



Well Services
E-LINE

RADIAL CEMENT BOND
GAMMA RAY
CCL LOG

Company NOBLE ENERGY
Well HSR-MARLEY 15-33
Field WATTENBURG
County WELD State CO

Location: API # : 05-123-16769
SW/SE
LAT. 40.26371 LONG. -104.66605
SEC 33 TWP 4N RGE 65W
Permanent Datum GL
Log Measured From K.B. OF 10'
Drilling Measured From KELLY BUSHING
Elevation 4,782'
Other Services
K.B. 4,820'
D.F. 4,819'
G.L. 4,810'

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Well HSR-MARLEY 15-33
Field WATTENBURG
County WELD
State CO

Date	9-11-2018		
Run Number	ONE		
Depth Driller	7,806'		
Depth Logger	2,410'		
Bottom Logged Interval	2,400'		
Top Log Interval	SURFACE		
Open Hole Size	7 7/8"		
Type Fluid	WATER		
Density / Viscosity	1.0		
Max. Recorded Temp.	101 DEG. F.		
Estimated Cement Top	N/A		
Time Well Ready	ON ARRIVAL		
Time Logger on Bottom	N/A		
Equipment Number	3812		
Location	GREELEY, CO		
Recorded By	CODY FORNENGO		
Witnessed By	J.NAVA		

Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	8 5/8"	24 #	SURFACE	526'
Prot. String				
Production String	4.5"	11.6#	SURFACE	7,308'
Liner				

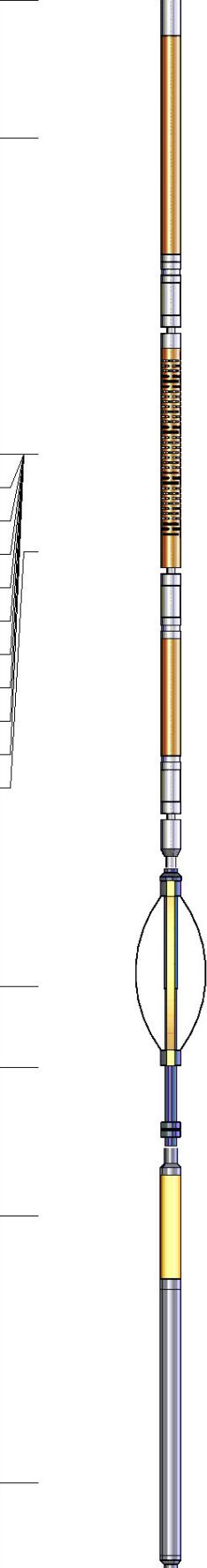
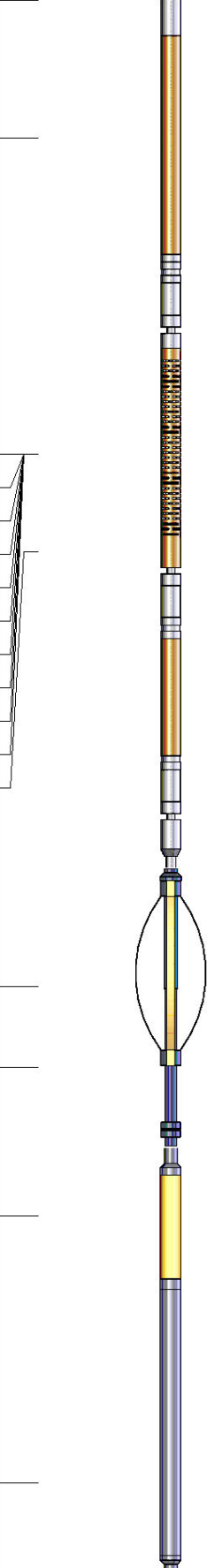
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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on 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.

