



PIONEER
Pioneer Energy Services

**RADIAL BOND LOG
WITH GAMMA RAY**

Company **XCEL ENERGY**
 Well **ROUNDUP STORAGE FIELD #9**
 Field
 County **MORGAN** State **Colorado**

Comp. XCEL ENERGY
 Well ROUNDUP STORAGE FIELD #9
 Field
 Co. MORGAN
 State Colorado

Location: API #: 05-087-07483
 NE NE
 Permanent Datum SEC 22 TWP 2N RGE 60W
 Log Measured From KB Elevation 4631
 Drilling Measured From KB Above Perm. Datum
 Other Services
 2 CIBP
 Elevation
 K.B. ---
 D.F. ---
 G.L. 4631

Date of Service	16-AUG-2021				
Run Number	ONE				
Depth Driller or PBTD	---				
Depth Logger	6354				
Bottom Log Interval	6350				
Top Log Interval	Surface				
Open Hole Size	7 7/8				
Type Fluid	WATER				
Fluid Level	Full				
Fluid Density	8.33 PPG				
Max. Recorded Temperature	198				
Max. Wellhead Pressure	0				
Wellhead Connection	---				
Estimated Cement Top	SEE LOG				
Unit Number	133				
Wireline Size	9/32				
Location	FT MORGAN				
Recorded By	HAYES				
Witnessed By	GARY CHANDLER				
Tubing Record	Size	W/Ft	Top	Bottom	
Surface Casing	8.63		24	Surface	Total Depth
Production Casing	5.5		17	Surface	Total Depth
Liner Record					

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All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Pioneer Wireline Services, LLC will not 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.

Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.
Bond Tool Calibrated @ 808'

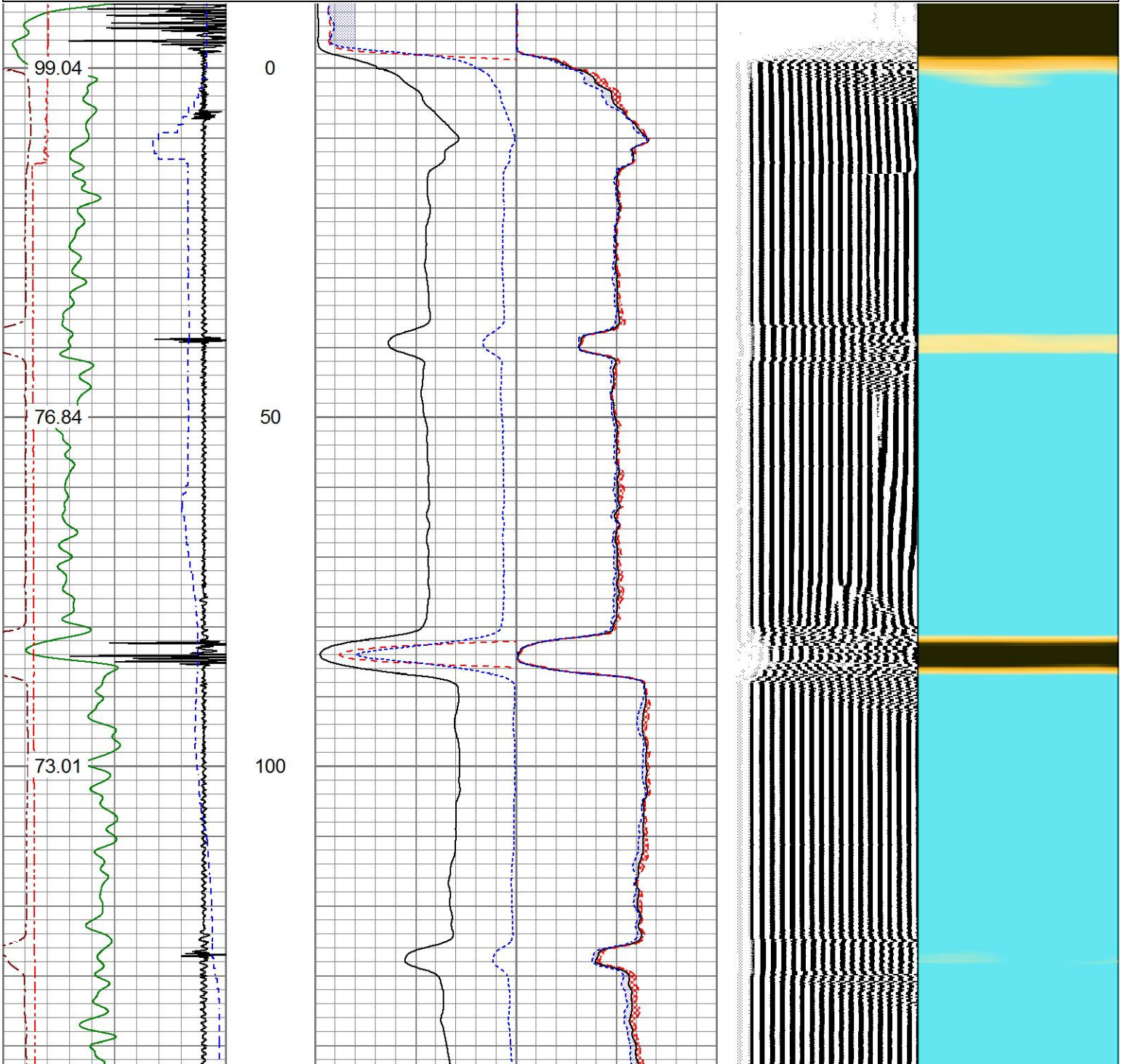
Logged With 0 PSI Surface Induced Pressure

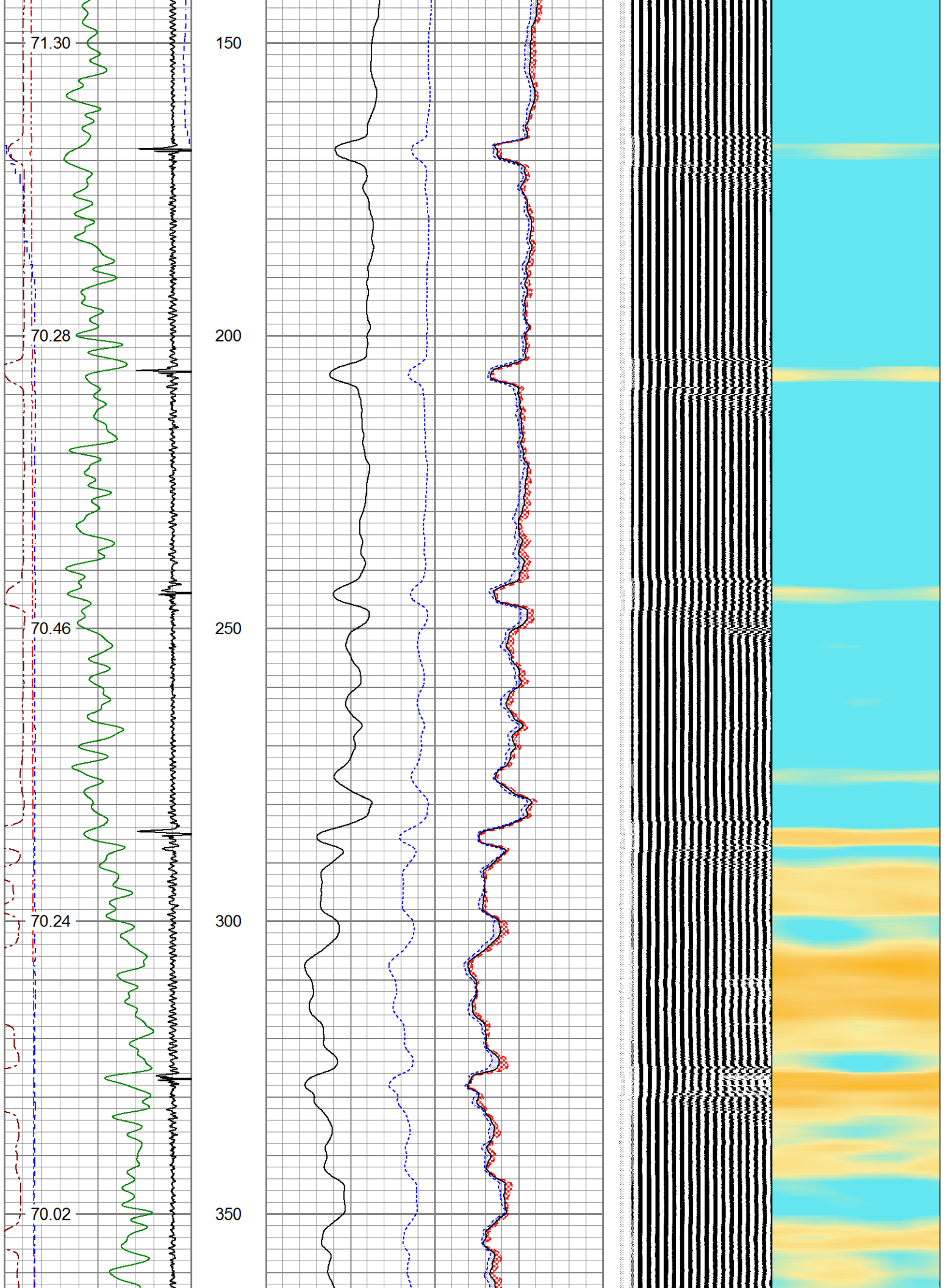
THANK YOU FOR USING PIONEER ENERGY SERVICES!

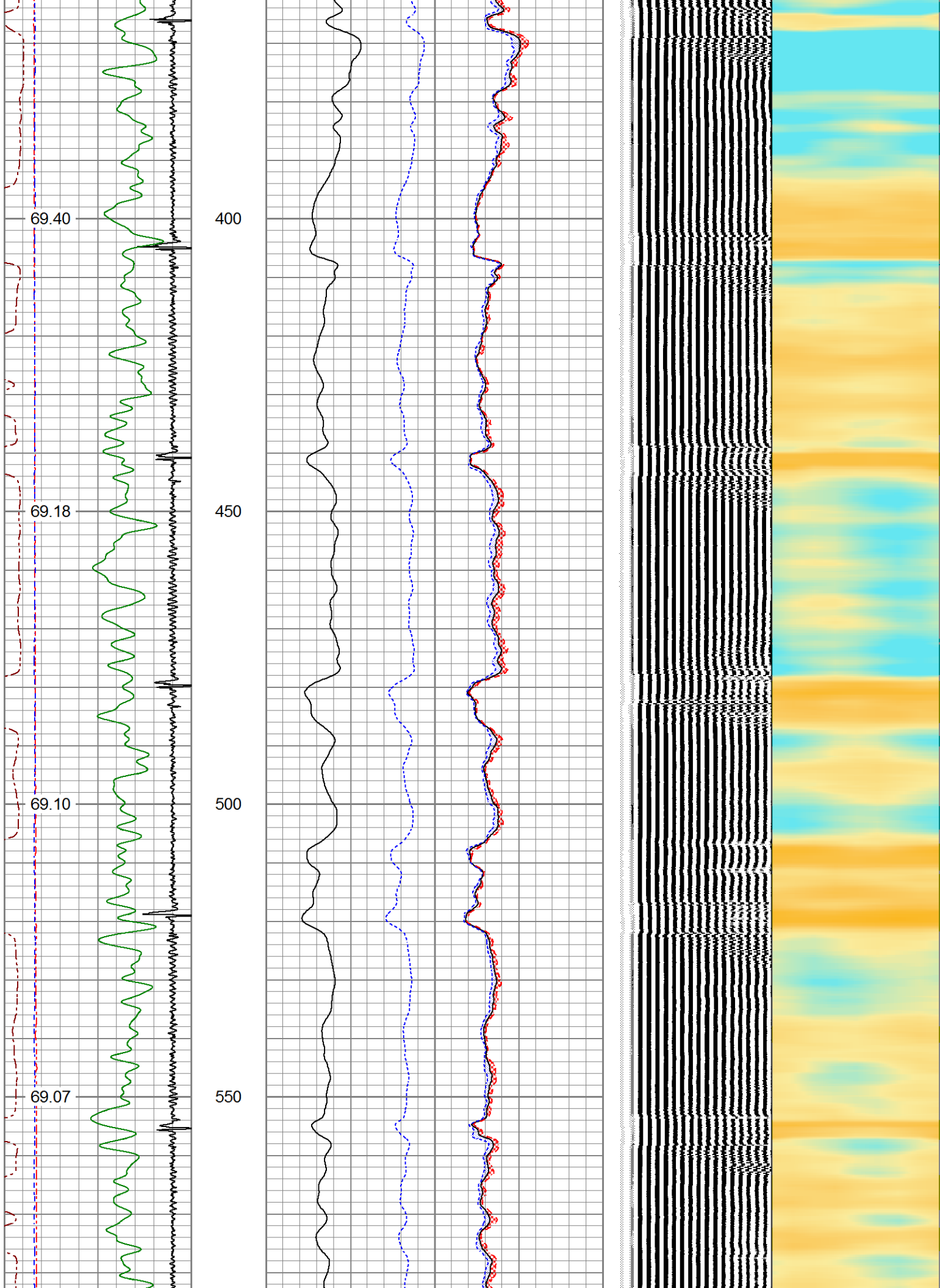
Your Pioneer Energy Services Crew	Tool Data - Services	Serial Number
Engineer: HAYES Operator: Operator: Operator:		

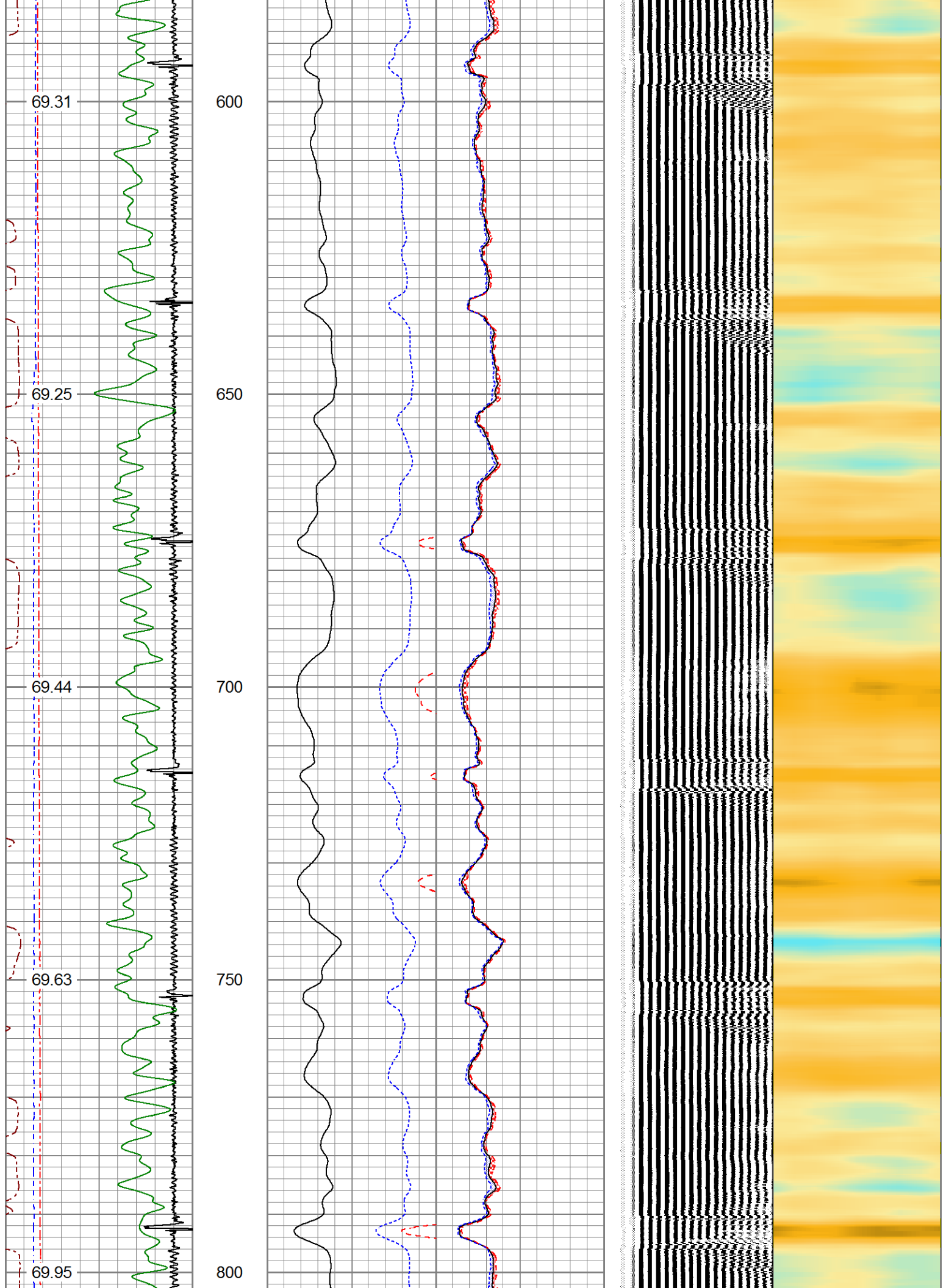
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 Dataset Pathname pass7.1
 Presentation Format pinr_scbl
 Dataset Creation Mon Aug 16 13:02:41 2021
 Charted by Depth in Feet scaled 1:240

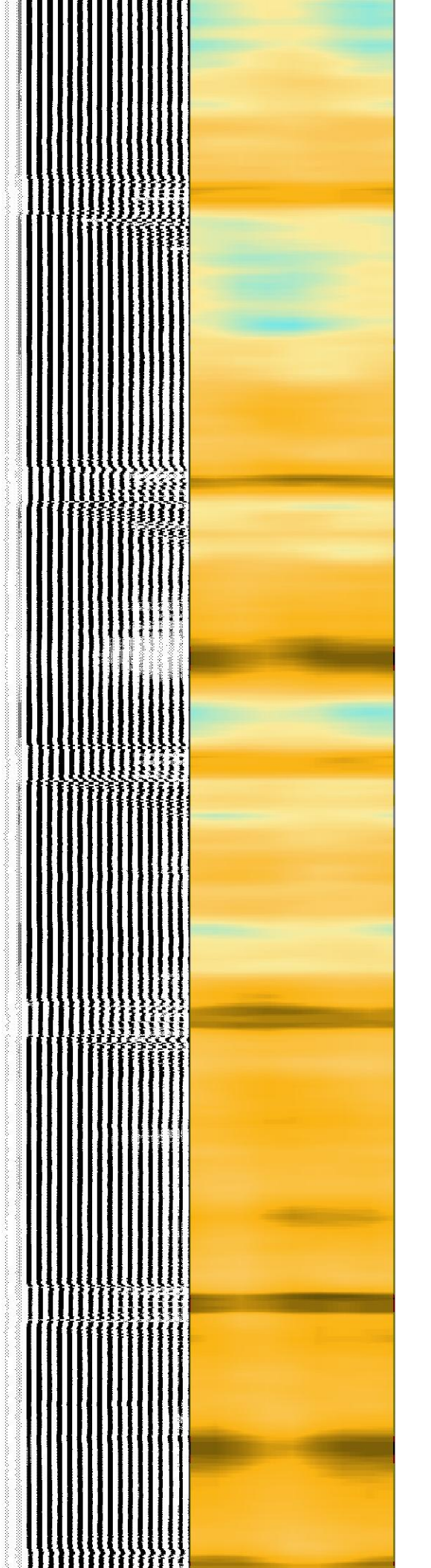
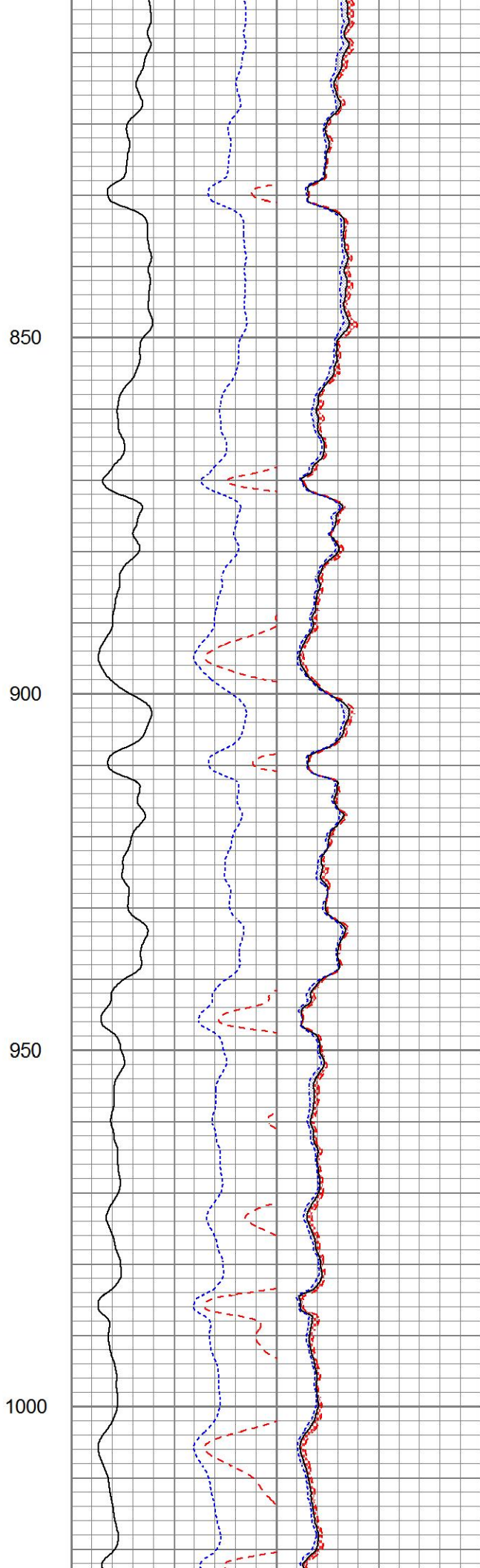
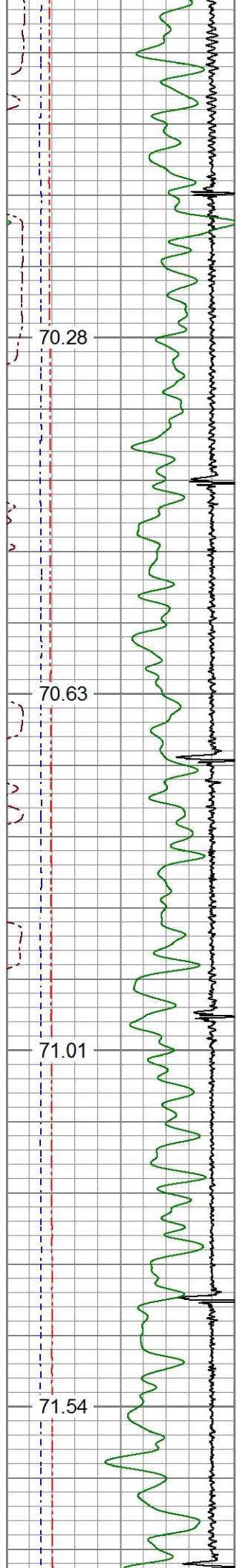
3Ft Travel Time 270 (usec) 170	3' Amplitude 0 (mV) 100	Sector Amplitude Average 0 150	200 VDL (usec) 1200	1 Sector Map 8
-9 Collar Locator 1	3' Amplified Amplitude X 5 0 (mV) 20	Sector Amplitude Maximum 0 150		
Gamma Ray 0 (GAPI) 150	1 Bond Index 0	Sector Amplitude Minimum 0 150		
0 LineTension (lb)2000				
Line Speed -100 (ft/min) 100				
TEMP (degF)				

