



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company Kerr-McGee Oil & Gas Onshore, L.P.
Well Bulthaupt 21-6
Field Wattenberg
County Weld State Colorado

Location: API #: 05-123-26883

Other Services
NONE

SEC 6 TWP 1N RGE 68W

Elevation

Permanent Datum Ground Level Elevation 4972'
Log Measured From Kelly Bushing 14 FT
Drilling Measured From Kelly Bushing

K.B. 4986'
D.F. 4985'
G.L. 4972'

Date 19-APR-2017

Run Number One

Depth Driller 7879 FT

Depth Logger 4214 FT

Bottom Logged Interval 4210 FT

Top Log Interval Surface

Open Hole Size 7.875"

Type Fluid Water

Density / Viscosity 8.34 lb/gal

Max. Recorded Temp. 147°F

Estimated Cement Top Surface

Time Well Ready ROA

Time Logger on Bottom 16:28

Equipment Number HD-343

Location Fort Lupton, CO

Recorded By Robert Fogarty

Witnessed By Luis Morales

Run Number

Bit From To

Size (in) Weight (lb/ft) From To

Casing Record

Surface Casing Size (in) Wgt (lb/ft) Grade Top Bottom

Intermediate #1 8 5/8 24 J-55 14 FT 815 FT

Intermediate #2 4 1/2 11.6 I-80 14 FT 7853 FT

Liner

<<< Fold Here >>>

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 as per customer request
Depth referenced to Kelly Bushing at 14 FT
Adjusted +13.3 FT to correlate to Kelly Bushing
Log ran from 4214 FT to Surface
Log ran with 0 PSI surface induced pressure
Logging tools were clean and free of any debris upon completion of operations

Thank you for choosing Reliance Oilfield Services, LLC!!

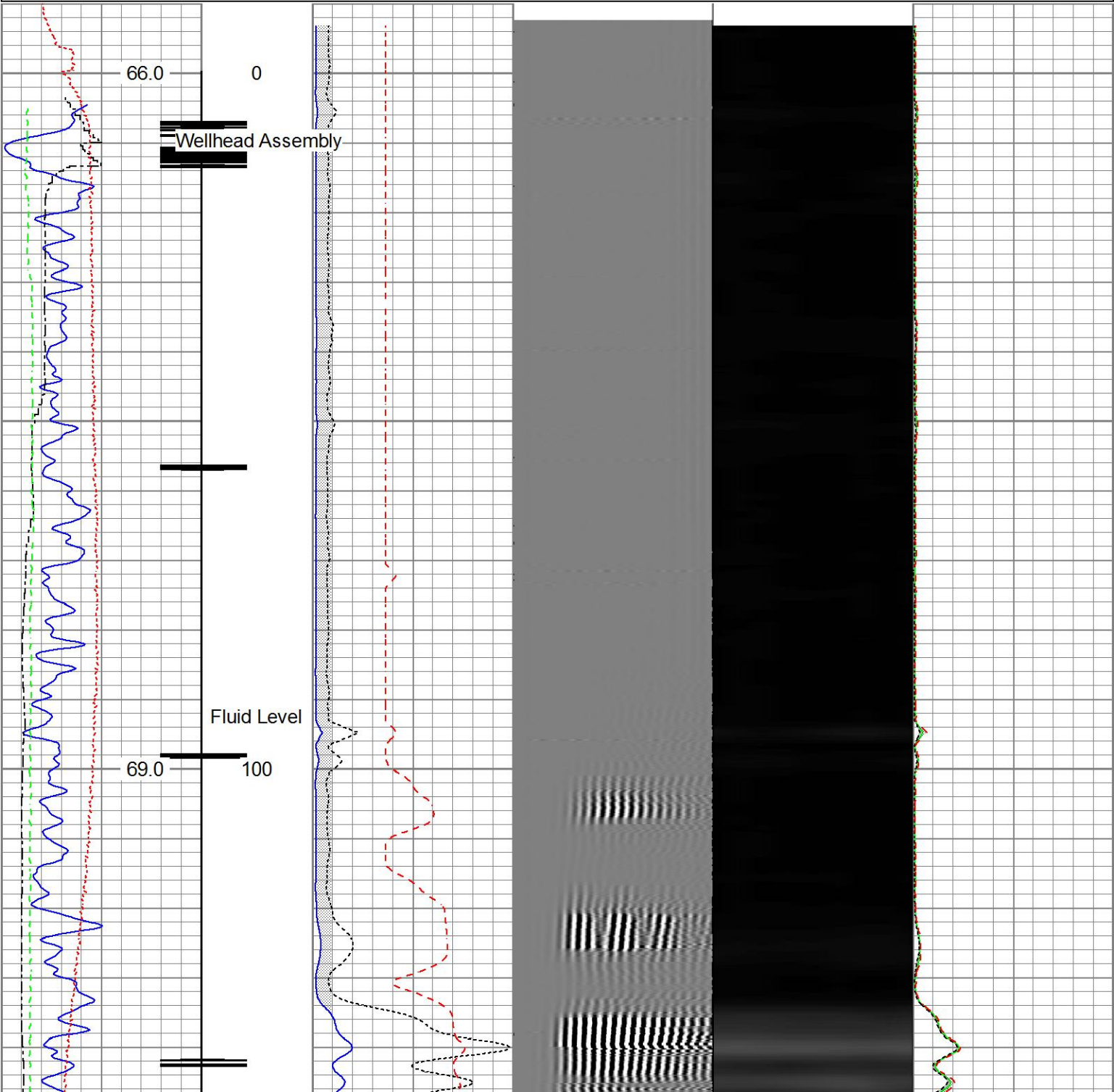


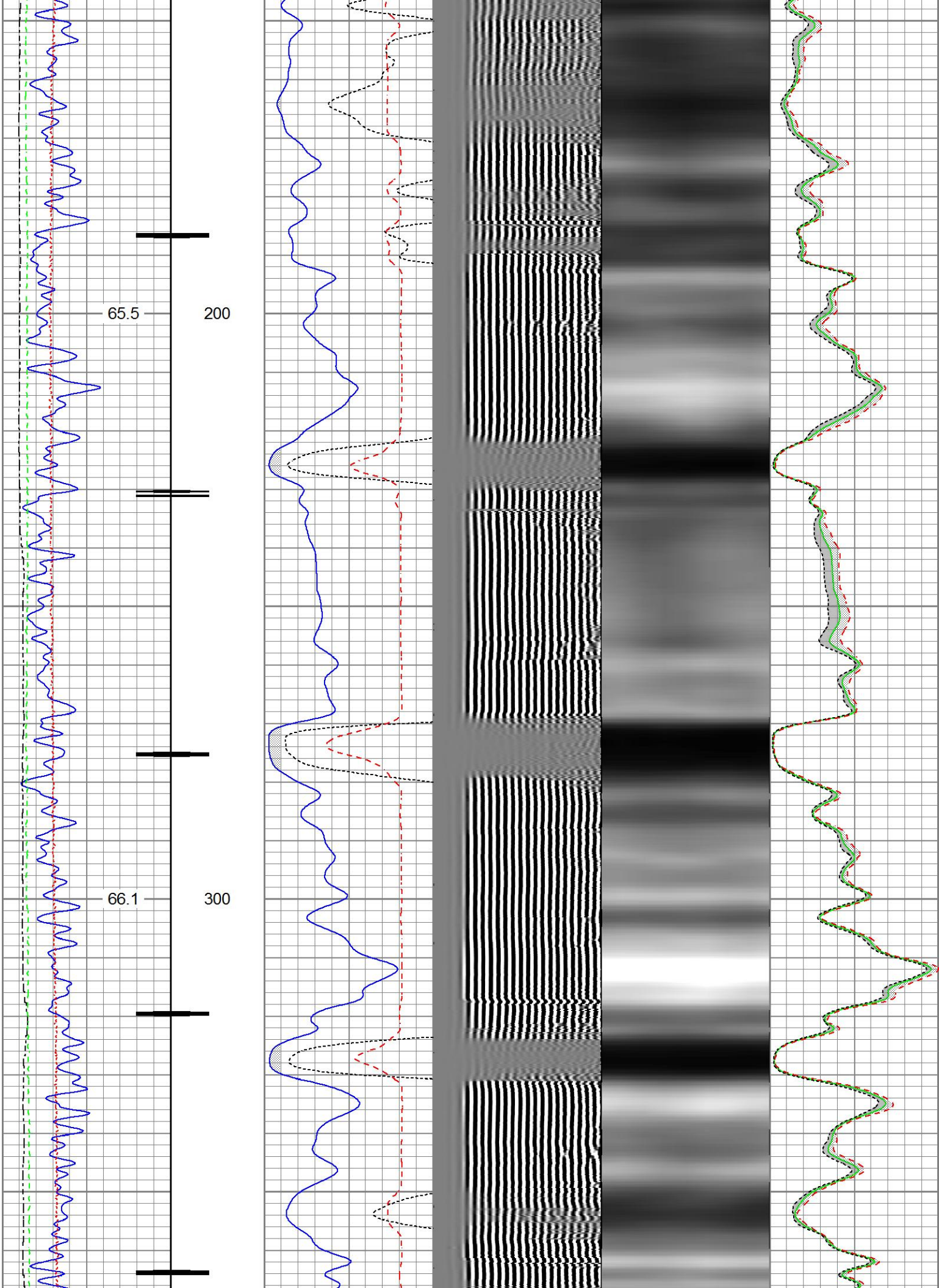
Main Pass

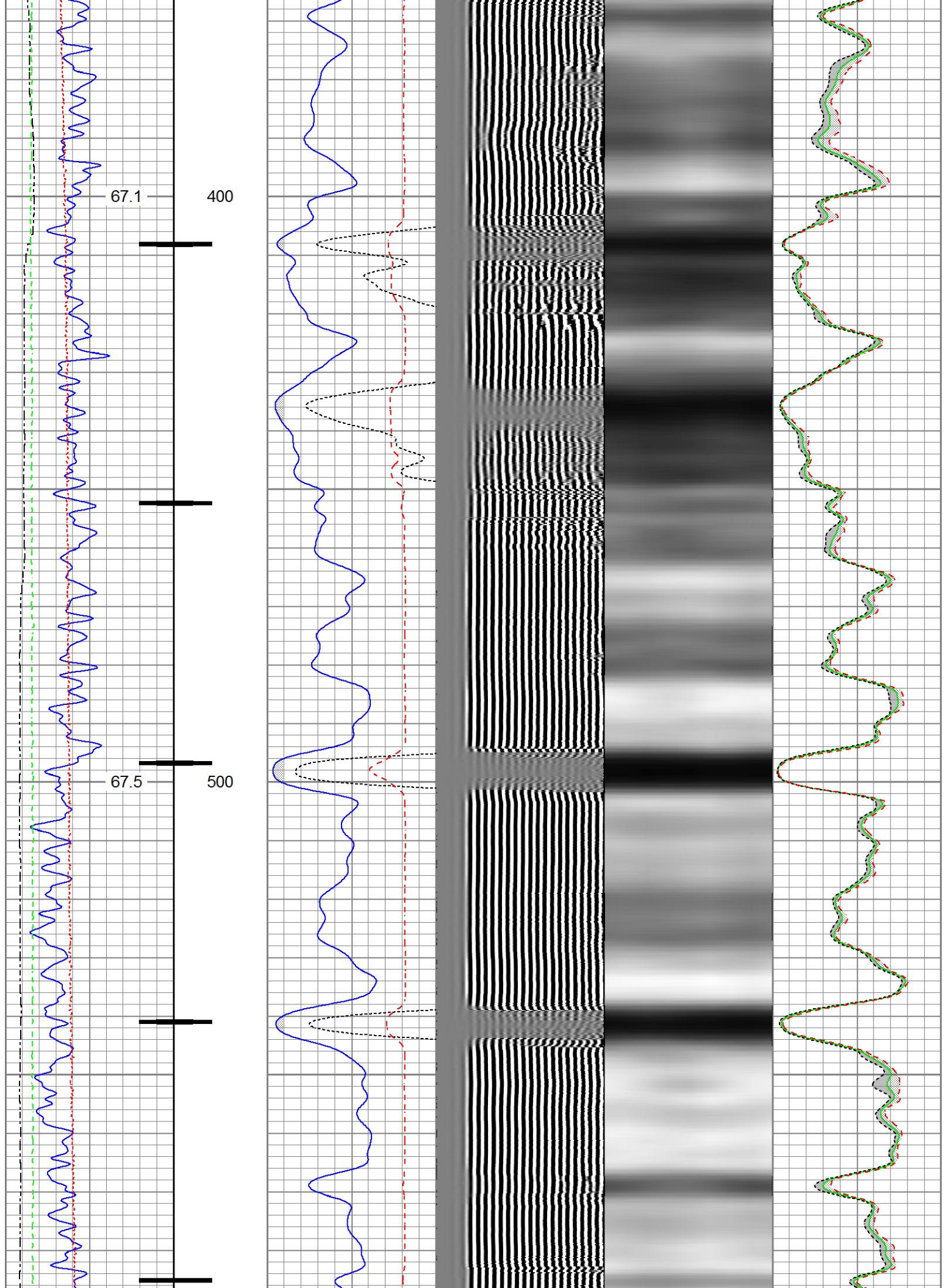
Recorded with 0 PSI Surface Induced Pressure

