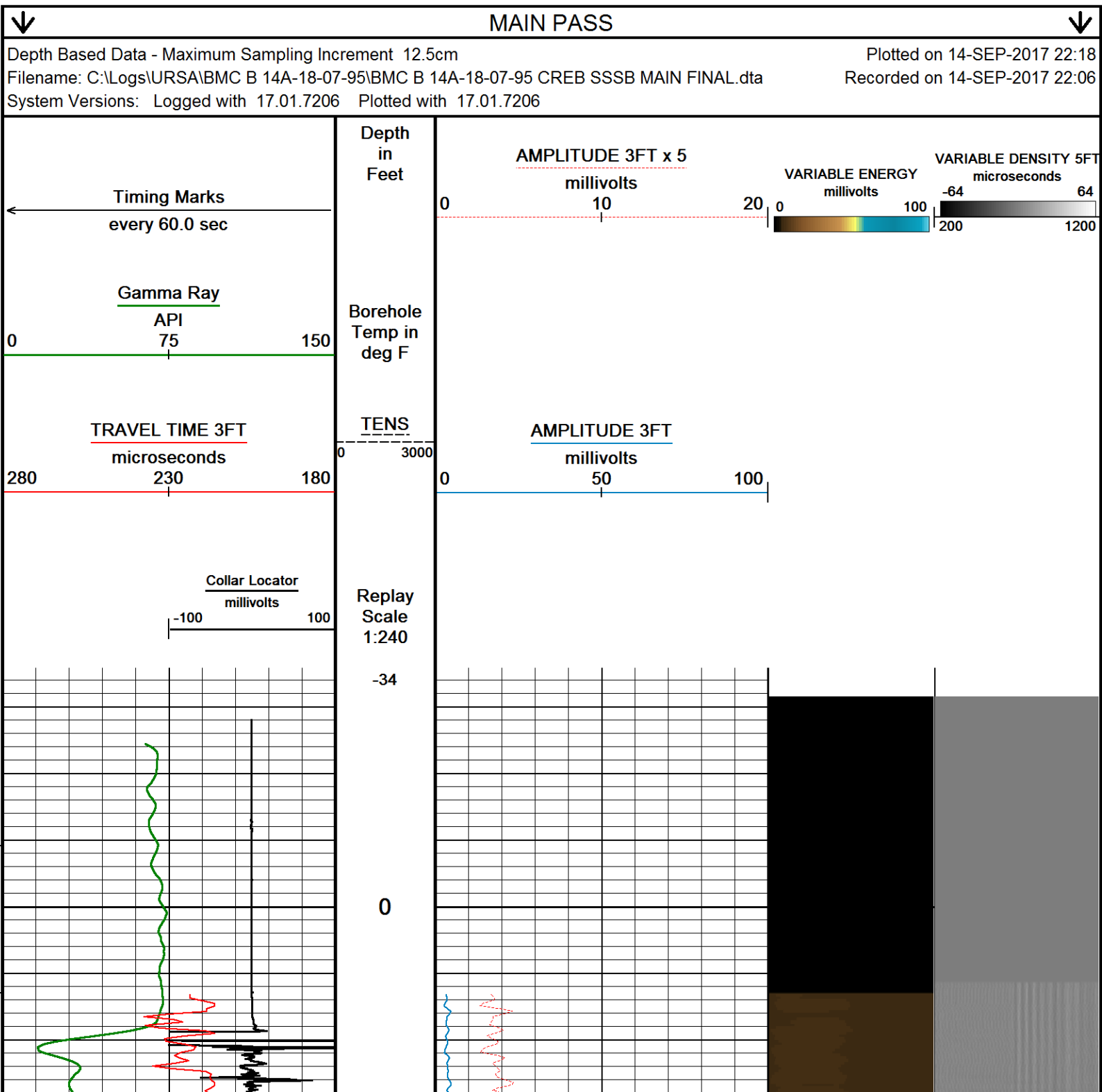
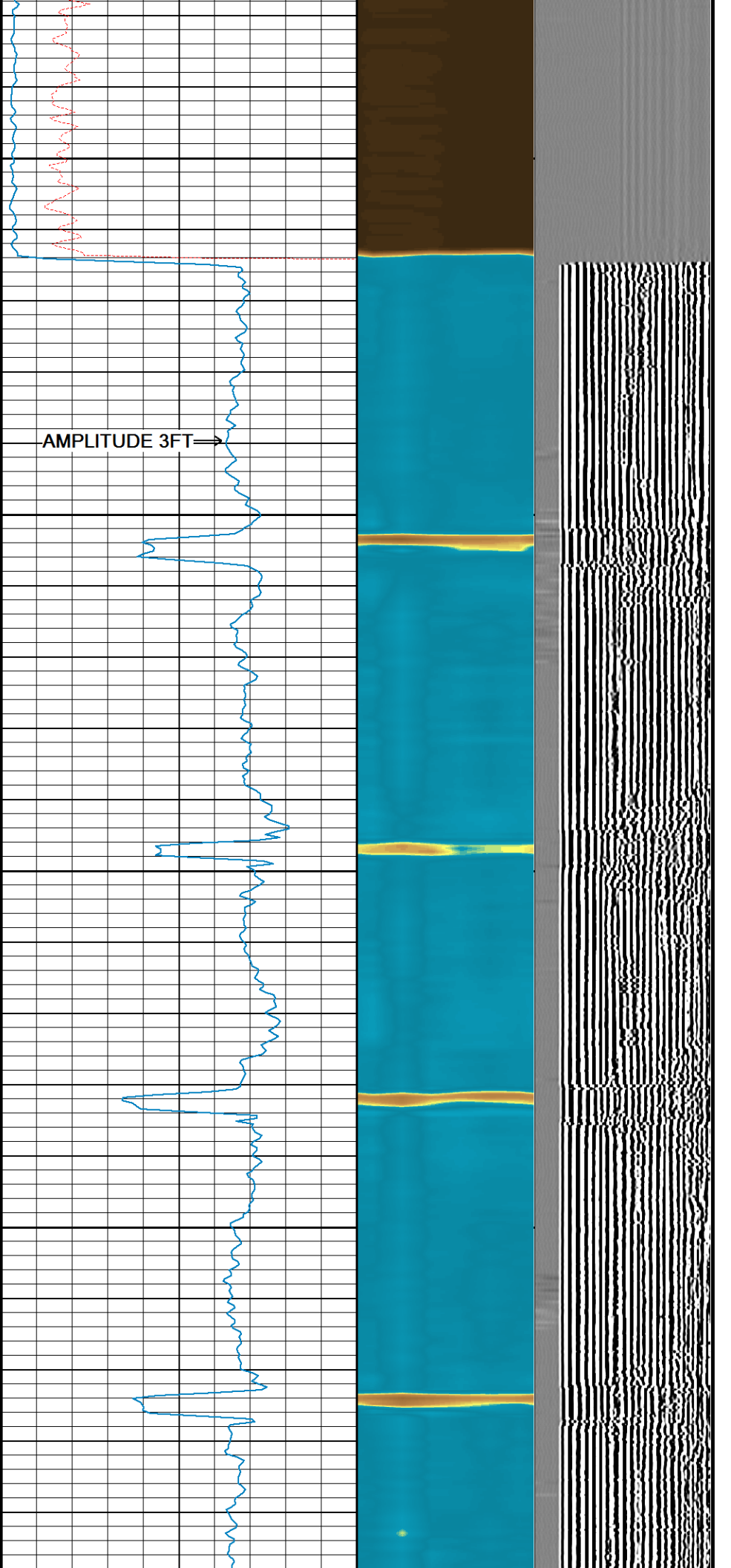
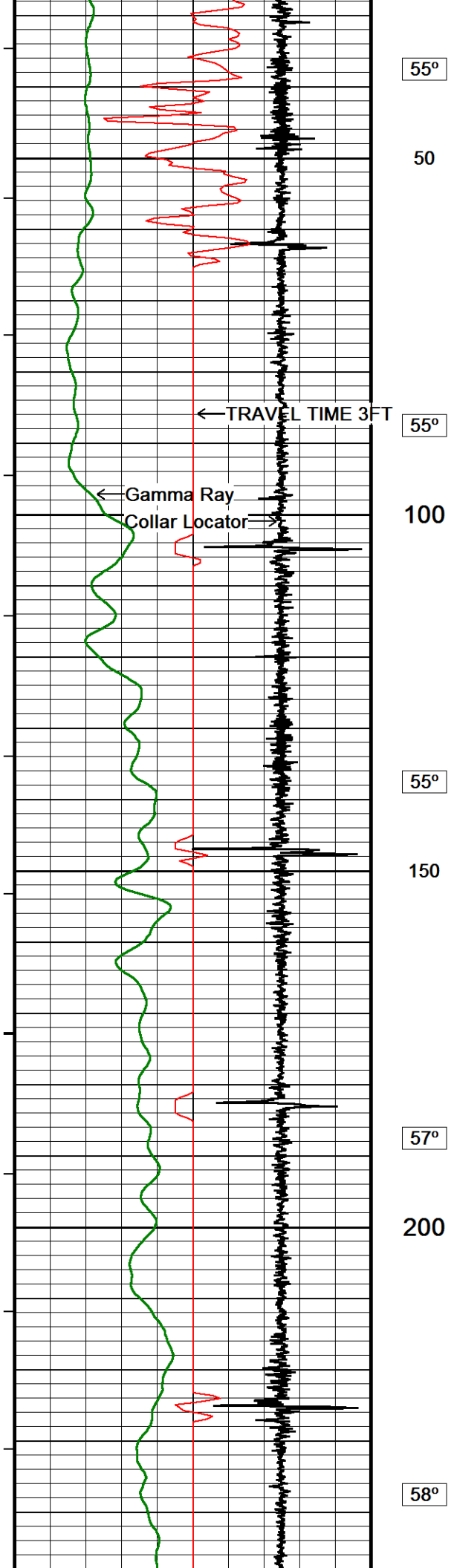
				SLIM SECTOR BOND LOG			
COMPANY				URSA OPERATING COMPANY			
WELL				BMC B 14A-18-07-95			
FIELD				WILDCAT			
PROVINCE/COUNTY				GARFIELD			
COUNTRY/STATE				USA / COLORADO			
LOCATION				2261' FNL & 0613' FWL			
SEC 18	TWP 7S	RGE 95W	Other Services				
Latitude		CREB					
Longitude							
API Number		05-045-23319					
Permanent Datum GROUND LEVEL, Elevation 5100 feet				Elevations: KB 5117.00 feet			
Log Measured From KB, 17.00 feet above Permanent Datum				DF 5117.00			
Drilling Measured From KB				GL 5100.00			
Date	14-SEP-2017		PERFORATION RECORD				
Run Number	ONE		Shot	Number	Depth From	Depth To	
Service Order			Density	of Shots	feet	feet	
Type Log	SSSB						
Depth Driller	6822.00						
Depth Logger	6400.00						
Top Log Interval	0.00						
Bottom Log Interval	6822.00						
Hole Fluid Type	WATER						
Hole Fluid Level	0.00						
Restriction ID	3.875		Gun Type				
Max Recorded Temp	196.00		Gun Size				
Well Head Pressure	0.00		CASING / TUBING RECORD				
Well Head Equipment	N/A		Size	Weight	Depth From	Depth To	
Time Well Ready	ROA		inches	pounds/ft	feet	feet	
Time Logger Bottom	SEE LOG		8.625	32.00	0.00	1700.00	
Unit	14115		4.500	11.60	0.00	6822.00	
Equipment Name	WSS-E						
Base	CASPER						
Recorded By	P. MAZUR						
Witnessed By	NOT WITNESSED						

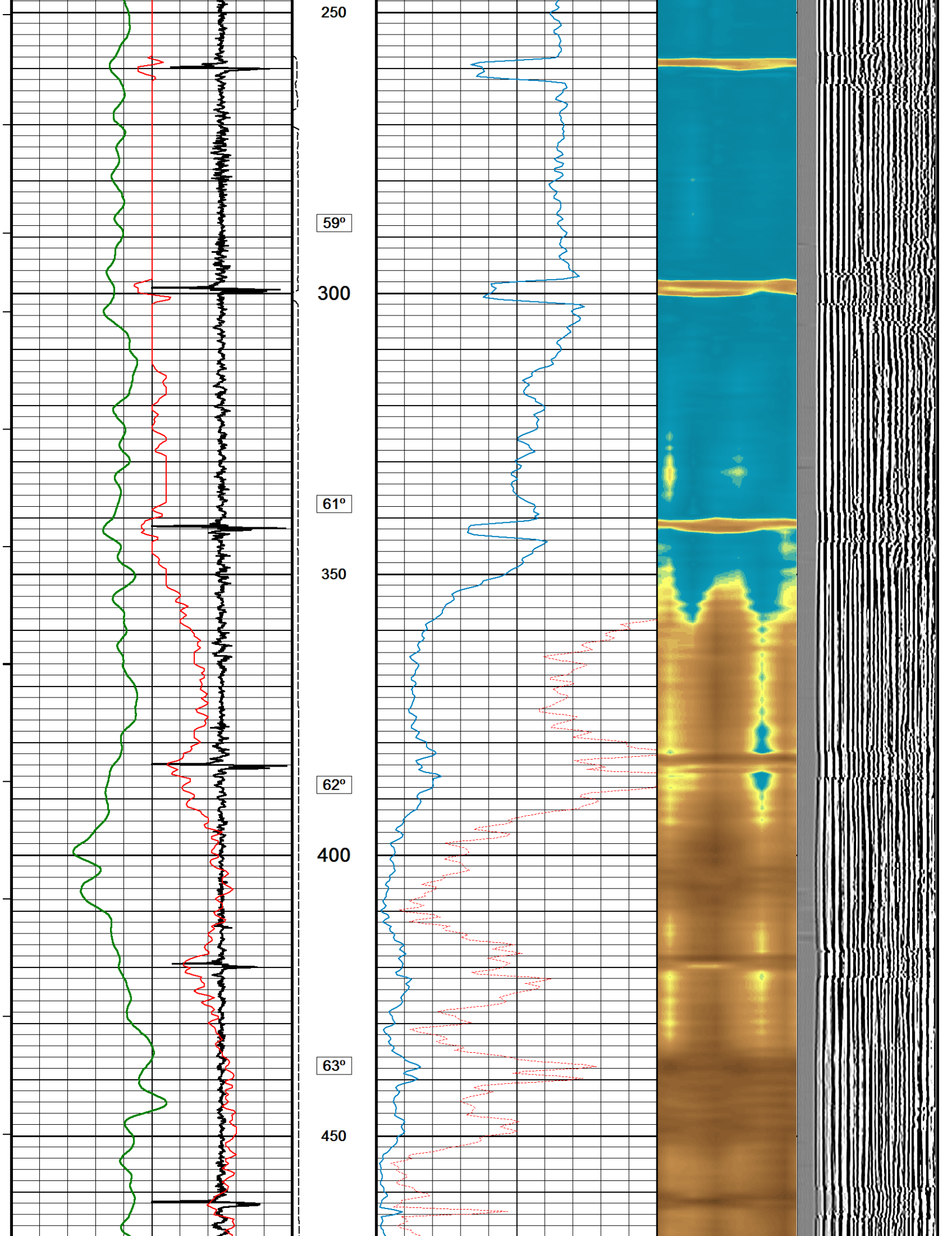
CASING / TUBING RECORD						
Type	Grade	TypeJoint	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE			8.625	0.00	1700.00	32.00
PRODUCTION			4.500	0.00	6822.00	11.60

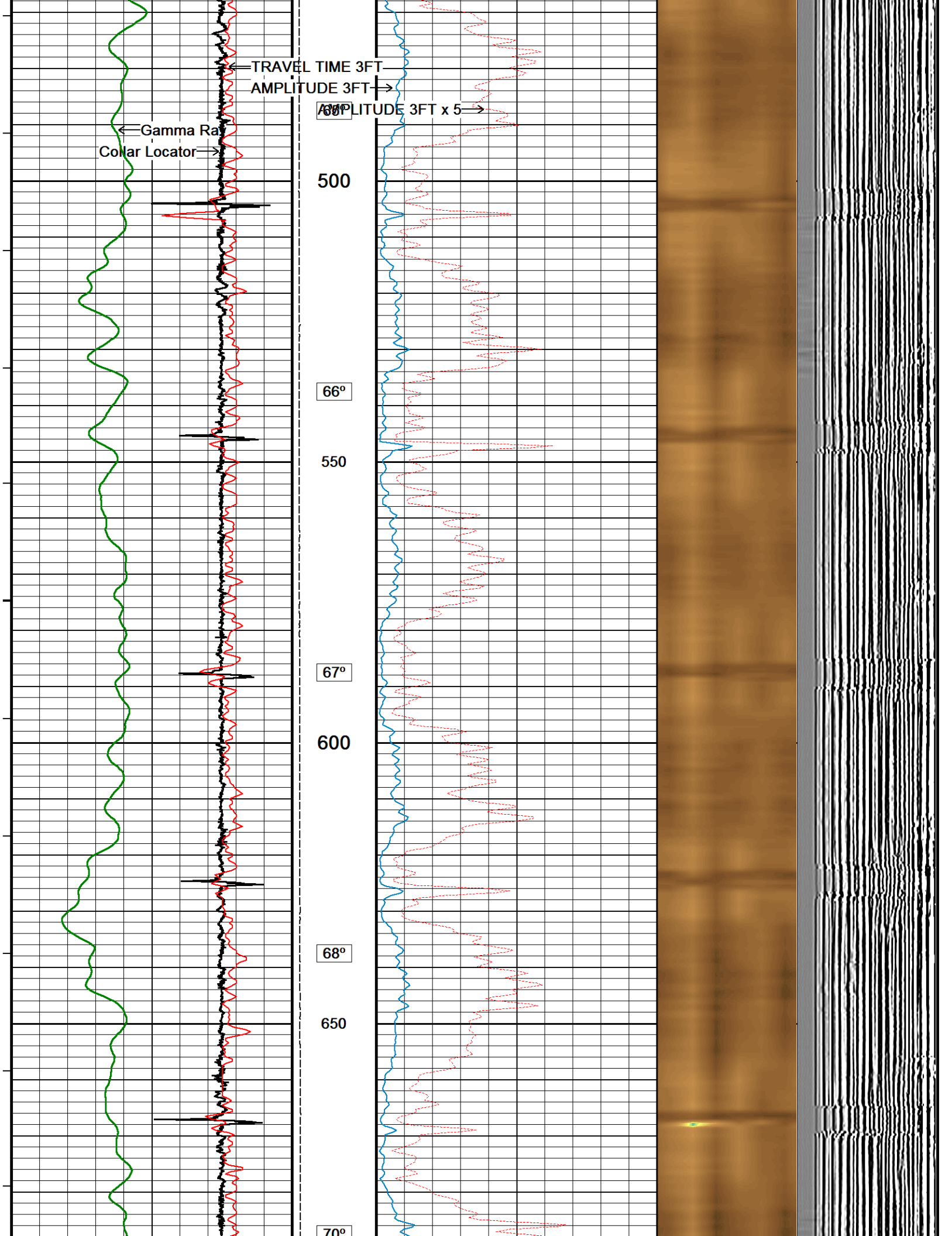
REMARKS
SOFTWARE VERSION 17.01.7206 - COMMERCIAL VERSION
ALL DEPTH CONTROL PROCEDURES FOR SUBSEQUENT RUN IN HOLE WERE FOLLOWED. LOG RUN FROM 17' K.B.
SURFACE SYSTEM USED: WCM-D 160
TOOLS RUN: WCCC, UGRK, QPGE, CR3B, TMPN, CRPB, CRMB, CR3B, UGRK, SUEC, SSSB, STEB, CENA WERE RAN IN COMBINATION
GAMMA RAY COUNTS ON SUBSEQUENT PASSES ARE AFFECTED BY RESIDUAL NEUTRON ACTIVATION CAUSED BY THE PREVIOUS PASS
PREDICTED 3' AMPLITUDE FOR 4.5" WITH 11.6 LB/FT CASING: 81 mv
FREE PIPE CALIBRATION DONE AT 280 FT
UNKNOWNEN CEMENT CLASS DUE MISSING DATA FROM CLIENT
UNKNOWNEN CEMENT JOB ENDED TIME DUE TO MISSING DATA FROM CLIENT
BOTTOM HOLE TEMPERATURE WAS DEG. 196F

