RELIANCE OILFIELD SERVICES

Radial Cement Bond
Gamma Ray
Casing Collar Log

Company	TEP Rocky Mountain LLC
Well	Youberg SR 312-12
Field	Rulison
County	Garfield
State	Colorado

Company TEP Rocky Mountain LLC
Well Youberg SR 312-12
Field Rulison
County Garfield State Colorado

Location: API # : 05-045-23302
1933' FNL & 2114' FEL SWNE
SEC 12 TWP 7S RGE 94W

Other Services
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Permanent Datum	Ground Level	Elevation 7254'	Elevation	K.B. 7278' D.F. 7277' G.L. 7254'
Log Measured From	Kelly Bushing	24 FT		
Drilling Measured From	Kelly Bushing			

Date	06-NOV-2017		
Run Number	One		
Depth Driller	10104 FT		
Depth Logger	10029 FT		
Bottom Logged Interval	10029 FT		
Top Log Interval	Surface		
Open Hole Size	8.750"		
Type Fluid	Fresh Water		
Density / Viscosity	8.34 lb/gal		
Max. Recorded Temp.	242°F		
Estimated Cement Top	See Log		
Time Well Ready	ROA		
Time Logger on Bottom	13:00		
Equipment Number	HD-359		
Location	Grand Junction, CO		
Recorded By	A. Ellsworth		
Witnessed By	D. Welsh		

Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size (in)	Weight (lb/ft)	From	To

Casing Record	Size (in)	Wgt (lb/ft)	Grade	Top	Bottom
Surface Casing	9 5/8	32.3	H-40	Surface	1466 FT
Intermediate #1	4 1/2	11.6	P-110	Surface	10061 FT
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 referenced to Kelly Bushing at 24 FT
Marker Joint logged at 6424 FT - 6444 FT
Log ran from 10029 FT to Surface
Recorded with 0 PSI Surface Induced Pressure

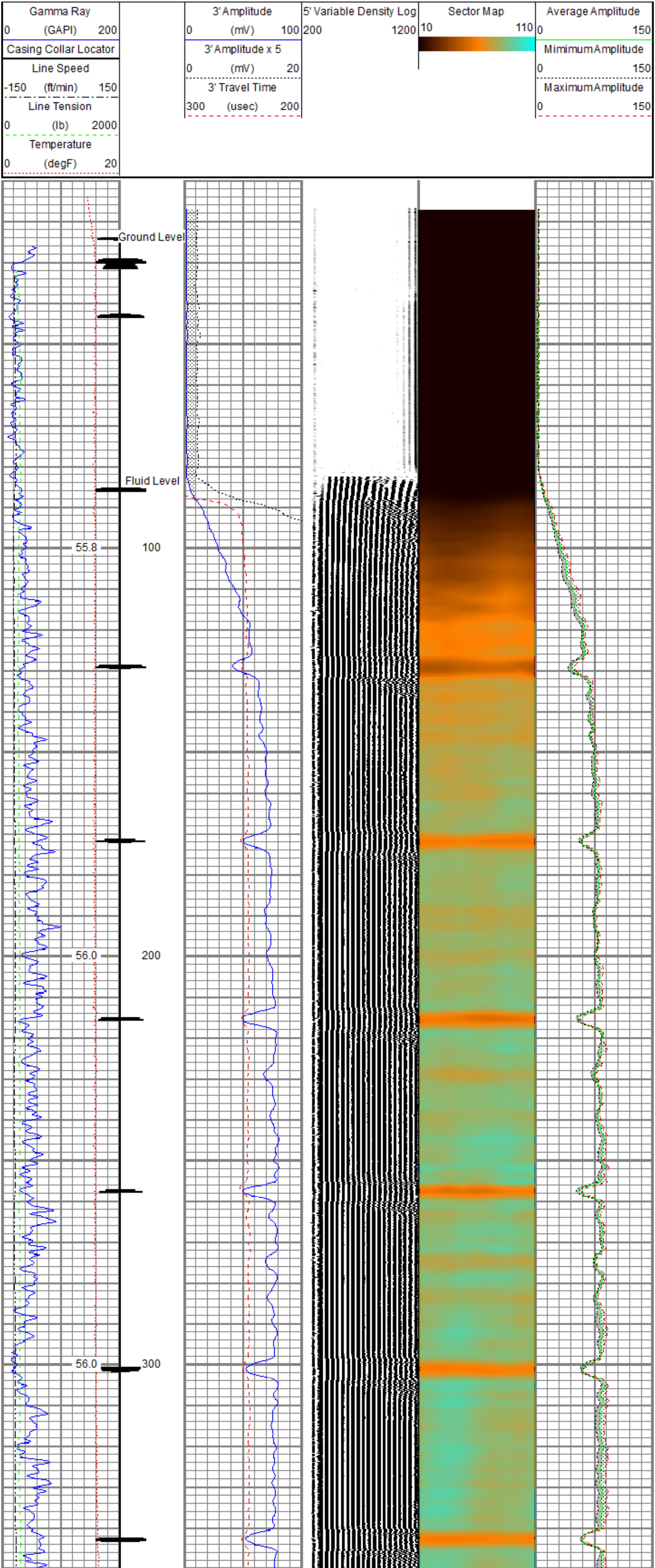
Thank you for choosing Reliance Oilfield Services, LLC!!

