

**FLOW/BUILDUP TEST REPORT**

**HOME PIERSON 11-11-02-29W1 HZ  
SPEARFISH (Datum @ 1025 mKB)  
TEST DATE: JANUARY 25 - MARCH 6, 2000**

Prepared for:  
**ANDERSON EXPLORATION LTD.**

Prepared by:  
**PETRO MANAGEMENT GROUP LTD.**

**MARCH 2000**

March 20, 2000

**ANDERSON EXPLORATION LTD.**

1600, 324 - 8th Ave. S.W.

Calgary, Alta., T2P 2Z5

**Attn.: Mr. Larry Sopko**

**HOME PIERSON 11-11-02-29W1 HZ**

**SPEARFISH (DATUM @ 1025 mKB)**

**FLOW/BUILDUP TEST**

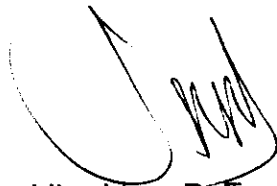
**TEST DATE: JANUARY 25 - MARCH 6, 2000**

As requested, a flow/buildup test analysis was performed on the subject Horizontal well. A summary of the test data and the analysis results is attached. The report marked ORIGINAL contains the test data on a diskette, if available. Three copies of the report are attached.

Should you have any questions, please feel free to contact me at (403) 216-5101.

Yours truly,

**Petro Management Group Ltd.**



Saad Ibrahim, P. Eng.  
Principal Engineer

# Horizontal Oil Well Model

Case Name : Horizontal Well Model #1

Home Pierson 11-11-02-29W1 HZ

Spearfish (Datum @ 1025 mKB)

Flow/Buildup Test

Test Date: Jan. 25 - Mar. 6, 2000

## Model Parameters

Permeability in X Direction ( $k_x$ )	3.672 mD	Effective Horizontal Well Length ( $L_e$ )	1300.00 m
Permeability in Y Direction ( $k_y$ )	2.880 mD	Reservoir Length ( $X_e$ )	2000.00 m
Permeability in Z Direction ( $k_z$ )	1.370 mD	Reservoir Width ( $Y_e$ )	1000.00 m
Skin (s)	62.118	Reservoir Thickness ( $Z_e$ )	2.50 m
Total Mobility ( $k/\mu$ ) <sub>t</sub>	0.59 mD/mPa.s	Active Well At ( $X_w$ )	1000.00 m
Total Transmissivity ( $kh/\mu$ ) <sub>t</sub>	1.46 mDm/mPa.s	Active Well At ( $Y_w$ )	500.00 m
Wellbore Storage Constant Dim. (CD)	130000.00	Height of Horizontal Well From Base ( $Z_w$ )	1.25 m

## Formation Parameters

Net Pay (h)	2.50 m
Total Porosity ( $\phi_t$ )	16.00 %
Oil Saturation ( $S_o$ )	60.00 %
Gas Saturation ( $S_g$ )	0.00 %
Water Saturation ( $S_w$ )	40.00 %
Wellbore Radius ( $r_w$ )	0.091 m
Formation Temperature (T)	42.0 °C
Formation Compressibility ( $c_f$ )	5.802e-7 kPa <sup>-1</sup>
Total Compressibility ( $c_t$ )	1.702e-6 kPa <sup>-1</sup>

## Fluid Properties

Oil Compressibility ( $c_o$ )	1.56631e-6 kPa <sup>-1</sup>
Gas Compressibility ( $c_g$ )	4.07261e-4 kPa <sup>-1</sup>
Water Compressibility ( $c_w$ )	4.55755e-7 kPa <sup>-1</sup>
Oil Formation Volume Factor ( $B_o$ )	1.057
Gas Formation Volume Factor ( $B_g$ )	0.040479 m <sup>3</sup> /m <sup>3</sup>
Water Formation Volume Factor ( $B_w$ )	1.006
Oil Viscosity ( $\mu_o$ )	4.180 mPa.s
Gas Viscosity ( $\mu_g$ )	11.452 μPa.s
Water Viscosity ( $\mu_w$ )	0.625 mPa.s
Solution Gas Ratio ( $R_s$ )	11 m <sup>3</sup> /m <sup>3</sup>
Oil Gravity ( $\gamma_o$ )	0.845
Gas Gravity ( $\gamma_g$ )	0.650
PVT Reference Pressure (ppVT)	2591.95 kPa
Bubble Point Pressure ( $P_{bp}$ )	2591.95 kPa

## Production and Pressure

$Q_t B_t$	4.567 m <sup>3</sup> /d
Final Oil Rate	4.300 m <sup>3</sup> /d
Final Gas Rate	0.000 10 <sup>3</sup> m <sup>3</sup> /d
Final Water Rate	0.020 m <sup>3</sup> /d
Final Flowing Pressure ( $P_{wfo}$ )	555.19 kPa
Final Measured Pressure	2591.95 kPa
Initial Pressure ( $p_i$ )	2591.95 kPa

## Synthesis Results

Average Error	-0.98 %
Synthetic Initial Pressure ( $p_i$ )	4513.52 kPa
Extrapolated Pressure at Specified Time	3355.97 kPa
Pressure Drop Due To Skin ( $\Delta p_s$ )	850.23 kPa
Flow Efficiency (FE)	0.830
Damage Ratio (DR)	1.205

## Forecasts

Specified Flowing Pressure ( $P_{wfs}$ )	555.19 kPa
3 - Month Constant Rate	4.455 m <sup>3</sup> /d
6 - Month Constant Rate	3.620 m <sup>3</sup> /d
Specified Forecast Time	12.00 month
Forecast Constant Rate @ Current Skin	2.906 m <sup>3</sup> /d
PI / II (Total Liquids - Actual)	1.62e-3 m <sup>3</sup> /d/kPa
Forecast Constant Rate @ Skin=0	3.690 m <sup>3</sup> /d
PI / II (Total Liquids - Ideal)	2.35e-3 m <sup>3</sup> /d/kPa
Forecast Constant Rate @ Skin=-4	3.802 m <sup>3</sup> /d

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### **TEST DATA QUALITY**

### **PRESSURE TRANSIENT ANALYSIS**

### **PRESSURE HISTORY MATCH**

### **IPR**

### **FIELD DATA**

### **SUBSURFACE PRESSURES**

### **FLUID ANALYSIS**



### **SUMMARY OF RESULTS**

1. The average reservoir pressure ( $P_R$ ) is 3 356 kPa.
2. The effective horizontal permeabilities to oil of the Spearfish formation in the X & Y directions are 3.7 mD and 2.9 mD, respectively.
3. The vertical horizontal is 1.4 mD.
4. The apparent skin factor of +62.1 confirms a highly damaged wellbore.
5. The IPR plot indicates a maximum theoretical stabilized oil rate (AOF) of 4.6 m<sup>3</sup>/d.
6. Radius of investigation is approximately 418 m.
7. The effectively length of the horizontal well is 1300.

**TEST  
ANALYSIS**

## **DISCUSSION**

### **1. Test Overview:**

The Home Pierson 11-11-02-29W1 HZ is completed in the Spearfish formation. The mid point of the vertical pay section (Datum) is 1025 mKB. The well is equipped with a 60.3 mm tubing. The well was not fractured.

During the test, the well produced at an oil rate of 4.3 m<sup>3</sup>/d. Subsequently, the well was shutin for a 983 hour buildup period. The bottom hole pressures were calculated from the measurement of liquid levels, obtained from the Acoustic Wellsounder equipment by Otatco Inc. The oil gravity is 36 API. Other oil physical properties were calculated using various standard correlations.

### **2. Data Validation:**

During the test, bottom hole pressures were measured using the Acoustic Wellsounder equipment.

The primary pressure derivative (PPD) plot was constructed for the measured pressures (Figure 1) as shown in the Section "Test Data Quality". The PPD showed only minor pressure anomalies. The PPD plot should be monotonically decreasing with time for valid buildup data. Pressure data was reported in absolute at MPP.



## TEST INTERPRETATION

### 1. Pressure Buildup Analysis:

Pressure buildup analysis was performed on the shut-in period. The reservoir parameters were provided by Anderson Exploration Ltd., as shown in the attached form "Summary of Test Data and Results". The final oil rate flow rate prior to shutting in the well was  $1.6 \text{ m}^3/\text{d}$  at a sandface flowing pressure of 555 kPa, as shown in the Strip Chart (Figure 2) in the section "Pressure Transient Analysis".

Both the Horner Plot and the pressure derivative analysis were used in the analysis, as discussed below, and results were later fine tuned using the pressure history match techniques of the test pressure data.

Wellbore storage regime was identified by the unit slope straight of the pressure derivative as shown in the Diagnostic Derivative Analysis plot (Figure 3) in the section "Pressure Transient Analysis". The flattening of the pressure derivative of the late time data confirms that the horizontal radial flow was reached.

Radial flow analysis was performed to determine the reservoir parameters using the semi-log straight line drawn through the late time pressure data, as shown in the Horner plot (Figure 4). The extrapolation of the last data points yielded a  $P^*$  of 3 578 kPa. The ( $P^*$ ) was corrected for the shape, areal extent of the reservoir and the location of the well to determine the average reservoir pressure of 3 413 kPa. The results of the Horner plot are summarized below:

	Horner
Effective Permeability, mD	15.7
Reservoir Pressure, kPa	3 413

The skin factor could not be calculated from the radial flow analysis since the early vertical radial flow regime was masked by the wellbore storage.

## 2. Pressure History Match:

The preliminary results from the Horner analysis were used as starting parameters for pressure history matching of the test data. The best match of the test data was obtained, using the Horizontal Well Model. The overlay of simulated analysis results on the real test data is presented in the cartesian, semi-log and log-log plots (Figures 5, 6, and 7), in the section "Pressure History Match". The parameters used to achieve the history match are as follows:

	History Match
Reservoir Pressure, $P_r$	3 356 kPa
Effective Permeability in X- Direction, $k_x$	3.7 mD
Effective Permeability in Y- Direction, $k_y$	2.9 mD
Vertical Permeability	1.4 mD
Skin Factor, $S$	+62.1
Effective Length of Horizontal Well, $L_e$	1300 m

## 3. Inflow Performance Relationship (I.P.R)

The Inflow Performance Relationship (I.P.R) was constructed using the Vogel equation, as shown in Figure 9, in the Section "I.P.R". The average reservoir pressure of 3 356 kPa and the test data were used to generate the I.P.R plot, at the current skin factor of +62.1. The well maximum theoretical oil rate is 4.6 m<sup>3</sup>/d.

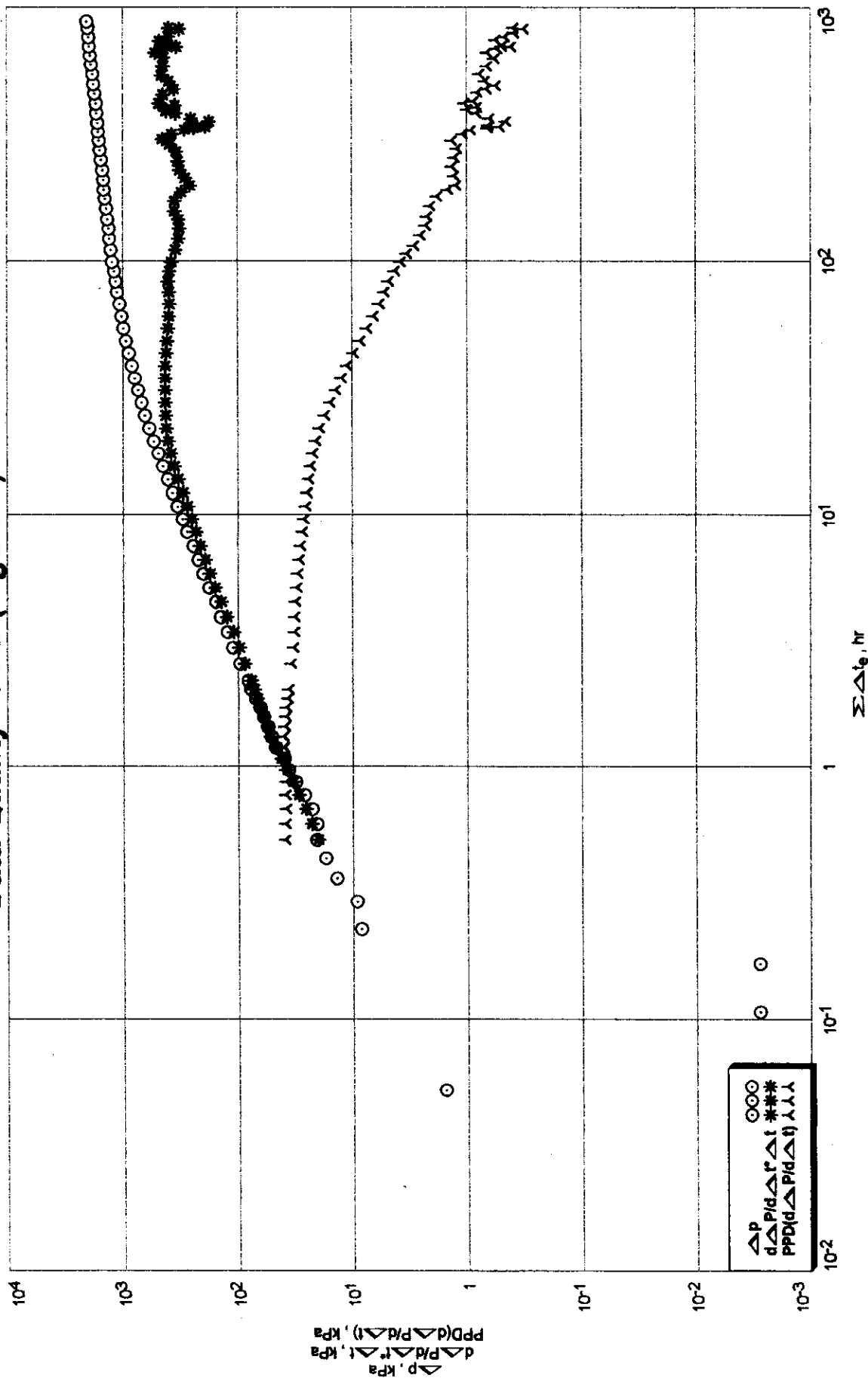
## 4. Production Forecast Sensitivity Analysis:

Production forecasts were generated for the well using the reservoir parameters obtained from the test history match. Sensitivity analysis was performed in attempt to maximize the oil recovery and to establish a reasonable gas production plateau. The bottom hole flowing pressure (BHFP) was used as a sensitivity parameter, and the various generated production forecasts are shown in Figure 8 in the section "Pressure History Match".