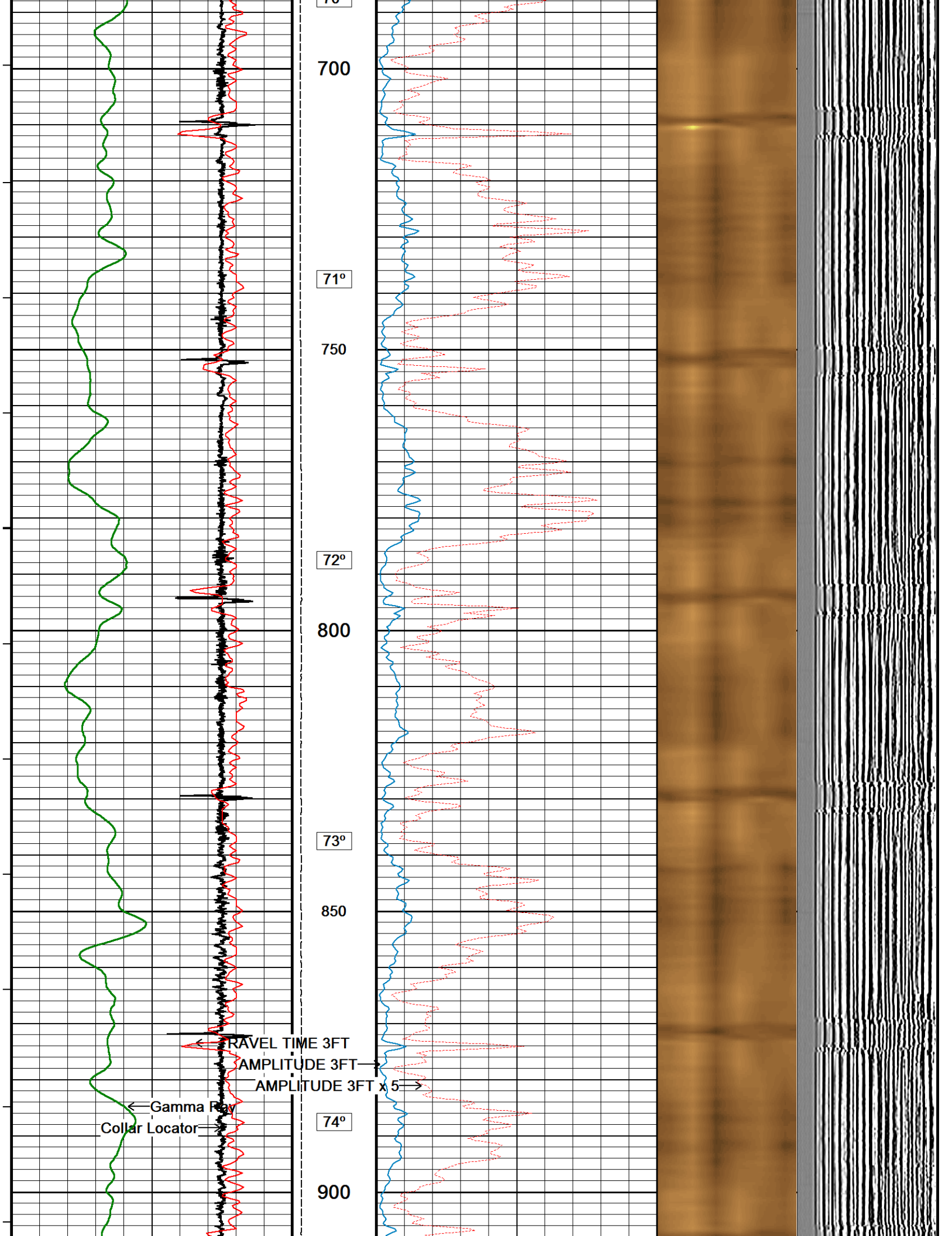
In interpreting, communicating or providing information and/or making recommendations, either written or oral, as to logs or test or other data, type or amount of material, or Work or other service to be furnished, or manner of performance, or in predicting results to be obtained, the Contractor will give the Company the benefit of the Contractor's best judgment based on its experience and will perform all such Work in a good and workmanlike manner. Any interpretation of test or other data, and any recommendation or reservoir description based upon such interpretations, are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and assumptions are not infallible, and with respect to which professional engineers and analysts may differ. ACCORDINGLY ANY INTERPRETATION OR RECOMMENDATION RESULTING FROM THE SERVICES WILL BE AT THE SOLE RISK OF THE COMPANY, AND THE CONTRACTOR CANNOT AND DOES NOT WARRANT THE ACCURACY, CORRECTNESS OR COMPLETENESS OF ANY SUCH INTERPRETATION OR RECOMMENDATION, WHICH INTERPRETATIONS AND RECOMMENDATIONS SHOULD NOT, THEREFORE, UNDER ANY CIRCUMSTANCES BE RELIED UPON AS THE SOLE OR MAIN BASIS FOR ANY DRILLING, COMPLETION, WELL TREATMENT, PRODUCTION OR FINANCIAL DECISION, OR ANY PROCEDURE INVOLVING ANY RISK TO THE SAFETY OF ANY DRILLING ACTIVITY, DRILLING RIG OR ITS CREW OR ANY OTHER INDIVIDUAL. THE COMPANY HAS FULL RESPONSIBILITY FOR ALL DECISIONS CONCERNING THE SERVICES.

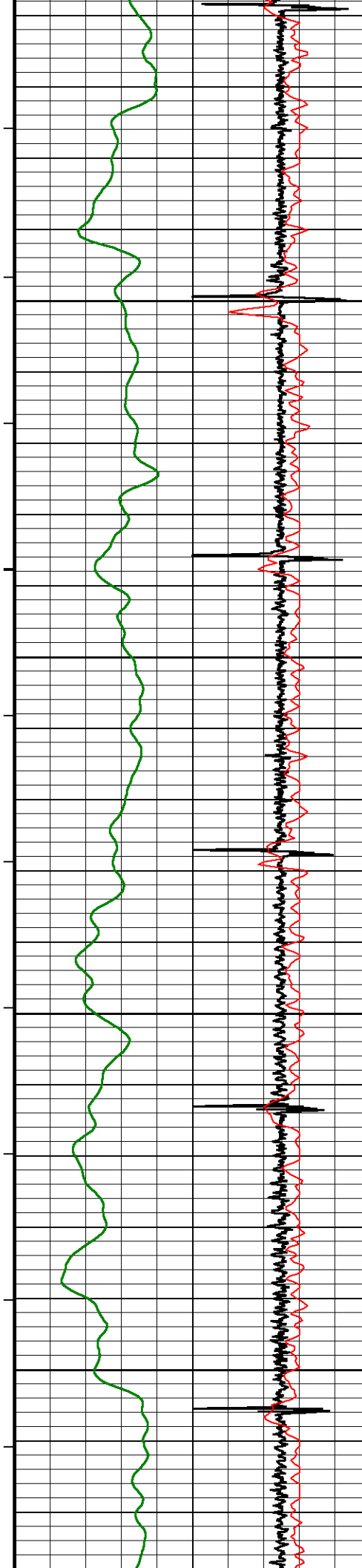












75°

950

76°

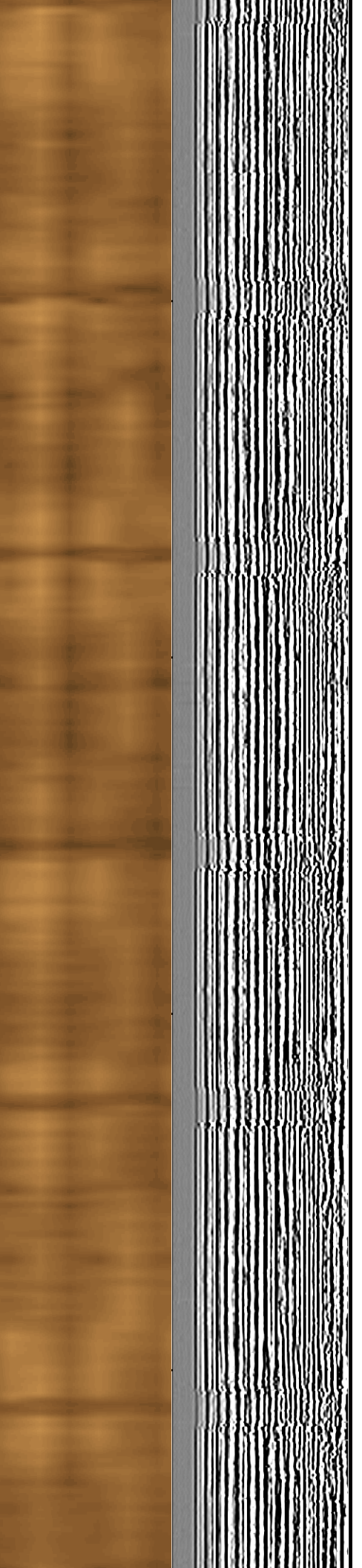
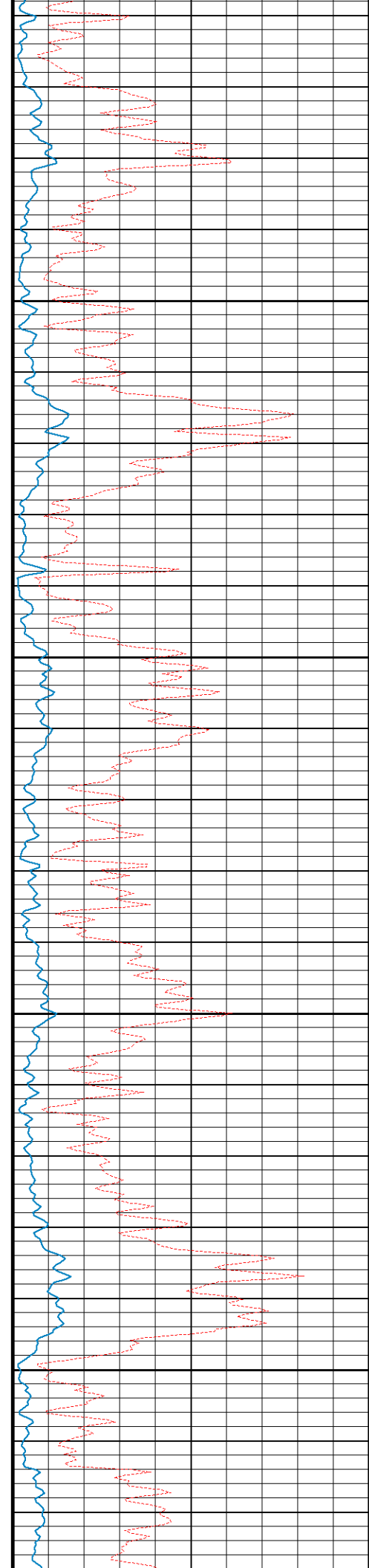
1000

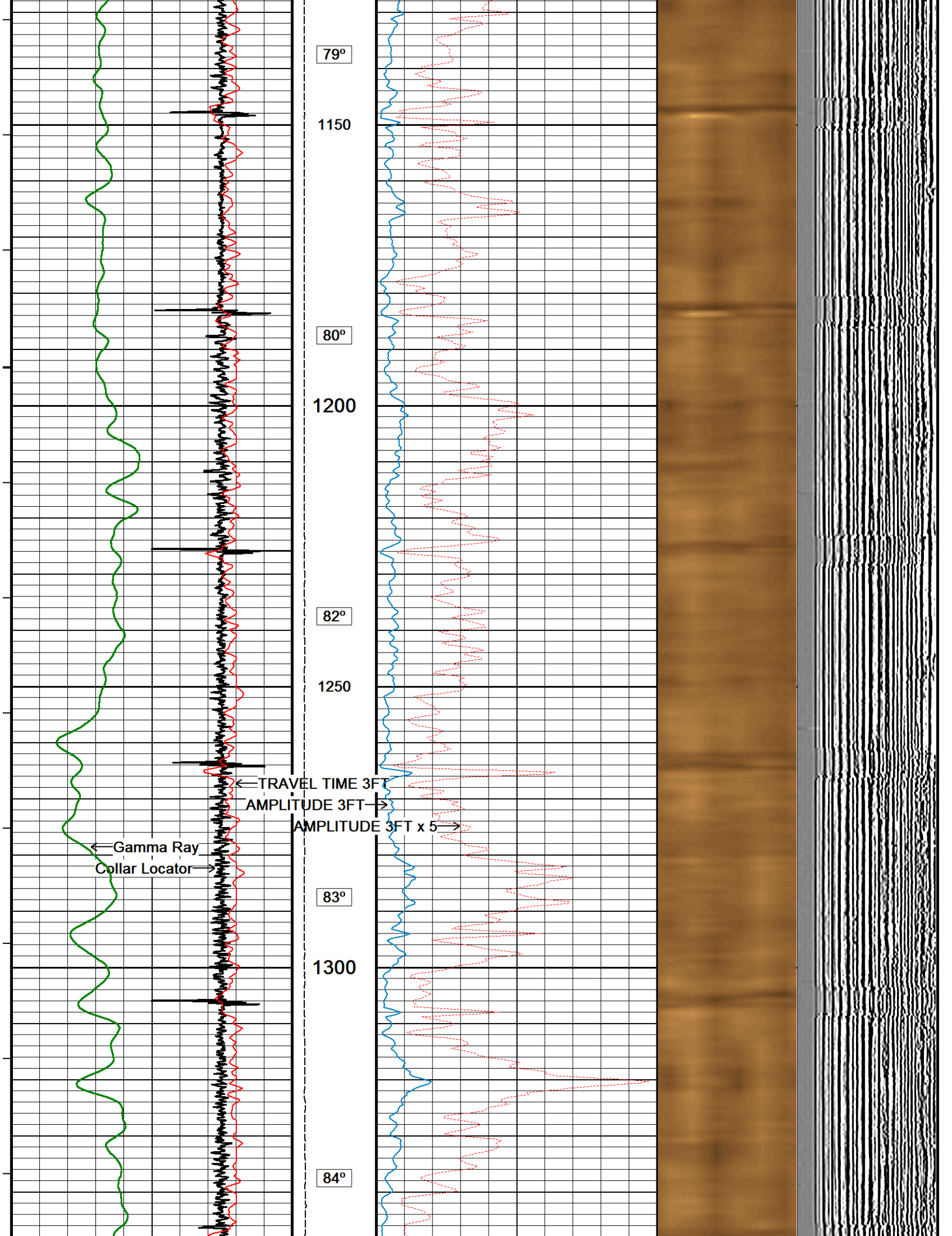
77°

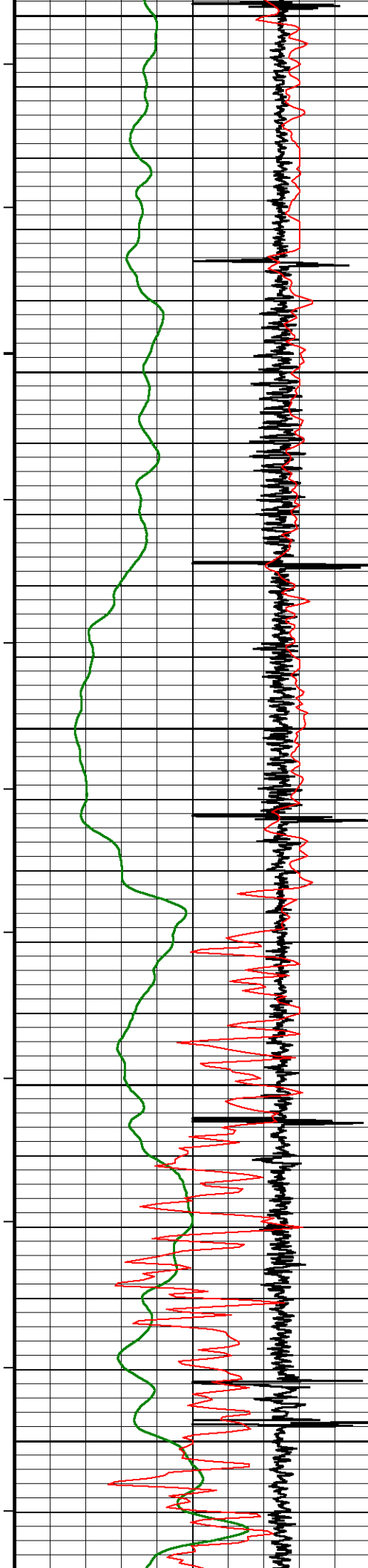
1050

78°

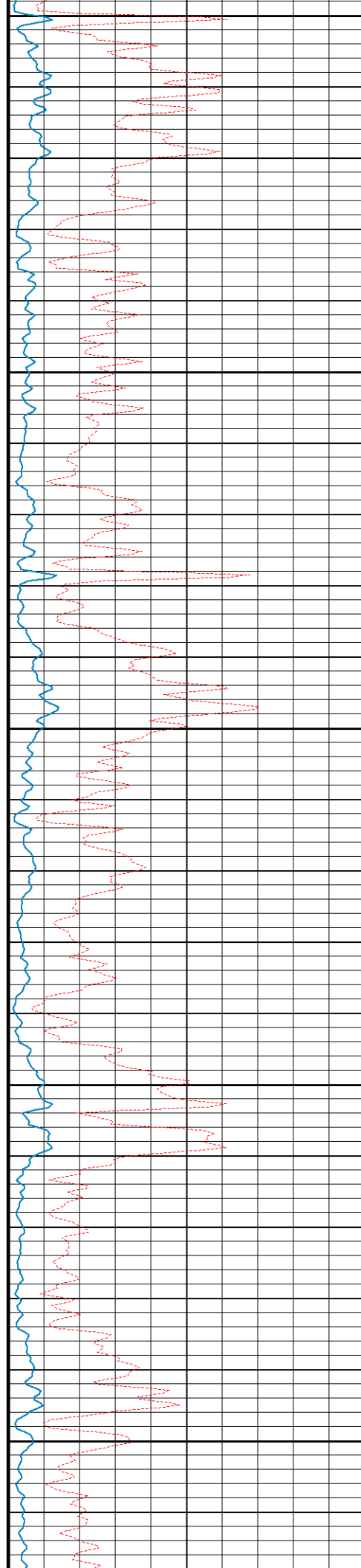
1100

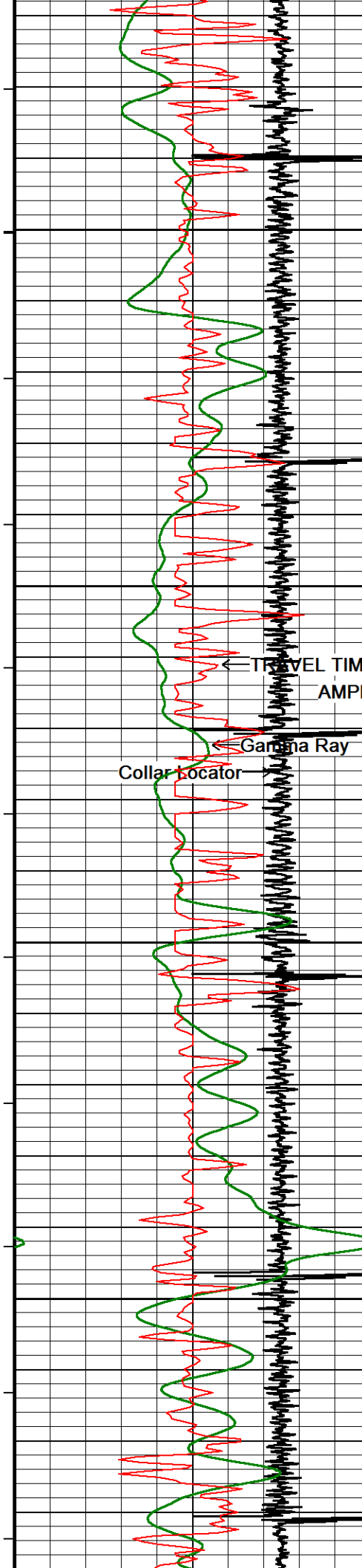




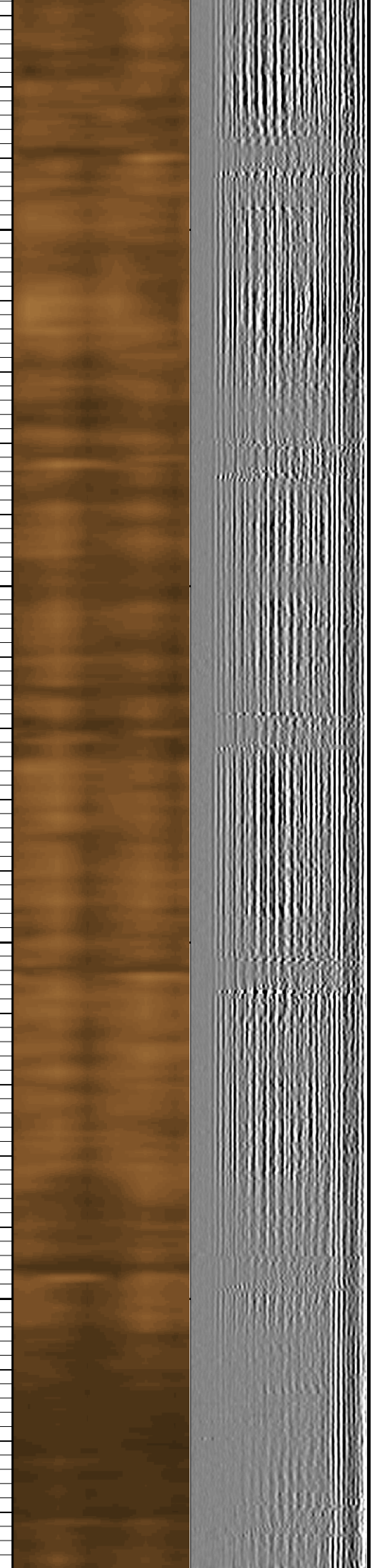
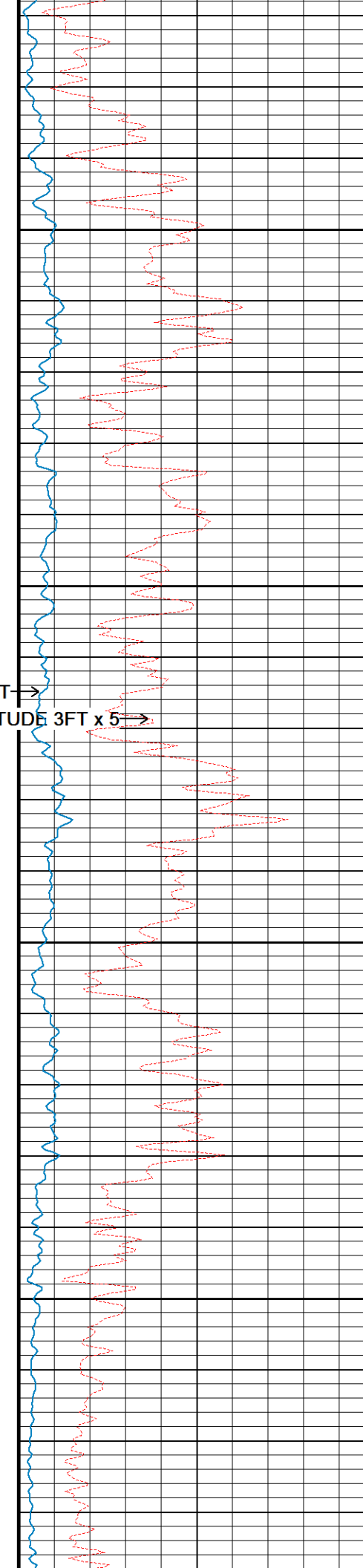