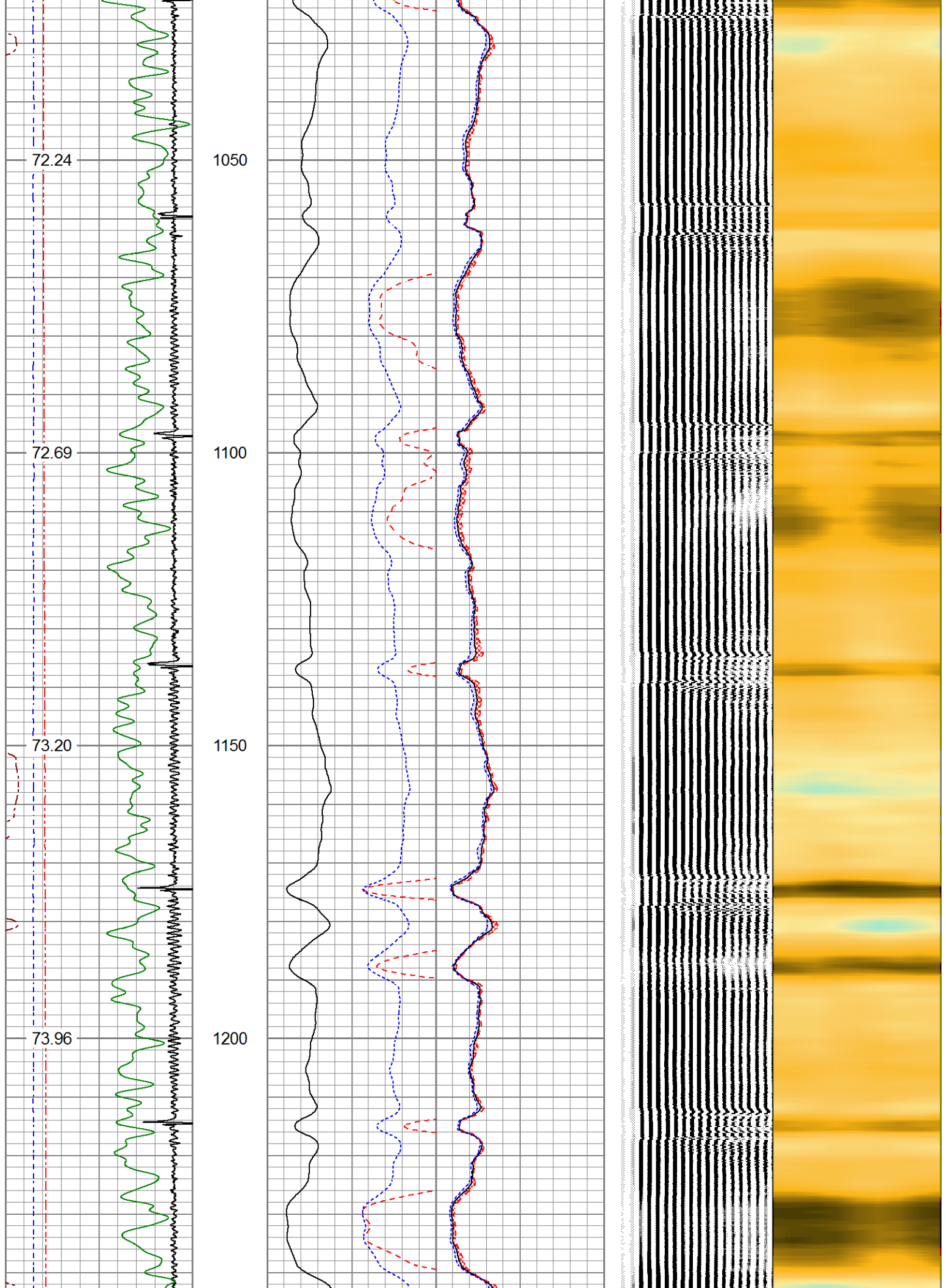


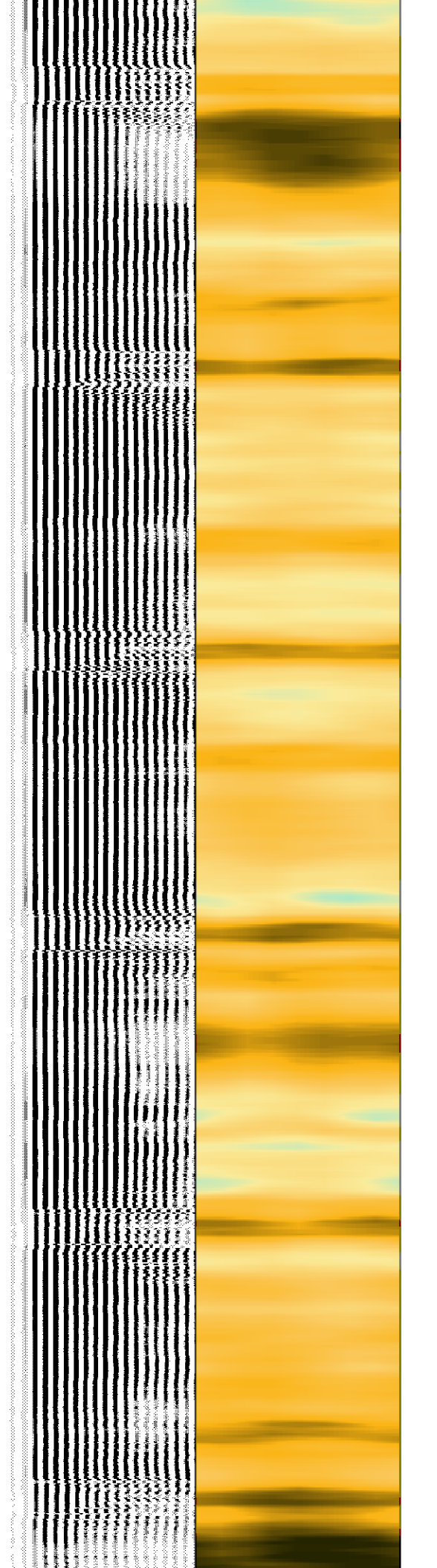
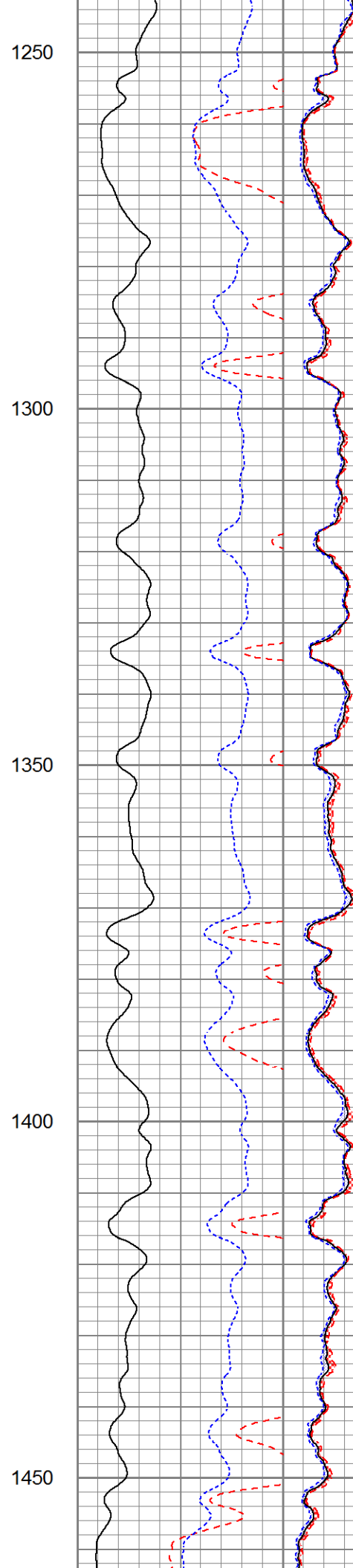
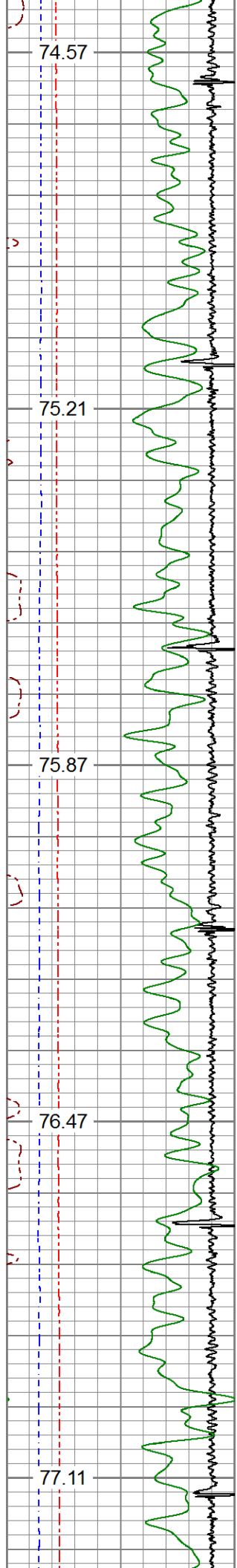


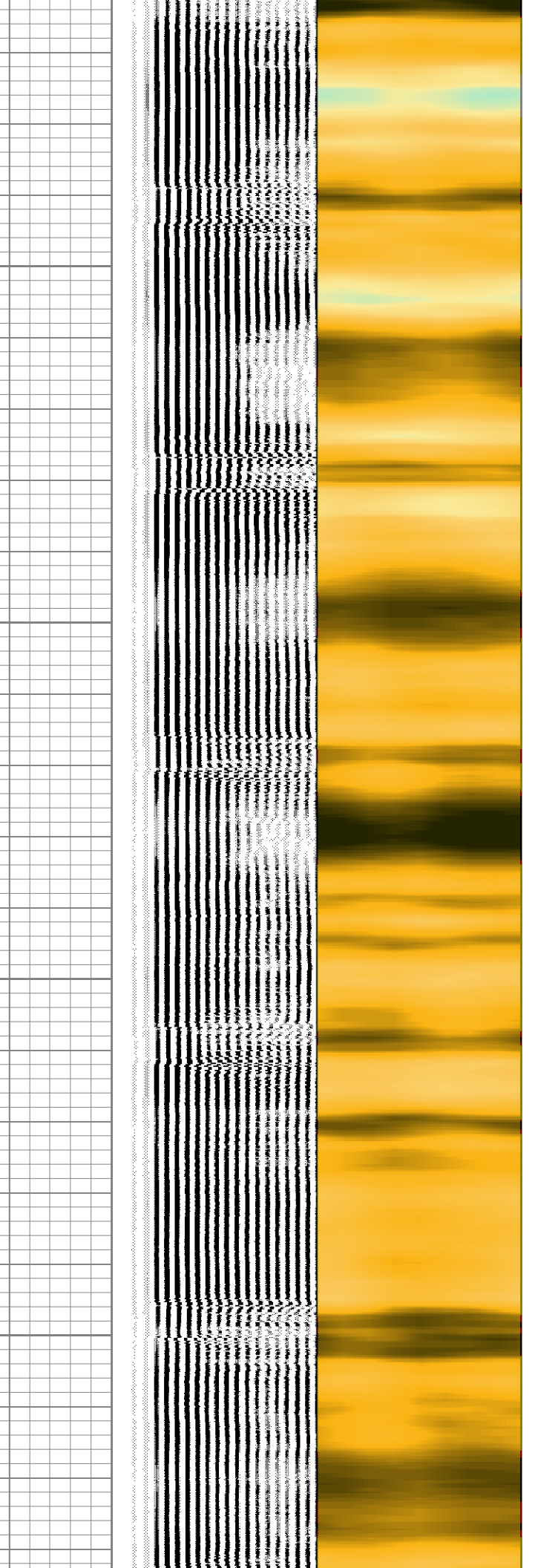
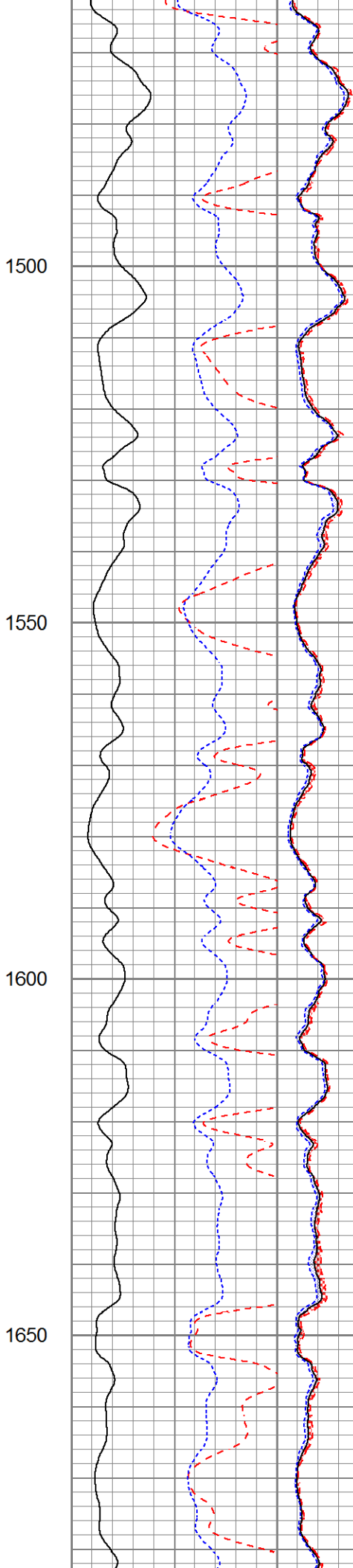
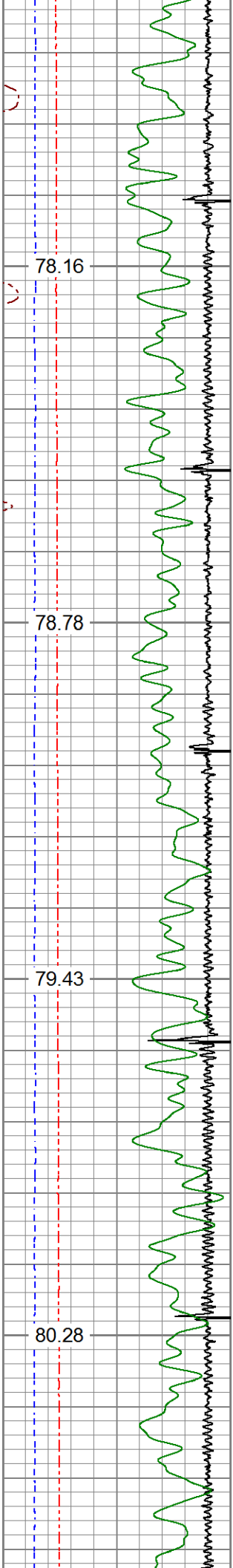


