



**Radial Cement Bond
Gamma Ray
Casing Collar Log**

Company Kerr-McGee Oil & Gas Onshore, L.P.
Well Ballantine 4-30A
Field Wattenberg
County Weld
State Colorado

Location: SEC 30 TWP 2N RGE 68W
 API #: 05-123-20764
 Other Services: NA

Date	20-Nov-2015	Run Number	One	Depth Driller	8113 FT	Depth Logger	4000 FT	Bottom Logged Interval	4000 FT	Top Log Interval	Surface	Open Hole Size	7.875"	Type Fluid	Water	Density / Viscosity	8.34 lbm/gal	Max. Recorded Temp.	140°F	E. Estimated Cement Top	614 FT	Time Well Ready	ROA	Time Logger on Bottom	8:00	E. Equipment Number	HD-0343	Location	Fort Lupton, CO	Recorded By	Robert Fogarty	Witnessed By	
		Borehole Record		Tubing Record																													
Run Number	Bit	From	To	Size	Weight	From	To																										
Casing Record	Size (in)	Wgt (lbs/ft)	Grade	Top	Bottom																												
Surface Casing	8.875	24	1-80	Surface	TD																												
Intermediate #1	4.5	11.6	1-80	Surface	TD																												
Intermediate #2																																	
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.

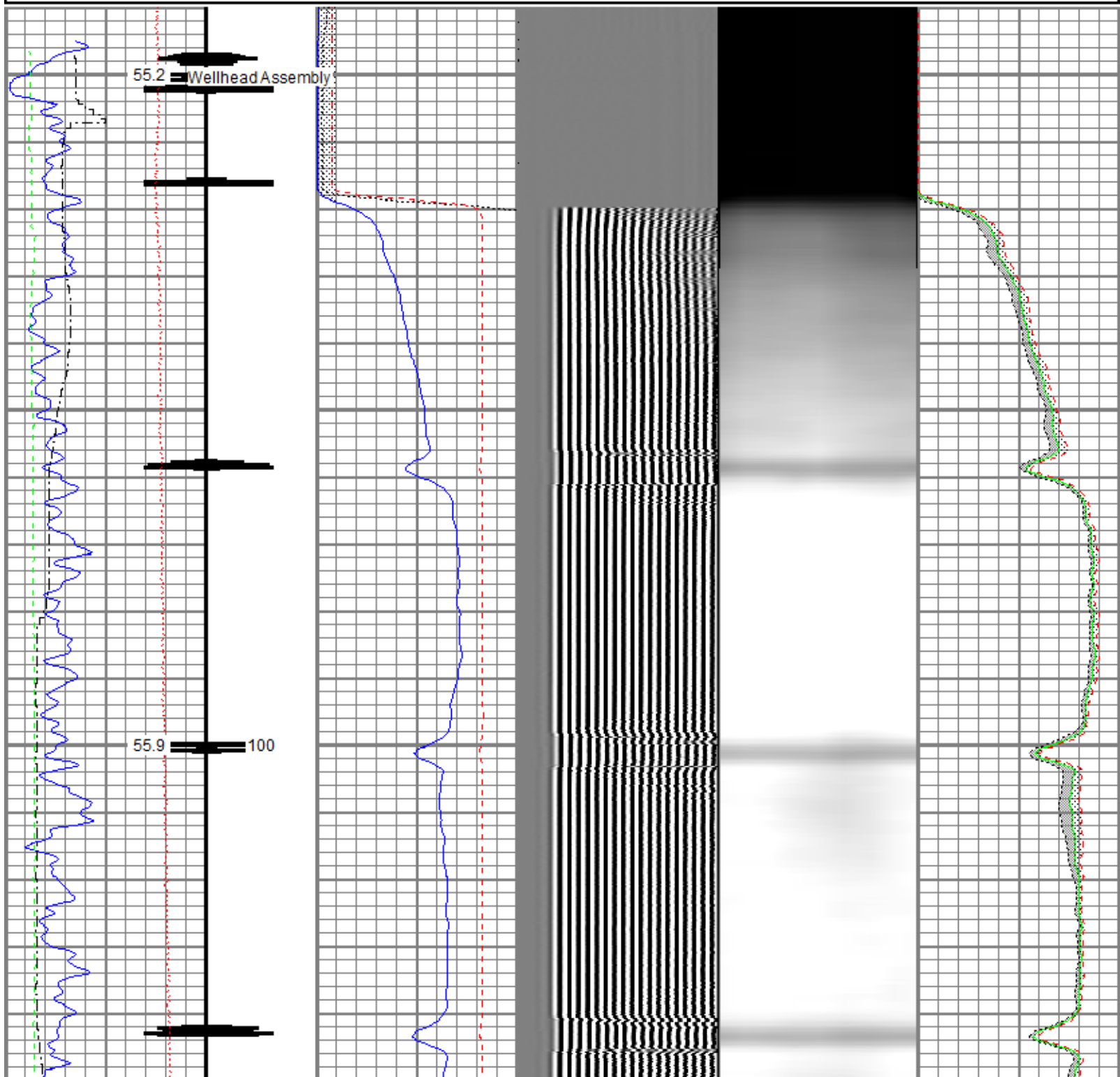
Comments

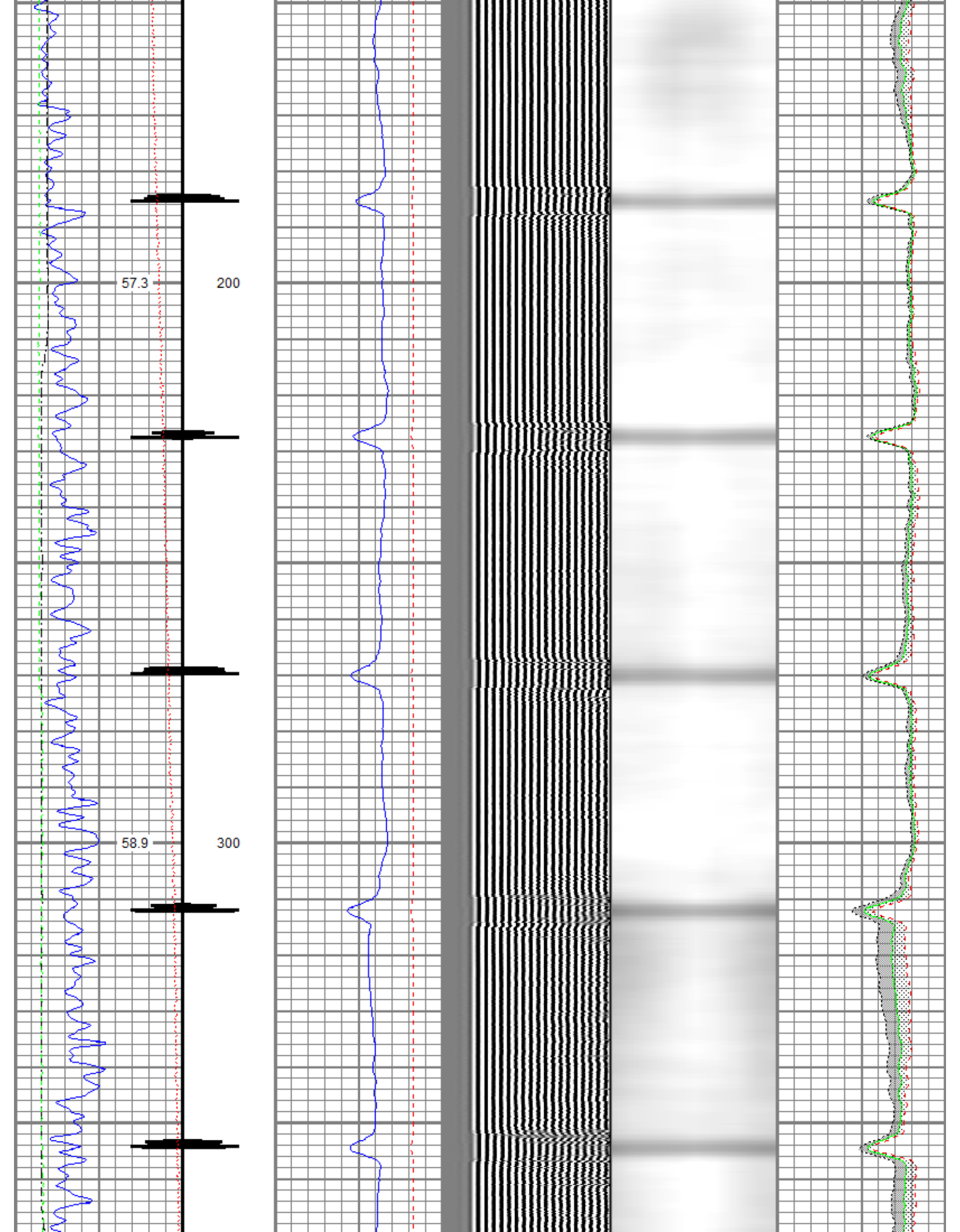
Log ran as per Customer request.
 Depth Reference to previous rcbl log
 Log Adjusted -7 FT to correlate to rcbl log dated 2-18-03
 Old Cement top 3770 FT
 New Cement top 614 FT
 Log Ran from 4000 FT to surface
 Log was ran with 0 PSI
 No debris found on logging tools upon completion of run.