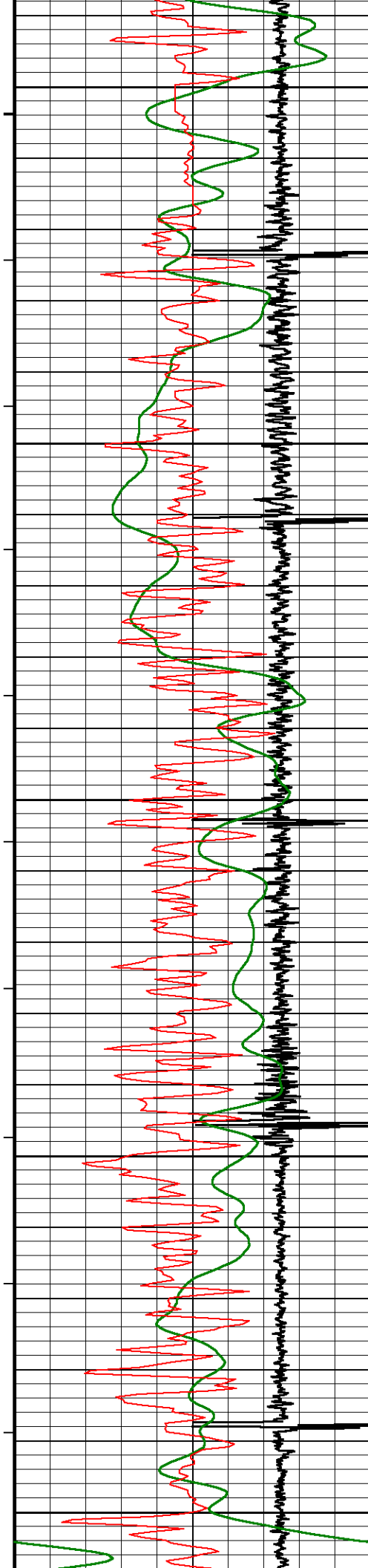
1350
85°
1400
85°
1450
86°
1500
87°
1550



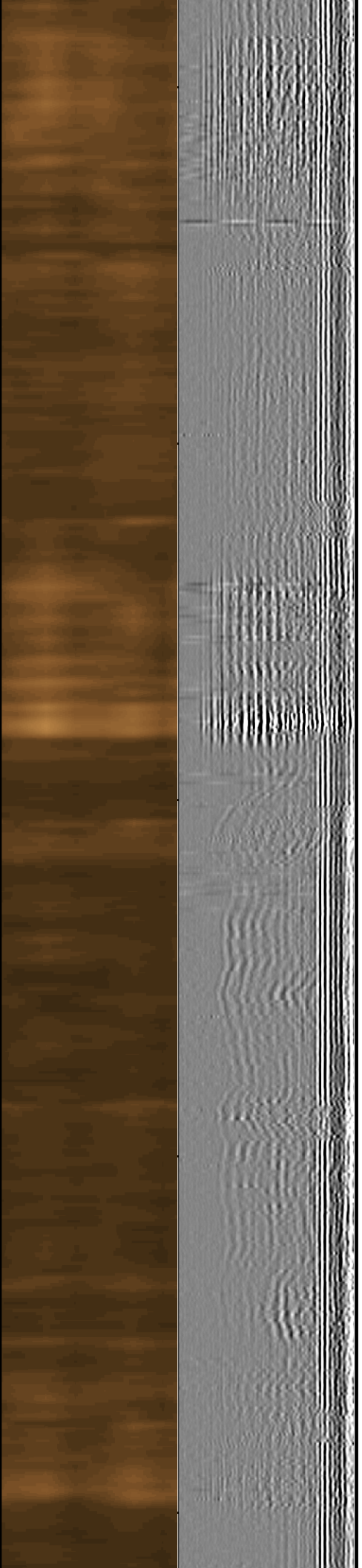
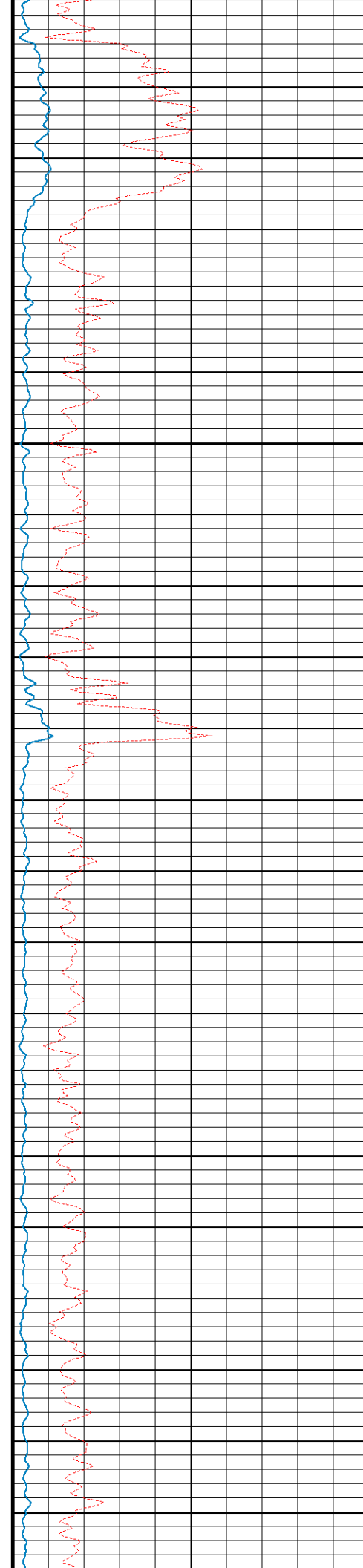


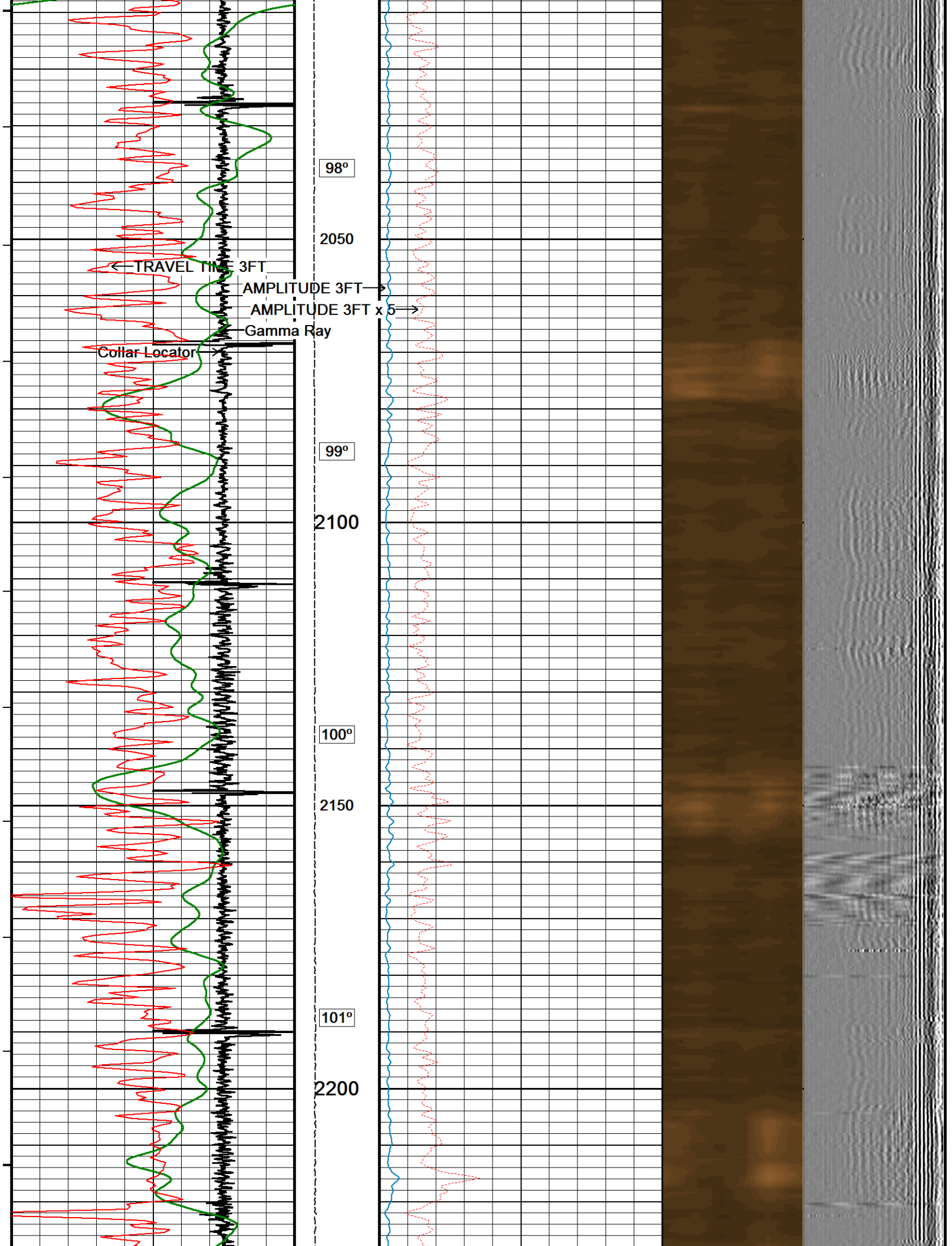
88°
1600
89°
1650
90°
1700
91°
1750
93°

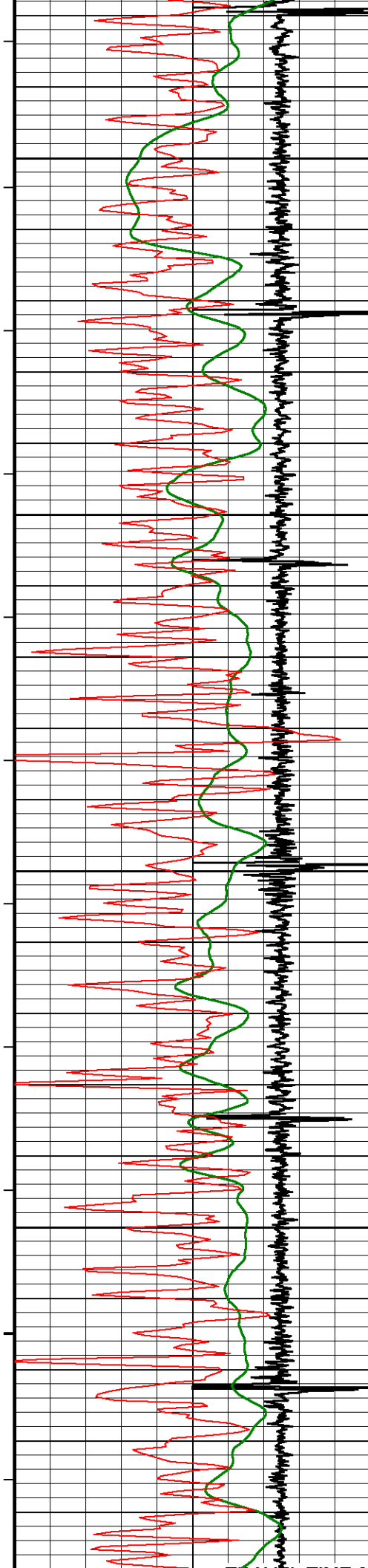




1800 94° 1850 95° 1900 96° 1950 97° 2000







102°

2250

103°

2300

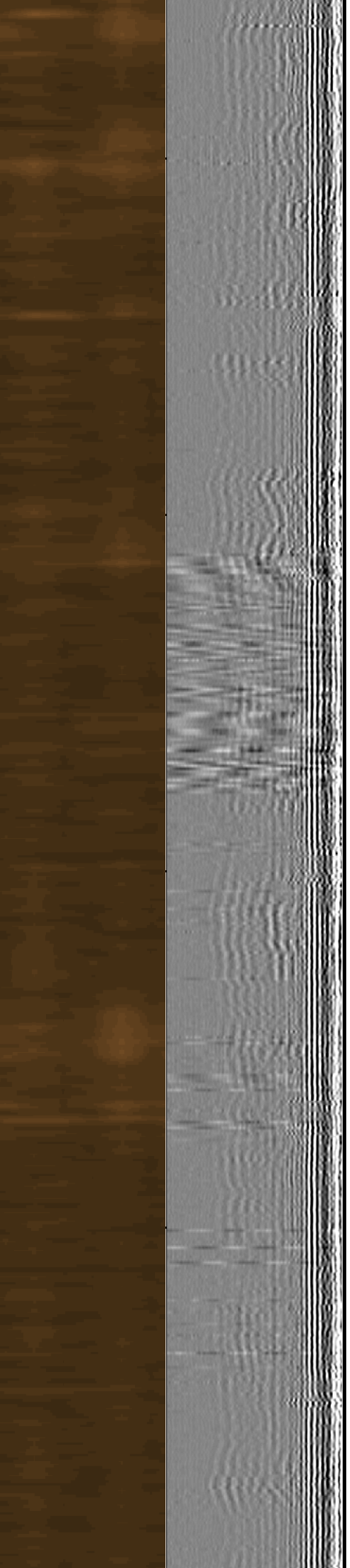
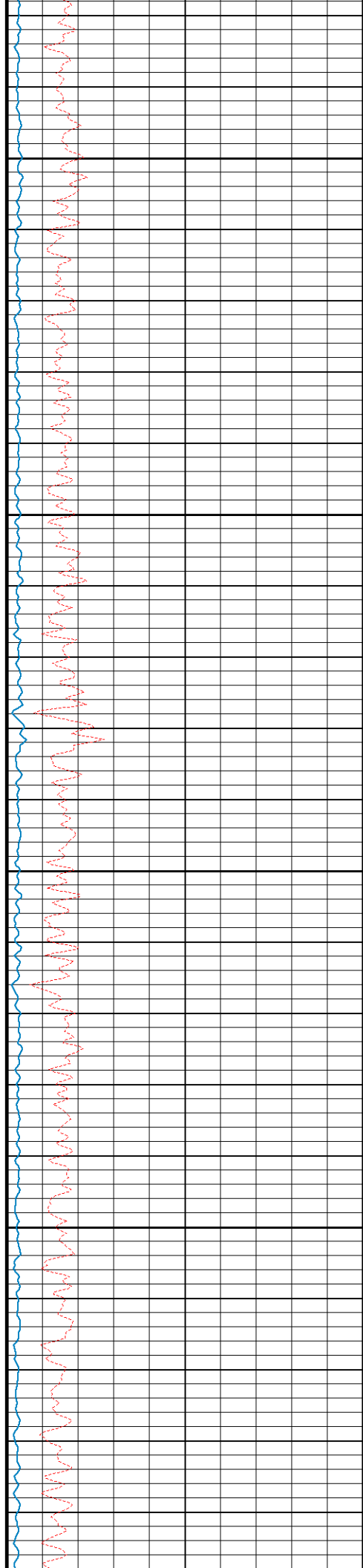
103°

