Radial Cement Bond
Gamma Ray
Casing Collar Log

Company TEP Rocky Mountain LLC
Well Federal GM 11-10
Field Grand Valley
County Garfield State Colorado

Company	TEP Rocky Mountain LLC
Well	Federal GM 11-10
Field	Grand Valley
County	Garfield
State	Colorado

Location: API # : 05-045-22694

2112' FNL & 1908' FWL SENW

SEC 10 TWP 7S RGE 96W

Other Services

Permanent Datum	Ground Level	Elevation	6148'
Log Measured From	Kelly Bushing	24 FT	
Drilling Measured From	Kelly Bushing		

Elevation
K.B. 6172'
D.F. 6171'
G.L. 6148'

Date	30-AUG-2017		
Run Number	One		
Depth Driller	7541 FT		
Depth Logger	7484 FT		
Bottom Logged Interval	7484 FT		
Top Log Interval	Surface		
Open Hole Size	8.750"		
Type Fluid	Fresh Water		
Density / Viscosity	8.34 lb/gal		
Max. Recorded Temp.	204°F		
Estimated Cement Top	See Log		
Time Well Ready	ROA		
Time Logger on Bottom	13:35		
Equipment Number	HD-359		
Location	Grand Junction, CO		
Recorded By	A. Ellsworth		
Witnessed By	J. Skalla		

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	1040 FT
Intermediate #1	4 1/2	11.6	P-110	Surface	7501 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

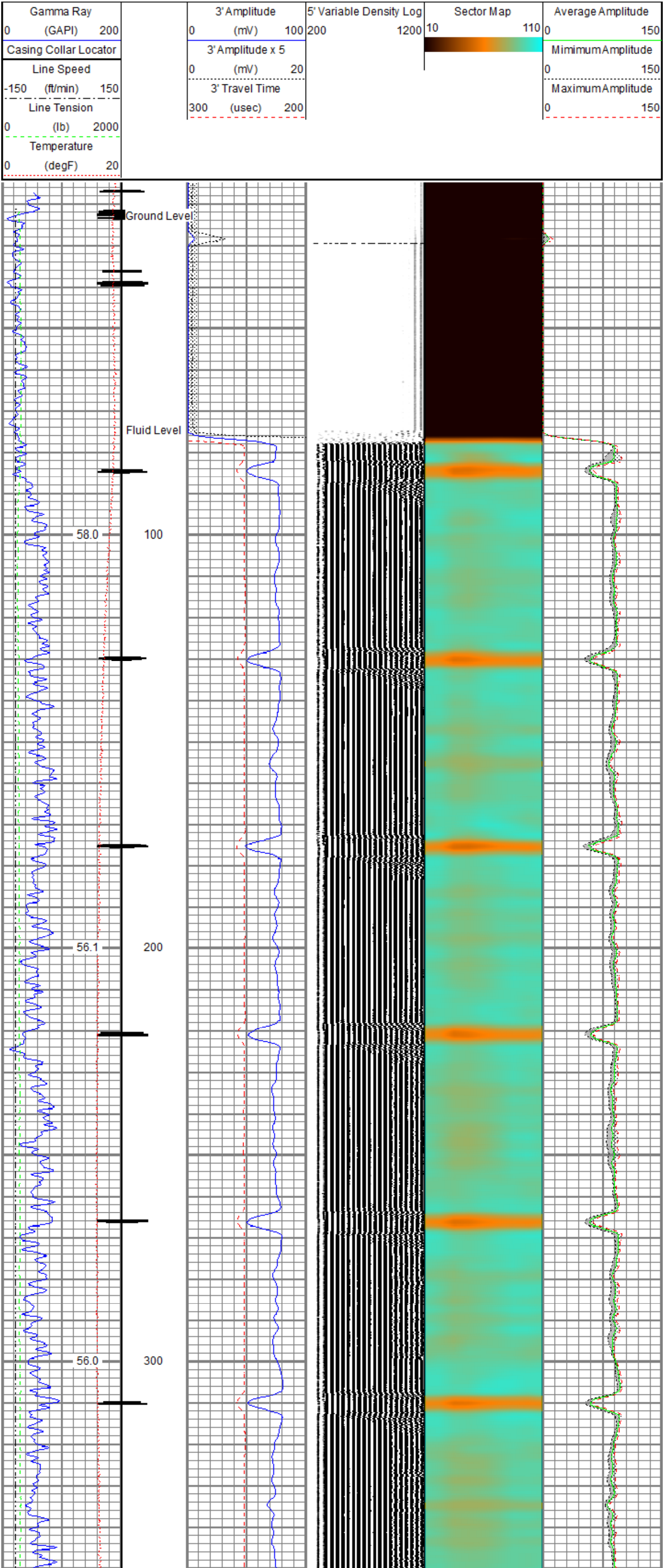
Log ran as per customer request
Depth referenced to Kelly Bushing at 24 FT
Marker Joint logged at 3434 FT - 3456 FT
Log ran from 7484 to Surface
Recorded with 0 PSI Surface Induced Pressure

