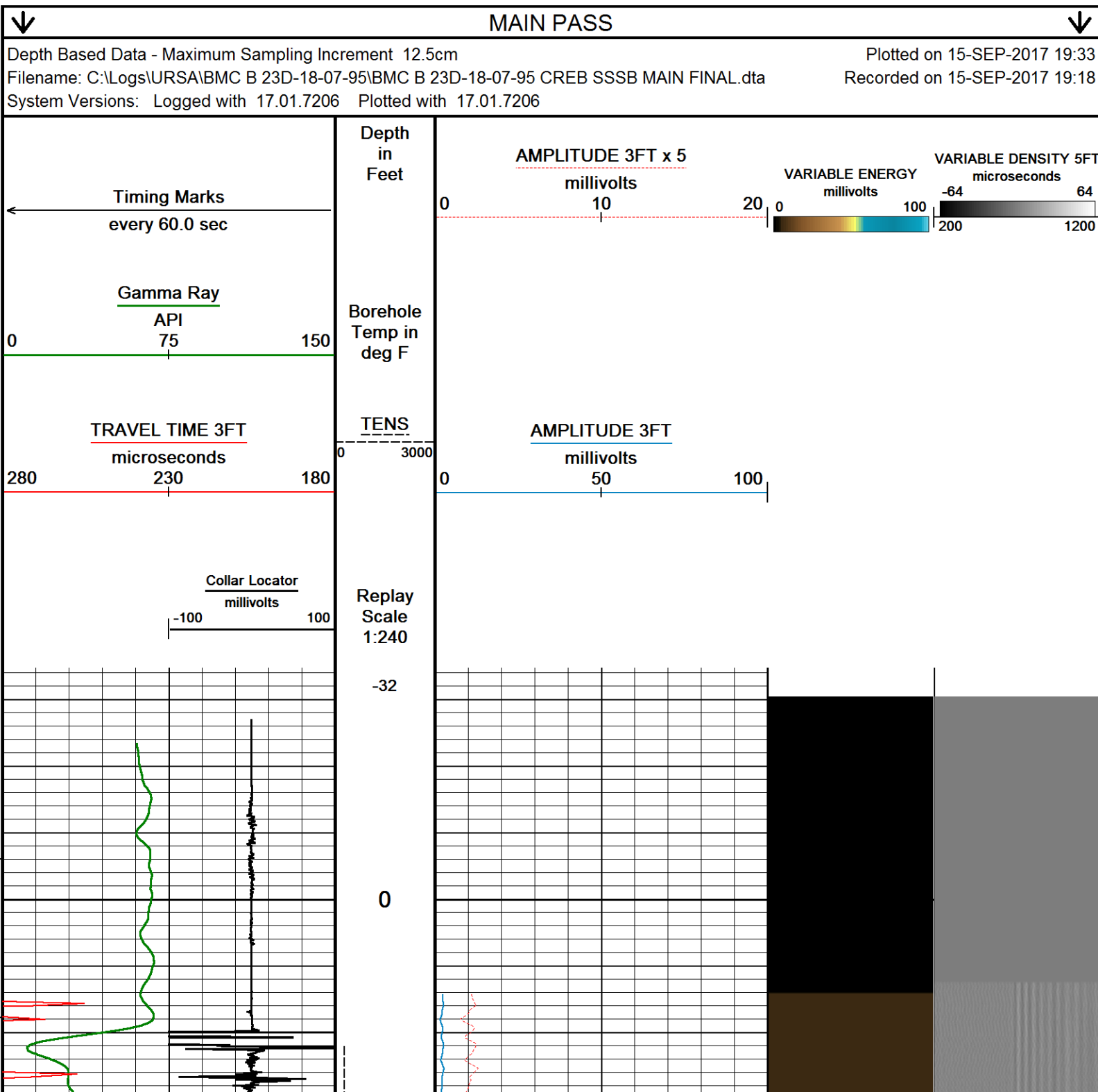
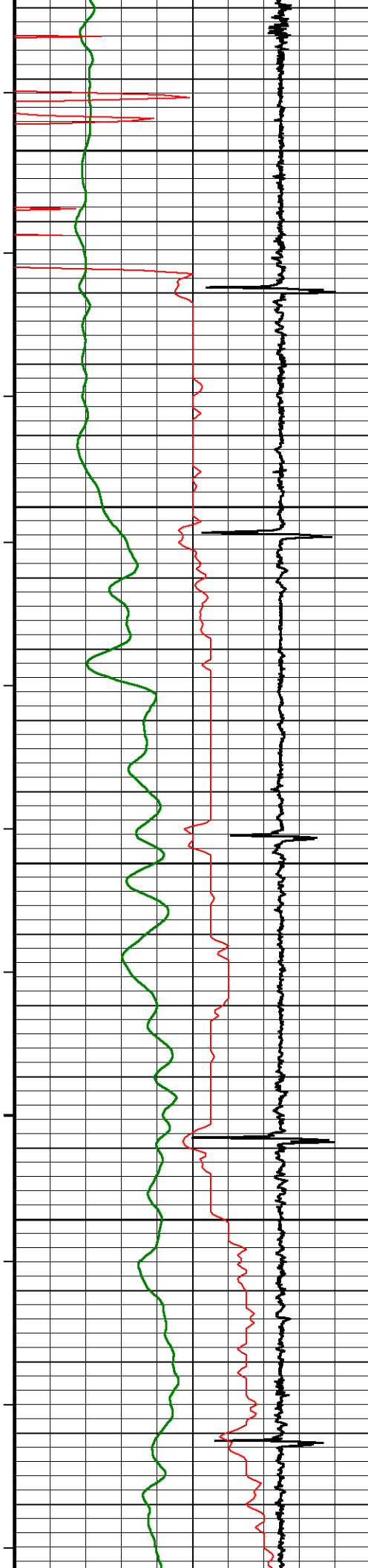
				SLIM SECTOR BOND LOG			
COMPANY WELL FIELD PROVINCE/COUNTY COUNTRY/STATE LOCATION				URSA OPERATING COMPANY BMC B 23D-18-07-95 WILDCAT GARFIELD USA / COLORADO 2261' FNL & 0623' FWL			
SEC 18	TWP 7S	RGE 95W	Other Services CREB				
Latitude		Longitude		API Number		05-045-23318	
Permanent Datum GROUND LEVEL, Elevation 5100 feet				Log Measured From KB, 17.00 feet above Permanent Datum		Drilling Measured From KB	
Permanent Datum GROUND LEVEL, Elevation 5100 feet				Log Measured From KB, 17.00 feet above Permanent Datum		Drilling Measured From KB	
Date				15-SEP-2017			
Run Number				ONE			
Service Order							
Type Log				SSSB			
Depth Driller				6986.00			
Depth Logger				6620.00			
Top Log Interval				3300.00			
Bottom Log Interval				6986.00			
Hole Fluid Type				WATER			
Hole Fluid Level				0.00			
Restriction ID				3.875			
Max Recorded Temp				198.00			
Well Head Pressure				0.00			
Well Head Equipment				N/A			
Time Well Ready				ROA			
Time Logger Bottom				SEE LOG			
Unit				14115			
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	6986.00	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 80 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. 198F

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.





56°

50

55°

100

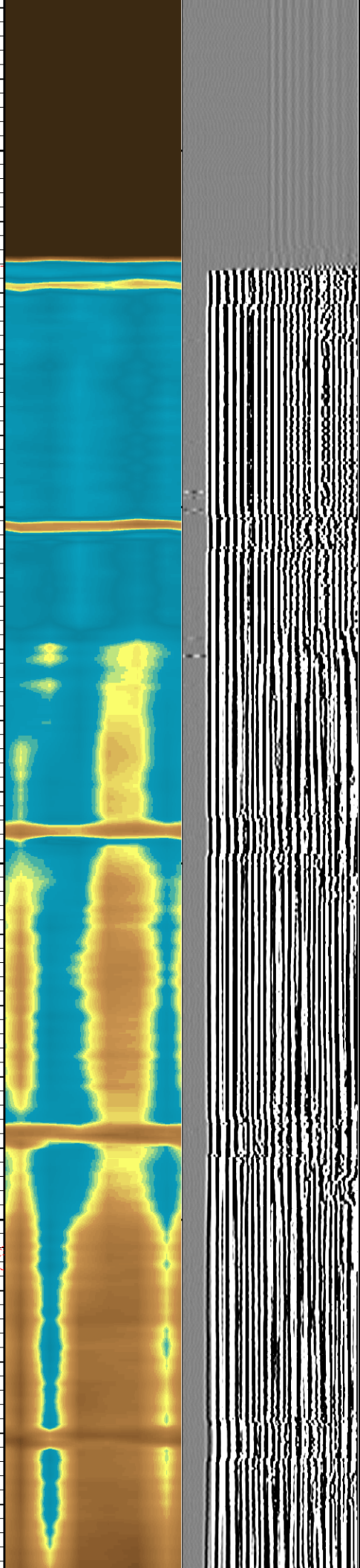
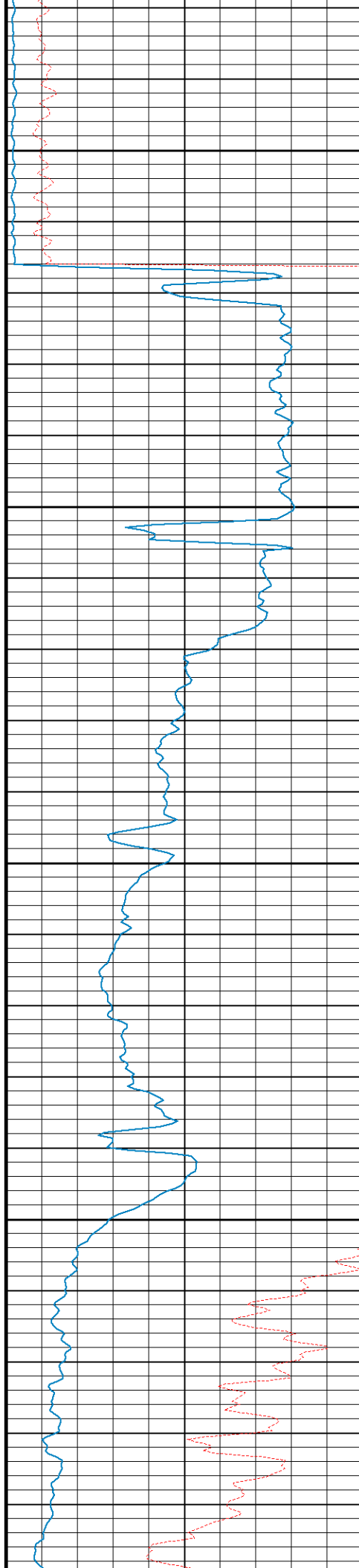
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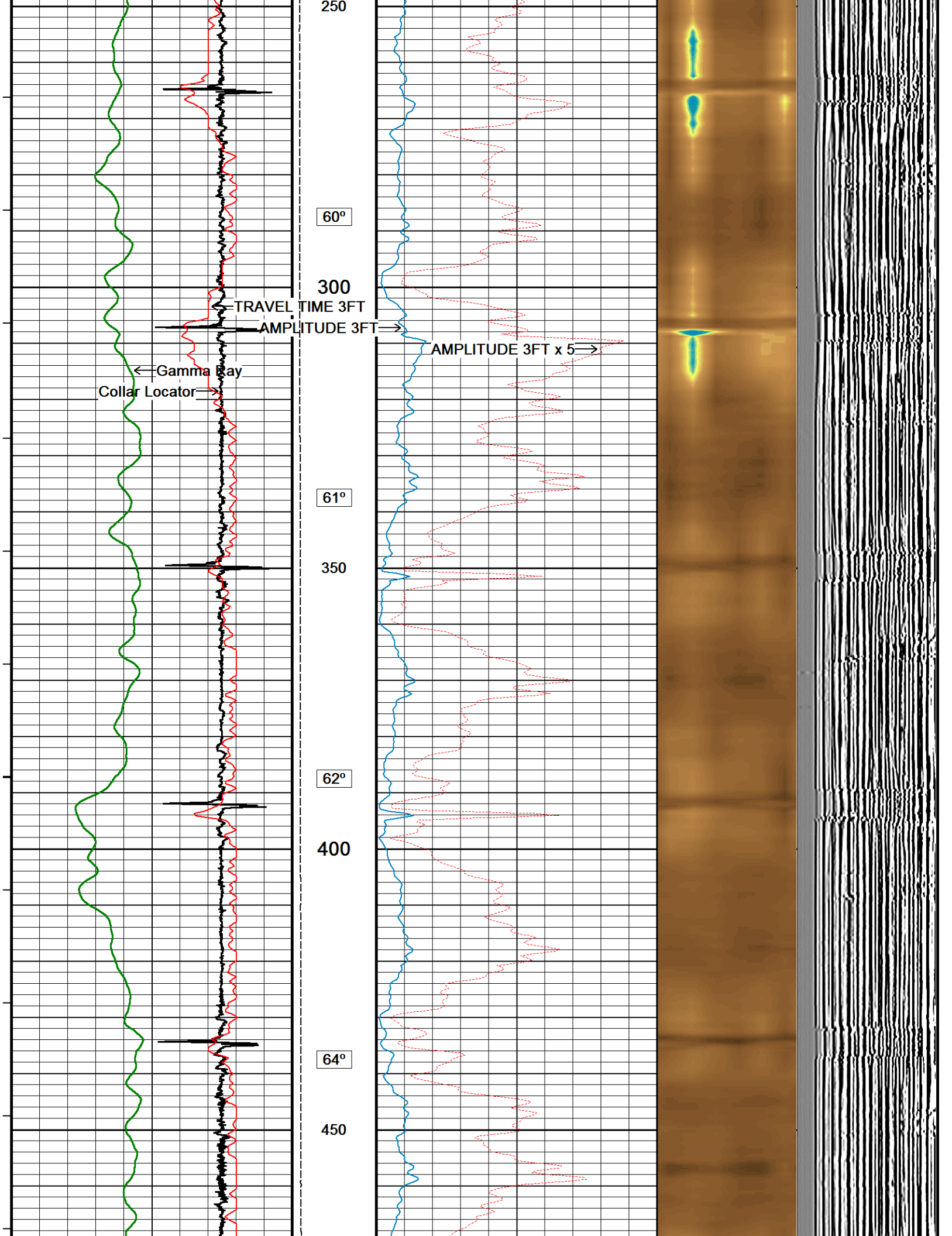
150

