PERMIAN TESTERS, INC.

P. O. BOX 6441 • PHONE 366-0811
ODESSA, TEXAS
79762

TICKET NO. 4872
DATE February 2, 1983
ORDER NO.
DISTRICT Odessa

COMPANY Clements Energy, Inc.
LEASE MGF State WELL NO. 22-1 TEST NO. 1 FORMATION Wolfcamp ELEVATION
FIELD Wildcat COUNTY Lea STATE New Mexico INTERVAL TESTED 10,452 TO 10,530 ANCHOR LENGTH 7

DRILL STEM TEST DATA

BOTTOM HOLE CHOKE	5/8"	SURFACE	1" Adj.	CUSHION	None		
TIME TOOL OPENED	11:00 A.M.	RECORDER DATA					
TOOL OPEN BEFORE I.S.I.P.	30 MIN.	TYPE	AK-I	CAPACITY	7950		
INITIAL SHUT-IN	1 HRS. 0 MIN.	TOP	13,206	DEPTH	10,521		
TOOL OPEN	1 HRS. 30 MIN.	BOTTOM	13,204	DEPTH	10,527		
FINAL SHUT-IN	3 HRS. 0 MIN.	CLOCK: TOP	18 Hr.	BOTTOM	24 Hr.		

SURFACE ACTION: Pre-Flow: Opened tool with a weak blow, increasing quickly to a good blow of 3½ lbs. on ½" choke. Gas to surface at 21 mins. at 62 MCF/Day. Blow decreased to 55 MCF/Day and stabilized for the remainder 10 mins. of the preflow.
Final-Flow: Opened tool at 19.9 MCF/Day. Increased to 68.8 MCF/Day in 10 mins., then slowly decreased to 44.5 MCF/Day and stabilized for 50 mins., then decreased to 33.9 MCF/Day at the end of the flow period.

RECOVERY: 573' Heavy Oil & Gas Cut Drlg. Fluid
60' Slightly Oil & Gas Cut Drlg. Mud Emulsified

REMARKS

SUCCESSFUL TEST Yes B. H. TEMPERATURE °F
TESTER F. W. Anderson APPROVED BY Paul Gruben

			RECORDER NO.		RECORDER NO.	
A	(INITIAL HYDROSTATIC PRESSURE)		5257	P.S.I.		P.S.I.
B	(INITIAL PRE-FLOW PRESSURE)		369	P.S.I.		P.S.I.
C	(FINAL PRE-FLOW PRESSURE)	30 MIN.	160	P.S.I.		P.S.I.
D	(INITIAL SHUT-IN PRESSURE)	60 MIN.	3264	P.S.I.		P.S.I.
E	(INITIAL FLOW PRESSURE)		221	P.S.I.		P.S.I.
F	(FINAL FLOW PRESSURE)	90 MIN.	291	P.S.I.		P.S.I.
G	(FINAL SHUT-IN PRESSURE)	180 MIN.	3272	P.S.I.		P.S.I.

HOLE AND MUD DATA

TOTAL DEPTH	10,530	MAIN HOLE	7 7
RAT HOLE		CASING SIZE	8 5
DEPTH OF CSG.	4400	TYPE MUD	S.W.G
MUD WT.	9.1	VISCOSITY	33
WATER LOSS	8	CAKE	1/3
CHLORIDE	34,000 PPM		
RESISTIVITY	0.26	@	55

TOOL DATA

NO. PACKERS	2	STRADDLE TEST	
SIZE PACKERS	6 3/4	CSG. TEST	
CONVENTIONAL TEST		Yes	

TYPE TOOL	DEPTH	LENGTH	I.D.	
4½ XH DP		10019	3.8	4
4½ XH DC		296	2.3	6
Circ. Sub	10317	2		
4½ XH DC		92		
Shut In		5		
Samp.		3		
Hyd.		5		
Jars		6		
Safety		2		
Packer		6		
Packer	10452	6		
Perf.				
4½ XH DC				
Perf.				
Rec.				
Rec.		78		

