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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

Form C-122
Revised October, 1999

CISF

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator MURCHISON OIL & GAS, INC.				Lease or Unit Name KODIAK BEAR STATE COM.			
Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 11/25/02		Well No. 1	
Completion Date 11/22/02		Total Depth 10350		Plug Back TD 10280		Elevation 3626 KB	
Unit Ltr - Sec - TWP - Rge N 1 17 28		County EDDY		Pool EMP. MORROW SO			
Csg. Size 5 1/2	Wt. 17	d 4.892	Set At 10350	Perforations: From: 10085 To: 10166			
Tbg. Size 2 7/8	Wt. 6.5	d 2.441	Set At 10005	Perforations: From: OPEN To: ENDED			
Type Well-Single-Bradenhead-G.G. or G.O. Multiple SINGLE				Packer Set At 9987		Formation MORROW	
Producing Thru Tbg. Size		Reservoir Temp. °F 174.1 @ 10005		Mean Annual Temp. °F 60		Baro. Press. -P _a 13.2	
Connection AGAVE ENERGY							
L 10005	H 10005	Gg 0.764	%CO ₂ 2.648	%N ₂ 0.71	%H ₂ S N/A	Prover N/A	Meter Run 4.026
Taps FLG							
FLOW DATA				TUBING DATA		CASING DATA	
No.	Prover Line Size	Orifice x Size	Press p.s.i.g.	Diff. h _w	Temp. °F	Press p.s.i.g.	Temp. °F
SI							
1	4 X	1.250	548	6.9	77	2577	
2	4 X	1.250	543	26.1	74	2268	
3	4 X	1.250	534	67	66	1942	
4	4 X	1.250	555	136.1	75	1566	
5							
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							591
2							1,155
3	MEASURED		BY	TOTAL	FLOW	METER	1,848
4							2,671
5							
No.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio 22.311 Mcf bbl		
1					A.P. I. Gravity of Liquid Hydrocarbons 55.9 @ 60 Deg		
2					Specific Gravity Separator Gas 0.764 XXXXXXXX		
3			N/A		Specific Gravity Flowing Fluid XXXXXX Gmix = 889		
4					Critical Pressure 675 P.S.I.A.	663 P.S.I.A.	
5					Critical Temperature 408 R	451 R	
P _c 2858.2 P _w 8169.3							
No.	P _t ²	P _w	P _w ²	P _c ² - P _w ²	(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.456$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.456$		
1		2590.9	6713	1456.3			
2		2284.2	5217.4	2951.9			
3		1963.4	3854.7	4314.6			
4		1599	2556.9	5612.4			
5							
Absolute Open Flow 3,888 Mcfd @ 15.025				Angle of Slope θ: 45		Slope n: 1	
Remarks: WELL PRODUCED 11.7 BBLS CONDENSATE DURING TEST							
Approved By Division:		Conducted By: JARREL SERVICES INC.		Calculated By: BM		Checked By: BM	

COMPANY : MURCHISO O & G INC. LEASE : K. STATE COM WELL NO. : 1
 UNIT : N SECTION : 1 TOWNSHIP : 17
 L : 10005 H : 10005 L/H : 1 G/GMIX : 0.889
 %CO2 : 2.648 %N2 : 0.71 H2S : DATE : 11-25-02
 d : 2.441 Fr : 0.010763 GH : 8894.4 RANGE : 28

Pc = 2858.2 Pc2 = 8169.3
 Pt2 = 6709.1 Pw = 2590.9
 5203.9 2284.2
 3822.8 1963.4
 2493.9 1599.0

VOL 1 : 591 PSIA 1 : 2590.2 RESV.TEMP 174.1
 VOL 2 : 1155 PSIA 2 : 2281.2
 VOL 3 : 1848 PSIA 3 : 1955.2 SHUT-IN PR= 2858.2
 VOL 4 : 2671 PSIA 4 : 1579.2