57°

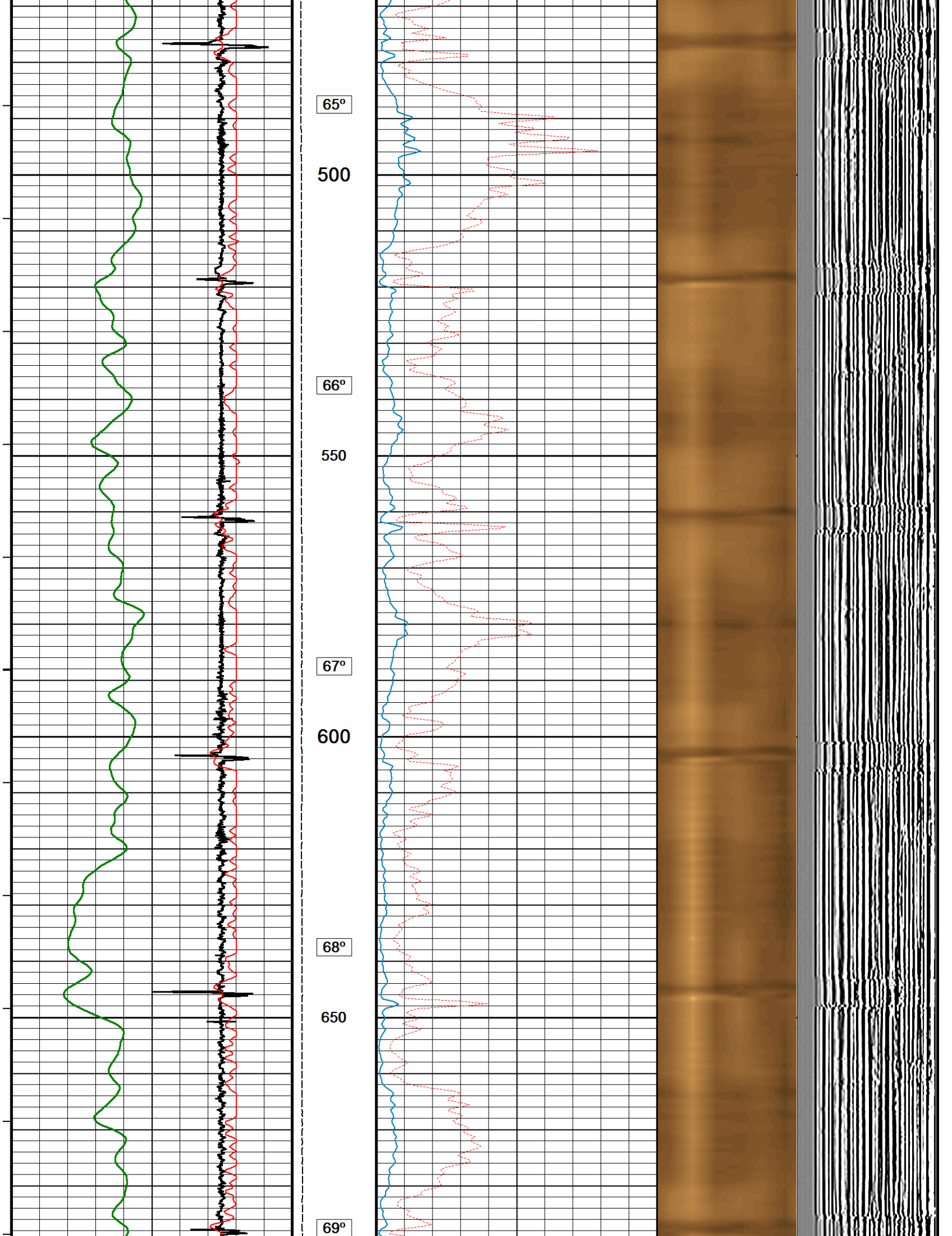
200

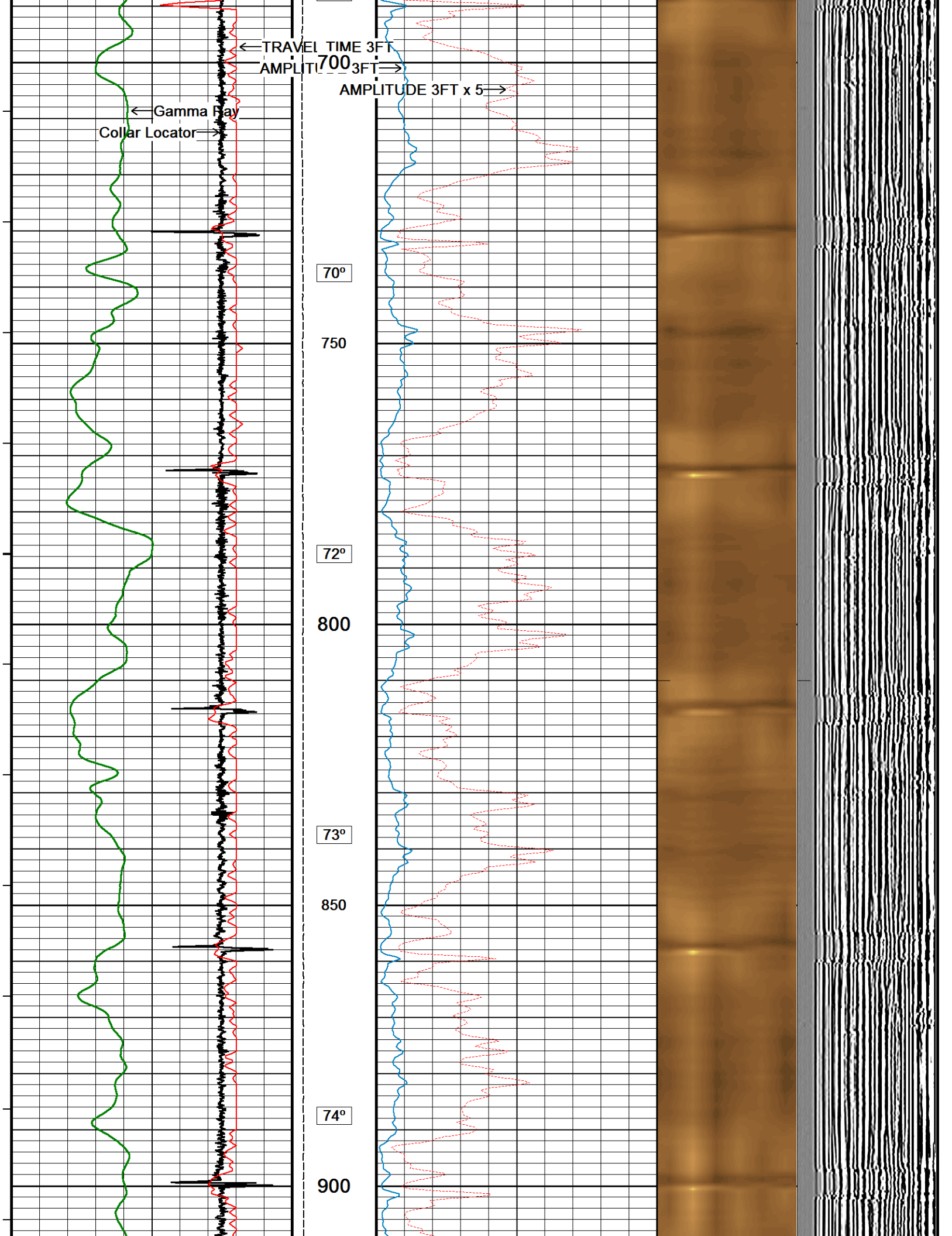
58°

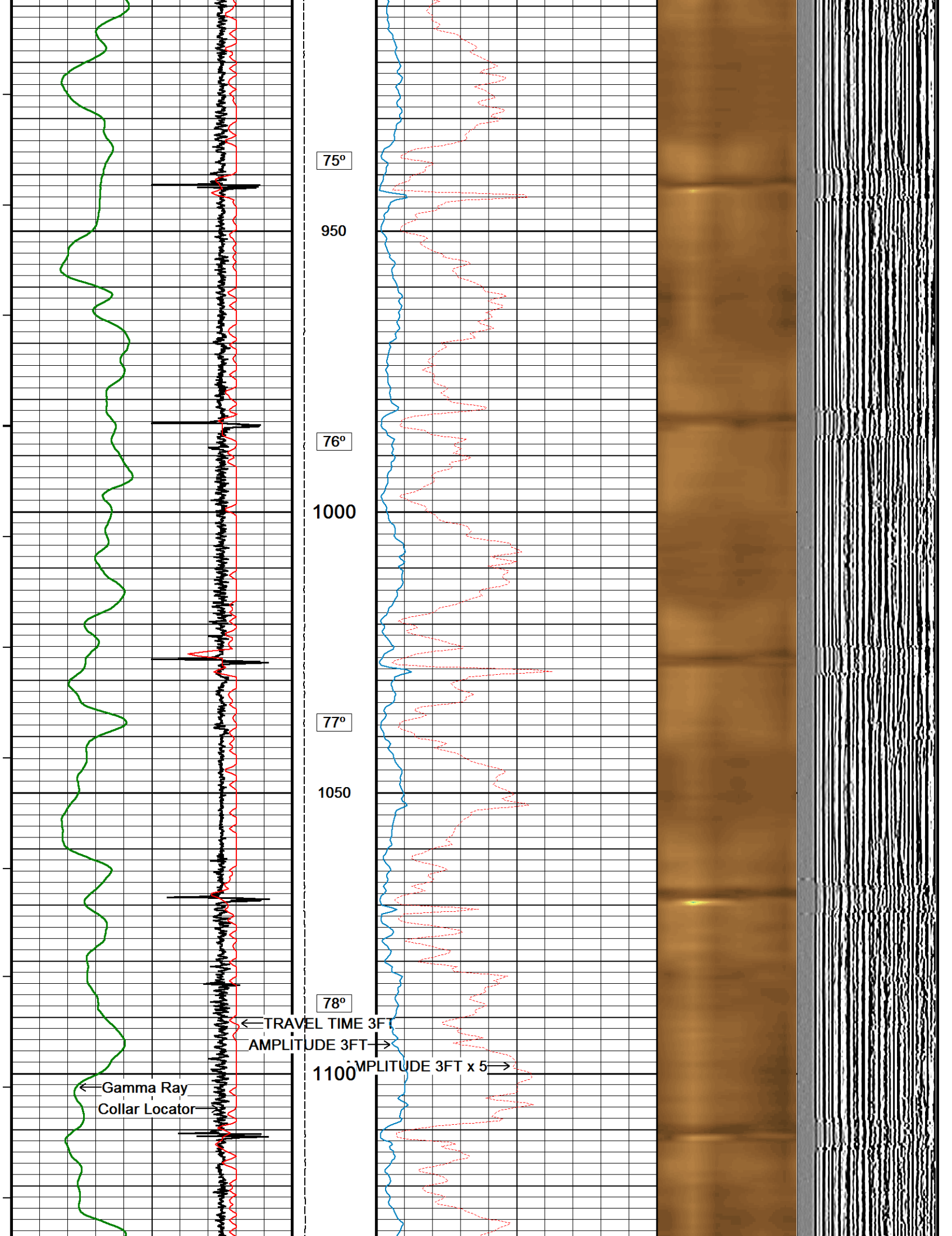


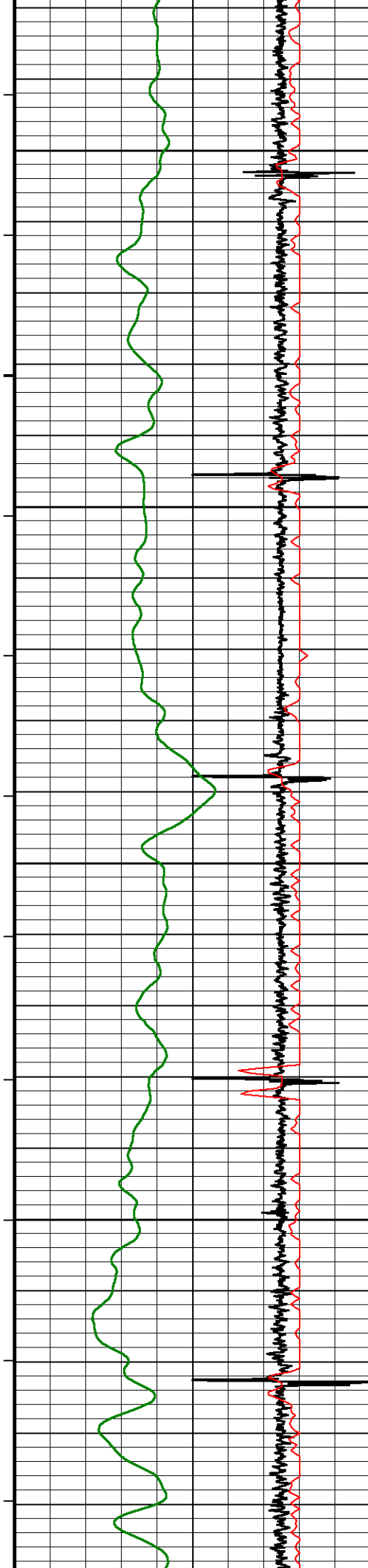












79°

1150

80°

1200

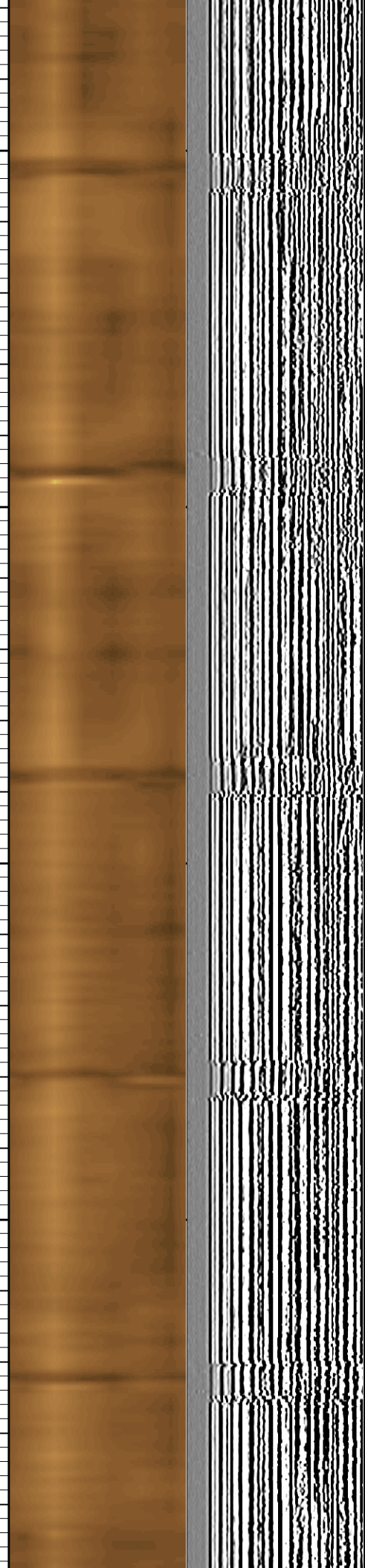
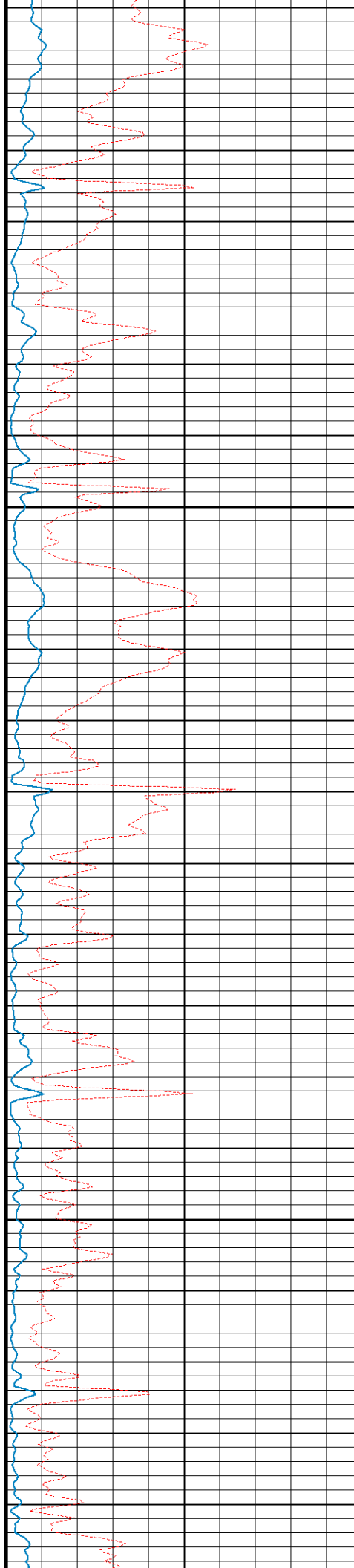
81°

1250

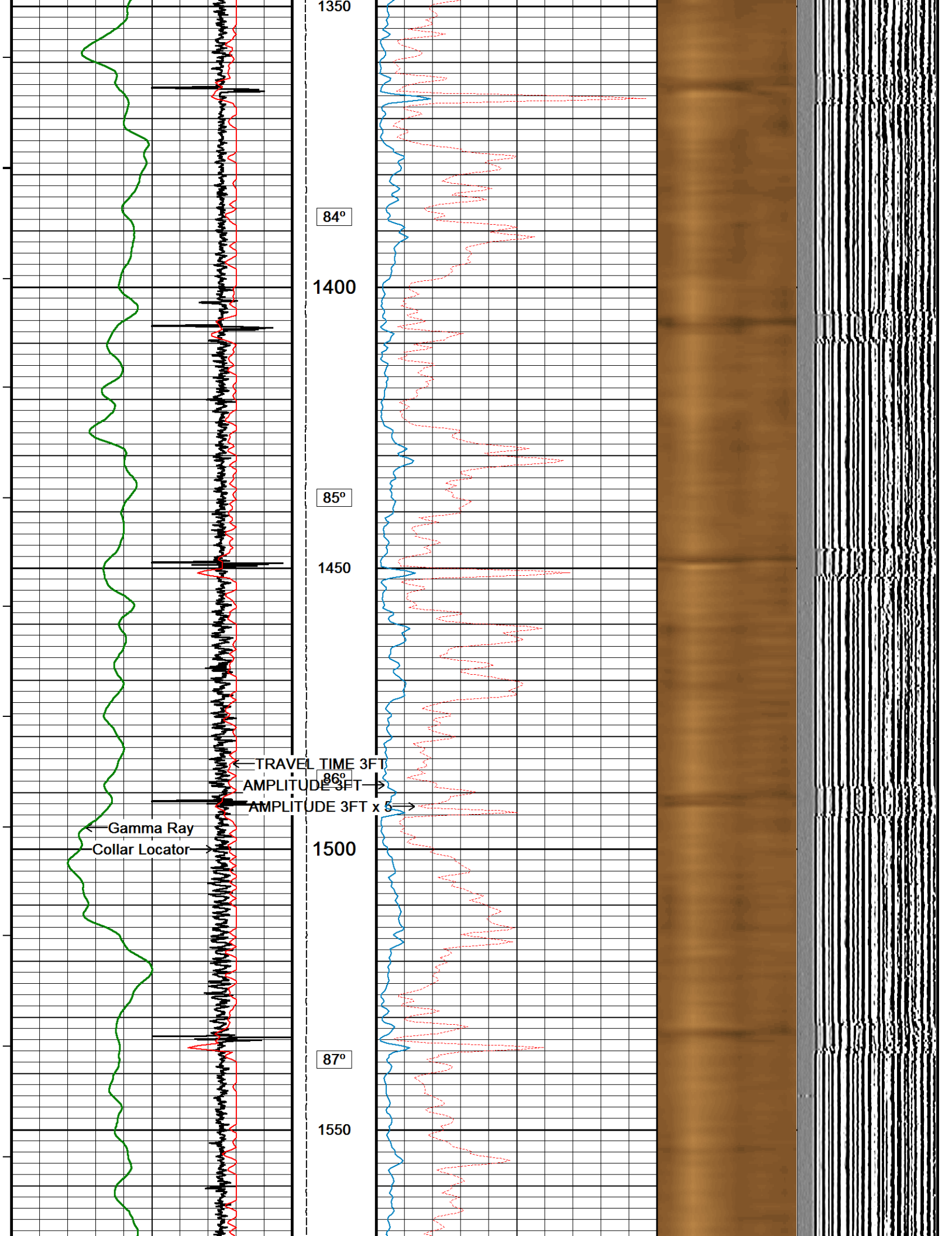
82°

1300

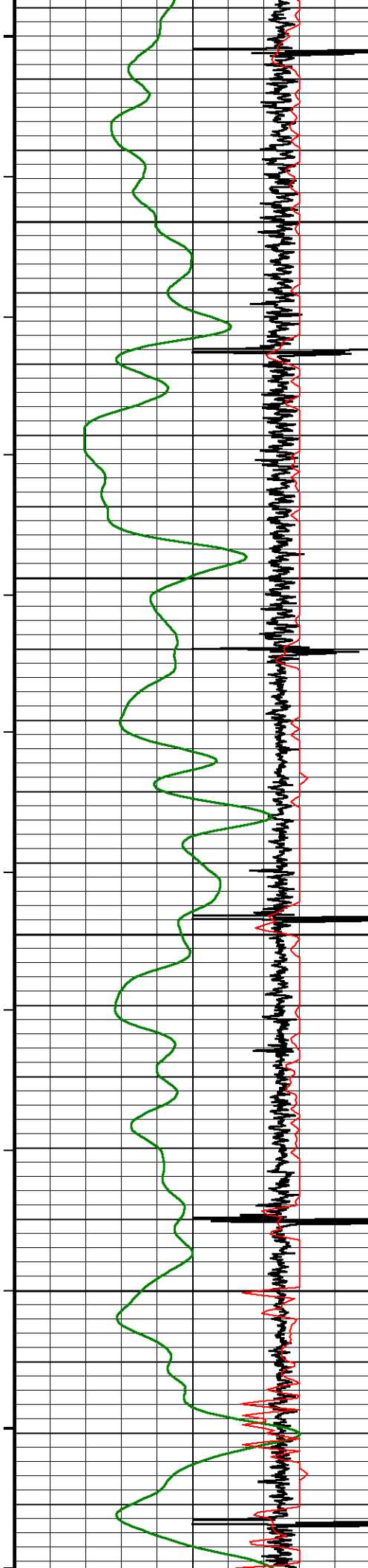
83°











88°

1600

89°

1650

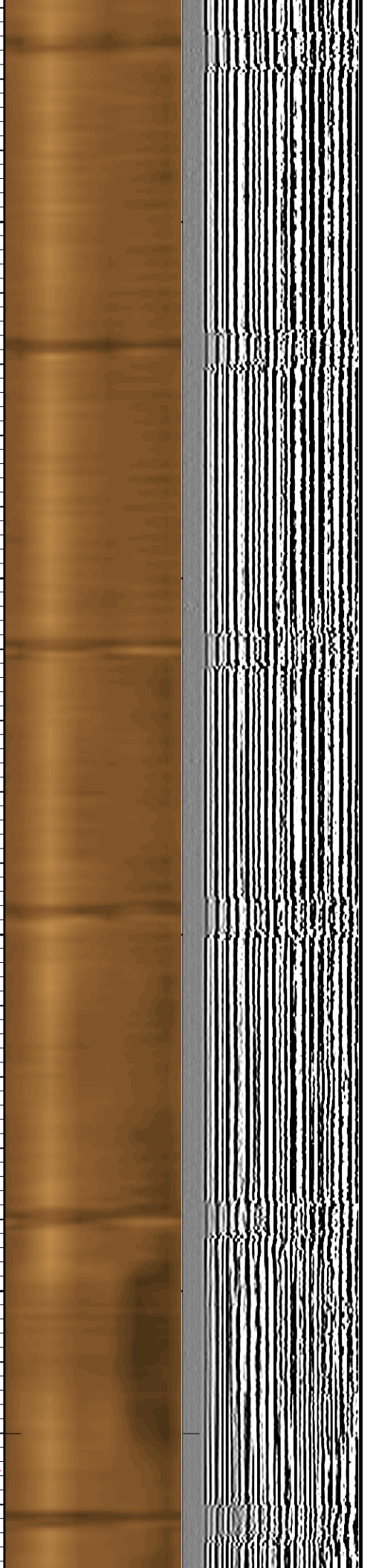
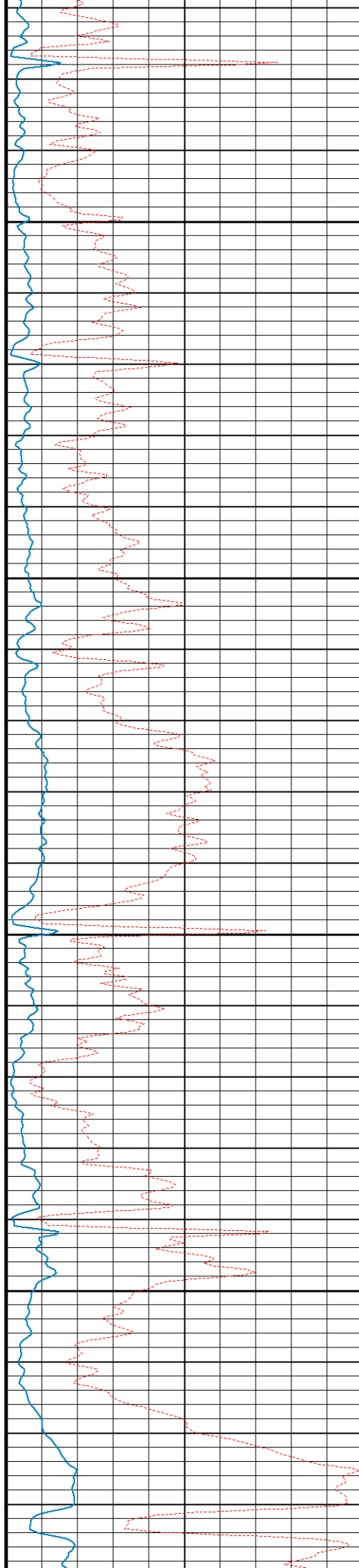
90°