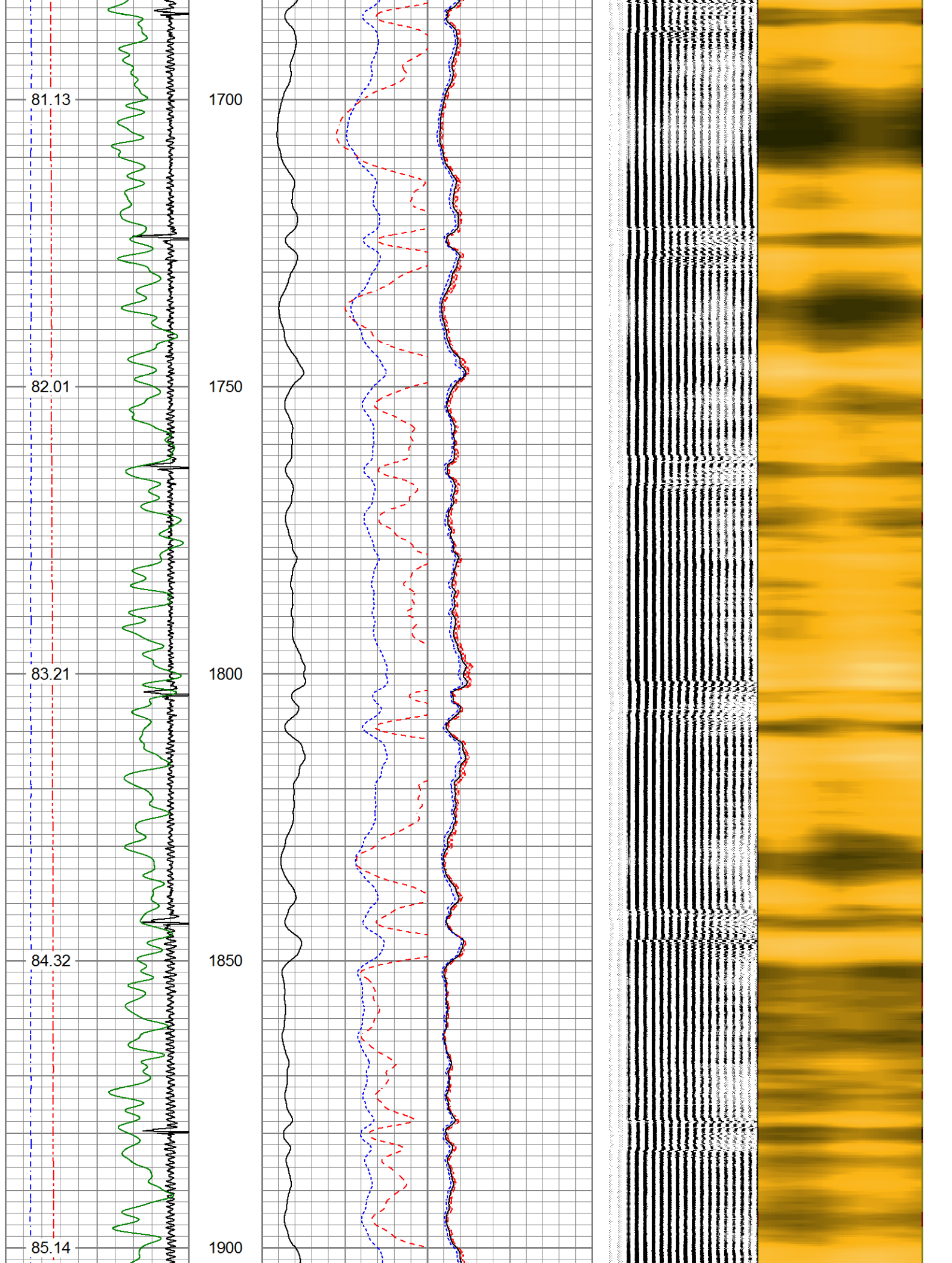


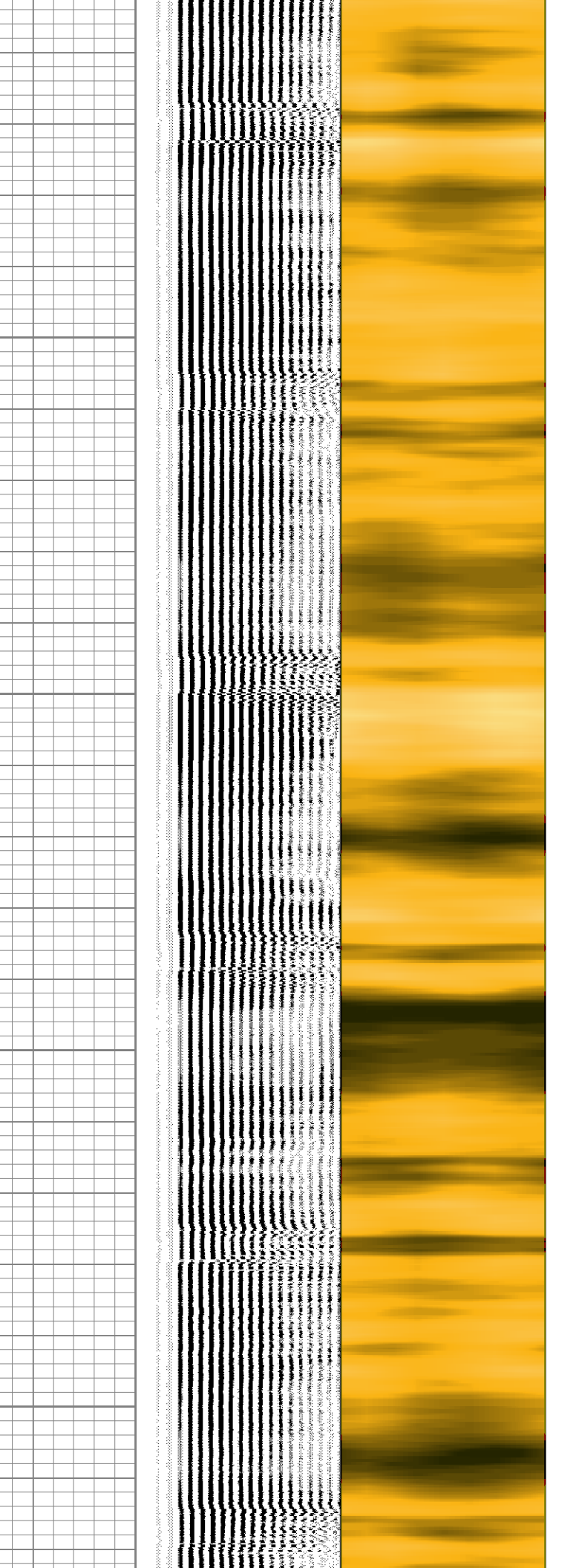
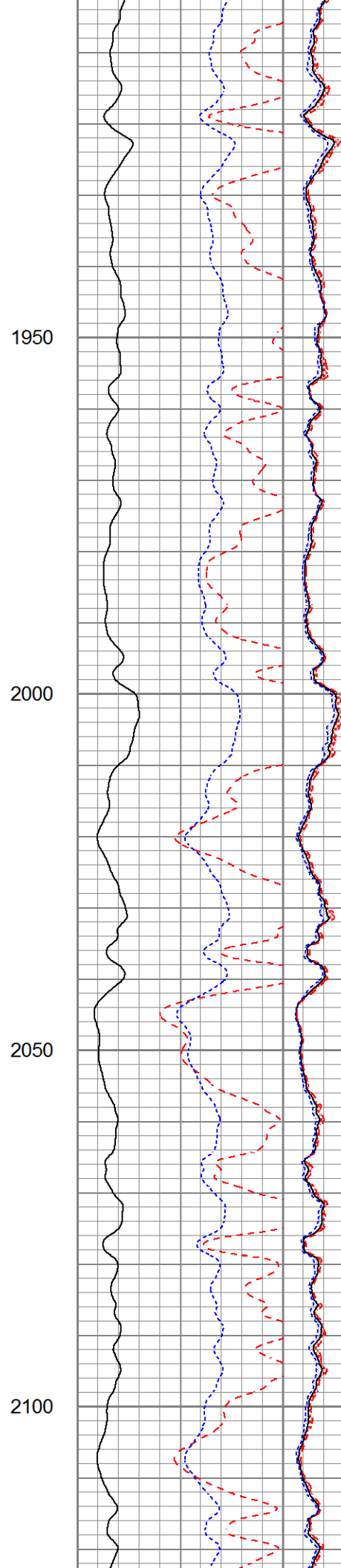
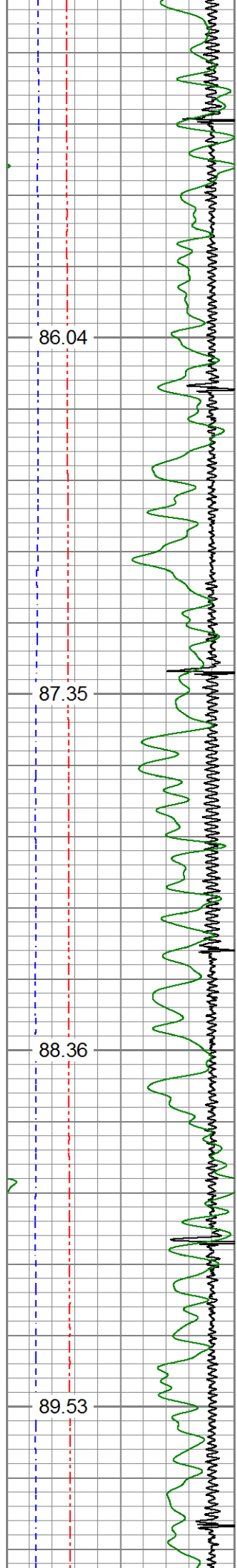


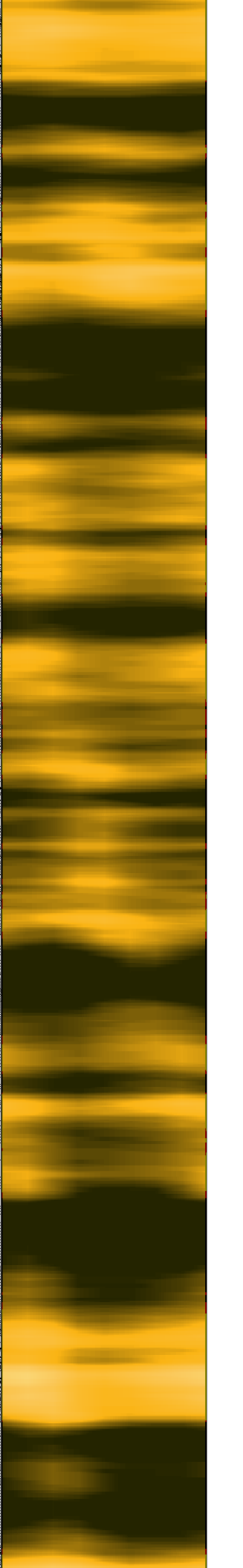
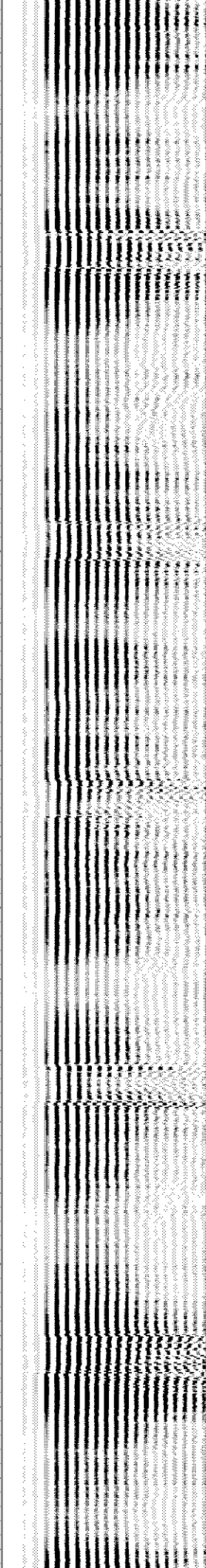
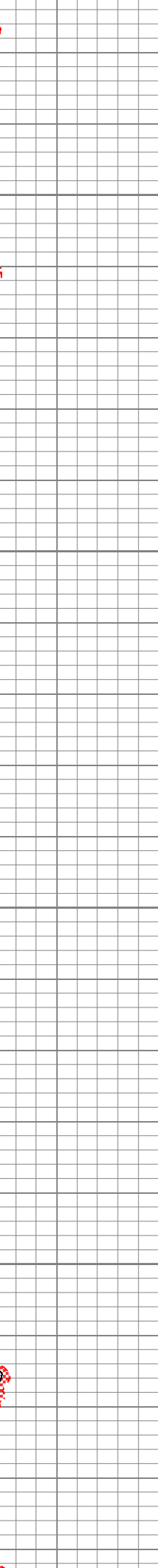
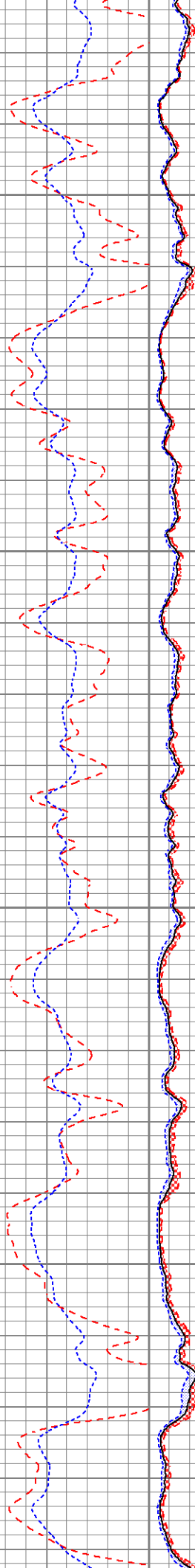
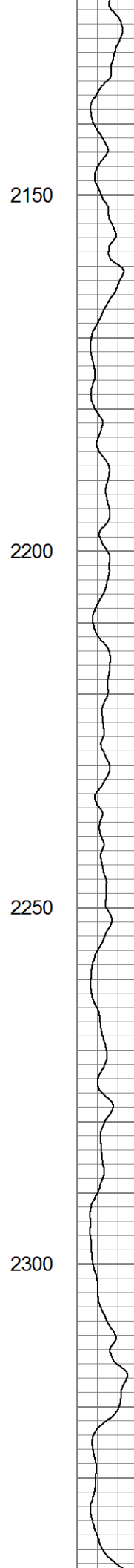
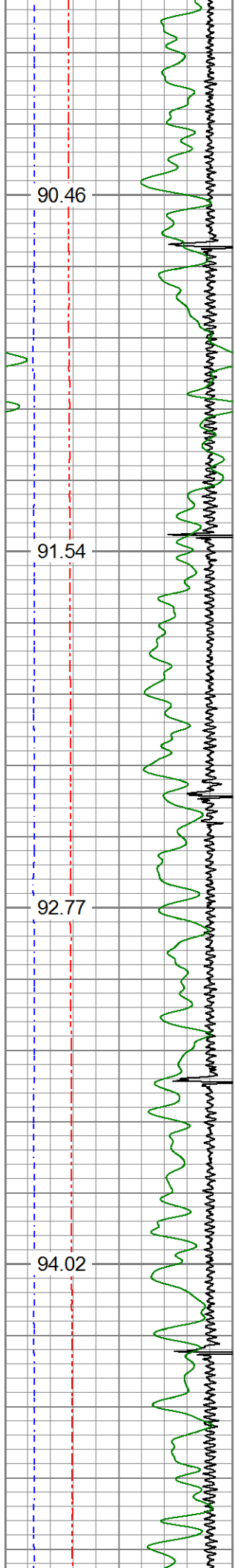


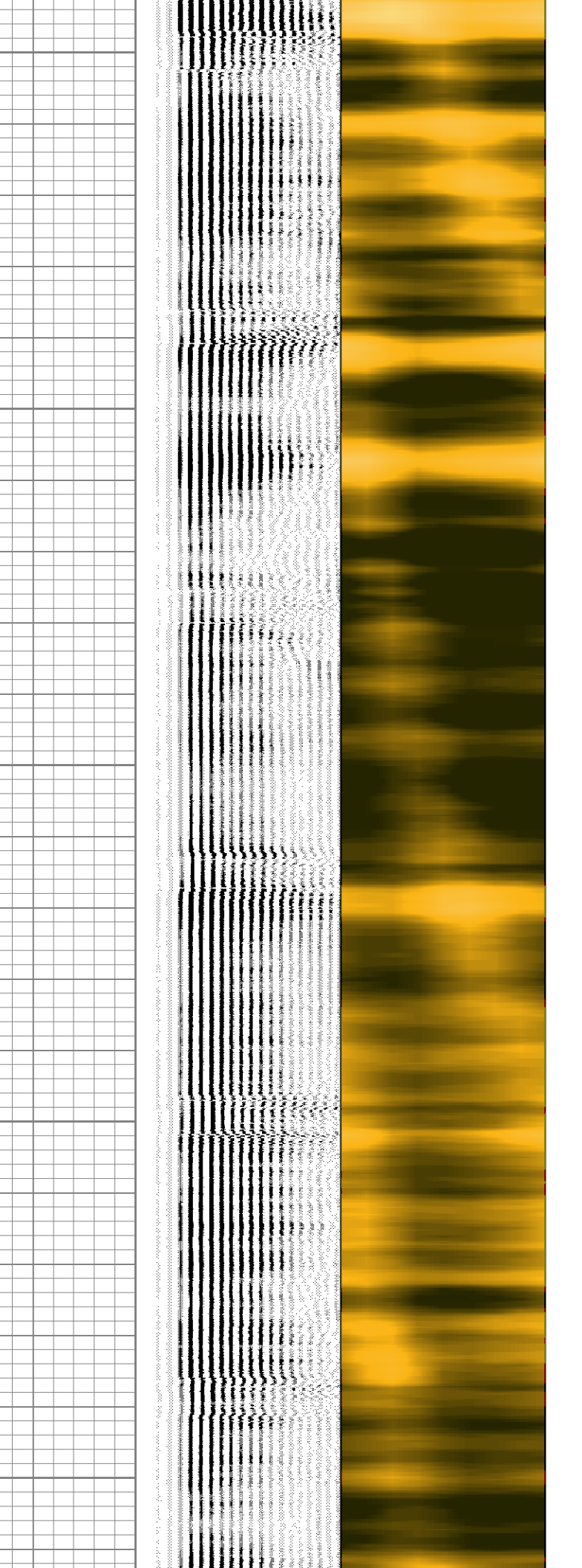
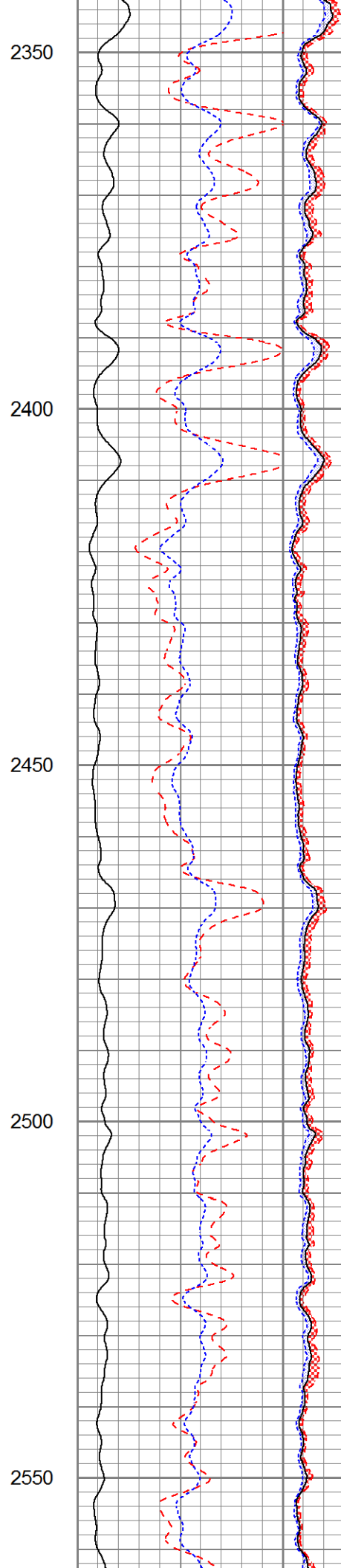
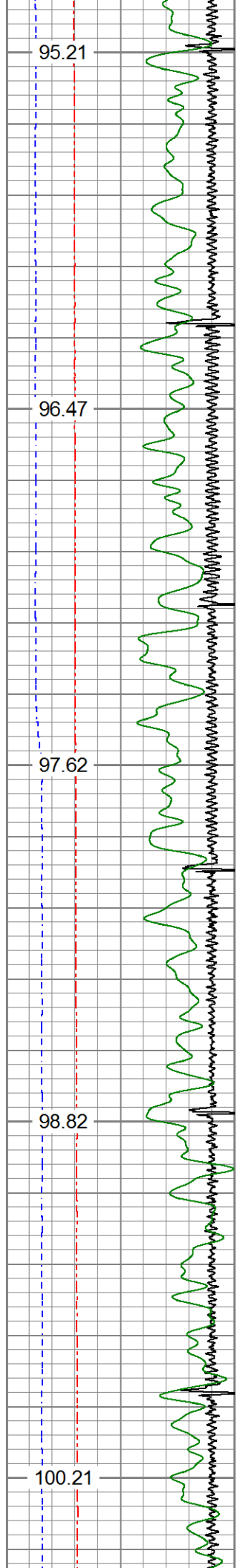


