



COMPANY : SAHARA OPERATING CO. 30-025-34364
LEASE : INDIANA "1"
WELL NO. : # 1 - G - 1 - 19 - 36
FIELD : WILDCAT
COUNTY/STATE : LEA / NEW MEXICO

TEST DATE : 06/20/98
D.S.T. NO. : 2
TEST TKT. NO. : 20264
INVOICE NO. : 18487
ORDER NO. :

FORMATION : ABO
INTERVAL (ft) : 7255 TO 7480
TOTAL DEPTH (ft) : 7480
ELEVATION (ft) :
HOLE SIZE (in) : 7.875
DRILL PIPE ID (in) : 3.75
DRILL COLLAR ID (in) : 2.25
DRILL COLLAR feet : 619
ANCHOR LENGTH (ft) : 225
TOOL LENGTH (ft) : 74
TOOL O.D. (in) : 5
PACKER SIZE (in) : 7.00

RECORDER DATA
AK1-KUSTER / AMERADA

TOP RECORDER: IN
RECORDER NO. : 11026
CAPACITY (psi) : 5025
DEPTH (ft) : 7260
CLOCK NO. : 33702
DURATION (hrs) : 12

BOTTOM RECORDER: OUT
RECORDER NO. : 88051
CAPACITY (psi) : 10000
DEPTH (ft) : 7265
CLOCK NO. : 88051
DURATION (hrs) : 96

MUD PROPERTIES

MUD TYPE : SALTGEL/STARCH
MUD WT. (#/gal) : 10.0
WATER LOSS (cc) : 14.0
FILTER CAKE (in) : 1/32
VISCOSITY (sec) : 50
CHLORIDE PPM : 178000
RESISTIVITY(ohm-m) : 0.06

EQUIPMENT DATA

CONVENTIONAL : YES
STRADDLE : NO
SELECTIVE ZONE : NO
SAMPLE CHAMBER : YES
GAS ANALYSIS : NO
ROTARY JARS : YES
NO. OF PACKERS : 2
SAFETY JOINT : YES
CIRCULATING SUB : YES
REVERSED OUT : YES
MULTIFLOW : NO
MILEAGE : NO
OPERATOR TIME : NO
OTHER : YES
AMARADA ELECTRONIC : YES
SUCCESSFUL : YES
PACKER FAILURE : NO
TOOL PLUG : NO

DECIDED NOT TO TEST : NO

FAIL TO REACH BOTTOM : NO

TIME INTERVAL DATA (min)

TOOL OPENED : 12:45 AM

TOTAL TEST TIME: 252

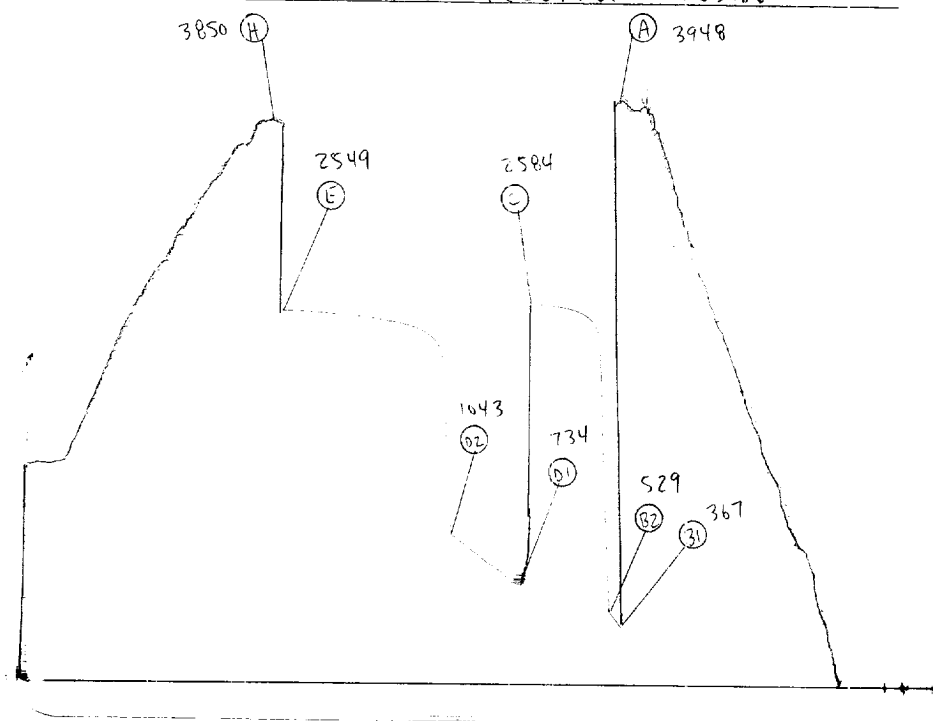
INITIAL FLOW : 10
SECOND FLOW : 57
THIRD FLOW :

INITIAL SHUT-IN: 58
SECOND SHUT-IN : 126
THIRD SHUT IN :

TEST TOOL OPERATOR: DON DAWKINS

		CORRECTED READING	FIELD READING
A	INITIAL HYDROSTATIC:	3948 PSI	3904 PSI
B-1	INITIAL FIRST FLOW :	367 PSI	387 PSI
B-2	FINAL FIRST FLOW :	529 PSI	490 PSI
C	FIRST SHUT-IN :	2584 PSI	2541 PSI
D-1	INITIAL SECOND FLOW:	734 PSI	684 PSI
D-2	FINAL SECOND FLOW :	1043 PSI	1007 PSI
E	SECOND SHUT-IN :	2549 PSI	2502 PSI
H	FINAL HYDROSTATIC :	3850 PSI	3763 PSI

TKT- 20264 REC- 11026 WT- 5025
AK-1 KUSTER 12 HR. CLOCK
TOP RECORDER: INSIDE

RECOVERY DATA

PIPE RECOVERY

B.H. TEMP. (deg F) : 125

SAMPLE CHAMBER

GAS TO SURFACE 6 MIN. INTO FINAL FLOW PERIOD
PULLED TO FLUID @ 2241 & REVERSED INTO TEST TANK
18 BBLS. OF FREE OIL (40.6 GRAVITY @ 60 DEGREES)
7 BBLS. OF HEAVY OIL & GAS CUT MUD