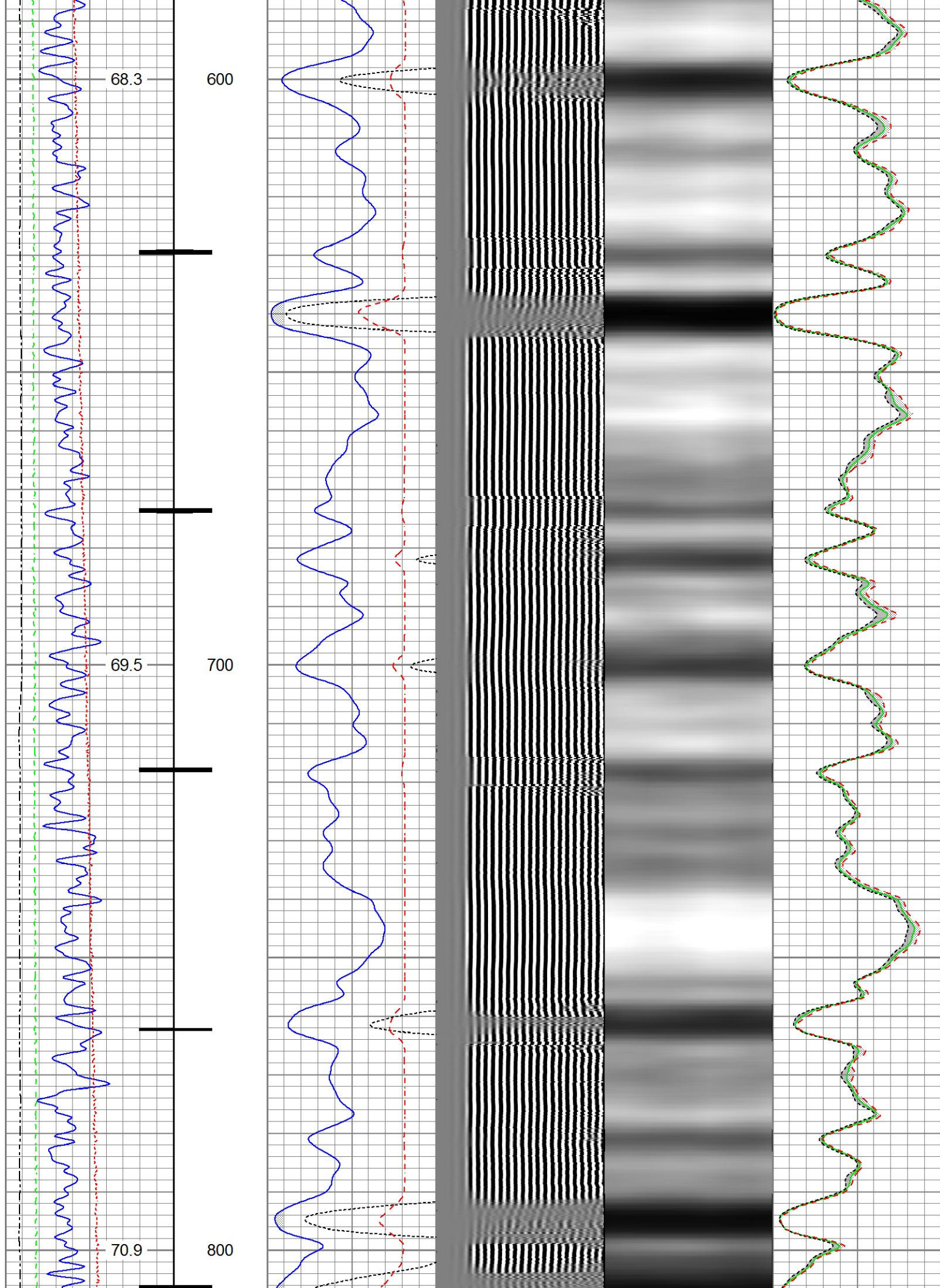
Database File	anadarko_bulthaup 21-6\0512326883_anadarko_bulthaup 21-6_04-19-17_rbl.db
Dataset Pathname	main
Presentation Format	ros_radri
Dataset Creation	Wed Apr 19 17:21:29 2017
Charted by	Depth in Feet scaled 1:240

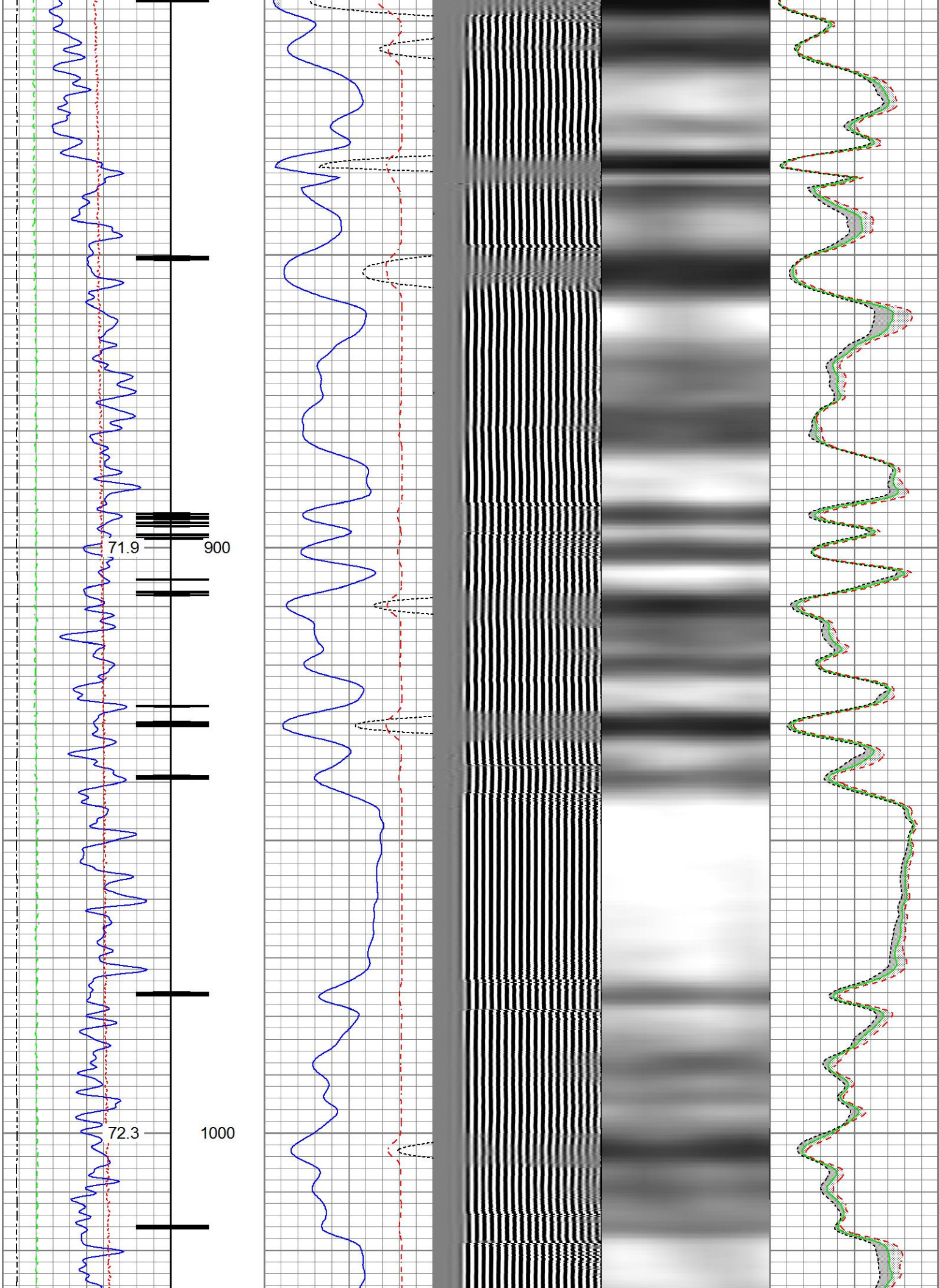
Gamma Ray		3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120		0 (mV) 100	200 1200		0 100
Casing Collar Locator		3' Amplitude x 5			Minimum Amplitude
Temperature		0 (mV) 20			0 100
0 (degF) 20		3' Travel Time			Maximum Amplitude
Line Speed		650 (usec) 150			0 100
-150 (ft/min) 150					
Line Tension					
0 (lb) 2000					

