RELIANCE OILFIELD SERVICES

Radial Cement Bond
Gamma Ray
Casing Collar Log

Company	TEP Rocky Mountain LLC
Well	Clough NR 314-3
Field	Rulison
County	Garfield
State	Colorado

Company TEP Rocky Mountain LLC
Well Clough NR 314-3
Field Rulison
County Garfield State Colorado

Location: API #: 05-045-23915

SEC 3 TWP 6S RGE 94W

Other Services
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Permanent Datum	Ground Level	Elevation 6719.1'	Elevation
Log Measured From	Kelly Bushing	24 FT	K.B. 6743.1'
Drilling Measured From	Kelly Bushing		D.F. 6742.1'
			G.L. 6719.1'

Date	15-JAN-2019		
Run Number	One		
Depth Driller	10170 FT		
Depth Logger	10087 FT		
Bottom Logged Interval	10073 FT		
Top Log Interval	Surface		
Open Hole Size	8.750"		
Type Fluid	Water		
Density / Viscosity	8.34 lb/gal		
Max. Recorded Temp.	253°F		
Estimated Cement Top	See Log		
Time Well Ready	ROA		
Time Logger on Bottom	23:30		
Equipment Number	HD-0359		
Location	Grand Junction, CO		
Recorded By	Z. Fisher		
Witnessed By	Dustin Welsh		

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	9 5/8	36	J-55	Surface	1109 FT
Intermediate #1	4 1/2	11.6	P-110	Surface	10128 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 from 5938-5959 FT
Log ran from 10073 FT to Surface
Recorded with 0 PSI Surface Induced Pressure

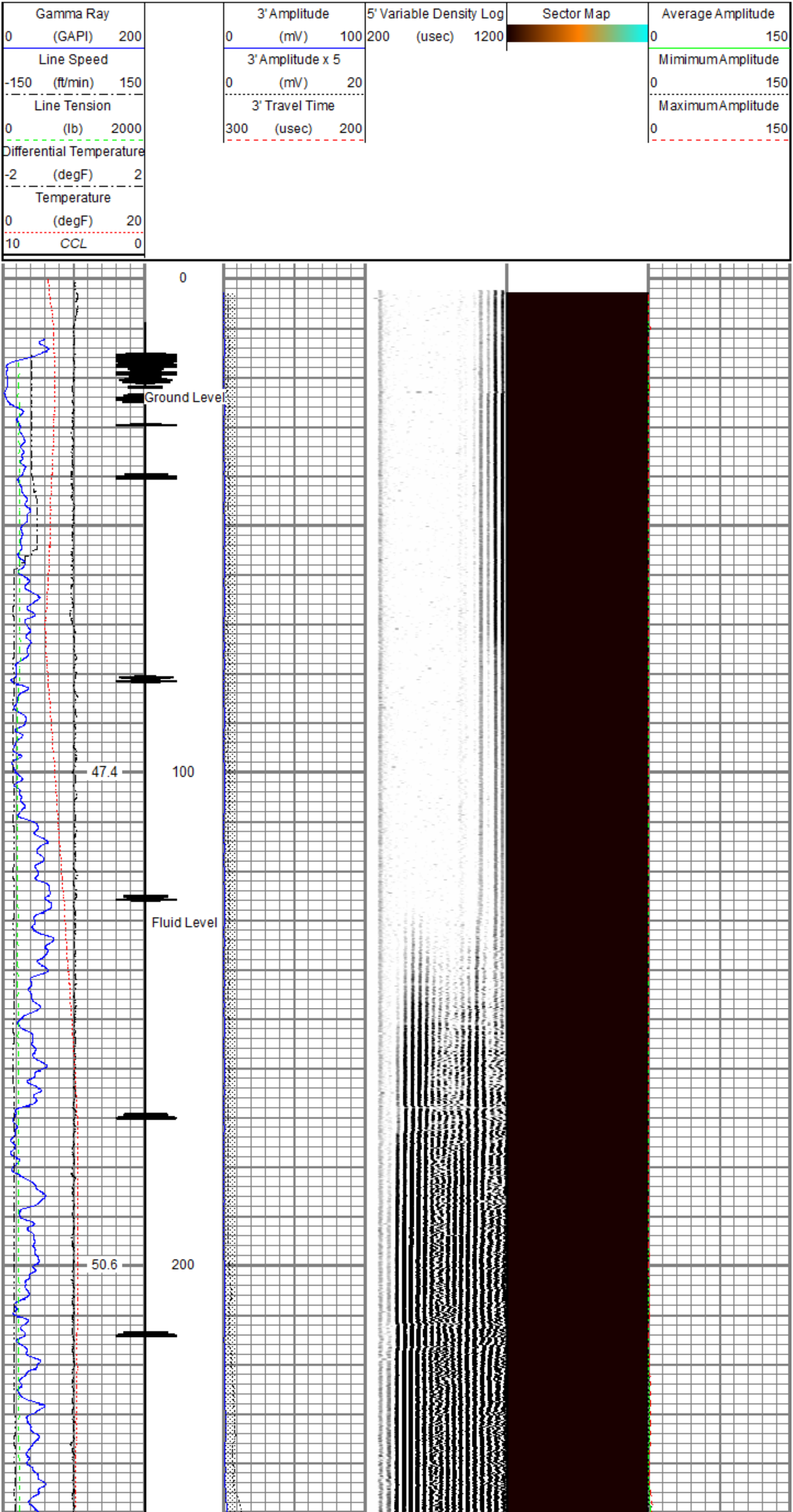
Thank you for choosing Reliance Oilfield Services, LLC!

