



## RADIAL CEMENT BOND LOG

Company KERR-MCGEE OIL & GAS  
Well KERN L 04-32D  
Field WATTENBERG  
County WELD State COLORADO

Location: API #: 05123317020000  
SW NW  
1990' FNL & 587' FWL  
SEC. 4 TWP. 3N RGE. 66W  
Permanent Datum GROUND LEVEL Elevation 4794'  
Log Measured From KELLY BUSHING = 13'  
Drilling Measured From KELLY BUSHING  
Other Services  
NONE  
Elevation  
K.B. 4807'  
D.F. 4806'  
G.L. 4794'

Company KERR-MCGEE OIL & GAS  
Well KERN L 04-32D  
Field WATTENBERG  
County WELD  
State COLORADO

Date	29 APRIL 2016						
Run Number	ONE						
Depth Driller	8032'						
Depth Logger	2000'						
Bottom Logged Interval	2000'						
Top Log Interval	SURFACE						
Open Hole Size	7-7/8"						
Type Fluid	WATER						
Density / Viscosity	~8.3#						
Max. Recorded Temp.	102 DEG F						
Estimated Cement Top	1290'						
Time Well Ready	N/A						
Time Logger on Bottom	N/A						
Equipment Number	W-062						
Location	WINDSOR, CO						
Recorded By	Z. EMICK						
Witnessed By	D. OLMEIDA						
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#		0'	741'
Prot. String							
Production String	4.5"			11.6#		0'	8022'
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

FREE PIPE READING = 82mV

FREE PIPE CORRELATED AT 710'

LOG NOT CORRELATED TO ANY OTHER LOG

CREW: Z. EMICK, J. JACKSON

THANK YOU FOR CHOOSING CUTTERS WIRELINE SERVICE

WE APPRECIATE YOUR BUSINESS, CUTTERS WIRELINE, WINDSOR CO. (970) 834-2495

### Calibration Report

Database File: kern l 04-32d.db  
Dataset Pathname: pass2.1  
Dataset Creation: Fri Apr 29 08:15:43 2016 by Calc SCH 110630

# Temperature Calibration Report

Serial Number: 060110  
Tool Model: 1.375TEMP  
Performed: Fri Apr 08 10:43:22 2016

	Reference	Reading
Low Reference:	1.00 degF	10.00 cps
High Reference:	100.00 degF	1000.00 cps
Gain:	0.10	
Offset:	0.00	
Delta Spacing	1	

## Gamma Ray Calibration Report

Serial Number: 060108  
Tool Model: Probe  
Performed: Mon Oct 01 09:23:25 2012

Calibrator Value: 185.2 GAPI

Background Reading: 4.8 cps  
Calibrator Reading: 200.0 cps

Sensitivity: 0.9487 GAPI/cps

## Segmented Cement Bond Log Calibration Report

Serial Number: 060113\_45  
Tool Model: Probe

Calibration Casing Diameter: 4.500 in  
Calibration Depth: 3395.099 ft

Master Calibration, performed Fri Apr 29 08:15:36 2016:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.000	0.268	2.000	81.196	295.075	1.999
CAL	0.007	2.493				
5'	0.000	0.245	2.000	81.196	323.518	1.999
SUM						
S1	-0.015	0.256	0.000	100.000	368.818	5.664
S2	0.000	0.267	0.000	100.000	374.013	-0.001
S3	0.000	0.272	0.000	100.000	368.130	-0.003
S4	0.000	0.274	0.000	100.000	365.106	-0.002
S5	0.000	0.267	0.000	100.000	374.964	-0.002
S6	0.000	0.262	0.000	100.000	381.399	-0.002
S7	0.000	0.262	0.000	100.000	381.238	-0.002
S8	0.000	0.265	0.000	100.000	376.875	-0.002

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	0.007	2.493	1.000	0.000

Air Zero Calibration, performed Tue Mar 29 08:51:45 2016:

	Raw (v)	Calibrated (v)	Results
	Zero	Zero	Offset
3'	0.000	0.000	0.000
5'	0.000	0.000	0.000
SUM			
S1	0.000	0.000	0.000

