

FINGAL 55B
DRILL STEM TEST
FINAL REPORT
“F” ZONE COAL SEAM
OPEN HOLE INTERVAL 297.5 – 298.9 mGL
JUNE 7, 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 55b Coal "F" Drill Stem Test Report

The following is a summary of the results obtained from the Drill stem test conducted on June 7, 2007 over the "F" Coals, open hole interval from circa 297.5 – 298.9 mGL.

The DST was conducted through the drillpipe and coring bit, using an off bottom inflatable packer. Prior to testing, 184 meters of water was displaced from the drillpipe with air to allow inflow from the reservoir to occur.

The test was comprised of a 63 minute flow period followed by a 70 minute buildup period. 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 increase in pressure followed by a slow fall-off was noted below the packer, suggesting that the permeability within the test interval was low.

During the shut-in procedure (raising the drill string 70mm) for the downhole tool, a sharp drop in pressure was noted to start the buildup. This was the result of some upward movement by the packer, creating a small amount of suction in the wellbore.

Comments and Conclusions

- The pressure response observed during the flow and buildup periods suggested a reservoir with low 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 (< 1 cf) and was not used in the interpretation.

- The net pay of 4.6 ft (1.4 m) was obtained from the core samples. A default porosity of 2% was used for the interpretation.
- An average water rate of circa 2.6 bbl/d was calculated using the pressure increase from the inflow of water into the wellbore during the flow period.
- The reservoir pressure (P_i) of 339 psia was calculated from the simulation. The subject reservoir is slightly under-pressured with a reservoir gradient of 0.35 psi/ft.
- The pressure derivative indicated that wellbore storage was immediately overcome by a linear flow (half slope) trend until about three minutes after shut-in. The derivative then begins to bend over and follow a downward trend until about 20 minutes after shut-in, where it flattens into radial flow (zero slope) for the duration of the test.
- Conventional analysis and Simulation were both conducted. It is suspected that the rapid increase in pressure during packer inflation likely created a small fracture in the very near wellbore area, as evident by the early time half slope (fracture flow effects). However, since the mini fracture did not penetrate very far into the damaged, near wellbore zone, for the purposes of this analysis, it was modelled using changing wellbore storage. The simulation compared very well with the conventional results and has been quoted throughout this report.
- 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) @ 292.9 mGL	339 psia (simulation)
Apparent Skin Factor	+4.3
Average Permeability to Water	2.8 md
Flow Capacity to Water	12.9 md.ft
Radius of Investigation	22 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

