



VDL CCL
GAMMA RAY
CEMENT BOND LOG

Company NOBLE
Well HBR PC G11-21D
Field WATTENBERG
County WELD State COLORADO

Location: API #: 05-123-33029
LAT: 40.32894
LONG: -104.62809
SEC 11 TWP 4 RGE 65
Permanent Datum GL Elevation 4691'
Log Measured From KB
Drilling Measured From KB
Other Services N/A
Elevation K.B. 4704'
D.F. 4703'
G.L. 4691'

Date	5/28/20
Run Number	ONE
Depth Driller	7350'
Depth Logger	2000'
Bottom Logged Interval	2000'
Top Log Interval	SURFACE
Open Hole Size	12.25"
Type Fluid	WATER
Density / Viscosity	N/A
Max. Recorded Temp.	N/A
Estimated Cement Top	SEE LOG
Time Well Ready	10:00
Time Logger on Bottom	10:30
Equipment Number	453
Location	EATON, CO.
Recorded By	JAKE BAILEY
Witnessed By	ERIC PETERSON

Borehole Record			Tubing Record				
Run Number	Bit	From	To	Size	Weight	From	To
Casing Record	Size			Wgt/Ft		Top	Bottom
Surface String	8.625"			24#		SURFACE	650'
Prot. String							
Production String	4.5"			11.6#		SURFACE	7325'
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

LOG RAN PER CUSTOMER REQUEST
DEPTH REFERENCE TO KB
ZERO PRESSURE APLIED

MAINPASS 2000' TO SURFACE

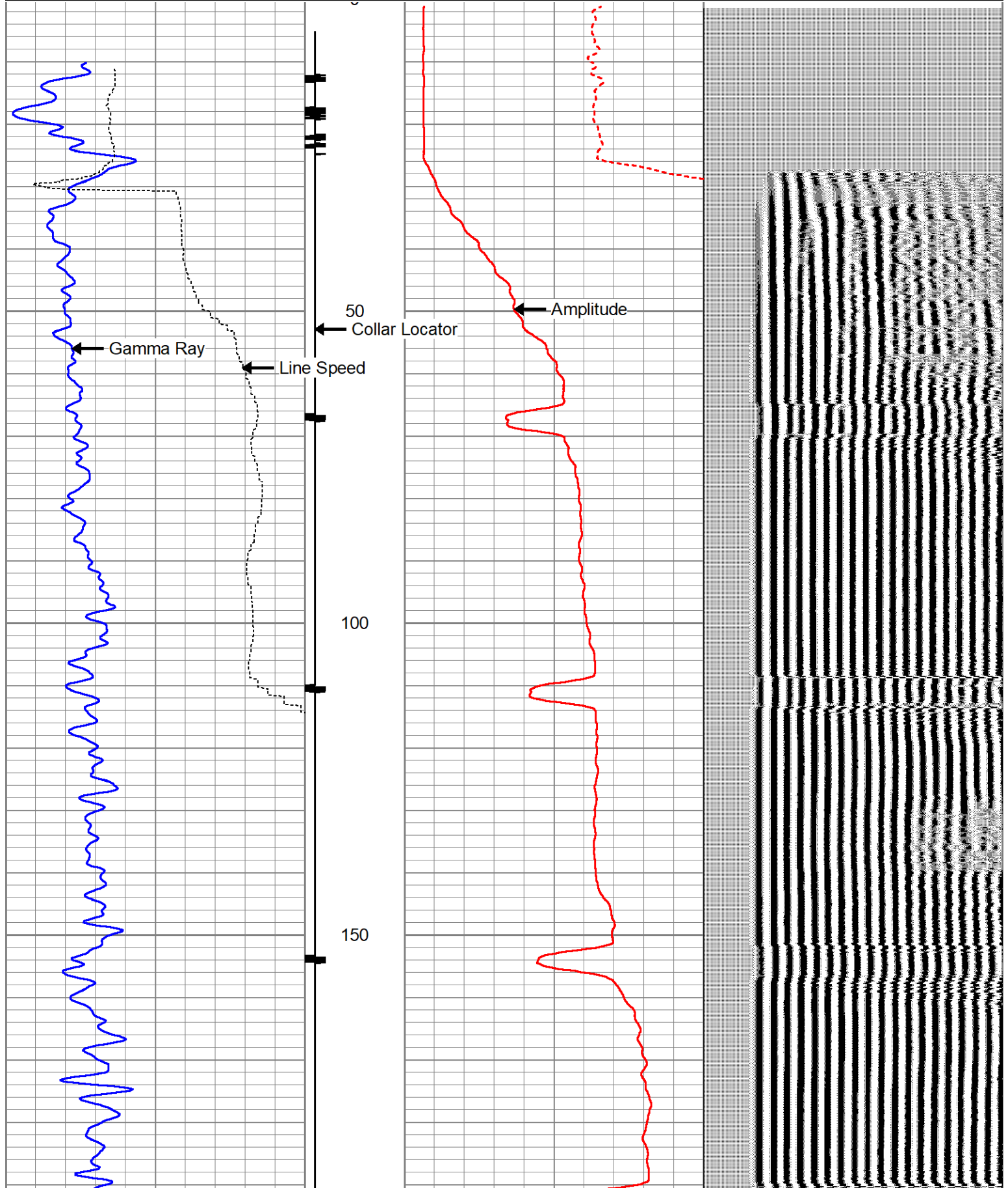
THANK YOU FOR USING A PLUS WELL SERVICES

