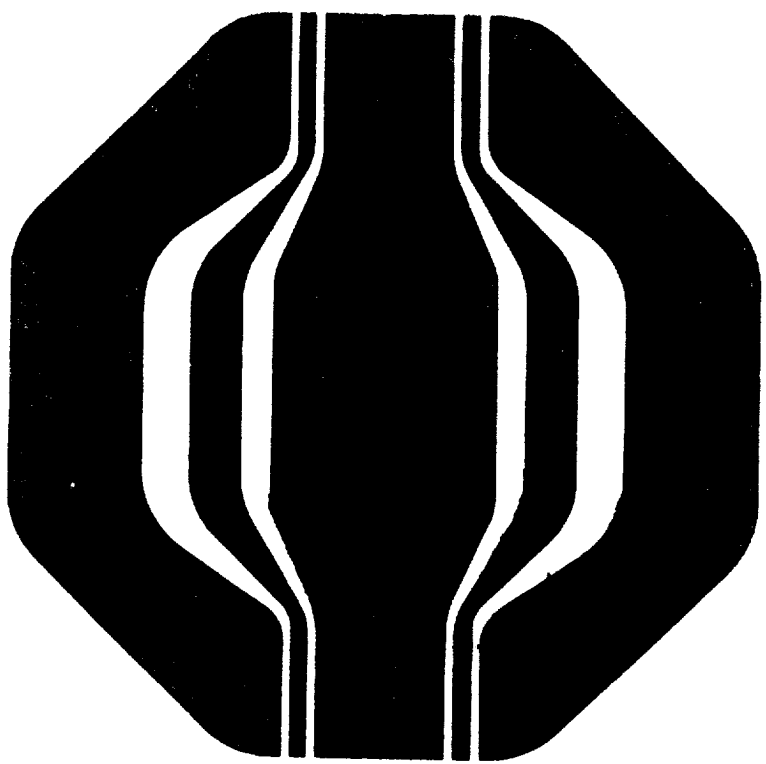
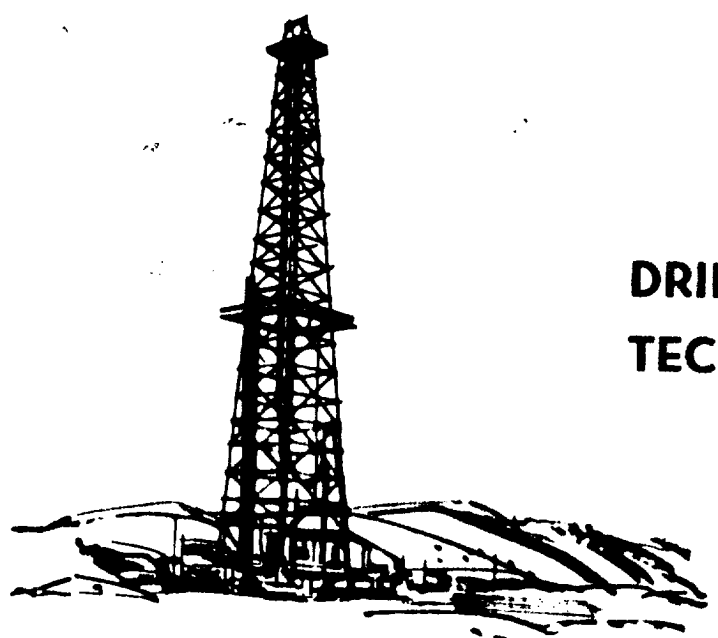


Operator	Sunmark Exploration Company	Well Name and No.	J.C. Maxwell #1	DST No.	3
Address	P.O. Box 30 Dallas, Texas 75221	Ticket No.	28771	Date	3-20-80
				No. Final Copies	5



