SUPERIOR WELL SERVICES

GAMMA RAY CCL
CEMENT BOND VDL

Company	NOBLE ENERGY INC.
Well	BUTTERBALL D19-22D
Field	WATTENBERG
County	WELD
State	COLORADO

Company NOBLE ENERGY INC.
Well BUTTERBALL D19-22D
Field WATTENBERG
County WELD State COLORADO
Location: API #: 0512334171
SHL: 2137' FNL & 673' FEL SE/NE
BHL: 2565' FNL & 1320' FEL SW/NE
SEC 19 TWP 3N RGE 64W

Other Services

Permanent Datum GL Elevation 4770
Log Measured From KB
Drilling Measured From KB

Elevation
K.B. 4784
D.F. 4784
G.L. 4770

Date	NOVEMBER 18, 2011
Run Number	ONE
Depth Driller	7717
Depth Logger	7651
Bottom Logged Interval	7650
Top Log Interval	2032
Open Hole Size	7-7/8
Type Fluid	WATER
Density / Viscosity	N/A
Max. Recorded Temp.	251 DEG. F
Estimated Cement Top	2031
Time Well Ready	PORTABLE MAST
Time Logger on Bottom	2-3/4 PROBE 110803
Equipment Number	3342
Location	45
Recorded By	GREG NOLAN
Witnessed By	MITCH TRIMBLE

Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	8-5/8	24# J-55	14	784.4
Prot. String				
Production String	4-1/2	11.6# M-80	14	7708
Liner				

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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

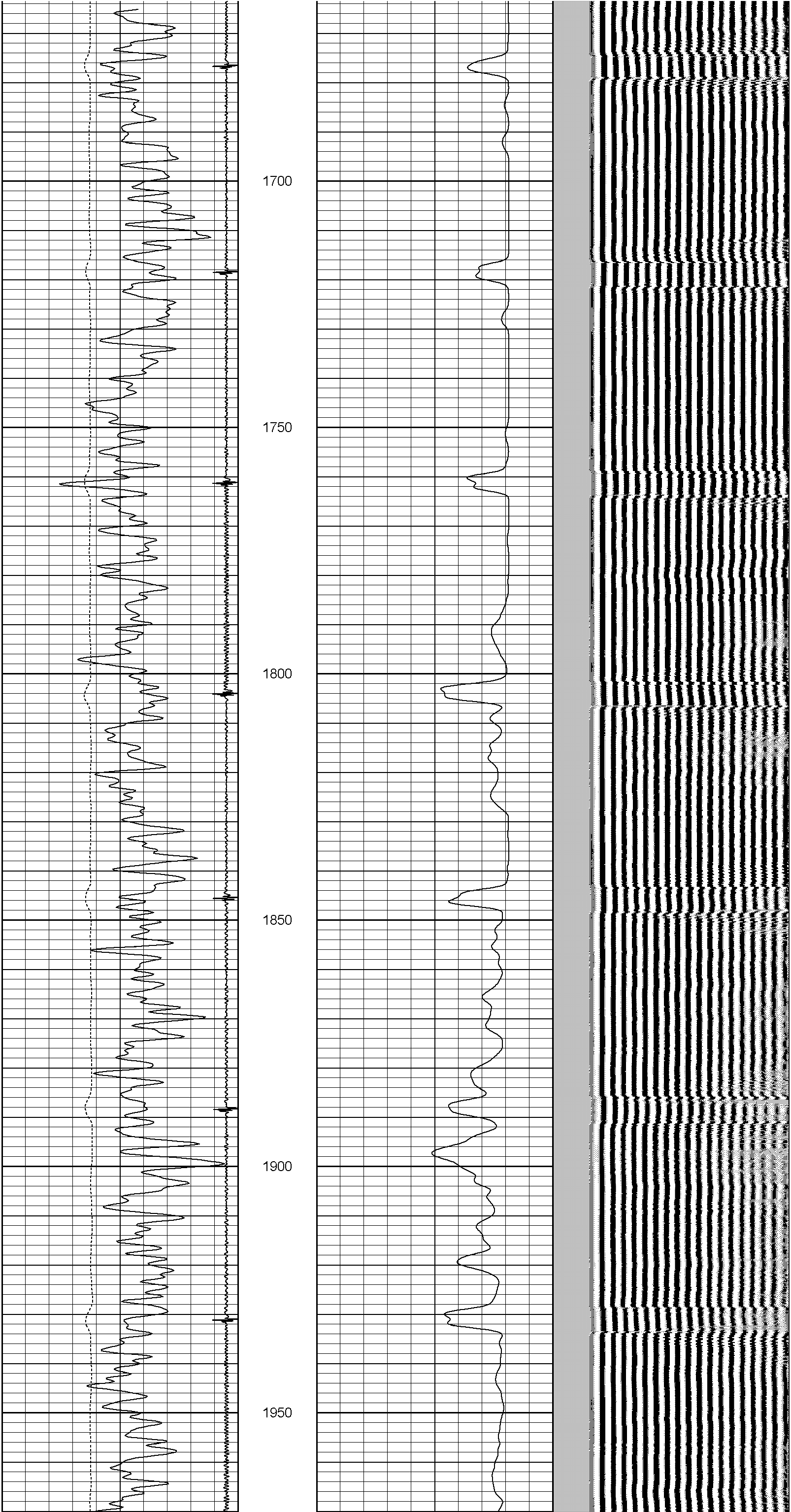
THANK YOU FOR CHOOSING SUPERIOR WELL SERVICES!!!!!
LOG CORRELATED TO HES SPECTRAL DENSITY, DUAL SPACED,
ARRAY COMP., TRUE RESISTIVITY LOG DATED 02-NOV-11
WCR 32 & WCR 49, E1, S.4, W INTO
WEST WELL OF A 2 WELL PAD