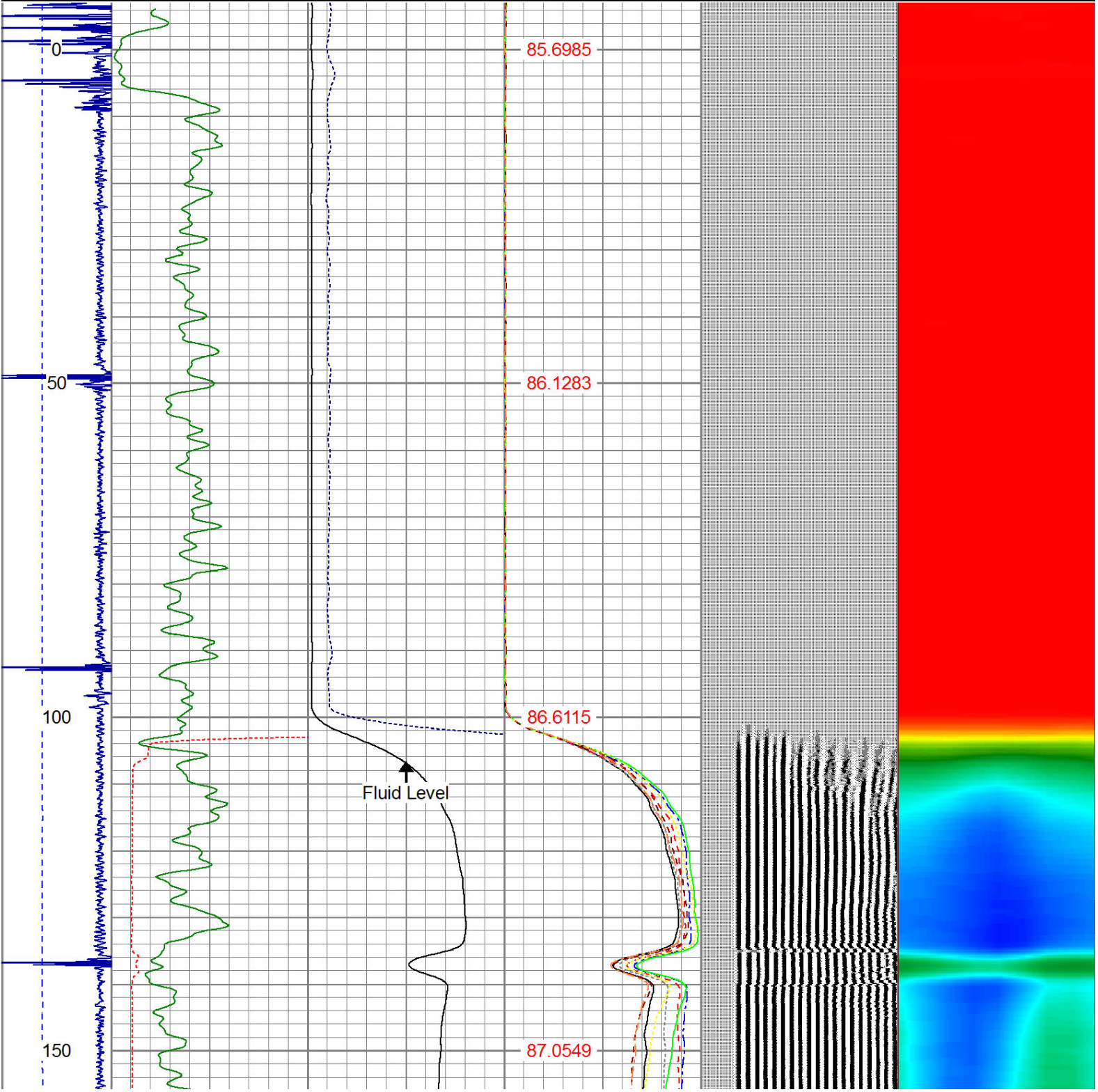
Comments

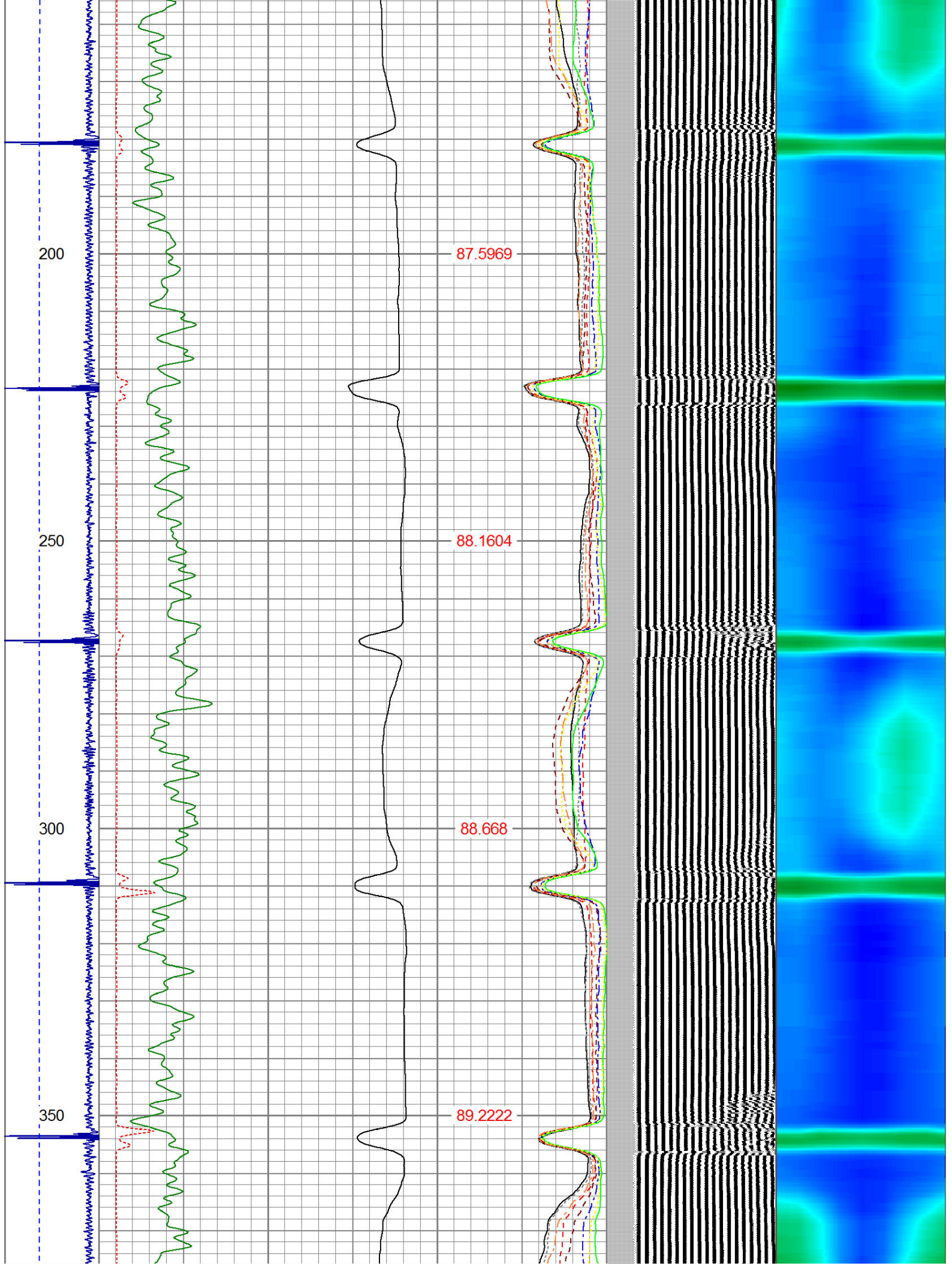
RAN CBL TO VERIFY CEMENT COVERAGE
RAN CBL OFF KB OF 10'

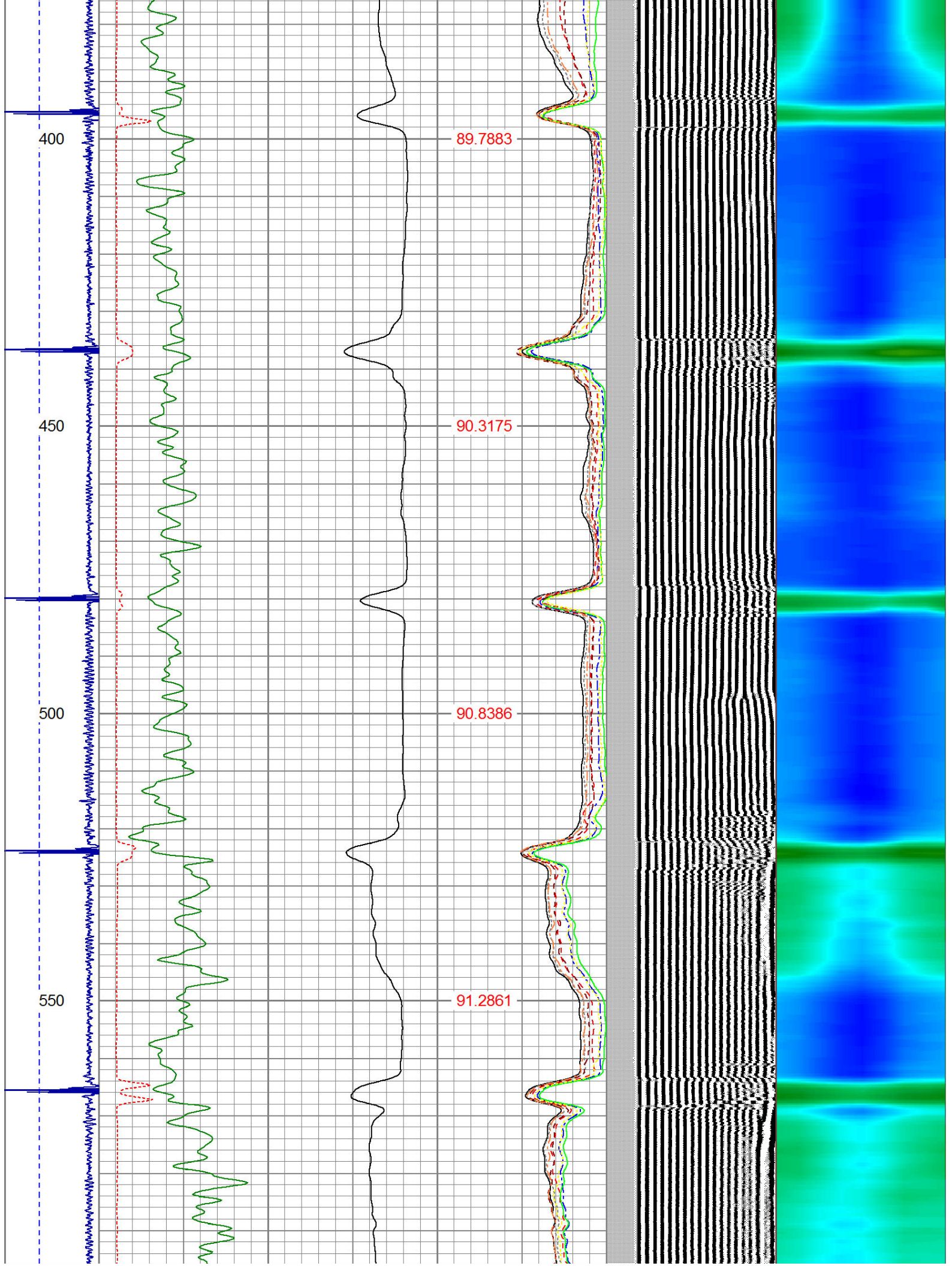
Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
HEAD/COIL	15.13			1.00	1.36	5.00