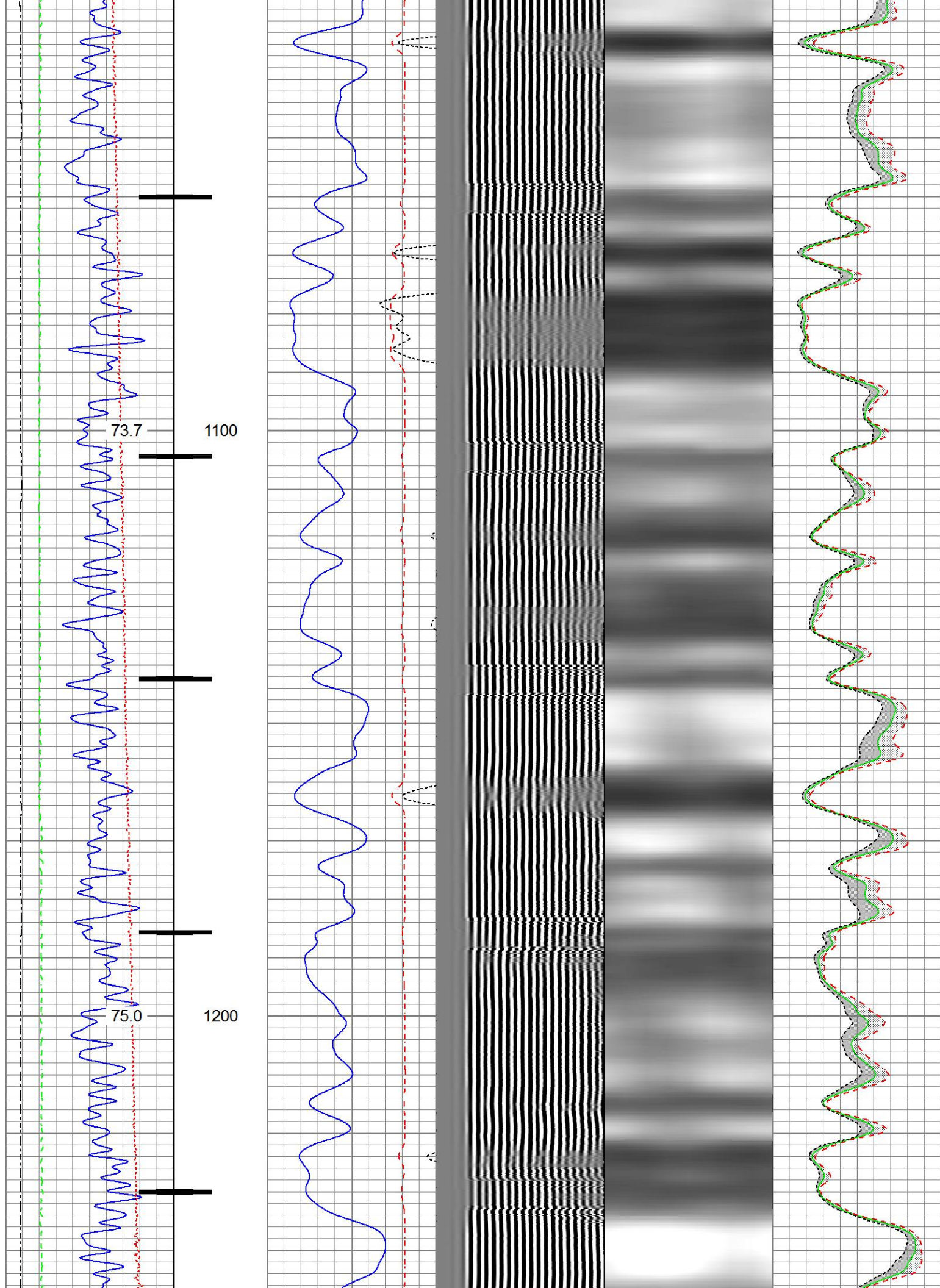


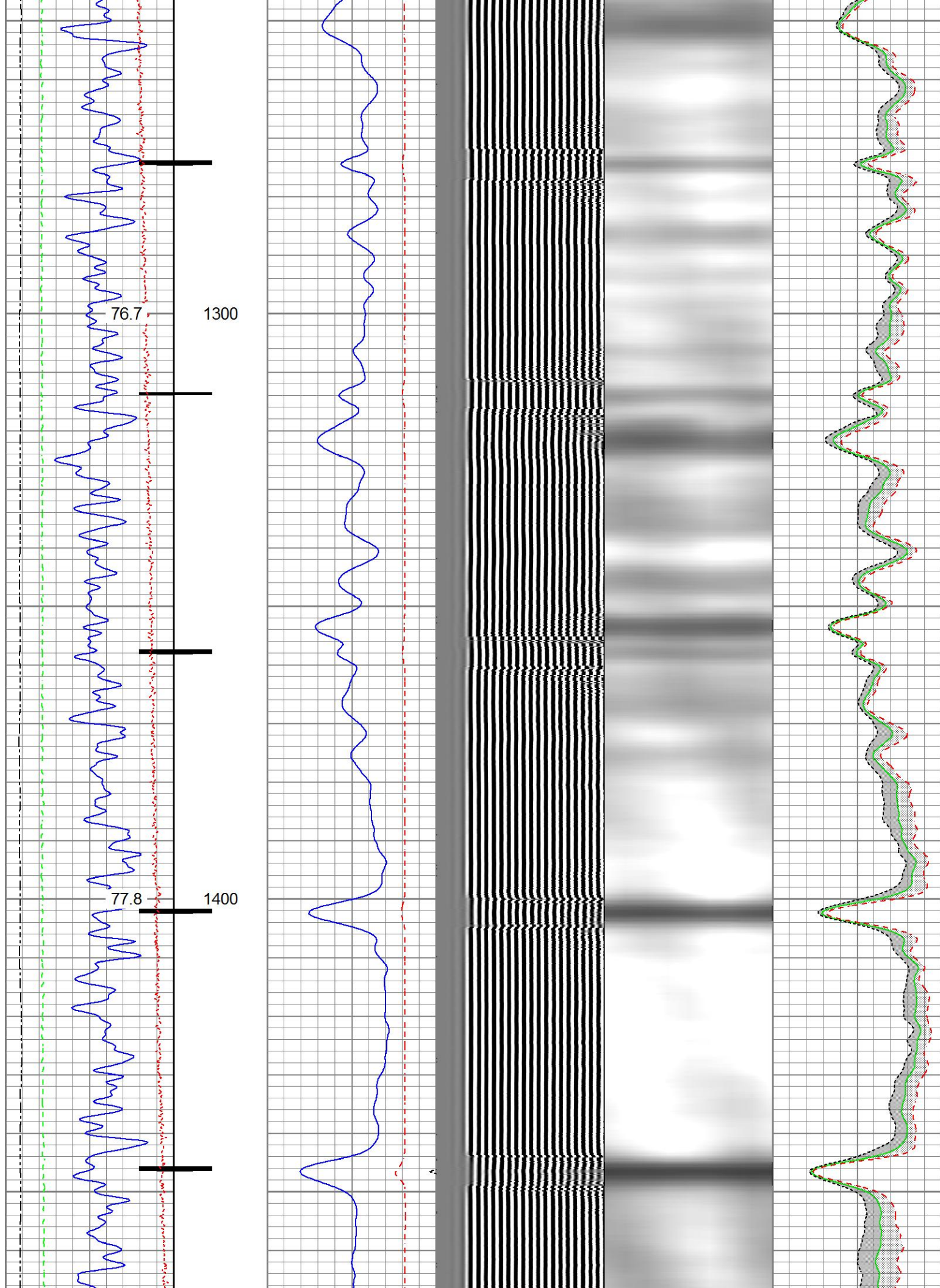


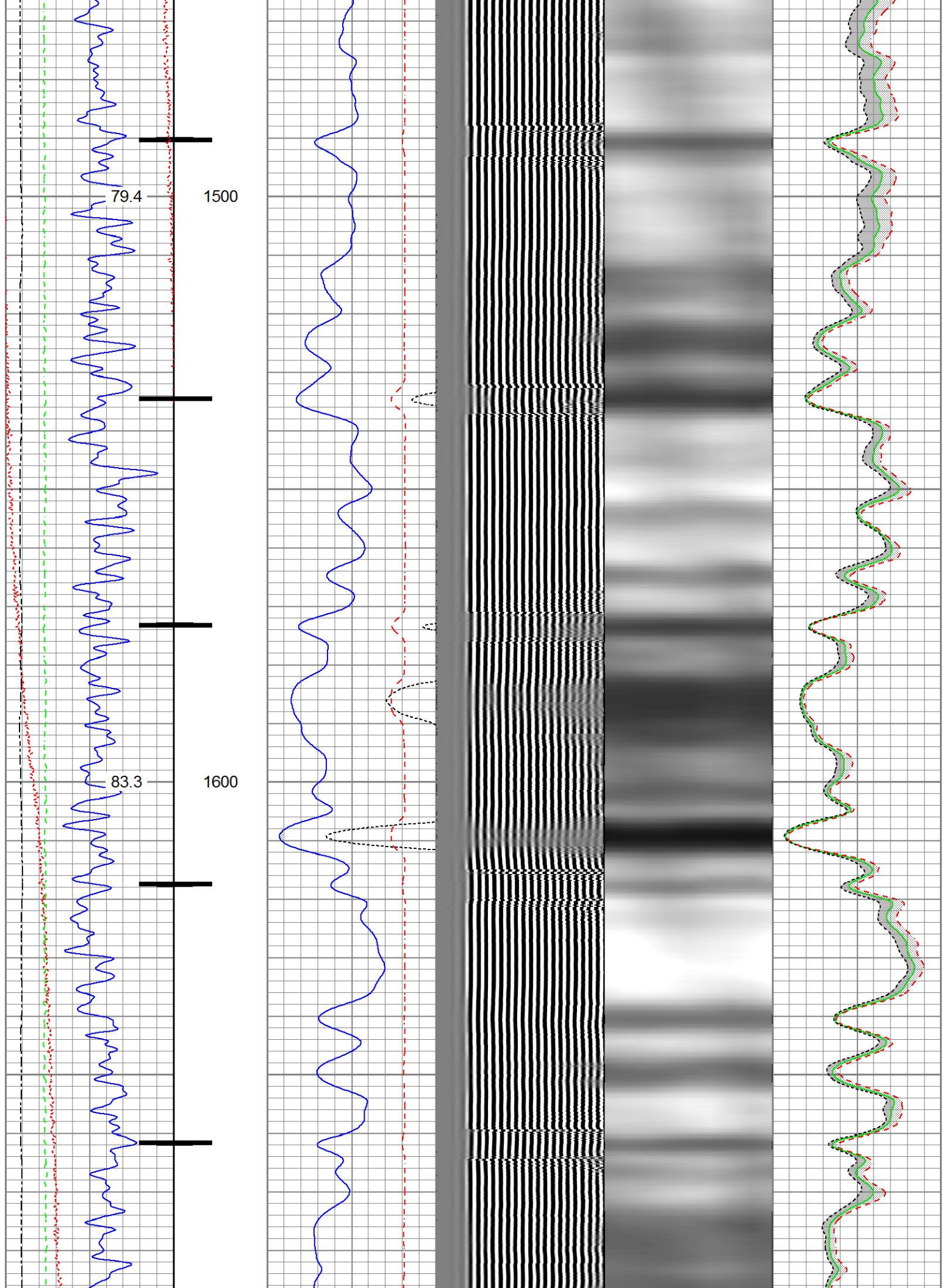


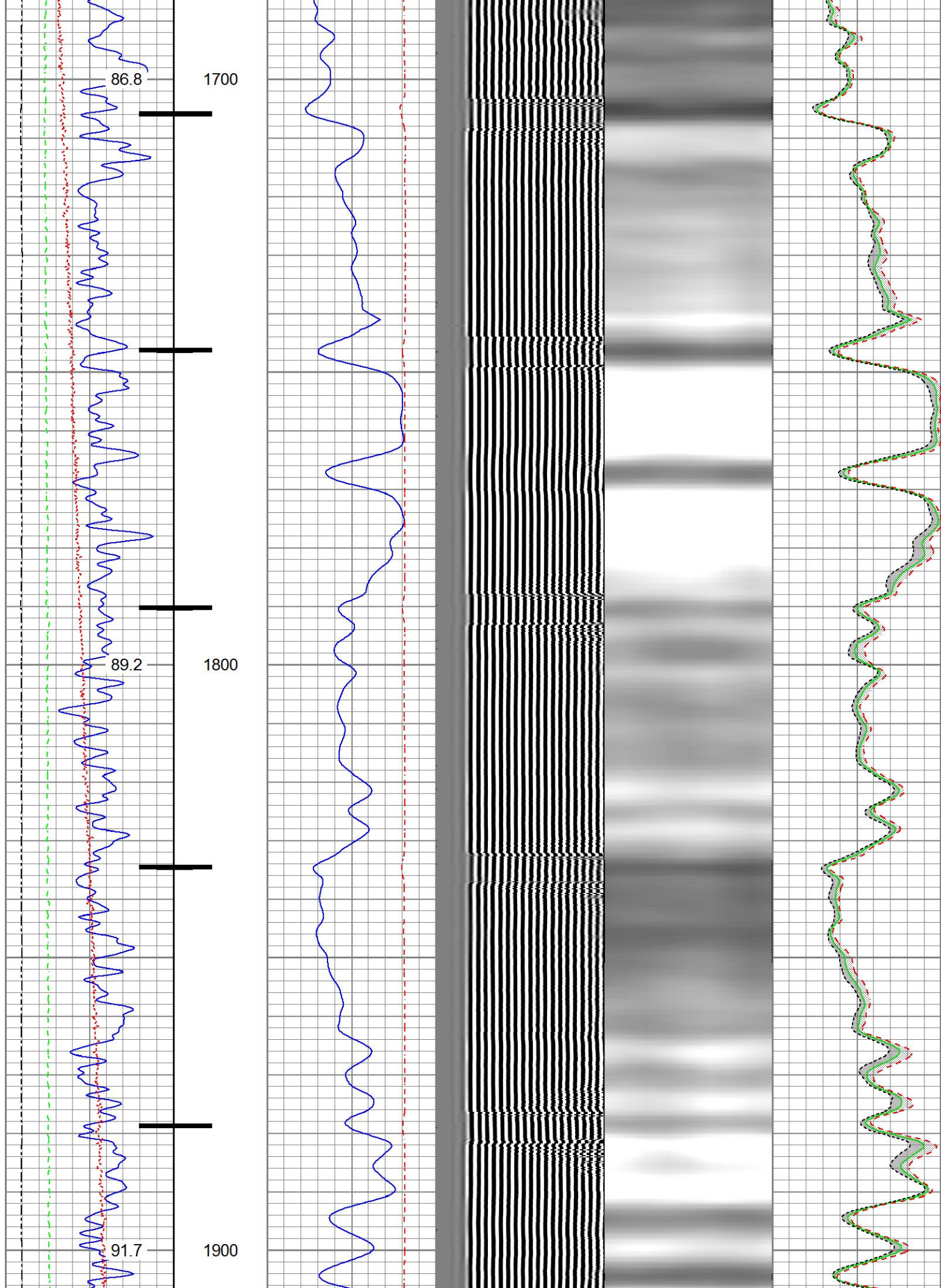


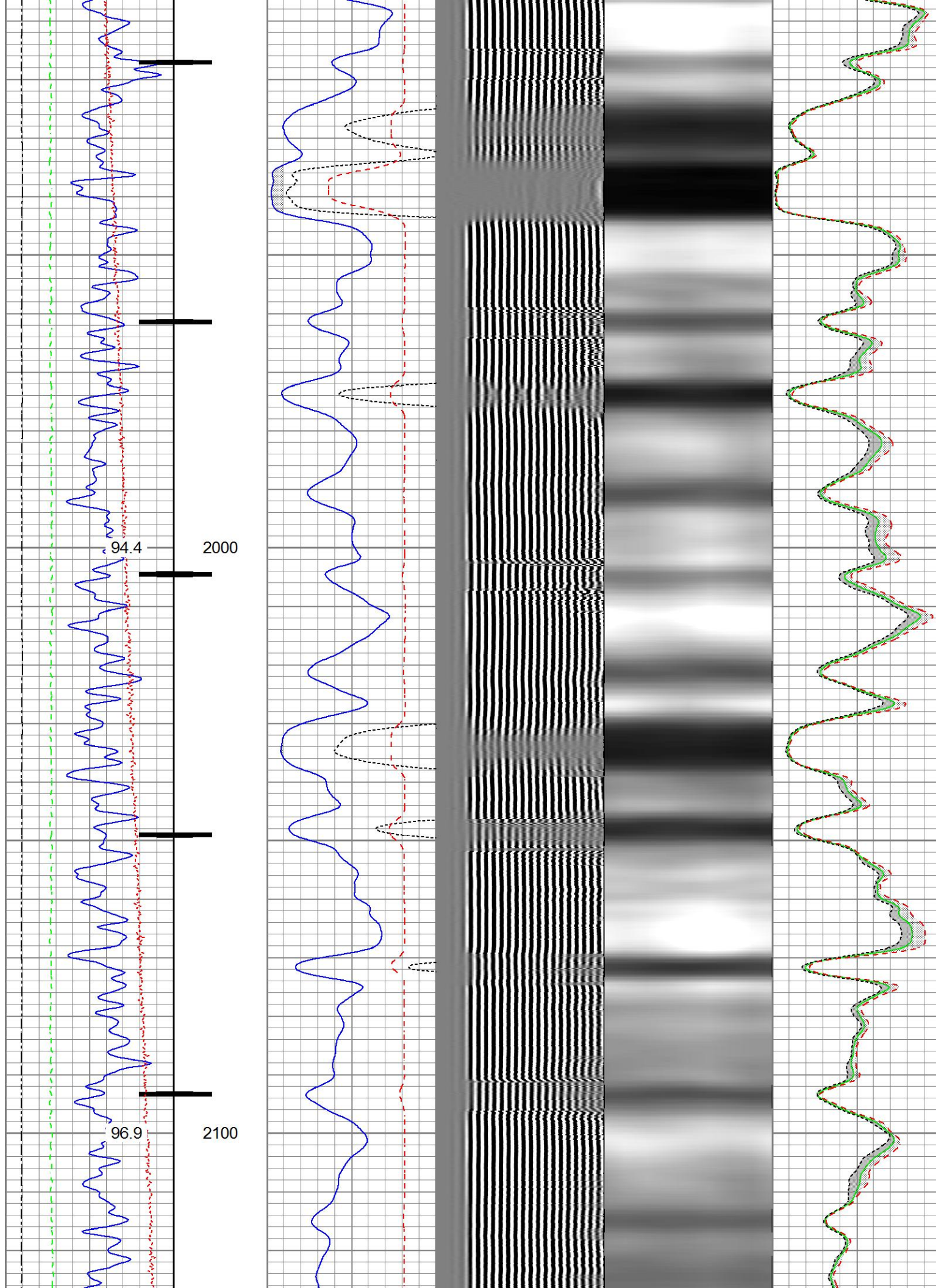