Validata

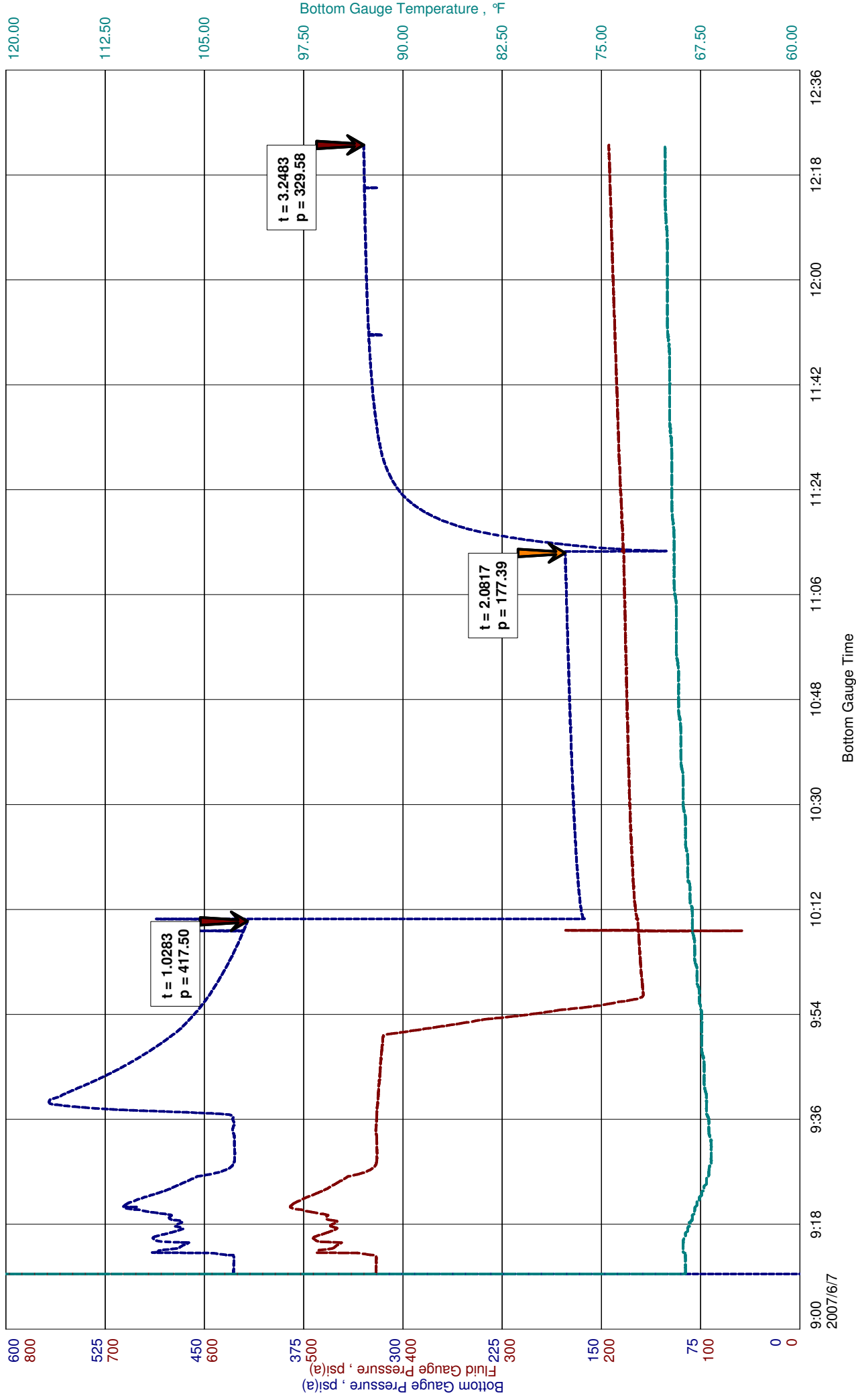