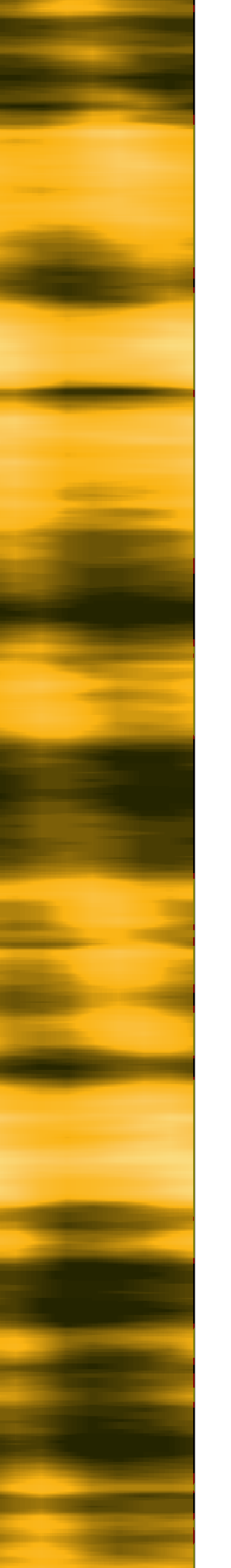
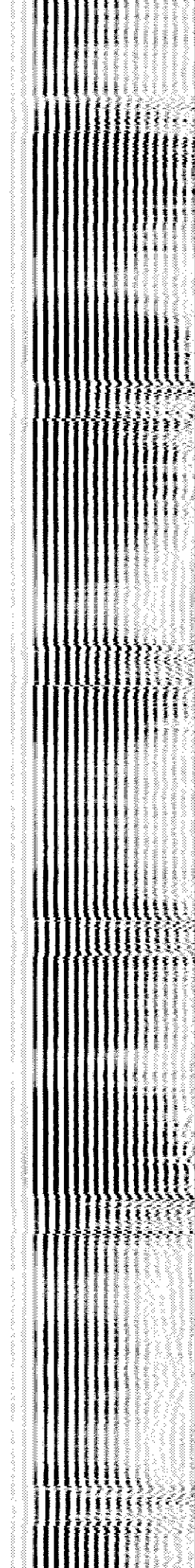
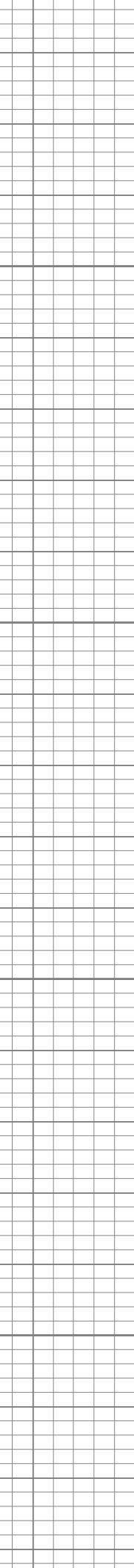
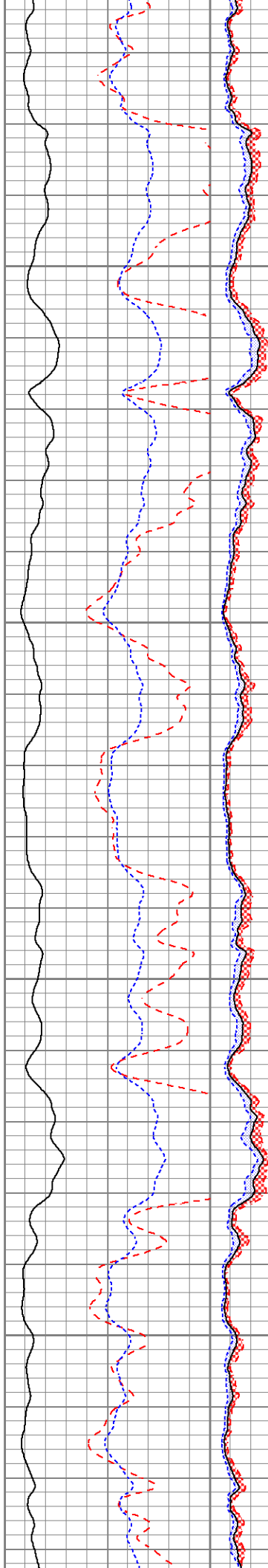
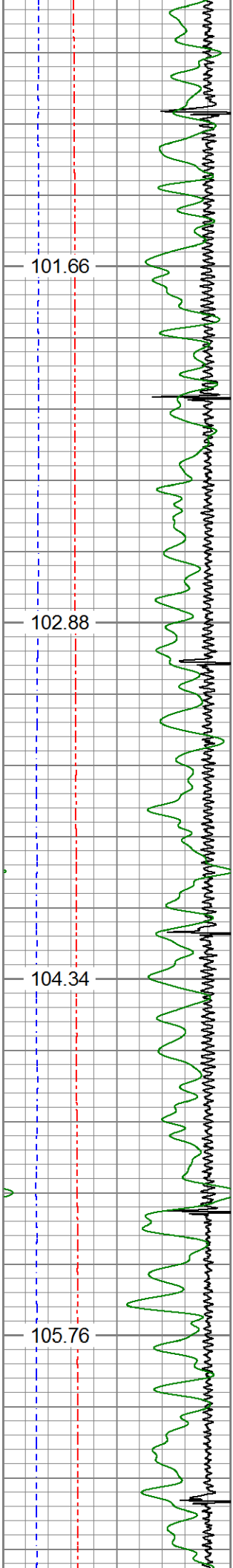


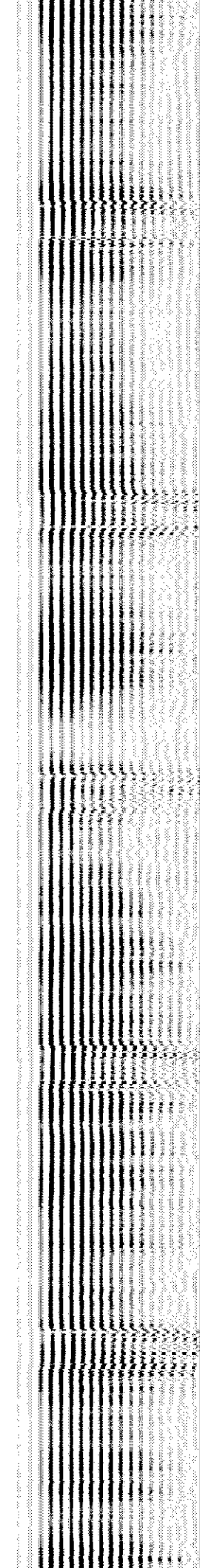
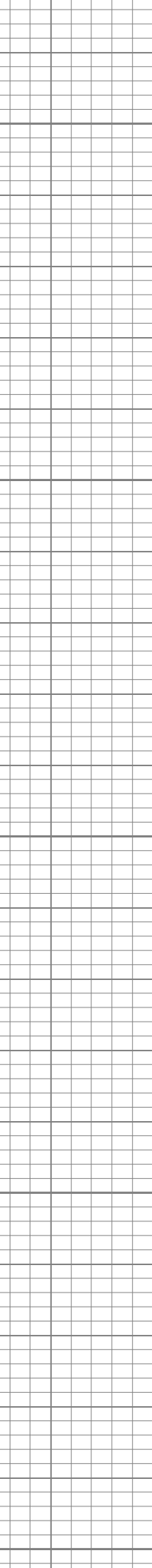
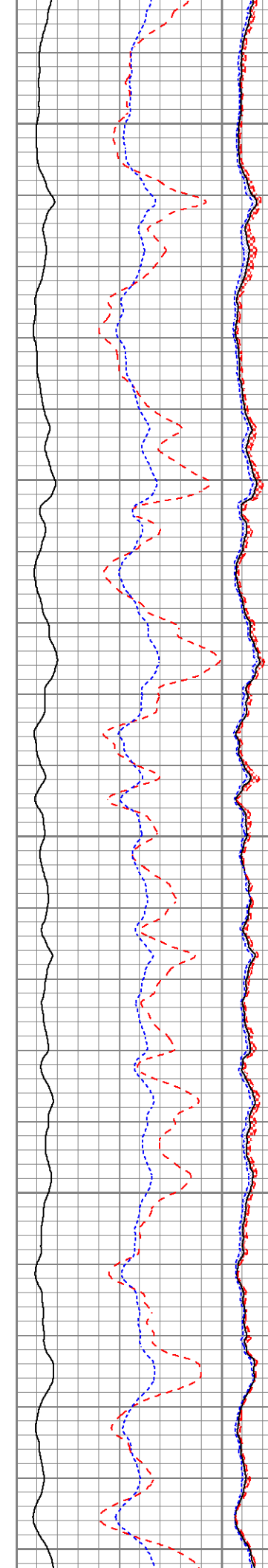
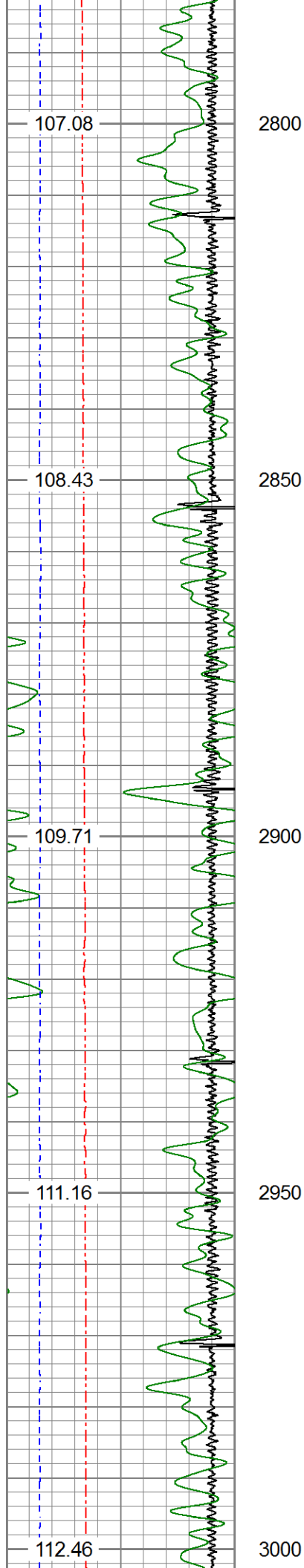


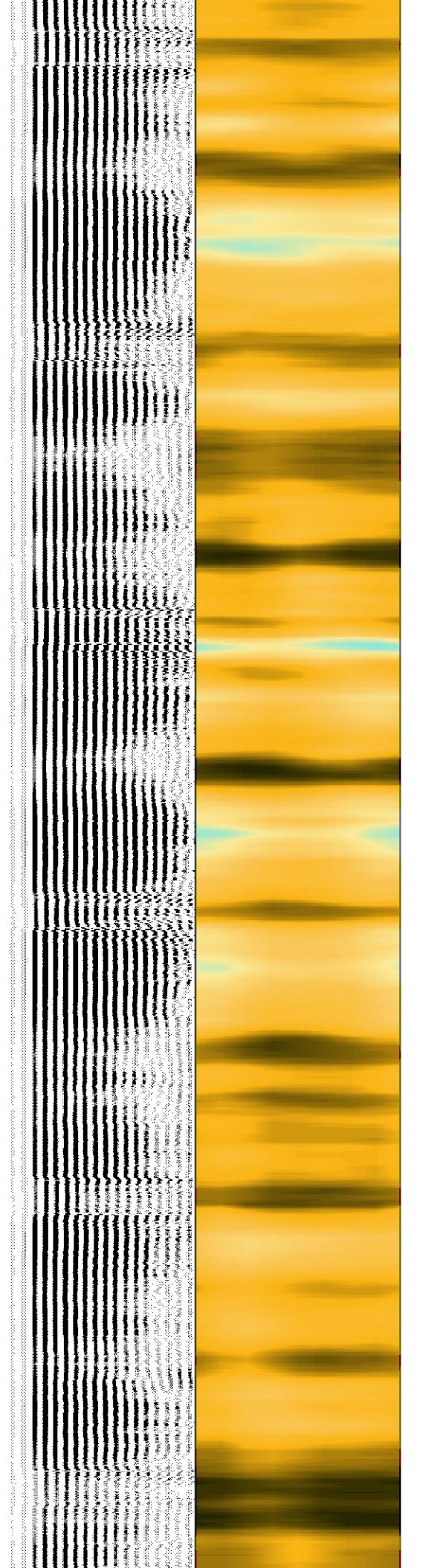
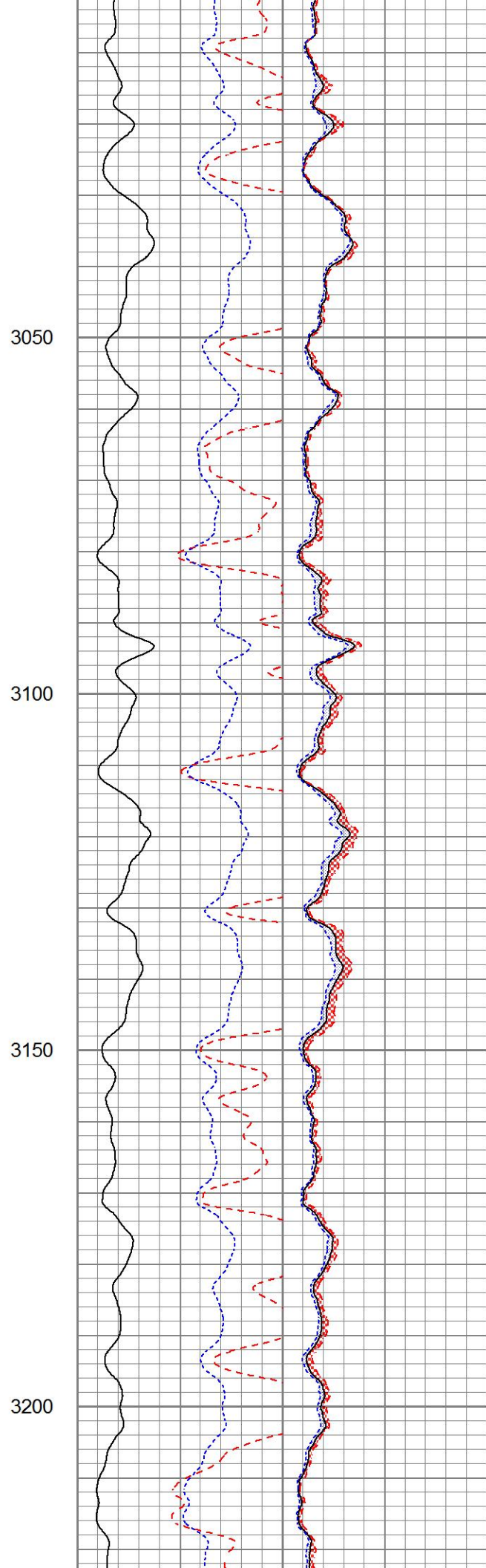
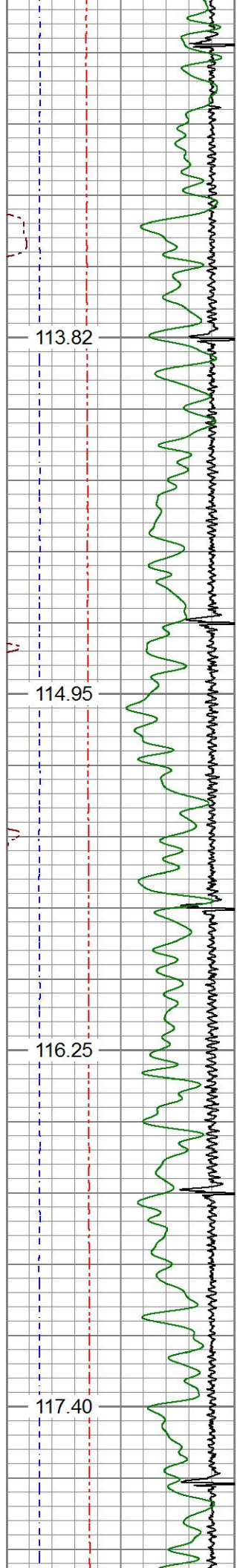


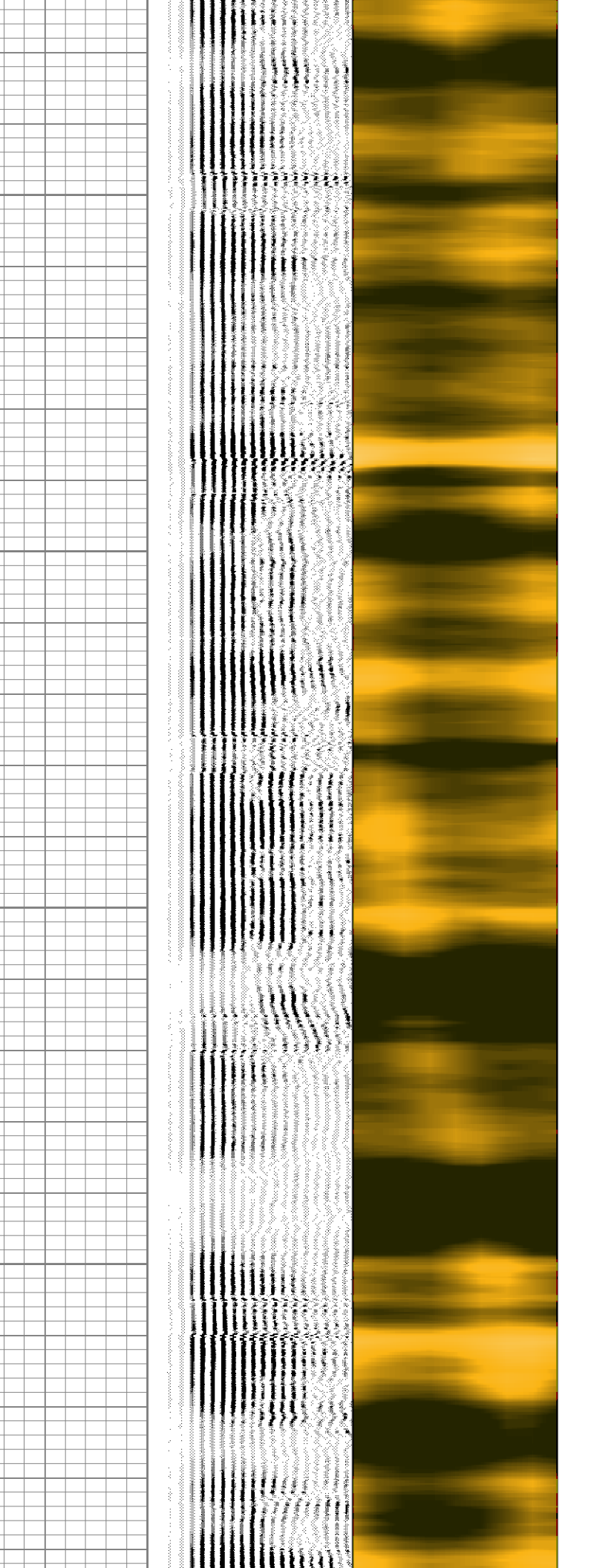
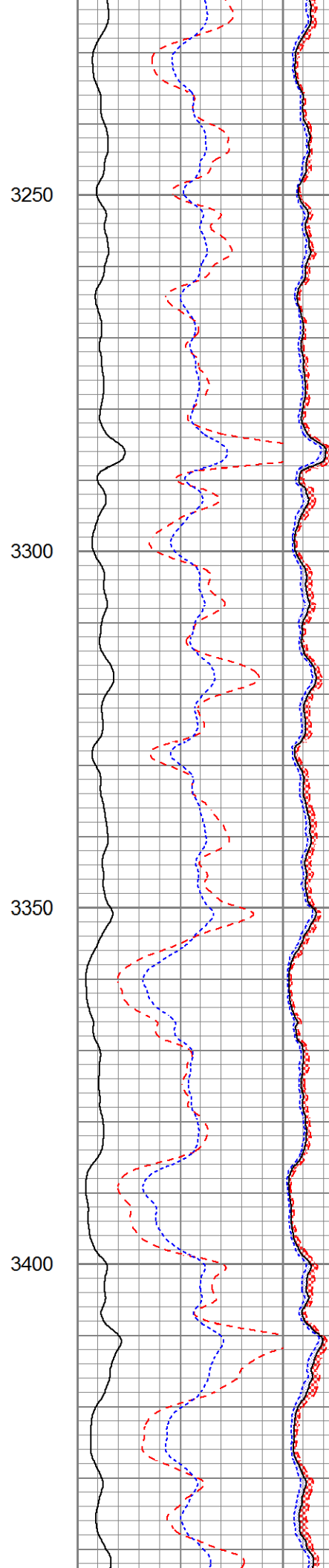
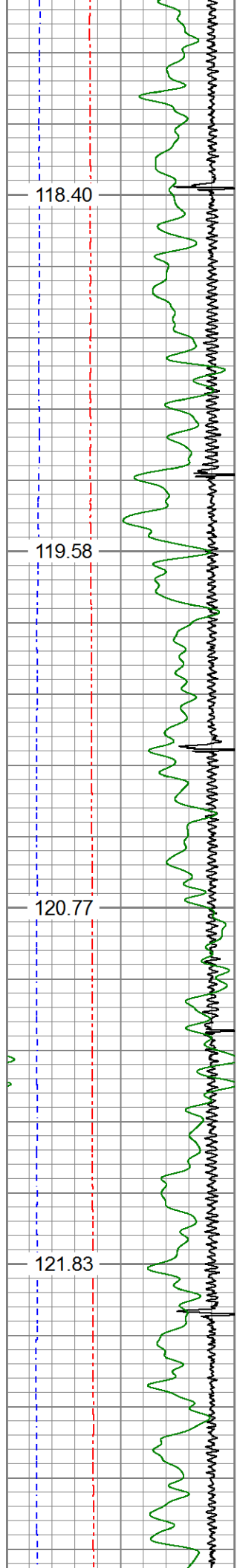