1000 LBS. OF PRESSURE
4.3 CU. FT. OF GAS
1100 CC'S OF FREE OIL
40.6 GRAVITY @ 60 DEG.
GOR = 610:1 CU. FT. / BBL.

TEST REMARKS

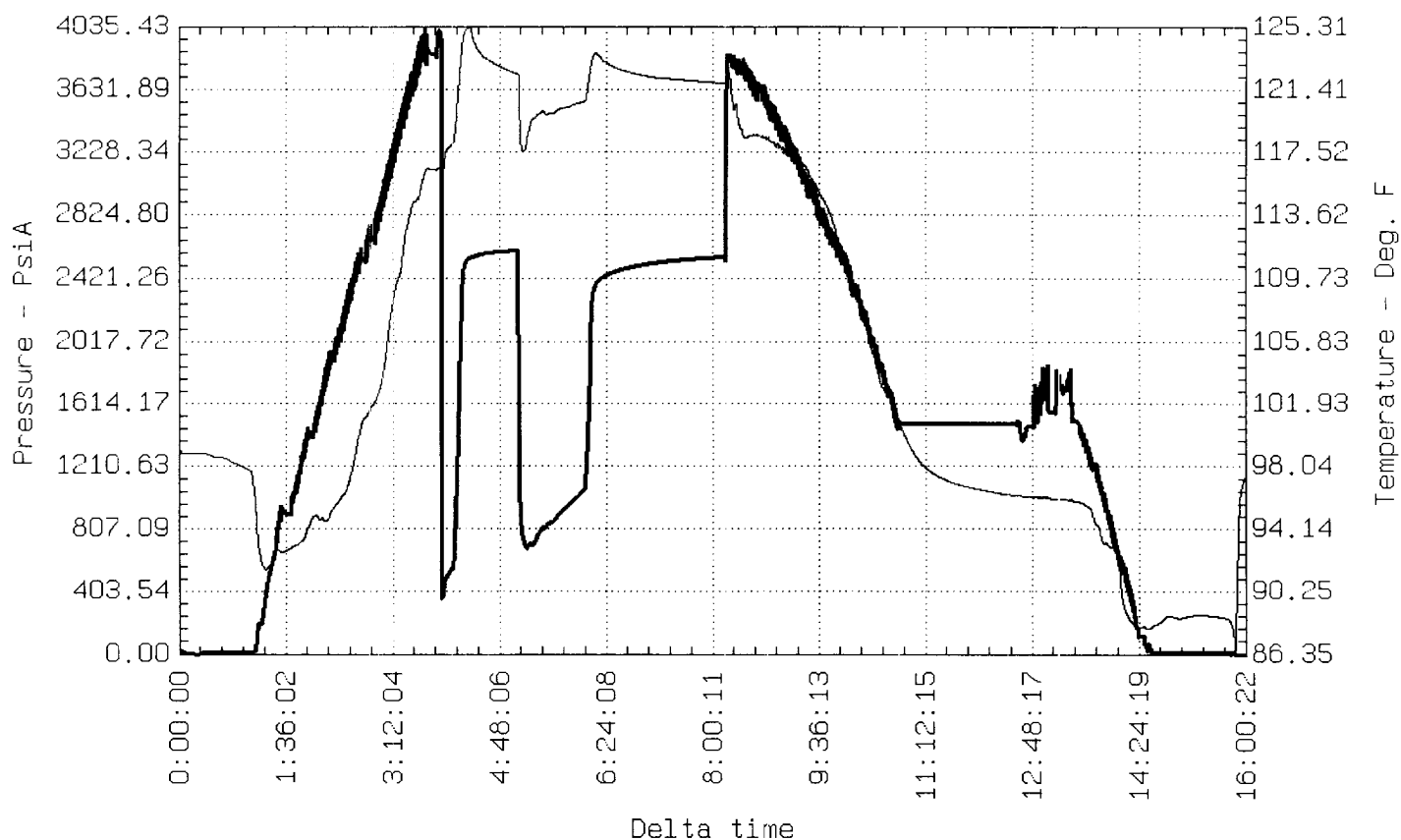
TOOL OPENED WITH A STRONG BLOW WHICH INCREASED TO 18" IN WATER IN 2 MIN.,
OPENED CHOKE TO 1/4" WITH 9" IN WATER THROUGHOUT THE 10 MIN. FIRST FLOW.
REOPENED TOOL WITH A STRONG BLOW ON 1/4" CHOKE, GAS TO SURFACE IN 6 MIN.
WITH 30 LBS. (65 MCFPD) WHICH INCREASED TO 42 LBS. (83 MCFPD) IN 15 MIN.,
60 LBS. (109 MCFPD) IN 30 MIN., 32 LBS. ON 1/2" CHOKE (292 MCFPD) IN 45
MIN. AND 20 LBS. ON 1/2" CHOKE (217 MCFPD) AT END OF 60 MIN. FINAL FLOW.

LOGGED PRESSURE / TEMPERATURE DATA

File name: SAHARA2

Company : SAHARA OPERATING COMPANY
Client : ROBERT McALPINE
Gauge number : 88051
Well name : INDIANA "1"
Well number : 1
Test number : 2
Field name : WILDCAT
Test operator : DON DAWKINS
Comments : ABO 7255-7480 FEET
:

Starting date: 06/20/98
time: 12:45:00



INCREMENTAL PRESSURE DATA

RECORDER NO : 88051

RECORDER CAPACITY : 10000 psi

RECORDER DEPTH : 7265 ft

ELAPSED TIME ---MIN----	TOTAL FLOW TIME, T ---MIN----	INCREMENTAL SHUT-IN TIME, DT ---MIN----	(T+DT)/DT (HORNER) -----	PRESSURE ---PSIG---	DELTA P ---PSIG---
FIRST FLOW					
.0	.0			354.90	.00
1.0	1.0			393.47	38.57
2.0	2.0			454.04	99.14
3.0	3.0			482.50	127.60
4.0	4.0			494.22	139.32
5.0	5.0			511.81	156.91
6.0	6.0			521.73	166.83
7.0	7.0			532.52	177.62
8.0	8.0			537.10	182.20
9.0	9.0			556.65	201.75
10.0	10.0			554.69	199.79
10.3	10.3			556.30	201.40
FIRST SHUT-IN					
10.3	10.3	.00	.000	556.30	.00
11.3	10.3	1.00	11.260	715.70	159.40
12.3	10.3	2.00	6.130	892.83	336.53
13.3	10.3	3.00	4.420	1081.38	525.08
14.3	10.3	4.00	3.565	1307.22	750.92
15.3	10.3	5.00	3.052	1551.80	995.50
16.3	10.3	6.00	2.710	1838.97	1282.67
17.3	10.3	7.00	2.466	2111.76	1555.46
18.3	10.3	8.00	2.283	2340.17	1783.87
19.3	10.3	9.00	2.140	2451.95	1895.65
20.3	10.3	10.00	2.026	2499.99	1943.69
22.3	10.3	12.00	1.855	2531.75	1975.45
24.3	10.3	14.00	1.733	2545.91	1989.61
26.3	10.3	16.00	1.641	2553.07	1996.77
28.3	10.3	18.00	1.570	2559.35	2003.05
30.3	10.3	20.00	1.513	2564.77	2008.47
32.3	10.3	22.00	1.466	2568.77	2012.47
34.3	10.3	24.00	1.428	2572.20	2015.90
36.3	10.3	26.00	1.395	2575.13	2018.83
38.3	10.3	28.00	1.366	2577.78	2021.48
40.3	10.3	30.00	1.342	2580.10	2023.80
43.3	10.3	33.00	1.311	2583.10	2026.80
46.3	10.3	36.00	1.285	2585.45	2029.15
49.3	10.3	39.00	1.263	2587.75	2031.45
52.3	10.3	42.00	1.244	2589.60	2033.30
55.3	10.3	45.00	1.228	2591.18	2034.88
58.3	10.3	48.00	1.214	2592.78	2036.48
61.3	10.3	51.00	1.201	2594.20	2037.90
64.3	10.3	54.00	1.190	2595.45	2039.15
67.3	10.3	57.00	1.180	2596.30	2040.00
68.6	10.3	58.32	1.176	2596.80	2040.50



INCREMENTAL PRESSURE DATA

RECORDER NO : 88051

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ELAPSED TIME ---MIN----	TOTAL FLOW TIME, T ---MIN----	INCREMENTAL SHUT-IN TIME, DT ---MIN----	(T+DT)/DT (HORNER) -----	PRESSURE ---PSIG---	DELTA P ---PSIG---
SECOND FLOW					
72.1	13.8			776.00	.00
75.1	16.8			691.80	-84.20
78.1	19.8			705.97	-70.03
81.1	22.8			705.55	-70.45
84.1	25.8			733.25	-42.75
87.1	28.8			781.50	5.50
90.1	31.8			815.97	39.97
93.1	34.8			816.60	40.60
96.1	37.8			845.20	69.20
99.1	40.8			849.45	73.45
102.1	43.8			871.67	95.67
105.1	46.8			905.25	129.25
108.1	49.8			923.45	147.45
111.1	52.8			944.27	168.27
114.1	55.8			963.20	187.20
117.1	58.8			986.90	210.90
120.1	61.8			1007.50	231.50
123.1	64.8			1026.65	250.65
126.1	67.8			1049.00	273.00
129.0	70.7			1070.80	294.80
SECOND SHUT-IN					
129.0	70.7	.00	.000	1070.80	.00
130.0	70.7	1.00	71.680	1218.80	148.00
131.0	70.7	2.00	36.340	1379.08	308.28
132.0	70.7	3.00	24.560	1547.98	477.18
133.0	70.7	4.00	18.670	1762.70	691.90
134.0	70.7	5.00	15.136	2127.87	1057.07
135.0	70.7	6.00	12.780	2260.20	1189.40
136.0	70.7	7.00	11.097	2322.45	1251.65
137.0	70.7	8.00	9.835	2353.35	1282.55
138.0	70.7	9.00	8.853	2373.15	1302.35
139.0	70.7	10.00	8.068	2386.00	1315.20
141.0	70.7	12.00	6.890	2404.20	1333.40
143.0	70.7	14.00	6.049	2417.08	1346.28
145.0	70.7	16.00	5.418	2427.22	1356.42
147.0	70.7	18.00	4.927	2435.80	1365.00
149.0	70.7	20.00	4.534	2443.03	1372.23
151.0	70.7	22.00	4.213	2449.62	1378.82
153.0	70.7	24.00	3.945	2455.53	1384.73