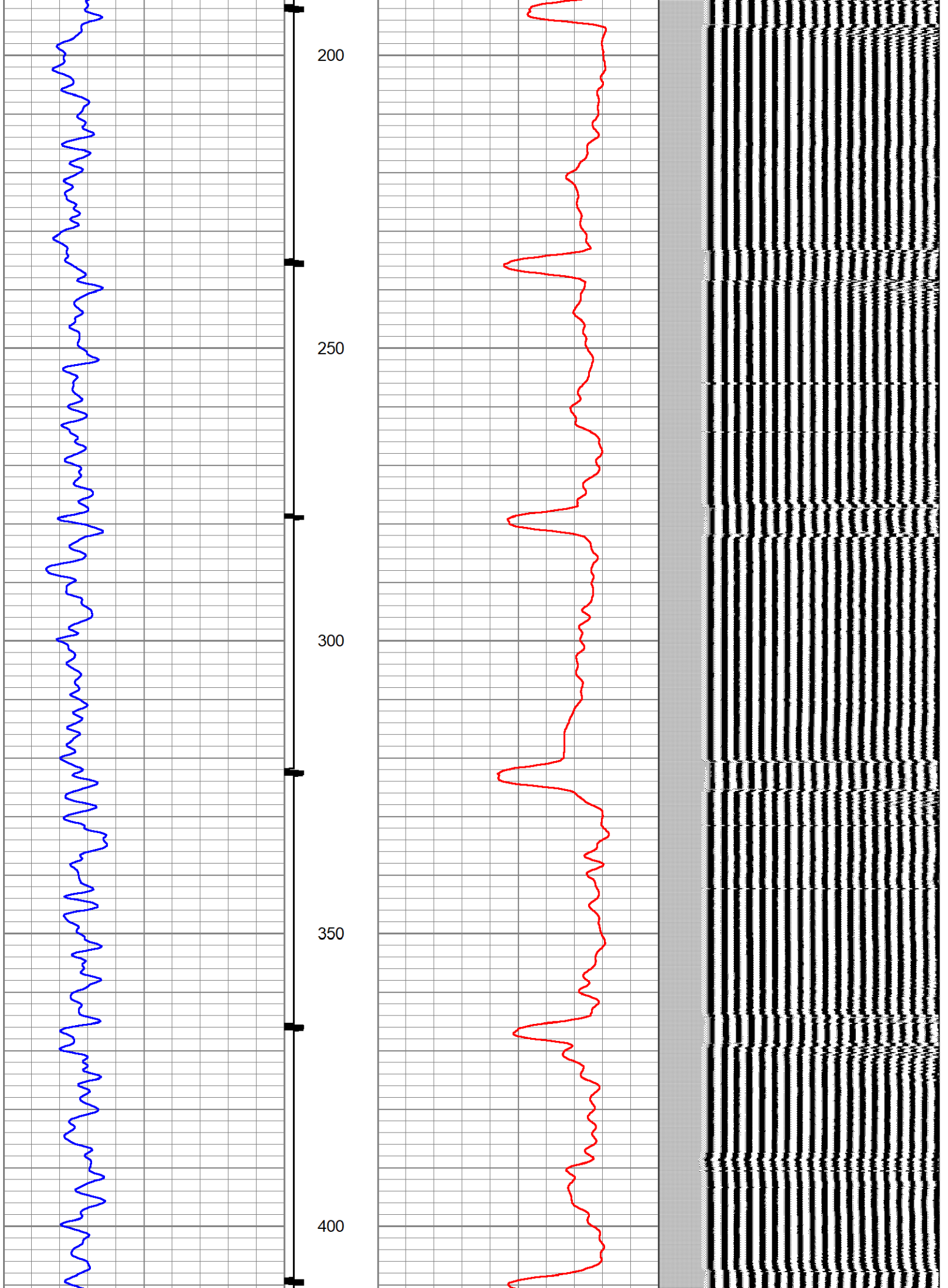


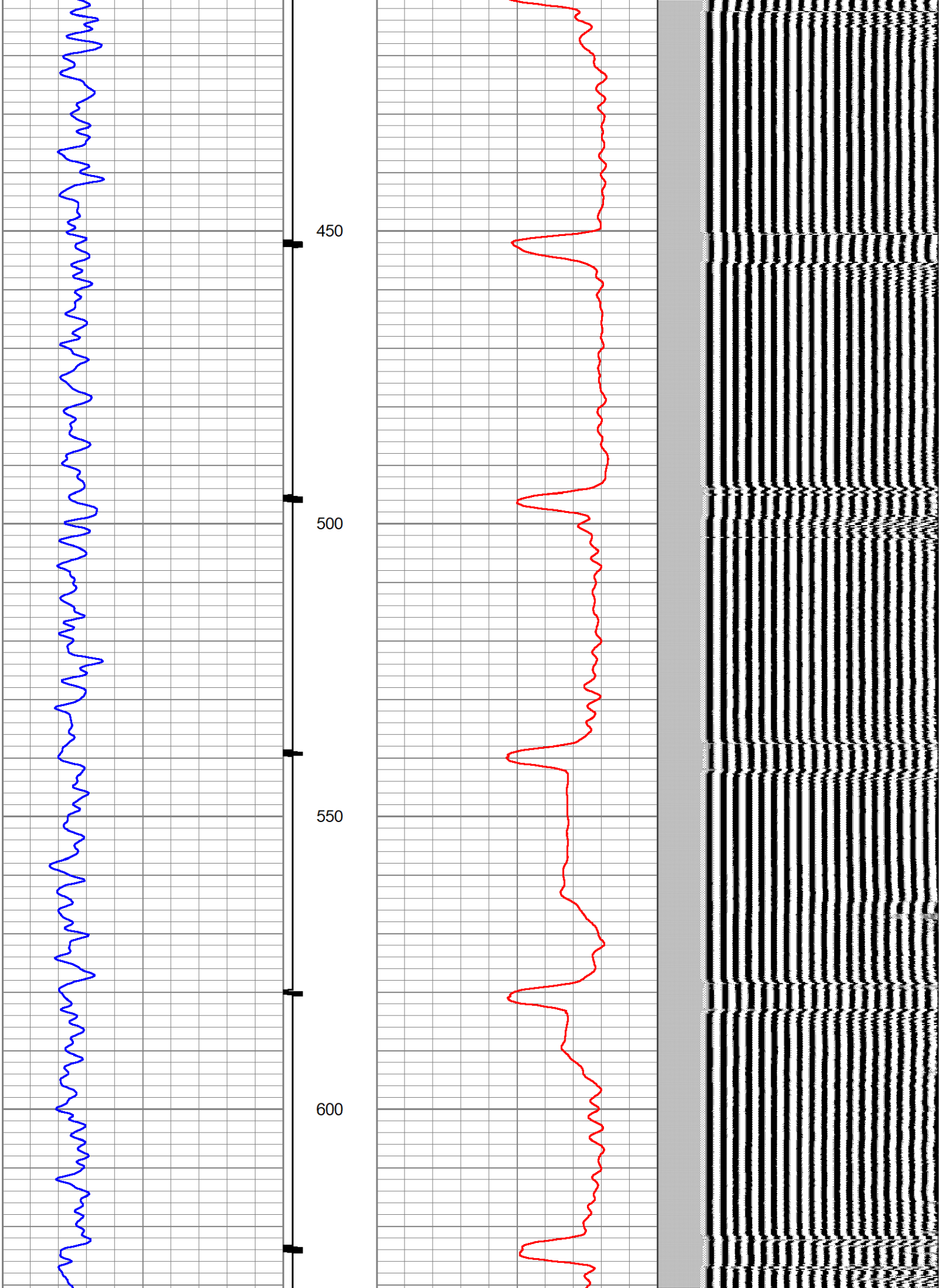
MAIN PASS

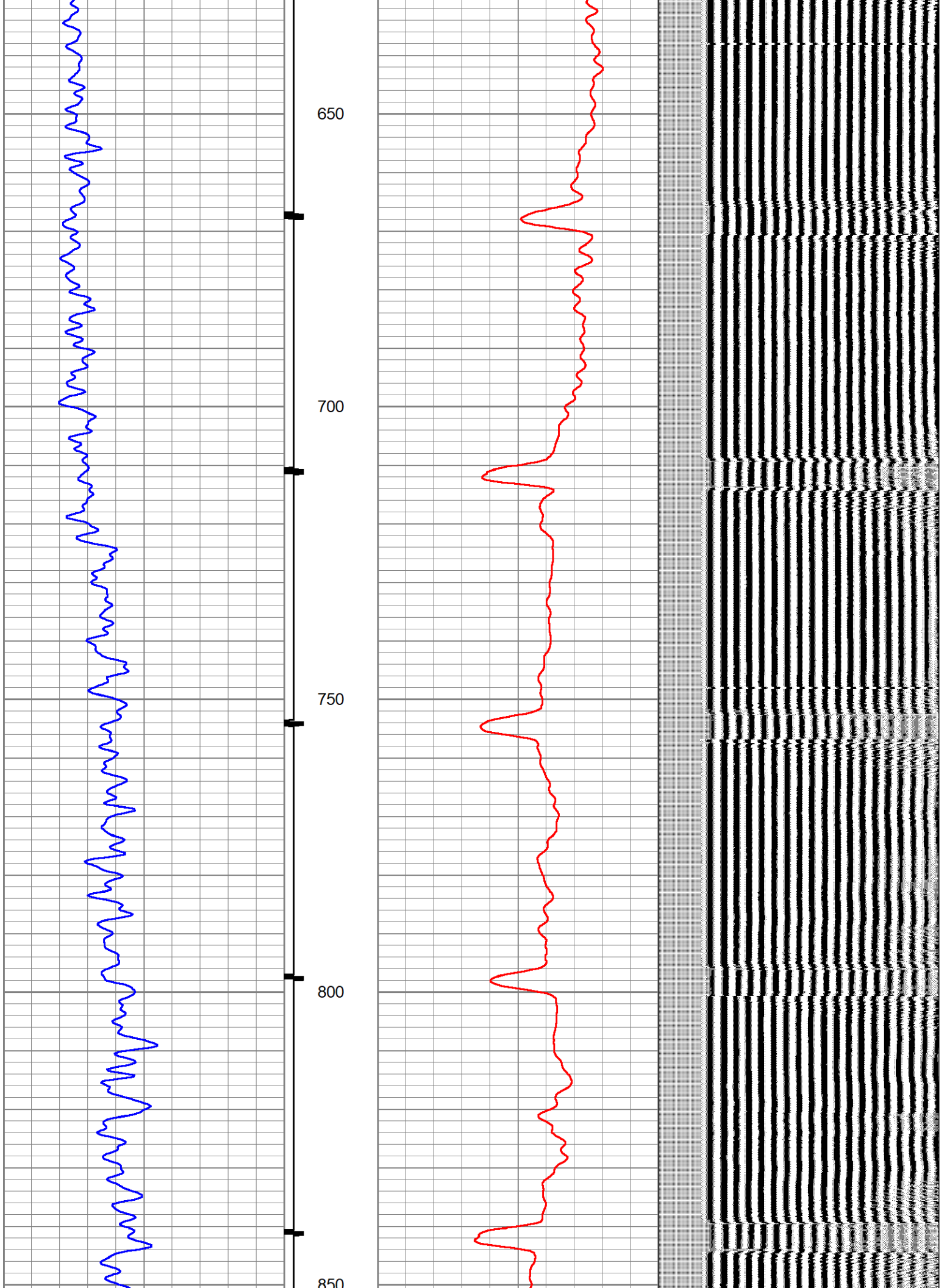
Database File hbr pc g11-21dcb15-28-20.db
 Dataset Pathname pass5
 Presentation Format cbl_dr
 Dataset Creation Thu May 28 10:29:21 2020
 Charted by Depth in Feet scaled 1:240

