

FINGAL 41B
DRILL STEM TEST
FINAL REPORT
“D” ZONE COAL SEAM
OPEN HOLE INTERVAL 355.7 – 364.5 mGL
JUNE 23 – 24, 2007

Prepared for:
Pure Energy Resources Limited



Prepared by:
Focal Petroleum Engineering Pty Ltd.

July 11, 2007

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Pure Energy Resources Limited
P.O. Box 952
SOUTH PERTH, WA 6951

Attention: Mr. Steve Beardsall

Dear Sir

Re: Fingal 41b Coal “D” Drill Stem Test Report

The following is a summary of the results obtained from the Drill Stem Test conducted from June 23 – 24, 2007 over the “D” Coals, open hole interval from circa 355.7 – 364.45 mGL.

The DST was conducted through the drillpipe and coring bit, using an off bottom inflatable packer. Prior to testing, circa 310 meters of water were displaced from the drillpipe with air to allow inflow from the reservoir to occur.

The test was comprised of a one hour flow and a 14.5 hour buildup (recorders left downhole overnight. A low flow gas meter was used to measure the gas recovery and a fluid recorder in the drill pipe was used to establish daily water production volumes (bbl/day) from the inflow of water into the wellbore.

During the inflation of the isolation packers, a rapid falloff in pressure was noted below the packer suggesting that the reservoir is significantly under-pressured and that there is permeability within the formation.

Comments and Conclusions

- The pressure response observed during the flow and buildup periods suggested a reservoir with moderate flow capacity to water. Since the inflow from the reservoir was predominantly water, the test was analysed as a water well. The gas volume recovered was insignificant (< 2 cf) and was not used in the interpretation.

- A temperature anomaly was noted during the buildup from about 10.5 to 12.5 hours after shut-in. This has been attributed to the temperature recorder and not to a reservoir response. Furthermore, the pressure gauges did not indicate any similar behaviour at this time and all corresponding pressure data was used in the interpretation.
- The gross net pay of 9.8 ft (3 m) was obtained from the core samples (D upper section 4.5 ft, D lower section 5.3 ft). A default porosity of 2% was used for the interpretation.
- An average water rate of circa 9.3 bbl/d was calculated using the pressure increase from the inflow of water into the wellbore during the flow period.
- A reservoir pressure (P_i) of 252 psia was extrapolated from the late-time semi-log data. The subject reservoir is significantly under-pressured with a reservoir gradient of 0.22 psi/ft.
- The pressure derivative indicated that wellbore storage was overcome within the first minute of shut-in by radial flow (zero slope). The pressure derivative displayed some erratic behaviour (non-reservoir activity) during the course of the buildup, but returned to the initial radial flow trend. The non-reservoir activity has been attributed to wellbore effects including minor phase redistribution and liquid movement.
- Conventional analysis and Simulation were both conducted. A line was placed through the initial radial flow portion on the semi-log plot to determine permeability and skin. A second line of identical slope was placed through the late-time semi-log data to extrapolate reservoir pressure.
- The positive skin value is considered moderate and is likely attributed to coal fines in the near wellbore region.

A summary of the Test Results is as follows:

Average Reservoir Pressure (Pr) @ 351.6 mGL	252 psia (semi-log)
Apparent Skin Factor	+2
Average Permeability to Water	4.9 md
Flow Capacity to Water	48 md.ft
Radius of Investigation	34 ft

If further clarification of the test interpretation is required, please contact the undersigned on (08) 94749622.