DATA  
QUALITY

Home Pierson 11-11-02-29W1 HZ  
 Spearfish (Datum @ 1025 mKB)  
 Flow/Buildup Test  
 Test Date: Jan. 25 - Mar. 6, 2000

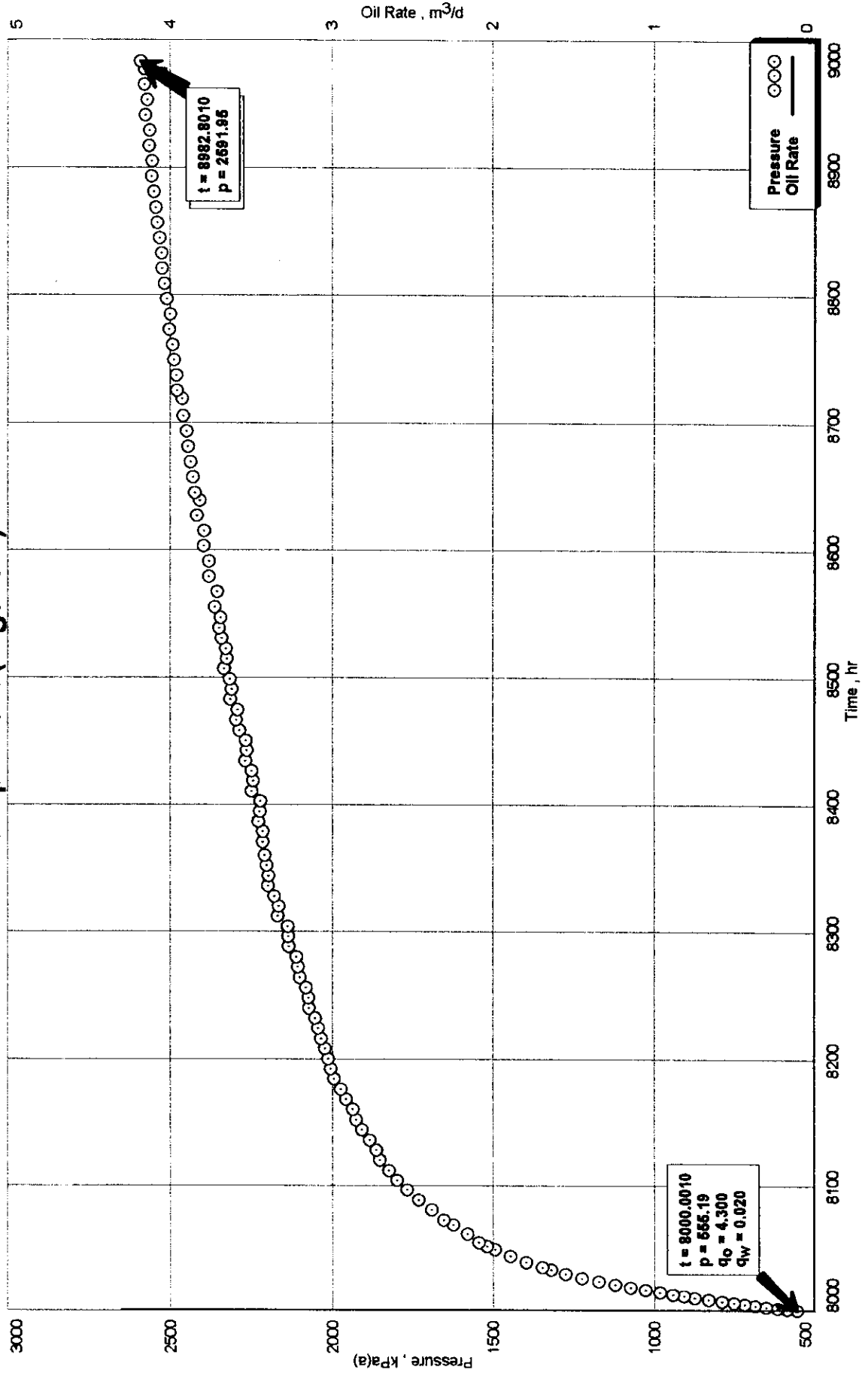
**Data Quality - PPD (Figure 1)**



**TRANSIENT  
ANALYSIS**

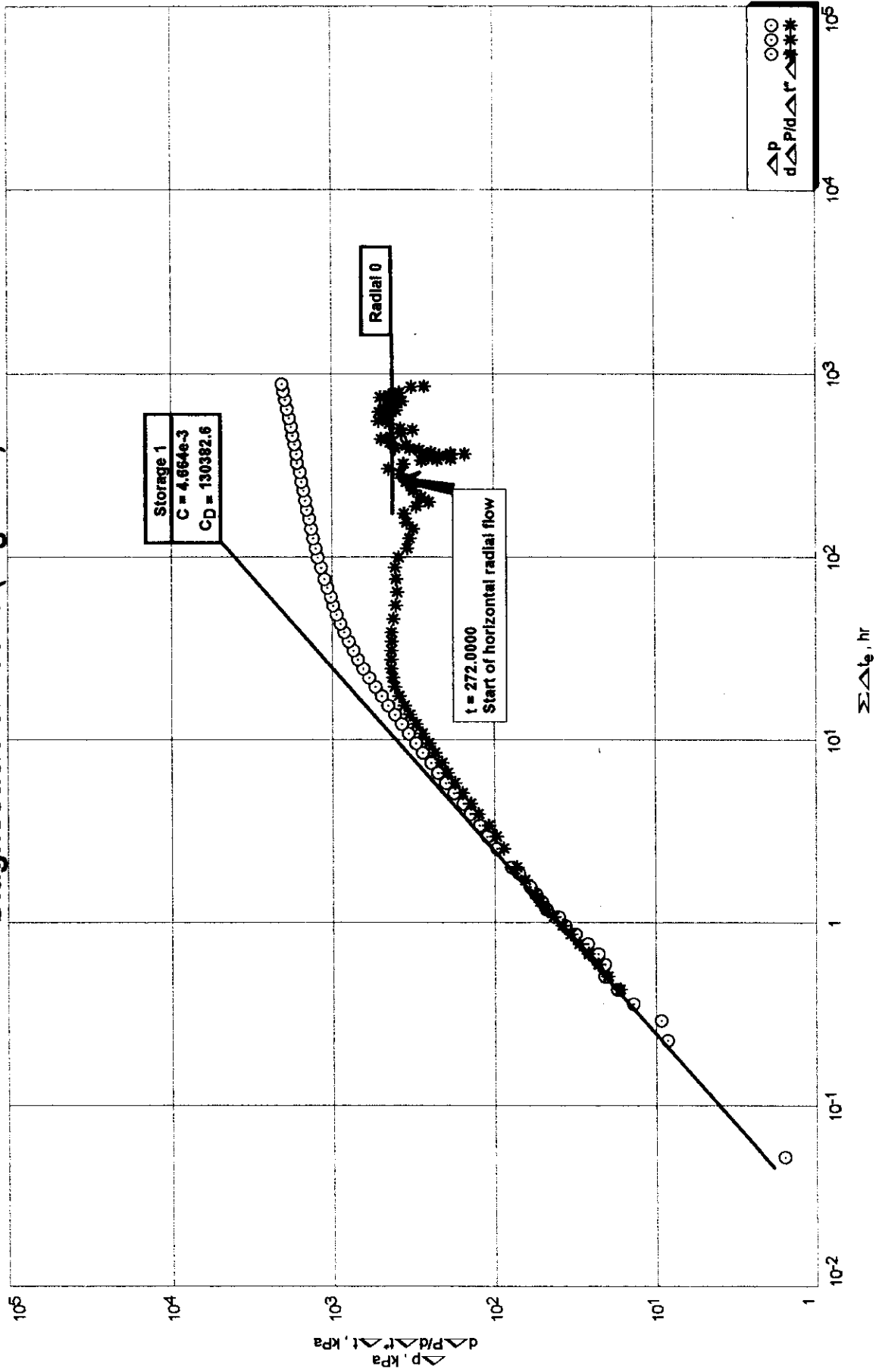
Home Pierson 11-11-02-29W1 HZ  
 Spearfish (Datum @ 1025 mKB)  
 Flow/Buildup Test  
 Test Date: Jan. 25 - Mar. 6, 2000

Strip Chart (Figure 2)



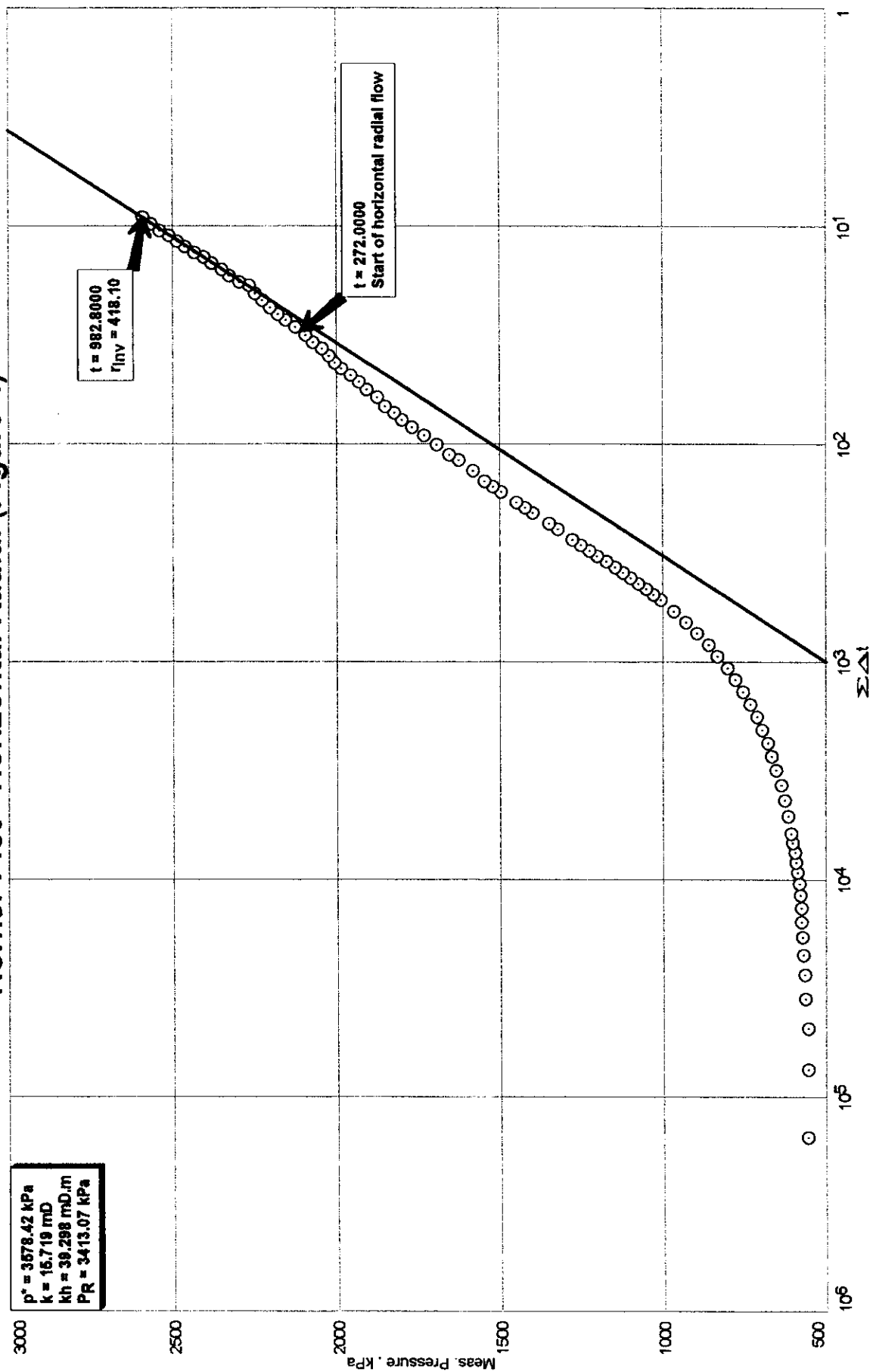
Home Pierson 11-11-02-29W1 HZ  
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Diagnostic/Derivative (Figure 3)



