



COMPENSATED DENSITY / NEUTRON LOG

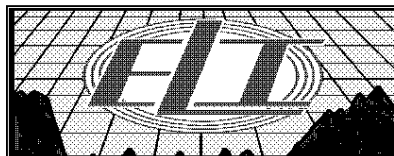
Company	DOWNING - NELSON OIL CO. INC.		
Well	RUDER #1-31		
Field	WILDCAT		
County	ELLIS		
State	KANSAS		
Company	DOWNING - NELSON OIL COMPANY, INC.		
Well	RUDER #1-31		
Field	WILDCAT		
County	ELLIS		
State	KANSAS		
Location:	API # : 15-051-26944-0000		Other Services DIL/MEL
Permanent Datum	330' FNL & 330' FWL		Elevation K.B. 2076 D.F. 2074 G.L. 2068
Log Measured From	NW - NW - NW		
Drilling Measured From	SEC 31 TWP 14S RGE 18W		
Date	2/8/19		
Run Number	TWO		
Depth Driller	3711		
Depth Logger	3711		
Bottom Logged Interval	3709		
Top Log Interval	2800		
Casing Driller	8 5/8" @ 1320'		
Casing Logger	1320		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 9,500 PPM	
Density / Viscosity	9.3/50		
pH / Fluid Loss	10.0/8.0		
Source of Sample	FLOWLINE		
Rim @ Meas. Temp	.650 @ 60F		
Rmf @ Meas. Temp	.488 @ 60F		
Rmc @ Meas. Temp	.780 @ 60F		
Source of Rmf / Rmc	MEASUREMENT		
Rim @ BHT	.345 @ 113F		
Time Circulation Stopped	9 HOURS		
Time Logger on Bottom	5:15 P.M.		
Maximum Recorded Temperature	113F		
Equipment Number	922339		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
Witnessed By	MARC DOWNING		

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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 willful 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.

Comments

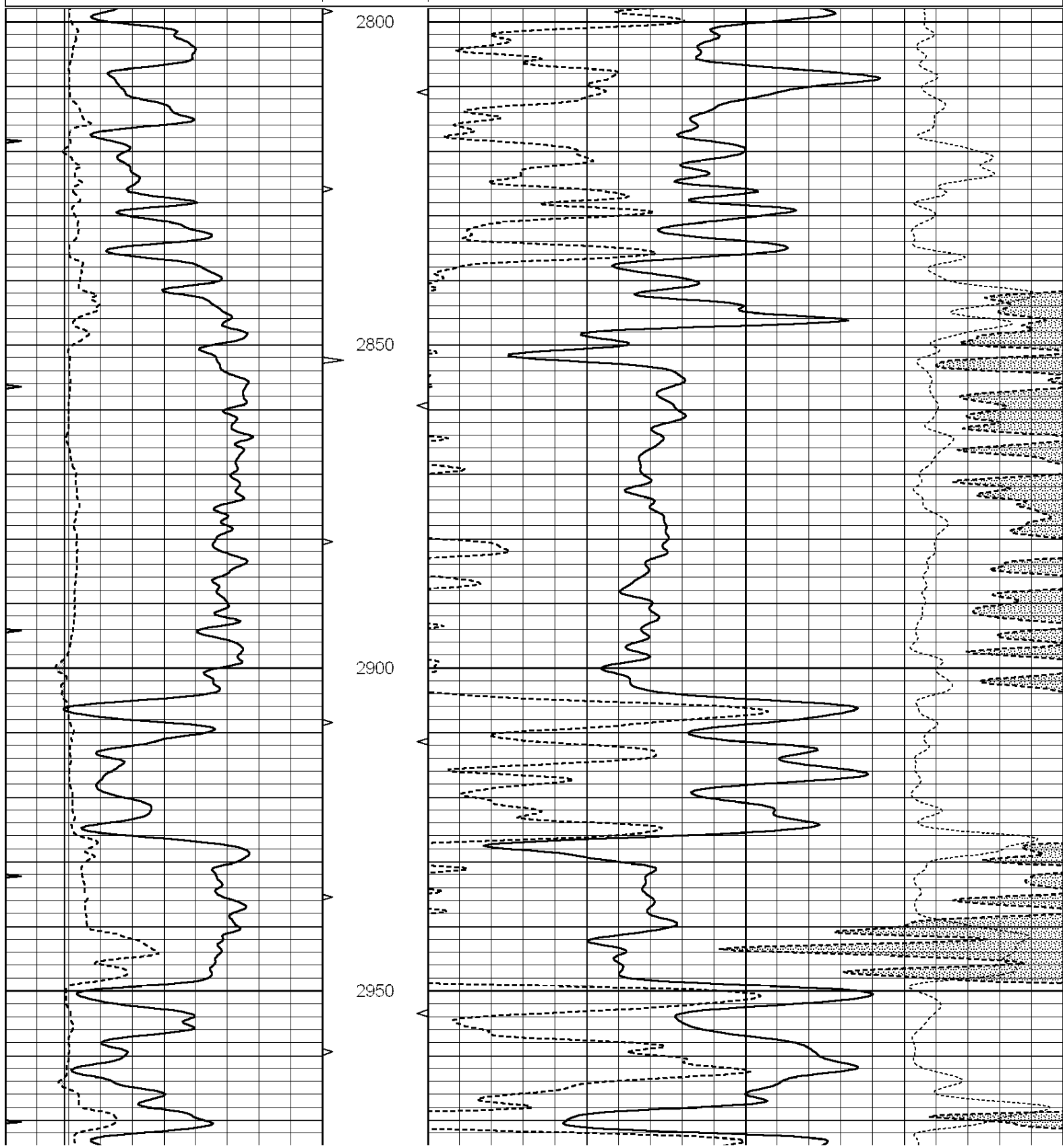
THANK YOU FOR USING ELI WIRELINE HAYS, KANSAS (785) 628-6395
DIRECTIONS
FHSU RODEO ARENA (230TH & GOLF COURSE RD.) 5S. TO "BUTTERFIELD TRAIL", 1W., 1/4S., E. INTO