Yours faithfully,

FOCAL PETROLEUM ENGINEERING PTY LTD

Ryan Gee

WELL TEST CONSULTANT

Terry Primeau

MANAGING DIRECTOR

LIST OF FIGURES

Figure 1 – Validata Plot

Figure 2 – Strip Chart

Figure 3 – Conventional Log-Log Plot

Figure 4 – Conventional Semi-Log Plot

Figure 5 – Conventional Results

Figure 6 – Simulation Match – Strip Chart

Figure 7 – Simulation Match – Log-Log Plot

Figure 8 – Simulation Match – Semi-Log Plot

Figure 9 – Simulation Results

Fingal 41B
June 23 - 24, 2007

Validata

Packer Depth @ 355.5 mGL
Formation: Seam D

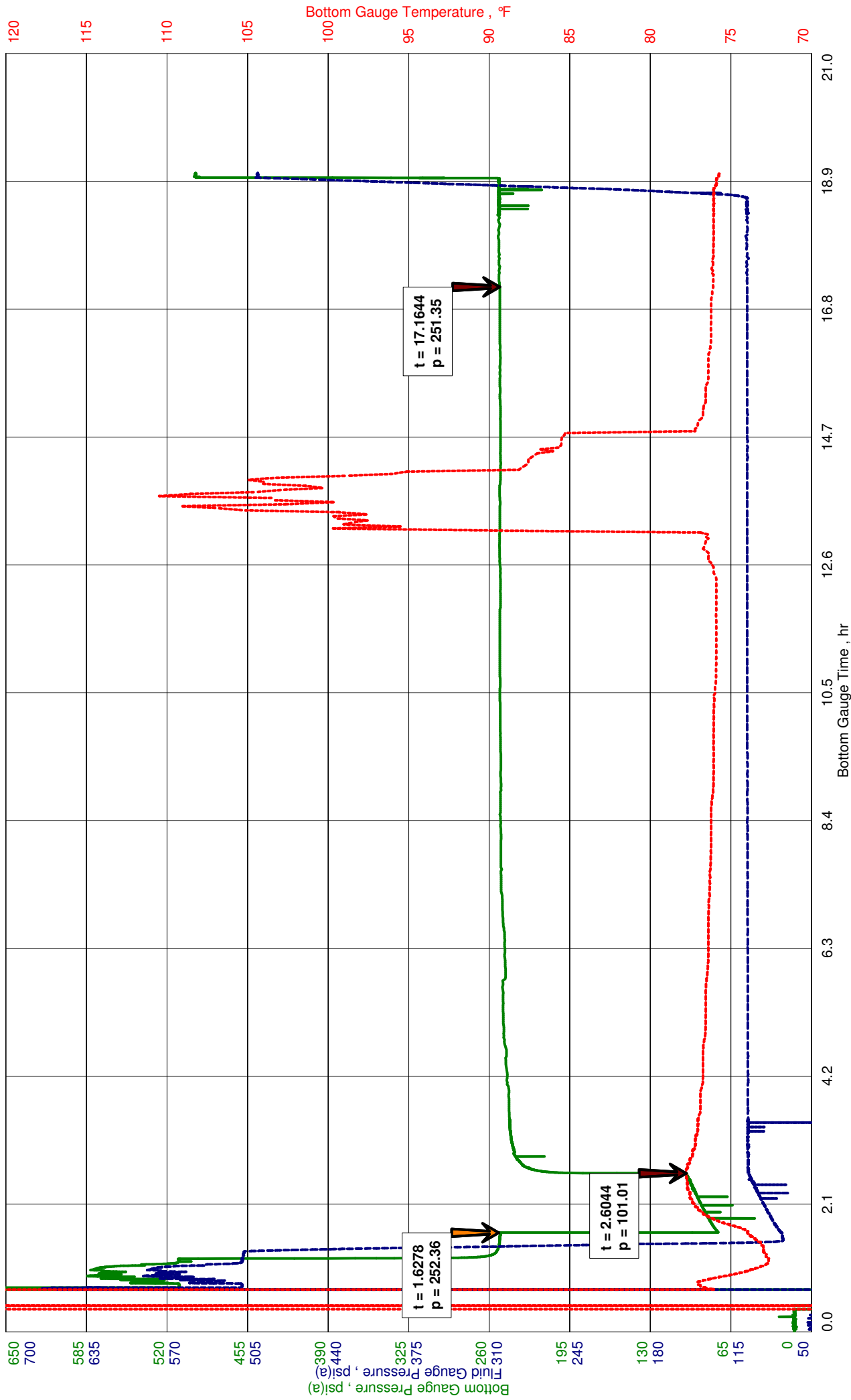
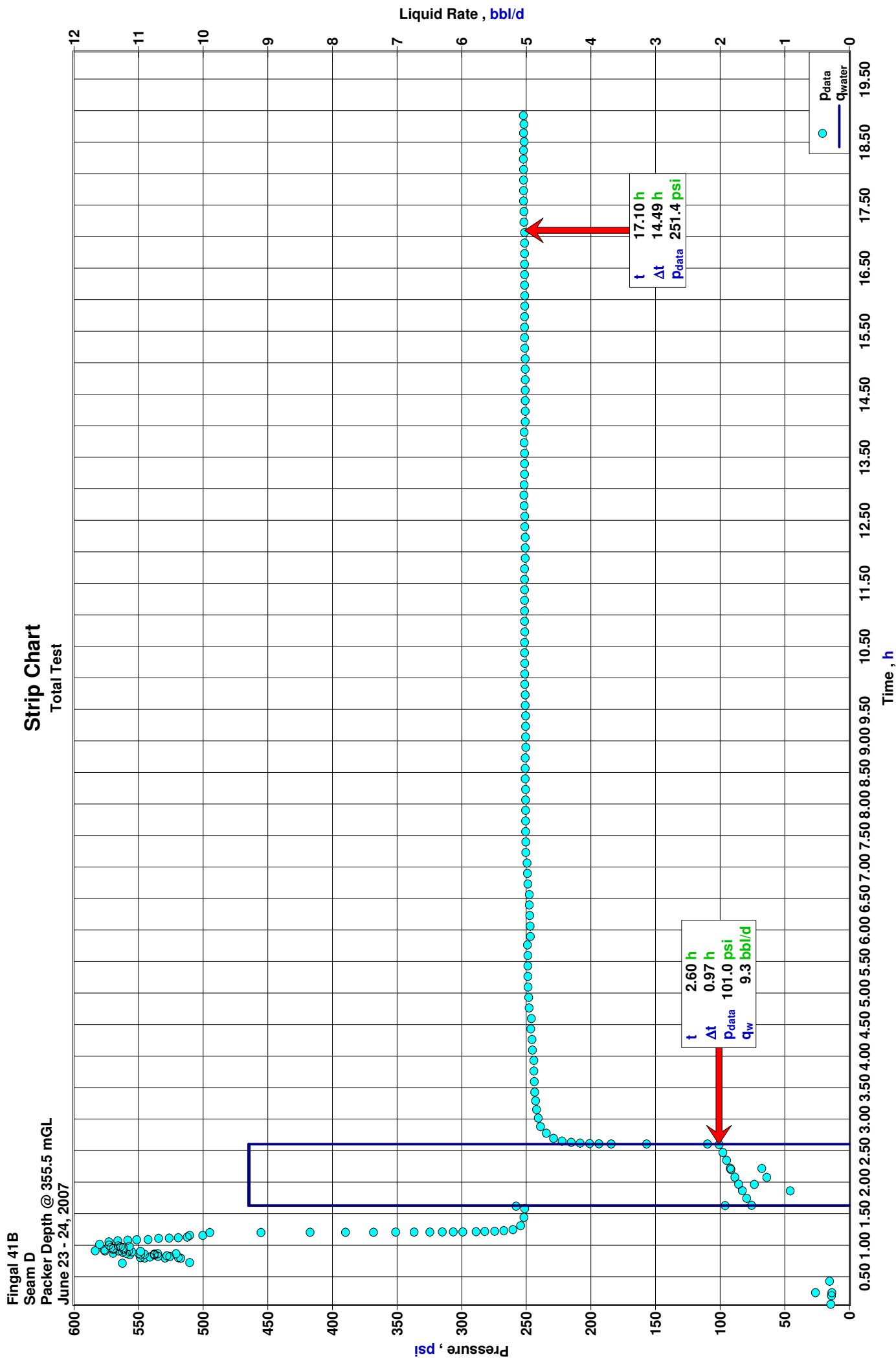