Home Pierson 11-11-02-29W1 HZ  
 Spearfish (Datum @ 1025 mKB)  
 Flow/Buildup Test  
 Test Date: Jan. 25 - Mar. 6, 2000

Horner Plot - Horizontal Radial (Figure 4)

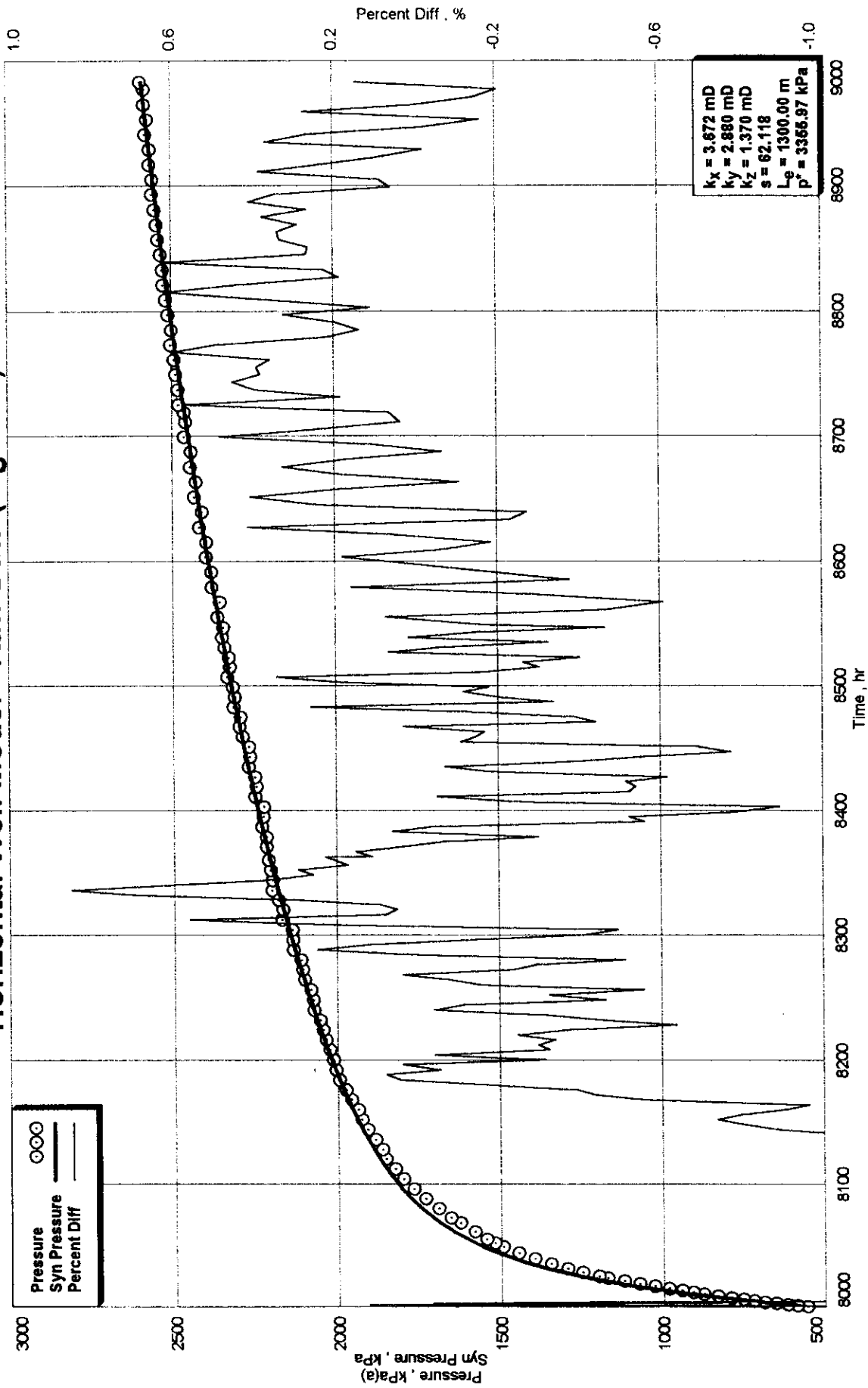




HISTORY  
MATCH

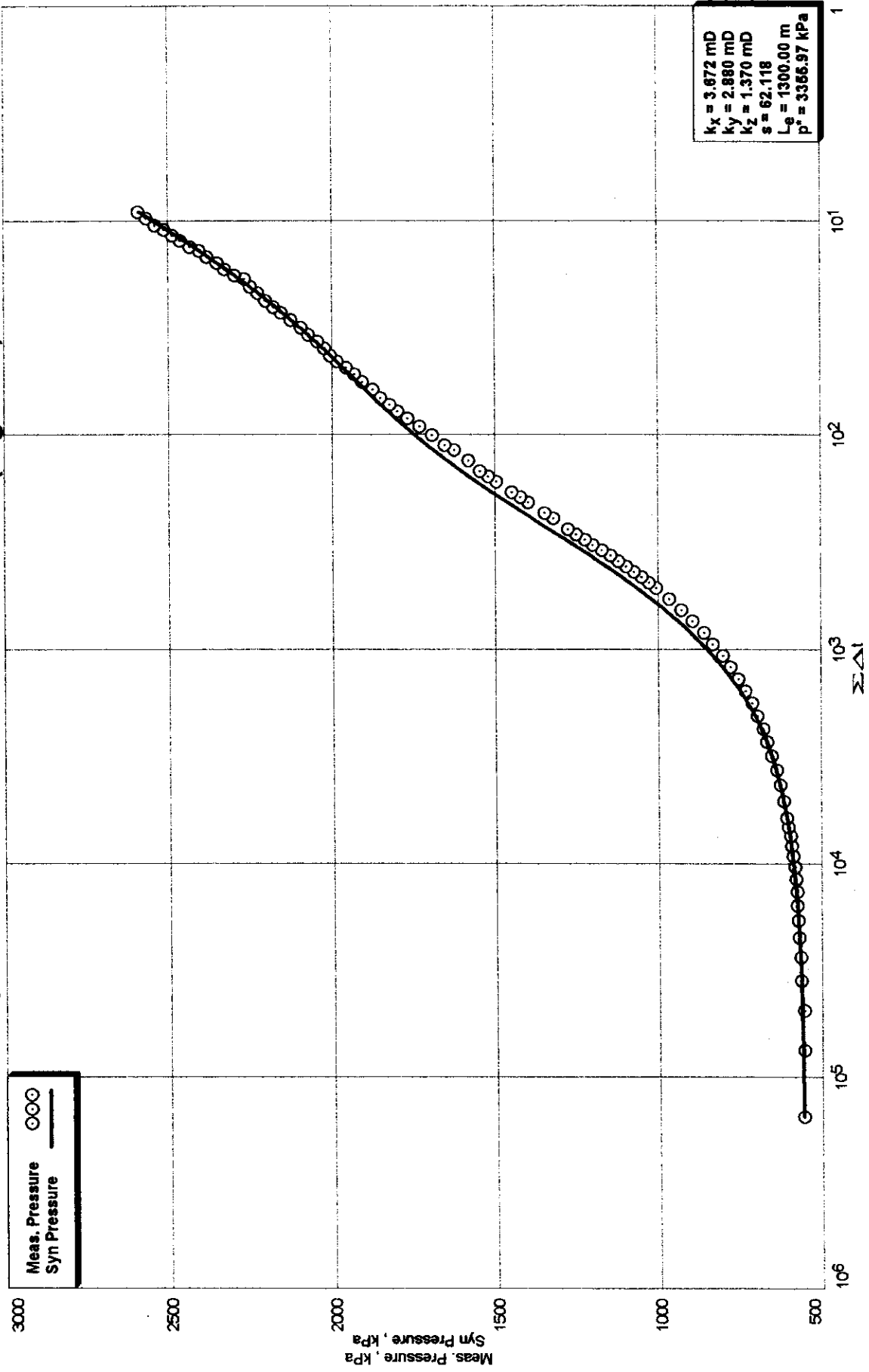
Home Pierson 11-11-02-29W1 HZ  
 Spearfish (Datum @ 1025 mKB)  
 Flow/Buildup Test  
 Test Date: Jan. 25 - Mar. 6, 2000

Horizontal Well Model - Raw Data (Figure 5)



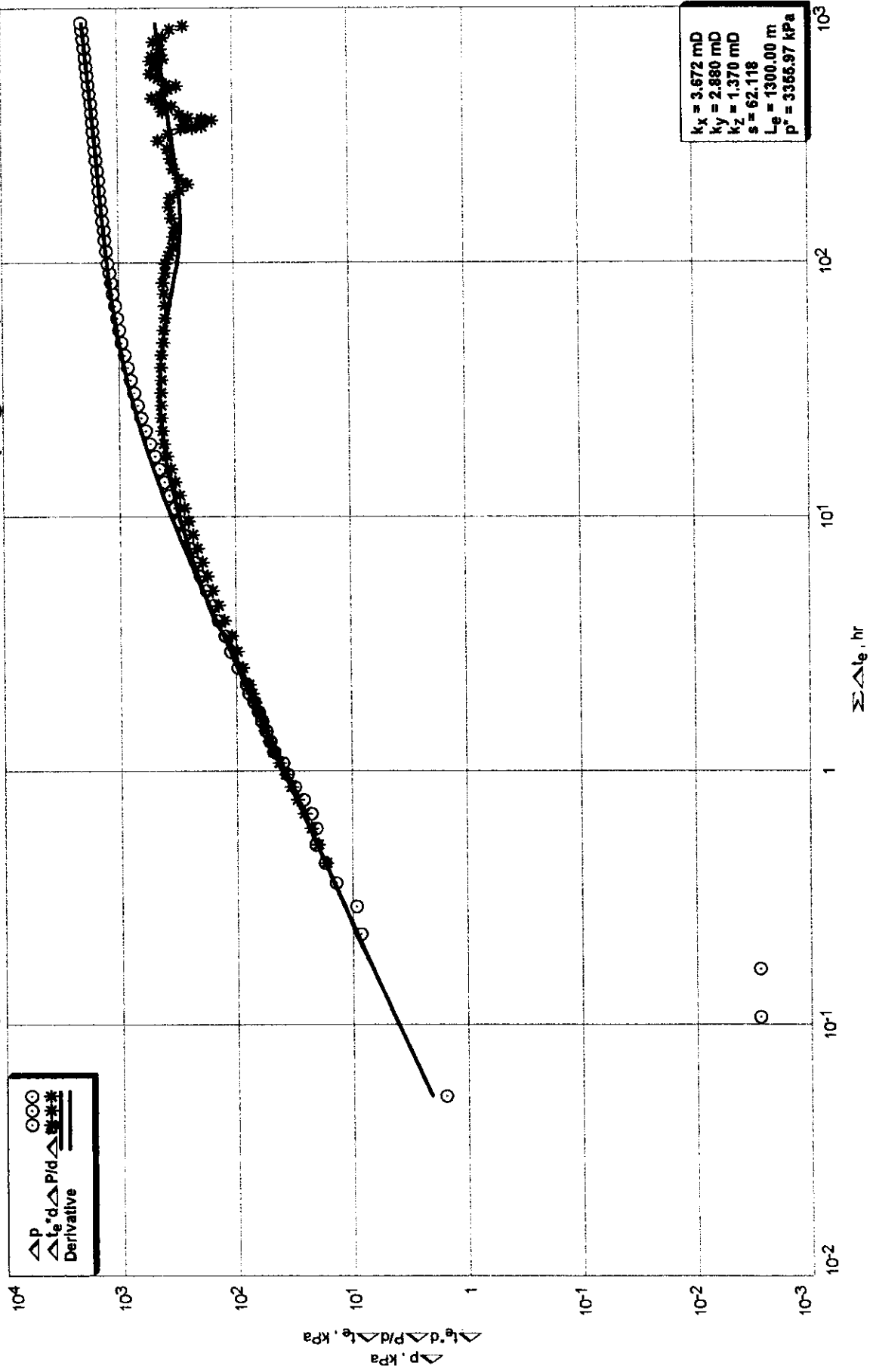
Home Pierson 11-11-02-29W1 HZ  
 Spearfish (Datum @ 1025 mKB)  
 Flow/Buildup Test  
 Test Date: Jan. 25 - Mar. 6, 2000