LYNES

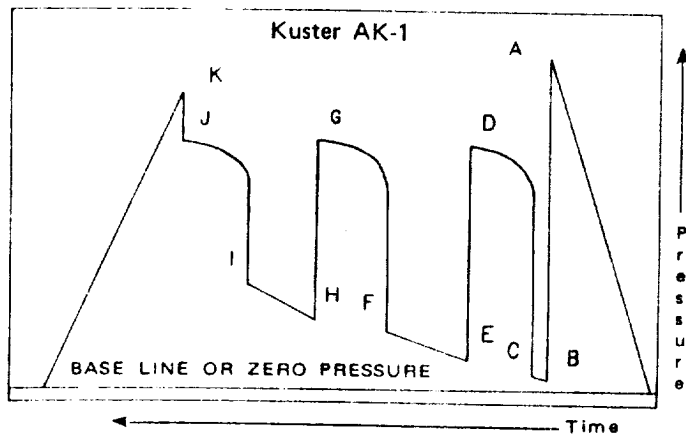


**DRILL STEM TEST
TECHNICAL SERVICE REPORT**

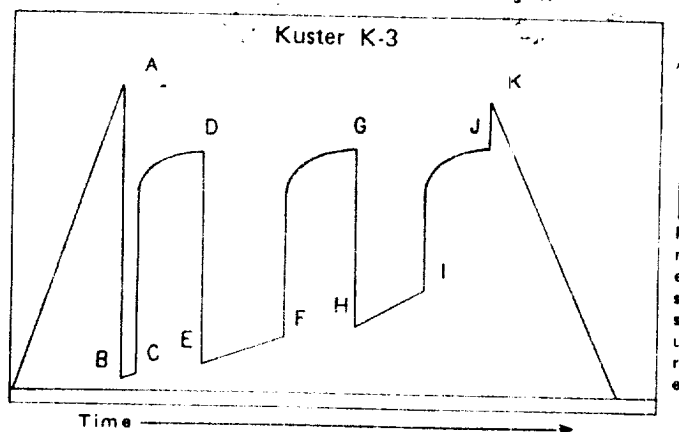
GUIDE TO INTERPRETATION AND IDENTIFICATION OF LYNES DRILL STEM TEST PRESSURE CHARTS

In making any interpretation, our employees will give Customer the benefit of their best judgment as to the correct interpretation. Nevertheless, since all interpretations are opinions based on inferences from electrical, mechanical or other measurements, we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not be liable or responsible, except in the case of gross or wilful negligence on our part, for any loss, costs, damages or expenses incurred or sustained by Customer resulting from any interpretation made by any of our agents or employees.

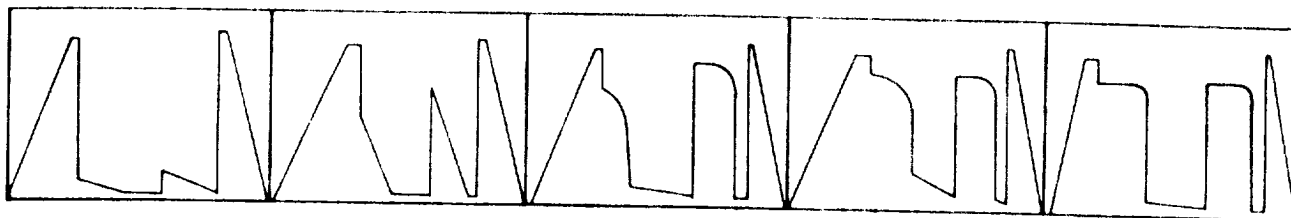
AK-1 recorders. Read from right to left.



K-3 recorders. Read from left to right.



- A — Initial Hydrostatic
- B — First Initial Flow
- C — First Final Flow
- D — Initial Shut-in
- E — Second Initial Flow
- F — Second Final Flow
- G — Second Shut-in
- H — Third Initial Flow
- I — Third Final Flow
- J — Third Shut-in
- K — Final Hydrostatic