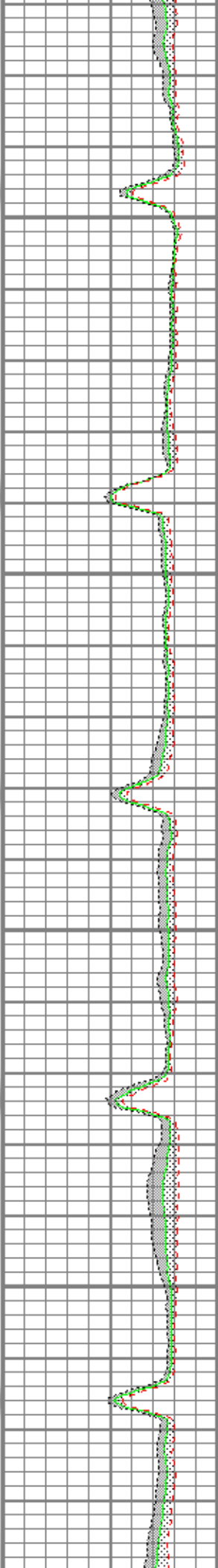
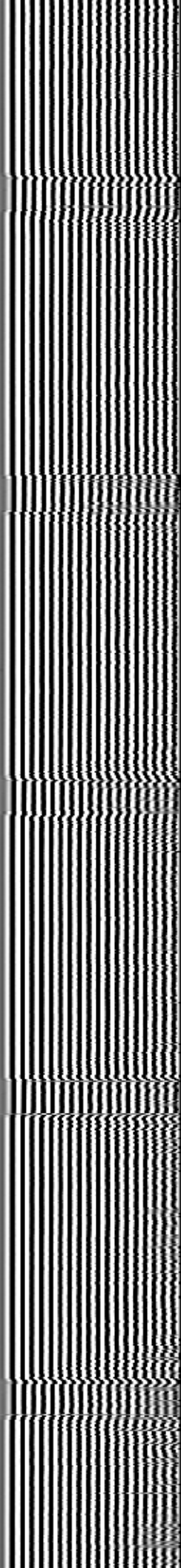
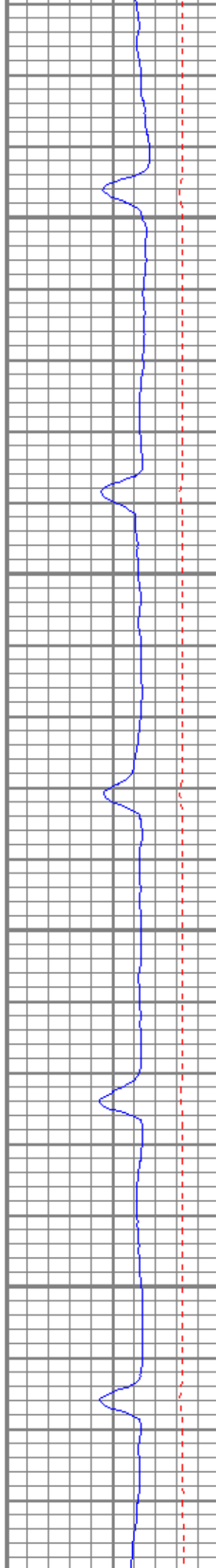
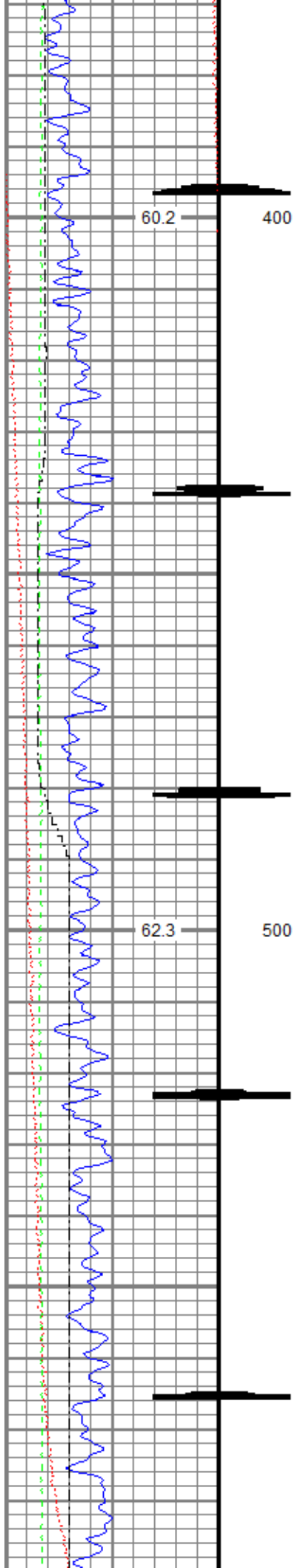
Thank you for choosing FMC Technologies Completion Services, Inc.!!

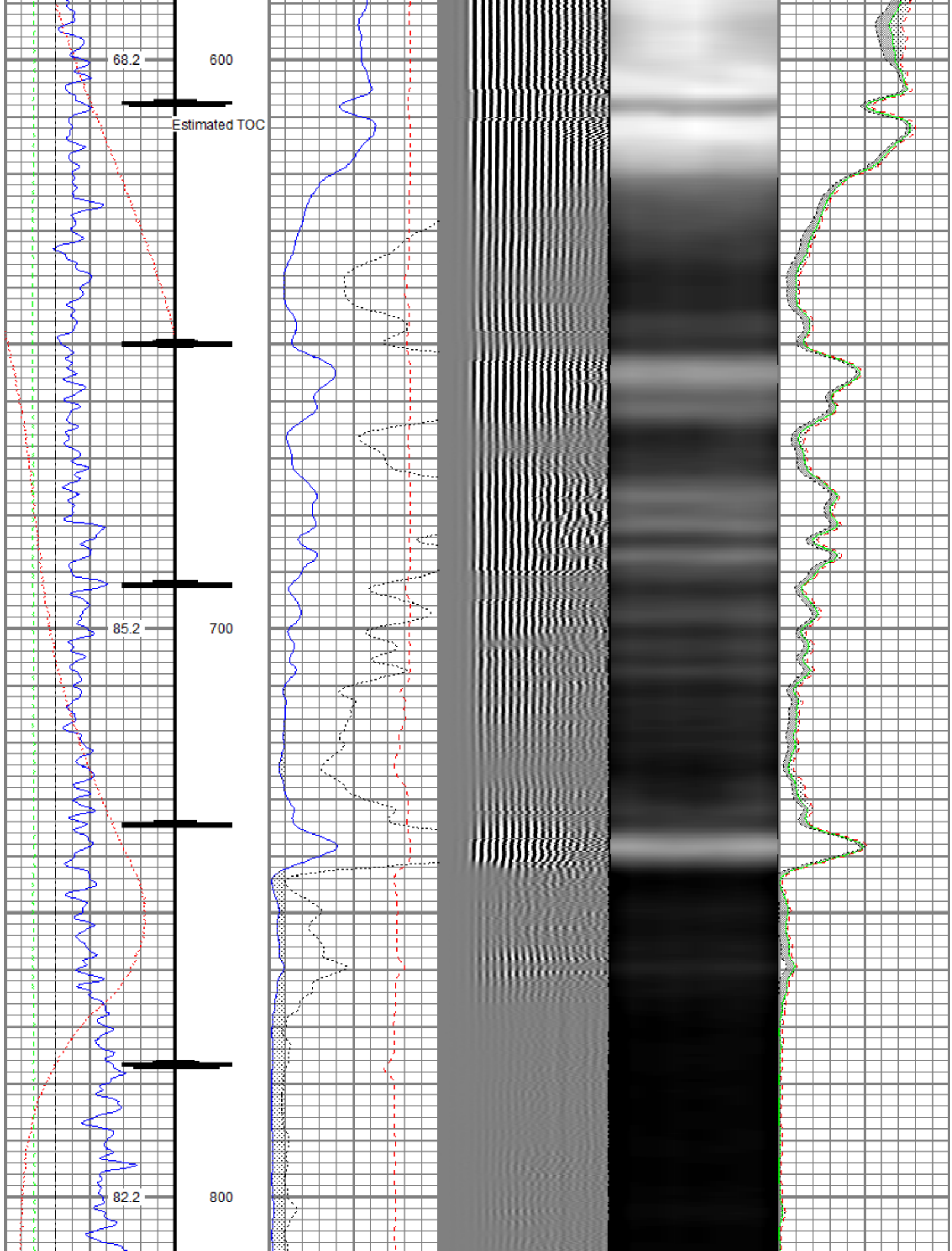
Database File: anadarko_ballantine_4_30a_rcbl_20_november_2015.db
 Dataset Pathname: pass7
 Presentation Format: radii
 Dataset Creation: Fri Nov 20 08:02:24 2015 by Log 7.0 B1
 Charted by: Depth in Feet scaled 1:240

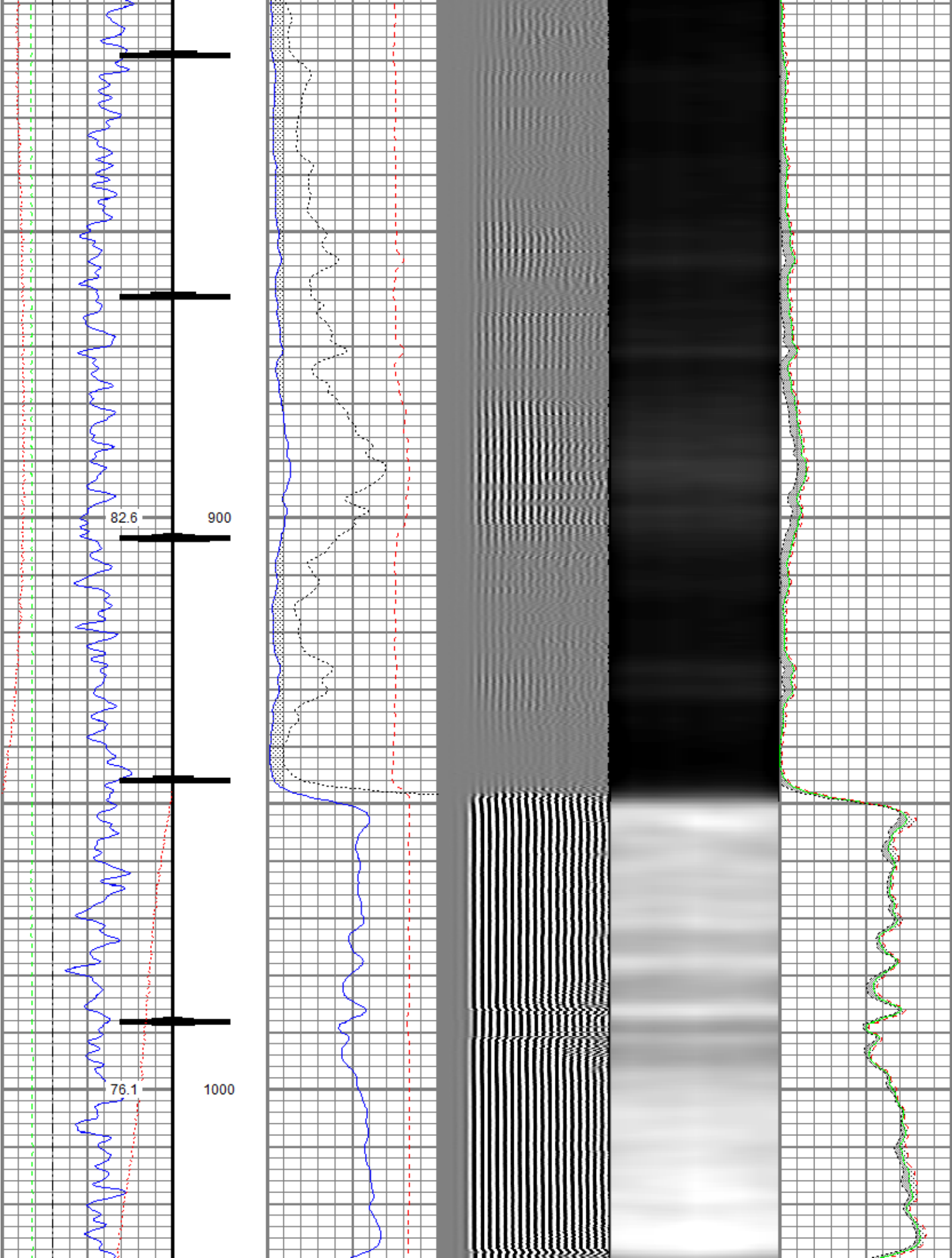
Gamma Ray (GAPI) 120	0 3' Amplitude (mV) 100	5' Variable Density Log 200 1200	Sector Map	0 Average Amplitude 100
Casing Collar Locator	0 3' Amplitude x 5 (mV) 20			Minimum Amplitude 100
0 Temperature (degF) 20	0 3' Travel Time (msec) 150			Maximum Amplitude 100
Line Speed -150 (ft/min) 150				
0 Line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