Figure 1



Fingal 41B
Seam D
Packer Depth @ 355.5 mGL
June 23 - 24, 2007

Diagnostic Analysis

Typecurve

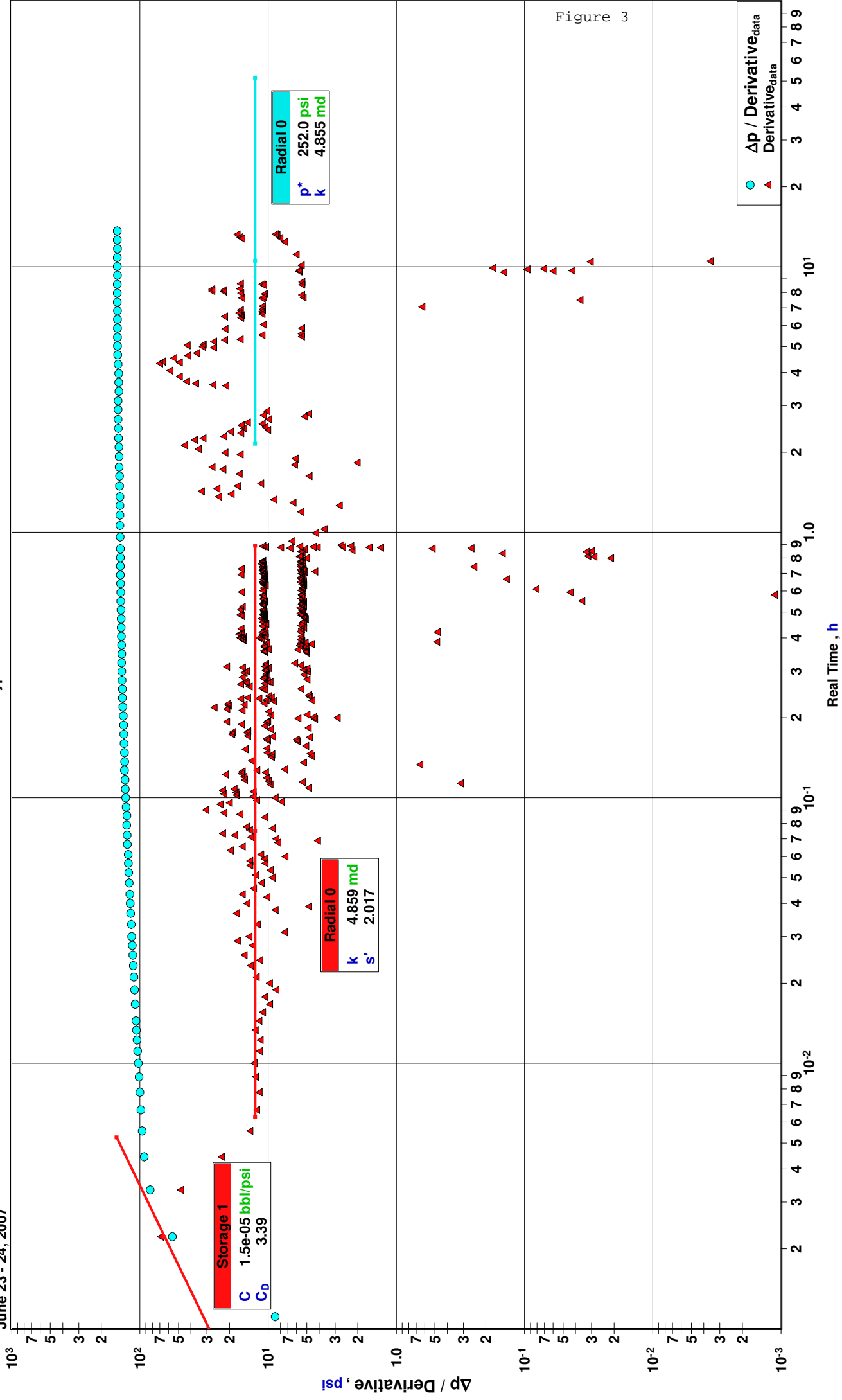


