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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

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OCD-ARTESIA

Form C-122
Revised October, 1999

30-015-30561

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator YATES DRILLING COMPANY				Lease or Unit Name SPURCK 16 ST. COM.			
Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 3/23/04		Well No. 2 #1	
Completion Date 11/10/03		Total Depth 10355		Plug Back TD 10031		Elevation 3559 GL	
Csg. Size 5 1/2		Wt. 17&15.5		d 4.892		Set At 10081	
Tbg. Size 2 7/8		Wt. 6.5		d 2.441		Set At 9936	
Perforations: From: 9962 To: 9969				County EDDY			
Perforations: From: OPEN To: ENDED				Pool EMPIRE PENN			
Type Well-Single-Bradenhead-G.G. or G.O. Multiple SINGLE				Packer Set At 9936		Formation PENN	
Producing Thru TBG		Reservoir Temp. °F 173.4 @ 9936		Mean Annual Temp. °F 60		Baro. Press. - P _a 13.2	
Connection AGAVE		L 9936		H 9936		Gg 0.641	
%CO ₂ 0.562		%N ₂ 0.383		%H ₂ S N/A		Prover N/A	
Meter Run 2.067		Taps FLG					
FLOW DATA				TUBING DATA			
CASING DATA				Duration of Flow			
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						1372	PKR
1	2 X	1.375	287	2.9	84	1307	"
2	2 X	1.375	286	8.7	81	1224	"
3	2 X	1.375	290	19	82	1095	"
4	2 X	1.375	293	34.8	76	928	"
5							
RATE OF FLOW CALCULATIONS							
No.	COEFFICIENT (24 Hour)		√ h _w P _m	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor F _g	Super Compress Factor F _{pv}
1							375
2							656
3							972
4	MEASURED			BY	TOTAL	FLOW	METER
5							1,319
No.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio 92.278 Mcf bbl.		
1					A.P. I. Gravity of Liquid Hydrocarbons 51.2 @ 60 Deg.		
2					Specific Gravity Separator Gas 0.641 XXXXXXXX		
3		N/A			Specific Gravity Flowing Fluid XXXXXX GMIX = .674		
4					Critical Pressure 670 P.S.I.A. 669 P.S.I.A.		
5					Critical Temperature 372 R. 382 R		
P _c 1385.2		P _{c2} 1918.8					
No.	P _i ²	P _w	P _w ²	P _c ² - P _w ²	(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.893$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.577$		
1		1320.8	1744.4	174.4			
2		1239	1535.2	383.6			
3		1112.8	1238.3	680.5			
4		951.4	905.2	1013.6			
5							
Absolute Open Flow 2,080 Mcfd @ 15.025				Angle of Slope (°): 54.49		Slope n: 0.7134	
Remarks: WELL PRODUCED 1.5 BBLS 51.2 API GR. CONDENSATE							
Approved By Division:		Conducted By: Jarrel Services, Inc.		Calculated By: BM		Checked By: BM	

COMPANY : YATES DRILLING CO. LEASE : SPURCK 16 ST. COM. WELL NO. : 2
 UNIT : J SECTION : 17 TOWNSHIP : 28
 L : 9936 H : 9936 L/H : 1 G/GMIX : 0.674
 %CO2 : 0.562 %N2 : 0.383 H2S : DATE : 3-23-04
 d : 2.441 Fr : 0.010763 GH : 6696.9 RANGE : 28

Pc = 1385.2 Pc2 = 1918.8 *
 Pt2 = 1742.9 Pw = 1320.8 *
 1530.7 1239.0 *
 1228.1 1112.8 *
 885.9 951.4 *

VOL 1 : 375 PSIA 1 : 1320.2 RESV.TEMP 173.4
 VOL 2 : 656 PSIA 2 : 1237.2
 VOL 3 : 972 PSIA 3 : 1108.2 SHUT-IN PR= 1385.2
 VOL 4 : 1319 PSIA 4 : 941.2