# Horizontal Well Model - Horner Plot (Figure 6)



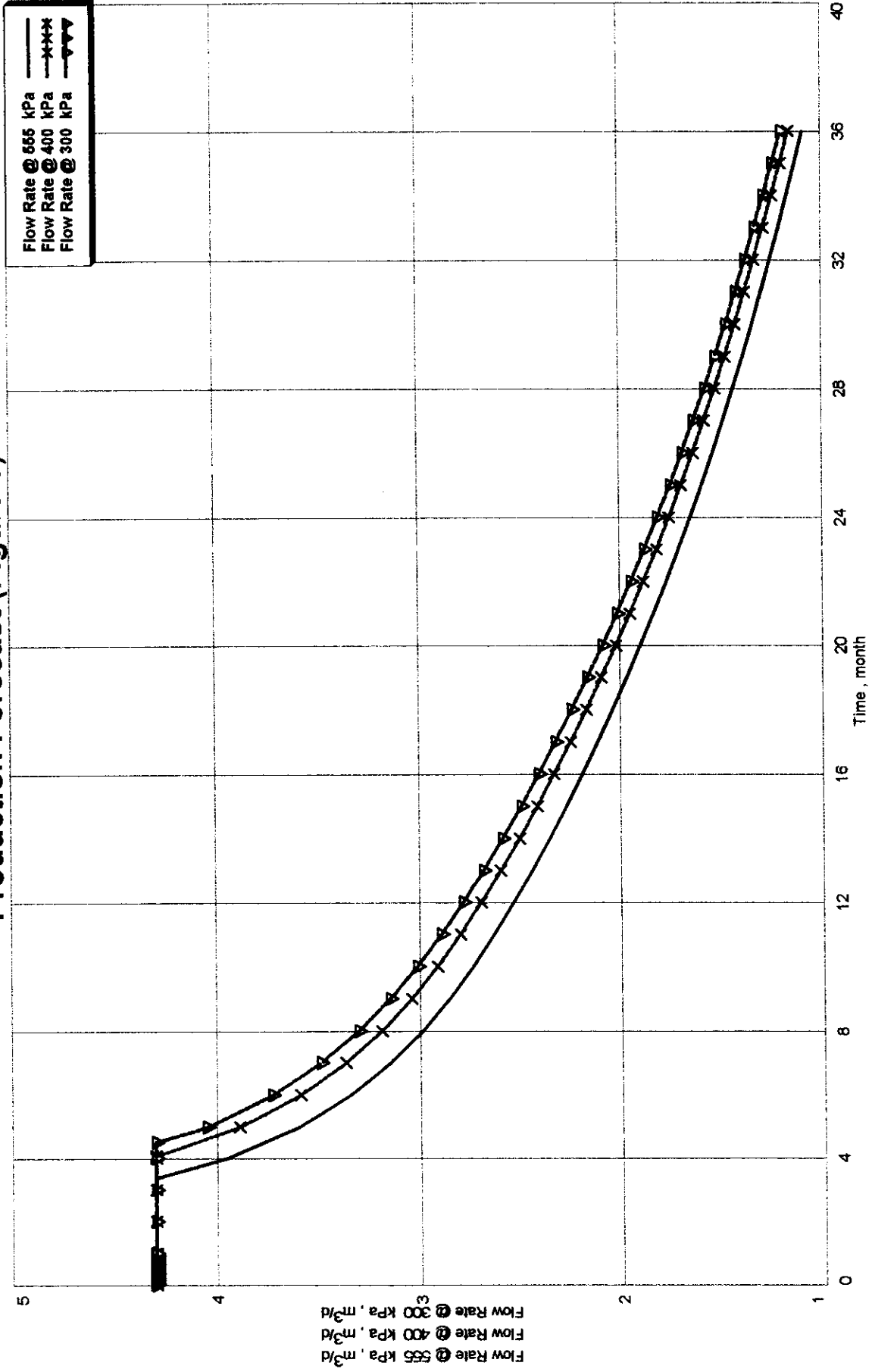
Home Pierson 11-11-02-29W1 HZ  
 Spearfish (Datum @ 1025 mKB)  
 Flow/Buildup Test  
 Test Date: Jan. 25 - Mar. 6, 2000

# Horizontal Well Model - Derivative Plot (Figure 7)



Home Pierson 11-11-02-29W1 HZ  
 Spearfish (Datum @ 1025 mKB)  
 Flow/Buildup Test  
 Test Date: Jan. 25 - Mar. 6, 2000

Production Forecast (Figure 8)



I.P.R.

# Inflow Performance Relationship (I.P.R.)

Home Pierson 11-11-02-29W1 HZ  
Spearfish (Datum @ 1025 mKB)

Flow/Buildup Test  
Test Date: Jan. 25 - Mar. 6, 2000

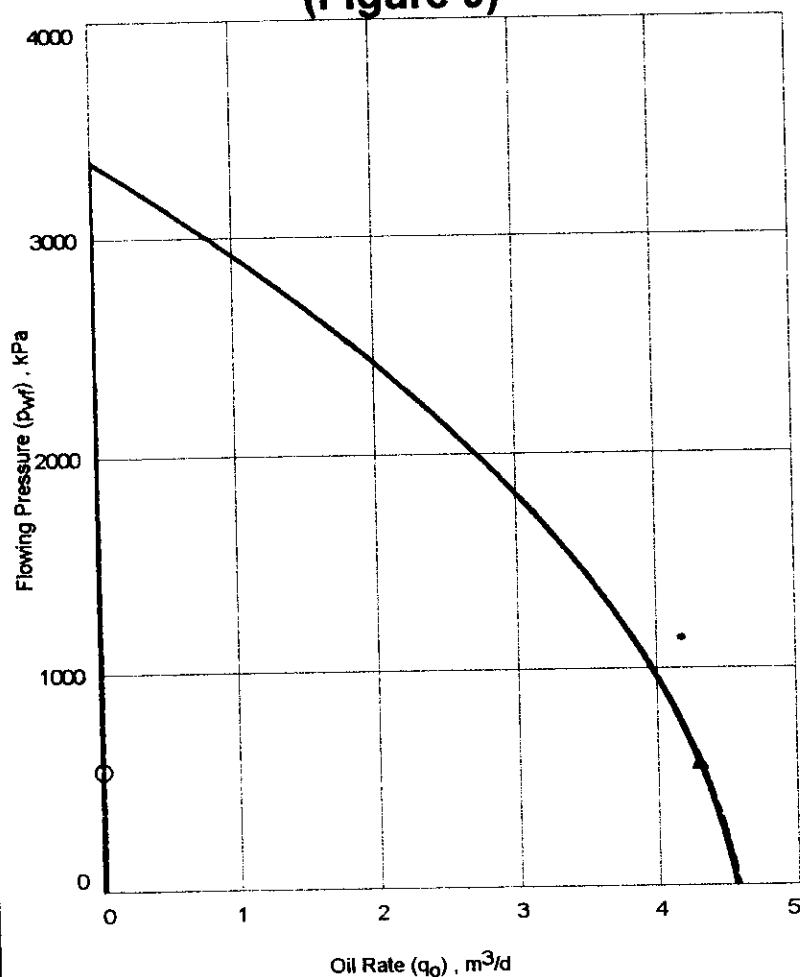
## Test Data

Reservoir Pressure ( $p_R$ )	3356.00 kPa
Bubble Point Pressure ( $p_{bp}$ )	kPa
Test Pressure ( $p_{wf}$ )	555.00 kPa
Oil Test Rate ( $q_o$ )	4.300 m <sup>3</sup> /d
Water Test Rate ( $q_w$ )	0.020 m <sup>3</sup> /d

## Results

Maximum Oil Rate	4.550 m <sup>3</sup> /d
Maximum Water Rate	0.024 m <sup>3</sup> /d
Maximum Total Rate	4.574 m <sup>3</sup> /d

(Figure 9)



Flowing Pressure kPa	Oil Rate m <sup>3</sup> /d	Water Rate m <sup>3</sup> /d	Total Rate m <sup>3</sup> /d
0.00	4.550	0.024	4.574
300.00	4.440	0.022	4.461
555.00*	4.300	0.020	4.320
600.00	4.271	0.020	4.291
900.00	4.044	0.018	4.062
1200.00	3.759	0.015	3.775
1500.00	3.416	0.013	3.429
1800.00	3.015	0.011	3.026
2100.00	2.555	0.009	2.564
2400.00	2.038	0.007	2.044
2700.00	1.462	0.005	1.467
3000.00	0.828	0.003	0.830
3300.00	0.136	0.000	0.136
3356.00	0.000	0.000	0.000

Note : \* Test Point  
 \*\* Bubble Point  
 Oil IPR based on Vogel's Equation.  
 (Quadratic Curve Factor=0.2)

PRESSURE  
DATA





**OTATCO INC**

***ANDERSON EXPLORATION LTD.***

***ACOUSTIC PRESSURE SURVEY ( BUILD-UP)  
HOME/SCURRY PIERSON PROV HZNTL 11-11-2-29W1  
HZ/11-11-002-29W1  
FIELD: PIERSON  
POOL: SPEAR FISH  
JANUARY - MARCH, 2000***

***DISTRIBUTION: GORD PETERS, Calgary - 2 copies***

***PREPARED BY: ALEX OYKHMAN, C. E. T.***

***DATE: 2000-03-06***

**Oilfield Technology and Trading Company (A.S.E. "OT")**

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Operations and Engineering - Bay 12, 700 - 58<sup>th</sup> Ave. S.E. Calgary, Alberta T2H 2E2 Tel: (403) 264-5530 Fax: (403) 269-4136

**ANDERSON EXPLORATION LTD.**

**ACOUSTIC PRESSURE SURVEY (BUILD-UP)  
HOME/SCURRY PIERSON PROV HZNTL 11-11-2-29W1  
HZ/11-11-002-29W1  
FIELD: PIERSON  
POOL: SPEAR FISH  
JANUARY - MARCH, 2000**

**TEST SUMMARY:**

- ♦ A Tri-Ener-Tech FL1 was installed into the casing on 2000-01-25 at 14:40 hours. The fluid level was at 101.7(TVD) joints from surface.
- ♦ The well was shut-in on 2000-01-25 at 14:52 hours to start the build-up.
- ♦ The build-up test was concluded on 2000-03-06 at 13:40 hours.
- ♦ A bottomhole pressure of 2592 kPa (absolute) was calculated at the mid-point of the perforations after 982.8 hours of shut-in time.

**PRESSURE DATA CALCULATIONS:**

- ♦ The bottomhole pressures were calculated using the following information:

Atmospheric Pressure	93.0 kPa
* Formation Depth	1020.95 m KB
Oil Gravity	36.00° API
Water Gravity	1.140
Gas Gravity	1.107
Oil Production	4.30 m <sup>3</sup> /d
Water Production	0.02 m <sup>3</sup> /d
Bottomhole Temperature	40.0°C

- \* Deviated well; MPP and fluid levels at TVD.

**ATTACHMENTS:**  
ACOUSTIC WELLSOUNDER PRESSURE SURVEY DATA  
TYPECURVE PRE-PLOT  
BOTTOMHOLE PRESSURE VERSUS TIME  
CASING PRESSURE VERSUS TIME  
FLUID LEVEL VERSUS TIME  
PRESSURE FILE (ASCII FORMAT)

# OTATCO INC

## Acoustic Wellsounder Pressure Survey

COMPANY: ANDERSON EXPLORATION LTD.  
 FIELD: PIERSON  
 POOL NAME: SPEAR FISH

WELLNAME: HOME/SCURRY PIERSON PROV HZNTL 11-11-2-29W1  
 LOCATION: HZ/11-11-002-29W1  
 STATUS: PUMP OIL

**Tubing**  
 TOTAL JOINTS = 111.00  
 TUBING BOTTOM = 1102.83 mKB  
 AVERAGE JOINT LENGTH = 9.90 m

**Elevation**  
 KB = 474.67 m  
 CF = 470.20 m  
 KB to CF = 4.47 m

**Production**  
 OIL RATE = 4.30 m3/d  
 WATER RATE = 0.02 m3/d

**Temperature**  
 SURFACE TEMP = 2.00 C  
 RESERVOIR TEMP = 40.00 C

**Fluid Properties**  
 OIL GRAVITY(API) = 36.00  
 GAS GRAVITY = 1.107  
 WATER GRAVITY = 1.140

**Producing Interval**  
 Top of Interval = 1018.89 mKB  
 Bottom of Interval = 1023.00 mKB  
 MID-POINT PERFS = 1020.95 mKB

- HORIZONTAL DEVIATED WELL; FLUID LEVELS AND PERFORATED INTERVAL CORRECTED FOR DEVIATION.