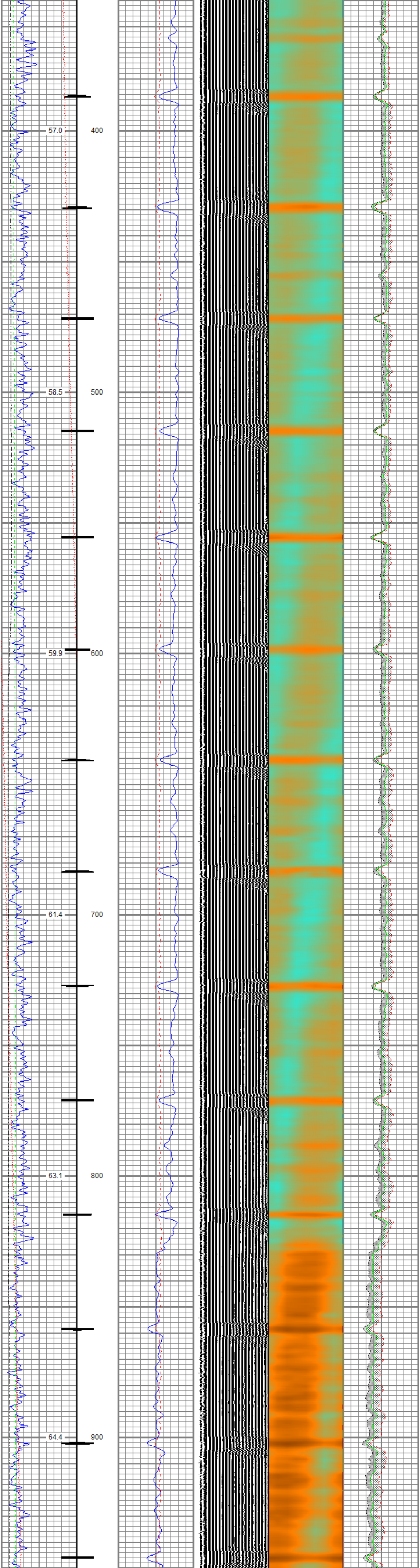
RELIANCE OILFIELD SERVICES

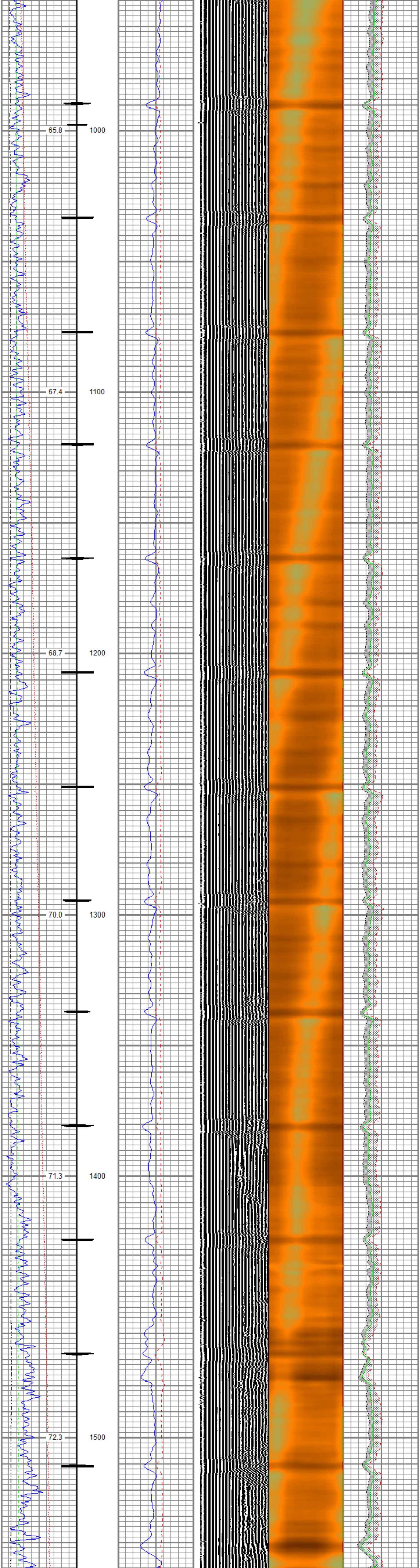
Main Pass

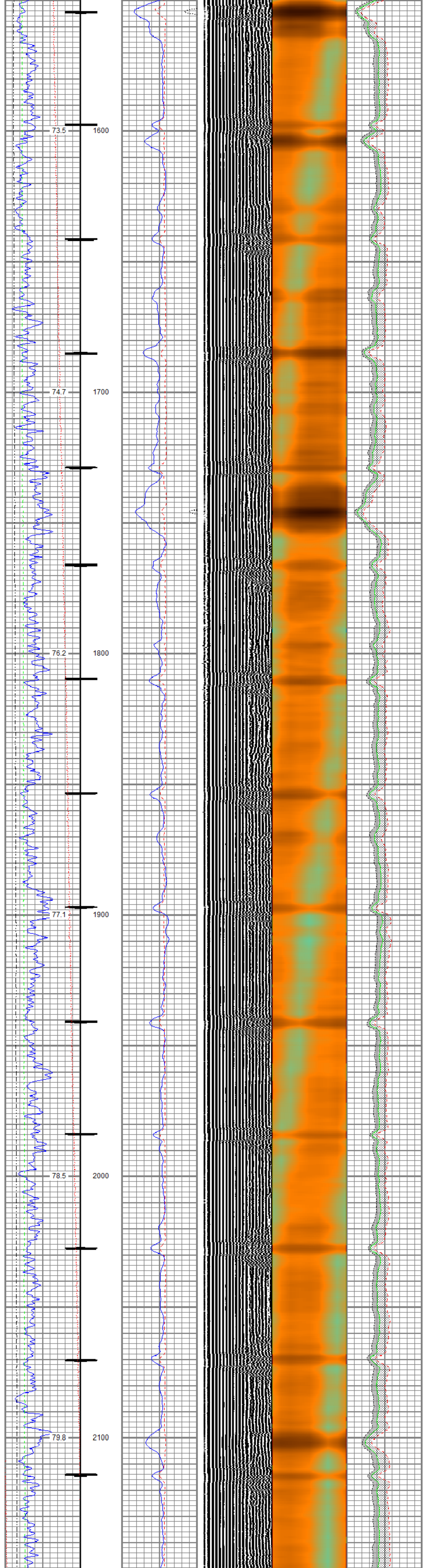
Recorded With 0 PSI Surface Induced Pressure

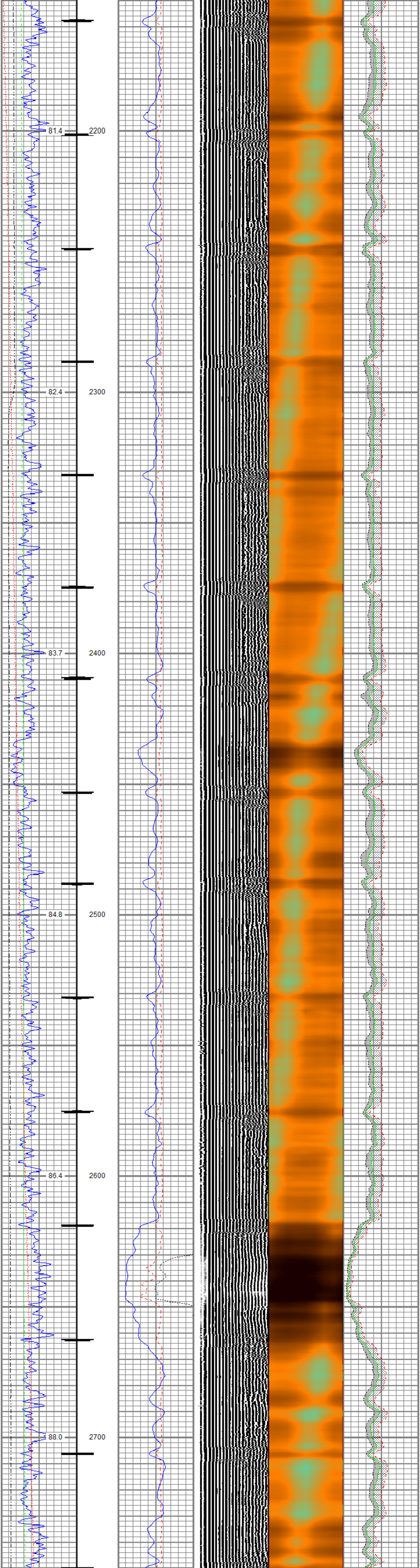
Database File	tep_youberg sr 312-12_rbl_11-06-17\tep_youberg sr 312-12_rbl_11-06-17.db
Dataset Pathname	Main.1
Presentation Format	ros_rbt004_tep
Dataset Creation	Tue Nov 07 11:44:09 2017
Charted by	Depth in Feet scaled 1:240

