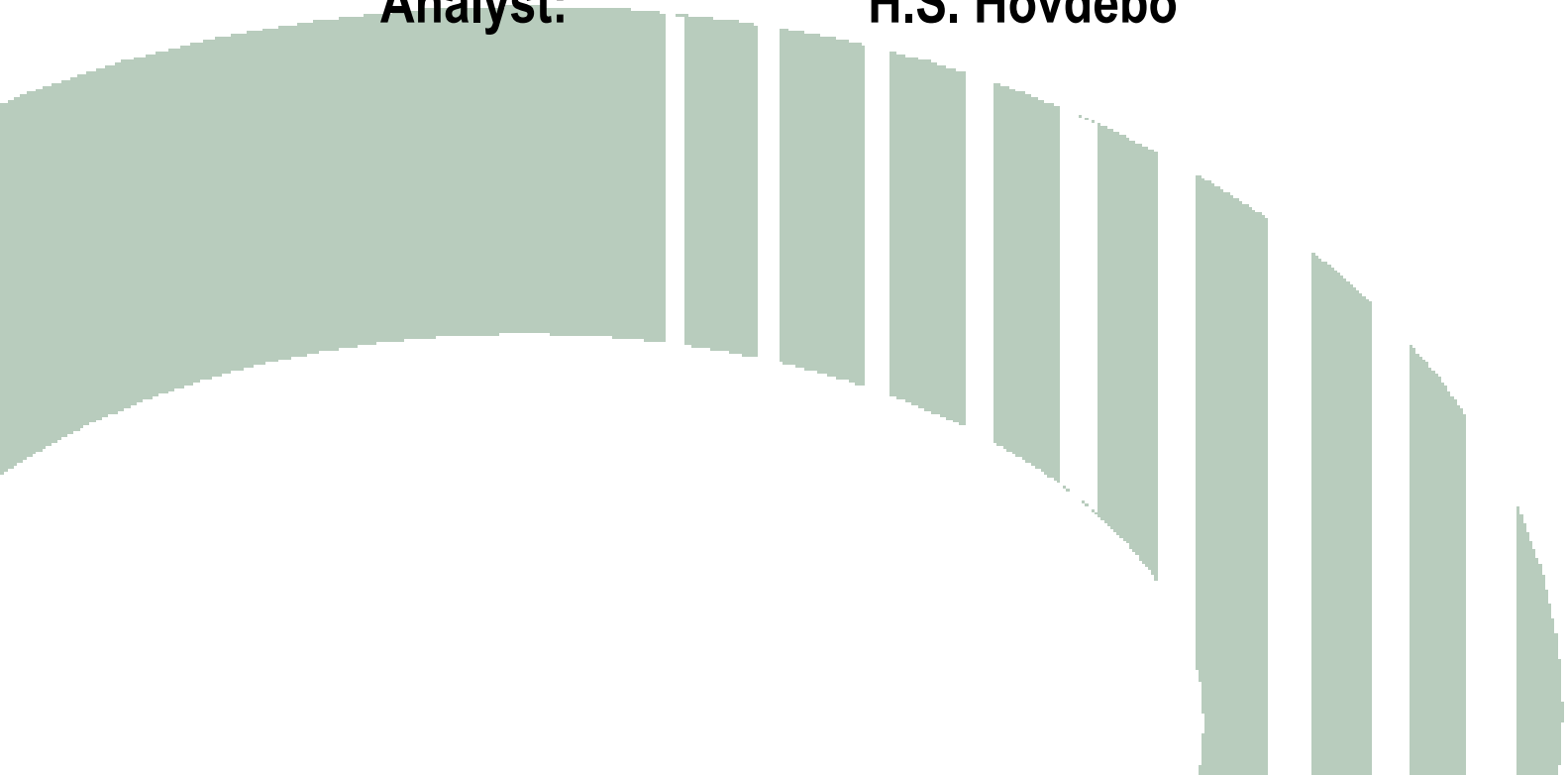




Production Profile Interpretation Report

Company: HILCORP
Field: ABBEVILLE
Well: CARL DURKE #1 S/T
Survey Date: 18-FEB-2005
Service Company: PRECISION ENERGY SERVICES
Interpretation Date: 22-FEB-2005
Analyst: H.S. Hovdebo



Purpose of Survey

To quantify the production from each perforated interval in the well.