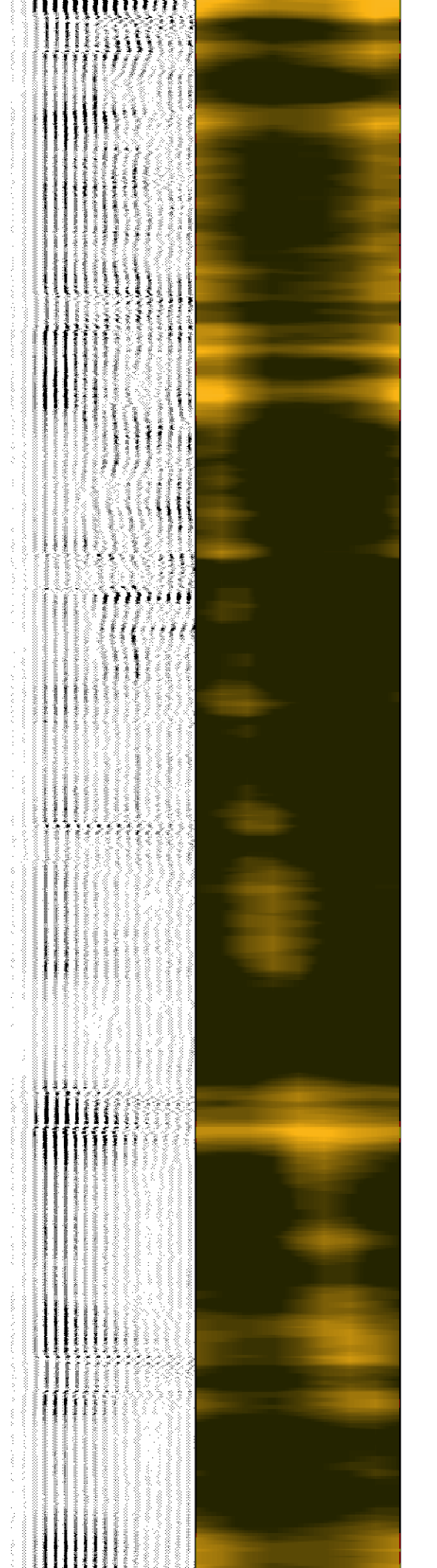
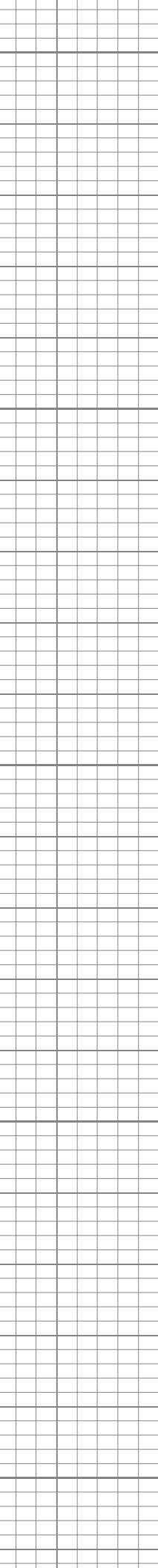
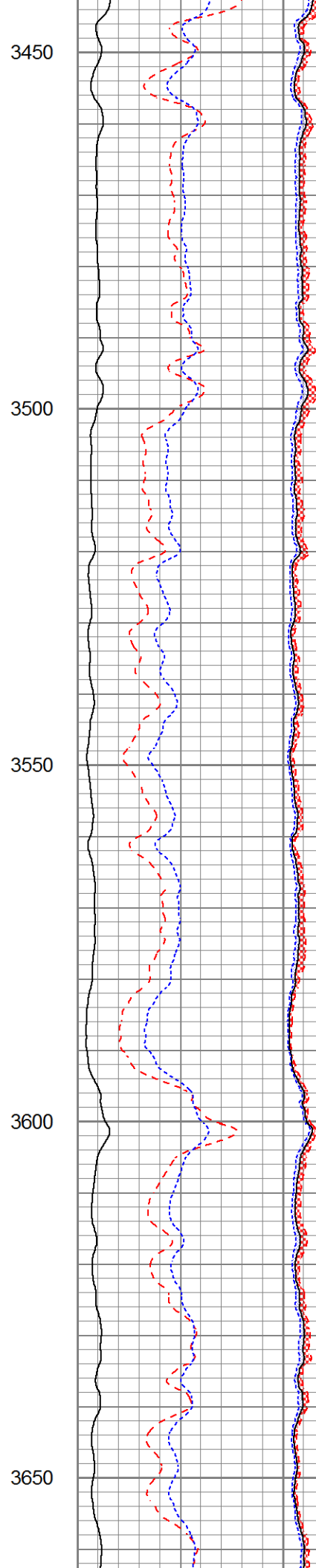
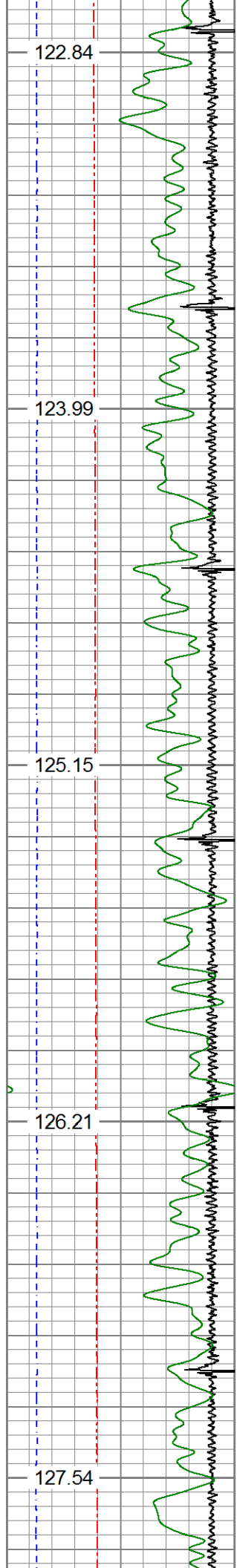


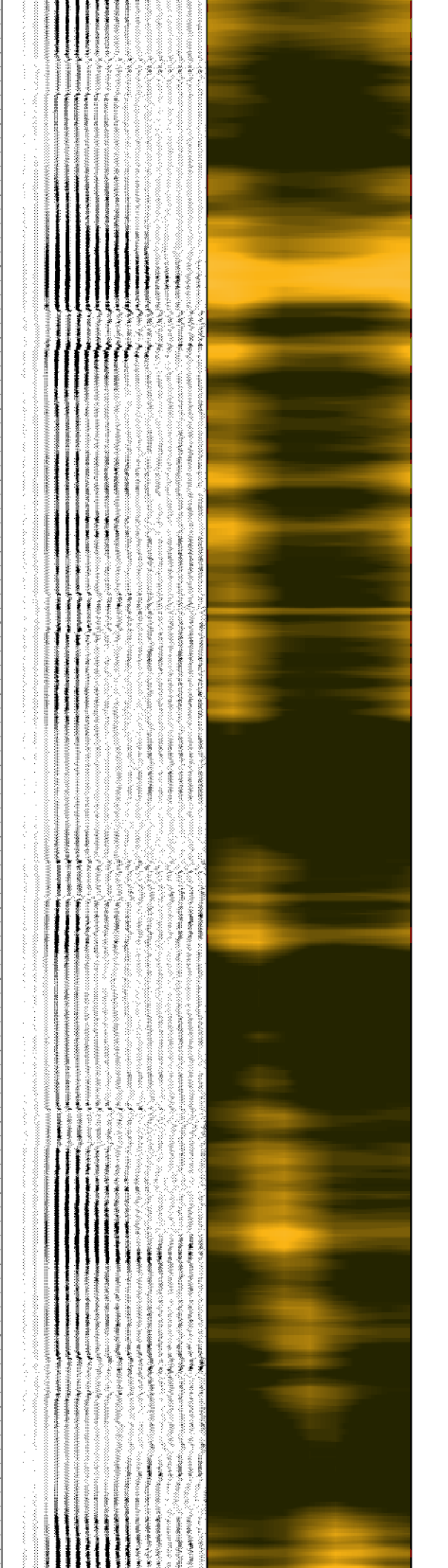
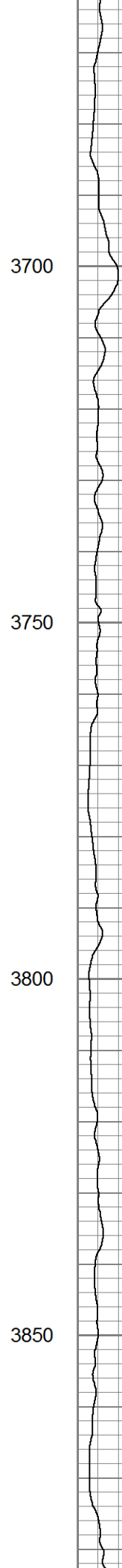
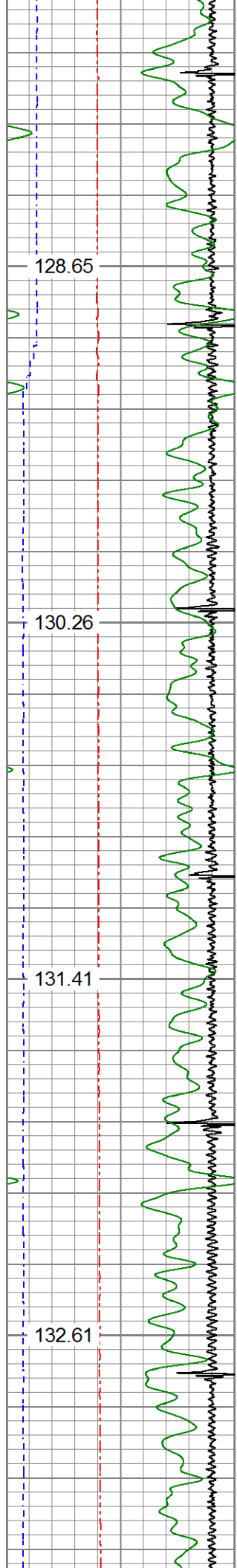


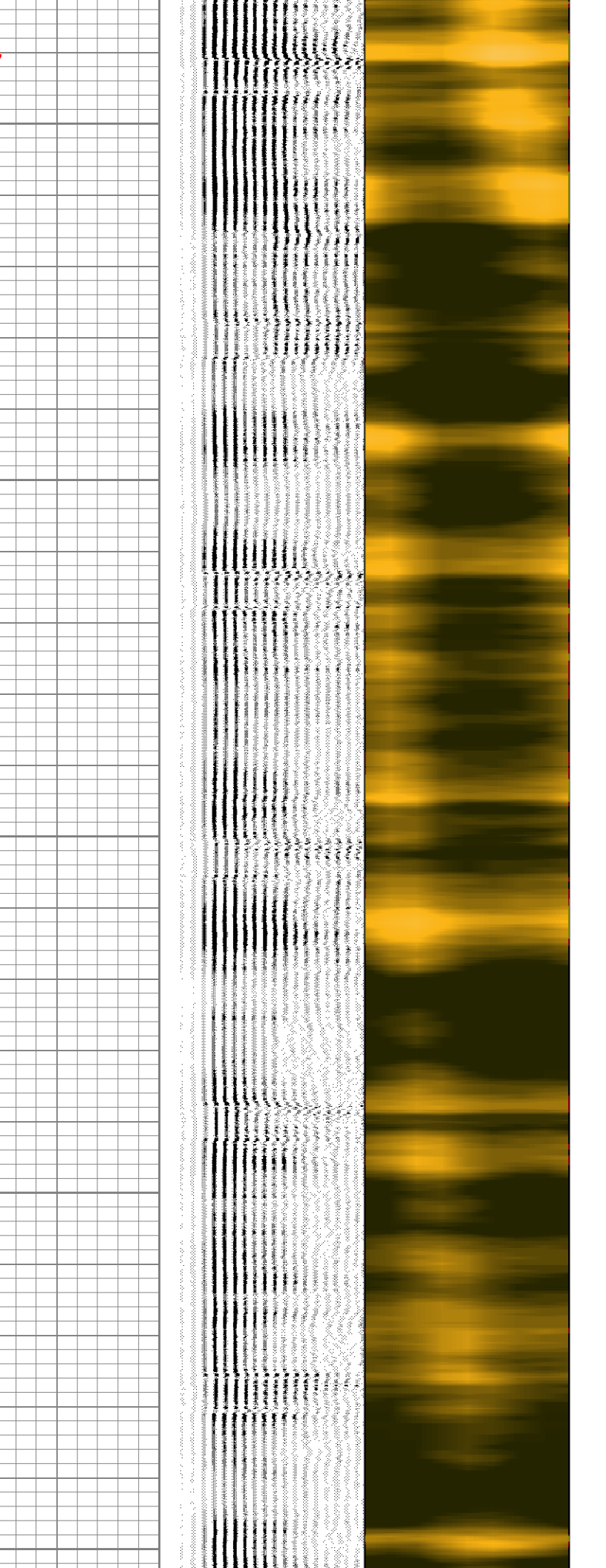
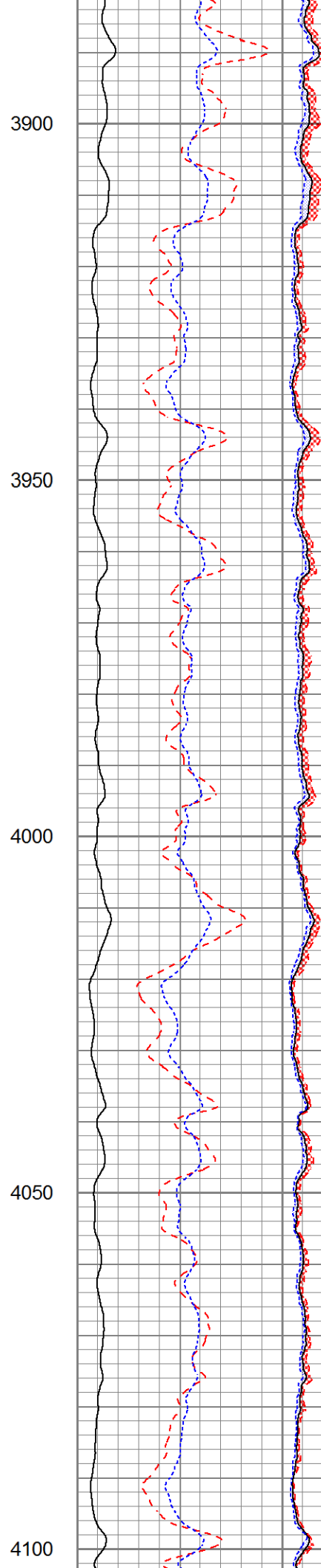
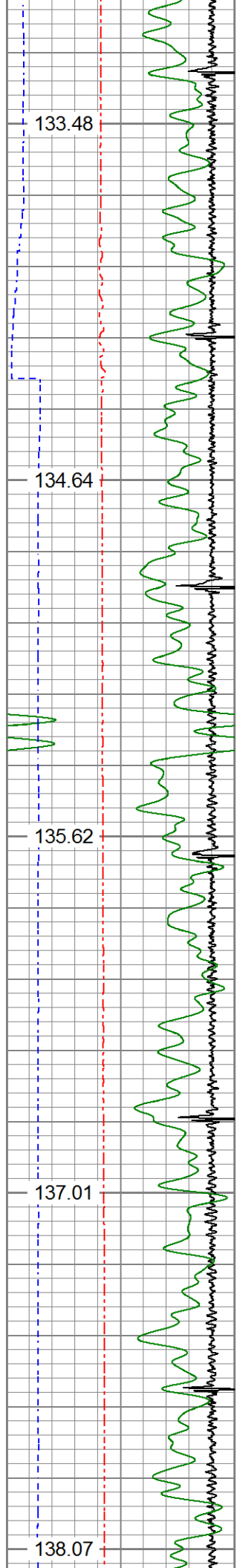


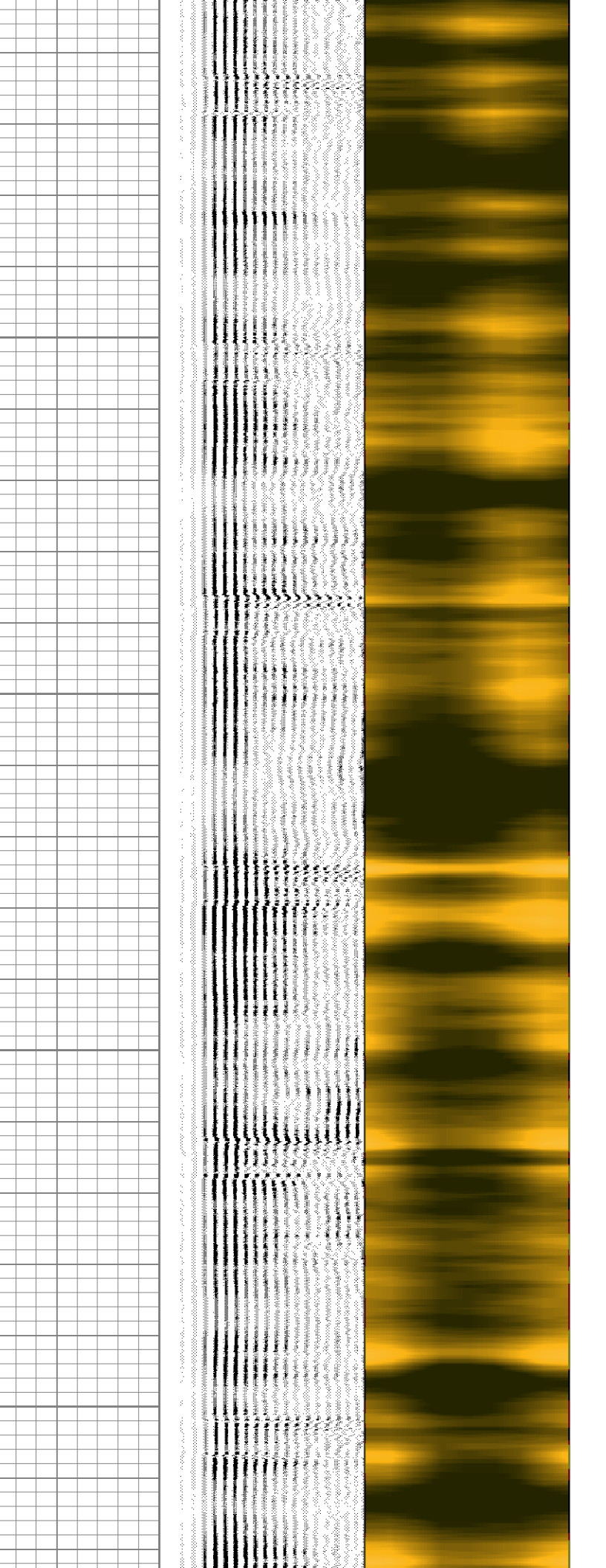
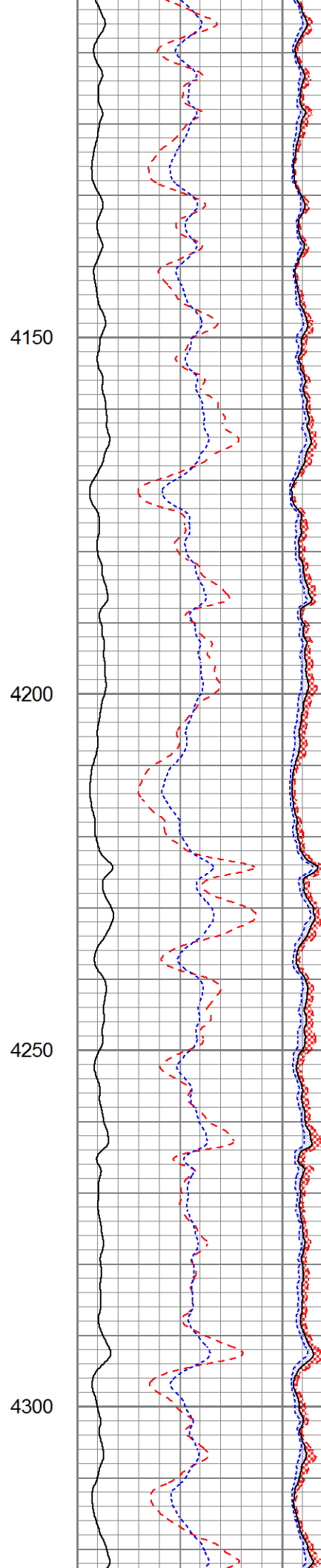
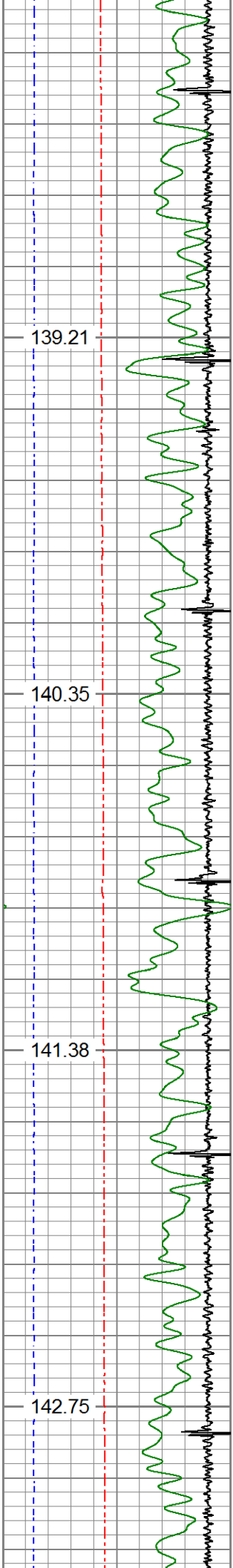