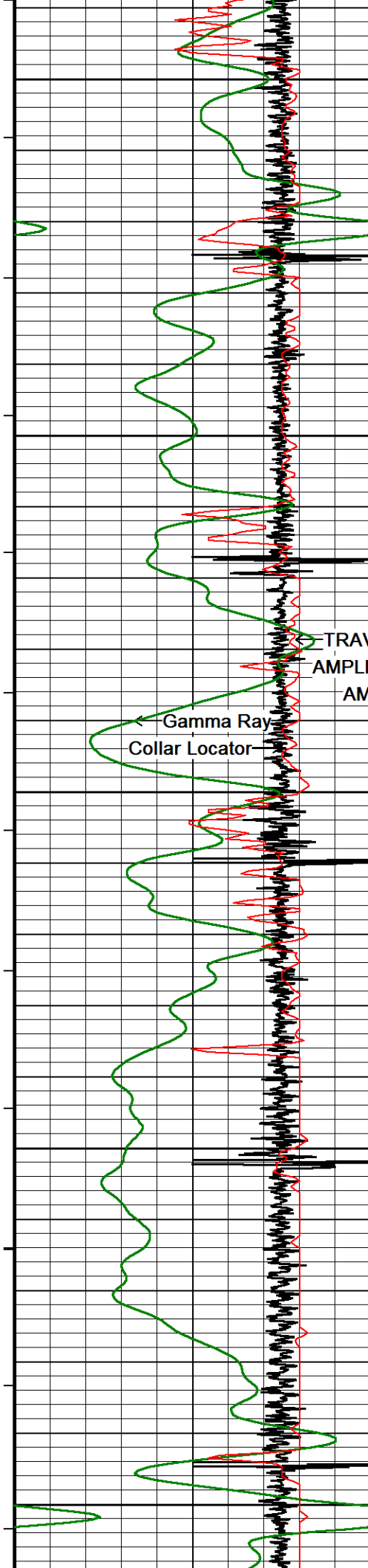
1700

91°

1750

92°





1800

93°

1850

← TRAVEL TIME 3FT  
AMPLITUDE 3FT →  
94° AMPLITUDE 3FT x 5 →

Gamma Ray  
Collar Locator

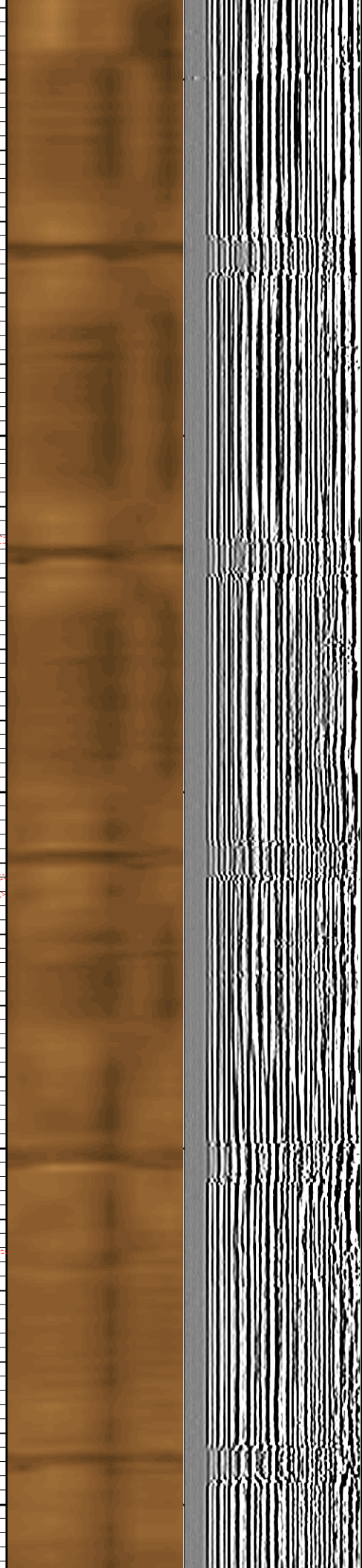
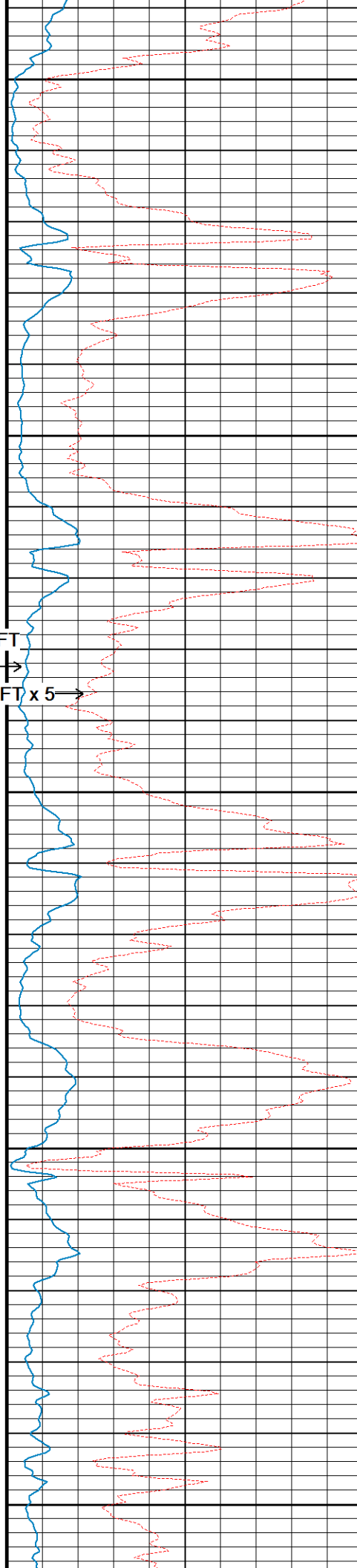
1900

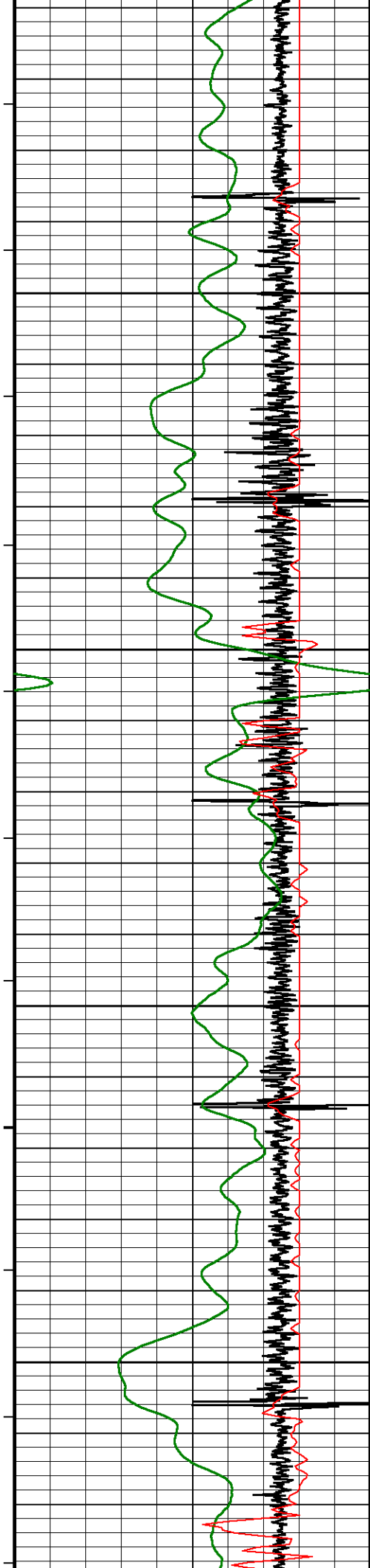
95°

1950

96°

2000





97°

2050

98°

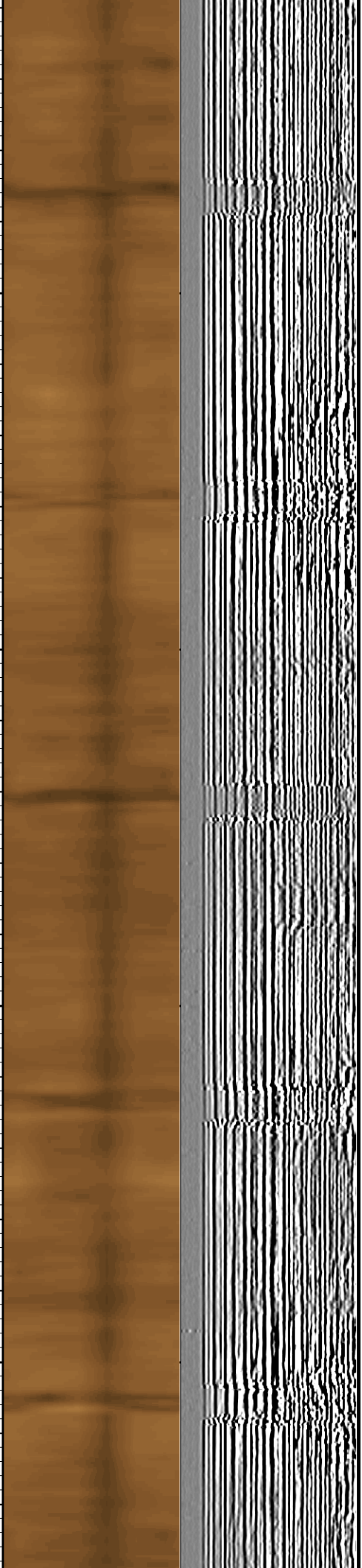
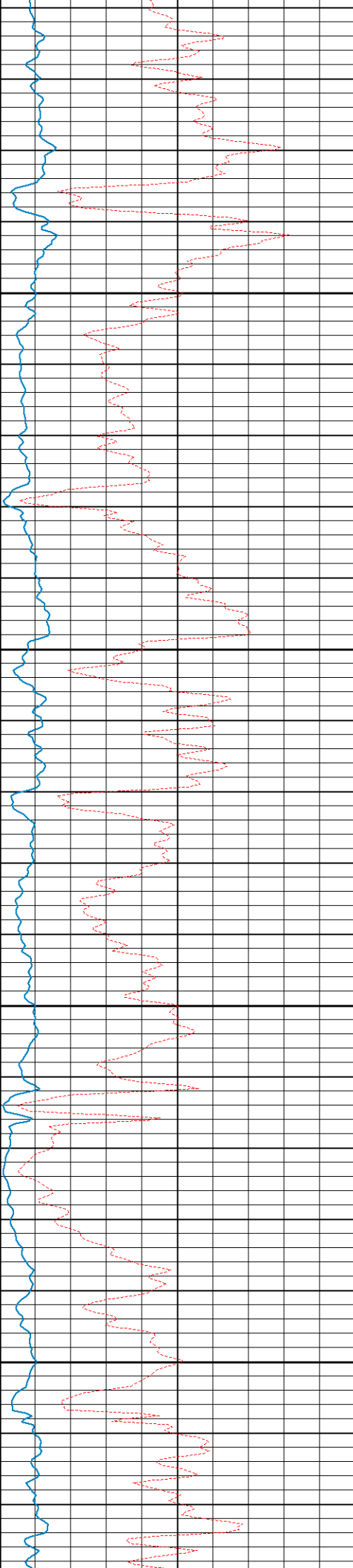
2100

99°

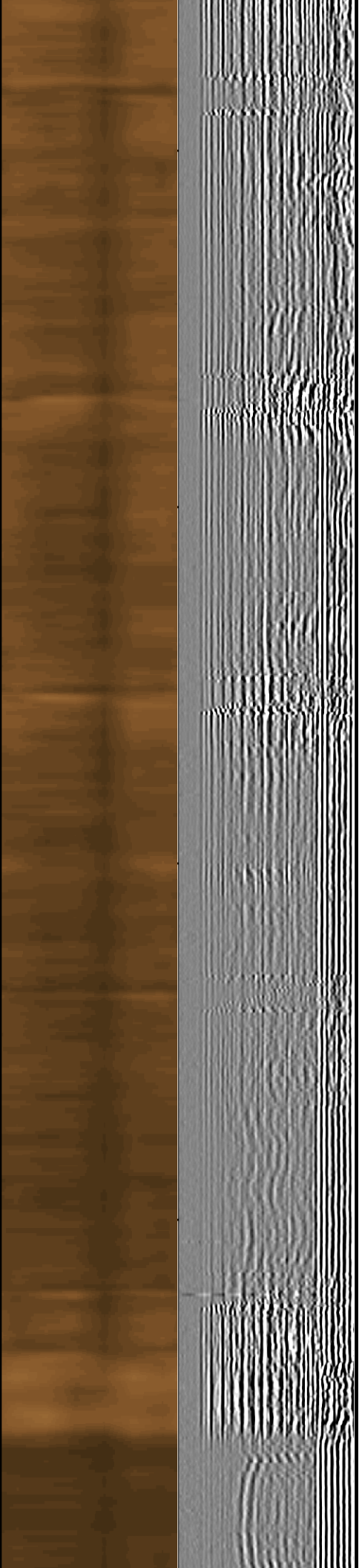
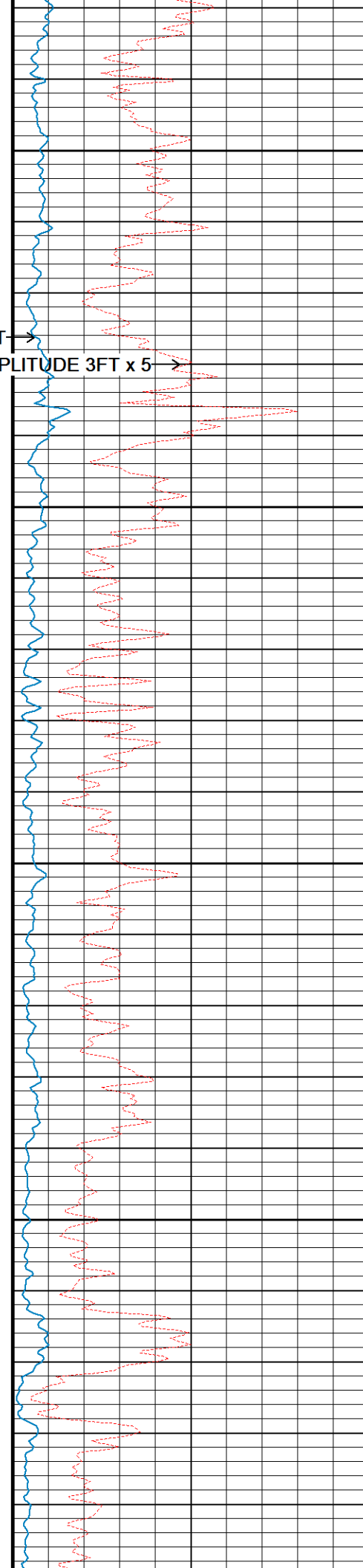
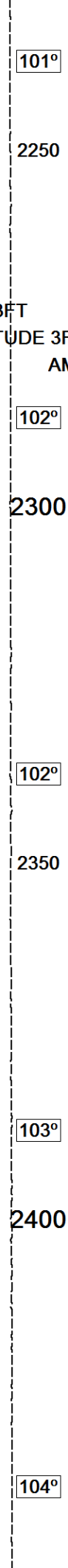
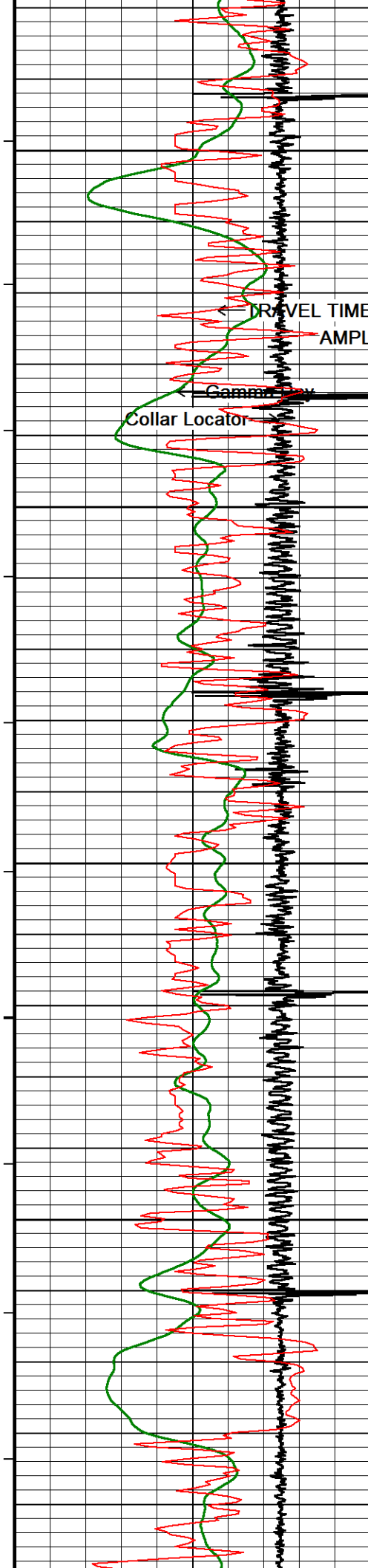
2150