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

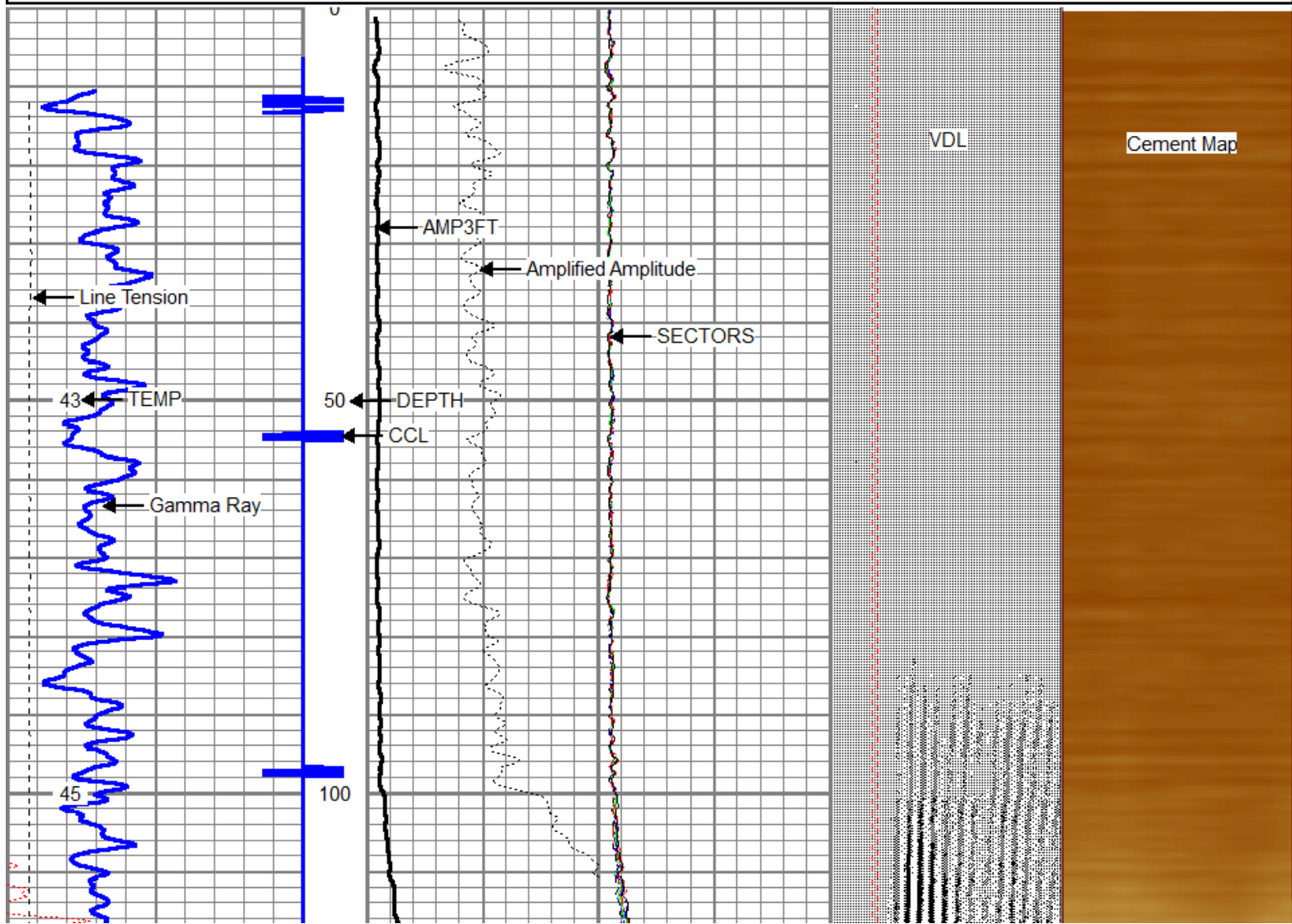


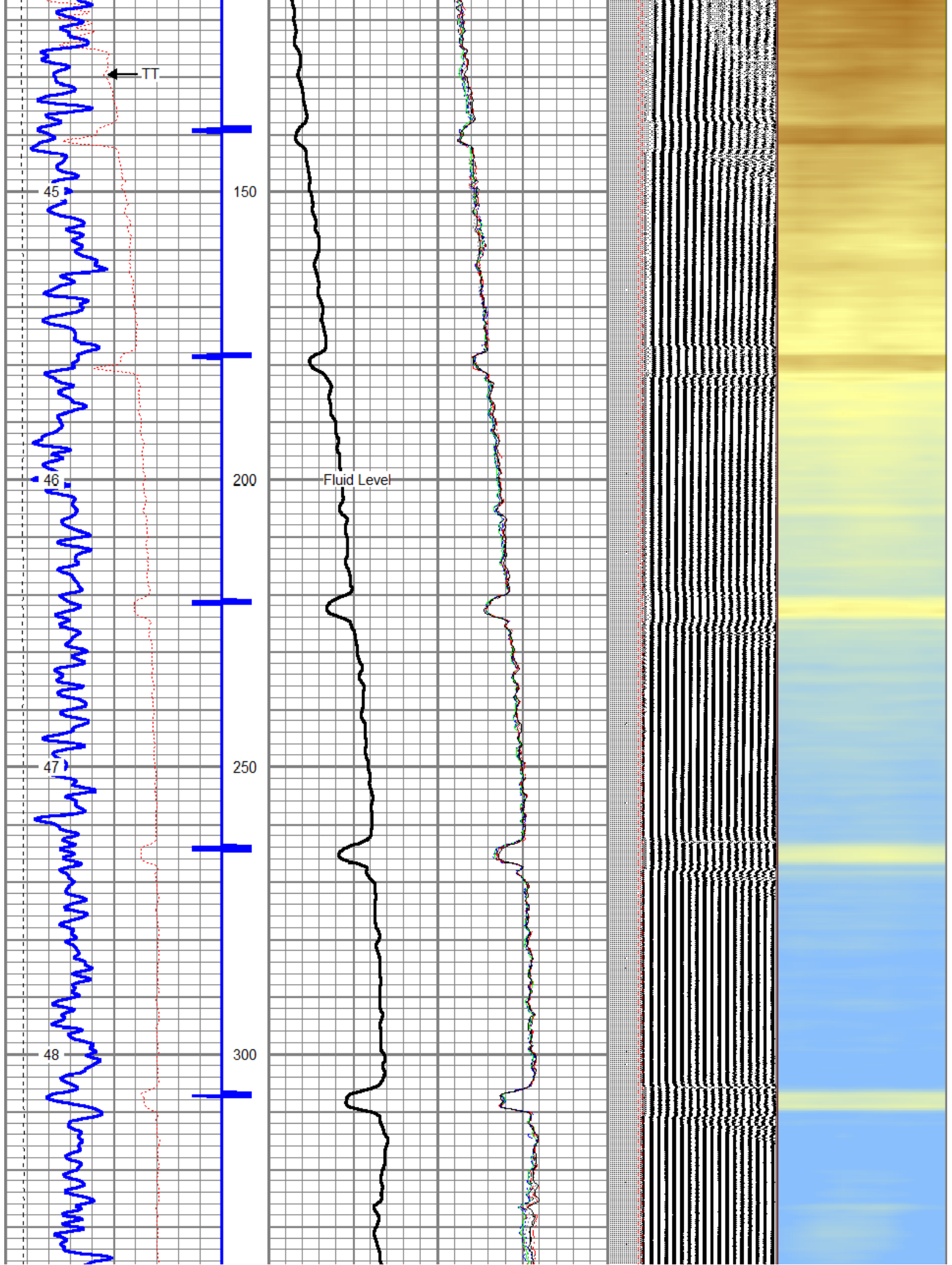
## MAIN PASS 0 PSI

5" = 100'