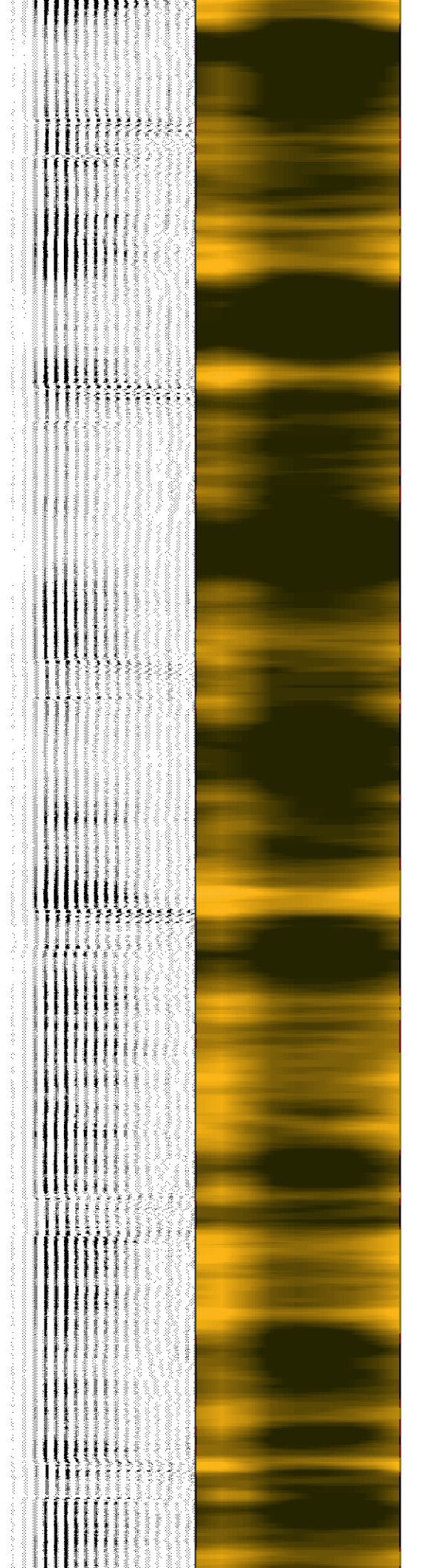
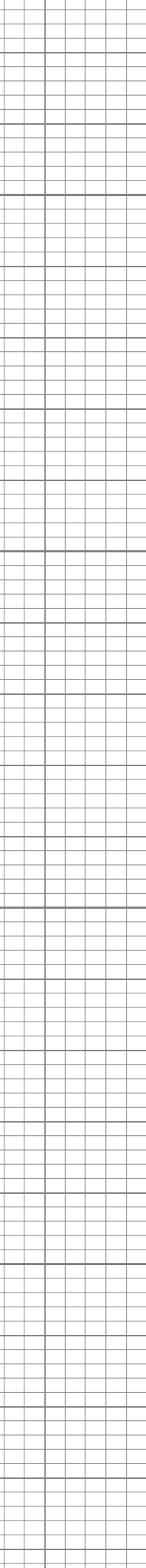
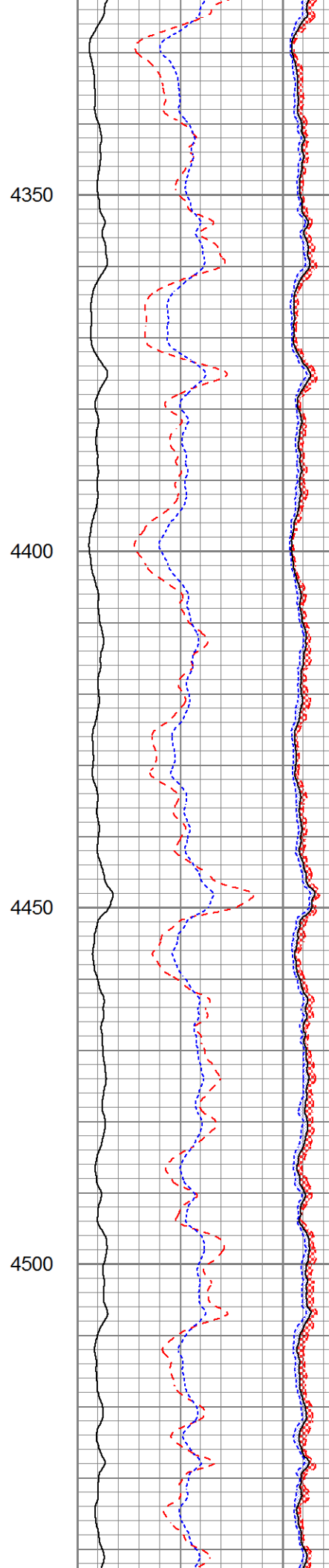
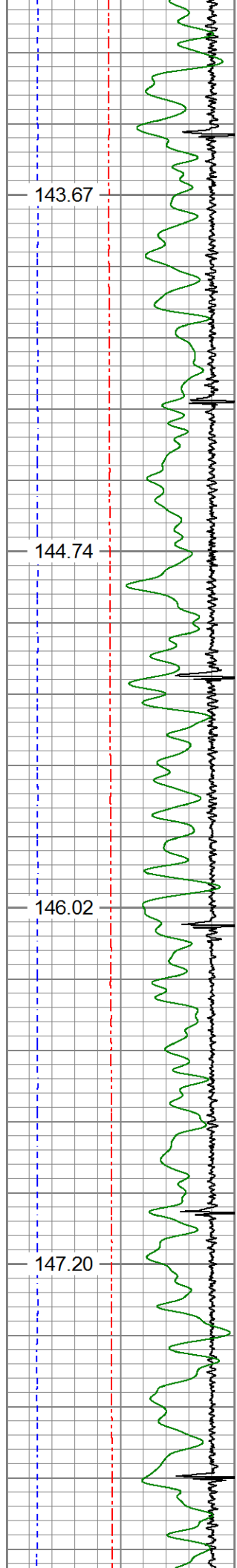


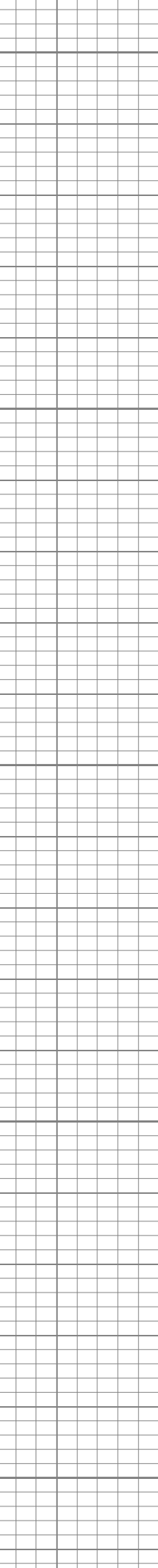
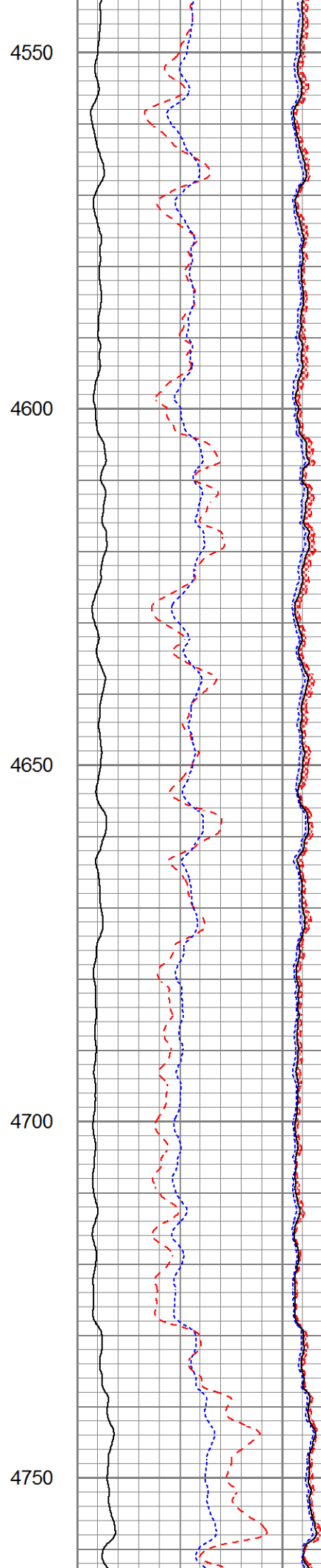
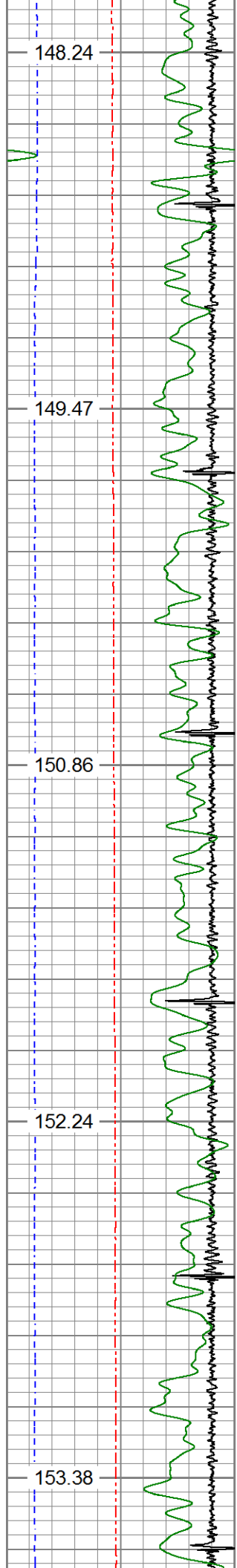












148.24

4550

149.47

4600

150.86

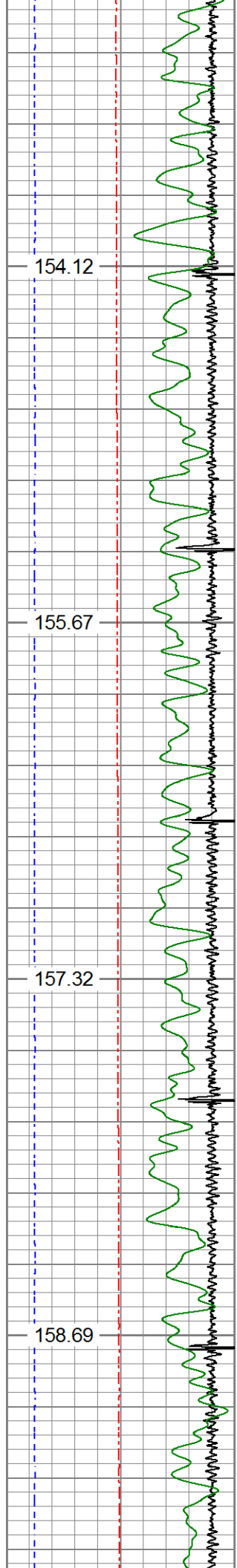
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153.38

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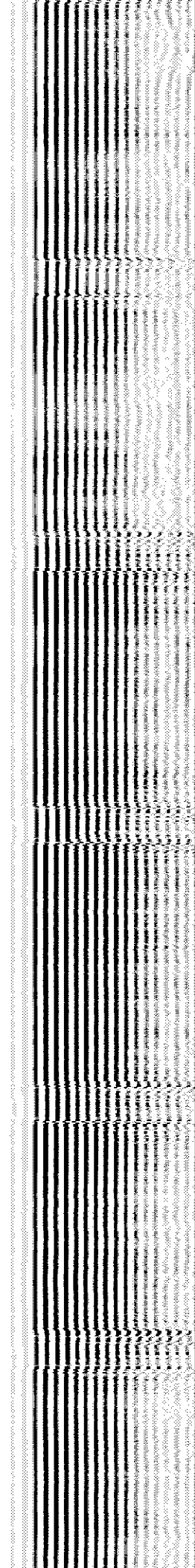
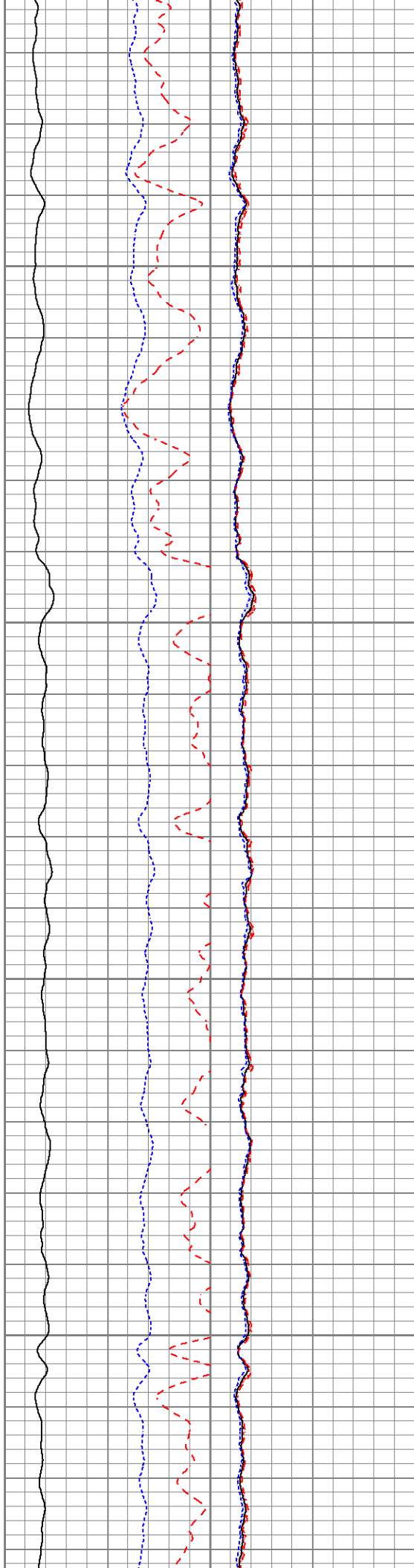