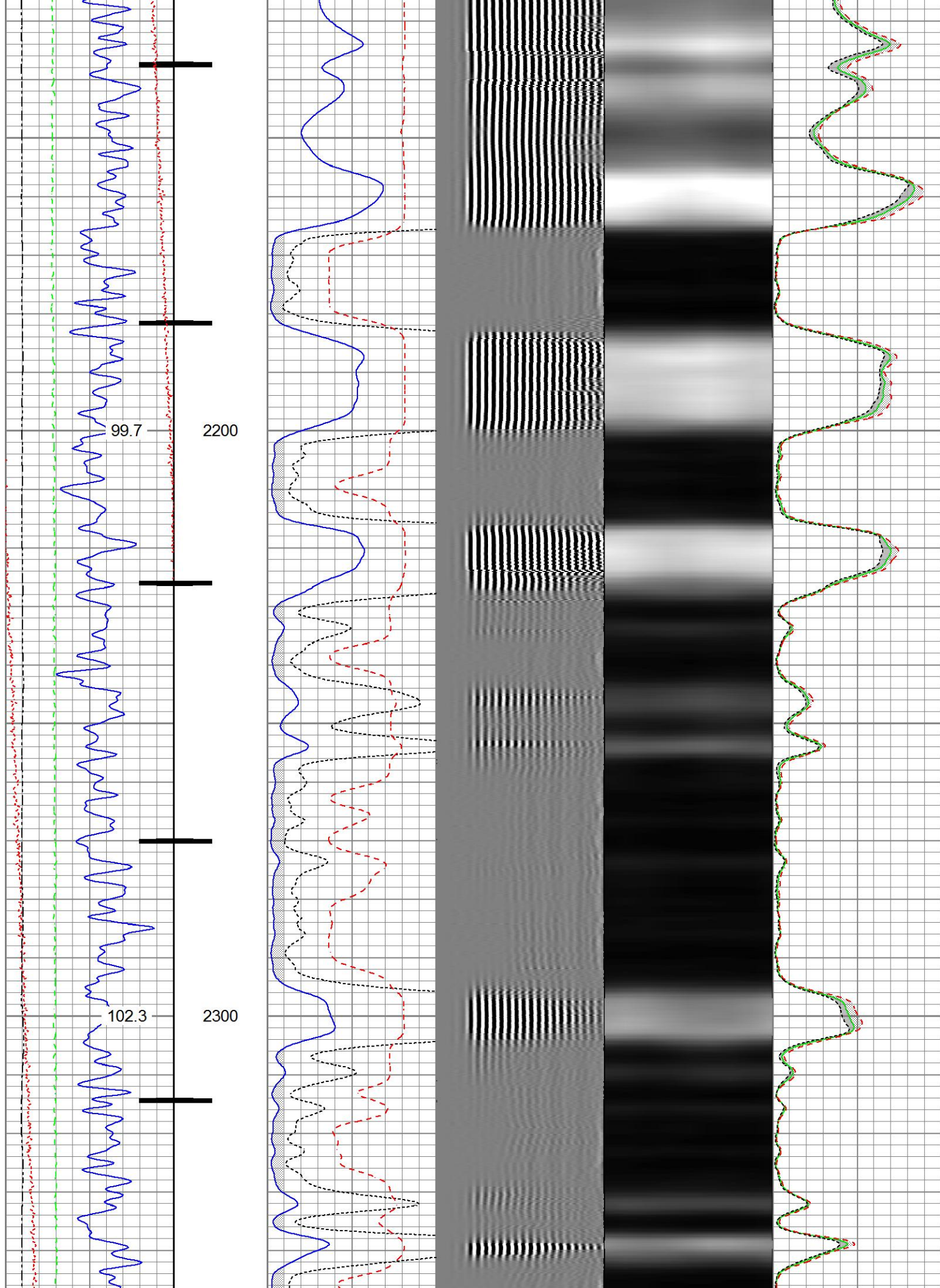


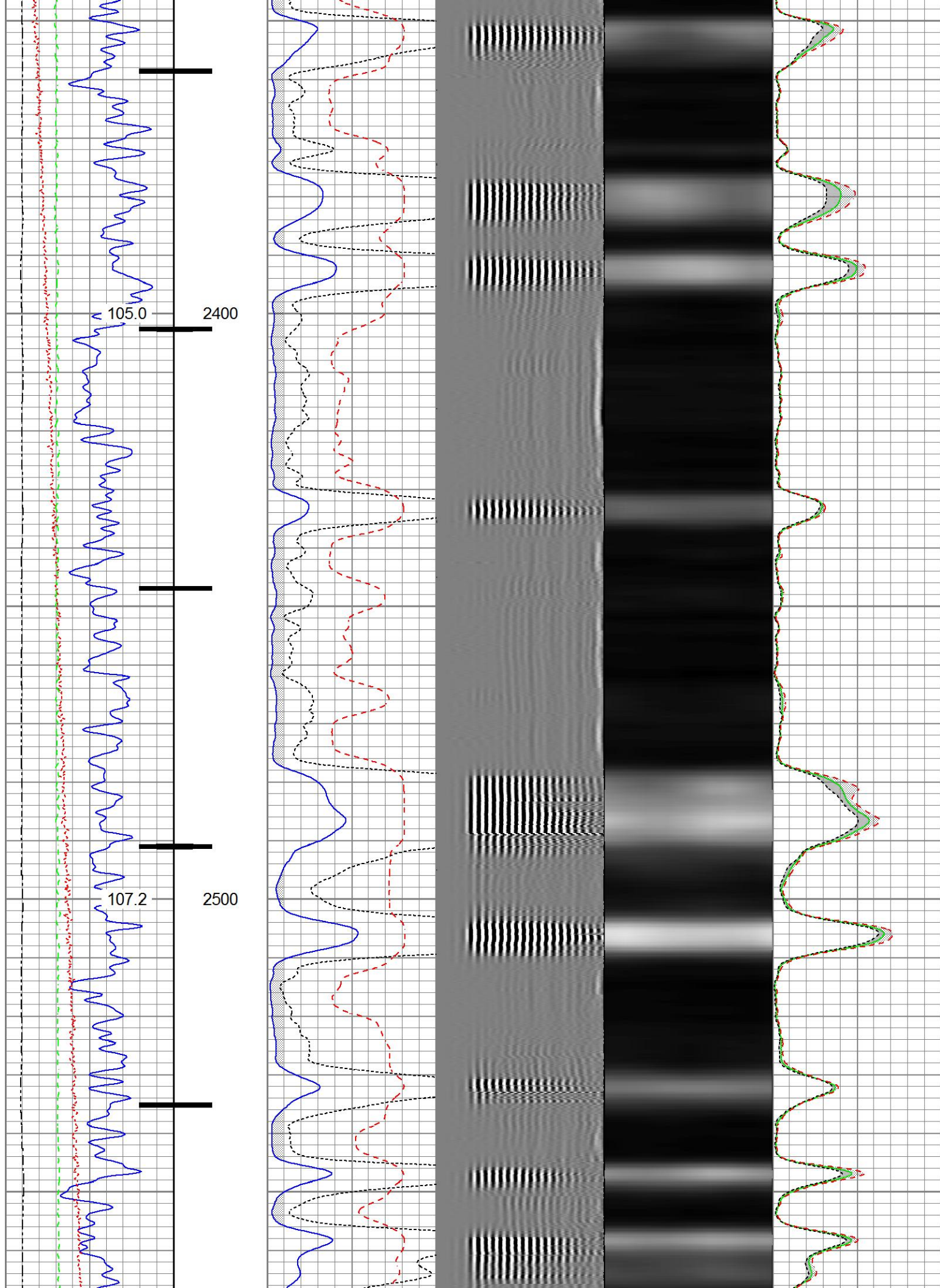


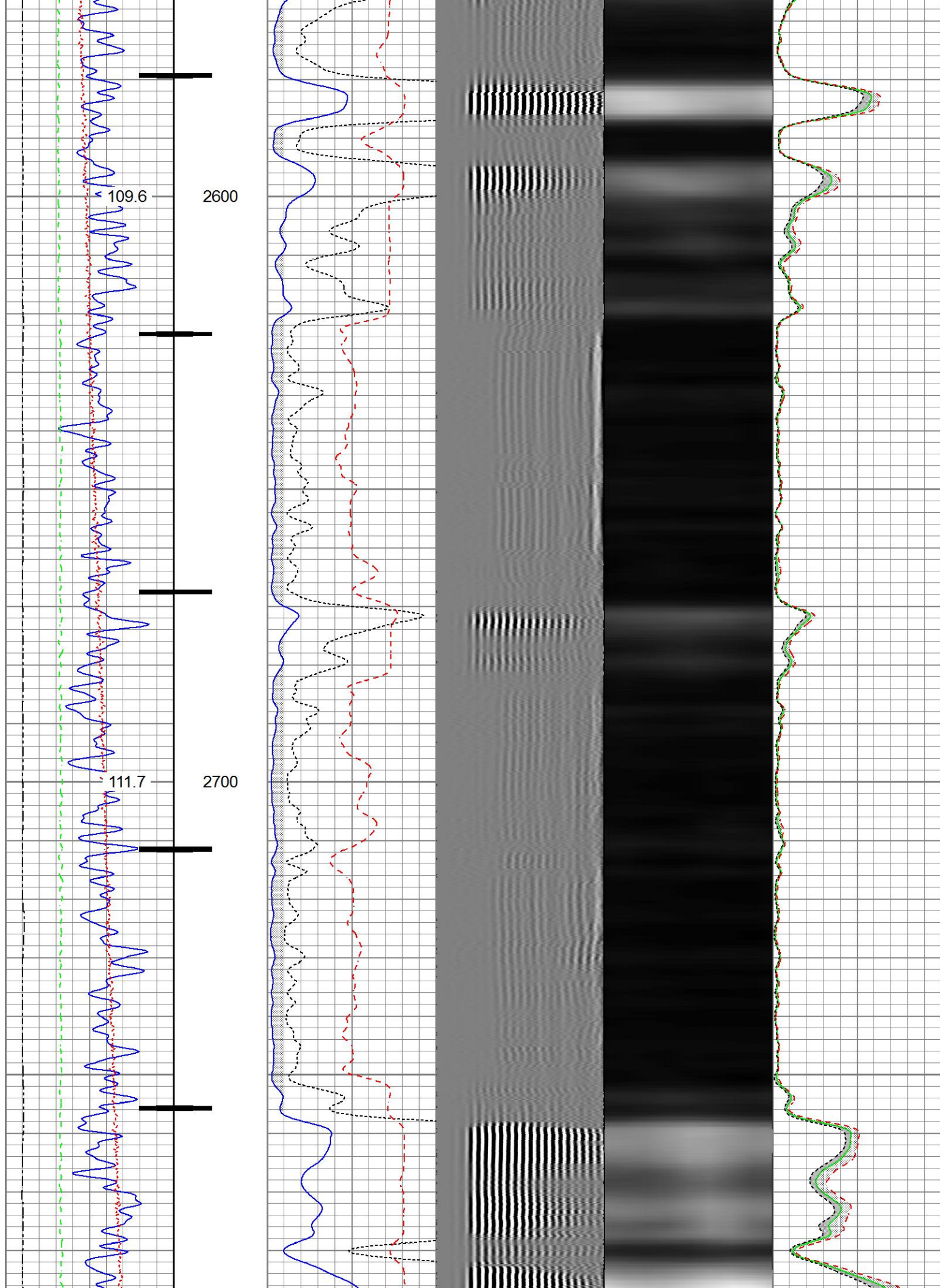


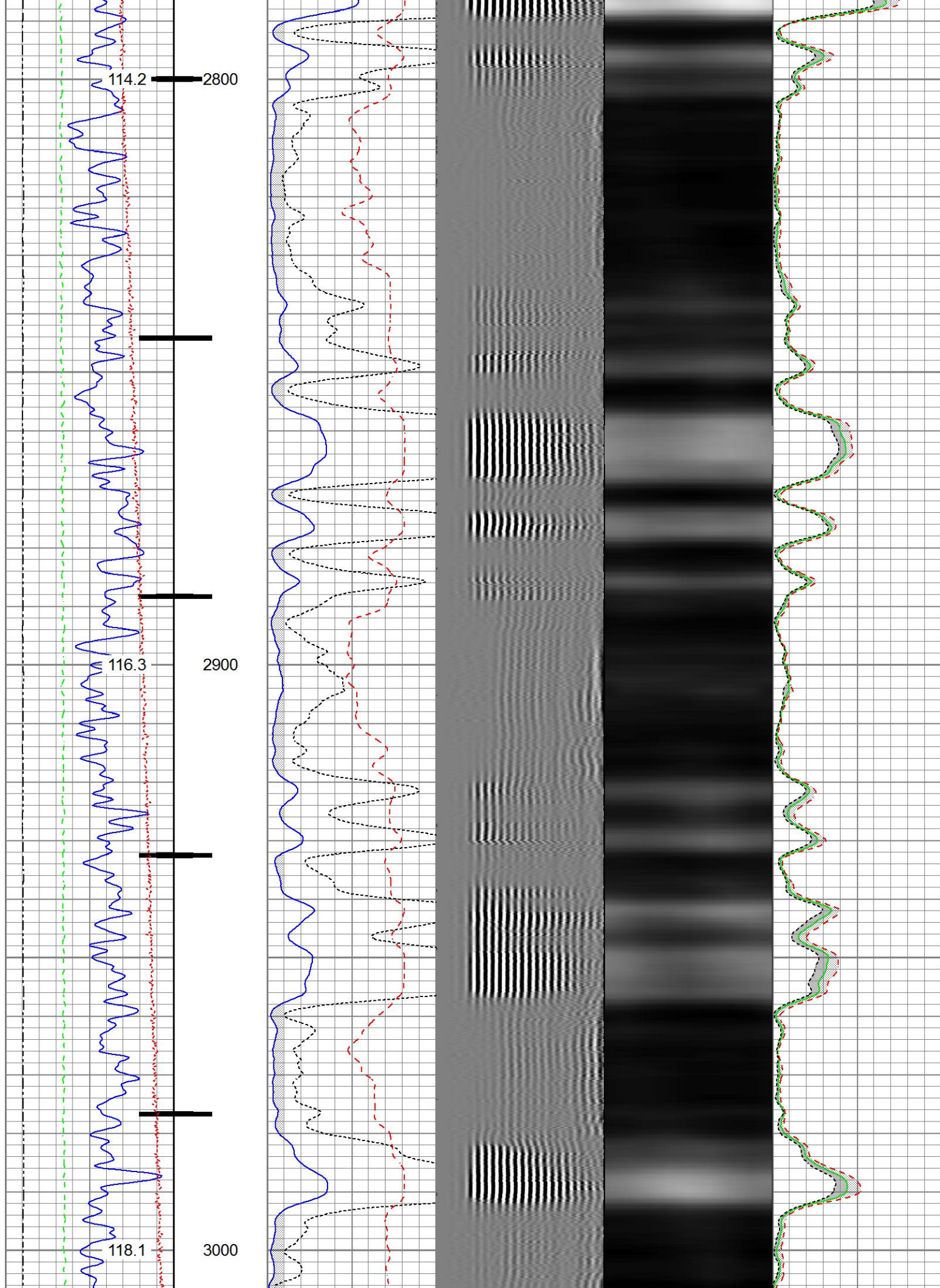


