

FLOPETROL JOHNSTON

Schlumberger

WELL PERFORMANCE

TESTING™ REPORT

A Production System Analysis (NODAL™)
Based On Drillstem Test Data

TEST DATE:

27-Nov-1984

RECEIVED
HOBBS
DISTRICT
DEC 6 1984

REPORT NO.
54059E

Company: AMOCO PRODUCTION CO.

Well: Salman Rch B-1

TEST IDENTIFICATION

Test Type MFE OH Tele.
Test No. Two
Formation --
Test Interval (ft) 6587 to 6780

WELL LOCATION

Field
County
State New Mexico
Sec/Twn/Rng 15S 21N 17E

HOLE CONDITIONS

Total Depth (MD/TUD) (ft) 6780 / 6780
Hole Size (in) 8 3/4
Csg/Liner I.D. (in) --
Perf'd Interval (ft) --
Shot Density/Diameter (in) ... --

MUD PROPERTIES

Mud Type LSND
Mud Weight (lb/gal) 9.0
Mud Resistivity (OHM-M) 4.5 at 20 F
Filtrate Resistivity (OHM-M) . --
Filtrate Chlorides (PPM) 250

INITIAL TEST CONDITIONS

Initial Hydrostatic (psi) 3128
Gas Cushion Type None
Surface Pressure (psi) --
Liquid Cushion Type None
Cushion Length (ft) --

TEST STRING CONFIGURATION

Pipe Length (ft)/I.D. (in) ... 5988 / 3.25
Collar Length (ft)/I.D. (in) . 650 / 2.25
Packer Depth(s) (ft) 6681, 6687
BH Choke Size (in) 15/16

NET PIPE RECOVERY

Volume	Fluid Type	Properties
194 feet	Mud	Gas cut Rw 4.4 at 20
		300 PPM

NET SAMPLE CHAMBER RECOVERY

Volume	Fluid Type	Properties
2.16 ft3	Gas	Dry
340 cc	Mud	
Pressure: 670		GOR: -- GLR: --

INTERPRETATION RESULTS

Reservoir Pres(psi)/Depth(ft). 2437 / 6658
Gauge Depth (ft)/Ref 6658 / KB
Effective Permeability (md) .. 0.0019
Transmissibility (md-ft/cp) .. 8.67
Skin Factor/Damage Ratio -0.10 / 0.90
Radius of Investigation (ft) . 2

ROCK/FLUID/WELLBORE PROPERTIES

Analysis Fluid Type Gas
Viscosity (cp) 0.015
Net Pay (ft) 70
Porosity 0.060
Wellbore Radius (ft) 0.36
Reservoir Temp (F) 163

PRODUCTION RATE DURING TEST: 50 MSCF/D (ave)

MAXIMUM PRODUCTION RATE POTENTIAL

250 MSCF/D

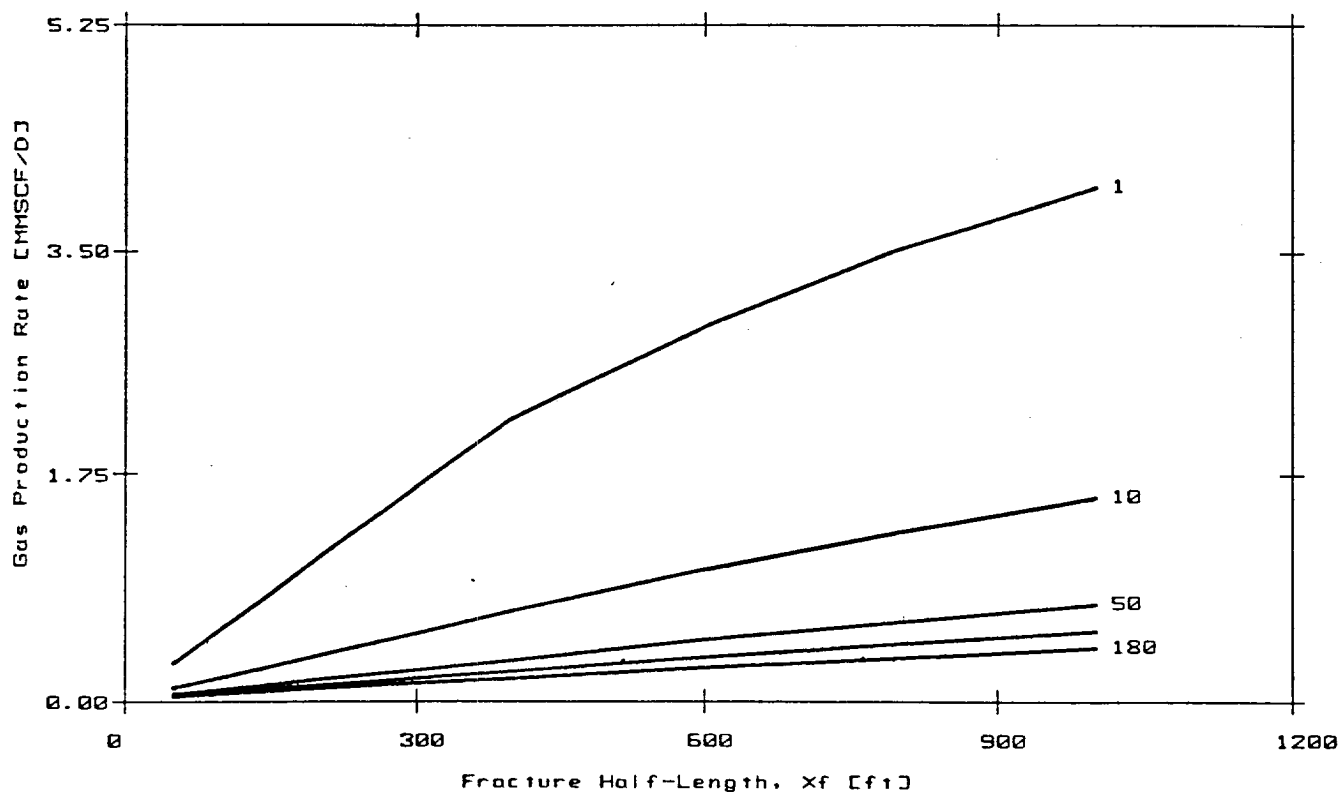
Comments:

Maximum rate potential is for a 600 foot fracture after 180 days of production. The interpretation results indicate that the well is in a homogeneous system with low permeability effective to gas. The test rate was the average of the rates reported by the TELEFLOW system. A longer test; initial shutin, final flow and final shutin, would have given better measures of the reservoir properties. The Horner Analysis is based on the last few points in the buildup, a longer shutin may have given a larger permeability and a lower reservoir pressure.

WELL TEST INTERPRETATION		PORT #: S4059E DST 2	PAGE:
CLIENT : AMOCO PRODUCTION CO.			3-DEC-84
REGION : Mid-Cont.	SENSITIVITY ANALYSIS		Field: Wildcat
DISTRICT: Hobbs	Rate vs. X_f (vs. Time)		Zone : --
BASE : Midland	Propped Hydraulic Fracture		Well : Salman Rch B-1
Engr : D.J. Simper			Location: 21/21n/17e

Reservoir Pressure: 2437 psi Liquid/Gas Ratio: 0.0 STB/MMSCF
 Permeability: 0.0019 md Tubing Size: 2.441 in (id)
 Net Thickness: 70.0 ft Wellhead Pressure: 500.0 psi

Fracture Conductivity, kf^*w : 500.0 md.ft

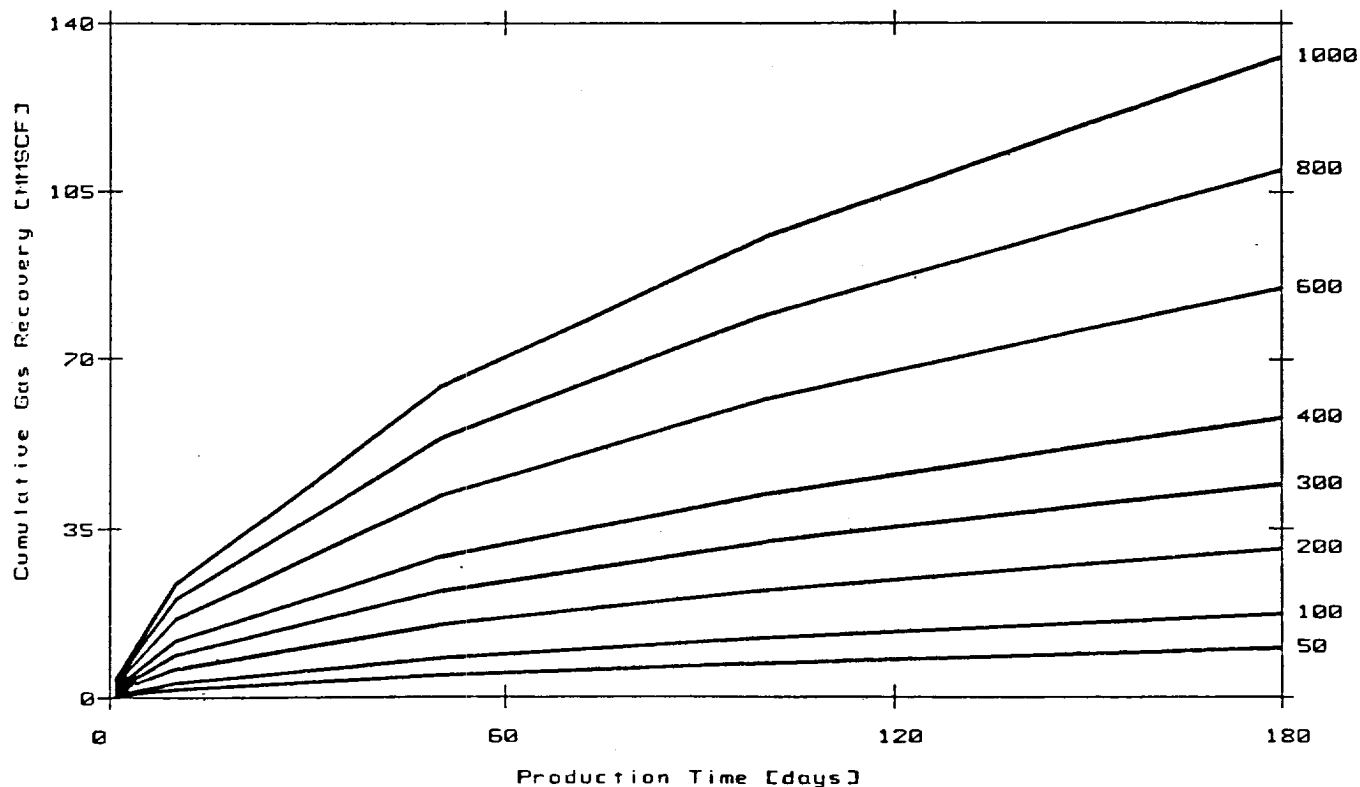


Production Rate vs. Frac. Half-Length, Transient Conditions
 1 to 180 days : Propped Hydraulic Fracture

