



**Weatherford**

**RAPTOR NVISION LOG**

COMPANY		CAERUS OIL & GAS LLC			
WELL		PUCKETT 13B-1			
FIELD		GRAND VALLEY			
PROVINCE/COUNTY		GARFIELD			
COUNTRY/STATE		USA / COLORADO			
LOCATION		SHL: 2111 N 1322 W & BHL: 2130 N 886 <b>FIELD PRINT</b>			
SEC 1	TWP 7S	RGE 97W	Other Services		
Longitude		SSSB			
API Number		5045228620000		Elevations:	
Permanent Datum		GROUND LEVEL, Elevation 8329 feet		KB	8351.00
Log Measured From		KB		DF	8351.00
Drilling Measured From		KB @ 22'		GL	8329.00
Date	09-DEC-2015	PERFORATION RECORD			
Run Number	ONE	Shot	Number	Depth From	Depth To
Service Order	136820485	Density	of Shots	feet	feet
Type Log	CREB-SSSB				
Depth Driller	8805.00				
Depth Logger	8713.00				
Top Log Interval	2500.00				
Bottom Log Interval	8709.00				
Hole Fluid Type	1.4% KCL				
Hole Fluid Level	0.00				
Restriction ID	3.875	Gun Type			
Max Recorded Temp	225.00	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	0135	9.625	36.00	0.00	2497.00
Unit	14113	4.500	11.60	0.00	8805.00
Equipment Name	WSS-E				
Base	CASPER				
Recorded By	MAZUR				
Witnessed By	NOT WITNESSED				

BOREHOLE RECORD			Last Edited: 09-DEC-2015 14:36
Bit Size inches	Depth From feet	Depth To feet	
14.750	0.00	2498.00	
8.750	2498.00	9371.00	

CASING / TUBING RECORD						
Type	Grade	TypeJoint	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	J-55	LT&C	9.625	0.00	2497.00	36.00
PRODUCTION	P-110	LT&C	4.500	0.00	8805.00	11.60

**REMARKS**

SOFTWARE VERSION 16.00.6296 - DEVELOPMENT BUILD VERSION

ALL DEPTH CONTROL PROCEDURES FOR SUBSEQUENT RUN IN HOLE WERE FOLLOWED. LOG RUN FROM 22' K.B.

SHORT JOINT LOCATED AT 4503' - 4513'

SURFACE SYSTEM USED: WCM-D 307

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 6470 FT

UNKNOWNEN CEMENT CLASS DUE MISSING DATA FROM CLIENT

UNKNOWNEN CEMENT JOB ENDED TIME DUE TO MISSING DATA FROM CLIENT

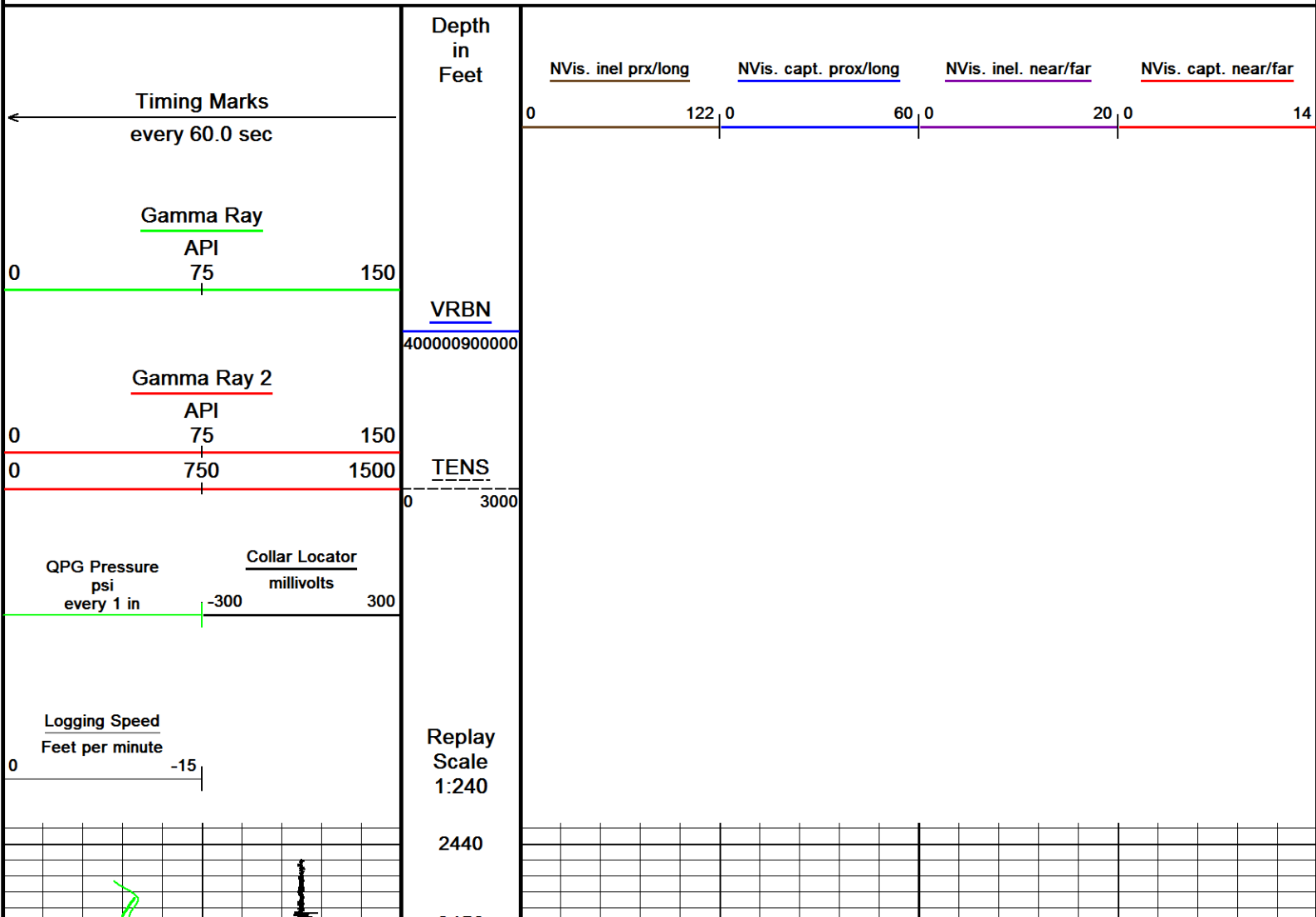
BOTTOM HOLE TEMPERATURE WAS DEG. 225F

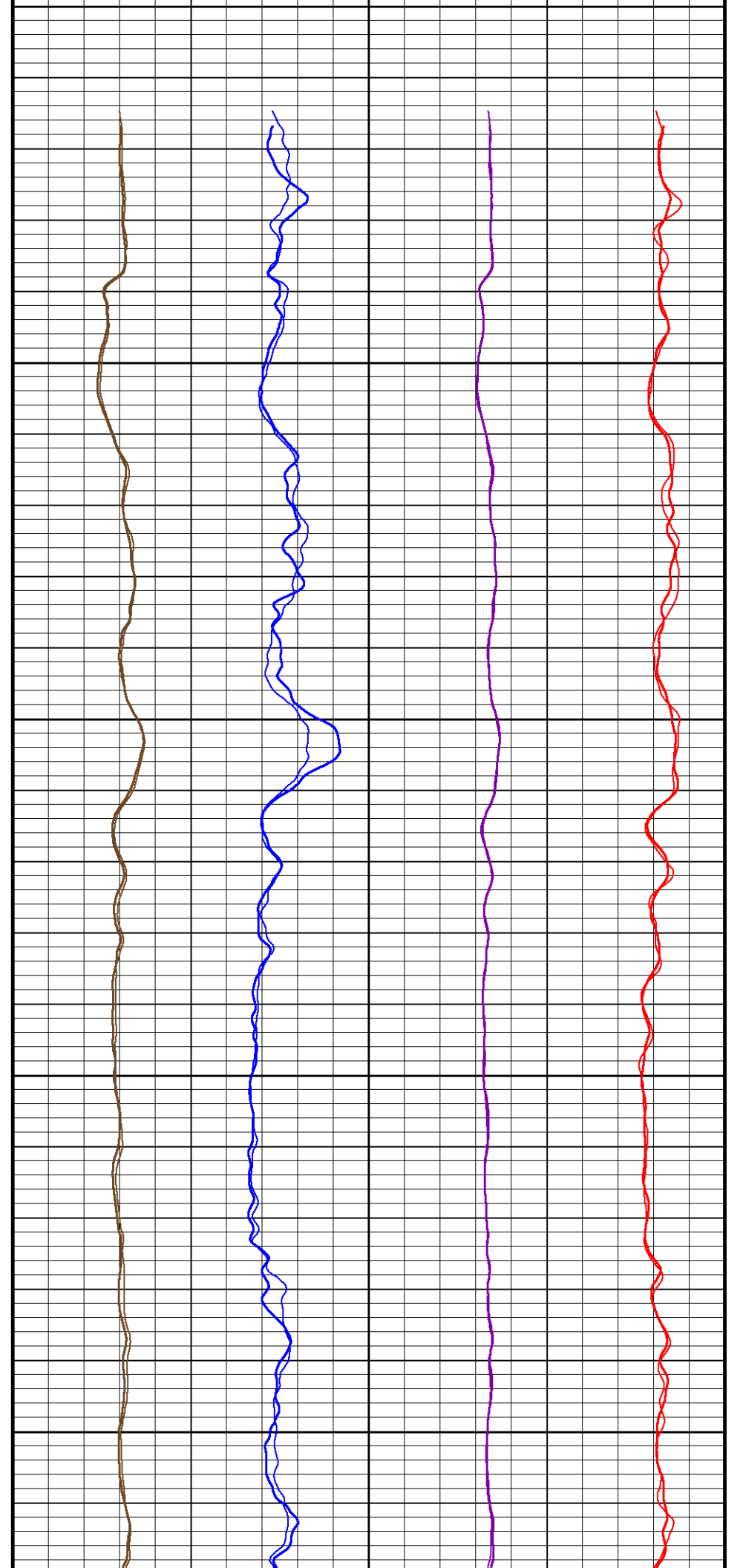
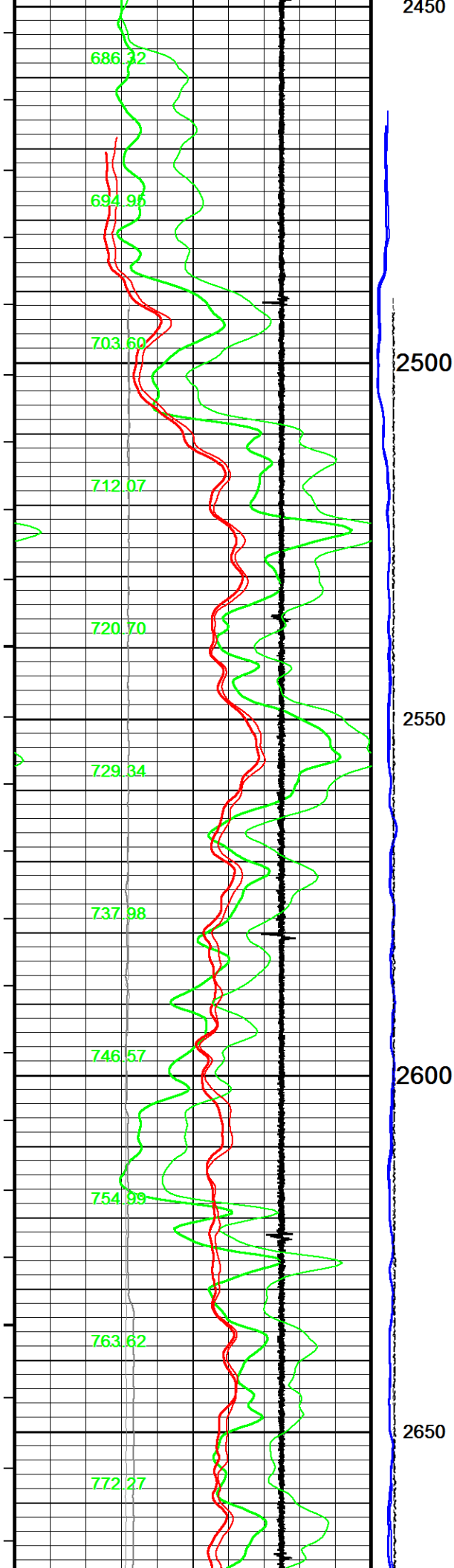
CREW: PAUL MAZUR, DARREN BEANS, ZACH MAGNER, JAMES BARNETT

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.

