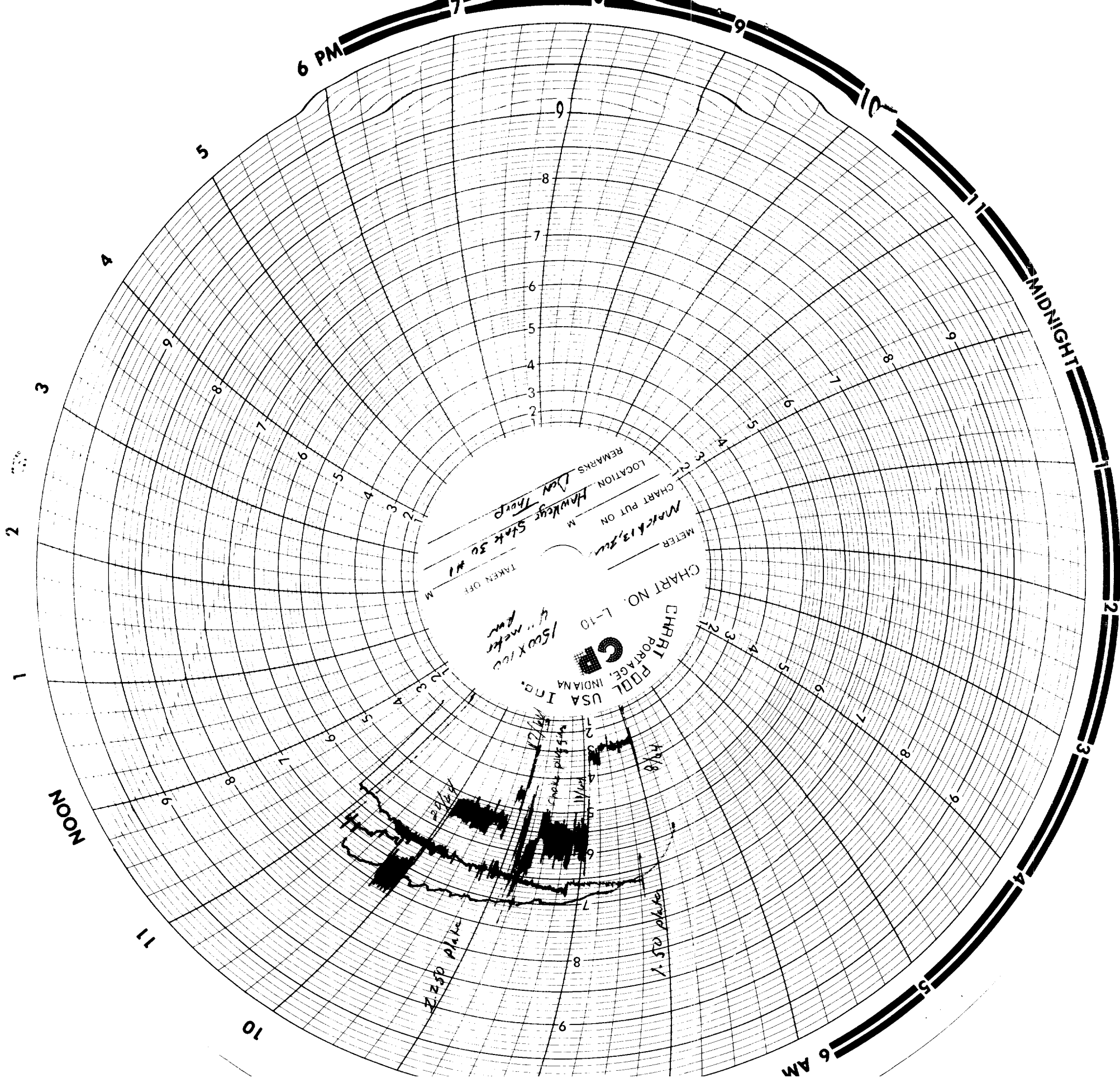
API GRAVITY @ 60 DEG. = 49.0

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SPECIFIC GRAVITY OF GAS = 0.7330

XX
TOTAL GAS PRODUCED = 563

G.O.R. = 6.473

G.MIX = 1.162



4
11/10/2005
Received
Hubs
OP