INCREMENTAL PRESSURE DATA

RECORDER NO : 88051

RECORDER CAPACITY : 10000 psi

RECORDER DEPTH : 7265 ft

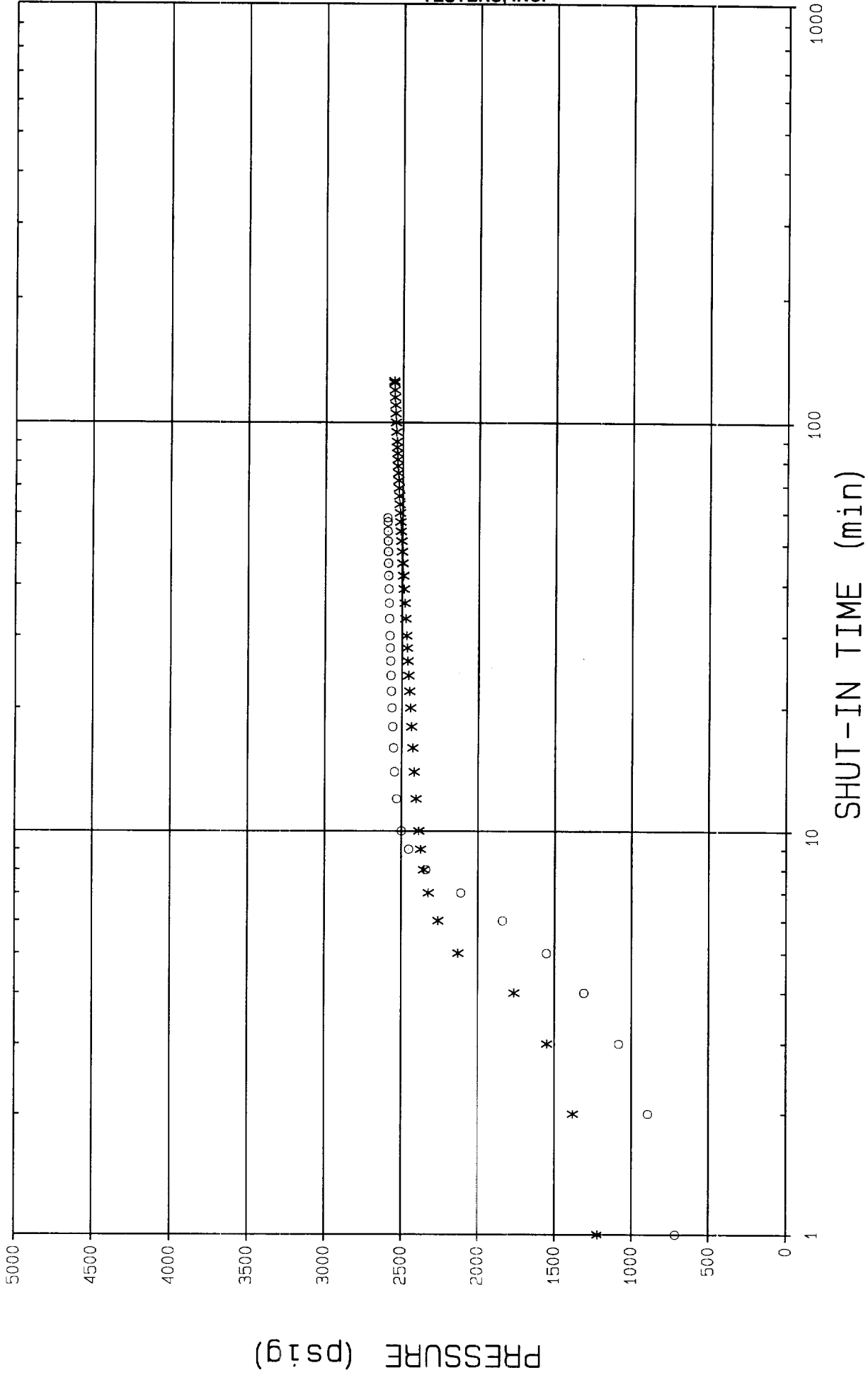
ELAPSED TIME ---MIN---	TOTAL FLOW TIME, T ---MIN---	INCREMENTAL SHUT-IN TIME, DT ---MIN---	(T+DT)/DT (HORNER) -----	PRESSURE ---PSIG---	DELTA P ---PSIG---
		SECOND SHUT-IN			
155.0	70.7	26.00	3.718	2461.00	1390.20
157.0	70.7	28.00	3.524	2465.95	1395.15
159.0	70.7	30.00	3.356	2470.55	1399.75
162.0	70.7	33.00	3.142	2476.93	1406.13
165.0	70.7	36.00	2.963	2482.90	1412.10
168.0	70.7	39.00	2.812	2488.10	1417.30
171.0	70.7	42.00	2.683	2492.80	1422.00
174.0	70.7	45.00	2.571	2497.40	1426.60
177.0	70.7	48.00	2.473	2501.30	1430.50
180.0	70.7	51.00	2.386	2505.35	1434.55
183.0	70.7	54.00	2.309	2509.18	1438.38
186.0	70.7	57.00	2.240	2512.33	1441.53
189.0	70.7	60.00	2.178	2515.70	1444.90
192.0	70.7	63.00	2.122	2518.70	1447.90
195.0	70.7	66.00	2.071	2521.73	1450.93
198.0	70.7	69.00	2.024	2524.35	1453.55
201.0	70.7	72.00	1.982	2527.20	1456.40
204.0	70.7	75.00	1.942	2529.53	1458.73
207.0	70.7	78.00	1.906	2531.85	1461.05
210.0	70.7	81.00	1.873	2534.10	1463.30
213.0	70.7	84.00	1.841	2536.20	1465.40
216.0	70.7	87.00	1.812	2538.18	1467.38
219.0	70.7	90.00	1.785	2540.00	1469.20
224.0	70.7	95.00	1.744	2542.91	1472.11
229.0	70.7	100.00	1.707	2545.68	1474.88
234.0	70.7	105.00	1.673	2548.10	1477.30
239.0	70.7	110.00	1.643	2550.43	1479.63
244.0	70.7	115.00	1.615	2552.77	1481.97
249.0	70.7	120.00	1.589	2554.75	1483.95
254.0	70.7	125.00	1.565	2556.76	1485.96
255.2	70.7	126.24	1.560	2557.20	1486.40

REMARKS

THE INCREMENTAL DATA, PLOTS AND ANALYSIS ARE FROM THE ELECTRONIC RECORDER
 PLEASE REFER TO DERIVATIVE DIAGNOSTICS ANALYSIS FOR FURTHER INFORMATION.



PRESSURE TIME



SAHARA OPERATING CO.
INDIANA "1" # 1

○ FIRST SHUT-IN
* SECOND SHUT-IN



Well Test Report

RigTesters, Inc.
ABILENE - MIDLAND - GRAHAM
SAHARA OPERATING CO.



Well identification

Well ID	INDIANA "1" #1	Well location	W. HOBBS
County/District	LEA	State, Country	NEW MEXICO
Company	SAHARA OPER. CO	Division	MIDLAND

Fluid properties

Prod/Inj fluid	OIL	GOR	610:1
Water cut	0%	Condensate yield	UNKNOWN
API gravity	40.6	Gas spec. grav.	0.7
Viscosity	0.70337 cp	Pseudo-critical T	382.97 deg R
Pseudo-critical P	664.37 psia	H2S mole fraction	UNKNOWN
CO2 mole fraction	UNKNOWN	N2 mole fraction	UNKNOWN
Compressibility(t)	17.17 e-6/psi	Formation vol factor	1.3222 RB/STB