Figure 3

Fingal 41B
Seam D
Packer Depth @ 355.5 mGL
June 23 - 24, 2007

Diagnostic Analysis
Radial

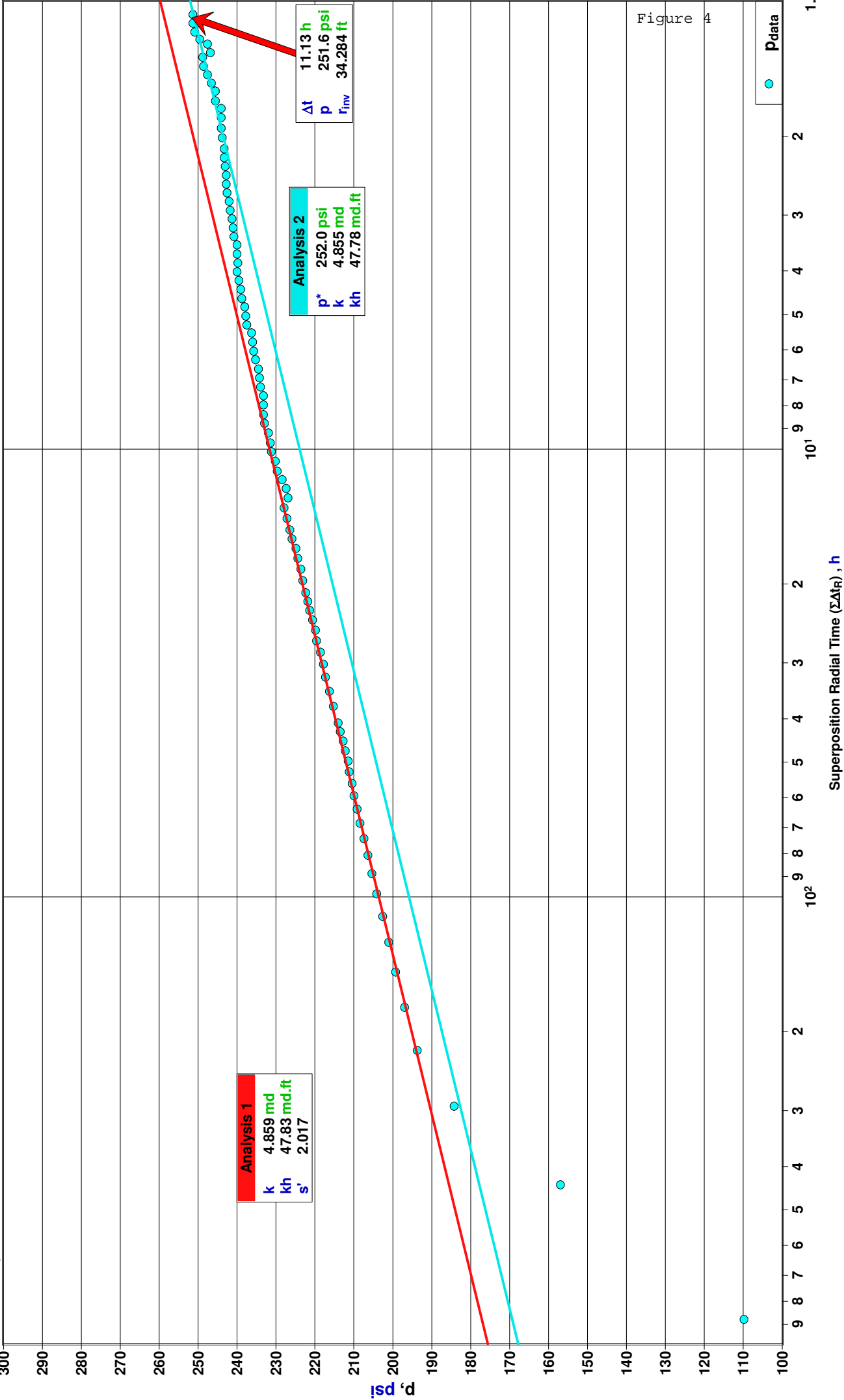