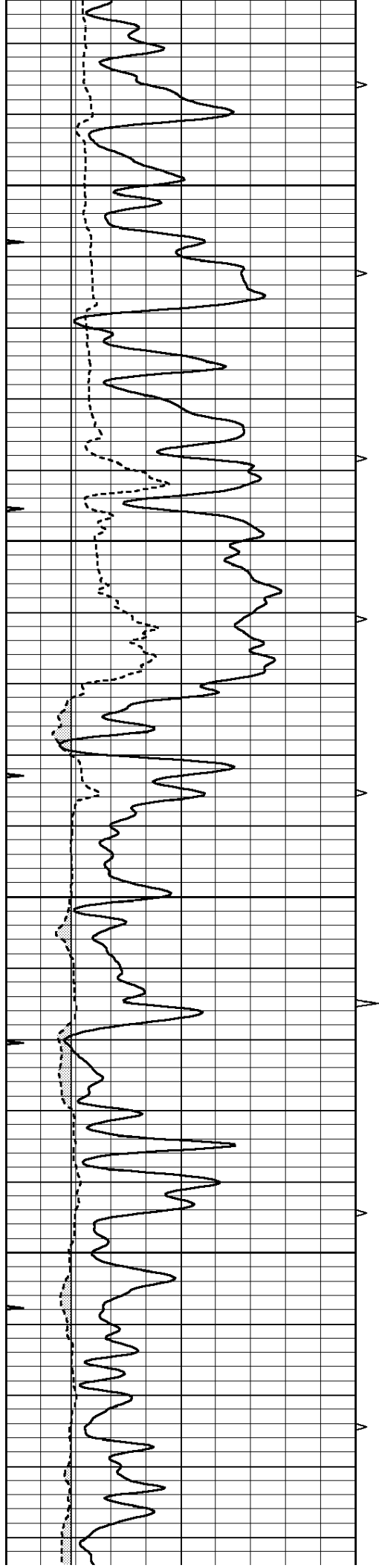


MAIN SECTION

Database File: 3338ddn.db
Dataset Pathname: pass3.11
Presentation Format: den_neu
Dataset Creation: Fri Feb 08 19:12:55 2019
Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)	-10
6	DCAL (in)	16	10 (ft3)	0 30	COMPENSATED NEUTRON (pu)	-10
0	MINMK	20	TBHV		-0.25 CORRECTION (g/cc)	0.25
			0 (ft3)	10		