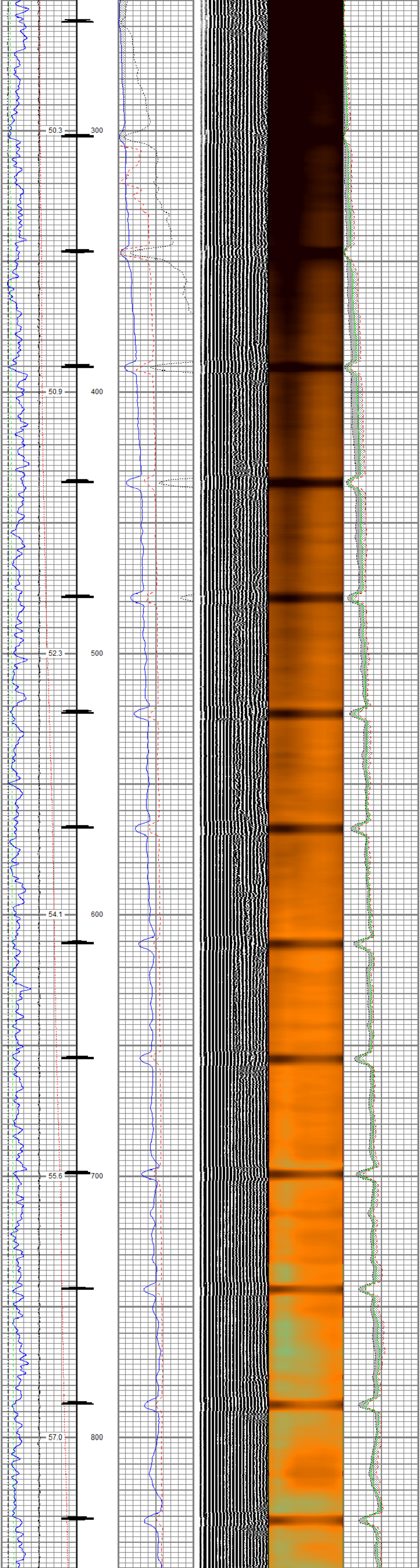
RELIANCE OILFIELD SERVICES

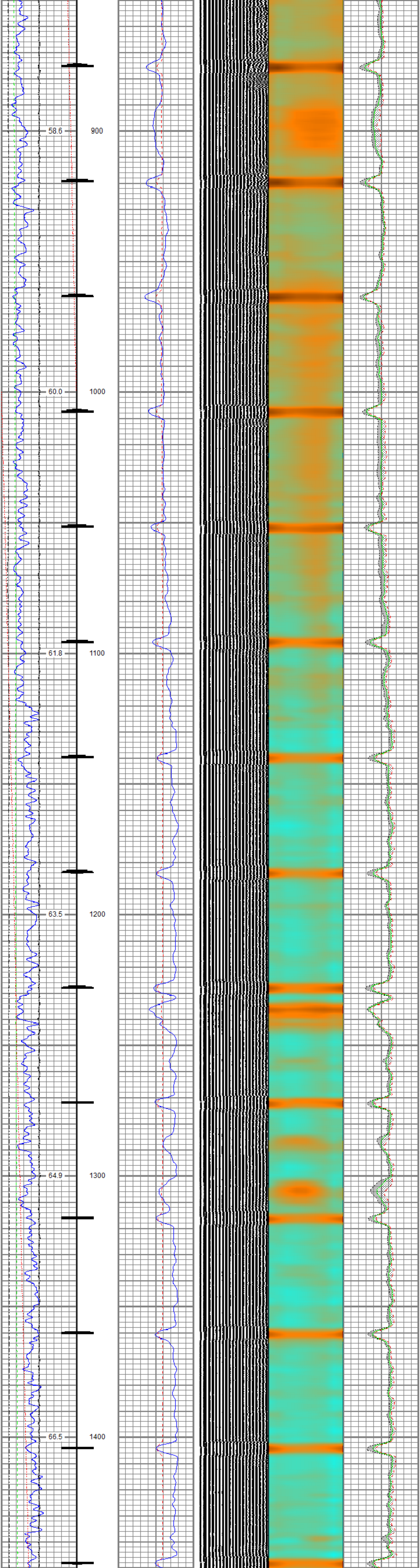
Main Pass

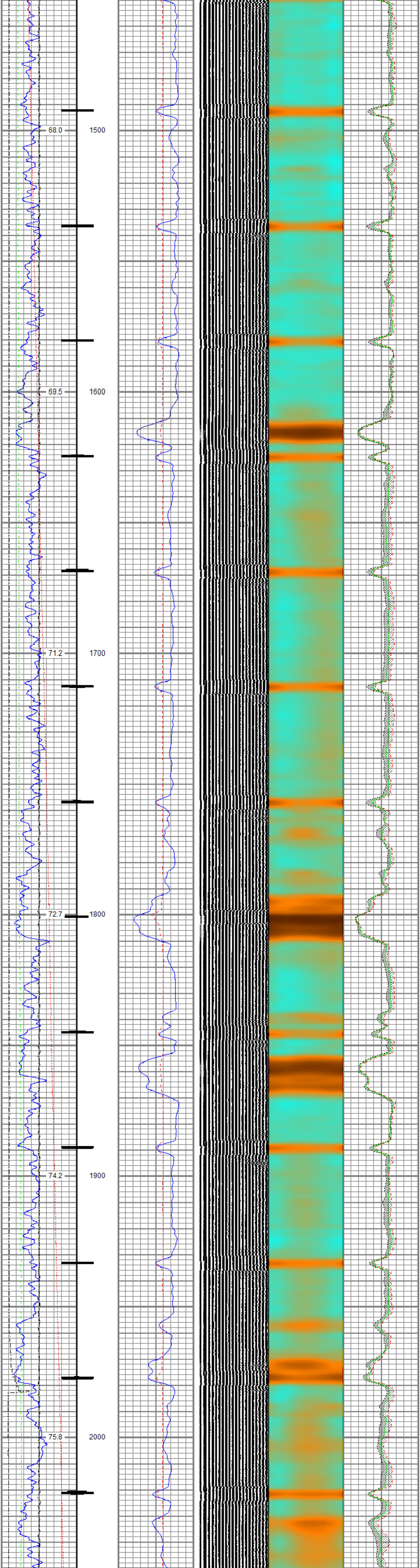
Recorded With 0 PSI Surface Induced Pressure

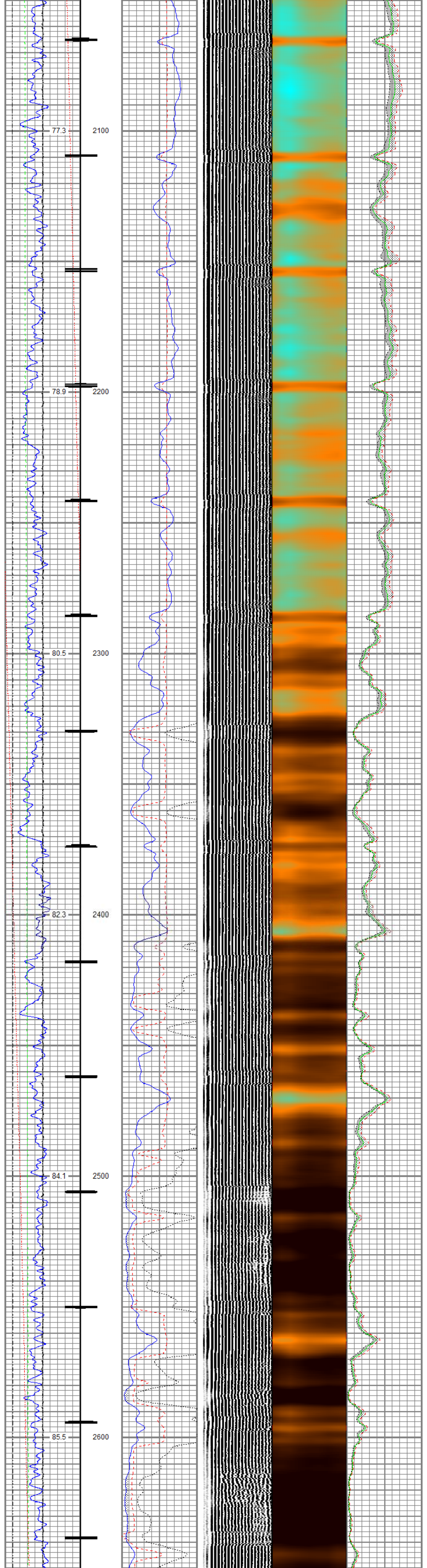
Database File	tep_clough nr 314-3\tep_clough nr 314-3_rbl_01-15-19.db
Dataset Pathname	main.1
Presentation Format	ros_rbt004_tep
Dataset Creation	Thu Jan 17 06:20:52 2019
Charted by	Depth in Feet scaled 1:240