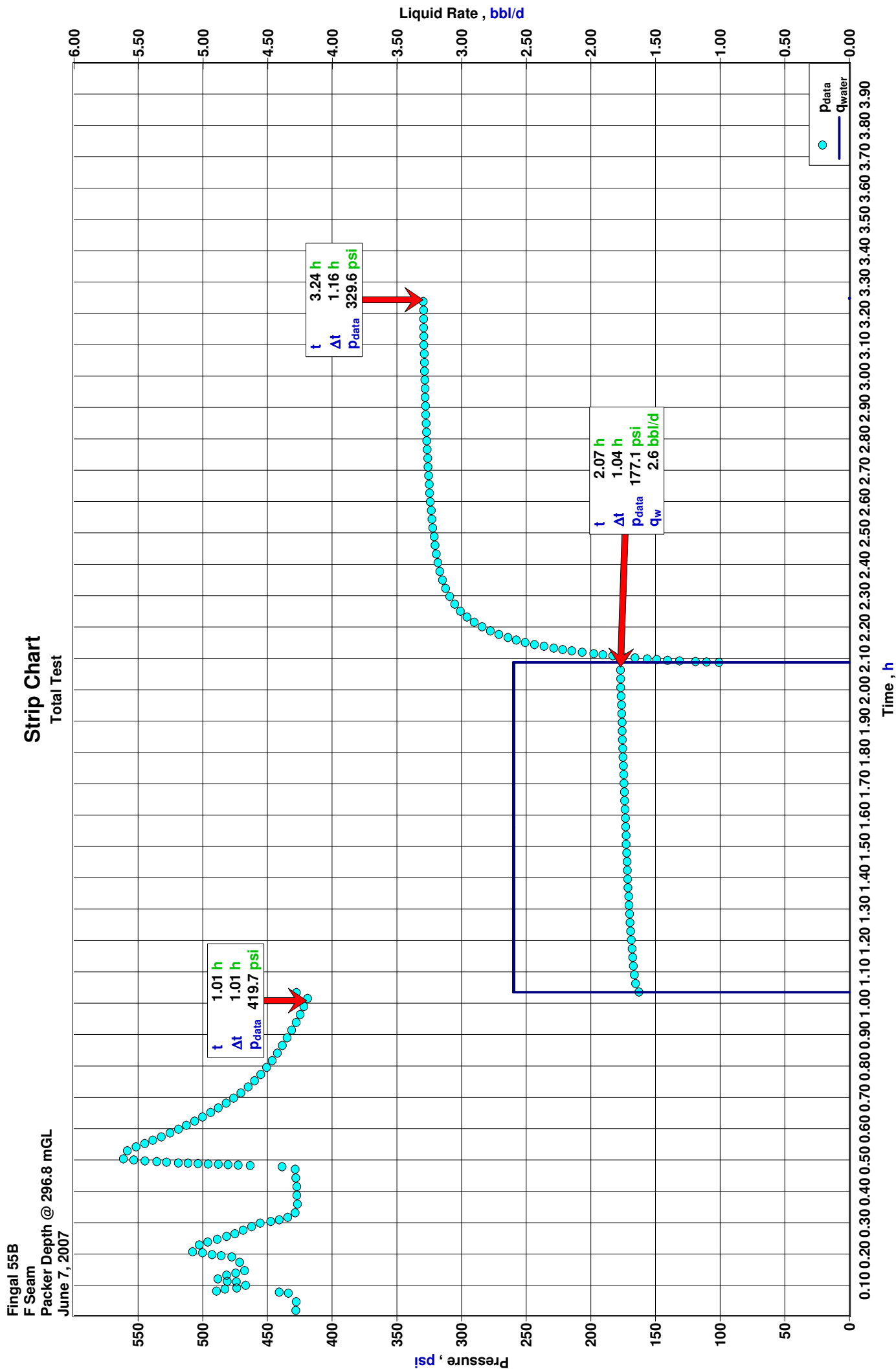
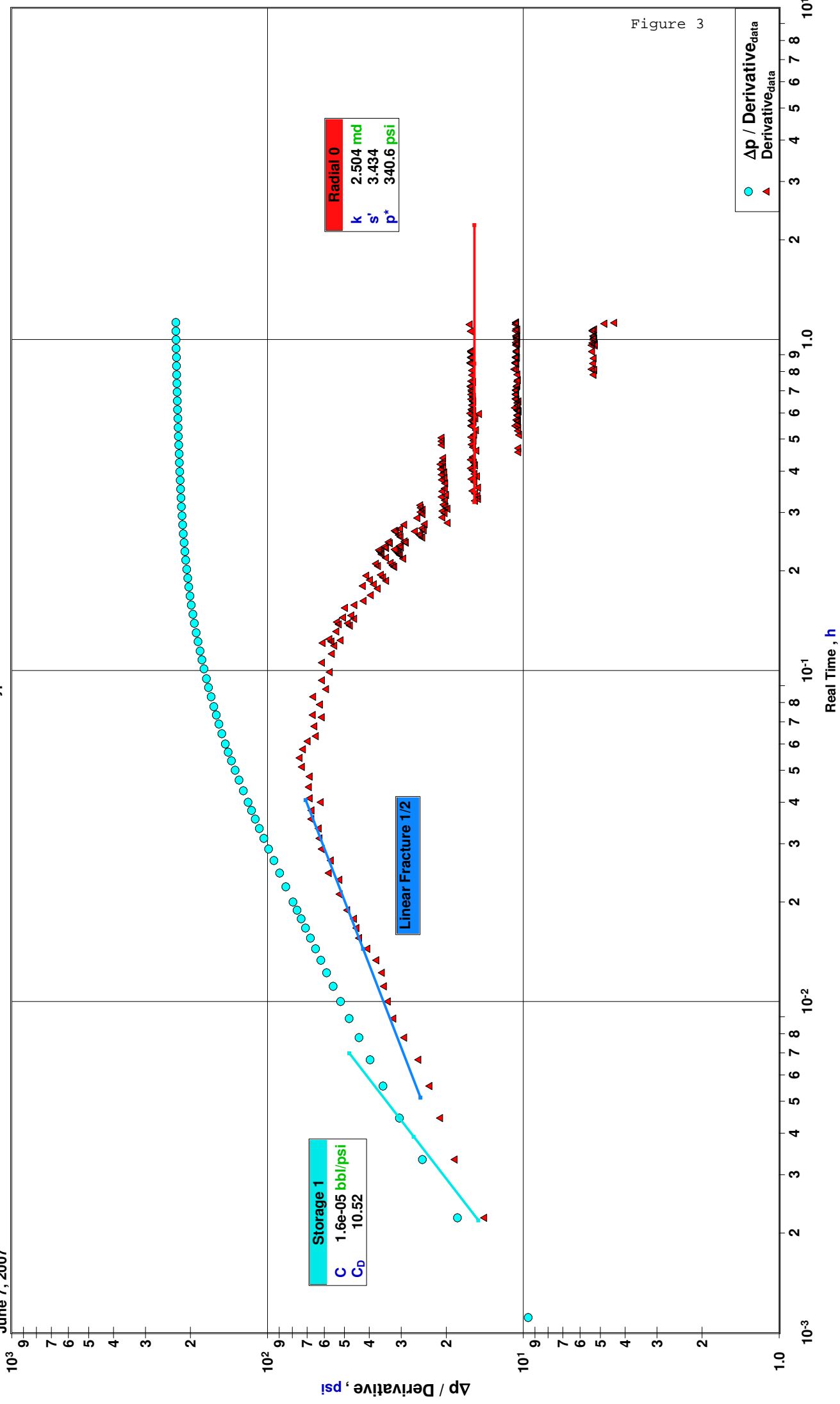