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TEST TICKET NO. 4872

PRESSURE BREAKDOWN

Date February 2, 1983

pany Clements Energy, Inc. County Lea

Name & No. M. G. F. State # 22-1 State New Mexico

No. 1 Tool Open 30 Min. For Pre Flow Tool Closed 60 Min. For ISIP

val 10,452 To 10,530 Tool Open 90 Min. For Final Flow Tool Closed 176 Min. For FSIP

INITIAL SHUT-IN				FINAL SHUT-IN			
Time Deflection	Min.	Deflection	Pressure	Time Deflection	Min.	Deflection	Pressure
	0		160		0		291
	2		213		2		410
	4		402		4		525
	6		598		6		697
	8		791		8		930
	10		1044		10		1076
	12		1255		12		1271
	18		1912		18		1857
	24		2565		36		2935
	30		2927		54		3100
	36		3096		72		3176
	42		3172		90		3212
	48		3216		108		3224
	54		3248		126		3240
	60		3264		144		3256
					162		3266
					176		3272

PH. 366-0811

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BOTTOM HOLE SAMPLER REPORT

Date: February 2, 1983 Ticket No.: 4872

Company: Clements Energy, Inc.

Well Name & No.: M. G. F. State $ 22-1 DST No.: 1

County: Lea State: New Mexico

Sampler No.: Test Interval: 10,452 To 10,530

Pressure in Sampler: 225 PSI BHT: °F

Total Volume of Sampler: 1800 cc.

Oil: 275 cc.

Water: 575 cc.

Mud: cc.

Gas: .608 cu. ft.

Other:

Resistivity

Drilling Fluid in Pits 0.26 @ 55 °F Chloride Content 34,000 ppm.

Fluid from Sampler 0.20 @ 55 °F Chloride Content 45,000 ppm.

Gas/Oil Ratio Gravity °API @ °F

Where was sample drained Rig

Remarks:

4. The calculated Effective Transmissibility of 21.6 md.-ft./cp. indicates an Average Permeability of 2.2 md./cp. for the reported 10 feet of effective porosity within the total 78 feet of interval tested.

5. The evaluation criteria used in the Drill-Stem-Test Analysis System indicate that the tools and recorder functioned properly; however, as noted above, because of the questionable reliability of the calculated production rate, the numerical results obtained in this analysis should be considered as indicators only.

Consulting Petroleum Geologist
6851 South Holly Circle
Suite 290
Englewood, Colorado 80112
(303) 694-1180

Drill-Stem-Test Pressure Analysis Report (Liquid Recovery)

LOCATION: ---	TIME OPEN: Initial: 30 mins. Final: 90 mins.	FILE NUMBER: Special
COUNTY AND STATE: NEW MEXICO. LEA	INITIAL SHUT-IN TIME: 60 minutes	I. D. NUMBER: P-4872
COMPANY: Clements Energy, Inc.	FINAL SHUT-IN TIME: 180 minutes	DATE COMPUTED: 2/3/83
LEASE AND WELL NUMBER: MGF-State #22-1	TEST NUMBER: 1	DATE TESTED: 2/1/83
FORMATION TESTED: Wolfcamp	INTERVAL TESTED: Feet 10452-10530	ELEVATION: Feet KB 4129

RECOVERY:
573 ft. of heavily oil and gas-cut drilling fluid, 60 ft. of slightly oil and gas-cut drilling fluid, emulsified. Gas to surface in 21 minutes of the Initial Flow period; maximum flow rate: 68.8 MCFPD.

HOLE, TOOL AND RECOVERY DATA

DRILL-PIPE CAPACITY (Barrels per foot)	0.0142	FEET OF MUD g&oc	633.	MUD PERCENTAGE %	100.
DRILL-COLLAR CAPACITY (Barrels per foot)	0.0049	FEET OF WATER		WATER PERCENTAGE %	
DRILL-COLLAR FOOTAGE (Feet)	388.	FEET OF OTHER		OTHER PERCENTAGE %	
HOLE DIAMETER (Inches)	7.875	FEET OF OIL		OIL PERCENTAGE %	
PIPE FOOTAGE EQUIVALENT TO ANNULUS (Feet)	---	FEET OF CUSHION		FORMATION RECOVERY PERCENTAGE %	
INTERVAL THICKNESS (Feet)	78.	TOTAL RECOVERY (Feet)	633.	AVERAGE PRODUCTION RATE (Barrels per day)	64.6
MUD WEIGHT (Pounds per gallon)	9.1	CAPACITY OF ANNULUS (Barrels)	4.7	BHT = * °F.	
EFFECTIVE FLOWING TIME (Minutes)	120.	GROSS RECOVERY VOLUME (Barrels)	5.4	RECOVERY LESS THAN ANNULAR VOLUME, (X)	

GAUGE SUMMARY

* Thermometer broke.