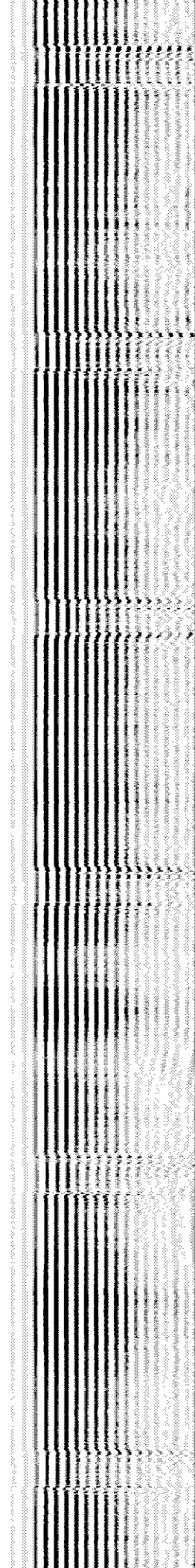
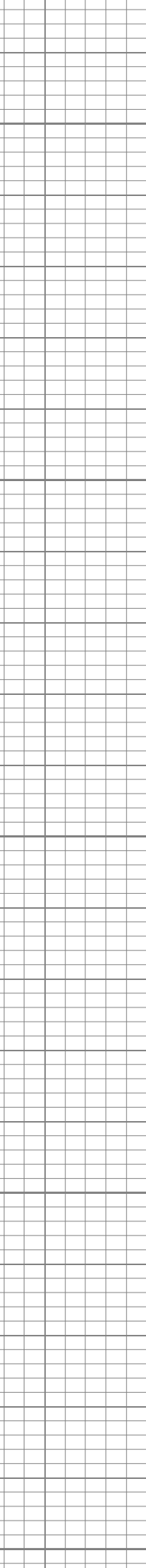
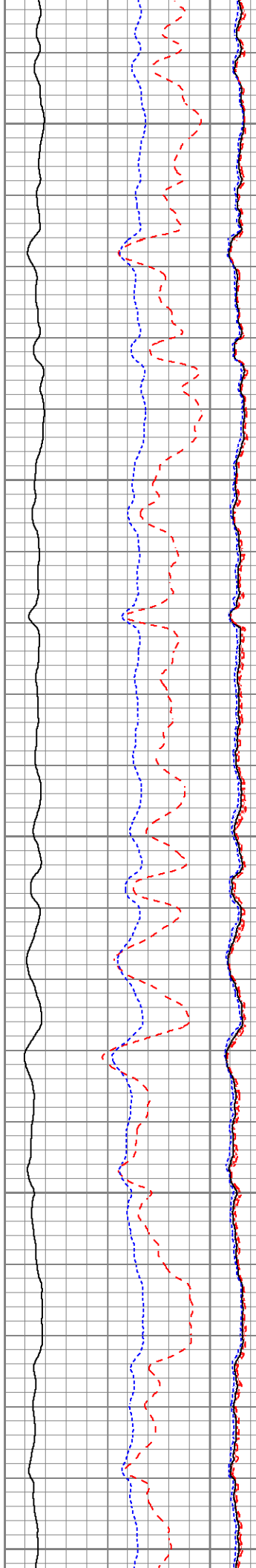
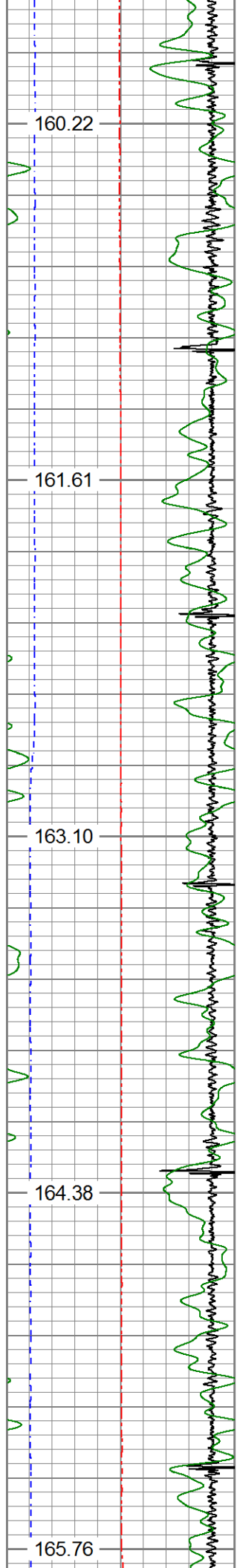
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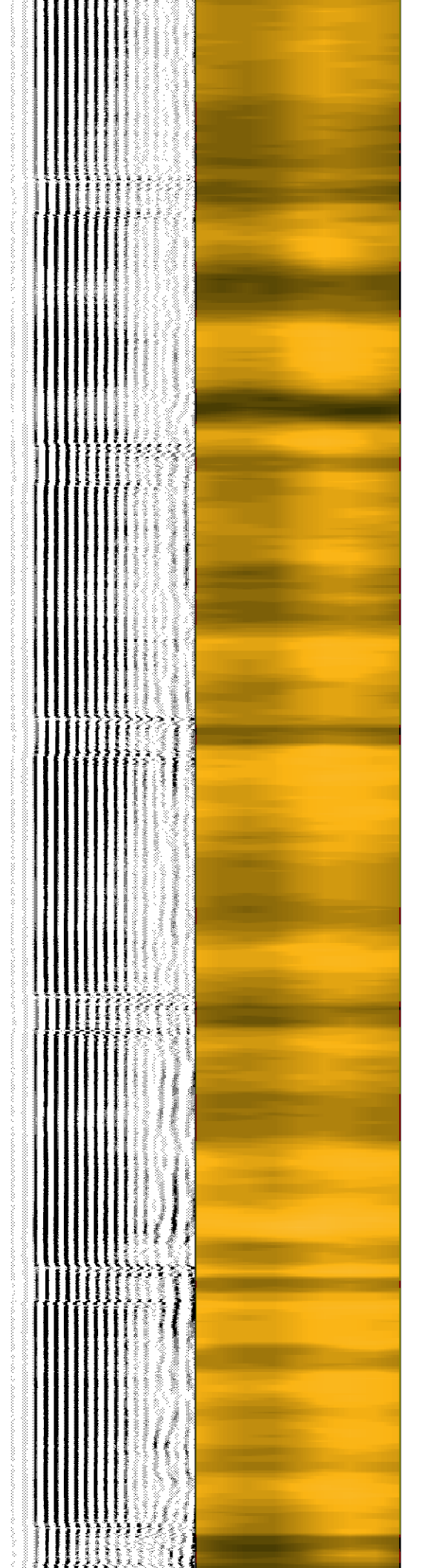
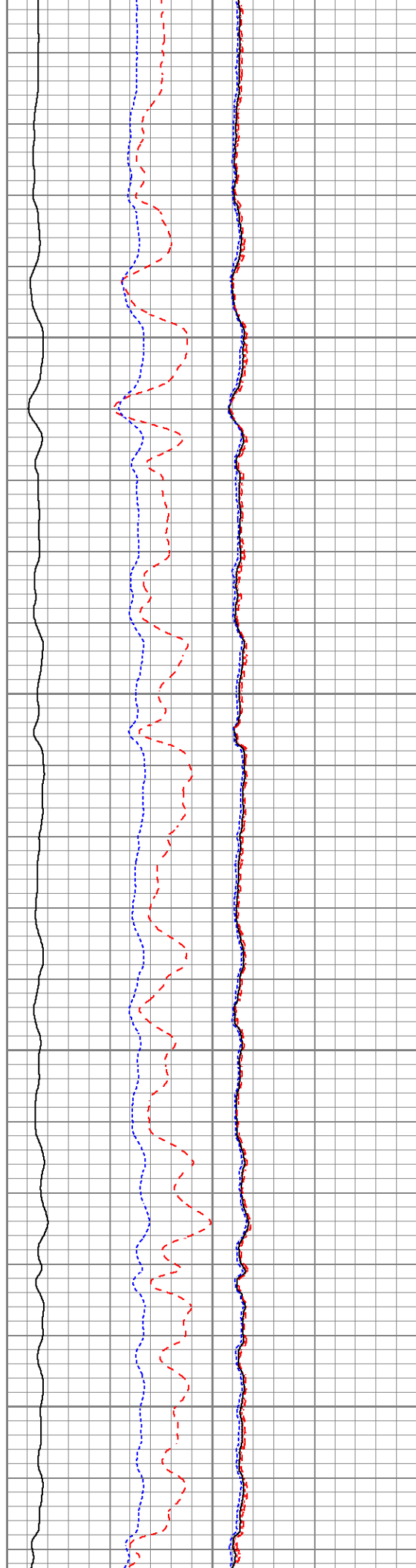
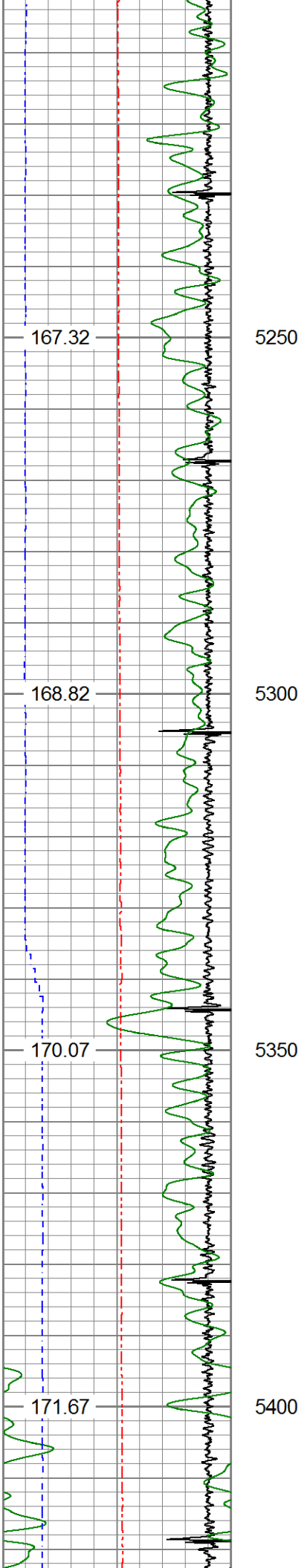
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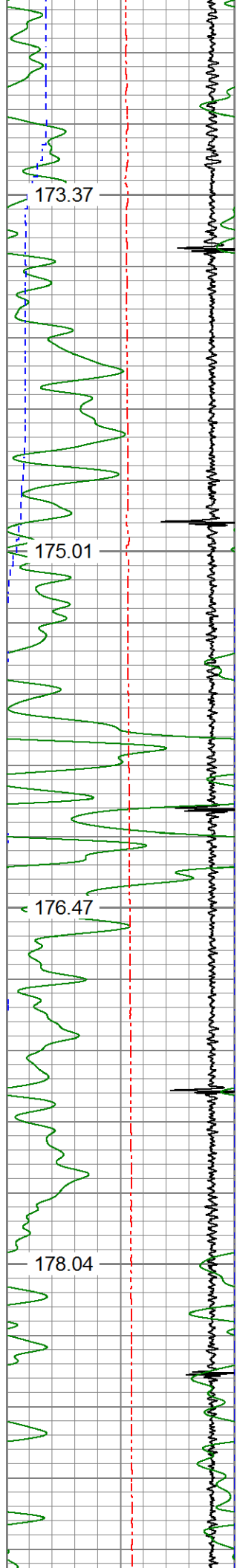
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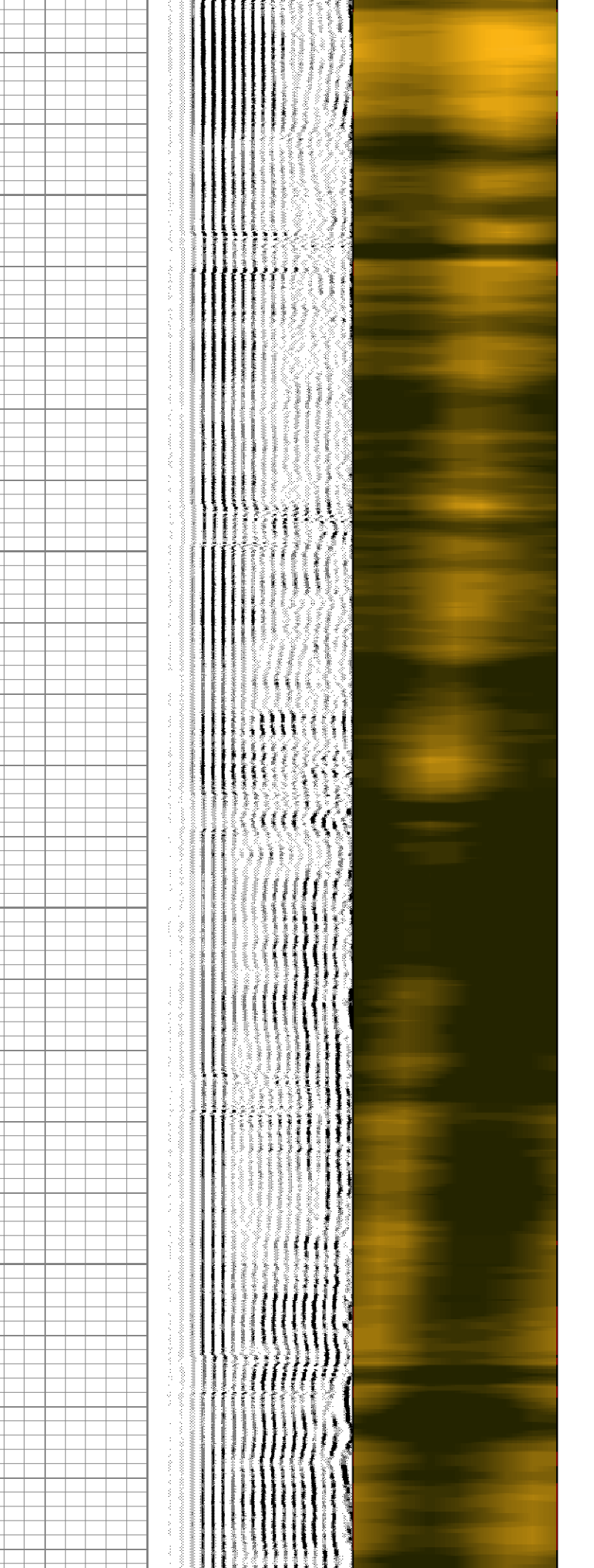
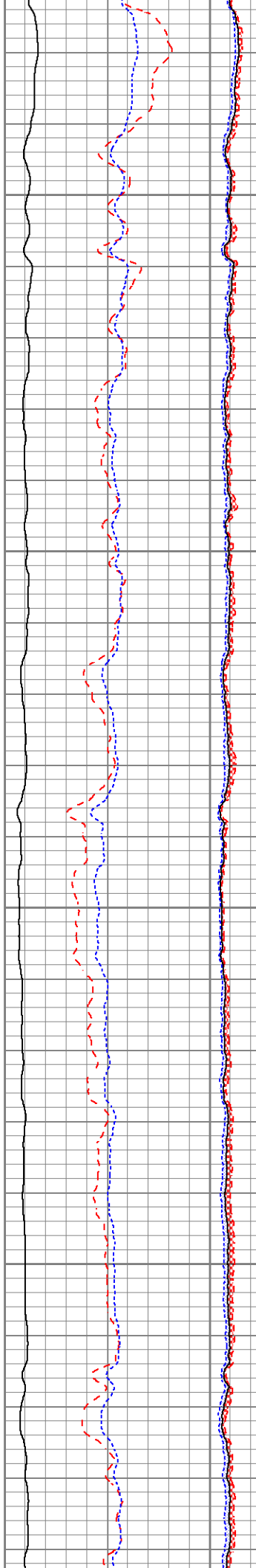


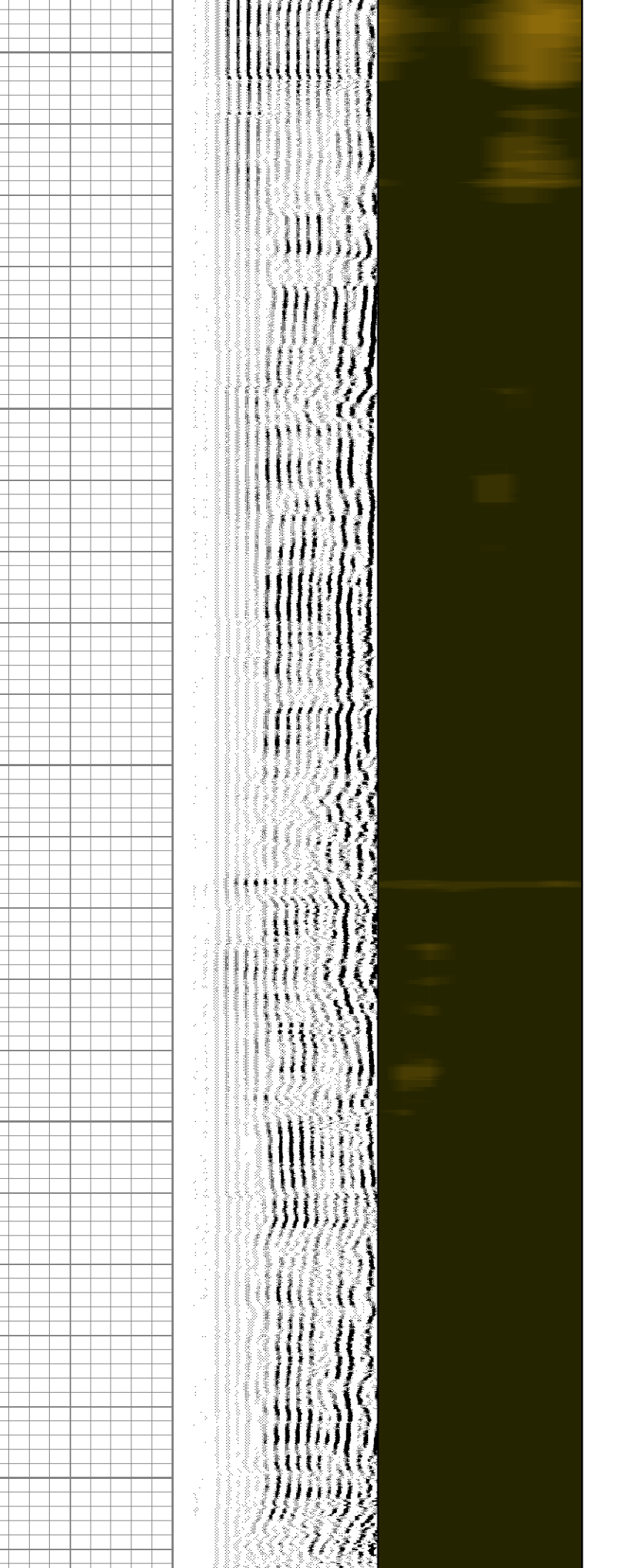
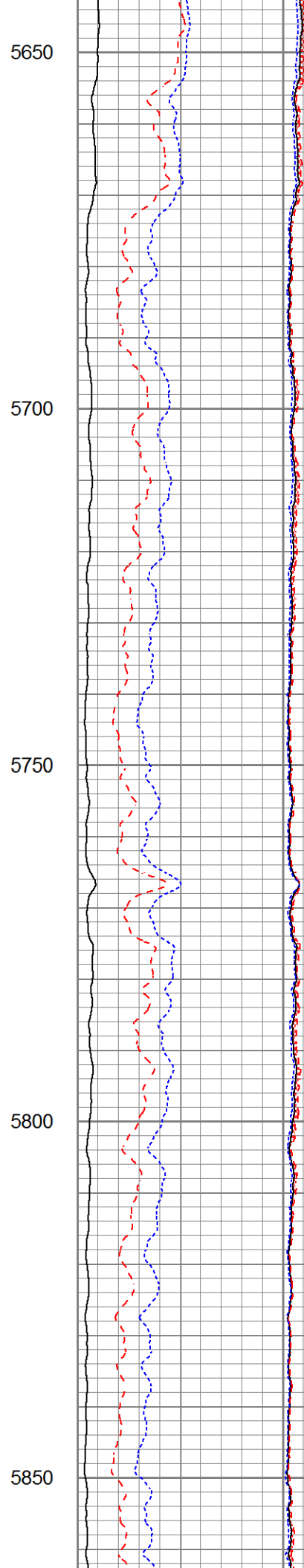
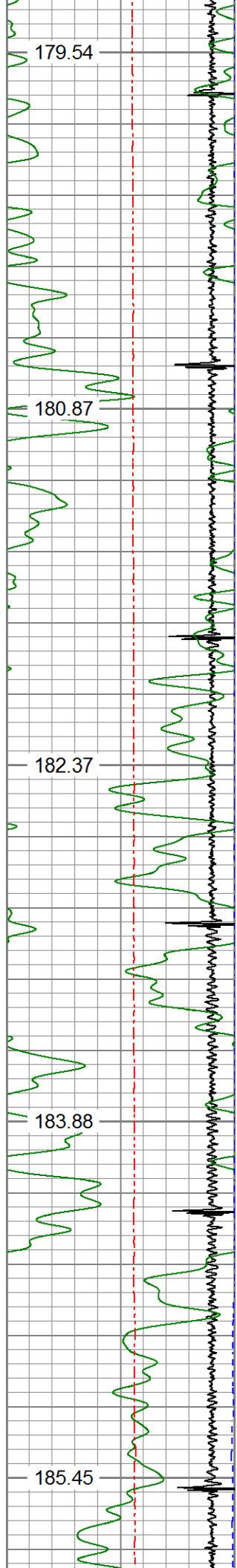


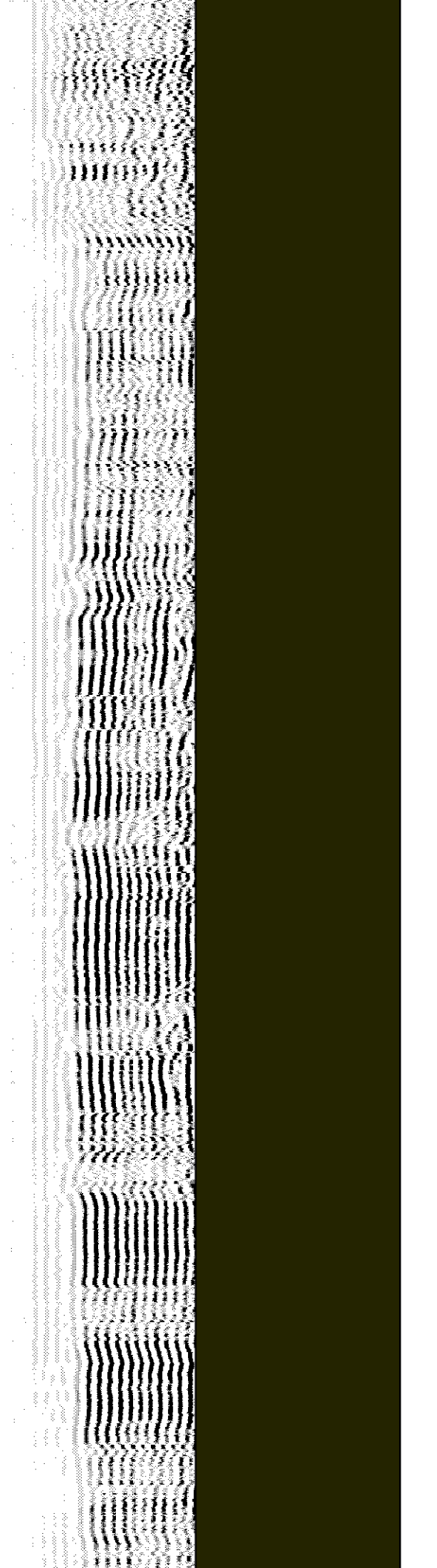
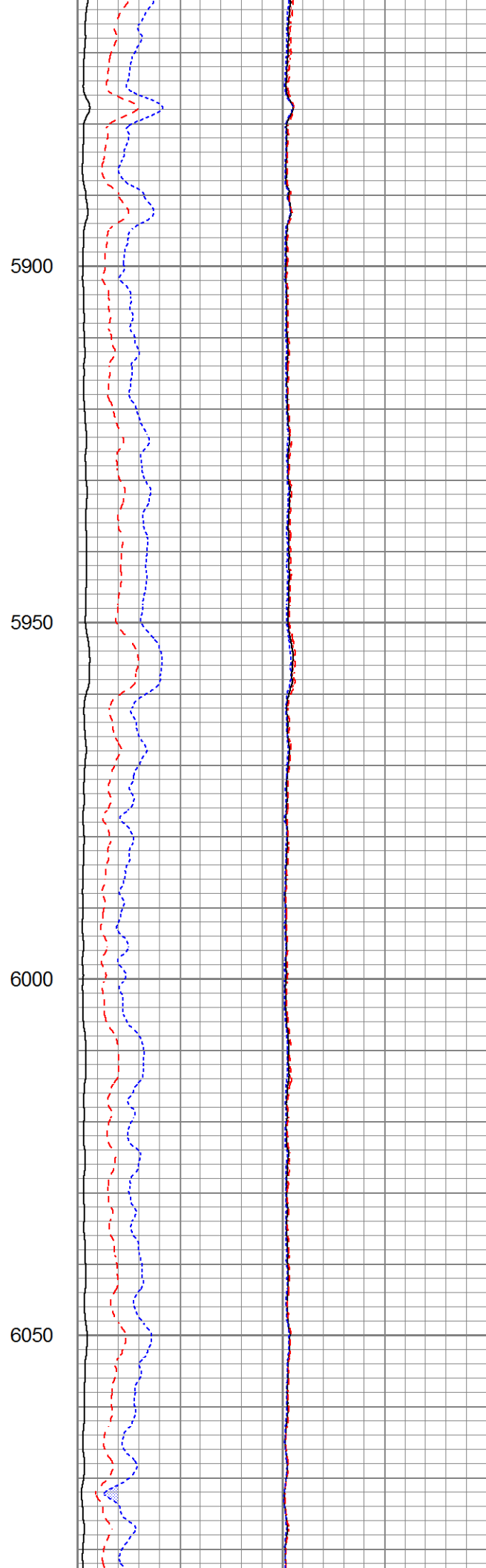
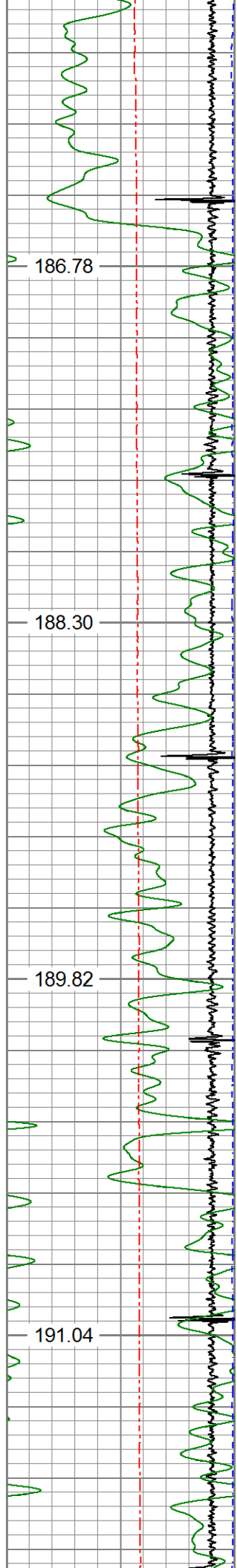




