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See Rule 401 & Rule 1122

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505

CISF

Form C-122
Revised October, 1999

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator MURCHISON OIL & GAS, INC.				Lease or Unit Name HIGH MESA STATE COM.			
Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 10/5/01		Well No. 1	
Completion Date 9/28/01		Total Depth 10440		Plug Back TD 10265		Elevation 3580 GL	
Csg Size 5 1/2		Wt 17#		d 4 892		Set At 10440	
Tbg Size 2 3/8		Wt 4 7		d 1 995		Set At 9538	
Perforations: From: 9668 To: 9674				County EDDY			
Type Well-Single-Bradenhead-G.G. or G.O. Multiple SINGLE				Packer Set At 9538		Formation ATOKA	
Producing Thru Tbg Size		Reservoir Temp °F 169.4 @ 9538		Mean Annual Temp. °F 60		Baro. Press -P _a 13.2	
Connection AGAVE							
I. 9538		H 9538		Gg 0.713		%CO ₂ 0.392	
				%N ₂ 2.387		%H ₂ S N/A	
Prover N/A		Meter Run 2.068		Taps FLG			
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
1	2 X 0.750					2687	
2	2 X 0.750					2435	
3	2 X 0.750					2188	
4	2 X 0.750					1887	
5	2 X 0.750					1476	
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							79
2							168
3	MEASURED	BY		TOTAL	FLOW	METER	283
4							464
5							
No	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio 20.688 Mcf bbl.		
1					A.P. I. Gravity of Liquid Hydrocarbons 58 @ 60 Deg.		
2					Specific Gravity Separator Gas 0.713 XXXXXXXX		
3	N/A	N/A	N/A	N/A	Specific Gravity Flowing Fluid XXXXX Gmix= .846		
4					Critical Pressure P.S.I.A. * 661 P.S.I.A.		
5					Critical Temperature R. * 432 R		
P _c 2700.2 P _{c2} 7291.1							
No	P _t ²	P _w	P _w ²	P _c ² - P _w ²	(1) $P_c^2 = \frac{1.439}{P_c^2 - P_w^2}$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.439$		
1		2448.2	5993.9	1297.2			
2		2201.4	4846	2445			
3		1900.7	3612.8	3678.3			
4		1491	2223.2	5067.9			
5					79825 $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 0.666$		
Absolute Open Flow 666		Mcf/d @ 15.025		Angle of Slope (°) 45		Slope n: 1	
Remarks WELL PRODUCED 2.0 BBLs CONDENSATE DURING TEST * = CORR. TO 2.387 % N2							
Approved By Division		Conducted By: JARREL SERVICES, INC.		Calculated By: BM		Checked By: BM	

COMPANY : MURCHISO O & G , IN LEASE :H 'SA ST. COM. WELL NO. : 1 Pc = 2700.2 Pc2 = 7291.1 *
UNIT : P SECTION : 2 TOWNSHIP : 17 *
L : 9538 H : 9538 L/H : 1 G/GMIX : 0.846 Pt2 = 5993.7 Pw = 2448.2 *
%CO2 : 0.392 %N2 : 2.387 H2S : DATE :10-5-01 4845.3 2201.4 *
d : 1.995 Fr :0.018231 GH : 8069.1 RANGE : 38 3610.8 1900.7 *
2217.7 1491.0 *

VOL 1 : 79 PSIA 1 : 2448.2 RESV.TEMP 169.4 Pc2-Pw2= 1297.2 Pw2 = 5993.9 *
VOL 2 : 168 PSIA 2 : 2201.2 2445.0 4846.0 *
VOL 3 : 283 PSIA 3 : 1900.2 SHUT-IN PR= 2700.2 3678.3 3612.8 *
VOL 4 : 463 PSIA 4 : 1489.2 5067.9 2223.2 *