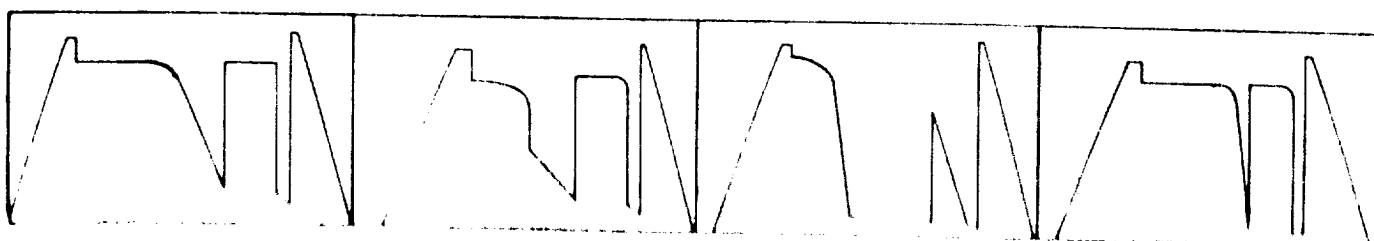
Very low permeability. Usually only mud recovered from interval tested. Virtually no permeability.

Slightly higher permeability. Again usually mud recovered.

Slightly higher permeability. Small recovery, less than 200 ft.

Average permeability. Final and initial shut-ins differ by 50 psi.

Average permeability. Strong damage effect. High shut-in pressure, low flow pressure.



Excellent permeability where final flow final shut-in pressure.

High permeability where ISIP and FSIP are within 10 psi.

Deep well bore invasion or damage. Final shut in higher than the initial shut in.

Tight hole chamber tester. Permeability very difficult to interpret unless the recovery is less than chamber length. Flow pressure builds.

Contractor Rial Drilling Co.
Rig No. 2
Spot NE-NE
Sec. 27
Twp. 14
Rng. --
Field Wildcat
County Lea
State New Mexico
Elevation --
Formation Mississippi

Top Choke 1"
Bottom Choke 1"
Size Hole 8 3/4"
Size Rat Hole --
Size & Wt. D. P. 4 1/2" 16.60
Size Wt. Pipe --
I. D. of D. C. 2 1/4"
Length of D. C. 553'
Total Depth 11,371'
Interval Tested 11,240-11,371'
Type of Test Bottom Hole
Conventional

Flow No. 1 15 Min.
Shut-in No. 1 60 Min.
Flow No. 2 360 Min.
Shut-in No. 2 120 Min.
Flow No. 3 -- Min.
Shut-in No. 3 -- Min.

Bottom Hole Temp. 170°F
Mud Weight 10.7
Gravity --
Viscosity 40

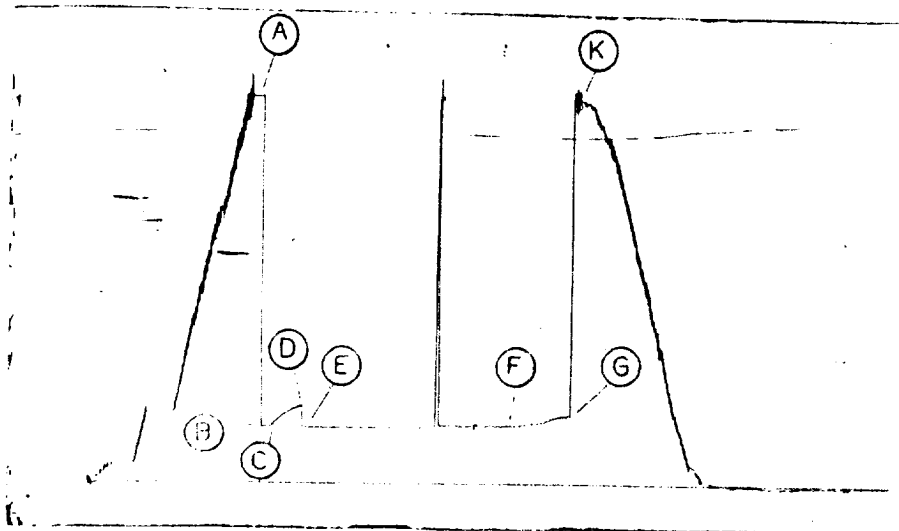
Tool opened @ 7:00AM

Outside Recorder

PRD Make Kuster K-3
No. 12638 Cap. 7500 @ 11,248

Press	Corrected
Initial Hydrostatic A	6334
Final Hydrostatic K	6285
Initial Flow B	1009
Final Initial Flow C	1016
Initial Shut-in D	1369
Second Initial Flow E	1000
Second Final Flow F	1028
Second Shut-in G	1208
Third Initial Flow H	--
Third Final Flow I	--
Third Shut-in J	--

Lynes Dist. Midland, Texas
Our Tester Bill Coats
Witnessed By: _____



Did Well Flow - Gas no Oil no Water no

RECOVERY IN PIPE. 2248' Total Fluid. (Ran 2000' water cushion)
2000' Water cushion = 28.4 bbl.
155' Saltwater = 17.73 bbl.
93' Drilling mud = .46 bbl.