Discussion / Conclusions

The results of the production log analysis for this well indicate that over 60% of the water produced by this well is entering the wellbore through the lowermost perforated interval at 12418-12446. The majority of the oil production is coming from the perforations at 12386-12396.

The details of the analysis are presented graphically in the production profile on the next page and summarized in the table on page 10.

ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS AND WE CANNOT AND DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION, AND WE SHALL NOT, EXCEPT IN THE CASE OF GROSS OR WILLFULL NEGLIGENCE ON OUR PART, BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COSTS, DAMAGES, OR EXPENSES INCURRED OR SUSTAINED BY ANYONE RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR OFFICERS, AGENTS OR EMPLOYEES. THESE INTERPRETATIONS ARE ALSO SUBJECT TO OUR GENERAL TERMS AND CONDITIONS SET OUT IN OUR CURRENT PRICE SCHEDULE.

COMPUTALOG WIRELINE SERVICES INC.

Survey Summary

Survey Name: FLOWING
Surface rates:
Gas 0 Mscf/D
Oil 60 STB/D
Water 200 STB/D

Tools Summary

String OD 1.6875 in
Capacitance (Calib. Type Yw vs norm. resp.)
100% Water 21550 cps
100% HC 34000. cps
Density Nuclear tool
Spinner blade OD 1.2205 in

Interpretation Summary

Interpretation Name: FLOWING

Density offset 0 g/cc
Capacitance offset 0 cps

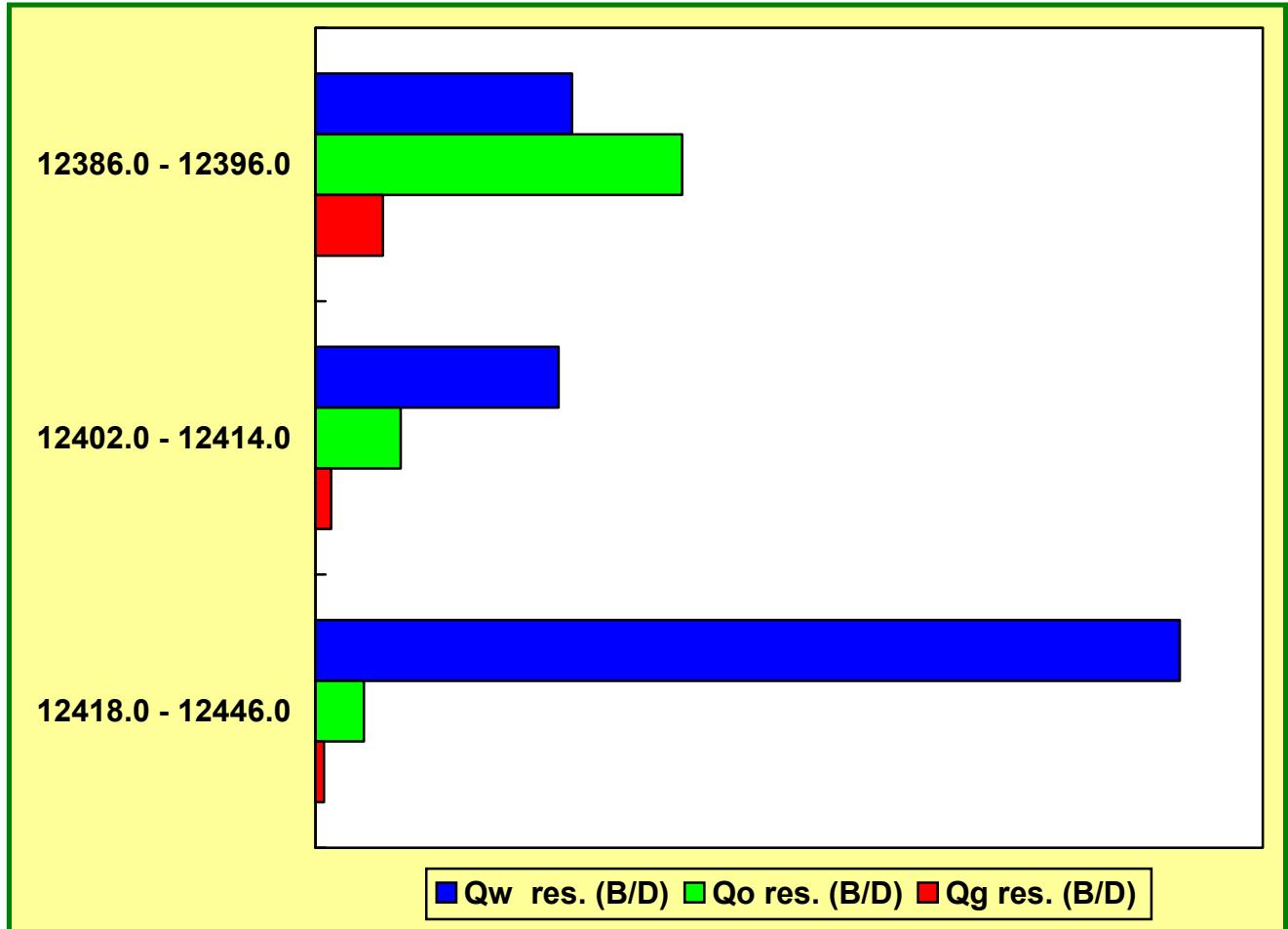
Flow type Water-HC(liq)
Flow model ABB - Deviated
Flow model L-G
Flow model W-O
Vpcf multiplier 1
Vslip multiplier 1
Vslip mult.W-O 1