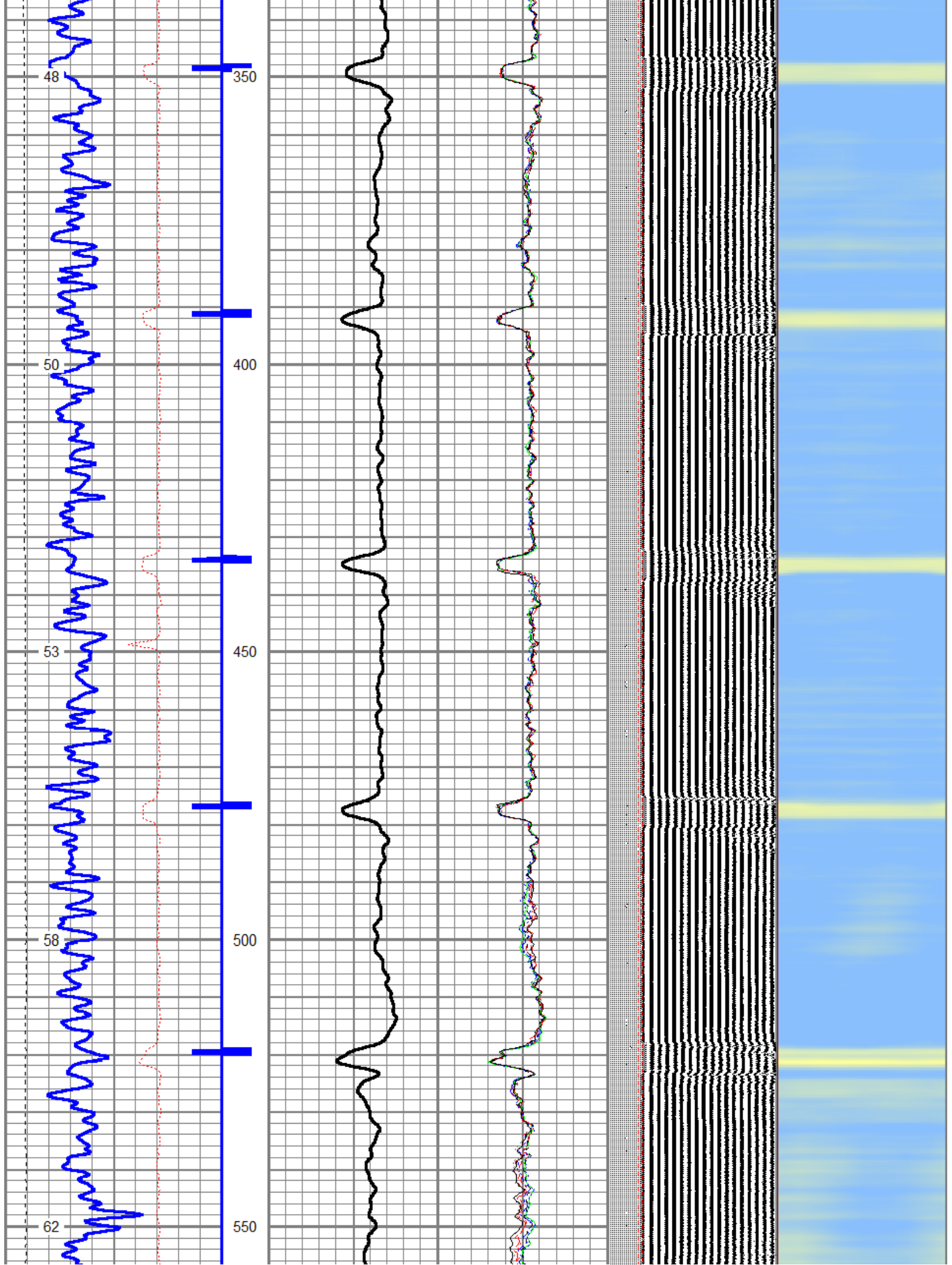
Database File: kern I 04-32d.db  
 Dataset Pathname: pass2.1  
 Presentation Format: rbl55  
 Dataset Creation: Fri Apr 29 08:15:43 2016 by Calc SCH 110630  
 Charted by: Depth in Feet scaled 1:240