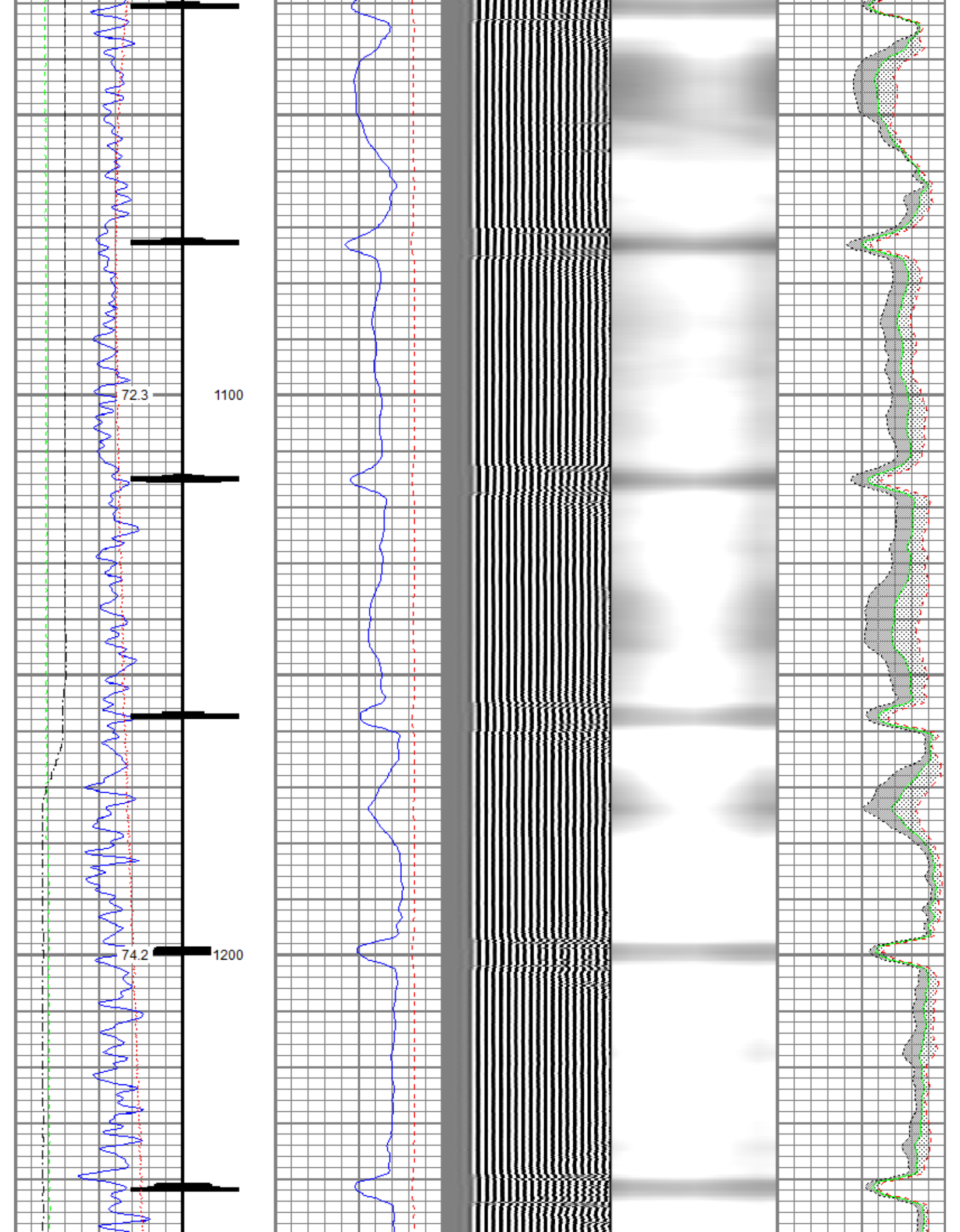


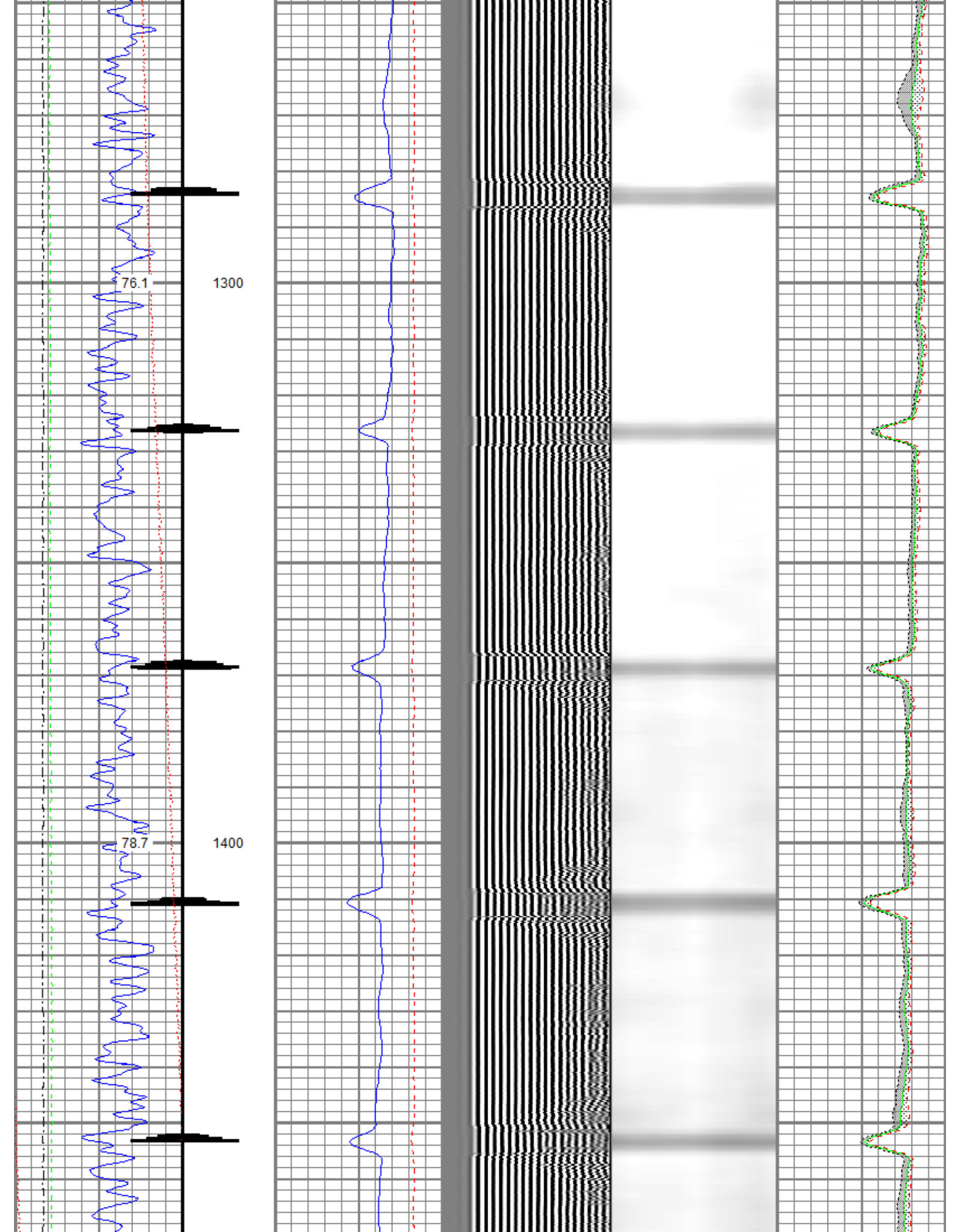


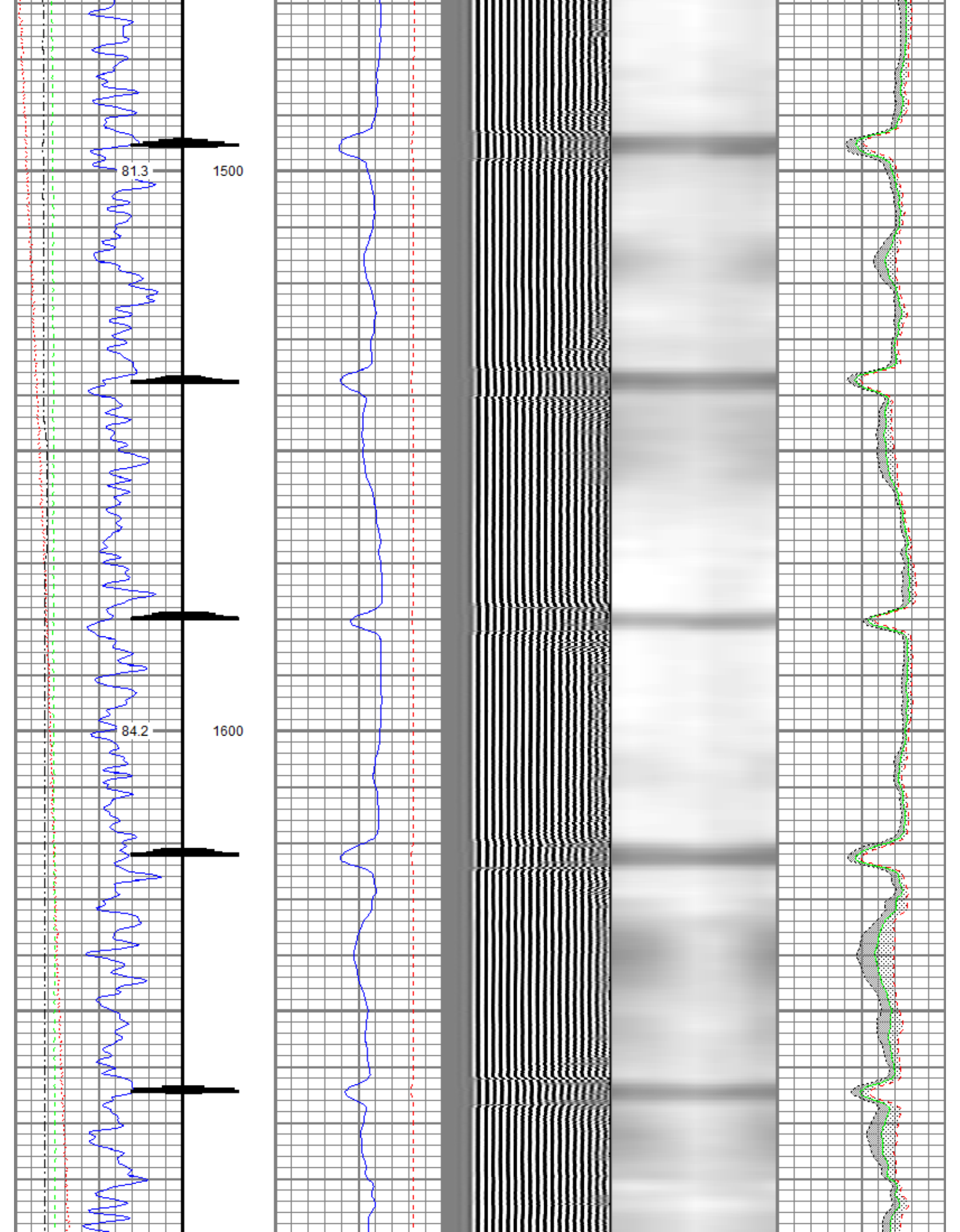


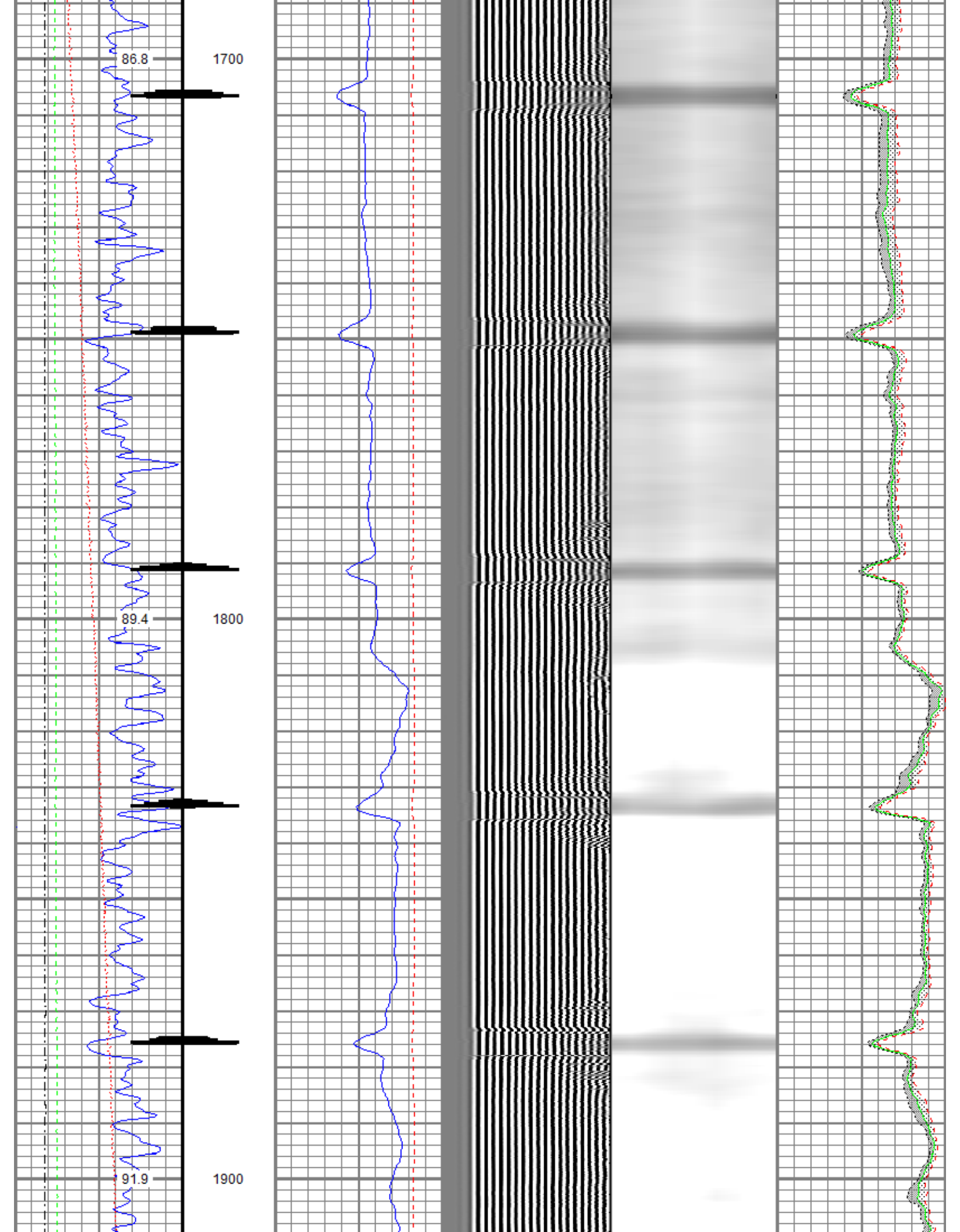