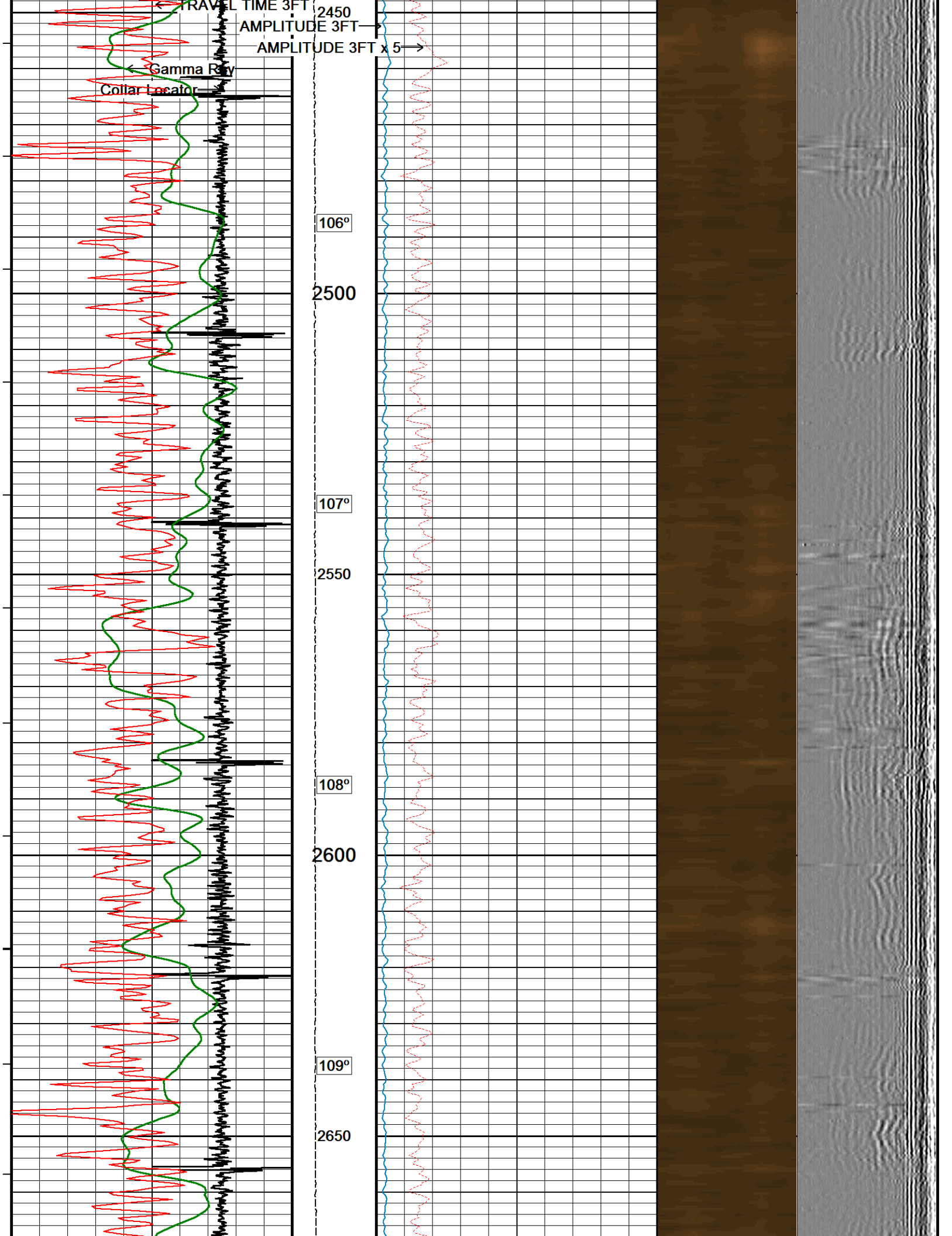
2350

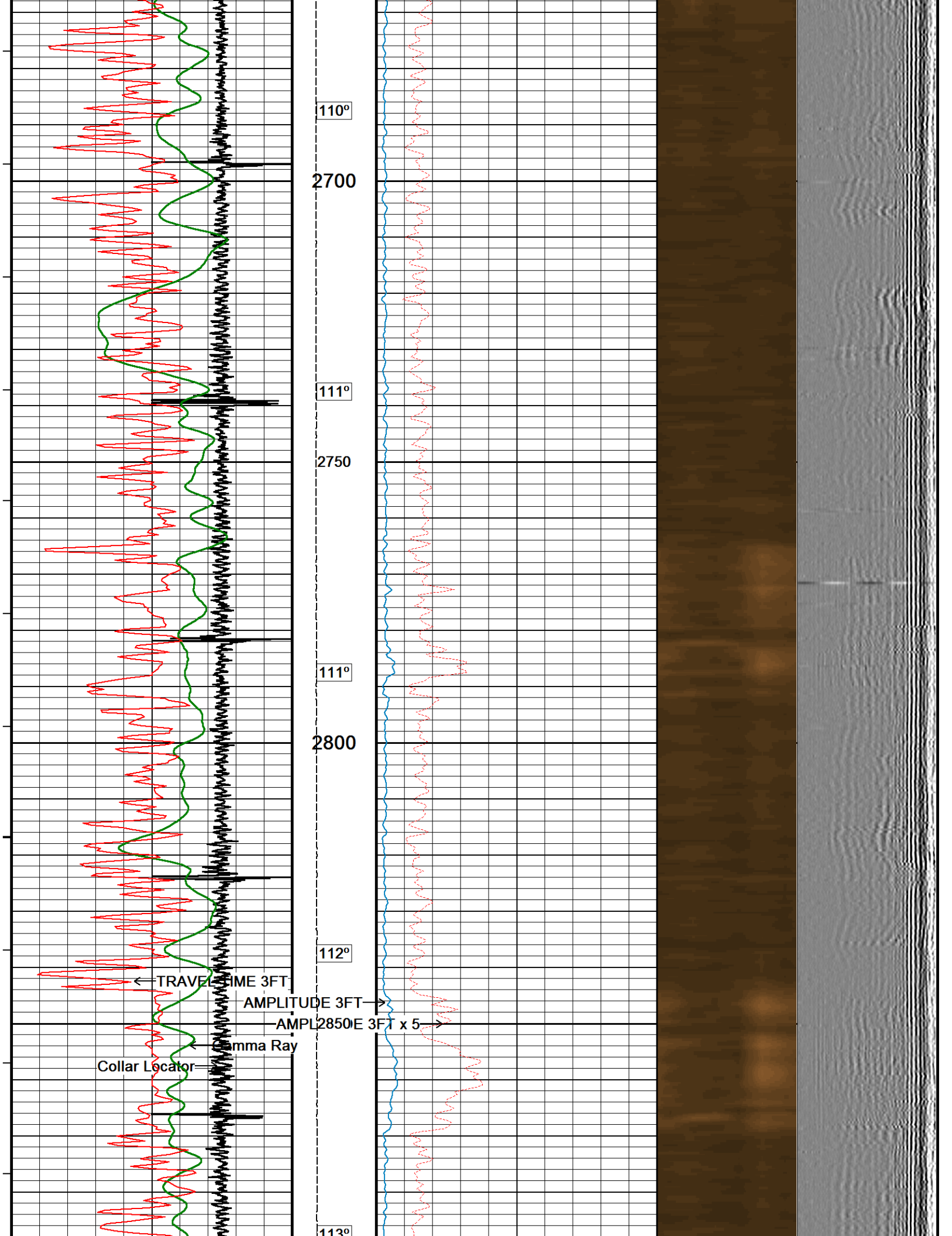
104°

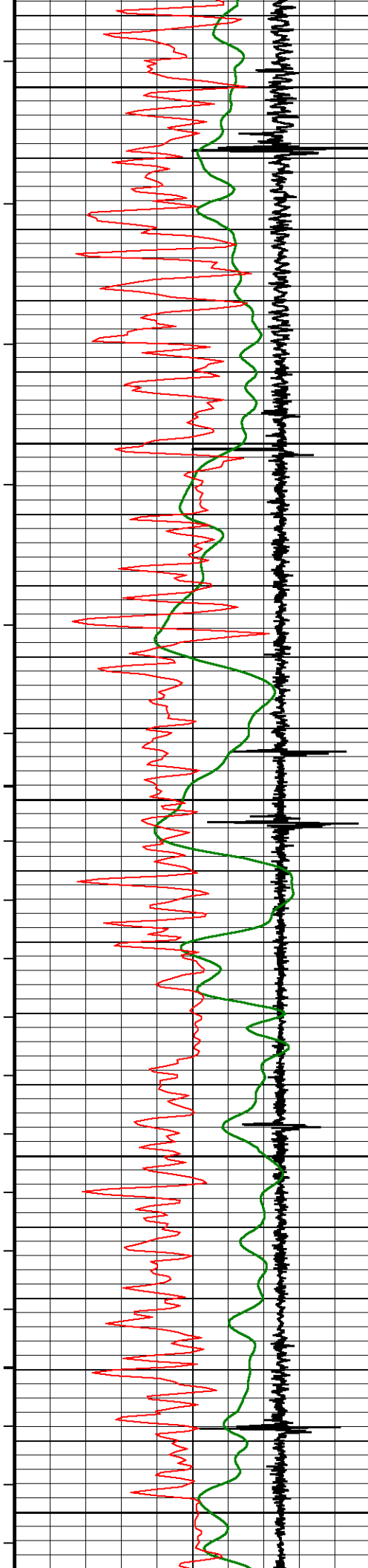
2400

105°

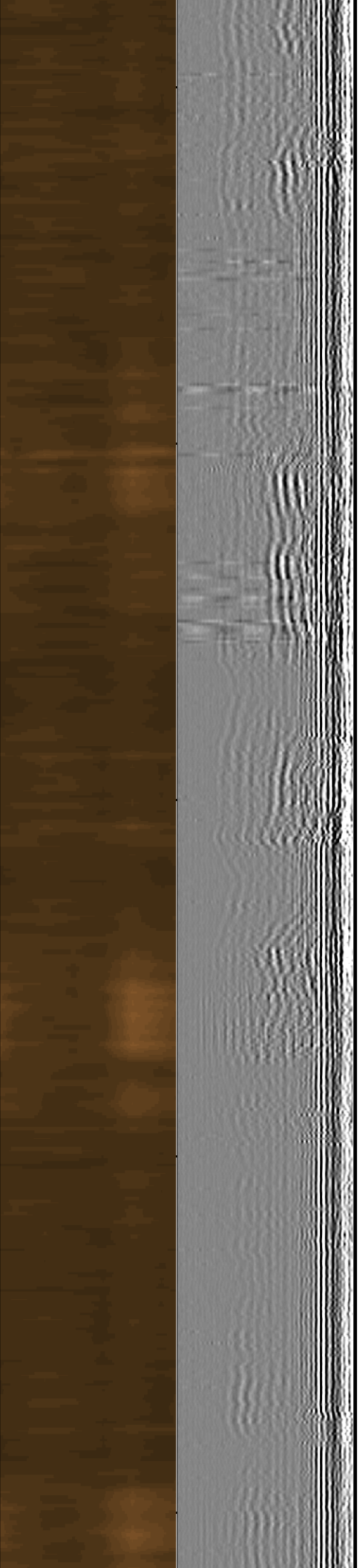
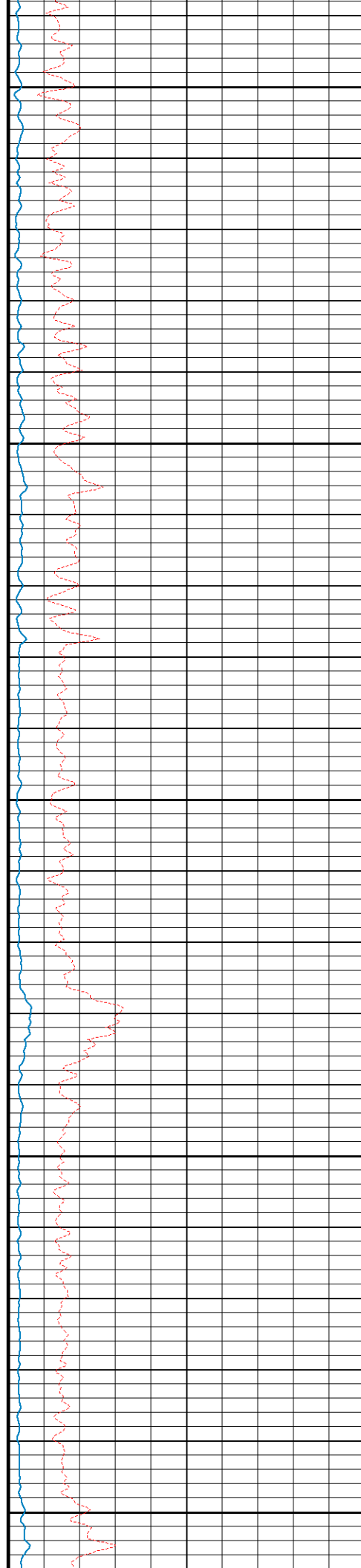


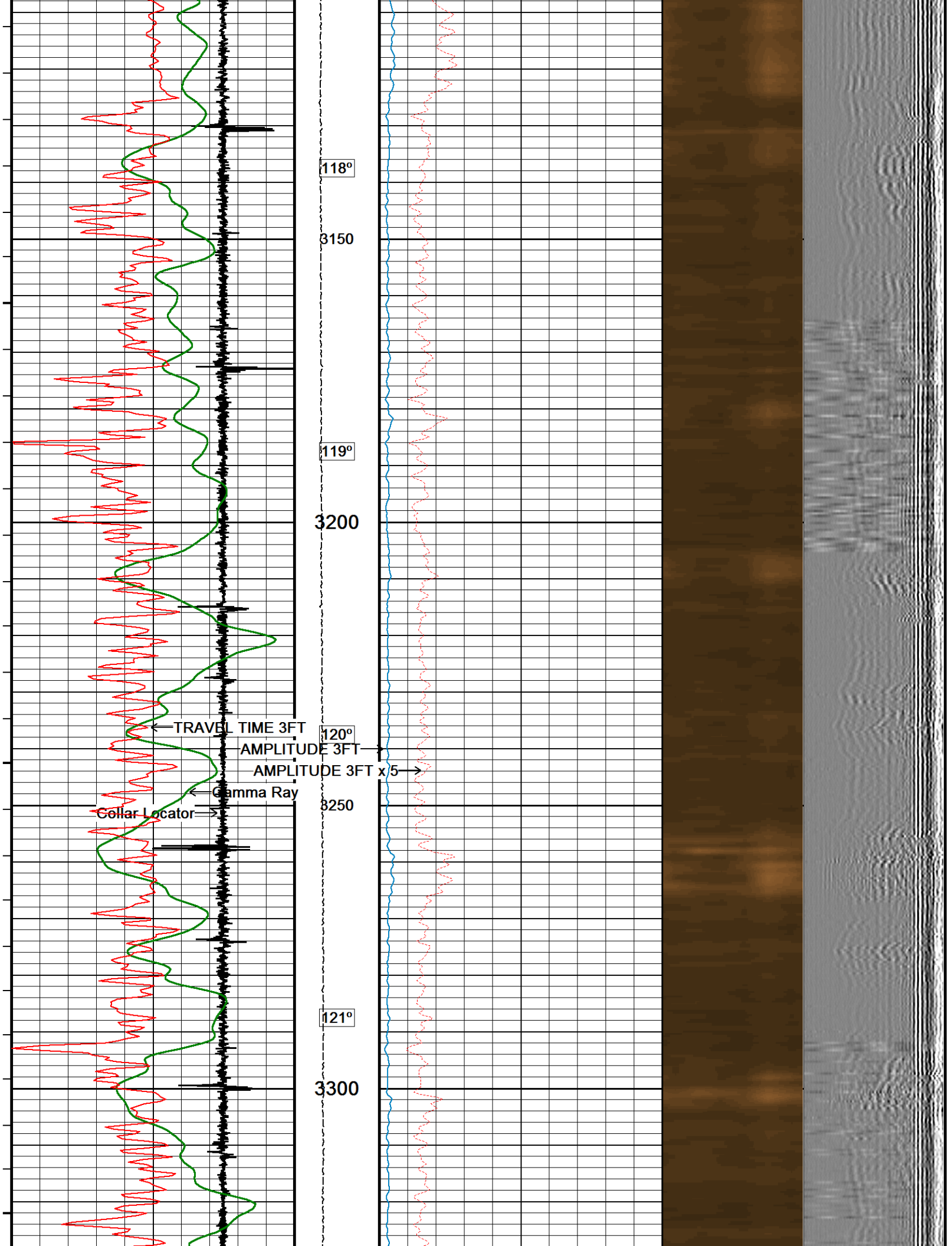


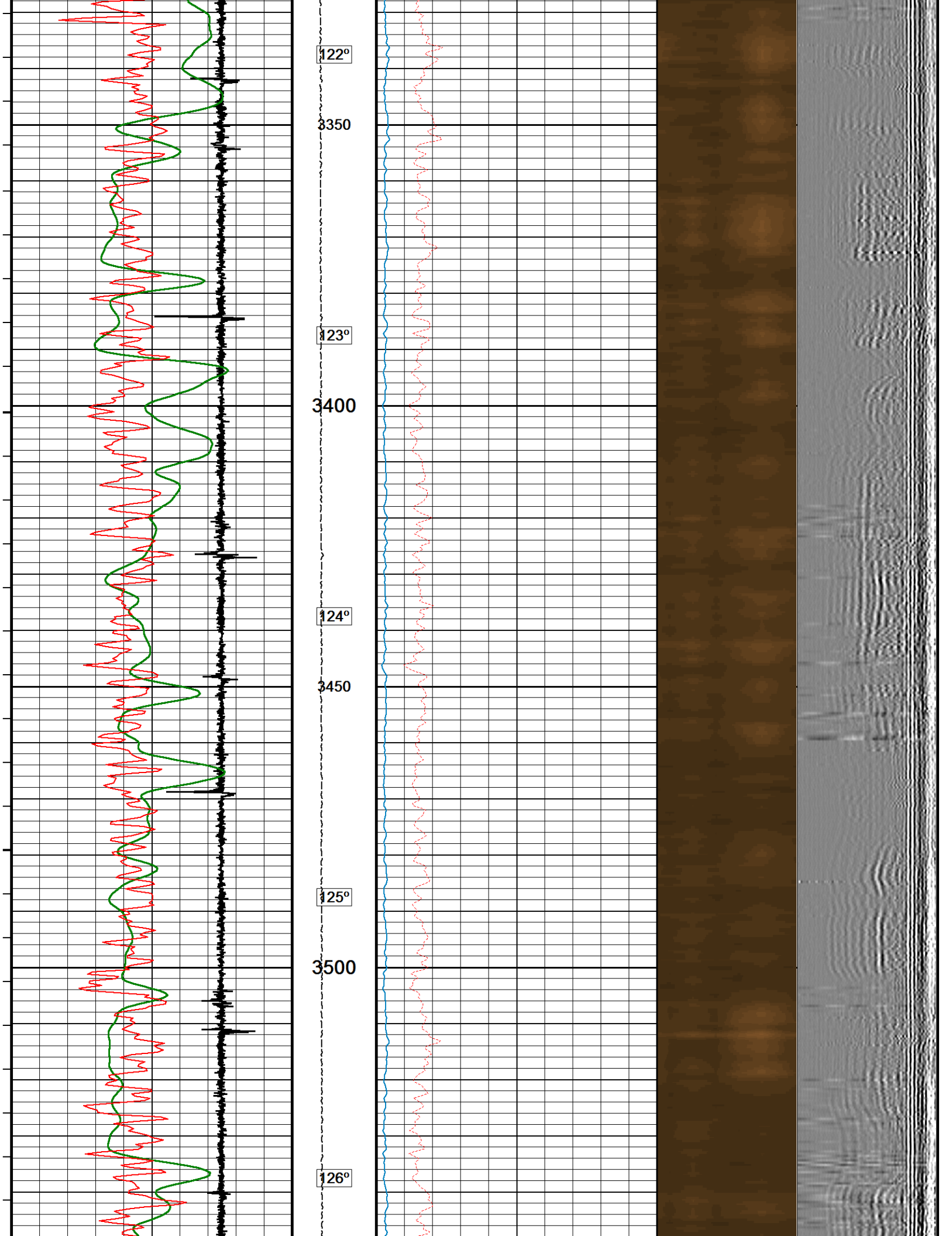


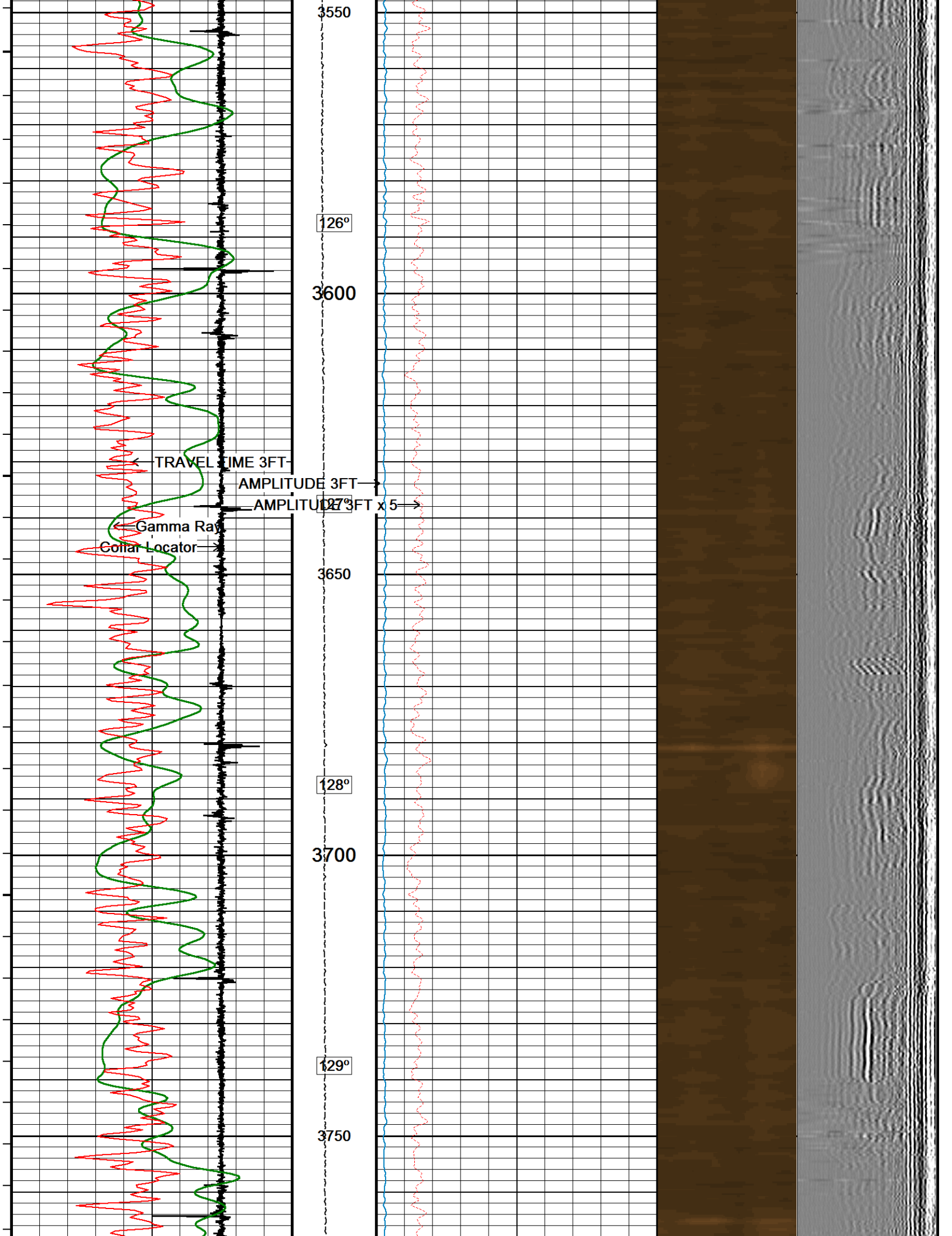


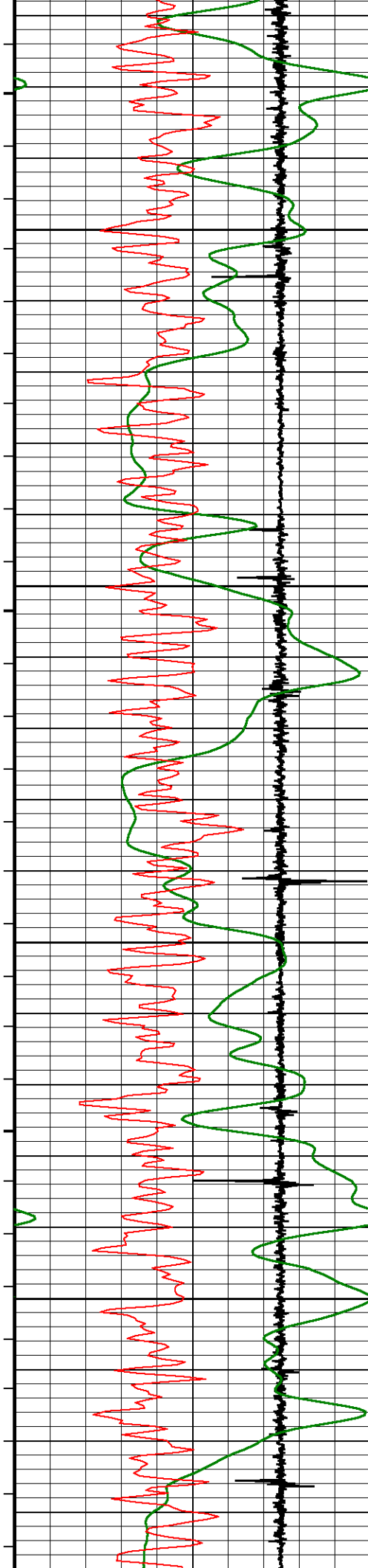
2900
114°
2950
115°
3000
116°
3050
117°
3100