Figure 2



Fingal 55B
F Seam
Packer Depth @ 296.8 mGL
June 7, 2007

Diagnostic Analysis Typecurve



Water Well Test - Buildup

Radial Flow Analysis

Fingal 55B
F Seam

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Analysis Results

Total Sandface Rate ($q_t B_t$)	2.597 bbl/d	Apparent Skin (s')	3.434
Semilog Slope (m)	35.75	Skin - Damage	3.434
Gas Permeability (k_g)	md	Skin - Inclination	
Oil Permeability (k_o)	md	Skin - Partial Penetration	
Water Permeability (k_w)	2.504 md	Pressure Drop Due to Skin (Δp_s)	106.68 psi
Flow Capacity (kh)	11.501 md.ft	Damage Ratio (DR)	1.806
Total Mobility (k/μ_t)	2.57 md/cp	Flow Efficiency (FE)	0.554
Total Transmissivity(kh/μ_t)	11.81 md.ft/cp		

Reservoir Parameters

Net Pay (h)	4.593 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)	69.8 °F
Formation Compressibility (c_f)	9.482e-6 psi ⁻¹
Total Compressibility (c_t)	1.692e-4 psi ⁻¹

Pressures

Initial Pressure (p_i)	340.00 psi
Extrapolated Pressure (p^*)	340.60 psi
Final Flowing Pressure (p_{wfo})	101.01 psi

Production and Times

Corrected Flow Time (t_c)	1.0522 hr
Cumulative Water Production	0.114 bbl
Final Water Rate	2.600 bbl/d

Fluid Properties

Water Compressibility (c_w)	3.27591e-6 psi ⁻¹
Water Formation Volume Factor (B_w)	0.999
Water Viscosity (μ_w)	0.974 cp
Solution Gas Ratio (R_{sw})	0 scf/bbl
Specific Gravity (G)	1.000
Gas Gravity (G)	0.650
PVT Reference Pressure (pp_{VT})	340.00 psi