Blow Description:

1st Flow: Tool opened with a very weak blow and remained thru flow period.
2nd Flow: Tool opened with no blow, increased to a very weak blow and remained thru flow period.

Operator Sunmark Exploration Company
P.O. Box 30
Dallas, Texas 75221
Ticket No. 28771
Date 3-20-80
DST No. 3
No. Final Cogs 5

WELL NAME: J.C. MAXWELL 1

DST NUMBER: 003

RECORDER NUMBER: 012638

INTERVAL TESTED: 11240FT TO 11371FT

RECORDER DEPTH: 11248.000FT

TOTAL FLOW TIME: 15.0MIN

FIRST SHUT IN PRESSURE (LIQUID)

TIME (MIN)	(T+PHI)	PRESSURE
PHI	/PHI	(PSI)
.0	.0000	1016.0
1.0	16.0000	1019.0
2.0	8.5000	1028.0
3.0	6.0000	1035.0
4.0	4.7500	1041.0
5.0	4.0000	1047.0
6.0	3.5000	1057.0
7.0	3.1429	1066.0
8.0	2.8750	1076.0
9.0	2.6667	1085.0
10.0	2.5000	1094.0
12.0	2.2500	1110.0
14.0	2.0714	1129.0
16.0	1.9375	1145.0
18.0	1.8333	1164.0
20.0	1.7500	1180.0
22.0	1.6818	1192.0
24.0	1.6250	1202.0
26.0	1.5769	1218.0
28.0	1.5357	1230.0
30.0	1.5000	1243.0
35.0	1.4286	1268.0
40.0	1.3750	1293.0
45.0	1.3333	1315.0
50.0	1.3000	1334.0
55.0	1.2727	1353.0
60.0	1.2500	1369.0

Both shut-in pressure build-up curves have insufficient character to permit the use of a Horner plot to determine reliable extrapolated shut-in pressures.