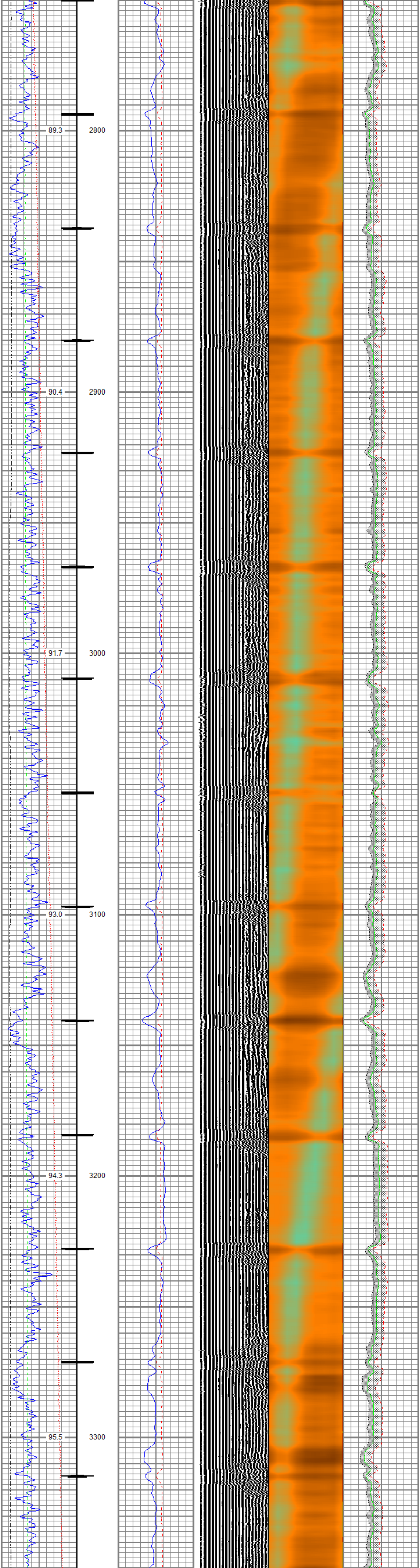


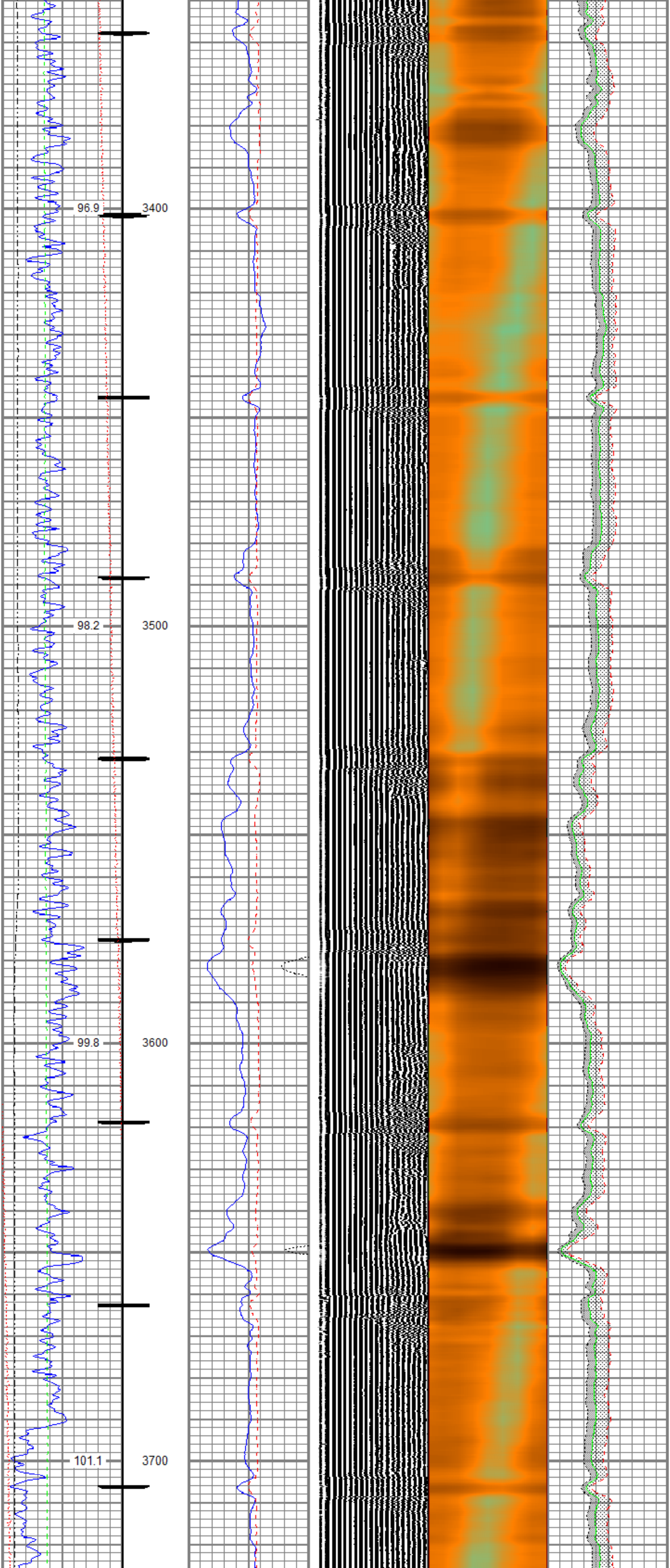


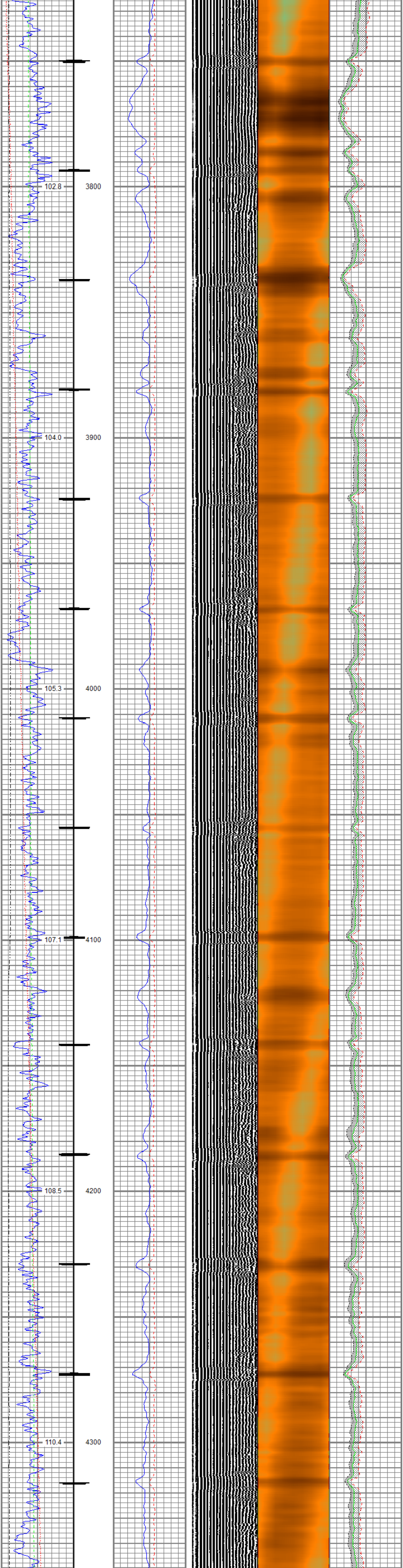








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3900
105.3
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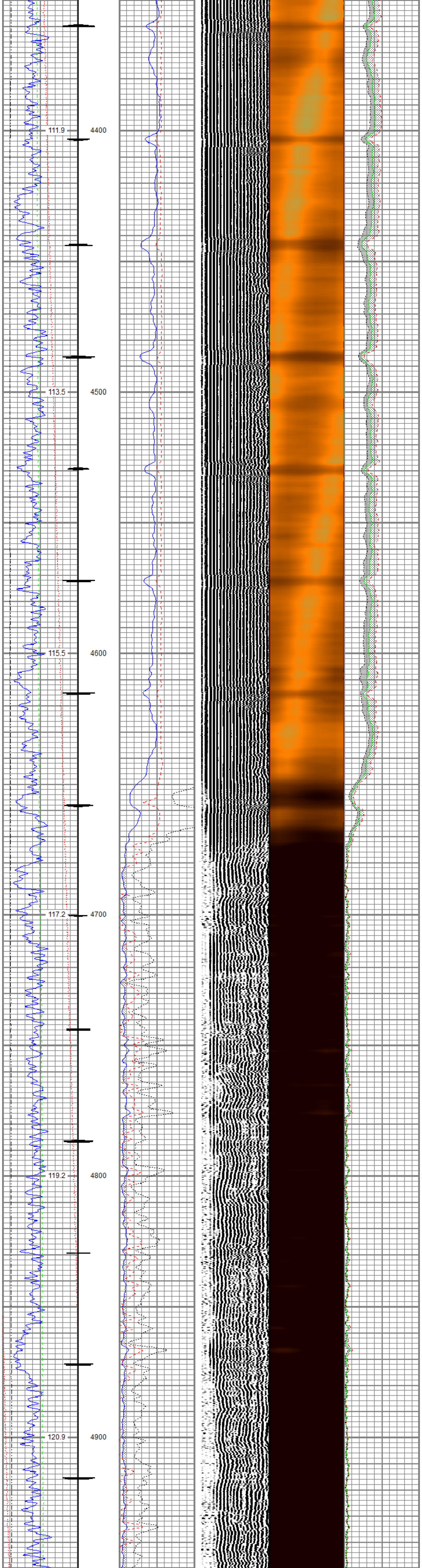