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Total Test

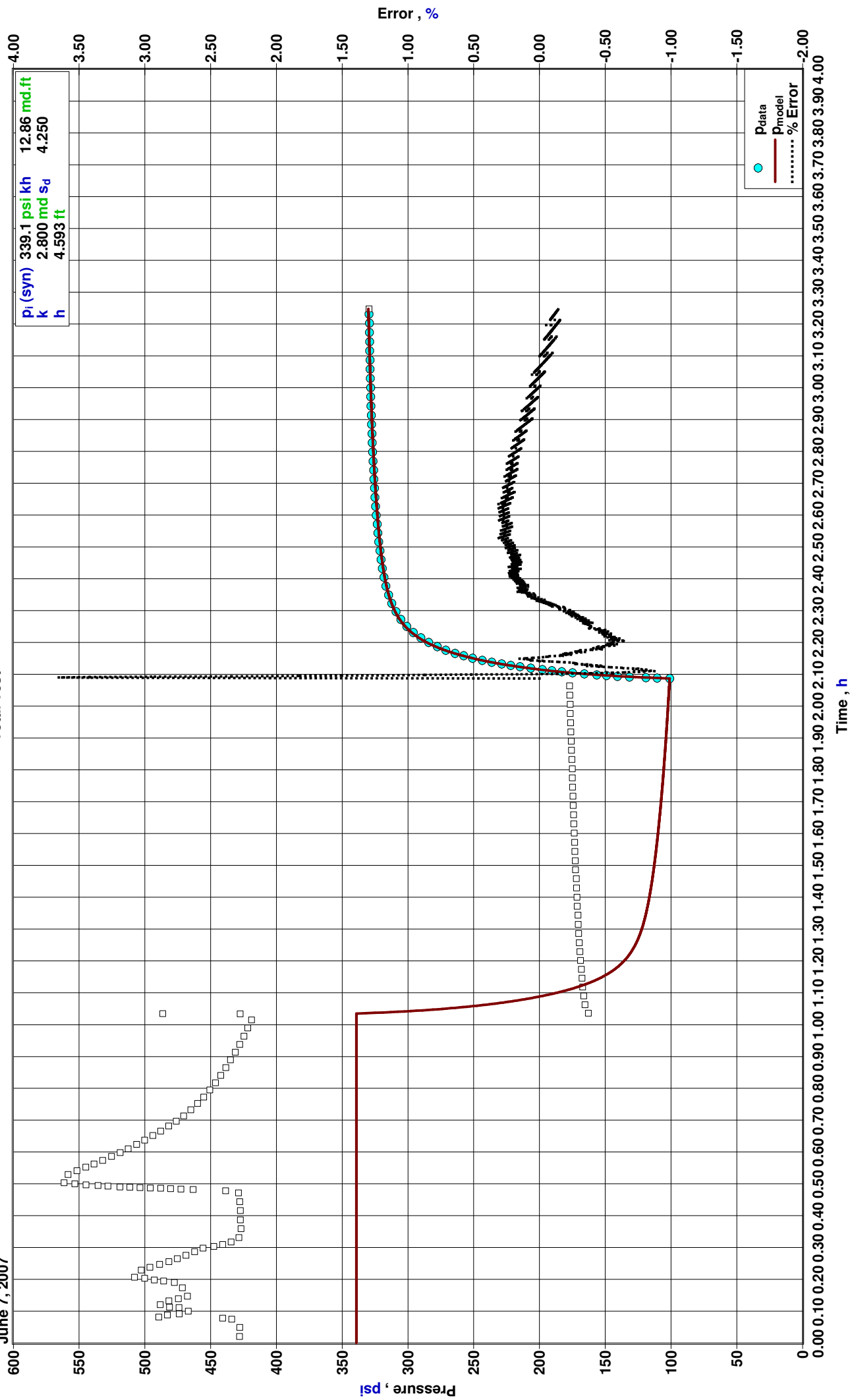


Figure 6

Fingal 55B
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Simulation Typecurve