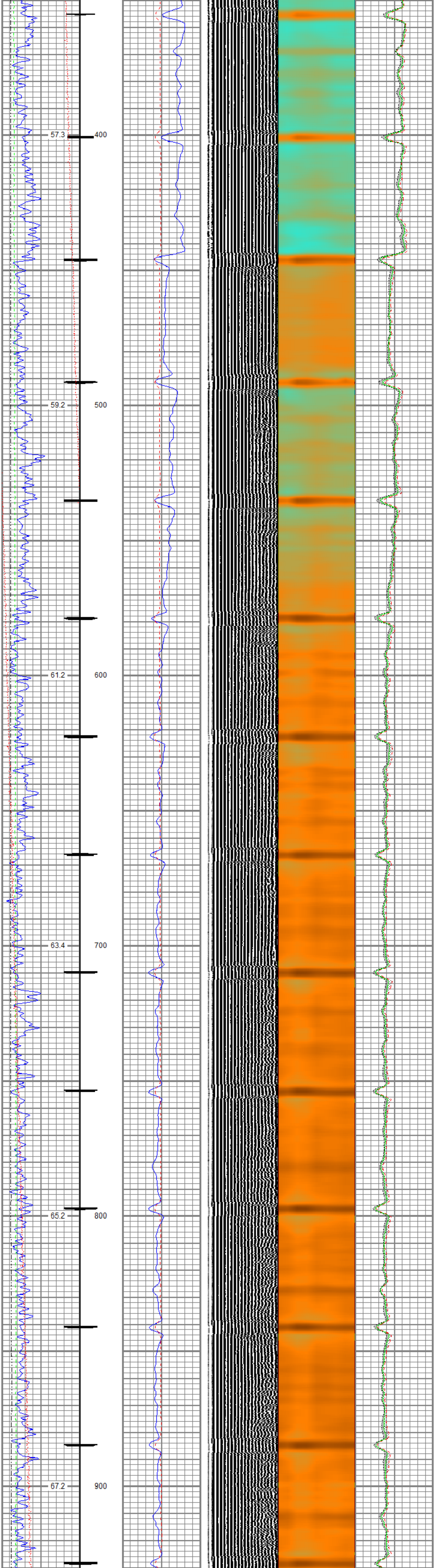
Thank you for choosing Reliance Oilfield Services, LLC!!