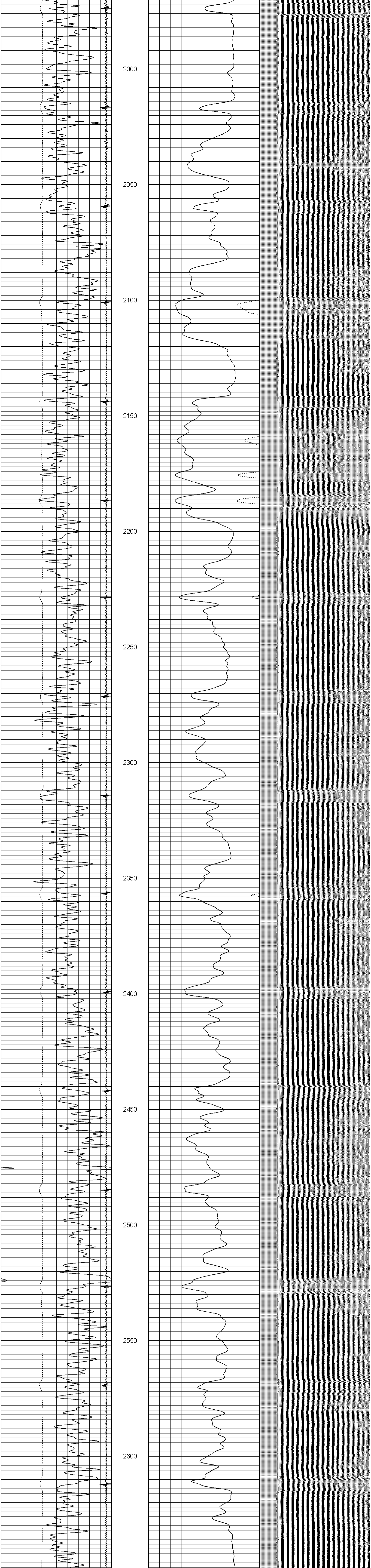
Database File:	cbl noble butterball d19-22d.db
Dataset Pathname:	pass3
Presentation Format:	bond
Dataset Creation:	Fri Nov 18 08:54:52 2011 by Log Std Casedhole 10081
Charted by:	Depth in Feet scaled 1:240