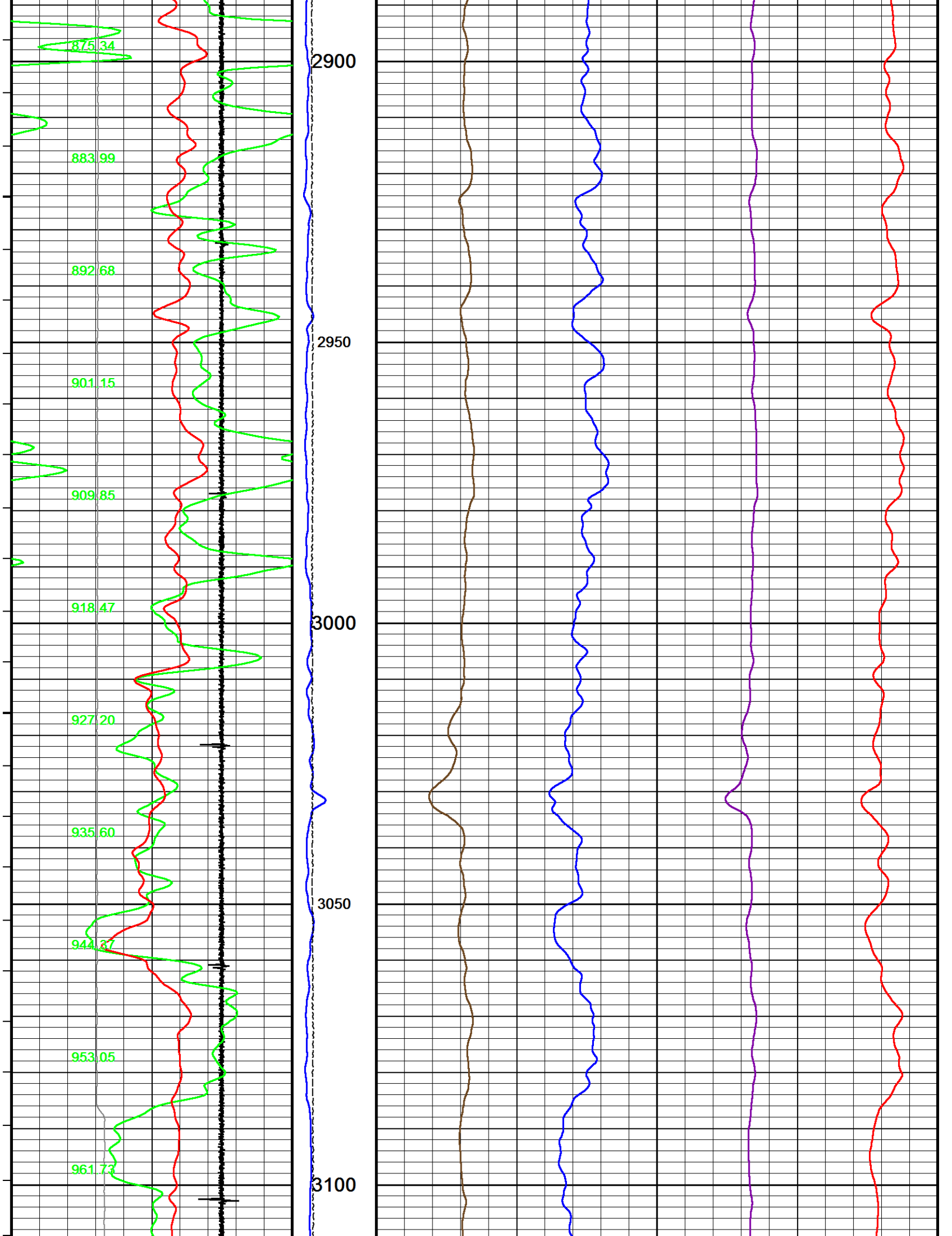
**MAIN REPEAT 2**

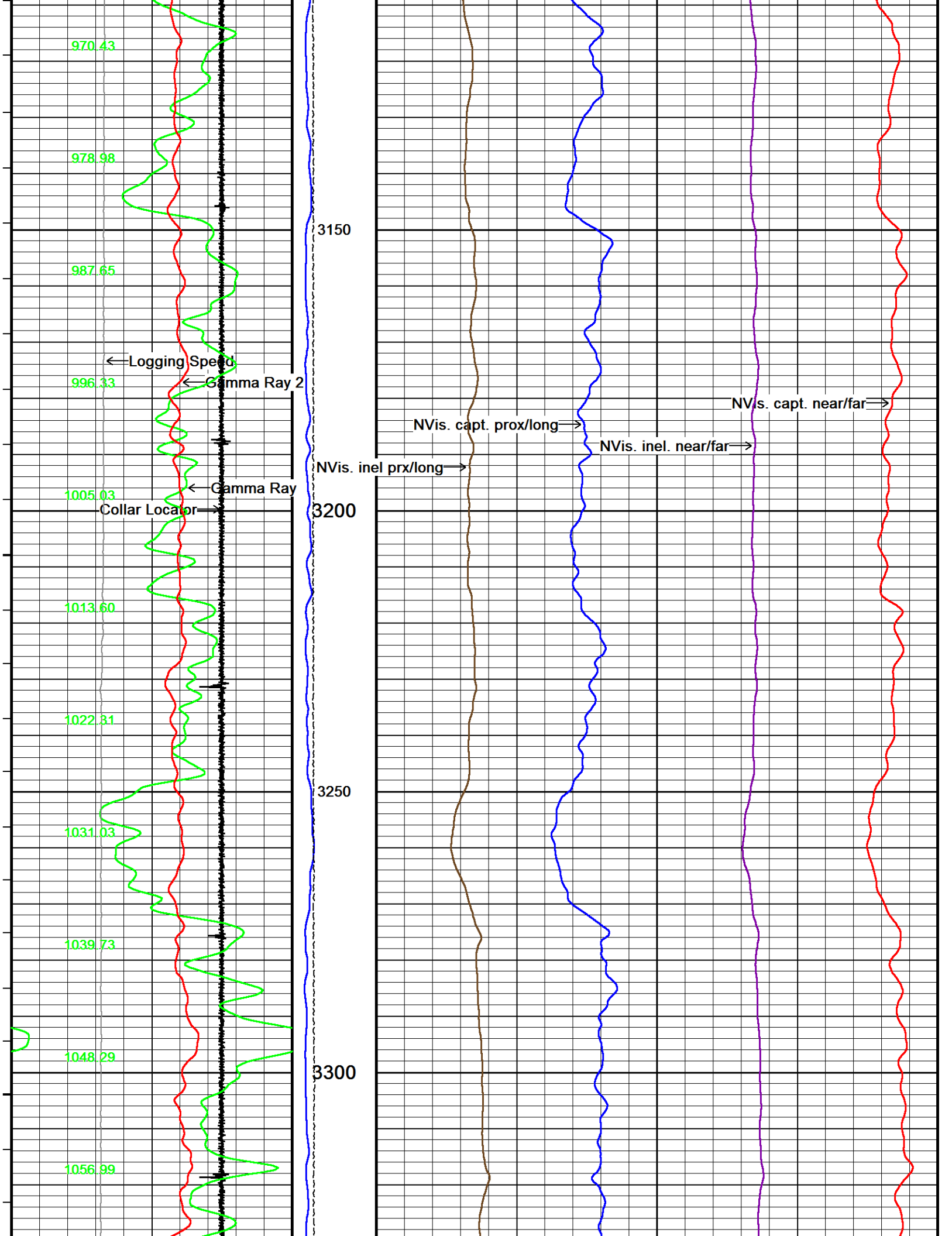
Depth Based Data - Maximum Sampling Increment 12.5cm Plotted on 09-DEC-2015 14:38  
 Filename: C:\Logs\Caerus\Puckett 13B-1\CREB-SSB\_001.dta Recorded on 09-DEC-2015 01:35  
 Filename: C:\Logs\Caerus\Puckett 13B-1\CREB-SSB\_002.dta Recorded on 09-DEC-2015 13:01  
 System Versions: Logged with 16.00.6296 Processed with 16.00.6296 Plotted with 16.00.6296