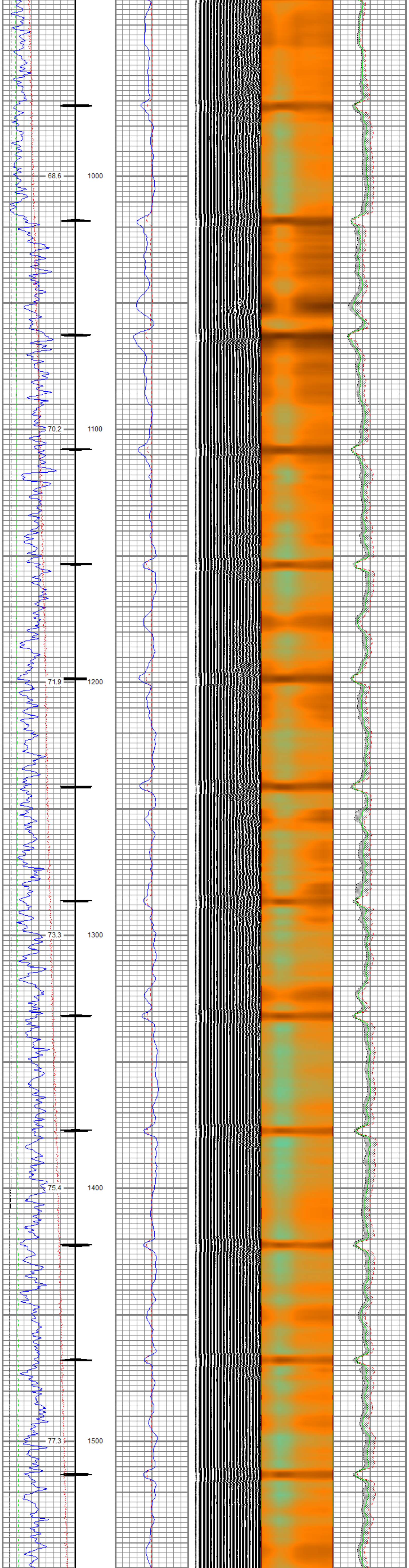
Main Pass

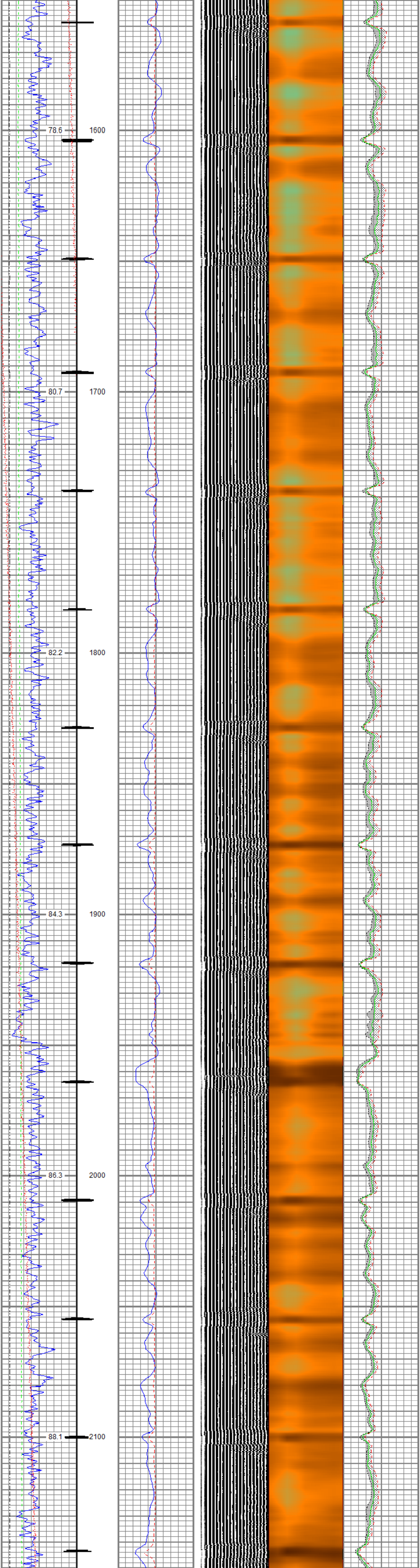
Recorded With 0 PSI Surface Induced Pressure

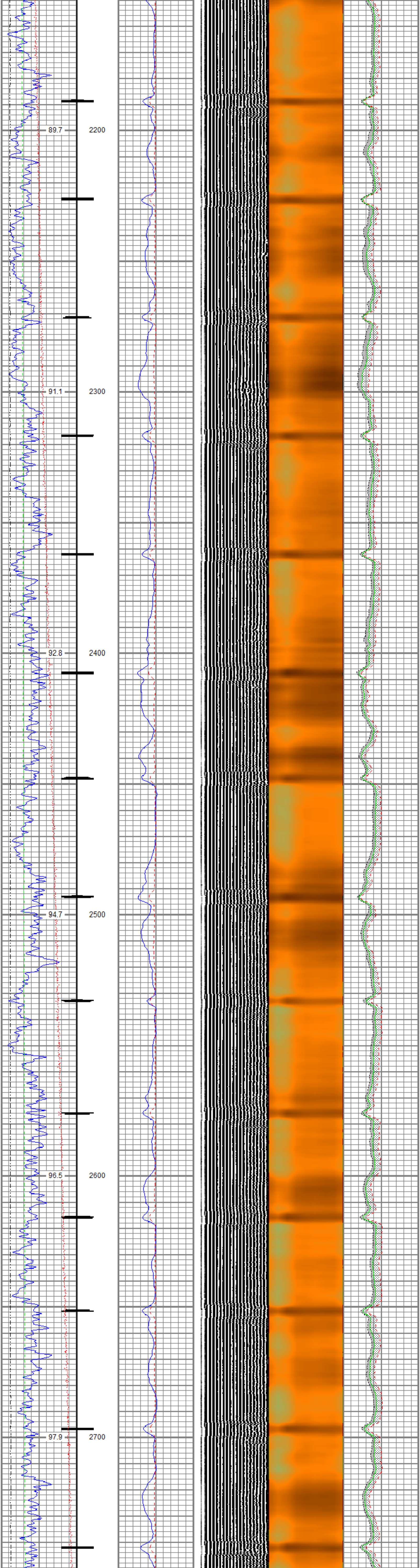
Database File	tep_federal gm 11-10_rbl_08-30-17\tep_federal gm 11-10_rbl_08-30-17.db
Dataset Pathname	Main.1
Presentation Format	ros_rbt004_tep
Dataset Creation	Thu Aug 31 11:22:48 2017
Charted by	Depth in Feet scaled 1:240