WELL TEST INTERPRETATION		PORT #: 54059E DST 2	PAGE:
CLIENT : AMOCO PRODUCTION CO.			3-DEC-84
REGION : Mid-Cont.	SENSITIVITY ANALYSIS Recovery vs. Time (vs. Xf) Propped Hydraulic Fracture		Field: Wildcat
DISTRICT: Hobbs			Zone : --
BASE : Midland			Well : Salman Rch B-1
Engr : D.J. Simper			Location: 21/21n/17e

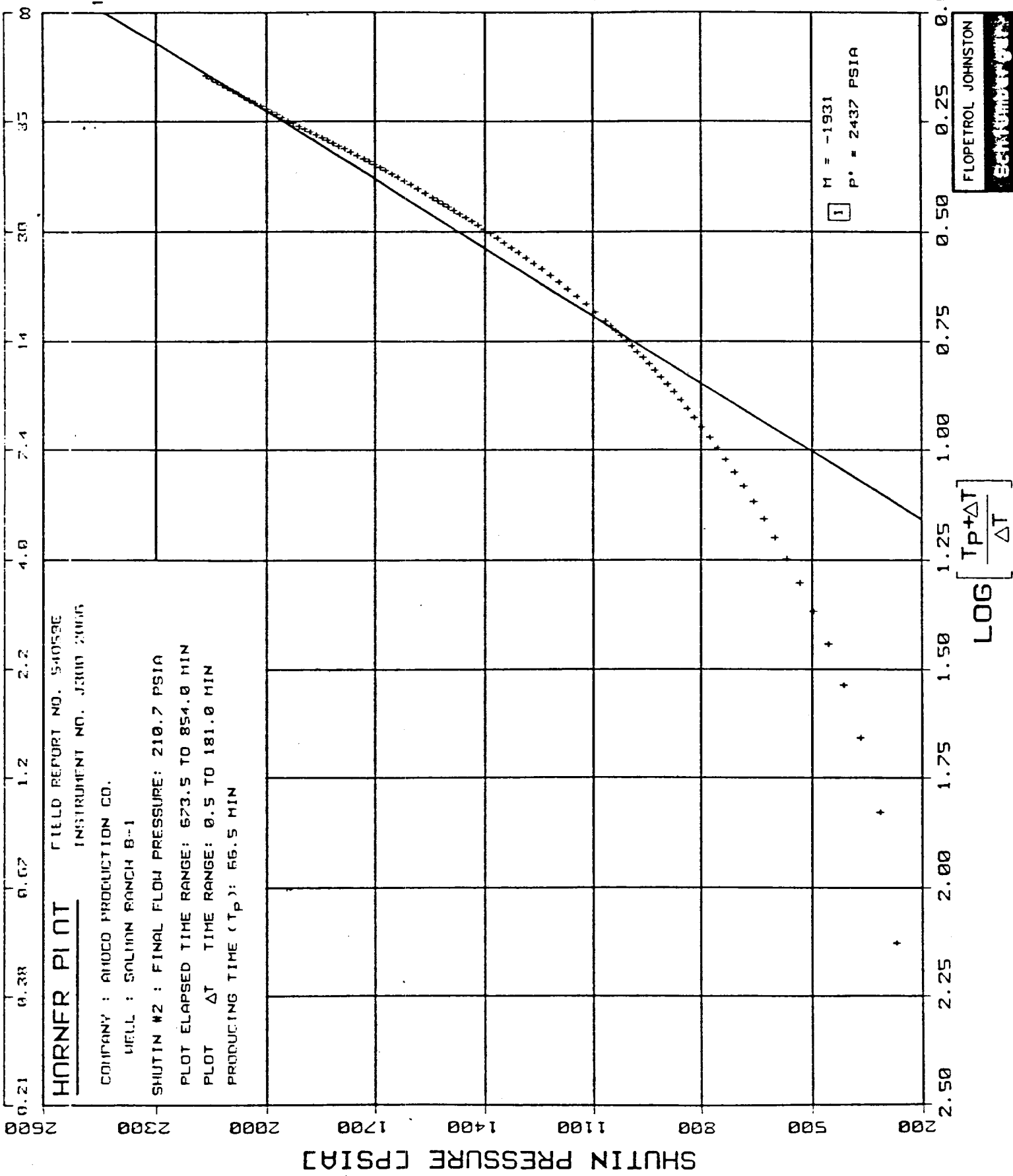
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 Permeability: 0.0019 md Tubing Size: 2.441 in (id)
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Fracture Conductivity, $k_f w$: 500.0 md.ft



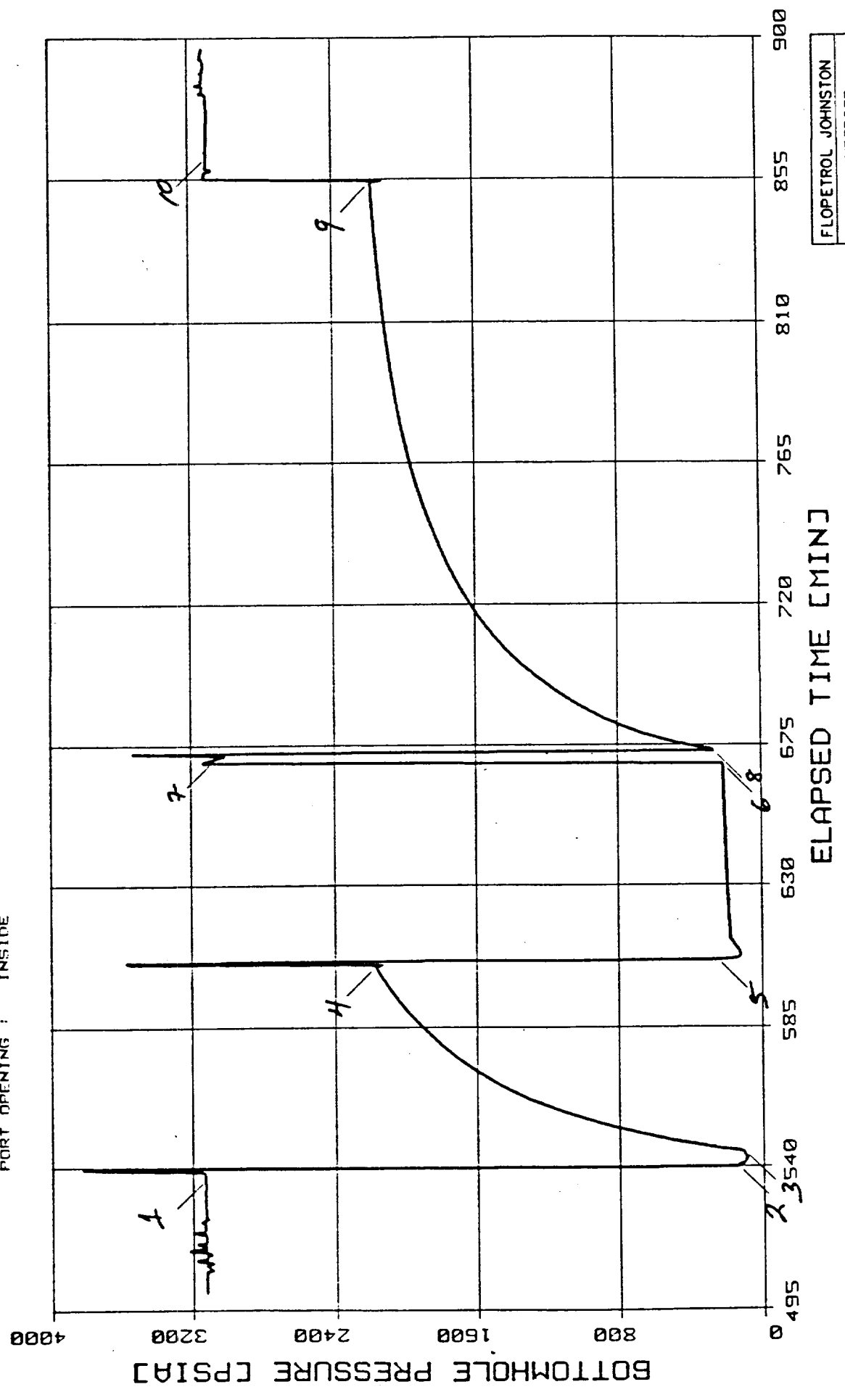
Effect of Time on Cumulative Recovery, for Fracture Half-Lengths from 50 to 1000 ft : Propped Hydraulic Fracture

ΔT (MIN)



BOTTOMHOLE PRESSURE LOG

FIELD REPORT NO. 54059E COMPANY : AMOCO PRODUCTION CO.
 INSTRUMENT NO. J300-2066 WELL : SALMAN RANCH B-1
 DEPTH : 6658 FT
 CAPACITY : 10000 PSI
 PORT OPENING : INSIDE