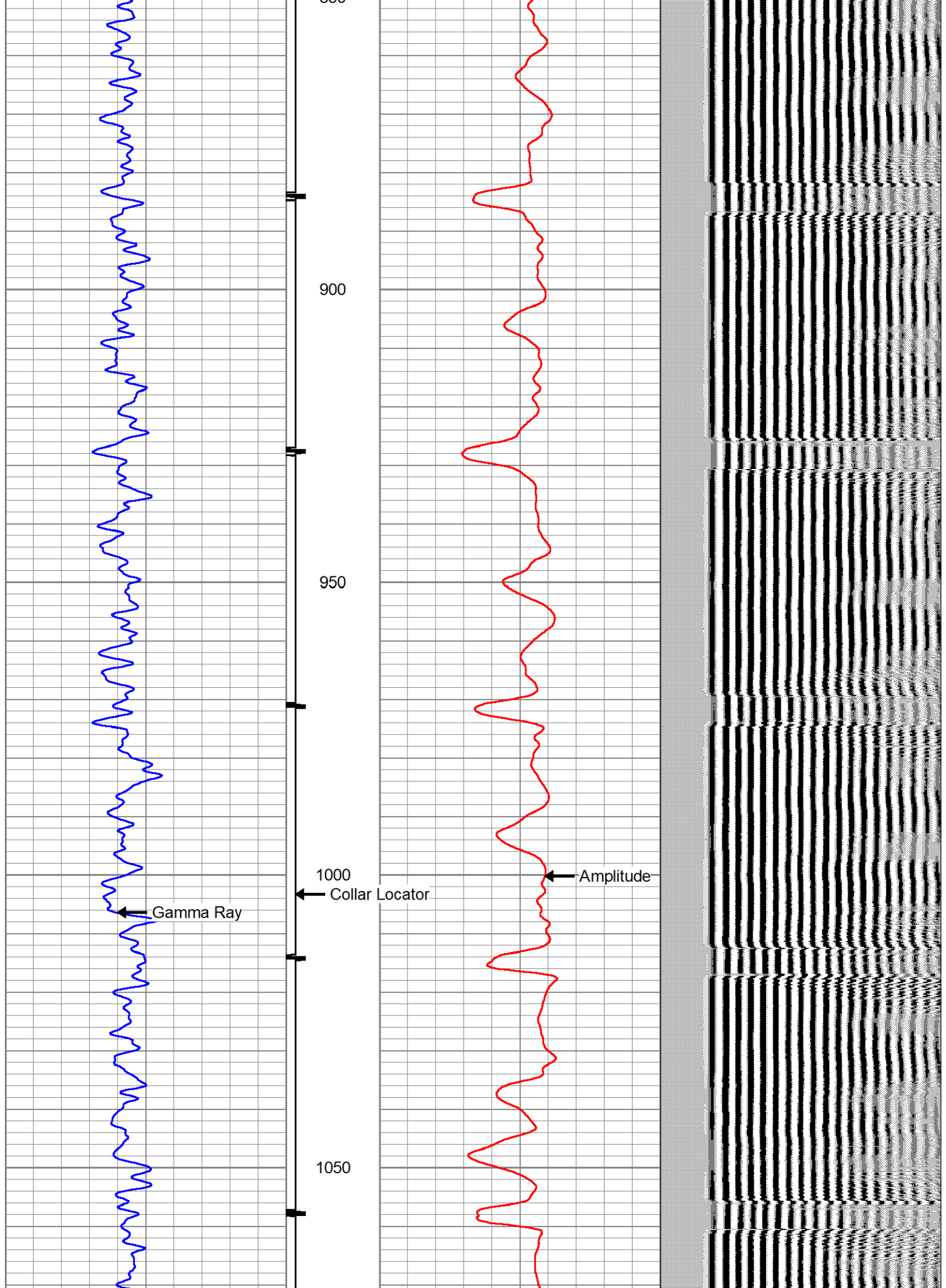
0	Gamma Ray (GAPI)	250	Collar Locator	0	Amplified Amplitude (mV)	10	200	VDL (usec)	1200
0	Line Speed (ft/min)	-100	-1	9	0	Amplitude (mV)	100		