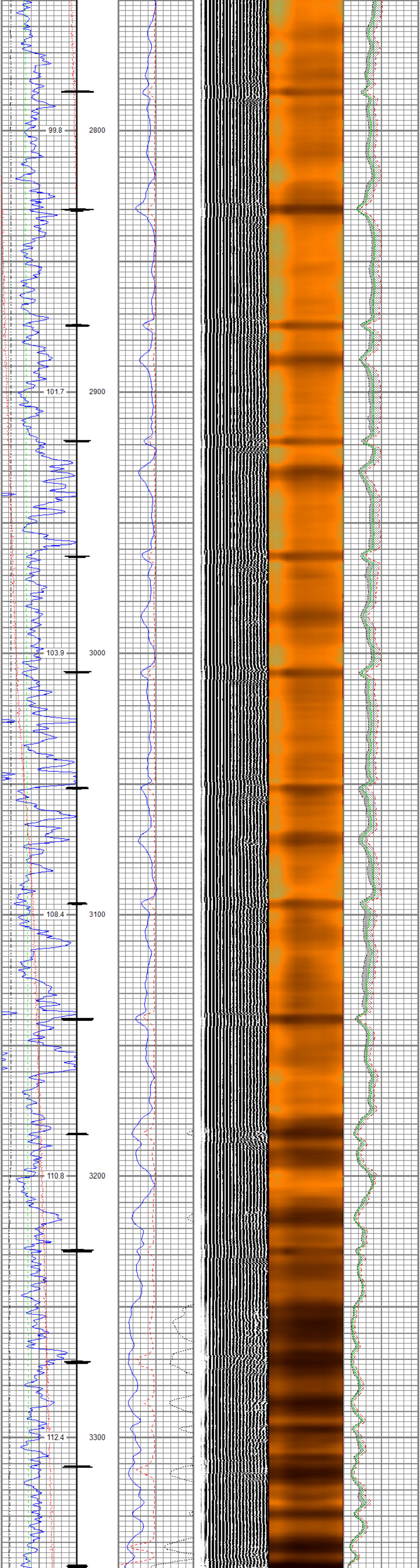


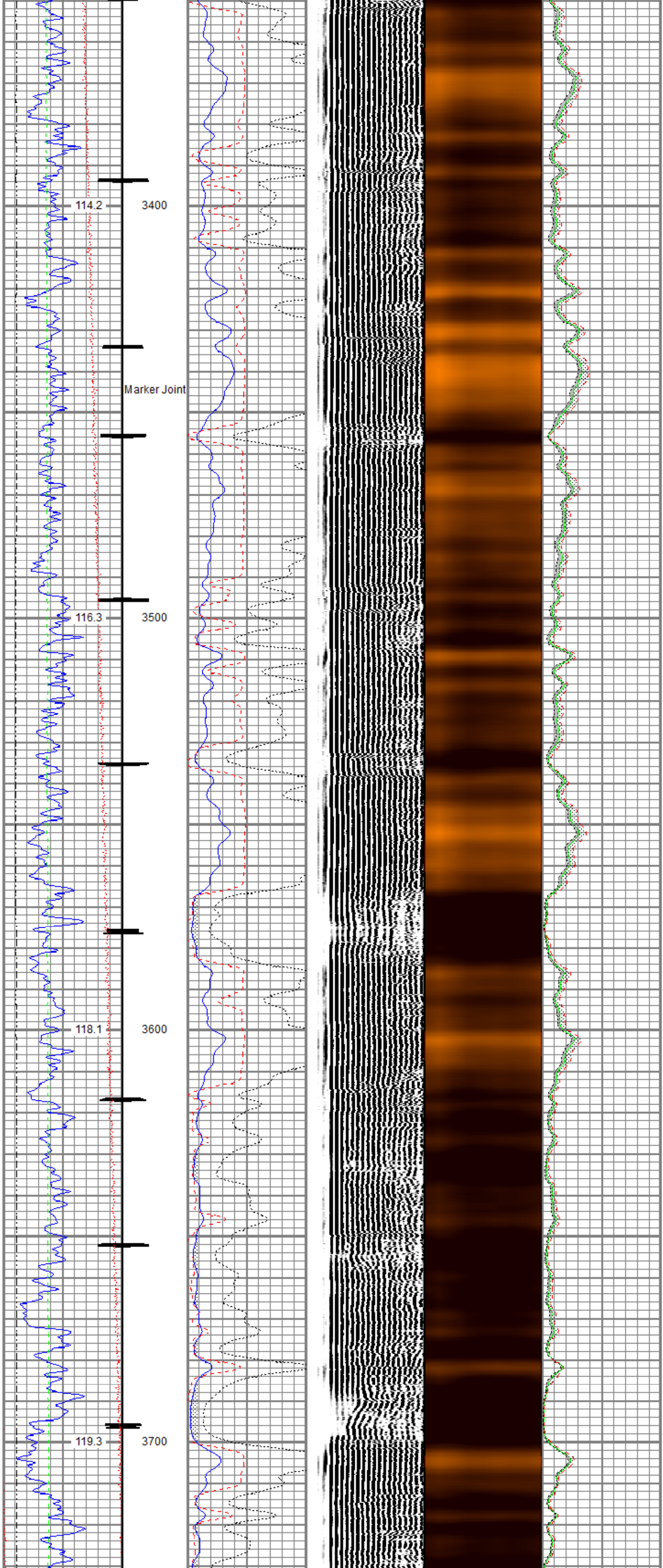


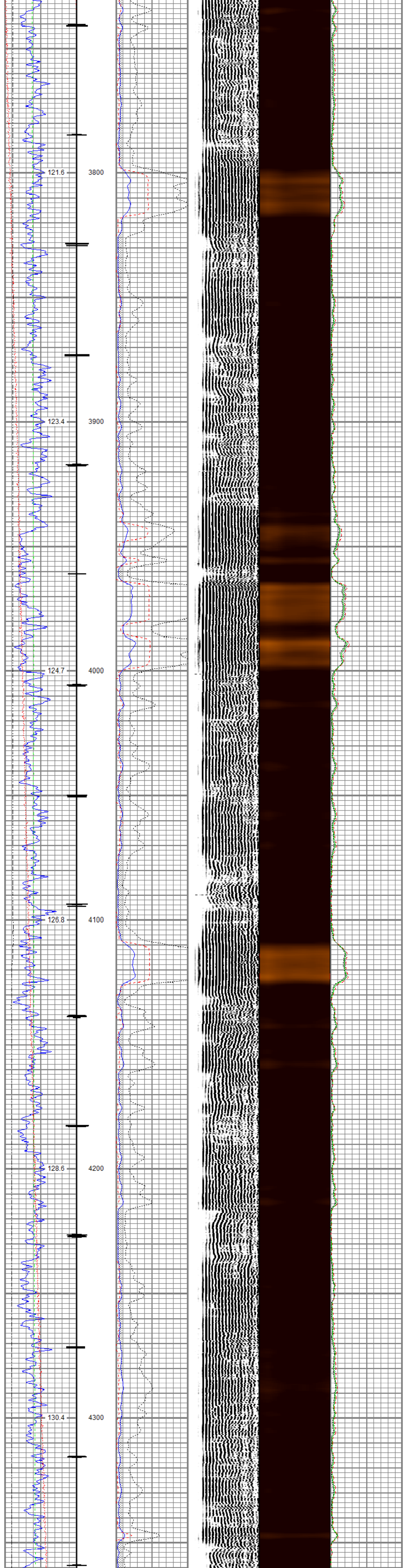


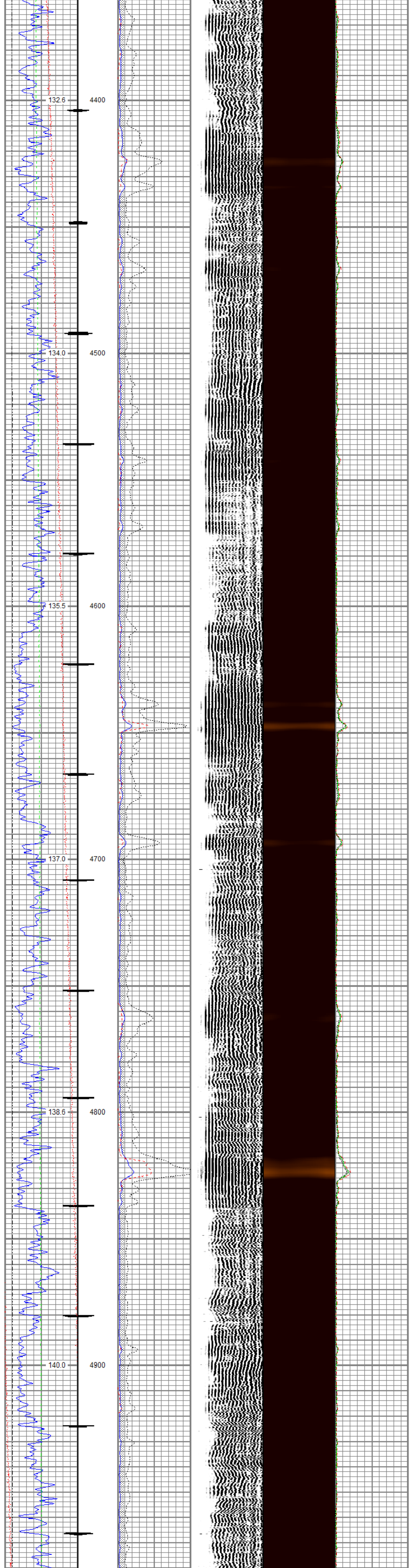