FLOPETROL JOHNSTON
 SCHLUMBERGER

DST EVENT SUMMARY

Field Report # 54059E

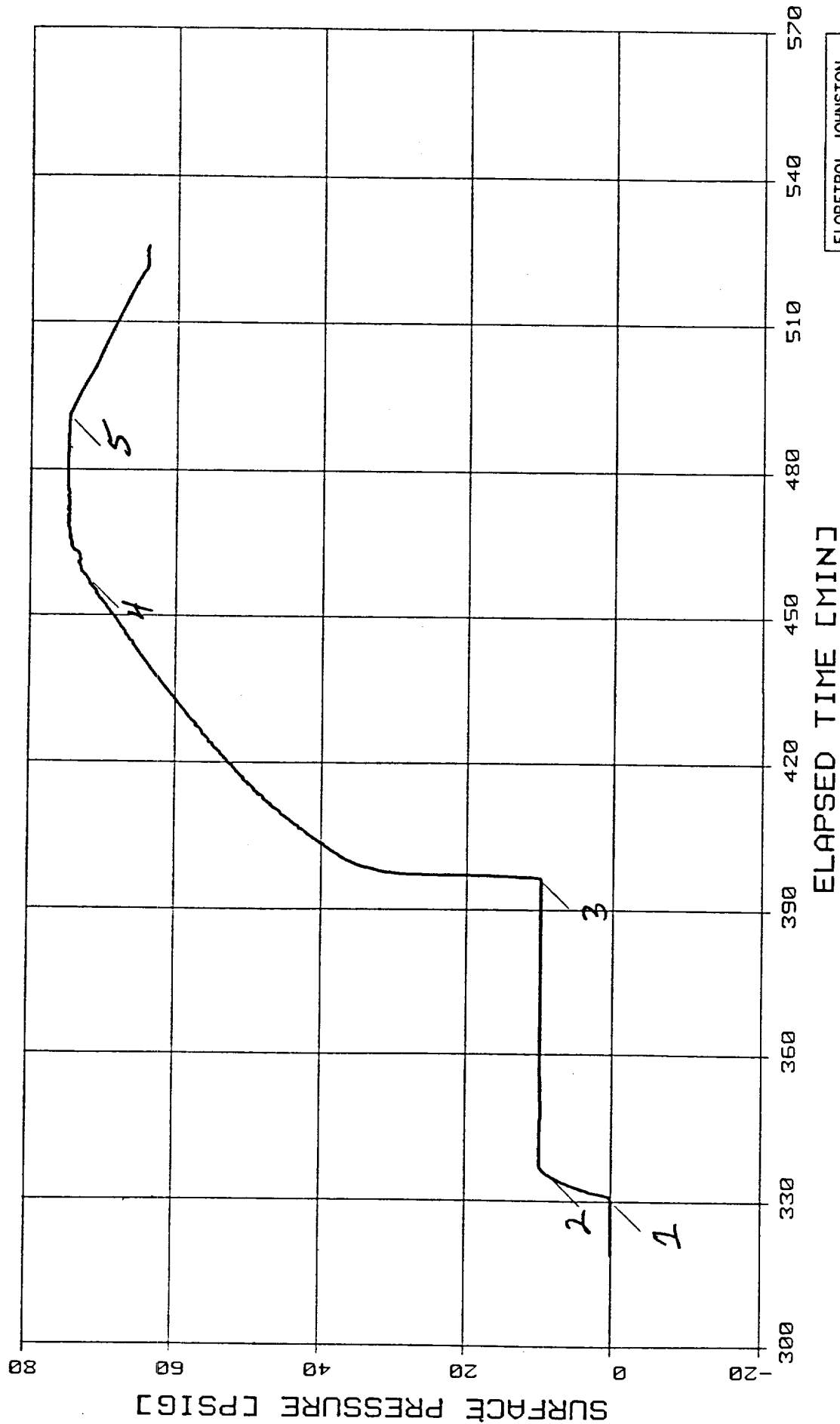
DATE (M/D/Y)	TIME (HR:MIN)	EVENT E.T. (MIN)	EVENT DESCRIPTION	SURFACE PRESSURE (PSIG)	FLOOR MANIFOLD CHOKE SIZE (INCH)
11-27-84	0900	—	SET PACKER		
	0901	—	OPENED TEST TOOL FOR INITIAL FLOW	0.08	Closed Chamber
			Average gas rate from Teleflow: 70 MCF/D		
	0906	—	CLOSED TEST TOOL FOR INITIAL SHUT-IN	8.41	
	1007	—	OPENED TEST TOOL FOR FINAL FLOW	10.11	Closed Chamber
	1017			42.6	
	1027			50.5	
	1037			56.8	
	1047			62.0	
	1057			66.8	
	1107			71.2	
			Average gas rate from Teleflow: 48 MCF/D		
	1108		Pulled loose		
	1114		Set and opened tool		
	1115	—	CLOSED TEST TOOL FOR FINAL SHUT-IN	74.0	
			Gas to surface during blowdown		
	1415	—	FINISHED FINAL SHUT-IN		
	1419	—	UNSEATED PACKER		
	1607	—	REVERSED OUT		
		—	BEGAN TRIP OUT OF HOLE		

SURFACE PRESSURE LOG

FIELD REPORT NO. 54059E

COMPANY : AMOCO PROD. CO.

WELL : SALMAN RANCH B-1



.....
 • WELL TEST DATA PRINTOUT •

FIELD REPORT # : 54059E

INSTRUMENT # : *Teleflow*
 CAPACITY [PSI] : 5000.

COMPANY : AMOCO PROD. CO.

WELL : SALMAN RANCH B-1

PORT OPENING :

MNEMONICS : ET = ELAPSED TIME [MIN]
 PS = SURFACE PRESSURE [PSIG]

#	CODE	EXPLANATION	ET	PS
1	2	START FLOW	330.17	0.08
2	6	END FLOW & START SHUT-IN	335.17	8.41
3	2	START FLOW	396.58	10.11
4	6	END FLOW & START SHUT-IN	457.50	71.96
5	31	OPENED ON SURFACE	491.00	74.66

ET	PS	ET	PS	ET	PS
.....					
318.92	0.00	323.50	0.00	328.08	-0.01
319.00	0.04	323.58	-0.03	328.17	-0.02
319.08	-0.02	323.67	-0.02	328.25	-0.01
319.17	0.01	323.75	-0.01	328.33	-0.02
319.25	-0.01	323.83	-0.03	328.42	-0.02
319.33	-0.01	323.92	0.02	328.50	-0.04
319.42	0.02	324.00	0.03	328.58	-0.05
319.50	-0.02	324.08	0.00	328.67	0.00
319.58	-0.01	324.17	-0.03	328.75	0.02
319.67	0.03	324.25	-0.03	328.83	0.04
319.75	0.01	324.33	0.04	328.92	0.07
31.83	-0.05	324.42	-0.04	329.00	0.01
31.92	-0.03	324.50	-0.08	329.08	0.00
320.00	-0.01	324.58	-0.05	329.17	0.00
320.08	0.02	324.67	-0.10	329.25	-0.04
320.17	-0.03	324.75	-0.08	329.33	0.00
320.25	-0.01	324.83	0.00	329.42	0.00
320.33	0.01	324.92	0.00	329.50	-0.03
320.42	0.00	325.00	0.02	329.58	-0.05
320.50	0.02	325.08	0.00	329.67	-0.04
320.58	0.00	325.17	0.00	329.75	-0.03
320.67	-0.03	325.25	0.01	329.83	-0.01
320.75	-0.03	325.33	0.05	329.92	-0.04
320.83	-0.01	325.42	0.00	330.00	-0.03
320.92	0.00	325.50	0.05	330.08	-0.04
321.00	-0.01	325.58	-0.01	330.17	0.08 #1
321.08	-0.04	325.67	-0.02	330.25	0.07
321.17	-0.02	325.75	0.05	330.33	0.07
321.25	0.02	325.83	-0.03	330.42	0.09
321.33	-0.02	325.92	-0.02	330.50	0.15
321.42	-0.02	326.00	0.02	330.58	0.20
321.50	0.02	326.08	-0.03	330.67	0.21
321.58	-0.02	326.17	0.00	330.75	0.00
321.67	-0.05	326.25	0.00	330.83	0.03
321.75	-0.02	326.33	0.00	330.92	0.09
321.83	-0.03	326.42	-0.02	331.00	0.28
321.92	0.00	326.50	-0.03	331.08	0.47
322.00	-0.02	326.58	0.00	331.17	0.76
322.08	-0.03	326.67	0.06	331.25	0.96
322.17	0.00	326.75	0.04	331.33	1.24
322.25	-0.03	326.83	0.05	331.42	1.55
322.33	0.01	326.92	-0.01	331.50	1.92
322.42	-0.03	327.00	-0.03	331.58	2.20
322.50	-0.03	327.08	0.00	331.67	2.47
322.58	0.01	327.17	0.03	331.75	2.74
322.67	-0.01	327.25	0.03	331.83	2.92
322.75	0.05	327.33	0.04	331.92	3.10
322.83	0.00	327.42	0.05	332.00	3.31
322.92	-0.05	327.50	0.03	332.08	3.44
323.00	-0.02	327.58	-0.02	332.17	3.65
323.08	0.00	327.67	0.00	332.25	3.84
323.17	-0.01	327.75	-0.01	332.33	4.18
323.25	-0.03	327.83	0.00	332.42	4.09
323.33	-0.05	327.92	0.05	332.50	4.27
323.42	0.02	328.00	-0.01	332.58	4.43