Figure 4

Fingal 41B
Seam D
Packer Depth @ 355.5 mGL
June 23 - 24, 2007

Diagnostic Analysis
Radial

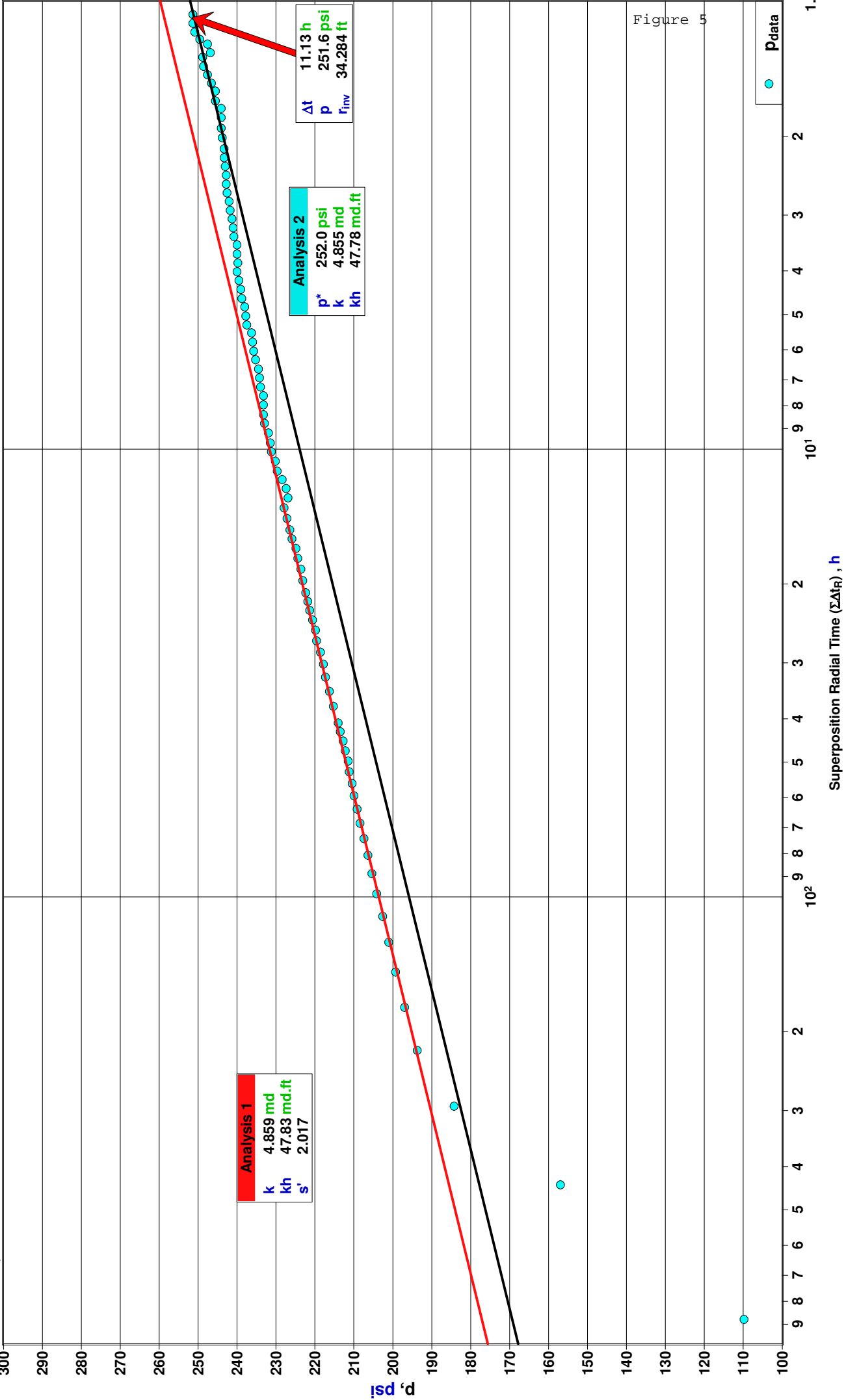


Figure 5