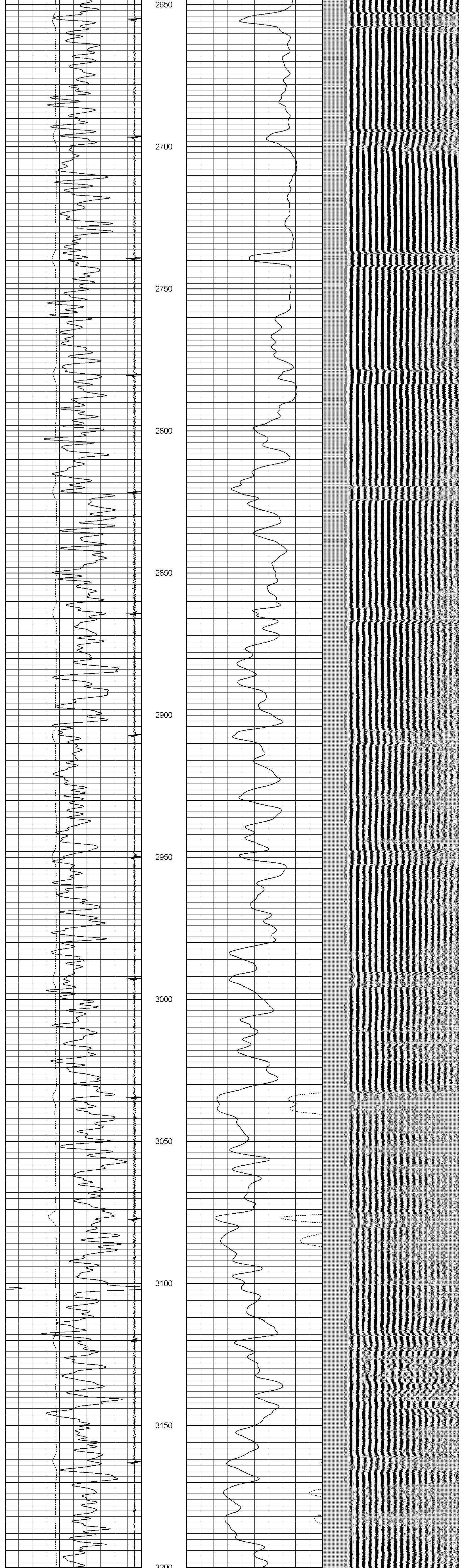
30 CCL -1.5
30 Gamma Ray (GAPI) 130
400 TT3 (usec) 100
200 GR (GAPI) 400

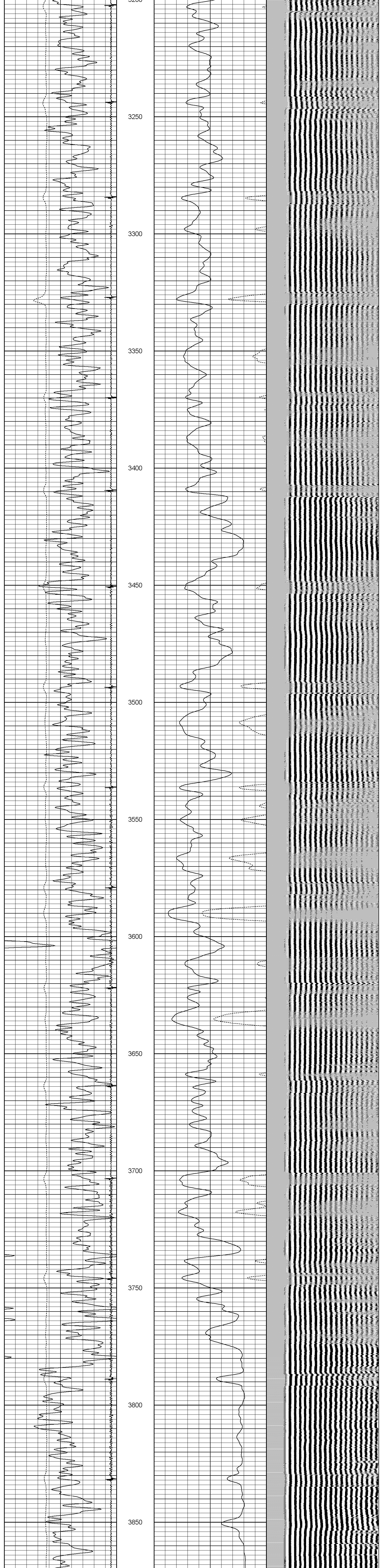
0 Amplitude (mV) 100
0 Amplified Amplitude (mV) 30