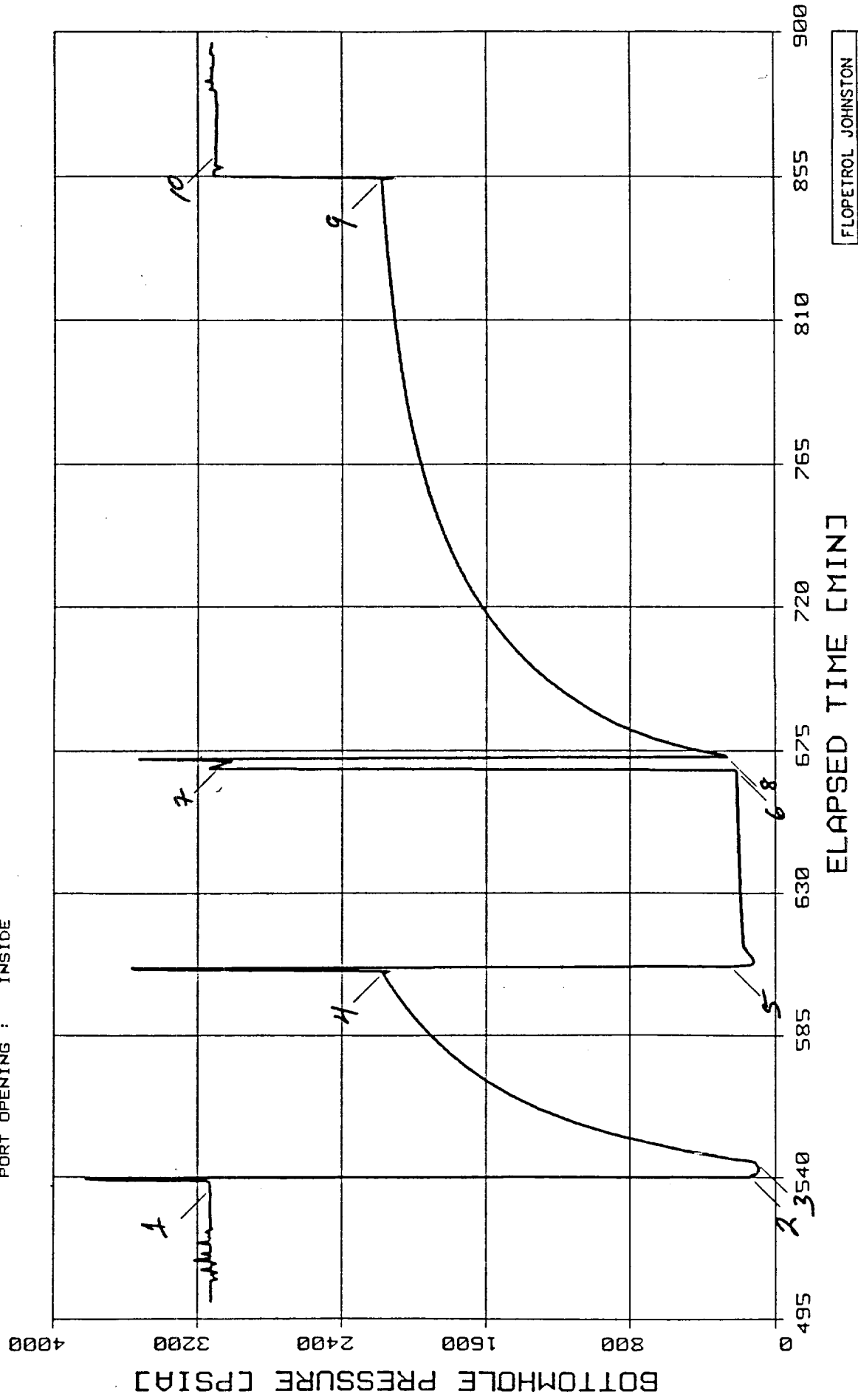
ET	PS	ET	PS	ET	PS
.....					
332.67	4.57	338.50	9.77	396.33	9.77
332.75	4.73	339.00	9.75	396.42	9.77
332.83	4.97	339.50	9.78	396.50	9.78
332.92	5.08	340.00	9.75	396.58	10.11 #3
333.00	5.30	340.50	9.77	396.67	10.51
333.08	5.45	341.00	9.75	396.75	11.21
333.17	5.60	341.50	9.78	396.83	12.32
333.25	5.76	342.00	9.76	396.92	13.60
333.33	5.88	342.50	9.79	397.00	15.18
333.42	6.02	343.00	9.78	397.08	17.78
333.50	6.17	348.00	9.64	397.17	21.11
333.58	6.31	353.00	9.68	397.25	24.61
333.67	6.44	358.00	9.76	397.33	27.52
333.75	6.58	363.00	9.76	397.42	29.15
333.83	6.68	368.00	9.79	397.50	29.79
333.92	6.81	373.00	9.76	397.58	30.21
334.00	6.94	378.00	9.72	397.67	30.81
334.08	7.05	383.00	9.76	397.75	31.15
334.17	7.18	388.00	9.75	397.83	31.52
334.25	7.29	393.00	9.78	397.92	31.85
334.33	7.39	393.42	9.79	398.00	32.12
334.42	7.51	393.50	9.80	398.25	32.76
334.50	7.60	393.58	9.77	398.50	33.23
334.58	7.72	393.67	9.78	398.75	34.11
334.67	7.83	393.75	9.79	399.00	34.68
334.75	7.93	393.83	9.76	399.25	35.20
334.83	8.04	393.92	9.75	399.50	35.58
334.92	8.13	394.00	9.78	399.75	35.92
335.00	8.21	394.08	9.79	400.00	36.30
335.08	8.36	394.17	9.77	400.25	36.62
335.17	8.41 #2	394.25	9.76	400.50	36.91
335.25	8.51	394.33	9.76	400.75	37.22
335.33	8.61	394.42	9.78	401.00	37.47
335.42	8.69	394.50	9.77	401.25	37.76
335.50	8.81	394.58	9.78	401.50	38.00
335.58	8.90	394.67	9.80	401.75	38.23
335.67	8.94	394.75	9.79	402.00	38.55
335.75	9.02	394.83	9.75	402.25	38.79
335.83	9.06	394.92	9.76	402.50	38.94
335.92	9.12	395.00	9.78	402.75	39.18
336.00	9.21	395.08	9.75	403.00	39.46
336.08	9.32	395.17	9.76	403.25	39.48
336.17	9.37	395.25	9.74	403.50	39.80
336.25	9.42	395.33	9.75	403.75	40.15
336.33	9.45	395.42	9.75	404.00	40.43
336.42	9.49	395.50	9.77	404.25	40.61
336.50	9.52	395.58	9.74	404.50	40.86
336.58	9.55	395.67	9.74	404.75	41.13
336.67	9.59	395.75	9.75	405.00	41.37
336.75	9.64	395.83	9.75	405.25	41.60
336.83	9.67	395.92	9.78	405.50	41.87
336.92	9.70	396.00	9.77	405.75	41.92
337.00	9.67	396.08	9.77	406.00	42.25
337.50	9.75	396.17	9.76	406.25	42.27
338.00	9.73	396.25	9.76	406.50	42.58

ET	PS	ET	PS	ET	PS
.....					
406.75	43.02	420.50	52.69	438.33	62.95
407.00	43.04	420.75	53.09	438.58	63.11
407.25	43.26	421.00	53.29	438.83	63.23
407.50	43.60	421.25	53.22	439.08	63.37
407.75	43.70	421.50	53.48	439.33	63.46
408.00	43.98	421.75	53.79	439.58	63.58
408.25	44.13	422.00	53.70	439.83	63.72
408.50	44.31	422.25	53.84	440.08	63.90
408.75	44.70	422.50	54.12	440.33	63.93
409.00	44.84	422.75	54.10	440.58	64.08
409.25	44.95	423.00	54.58	440.83	64.24
409.50	45.35	423.25	54.55	441.08	64.33
409.75	45.51	423.50	54.84	441.58	64.54
410.00	45.56	423.75	54.75	441.58	64.60
410.25	45.78	424.00	54.90	441.67	64.66
410.50	45.94	424.25	55.32	441.75	64.68
410.75	46.19	424.50	55.38	441.83	64.77
411.00	46.58	424.75	55.34	441.92	64.77
411.25	46.61	425.00	55.49	442.00	64.78
411.50	46.97	425.25	55.82	442.08	64.87
411.75	46.85	425.50	55.85	442.17	64.90
412.00	47.29	425.75	56.19	442.25	64.86
412.25	47.30	426.00	56.25	442.33	64.95
412.50	47.68	426.25	56.39	442.42	64.98
412.75	47.86	426.50	56.25	442.50	65.07
413.00	47.85	426.75	56.58	442.58	65.13
413.25	47.96	427.00	56.60	442.67	65.17
413.50	48.18	427.25	56.80	442.75	65.11
413.75	48.63	427.50	57.20	442.83	65.21
414.00	48.52	427.75	57.03	442.92	65.29
414.25	48.90	428.00	57.18	443.00	65.28
414.50	49.17	428.25	57.48	443.50	65.58
414.75	49.04	428.50	57.63	444.00	65.75
415.00	49.27	428.75	57.85	444.50	65.79
415.25	49.43	429.00	57.96	445.00	66.30
415.50	49.53	429.25	58.14	445.50	66.37
415.75	49.95	429.50	58.23	446.00	66.72
416.00	49.90	429.75	58.40	446.50	66.80
416.25	50.22	430.00	58.53	447.00	67.03
416.50	50.46	430.50	58.75	447.50	67.38
416.75	50.60	431.00	59.10	448.00	67.57
417.00	50.50	431.50	59.33	448.50	67.73
417.25	50.82	432.00	59.63	449.00	67.99
417.50	51.01	432.50	59.89	449.50	68.21
417.75	51.21	433.00	60.13	450.00	68.38
418.00	51.28	433.50	60.45	450.50	68.82
418.25	51.56	434.00	60.68	451.00	68.98
418.50	51.61	434.50	60.94	451.50	69.30
418.75	51.74	435.00	61.22	452.00	69.45
419.00	51.99	435.50	61.51	452.50	69.70
419.25	52.11	436.00	61.74	453.00	69.92
419.50	52.10	436.50	62.05	453.50	70.35
419.75	52.46	437.00	62.24	454.00	70.56
420.00	52.68	437.50	62.53	454.50	70.85
420.25	52.80	438.00	62.81	455.00	70.83

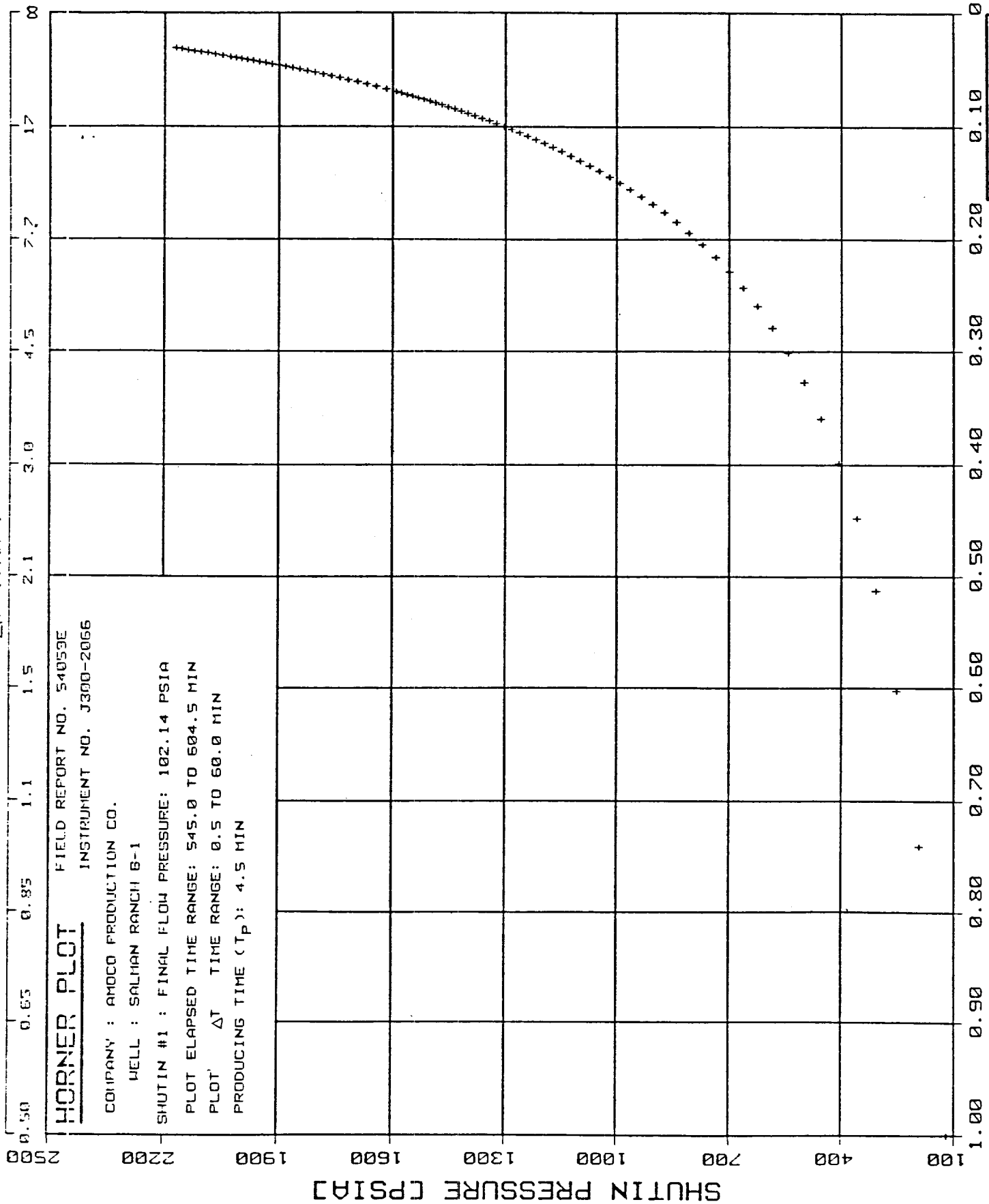
ET	PS	ET	PS	ET	PS
455.50	71.16	468.33	74.76	475.50	74.77
456.00	71.44	468.50	74.66	475.67	74.81
456.50	71.74	468.67	74.61	475.83	74.65
457.00	71.76	468.83	74.85	476.00	74.81
457.50	71.96 #4	469.00	74.84	481.00	74.82
458.00	72.13	469.17	74.59	486.00	74.78
458.50	72.49	469.33	74.61	491.00	74.66 #5
459.00	72.84	469.50	74.57	496.00	72.93
459.50	72.98	469.67	74.80	501.00	71.06
460.00	72.96	469.83	74.61	506.00	69.43
460.50	73.15	470.00	74.79	511.00	67.84
461.00	73.30	470.17	74.59	516.00	66.16
461.50	73.00	470.33	74.81	518.42	65.26
462.00	73.11	470.50	74.77	518.50	65.28
462.50	73.14	470.67	74.67	518.58	65.17
463.00	73.27	470.83	74.59	518.67	65.13
463.50	73.95	471.00	74.61	518.75	65.15
464.00	74.14	471.17	74.59	518.83	65.11
464.50	74.26	471.33	74.63	518.92	65.01
464.67	74.35	471.50	74.59	519.00	65.07
464.75	74.19	471.67	74.82	519.08	64.97
464.83	74.30	471.83	74.80	519.17	64.98
464.92	74.21	472.00	74.59	519.25	64.95
465.00	74.23	472.17	74.83	519.33	64.95
465.17	74.23	472.33	74.61	519.42	64.94
465.33	74.40	472.50	74.60	519.50	64.82
465.50	74.43	472.67	74.65	519.58	64.81
465.67	74.34	472.83	74.61	519.67	64.77
465.83	74.55	473.00	74.57	519.75	64.72
466.00	74.35	473.17	74.58	519.83	64.70
466.17	74.60	473.33	74.66	519.92	64.67
466.33	74.45	473.50	74.59	520.00	64.70
466.50	74.44	473.67	74.71	520.50	64.40
466.67	74.49	473.83	74.74	521.00	64.17
466.83	74.52	474.00	74.65	521.50	64.08
467.00	74.55	474.17	74.65	522.00	64.11
467.17	74.55	474.33	74.62	522.50	64.11
467.33	74.58	474.50	74.84	523.00	64.11
467.50	74.57	474.67	74.63	523.50	64.12
467.67	74.60	474.83	74.63	524.00	64.10
467.83	74.52	475.00	74.62	524.50	64.12
468.00	74.70	475.17	74.61	525.00	64.12
468.17	74.66	475.33	74.66	525.50	64.00