WELL NAME: J.C. MAXWELL 1

DST NUMBER: 003

RECORDER NUMBER: 012638

INTERVAL TESTED: 11240FT TO 11371FT

RECORDER DEPTH: 11248.000FT

TOTAL FLOW TIME: 375.0MIN

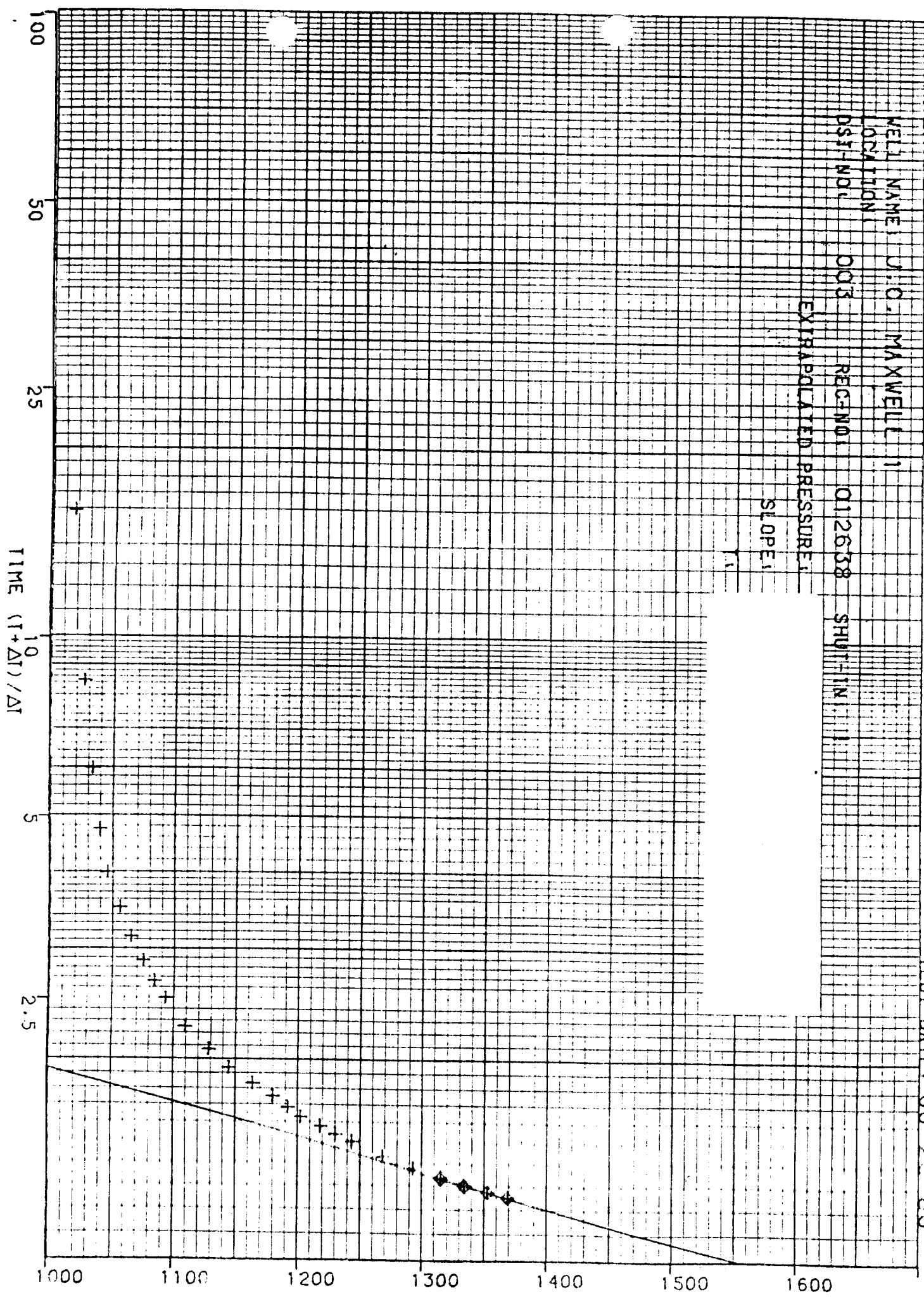
SECOND SHUT IN PRESSURE (LIQUID)

TIME (MIN) PHI	(T+PHI) /PHI	PRESSURE (PSI)
.0	.0000	1028.0
1.0	376.0000	1028.0
2.0	188.5000	1028.0
3.0	126.0000	1028.0
4.0	94.7500	1028.0
5.0	76.0000	1028.0
6.0	63.5000	1028.0
7.0	54.5714	1028.0
8.0	47.8750	1028.0
9.0	42.6667	1029.0
10.0	38.5000	1029.0
12.0	32.2500	1029.0
14.0	27.7857	1030.0
16.0	24.4375	1030.0
18.0	21.8333	1031.0
20.0	19.7500	1033.0
22.0	18.0455	1035.0
24.0	16.6250	1038.0
26.0	15.4231	1041.0
28.0	14.3929	1044.0
30.0	13.5000	1046.0
40.0	10.3750	1057.0
50.0	8.5000	1073.0
60.0	7.2500	1085.0
70.0	6.3571	1101.0
80.0	5.6875	1142.0
90.0	5.1667	1170.0
100.0	4.7500	1186.0
110.0	4.4091	1199.0
120.0	4.1250	1208.0

HORNER PLOT

TEST DATE: 03 22 80

WELL NAME: J.C. MAXWELL 1
LOCATION:
DST-NO: 003 REC-NO: 012638 SHUT-IN: 1
EXTRAPOLATED PRESSURE:
SLOPE: 1



HORNER PLOT

TEST DATE: 03 20 80

WELL NAME: J.C. MAXWELL 1

LOCATION:

DS-NO:

003

REC-NO:

Q12638

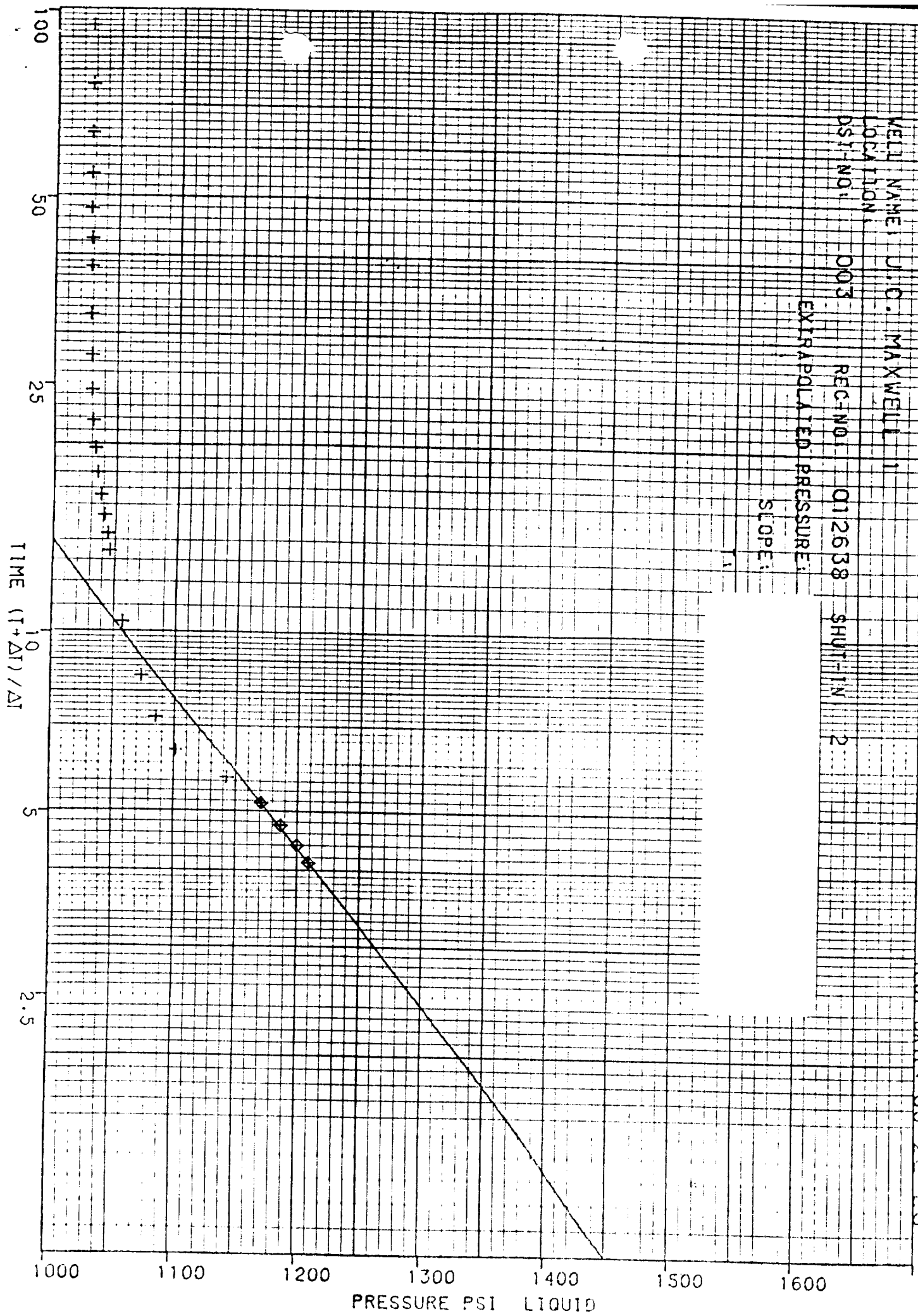
SHUT-IN:

2

EXTRAPOLATED PRESSURE:

SLOPE:

1.1



LYNES, INC.

Sampler Report

Company Sunmark Exploration Company Date 3-20-80
Well Name & No. J.C. Maxwell #1 Ticket No. 28771
County Lea State New Mexico
Test Interval 11,240-11,371' DST No. 3

Total Volume of Sampler: 2000 cc.
Total Volume of Sample: 1500 cc.
Pressure in Sampler: 0 psig
Oil: None cc.
Water: None cc.
Mud: 1500 drilling cc.
Gas: None cu. ft.
Other: None
Sample: 38,000 ppm. chl.