p_i (syn)	339.1 psi kh	12.86 md.ft
k	2.800 md	4.250
h	4.593 ft	

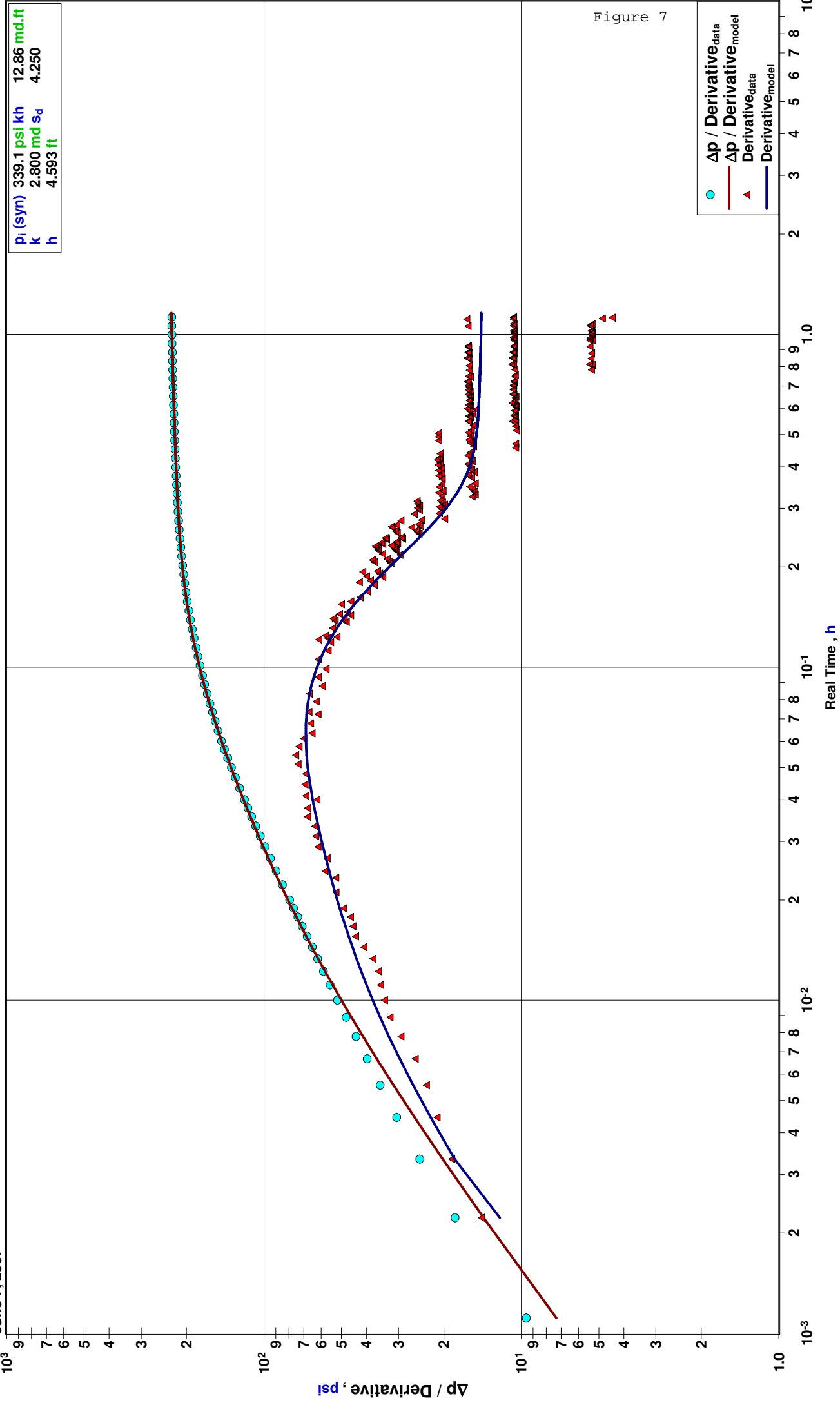
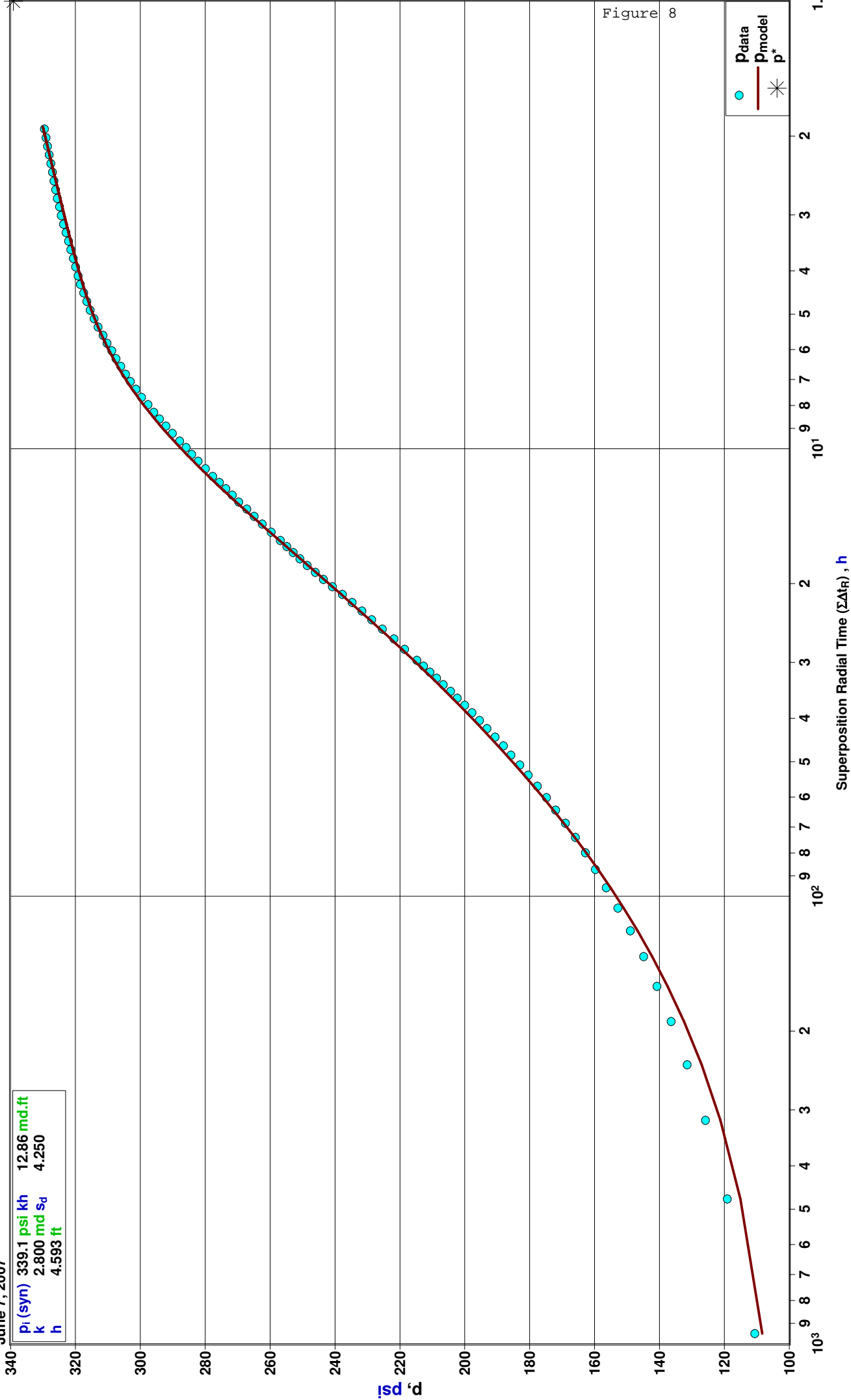