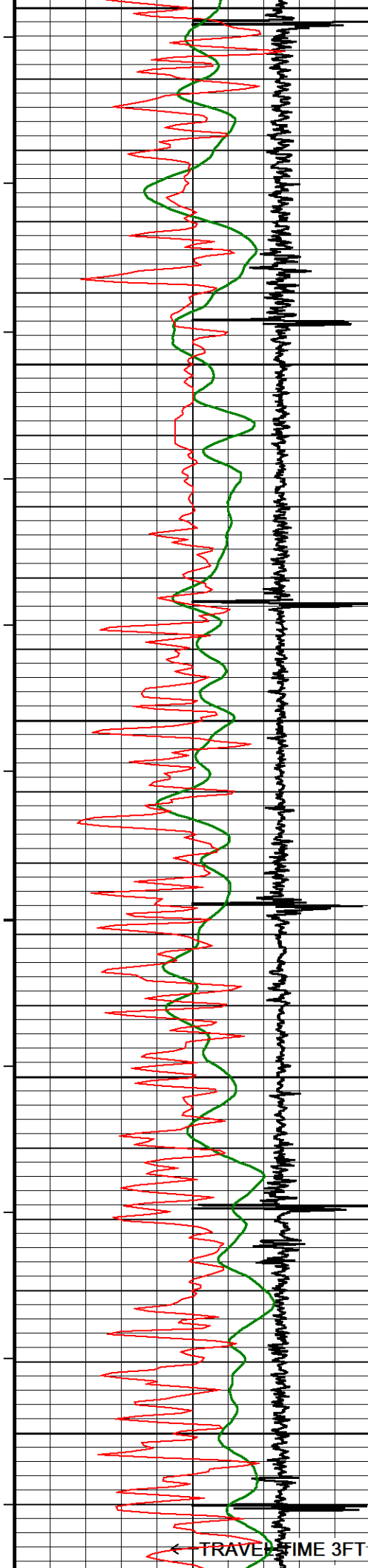
100°

2200

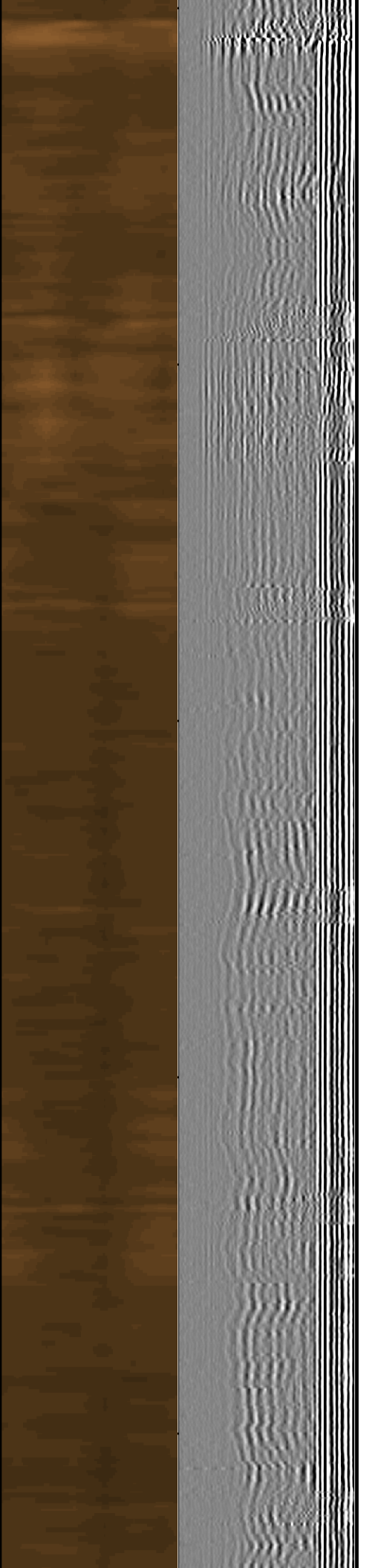
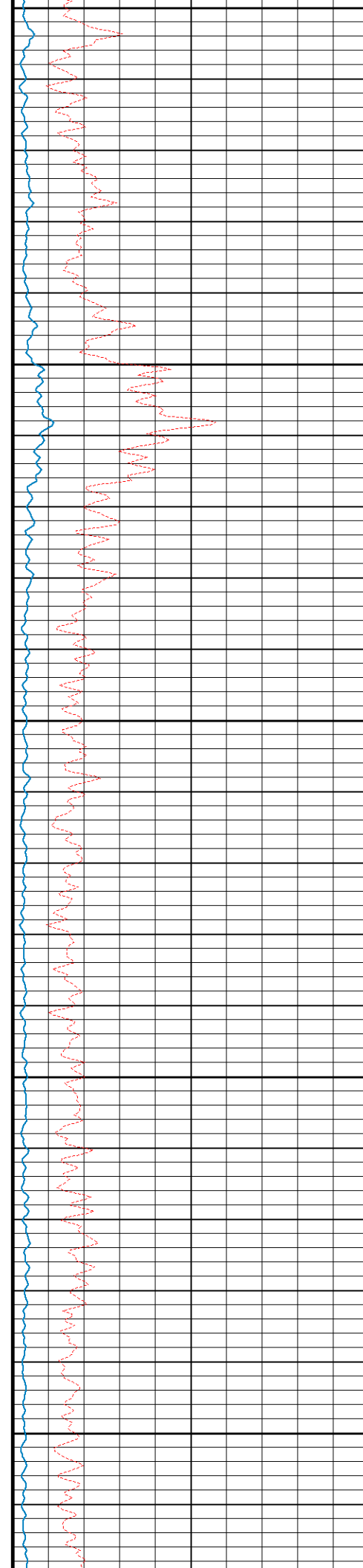




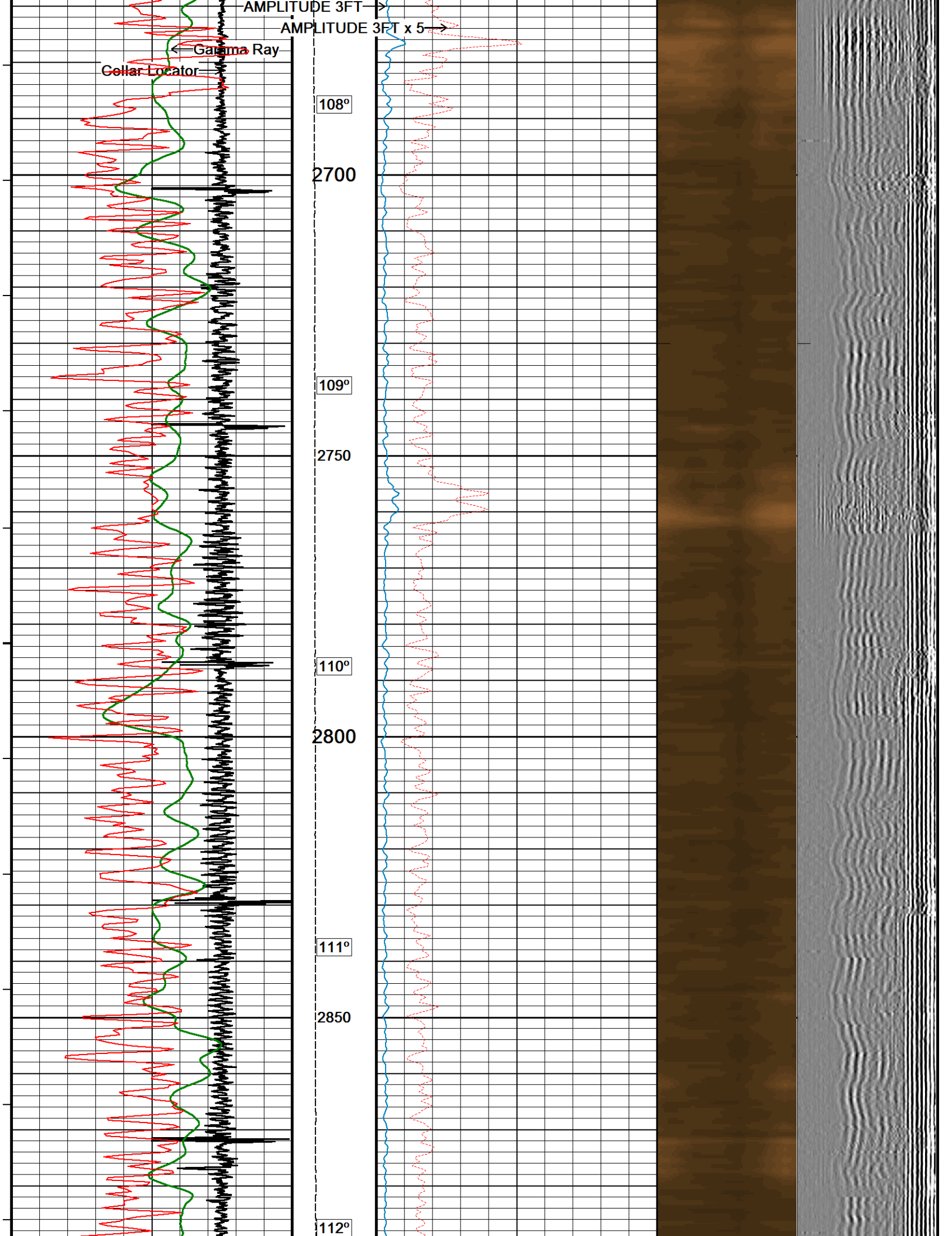


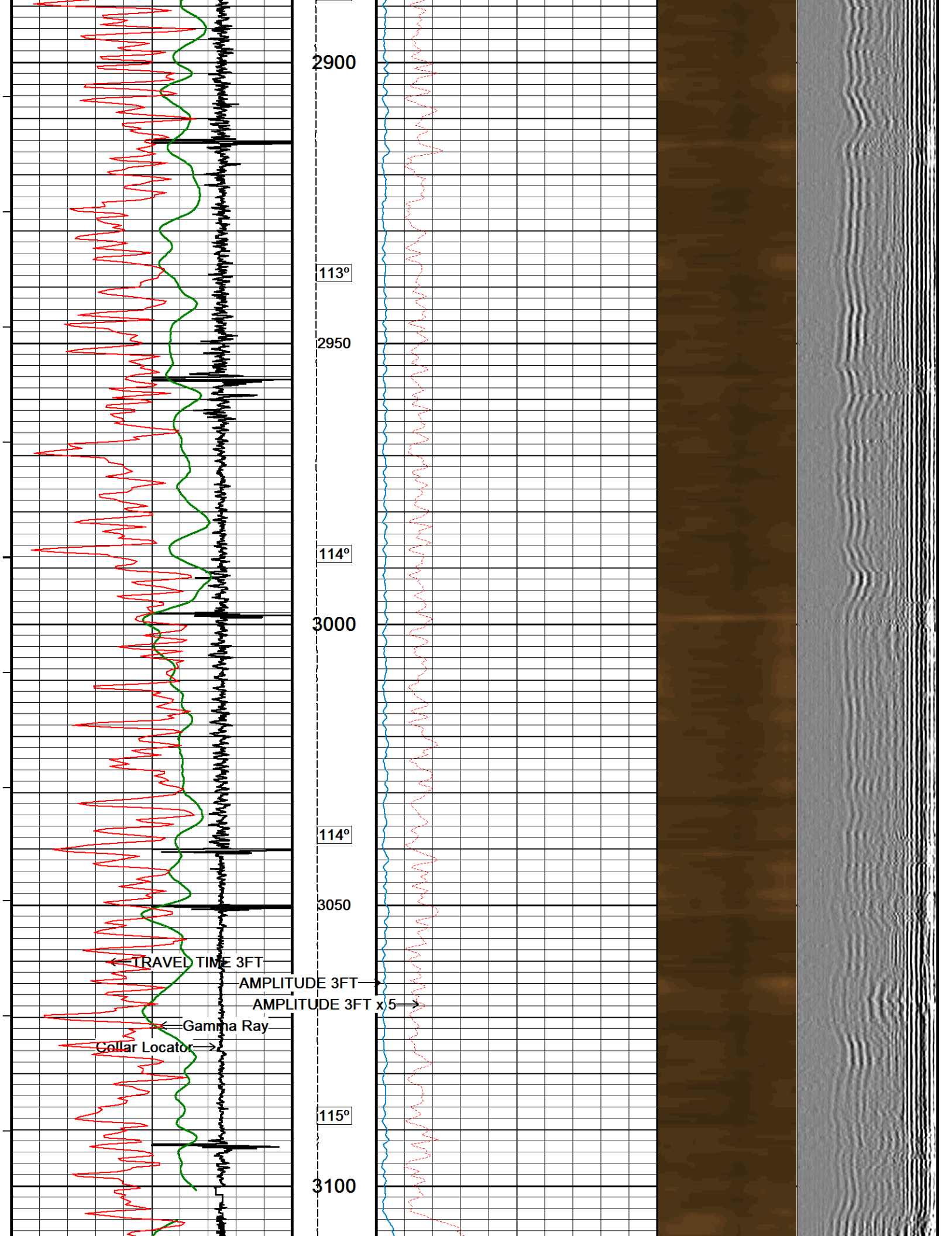


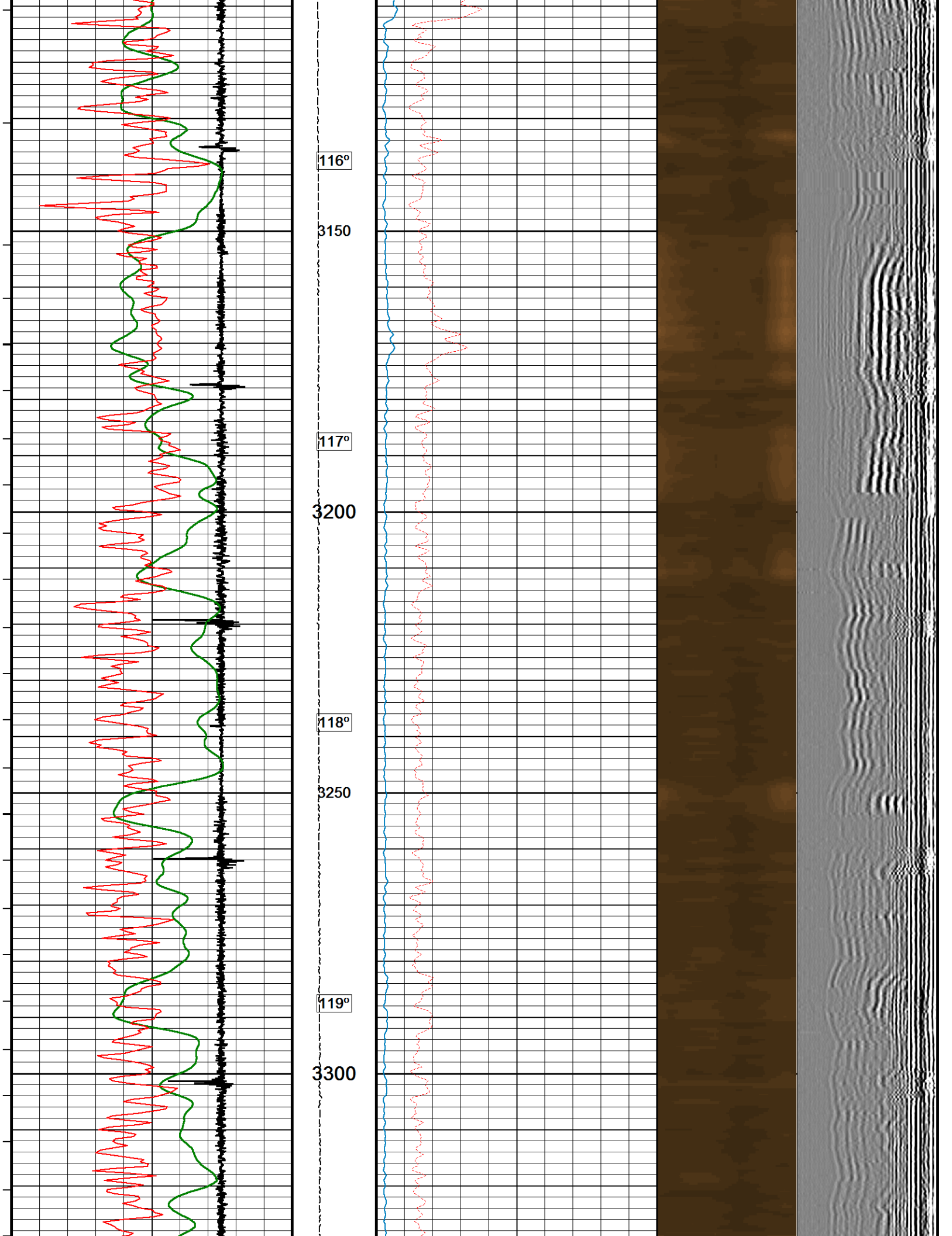
2450  
105°  
2500  
106°  
2550  
107°  
2600  
107°  
2650