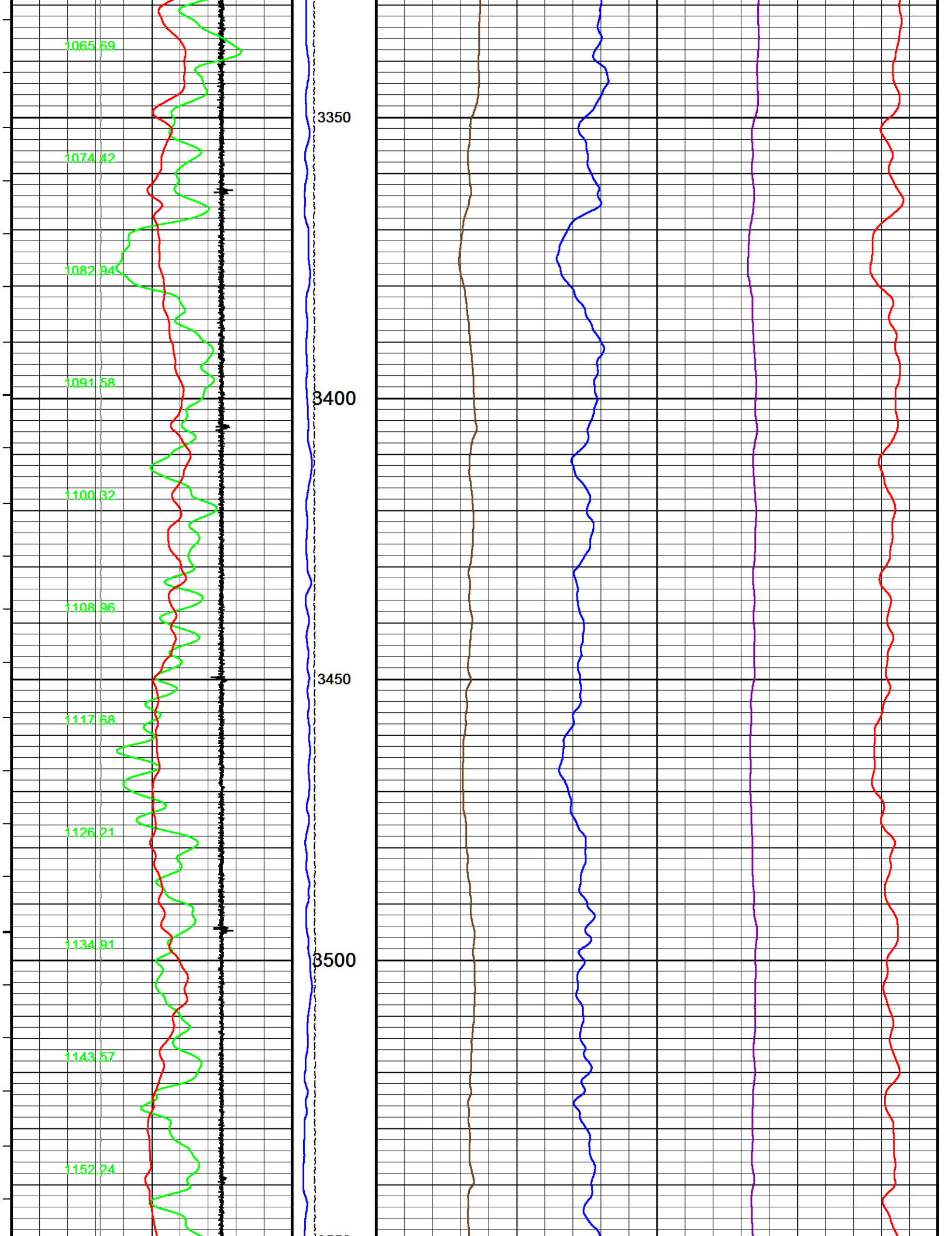


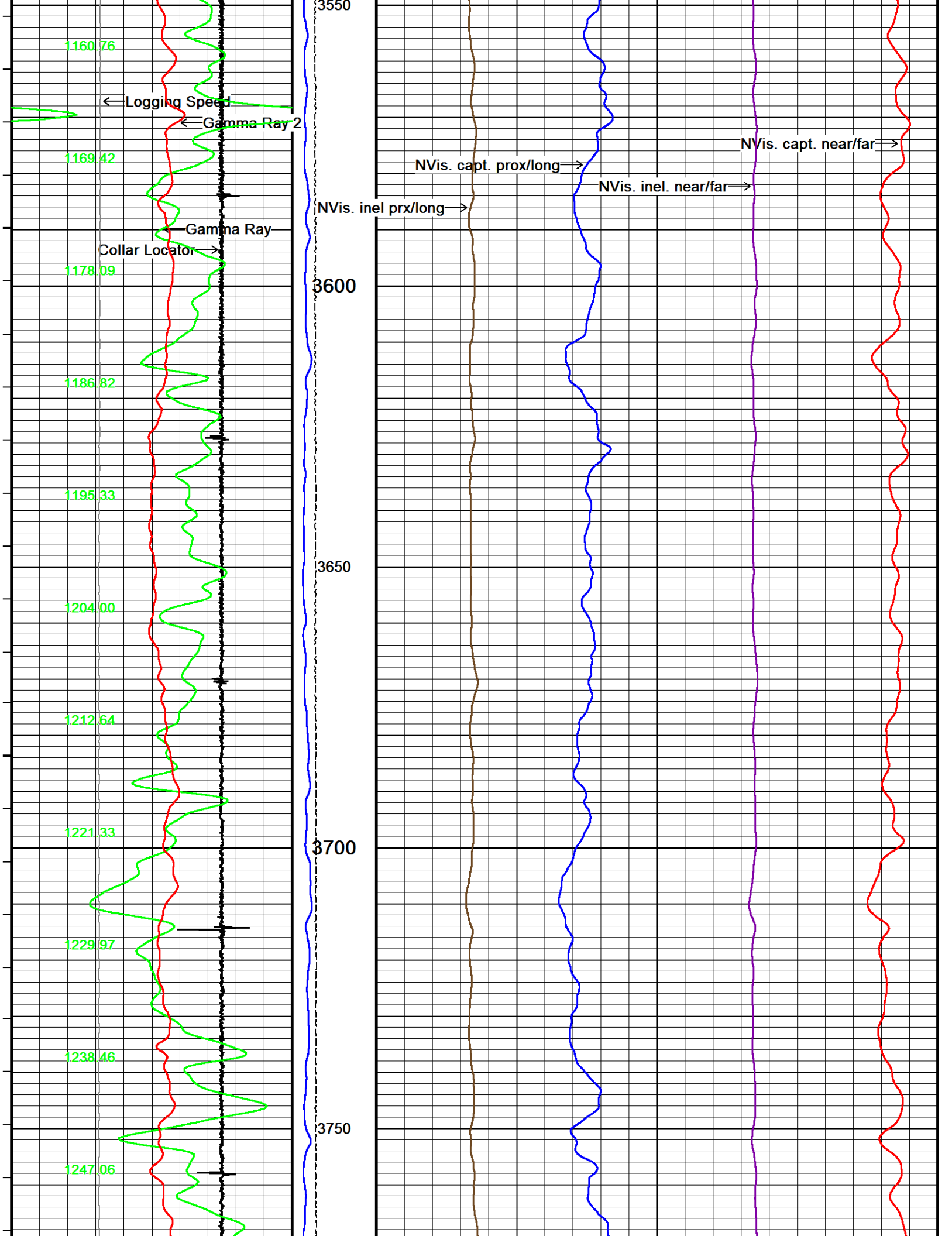


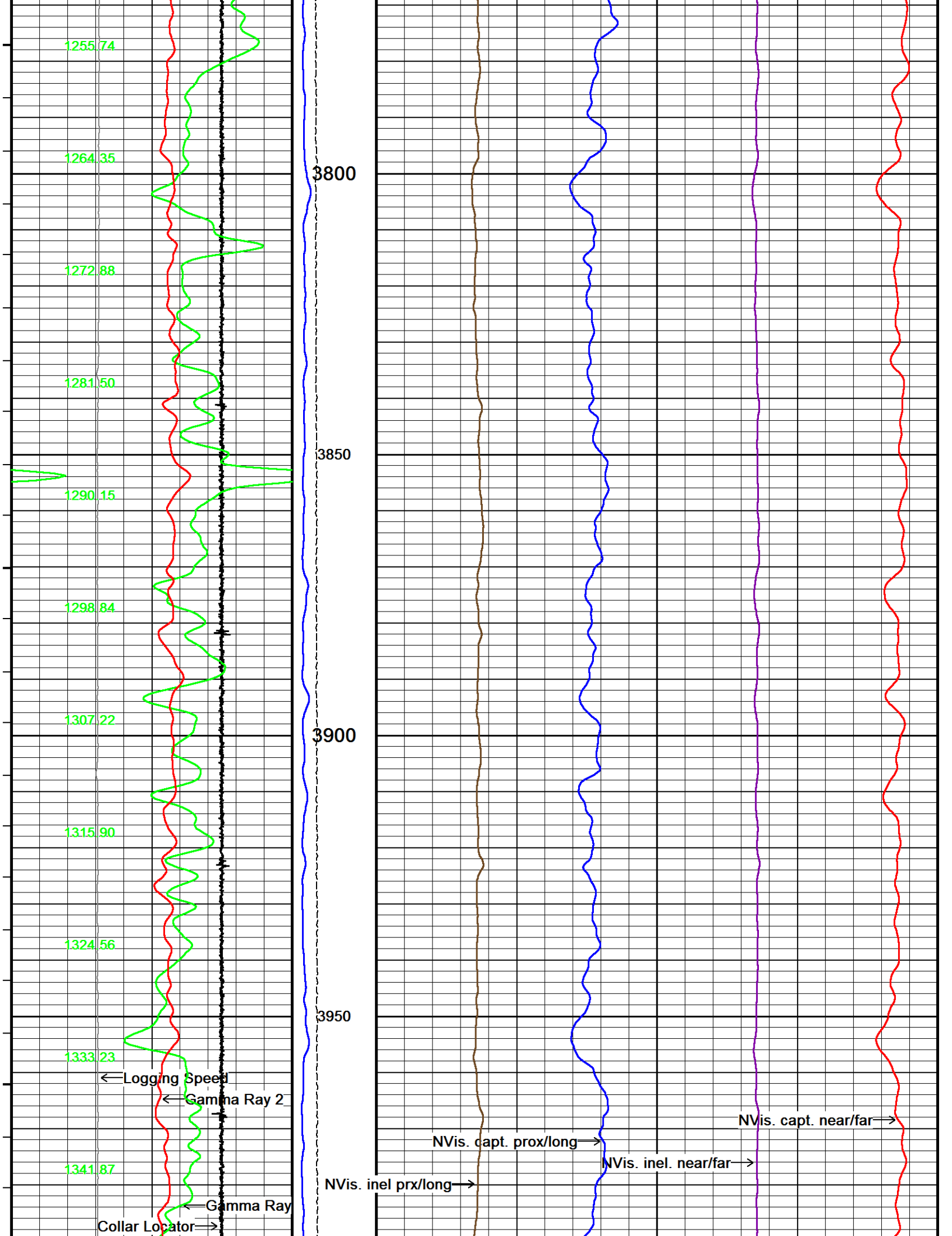


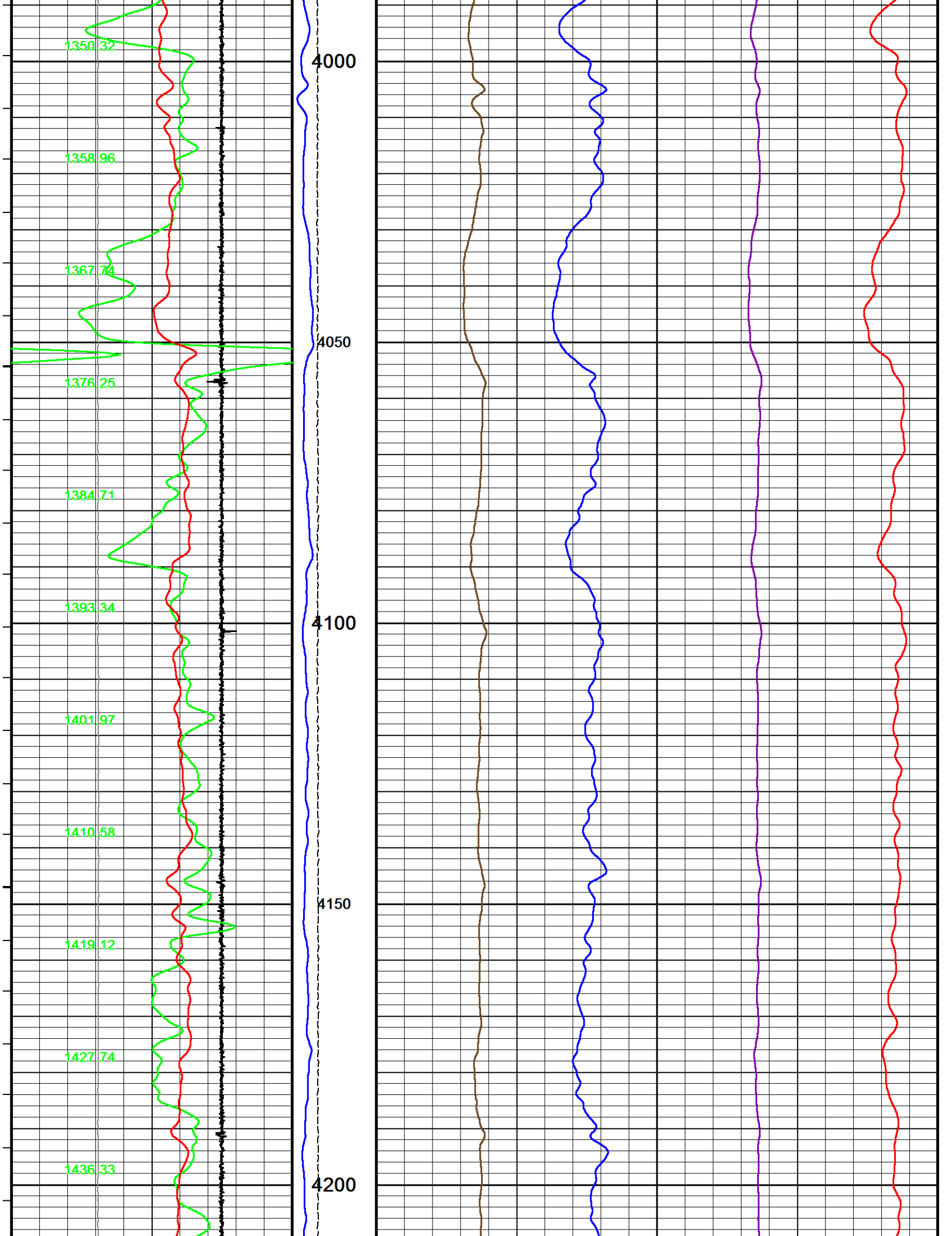