Fingal 41B
Seam D
Packer Depth @ 355.5 mGL
June 23 - 24, 2007

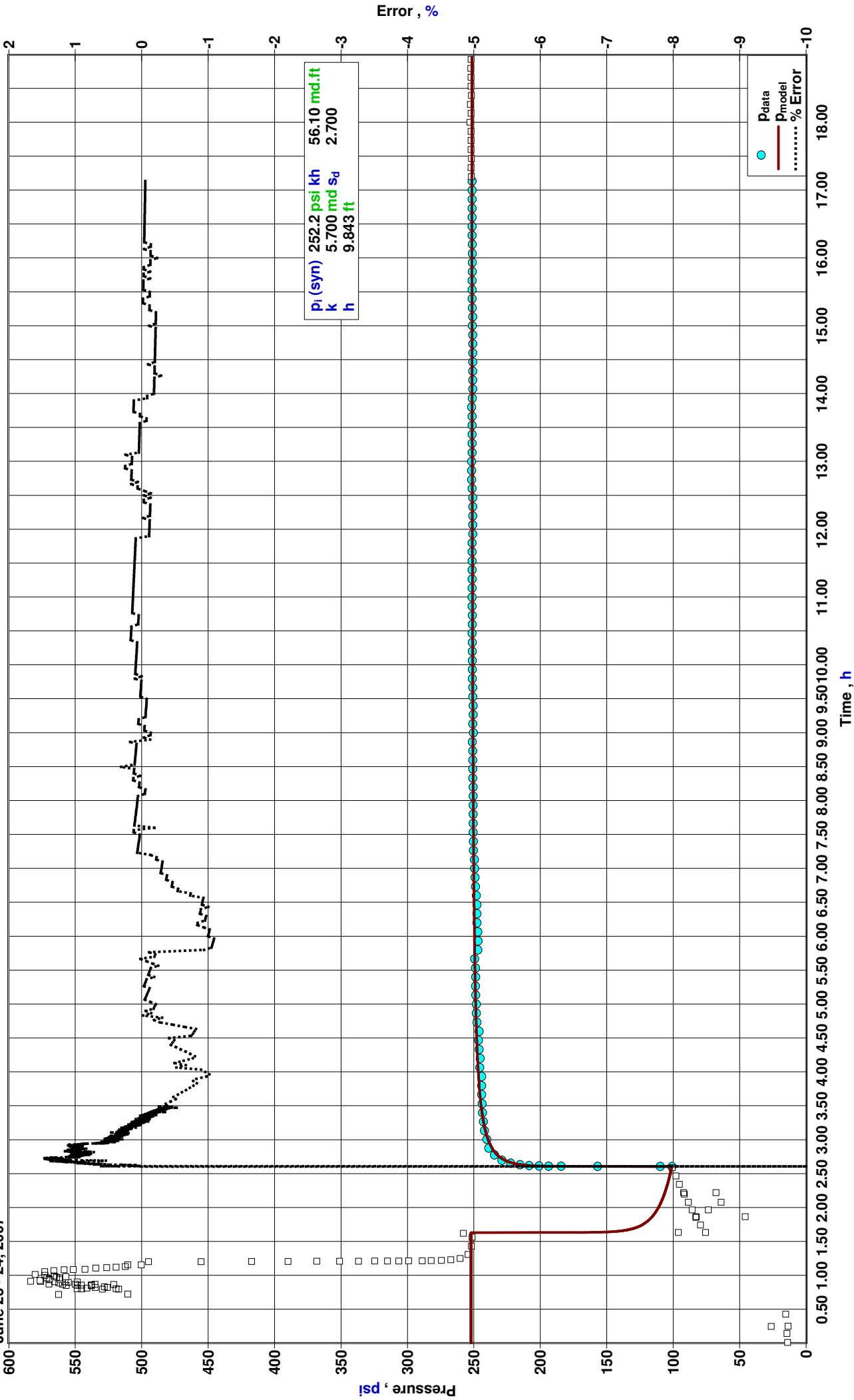
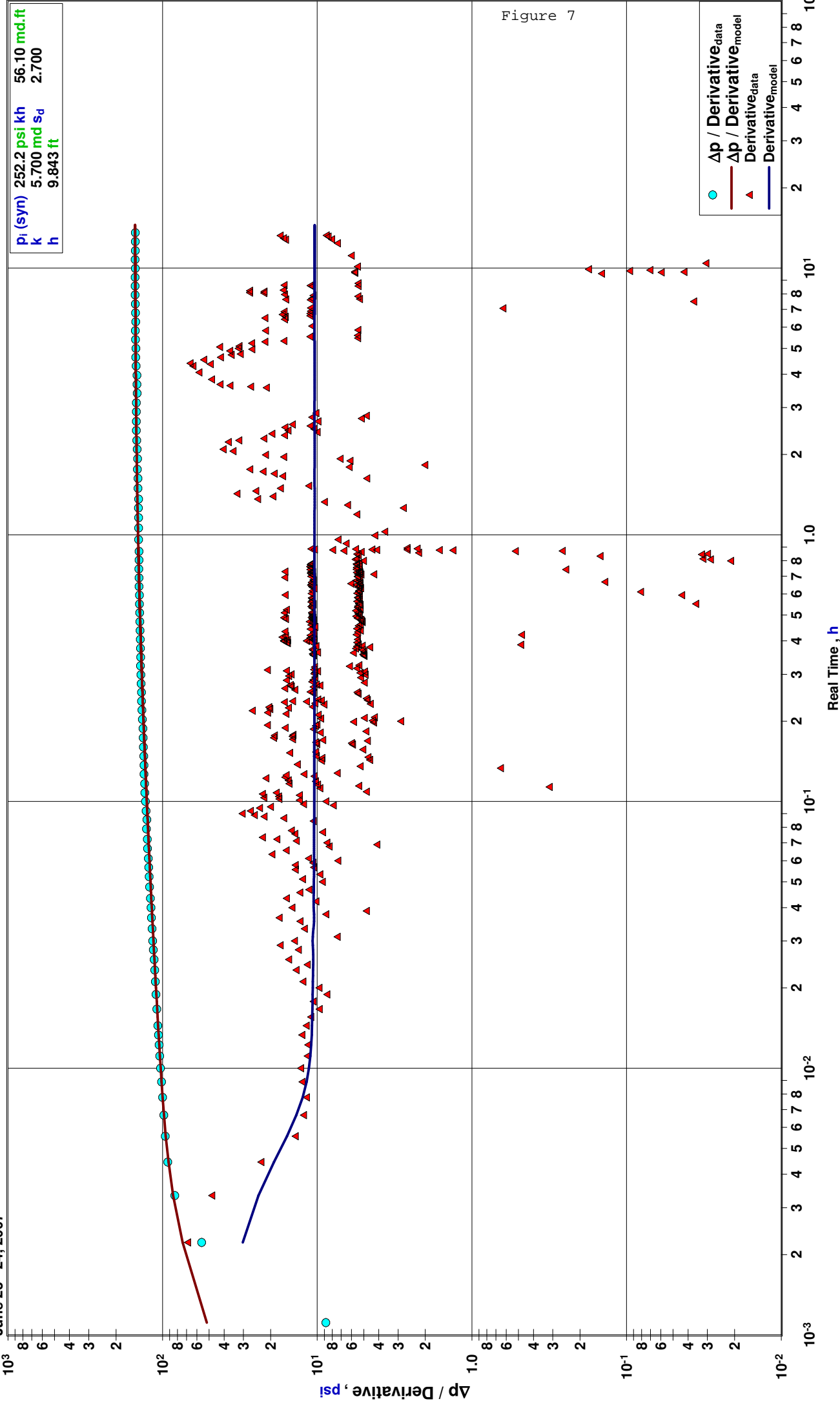