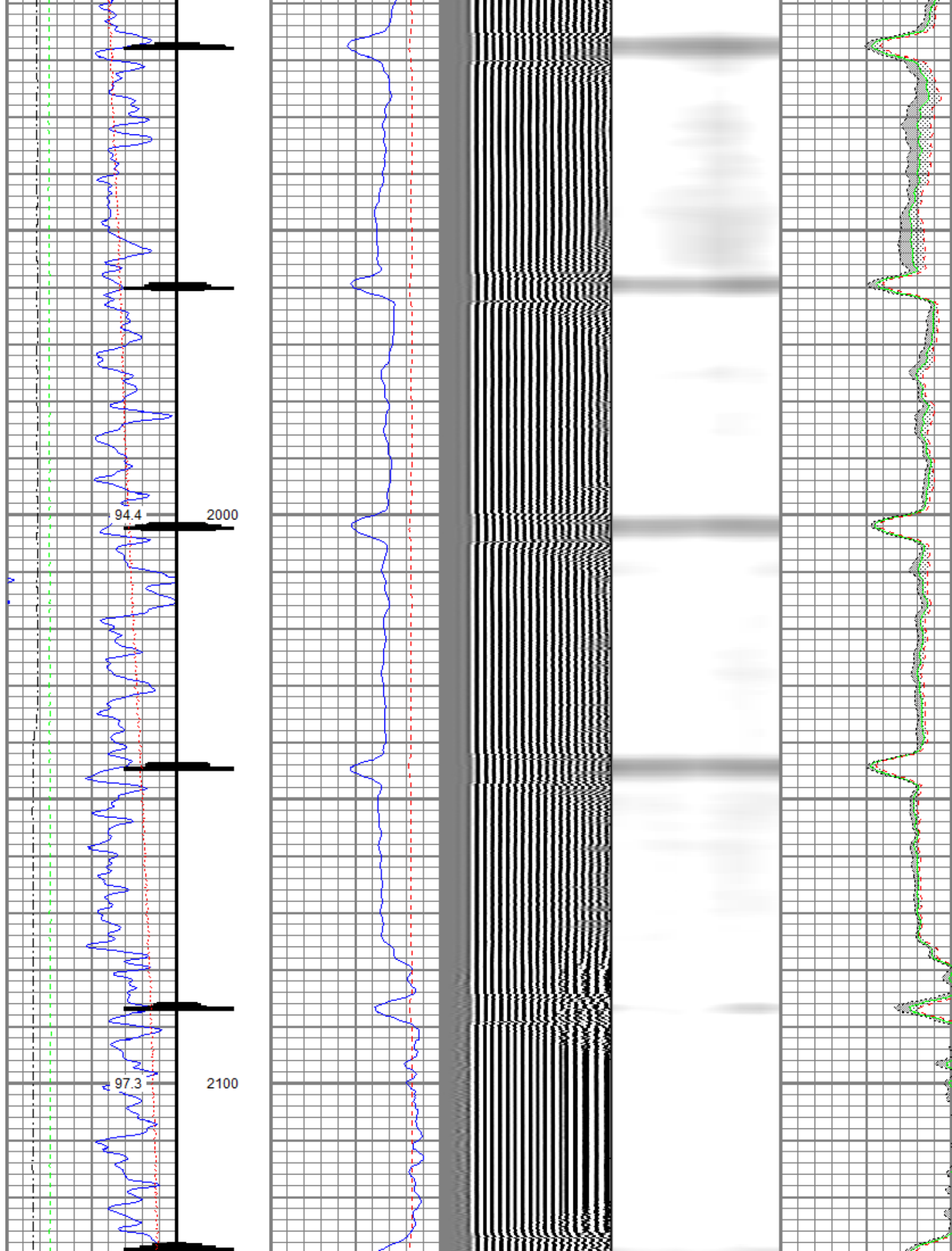


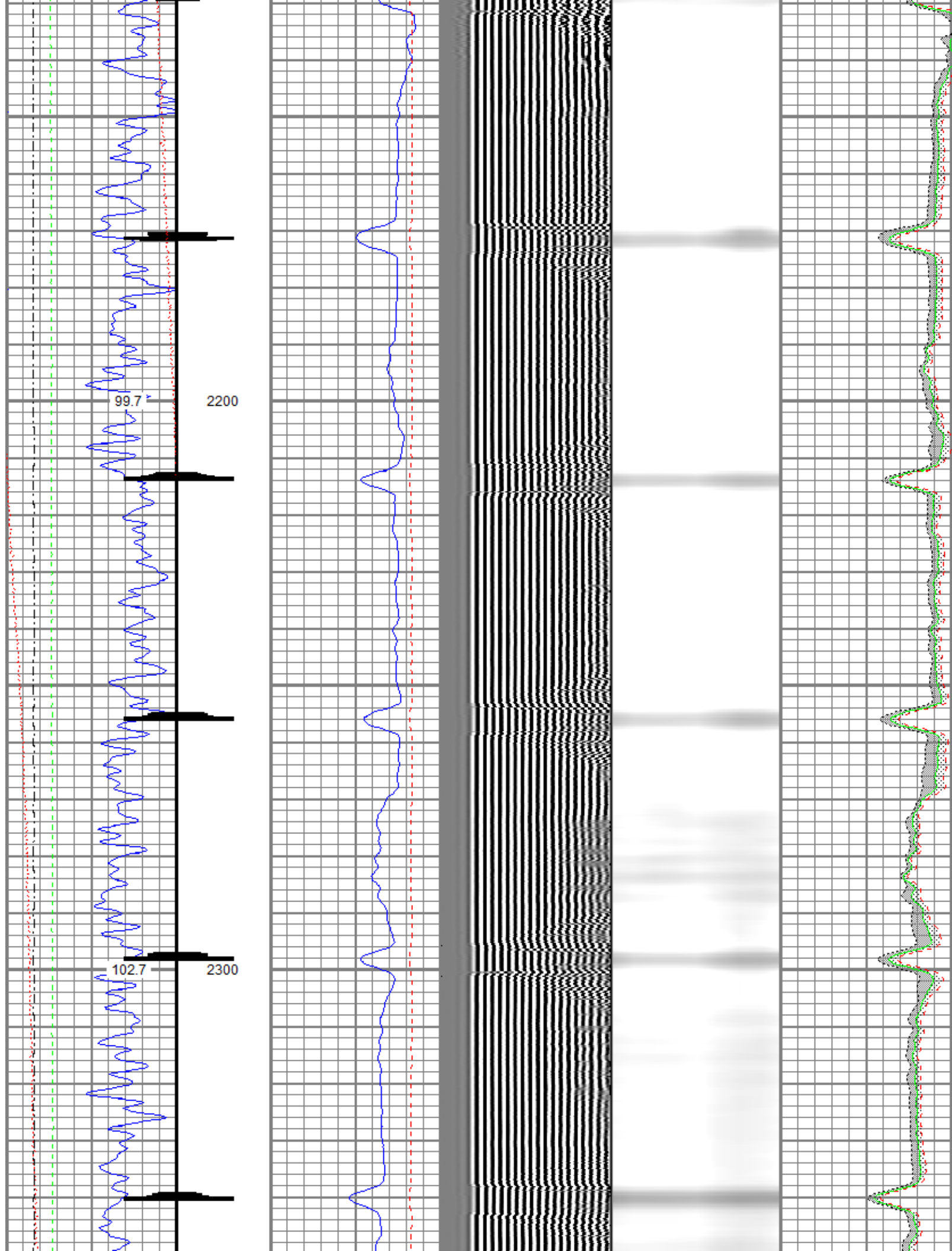


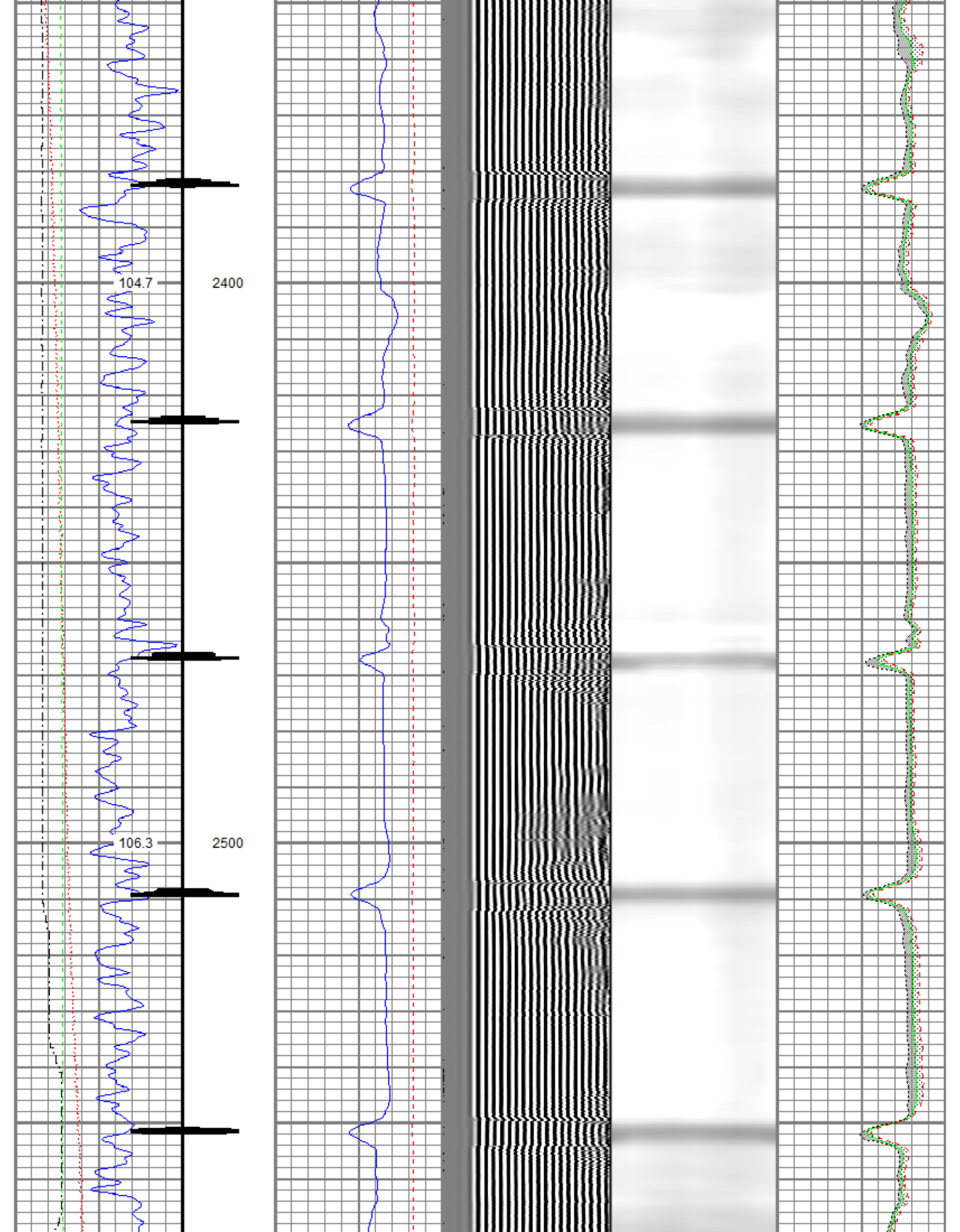


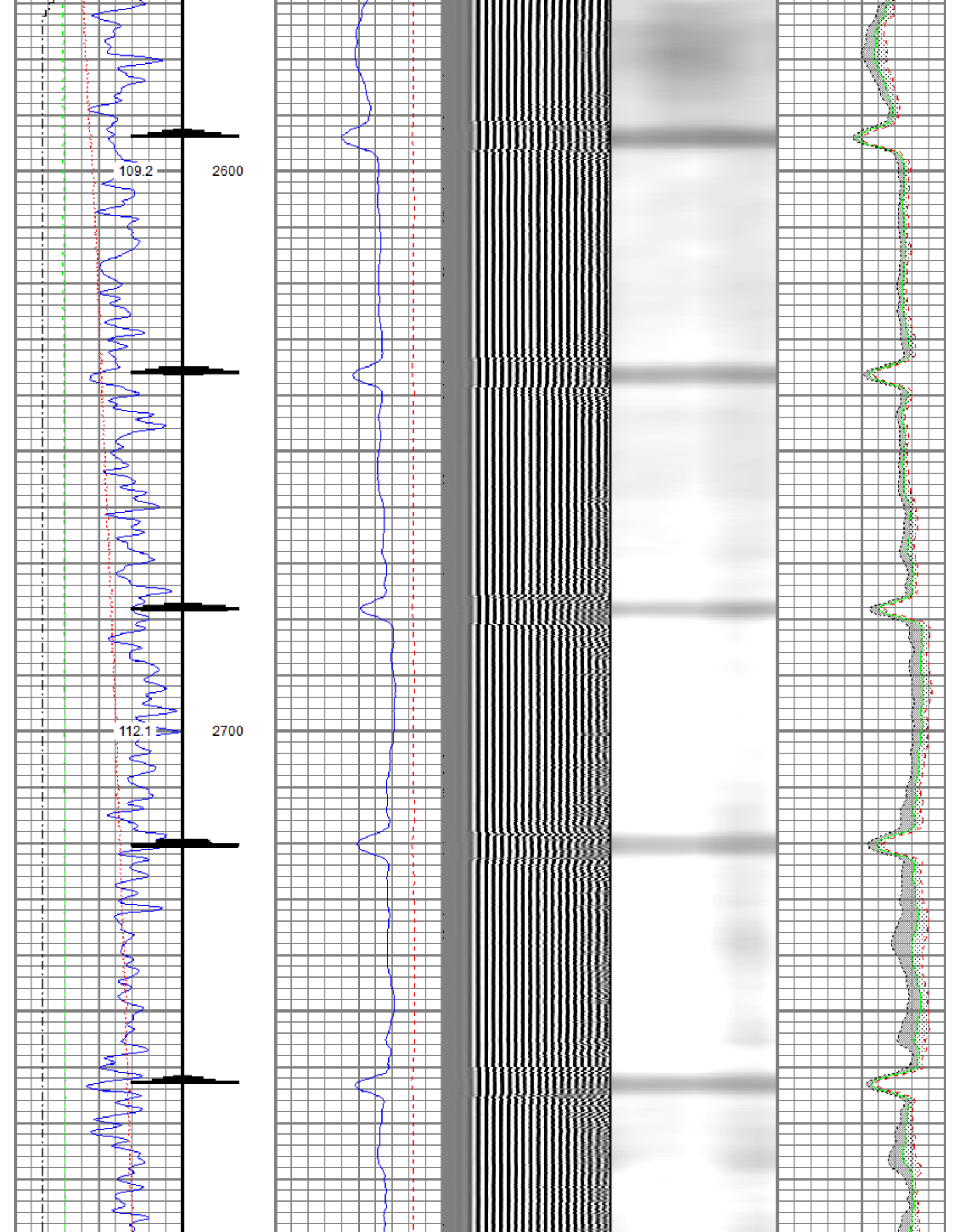