PCR : 663
 TCR : 451

Pc2-Pw2= 1456.3 Pw2 = 6713.0
 2951.9 5217.4
 4314.6 3854.7
 5612.4 2556.9

n = 1.000 ✓

Pc2/(Pc2-Pw2) = 5.609
 2.767
 1.893
 1.456 ✓

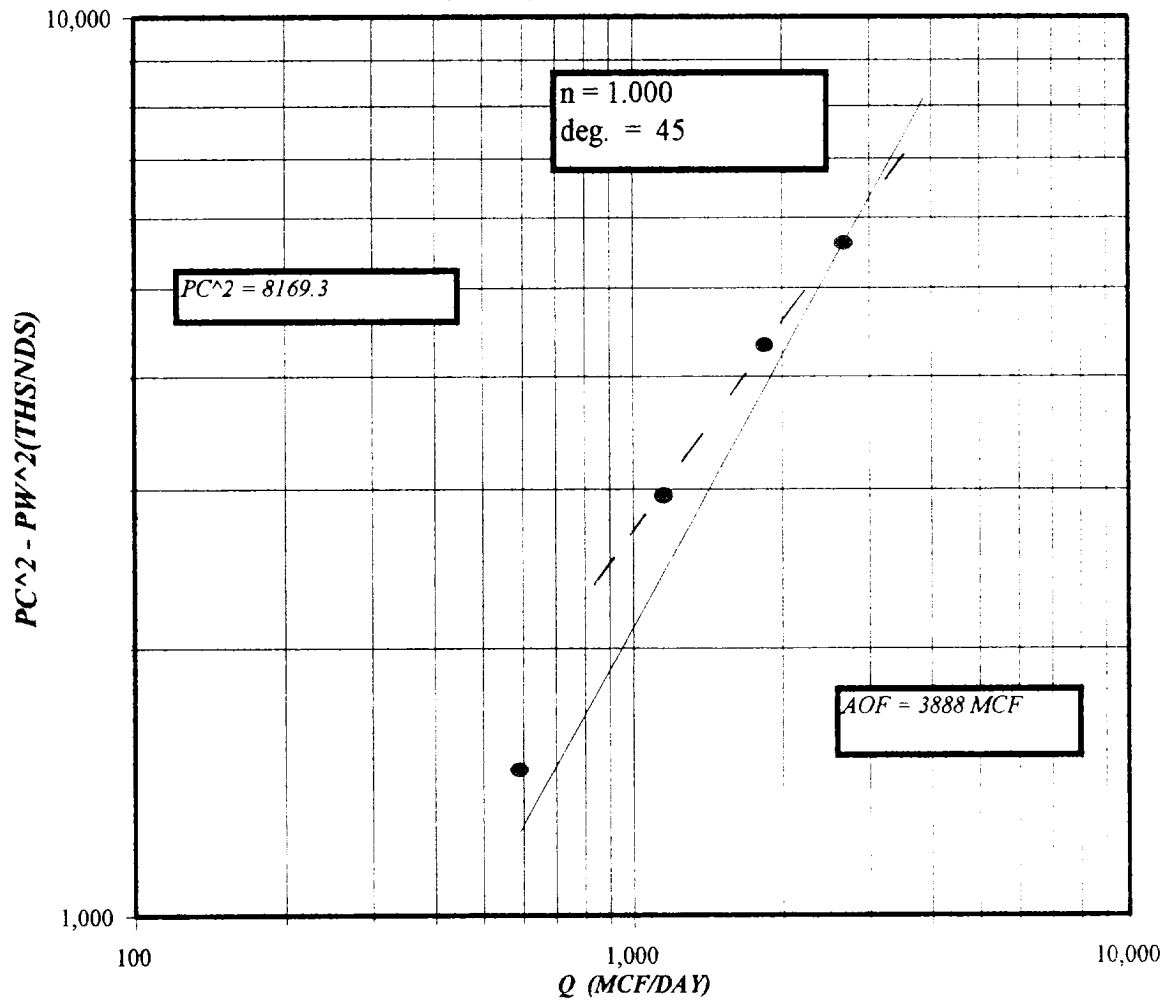
[Pc2/Pc2-Pw2]n = 5.609
 2.767
 1.893
 1.456 ✓