Resistivity

Make Up Water @ _____ of Chloride Content _____ ppm.
Mud Pit Sample @ _____ of Chloride Content _____ ppm.
Gas/Oil Ratio _____ Gravity _____ °API @ _____ °F
Where was sample drained _____

Remarks: Recovery: Top Sample: 1000 ppm. chl.
Middle Sample: 1000 ppm. chl.
Bottom Sample: 1000 ppm. chl.

NOMENCLATURE (Definition of Symbols)

- Q = average production rate during test, bbls./day
- Q_g = measured gas production rate during test, MCF/day
- k = permeability, md
- h = net pay thickness, ft. (when unknown, test interval is chosen)
- μ = fluid viscosity, centipoise
- Z = compressibility factor
- T_r = reservoir temperature, ° Rankine
- m = slope of final SIP buildup plot, psig/cycle (psig²/cycle for gas)
- b = approximate radius of investigation, feet
- r_w = wellbore radius, feet
- t_o = total flowing time, minutes
- P_o = Extrapolated maximum reservoir pressure, psig
- P_r = final flowing pressure, psig
- P.I. = productivity index, bbls./day/psi
- P.I._d = theoretical productivity index with damage removed, bbl./day/psi
- D.R. = damage ratio
- E.D.R. = estimated damage ratio
- AOF = absolute open flow potential, MCF/D
- AOF_d = theoretical absolute open flow if damage were removed
- z = subsea depth
- W = water gradient based on salinity
- H_w = potentiometric surface

[illegible]

INTERPRETATION CALCULATIONS (GAS)

ESTIMATED GAS PROPERTIES

Gravity @ 60°F

Viscosity (cP)

Estimated Bottom Hole Temperature

Compressibility Factor (Z)

$R(T_b) =$

PERMEABILITY

Pressure (psi) or Rate

md-ft

$$kh = \frac{1417 Q_g Z T_b}{m} = \frac{1417 \times \dots \times \dots}{\dots} = \dots \text{ md-ft}$$

$$kh = \frac{1417 Q_g Z T_b}{m} = \dots \text{ md-ft}$$

IN SITU CAPACITY

$$kh = \dots \text{ md-ft}$$

AVERAGE EFFECTIVE PERMEABILITY

Estimated Pay Thickness

Actual Pay Thickness

$$k = \dots \text{ md}$$

APPROXIMATE RADII OF INVESTIGATION

$$b = 0.02 \sqrt{k P_a} = 0.02 \sqrt{\dots} = \dots \text{ ft}$$

ACTUAL CAPACITY

$$kh = \frac{3270 Q_g Z T_b \log(1.472 \frac{b}{P_a - P_b})}{P_a - P_b} = 3270 \times \dots = \dots \text{ md-ft}$$

ESTIMATED DAMAGE RATIO

$$EDR = \frac{(P_a^2 - P_b^2)}{m (\log T_b + 7.65)}$$

EDR =

ESTIMATED RANGE OF AOF POTENTIAL

$$\text{Max AOF} = \frac{Q_g P_a^2}{P_a^2 - P_b^2} = \dots \text{ MCF/D}$$

$$\text{Min AOF} = \frac{Q_g P_b^2}{P_a^2 - P_b^2} = \dots \text{ MCF/D}$$

ESTIMATED RANGE OF AOF POTENTIAL BASED ON PERMEABILITY

$$\text{Max AOF} = (\text{Max AOF})_{\text{EDR}} \times \dots = \dots \text{ MCF/D}$$

$$\text{Min AOF} = (\text{Min AOF})_{\text{EDR}} \times \dots = \dots \text{ MCF/D}$$

$$\text{Drawdown Factor} = \frac{(P_a^2 - P_b^2) \times 100}{P_a^2} = \dots \%$$

4% to 5% is considered serious or substantial

$$\text{Potential Surface} = P_a^2 - Z^2 \times P_b^2 = \dots \text{ H}$$

W