General Interpretation Comments:

- 1) A three-phase water-hydrocarbon (liquid) model was used for the analysis, employing the ABB-deviated flow correlation.
- 2) Although not reported, there would appear to be some gas production associated with the oil from this well and the analysis indicates some free gas production at reservoir conditions. This is consistent with the cooling anomaly visible opposite the major hydrocarbon entry point at the perforations from 12386-12396.

Contributions by Phase (Downhole)

Zones (ft)	Qw res. (B/D)	Qo res. (B/D)	Qg res. (B/D)
12386.0 - 12396.0	43.34	61.93	11.38
12402.0 - 12414.0	41.05	14.40	2.61
12418.0 - 12446.0	146.01	8.14	1.44



Contributions by Phase (Surface)

Zones (ft)	Qw s.c. (STB/D)	Qo s.c. (STB/D)	Qg s.c. (Mscf/D)
12386.0 - 12396.0	41.66	48.98	27.79
12402.0 - 12414.0	39.45	11.38	6.67
12418.0 - 12446.0	140.34	6.42	4.62

Water total contribution SC: 221.446 STB/D
Oil total contribution SC: 66.7916 STB/D
Gas total contribution SC: 39.0806 Mscf/D

Fluid Parameters Summary

Fluid Type: Water - Oil+Gas

Gas: (YES)

Specific gravity	0.72
N2 %	0
CO2 %	0
H2S %	0
Z factor	Beggs and Brill
μ_g	Lee et al.