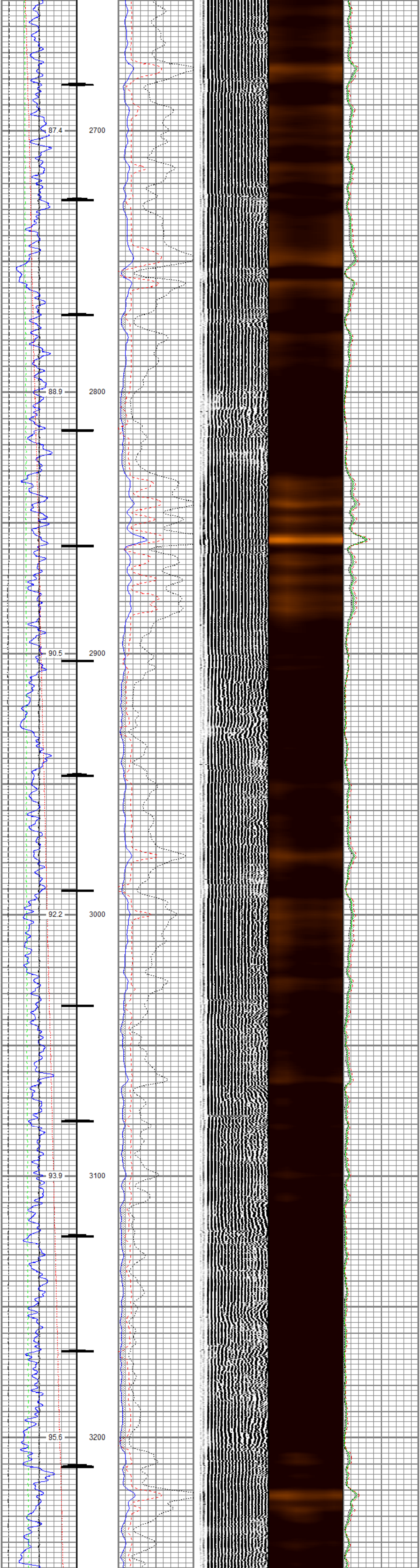


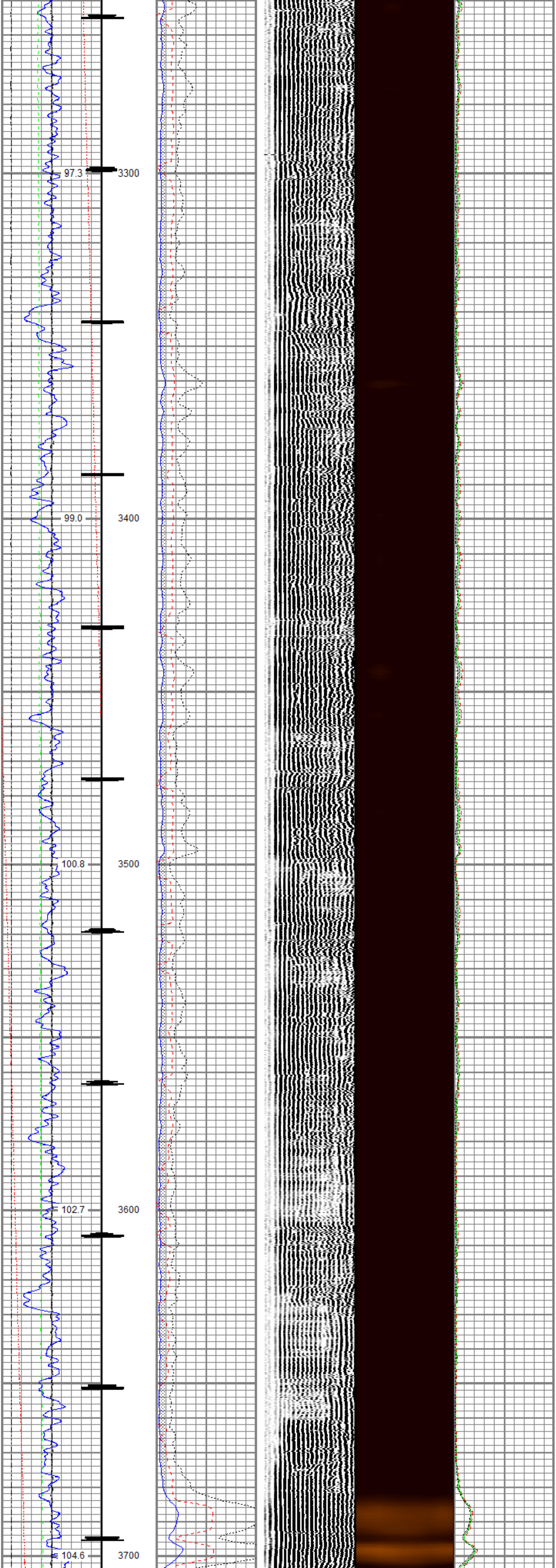


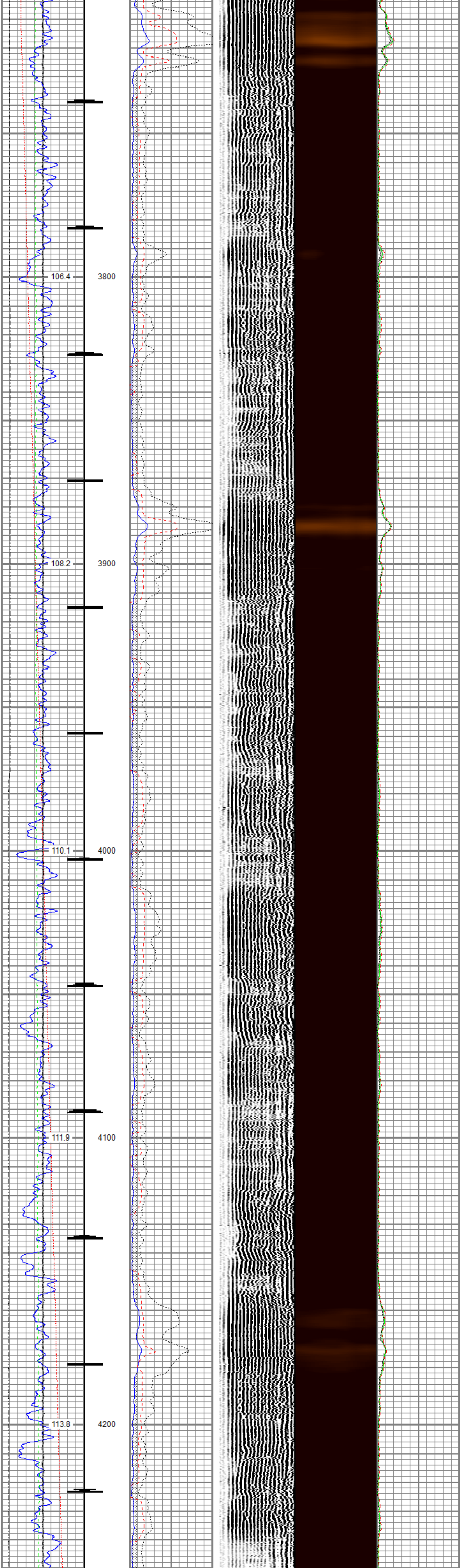








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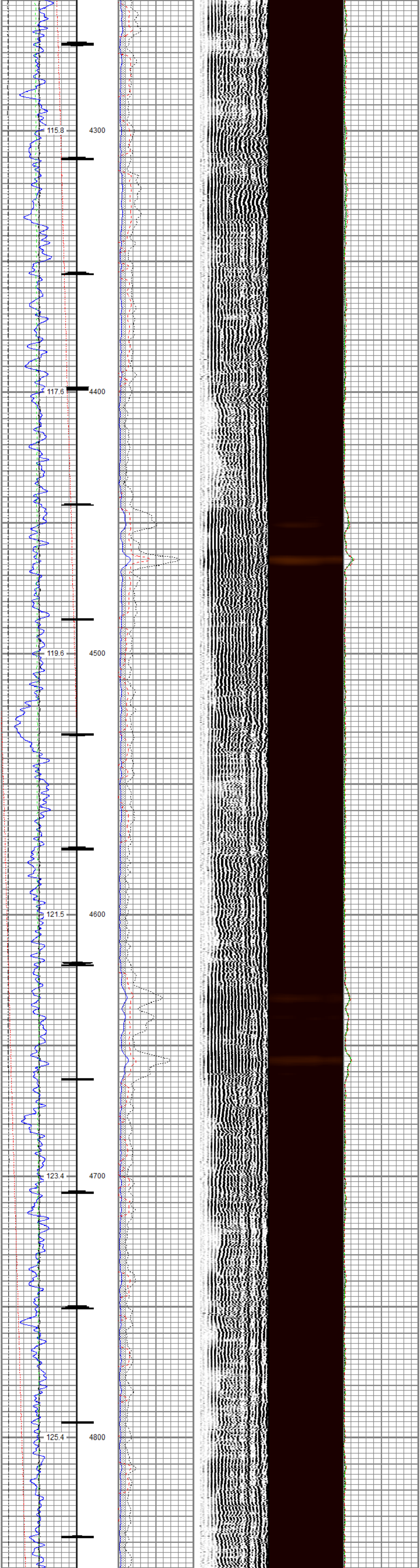
3800
108.2
3900
110.1
4000
111.9
4100
113.8