114.2

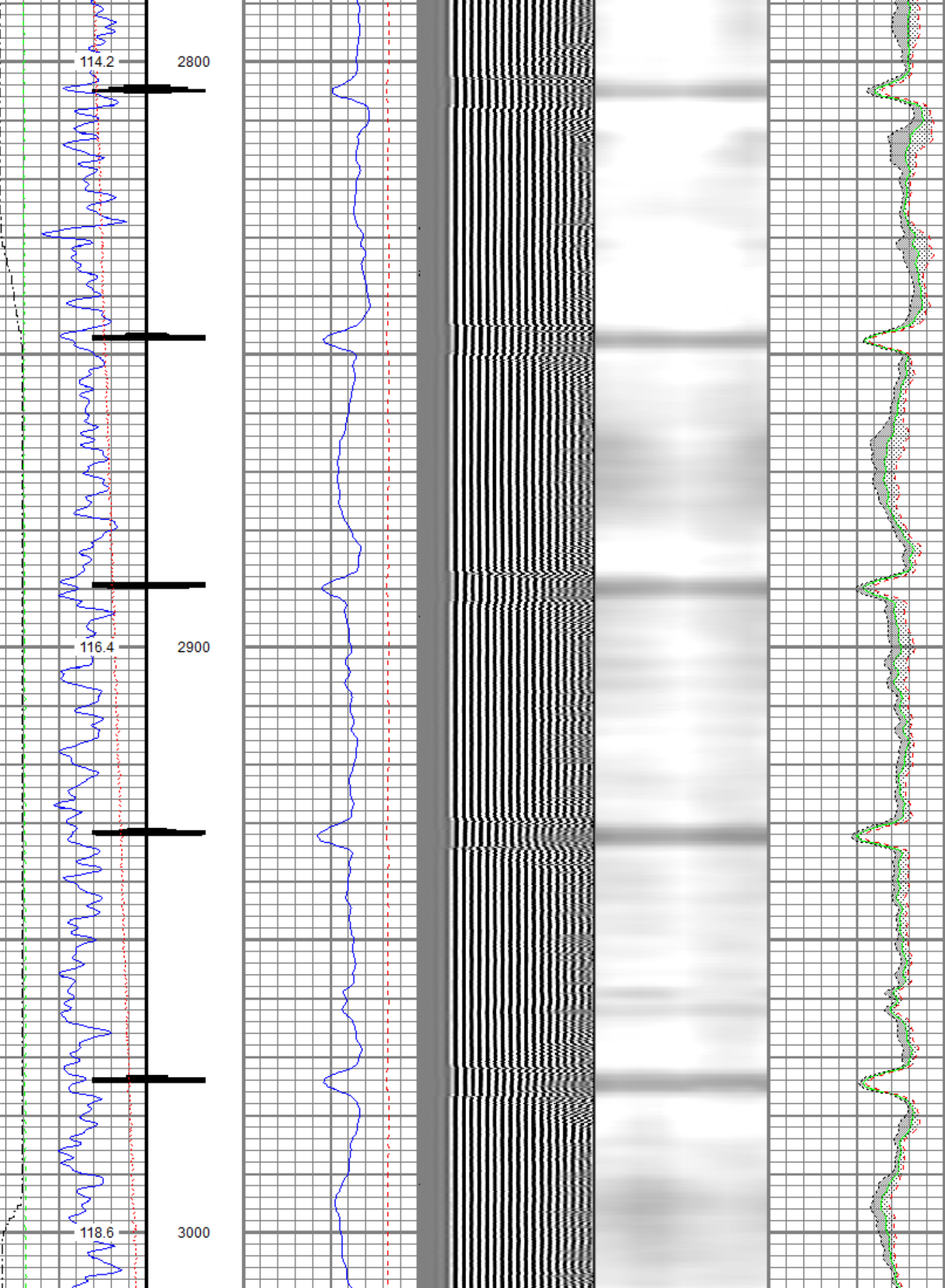
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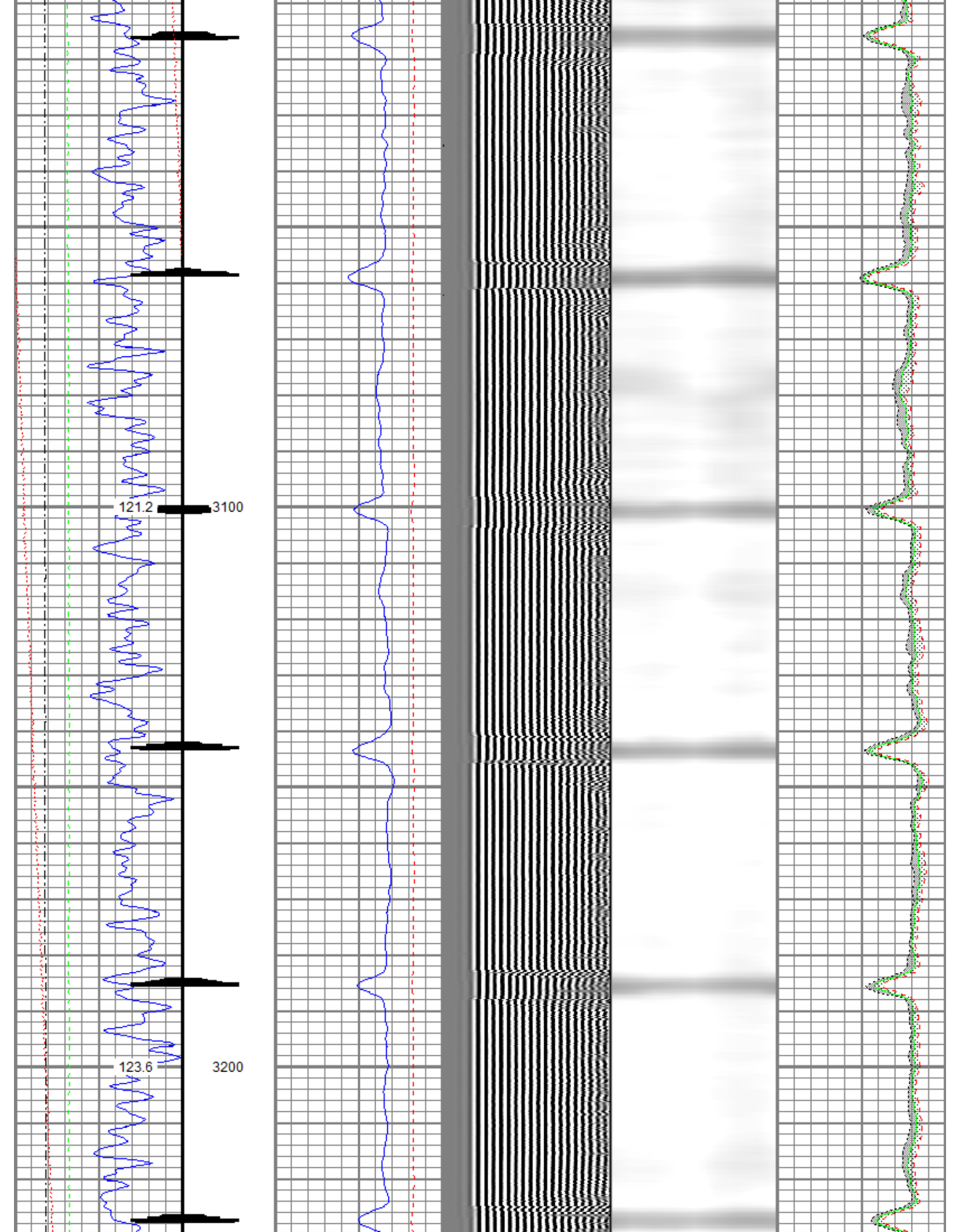
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