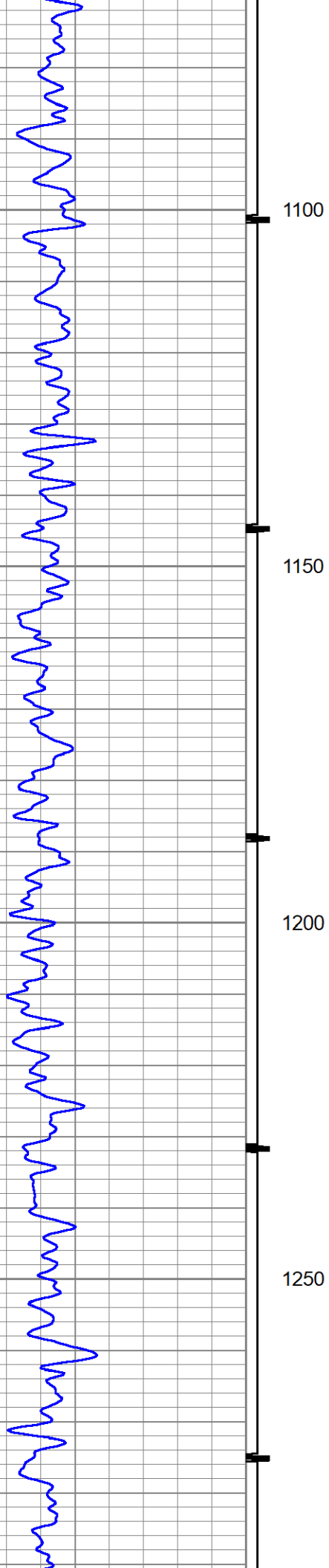










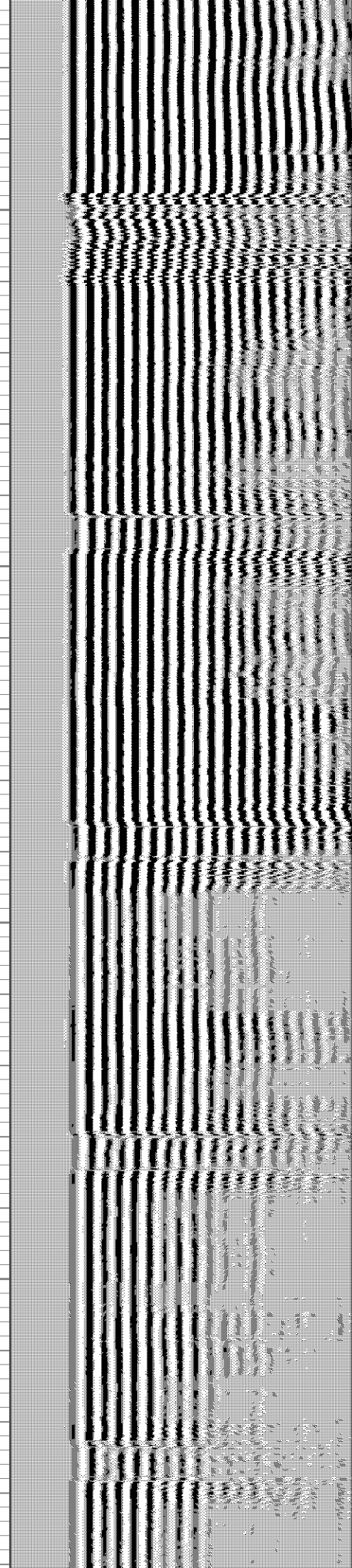


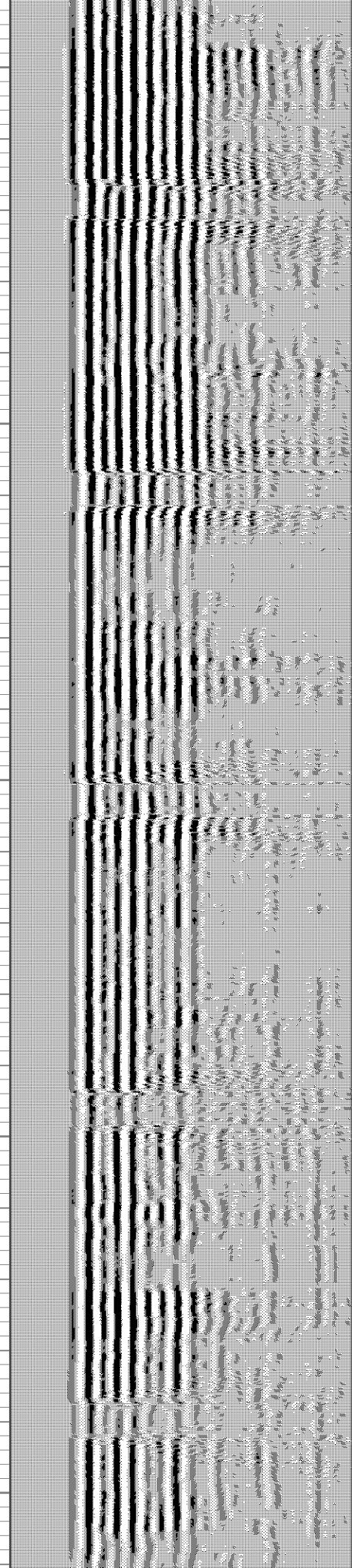
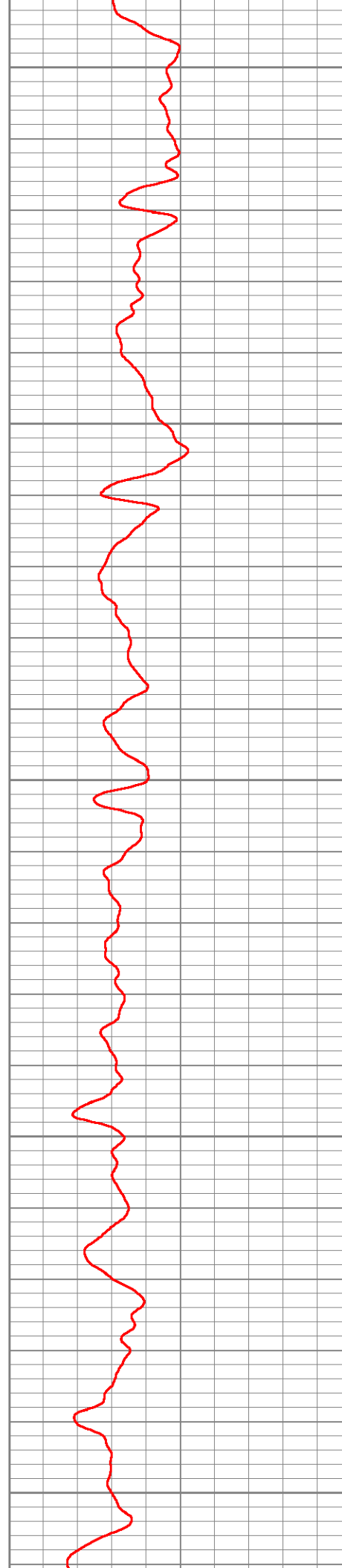