PCR : 664
TCR : 438

n = 1.000 ✓

Pc2/(Pc2-Pw2) = 5.621
2.982
1.982
1.439 ✓

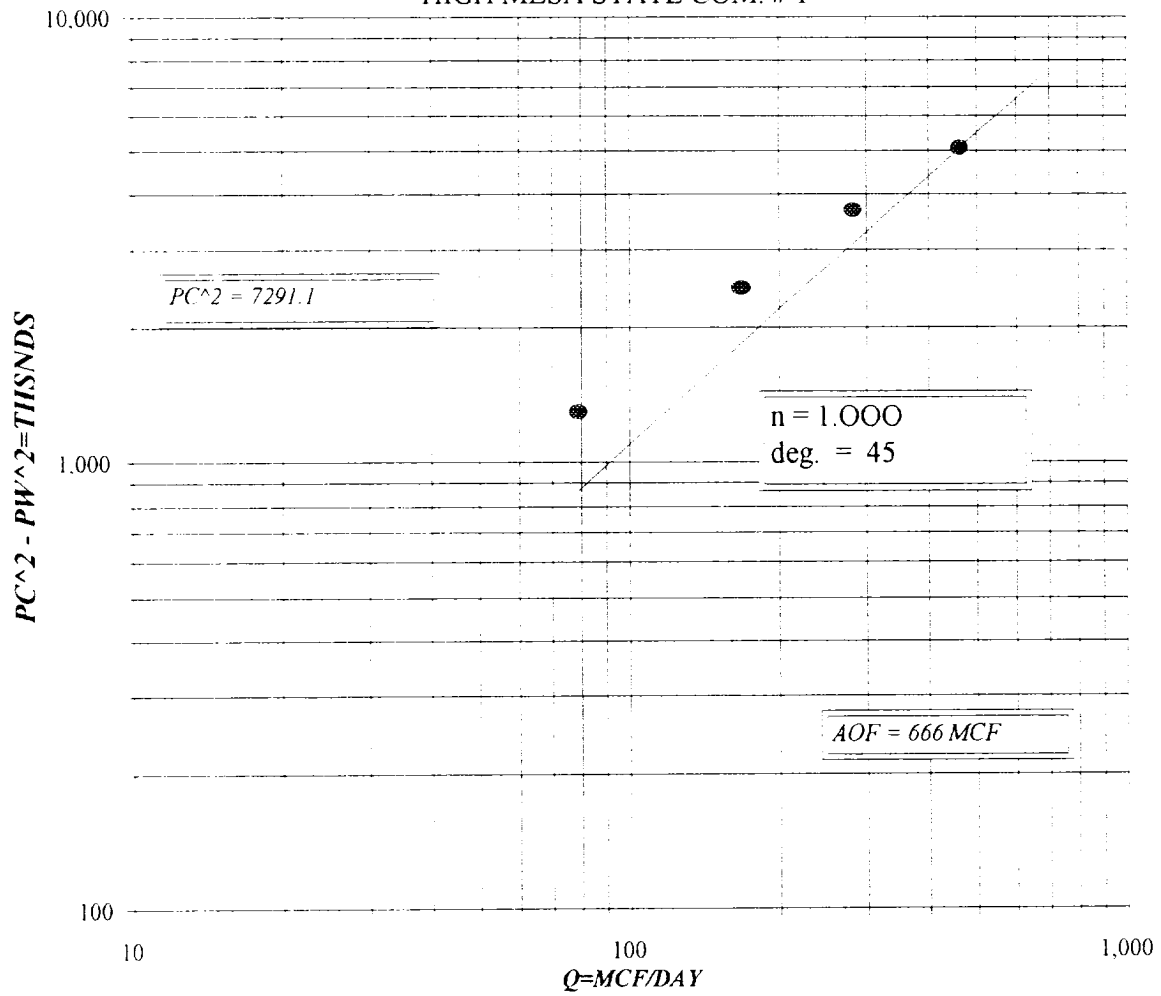
LINE		RATE 1		RATE 2		RATE 3		RATE 4	
		1ST	2ND	1ST	2ND	1ST	2ND	1ST	2ND
1	QM	0.079	0.079	0.168	0.168	0.283	0.283	0.463	0.463
2	TW	534	534	534	534	534	534	534	534
3	Ts	629.4	629.4	629.4	629.4	629.4	629.4	629.4	629.4
4	T	581.7	581.7	581.7	581.7	581.7	581.7	581.7	581.7
	PR (est)	3.69		3.32		2.86		2.24	
5	Z(est)	0.645	0.692	0.635	0.666	0.636	0.642	0.667	0.637
6	TZ	375.3	402.6	369.6	387.5	369.7	373.3	388.0	370.8
7	GH/TZ	21.501	20.041	21.834	20.826	21.826	21.615	20.797	21.761
8	eS	2.240	2.120	2.268	2.184	2.267	2.249	2.181	2.262
9	1-e-S	0.553	0.528	0.559	0.542	0.559	0.555	0.542	0.558
10	Pt	2448.2	2448.2	2201.2	2201.2	1900.2	1900.2	1489.2	1489.2
11	Pt2 /1000	5993.7	5993.7	4845.3	4845.3	3610.8	3610.8	2217.7	2217.7
12	Fr	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231
13	Fc=FrTZ	6.842	7.341	6.738	7.064	6.740	6.806	7.074	6.760
14	FcQM	0.54	0.58	1.13	1.19	1.91	1.93	3.28	3.13
15	L/H(FcQM)	0.3	0.3	1.3	1.4	3.6	3.7	10.7	9.8
16	Pw	0.161702	0.177679	0.716248	0.763358	2.033493	2.060388	5.808559	5.4647824
17	Pw2	5993.8	5993.9	4846.0	4846.0	3612.8	3612.8	2223.5	2223.2
18	Ps2	13423.9	12708.4	10989.5	10581.7	8190.3	8125.8	4850.1	5027.8
19	Ps	3663.9	3564.9	3315.0	3253.0	2861.9	2850.6	2202.3	2242.3
20	P	3056.0	3006.5	2758.1	2727.1	2381.0	2375.4	1845.7	1865.7
21	Pr	4.60	4.53	4.15	4.11	3.59	3.58	2.78	2.81
22	Tr	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
23	Z	0.692	0.688	0.666	0.664	0.642	0.642	0.637	0.637