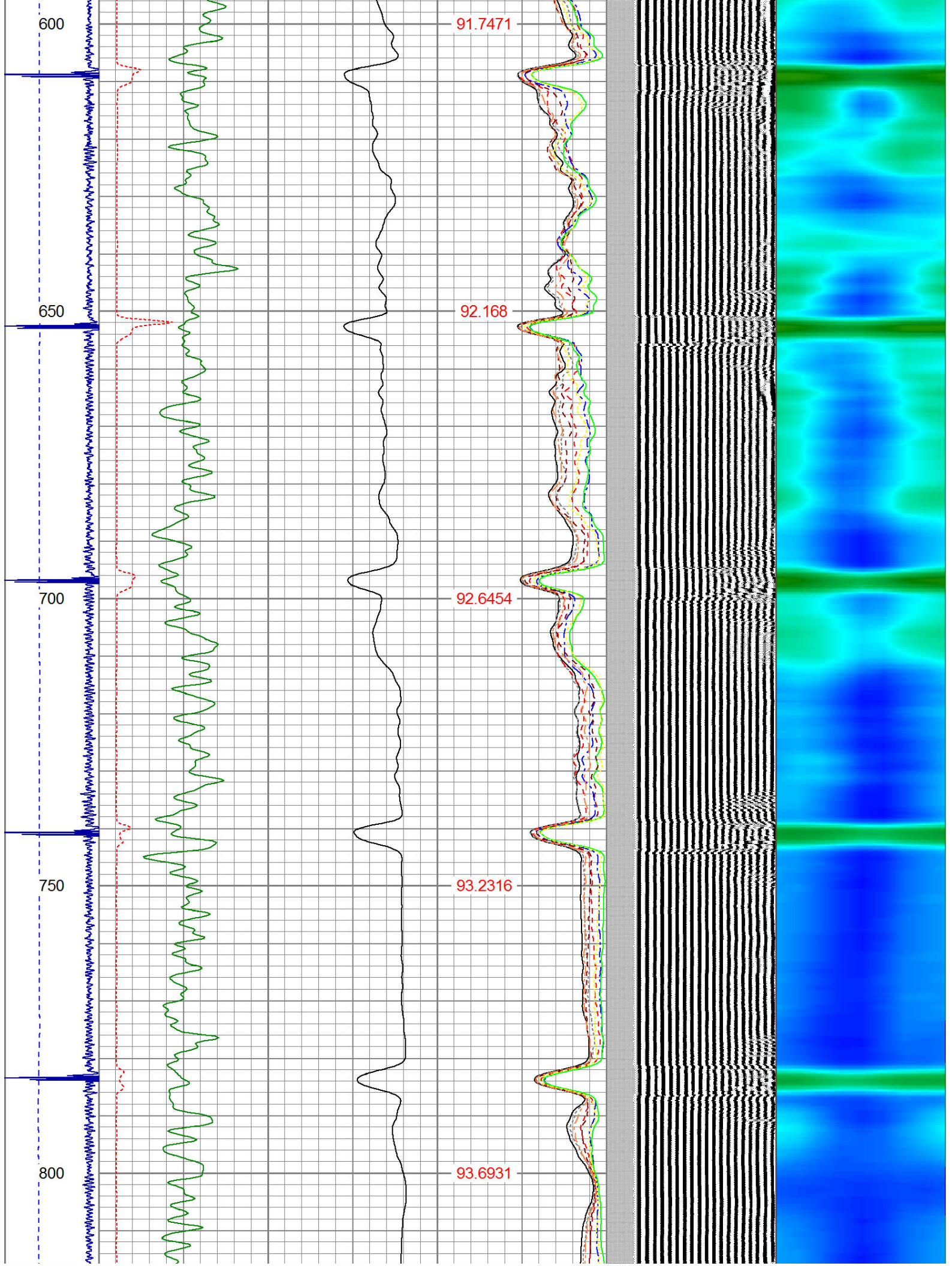
HEADVOLT	16.15					
IntTemp	14.71					
WVF3FT	11.46		RBT-Probe (Base) Probe Radii Bond Tool with Digital Telemetry	8.92	2.75	90.00
WVFCAL	11.46					
WVFS1	11.46					
WVFS2	11.46					
WVFS3	11.46					
WVFS4	11.46					
WVFS5	11.46					
WVFS6	11.46					
WVFS7	11.46					
WVFS8	11.46					
WVF5FT	10.46					
CNLSC	6.00		CNT-Probe_B (275) Bow centralizer	2.88	2.75	40.00
CNSSC	5.17					
CCL	3.64					
GR	0.90		GR-Probe (275) Probe 2.75"	4.33	2.75	30.00
Dataset: hsr-marley 15-33.db: field/well/run1/pass2 Total Length: 17.13 ft Total Weight: 165.00 lb O.D. 2.75 in						