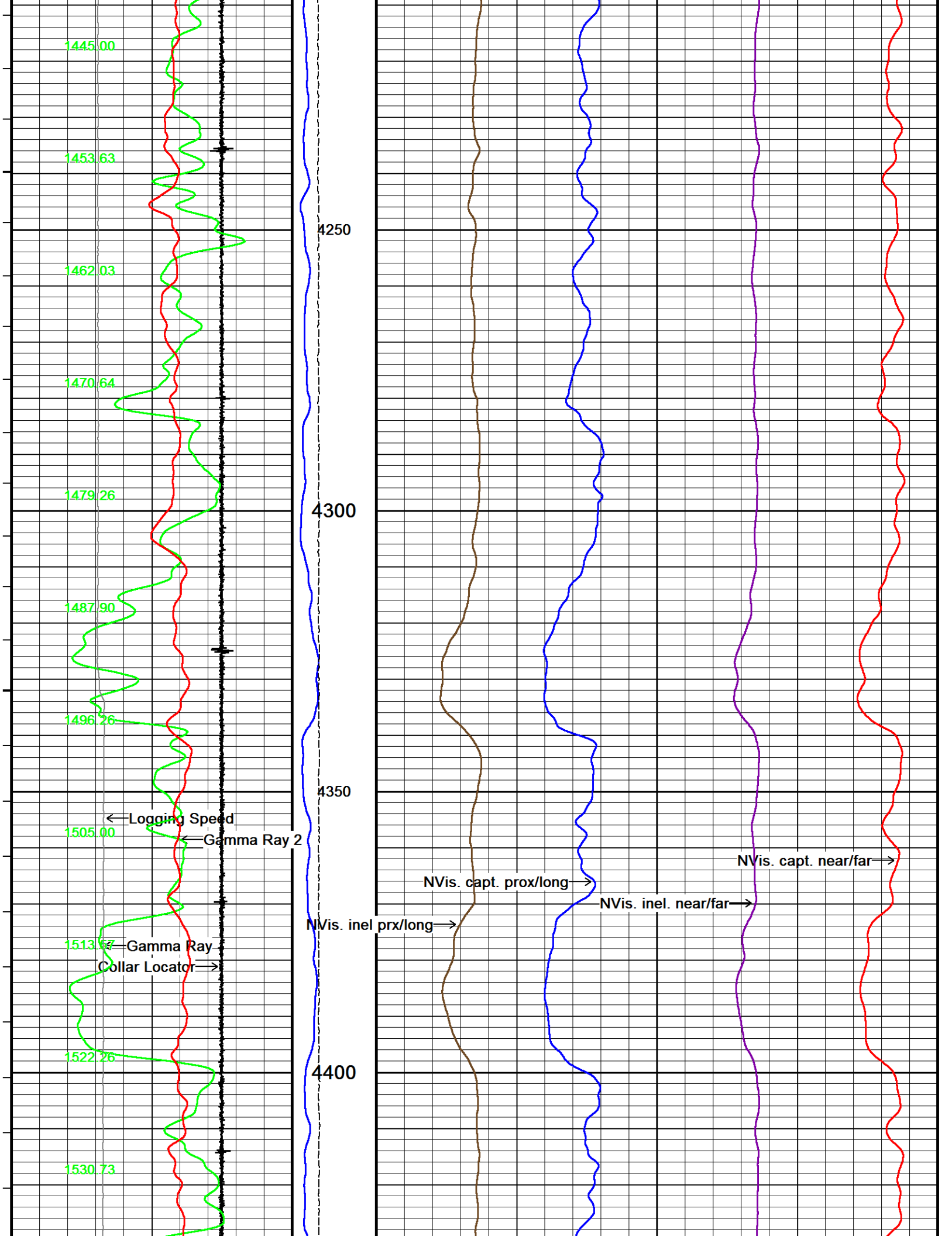


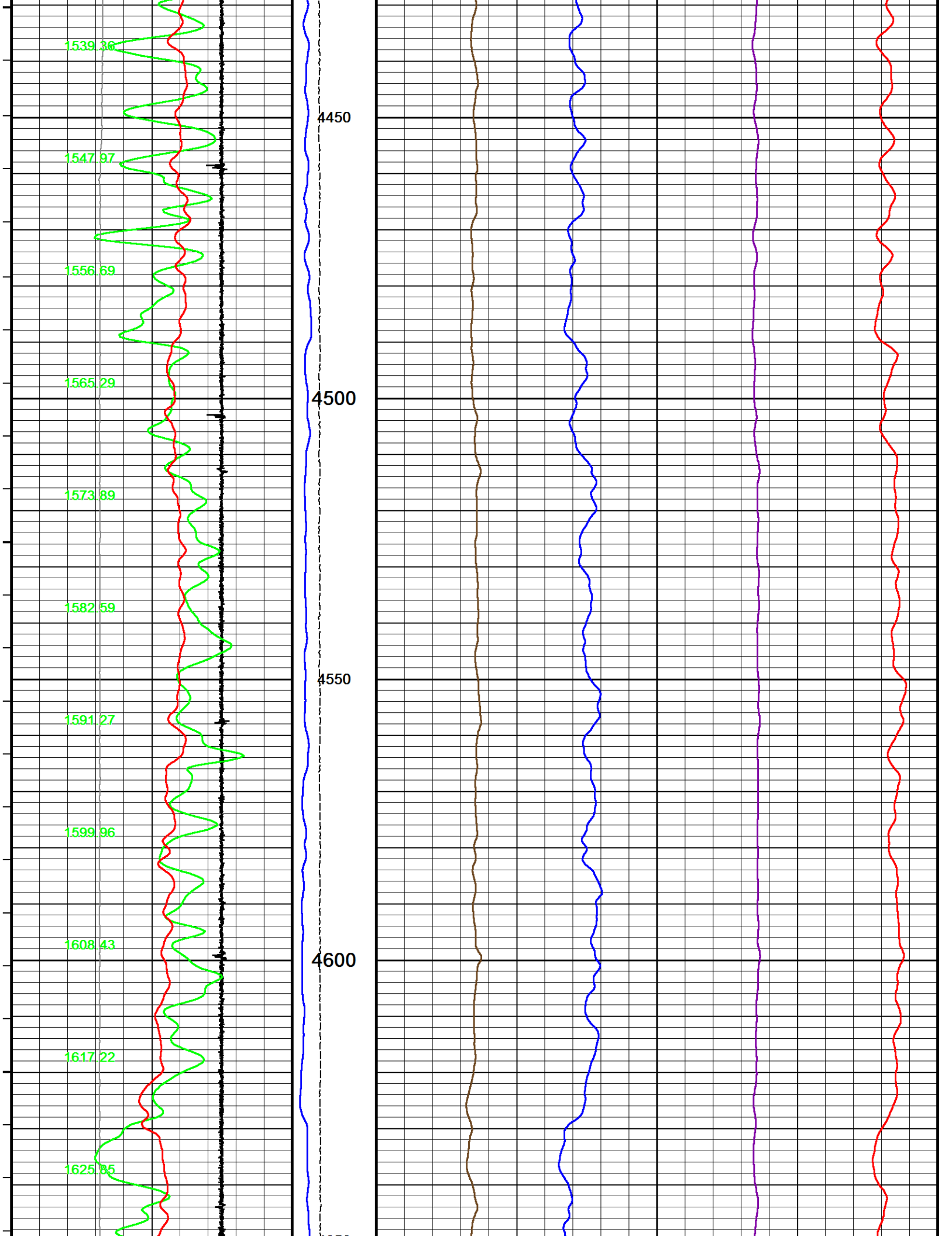


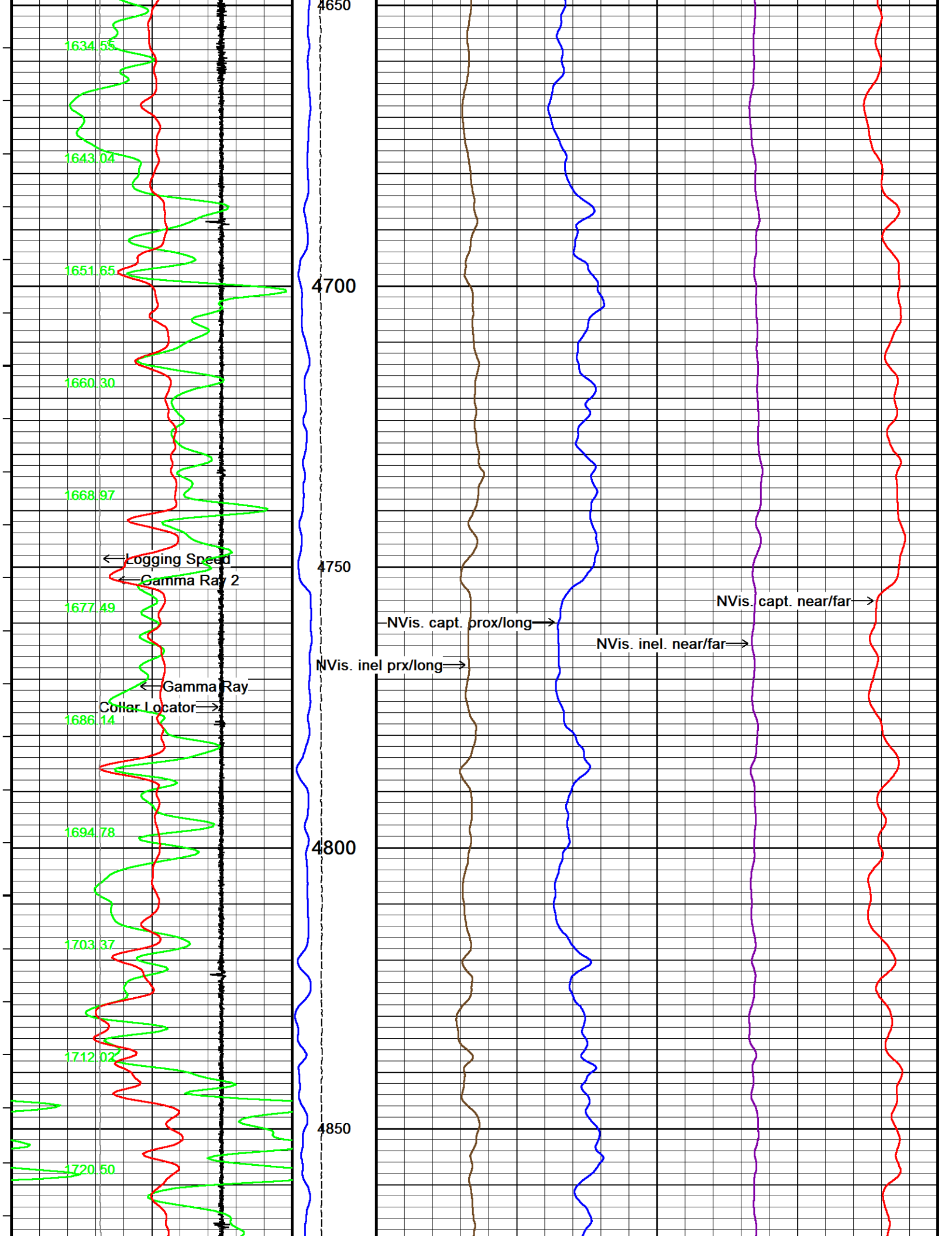