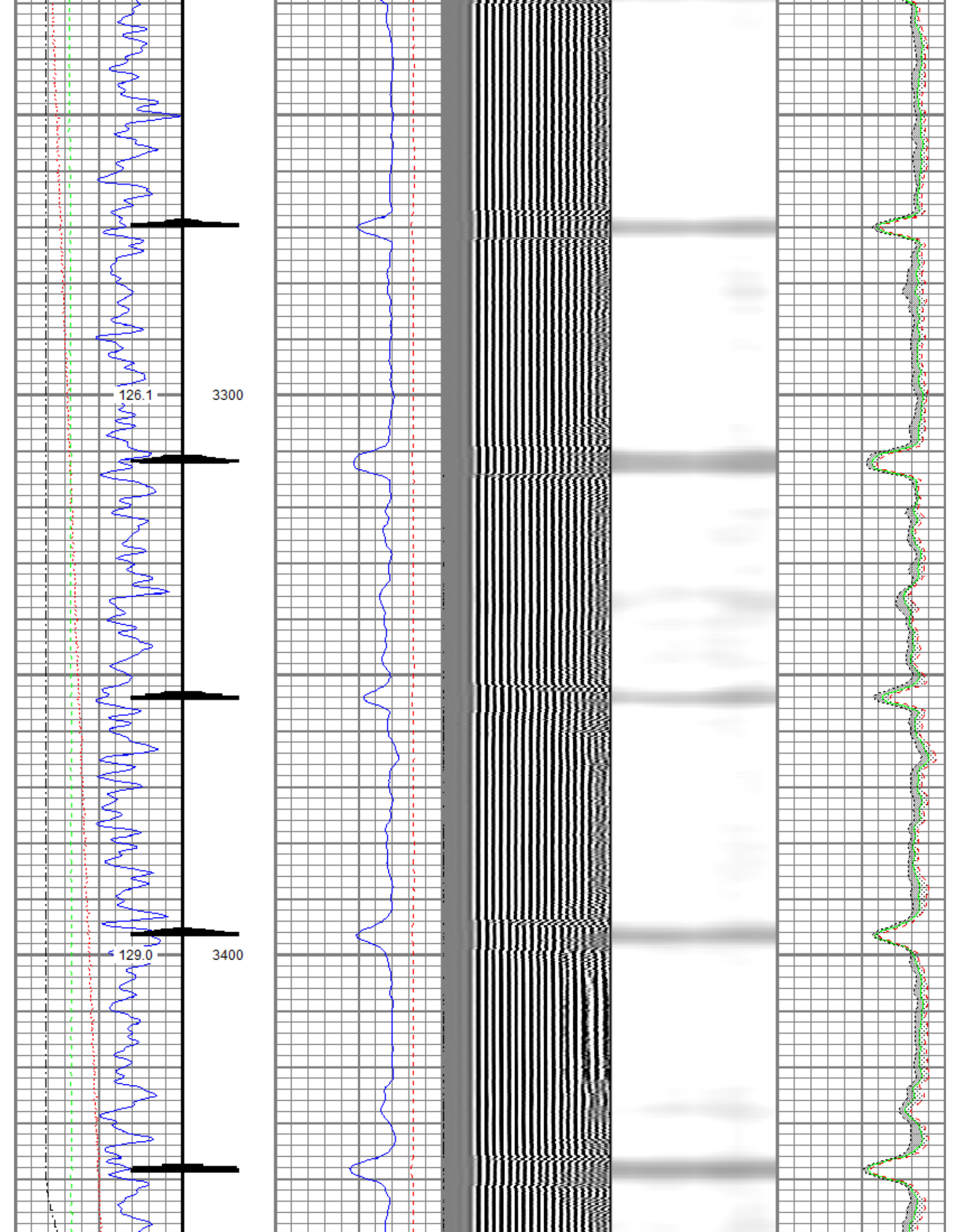
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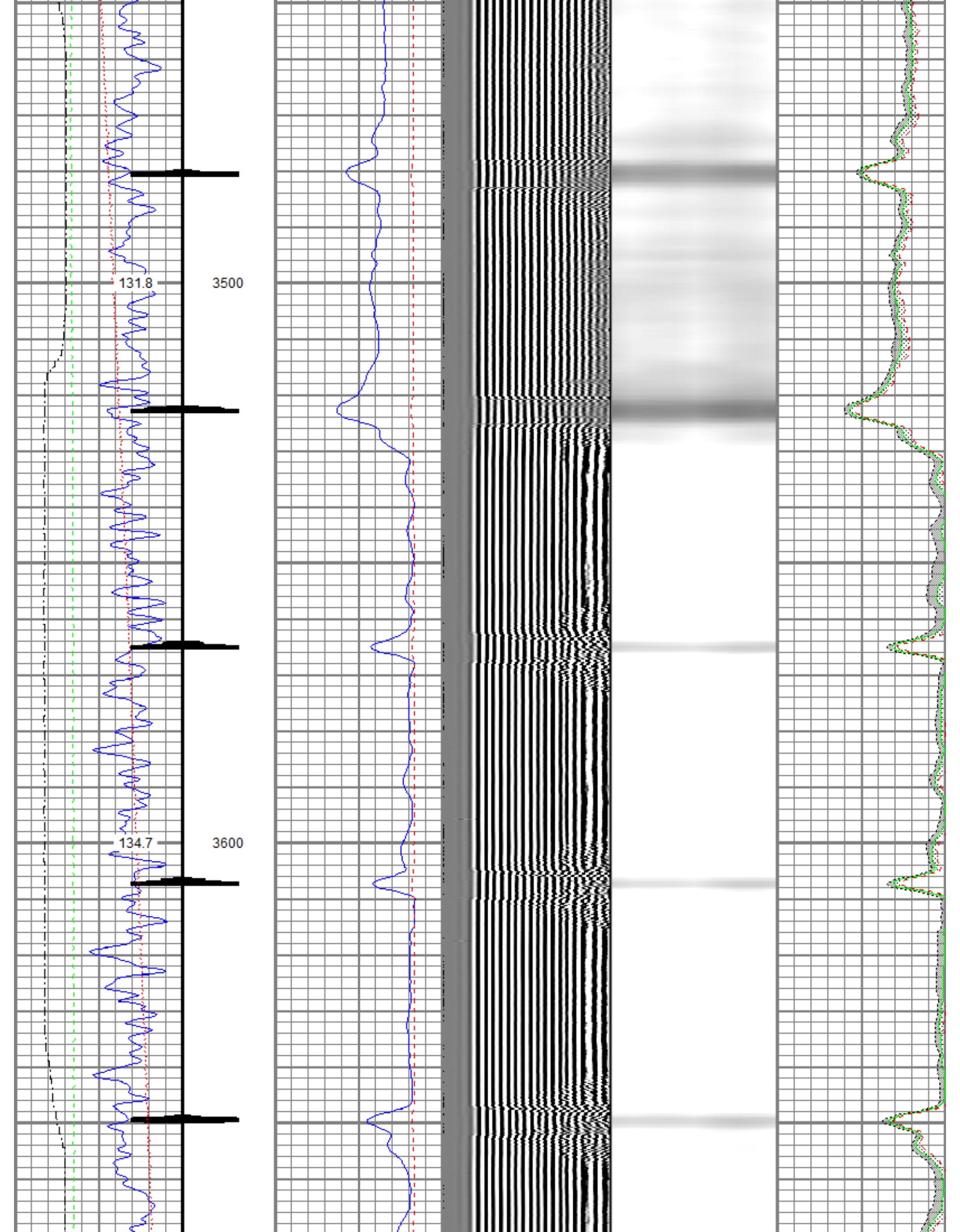