Pc2-Pw2= 174.4 Pw2 = 1744.4 *
 383.6 1535.2 *
 680.5 1238.3 *
 1013.6 905.2 *

PCR : 669
 TCR : 382

n = 0.713 ✓

Pc2/(Pc2-Pw2) = 11.004
 5.003
 2.820
 1.893 ✓

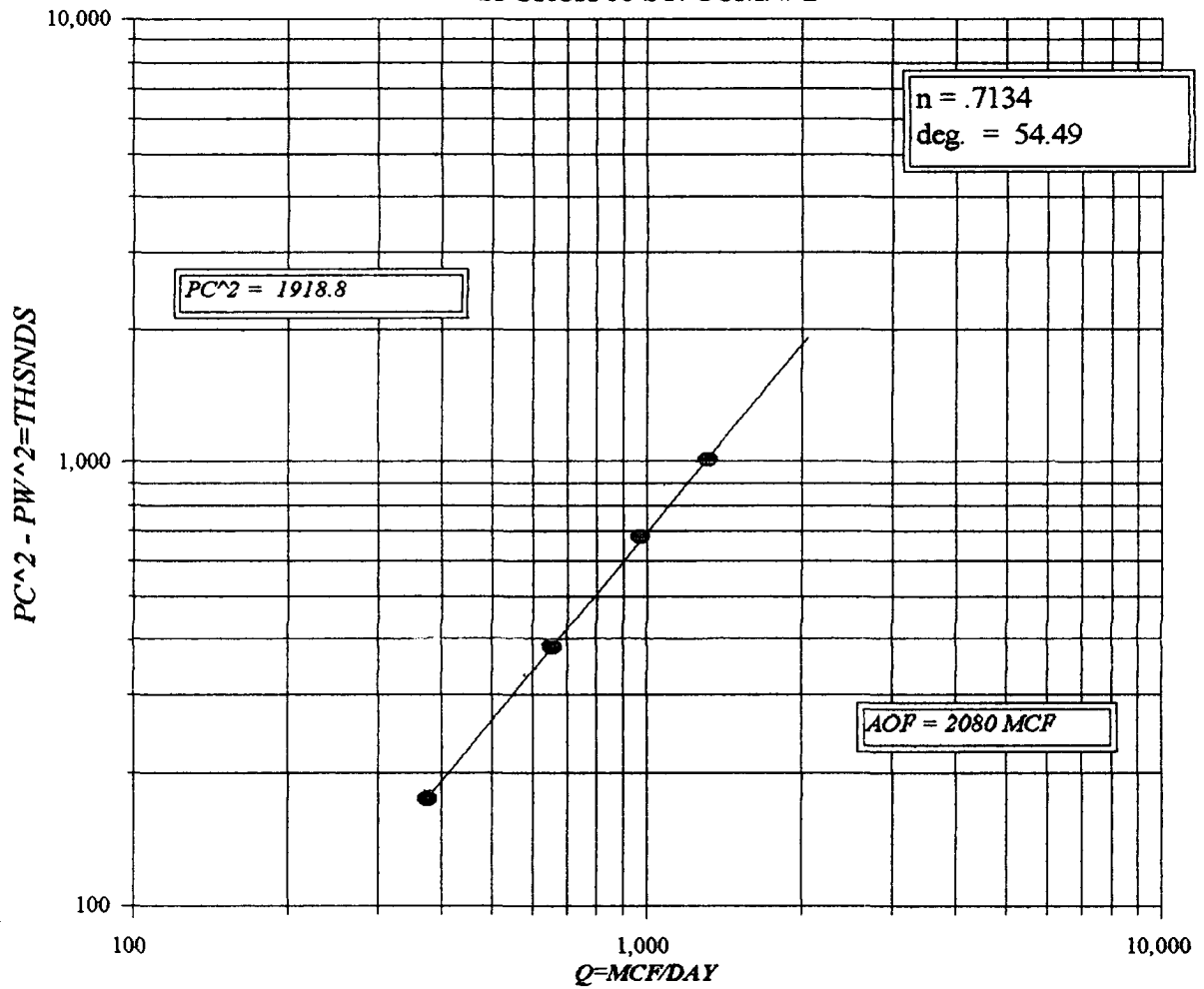
LINE	RATE 1		RATE 2		RATE 3		RATE 4	
	1ST	2ND	1ST	2ND	1ST	2ND	1ST	2ND
1 QM	0.375	0.375	0.656	0.656	0.972	0.972	1.319	1.319
2 TW	534	534	534	534	534	534	534	534
3 Ts	633.4	633.4	633.4	633.4	633.4	633.4	633.4	633.4
4 T	583.7	583.7	583.7	583.7	583.7	583.7	583.7	583.7
PR (est)	1.97		1.85		1.66		1.41	
5 Z(est)	0.814	0.798	0.822	0.805	0.835	0.819	0.854	0.838
6 TZ	475.4	465.7	479.9	470.1	487.6	477.9	498.3	489.1
7 GH/TZ	14.088	14.380	13.954	14.245	13.736	14.014	13.439	13.691
8 eS	1.696	1.715	1.688	1.706	1.674	1.691	1.655	1.671
9 l-e-S	0.410	0.417	0.407	0.414	0.403	0.409	0.396	0.402
10 Pt	1320.2	1320.2	1237.2	1237.2	1108.2	1108.2	941.2	941.2
11 Pt2 /1000	1742.9	1742.9	1530.7	1530.7	1228.1	1228.1	885.9	885.9
12 Fr	0.010763	0.010763	0.010763	0.010763	0.010763	0.010763	0.010763	0.010763
13 Fc=FrTZ	5.116	5.012	5.165	5.060	5.248	5.143	5.363	5.265
14 FcQm	1.92	1.88	3.39	3.32	5.10	5.00	7.07	6.94
15 L/H(FcQm)	3.7	3.5	11.5	11.0	26.0	25.0	50.0	48.2
16 Pw	1.510728	1.472624	4.678071	4.559946	10.47306	10.21597	19.81165	19.362577
17 Pw2	1744.4	1744.4	1535.3	1535.2	1238.6	1238.3	905.7	905.2
18 Ps2	2958.6	2991.2	2591.0	2619.2	2073.1	2094.5	1499.1	1512.6
19 Ps	1720.1	1729.5	1609.7	1618.4	1439.8	1447.2	1224.4	1229.9
20 P	1520.1	1524.9	1423.4	1427.8	1274.0	1277.7	1082.8	1085.5
21 Pr	2.27	2.28	2.13	2.13	1.90	1.91	1.62	1.62
22 Tr	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53
23 Z	0.798	0.798	0.805	0.805	0.819	0.818	0.838	0.838