Figure 7

Fingal 55B
F Seam
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p_i (syn)	339.1 psi	kh	12.86 md.ft
k	2.800 md	s_d	4.250
h	4.593 ft		

Simulation
Radial



Vertical Water Well Model

Case Name : Radial Homogenous Simulation

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Model Parameters

Water Permeability (k_w)	2.800 md	Reservoir Length (X_e)	1000000.000 ft
Gas Permeability (k_g)	md	Reservoir Width (Y_e)	1000000.000 ft
Skin (s)	4.250	Active Well At (X_w)	ft
Total Mobility (k/μ) _t	2.88 md/cp	Active Well At (Y_w)	ft
Total Transmissivity (kh/μ) _t	13.21 md.ft/cp		
Wellbore Storage Constant Dim. (C_D)	3.93		

Formation Parameters

Net Pay (h)	4.593 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)	69.8 °F
Formation Compressibility (c_f)	9.482e-6 psi ⁻¹
Total Compressibility (c_t)	1.692e-4 psi ⁻¹

Fluid Properties

Water Compressibility (c_w)	3.27591e-6 psi ⁻¹
Water Formation Volume Factor (B_w)	0.999
Water Viscosity (μ_w)	0.974 cp
Solution Gas Ratio (R_{sw})	0 scf/bbl
Specific Gravity (G)	1.000
PVT Reference Pressure (p_{pvt})	340.00 psi

Production and Pressure

$Q_t B_t$	2.597 bbl/d
Final Water Rate	2.600 bbl/d
Final Gas Rate	MMCF/D
Final Flowing Pressure (p_{wfo})	101.01 psi
Final Measured Pressure	329.58 psi
Cumulative Water Production	0.114 bbl

Synthesis Results

Average Error	0.21 %
Synthetic Initial Pressure (p_i)	339.14 psi
Extrapolated Pressure at Specified Time	339.14 psi
Pressure Drop Due To Skin (Δp_s)	117.91 psi
Flow Efficiency (FE)	0.505
Damage Ratio (DR)	1.981

Forecasts

Forecast Flowing Pressure (P_{flow})	101.01 psi
3 - Month Constant Rate Forecast @ Curr. Skin	1.797 bbl/d
6 - Month Constant Rate Forecast @ Curr. Skin	1.748 bbl/d
Forecast Flow Duration (t_{flow})	12.00 month
Constant Rate Forecast @ Curr. Skin	1.702 bbl/d
PI / II (Actual)	0.007 bbl/d/psi
Constant Rate Forecast @ Skin=0	2.519 bbl/d
PI / II (Ideal)	0.011 bbl/d/psi
Constant Rate Forecast @ Skin=-4	4.595 bbl/d