4200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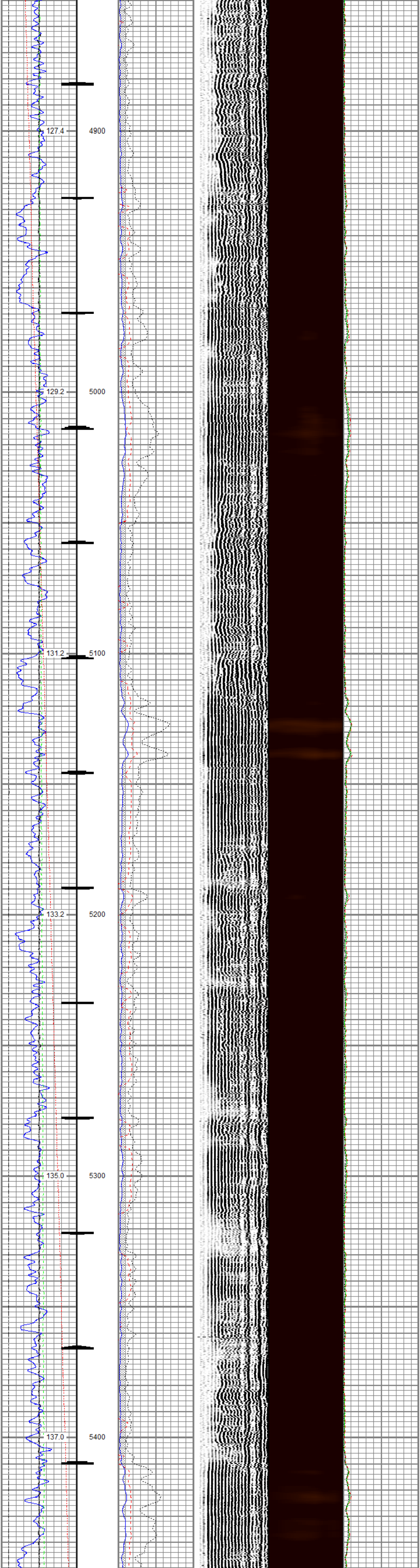
4300
117.6
4400
119.6
4500
121.5
4600
123.4
4700
125.4
4800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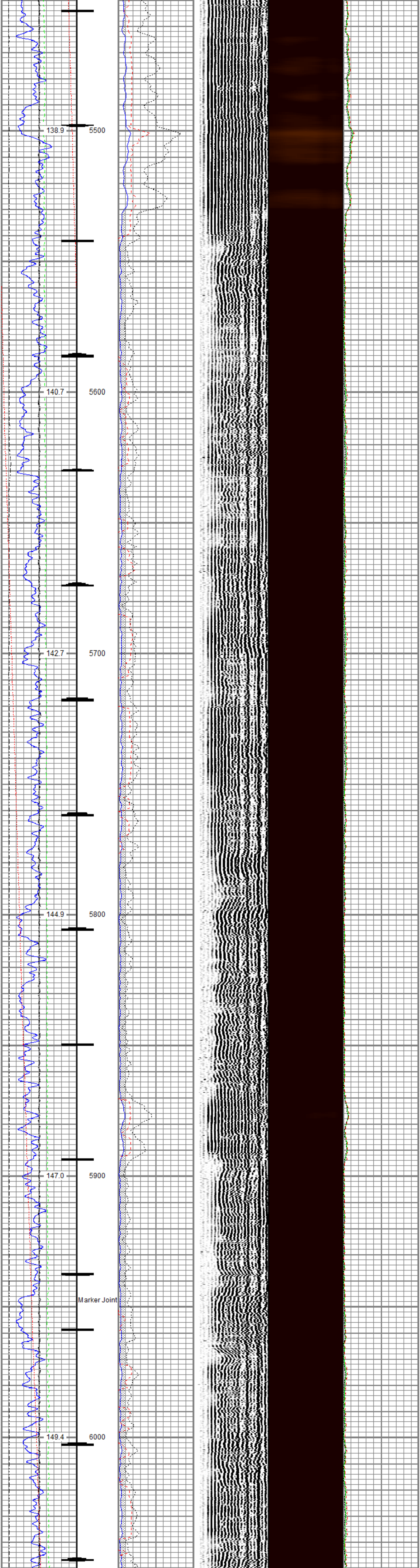
4900
129.2
5000
131.2
5100
133.2
5200
135.0
5300
137.0