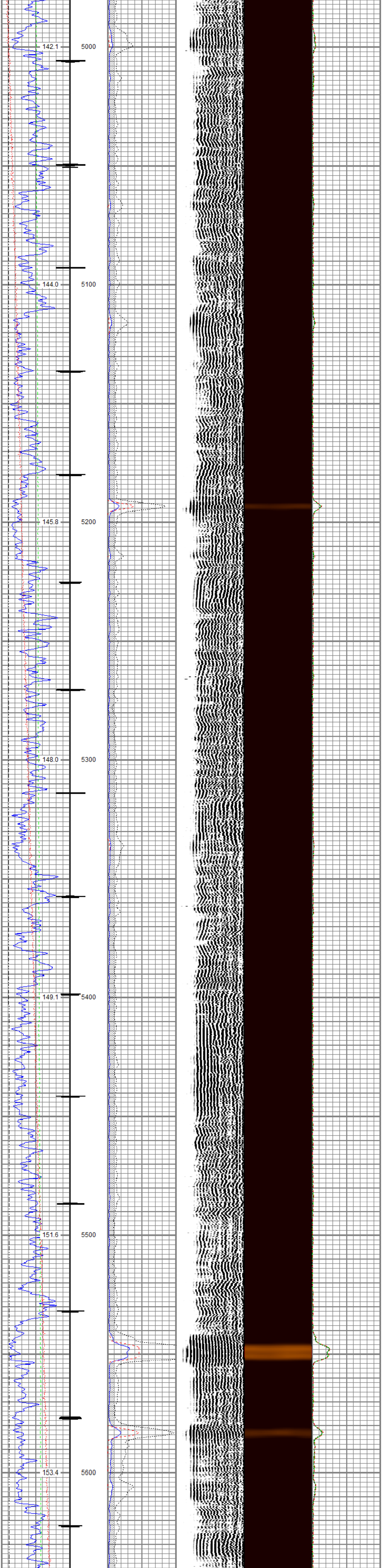


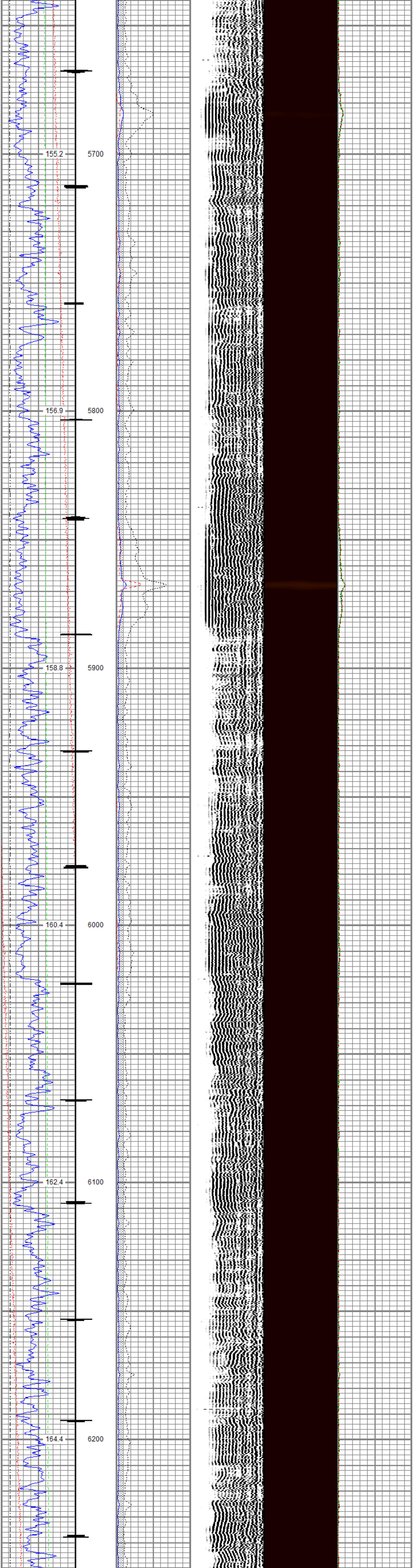


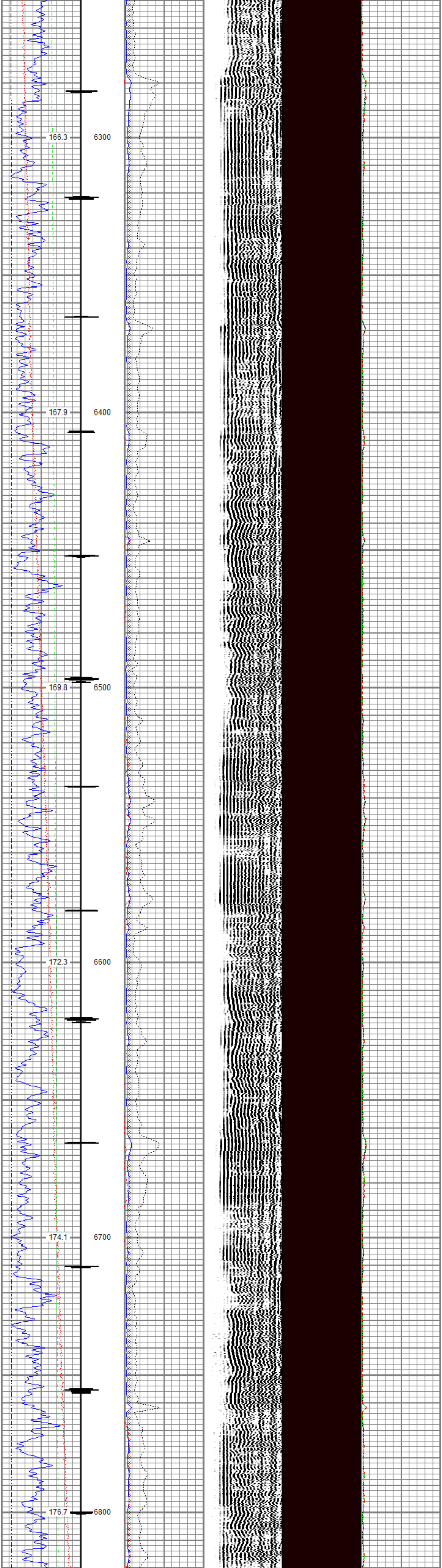


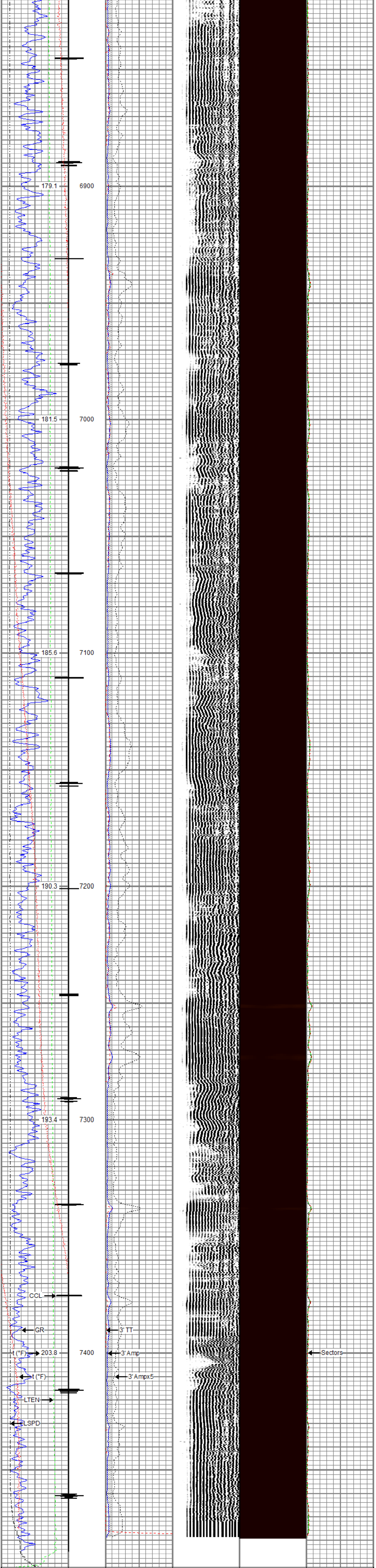












Gamma Ray		3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 200		0 (mV) 100	200 1200	10 110	0 150
Casing Collar Locator		3' Amplitude x 5			Mimimum Amplitude
Line Speed		0 (mV) 20			0 150
-150 (ft/min) 150		3' Travel Time			Maximum Amplitude
Line Tension		300 (usec) 200			0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