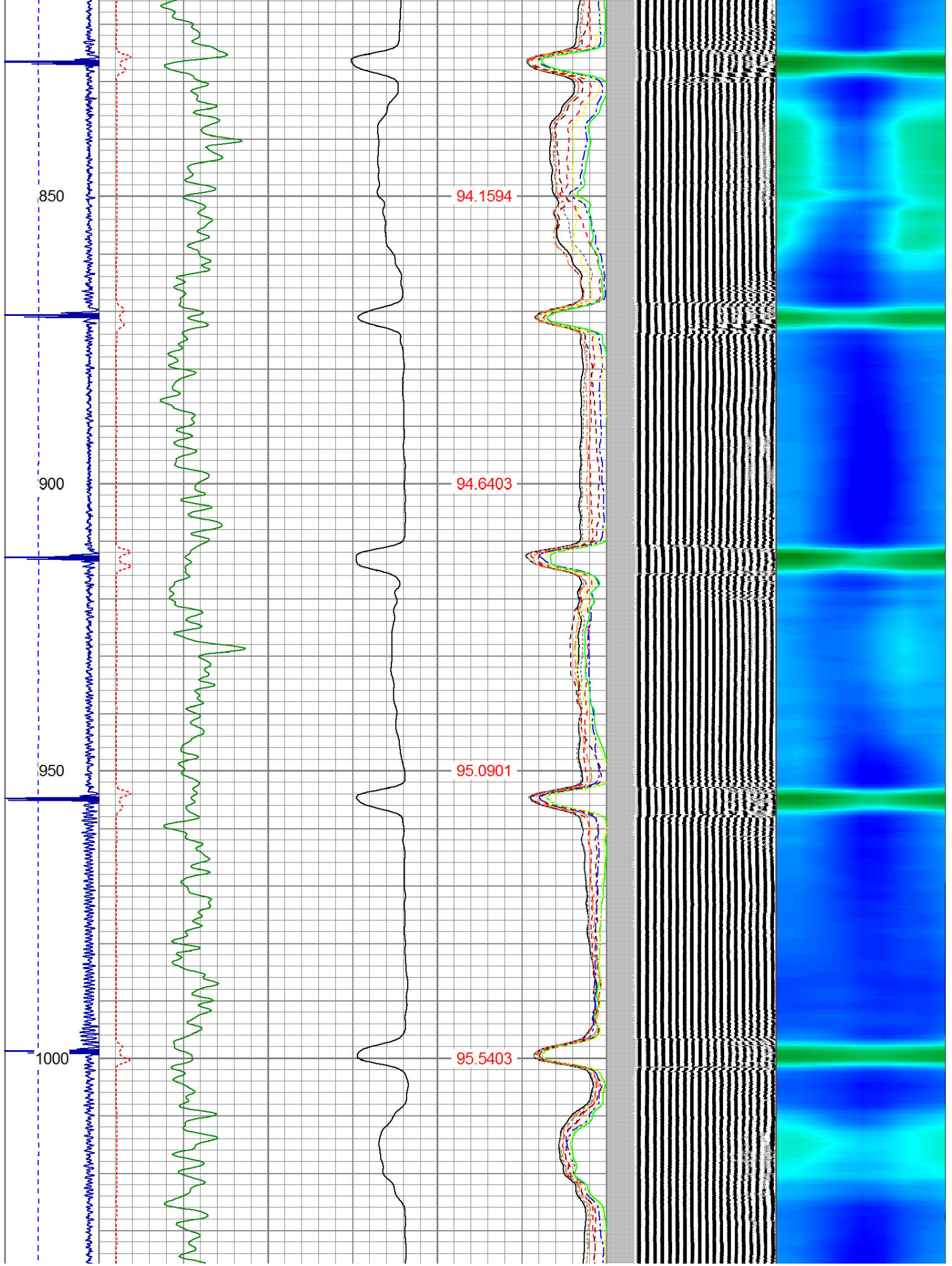
Dataset Creation:		Tue Sep 11 14:05:09 2018 by Log SCH 120126																	
Charted by:		Depth in Feet scaled 1:240																	
-9	CCL	1	200	TT (usec)	800	0	AMP (mV)	100	0	AMPS1	100	200	VDL	1200	1	Cement Map	8		
LSPD (ft/min)	0		0	GR (GAPI)	200	0	AMPx5 (mV)	20	0	AMPS2	100								
	200		200	GR (GAPI)	400			0	AMPS3	100									
	0		0					0	AMPS4	100									
								0	AMPS5	100									
								0	AMPS6	100									
								0	AMPS7	100									
								0	AMPS8	100									
								IntTemp											
								(degF)											