Shot #	Date	Time	Test Time (hrs)	Joints to Fluid	Column Heights (m)			Gradients (kPa/m)			Pressures (kPag)					MPP
					Gas	Oil	Emul	Gas	Oil	Emul	Csg	Gas	Oil	Emul		
1	00/01/25	14:52:01	0.0000	101.68	1006.14	10.34	0.00	0.059	7.902	7.912	321.0	59.5	81.7	0.0		462.2
2	00/01/25	14:55:08	0.0519	101.66	1005.94	10.34	0.20	0.059	7.902	7.991	321.0	59.5	81.7	1.6		463.8
3	00/01/25	14:58:25	0.1067	101.68	1006.14	10.34	0.00	0.059	7.902	8.076	321.0	59.5	81.7	0.0		462.2
4	00/01/25	15:01:55	0.1650	101.68	1006.14	10.34	0.00	0.059	7.902	8.121	321.0	59.5	81.7	0.0		462.2
5	00/01/25	15:05:36	0.2264	101.66	1005.94	10.34	0.20	0.060	7.903	7.986	327.0	60.4	81.7	1.6		470.7
6	00/01/25	15:09:29	0.2911	101.65	1005.84	10.34	0.30	0.060	7.903	7.915	327.0	60.4	81.7	2.4		471.4
7	00/01/25	15:13:36	0.3597	101.65	1005.84	10.33	0.30	0.061	7.904	7.946	331.0	61.0	81.7	2.4		476.0
8	00/01/25	15:17:57	0.4322	101.65	1005.84	10.33	0.30	0.061	7.904	7.939	334.0	61.4	81.7	2.4		479.5
9	00/01/25	15:22:33	0.5089	101.65	1005.84	10.33	0.30	0.062	7.905	7.939	337.0	61.9	81.7	2.4		483.0
10	00/01/25	15:27:25	0.5900	101.65	1005.84	10.33	0.30	0.062	7.905	7.916	337.0	61.9	81.7	2.4		482.9
11	00/01/25	15:32:33	0.6756	101.67	1006.04	10.33	0.10	0.062	7.905	7.982	340.0	62.3	81.7	0.8		484.9
12	00/01/25	15:37:59	0.7661	101.68	1006.14	10.33	0.01	0.063	7.906	7.941	344.0	62.9	81.7	0.1		488.7
13	00/01/25	15:43:43	0.8617	101.66	1005.94	10.33	0.21	0.063	7.906	7.951	347.0	63.4	81.7	1.6		493.7
14	00/01/25	15:49:47	0.9628	101.64	1005.74	10.33	0.40	0.063	7.907	7.935	350.0	63.8	81.7	3.2		498.7
15	00/01/25	15:56:12	1.0697	101.64	1005.74	10.33	0.41	0.064	7.908	7.935	353.0	64.3	81.7	3.2		502.2
16	00/01/25	16:02:59	1.1828	101.60	1005.35	10.33	0.80	0.064	7.908	7.930	357.0	64.8	81.7	6.4		509.9
17	00/01/25	16:10:09	1.3022	101.60	1005.35	10.33	0.80	0.065	7.909	7.928	360.0	65.3	81.7	6.4		513.3
18	00/01/25	16:17:44	1.4286	101.59	1005.25	10.33	0.90	0.065	7.909	7.927	363.0	65.7	81.7	7.2		517.6
19	00/01/25	16:25:44	1.5619	101.57	1005.05	10.32	1.10	0.066	7.910	7.926	366.0	66.2	81.7	8.7		522.6
20	00/01/25	16:34:12	1.7031	101.56	1004.95	10.32	1.20	0.066	7.910	7.926	369.0	66.6	81.7	9.5		526.8
21	00/01/25	16:43:09	1.8522	101.53	1004.65	10.32	1.50	0.067	7.911	7.925	372.0	67.1	81.7	11.9		532.6
22	00/01/25	16:52:37	2.0100	101.49	1004.26	10.32	1.90	0.067	7.911	7.926	376.0	67.6	81.7	15.0		540.3
23	00/01/25	17:02:36	2.1764	101.49	1004.26	10.32	1.90	0.068	7.912	7.925	379.0	68.1	81.7	15.0		543.8
24	00/01/25	17:12:41	2.3389	101.43	1003.66	10.32	2.49	0.069	7.913	7.931	388.0	69.4	81.7	19.8		558.8
25	00/01/25	17:36:09	2.7356	101.43	1003.66	10.32	2.49	0.070	7.914	7.926	391.0	69.8	81.7	19.8		562.3
26	00/01/25	17:48:38	2.9436	101.38	1003.17	10.32	2.99	0.070	7.915	7.929	397.0	70.7	81.6	23.7		573.1
27	00/01/25	18:01:50	3.1636	101.34	1002.77	10.32	3.39	0.071	7.915	7.927	400.0	71.1	81.6	26.8		579.6
28	00/01/25	18:15:46	3.3958	101.31	1002.48	10.31	3.68	0.071	7.916	7.927	403.0	71.6	81.6	29.2		585.4
29	00/01/25	18:30:31	3.6417	101.30	1002.38	10.31	3.79	0.072	7.917	7.930	410.0	72.6	81.6	30.0		594.3
30	00/01/25	18:46:06	3.9014	101.23	1001.68	10.31	4.48	0.073	7.917	7.928	413.0	73.0	81.6	35.5		603.2
31	00/01/25	19:02:34	4.1758	101.20	1001.39	10.31	4.78	0.074	7.918	7.930	419.0	73.9	81.6	37.9		612.4
32	00/01/25	19:19:58	4.4658	101.18	1001.19	10.31	4.98	0.074	7.919	7.930	423.0	74.5	81.6	39.5		618.6
33	00/01/25	19:38:23	4.7728	101.13	1000.70	10.31	5.47	0.075	7.920	7.931	429.0	75.4	81.6	43.4		629.4
34	00/01/25	19:57:50	5.0969	101.08	1000.20	10.31	5.97	0.076	7.921	7.931	435.0	76.3	81.6	47.3		640.2
35	00/01/25	20:18:23	5.4394	101.04	999.80	10.30	6.37	0.077	7.922	7.932	442.0	77.3	81.6	50.5		651.4
36	00/01/25	20:40:07	5.8017	100.99	999.31	10.30	6.86	0.078	7.922	7.933	448.0	78.2	81.6	54.4		662.2
37	00/01/25	21:03:06	6.1847	100.93	998.72	10.30	7.46	0.079	7.923	7.934	455.0	79.2	81.6	59.2		675.0
38	00/01/25	21:27:23	6.5894	100.87	998.12	10.30	8.05	0.080	7.924	7.934	460.0	79.9	81.6	63.9		685.4
39	00/01/25	21:53:03	7.0172	100.81	997.53	10.30	8.65	0.081	7.925	7.935	467.0	80.9	81.6	68.6		698.1
40	00/01/25	22:20:11	7.4694	100.76	997.03	10.30	9.14	0.082	7.926	7.935	473.0	81.8	81.6	72.6		709.0
41	00/01/25	22:48:52	7.9475	100.67	996.14	10.30	10.04	0.083	7.927	7.936	481.0	82.9	81.6	79.6		725.2
42	00/01/25	23:19:11	8.4528	100.60	995.45	10.29	10.73	0.084	7.928	7.937	489.0	84.1	81.6	85.2		739.9
43	00/01/25	23:51:14	8.9869	100.53	994.76	10.29	11.42	0.086	7.929	7.937	496.0	85.1	81.6	90.7		753.4
44	00/01/26	00:25:06	9.5514	100.44	993.87	10.29	12.32	0.086	7.930	7.938	502.0	85.9	81.6	97.8		767.3
45	00/01/26	01:00:54	10.1481	100.34	992.88	10.29	13.31	0.088	7.931	7.939	509.0	86.9	81.6	105.6		783.2
46	00/01/26	01:38:45	10.7789	100.23	991.79	10.29	14.40	0.089	7.932	7.940	518.0	88.2	81.6	114.3		802.1
47	00/01/26	02:18:46	11.4458	100.14	990.90	10.29	15.29	0.090	7.933	7.940	525.0	89.2	81.6	121.4		817.2
48	00/01/26	03:01:03	12.1506	100.03	989.81	10.28	16.38	0.091	7.934	7.941	534.0	90.5	81.6	130.1		836.1
49	00/01/26	03:45:45	12.8956	99.94	988.92	10.28	17.27	0.092	7.936	7.943	540.0	91.3	81.6	137.2		850.1
50	00/01/26	04:33:00	13.6831	99.79	987.44	10.28	18.76	0.094	7.938	7.945	550.0	92.7	81.6	149.1		873.3
51	00/01/26	05:22:57	14.5156	99.66	986.15	10.26	20.07	0.095	7.953	7.965	556.0	93.5	81.6	159.8		890.9
52	00/01/26	06:15:44	15.3953	99.51	984.66	10.26	21.55	0.096	7.954	7.960	566.0	94.9	81.6	171.6		914.0
53	00/01/26	07:11:33	16.3256	99.35	983.08	10.24	23.16	0.097	7.969	7.980	573.0	95.8	81.6	184.8		935.2
54	00/01/26	08:10:32	17.3086	99.21	981.70	10.23	24.55	0.099	7.973	7.978	583.0	97.2	81.6	195.8		957.6
55	00/01/26	09:12:53	18.3478	99.05	980.11	10.21	26.15	0.100	7.987	7.995	592.0	98.4	81.6	209.0		981.1
56	00/01/26	10:18:48	19.4464	98.90	978.63	10.20	27.65	0.102	7.997	8.003	602.0	99.8	81.6	221.3		1004.6
57	00/01/26	11:28:28	20.6075	98.74	977.05	10.18	29.25	0.104	8.012	8.019	612.0	101.2	81.6	234.6		1029.3
58	00/01/26	12:42:06	21.8347	98.59	975.56	10.16	30.76	0.105	8.030	8.038	622.0	102.6	81.6	247.2		1053.4
59	00/01/26	13:59:57	23.1322	98.41	973.78	10.13	32.57	0.107	8.053	8.061	632.0	103.9	81.6	262.5		1080.0
60	00/01/26	15:22:14	24.5036	98.22	971.90	10.09	34.49	0.108	8.085	8.094	641.0	105.1	81.5	279.1		1106.8
61	00/01/26	16:49:12	25.9531	98.02	969.92	10.09	36.47	0.109	8.115	8.114	648.0	106.0	81.8	295.9		1131.7
62	00/01/26	18:21:08	27.4853	97.84	968.14	10.09	38.25	0.111	8.114	8.113	658.0	107.3	81.8	310.3		1157.5
63	00/01/26	19:58:19	29.1050	97.65	966.26	10.09	40.13	0.112	8.114	8.112	667.0	108.5	81.8	325.5		1182.8
64	00/01/26	21:41:02	30.8169	97.49	964.68	10.09	41.71	0.113	8.114	8.111	674.0	109.4	81.8	338.3		1203.6
65	00/01/26	23:29:37	32.6267	97.32	962.99	10.09	43.39	0.115	8.114	8.110	683.0	110.6	81.8	351.9		1227.4