Figure 6

Fingal 41B
Seam D
Packer Depth @ 355.5 mGL
June 23 - 24, 2007

Simulation
Typecurve

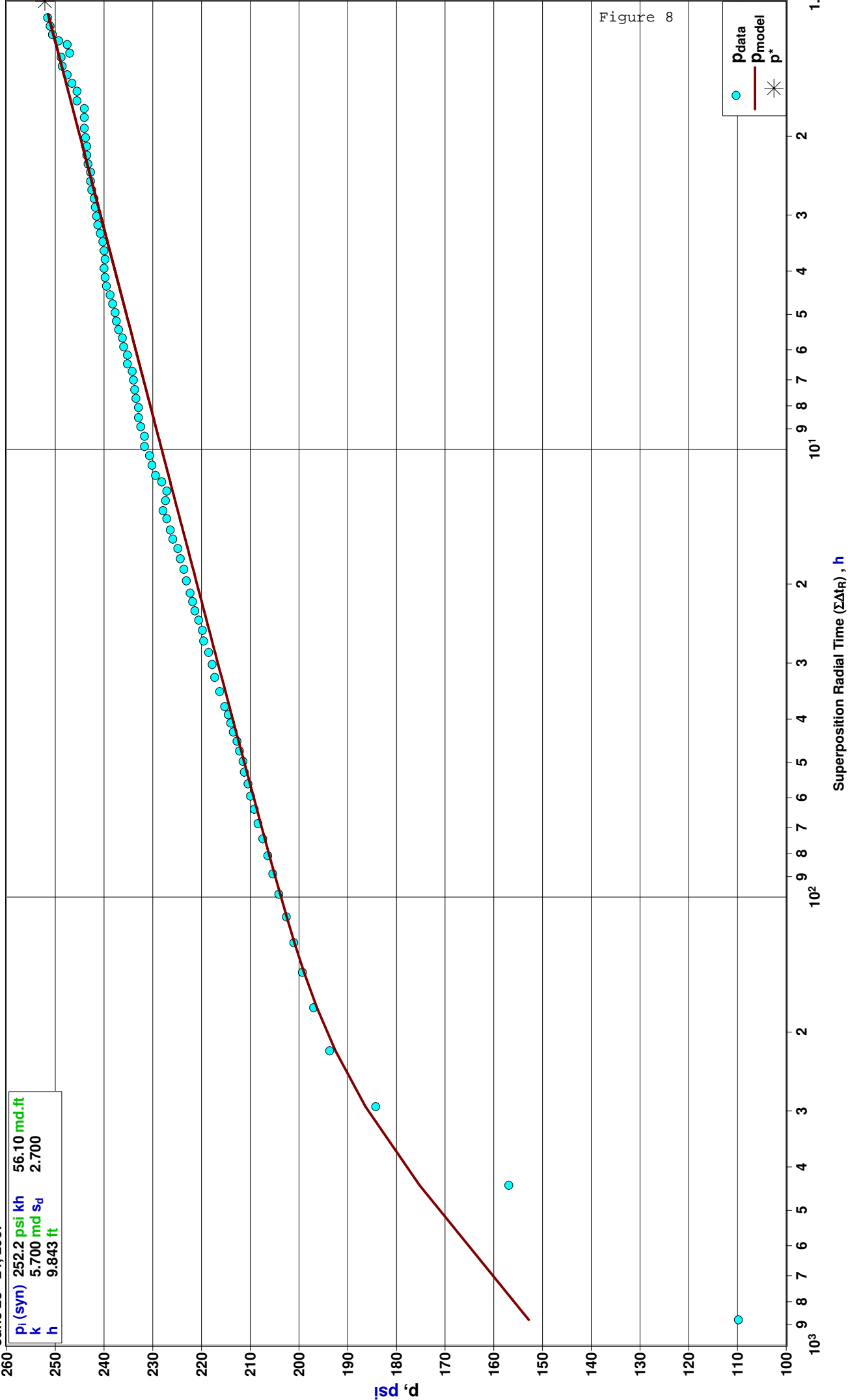
p_i (syn)	252.2 psi kh	56.10 md.ft
k	5.700 md	2.700
h	9.843 ft	