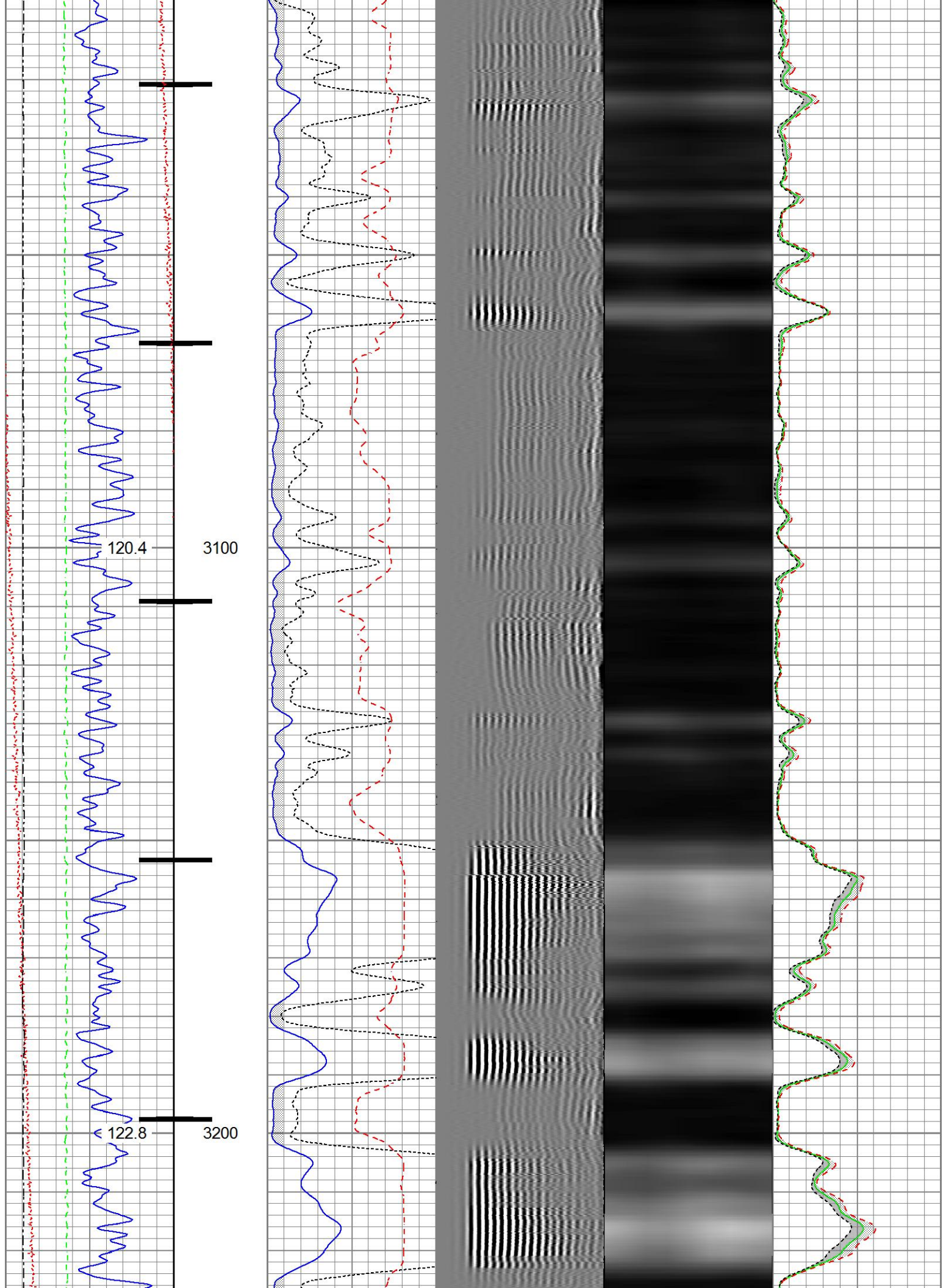


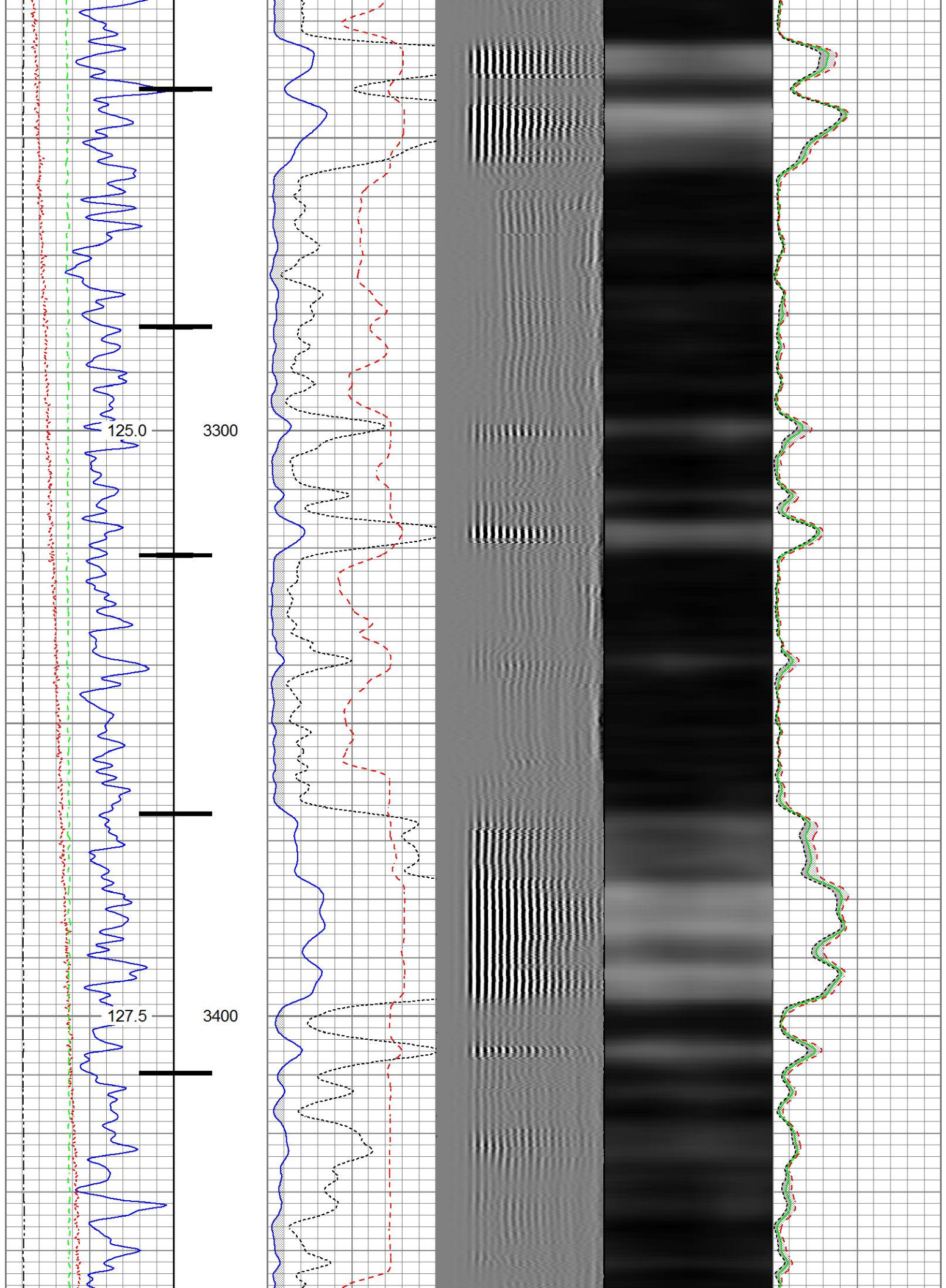


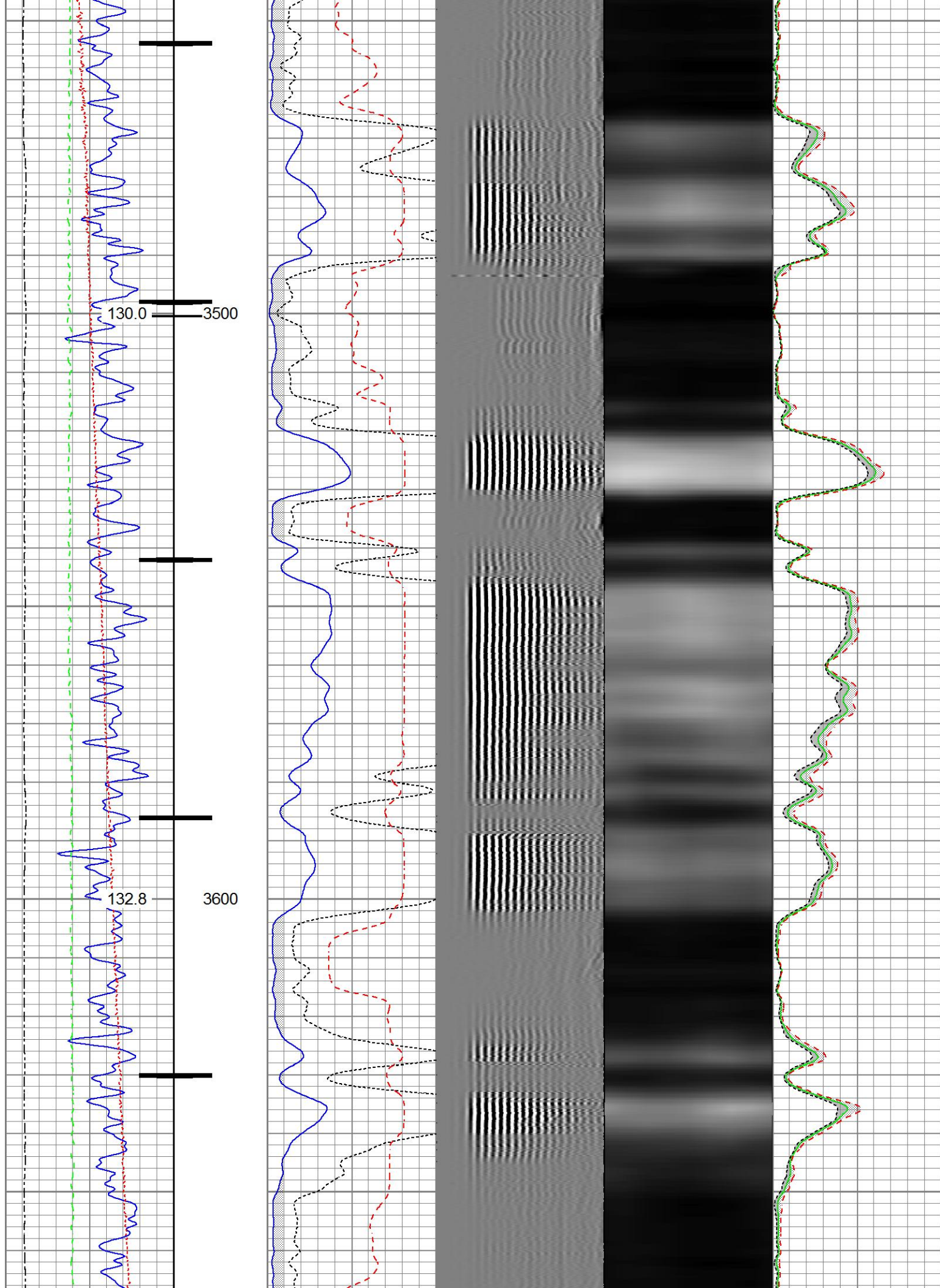


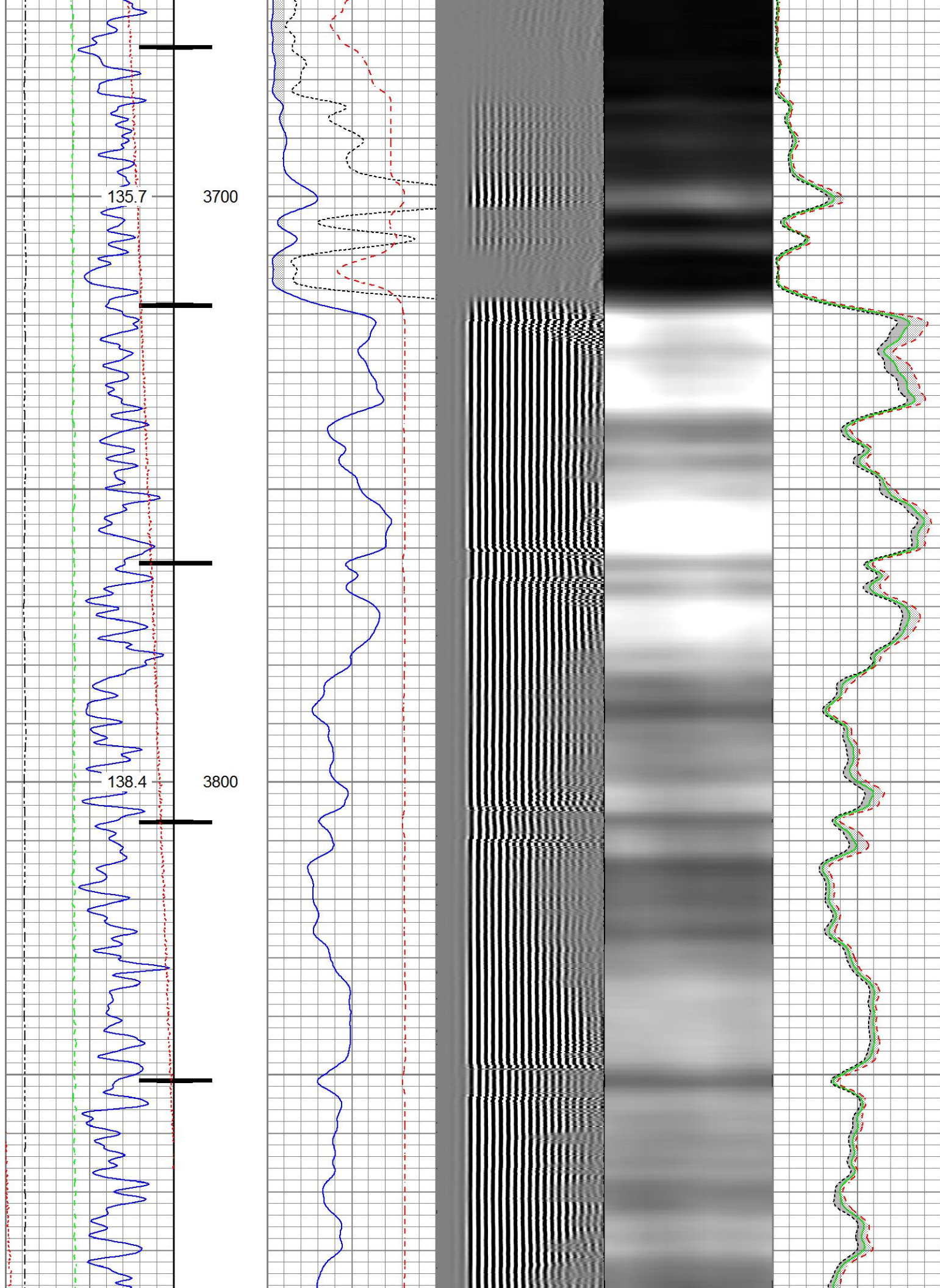


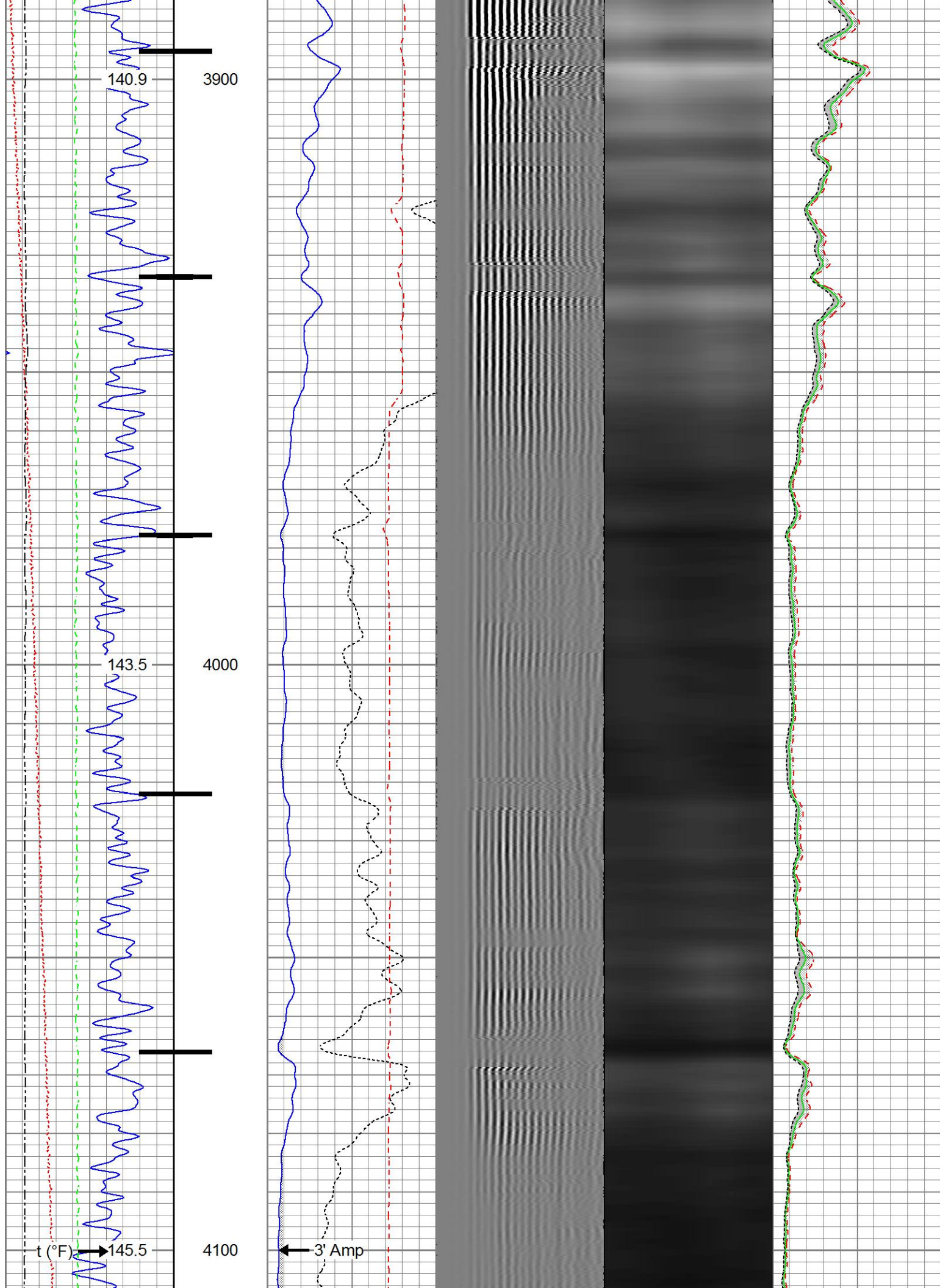