Oil: (YES)

Gravity	32 API
GOR	561.458 cf/bbl
WOR	
Rs, Pb	Standing
Bo	Standing
Co	Vasquez and Beggs
μ_o	Beggs and Robinson

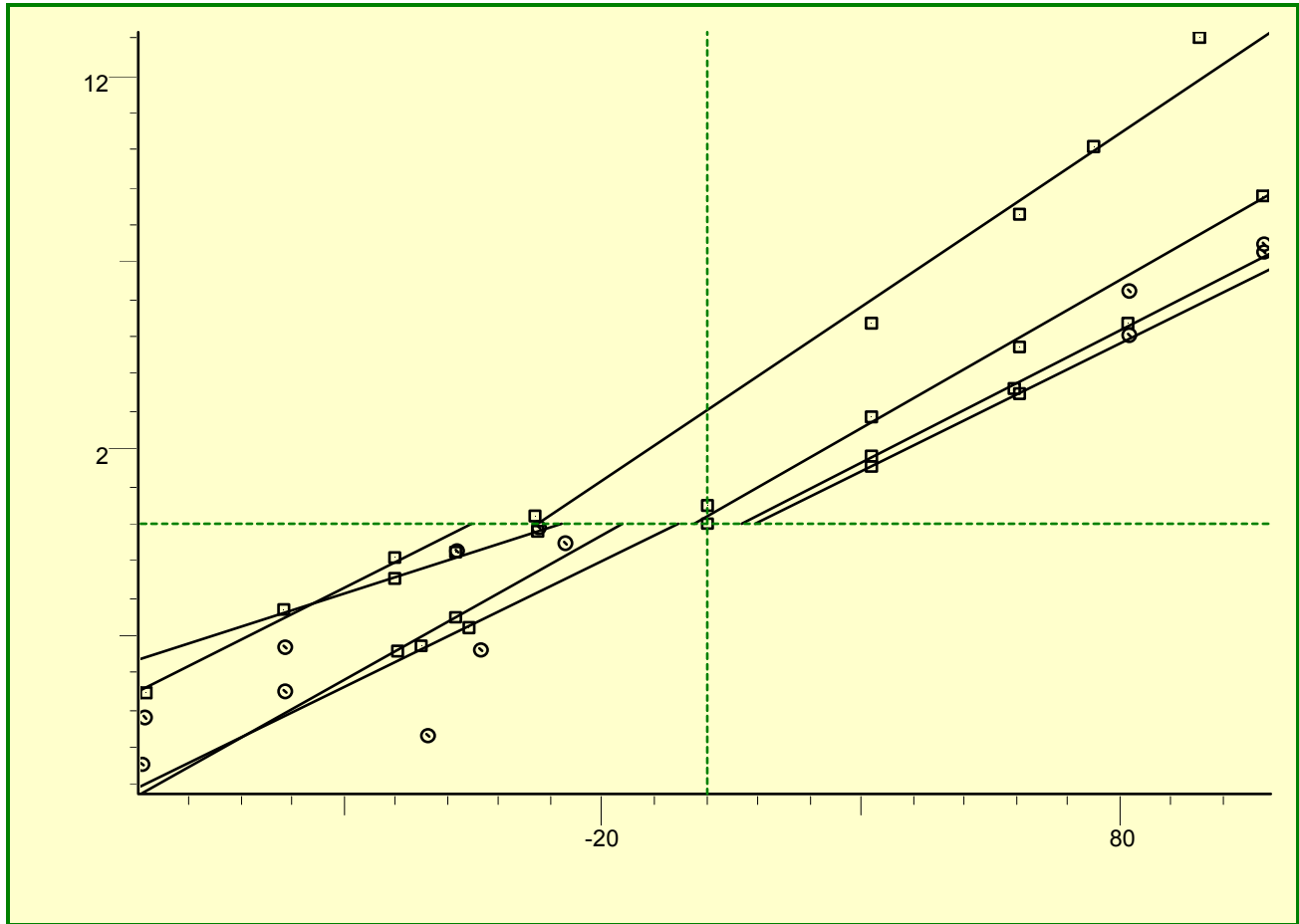
Condensate: (NO)

Tank GOR	N/A
Tank gas gravity	N/A
Separator GOR	N/A
Separator gas gravity	N/A
Separator P	N/A
Separator T	N/A
Dew point P	N/A
Dew point T	N/A
Liq. Gravity	N/A
N2 %	N/A
CO2 %	N/A
H2S %	N/A