Fingal 41B
Seam D
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p_i (syn) 252.2 psi kh 56.10 md.ft
 k 5.700 md s_d 2.700
 h 9.843 ft

Simulation
Radial



Vertical Water Well Model

Case Name : Simulation

Fingal 41B

Packer Depth @ 355.5 mGL

Seam D

June 23 - 24, 2007

Model Parameters

Water Permeability (k_w)	5.700 md	Reservoir Length (X_e)	1000000.000 ft
Gas Permeability (k_g)	md	Reservoir Width (Y_e)	1000000.000 ft
Skin (s)	2.700	Active Well At (X_w)	ft
Total Mobility (k/μ_t)	6.42 md/cp	Active Well At (Y_w)	ft
Total Transmissivity (kh/μ_t)	63.19 md.ft/cp		
Wellbore Storage Constant Dim. (C_D)	1.20		

Formation Parameters

Net Pay (h)	9.843 ft
Total Porosity (ϕ_t)	2.00 %
Water Saturation (S_w)	95.00 %
Oil Saturation (S_o)	0.00 %
Gas Saturation (S_g)	5.00 %
Wellbore Radius (r_w)	0.30 ft
Formation Temperature (T)	76.9 °F
Formation Compressibility (c_f)	9.482e-6 psi ⁻¹
Total Compressibility (c_t)	2.201e-4 psi ⁻¹

Production and Pressure

$Q_t B_t$	9.303 bbl/d
Final Water Rate	9.300 bbl/d
Final Gas Rate	MMCF/D
Final Flowing Pressure (p_{wfo})	101.01 psi
Final Measured Pressure	251.85 psi
Cumulative Water Production	0.378 bbl

Synthesis Results

Average Error	0.45 %
Synthetic Initial Pressure (p_i)	252.16 psi
Extrapolated Pressure at Specified Time	252.16 psi
Pressure Drop Due To Skin (Δp_s)	56.12 psi
Flow Efficiency (FE)	0.629
Damage Ratio (DR)	1.591

Fluid Properties

Water Compressibility (c_w)	3.25199e-6 psi ⁻¹
Water Formation Volume Factor (B_w)	1.000
Water Viscosity (μ_w)	0.888 cp
Solution Gas Ratio (R_{sw})	0 scf/bbl
Specific Gravity (G)	1.000
PVT Reference Pressure (p_{pvt})	251.93 psi

Forecasts

Forecast Flowing Pressure (P_{flow})	101.01 psi
3 - Month Constant Rate Forecast @ Curr. Skin	6.075 bbl/d
6 - Month Constant Rate Forecast @ Curr. Skin	5.891 bbl/d
Forecast Flow Duration (t_{flow})	12.00 month
Constant Rate Forecast @ Curr. Skin	5.719 bbl/d
PI / II (Actual)	0.039 bbl/d/psi
Constant Rate Forecast @ Skin=0	7.412 bbl/d
PI / II (Ideal)	0.051 bbl/d/psi
Constant Rate Forecast @ Skin=-4	13.197 bbl/d