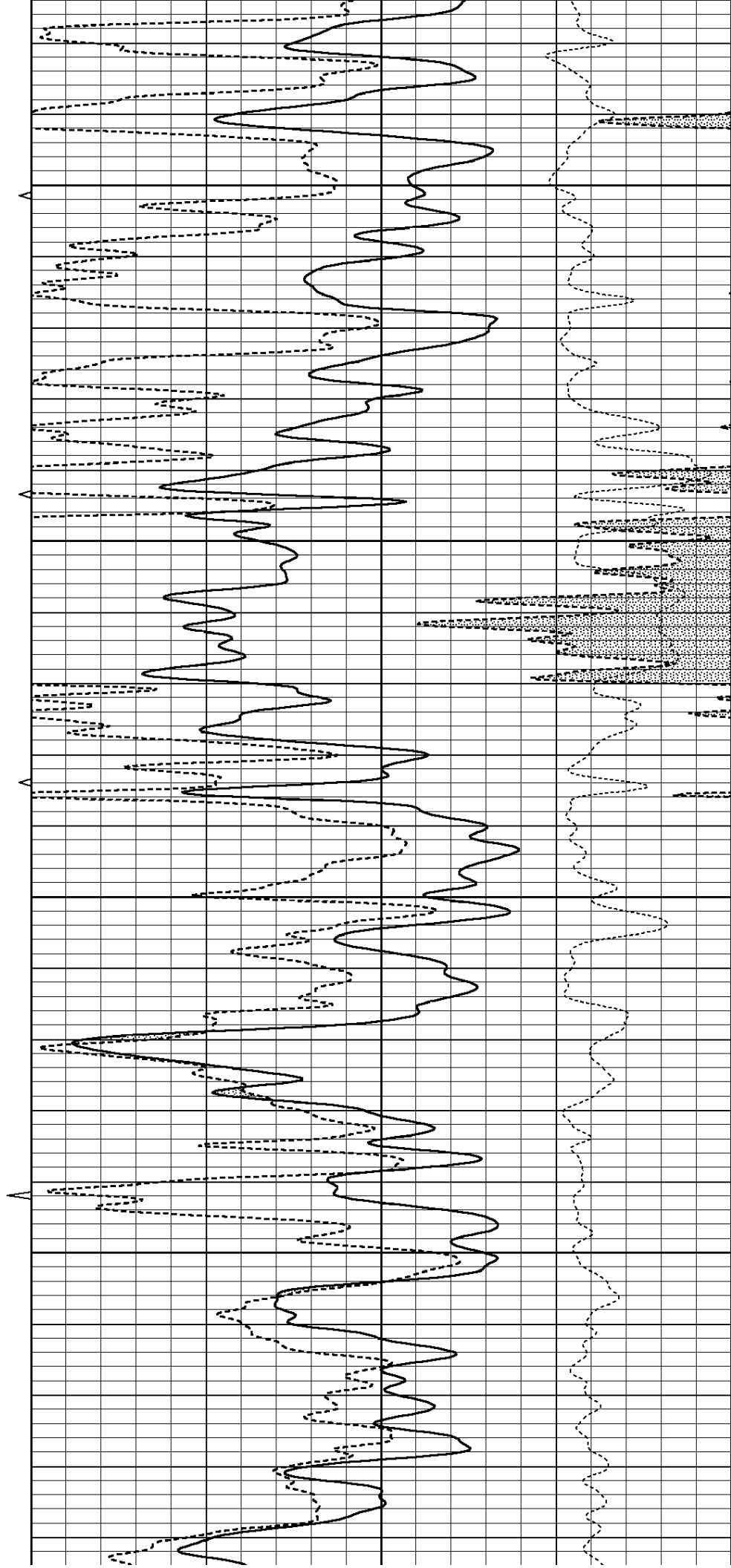


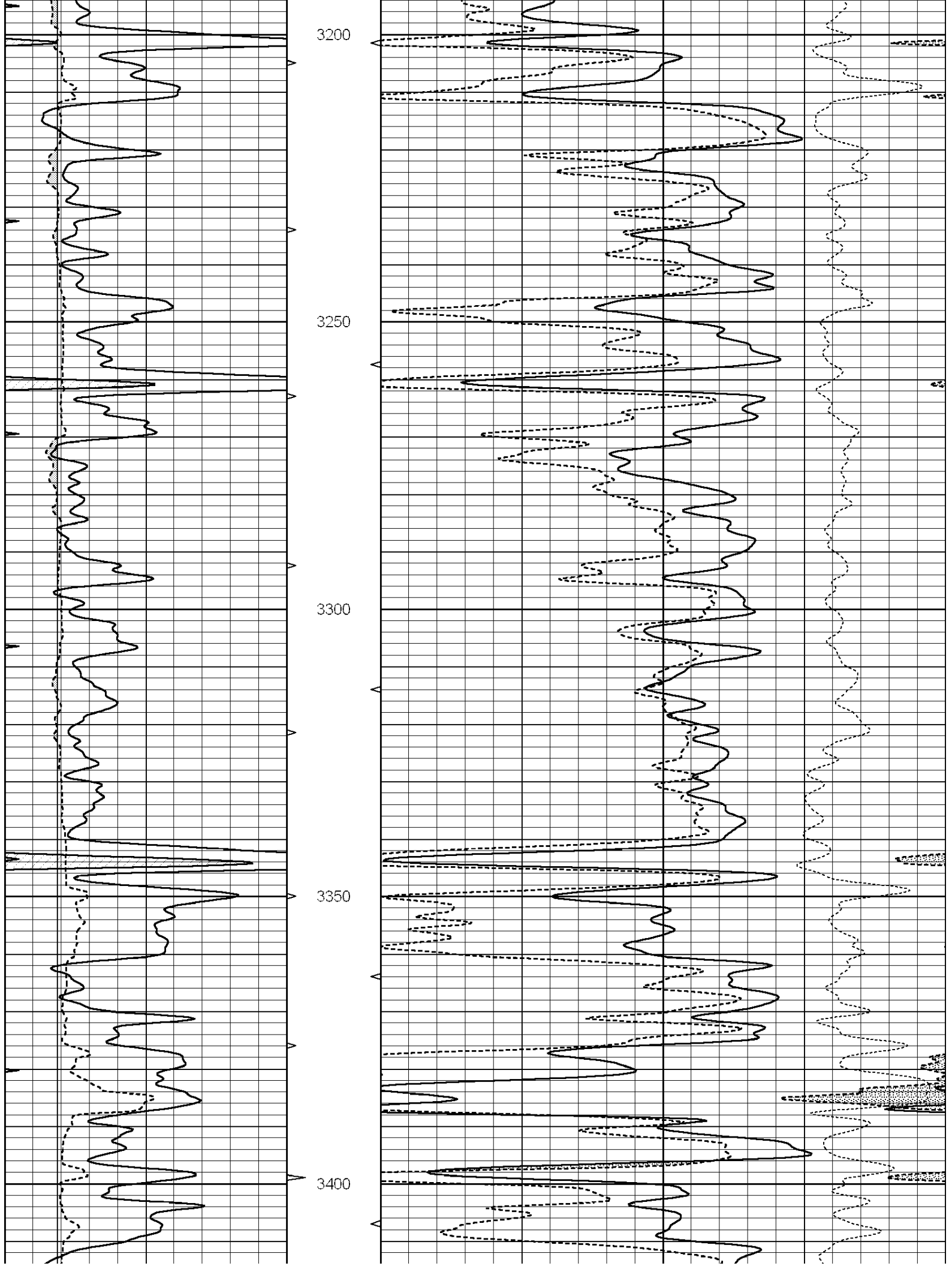
3000