5400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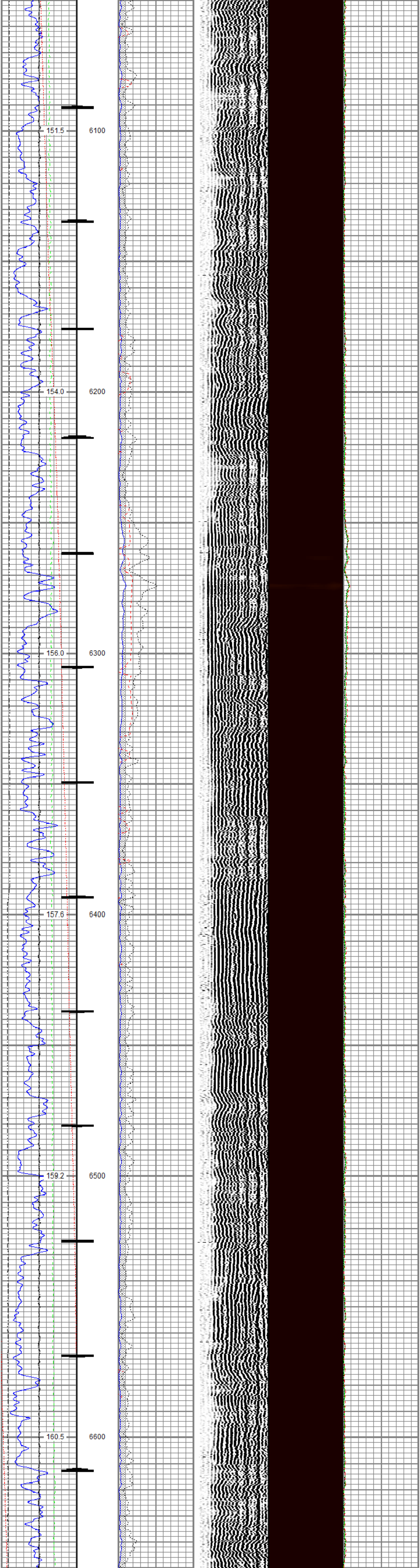
5600
142.7
5700
144.9
5800
147.0
5900
Marker Joint
149.4
6000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6400
159.2
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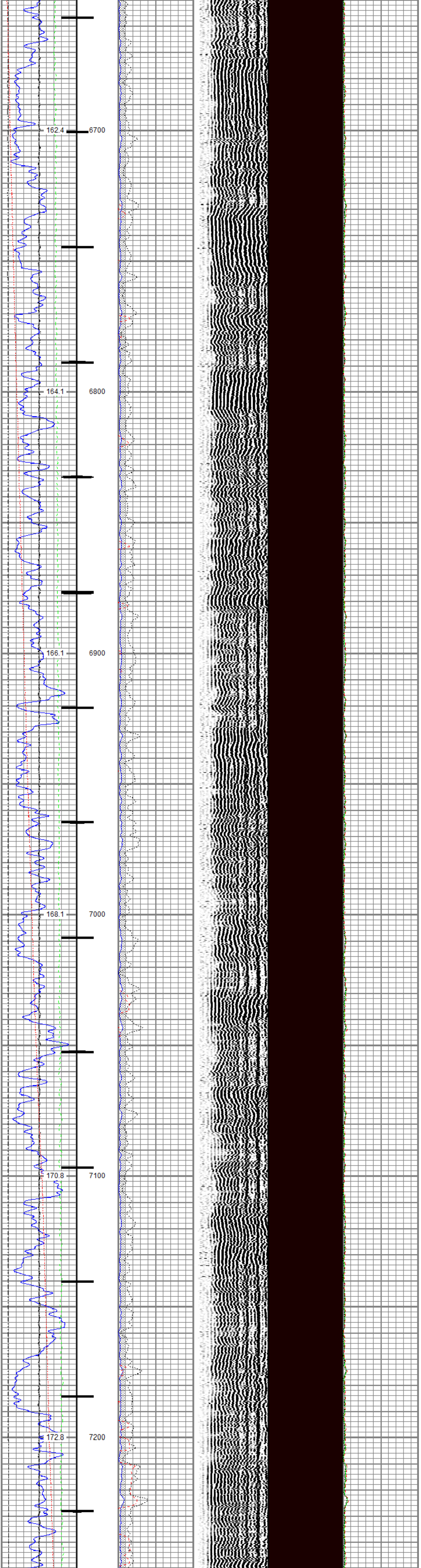
160.5