130°

3800

131°

3850

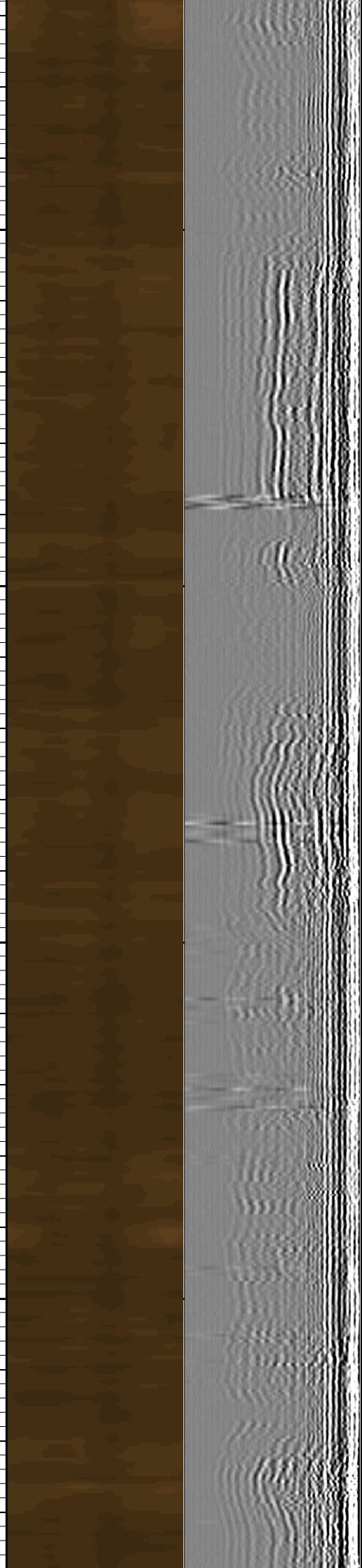
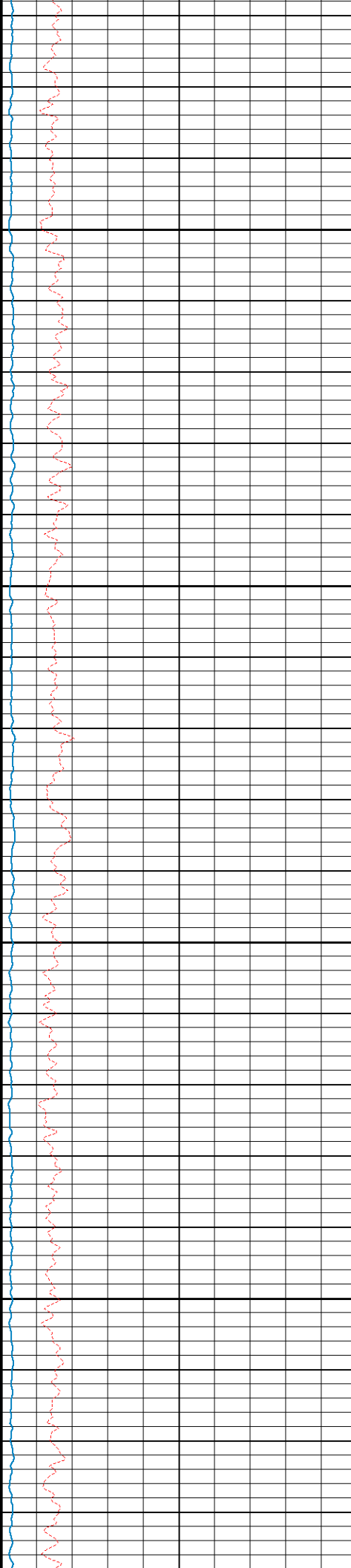
132°