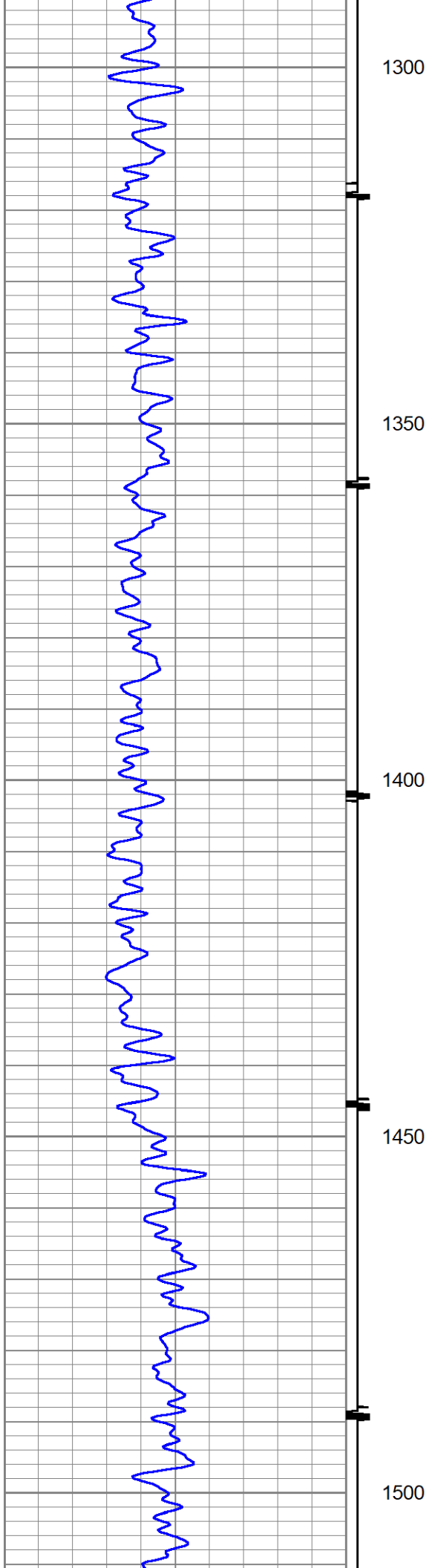
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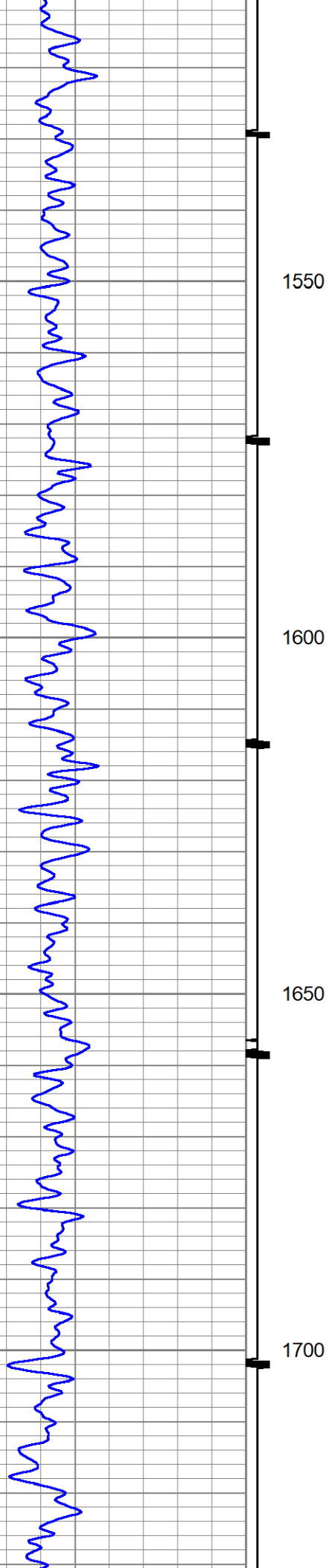
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1200