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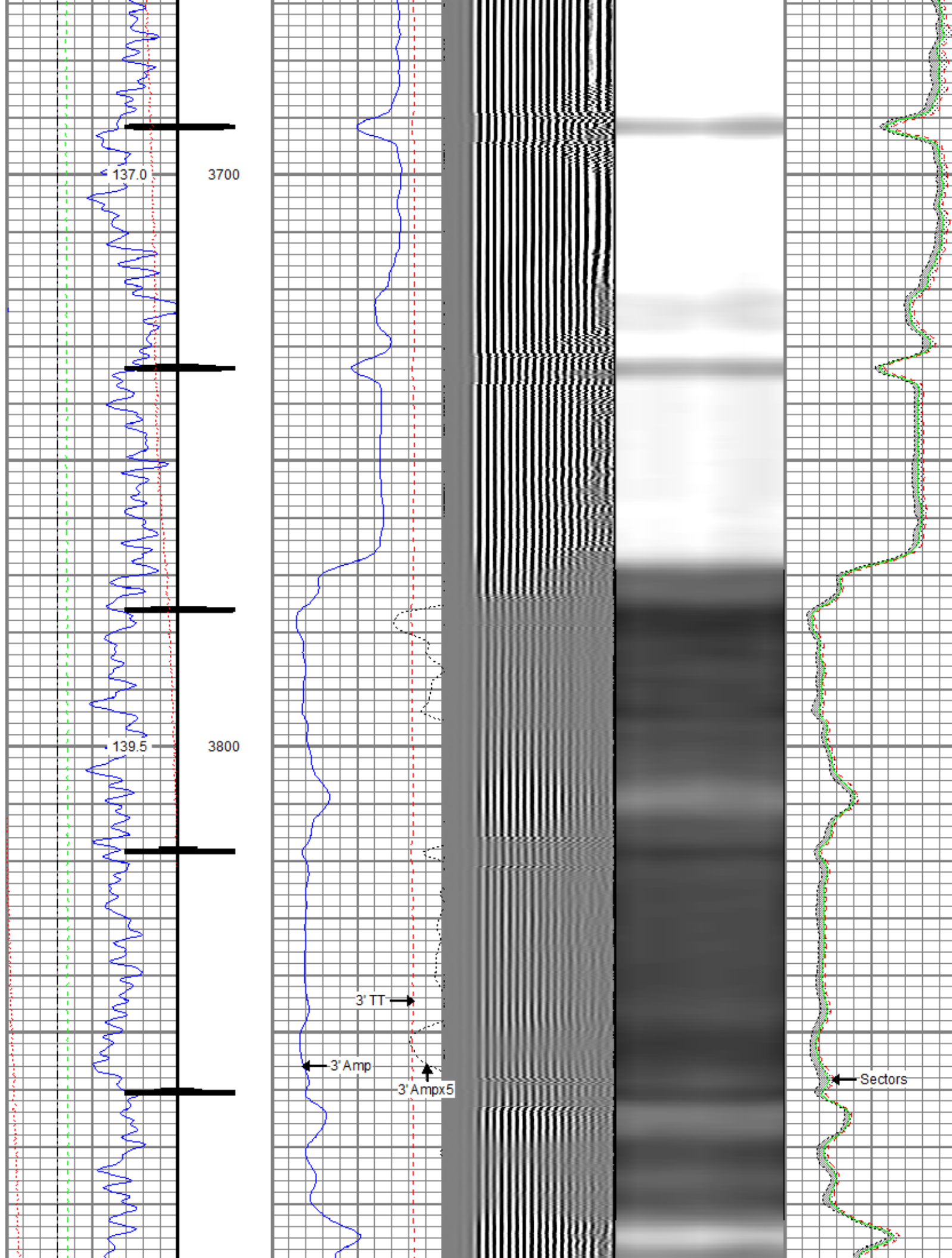
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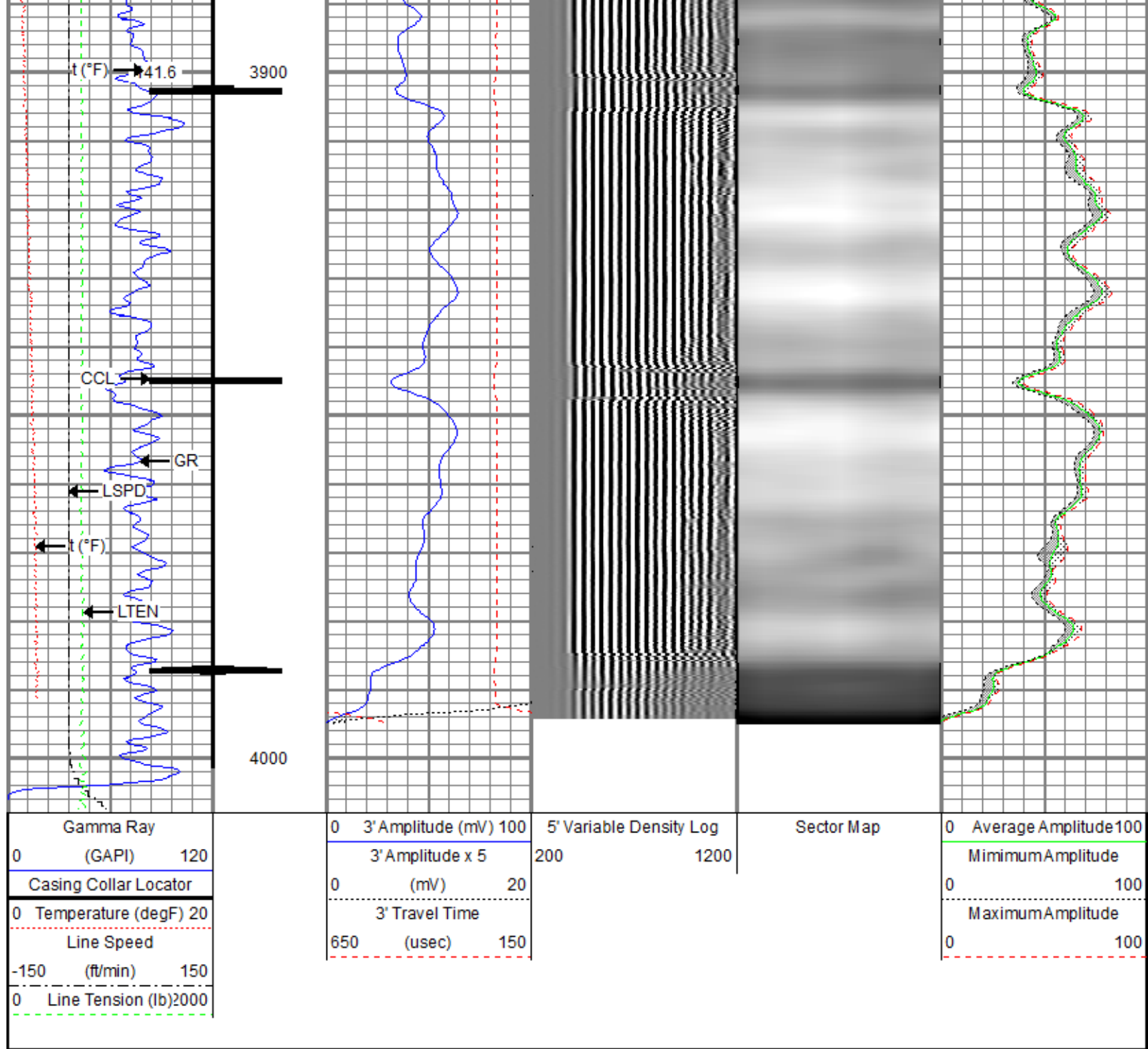