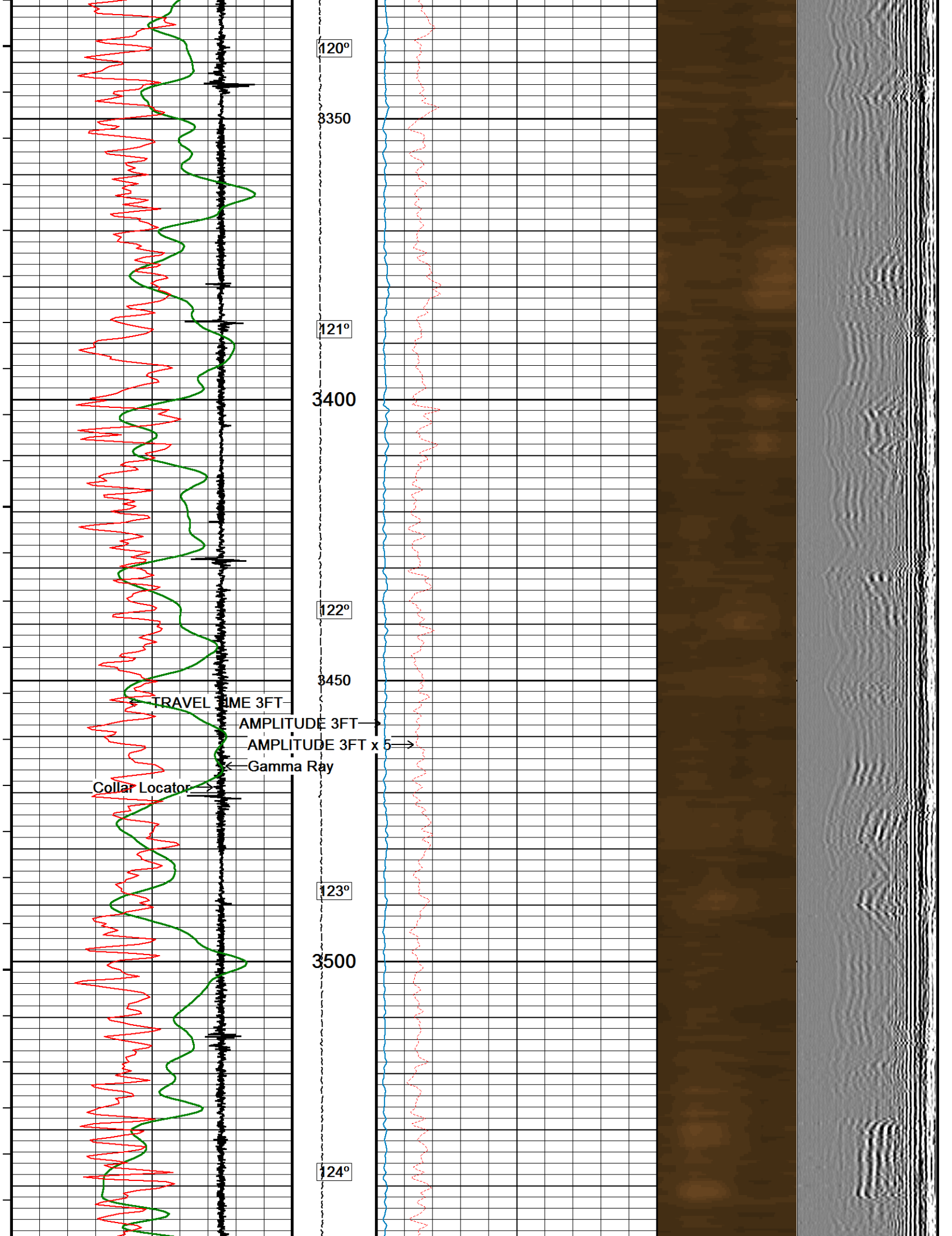




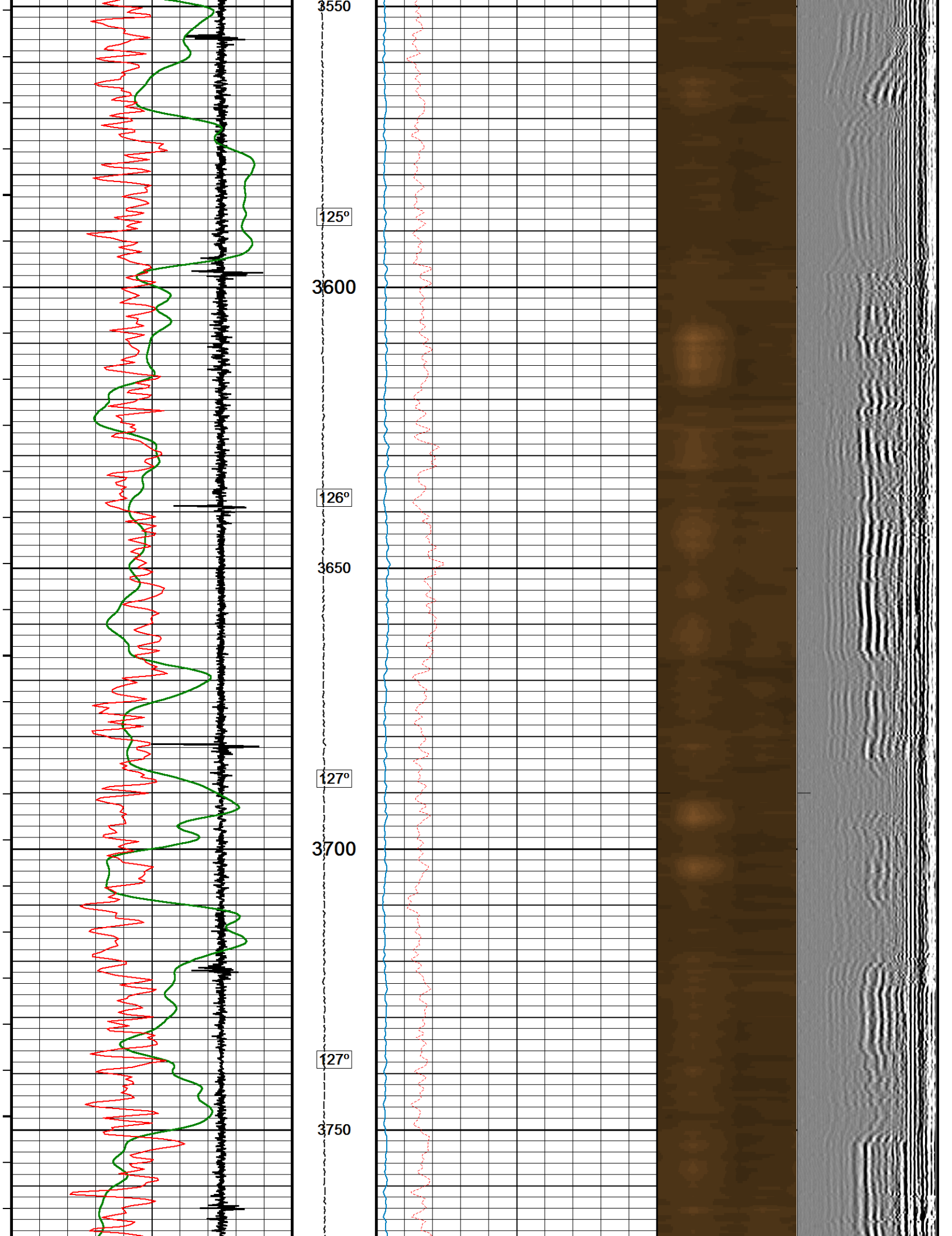




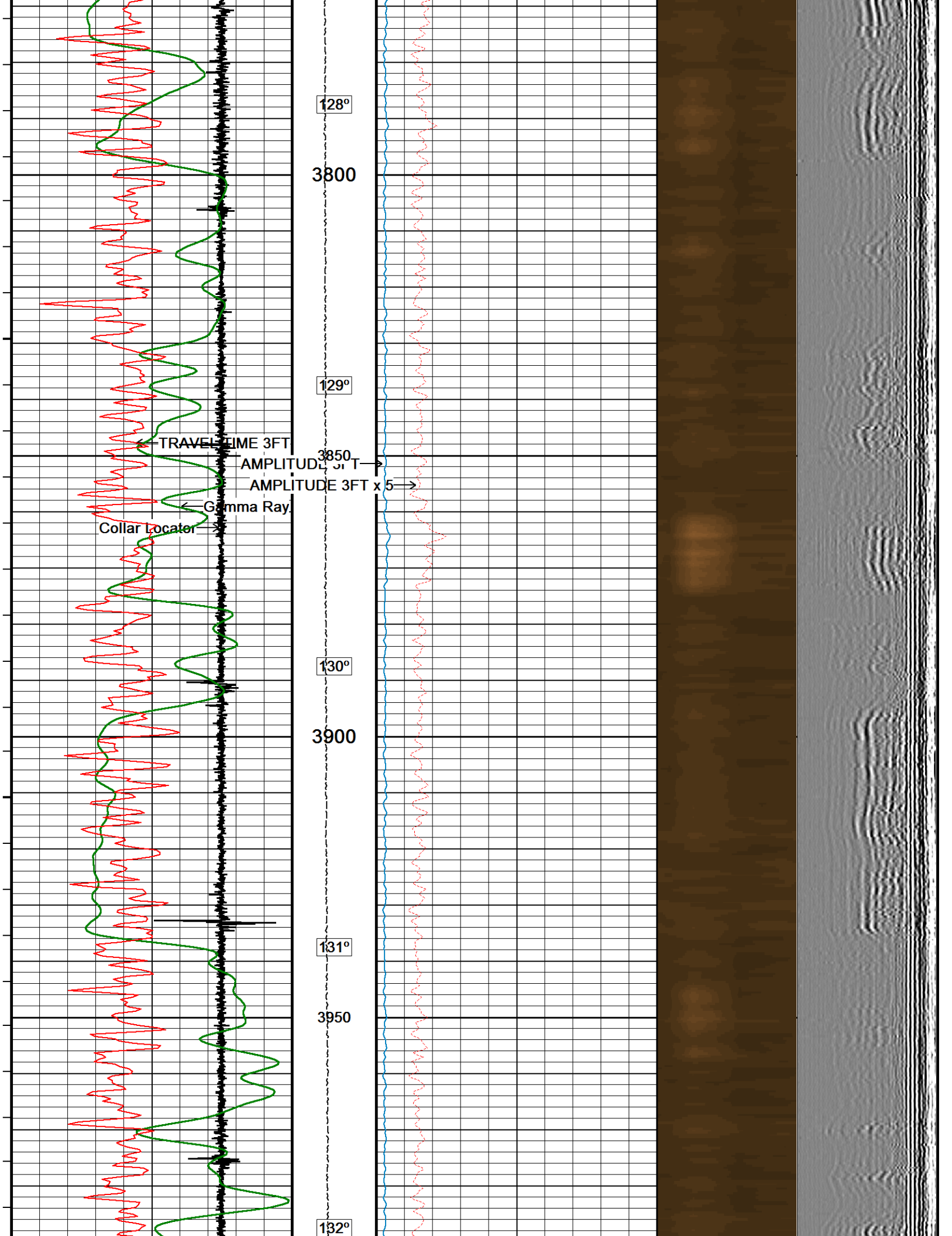


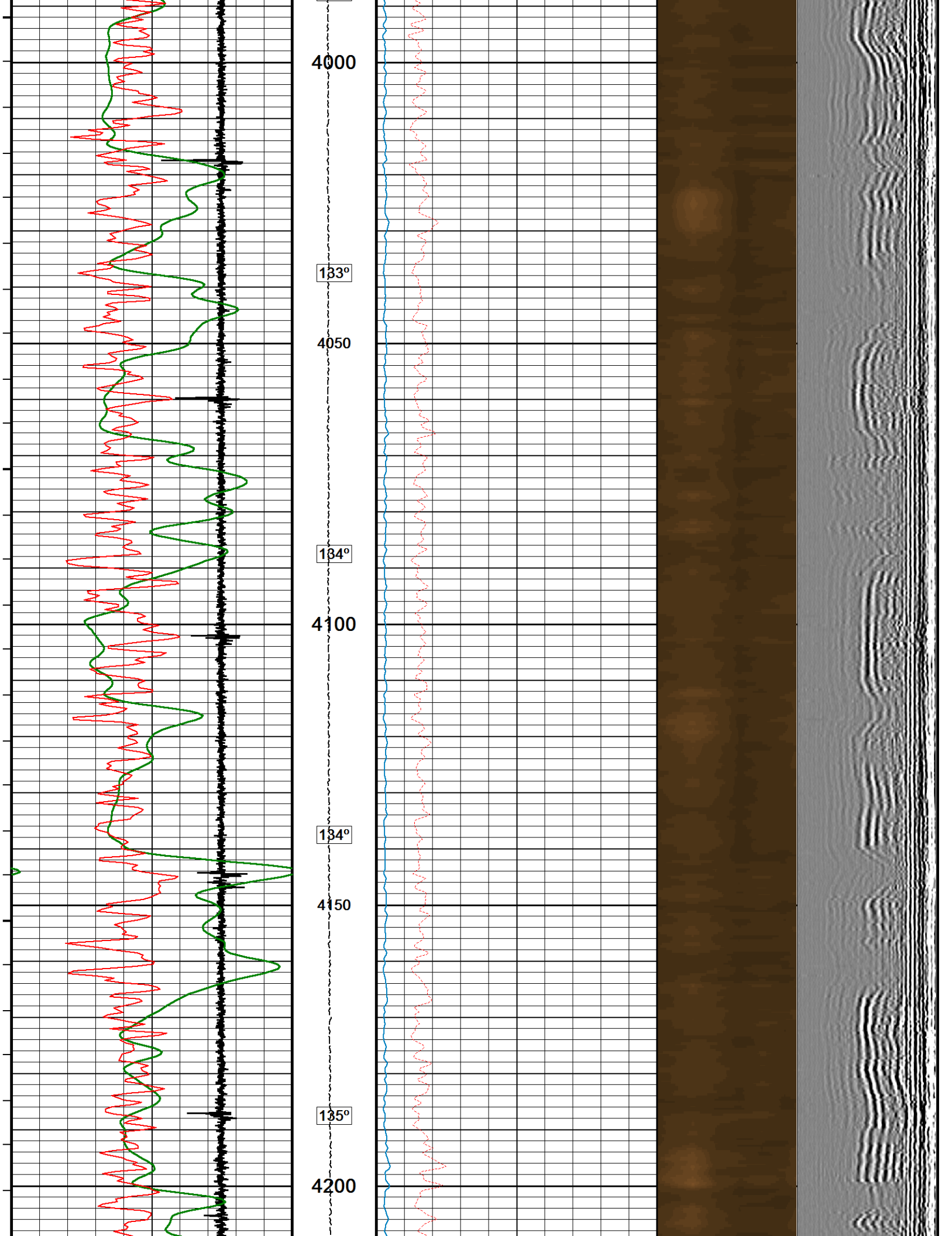


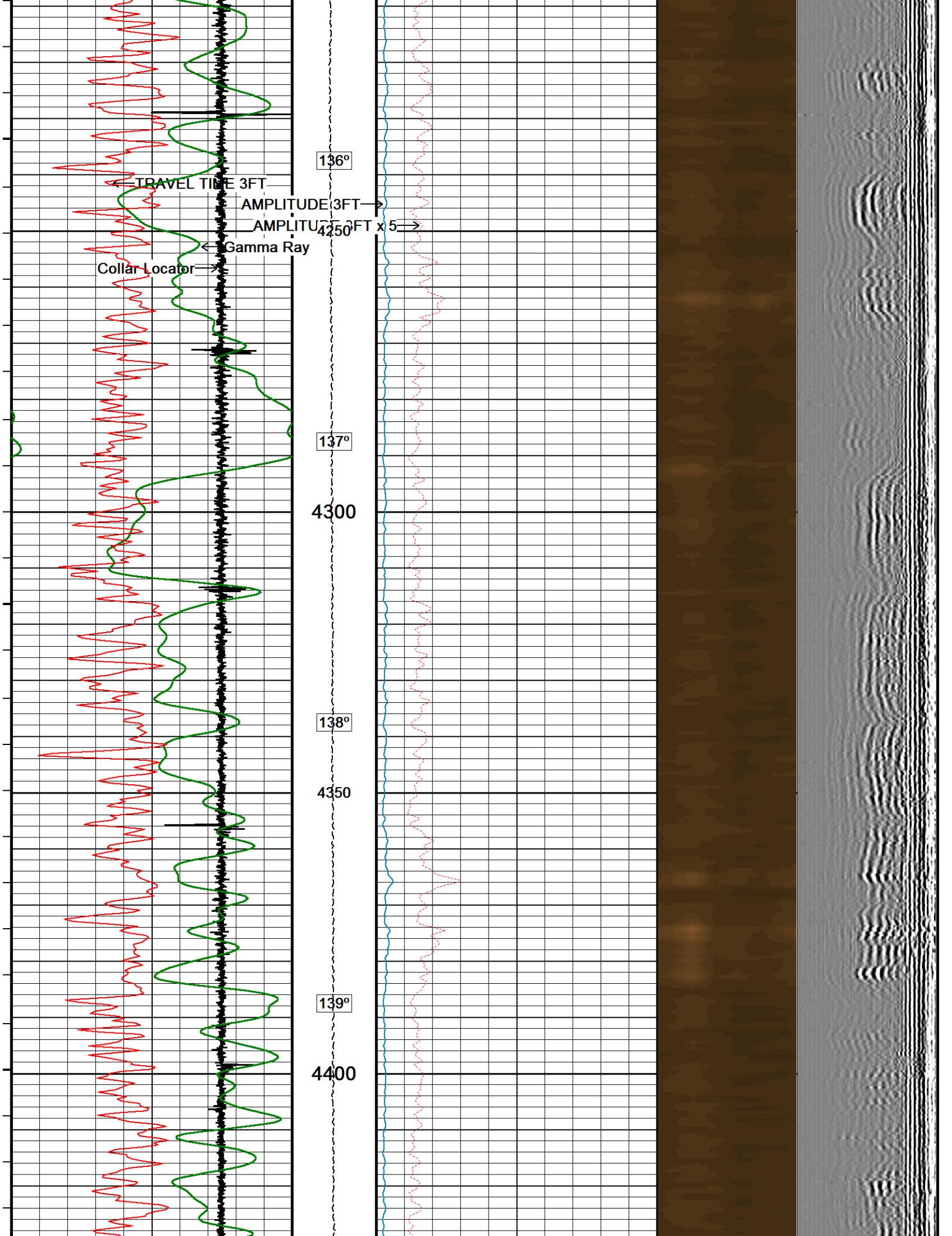


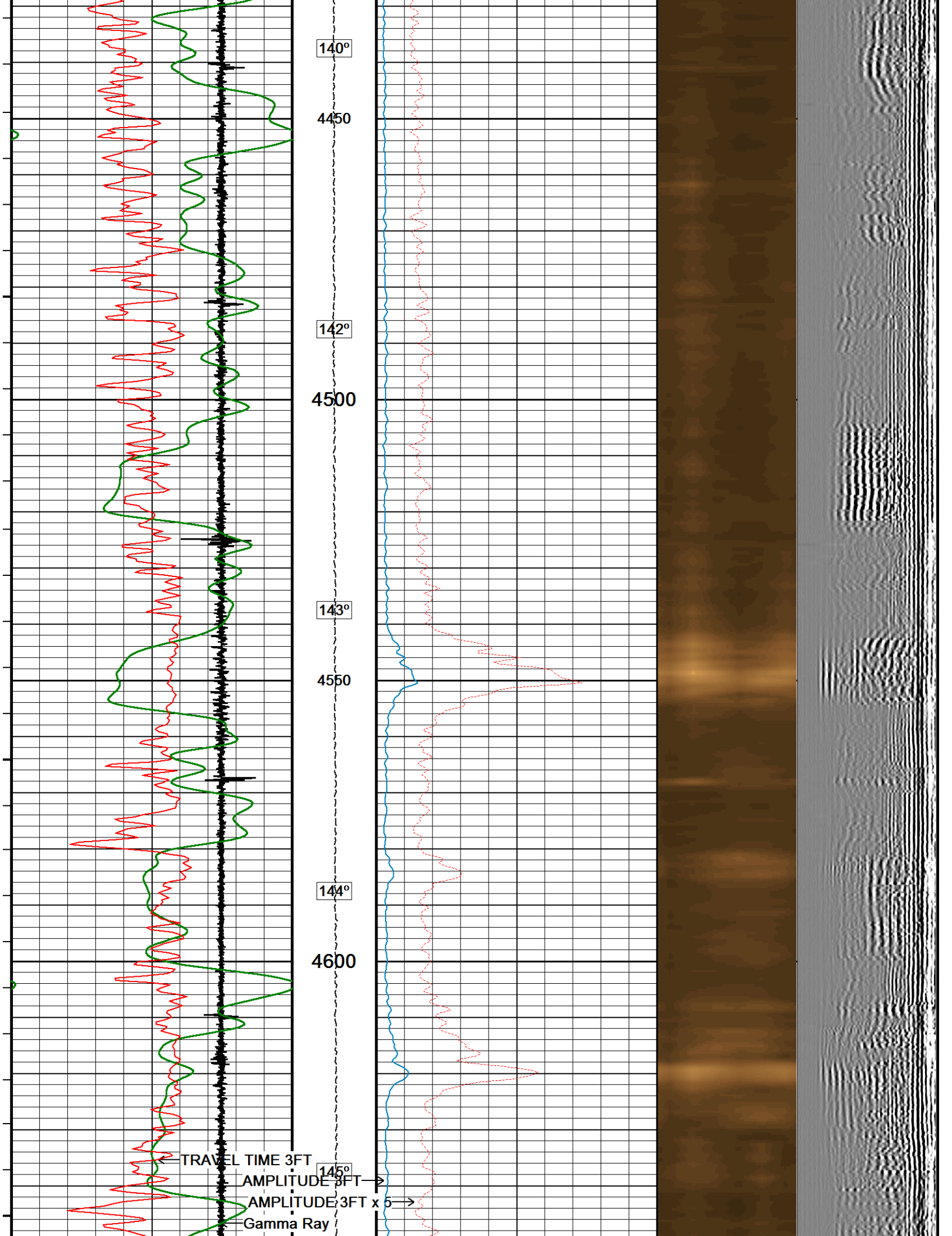




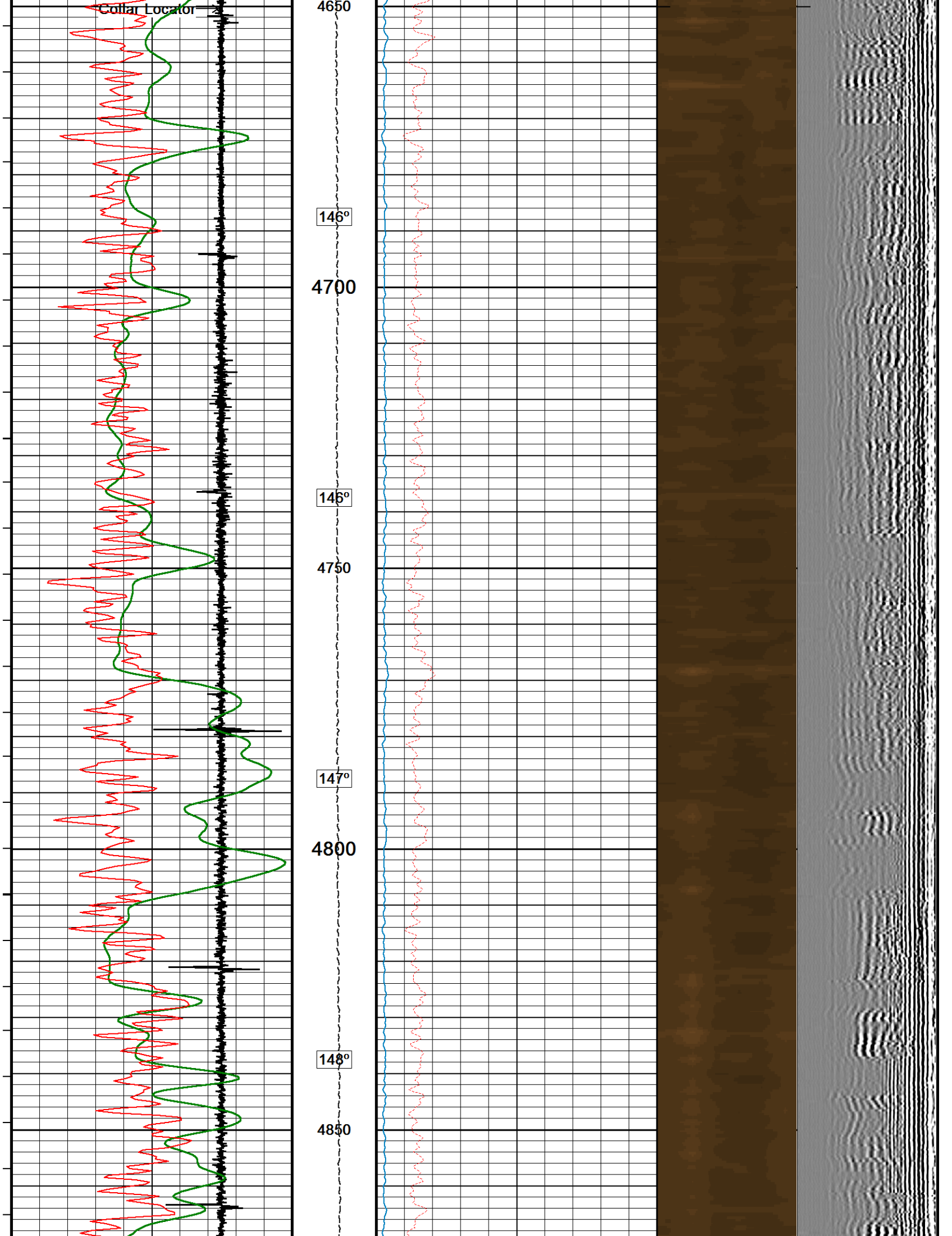




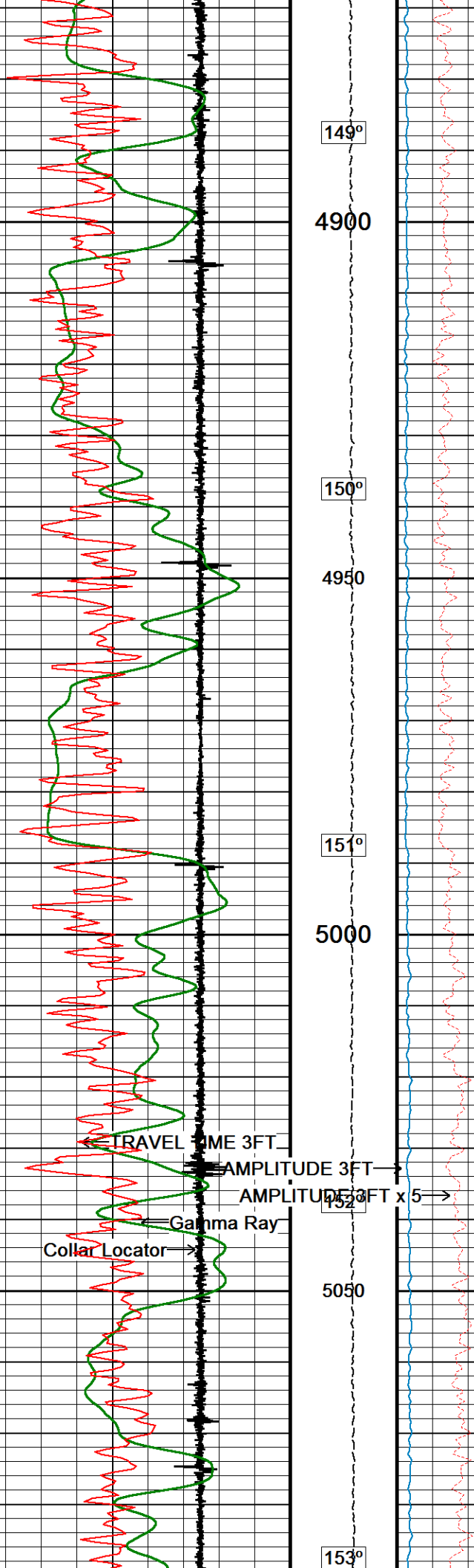


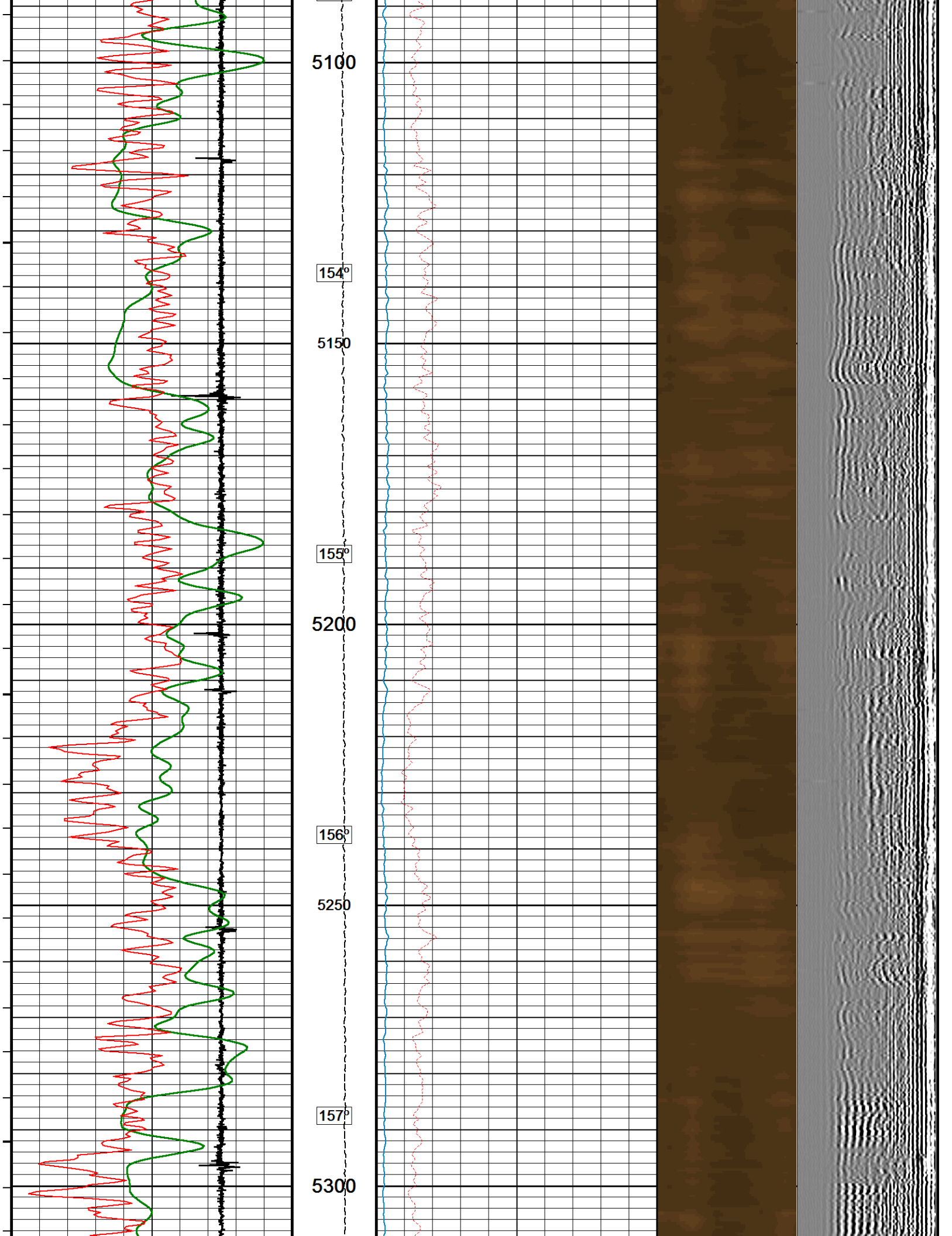