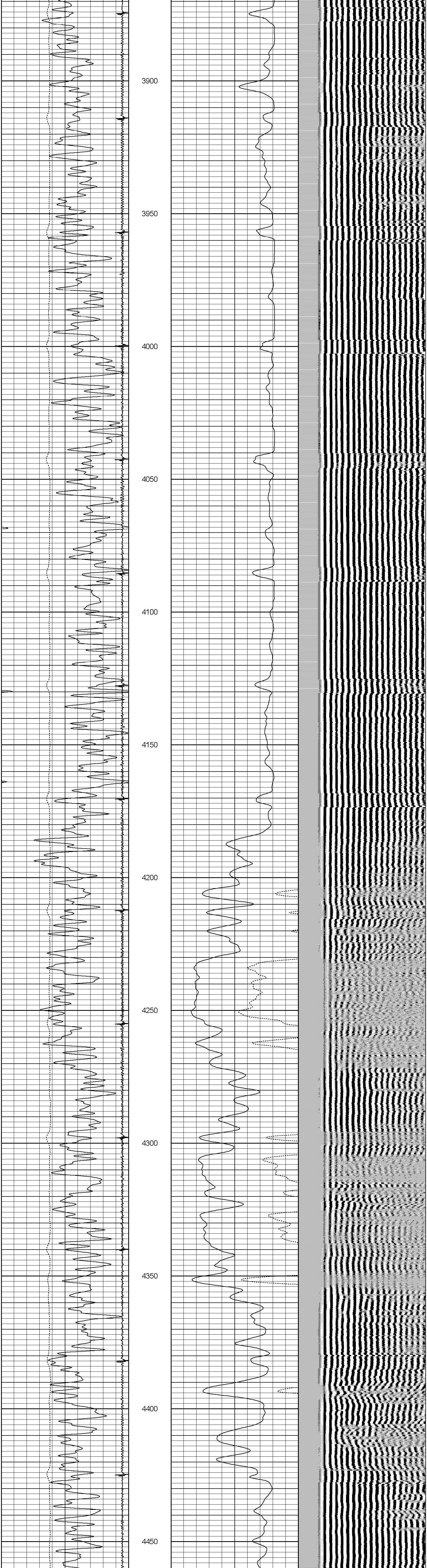
200 VDL 1200

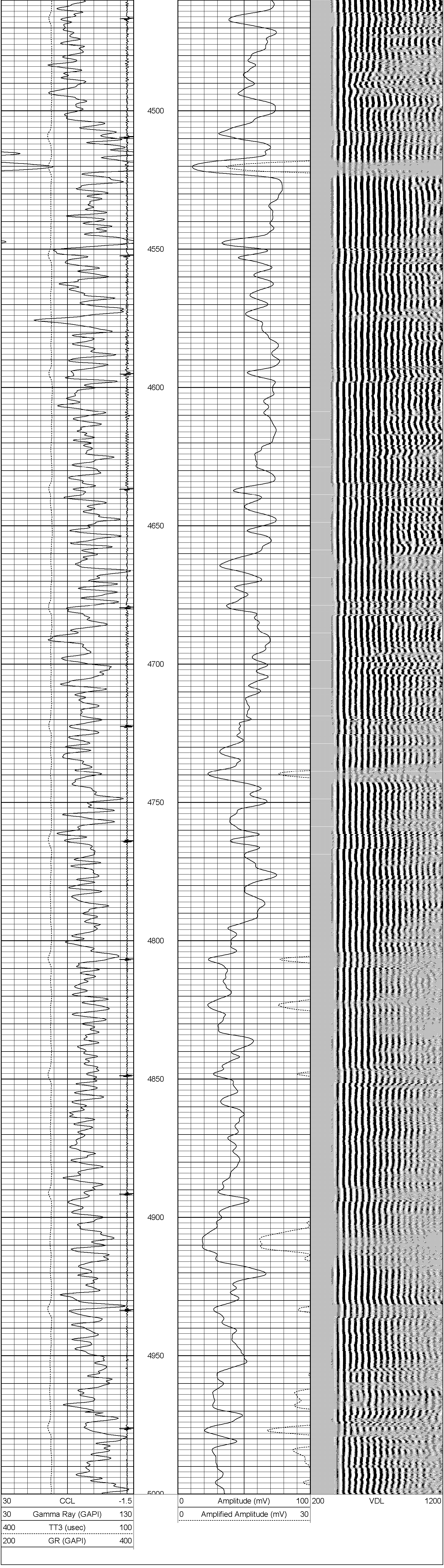