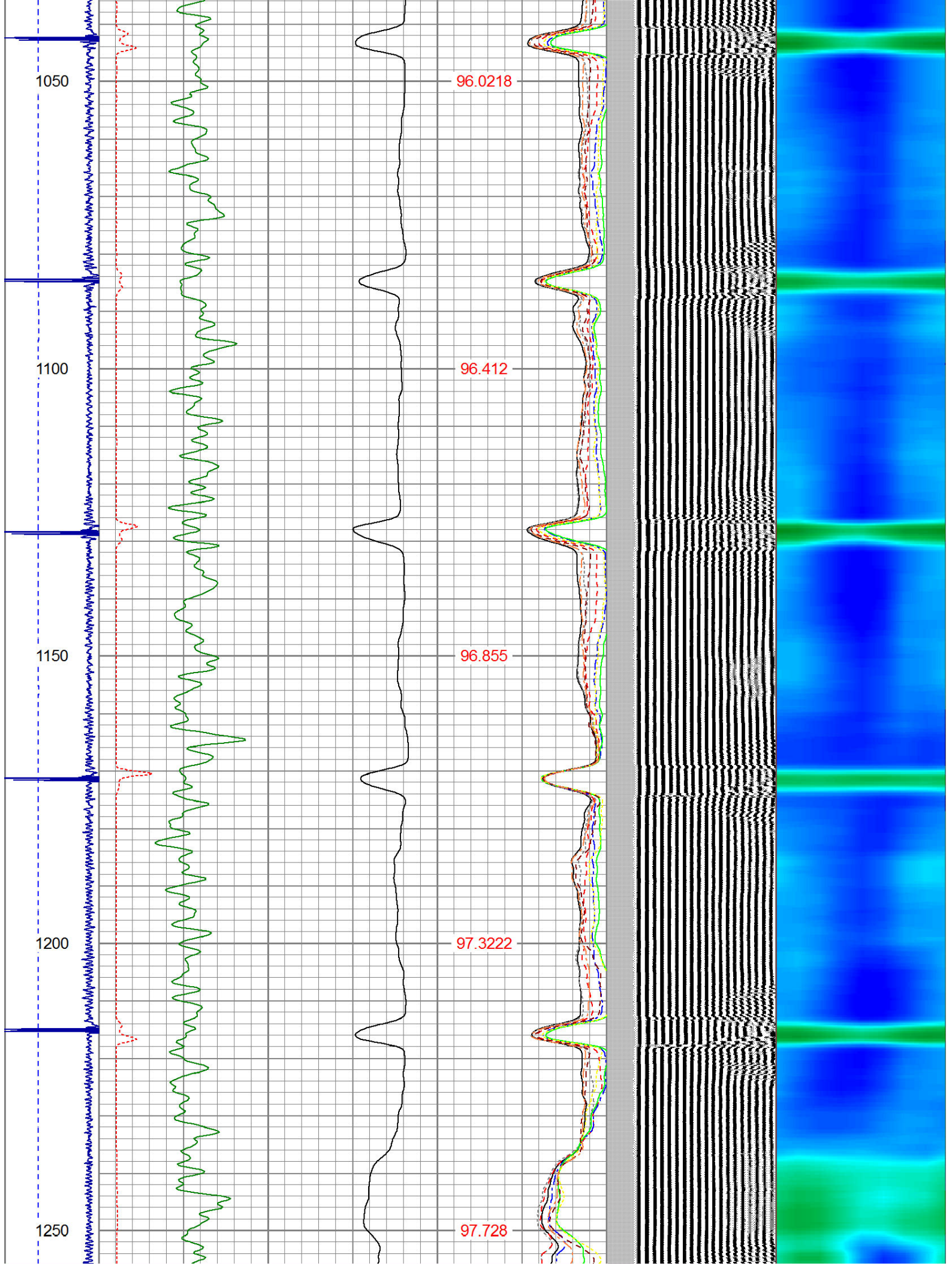


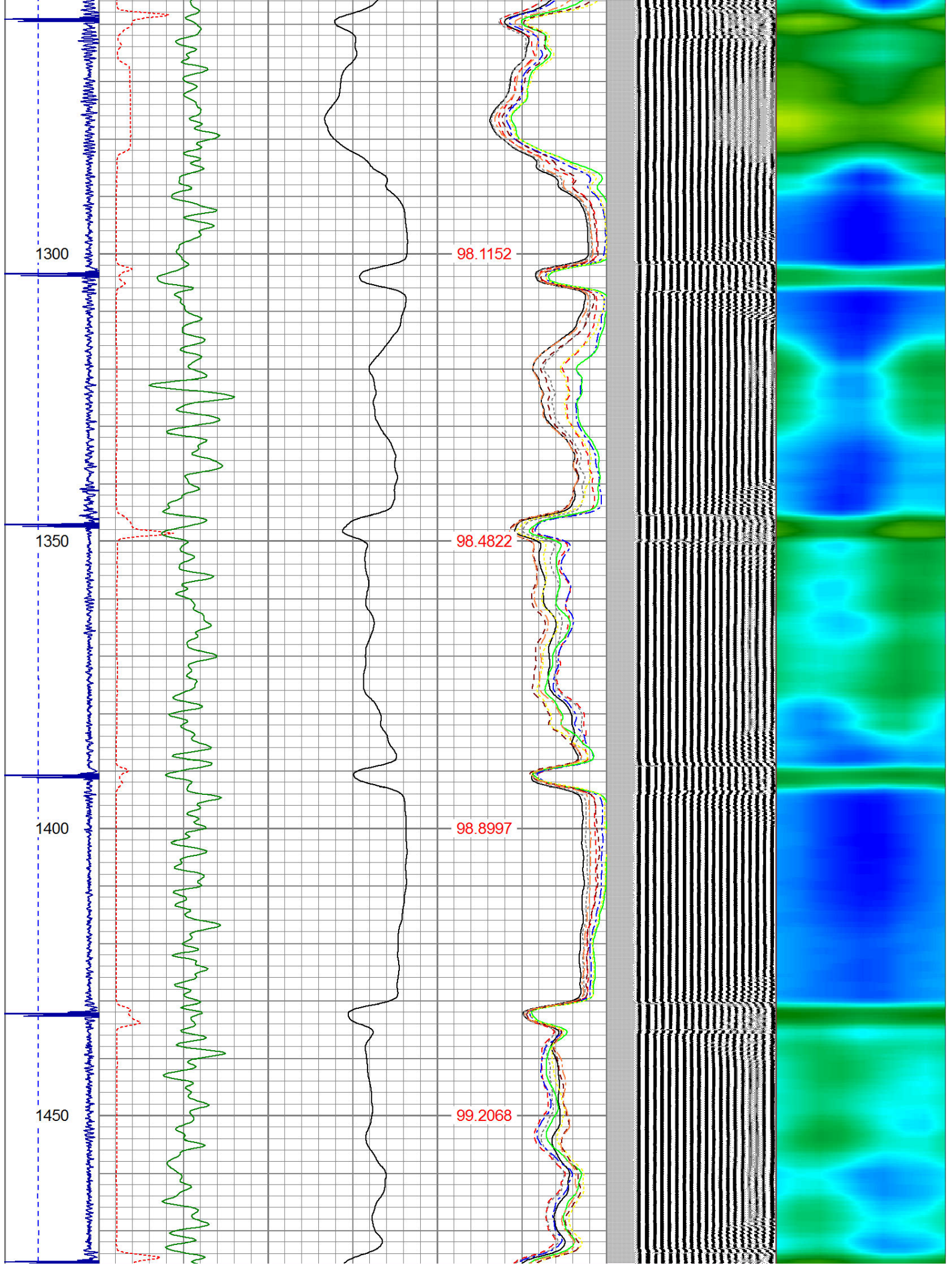


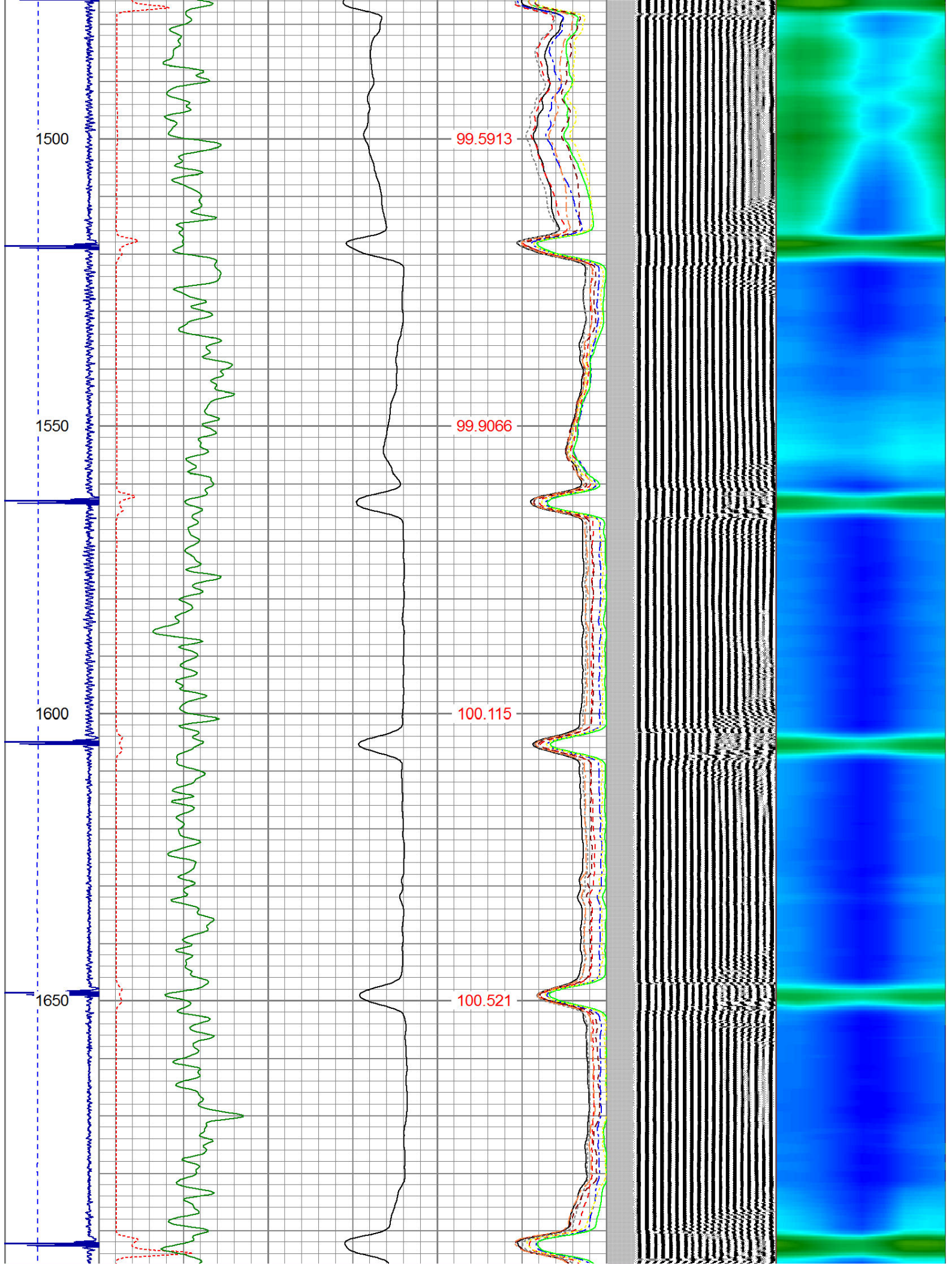


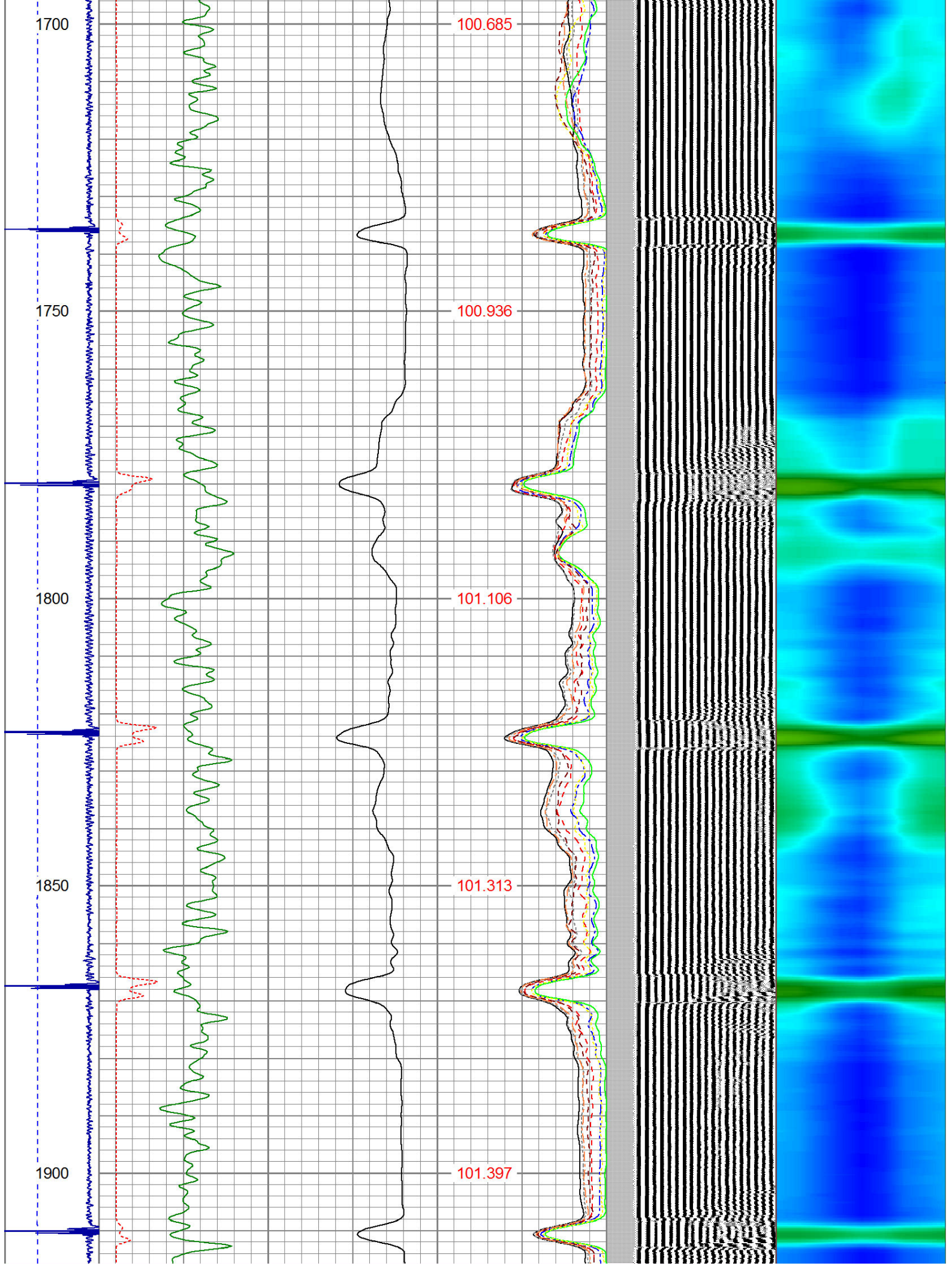


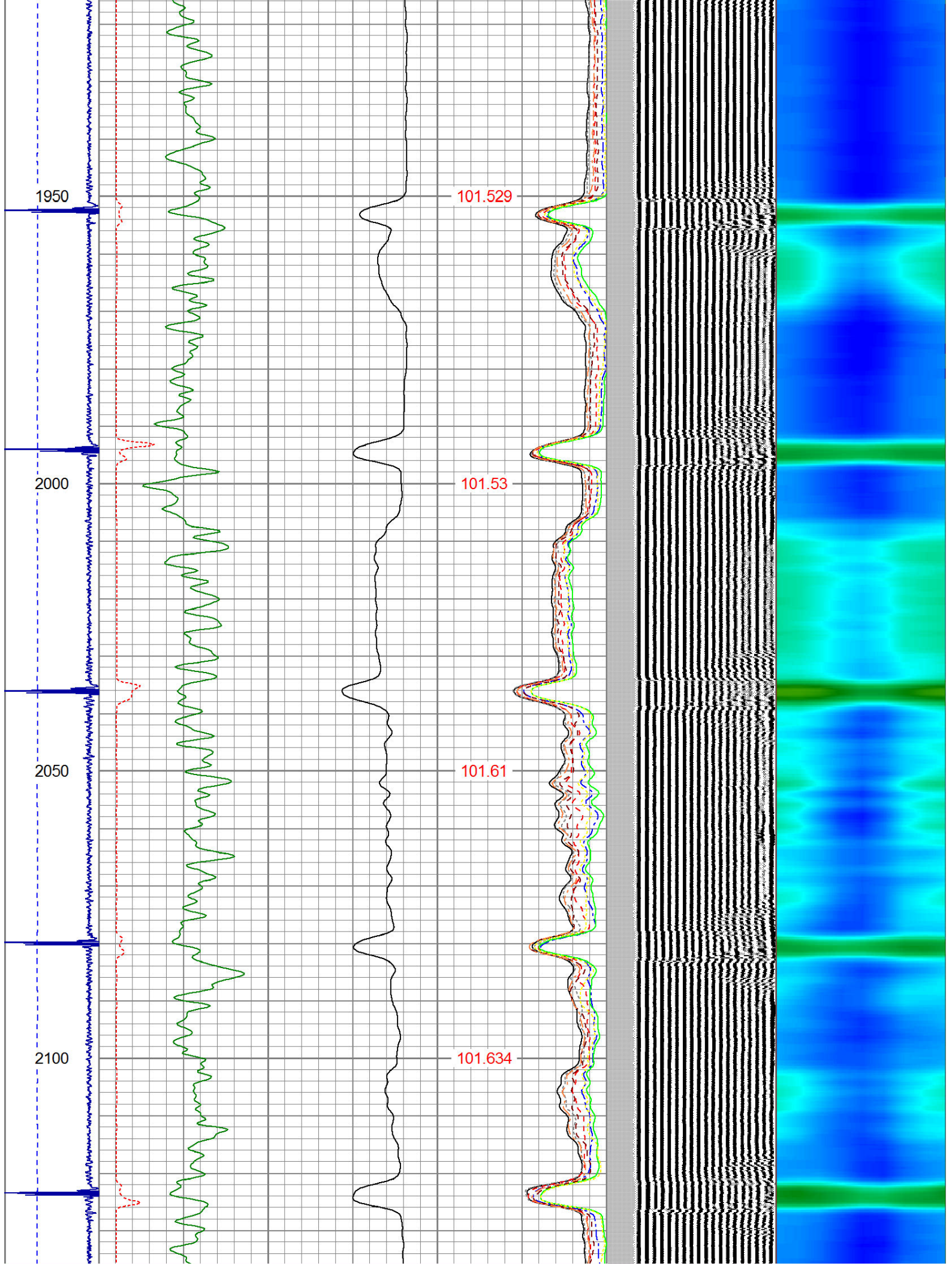


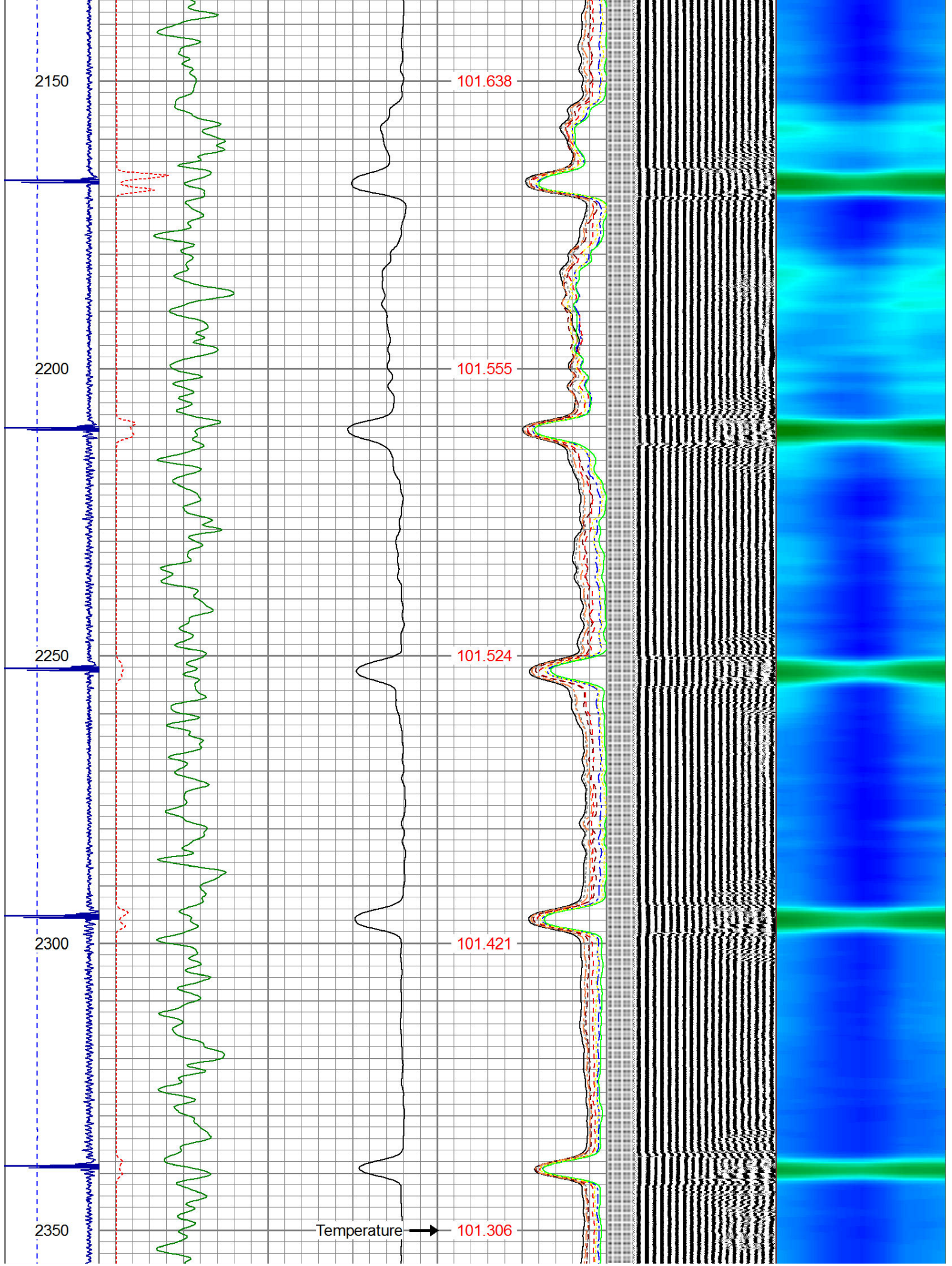


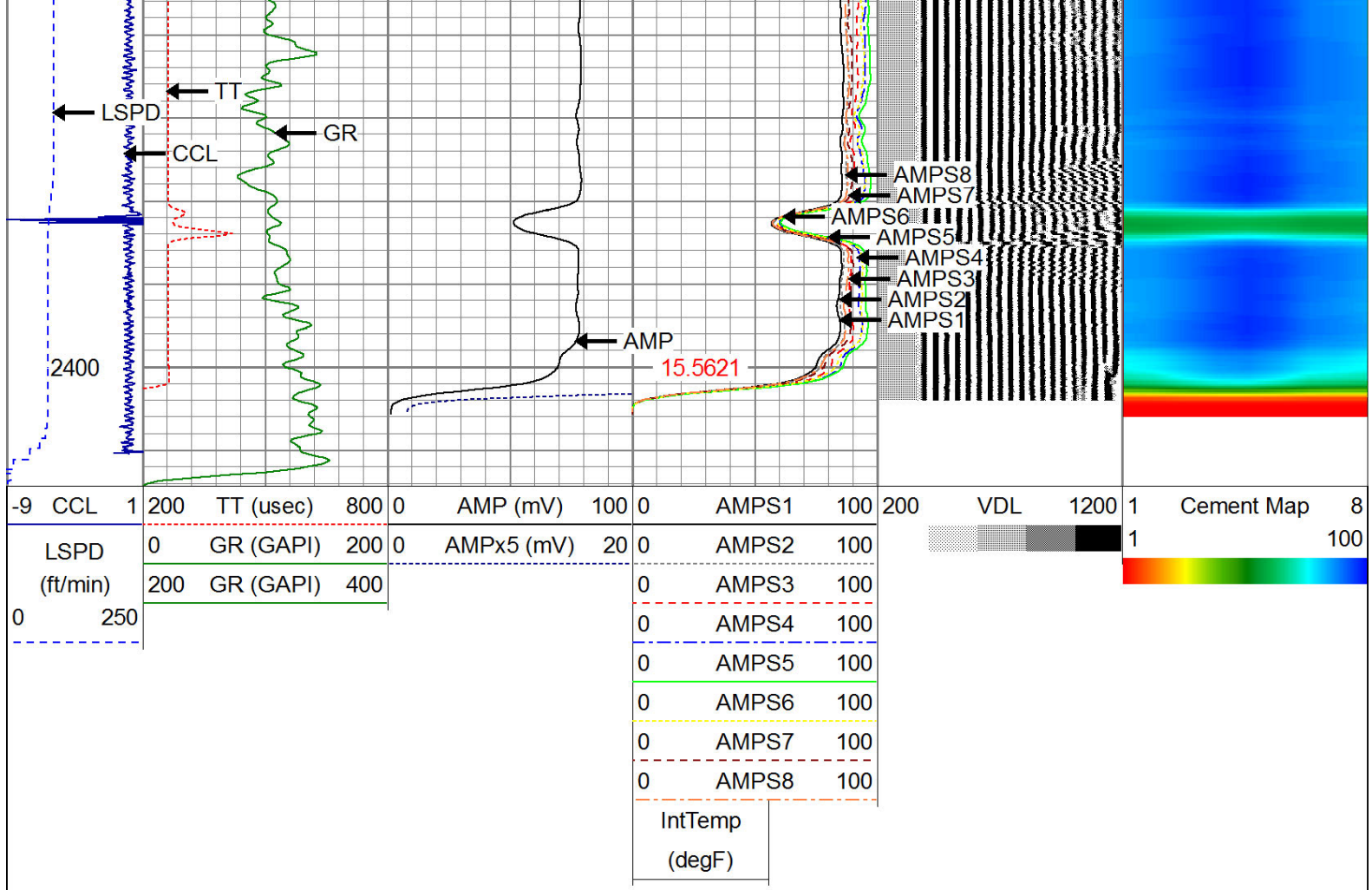












Calibration Report					
Database File:	hsr-marley 15-33.db				
Dataset Pathname:	pass2				
Dataset Creation:	Tue Sep 11 14:05:09 2018 by Log SCH 120126				
Gamma Ray Calibration Report					
Serial Number:	275				
Tool Model:	Probe				
Performed:	Tue Sep 23 07:13:12 2014				
Calibrator Value:	100.0		GAPI		
Background Reading:	35.0		cps		