107.1
4100
108.5
4200
110.4
4300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115.5
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117.2
4700
119.2
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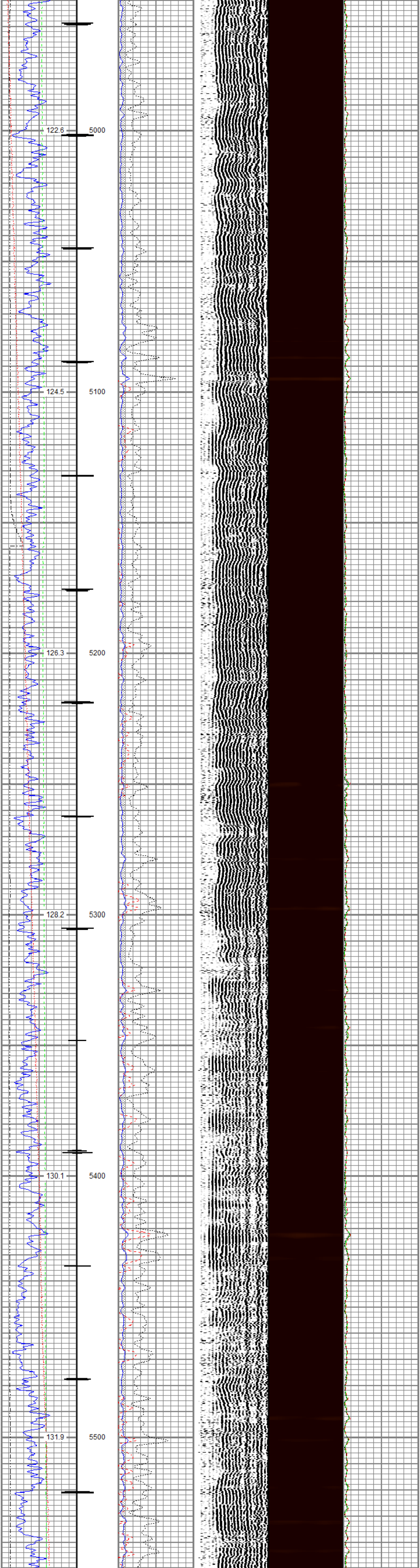