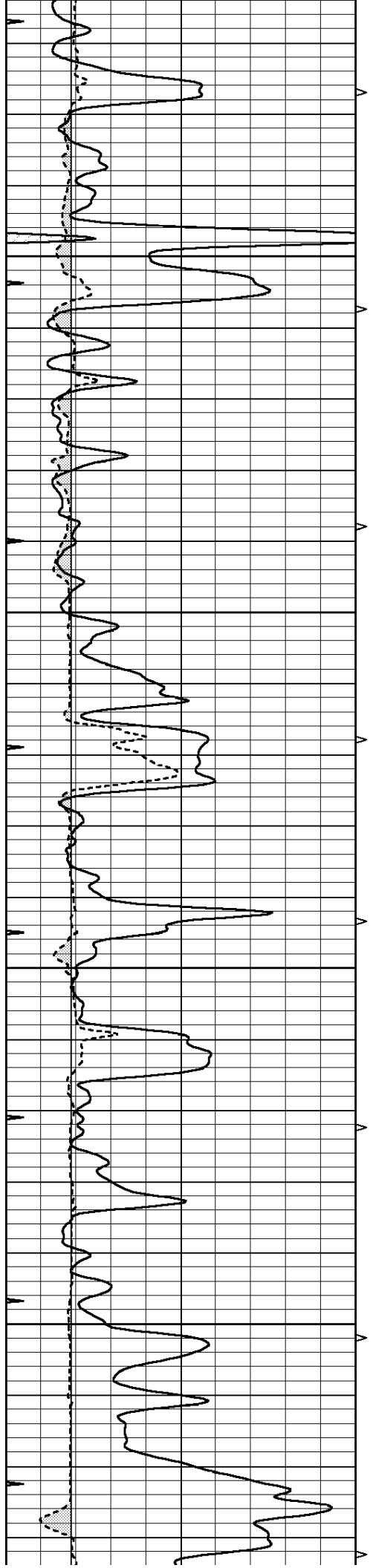
3050

3100

3150





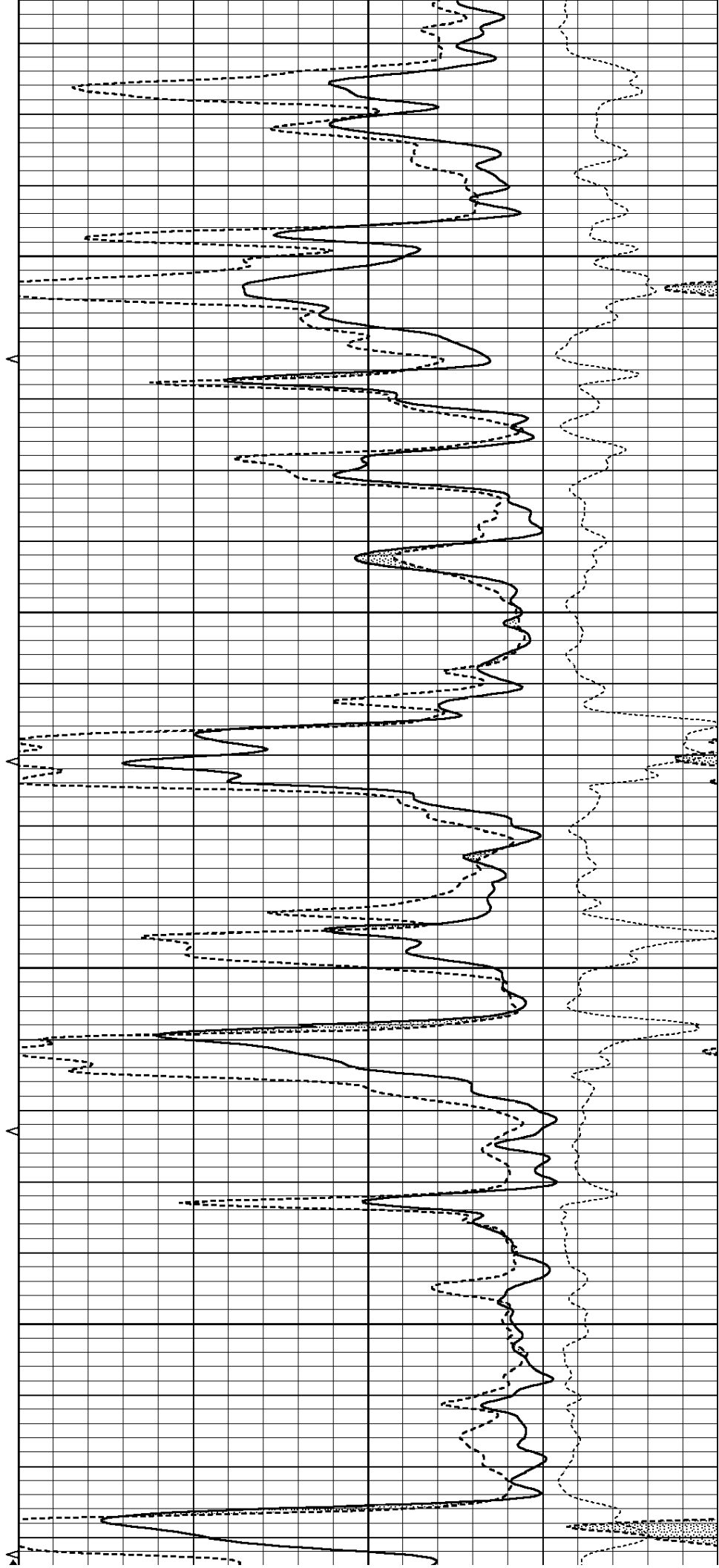