RECORDER NUMBER	DEPTH:	DATUM:
13206	10521'	-6392'

KEY POINT SUMMARY

First Flow

INITIAL FLOWING PRESSURE: psig — 369.

FINAL FLOWING PRESSURE: psig — 160.

Second Flow

INITIAL FLOWING PRESSURE: psig — 221.

FINAL FLOWING PRESSURE: psig — 291.

INITIAL SHUT-IN PRESSURE: psig — 3264.

FINAL SHUT-IN PRESSURE: psig — 3272.

INITIAL HYDROSTATIC MUD PRESSURE: psig — 5257.

FINAL HYDROSTATIC MUD PRESSURE: psig — 5257

EXTRAPOLATION SUMMARY

INITIAL $(t+\theta)/\theta$ CALCULATED FROM MEASURED DATA: 1.50

NUMBER OF POINTS USED FOR INITIAL CURVE-FIT: ---

SLOPE OF INITIAL BUILD-UP CURVE: psi/cycle ---

INITIAL EXTRAPOLATED PRESSURE: psig — Indeterminate - Insufficient Shut-in Time

FINAL $(t+\theta)/\theta$ CALCULATED FROM MEASURED DATA: 1.68

NUMBER OF POINTS USED FOR FINAL CURVE-FIT: 7.

SLOPE OF FINAL BUILD-UP CURVE: psi/cycle 487.

FINAL EXTRAPOLATED PRESSURE: psig — 3382.

SUMMARY OF RESULTS

EFFECTIVE TRANSMISSIBILITY, kh/μ: md ft per cp — 21.6

INDICATED AVERAGE PERMEABILITY, k/μ: md/cp — 2.2 (for 10' effect. ϕ)

PRODUCTIVITY INDEX: Barrels per day per psi — 0.021

DAMAGE RATIO: 1.16

FLOWING PRESSURE COMPARISON: % ---

INITIAL POTENTIOMETRIC SURFACE: feet

FINAL POTENTIOMETRIC SURFACE: feet 1488.

INITIAL MUD PRESSURE COMPARISON: % 94.7

FINAL MUD PRESSURE COMPARISON: %

PRESSURE BUILD-UP CURVE INCREMENTAL-READING DATA

Company Clements Energy, Inc.
Well Name & No. MGF-State #22-1
Location Lea County, New Mexico
DST No. 1 Test Interval: 10452-10530' Formation Tested: Wolfcamp

Recorder No. 13206 Recorder Depth 10521 feet.

INITIAL SHUT-IN

Initial Flow Time, t = 30			
θ	t + θ	$\log \frac{t+\theta}{\theta}$	Pressure (p.s.i.)
0	---	---	160
2		1.204	213
4		.929	402
6		.778	598
8		.677	791
10		.602	1044
12		.544	1255
18		.426	1912
24		.352	2565
30		.301	2927
36		.263	3096
42		.234	3172
48		.211	3216
54		.192	3248
60		.176	3264

FINAL SHUT-IN

Total Flow Time, t = 120			
θ	t + θ	$\log \frac{t+\theta}{\theta}$	Pressure (p.s.i.)
0	---	---	291
2		1.785	410
4		1.491	525
6		1.322	697
8		1.204	930
10		1.114	1076
12		1.041	1271
18		.885	1857
36		.637	2935
54		.508	3100
72		.426	3176
90		.368	3202
108		.325	3224
126		.291	3240
144		.263	3256
162		.241	3266
176		.226	3272