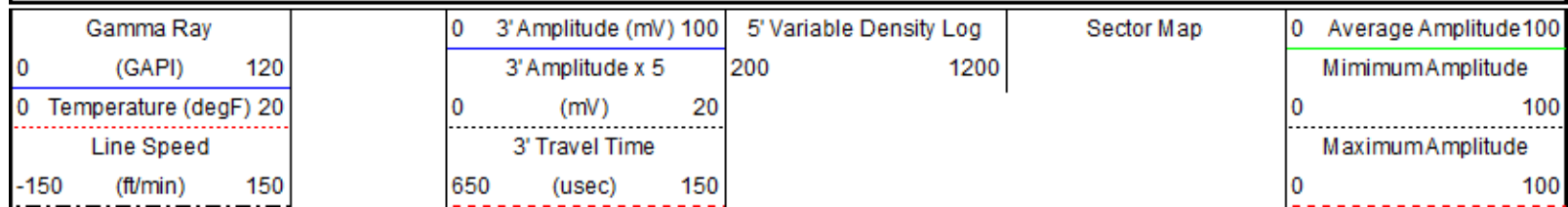


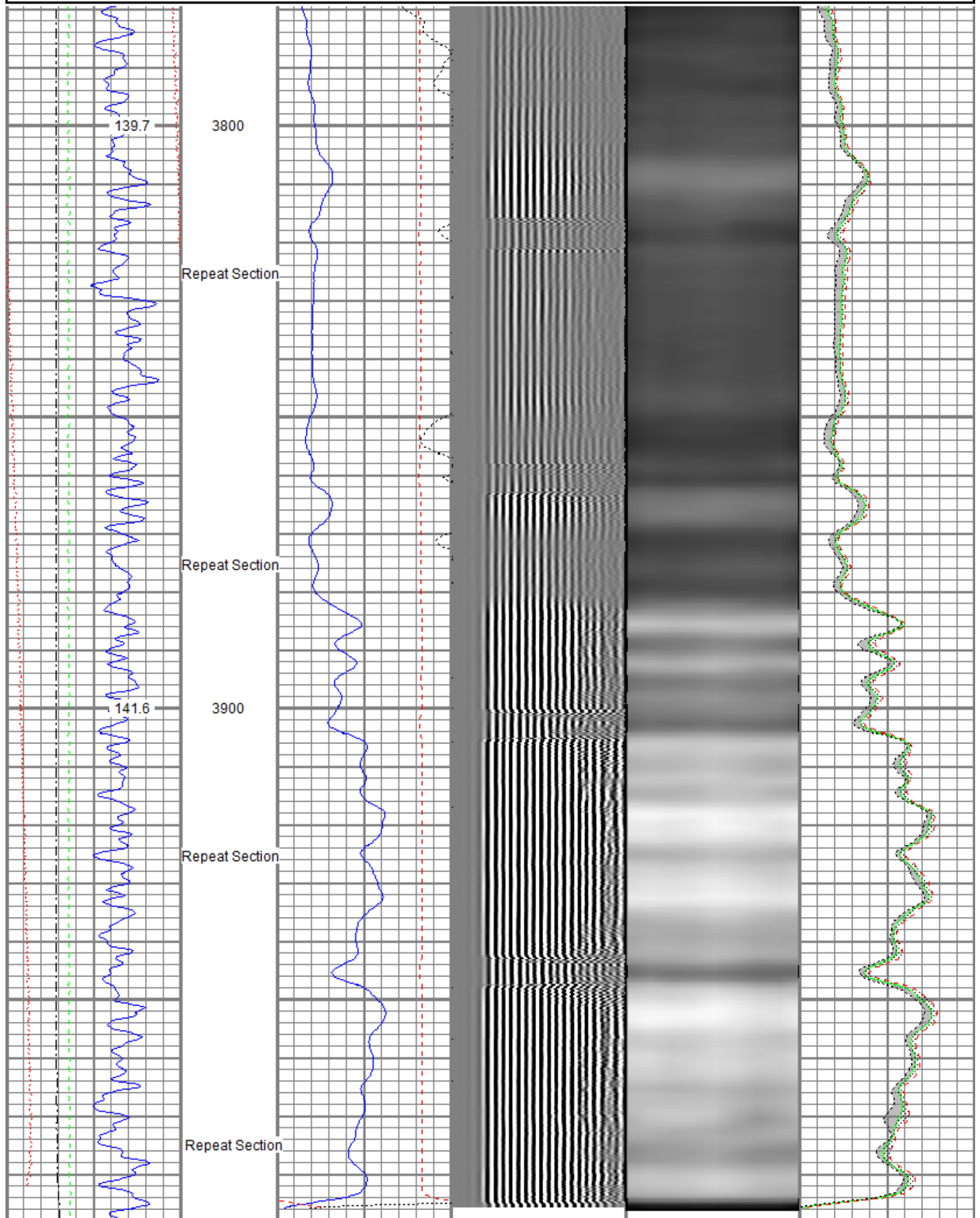


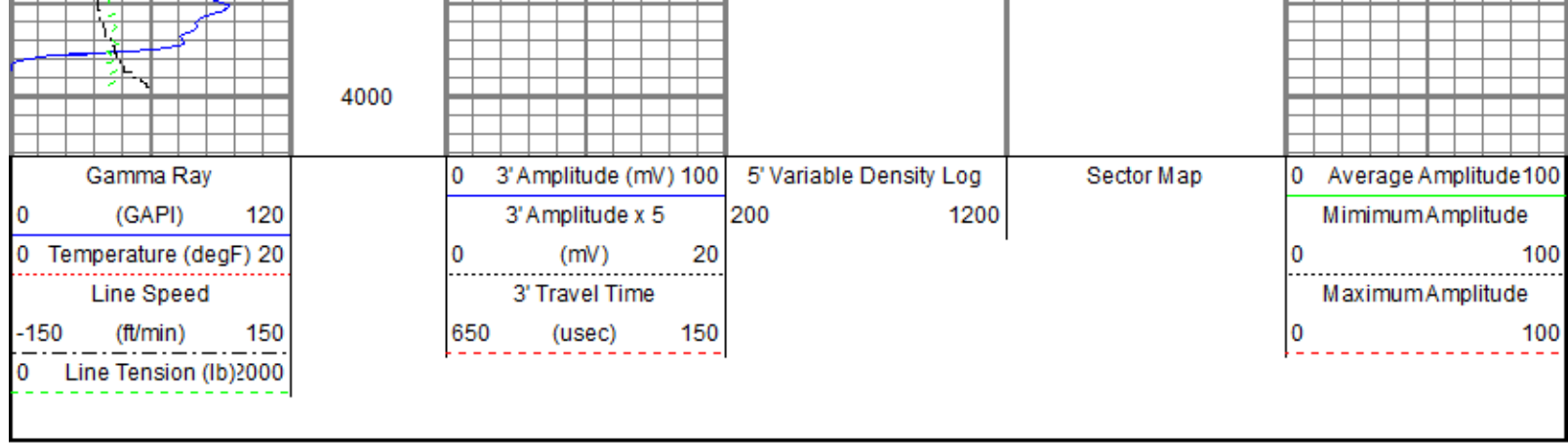
FMC Technologies

Repeat Pass
Recorded with 0 PSI

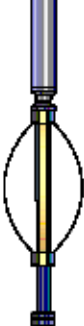
Database File: anadarko_ballantine_4_30a_rcbl_20_november_2015.db
 Dataset Pathname: pass6
 Presentation Format: radii
 Dataset Creation: Fri Nov 20 07:57:12 2015 by Log 7.0 B1
 Charted by: Depth in Feet scaled 1:240







Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)	
			T_CH14375_1_GO Titan 1-7/16" Assembled Electric Cable Head with 1" Fishing Neck	1.03	1.44	4.00	
			Probe_IL_BS_Cent Probe 2-3/4" Inline Electrical Inline Bowspring Centralizer	2.88	2.75	10.00	
HeadVolt	19.49						
Temp	16.72						
WVFS3FT	14.55			Probe_RADII-C-2-3/4" (FW1302-002) Probe 2-3/4" Sector Cement Bond Tool with Temperature Probe	9.19	2.75	105.00
WVFCAL	14.55						
WVFS1	14.55						
WVFS2	14.55						
WVFS3	14.55						
WVFS4	14.55						
WVFS5	14.55						
WVFS6	14.55						
WVFS7	14.55						
WVFS8	14.55						
WVFS5FT	13.55						
			Probe_IL_BS_Cent Probe 2-3/4" Inline Electrical Inline Bowspring Centralizer	2.88	2.75	10.00	
CCL	6.51						
DCCL	6.51		Probe_CCL_GR-2.75" Digital (FW1212-026) Probe 2-3/4" Digital CCL / Gamma Ray Combined	4.54	2.75	55.00	

GR	3.77		Probe_IL_BS_Cent Probe 2-3/4" Inline Electrical Inline Bowspring Centralizer	2.88	2.75	10.00
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Dataset: anadarko_ballantine_4_30a_rcbl_20_november_2015.db: field/well/run1/pass7
 Total Length: 23.40 ft
 Total Weight: 194.00 lb
 O.D.: 2.75 in

Calibration Report

Database File: anadarko_ballantine_4_30a_rcbl_20_november_2015.db
 Dataset Pathname: pass7
 Dataset Creation: Fri Nov 20 08:02:24 2015 by Log 7.0 B1

Gamma Ray Calibration Report

Serial Number: FW1212-026
 Tool Model: 2.75"Digital
 Performed: Wed Nov 18 10:56:24 2015
 Calibrator Value: 1.0 GAPI
 Background Reading: 0.0 cps
 Calibrator Reading: 1.0 cps
 Sensitivity: 0.6300 GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: FW1302-002
 Tool Model: 2-3/4"
 Calibration Casing Diameter: 4.500 in
 Calibration Depth: 4006.263 ft

Master Calibration, performed Fri Nov 20 07:56:58 2015:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.004	0.529	0.800	81.196	153.146	0.157
CAL	0.791	0.801				
5'	0.004	0.433	0.800	81.196	187.215	0.062
SUM						
S1	0.036	0.550	0.000	100.000	194.589	-6.946
S2	0.007	0.508	0.000	100.000	199.659	-1.392
S3	0.008	0.501	0.000	100.000	202.607	-1.546
S4	0.004	0.509	0.000	100.000	197.774	-0.693
S5	0.003	0.527	0.000	100.000	190.889	-0.645
S6	0.003	0.609	0.000	100.000	165.131	-0.562
S7	0.003	0.673	0.000	100.000	149.252	-0.439
S8	0.003	0.646	0.000	100.000	155.517	-0.433

Internal Reference Calibration, performed Wed Dec 31 17:00:00 1969:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.791	0.004	1.000	0.000

CAL 0.000 0.000 0.791 0.801 1.000 0.000

Air Zero Calibration, performed Fri Nov 20 07:56:42 2015:

	Raw (v)	Calibrated (v)	Results
	<u>Zero</u>	<u>Zero</u>	<u>Offset</u>
3'	0.000	0.000	0.000
5'	0.000	0.000	0.000
SUM			
S1	0.000	0.000	0.000
S2	0.000	0.000	0.000
S3	0.000	0.000	0.000
S4	0.000	0.000	0.000
S5	0.000	0.000	0.000
S6	0.000	0.000	0.000
S7	0.000	0.000	0.000
S8	0.000	0.000	0.000



Company Kerr-McGee Oil & Gas Onshore, L.P.
Well Ballantine 4-30A
Field Wattenberg
County Weld
State Colorado