120.9
4900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130.1
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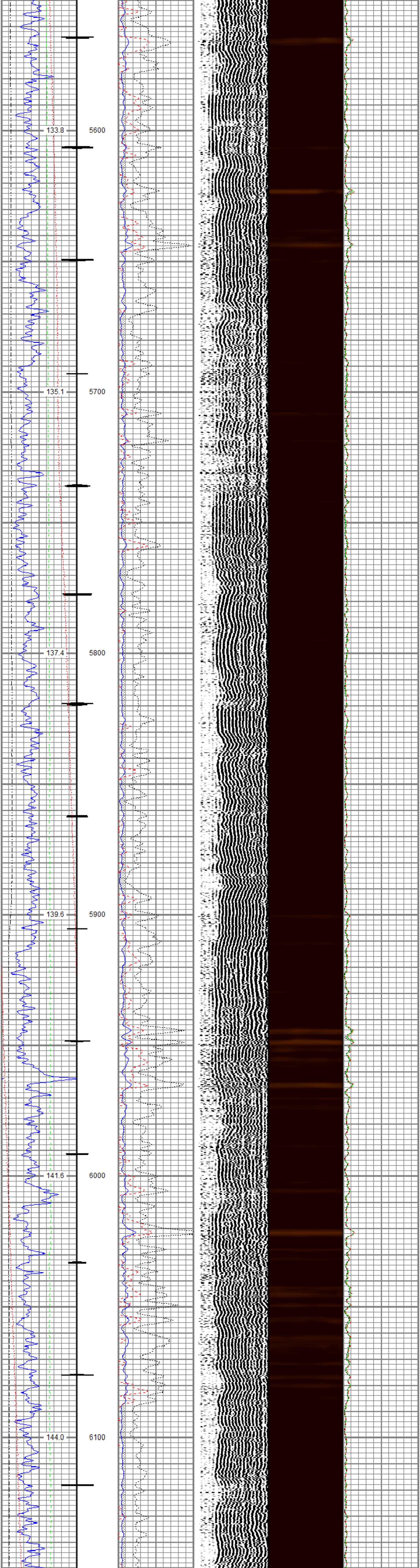
131.9
5500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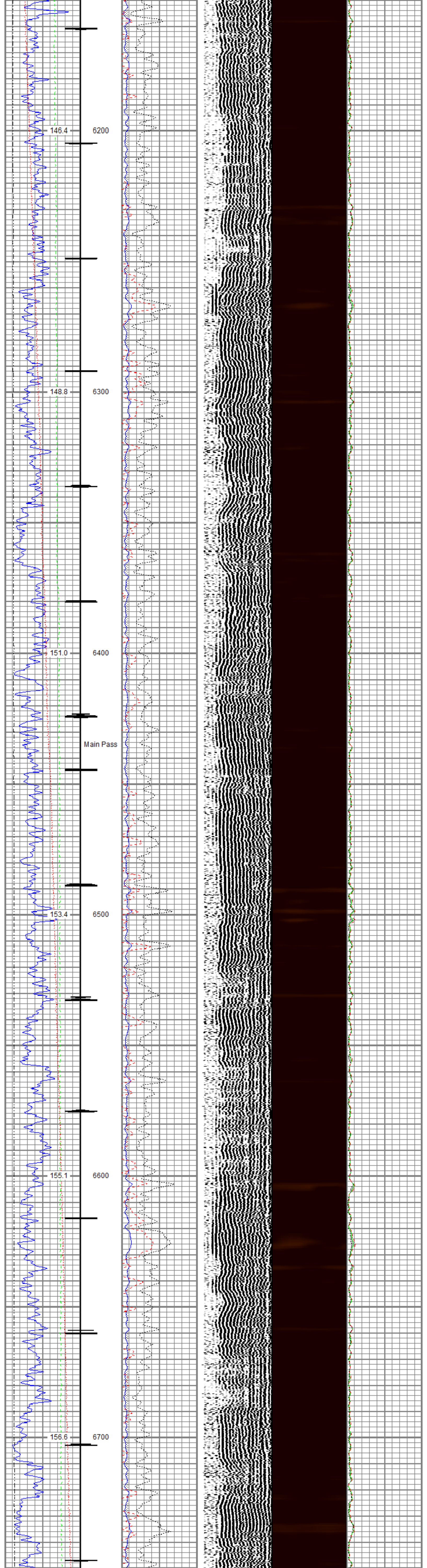