1250





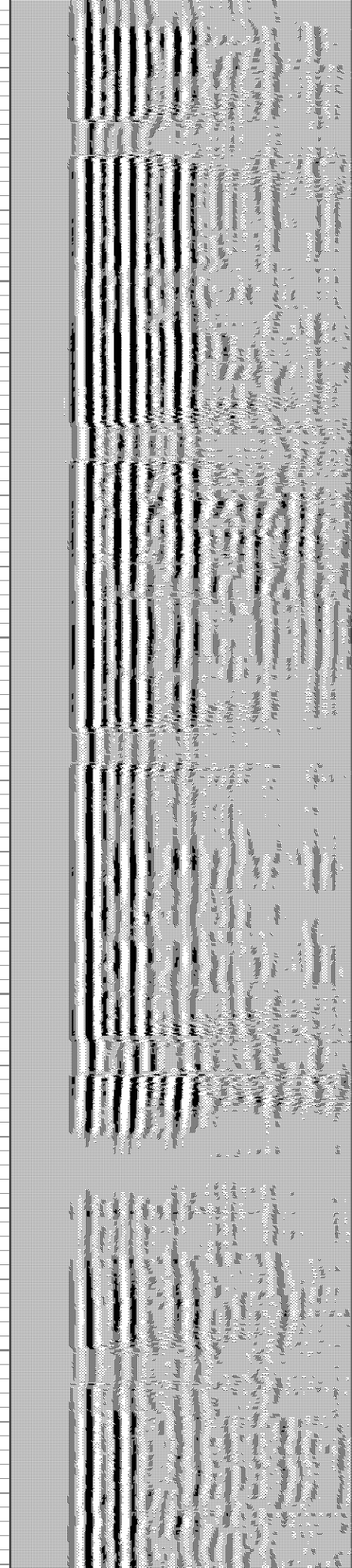


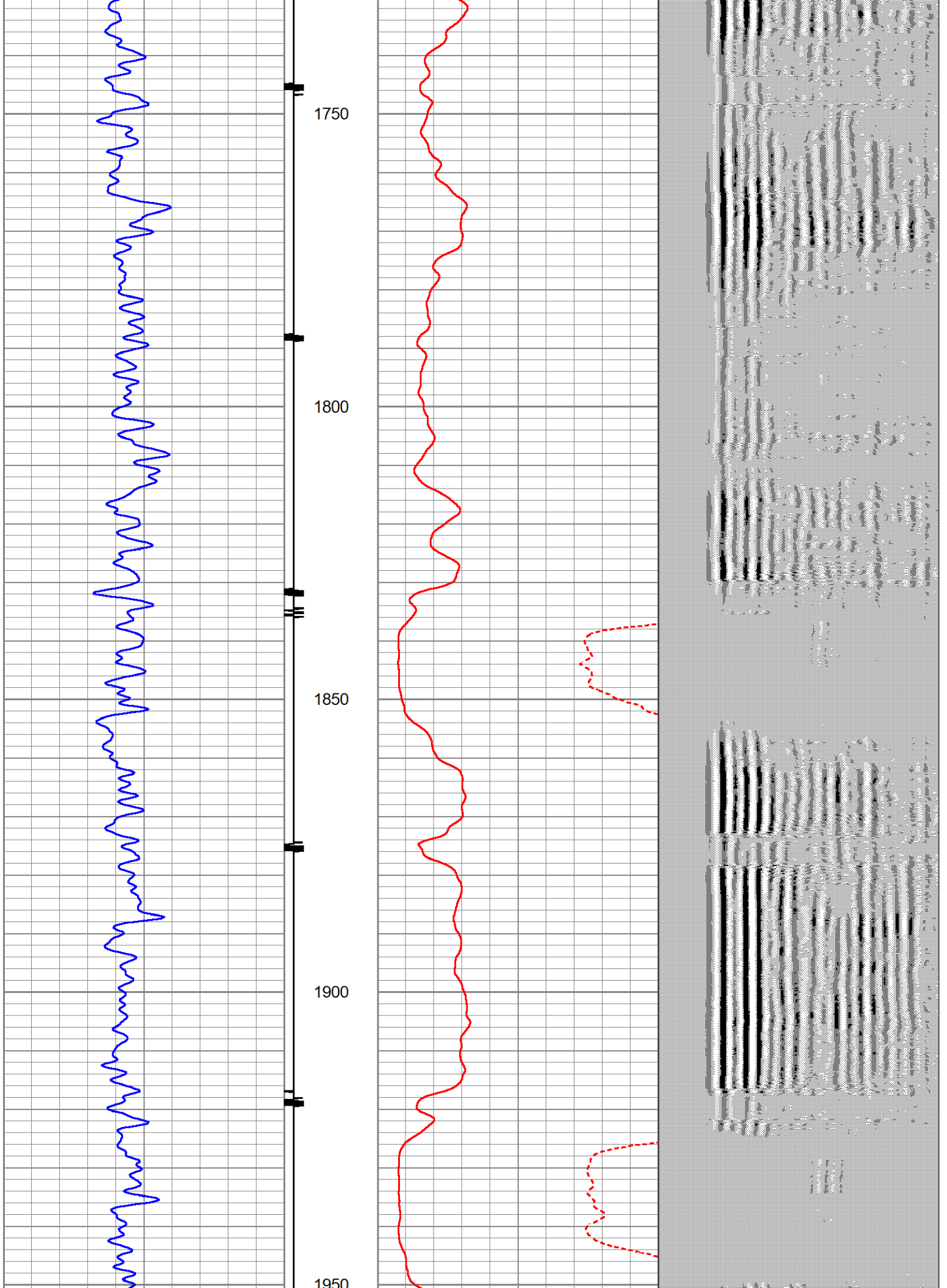
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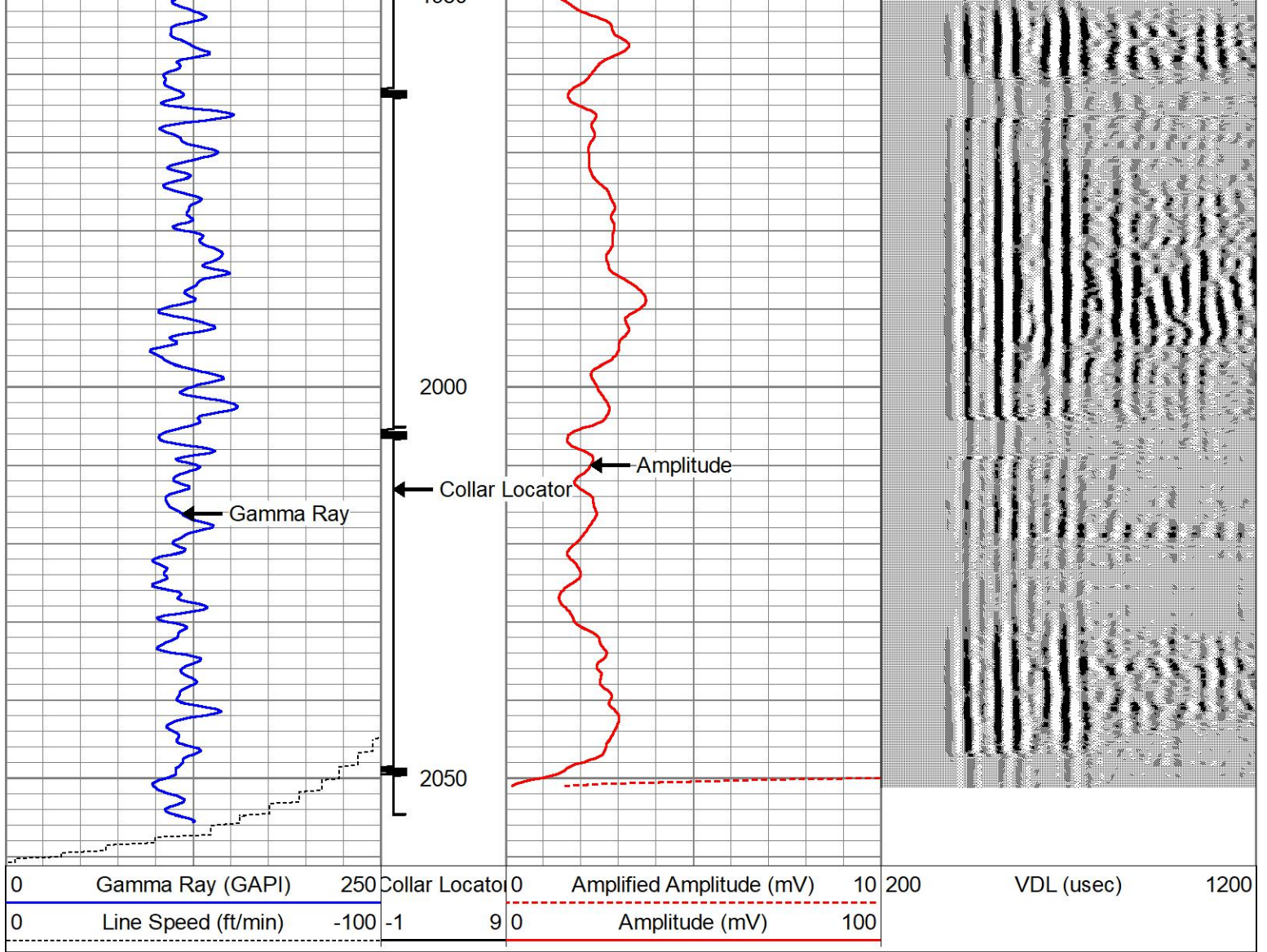
1600