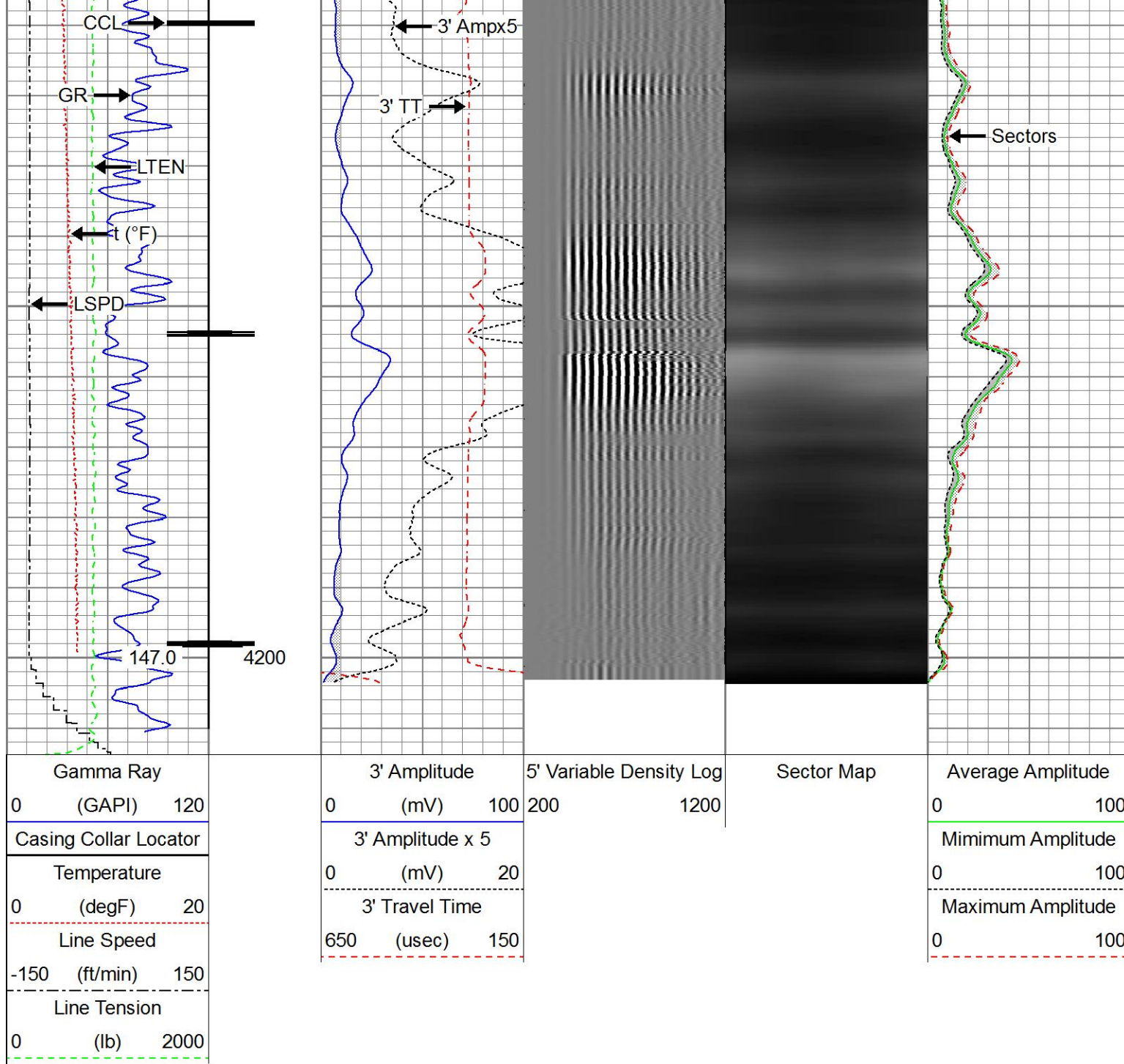








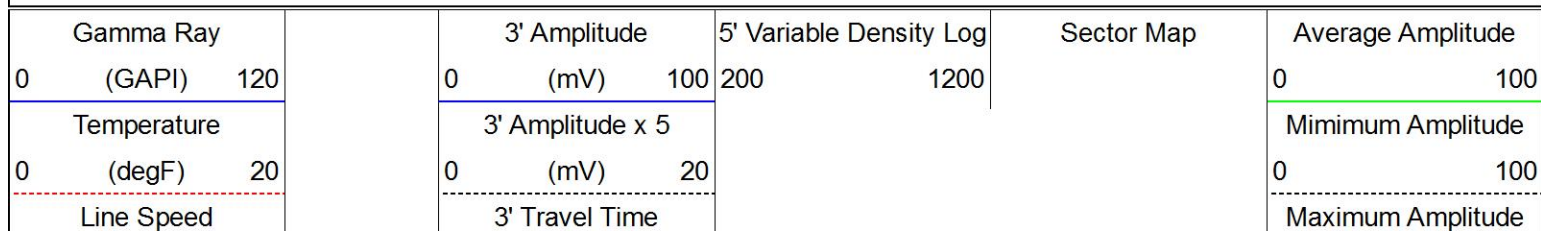




Repeat Pass

Recorded With 0 PSI Surface Induced Pressure

Database File anadarko_bulthaup 21-6\0512326883_anadarko_bulthaup 21-6_04-19-17_rbl.db
 Dataset Pathname pass9.1
 Presentation Format ros_radrii
 Dataset Creation Thu Apr 20 07:32:27 2017
 Charted by Depth in Feet scaled 1:240