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Main Pass
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155.1
6600
156.6
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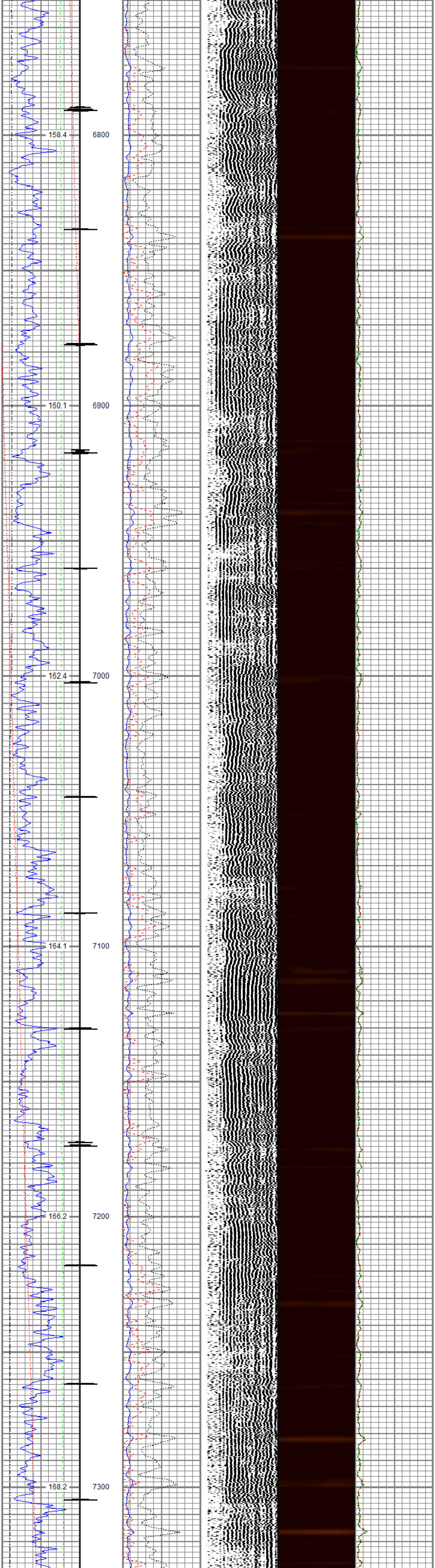
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