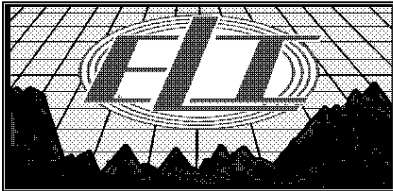
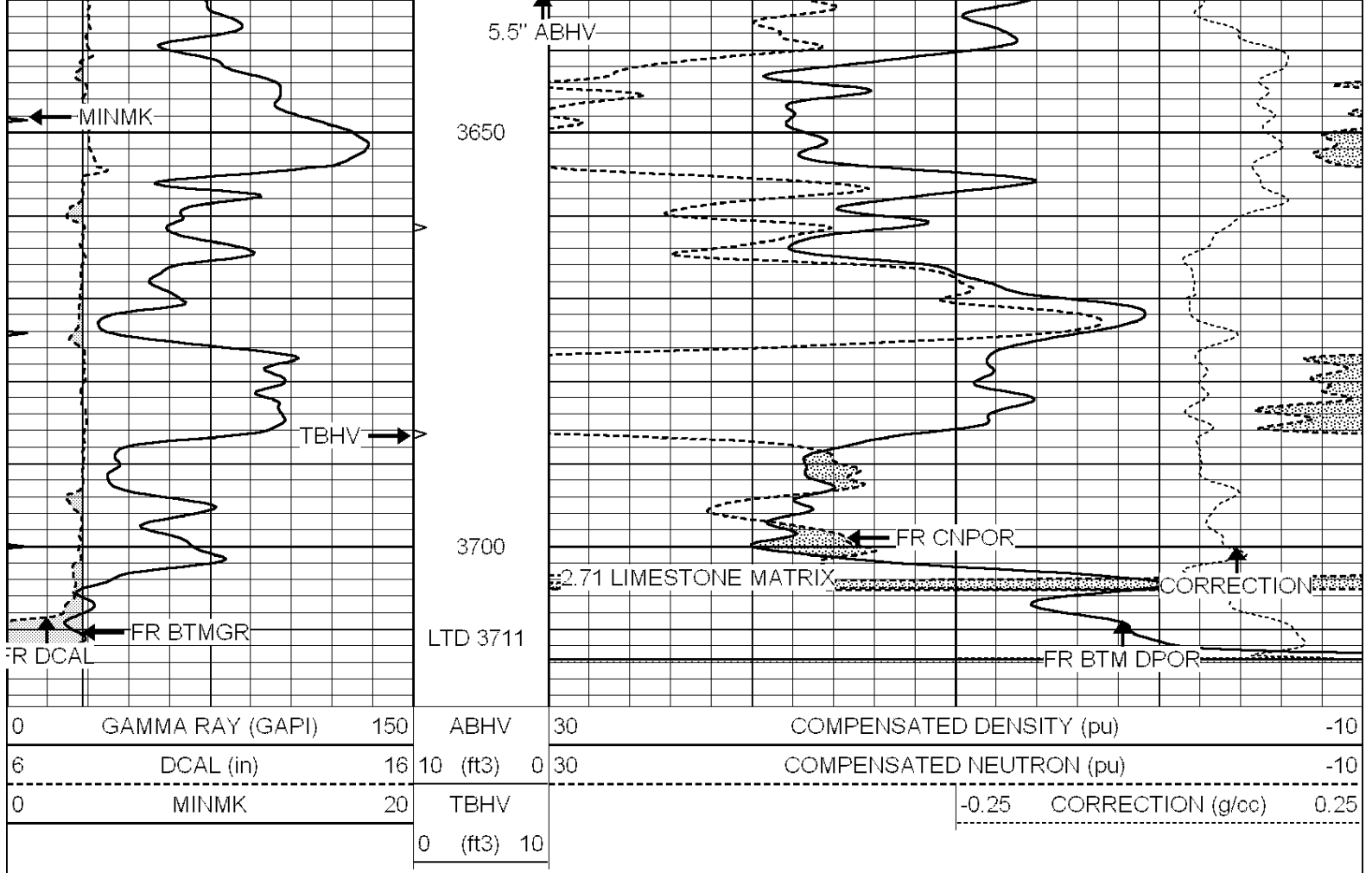
3450

3500