## ANDERSON EXPLORATION LTD. HZ/11-11-002-29W1 Continued

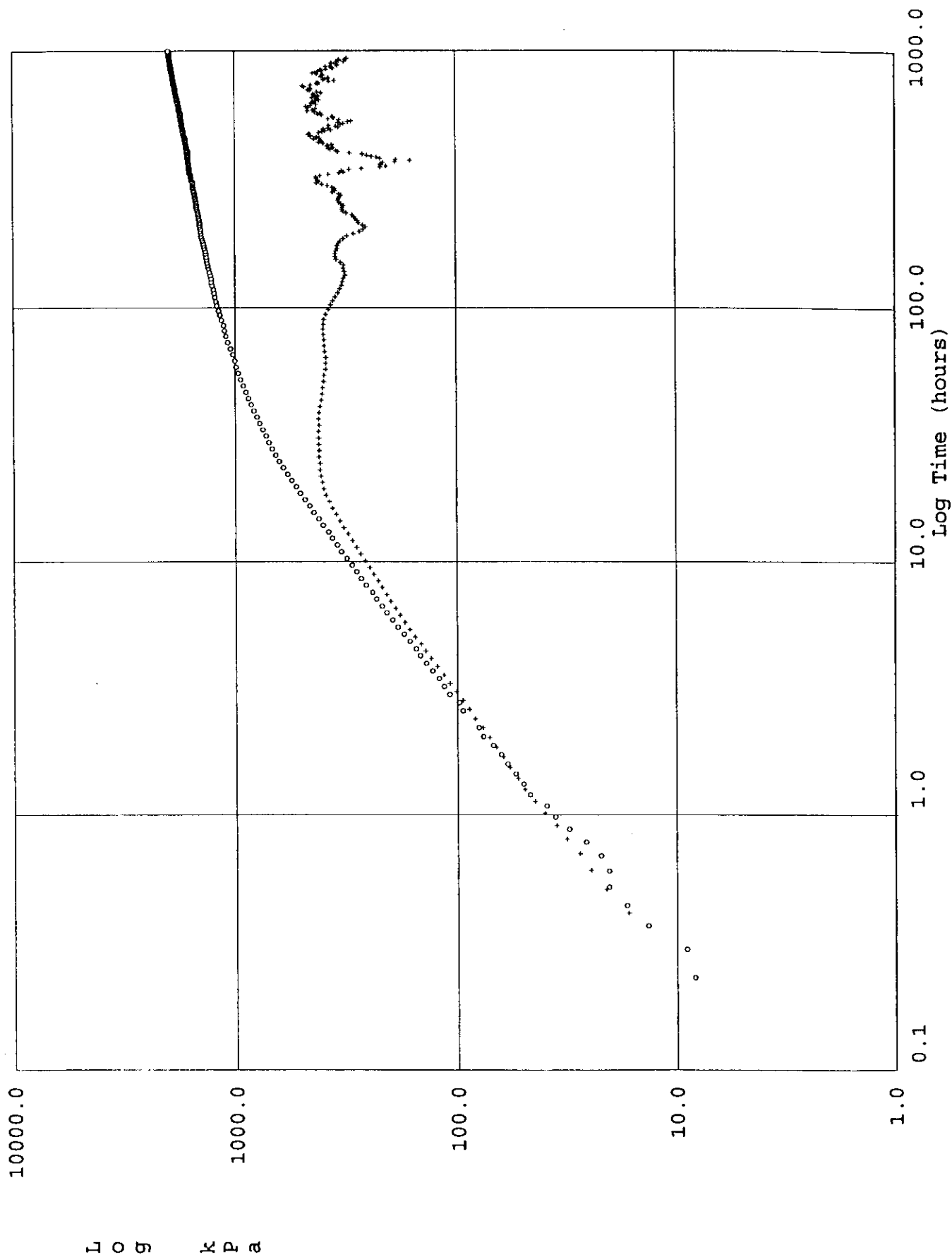
Shot #	Date	Time	Test Time (hrs)	Joints to Fluid	Column Heights (m)			Gradients (kPa/m)			Pressures (kPag)				
					Gas	Oil	Emul	Gas	Oil	Emul	Csg	Gas	Oil	Emul	MPP
66	00/01/27	01:24:23	34.5394	97.11	960.92	10.09	45.47	0.116	8.113	8.110	692.0	111.7	81.8	368.8	1254.3
67	00/01/27	03:25:42	36.5614	96.96	959.43	10.09	46.96	0.117	8.113	8.109	699.0	112.6	81.8	380.8	1274.2
68	00/01/27	05:33:57	38.6989	96.72	957.06	10.09	49.33	0.119	8.113	8.108	709.0	113.9	81.8	400.0	1304.7
69	00/01/27	07:49:30	40.9581	96.51	954.98	10.09	51.41	0.120	8.113	8.107	715.0	114.6	81.8	416.8	1328.2
70	00/01/27	10:12:47	43.3461	96.32	953.10	10.09	53.29	0.122	8.113	8.106	725.0	115.9	81.8	432.0	1354.7
71	00/01/27	12:44:14	45.8703	96.16	951.52	10.09	54.87	0.123	8.113	8.106	732.0	116.7	81.8	444.8	1375.3
72	00/01/27	15:24:20	48.5386	95.97	949.64	10.09	56.75	0.124	8.112	8.105	742.0	118.0	81.8	460.0	1401.8
73	00/01/27	18:13:33	51.3589	95.72	947.16	10.09	59.23	0.125	8.099	8.089	748.0	118.7	81.7	479.1	1427.4
74	00/01/27	21:12:26	54.3403	95.50	944.99	10.09	61.40	0.126	8.103	8.093	754.0	119.3	81.7	497.0	1452.0
75	00/01/28	00:21:31	57.4917	95.31	943.11	10.09	63.28	0.127	8.108	8.098	759.0	119.8	81.8	512.5	1473.1
76	00/01/28	03:41:23	60.8228	95.16	941.62	10.09	64.77	0.128	8.113	8.102	762.0	120.1	81.8	524.8	1488.7
77	00/01/28	07:12:39	64.3439	95.03	940.33	10.09	66.05	0.129	8.112	8.102	768.0	120.8	81.8	535.1	1505.8
78	00/01/28	10:55:57	68.0656	94.83	938.36	10.09	68.03	0.130	8.112	8.101	778.0	122.1	81.8	551.1	1533.1
79	00/01/28	14:52:01	72.0000	94.58	935.88	10.09	70.51	0.131	8.112	8.100	786.0	123.0	81.8	571.1	1561.9
80	00/01/28	18:52:01	76.0000	94.43	934.40	10.09	71.99	0.133	8.112	8.099	794.0	124.0	81.8	583.1	1582.9
81	00/01/28	22:52:01	80.0000	94.27	932.81	10.09	73.57	0.133	8.112	8.099	798.0	124.4	81.8	595.9	1600.1
82	00/01/29	02:52:01	84.0000	94.13	931.43	10.09	74.96	0.134	8.112	8.098	801.0	124.7	81.8	607.0	1614.6
83	00/01/29	06:52:01	88.0000	93.96	929.75	10.09	76.64	0.136	8.112	8.097	811.0	126.0	81.8	620.6	1639.4
84	00/01/29	10:52:01	92.0000	93.83	928.46	10.09	77.93	0.137	8.111	8.097	818.0	126.9	81.8	631.0	1657.7
85	00/01/29	14:52:01	96.0000	93.64	926.58	10.09	79.81	0.137	8.112	8.096	821.0	127.1	81.8	646.1	1676.1
86	00/01/29	18:52:01	100.0000	93.47	924.90	10.09	81.49	0.138	8.112	8.096	826.0	127.6	81.8	659.7	1695.2
87	00/01/29	22:52:01	104.0000	93.35	923.71	10.09	82.68	0.138	8.112	8.095	828.0	127.8	81.8	669.3	1706.9
88	00/01/30	02:52:01	108.0000	93.21	922.33	10.09	84.06	0.139	8.112	8.095	831.0	128.1	81.8	680.5	1721.3
89	00/01/30	06:52:01	112.0000	93.11	921.34	10.09	85.05	0.139	8.112	8.095	833.0	128.2	81.8	688.5	1731.5
90	00/01/30	10:52:01	116.0000	93.08	921.04	10.09	85.35	0.140	8.112	8.094	837.0	128.8	81.8	690.8	1738.4
91	00/01/30	14:52:01	120.0000	92.91	919.36	10.09	87.03	0.141	8.111	8.094	844.0	129.6	81.8	704.4	1759.8
92	00/01/30	18:52:01	124.0000	92.79	918.17	10.09	88.22	0.141	8.112	8.093	844.0	129.4	81.8	714.0	1769.3
93	00/01/30	22:52:01	128.0000	92.79	918.17	10.09	88.22	0.141	8.111	8.093	846.0	129.8	81.8	714.0	1771.5
94	00/01/31	02:52:01	132.0000	92.64	916.69	10.09	89.70	0.141	8.112	8.093	845.0	129.4	81.8	726.0	1782.2
95	00/01/31	06:52:01	136.0000	92.57	915.99	10.09	90.40	0.142	8.112	8.093	848.0	129.7	81.8	731.6	1791.1
96	00/01/31	10:52:01	140.0000	92.51	915.40	10.09	90.99	0.143	8.111	8.092	855.0	130.7	81.8	736.3	1803.9
97	00/01/31	14:52:01	144.0000	92.44	914.71	10.09	91.68	0.144	8.111	8.092	860.0	131.4	81.8	741.9	1815.1
98	00/01/31	18:52:01	148.0000	92.32	913.52	10.09	92.87	0.144	8.111	8.092	860.0	131.2	81.8	751.5	1824.5
99	00/01/31	22:52:01	152.0000	92.24	912.73	10.09	93.66	0.144	8.111	8.091	862.0	131.4	81.8	757.9	1833.1
100	00/02/01	02:52:01	156.0000	92.22	912.53	10.09	93.86	0.145	8.111	8.091	866.0	132.0	81.8	759.4	1839.2
101	00/02/01	06:52:01	160.0000	92.20	912.33	10.09	94.06	0.145	8.111	8.091	869.0	132.4	81.8	761.0	1844.2
102	00/02/01	10:52:01	164.0000	92.17	912.03	10.09	94.35	0.146	8.111	8.091	872.0	132.8	81.8	763.4	1850.0
103	00/02/01	14:52:01	168.0000	92.04	910.75	10.09	95.64	0.146	8.111	8.090	876.0	133.2	81.8	773.7	1864.8
104	00/02/01	18:52:01	172.0000	91.97	910.06	10.09	96.33	0.147	8.111	8.090	879.0	133.6	81.8	779.3	1873.7
105	00/02/01	22:52:01	176.0000	91.92	909.56	10.09	96.83	0.147	8.111	8.090	882.0	134.0	81.8	783.3	1881.1
106	00/02/02	02:52:01	180.0000	91.84	908.77	10.09	97.62	0.148	8.111	8.089	886.0	134.5	81.8	788.7	1891.9
107	00/02/02	06:52:01	184.0000	91.75	907.88	10.09	98.51	0.148	8.111	8.089	889.0	134.8	81.8	796.8	1902.4
108	00/02/02	10:52:01	188.0000	91.72	907.58	10.09	98.81	0.149	8.110	8.088	893.0	135.4	81.8	799.2	1909.4
109	00/02/02	14:52:01	192.0000	91.72	907.58	10.09	98.81	0.150	8.110	8.088	896.0	135.8	81.8	799.2	1912.8
110	00/02/02	18:52:01	196.0000	91.62	906.59	10.09	99.80	0.150	8.110	8.088	896.0	135.7	81.8	807.2	1920.6
111	00/02/02	22:52:01	200.0000	91.62	906.59	10.09	99.80	0.149	8.110	8.088	895.0	135.5	81.8	807.2	1919.5
112	00/02/03	02:52:01	204.0000	91.52	905.60	10.09	100.79	0.150	8.110	8.088	898.0	135.8	81.8	815.1	1930.8
113	00/02/03	06:52:01	208.0000	91.52	905.60	10.09	100.79	0.150	8.110	8.088	898.0	135.8	81.8	815.1	1930.8
114	00/02/03	10:52:01	212.0000	91.50	905.40	10.09	100.98	0.151	8.110	8.088	902.0	136.4	81.8	816.7	1936.9
115	00/02/03	14:52:01	216.0000	91.44	904.81	10.09	101.58	0.151	8.110	8.088	902.0	136.3	81.8	821.5	1941.6
116	00/02/03	18:52:01	220.0000	91.39	904.32	10.09	102.07	0.151	8.110	8.087	905.0	136.7	81.8	825.5	1949.0
117	00/02/03	22:52:01	224.0000	91.34	903.82	10.09	102.57	0.151	8.110	8.087	904.0	136.5	81.8	829.5	1951.7
118	00/02/04	02:52:01	228.0000	91.34	903.82	10.09	102.57	0.151	8.110	8.087	904.0	136.5	81.8	829.5	1951.7
119	00/02/04	06:52:01	232.0000	91.27	903.13	10.09	103.26	0.151	8.110	8.087	907.0	136.8	81.8	835.1	1960.7
120	00/02/04	10:52:01	236.0000	91.21	902.54	10.09	103.85	0.152	8.110	8.087	910.0	137.2	81.8	839.8	1968.8
121	00/02/04	14:52:01	240.0000	91.19	902.34	10.09	104.05	0.153	8.110	8.086	918.0	138.4	81.8	841.4	1979.5
122	00/02/04	18:52:01	244.0000	91.16	902.04	10.09	104.35	0.154	8.110	8.086	919.0	138.5	81.8	843.8	1983.0
123	00/02/04	22:52:01	248.0000	91.16	902.04	10.09	104.35	0.153	8.110	8.086	917.0	138.2	81.8	843.8	1980.7
124	00/02/05	02:52:01	252.0000	91.09	901.35	10.09	105.04	0.154	8.110	8.086	919.0	138.4	81.8	849.3	1988.5
125	00/02/05	06:52:01	256.0000	91.09	901.35	10.09	105.04	0.154	8.110	8.086	919.0	138.4	81.8	849.3	1988.5
126	00/02/05	10:52:01	260.0000	90.98	900.26	10.09	106.13	0.154	8.110	8.085	923.0	138.8	81.8	858.1	2007.7
127	00/02/05	14:52:01	264.0000	91.00	900.46	10.09	105.93	0.155	8.109	8.085	930.0	139.9	81.8	856.4	2008.1
128	00/02/05	18:52:01	268.0000	90.91	899.57	10.09	106.82	0.155	8.109	8.085	930.0	139.8	81.8	863.6	2015.2
129	00/02/05	22:52:01	272.0000	90.91	899.57	10.09	106.82	0.155	8.109	8.085	929.0	139.6	81.8	863.6	2014.0
130	00/02/06	02:52:01	276.0000	90.88	899.27	10.09	107.12	0.155	8.109	8.085	930.0	139.7	81.8	866.0	2017.5
131	00/02/06	06:52:01	280.0000	90.91	899.57	10.09	106.82	0.156	8.109	8.085	932.0	140.1	81.8	863.6	2017.5
132	00/02/06	10:52:01	284.0000	90.81	898.58	10.09	107.81	0.157	8.109	8.084	939.0	141.0	81.8	871.6	2033.3
133	00/02/06	14:52:01	288.0000	90.78	898.28	10.09	108.11	0.158	8.109	8.084	945.0	141.8	81.8	873.9	2042.5
134	00/02/06	18:52:01	292.0000	90.73	897.79	10.09	108.60	0.158	8.109	8.084	943.0	141.4	81.8	877.9	2044.1
135	00/02/06	22:52:01	296.0000	90.73											