Water: (YES)

Salinity, ppm	1.2E+5
Rsw	Katz
Cw	Dodson and Standing
μ_w	Van-Wingen+Frick

Spinner Calibration Summary



rps versus ft/min

Threshold (+) 6.8717 ft/min Threshold (-) -5.5864 ft/min

Calib. Zone (ft)	Slope (+)	Slope (-)	Int (+) (ft/min)	Int (-) (ft/min)	Int. Diff. (ft/min)
12274.2 - 12350.2	0.093	0.069	-32.668	-45.126	12.458
12356.8 - 12389.0	0.079	0.044	-2.216	-28.145	25.929
12394.1 - 12439.3	0.068	0.078	9.479	-16.122	25.601
12443.6 - 12466.3	0.071	0.068	6.872	-5.479	12.351

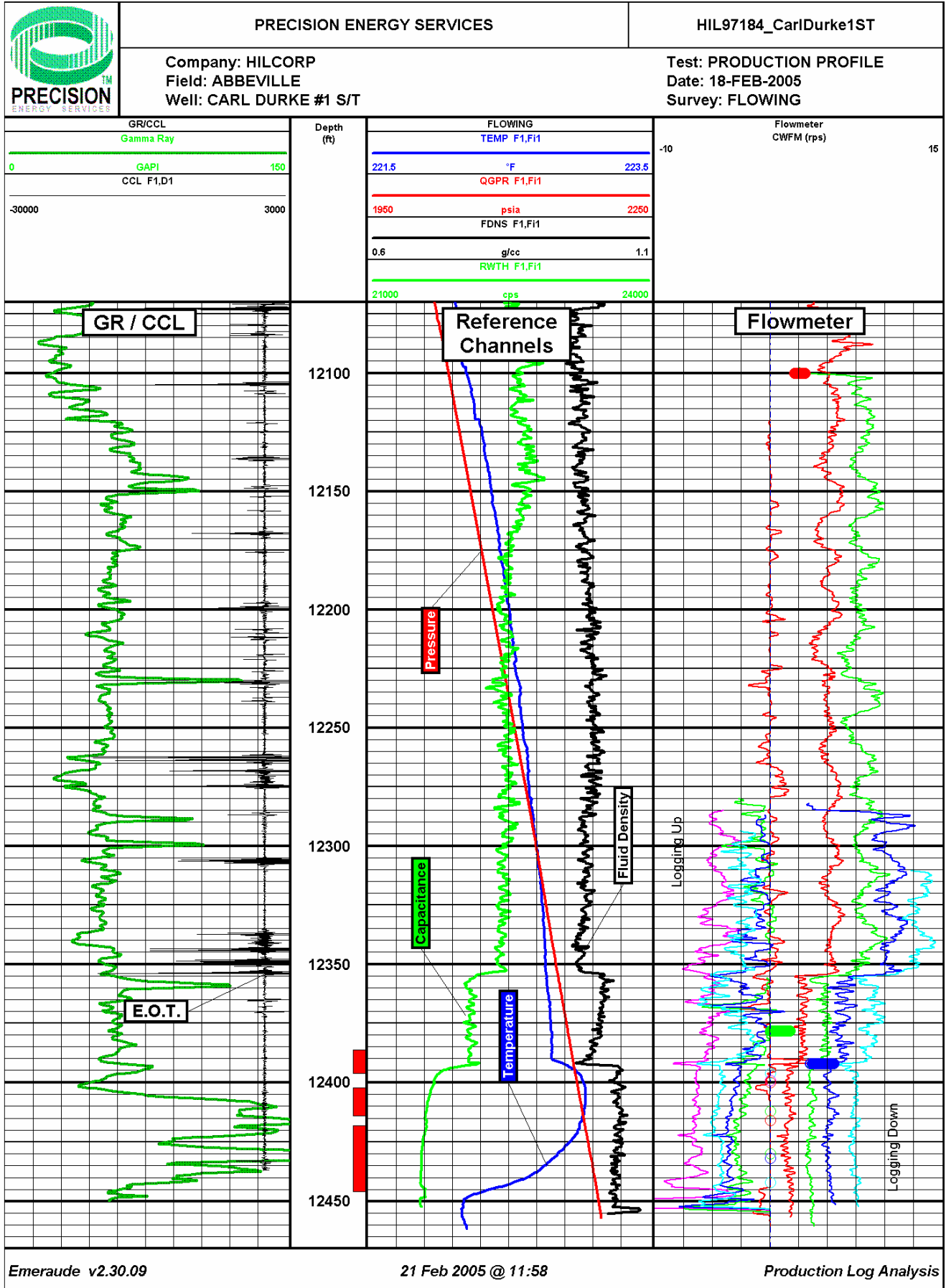
Percentage Total Production (Downhole)