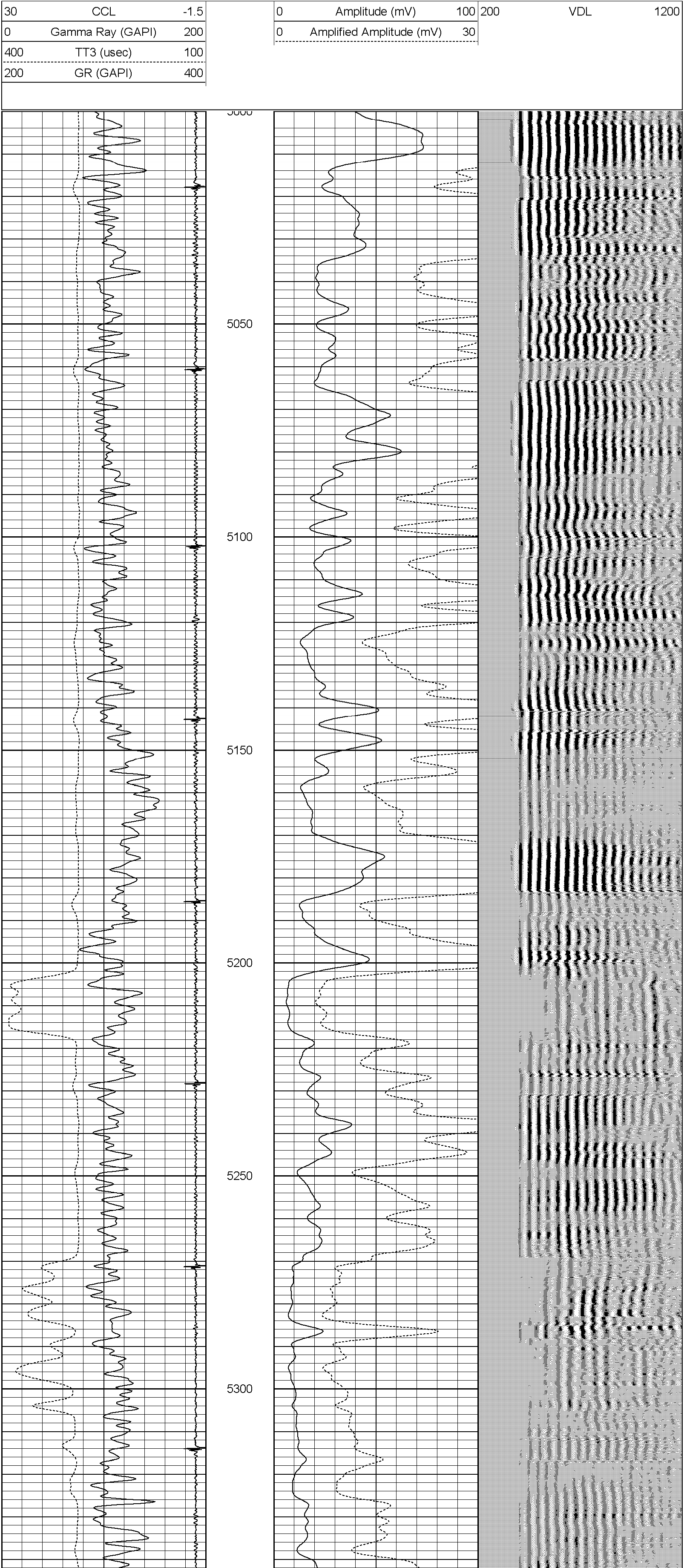


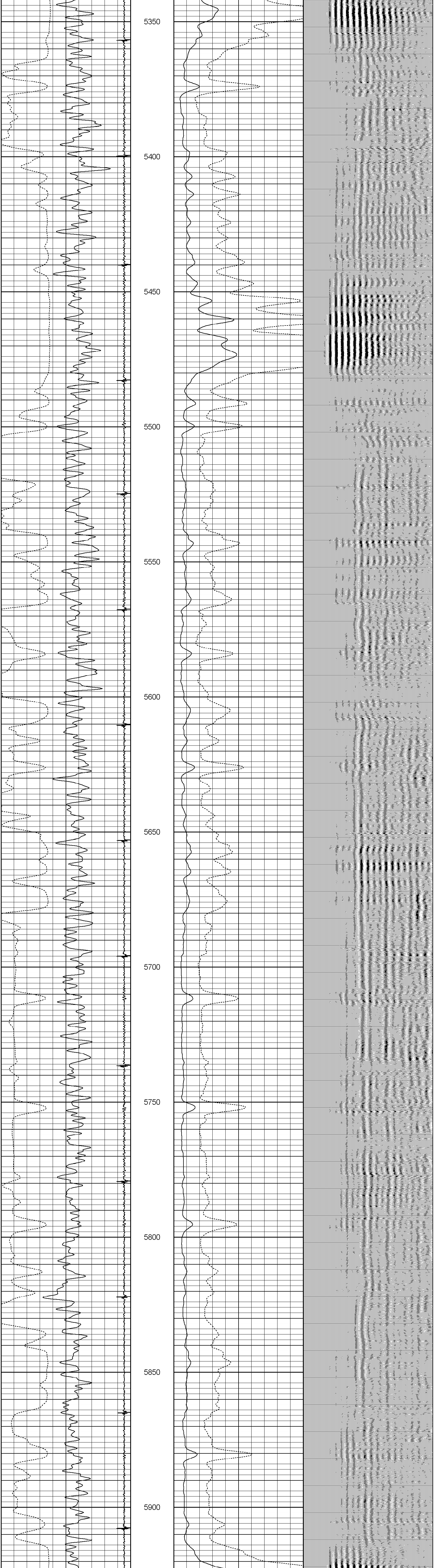


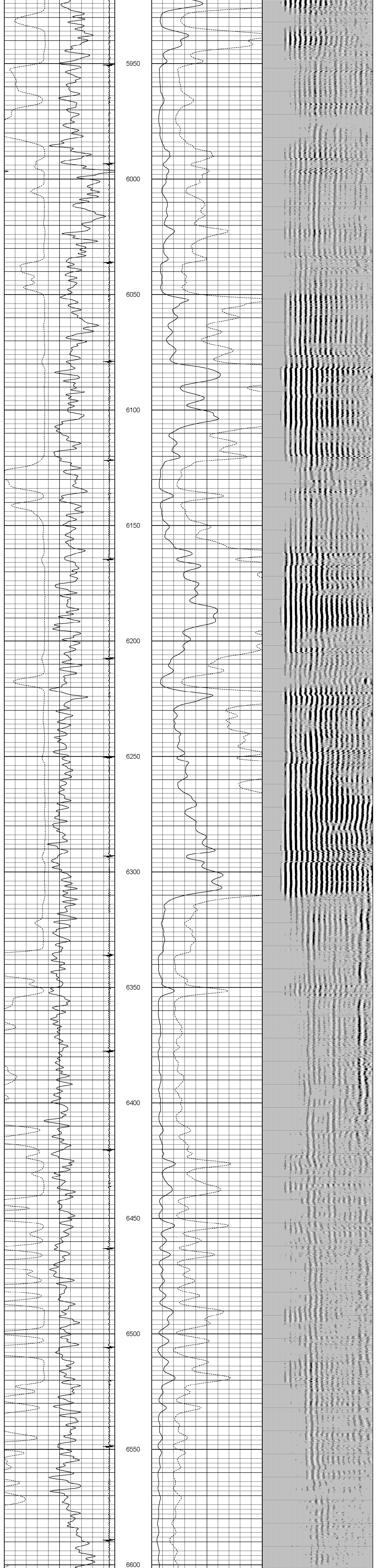