BOTTOMHOLE PRESSURE LOG

FIELD REPORT NO. 54059E COMPANY : AMOCO PRODUCTION CO.
INSTRUMENT NO. J300-2066 WELL : SALMAN RANCH B-1
DEPTH : 6658 FT
CAPACITY : 10000 PSI
PORT OPENING : INSIDE



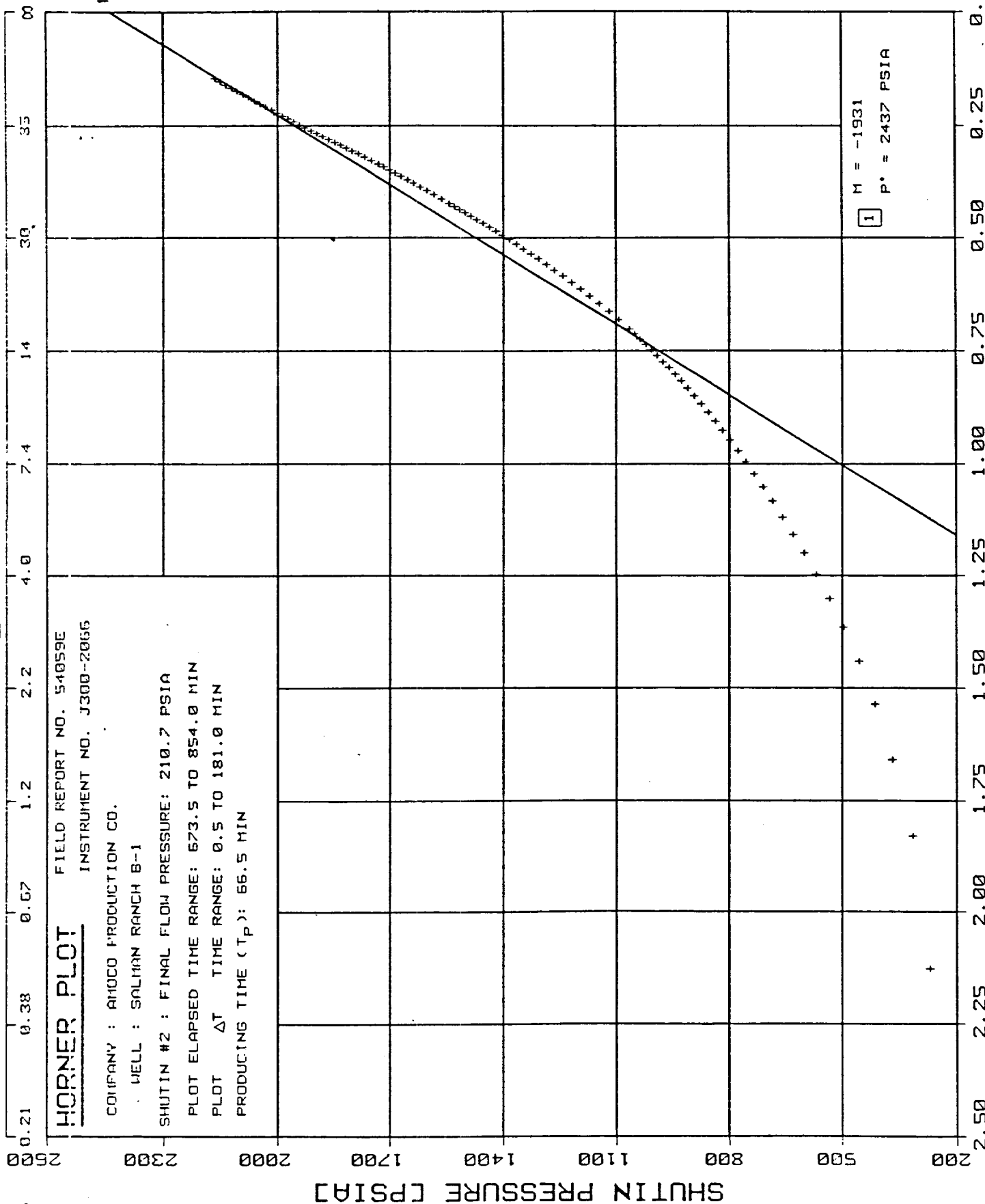
ΔT (MIN)



FLOPETROL JOHNSTON

Schlumberger

ΔT (MIN)



FLOPETROL JOHNSTON

SCOTT HENDERSON

LOG LOG PLOT

COMPANY : AMOCO PRODUCTION CO.

WELL : SALMAN RANCH B-1

FIELD REPORT NO. 54059E

INSTRUMENT NO. J300-2066

SHUTIN #2 :

FINAL FLOW PRESSURE (FWF) : 210.7 PSIA

PLOT ELAPSED TIME RANGE: 673.5 TO 854.0 MIN

PLOT ΔT TIME RANGE: 0.5 TO 181.0 MIN

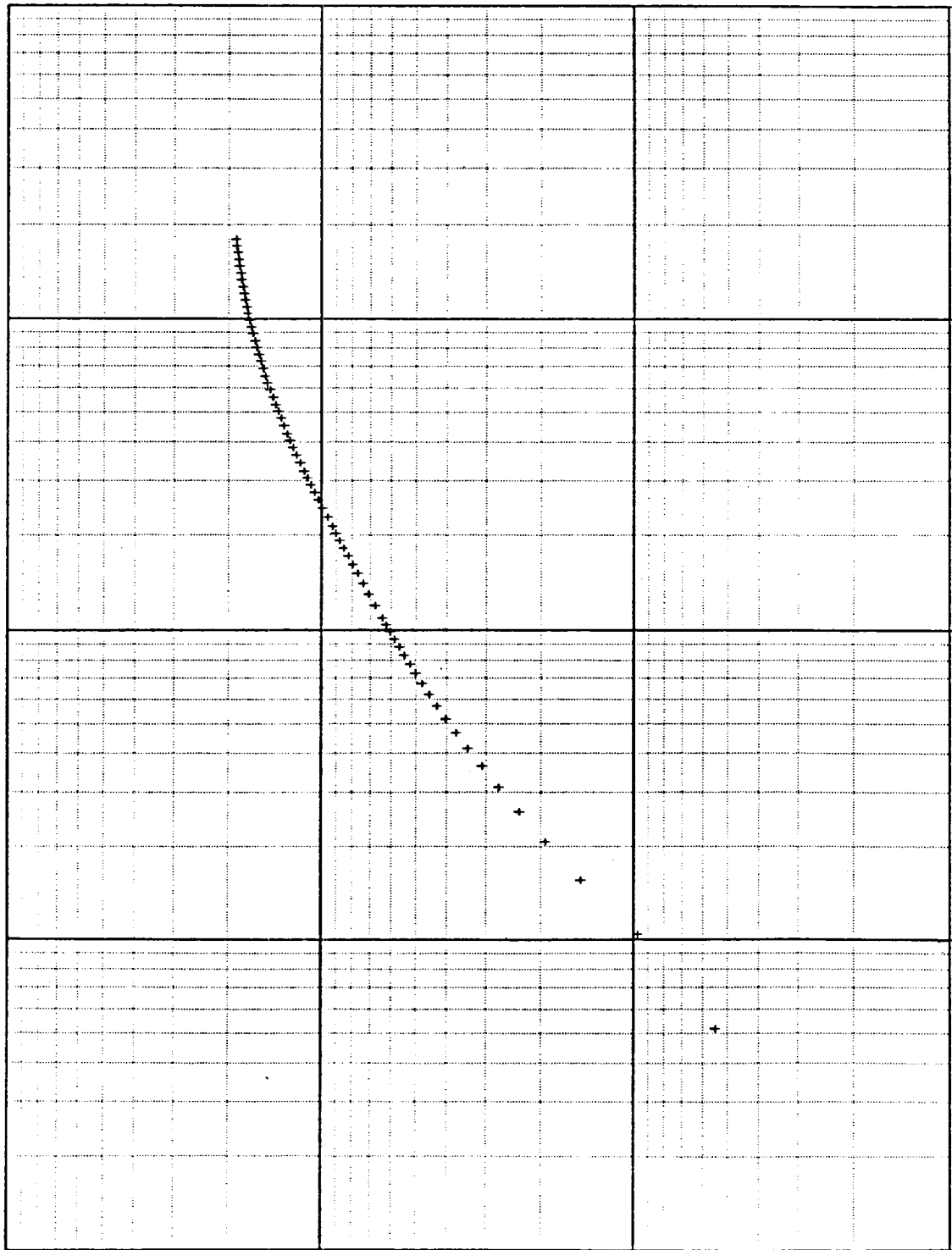
10000

1000

ΔP (PSI)