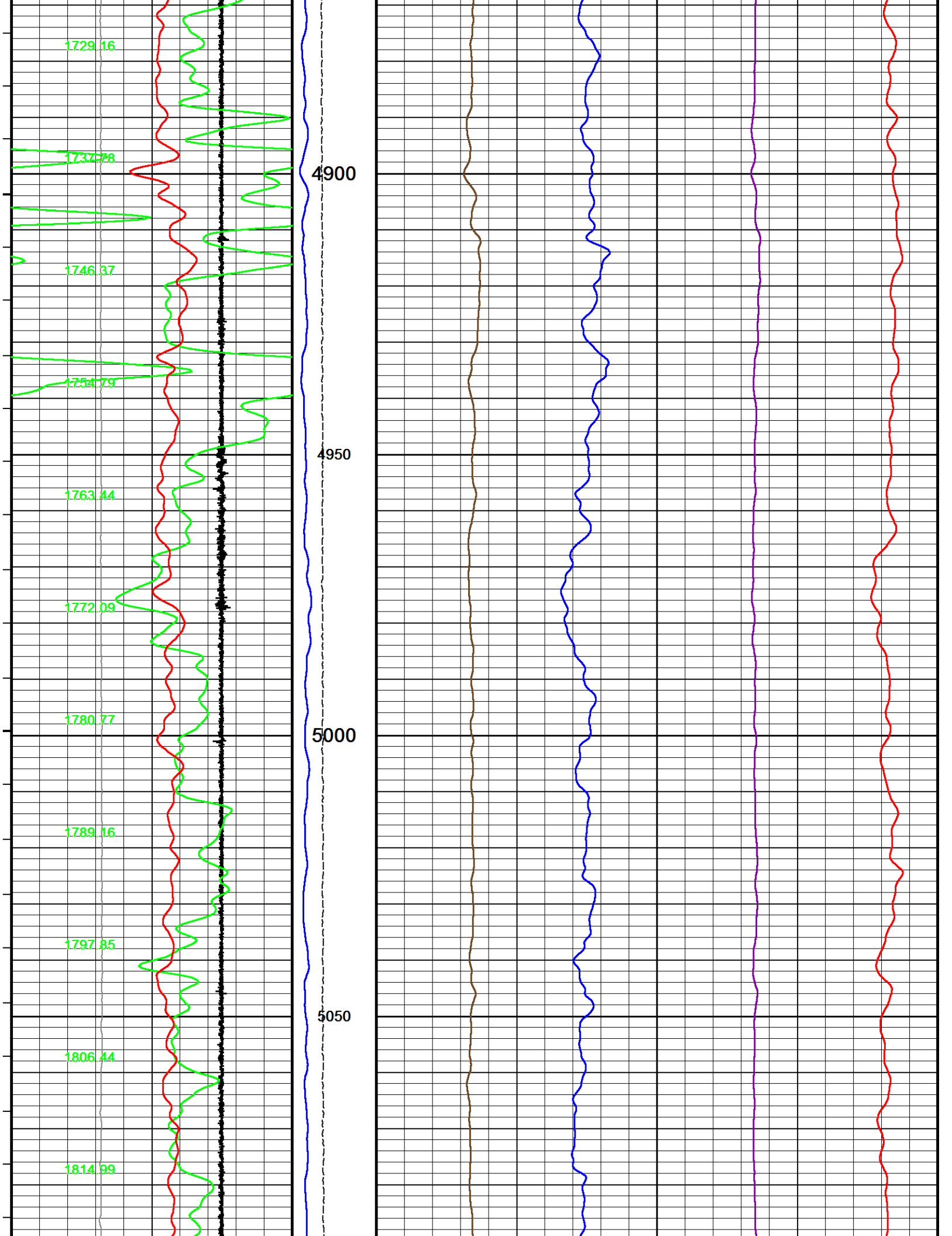


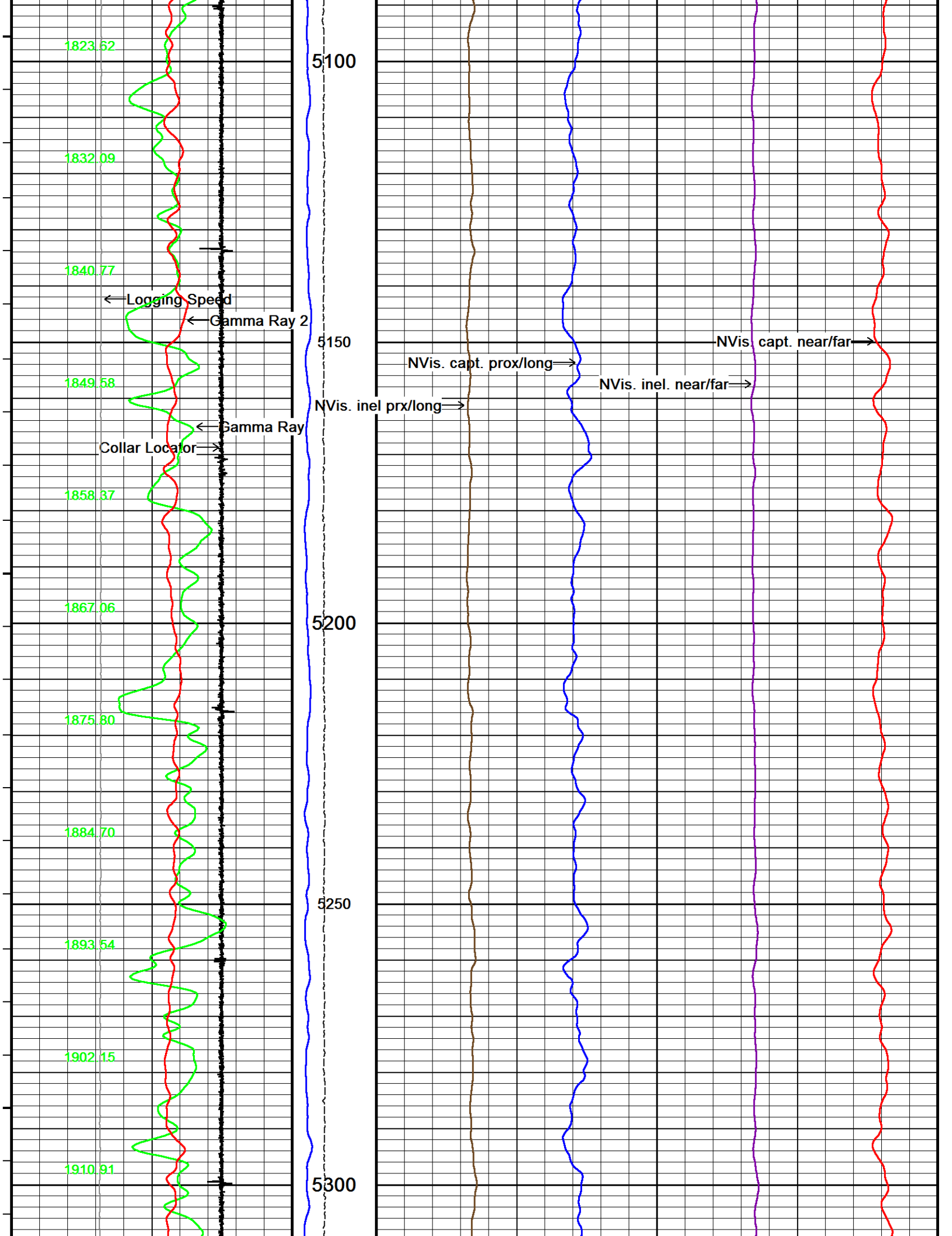


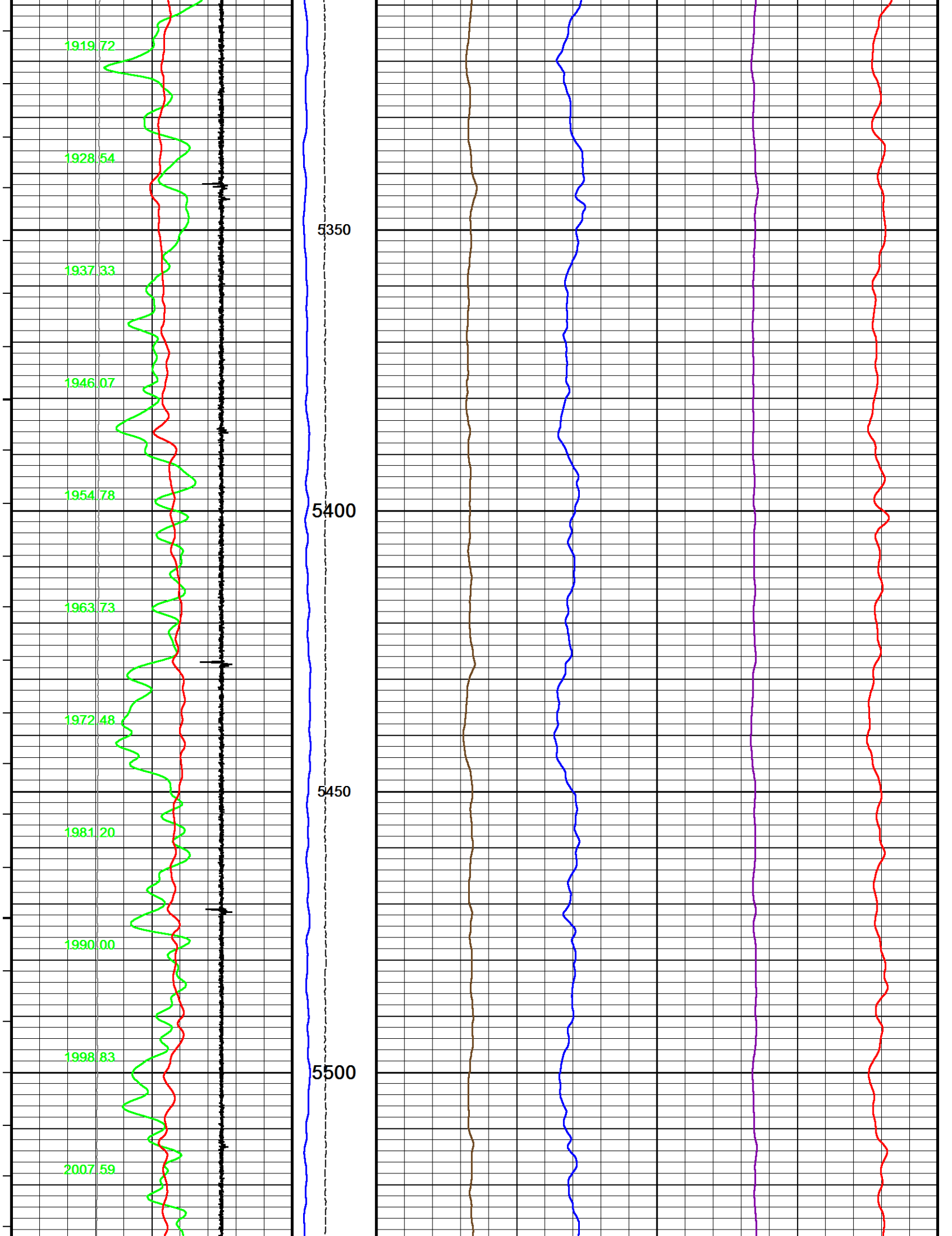


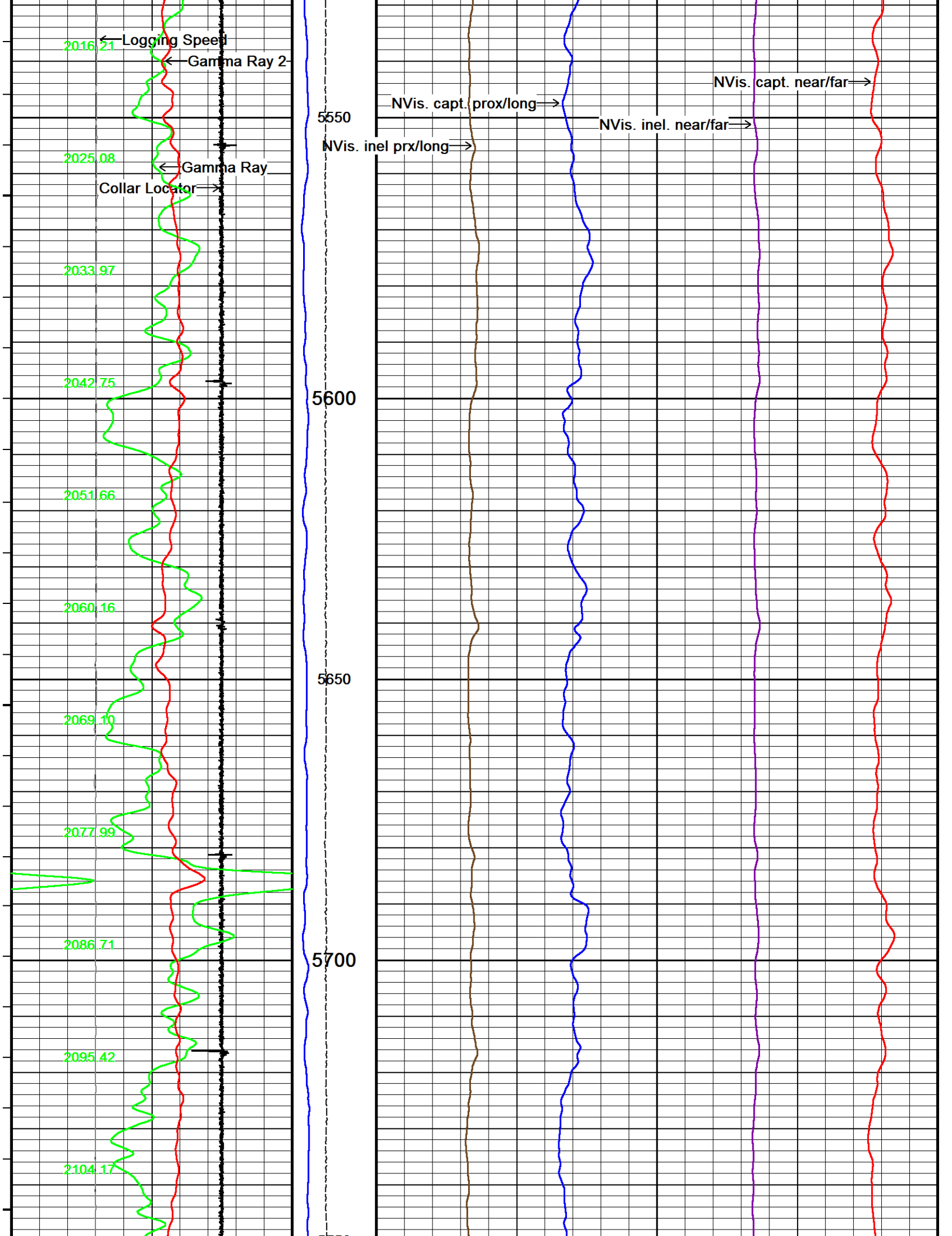