5450
5500
5550
5600







186.78

5900

188.30

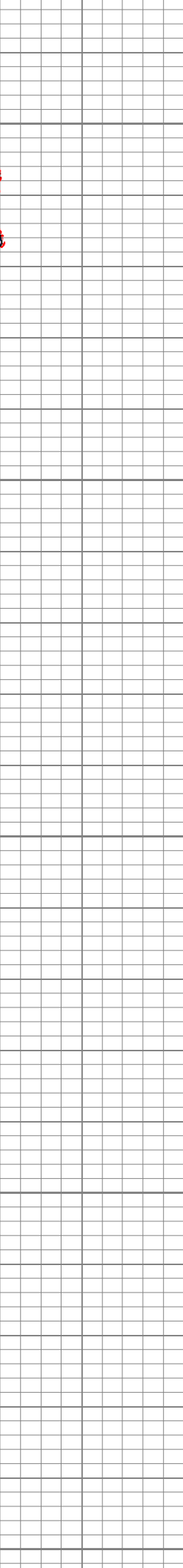
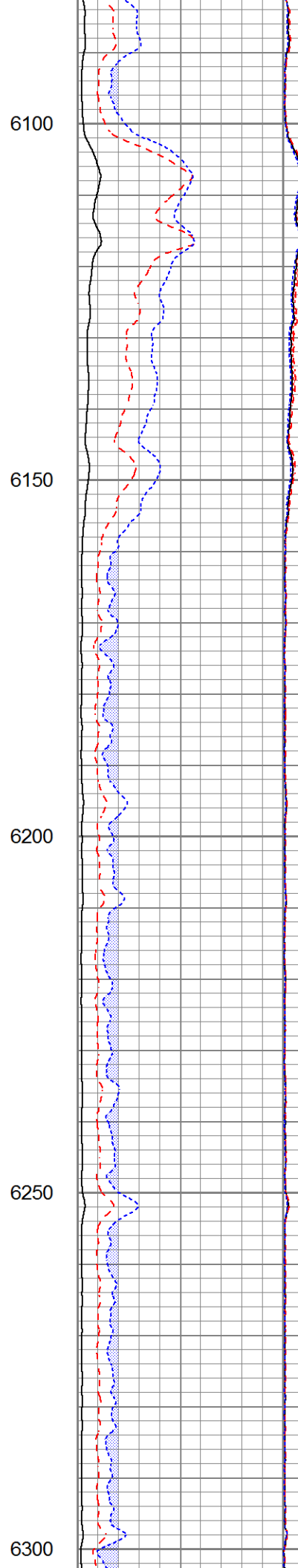
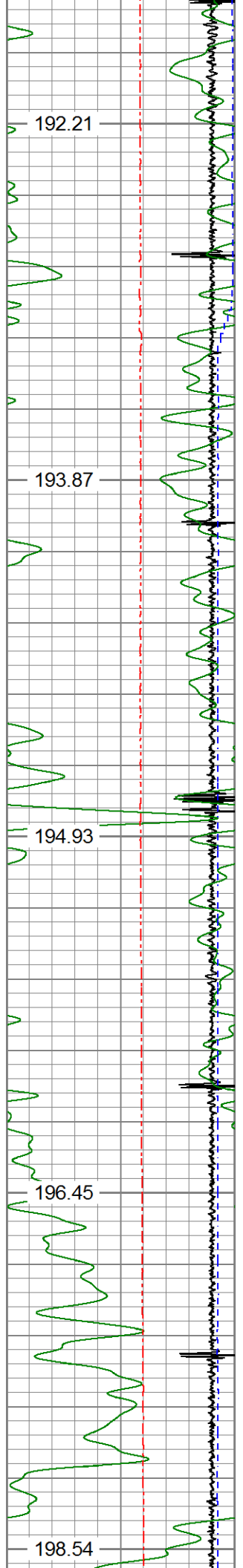
5950

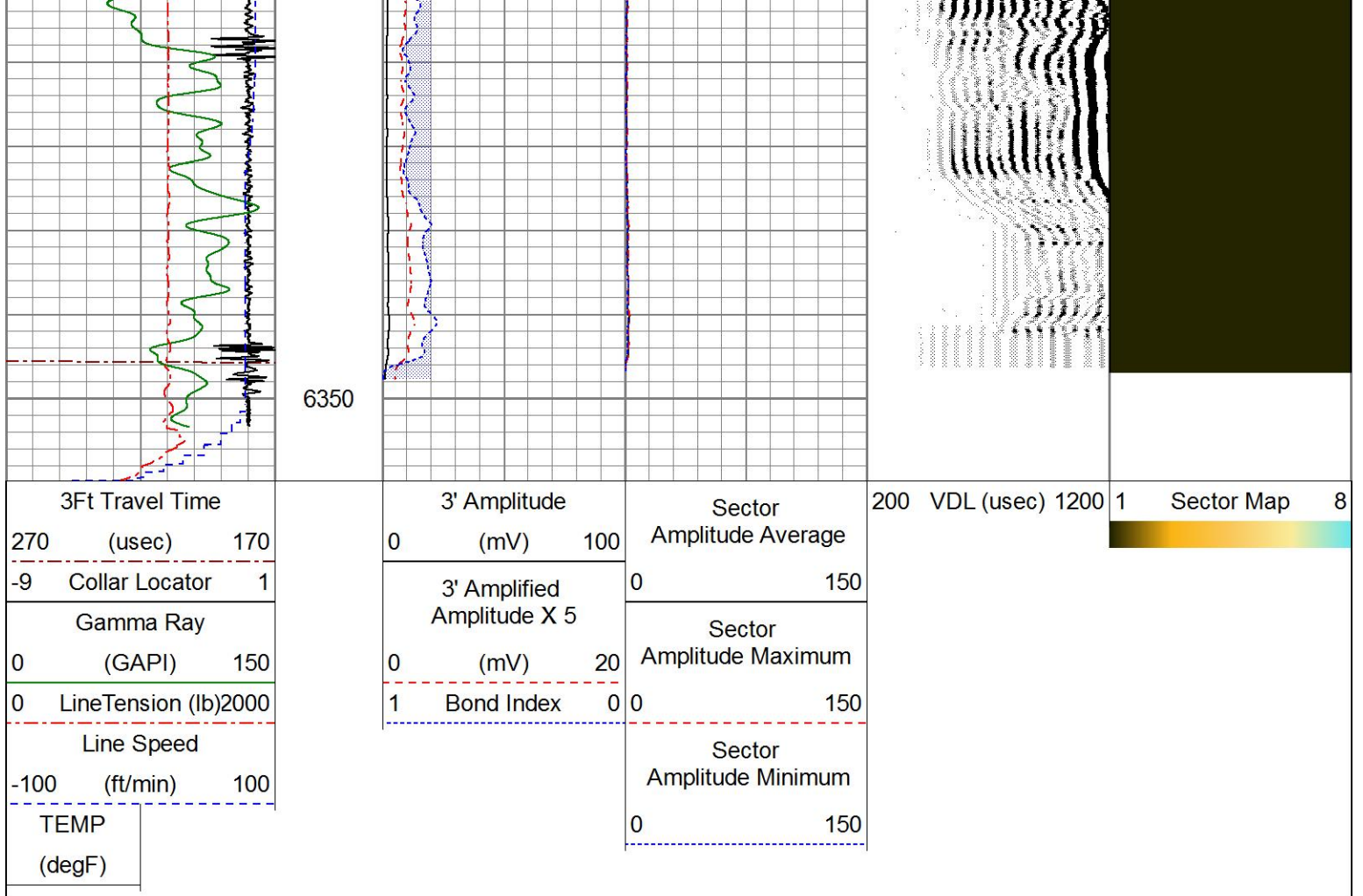
189.82


6000

191.04

6050



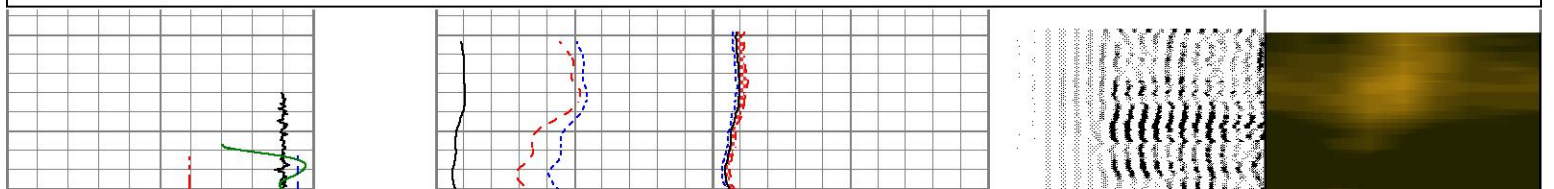
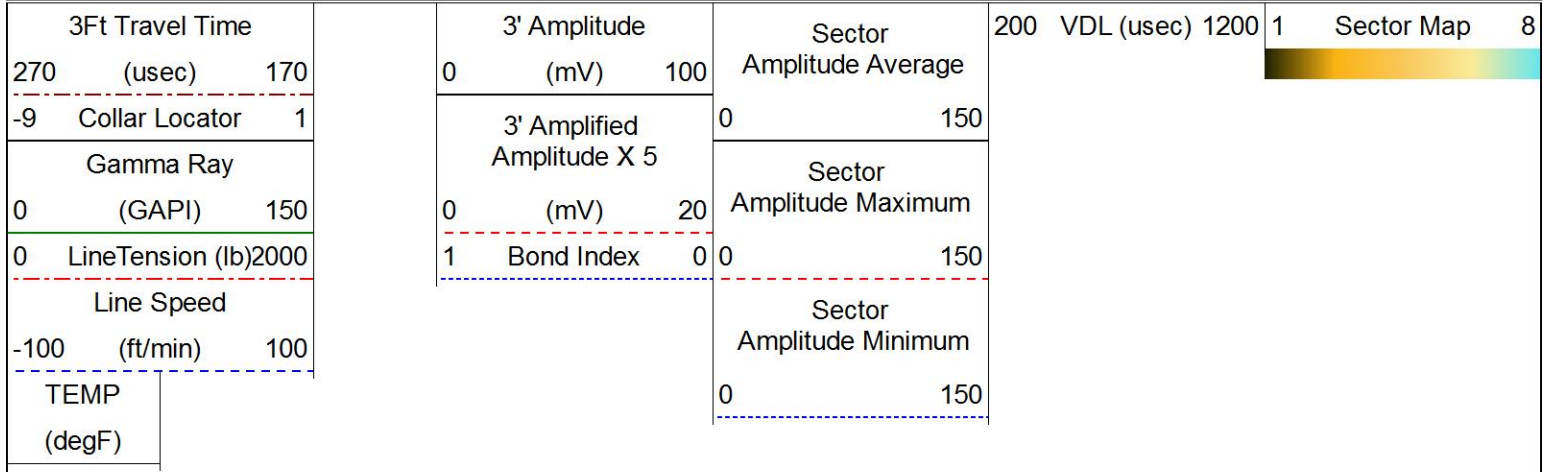


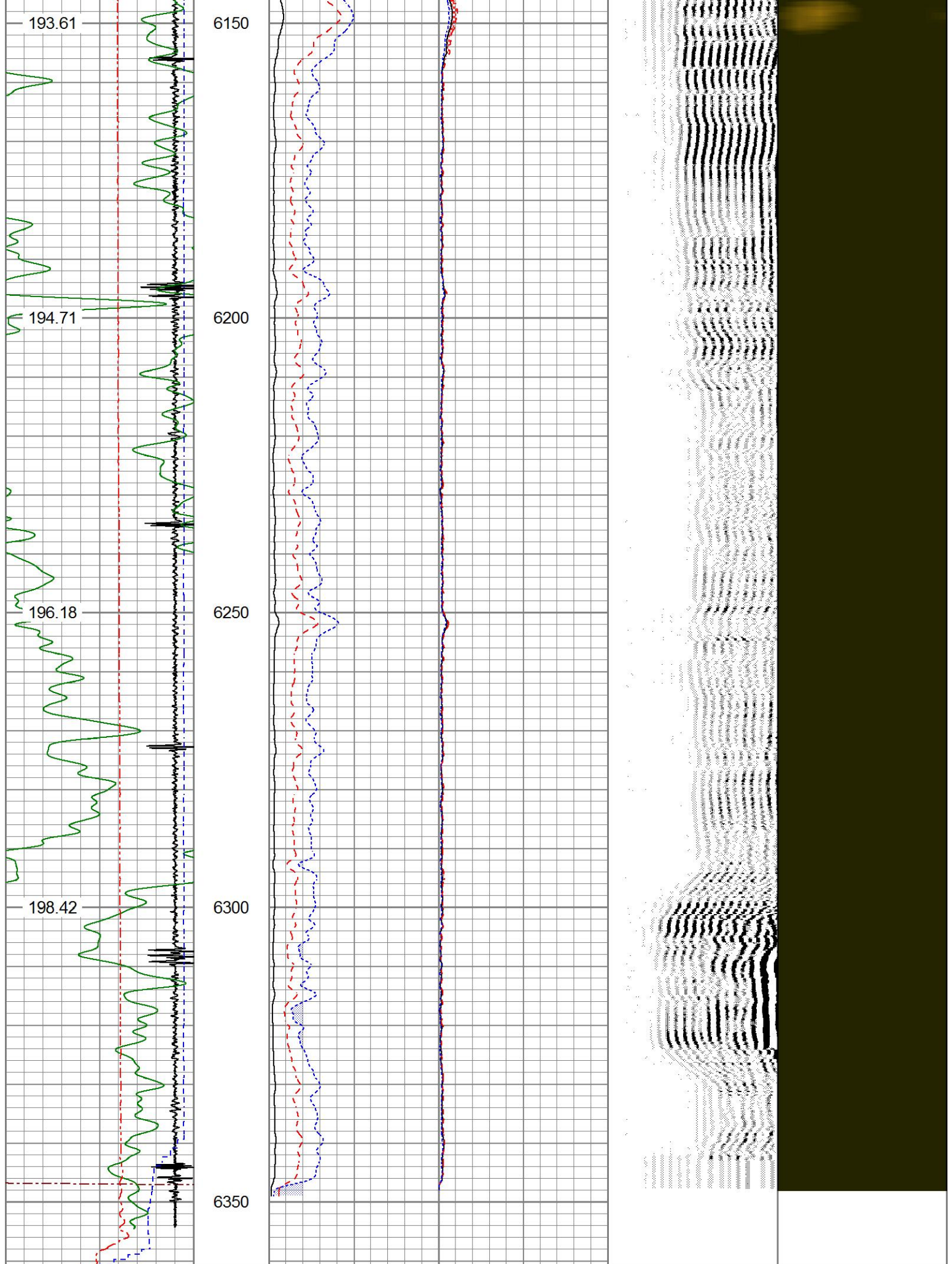


REPEAT SECTION

0 PSI APPLIED AT SURFACE

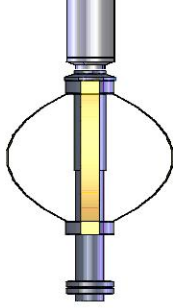
Database File xcel energy_roundupstorage field well #9 rcbl_05-087-07483_2021-16-aug.db
 Dataset Pathname pass5
 Presentation Format pinr_scbl
 Dataset Creation Mon Aug 16 12:02:43 2021
 Charted by Depth in Feet scaled 1:240





270	(usec)	170	0	(mV)	100	Amplitude Average	0	150
-9	Collar Locator	1	3' Amplified Amplitude X 5				0	150
Gamma Ray (GAPI)			0	(mV)	20	Sector Amplitude Maximum		
0	LineTension (lb)	2000	1	Bond Index	0		0	150
Line Speed						Sector Amplitude Minimum		
-100	(ft/min)	100					0	150
TEMP (degF)								

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)	
			Cable Head-Titan_144 1 7/16" Titan Cable Head	1.03	1.44	2.00	
			Centralizer-275 Probe 2 3/4" Probe Adjustable Spring Centralizer	2.88	2.75	15.00	
TEMP	16.78						
WVFS8	14.49			PROBE-RBT-DIGITAL-RBL-DCT (FW1411-67) Probe 2 3/4" Radii Bond with Temp-Corrosion Package	9.21	2.75	105.00
WVFS7	14.49						
WVFS6	14.49						
WVFS5	14.49						
WVFS4	14.49						
WVFS3	14.49						
WVFS2	14.49						
WVFS1	14.49						
WVFCAL	14.49						
WVF3FT	14.49						
WVF5FT	13.49						
			Centralizer-275 Probe 2 3/4" Probe Adjustable Spring Centralizer	2.88	2.75	15.00	
CCL	6.51						
			PROBE-GR/CCL-ANALOG-GR/CCL-A (120672) 2 3/4" Gamma with CCL-Analog	4.54	2.75	60.00	
GR	3.78						



Centralizer-275 Probe
2 3/4" Probe Adjustable Spring Centralizer

2.88

2.75

15.00

Dataset: xcel energy_roundupstorage field well #9 rcbl_05-087-07483_2021-16-aug.db: field/well/run1/pass7.1
 Total length: 23.42 ft
 Total weight: 212.00 lb
 O.D.: 2.75 in

Calibration Report

Database File xcel energy_roundupstorage field well #9 rcbl_05-087-07483_2021-16-aug.db
 Dataset Pathname pass7.1
 Dataset Creation Mon Aug 16 13:02:41 2021

Gamma Ray Calibration Report

Serial Number: 120672
 Tool Model: GR/CCL-A
 Performed: Fri Jul 23 09:22:20 2021
 Calibrator Value: 1.0 GAPI
 Background Reading: 0.0 cps
 Calibrator Reading: 1.0 cps
 Sensitivity: 1.0000 GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: FW1411-67
 Tool Model: RBL-DCT
 Calibration Casing Diameter: 5.500 in
 Calibration Depth: 852.825 ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.000	1.403	1.000	71.921	50.539	0.997
CAL	-0.001	1.518				
5'	0.000	1.395	1.000	71.921	50.857	0.999
SUM						
S1	-0.006	1.367	0.000	100.000	72.824	0.430
S2	0.000	1.473	0.000	100.000	67.910	-0.001
S3	0.000	1.524	0.000	100.000	65.639	-0.005
S4	0.000	1.610	0.000	100.000	62.107	-0.003
S5	0.000	1.601	0.000	100.000	62.451	-0.003
S6	0.000	1.501	0.000	100.000	66.615	-0.001
S7	-0.000	1.412	0.000	100.000	70.812	0.002
S8	0.000	1.368	0.000	100.000	73.100	-0.003

Air Zero Calibration, performed Mon Aug 16 11:43:10 2021:

Raw (v) Calibrated (v) Results

	Zero	Zero	Offset
3'	-0.001	0.000	0.000
5'	-0.001	0.000	0.000
SUM			
S1	-0.001	0.000	-0.000
S2	-0.001	0.000	0.000
S3	-0.001	0.000	0.000
S4	-0.001	0.000	0.000
S5	-0.001	0.000	0.000
S6	-0.001	0.000	0.000
S7	-0.001	0.000	-0.000
S8	-0.001	0.000	0.000

Temperature Calibration Report

Serial Number: FW1411-67
 Tool Model: RBL-DCT
 Performed: (Not Performed)

	Reference	Reading
Low Reference:	0.00 degF	0.00 degF
High Reference:	1.00 degF	1.00 degF

Gain: 1.00
 Offset: 0.00
 Delta Spacing: 1



PIONEER
 Pioneer Energy Services

Company XCEL ENERGY
 Well ROUNDUP STORAGE FIELD #9
 Field
 County MORGAN
 State Colorado