6600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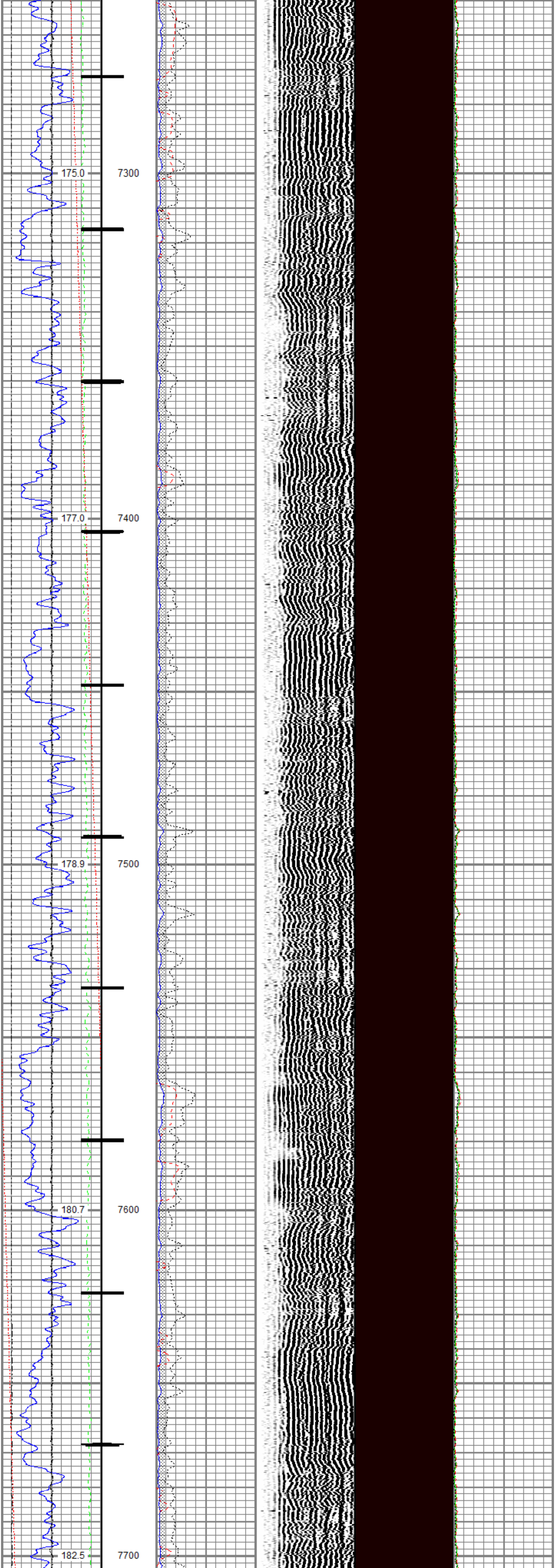
172.8
7200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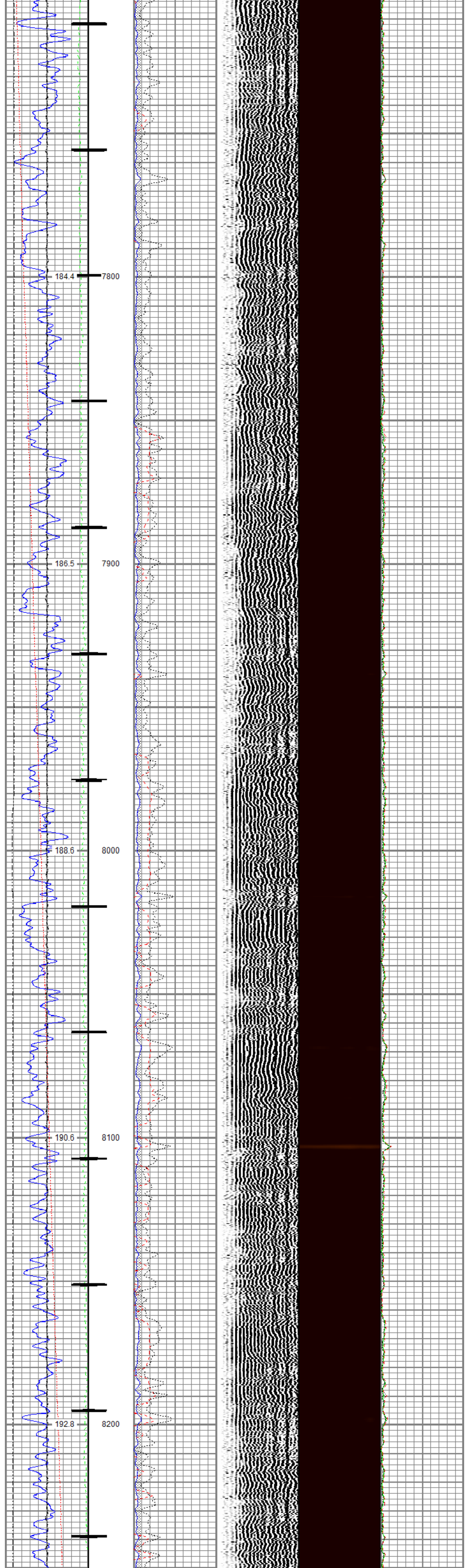
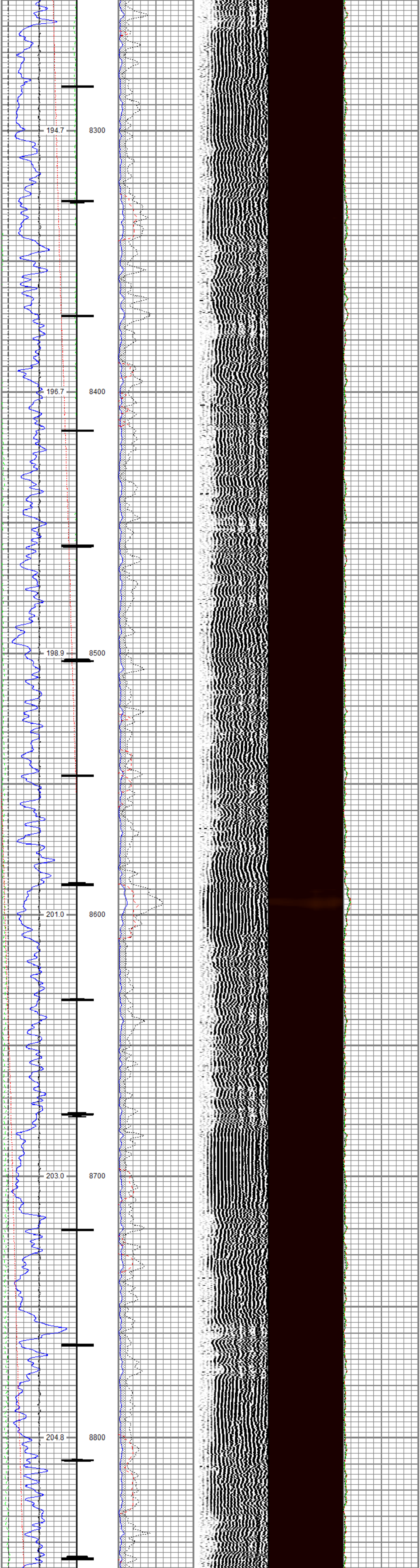
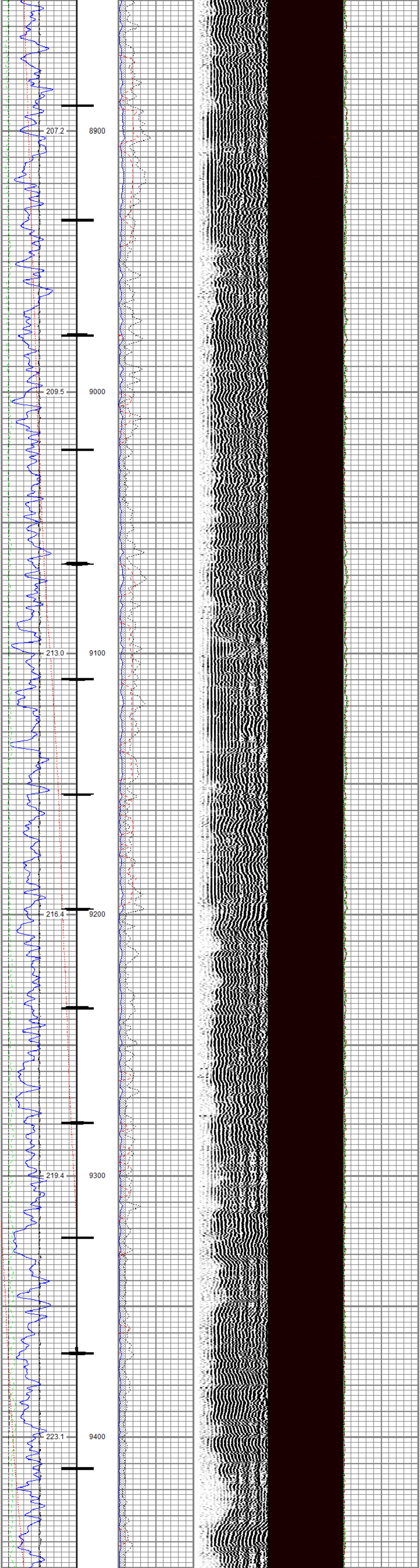
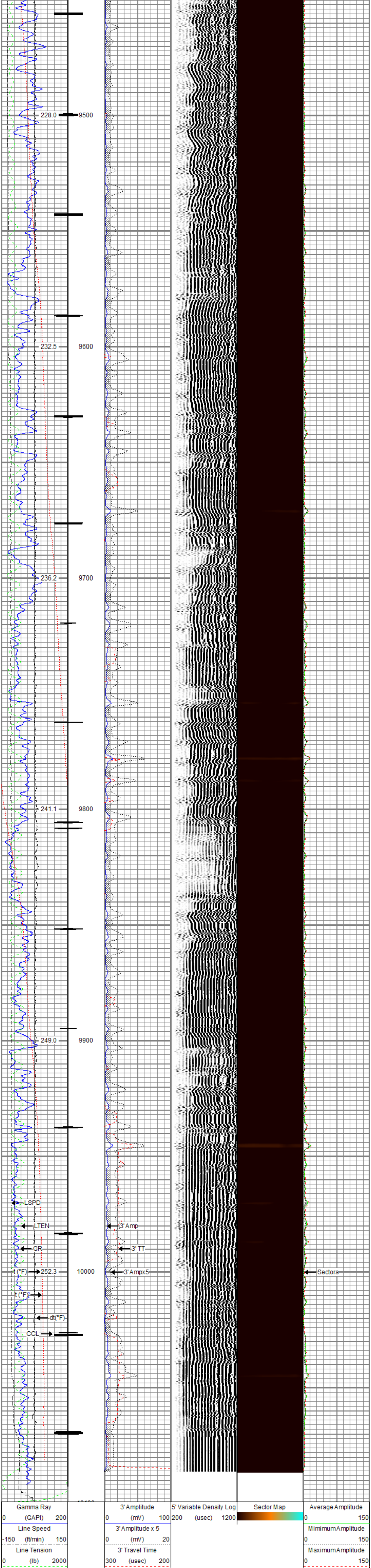
182.5
7700