Reservoir properties

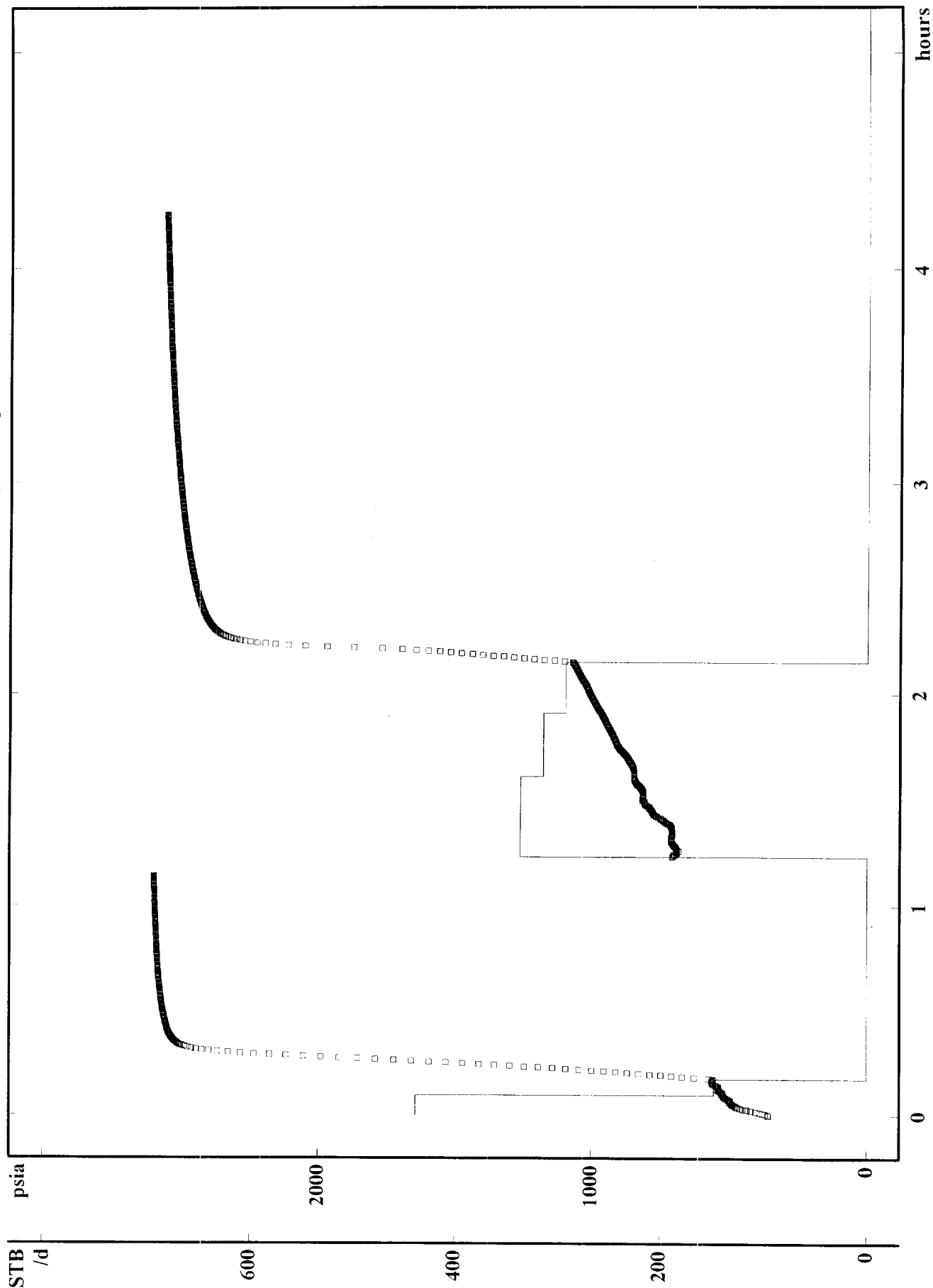
Porosity	0.12 frac	Formation thickness	45 ft
Wellbore radius	0.32813 ft	Prod-observer distance	N/A
Water-Oil Contact	UNKNOWN	Gas-Oil Contact	N/A
Gas-Water Contact	N/A	Rock compressibility	
Reservoir temperature	125 deg F	Pressure for properties	2620 psia

Comments

THE DERIVATIVES INDICATE A HETEROGENEOUS (MULTIPLE POROSITY) RESERVOIR WITH MODERATELY LOW PERMEABILITY & IMPROVING SKIN. BOTH SHUT-IN PERIODS HAD ACHIEVED RADIAL FLOW AS INDICATED BY FLATTENING OF DERIVATIVE CURVES. THE CHANGE IN SLOPE ON FINAL SHUT-IN HORNER PLOT AND DIP BELOW RADIAL FLOW REGIME ON DERIVATIVE INDICATES MULTIPLE POROSITY (POSSIBLY DUE TO LAYERING EFFECT) WITHIN INTERVAL TESTED. THE FIXED PARAMETERS USED WERE AN EST. 12% POROSITY, 45 FT. OF NET PAY REPORTED. AND AVERAGE PRODUCTION OF 314 BOPD FOR THE FINAL FLOW PERIOD. THE TOTAL RADIUS OF INVESTIGATION CALCULATED TO APPROX. 62 FT. FROM THE WELLBORE. THE CALCULATIONS HAVE BEEN MODIFIED TO REFLECT 45 FT. OF EFFECTIVE PAY.