100

10



0.10

1.0

10.0

100.0

1000.0

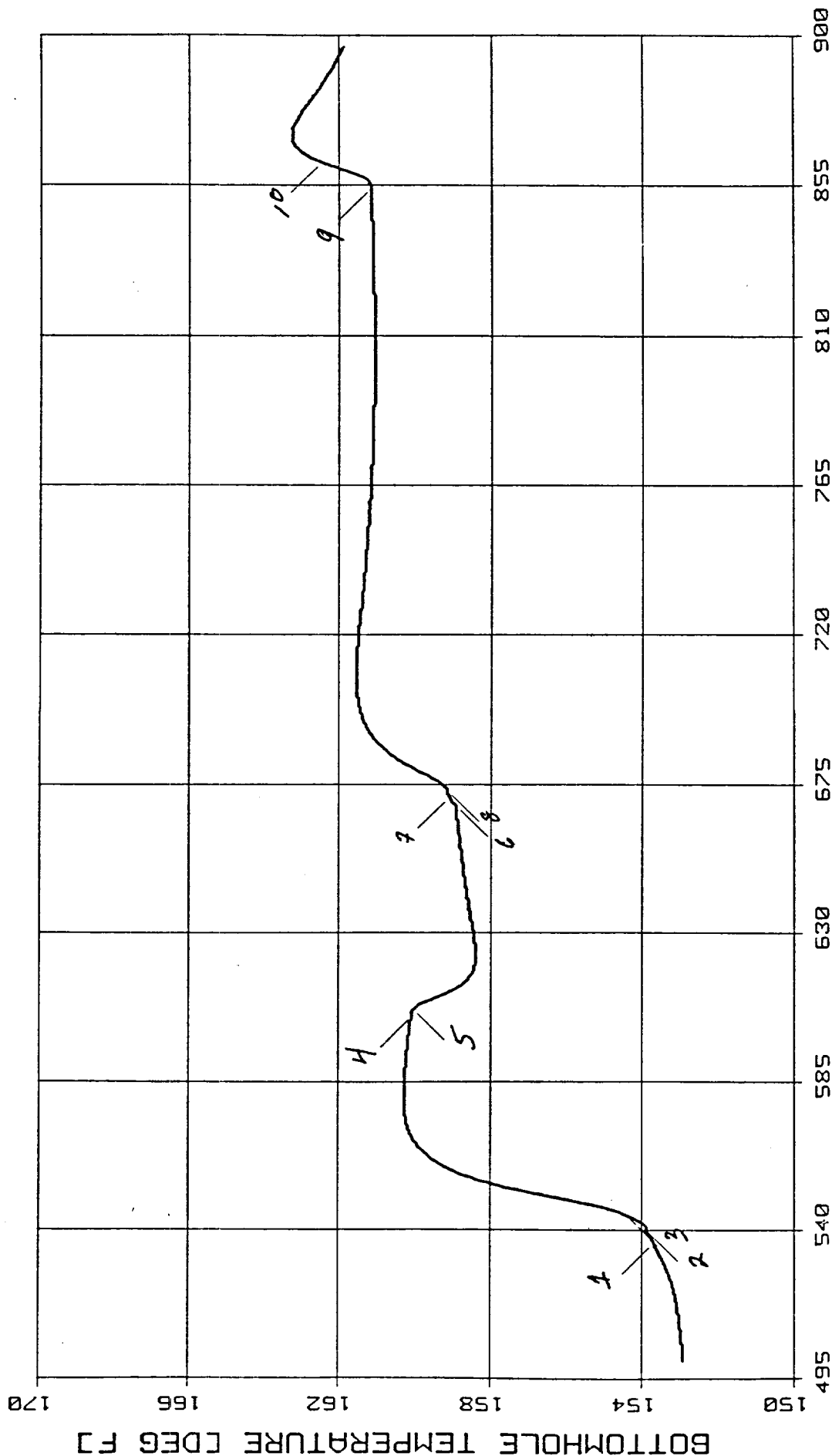
ΔT (MIN)

FLOPETROL JOHNSTON

Schlumberger

BOTTOMHOLE TEMPERATURE LOG

FIELD REPORT NO. 54059E COMPANY : AMOCO PRODUCTION CO.
INSTRUMENT NO. J300-2066 WELL : SALMAN RANCH B-1
DEPTH : 6658 FT



FLOPETROL JOHNSTON

CONTINUED

.....
 * WELL TEST DATA PRINTOUT *

FIELD REPORT # : 54059E

INSTRUMENT # : J300-2066

COMPANY : AMOCO PRODUCTION CO.

CAPACITY [PSI] : 10000.

WELL : SALMAN RANCH B-1

DEPTH [FT] : 6658.0

PORT OPENING : INSIDE

LABEL POINT INFORMATION

.....

#	TIME OF DAY		DATE	EXPLANATION	ELAPSED TIME, MIN	BOT HOLE	
	HH:MM:SS	DD-MM				PRESSURE PSIA	TEMP. DEG F
1	8:59:0	27	NO	HYDROSTATIC MUD	536.00	3128.4	153.7
2	9:3:0	27	NO	START FLOW	540.00	136.8	153.9
3	9:7:30	27	NO	END FLOW & START SHUT-IN	544.50	102.1	154.4
4	10:7:30	27	NO	END SHUT-IN	604.50	2168.8	160.1
5	10:9:30	27	NO	START FLOW	606.50	246.4	160.0
6	11:11:30	27	NO	END FLOW	668.50	210.7	158.9
7	11:14:0	27	NO	PULLED LOOSE	671.00	3055.1	159.1
8	11:16:0	27	NO	START SHUT-IN	673.00	263.0	159.1
9	14:17:0	27	NO	END SHUT-IN	854.00	2175.0	161.1
10	14:25:0	27	NO	HYDROSTATIC MUD	862.00	3096.7	162.4

SUMMARY OF FLOW PERIODS

.....

PERIOD	START ELAPSED TIME, MIN	END ELAPSED TIME, MIN	DURATION MIN	START PRESSURE PSIA	END PRESSURE PSIA
	TIME, MIN	TIME, MIN		PSIA	PSIA
1	540.00	544.50	4.50	136.8	102.1
2	606.50	668.50	62.00	246.4	210.7

SUMMARY OF SHUTIN PERIODS

.....

PERIOD	START ELAPSED TIME, MIN	END ELAPSED TIME, MIN	DURATION MIN	START PRESSURE PSIA	END PRESSURE PSIA	FINAL FLOW PRESSURE PSIA	PRODUCING TIME, MIN
	TIME, MIN	TIME, MIN		PSIA	PSIA	PSIA	TIME, MIN
1	544.50	604.50	60.00	102.1	2168.8	102.1	4.50
2	673.00	854.00	181.00	263.0	2175.0	210.7	66.50

TEST PHASE : FLOW PERIOD # 1

TIME OF DAY	DATE	ELAPSED	DELTA	BOT HOLE TEMP.	BOT HOLE PRESSURE
HH:MM:SS	DD-MM	TIME, MIN	TIME, MIN	DEG F	PSIA
9: 3: 0	27-NO	540.00	0.00	153.9	136.8
9: 7:30	27-NO	544.50	4.50	154.4	102.1

TEST PHASE : SHUTIN PERIOD # 1

FINAL FLOW PRESSURE [PSIA] = 102.1
 PRODUCING TIME [MIN] = 4.50

TIME OF DAY	DATE	ELAPSED	DELTA	BOT HOLE TEMP.	BOT HOLE PRESSURE	DELTA P	LOG HORNER
HH:MM:SS	DD-MM	TIME, MIN	TIME, MIN	DEG F	PSIA	PSI	TIME
9: 7:30	27-NO	544.50	0.00	154.4	102.1	0.0	
9: 8:30	27-NO	545.50	1.00	154.6	188.4	86.3	0.740
9: 9:30	27-NO	546.50	2.00	154.9	303.5	201.4	0.512
9:10:30	27-NO	547.50	3.00	155.2	404.2	302.1	0.398
9:11:30	27-NO	548.50	4.00	155.6	496.0	393.9	0.327
9:12:30	27-NO	549.50	5.00	156.1	580.8	478.7	0.279
9:13:30	27-NO	550.50	6.00	156.5	660.2	558.0	0.243
9:14:30	27-NO	551.50	7.00	157.0	734.6	632.4	0.216
9:15:30	27-NO	552.50	8.00	157.4	804.3	702.2	0.194
9:16:30	27-NO	553.50	9.00	157.7	870.0	767.8	0.176
9:17:30	27-NO	554.50	10.00	158.1	931.0	829.6	0.161
9:19:30	27-NO	556.50	12.00	158.6	1045.5	943.4	0.138
9:21:30	27-NO	558.50	14.00	159.0	1147.4	1045.2	0.121
9:23:30	27-NO	560.50	16.00	159.4	1238.3	1136.2	0.108
9:25:30	27-NO	562.50	18.00	159.6	1320.9	1218.7	0.097
9:27:30	27-NO	564.50	20.00	159.8	1396.0	1293.9	0.088
9:29:30	27-NO	566.50	22.00	159.9	1464.9	1362.7	0.081
9:31:30	27-NO	568.50	24.00	160.1	1528.2	1426.0	0.075
9:33:30	27-NO	570.50	26.00	160.1	1586.6	1484.4	0.069
9:35:30	27-NO	572.50	28.00	160.2	1640.7	1538.5	0.065
9:37:30	27-NO	574.50	30.00	160.2	1690.9	1588.7	0.061
9:42:30	27-NO	579.50	35.00	160.3	1802.4	1700.3	0.053
9:47:30	27-NO	584.50	40.00	160.3	1897.8	1795.6	0.046
9:52:30	27-NO	589.50	45.00	160.2	1979.9	1877.7	0.041
9:57:30	27-NO	594.50	50.00	160.2	2051.4	1949.2	0.037
10: 2:30	27-NO	599.50	55.00	160.1	2113.9	2011.7	0.034
10: 7:30	27-NO	604.50	60.00	160.1	2168.8	2066.7	0.031