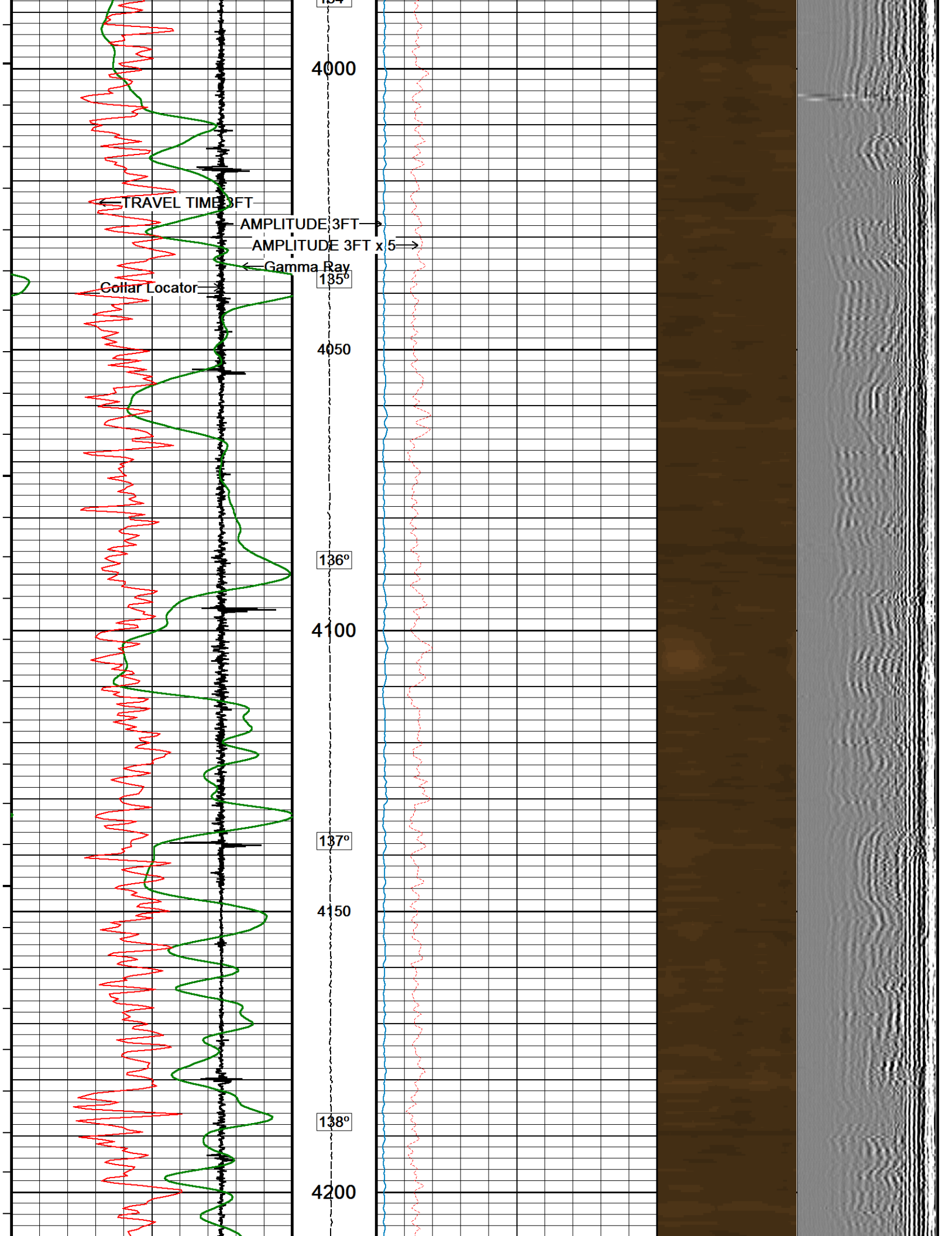
3900

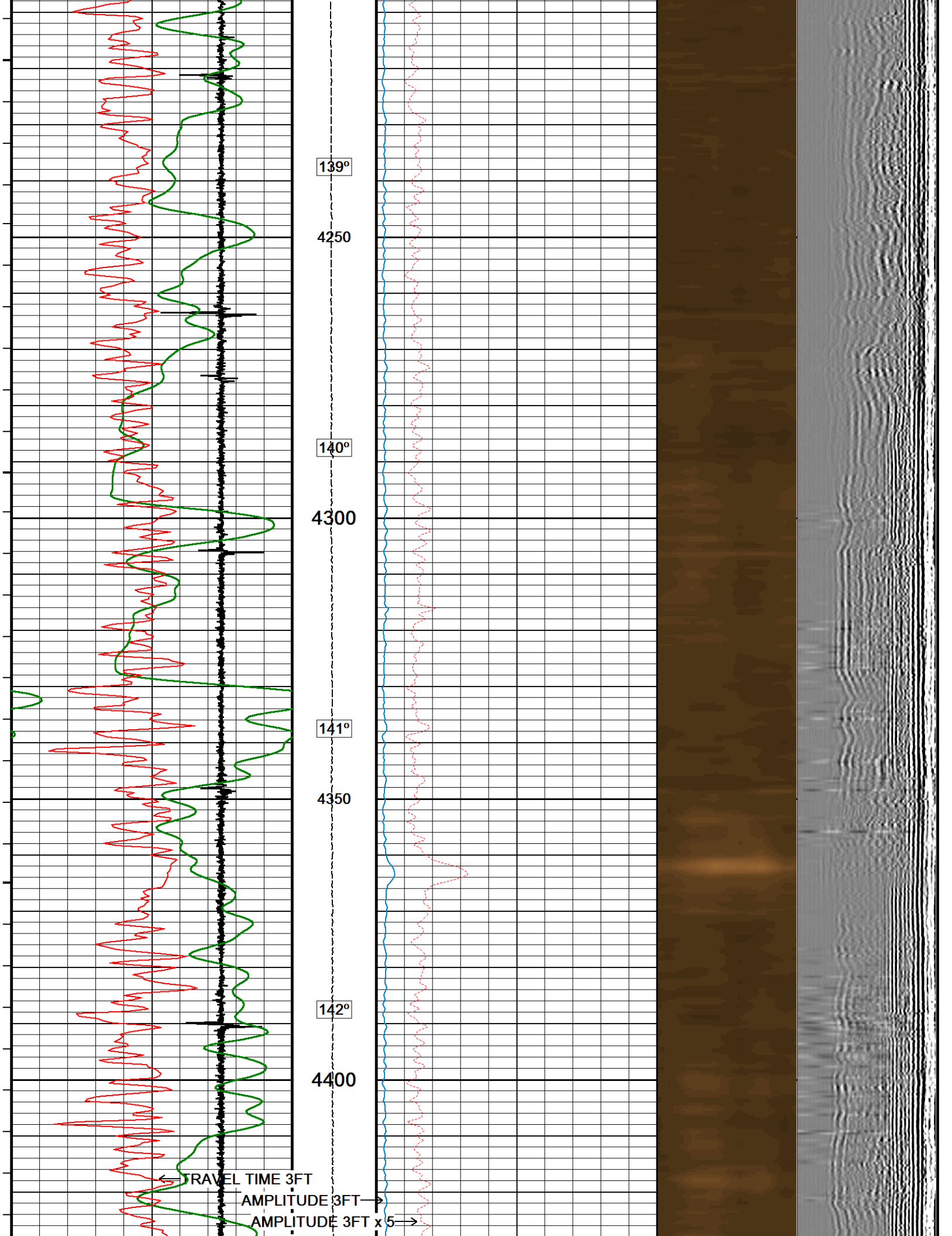
133°

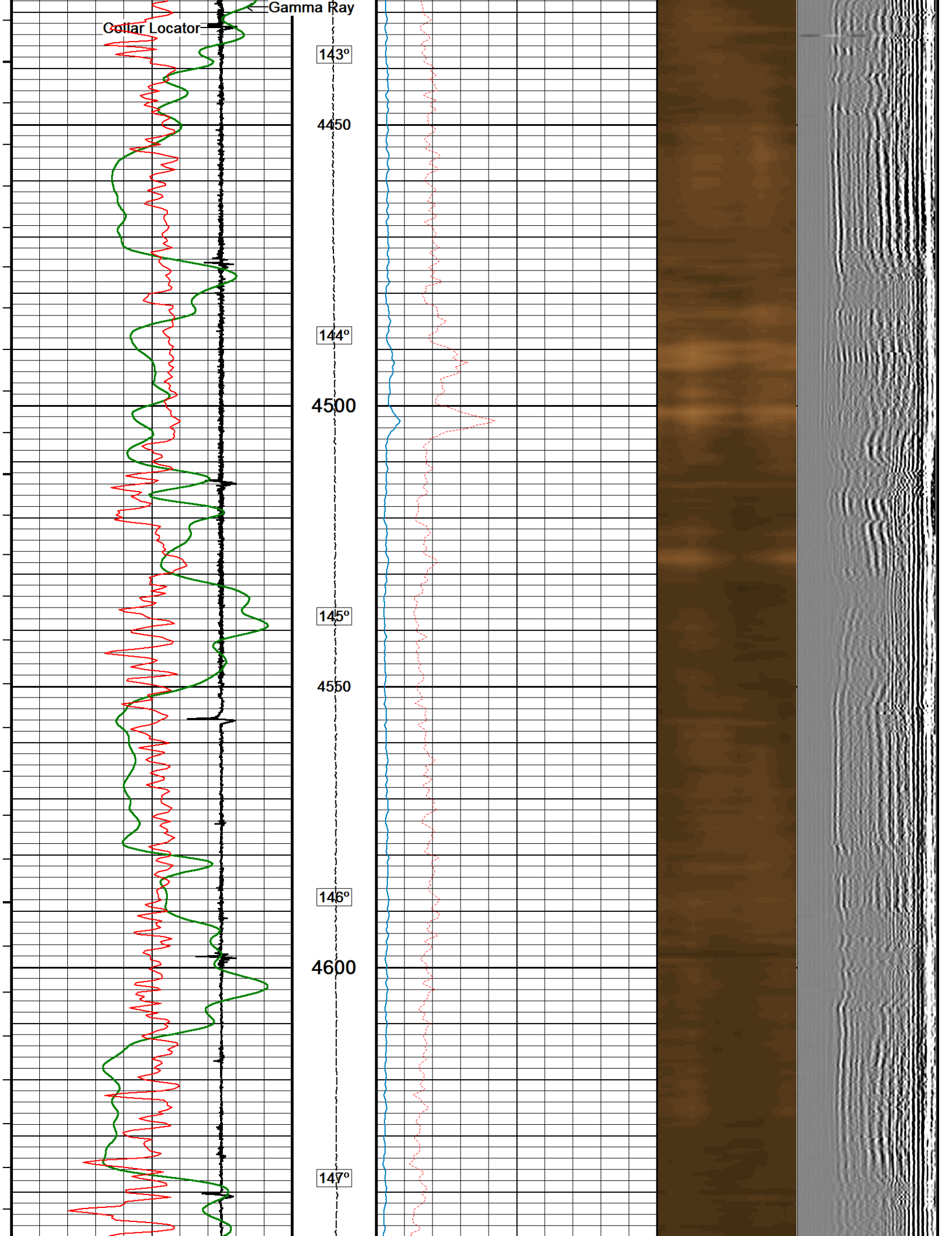
3950

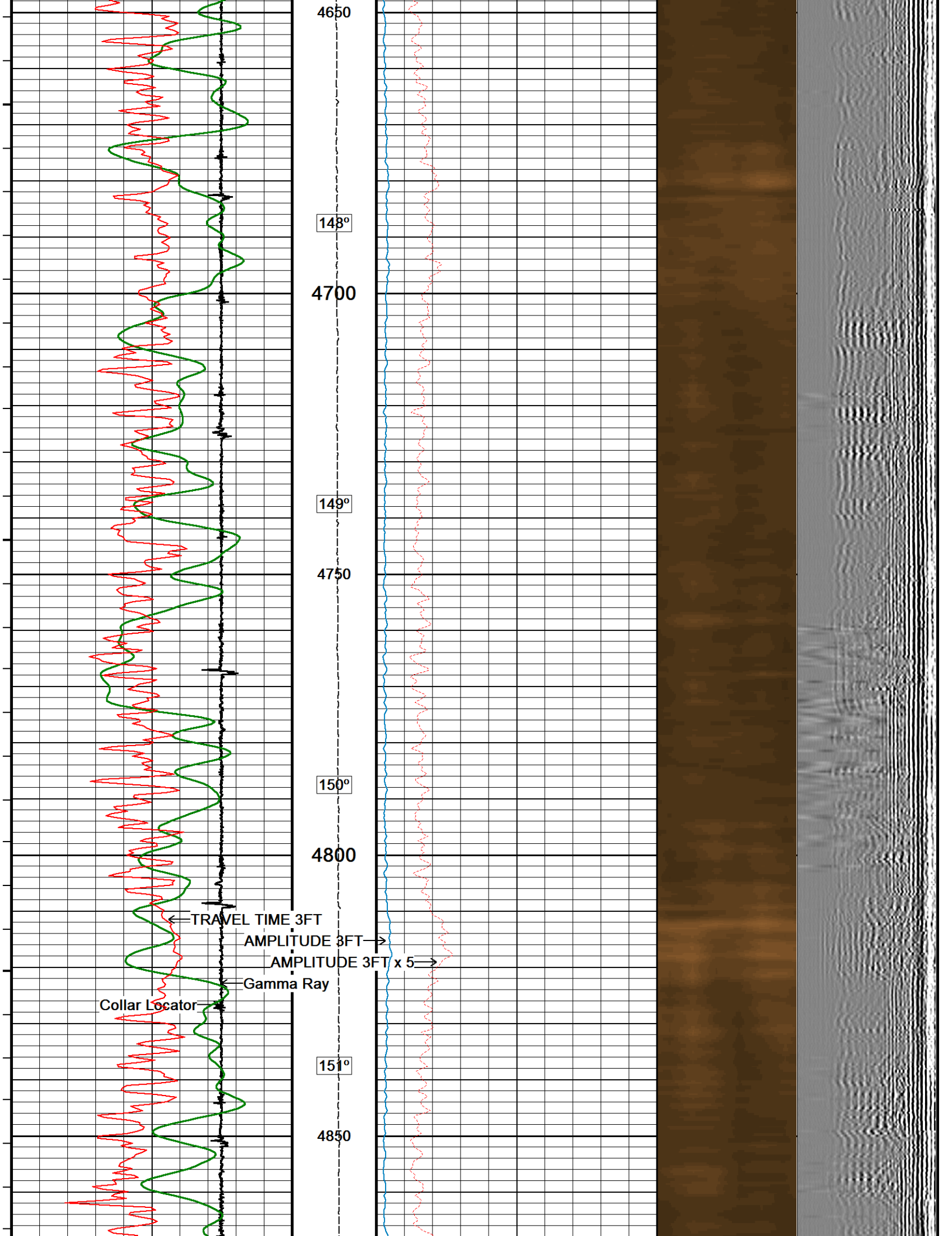
134°

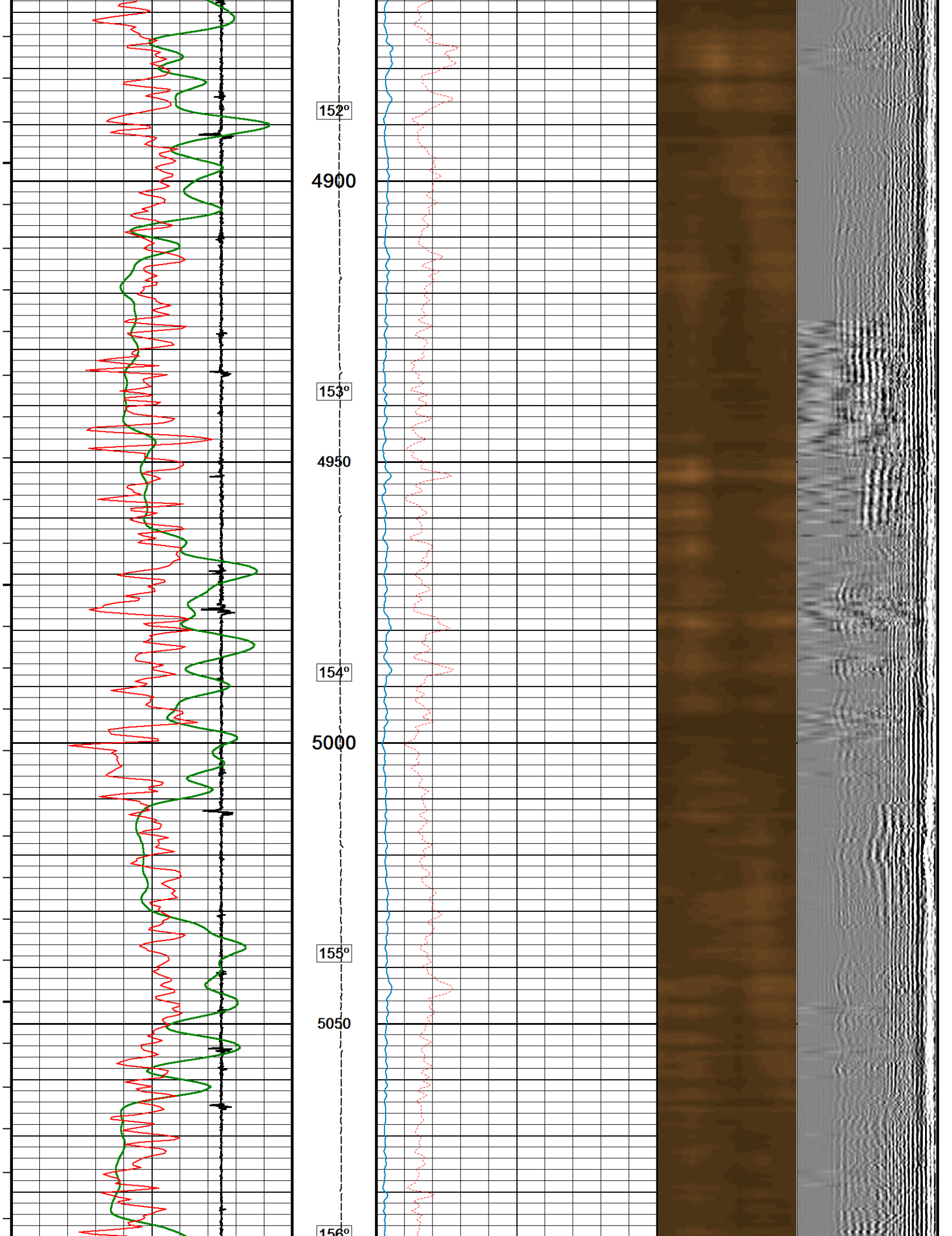


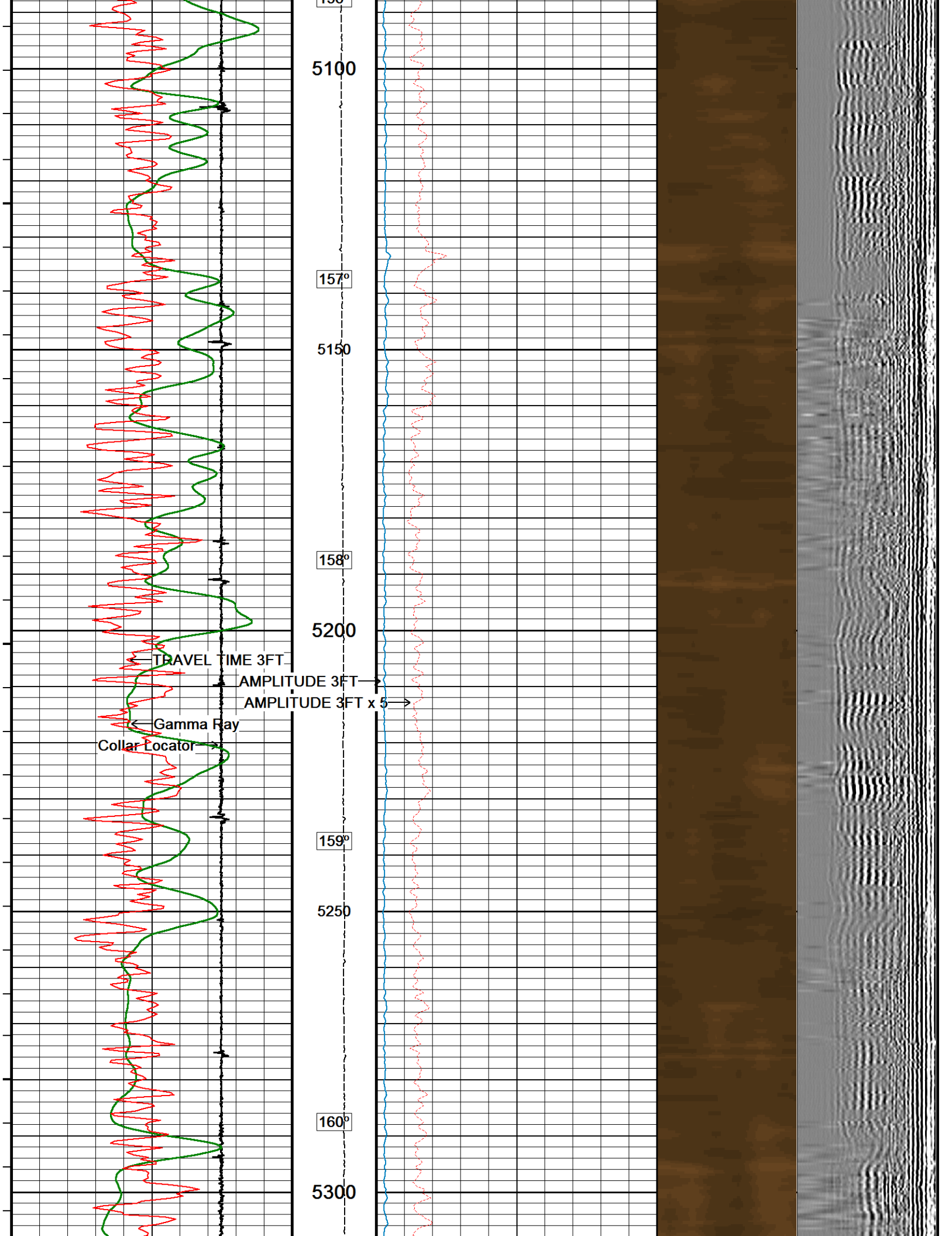


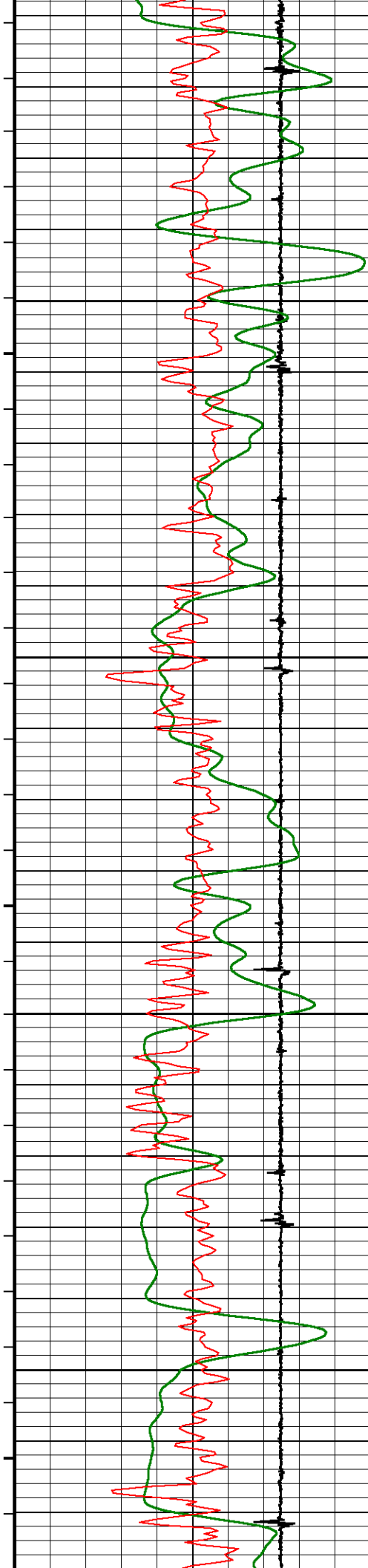












161^p

5350

162^b

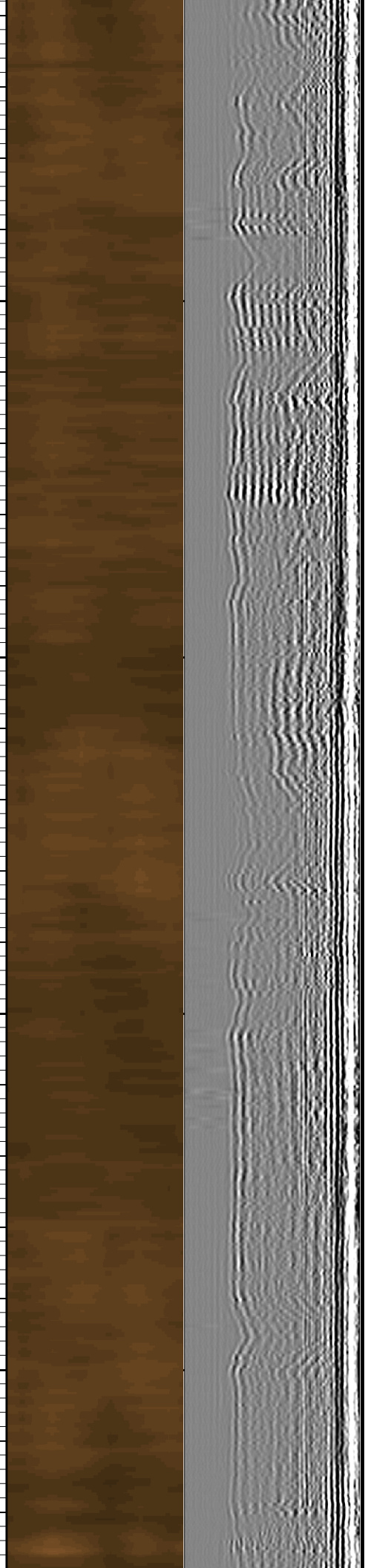
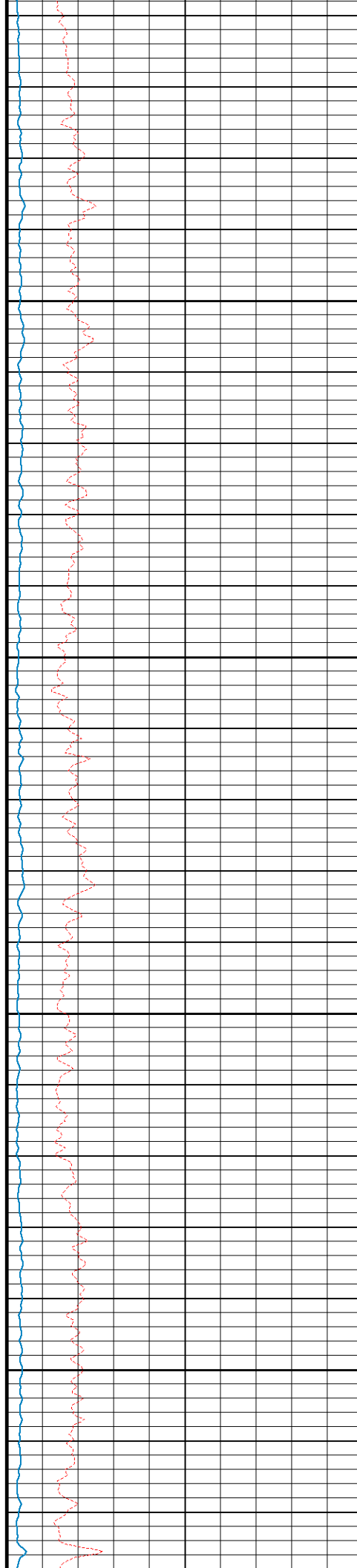
5400

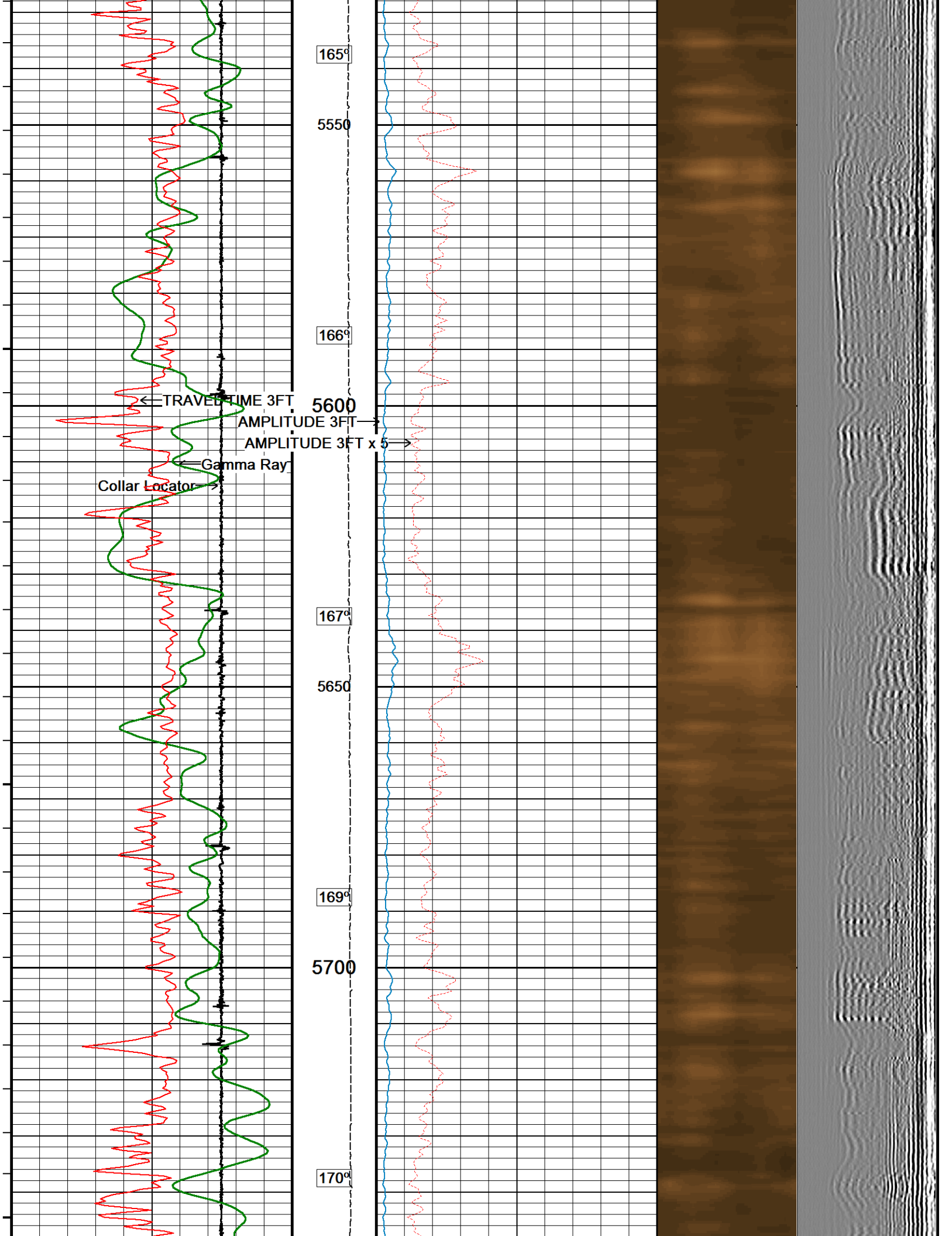
163^o

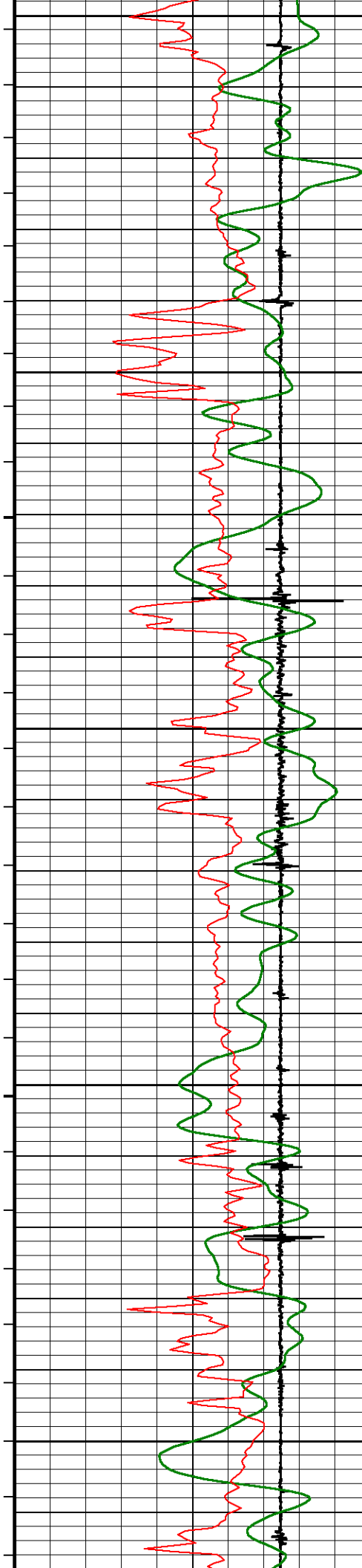
5450

164^o

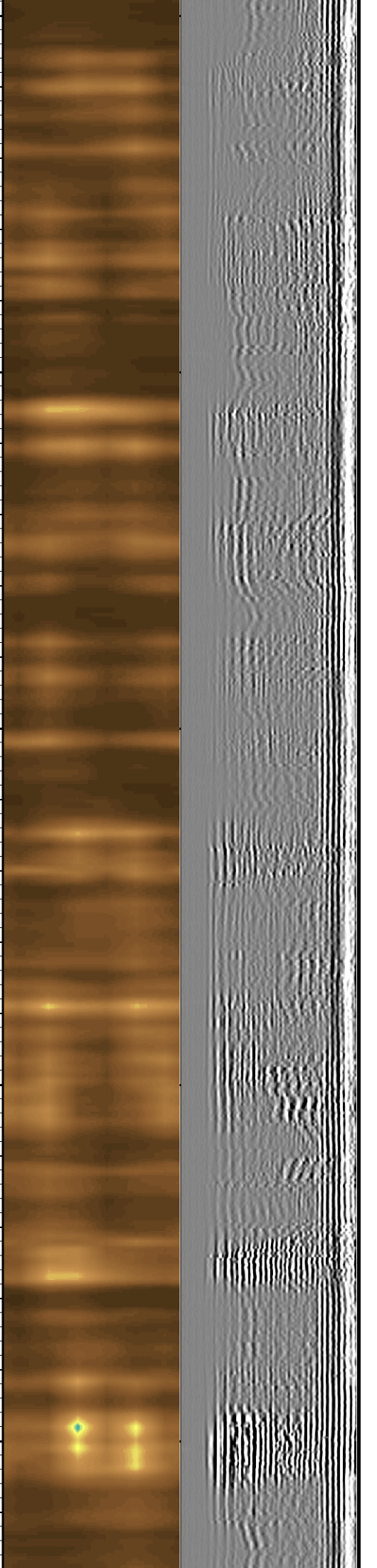
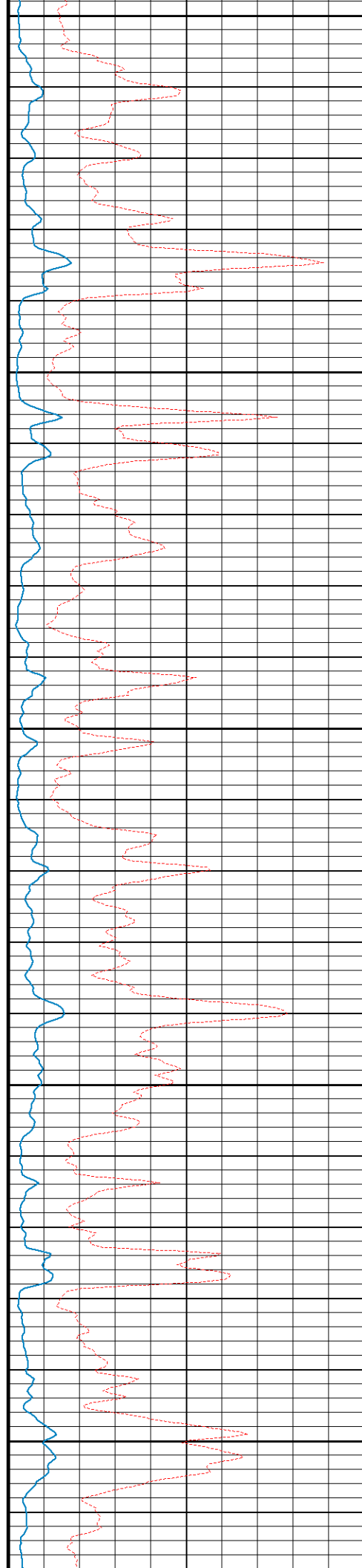
5500