[Pc2/Pc2-Pw2]n = 5.534
 3.154
 2.095
 1.577 ✓
 AOF= Q 2.075
 2.069
 2.036
 2.080 ✓

FORM C122-D

YATES DRILLING COMPANY

SPURCK 16 ST. COM. # 2



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

NO. OF BBLS PRODUCED = 1.5
API GRAVITY @ 60 DEG. = 51.2

SPECIFIC GRAVITY OF GAS = 0.6410

XX

TOTAL GAS PRODUCED = 138

G.O.R. = 92.278

G.MIX = 0.674



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: Spurck 16 State Com #2
COMPANY: Yates Drilling Company
LEASE:
PLANT:

SAMPLE DATA: DATE SAMPLED: 3/23/04 1:15PM
ANALYSIS DATE: 3/24/04
PRESSURE - PSIG
SAMPLE TEMP. °F
ATMOS. TEMP. °F

GAS (XX) LIQUID ()
SAMPLED BY: Donnie Dickerson
ANALYSIS BY: Rolland Perry

REMARKS:

COMPONENT ANALYSIS

COMPONENT	MOL PERCENT	GPM
Hydrogen Sulfide (H2S)		
Nitrogen (N2)	0.383	
Carbon Dioxide (CO2)	0.562	
Methane (C1)	89.224	
Ethane (C2)	6.031	1.609
Propane (C3)	2.145	0.590
I-Butane (IC4)	0.305	0.100
N-Butane (NC4)	0.561	0.176
I-Pentane (IC5)	0.176	0.064
N-Pentane (NC5)	0.146	0.053
Hexane Plus (C6+)	0.467	0.203
	100.000	2.795

BTU/CU.FT. - DRY 1125
AT 14.650 DRY 1122
AT 14.650 WET 1102
AT 14.73 DRY 1128
AT 14.73 WET 1108

MOLECULAR WT. 18.5932

SPECIFIC GRAVITY -
CALCULATED 0.641
MEASURED