Liquid Recovery

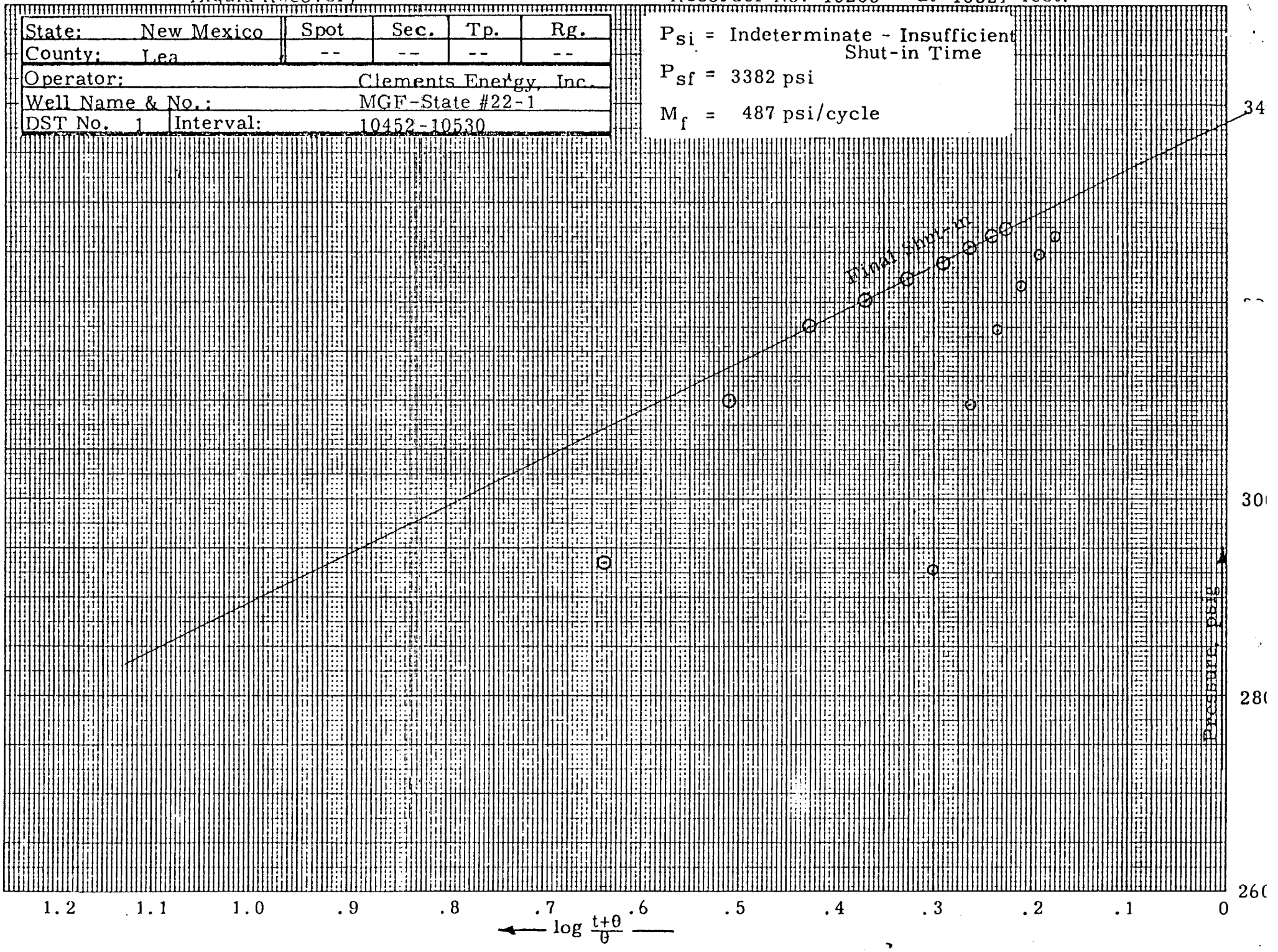
Recorder No. 13206 at 10521 feet.