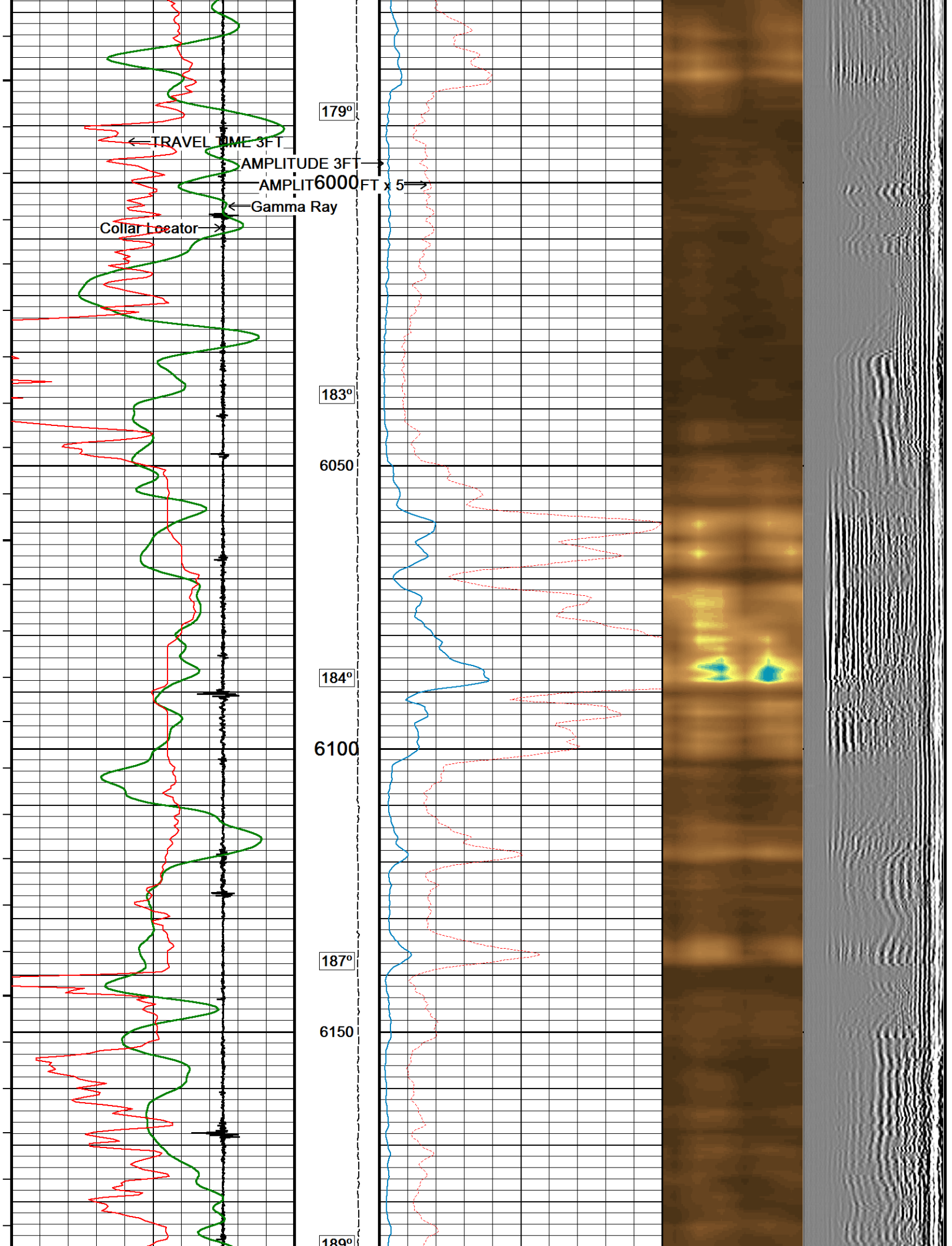


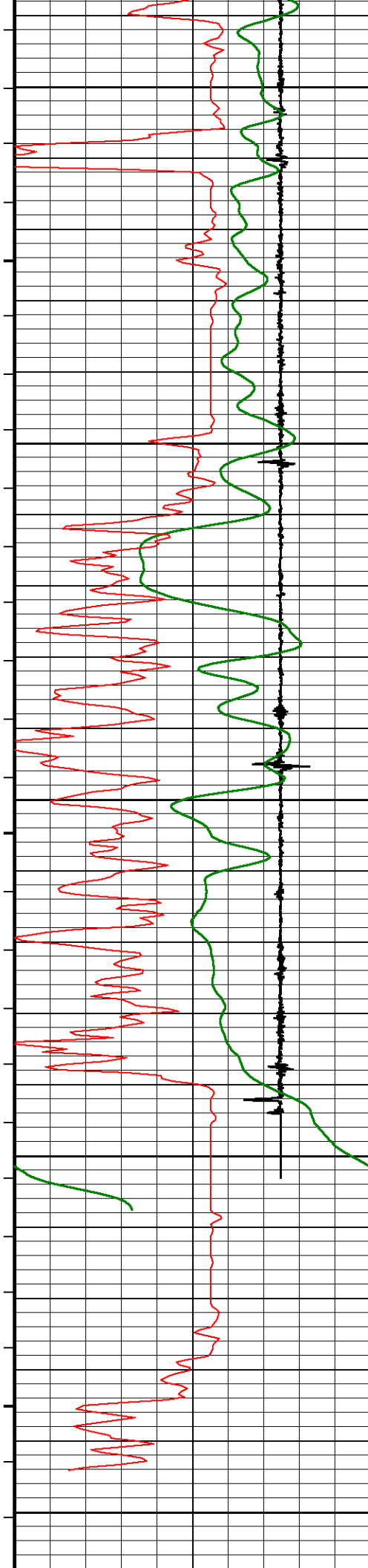




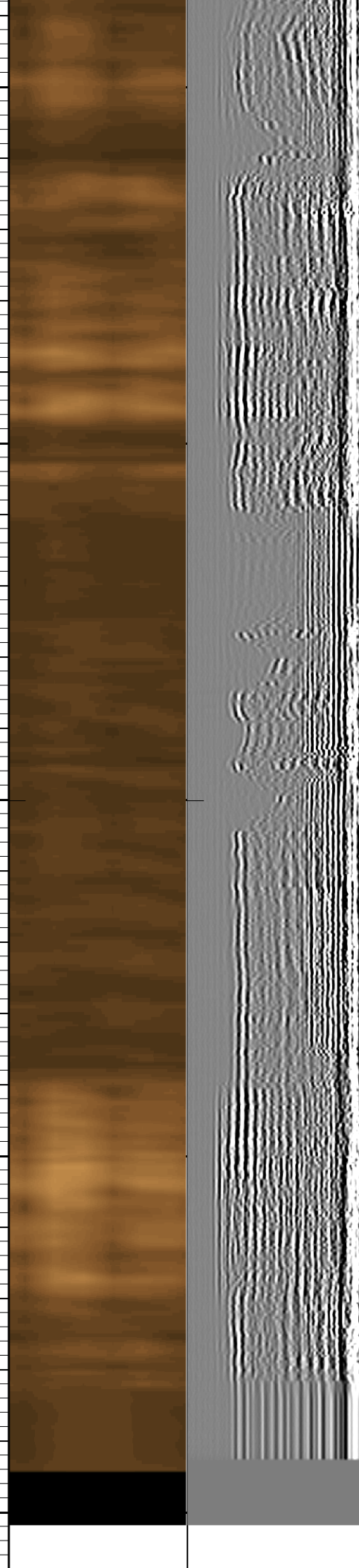
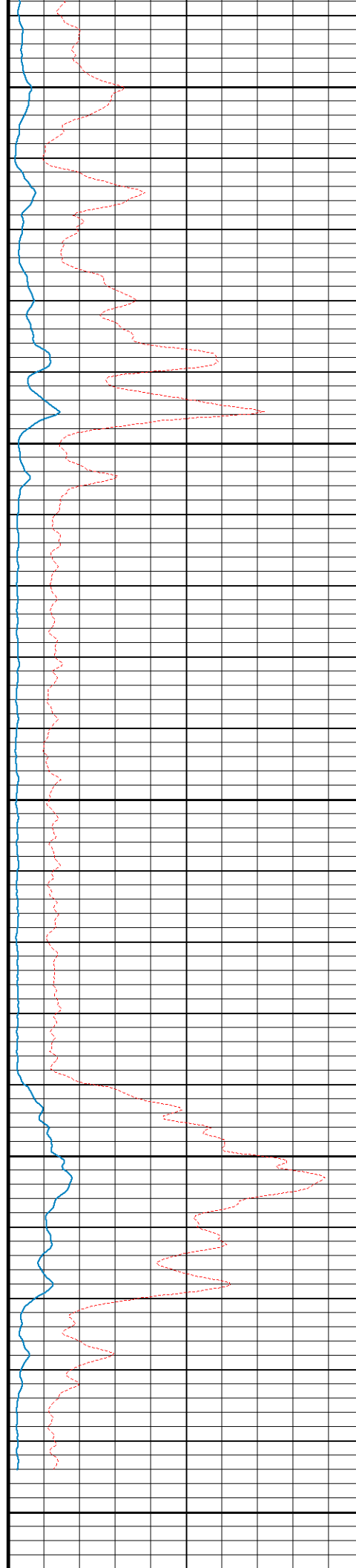
5750
172°
5800
173°
5850
175°
5900
176°
5950

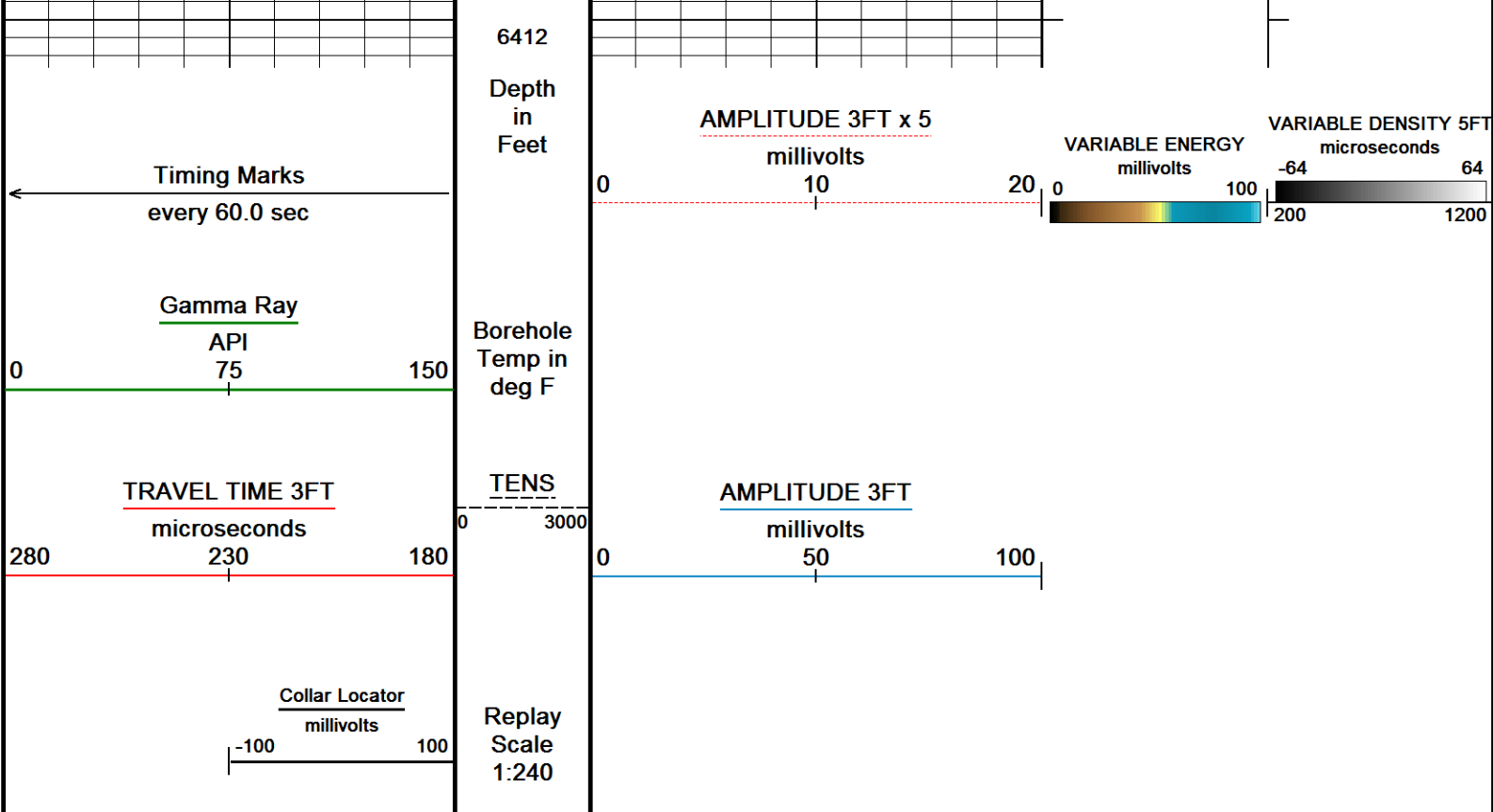






6200
190°
6250
195°
6300
196°
6350
6400





Depth Based Data - Maximum Sampling Increment 12.5cm Plotted on 14-SEP-2017 22:18

Filename: C:\Logs\URSA\BMC B 14A-18-07-95\BMC B 14A-18-07-95 CREB SSSB MAIN FINAL.dta Recorded on 14-SEP-2017 22:06

System Versions: Logged with 17.01.7206 Plotted with 17.01.7206

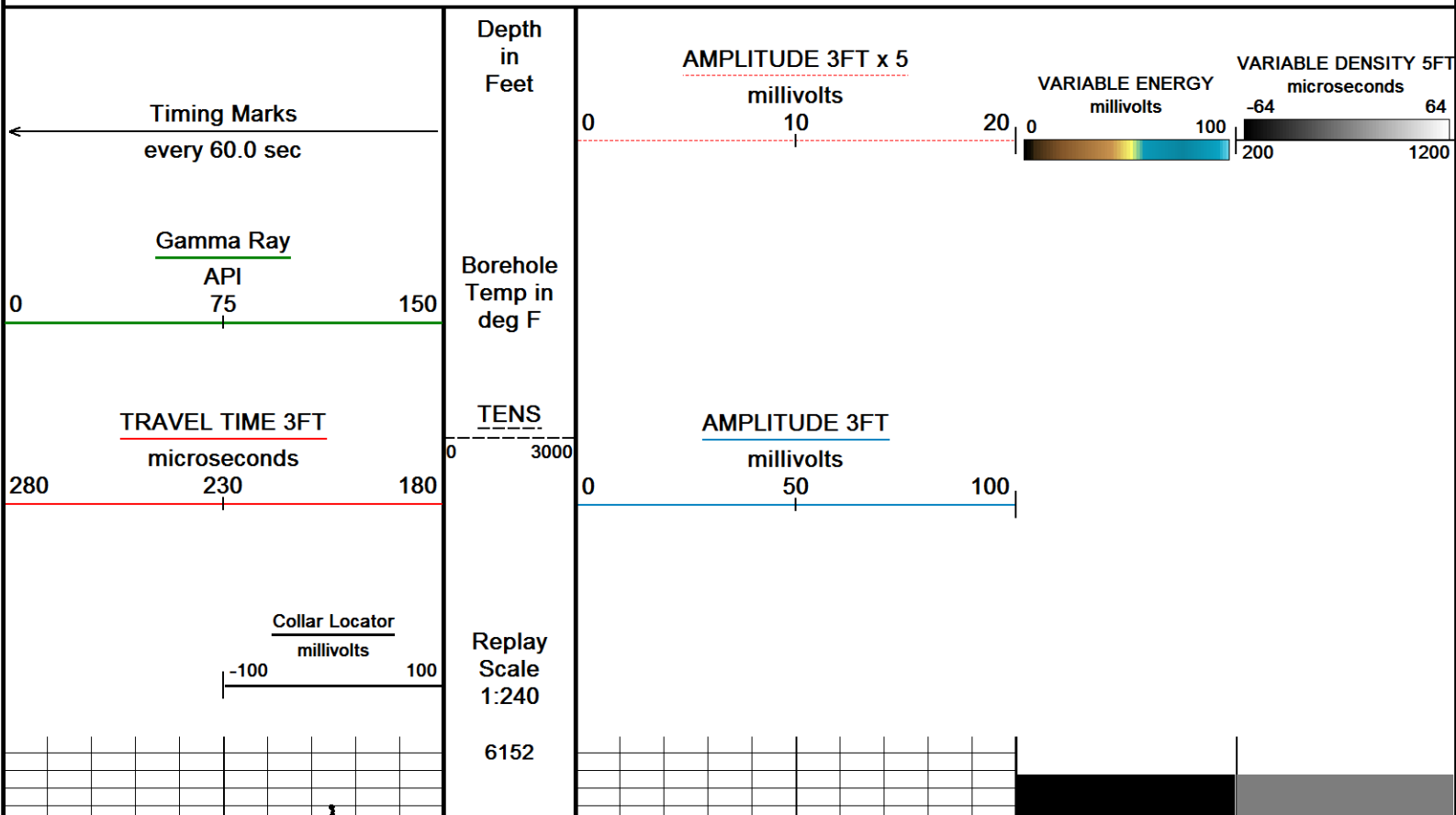
MAIN PASS

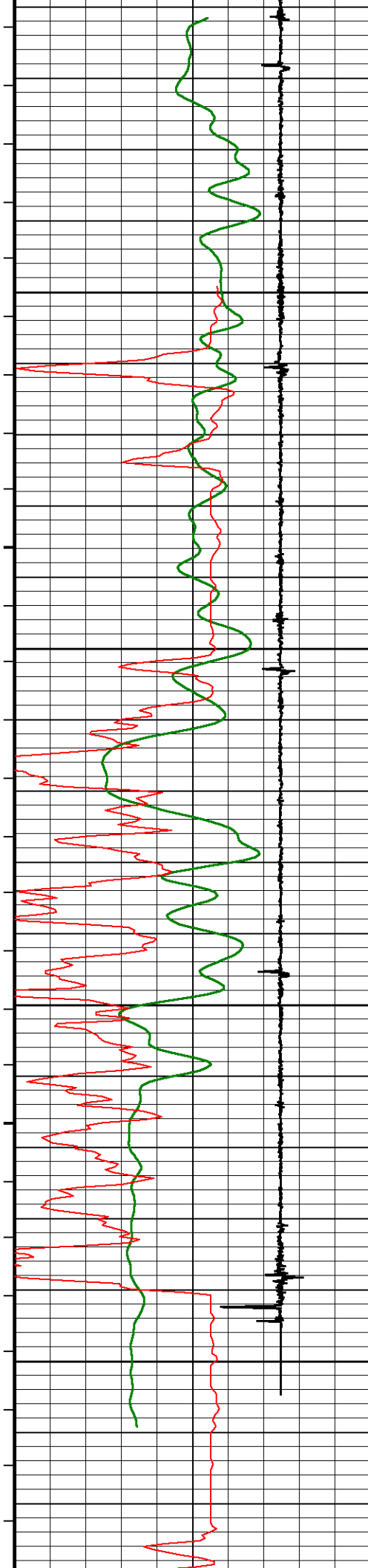
REPEAT PASS

Depth Based Data - Maximum Sampling Increment 12.5cm Plotted on 14-SEP-2017 22:18