SAHARA OPERATING CO. INDIANA "1" #1

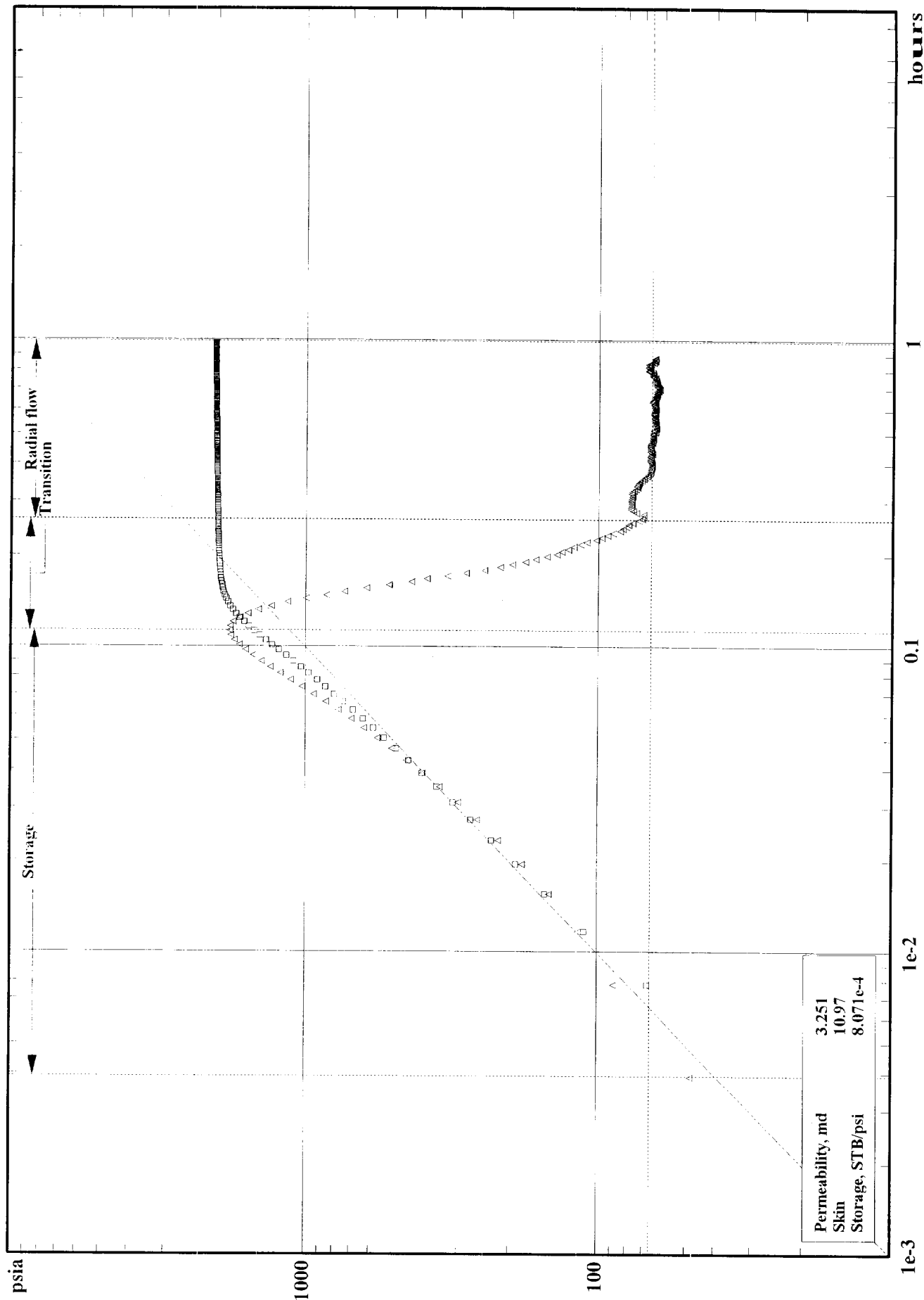
Pressure and flow rate vs time during test sequence



DST #2 7255 - 7480 FT. ABO

SAHARA OPERATING CO. INDIANA "1" #1

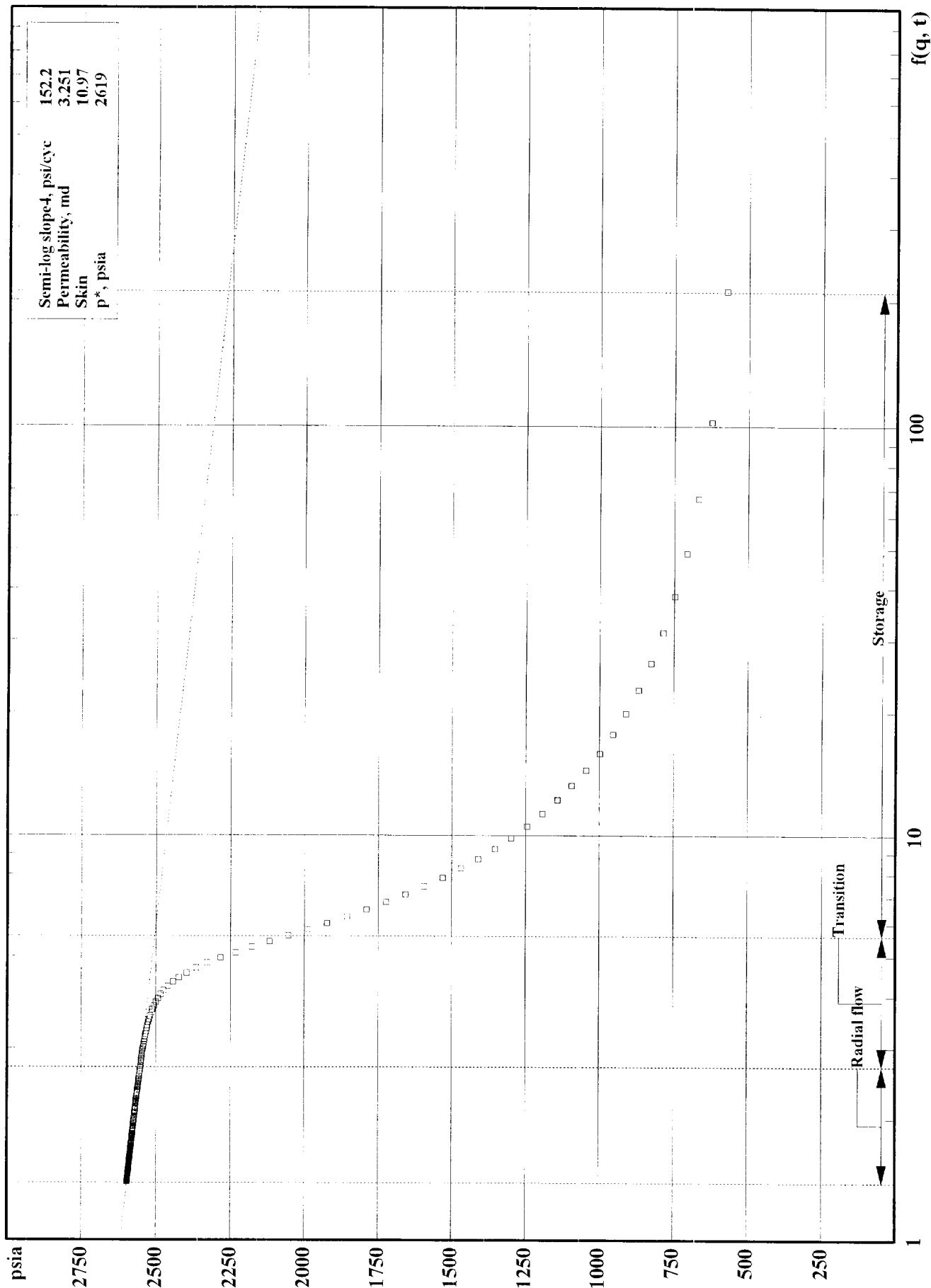
Diagnostic plot (pressure & time)