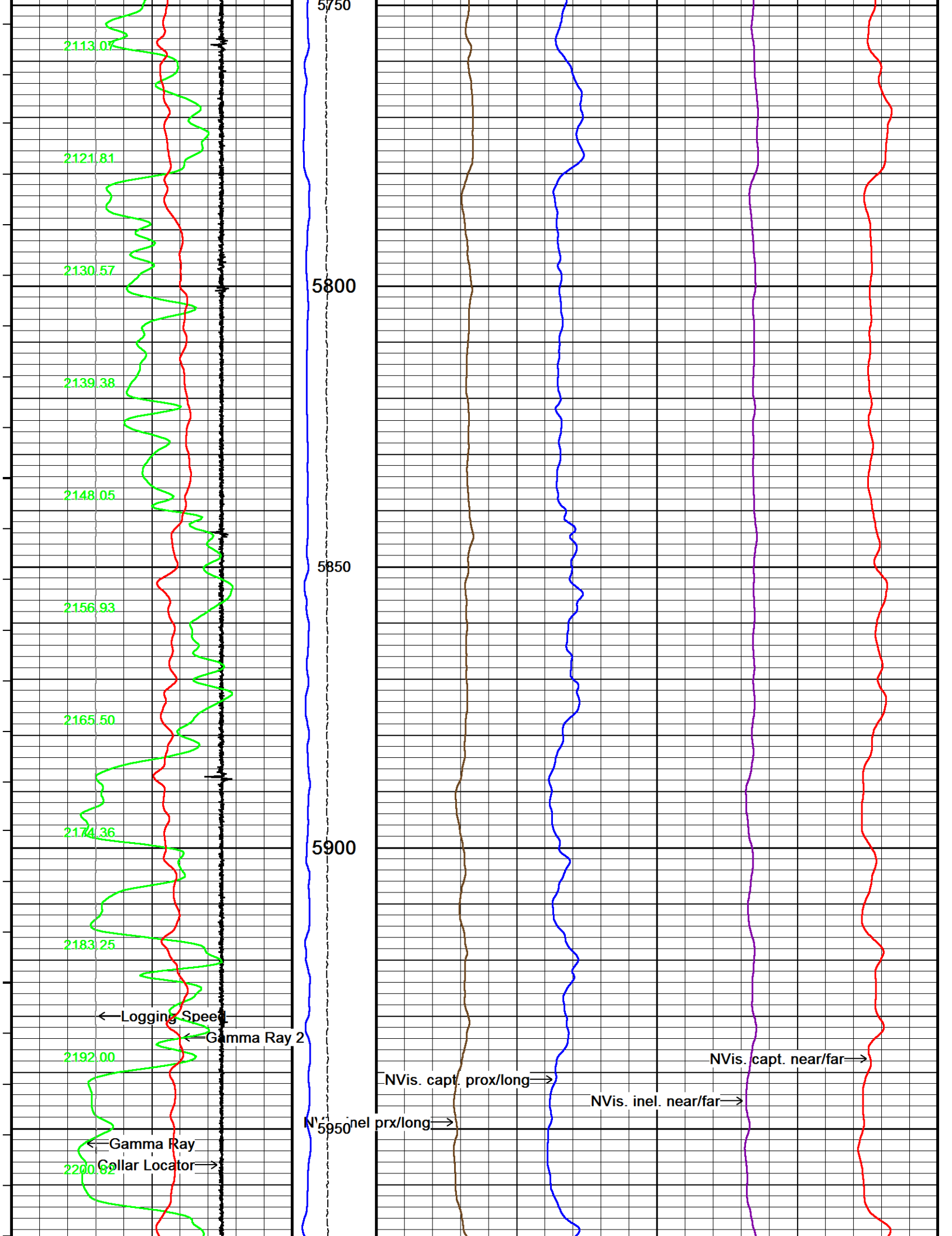


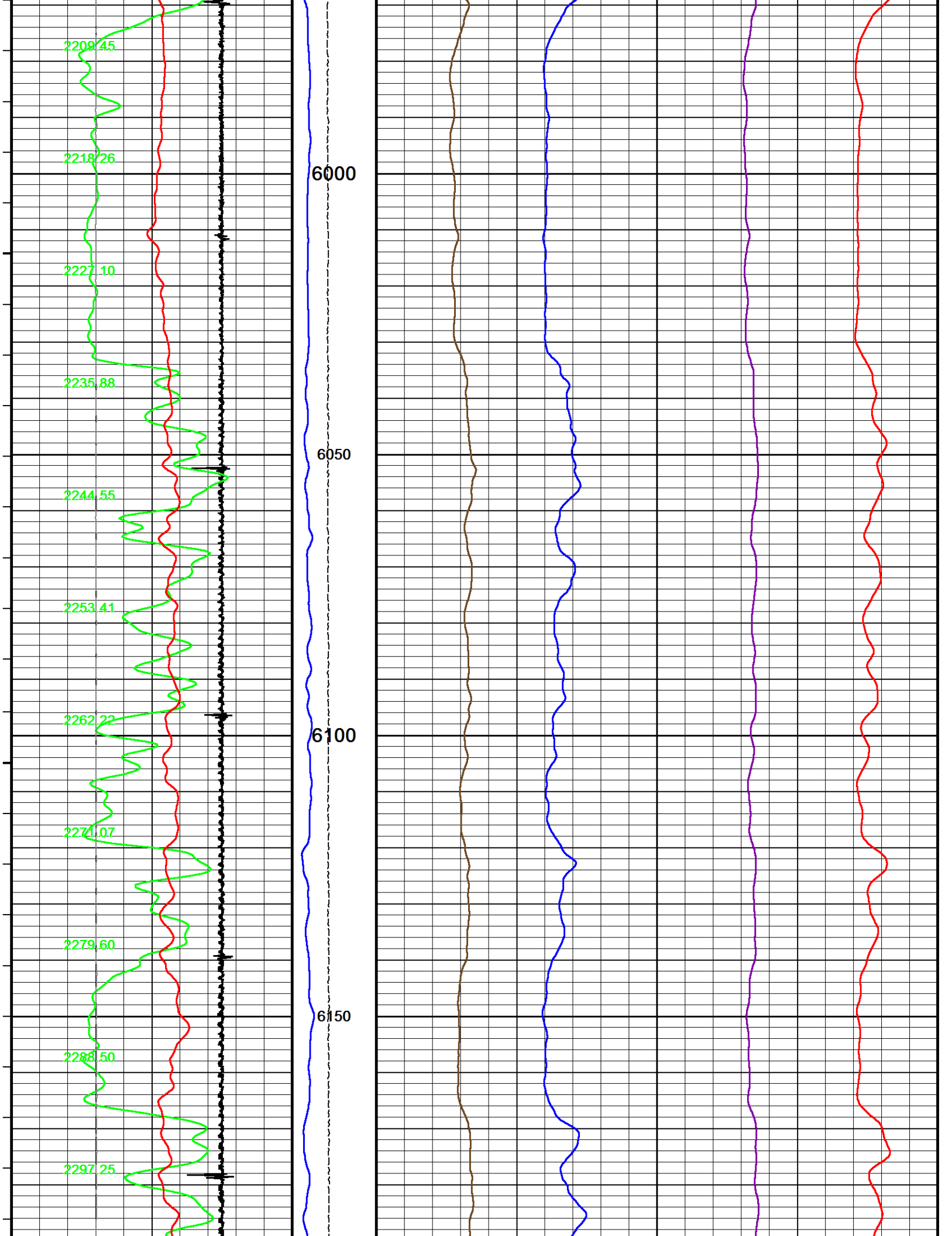


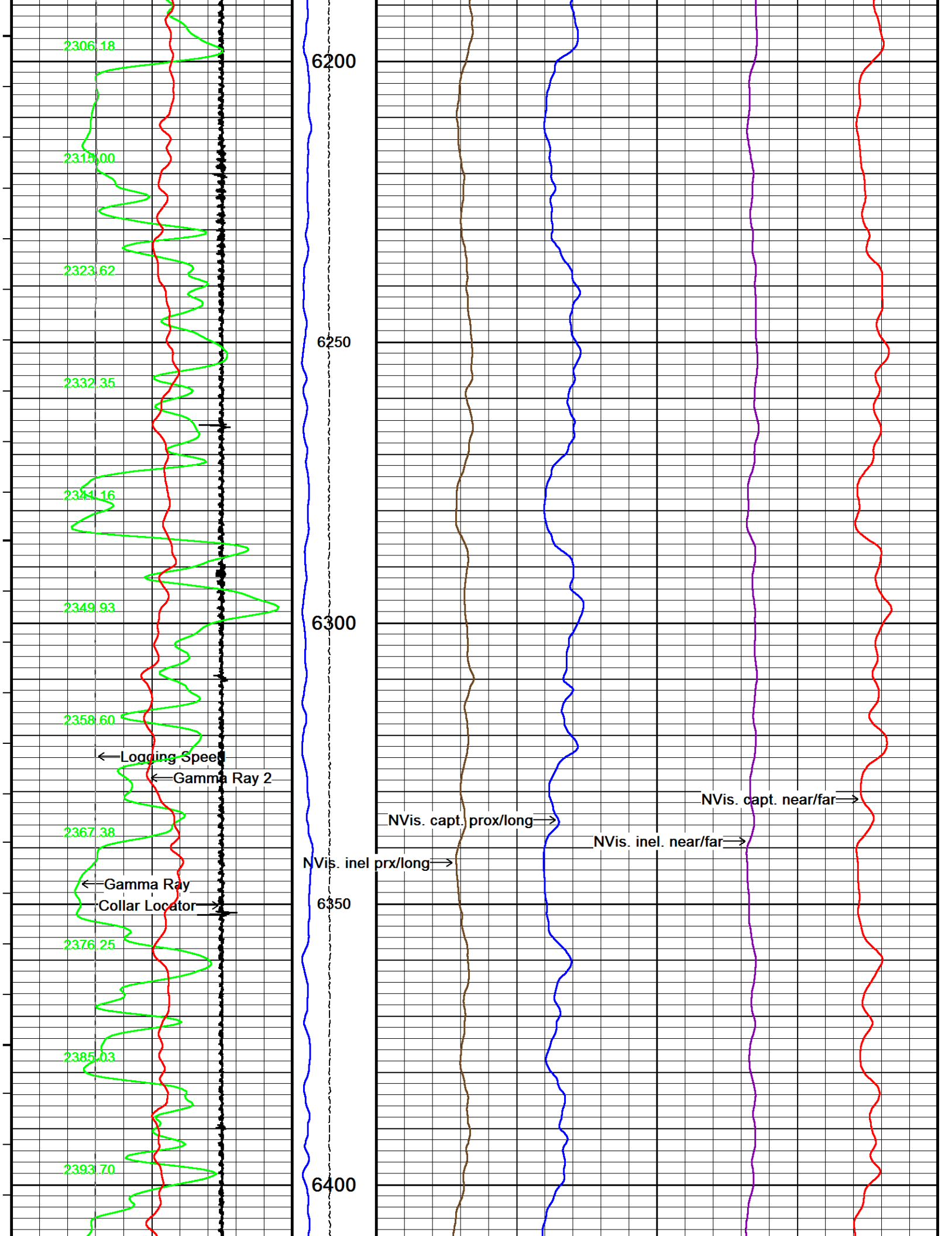


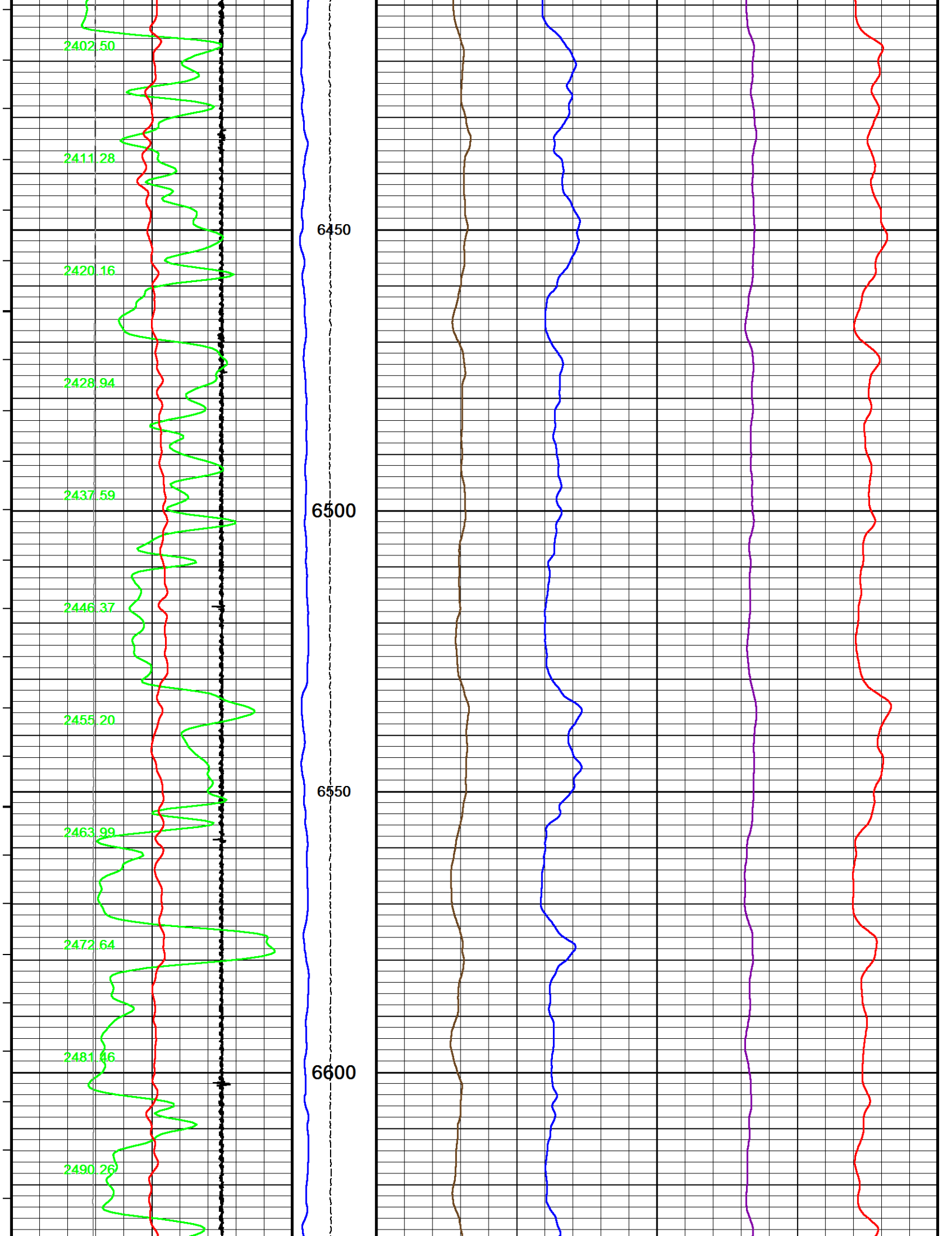