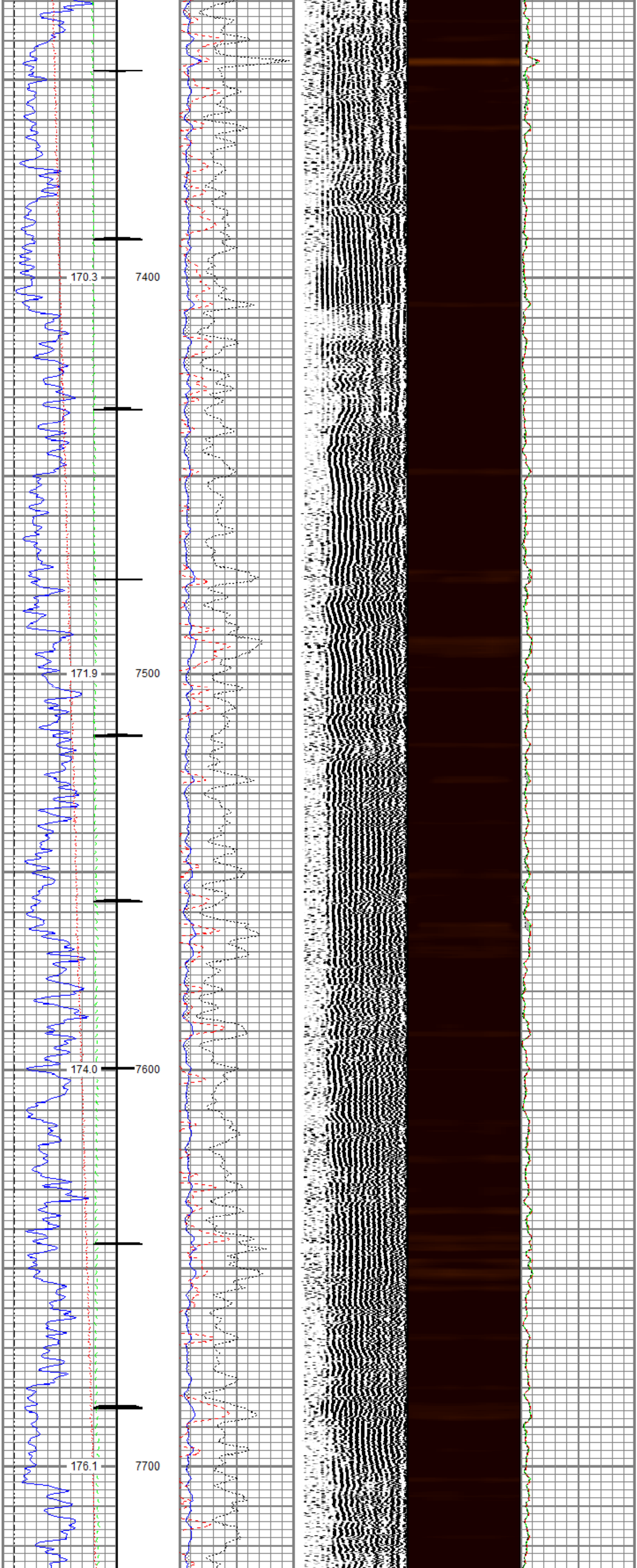
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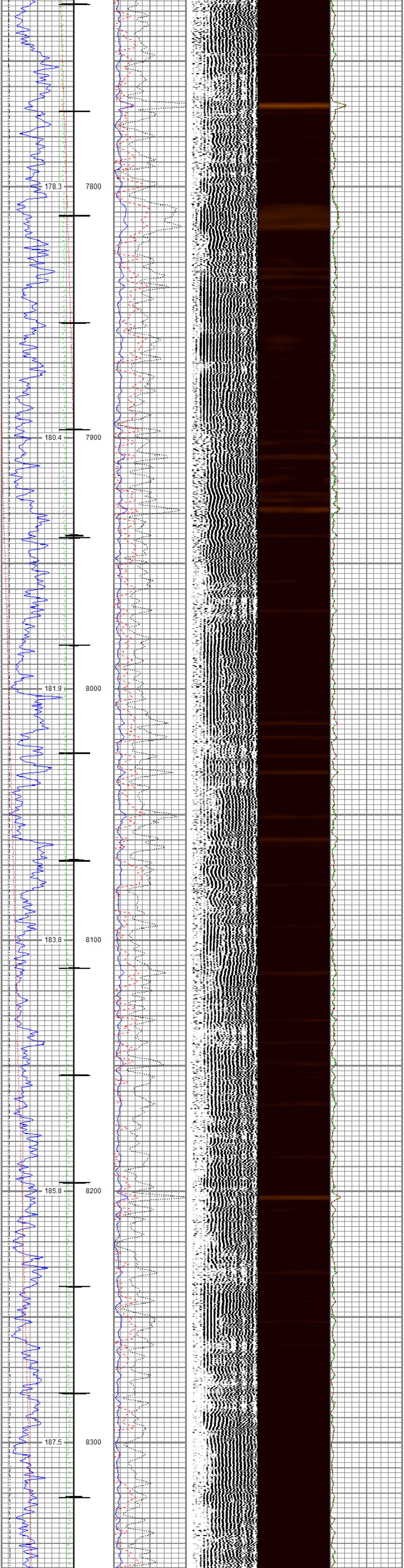
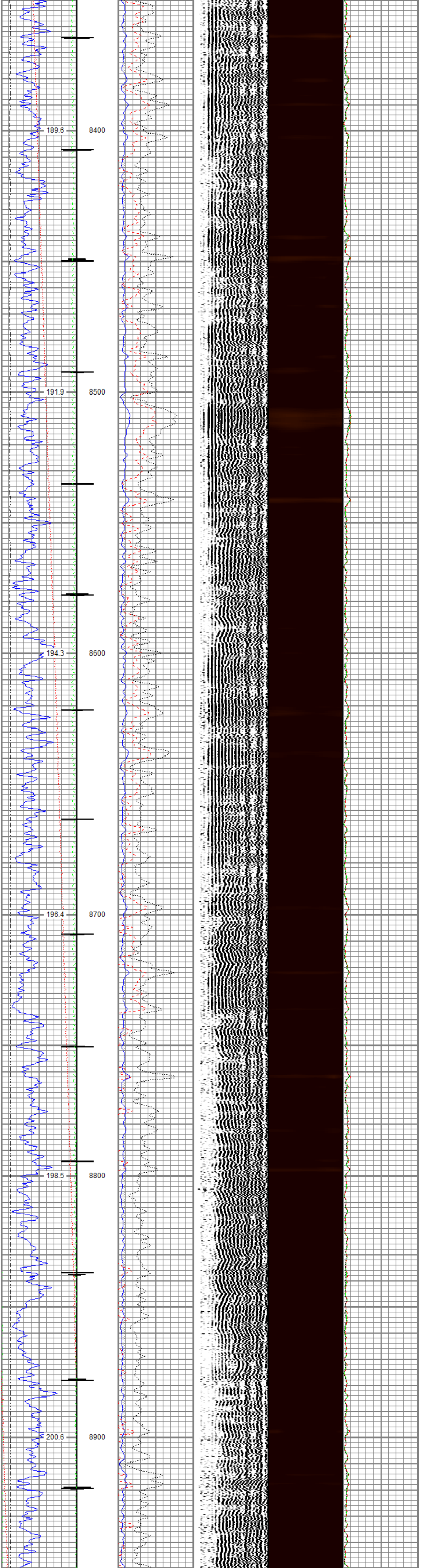
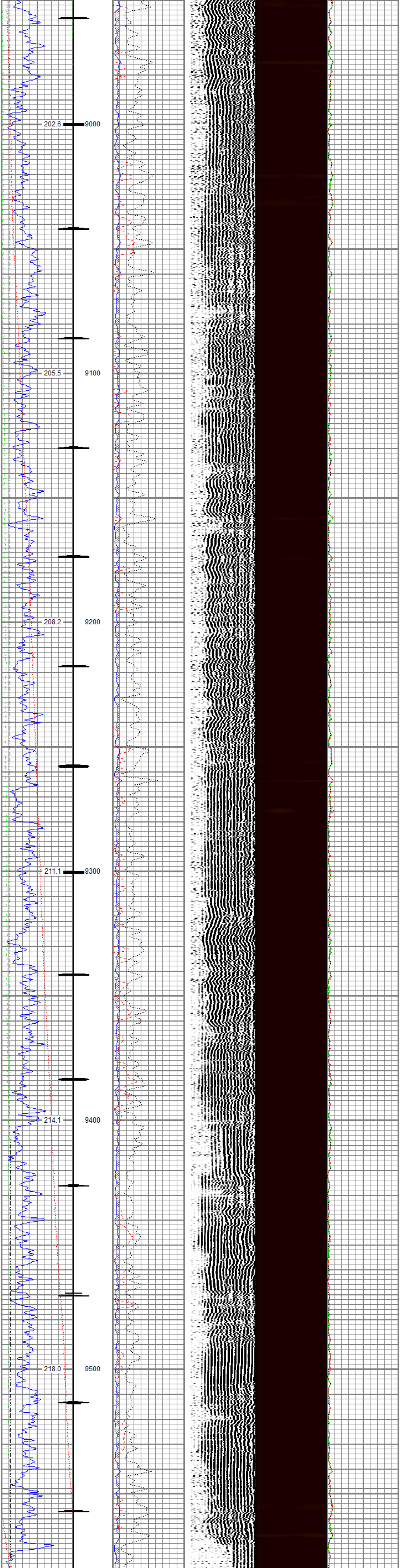
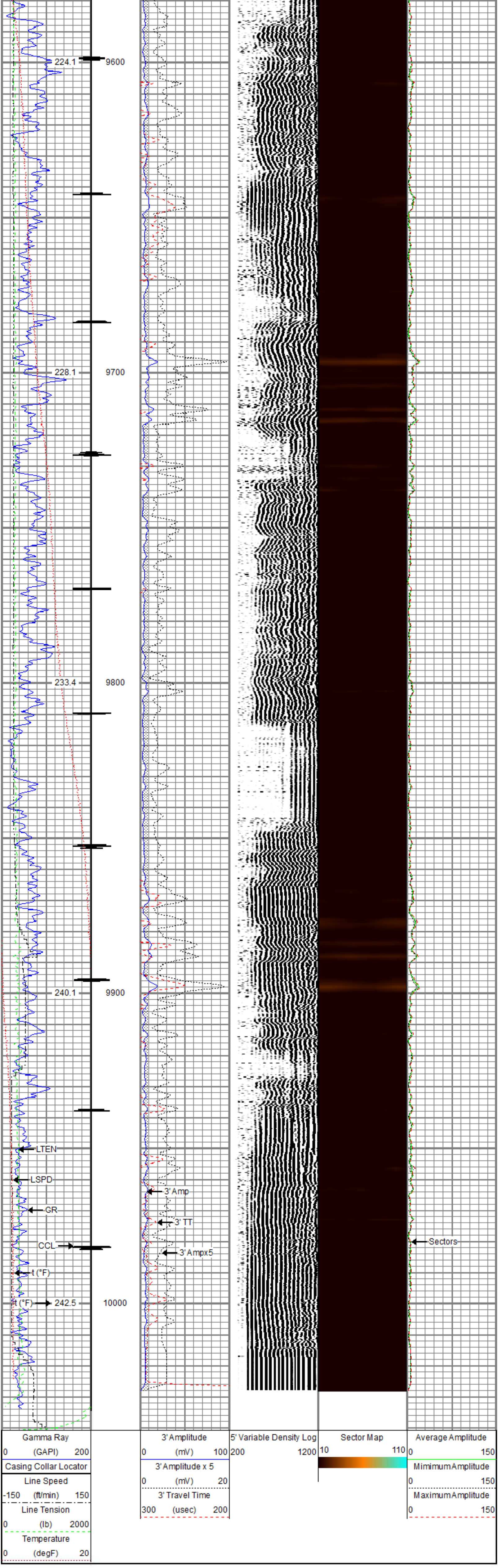