Calibrator Reading:	160.0		cps		
Sensitivity:	1.0000		GAPI/cps		
Compensated Neutron Calibration Report					
Serial Number:	275				
Tool Model:	Probe_B				
CALIBRATION	Wed Jul 30 08:47:19 2008				
Detector	Readings		Target		Normalization
Short Space	5001.20	cps	0.00	cps	1.0000
Long Space	1029.31	cps	0.00	cps	1.0000
PRE-SURVEY VERIFICATION					
Detector	Readings		Measured		Target

1)	Short Space	cps		
	Long Space	cps	pu	pu
2)	Short Space	cps		
	Long Space	cps	pu	
3)	Short Space	cps		
	Long Space	cps	pu	

POST-SURVEY VERIFICATION				
	Detector	Readings	Measured	Target
1)	Short Space	cps		
	Long Space	cps	pu	pu
2)	Short Space	cps		
	Long Space	cps	pu	pu
3)	Short Space	cps		
	Long Space	cps	pu	pu

Segmented Cement Bond Log Calibration Report

Serial Number:	Base		
Tool Model:	Probe		
Calibration Casing Diameter:	3.500	in	
Calibration Depth:	167.973	ft	

Master Calibration, performed Tue Aug 21 10:53:12 2018:						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.004	1.500	2.000	94.517	61.850	1.726
CAL	0.004	1.501				
5'	0.004	1.506	2.000	94.517	61.588	1.770
SUM						
S1	0.004	1.498	0.500	94.517	62.910	0.252
S2	0.005	1.474	0.500	94.517	63.986	0.202
S3	0.004	1.463	0.500	94.517	64.429	0.234
S4	0.004	1.494	0.500	94.517	63.105	0.237
S5	0.004	1.501	0.500	94.517	62.787	0.257
S6	0.004	1.540	0.500	94.517	61.220	0.259
S7	0.004	1.573	0.500	94.517	59.918	0.257
S8	0.004	1.528	0.500	94.517	61.683	0.267

Internal Reference Calibration, performed Tue Jun 05 07:53:42 2012:						
	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.004	1.501	1.000	0.000

Air Zero Calibration, performed Tue Sep 11 13:48:34 2018:			
	Raw (v)		Results
	Zero	Zero	Offset
3'	0.006	0.000	-0.002
5'	0.007	0.000	-0.003
SUM			

S1	0.008	0.000	-0.005
S2	0.006	0.000	-0.002
S3	0.007	0.000	-0.003
S4	0.006	0.000	-0.002
S5	0.007	0.000	-0.003
S6	0.006	0.000	-0.003
S7	0.007	0.000	-0.003
S8	0.008	0.000	-0.004



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