Zones (ft)	Qt res. (B/D)	Production % (%)
12386.0 - 12396.0	116.64	35.31
12402.0 - 12414.0	58.06	17.58
12418.0 - 12446.0	155.59	47.11

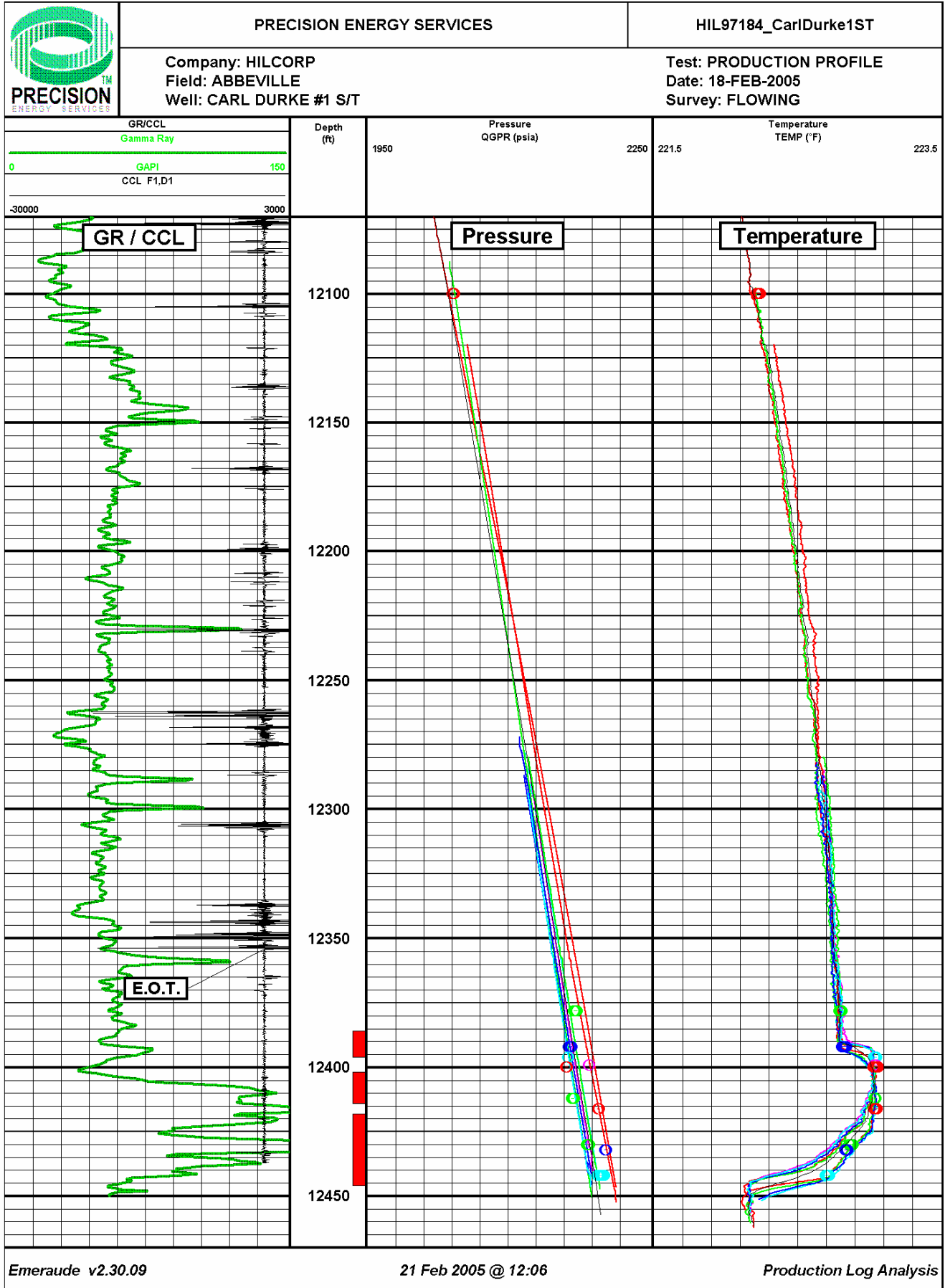
Appendix (Additional Tables - Log Plots)