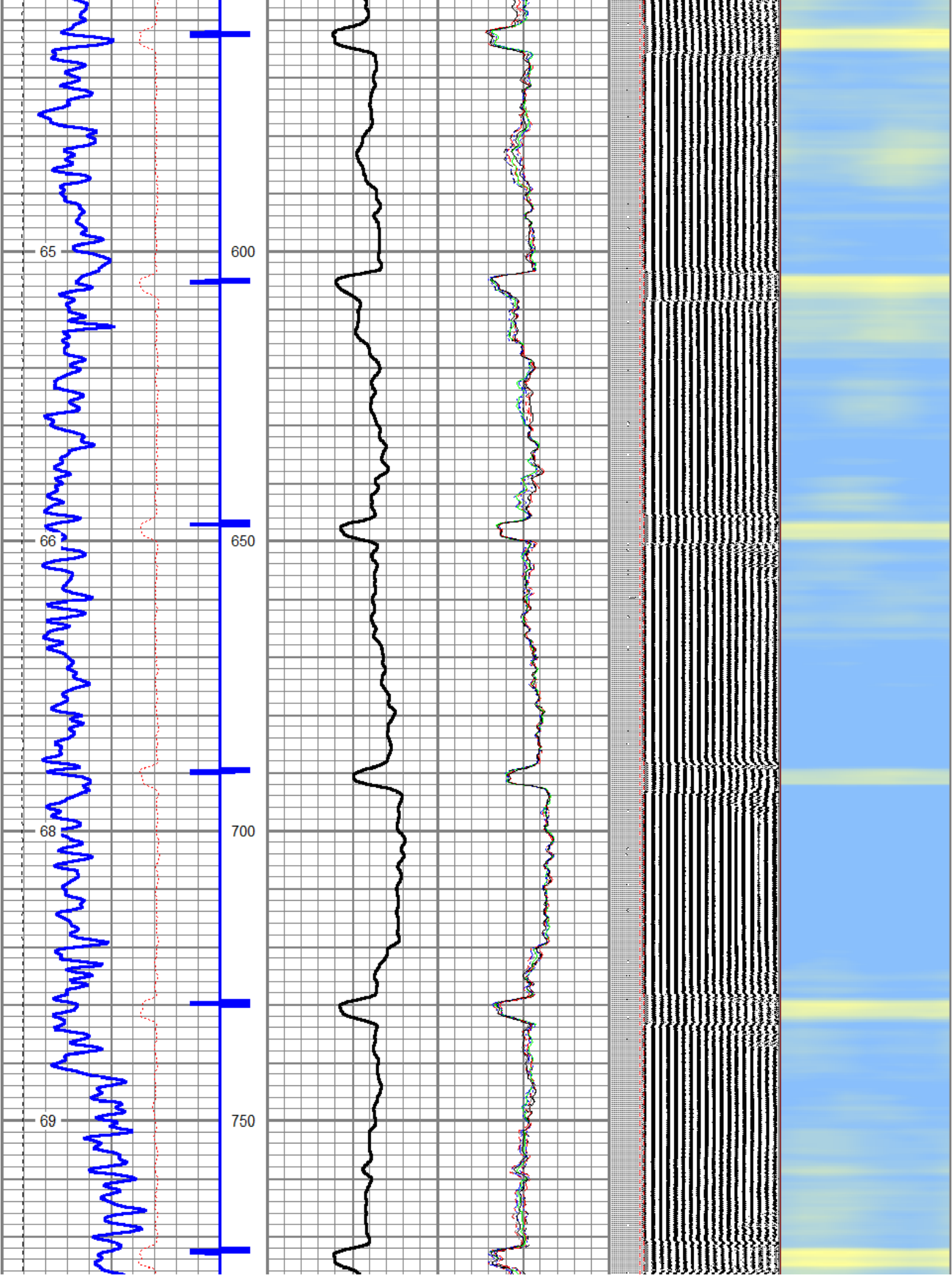
343	TT (usec)	243	0	Amplitude (mV)	100	-5	AMPS2	150	200	WVF5FT	1200	Cement Map
0	GR (GAPI)	200		Amplified Amplitude		-5	AMPS3	150				80
0	LTEN (lb)	4000	0	(mV)	10	-5	AMPS4	150		Free Pipe Gate		
	TEMP (degF)					-5	AMPS5	150				
						-5	AMPS6	150				
						-5	AMPS7	150				
						-5	AMPS8	150				
						-5	AMPS1	150				