3550

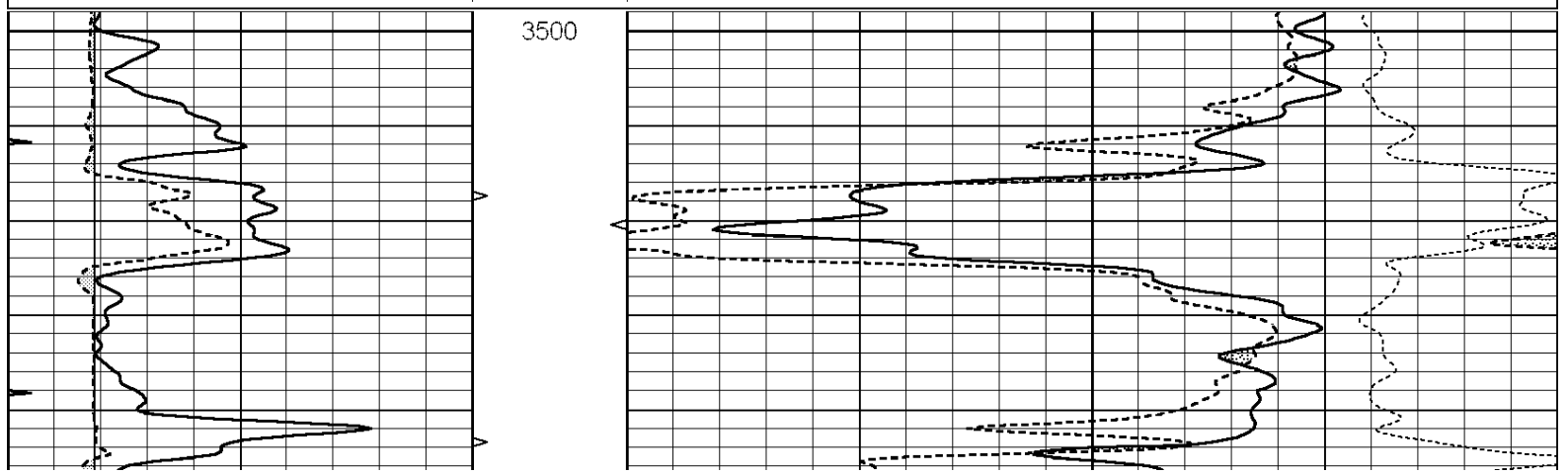
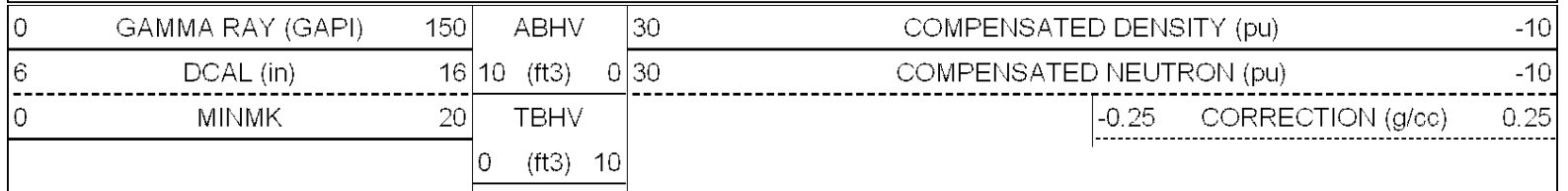
3600