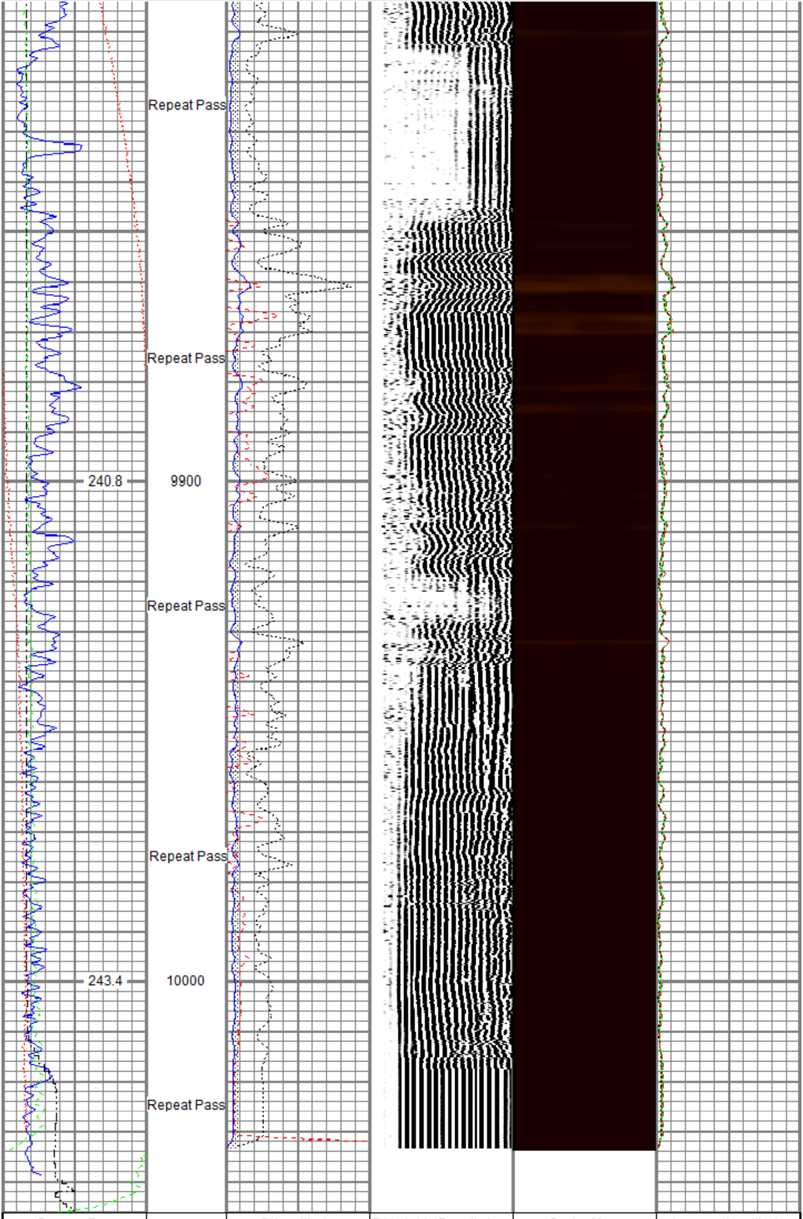
RELIANCE OILFIELD SERVICES

Repeat Pass

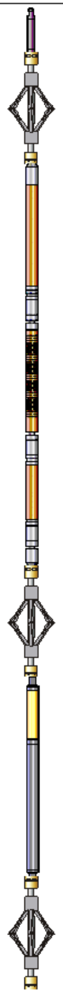
Recorded With 0 PSI Surface Induced Pressure

Database File	tep_youberg sr 312-12_rbl_11-06-17\tep_youberg sr 312-12_rbl_11-06-17.db
Dataset Pathname	Repeat.1
Presentation Format	ros_rbt004_tep
Dataset Creation	Tue Nov 07 12:59:49 2017
Charted by	Depth in Feet scaled 1:240

Gamma Ray		3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 200		0 (mV) 100	200 1200	10 110	0 150
Line Speed		3' Amplitude x 5			Mimimum Amplitude
-150 (ft/min) 150		0 (mV) 20			0 150
Line Tension		3' Travel Time			Maximum Amplitude
0 (lb) 2000		300 (usec) 200			0 150
Temperature					
0 (degF) 20					



Gamma Ray		3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 200		0 (mV) 100	200 1200	10 110	0 150
Line Speed		3' Amplitude x 5			Mimimum Amplitude
-150 (ft/min) 150		0 (mV) 20			0 150
Line Tension		3' Travel Time			Maximum Amplitude
0 (lb) 2000		300 (usec) 200			0 150
Temperature					
0 (degF) 20					

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			Titan_Electric_Cable_Heads-Titan_1-1 Electric Cable Head with 1" Fishing Neck	1/11.03	1.69	5.40
			DSS_RAC-RAC_5-Arm 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00
HeadVolt	18.84					
Temp	16.05					
			Probe_RADII-C-P_RBT_2750 (FW1305-0 Probe 2-3/4" Sector Cement Bond Tool with Temperature Probe	99.19	2.75	105.00
WVFS8	13.88					
WVFS7	13.88					
WVFS6	13.88					
WVFS5	13.88					
WVFS4	13.88					
WVFS3	13.88					
WVFS2	13.88					
WVFS1	13.88					
WVFCAL	13.88					
WVF3FT	13.88					
WVF5FT	12.88					
HEADVOLT	9.63					
			DSS_RAC-RAC_5-Arm 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00
DCCL	6.18					
CCL	6.18					
GR	4.96					
			Probe_GR_CCL-P_CGR_2750_S (FW1 Probe 2-3/4" Digital CCL / Gamma Ray Combined	214.541)	2.75	55.00
			DSS_RAC-RAC_5-Arm 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00

Dataset:	TEP_Youberg SR 312-12_RBL_11-06-17.db: field/well/run1/Main
Total length:	22.40 ft
Total weight:	261.40 lb
O.D.:	2.75 in

Calibration Report

Database File	c:\programdata\warrior\data\tep_youberg sr 312-12_rbl_11-06-17\tep_youberg sr 312-12_rbl_11-06-17.db
Dataset Pathname	Main.1
Dataset Creation	Tue Nov 07 11:44:09 2017

Gamma Ray Calibration Report

Serial Number:	FW1211-081	
Tool Model:	P_CGR_2750_S	
Performed:	Sat Feb 06 11:31:52 2016	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.6	cps
Sensitivity:	0.6061	GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number:	FW1305-098	
Tool Model:	P_RBT_2750	
Calibration Casing Diameter:	4.500	in
Calibration Depth:	10.032	ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.002	0.791	0.800	81.196	101.394	0.996
CAL	-0.006	0.757				
5'	-0.009	0.720	0.800	81.196	110.289	1.738
SUM						
S1	-0.022	0.882	0.000	100.000	110.590	2.450
S2	-0.026	0.923	0.000	100.000	105.379	2.705
S3	-0.027	0.944	0.000	100.000	102.986	2.804
S4	-0.024	0.931	0.000	100.000	104.678	2.507
S5	-0.021	0.931	0.000	100.000	105.045	2.174
S6	-0.020	0.896	0.000	100.000	109.182	2.221
S7	-0.024	0.842	0.000	100.000	115.467	2.725
S8	-0.022	0.841	0.000	100.000	115.843	2.588

Internal Reference Calibration, performed Fri May 05 10:29:14 2017:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	-0.006	0.757	1.000	0.000

Air Zero Calibration, performed Mon Nov 06 07:39:44 2017:

	Raw (v)	Calibrated (v)	Results
	Zero	Zero	Offset
3'	-0.003	0.000	0.000
5'	-0.001	0.000	-0.000
SUM			
S1	-0.009	0.000	0.000
S2	-0.005	0.000	-0.000
S3	-0.005	0.000	-0.000
S4	-0.006	0.000	-0.000
S5	-0.005	0.000	-0.000
S6	-0.005	0.000	-0.000
S7	-0.005	0.000	-0.000
S8	-0.005	0.000	-0.000

Company	TEP Rocky Mountain LLC
Well	Youberg SR 312-12
Field	Rulison
County	Garfield
State	Colorado