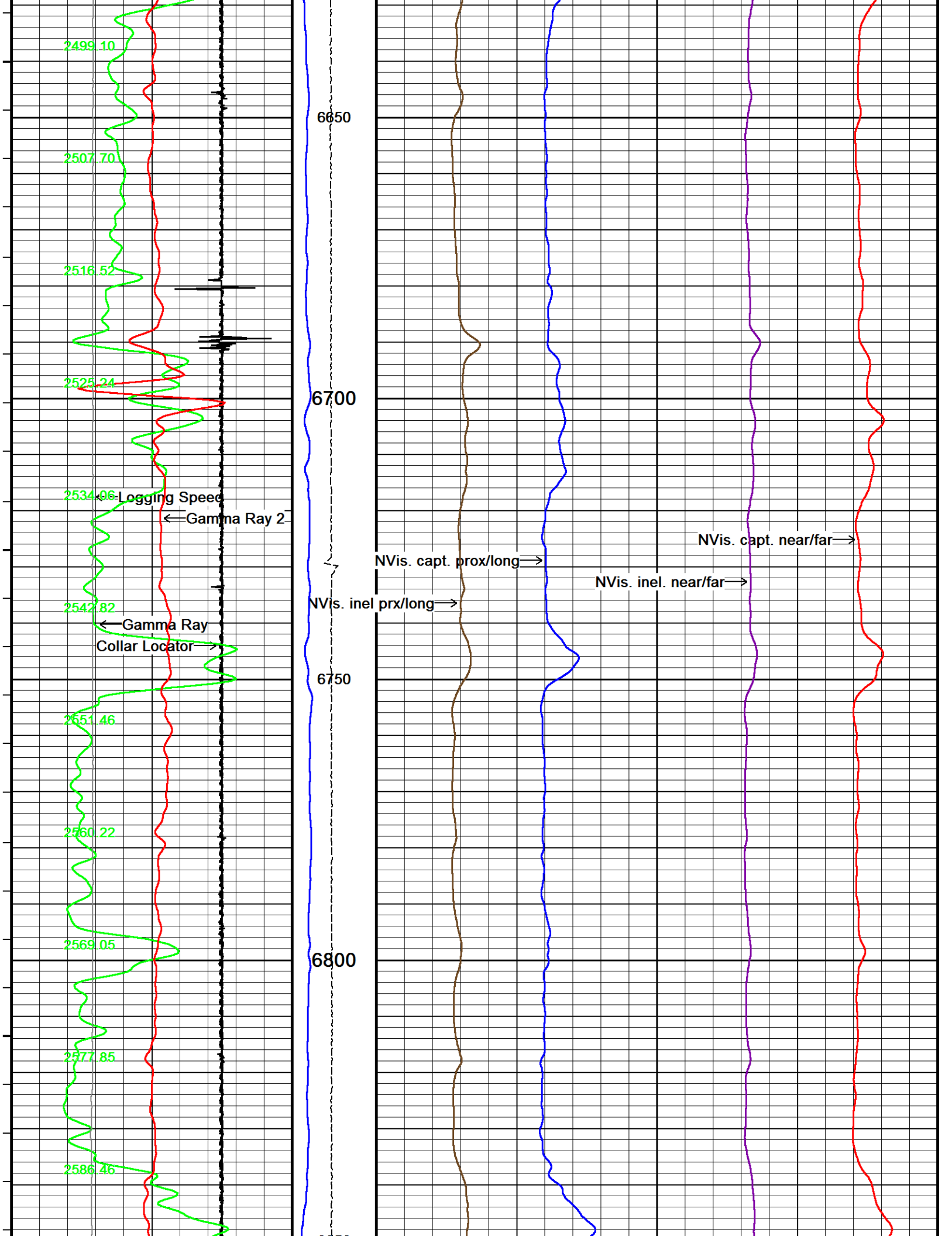


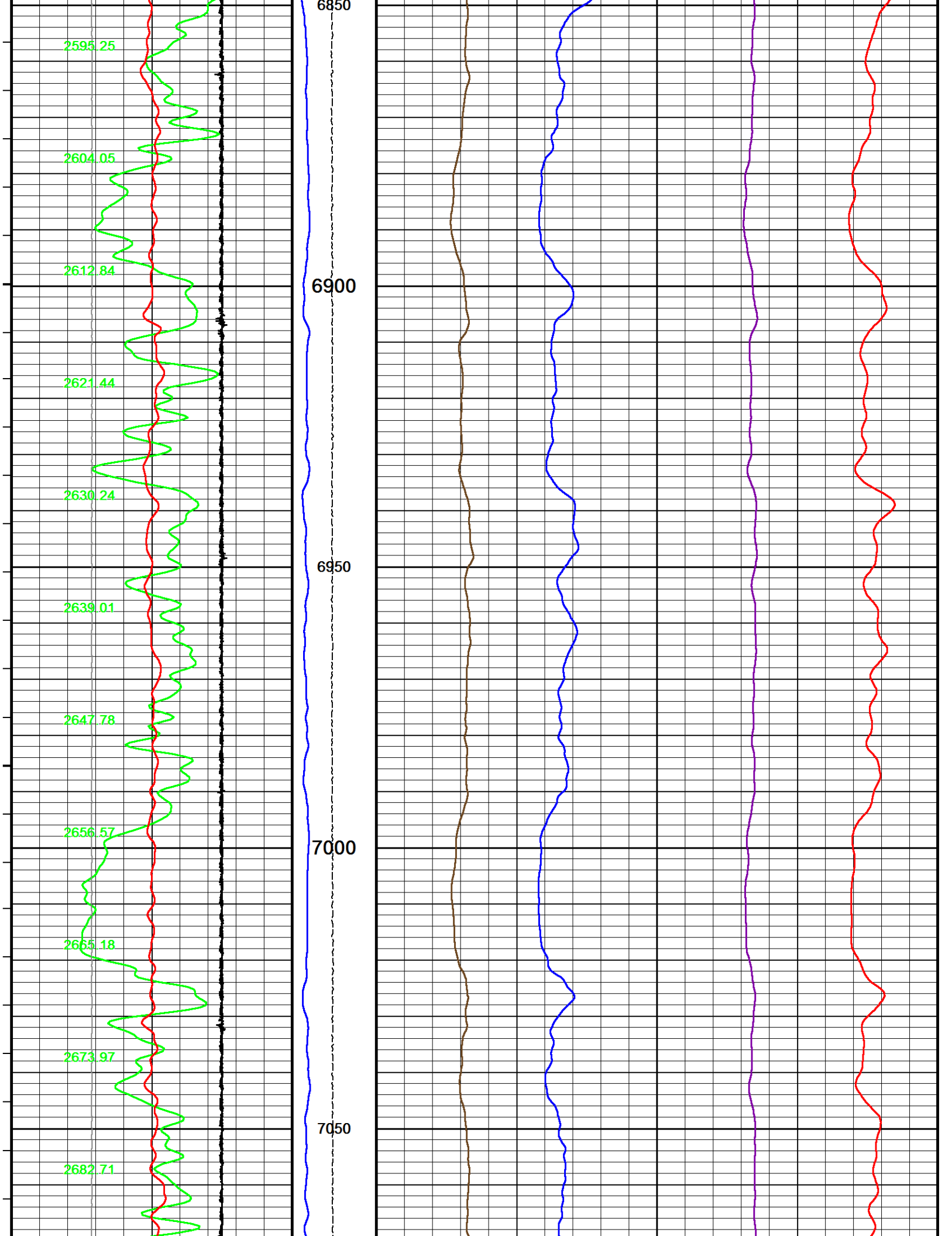


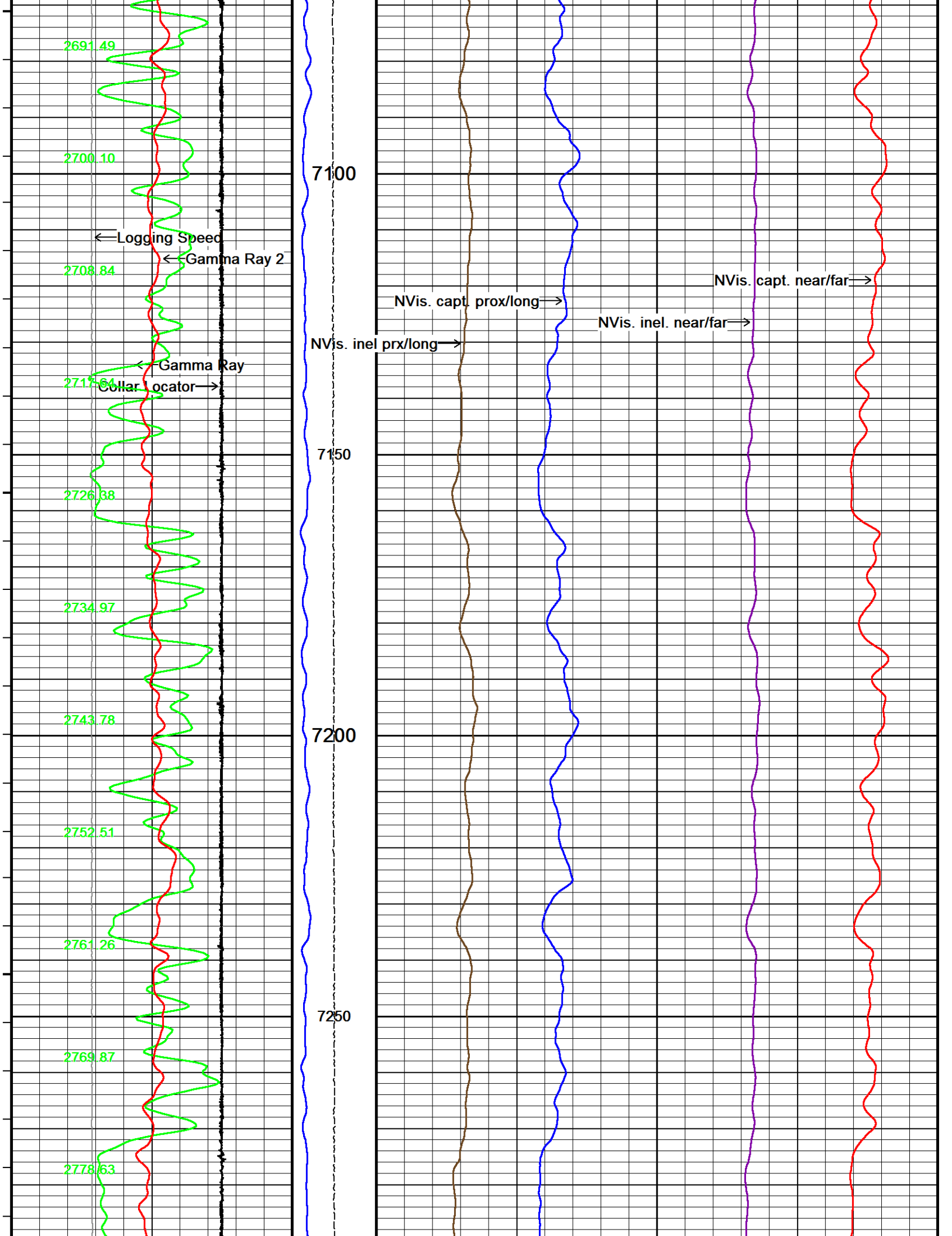