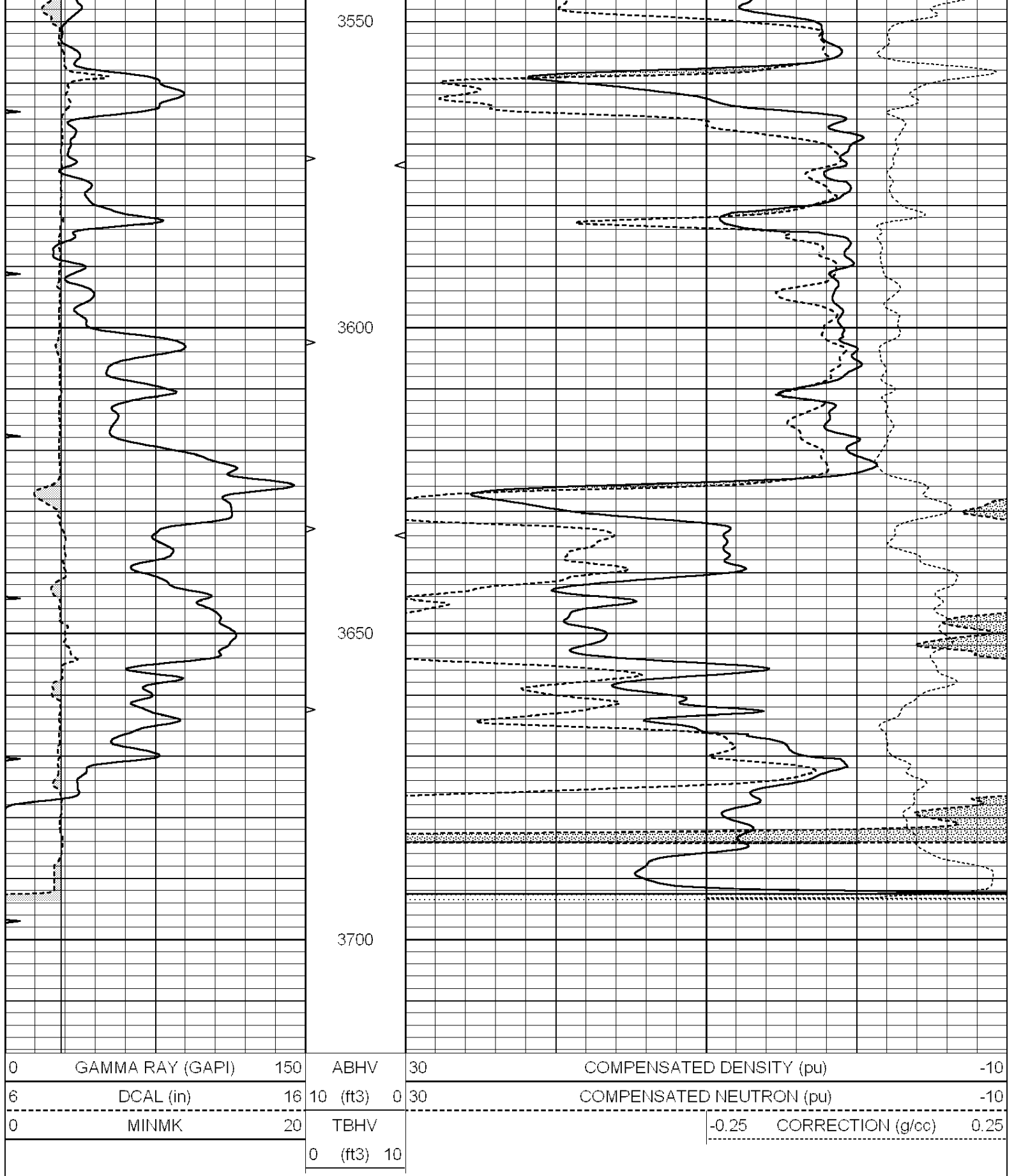




REPEAT SECTION

Database File: 3338ddn.db
 Dataset Pathname: pass2.4
 Presentation Format: den_neu
 Dataset Creation: Fri Feb 08 16:16:36 2019
 Charted by: Depth in Feet scaled 1:240