## ANDERSON EXPLORATION LTD. HZ/11-11-002-29W1 Continued

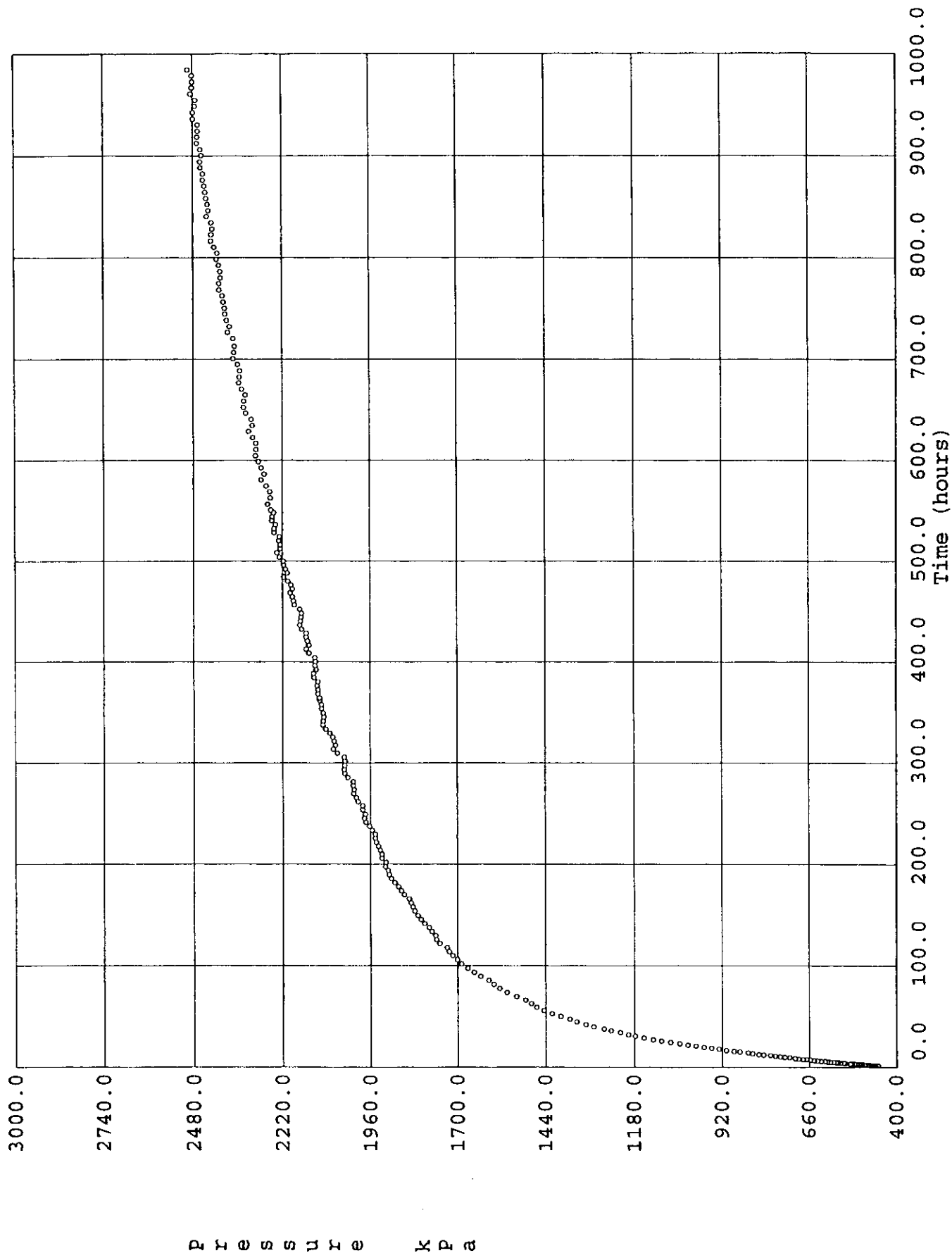
Shot #	Date	Time	Test Time (hrs)	Joints to Fluid	Column Heights (m)			Gradients (kPa/m)			Pressures (kPag)				
					Gas	Oil	Emul	Gas	Oil	Emul	Csg	Gas	Oil	Emul	MPP
156	00/02/10	05:30:01	374.6333	90.21	892.64	10.09	113.75	0.163	8.107	8.081	977.0	145.8	81.8	919.1	2123.7
157	00/02/10	09:30:01	378.6333	90.23	892.84	10.09	113.55	0.163	8.107	8.081	977.0	145.8	81.8	917.6	2122.2
158	00/02/10	13:30:01	382.6333	90.17	892.24	10.09	114.14	0.164	8.107	8.080	983.0	146.6	81.8	922.3	2133.7
159	00/02/10	17:30:01	386.6333	90.21	892.64	10.09	113.75	0.165	8.107	8.080	987.0	147.3	81.8	919.1	2135.2
160	00/02/10	21:30:01	390.6333	90.21	892.64	10.09	113.75	0.164	8.107	8.080	980.0	146.3	81.8	919.1	2127.2
161	00/02/11	01:30:01	394.6333	90.14	891.95	10.09	114.44	0.164	8.107	8.080	979.0	146.0	81.8	924.7	2131.5
162	00/02/11	05:30:01	398.6333	90.17	892.24	10.09	114.14	0.164	8.107	8.080	979.0	146.0	81.8	922.3	2129.1
163	00/02/11	09:30:01	402.6333	90.17	892.24	10.09	114.14	0.164	8.107	8.080	980.0	146.2	81.8	922.3	2130.3
164	00/02/11	13:30:01	406.6333	90.12	891.75	10.09	114.64	0.166	8.107	8.079	992.0	147.9	81.8	926.2	2147.9
165	00/02/11	17:30:01	410.6333	90.09	891.45	10.09	114.94	0.167	8.106	8.079	997.0	148.7	81.8	928.6	2156.0
166	00/02/11	21:30:01	414.6333	90.05	891.06	10.09	115.33	0.165	8.107	8.080	988.0	147.2	81.8	931.8	2148.8
167	00/02/12	01:30:01	418.6333	90.07	891.25	10.09	115.13	0.166	8.107	8.079	992.0	147.9	81.8	930.2	2151.8
168	00/02/12	05:30:01	422.6333	90.02	890.76	10.09	115.63	0.166	8.107	8.079	992.0	147.8	81.8	934.2	2155.7
169	00/02/12	09:30:01	426.6333	90.05	891.06	10.09	115.33	0.166	8.107	8.079	995.0	148.3	81.8	931.8	2156.8
170	00/02/12	13:30:01	430.6333	90.00	890.56	10.09	115.83	0.168	8.106	8.078	1003.0	149.4	81.8	935.7	2169.9
171	00/02/12	17:30:01	434.6333	89.91	889.67	10.09	116.72	0.168	8.106	8.078	1002.0	149.1	81.8	942.9	2175.8
172	00/02/12	21:30:01	438.6333	89.96	890.17	10.09	116.22	0.168	8.106	8.078	1002.0	149.2	81.8	938.9	2171.9
173	00/02/13	01:30:01	442.6333	89.91	889.67	10.09	116.72	0.167	8.107	8.079	998.0	148.5	81.8	942.9	2171.2
174	00/02/13	05:30:01	446.6333	89.93	889.87	10.09	116.52	0.167	8.107	8.079	998.0	148.5	81.8	941.3	2169.6
175	00/02/13	09:30:01	450.6333	89.91	889.67	10.09	116.72	0.167	8.106	8.078	1001.0	149.0	81.8	942.9	2174.6
176	00/02/13	13:30:01	454.6333	89.86	889.18	10.09	117.21	0.169	8.106	8.078	1012.0	150.6	81.8	946.8	2191.1
177	00/02/13	17:30:01	458.6333	89.86	889.18	10.09	117.21	0.170	8.106	8.077	1014.0	150.9	81.8	946.8	2193.4
178	00/02/13	21:30:01	462.6333	89.84	888.98	10.09	117.41	0.170	8.106	8.077	1015.0	151.0	81.8	948.4	2196.1
179	00/02/14	01:30:01	466.6333	89.80	888.58	10.09	117.81	0.171	8.105	8.077	1019.0	151.5	81.8	951.5	2203.8
180	00/02/14	05:30:01	470.6333	89.84	888.98	10.09	117.41	0.170	8.106	8.077	1015.0	151.0	81.8	948.4	2196.1
181	00/02/14	09:30:01	474.6333	89.80	888.58	10.09	117.81	0.170	8.106	8.077	1016.0	151.1	81.8	951.5	2200.4
182	00/02/14	13:30:01	478.6333	89.77	888.29	10.09	118.10	0.171	8.105	8.077	1022.0	152.0	81.8	953.9	2209.6
183	00/02/14	17:30:01	482.6333	89.72	887.79	10.09	118.60	0.172	8.105	8.076	1029.0	152.9	81.7	957.8	2221.5
184	00/02/14	21:30:01	486.6333	89.74	887.99	10.09	118.40	0.171	8.105	8.077	1021.0	151.8	81.8	956.3	2210.8
185	00/02/15	01:30:01	490.6333	89.72	887.79	10.09	118.60	0.172	8.105	8.076	1025.0	152.3	81.7	957.8	2216.9
186	00/02/15	05:30:01	494.6333	89.70	887.59	10.09	118.80	0.172	8.105	8.076	1028.0	152.8	81.7	959.4	2221.9
187	00/02/15	09:30:01	498.6333	89.68	887.40	10.09	118.99	0.172	8.105	8.076	1028.0	152.7	81.7	961.0	2223.5
188	00/02/15	13:30:01	502.6333	89.65	887.10	10.09	119.29	0.173	8.104	8.076	1036.0	153.9	81.7	963.3	2235.0
189	00/02/15	17:30:01	506.6333	89.61	886.70	10.09	119.69	0.174	8.104	8.075	1039.0	154.3	81.7	966.5	2241.5
190	00/02/15	21:30:01	510.6333	89.62	886.80	10.09	119.59	0.173	8.105	8.076	1032.0	153.2	81.7	965.8	2232.7
191	00/02/16	01:30:01	514.6333	89.61	886.70	10.09	119.69	0.173	8.105	8.076	1031.0	153.1	81.7	966.6	2232.4
192	00/02/16	05:30:01	518.6333	89.62	886.80	10.09	119.59	0.173	8.105	8.076	1035.0	153.7	81.7	965.7	2236.2
193	00/02/16	09:30:01	522.6333	89.61	886.70	10.09	119.69	0.173	8.105	8.076	1034.0	153.5	81.7	966.5	2235.8
194	00/02/16	13:30:01	526.6333	89.55	886.11	10.09	120.28	0.175	8.104	8.075	1042.0	154.7	81.7	971.3	2249.6
195	00/02/16	17:30:01	530.6333	89.58	886.41	10.09	119.98	0.175	8.104	8.075	1044.0	155.0	81.7	968.8	2249.6
196	00/02/16	21:30:01	534.6333	89.58	886.41	10.09	119.98	0.174	8.104	8.075	1041.0	154.5	81.7	968.9	2246.2
197	00/02/17	01:30:01	538.6333	89.50	885.61	10.09	120.77	0.175	8.104	8.075	1045.0	155.0	81.7	975.2	2257.0
198	00/02/17	05:30:01	542.6333	89.50	885.61	10.09	120.77	0.175	8.104	8.075	1044.0	154.9	81.7	975.2	2255.8
199	00/02/17	09:30:01	546.6333	89.56	886.21	10.09	120.18	0.175	8.104	8.075	1044.0	155.0	81.7	970.4	2251.2
200	00/02/17	11:53:01	549.0167	89.52	885.81	10.09	120.58	0.176	8.104	8.074	1049.0	155.7	81.7	973.6	2260.0
201	00/02/17	17:53:01	555.0167	89.50	885.81	10.09	120.77	0.177	8.103	8.074	1056.0	156.7	81.7	975.1	2269.6
202	00/02/17	23:53:01	561.0167	89.48	885.42	10.09	120.97	0.175	8.104	8.075	1047.0	155.3	81.7	976.8	2260.8
203	00/02/18	05:53:01	567.0167	89.47	885.32	10.09	121.07	0.175	8.104	8.075	1047.0	155.3	81.7	977.6	2261.6
204	00/02/18	11:53:01	573.0167	89.47	885.32	10.09	121.07	0.177	8.103	8.074	1057.0	156.8	81.7	977.5	2273.1
205	00/02/18	17:53:01	579.0167	89.40	884.63	10.09	121.76	0.179	8.103	8.073	1065.0	157.9	81.7	983.0	2287.7
206	00/02/18	23:53:01	585.0167	89.41	884.72	10.09	121.66	0.177	8.103	8.074	1058.0	156.9	81.7	982.3	2278.9
207	00/02/19	05:53:01	591.0167	89.39	884.53	10.09	121.86	0.178	8.103	8.073	1064.0	157.8	81.7	983.8	2287.3
208	00/02/19	11:53:01	597.0167	89.39	884.53	10.09	121.86	0.180	8.103	8.073	1071.0	158.8	81.7	983.8	2295.3
209	00/02/19	17:53:01	603.0167	89.34	884.03	10.09	122.36	0.180	8.102	8.072	1075.0	159.4	81.7	987.7	2303.8
210	00/02/19	23:53:01	609.0167	89.35	884.13	10.09	122.26	0.180	8.102	8.072	1074.0	159.2	81.7	986.9	2301.9
211	00/02/20	05:53:01	615.0167	89.34	884.03	10.09	122.36	0.180	8.102	8.072	1074.0	159.2	81.7	987.7	2302.7
212	00/02/20	11:53:01	621.0167	89.32	883.83	10.09	122.56	0.181	8.102	8.072	1081.0	160.3	81.7	989.3	2312.2
213	00/02/20	17:53:01	627.0167	89.28	883.44	10.09	122.95	0.183	8.102	8.071	1089.0	161.4	81.7	992.4	2324.5
214	00/02/20	23:53:01	633.0167	89.30	883.64	10.09	122.75	0.181	8.102	8.072	1080.0	160.1	81.7	990.9	2312.6
215	00/02/21	05:53:01	639.0167	89.28	883.44	10.09	122.95	0.181	8.102	8.072	1081.0	160.2	81.7	992.4	2315.4
216	00/02/21	11:53:01	645.0167	89.22	882.84	10.09	123.54	0.183	8.101	8.071	1091.0	161.6	81.7	997.1	2331.5
217	00/02/21	17:53:01	651.0167	89.24	883.04	10.09	123.35	0.184	8.101	8.071	1099.0	162.9	81.7	995.5	2339.1
218	00/02/21	23:53:01	657.0167	89.19	882.55	10.09	123.84	0.184	8.101	8.071	1094.0	162.0	81.7	999.5	2337.3
219	00/02/22	05:53:01	663.0167	89.22	882.84	10.09	123.54	0.183	8.101	8.071	1093.0	161.9	81.7	997.1	2333.8
220	00/02/22	11:53:01	669.0167	89.20	882.65	10.09	123.74	0.185	8.101	8.070	1101.0	163.1	81.7	998.6	2344.5
221	00/02/22	17:53:01	675.0167	89.17	882.35	10.09	124.04	0.186	8.101	8.070	1105.0	163.7	81.7	1001.0	2351.4
222	00/02/22	23:53:01	681.0167	89.13	881.95	10.09	124.44	0.185	8.101	8.070	1102.0	163.2	81.7	1004.2	2351.1
223	00/02/23	05:53:01	687.0167	89.13	881.95	10.09	124.44	0.185	8.101	8.070	1100.0	162.9	81.7	1004.2	2348.8
224	00/02/23	11:53:01	693.0167	89.15	882.15	10.09									