INITIAL SHUT-IN PERIOD DST #2

SAHARA OPERATING CO. INDIANA "1" #1

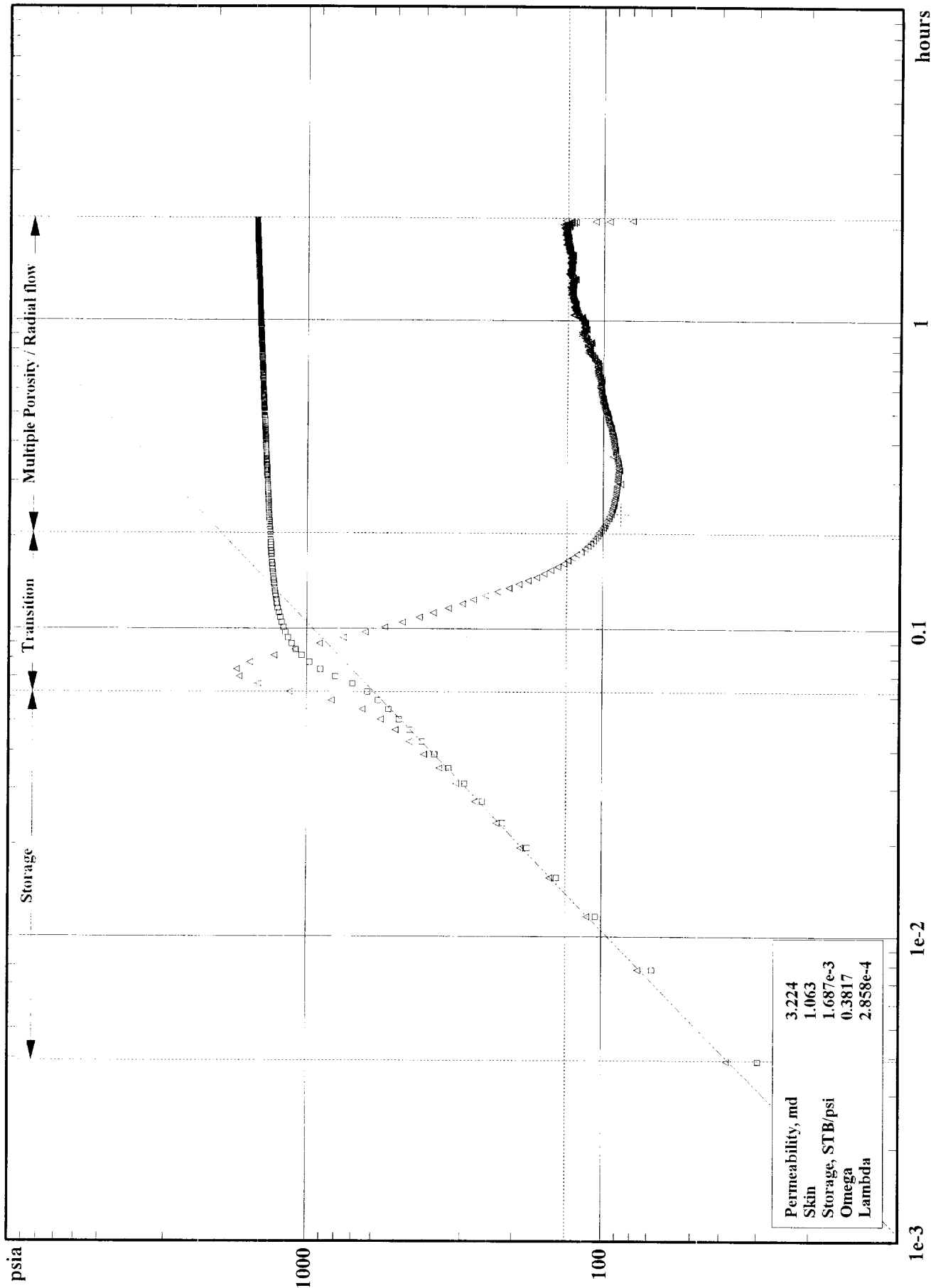
Variable rate Horner plot (pressure & time)