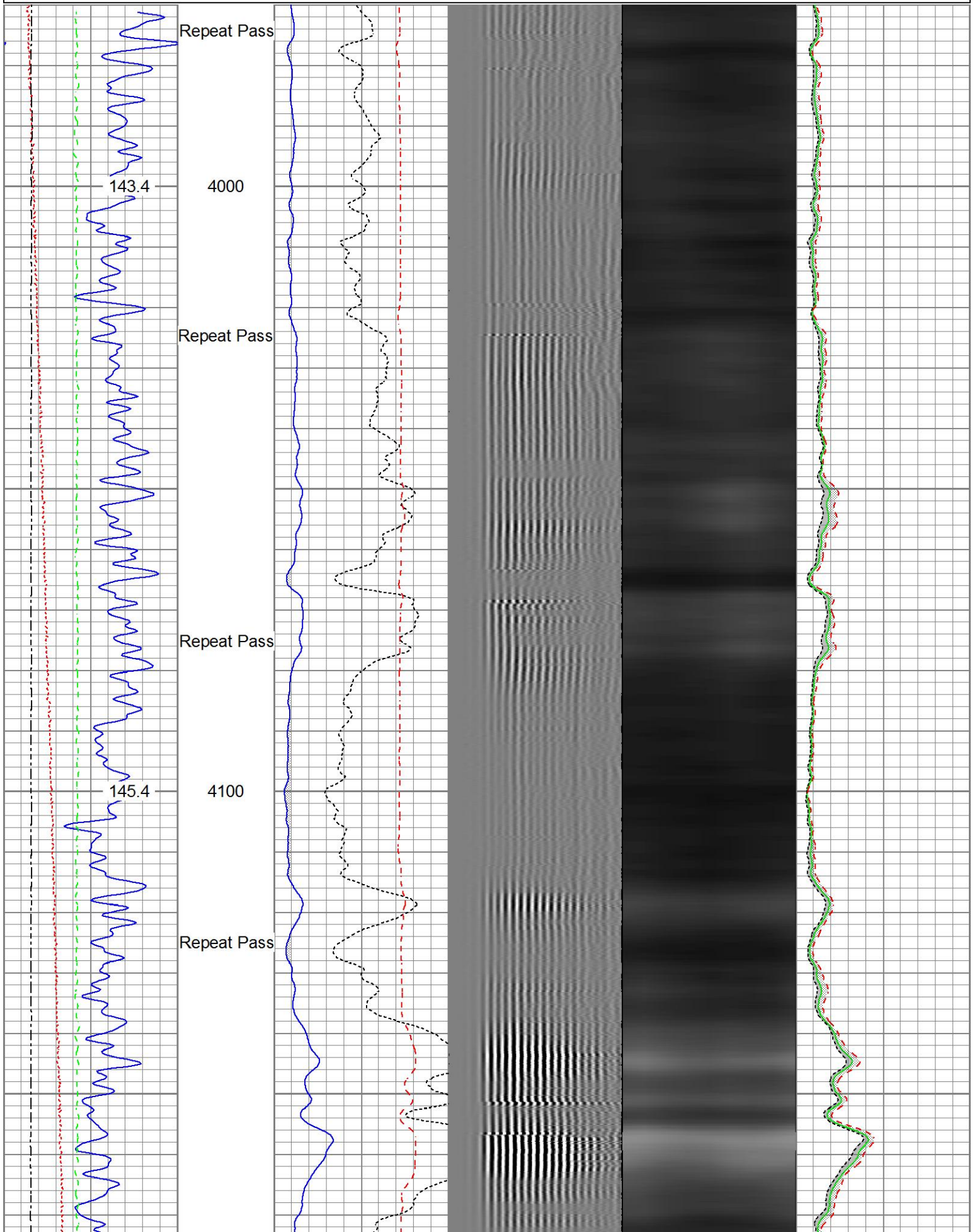
-150 (ft/min) 150

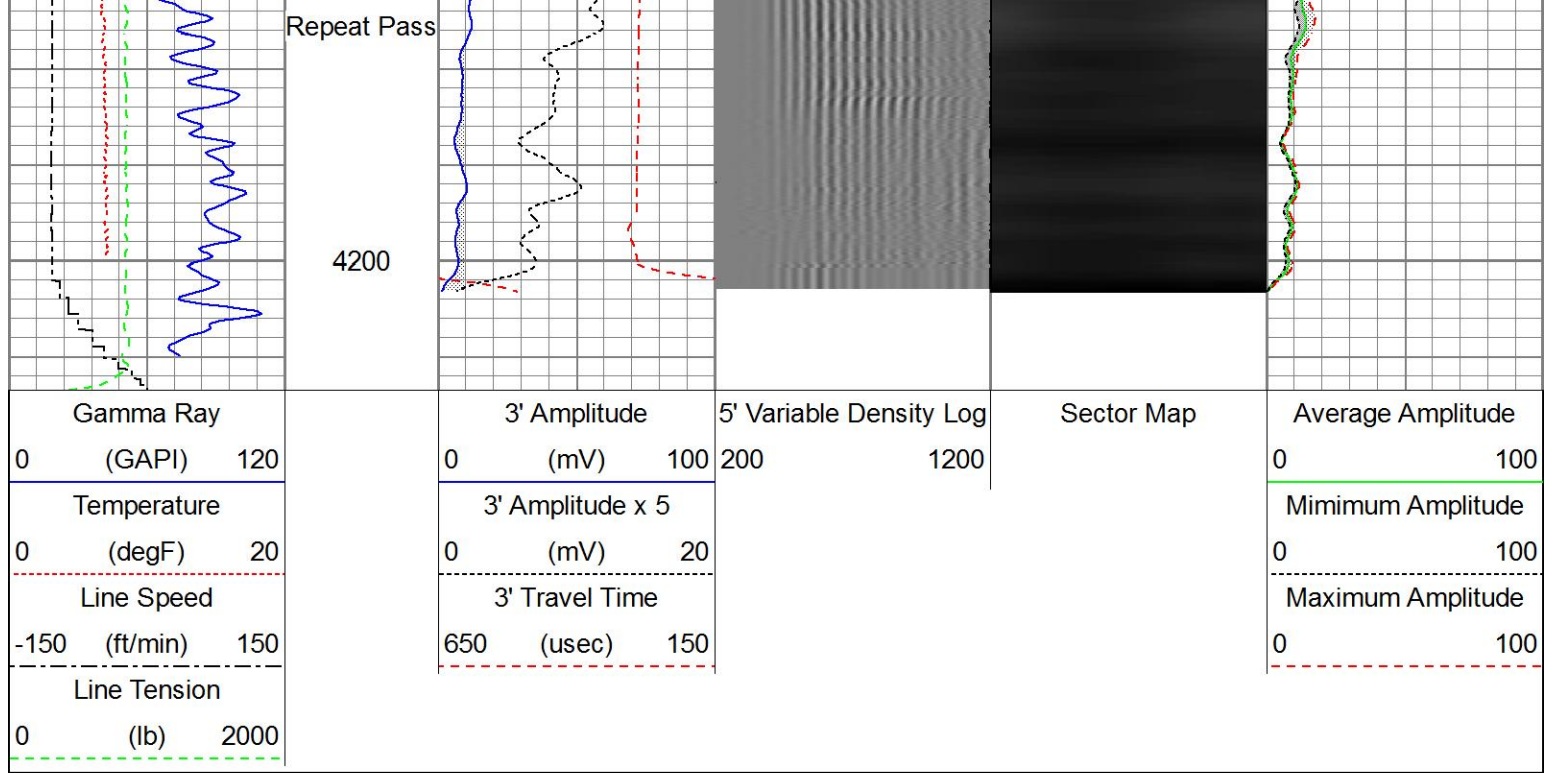
650 (usec) 150

0 100

Line Tension

0 (lb) 2000





Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
Temp	13.87		Titan_Electric_Cable_Heads-Titan_1-11/161.03 Electric Cable Head with 1" Fishing Neck	1.69	1.69	5.40
			Titan_Modified_Sinker_Bar-T_MESB_14375.00. Titan 1-7/16" X 7" Modified Over-the-line (Lead Core) Sinker Bar	1.44	1.44	39.00
			Probe_ELine_BowSpring_Centralizer-P_EE2.88275 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.75	2.75	20.00
WVFS8	11.70		Probe_RADII-C-P_RBT_2750 (FW1302-009.19 Probe 2-3/4" Sector Cement Bond Tool with Temperature Probe	2.75	2.75	105.00
WVFS7	11.70					
WVFS6	11.70					
WVFS5	11.70					
WVFS4	11.70					
WVFS3	11.70					
WVFS2	11.70					
WVFS1	11.70					
WVFCAL	11.70					
WVF3FT	11.70					
WVF5FT	10.70					
HeadVolt	7.45					

Head	7.10					
				Probe_ELine_BowSpring_Centralizer-P Probe 2-3/4" Electric Inline Bowspring Centralizer	EE2.88.275	2.75
DCCL	3.63					
CCL	3.63					
				Probe_GR_CCL-P_CGR_2750_S (FW1214.573) Probe 2-3/4" Digital CCL / Gamma Ray Combined		2.75
GR	0.89					55.00
Dataset: 0512326883_Anadarko_Bulthaup 21-6_04-19-17_RBL.db: field/well/run1/main Total length: 20.55 ft Total weight: 244.40 lb O.D.: 2.75 in						

Calibration Report	
Database File	D:\Warrior\Data\Anadarko_Bulthaup 21-6\0512326883_Anadarko_Bulthaup 21-6_04-19-17_RBL.db
Dataset Pathname	main
Dataset Creation	Wed Apr 19 17:21:29 2017

Gamma Ray Calibration Report		
Serial Number:	FW1212-026	
Tool Model:	P_CGR_2750_S	
Performed:	Mon Aug 15 10:19:05 2016	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.6	cps
Sensitivity:	0.6000	GAPI/cps

Segmented Cement Bond Log Calibration Report		
Serial Number:	FW1302-002	
Tool Model:	P_RBT_2750	
Calibration Casing Diameter:	4.500	in
Calibration Depth:	0.000	ft

Master Calibration, performed (Derived):						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.003	0.606	0.800	81.196	131.952	1.197
CAL	0.757	0.779				
5'	-0.004	0.472	0.800	81.196	168.653	1.556
SUM						
S1	-0.007	0.623	0.000	100.000	158.828	1.055
S2	-0.004	0.624	0.000	100.000	159.131	0.658
S3	-0.004	0.632	0.000	100.000	157.322	0.591

S4	-0.002	0.633	0.000	100.000	157.520	0.365
S5	-0.001	0.626	0.000	100.000	159.396	0.184
S6	0.000	0.614	0.000	100.000	163.074	-0.050
S7	-0.000	0.618	0.000	100.000	161.864	0.046
S8	-0.001	0.630	0.000	100.000	158.384	0.166

Internal Reference Calibration, performed Wed Aug 03 10:40:08 2016:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.757	0.779	1.000	0.000

Air Zero Calibration, performed Wed Apr 19 14:22:01 2017:

	Raw (v)		Calibrated (v)		Results	
	Zero		Zero		Offset	
3'	0.003		0.000		-0.000	
5'	0.001		0.000		-0.001	
SUM						
S1	-0.001		0.000		-0.000	
S2	0.003		0.000		0.000	
S3	0.003		0.000		-0.000	
S4	0.003		0.000		-0.000	
S5	0.003		0.000		-0.000	
S6	0.003		0.000		0.001	
S7	0.003		0.000		0.000	
S8	0.004		0.000		-0.000	



Company Kerr-McGee Oil & Gas Onshore, L.P.
Well Bulthaupt 21-6
Field Wattenberg
County Weld
State Colorado