[Pc2/Pc2-Pw2]n = 5.621
2.982
1.982
1.439 ✓

AOF= Q 0.444
0.501
0.561
0.666 ✓

FORM C122-D

MURCHISON OIL & GAS, INC.
HIGH MESA STATE COM. # 1



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

NO. OF BBLS PRODUCED = 2.0
API GRAVITY @ 60 DEG. = 58.0

SPECIFIC GRAVITY OF GAS = 0.7130

XX

TOTAL GAS PRODUCED = 41

G.O.R. = 20.688

G.MIX = 0.846



Laboratory Services, Inc.

4016 Fiesta Drive
Hobbs, New Mexico 88240

Telephone: (505) 397-3713

FOR: Jarrel Services Inc.
Attention: Mr. Donnie Dickerson
P. O. Box 1230
Hobbs, New Mexico 88240

SAMPLE:
IDENTIFICATION: High Mesa St. Com. #1
COMPANY: Murchison Oil & Gas
LEASE:
PLANT:

SAMPLE DATA: DATE SAMPLED: 10/5/01
ANALYSIS DATE: 10/8/01
PRESSURE – PSIG
SAMPLE TEMP. °F
ATMOS. TEMP. °F

GAS (XX) LIQUID ()
SAMPLED BY: JSI
ANALYSIS BY: Vickie Biggs

REMARKS:

COMPONENT ANALYSIS

COMPONENT	MOL PERCENT	GPM
Hydrogen Sulfide (H2S)		
Nitrogen (N2)	2.387	
Carbon Dioxide (CO2)	0.392	
Methane (C1)	78.896	
Ethane (C2)	10.232	2.730
Propane (C3)	5.409	1.487
I-Butane (IC4)	0.682	0.223
N-Butane (NC4)	1.348	0.424
I-Pentane (IC5)	0.227	0.083
N-Pentane (NC5)	0.188	0.068
Hexane Plus (C6+)	0.239	0.104
	100.000	5.119
BTU/CU.FT. – DRY	1208	MOLECULAR WT. 20.6585
AT 14.650 DRY	1204	
AT 14.650 WET	1183	
AT 14.73 DRY	1211	
AT 14.73 WET	1190	
SPECIFIC GRAVITY –		
CALCULATED	0.713	
MEASURED		