Differential Temperature
-2 (degF) 2
Temperature
0 (degF) 20
10 *CCL* 0

Repeat Pass

Recorded With 0 PSI Surface Induced Pressure

Database File	tep_clough nr 314-3\tep_clough nr 314-3_rbl_01-15-19.db
Dataset Pathname	repeat.1
Presentation Format	ros_rbt004_tep
Dataset Creation	Thu Jan 17 06:25:02 2019
Charted by	Depth in Feet scaled 1:240

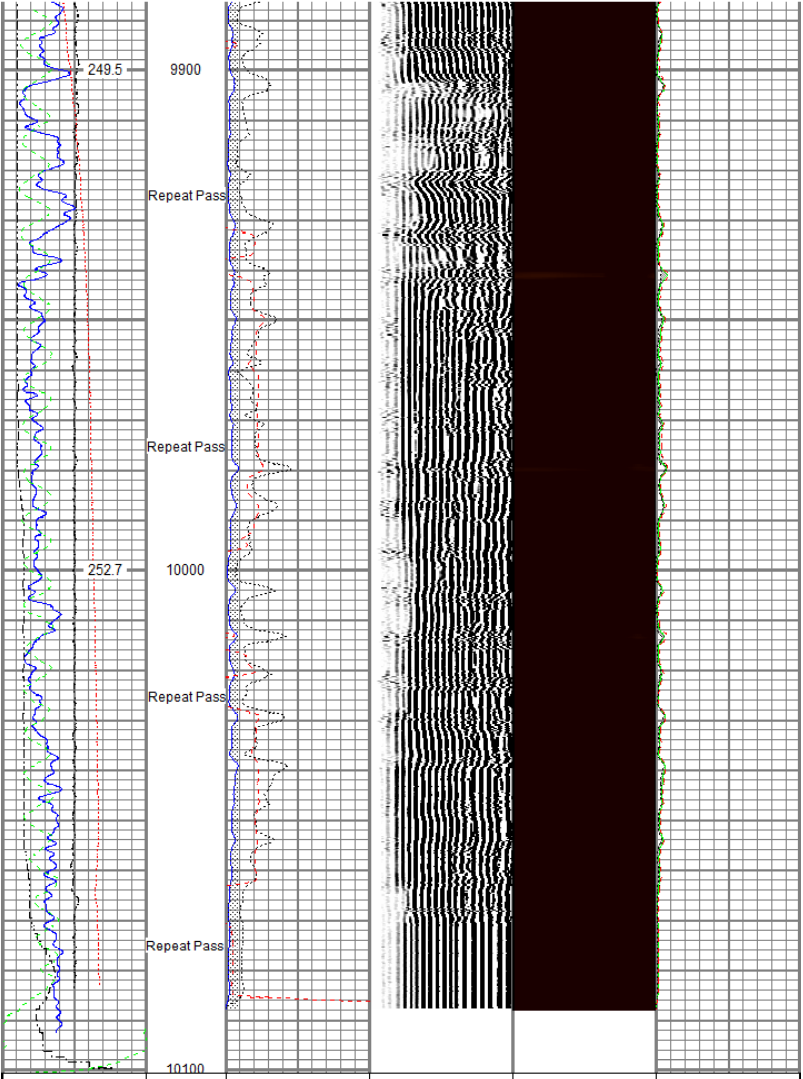
Gamma Ray
0 (GAPI) 200
Line Speed
-150 (ft/min) 150
Line Tension
0 (lb) 2000
Differential Temperature
-2 (degF) 2
Temperature
0 (degF) 20