Production Profile Tabular Results			
	z 1	z 2	z 3
From, ft	12386	12402	12418
To, ft	12396	12414	12446
Temperature, °F	222.8	223.0	223.0
Pressure, psia	2160.1	2169.4	2177.2
Diameter, in	4.778	4.778	4.778
Rs, cf/bbl	398.0	400.0	402.0
Rsw, cf/bbl	7.15	7.18	7.20
V Mixture, ft/min	10.3	6.7	4.9
Visc. Mixture, cp	0.36	0.34	0.34
Vpcf	0.81	0.80	0.80
Q total res., B/D	330.3	213.7	155.6
dQ res., B/D	116.6	58.1	155.6
% Qt	35.3	17.6	47.1
Water			
FVF	1.04	1.04	1.04
Viscosity, cp	0.3378	0.3373	0.3373
Density, g/cc	1.00	1.00	1.00
Qw total res., B/D	230.4	187.1	146.0
Qw total s.c., STB/D	221.5	179.8	140.3
dQw res., B/D	43.3	41.1	146.0
dQw s.c., STB/D	41.7	39.5	140.3
Oil+Gas			
FVF	1.26	1.27	1.27
Viscosity, cp	0.6449	0.6427	0.6413
Density, g/cc	0.73	0.73	0.73
Qo total res., B/D	84.5	22.5	8.1
Qo total s.c., STB/D	66.8	17.8	6.4
dQo res., B/D	61.9	14.4	8.1
dQo s.c., STB/D	49.0	11.4	6.4
Gas			
FVF	0.0080	0.0079	0.0079
Viscosity, cp	0.0176	0.0176	0.0176
Density, g/cc	0.1100	0.1100	0.1100
Qg total res., B/D	15.5	4.1	1.4
Qg total s.c., Mscf/D	39.1	11.3	4.6
dQg res., B/D	11.4	2.6	1.4
dQg s.c., Mscf/D	27.8	6.7	4.6
Vsw, ft/min	7.21	5.86	4.57
Vso, ft/min	2.64	0.71	0.26
Vsg, ft/min	0.48	0.13	0.05
Vw, ft/min	8.06	6.04	4.63
Vo, ft/min	29.77	27.72	26.28
Vg, ft/min	29.77	27.72	26.28
Yw	0.895	0.970	0.989
Yo	0.089	0.025	0.010
Yg	0.016	0.005	0.002
Vslip, ft/min	21.7	21.7	21.7
Regime	Bubble	Bubble	Bubble
Correl.	ABB - Deviated	ABB - Deviated	ABB - Deviated

Reference Channels - Flowmeter



Pressure - Temperature



Fluid Density - Capacitance