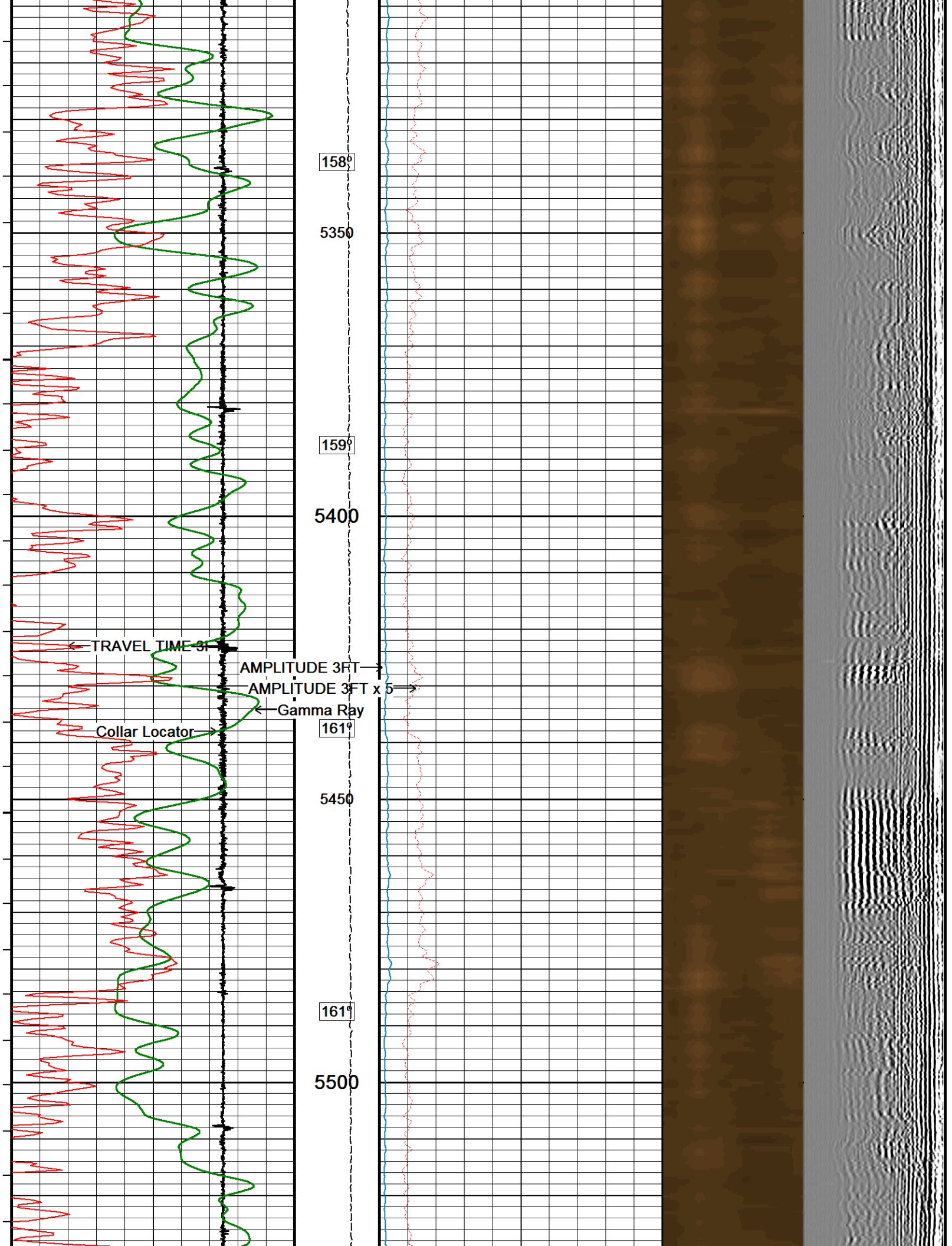




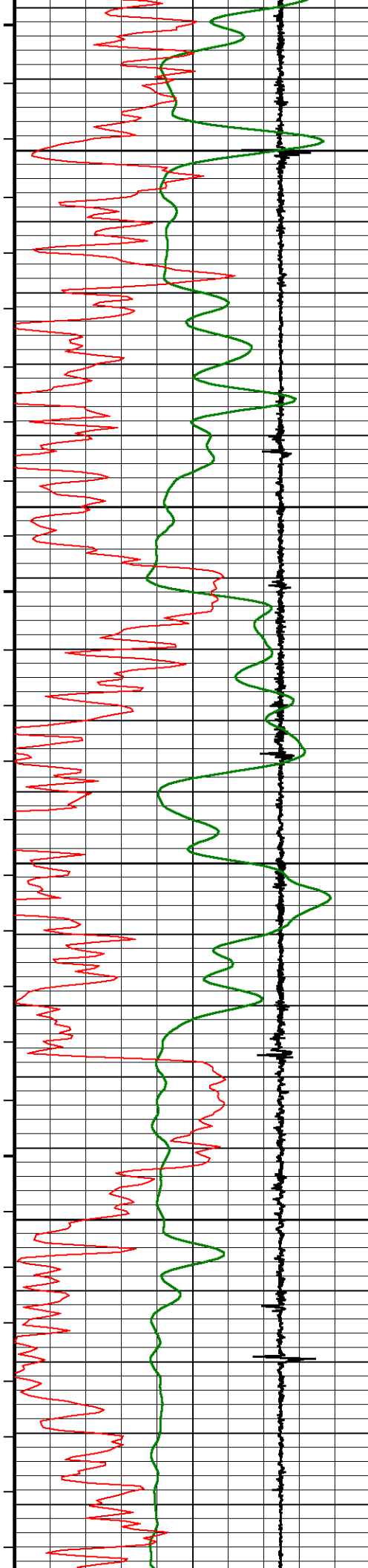












162°

5550

163°

5600

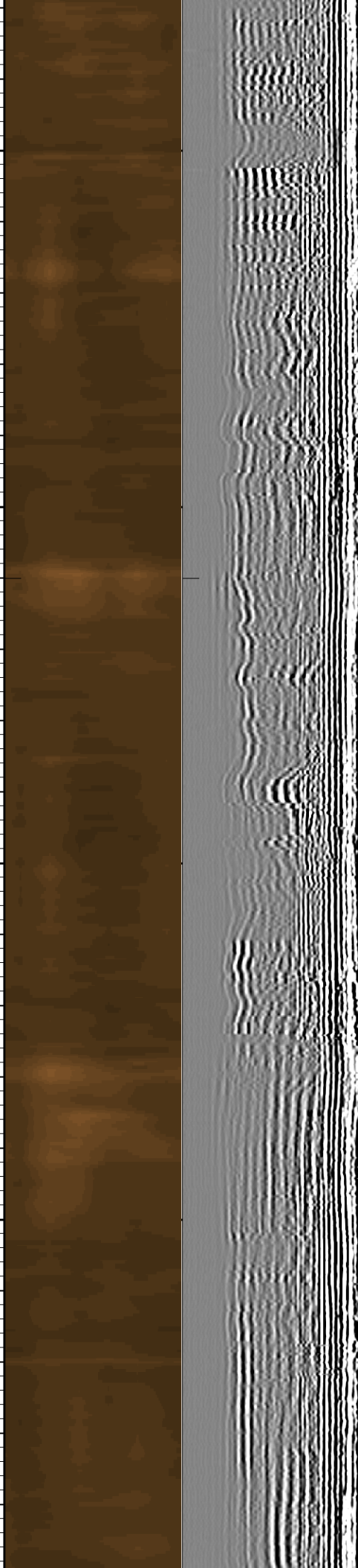
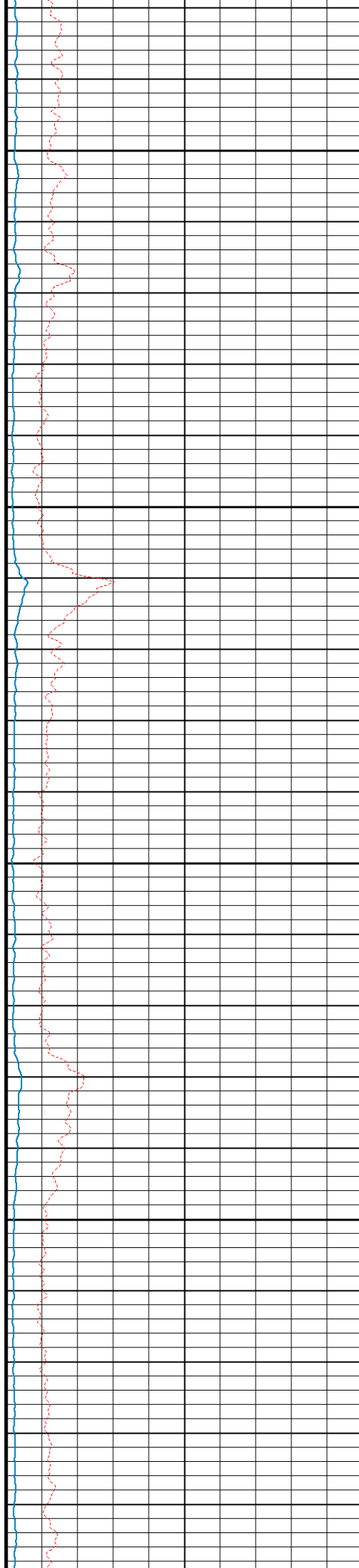
164°

5650

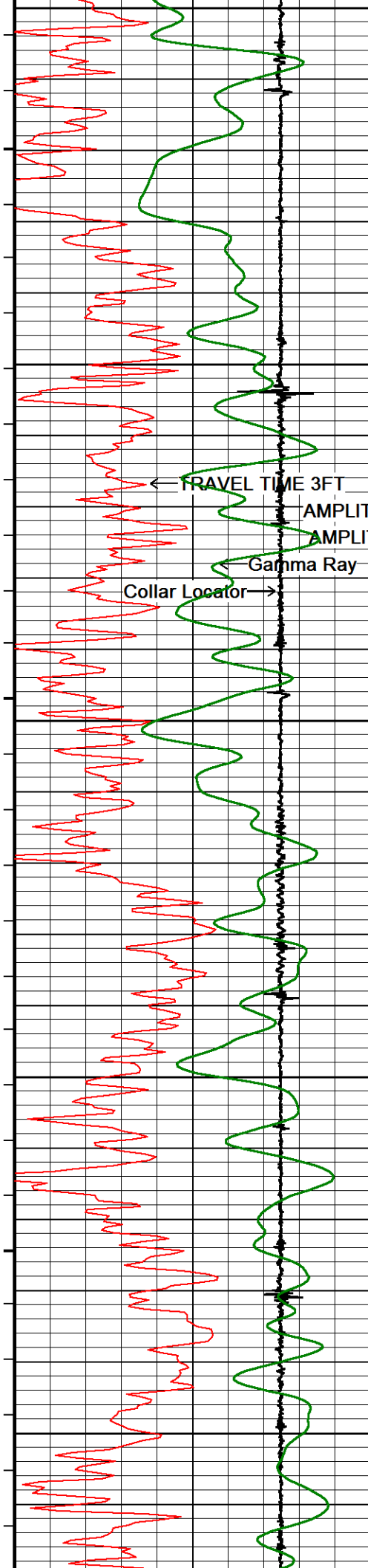
165°

5700

166°



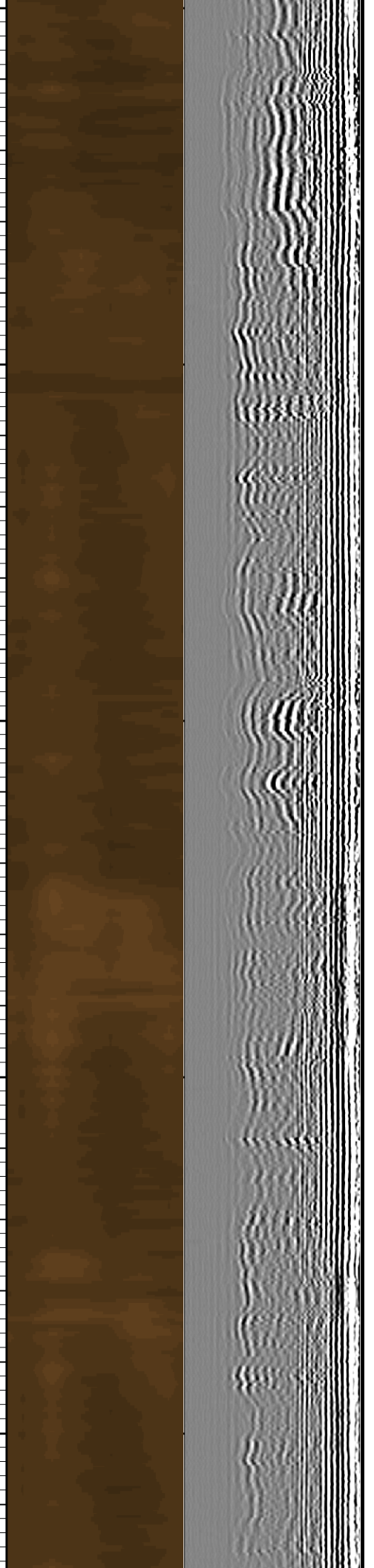
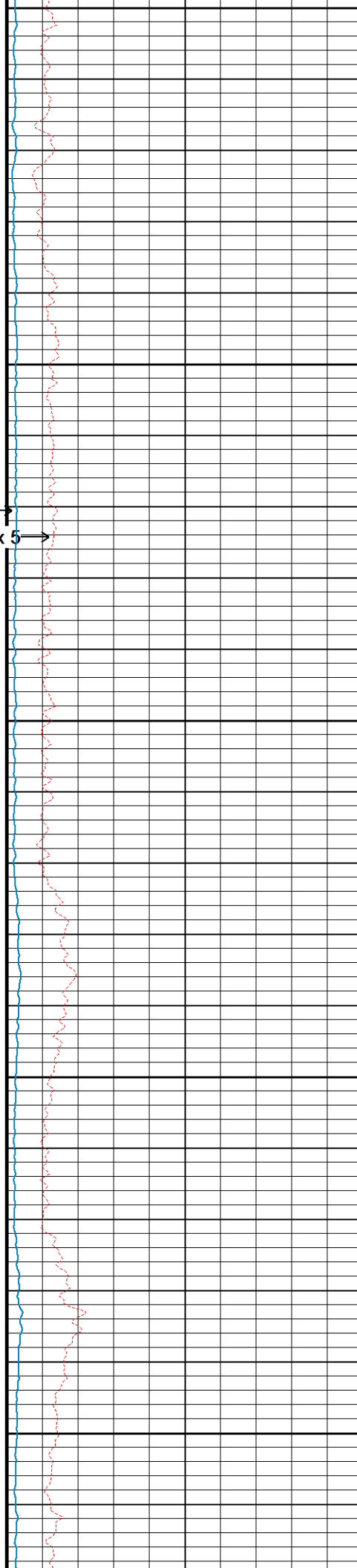


