STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

P. O. BOX 2088
ANTA FE, NEW MEXICO 87501

Revised 10-1-78

(1)

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test: [X] Initial [ ] Annual [ ] Special				Test Date: 10-20-90	
Company: Santa Fe Energy Resources, Inc.			Connection:		
Pool:			Formation: Atoka ~~Morrow~~		Unit:
Completion Date:	Total Depth:		Plug Back TD:	Elevation:	Farm or Lease Name: Amethyst 22 Federal
Csg. Size:	Wt.:	d:	Set At:	Perforations: From 12,635 To 12,638	Well No.: 1
Tbg. Size: 2 3/8	Wt.: 4.7	d: 1.995	Set At: 12,339	Perforations: From To	Unit: Sec.: 22 Twp.: 19S Rge.: 33E
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Single			Packer Set At: 12,339		County: Lea
Producing Thru: TBG	Reservoir Temp. °F: 200 @ 12,636		Mean Annual Temp. °F: 60	Baro. Press. – P_a: 13.2	State: New Mexico

** L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
12,636	12,636	.726	.41	2.16	---		3.068	Flg.

	FLOW DATA				TUBING DATA		CASING DATA		
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	Duration of Flow
SI						2139		PKR		72 hrs.
1.	3	X 1.250	450	6.00	90	1839		PKR		1 hr.
2.	3	X 1.250	470	10.00	85	1645		PKR		1 hr.
3.	3	X 1.250	480	19.00	84	1635		PKR		1 hr.
4.	3	X 1.250	475	32.00	84	1518		PKR		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, Fpv	Rate of Flow Q, Mcfd
1.	7.577	52.72	463.2	.9723	1.174	1.047	477
2.	7.577	69.51	483.2	.9768	1.174	1.057	638
3.	7.577	96.80	493.2	.9777	1.174	1.059	892
4.	7.577	124.99	488.2	.9777	1.174	1.058	1,150
5.							

NO.	P_t	Temp. °R	T_r	Z
1.	.69	550	1.40	.912
2.	.72	545	1.39	.895
3.	.74	544	1.38	.892
4.	.73	544	1.38	.893
5.				

Gas Liquid Hydrocarbon Ratio: 11.0 Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons: 51.9 @ 60° Deg.
Specific Gravity Separator Gas: .726 XXXXXXXXX
Specific Gravity Flowing Fluid: XXXXX
Critical Pressure: *665 P.S.I.A. P.S.I.A.
Critical Temperature: *392 R R

P_c 2527.9 P_c^2 6390.3

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1		2368.5	5609.8	780.5
2		2276.5	5182.5	1207.8
3		2141.7	4586.9	1803.4
4		1958.0	3833.8	2556.5
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 2.500$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 2.112$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 2.429$

Absolute Open Flow: 2,429 Mcfd @ 15.025 Angle of Slope θ: 50.8 Slope, n: .816

Remarks: *=corrected to 2.16% N_2
**=BHP Instrument set@ this depth
Well made 12.00 BBLS of 51.9 CONDENSATE & 1.00 BBL H_2O during test

Approved By Division	Conducted By:	Calculated By:	Checked By:
	Pro Well Testers	BM	BM

Santa Fe Energy Resources, Inc.
Amethyst 22 Federal, Well #1
22 - 10S - 33E
Lea County, New Mexico
10-20-90

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