TEST PHASE : FLOW PERIOD # 2

TIME OF DAY	DATE	ELAPSED	DELTA	BOT HOLE TEMP.	BOT HOLE PRESSURE
HH:MM:SS	DD-MM	TIME, MIN	TIME, MIN	DEG F	PSIA
10: 9:30	27-NO	606.50	0.00	160.0	246.4
10:14:30	27-NO	611.50	5.00	159.2	153.6
10:19:30	27-NO	616.50	10.00	158.6	175.8
10:24:30	27-NO	621.50	15.00	158.4	181.7
10:29:30	27-NO	626.50	20.00	158.4	186.2
10:34:30	27-NO	631.50	25.00	158.5	189.7
10:39:30	27-NO	636.50	30.00	158.5	193.0
10:44:30	27-NO	641.50	35.00	158.6	195.9
10:49:30	27-NO	646.50	40.00	158.7	199.1
10:54:30	27-NO	651.50	45.00	158.8	201.5
10:59:30	27-NO	656.50	50.00	158.8	204.6
11: 4:30	27-NO	661.50	55.00	158.9	207.0
11: 9:30	27-NO	666.50	60.00	158.9	209.5
11:11:30	27-NO	668.50	62.00	158.9	210.7

TEST PHASE : SHUTIN PERIOD # 2

FINAL FLOW PRESSURE [PSIA] = 210.7

PRODUCING TIME [MIN] = 66.50

TIME OF DAY	DATE	ELAPSED	DELTA	BOT HOLE TEMP.	BOT HOLE PRESSURE	LOG DELTA P	HORNER TIME
HH:MM:SS	DD-MM	TIME, MIN	TIME, MIN	DEG F	PSIA	PSI	
11:16: 0	27-NO	673.00	0.00	159.1	263.0	52.3	
11:17: 0	27-NO	674.00	1.00	159.2	311.5	100.8	1.829
11:18: 0	27-NO	675.00	2.00	159.3	411.0	200.3	1.535
11:19: 0	27-NO	676.00	3.00	159.4	493.1	282.4	1.365
11:20: 0	27-NO	677.00	4.00	159.6	564.2	353.5	1.246
11:21: 0	27-NO	678.00	5.00	159.7	626.2	415.5	1.155
11:22: 0	27-NO	679.00	6.00	159.9	681.0	470.3	1.082
11:23: 0	27-NO	680.00	7.00	160.0	730.1	519.4	1.021
11:24: 0	27-NO	681.00	8.00	160.2	774.7	564.0	0.969
11:25: 0	27-NO	682.00	9.00	160.4	815.9	605.2	0.924
11:26: 0	27-NO	683.00	10.00	160.5	854.3	643.6	0.884
11:28: 0	27-NO	685.00	12.00	160.7	924.9	714.2	0.816
11:30: 0	27-NO	687.00	14.00	160.9	989.2	778.5	0.760
11:32: 0	27-NO	689.00	16.00	161.1	1048.5	837.8	0.712
11:34: 0	27-NO	691.00	18.00	161.2	1103.8	893.1	0.672
11:36: 0	27-NO	693.00	20.00	161.3	1155.6	944.9	0.636
11:38: 0	27-NO	695.00	22.00	161.4	1204.2	993.5	0.605
11:40: 0	27-NO	697.00	24.00	161.4	1249.8	1039.1	0.576
11:42: 0	27-NO	699.00	26.00	161.5	1292.8	1082.1	0.551
11:44: 0	27-NO	701.00	28.00	161.5	1333.4	1122.7	0.528
11:46: 0	27-NO	703.00	30.00	161.5	1371.7	1161.0	0.507
11:51: 0	27-NO	708.00	35.00	161.5	1457.8	1247.1	0.462
11:56: 0	27-NO	713.00	40.00	161.5	1531.8	1321.2	0.425
12: 1: 0	27-NO	718.00	45.00	161.5	1597.5	1386.8	0.394

TEST PHASE : SHUTIN PERIOD # 2

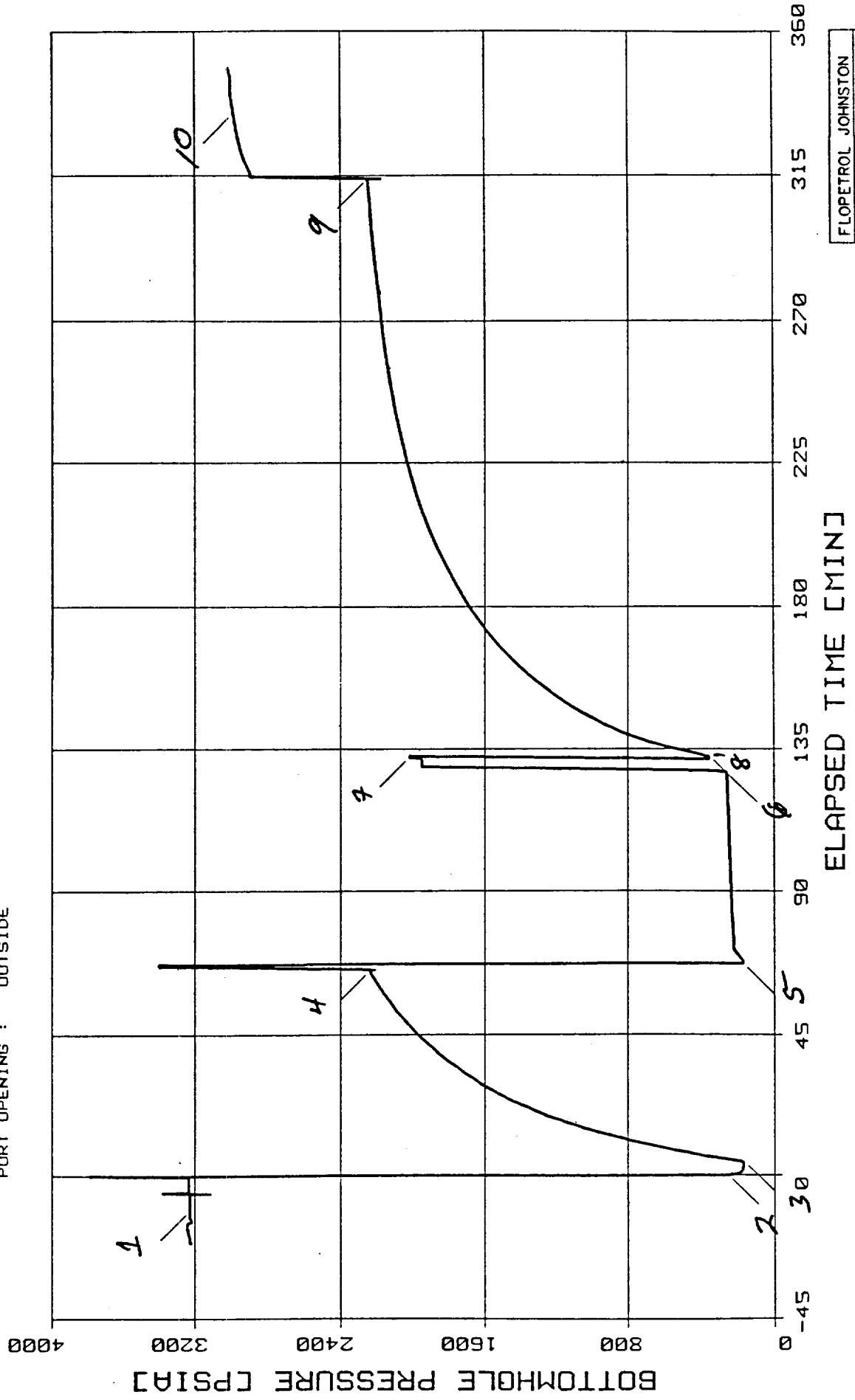
FINAL FLOW PRESSURE [PSIA] = 210.7

PRODUCING TIME [MIN] = 66.50

TIME OF DAY	DATE	ELAPSED	DELTA	BOT HOLE TEMP.	BOT HOLE PRESSURE	DELTA P	LOG HORNER
HH:MM:SS	DD-MM	TIME, MIN	TIME, MIN	DEG F	PSIA	PSI	TIME
.....							
12: 6: 0	27-NO	723.00	50.00	161.4	1655.6	1444.9	0.367
12:11: 0	27-NO	728.00	55.00	161.4	1707.8	1497.1	0.344
12:16: 0	27-NO	733.00	60.00	161.4	1754.7	1544.0	0.324
12:21: 0	27-NO	738.00	65.00	161.3	1796.8	1586.1	0.306
12:26: 0	27-NO	743.00	70.00	161.3	1834.7	1624.0	0.290
12:31: 0	27-NO	748.00	75.00	161.2	1869.0	1658.3	0.276
12:36: 0	27-NO	753.00	80.00	161.2	1900.0	1689.3	0.263
12:41: 0	27-NO	758.00	85.00	161.2	1927.7	1717.0	0.251
12:46: 0	27-NO	763.00	90.00	161.1	1952.7	1742.0	0.240
12:51: 0	27-NO	768.00	95.00	161.1	1975.2	1764.5	0.230
12:56: 0	27-NO	773.00	100.00	161.1	1995.8	1785.1	0.221
13: 1: 0	27-NO	778.00	105.00	161.1	2014.8	1804.1	0.213
13: 6: 0	27-NO	783.00	110.00	161.1	2032.1	1821.4	0.205
13:11: 0	27-NO	788.00	115.00	161.1	2047.8	1837.2	0.198
13:16: 0	27-NO	793.00	120.00	161.1	2062.3	1851.6	0.191
13:21: 0	27-NO	798.00	125.00	161.1	2075.8	1865.1	0.185
13:26: 0	27-NO	803.00	130.00	161.1	2088.1	1877.4	0.179
13:31: 0	27-NO	808.00	135.00	161.1	2099.9	1889.2	0.174
13:36: 0	27-NO	813.00	140.00	161.1	2110.7	1900.0	0.169
13:41: 0	27-NO	818.00	145.00	161.1	2120.2	1909.5	0.164
13:46: 0	27-NO	823.00	150.00	161.1	2129.6	1918.9	0.159
13:51: 0	27-NO	828.00	155.00	161.1	2138.4	1927.7	0.155
13:56: 0	27-NO	833.00	160.00	161.1	2146.3	1935.6	0.151
14: 1: 0	27-NO	838.00	165.00	161.1	2153.8	1943.1	0.147
14: 6: 0	27-NO	843.00	170.00	161.1	2161.2	1950.5	0.143
14:11: 0	27-NO	848.00	175.00	161.1	2168.3	1957.6	0.140
14:16: 0	27-NO	853.00	180.00	161.1	2173.1	1962.4	0.137
14:17: 0	27-NO	854.00	181.00	161.1	2175.0	1964.3	0.136

BOTTOMHOLE PRESSURE LOG

FIELD REPORT NO. 54059E COMPANY : AMOCO PRODUCTION CO.
INSTRUMENT NO. J 1916 WELL : SALMAN RANCH #B-1
DEPTH : 6774 FT
CAPACITY : 6400 PSI
PORT OPENING : OUTSIDE



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 • WELL TEST DATA PRINTOUT •

FIELD REPORT # : 54059E

INSTRUMENT # : J 1916

COMPANY : AMOCO PRODUCTION CO.