Shot #	Date	Time	Test Time (hrs)	Joints to Fluid	Column Heights (m)			Gradients (kPa/m)			Pressures (kPag)					MPP
					Gas	Oil	Emul	Gas	Oil	Emul	Csg	Gas	Oil	Emul		
246	00/02/29	01:40:01	826.8000	88.76	878.29	10.09	128.10	0.193	8.099	8.067	1145.0	169.2	81.7	1033.3	2429.2	
247	00/02/29	07:40:01	832.8000	88.71	877.80	10.09	128.59	0.193	8.099	8.067	1145.0	169.1	81.7	1037.3	2433.0	
248	00/02/29	13:40:01	838.8000	88.60	876.71	10.09	129.68	0.193	8.099	8.066	1149.0	169.5	81.7	1046.0	2446.2	
249	00/02/29	19:40:01	844.8000	88.68	877.50	10.09	128.89	0.193	8.098	8.066	1149.0	169.6	81.7	1039.6	2440.0	
250	00/03/01	01:40:01	850.8000	88.63	877.01	10.09	129.38	0.193	8.099	8.066	1148.0	169.4	81.7	1043.6	2442.7	
251	00/03/01	07:40:01	856.8000	88.57	876.41	10.09	129.98	0.193	8.099	8.066	1148.0	169.3	81.7	1048.4	2447.4	
252	00/03/01	13:40:01	862.8000	88.65	877.20	10.09	129.19	0.195	8.098	8.066	1156.0	170.7	81.7	1042.0	2450.3	
253	00/03/01	19:40:01	868.8000	88.57	876.41	10.09	129.98	0.194	8.098	8.066	1152.0	169.9	81.7	1048.4	2452.0	
254	00/03/02	01:40:01	874.8000	88.55	876.21	10.09	130.17	0.194	8.098	8.066	1155.0	170.3	81.7	1049.9	2456.9	
255	00/03/02	07:40:01	880.8000	88.55	876.21	10.09	130.17	0.194	8.098	8.066	1155.0	170.3	81.7	1049.9	2456.9	
256	00/03/02	13:40:01	886.8000	88.60	876.71	10.09	129.68	0.196	8.098	8.065	1164.0	171.8	81.7	1045.9	2463.4	
257	00/03/02	19:40:01	892.8000	88.60	876.71	10.09	129.68	0.196	8.097	8.065	1165.0	172.0	81.7	1045.9	2464.5	
258	00/03/03	01:40:01	898.8000	88.60	876.71	10.09	129.68	0.195	8.098	8.065	1161.0	171.4	81.7	1045.9	2459.9	
259	00/03/03	07:40:01	904.8000	88.60	876.71	10.09	129.68	0.196	8.098	8.065	1164.0	171.8	81.7	1045.9	2463.4	
260	00/03/03	13:40:01	910.8000	88.60	876.71	10.09	129.68	0.198	8.097	8.064	1173.0	173.2	81.7	1045.8	2473.7	
261	00/03/03	19:40:01	916.8000	88.60	876.71	10.09	129.68	0.197	8.097	8.064	1172.0	173.1	81.7	1045.8	2472.6	
262	00/03/04	01:40:01	922.8000	88.60	876.71	10.09	129.68	0.197	8.097	8.064	1171.0	172.9	81.7	1045.8	2471.4	
263	00/03/04	07:40:01	928.8000	88.60	876.71	10.09	129.68	0.197	8.097	8.064	1171.0	172.9	81.7	1045.8	2471.4	
264	00/03/04	13:40:01	934.8000	88.60	876.71	10.09	129.68	0.199	8.096	8.064	1182.0	174.7	81.7	1045.7	2484.0	
265	00/03/04	19:40:01	940.8000	88.60	876.71	10.09	129.68	0.199	8.096	8.064	1182.0	174.7	81.7	1045.7	2484.0	
266	00/03/05	01:40:01	946.8000	88.60	876.71	10.09	129.68	0.199	8.097	8.064	1178.0	174.0	81.7	1045.7	2479.4	
267	00/03/05	07:40:01	952.8000	88.60	876.71	10.09	129.68	0.198	8.097	8.064	1177.0	173.9	81.7	1045.7	2478.3	
268																

Type Curve Pre-plot ( Log(Ps - Pwf) vs Log(Time) )

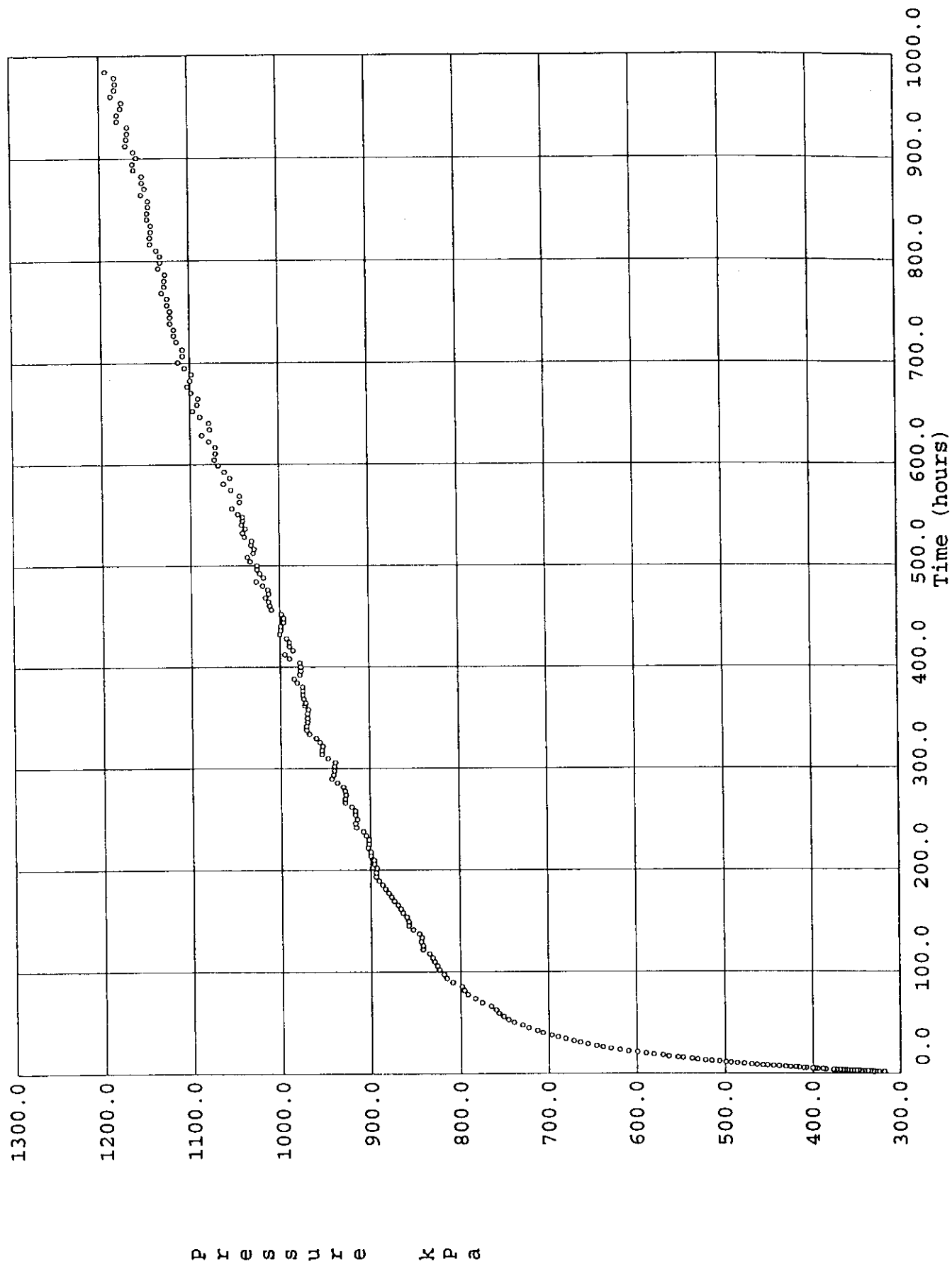


Bottom Hole Pressure vs Time





Casing Pressure vs Time



Fluid Level vs Time