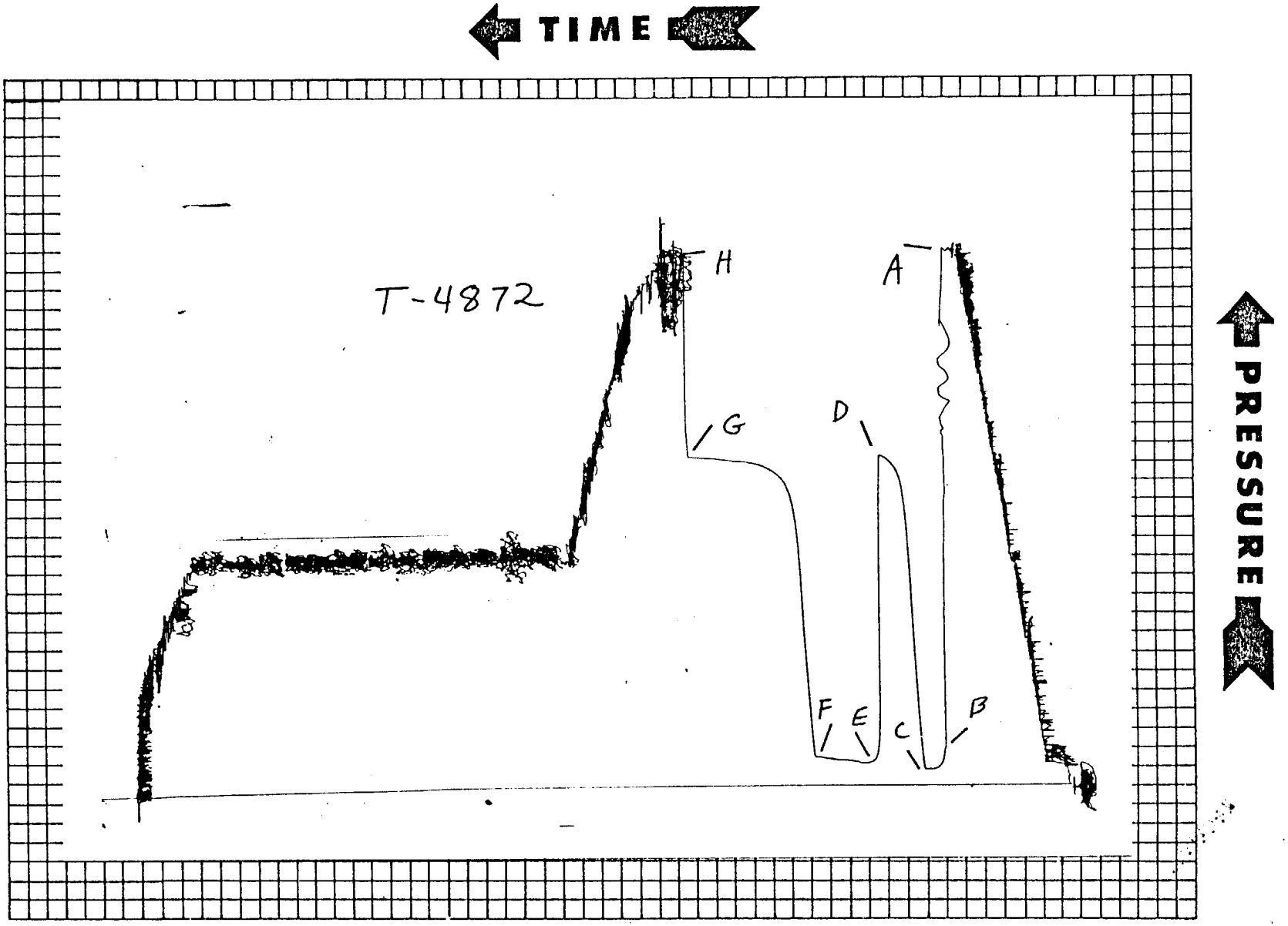
State: New Mexico	Spot	Sec.	Tp.	Rg.
County: Lea	--	--	--	--
Operator:	Clements Energy, Inc.			
Well Name & No.:	MGF-State #22-1			
DST No. 1	Interval:	10452-10530		

P_{si} = Indeterminate - Insufficient Shut-in Time

P_{sf} = 3382 psi

M_f = 487 psi/cycle




TIME
T-4872
H
A
G
D
F
E
C
B
PRESSURE