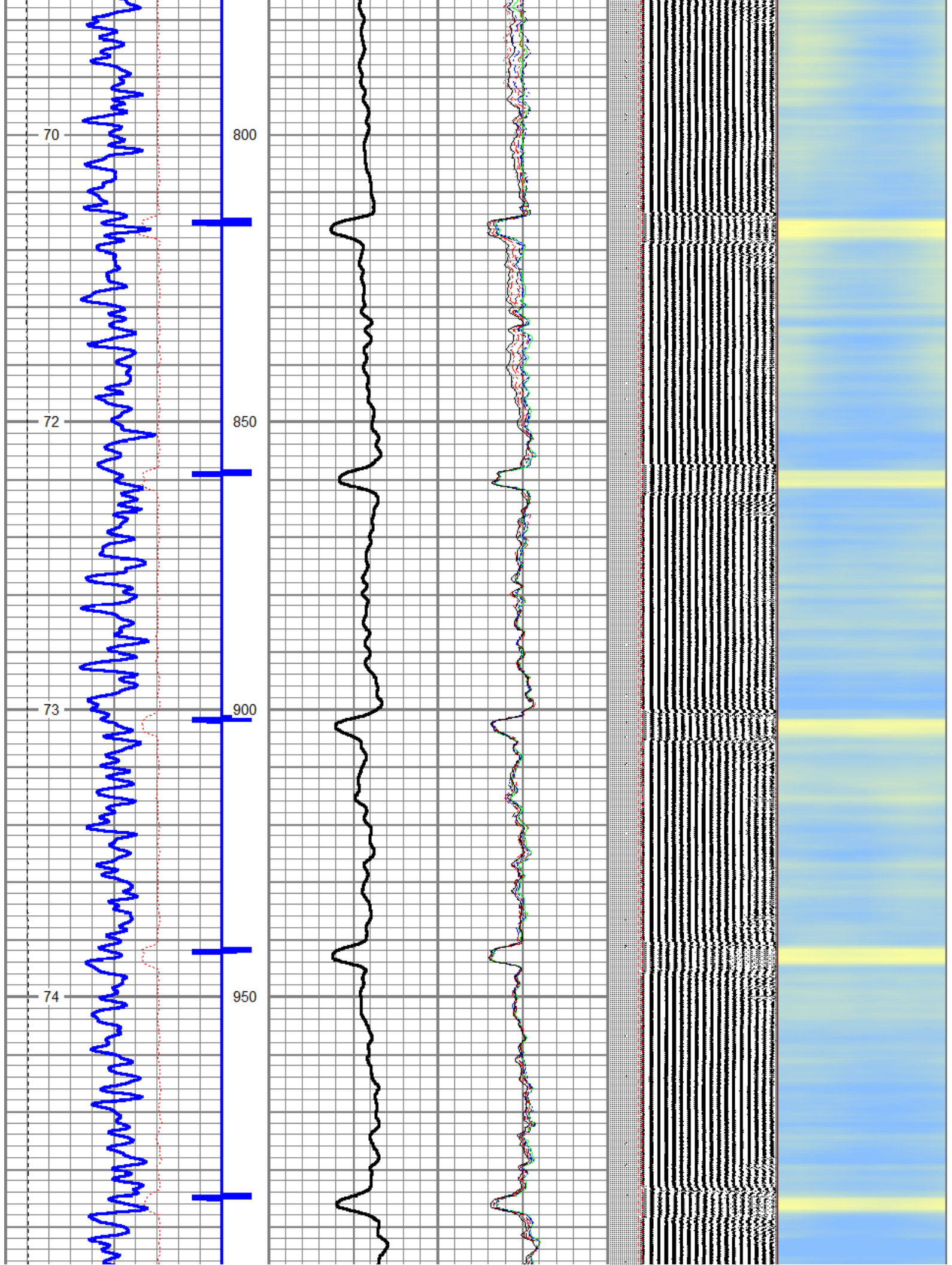




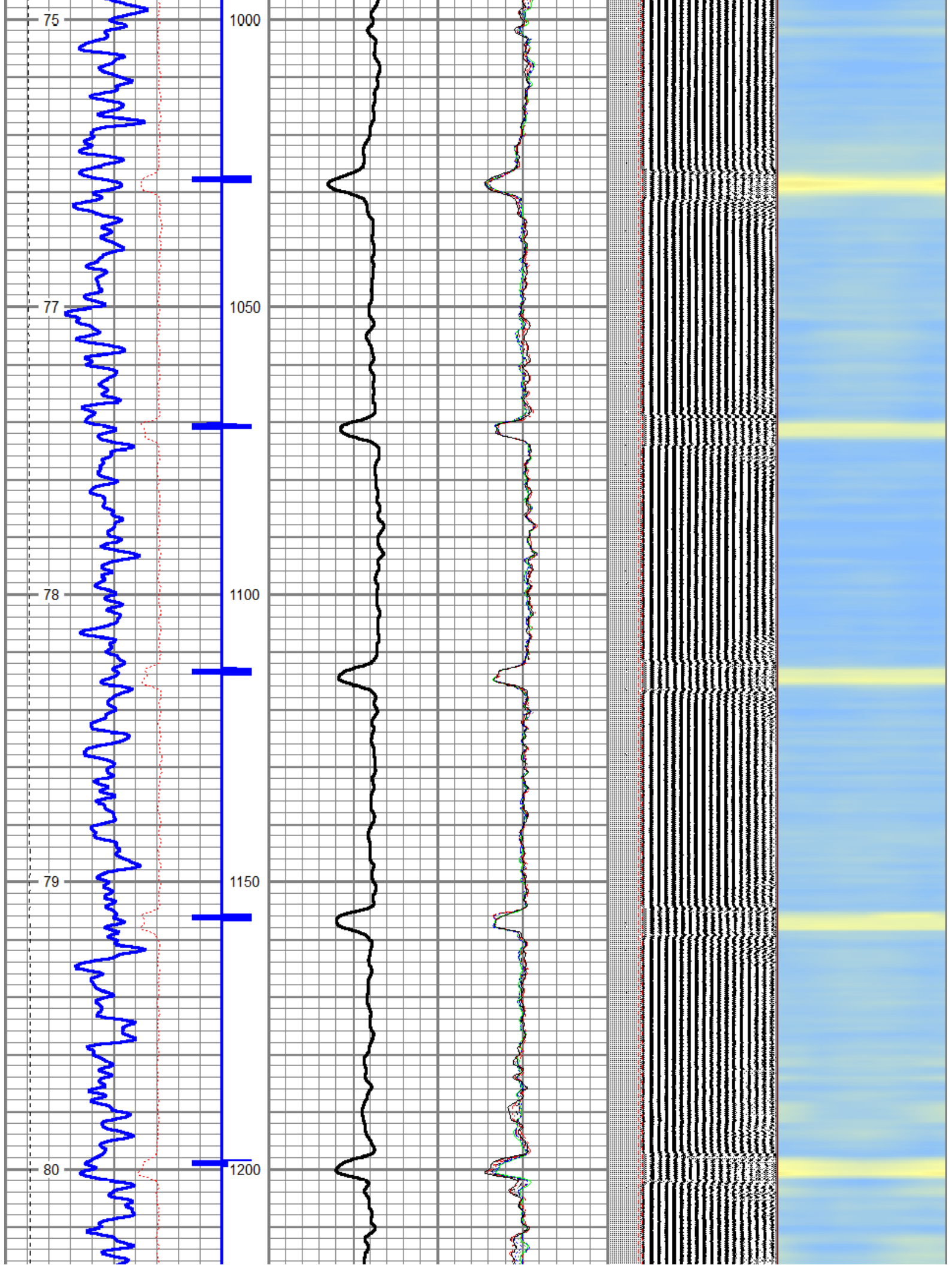




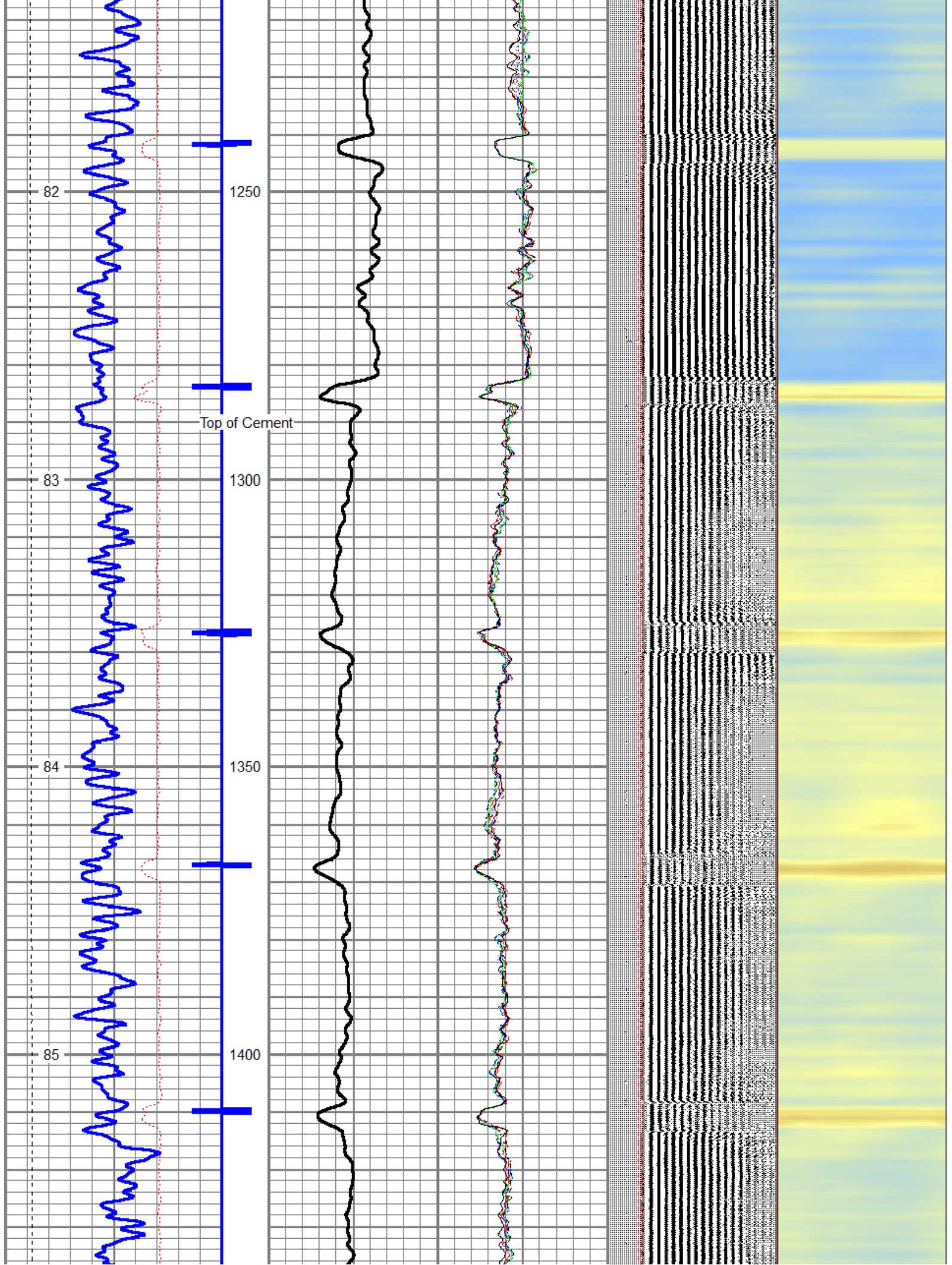


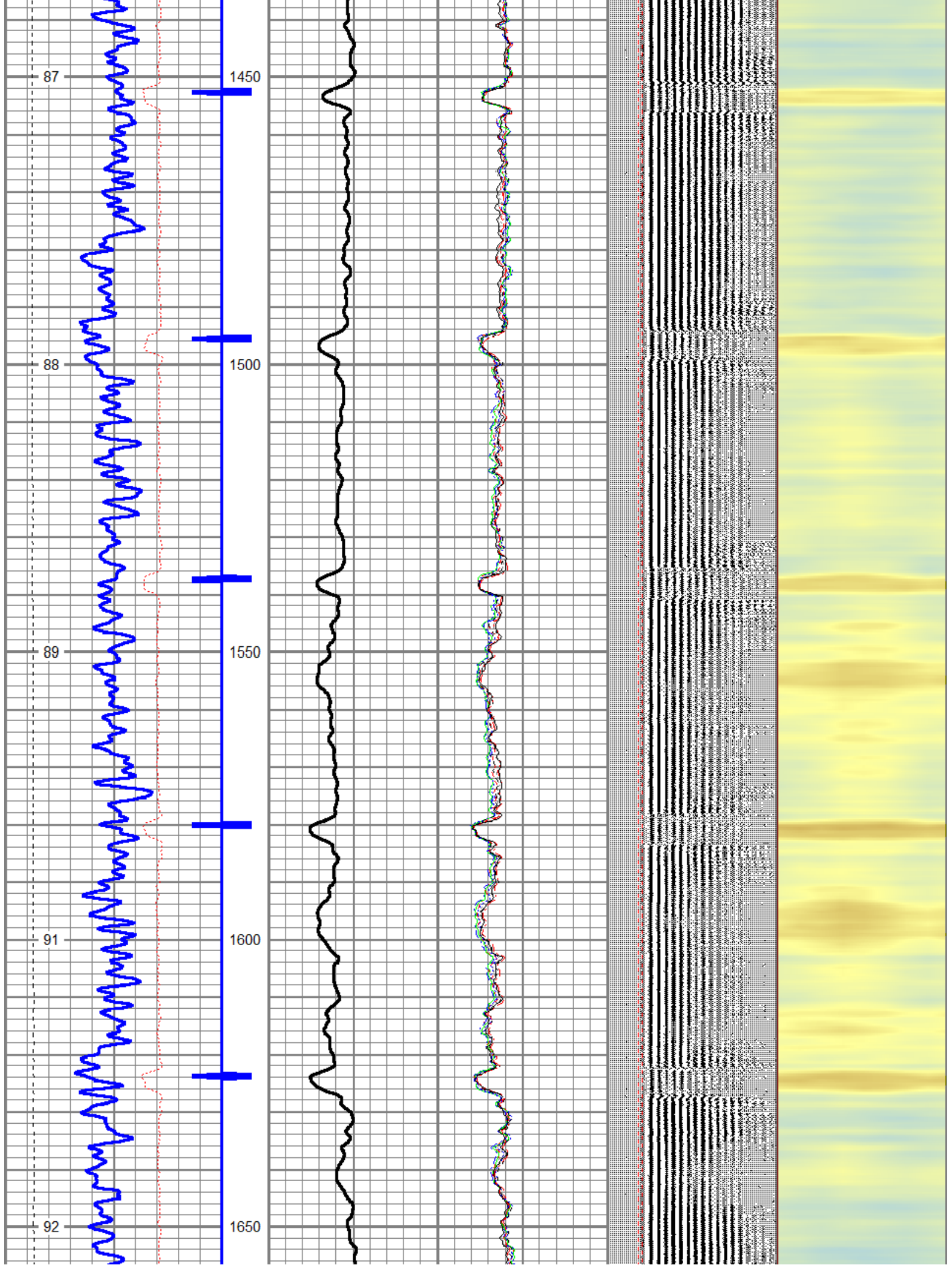




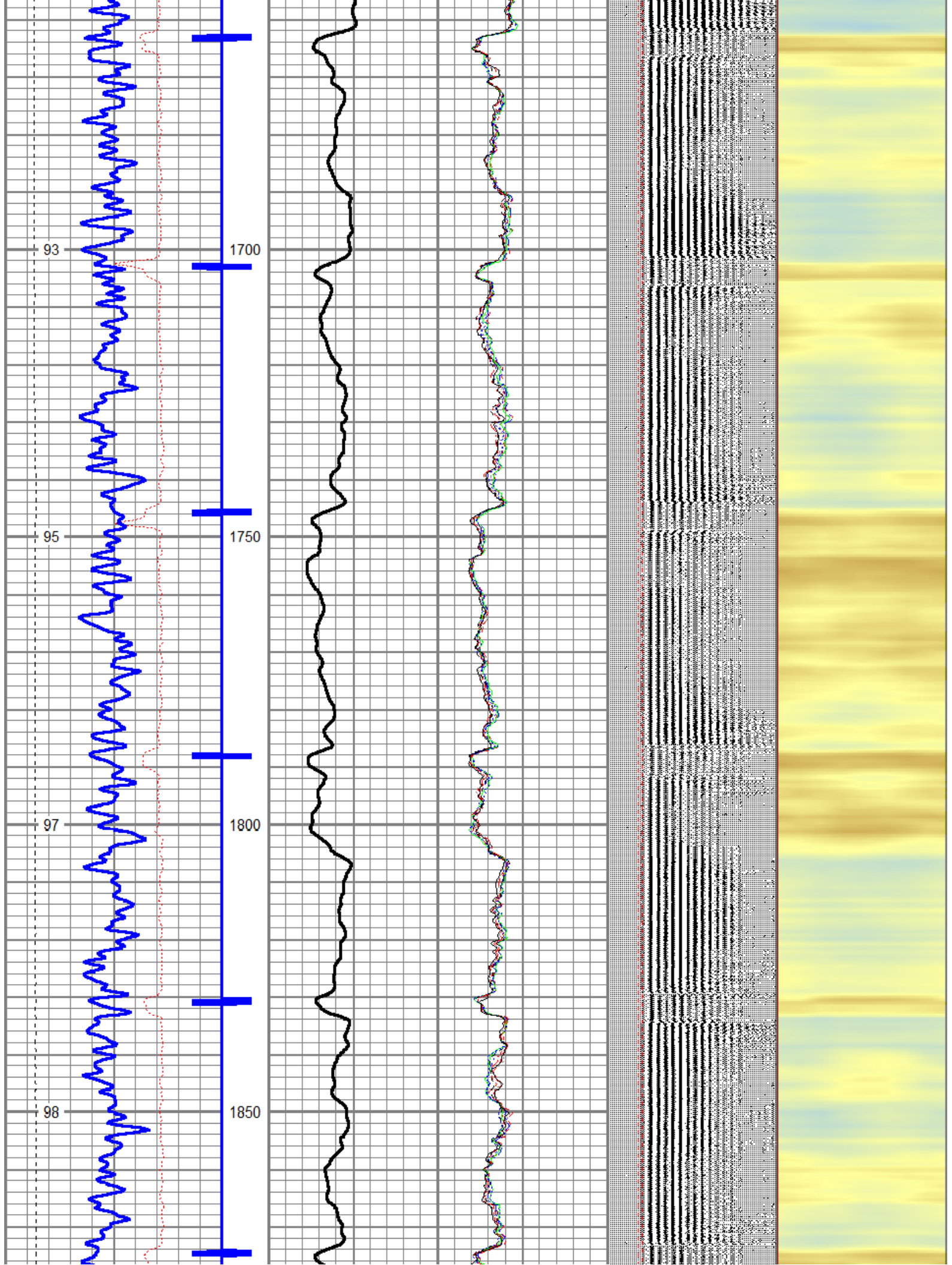




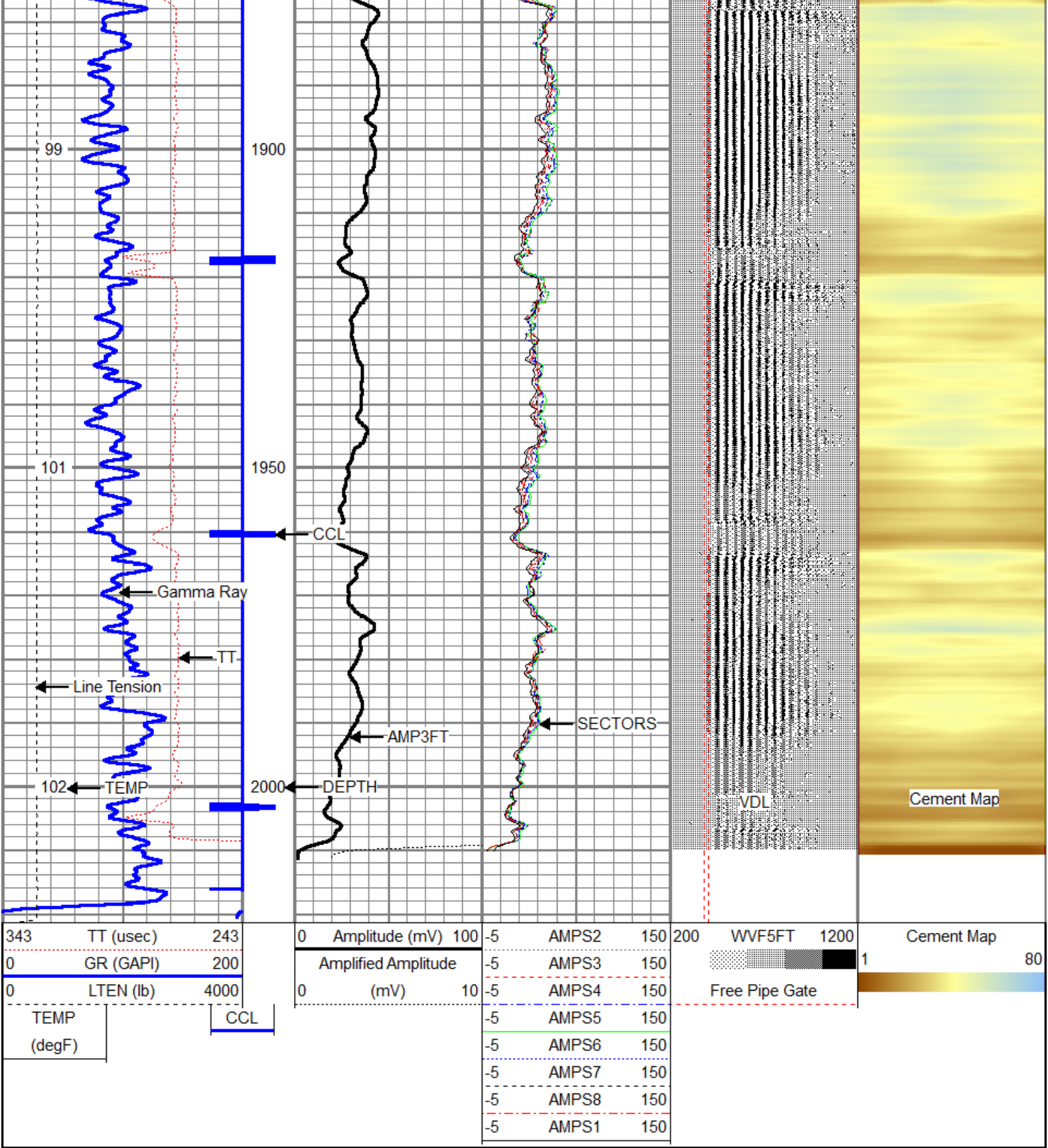












Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
			Probe	2.86	2.75	40.00

Tool Name	Start Depth (ft)	End Depth (ft)	Length (ft)	Weight (lb)	O.D. (in)
WVFS8	12.30	12.30	0.00	0.00	0.00
WVFS7	12.30	12.30	0.00	0.00	0.00
WVFS6	12.30	12.30	0.00	0.00	0.00
WVFS5	12.30	12.30	0.00	0.00	0.00
WVFS4	12.30	12.30	0.00	0.00	0.00
WVFS3	12.30	12.30	0.00	0.00	0.00
WVFS2	12.30	12.30	0.00	0.00	0.00
WVFS1	12.30	12.30	0.00	0.00	0.00
WVFCAL	12.30	12.30	0.00	0.00	0.00
WVFS3FT	12.30	11.30	1.00	9.39	2.75
Probe	11.30	8.44	2.86	2.75	40.00
CCL	8.44	6.19	2.25	4.00	2.75
GR	6.19	4.94	1.25	1.38	30.00
TEMP	4.94	4.86	0.08	0.00	0.00
Dataset: kern I 04-32d.db: field/well/run1/pass2.1 Total Length: 20.36 ft Total Weight: 230.00 lb O.D.: 2.75 in					