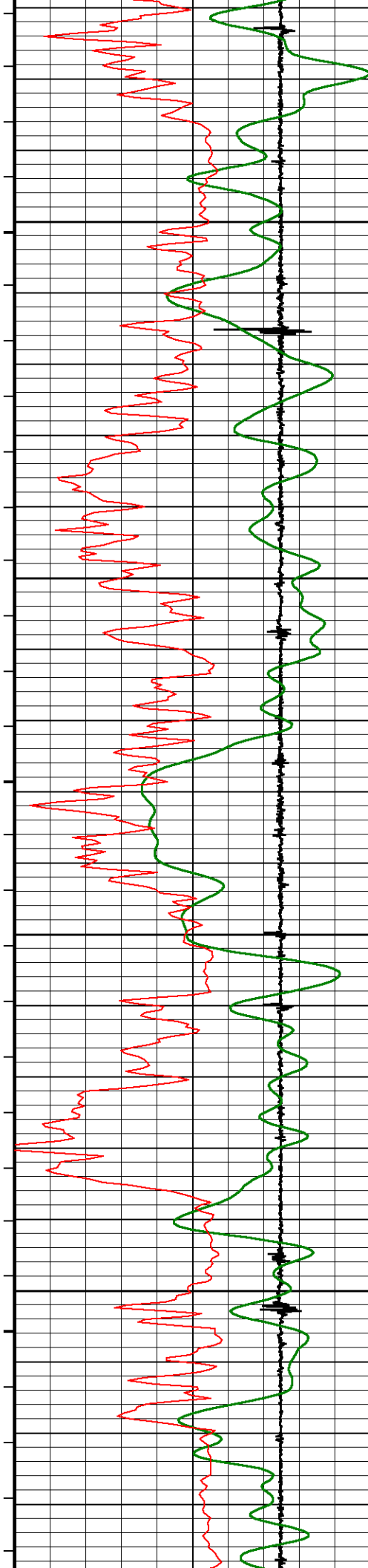


5750  
167°  
5800  
169°  
5850  
170°  
5900  
171°  
5950

← TRAVEL TIME 3FT  
AMPLITUDE 3FT  
AMPLITUDE 3FT x 5 →

← Gamma Ray  
Collar Locator →





173°

6000

174°

6050

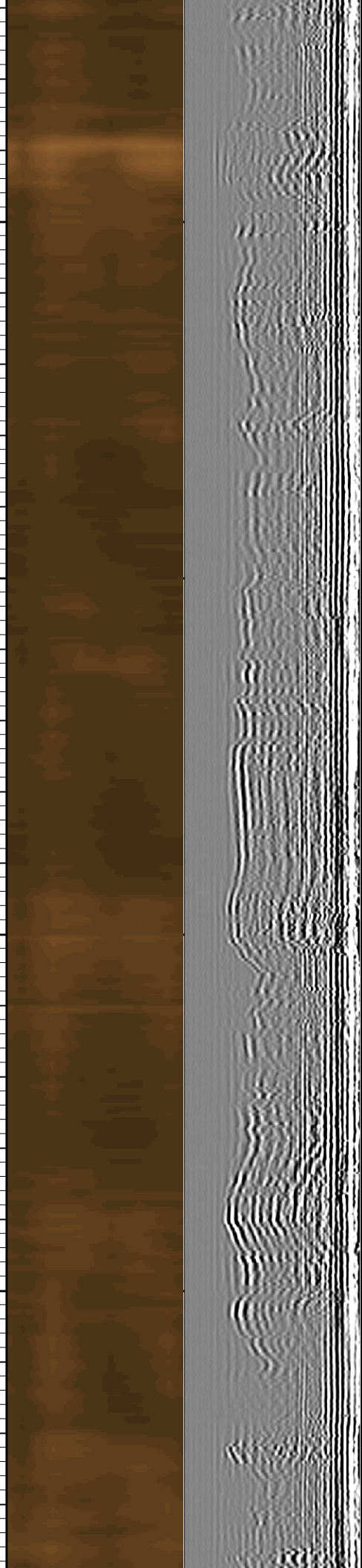
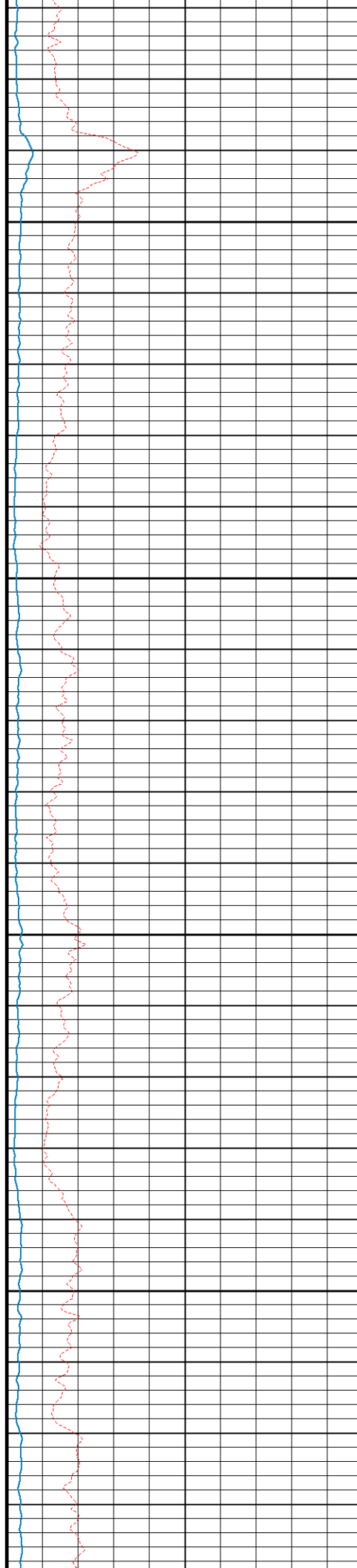
176°

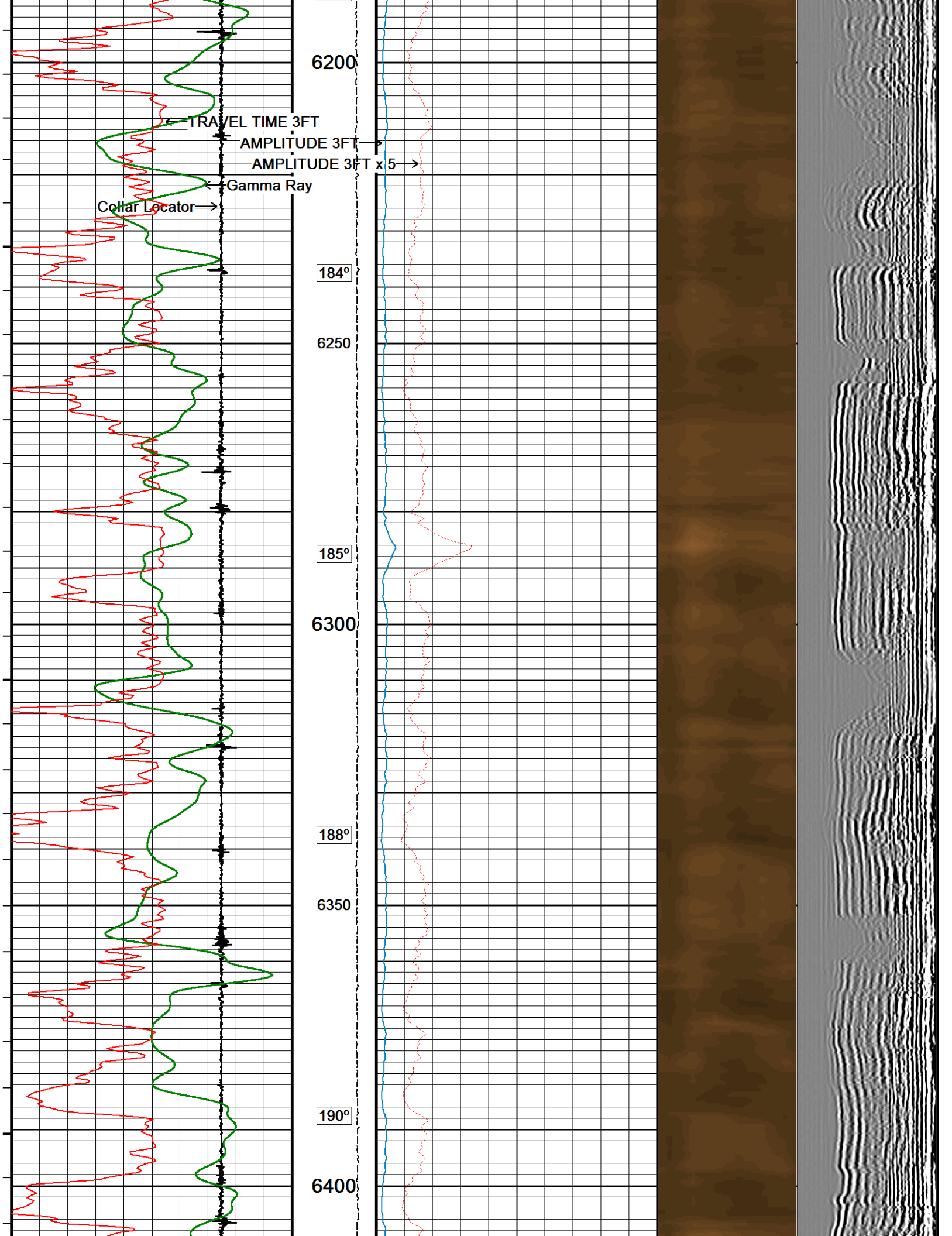
6100

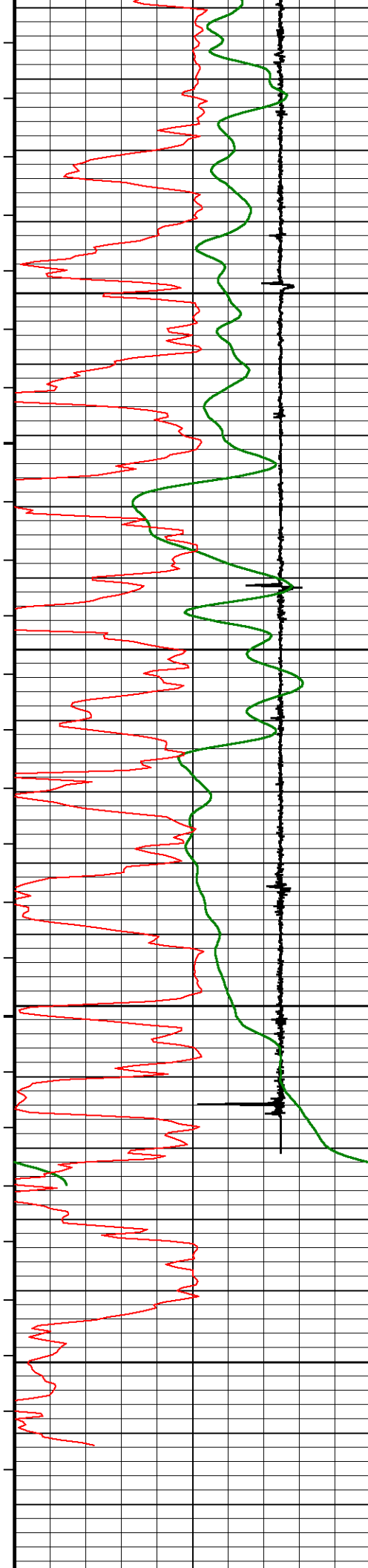
178°

6150

181°







192°

6450

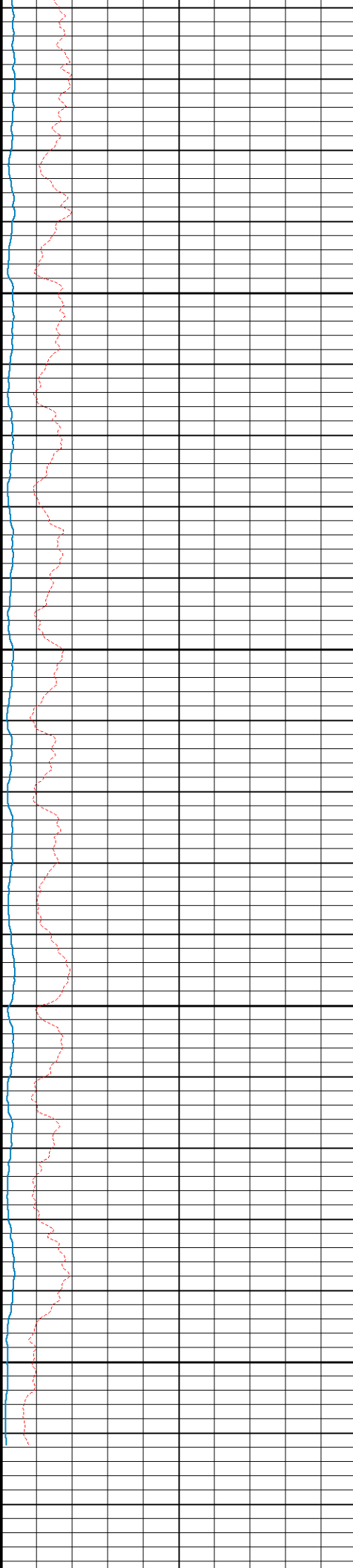
195°

6500

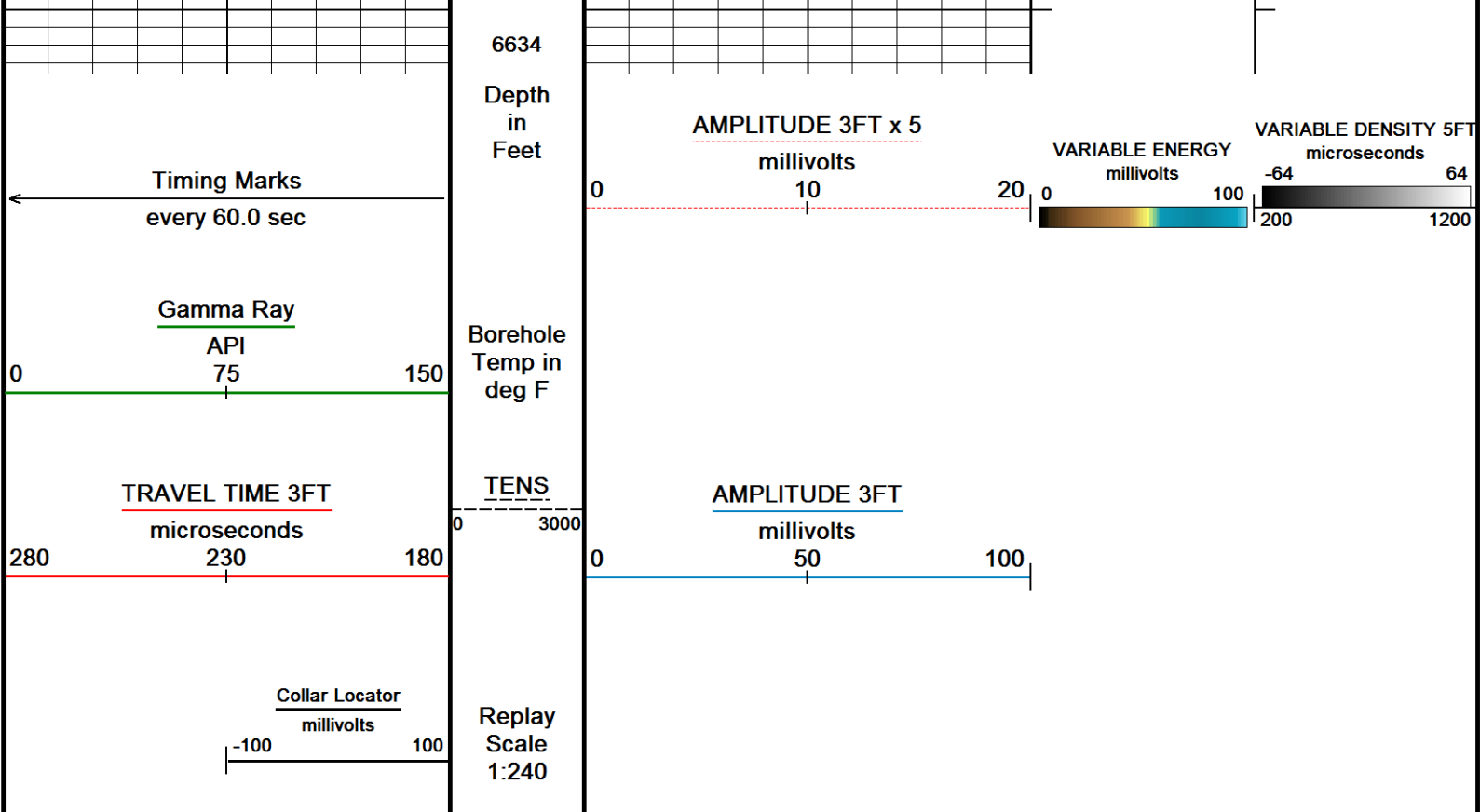
198°

6550

6600







Depth Based Data - Maximum Sampling Increment 12.5cm

Plotted on 15-SEP-2017 19:33

Filename: C:\Logs\URSA\BMC B 23D-18-07-95\BMC B 23D-18-07-95 CREB SSSB MAIN FINAL.dta