AOF= Q 3.315
 3.196
 3.499
 3.888 ✓

LINE	RATE 1		RATE 2		RATE 3		RATE 4	
	1ST	2ND	1ST	2ND	1ST	2ND	1ST	2ND
1 QM	0.591	0.591	1.155	1.155	1.848	1.848	2.671	2.671
2 TW	534	534	534	534	534	534	534	534
3 Ts	634.1	634.1	634.1	634.1	634.1	634.1	634.1	634.1
4 T	584.1	584.1	584.1	584.1	584.1	584.1	584.1	584.1
PR (est)	3.91		3.44		2.95		2.38	
5 Z(est)	0.633	0.708	0.612	0.668	0.604	0.630	0.623	0.605
6 TZ	369.8	413.3	357.7	389.9	352.8	368.0	363.9	353.2
7 GH/TZ	24.051	21.520	24.866	22.810	25.211	24.167	24.444	25.185
8 eS	2.464	2.241	2.541	2.352	2.574	2.475	2.501	2.571
9 l-e-S	0.594	0.554	0.606	0.575	0.611	0.596	0.600	0.611
0 Pt	2590.2	2590.2	2281.2	2281.2	1955.2	1955.2	1579.2	1579.2
1 Pt2 /1000	6709.1	6709.1	5203.9	5203.9	3822.8	3822.8	2493.9	2493.9
2 Pr	0.010763	0.010763	0.010763	0.010763	0.010763	0.010763	0.010763	0.010763
3 Fc=PrTZ	3.980	4.449	3.850	4.197	3.797	3.961	3.916	3.801
4 FcQm	2.35	2.63	4.45	4.85	7.02	7.32	10.46	10.15
5 L/H(FcQm)	5.5	6.9	19.8	23.5	49.2	53.6	109.4	103.1
6 Fw	3.288286	3.828015	11.99049	13.50861	30.11099	31.93796	65.67238	62.993800
7 Pw2	6712.4	6713.0	5215.9	5217.4	3852.9	3854.7	2559.5	2556.9
8 Ps2	16541.3	15044.7	13252.5	12272.5	9916.9	9540.5	6401.1	6574.6
9 Ps	4067.1	3878.7	3640.4	3503.2	3149.1	3088.8	2530.0	2564.1
0 P	3328.6	3234.5	2960.8	2892.2	2552.2	2522.0	2054.6	2071.6
1 Pr	5.02	4.88	4.47	4.36	3.85	3.80	3.10	3.12
2 Tr	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30
3 Z	0.708	0.697	0.668	0.661	0.630	0.628	0.605	0.605

FORM C122-D

MURCHISON OIL & GAS, INC.
KODIAK BEAR STATE COM. # 1



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

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NO. OF BBLs PRODUCED = 11.7
API GRAVITY @ 60 DEG. = 55.9

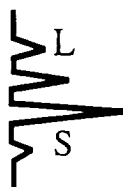
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SPECIFIC GRAVITY OF GAS = 0.7640

XX

TOTAL GAS PRODUCED = 261

G.O.R. = 22.311

G.MIX = 0.889



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: Kodiak Bear St. Com. #1
COMPANY: Murchison Oil & Gas
LEASE:
PLANT:

SAMPLE DATA: DATE SAMPLED: 11/25/02 2:45 pm
ANALYSIS DATE: 11/26/02
PRESSURE - PSIG
SAMPLE TEMP. °F
ATMOS. TEMP. °F

REMARKS:

COMPONENT ANALYSIS

COMPONENT	MOL PERCENT	GPM
Hydrogen Sulfide (H ₂ S)		
Nitrogen (N ₂)	0.710	
Carbon Dioxide (CO ₂)	2.648	
Methane (C ₁)	79.973	
Ethane (C ₂)	7.998	2.134
Propane (C ₃)	3.111	0.855
I-Butane (IC ₄)	0.441	0.144
N-Butane (NC ₄)	1.129	0.355
I-Pentane (IC ₅)	0.590	0.215
N-Pentane (NC ₅)	0.804	0.290
Hexane Plus (C ₆ +) <u>2.596</u>		<u>1.127</u>
	100.000	5.120
BTU/CU.FT. - DRY	1258	MOLECULAR WT. 22.2882
AT 14.650 DRY	1254	
AT 14.650 WET	1232	
AT 14.73 DRY	1261	
AT 14.73 WET	1239	
SPECIFIC GRAVITY - CALCULATED	0.764	
MEASURED		