Calibration Report

Database File: 1598ddn.db
Dataset Pathname: pass4
Dataset Creation: Wed Aug 30 02:13:00 2017 by Log SOC 120430

Serial-Model:
Surface Cal Performed:
Downhole Cal Performed:
After Survey Verification Performed:

PROBE7-DILG
Wed Aug 30 00:06:33 2017
Mon Jul 28 12:02:56 2008
Mon Jul 28 12:02:56 2008

Surface Calibration

Readings			References			Results		
Loop:	Air	Loop		Air	Loop		m	b
Deep	-0.014	0.629	V	0.000	400.000	mmho/m	620.000	0.000
Medium	0.039	0.728	V	0.000	464.000	mmho/m	675.000	-44.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.011	0.610	V	0.000	400.000	mmho/m	667.135	-7.256
Medium	0.005	0.712	V	0.000	464.000	mmho/m	655.677	-3.102

Downhole Calibration

	Readings			References			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	14.508	388.384	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	166.367	504.400	mmho/m	1.000	0.000
LL3		7.500	V		1400.000	Ohm-m		
		0.000	V		20.000	Ohm-m		
		-7.200	V		4000.000	mmho-m		

After Survey Verification

Readings				Targets			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	0.000	0.000	mmho/m	0.000	0.000
Medium	0.000	0.000	mmho/m	0.000	0.000	mmho/m	0.000	0.000
LL3		1.000	Ohm-m		1.000	Ohm-m		
		0.000	Ohm-m		0.000	Ohm-m		
		1.000	mmho-m		1.000	mmho-m		

Litho Density Calibration Report
Serial: 002 Model: PRB

Master Calibration

Performed Mon Aug 21 11:27:42 2017

	Background	Magnesium	Aluminum	Sandstone	
Window 1	837.1	10632.5	2945.1	12110.1	cps
Window 2	772.0	9117.4	2570.1	10197.3	cps
Window 3	631.7	4669.0	1481.9	5042.9	cps
Window 4	187.0	187.5	185.9	189.9	cps
Long Space	0.0	8345.4	1798.1	9425.3	cps
Short Space	1.1	1927.9	1285.9	2050.2	cps
Rho		1.7100	2.5960	1.3800	g/cc
Pe		0.0000	2.5700	1.5500	
Rib Angle	: 45.2	Rib Slope	: 1.008	Density/Spine Ratio	: 0.558
Spine Angle	: 75.2	Spine Slope	: 3.790	Spine Intercept	: -19.6

Before Survey Verification

Performed Wed Dec 31 18:00:00 1969

Window 1	0.0	0.0	0.0	0.0	cps
Window 2	0.0	0.0	0.0	0.0	cps
Window 3	0.0	0.0	0.0	0.0	cps
Window 4	0.0	0.0	0.0	0.0	cps
Long Space	0.0	0.0	0.0	0.0	cps

Short Space	0.0	0.0	0.0	0.0	cps
Measured Rho		0.0000	0.0000	0.0000	g/cc
Measured Correction		0.0000	0.0000	0.0000	g/cc
Measured Pe			0.0000	0.0000	
After Survey Verification					
Performed Wed Dec 31 18:00:00 1969					
Window 1	0.0	0.0	0.0	0.0	cps
Window 2	0.0	0.0	0.0	0.0	cps
Window 3	0.0	0.0	0.0	0.0	cps
Window 4	0.0	0.0	0.0	0.0	cps
Long Space	0.0	0.0	0.0	0.0	cps
Short Space	0.0	0.0	0.0	0.0	cps
Measured Rho		0.0000	0.0000	0.0000	g/cc
Measured Correction		0.0000	0.0000	0.0000	g/cc
Measured Pe			0.0000	0.0000	
Compensated Neutron Calibration Report					
Serial Number:		070808			
Tool Model:		Probe			
PRE-SURVEY VERIFICATION					
Detector	Readings	Measured	Target		
Short Space	cps				
Long Space	cps	pu	pu		
POST-SURVEY VERIFICATION					
Detector	Readings	Measured	Target		
Short Space	cps				
Long Space	cps	pu	pu		
Gamma Ray Calibration Report					
Serial Number:	070558				
Tool Model:	OPEN_GR				
Performed:	Wed May 31 00:09:32 2017				
Calibrator Value:	1.0	GAPI			
Background Reading:	0.0	cps			
Calibrator Reading:	1.0	cps			
Sensitivity:	0.2800	GAPI/cps			