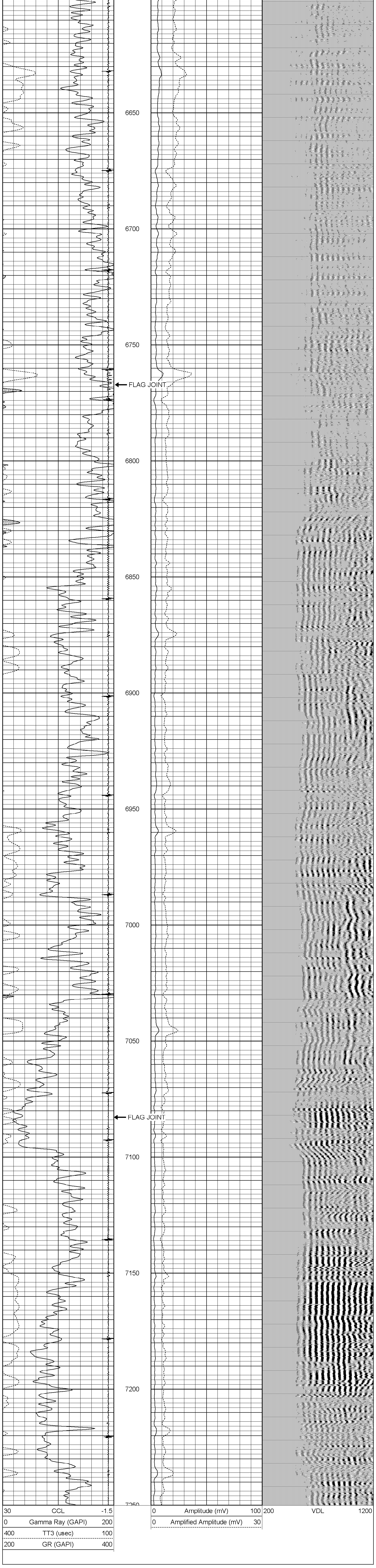


Database File:	cbl noble butterball d19-22d.db
Dataset Pathname:	pass2
Presentation Format:	bond
Dataset Creation:	Fri Nov 18 08:35:27 2011 by Log Std Casedhole 10081
Charted by:	Depth in Feet scaled 1:240