Recorded on 15-SEP-2017 19:18

System Versions: Logged with 17.01.7206 Plotted with 17.01.7206

↑ MAIN PASS ↑

↓ REPEAT PASS ↓

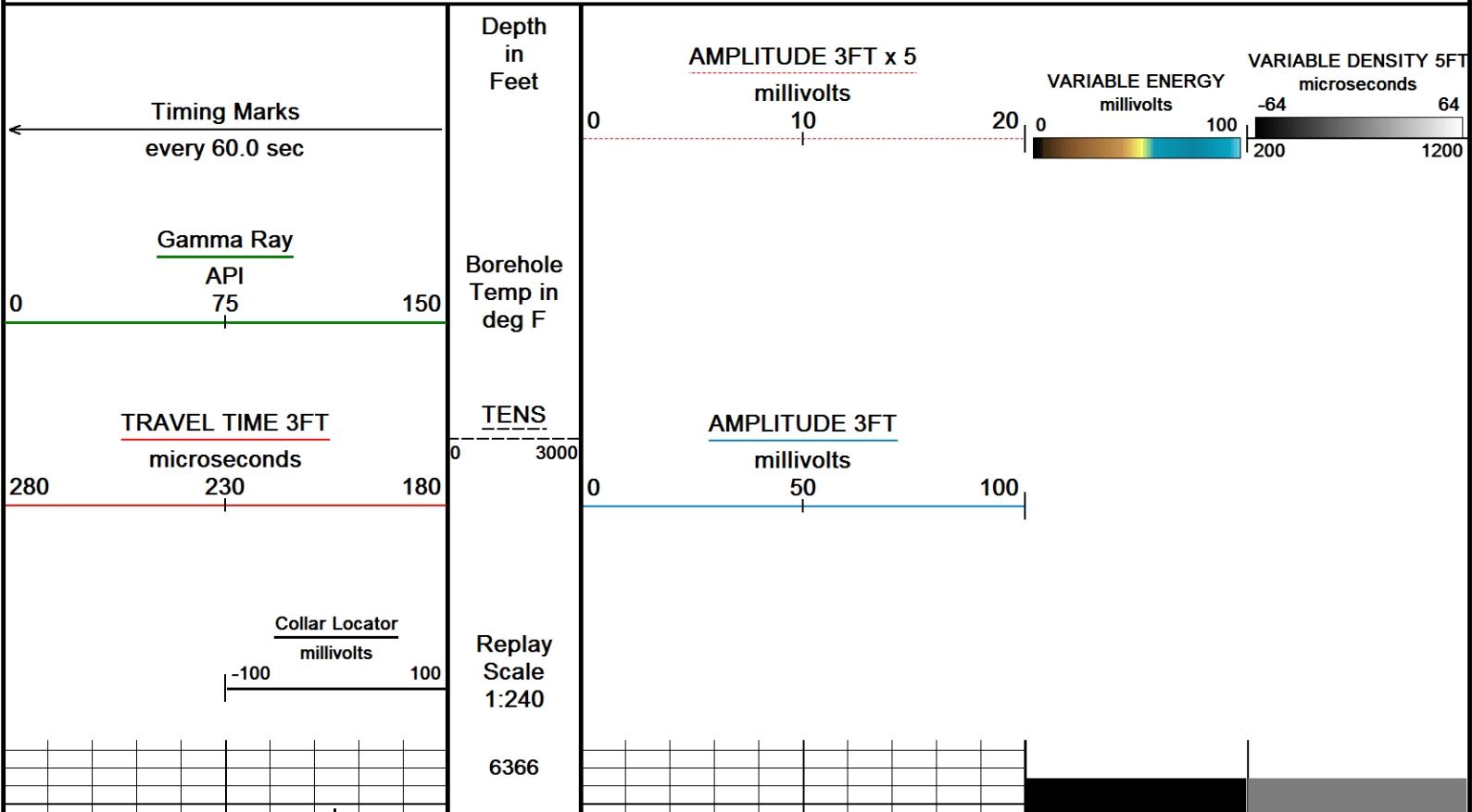
Depth Based Data - Maximum Sampling Increment 12.5cm

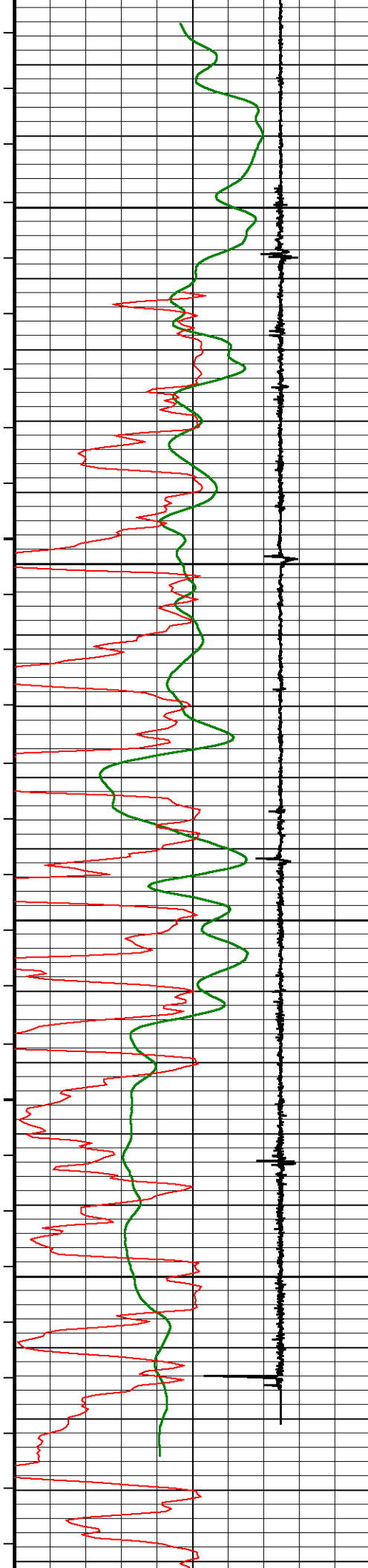
Plotted on 15-SEP-2017 19:33

Filename: C:\Logs\URSA\BMC B 23D-18-07-95\BMC B 23D-18-07-95 CREB SSSB REPEAT FINAL.dta

Recorded on 15-SEP-2017 19:26

System Versions: Logged with 17.01.7206 Plotted with 17.01.7206





6400

192°

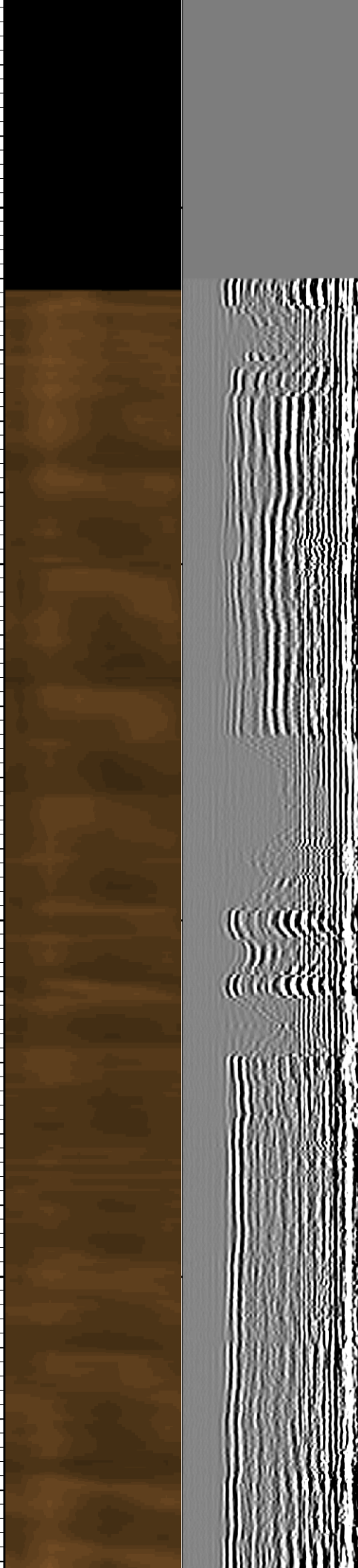
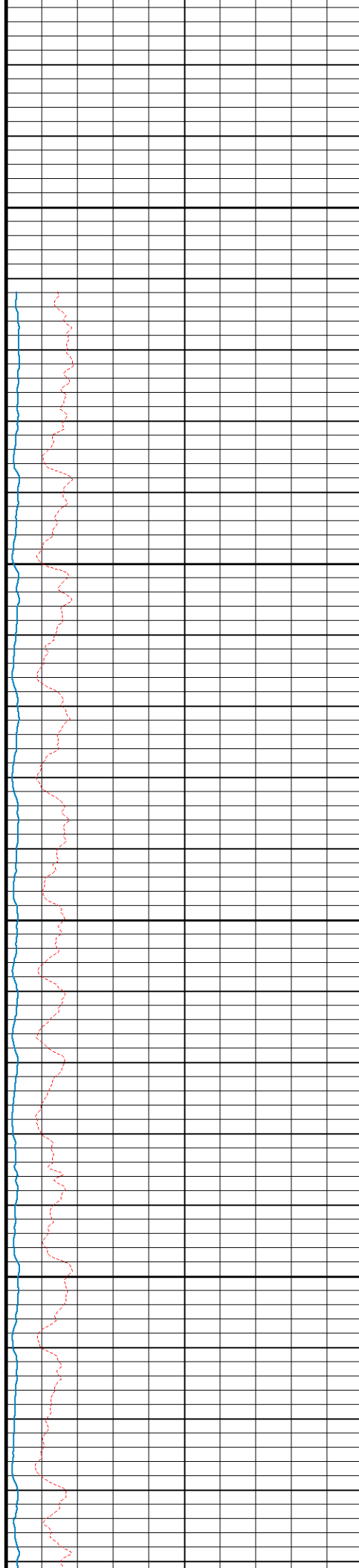
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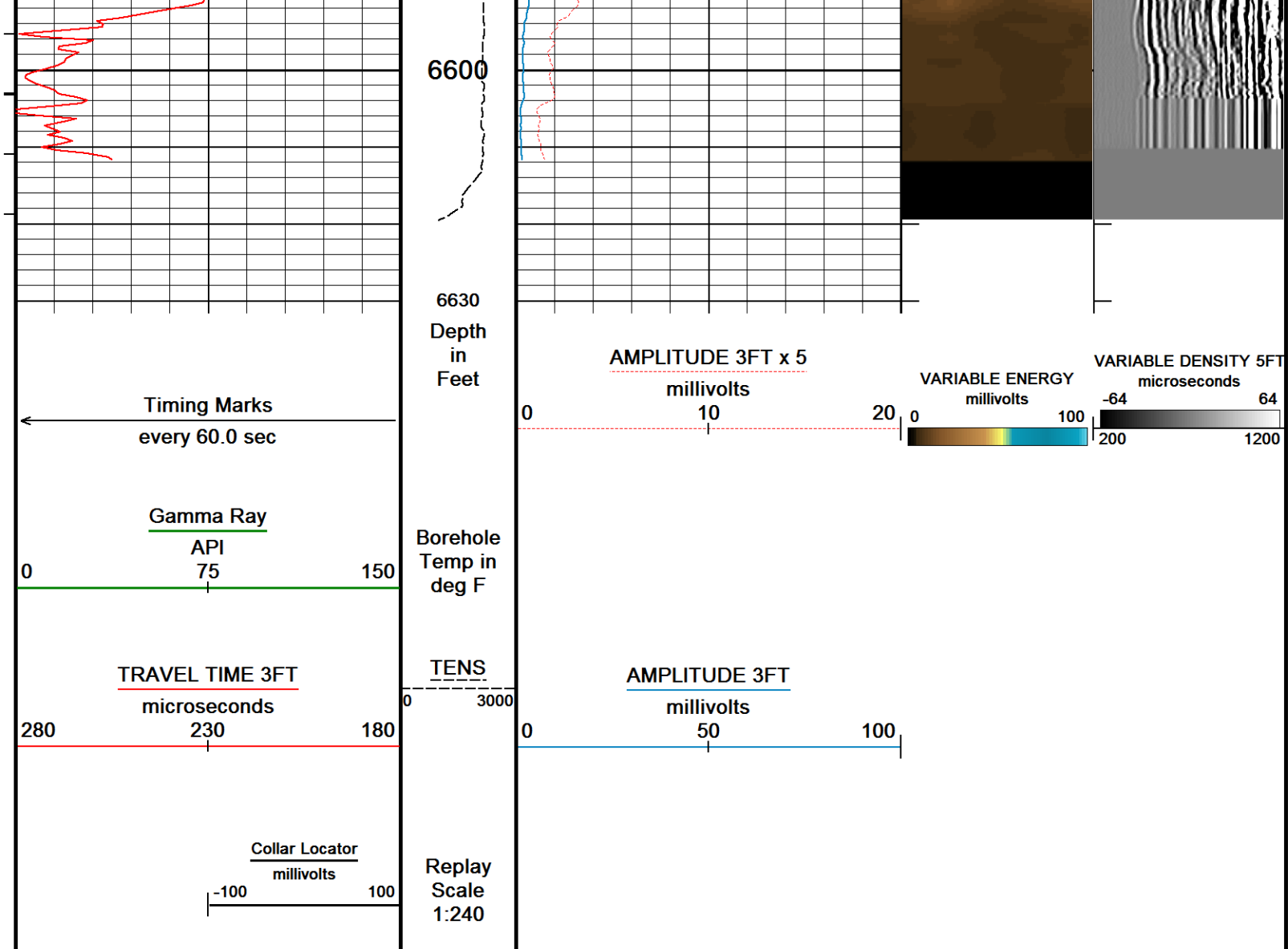
195°

6500

198°

6550





Depth Based Data - Maximum Sampling Increment 12.5cm

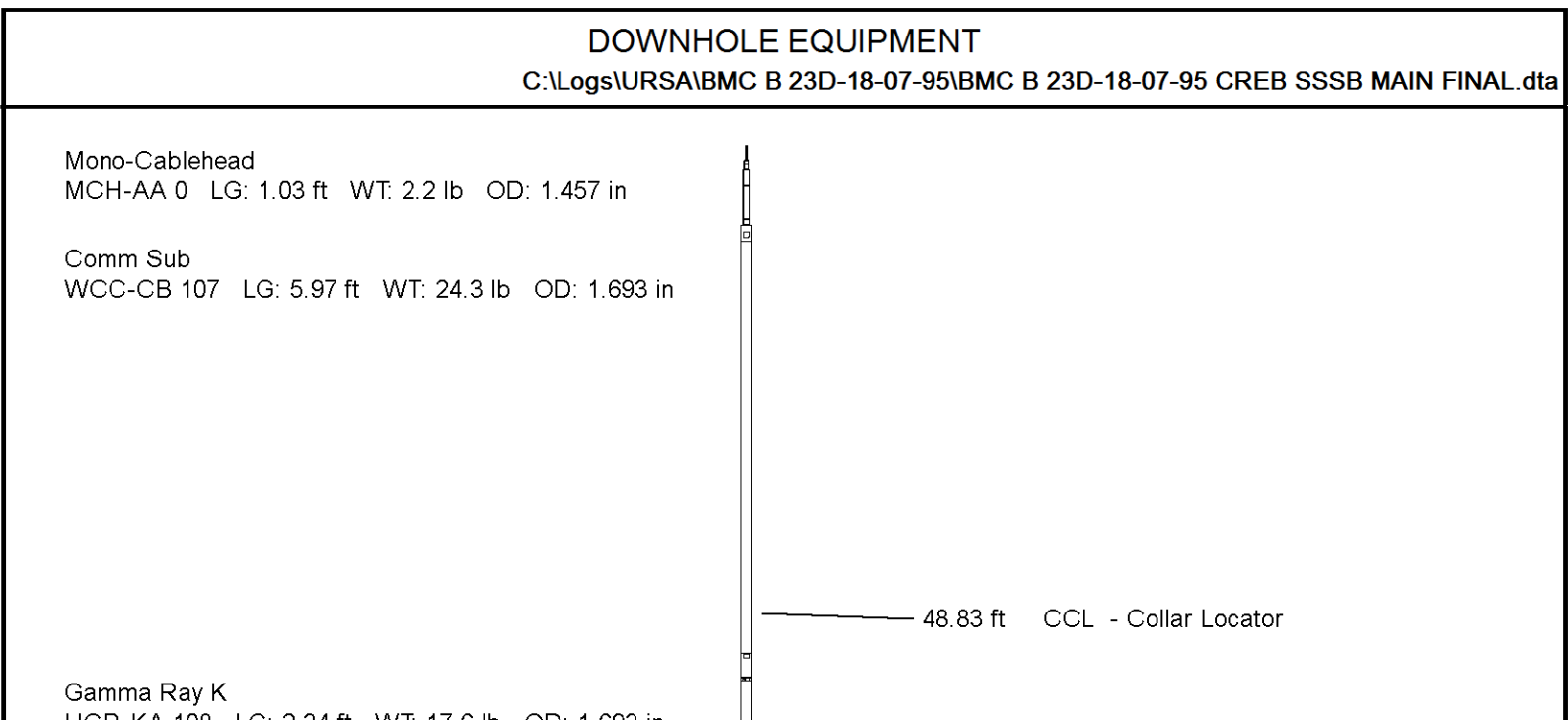
Plotted on 15-SEP-2017 19:33

Filename: C:\Logs\URSA\BMC B 23D-18-07-95\BMC B 23D-18-07-95 CREB SSSB REPEAT FINAL.dta

Recorded on 15-SEP-2017 19:26

System Versions: Logged with 17.01.7206 Plotted with 17.01.7206

↑ REPEAT PASS ↑



UGR-KA 108 LG: 2.34 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

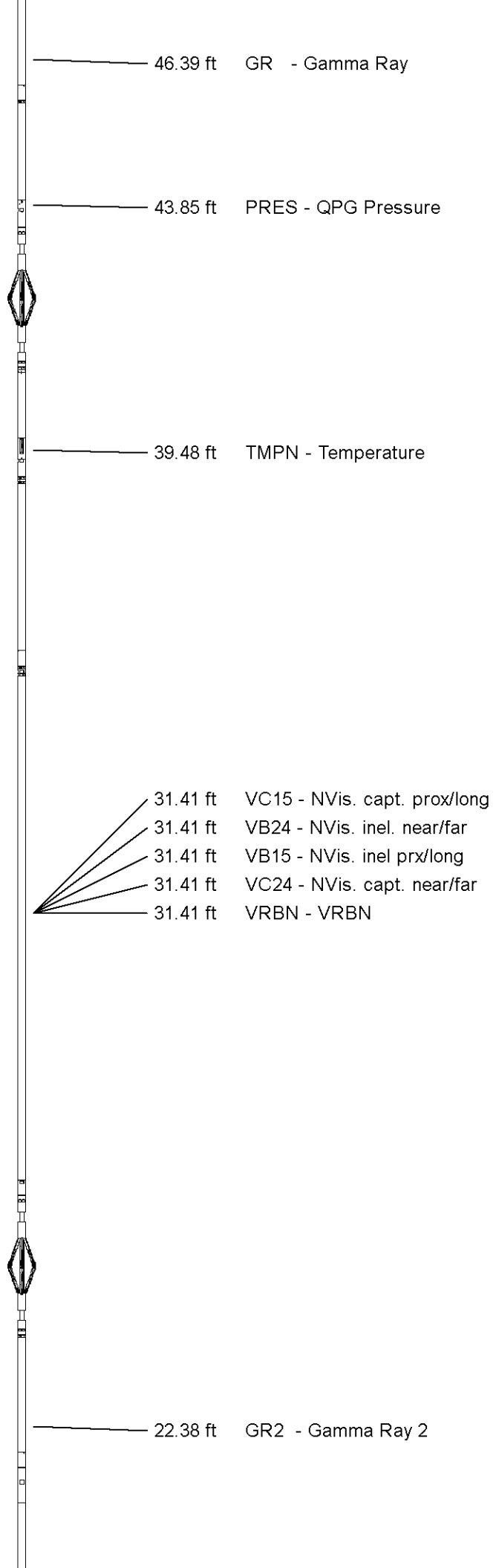
CRE series II processor section  
CRP-BA 129 LG: 3.31 ft WT: 15.4 lb OD: 1.654 in

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



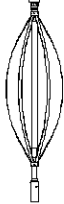


SSB Receiver Sonde  
SSS-BA 117 LG: 8.76 ft WT: 30.9 lb OD: 1.693 in

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 23D-18-07-95\BMC B 23D-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 Calibration

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
Sensor	Description	Standard	Measured
AMP 3FT	100% Bond	1.00	5.50
	Free Pipe	81.00	2151.20
AMP 5FT	100% Bond	0.40	1.30
	Free Pipe	54.00	3075.40
1 SECTOR AMP	100% Bond	5.00	10.80
	Free Pipe	95.00	1835.40
2 SECTOR AMP	100% Bond	5.00	9.80
	Free Pipe	95.00	1310.20
3 SECTOR AMP	100% Bond	5.00	2.40
	Free Pipe	95.00	1474.00
4 SECTOR AMP	100% Bond	5.00	4.10
	Free Pipe	95.00	1727.50
5 SECTOR AMP	100% Bond	5.00	8.00
	Free Pipe	95.00	1889.60
6 SECTOR AMP	100% Bond	5.00	1.30
	Free Pipe	95.00	2047.60

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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

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

COMPANY	URSA OPERATING COMPANY				
WELL	BMC B 23D-18-07-95				
FIELD	WILDCAT				
PROVINCE/COUNTY	GARFIELD				
COUNTRY/STATE	USA / COLORADO				
Elevation Kelly Bushing	5117	feet	Bottom Log Interval	6986.00	feet
Elevation Drill Floor	5117	feet	Depth Driller	6986.00	feet
Elevation Ground Level	5100	feet	Depth Logger	6620.00	feet

  
**Weatherford**<sup>®</sup>

SLIM SECTOR BOND LOG