INITIAL SHUT-IN PERIOD DST #2

SAHARA OPERATING CO. INDIANA "1" #1

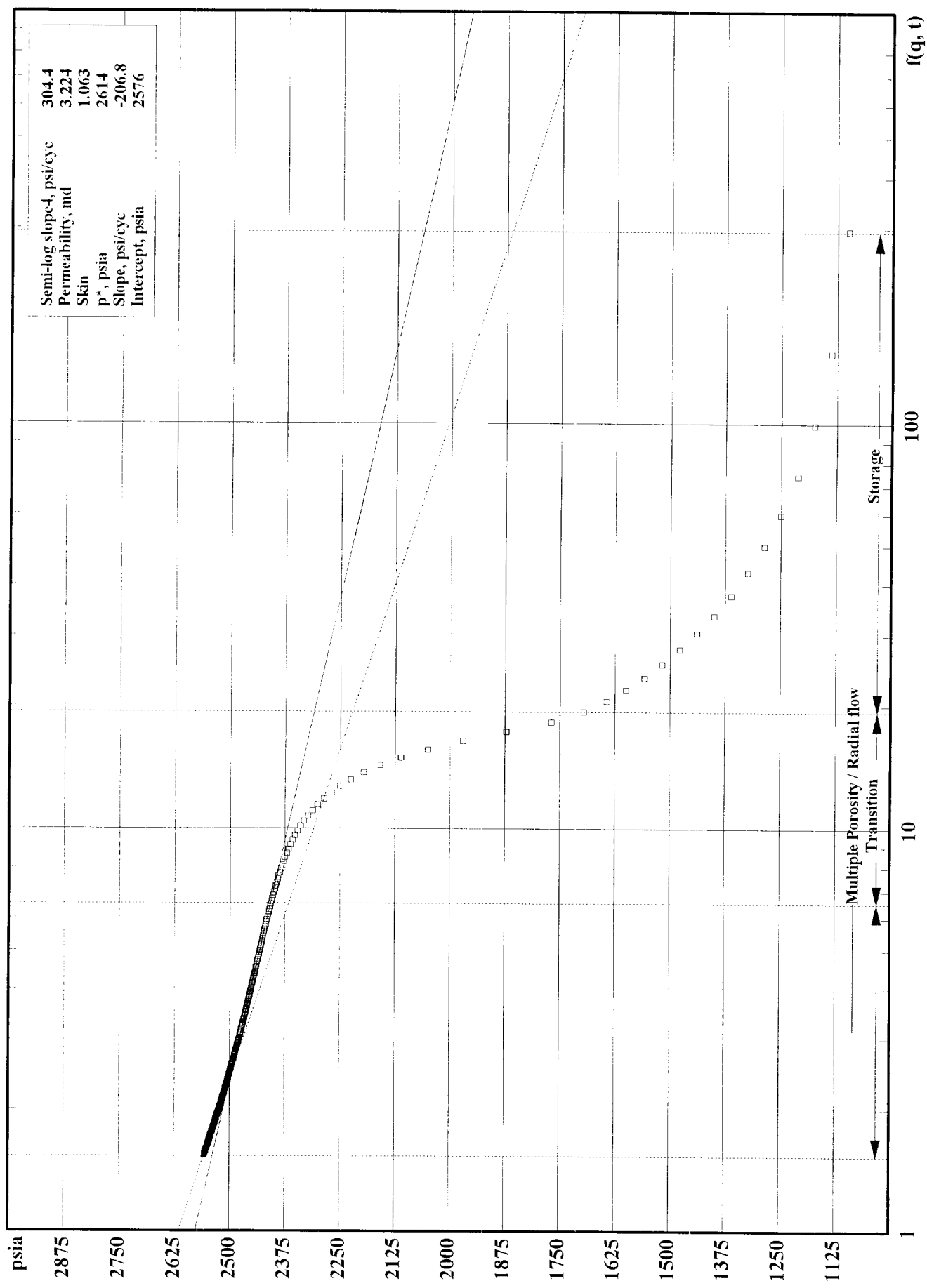
Diagnostic plot (pressure & time)



FINAL SHUT-IN PERIOD DST #2

SAHARA OPERATING CO. INDIANA "1" #1

Variable rate Horner plot (pressure & time)

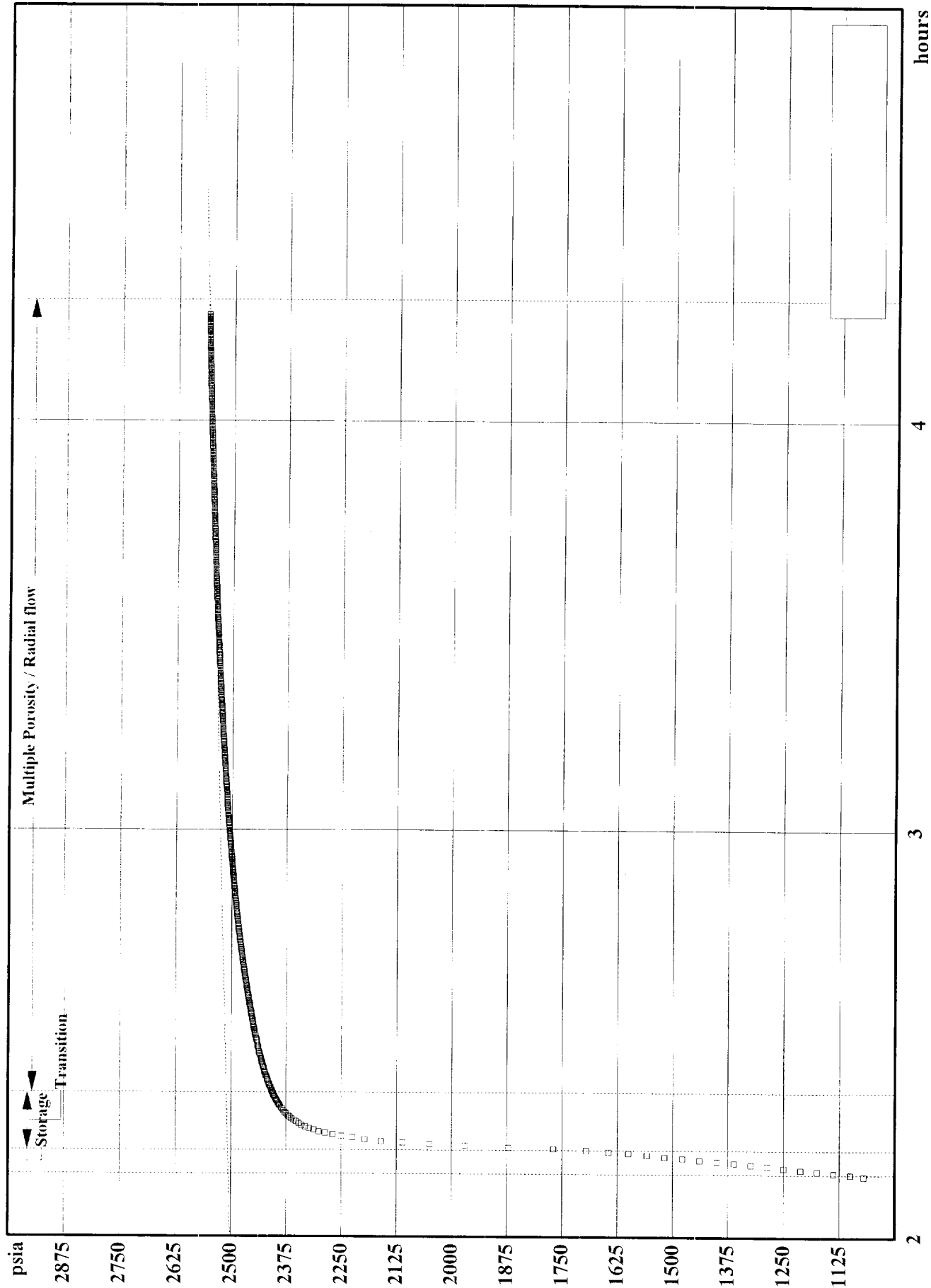


FINAL SHUT-IN PERIOD DST #2



SAHARA OPERATING CO. INDIANA "1" #1

Cartesian plot (pressure & time)



FINAL SHUT-IN PERIOD DST #2