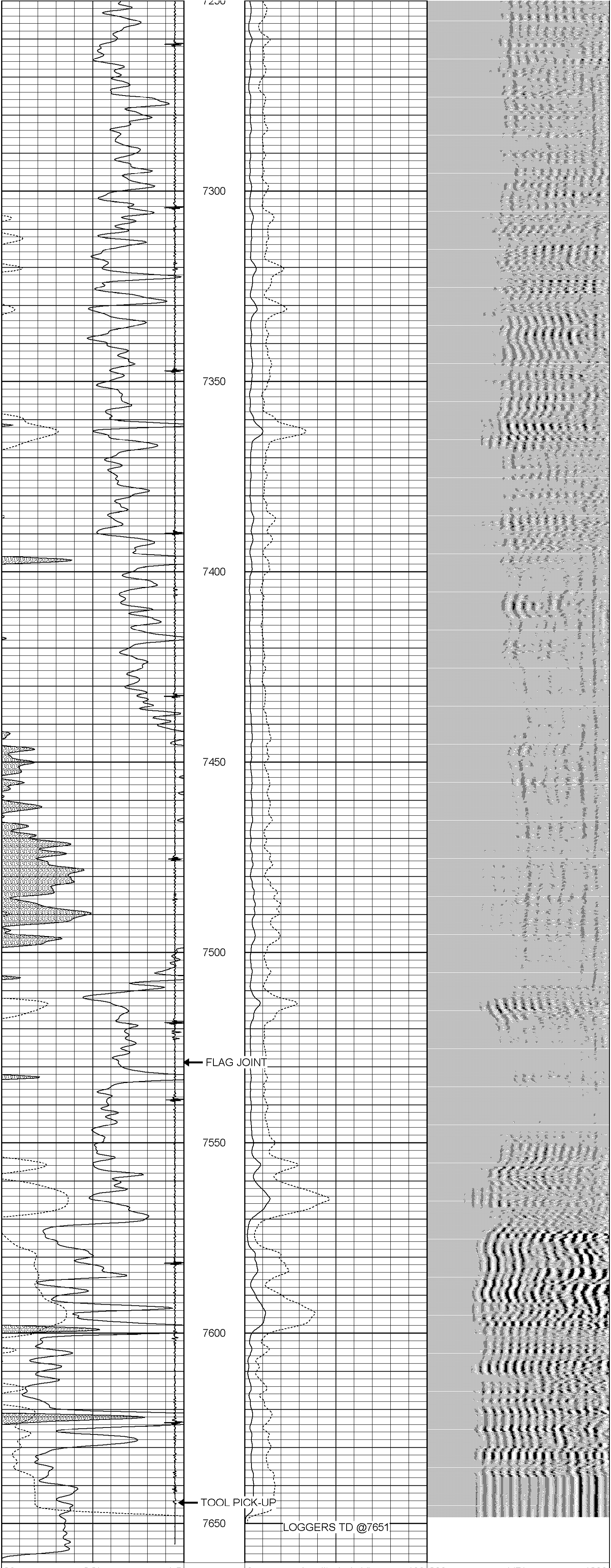






Database File: cbl noble butterball d19-22d.db
Dataset Pathname: pass1
Presentation Format: bond
Dataset Creation: Fri Nov 18 08:29:55 2011 by Log Std Casedhole 10081
Charted by: Depth in Feet scaled 1:240

30	CCL	-1.5	0	Amplitude (mV)	100	200	VDL	1200
0	Gamma Ray (GAPI)	200	0	Amplified Amplitude (mV)	30			
400	TT3 (usec)	100						
200	GR (GAPI)	400						



30	CCL	-1.5	0	Amplitude (mV)	100	200	VDL	1200
0	Gamma Ray (GAPI)	200	0	Amplified Amplitude (mV)	30			
400	TT3 (usec)	100						
200	GR (GAPI)	400						

Calibration Report

Database File: cbl noble butterball d19-22d.db
Dataset Pathname: pass1
Dataset Creation: Fri Nov 18 08:29:55 2011 by Log Std Casedhole 10081

Gamma Ray Calibration Report

Type / Serial: Probe275dig / 110809

SHOP CALIBRATION Tue Oct 25 12:02:16 2011

	Counts/Sec.	Gain	Offset	Jig	Units
Background	0.0				cps
Calibrator	1.0				cps
		0.9000			GAPI/cps

PRIMARY VERIFICATION

Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI

BEFORE SURVEY VERIFICATION

Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI

AFTER SURVEY VERIFICATION

Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI

Cement Bond Log Calibration Report

Serial Number: 110803
Tool Model: Probe275Digital
Performed: Fri Nov 18 08:13:26 2011

Depth: 936.783 ft
Casing Diameter: 4.5 in

	3' Spacing	5' Spacing	
Signal Zero:	0.8	0	mV
Calibrated Amplitude:	81.1961	81.1961	mV
Reading at Signal Zero:	0.0081543	0.00800781	V
Reading in Free Pipe:	2.49092	2.42625	V
Gain:	32.3817	33.5766	
Offset:	0.53595	-0.268875	