1650

1700



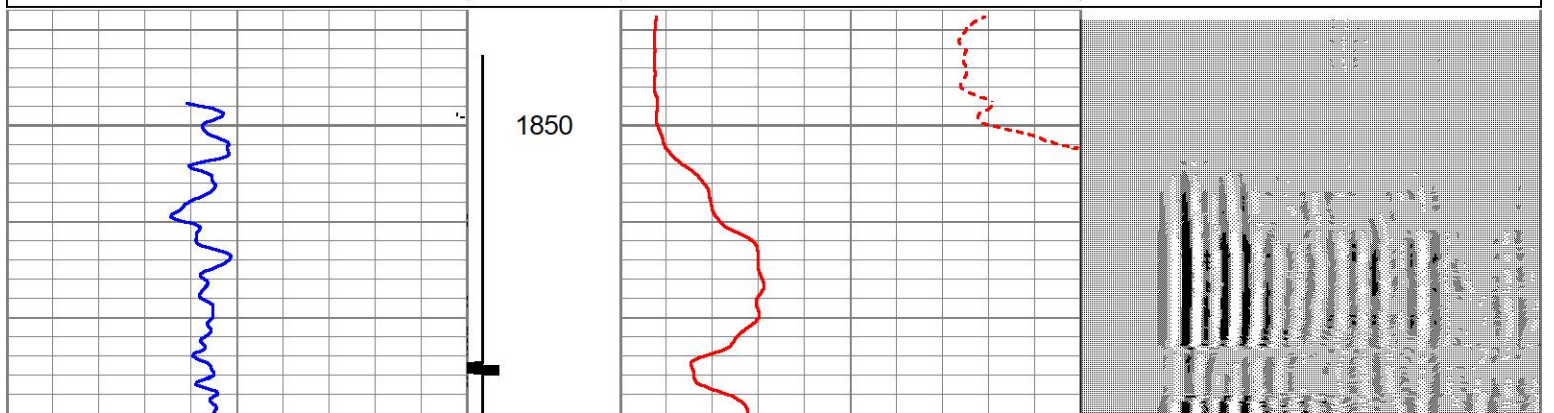


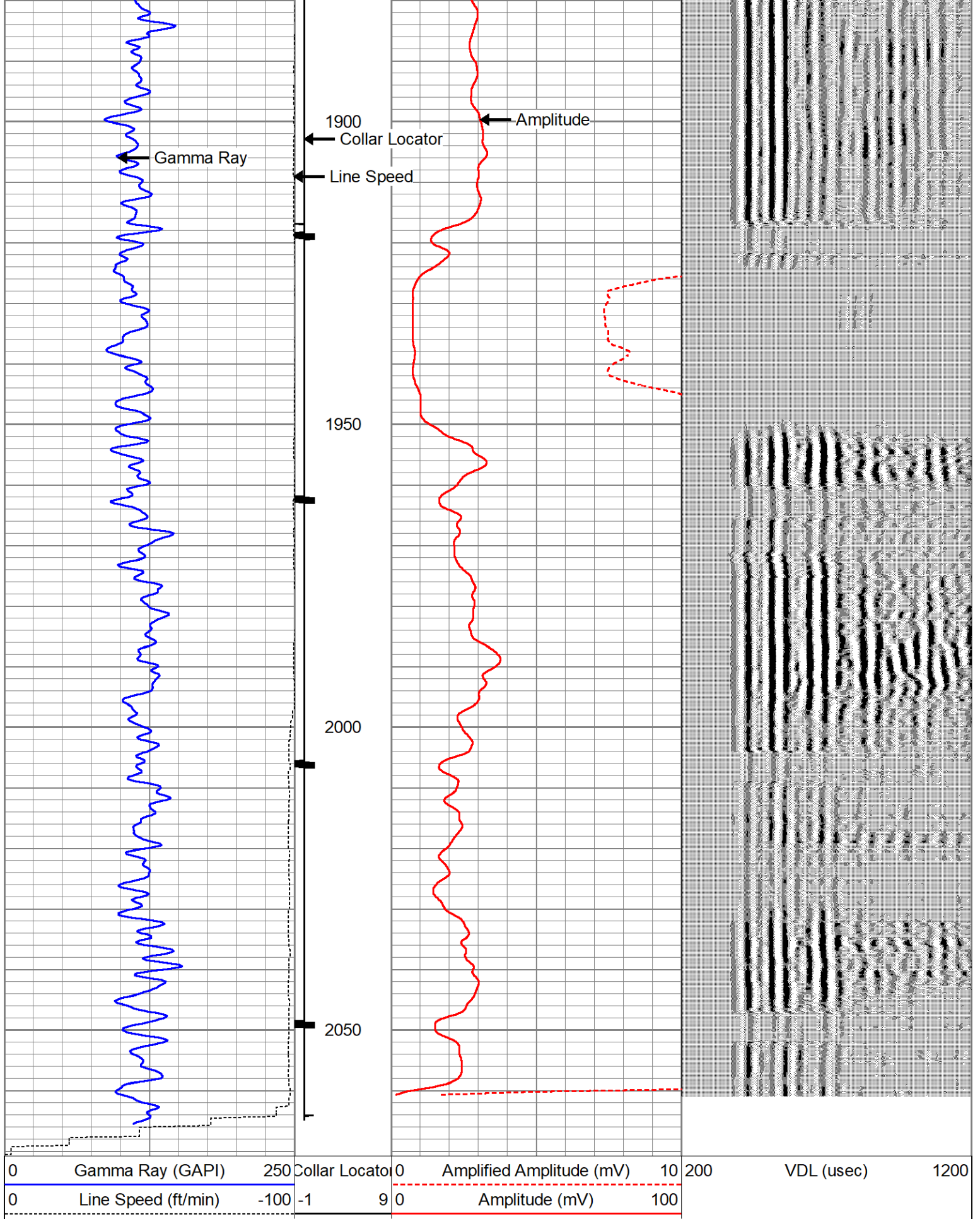


REPEAT PASS

Database File hbr pc g11-21dcb15-28-20.db
 Dataset Pathname pass4
 Presentation Format cbl_dr
 Dataset Creation Thu May 28 10:24:13 2020
 Charted by Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	250	Collar Locator	0	Amplified Amplitude (mV)	10	200	VDL (usec)	1200
0	Line Speed (ft/min)	-100	-1	9	0	Amplitude (mV)	100		





Calibration Report

Database File hbr pc g11-21dcb15-28-20.db
 Dataset Pathname pass5
 Dataset Creation Thu May 28 10:20:21 2020

Gamma Ray Calibration Report

Serial Number: 275
 Tool Model: Probe
 Performed: Thu May 09 10:03:43 2013

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
 Calibrator Reading: 1.0 cps

Sensitivity: 1.0000 GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: 275
 Tool Model: Probe

Calibration Casing Diameter: 4.500 in
 Calibration Depth: 370.992 ft

Master Calibration, performed Thu May 28 10:08:24 2020:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.000	0.402	1.000	81.196	199.419	1.000
CAL						
5'	0.000	0.267	1.000	81.196	300.424	1.000
SUM						
S1						
S2						
S3						
S4						
S5						
S6						
S7						
S8						

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL						

Air Zero Calibration, performed Thu May 28 09:57:00 2020:

	Raw (v)		Calibrated (v)		Results	
	Zero		Zero		Offset	
3'	0.000		0.000		0.000	
5'	0.000		0.000		0.000	
SUM						
S1						
S2						
S3						
S4						
S5						
S6						
S7						

Log Variables

DatabaseC:\ProgramData\Warrior\Data\hbr pc g11-21dcb15-28-20.db

Dataset field/well/run1/pass5/_vars_

Top - Bottom

BOREID in 7.875	BOTTEMP degF 100	CASEOD in 4.5	CASETHCK in 0	CASEWGHT lb/ft 11.6	MAXAMPL mV 0	MINAMPL mV 1	MINATTN db/ft 0.8
PERFS No	PPT usec 0	SRFTEMP degF 0	TDEPTH ft 0				

Variable Description

BOREID : Borehole I.D.

BOTTEMP : Bottom Hole Temperature

CASEOD : Casing O.D.

CASETHCK : Casing Thickness

CASEWGHT : Casing Weight

MAXAMPL : Maximum Amplitude

MINAMPL : Minimum Amplitude

MINATTN : Minimum Attenuation

PERFS : Perforation Flag

PPT : Predicted Pipe Time

SRFTEMP : Surface Temperature

TDEPTH : Total Depth

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			CS6CENT-CSSROLLER	2.20	1.69	4.41
WVF3FT	10.97		CBL-Probe (275) Probe 2.75" Dual Receiver Bond	8.75	2.75	60.00
WVF5FT	9.97					
WVFSYNC HEADVOLT	6.78 6.78					
CCL	5.84					