CAPACITY [PSI] : 6400.

WELL : SALMAN RANCH #B-1

DEPTH [FT] : 6774.0

PORT OPENING : OUTSIDE

TEMPERATURE [DEG F] : 163.0

LABEL POINT INFORMATION

#	TIME OF DAY		DATE DD-MM	EXPLANATION	ELAPSED TIME, MIN	BOT HOLE PRESSURE PSIA
	HH:MM:SS					
1	8:50:5		27	NO HYDROSTATIC MUD	-10.91	3226
2	9:1:0		27	NO START FLOW	0.00	249
3	9:5:16		27	NO END FLOW & START SHUT-IN	4.26	166
4	10:6:7		27	NO END SHUT-IN	65.11	2237
5	10:8:17		27	NO START FLOW	67.28	168
6	11:8:39		27	NO END FLOW	127.65	255
7	11:13:35		27	NO PULLED LOOSE	132.59	2016
8	11:13:40		27	NO START SHUT-IN	132.67	350
9	14:15:0		27	NO END SHUT-IN	314.00	2245
10	14:35:35		27	NO HYDROSTATIC MUD	334.59	2983

SUMMARY OF FLOW PERIODS

PERIOD	START ELAPSED		DURATION MIN	END ELAPSED		PRESSURE PSIA	PRESSURE PSIA
	TIME, MIN	TIME, MIN		TIME, MIN	TIME, MIN		
1	0.00	4.26	4.26	249	166		
2	67.28	127.65	60.37	168	255		

SUMMARY OF SHUTIN PERIODS

PERIOD	START ELAPSED		DURATION MIN	END ELAPSED		PRESSURE PSIA	PRESSURE PSIA	FINAL FLOW	
	TIME, MIN	TIME, MIN		TIME, MIN	TIME, MIN			PRESSURE PSIA	PRODUCING TIME, MIN
1	4.26	65.11	60.85	166	2237	166	4.26		
2	132.67	314.00	181.33	350	2245	255	64.63		

TEST PHASE : FLOW PERIOD # 1

TIME				BOT HOLE	
OF DAY	DATE	ELAPSED	DELTA	PRESSURE	
HH:MM:SS	DD-MM	TIME, MIN	TIME, MIN	PSIA	
9: 1: 0	27-NO	0.00	0.00	249	
9: 5:16	27-NO	4.26	4.26	166	

TEST PHASE : SHUTIN PERIOD # 1

FINAL FLOW PRESSURE [PSIA] = 166

PRODUCING TIME [MIN] = 4.26

TIME				BOT HOLE		LOG	
OF DAY	DATE	ELAPSED	DELTA	PRESSURE	DELTA P	HORNER	
HH:MM:SS	DD-MM	TIME, MIN	TIME, MIN	PSIA	PSI	TIME	
9: 5:16	27-NO	4.26	0.00	166	0		
9: 6:16	27-NO	5.26	1.00	278	112	0.721	
9: 7:16	27-NO	6.26	2.00	379	213	0.496	
9: 8:16	27-NO	7.26	3.00	470	304	0.384	
9: 9:16	27-NO	8.26	4.00	554	388	0.315	
9:10:16	27-NO	9.26	5.00	638	472	0.268	
9:11:16	27-NO	10.26	6.00	716	550	0.233	
9:12:16	27-NO	11.26	7.00	789	623	0.206	
9:13:16	27-NO	12.26	8.00	854	688	0.185	
9:14:16	27-NO	13.26	9.00	916	750	0.168	
9:15:16	27-NO	14.26	10.00	983	817	0.154	
9:17:16	27-NO	16.26	12.00	1097	931	0.132	
9:19:16	27-NO	18.26	14.00	1197	1031	0.115	
9:21:16	27-NO	20.26	16.00	1289	1123	0.103	
9:23:16	27-NO	22.26	18.00	1369	1203	0.092	
9:25:16	27-NO	24.26	20.00	1452	1286	0.084	
9:27:16	27-NO	26.26	22.00	1520	1354	0.077	
9:29:16	27-NO	28.26	24.00	1586	1420	0.071	
9:31:16	27-NO	30.26	26.00	1645	1479	0.066	
9:33:16	27-NO	32.26	28.00	1698	1532	0.062	
9:35:16	27-NO	34.26	30.00	1747	1581	0.058	
9:40:16	27-NO	39.26	35.00	1861	1695	0.050	
9:45:16	27-NO	44.26	40.00	1958	1792	0.044	
9:50:16	27-NO	49.26	45.00	2039	1873	0.039	
9:55:16	27-NO	54.26	50.00	2111	1945	0.036	
10: 0:16	27-NO	59.26	55.00	2174	2008	0.032	
10: 5:16	27-NO	64.26	60.00	2230	2064	0.030	
10: 6: 7	27-NO	65.11	60.85	2237	2071	0.029	

TEST PHASE : FLOW PERIOD # 2

TIME OF DAY	DATE	ELAPSED TIME, MIN	DELTA TIME, MIN	BOT HOLE PRESSURE PSIA
HH:MM:SS	DD-MM	.....	.....	.....
10: 8:17	27-NO	67.28	0.00	168
10:13:17	27-NO	72.28	5.00	217
10:18:17	27-NO	77.28	10.00	221
10:23:17	27-NO	82.28	15.00	226
10:28:17	27-NO	87.28	20.00	229
10:33:17	27-NO	92.28	25.00	233
10:38:17	27-NO	97.28	30.00	236
10:43:17	27-NO	102.28	35.00	238
10:48:17	27-NO	107.28	40.00	241
10:53:17	27-NO	112.28	45.00	244
10:58:17	27-NO	117.28	50.00	248
11: 3:17	27-NO	122.28	55.00	251
11: 8:17	27-NO	127.28	60.00	255
11: 8:39	27-NO	127.65	60.37	255

TEST PHASE : SHUTIN PERIOD # 2

FINAL FLOW PRESSURE [PSIA] = 255

PRODUCING TIME [MIN] = 64.63

TIME OF DAY	DATE	ELAPSED TIME, MIN	DELTA TIME, MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
HH:MM:SS	DD-MM	.....	.....	.....	.....	.....
11:13:40	27-NO	132.67	0.00	350	95	
11:14:40	27-NO	133.67	1.00	426	171	1.817
11:15:40	27-NO	134.67	2.00	505	250	1.523
11:16:40	27-NO	135.67	3.00	578	323	1.353
11:17:40	27-NO	136.67	4.00	644	389	1.234
11:18:40	27-NO	137.67	5.00	698	443	1.144
11:19:40	27-NO	138.67	6.00	749	495	1.071
11:20:40	27-NO	139.67	7.00	798	544	1.010
11:21:40	27-NO	140.67	8.00	842	587	0.958
11:22:40	27-NO	141.67	9.00	881	627	0.913
11:23:40	27-NO	142.67	10.00	919	665	0.873
11:25:40	27-NO	144.67	12.00	987	732	0.805
11:27:40	27-NO	146.67	14.00	1051	796	0.749
11:29:40	27-NO	148.67	16.00	1110	855	0.702
11:31:40	27-NO	150.67	18.00	1163	908	0.662
11:33:40	27-NO	152.67	20.00	1215	960	0.626
11:35:40	27-NO	154.67	22.00	1263	1008	0.595
11:37:40	27-NO	156.67	24.00	1308	1053	0.567
11:39:40	27-NO	158.67	26.00	1350	1095	0.542
11:41:40	27-NO	160.67	28.00	1388	1133	0.520
11:43:40	27-NO	162.67	30.00	1427	1172	0.499
11:48:40	27-NO	167.67	35.00	1516	1262	0.454
11:53:40	27-NO	172.67	40.00	1591	1336	0.418
11:58:40	27-NO	177.67	45.00	1657	1402	0.387

TEST PHASE : SHUTIN PERIOD # 2

FINAL FLOW PRESSURE [PSIA] = 256

PRODUCING TIME [MIN] = 64.63

TIME OF DAY	DATE	ELAPSED TIME, MIN	DELTA TIME, MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
HH:MM:SS	DD-MM	.....	.....	.....	.....	.....
12: 3:40	27-NO	182.67	50.00	1715	1460	0.360
12: 8:40	27-NO	187.67	55.00	1767	1512	0.337
12:13:40	27-NO	192.67	60.00	1816	1561	0.317
12:18:40	27-NO	197.67	65.00	1859	1605	0.300
12:23:40	27-NO	202.67	70.00	1898	1644	0.284
12:28:40	27-NO	207.67	75.00	1932	1677	0.270
12:33:40	27-NO	212.67	80.00	1963	1708	0.257
12:38:40	27-NO	217.67	85.00	1991	1736	0.246
12:43:40	27-NO	222.67	90.00	2016	1761	0.235
12:48:40	27-NO	227.67	95.00	2038	1784	0.225
12:53:40	27-NO	232.67	100.00	2059	1804	0.217
12:58:40	27-NO	237.67	105.00	2079	1824	0.208
13: 3:40	27-NO	242.67	110.00	2098	1843	0.201
13: 8:40	27-NO	247.67	115.00	2114	1860	0.194
13:13:40	27-NO	252.67	120.00	2129	1874	0.187
13:18:40	27-NO	257.67	125.00	2142	1887	0.181
13:23:40	27-NO	262.67	130.00	2153	1899	0.175
13:28:40	27-NO	267.67	135.00	2164	1910	0.170
13:33:40	27-NO	272.67	140.00	2175	1921	0.165
13:38:40	27-NO	277.67	145.00	2185	1931	0.160
13:43:40	27-NO	282.67	150.00	2195	1940	0.156
13:48:40	27-NO	287.67	155.00	2205	1950	0.151
13:53:40	27-NO	292.67	160.00	2214	1959	0.147
13:58:40	27-NO	297.67	165.00	2223	1968	0.144
14: 3:40	27-NO	302.67	170.00	2230	1975	0.140
14: 8:40	27-NO	307.67	175.00	2236	1981	0.137
14:13:40	27-NO	312.67	180.00	2243	1988	0.133
14:15: 0	27-NO	314.00	181.33	2245	1990	0.132