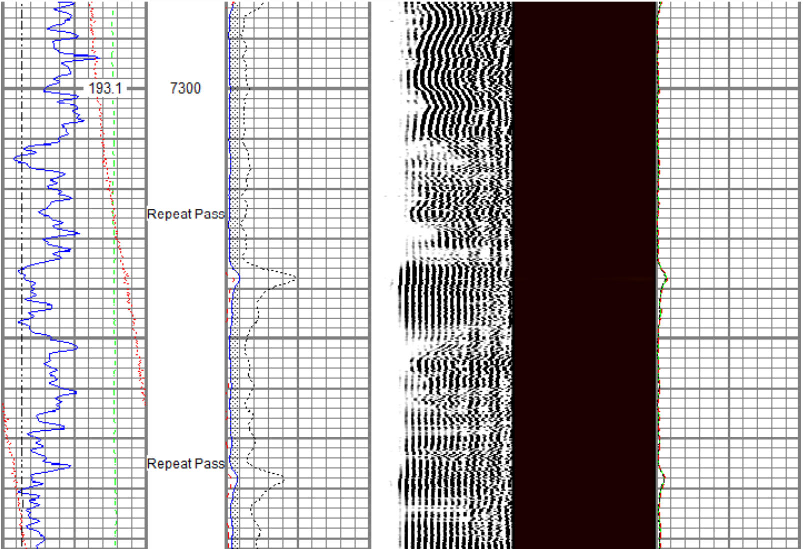
RELIANCE
OILFIELD SERVICES

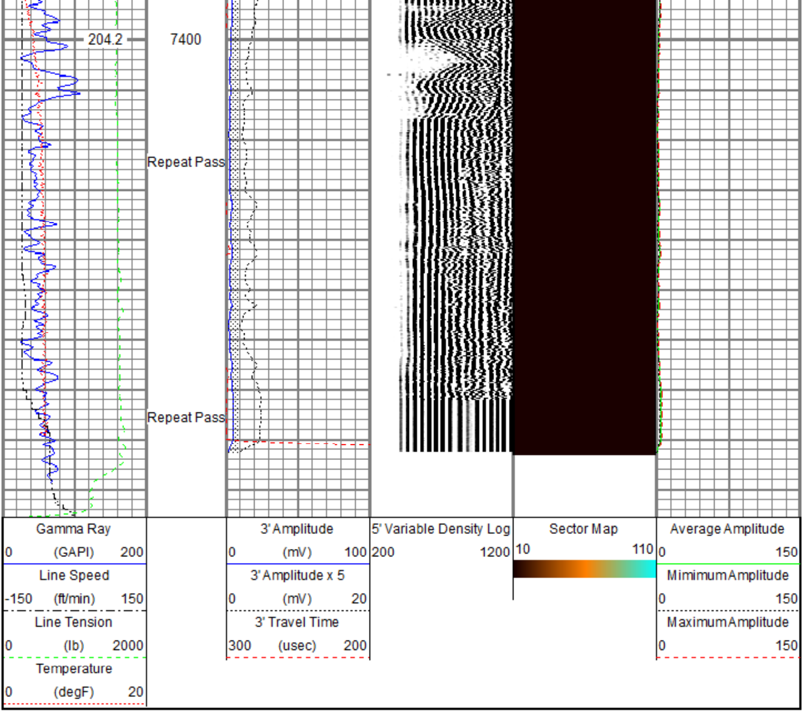
Repeat Pass

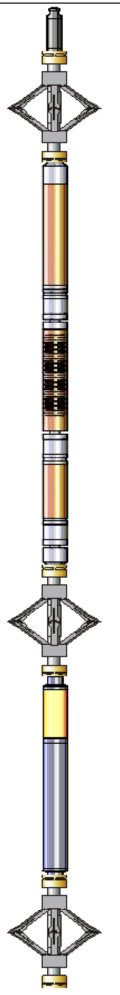
Recorded With 0 PSI Surface Induced Pressure

Database File	tep_federal gm 11-10_rbl_08-30-17\tep_federal gm 11-10_rbl_08-30-17.db
Dataset Pathname	Repeat.1
Presentation Format	ros_rbt004_tep
Dataset Creation	Thu Aug 31 11:35:14 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					





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
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_federal gm 11-10_rbl_08-30-17.db: field/well/run1/Main.1
Total length:	22.40 ft
Total weight:	261.40 lb
O.D.:	2.75 in

Calibration Report

Database File	d:\warrior\data\tep_federal gm 11-10_rbl_08-30-17\tep_federal gm 11-10_rbl_08-30-17.db
Dataset Pathname	Main.1
Dataset Creation	Thu Aug 31 11:22:48 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:	32.619	ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.007	0.629	0.800	81.196	126.481	1.678
CAL	-0.005	0.694				
5'	-0.006	0.493	0.800	81.196	161.124	1.778
SUM						
S1	-0.009	0.647	0.000	100.000	152.383	1.352
S2	-0.006	0.659	0.000	100.000	150.487	0.884
S3	-0.007	0.701	0.000	100.000	141.316	0.935
S4	-0.007	0.711	0.000	100.000	139.262	0.957
S5	-0.006	0.674	0.000	100.000	147.036	0.931
S6	-0.006	0.636	0.000	100.000	155.711	0.998
S7	-0.007	0.623	0.000	100.000	158.923	1.061
S8	-0.007	0.628	0.000	100.000	157.563	1.103

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	-0.005	0.694	1.000	0.000

Air Zero Calibration, performed Wed Aug 30 11:29:05 2017:

	Raw (v)	Calibrated (v)	Results
	Zero	Zero	Offset
3'	-0.006	0.000	-0.000
5'	-0.004	0.000	0.000
SUM			
S1	-0.009	0.000	0.000
S2	-0.006	0.000	0.000
S3	-0.006	0.000	0.000
S4	-0.006	0.000	0.000
S5	-0.006	0.000	0.000
S6	-0.006	0.000	0.000
S7	-0.006	0.000	-0.000
S8	-0.006	0.000	-0.000

RELIANCE
OILFIELD SERVICES

Company	TEP Rocky Mountain LLC
Well	Federal GM 11-10
Field	Grand Valley
County	Garfield
State	Colorado