3' Amplitude
0 (mV) 100
3' Amplitude x 5
0 (mV) 20
3' Travel Time
300 (usec) 200

5' Variable Density Log
200 (usec) 1200

Sector Map

Average Amplitude
0 150
Mimimum Amplitude
0 150
Maximum Amplitude
0 150



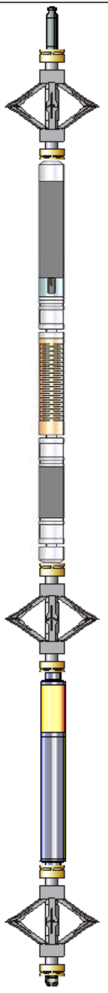
Gamma Ray
0 (GAPI) 200
Line Speed
-150 (ft/min) 150
Line Tension
0 (lb) 2000
Differential Temperature
-2 (degF) 2
Temperature
0 (degF) 20

3' Amplitude
0 (mV) 100
3' Amplitude x 5
0 (mV) 20
3' Travel Time
300 (usec) 200

5' Variable Density Log
200 (usec) 1200

Sector Map

Average Amplitude
0 150
Mimimum Amplitude
0 150
Maximum Amplitude
0 150

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			Titan CHD-14375 GO Titan 1-7/16" Assembled Electric Cable Head w/ 1" Fishing Neck	1.03	1.44	3.60
			DSS RAC-2750 5A GO DSS 2-3/4" Roller 5 Arm Centralizer w/ GO Ends	2.55	2.75	32.00
TEMP WVFS8 WVFS7 WVFS6 WVFS5 WVFS4 WVFS3 WVFS2 WVFS1 WVFCAL WVF3FT WVF5FT	16.33 14.10 14.10 14.10 14.10 14.10 14.10 14.10 14.10 14.10 14.10 13.10		Probe Radii-2750 RBT (101013) Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub	9.39	2.75	105.00
			DSS RAC-2750 5A GO DSS 2-3/4" Roller 5 Arm Centralizer w/ GO Ends	2.55	2.75	32.00
CCL$2 CCL$1 GR	6.42 6.42 5.18		Probe GR-CCL-2750 GOB (FW1211-081) Probe 2-3/4" rev.2 Digital Scintillation Gamma Ray/CCL Combined	4.51	2.75	55.00
			DSS RAC-2750 5A GO DSS 2-3/4" Roller 5 Arm Centralizer w/ GO Ends	2.55	2.75	32.00
			GO BN-14375 GO 1 7/16" Bull Nose with Go Box Top	0.25	1.44	1.00

Dataset: tep_clough nr 314-3_rbl_01-15-19.db: field/well/run1/main.1
Total length: 22.82 ft
Total weight: 260.60 lb
O.D.: 2.75 in

Calibration Report

Database File	c:\programdata\warrior\data\tep_clough nr 314-3\tep_clough nr 314-3_rbl_01-15-19.db
Dataset Pathname	main.1
Dataset Creation	Thu Jan 17 06:20:52 2019

Gamma Ray Calibration Report

Serial Number:	FW1211-081	
Tool Model:	2750 GOB	
Performed:	Sun Nov 12 12:22:44 2017	
Calibrator Value:	637.0	GAPI
Background Reading:	112.4	cps
Calibrator Reading:	1008.7	cps
Sensitivity:	0.7107	GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number:	101013	
Tool Model:	2750 RBT	
Calibration Casing Diameter:	4.500	in
Calibration Depth:	21.500	ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.008	0.643	0.800	81.196	126.625	-0.162
CAL	0.721	0.722				
5'	0.008	0.462	0.800	81.196	177.366	-0.672
SUM						
S1	0.003	0.684	0.000	100.000	146.666	-0.371
S2	0.004	0.646	0.000	100.000	155.910	-0.694
S3	0.006	0.633	0.000	100.000	159.416	-0.978
S4	0.008	0.681	0.000	100.000	148.555	-1.135
S5	0.004	0.716	0.000	100.000	140.441	-0.499
S6	0.003	0.706	0.000	100.000	142.247	-0.452
S7	0.002	0.681	0.000	100.000	147.300	-0.329
S8	0.005	0.676	0.000	100.000	148.968	-0.739

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.721	0.722	1.000	0.000

Air Zero Calibration, performed Tue Jan 15 18:06:24 2019:

	Raw (v)	Calibrated (v)	Results
	Zero	Zero	Offset
3'	0.001	0.000	-0.000
5'	0.006	0.000	-0.000
SUM			
S1	-0.001	0.000	0.001
S2	0.004	0.000	-0.000
S3	0.003	0.000	0.000
S4	0.004	0.000	0.000
S5	0.004	0.000	-0.000
S6	0.004	0.000	-0.000
S7	0.004	0.000	-0.000
S8	0.003	0.000	-0.000

Temperature Calibration Report

Serial Number:	101013	
Tool Model:	2750 RBT	
Performed:	Sun Nov 12 13:21:13 2017	
	Reference	Reading
Low Reference:	100.00 degF	112.30 degF
High Reference:	350.00 degF	394.75 degF
Gain:	0.89	
Offset:	0.60	
Delta Spacing	1	

RELIANCE
OILFIELD SERVICES

Company	TEP Rocky Mountain LLC
Well	Clough NR 314-3
Field	Rulison
County	Garfield
State	Colorado