Filename: C:\Logs\URSA\BMC B 14A-18-07-95\BMC B 14A-18-07-95 CREB SSSB REPEAT FINAL.dta Recorded on 14-SEP-2017 22:14

System Versions: Logged with 17.01.7206 Plotted with 17.01.7206





6200

190°

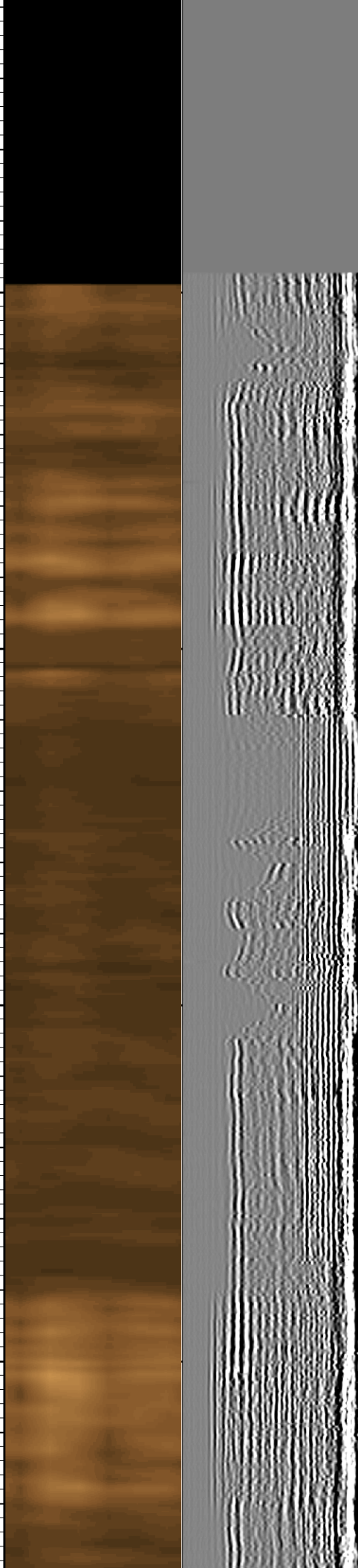
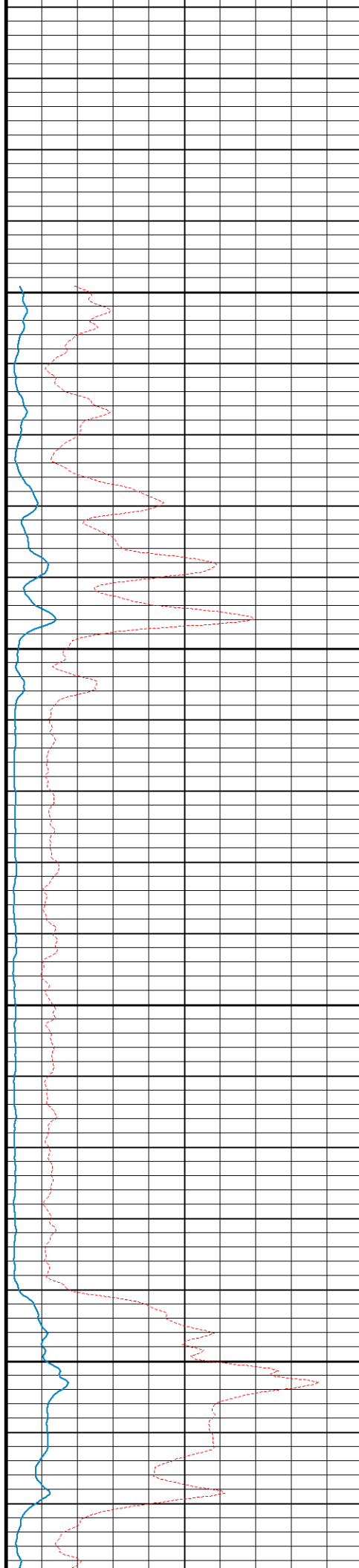
6250

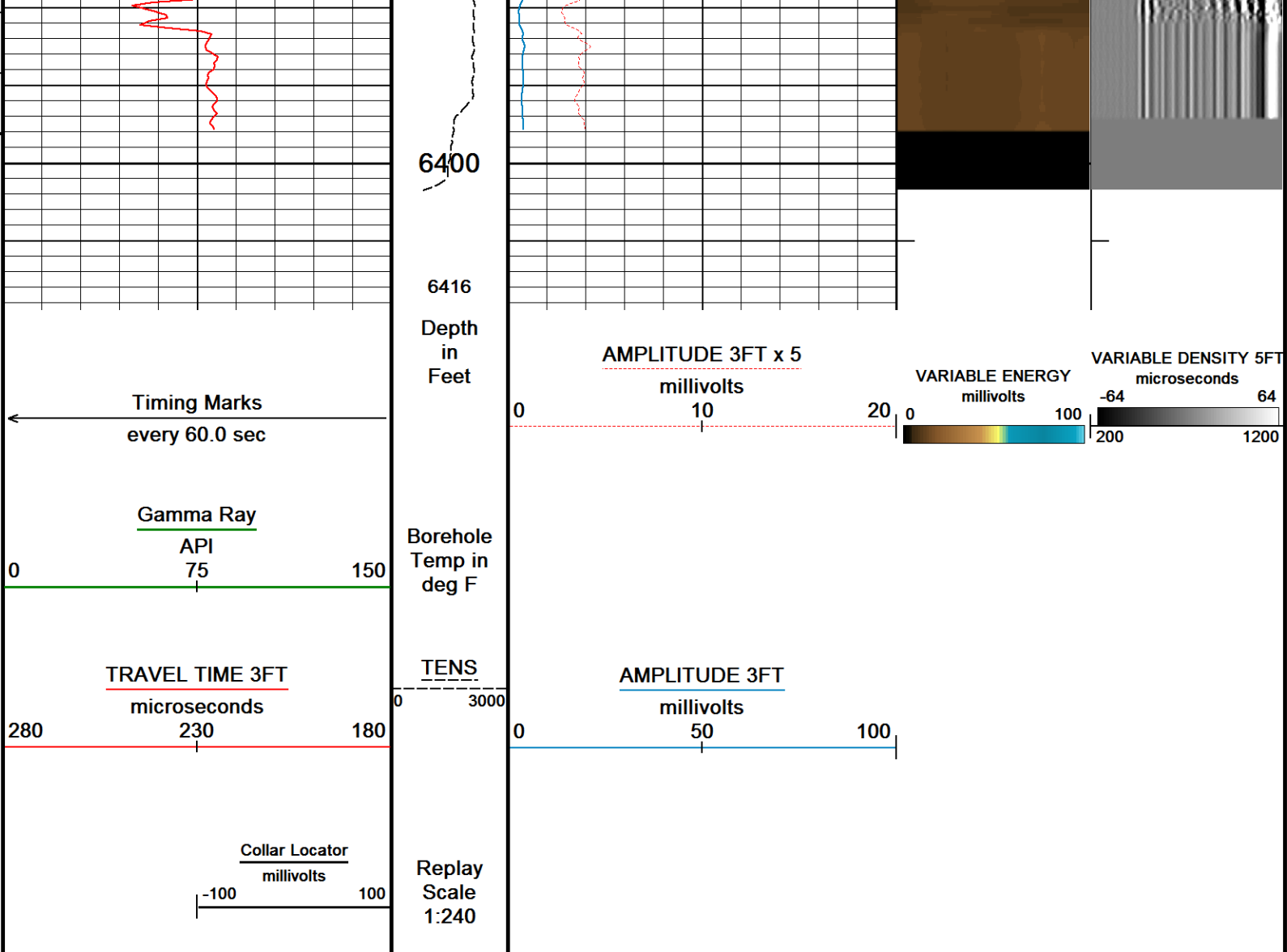
195°

6300

196°

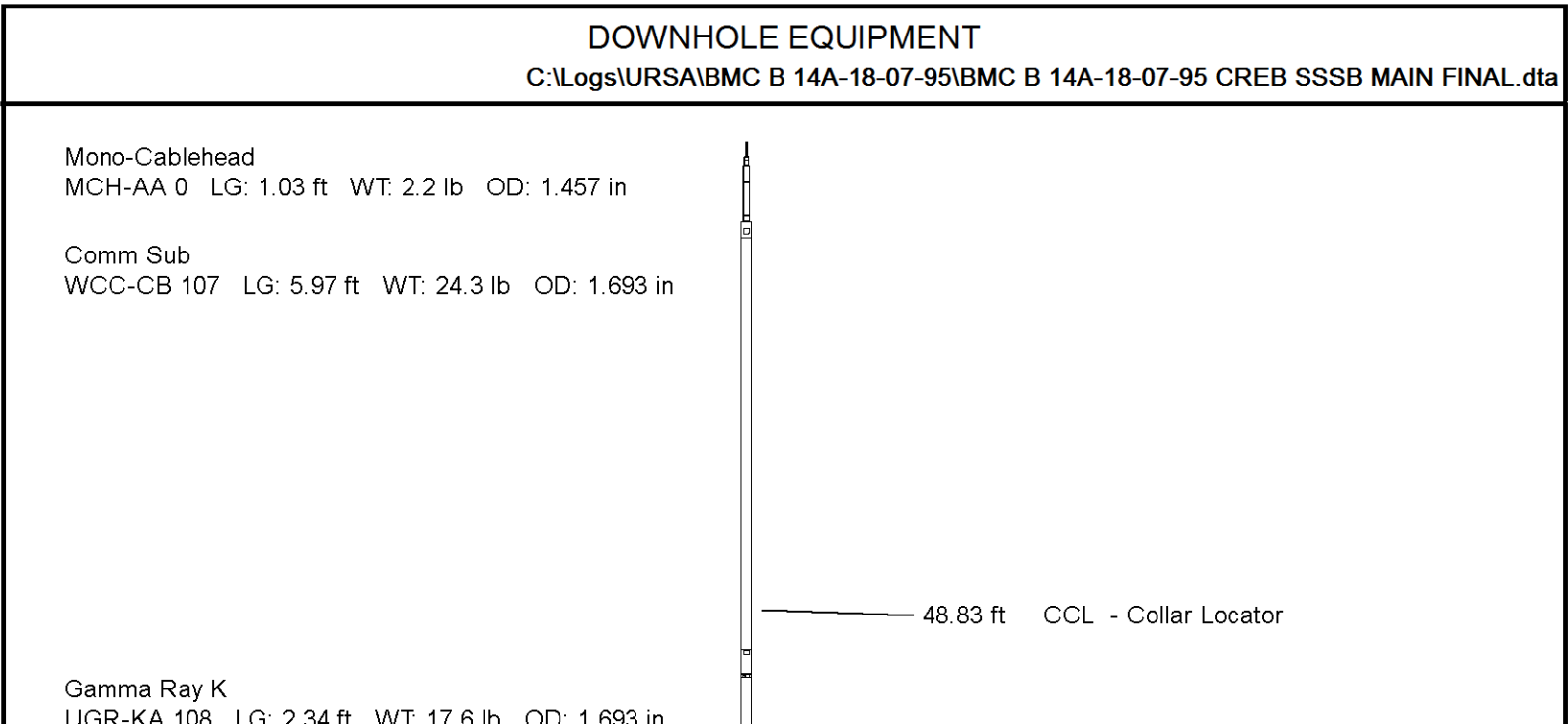
6350





Depth Based Data - Maximum Sampling Increment 12.5cm
Filename: C:\Logs\URSA\BMC B 14A-18-07-95\BMC B 14A-18-07-95 CREB SSSB REPEAT FINAL.dta
System Versions: Logged with 17.01.7206 Plotted with 17.01.7206

↑ REPEAT PASS ↑



UCK-KA 133 LG: 2.23 ft WT: 17.6 lb OD: 1.693 in

Quartz Press, Dual ITB, 43mm
QPG-EA 106 LG: 2.23 ft WT: 8.8 lb OD: 1.693 in

Centroller, 43mm, ITB, 3-arm Bi-Direct
CR3-BA 138 LG: 2.51 ft WT: 8.8 lb OD: 1.693 in

Tool Temperature, 43mm, 177C, 10-pin ITB
TMP-NA 138 LG: 1.93 ft WT: 8.8 lb OD: 1.693 in

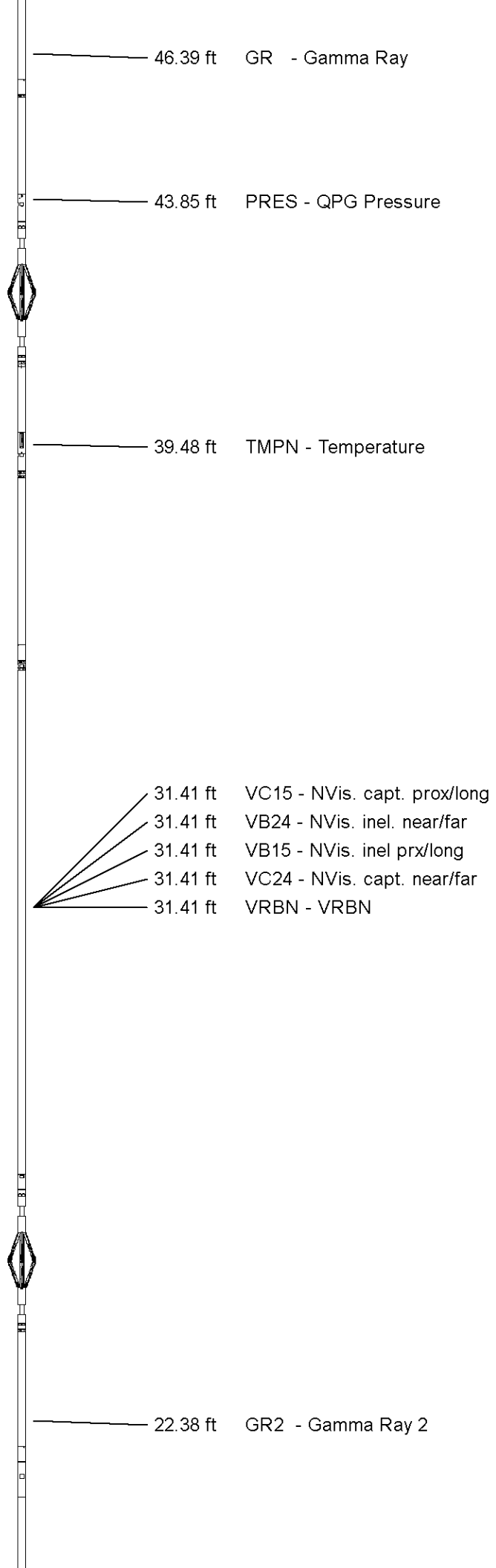
CRE series II processor section
CRP-BA 129 LG: 3.31 ft WT: 15.4 lb OD: 1.654 in

Casing Reservoir Evaluation Tool Sonde
CRM-BA 129 LG: 9.19 ft WT: 46.3 lb OD: 1.693 in

Centroller, 43mm, ITB, 3-arm Bi-Direct
CR3-BA 105 LG: 2.51 ft WT: 8.8 lb OD: 1.693 in

Gamma Ray K
UGR-KA 132 LG: 2.34 ft WT: 17.6 lb OD: 1.693 in

SSB Upper Electronics, ITB
SUE-CA 137 LG: 7.64 ft WT: 26.5 lb OD: 1.654 in



SSB Receiver Sonde
SSS-BA 117 LG: 8.76 ft WT: 30.9 lb OD: 1.693 in

SSB Transmitter Section
STE-BA 129 LG: 2.64 ft WT: 17.6 lb OD: 1.654 in

Centralizer, 35mm, ITB, uni-directional
CEN-LA 370 LG: 2.60 ft WT: 8.8 lb OD: 1.380 in

Total Length: 54.99 ft Weight: 242.5 lb



Tool Zero (0.00ft from bottom)

All measurements relative to tool zero.

SHOP AND FIELD CALIBRATIONS

C:\Logs\URSA\BMC B 14A-18-07-95\BMC B 14A-18-07-95 CREB SSSB MAIN FINAL.dta

WCC shop calibration WCC-CB 107

calibration on 00-JAN-1988 00:00

Tension Compression Shop Calibration

Tool Type: WCC-CB

Serial No: 107

standard +1G Measured

standard -1G Measured

X Acc	1.000 G	250000.0 mv	-1.000 G	0.0 mv
Y Acc	1.000 G	250000.0 mv	-1.000 G	0.0 mv
Z Acc	1.000 G	250000.0 mv	-1.000 G	0.0 mv

UGK Before survey cal UGR-KA 108

Field calibration on 15-AUG-2017 11:53

Gamma Ray Before Survey Calibration

Tool Type: UGR-KA

Serial No: 108

Calibrator No: 101

Background	Calibrator	Standard	Units
46.3	786.0	470.2	API
Delta Counts Per Sec: 739.7	CPS/API = 1.573		

QPG Master Calibration QPG-EA 106

Gauge

Serial Number 220928

Calibration Date 15 Sep 2012

Gauge Type QHB108-16-177

Base Check Date

Max Pressure 16000 PSI

Max Temperature 177 Deg C

Min Pressure 13 PSI

Min Temperature 25 Deg C

Pressure

Pressure polynomial order 3

Temperature polynomial order 3

T0

T1

T2

T3

T4

P0 13.6402

-0.585455

-0.0197893

9.3116e-006

P1 9.3116e-006

42.1819

-0.0208838

2.62627e-005

P2 2.62627e-005

-5.38063e-008

-0.00199429

8.64228e-006

P3 8.64228e-006

-3.99023e-008

3.69856e-011

6.96299e-007

P4

Temperature

Temperature polynomial order 3

T0

T1

T2

T3

T4

25.2302

-0.731527

-0.000858522

-6.86634e-007

Temperature Tool Shop Survey Calibration TMP-NA 138

Temperature Tool Shop Survey Calibration

Temperature Tool Shop Survey Calibration
Tool Type: TMP-NA Serial No: 138

Calibration

Standard		Measured
32	DEGF	36714 Hz
212	DEGF	50849 Hz

UGK Before Survey Cal UGR-KA 132

Field Calibration on 15-AUG-2017 12:40

Gamma Ray Before Survey Calibration

Tool Type: UGR-KA	Serial No: 132
Calibrator No: 101	

Background	Calibrator	Standard	Units
42.6	812.4	470.2	API
Delta Counts Per Sec: 769.8		CPS/API = 1.637	

SSBC Field Calibration SSS-BA 117

Field Calibration on 08-SEP-2017 15:24

Slim Sector Bond Field Calibration

Tool Type	SSS-BA	Serial No	117
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Sensor	Description	Standard	Measured
AMP 3FT	100% Bond	1.00	6.60
	Free Pipe	81.00	2210.50
AMP 5FT	100% Bond	0.40	1.10
	Free Pipe	54.00	4015.30
1 SECTOR AMP	100% Bond	5.00	16.60
	Free Pipe	95.00	1451.60
2 SECTOR AMP	100% Bond	5.00	15.60
	Free Pipe	95.00	1328.80
3 SECTOR AMP	100% Bond	5.00	9.70
	Free Pipe	95.00	1212.30
4 SECTOR AMP	100% Bond	5.00	2.00
	Free Pipe	95.00	1412.20
5 SECTOR AMP	100% Bond	5.00	6.20
	Free Pipe	95.00	1431.60
6 SECTOR AMP	100% Bond	5.00	1.20
	Free Pipe	95.00	1725.00

SSBC Constants SSS-BA 117

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Min Ampl 100% Bond	3.63	MV
Max Ampl 0% Bond	81.03	MV
Casing Size	4.50	IN
Casing Weight	11.6	LB/F
3' TT Correction	0.0	US
DT Fluid	200.0	US/F
Fast Formation TT	38.5	US/F
Cement Cmpr Strength	580	PSI
Casing Velocity	57.00	US/F
Maximum Attenuation	12.00	DB/F

SMS Constants SMS-A 0

Last Edited on 00-JAN-1988 00:00

Cement Weight	0.00	LB/G
Cement Weight	0.00	LB/G

COMPANY	URSA OPERATING COMPANY				
WELL	BMC B 14A-18-07-95				
FIELD	WILDCAT				
PROVINCE/COUNTY	GARFIELD				
COUNTRY/STATE	USA / COLORADO				
Elevation Kelly Bushing	5117	feet	Bottom Log Interval	6822.00	feet
Elevation Drill Floor	5117	feet	Depth Driller	6822.00	feet
Elevation Ground Level	5100	feet	Depth Logger	6400.00	feet



Weatherford®

SLIM SECTOR BOND LOG