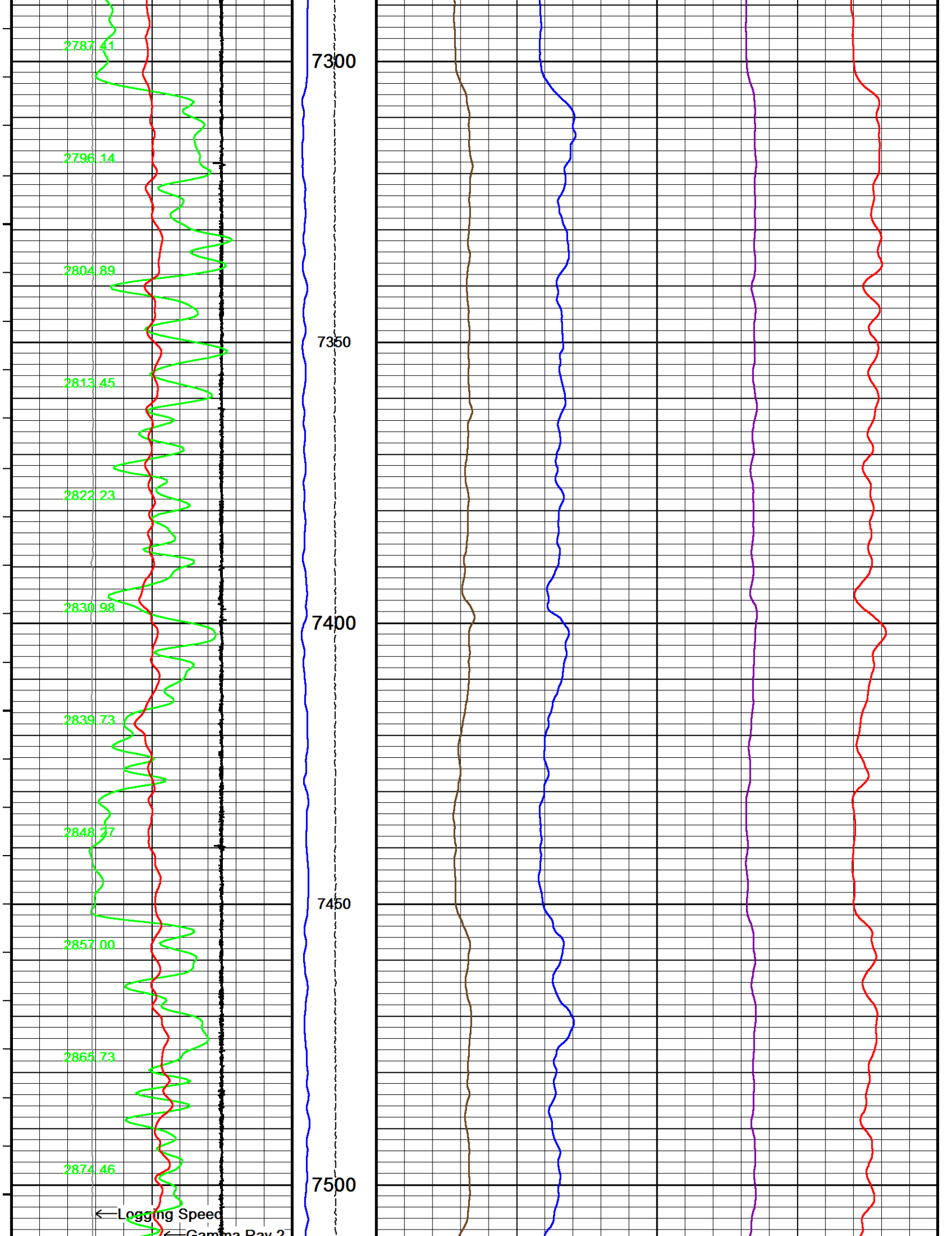


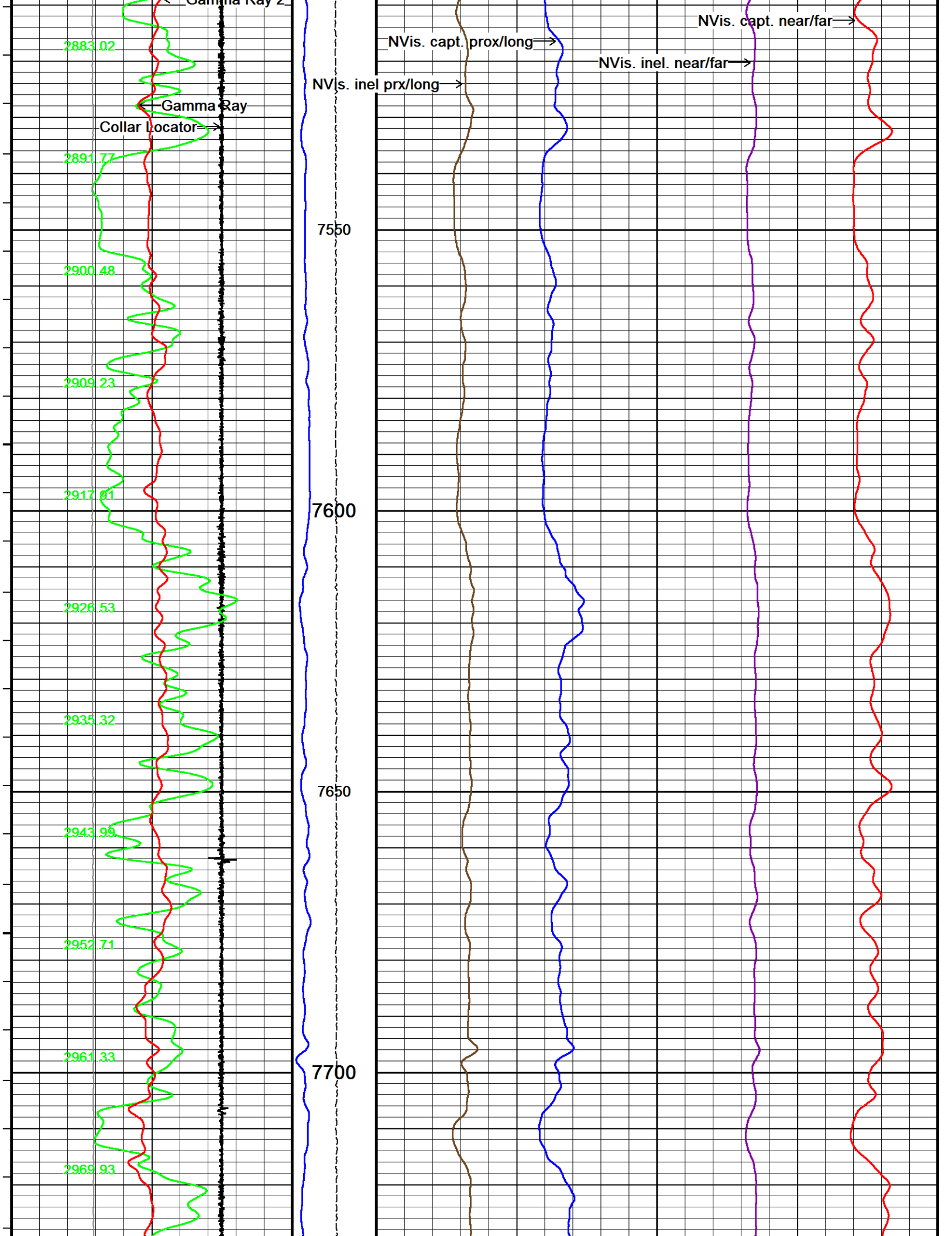


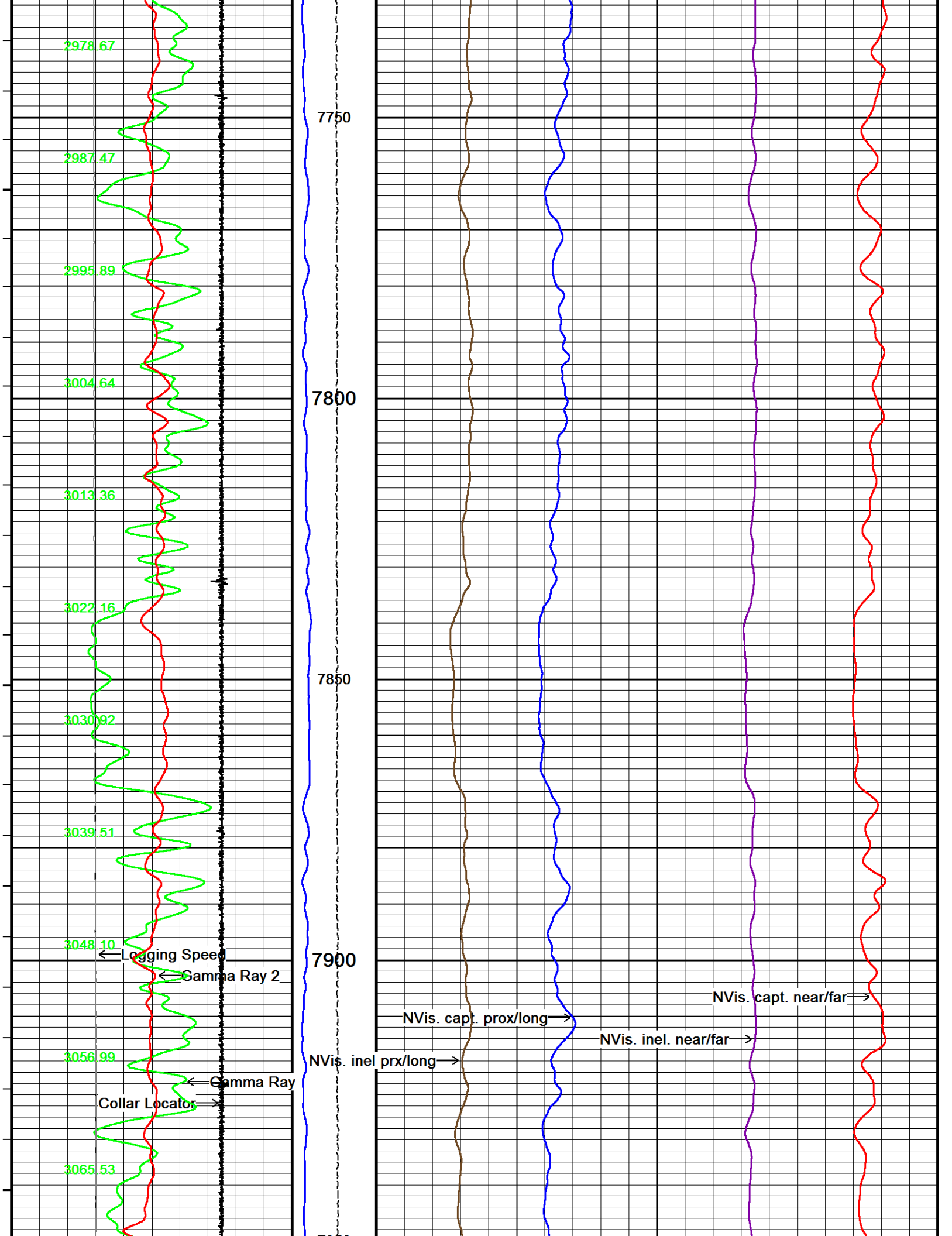


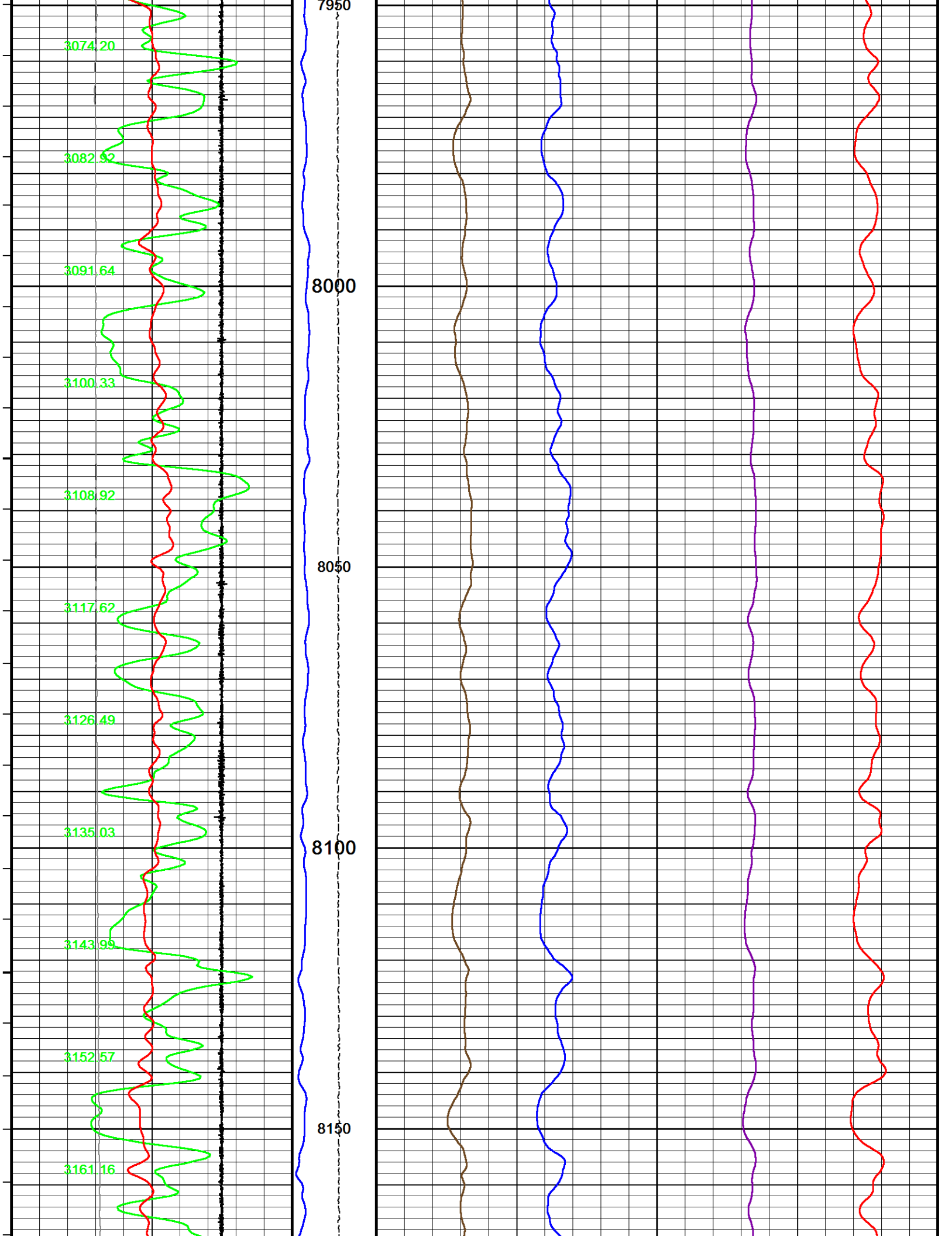


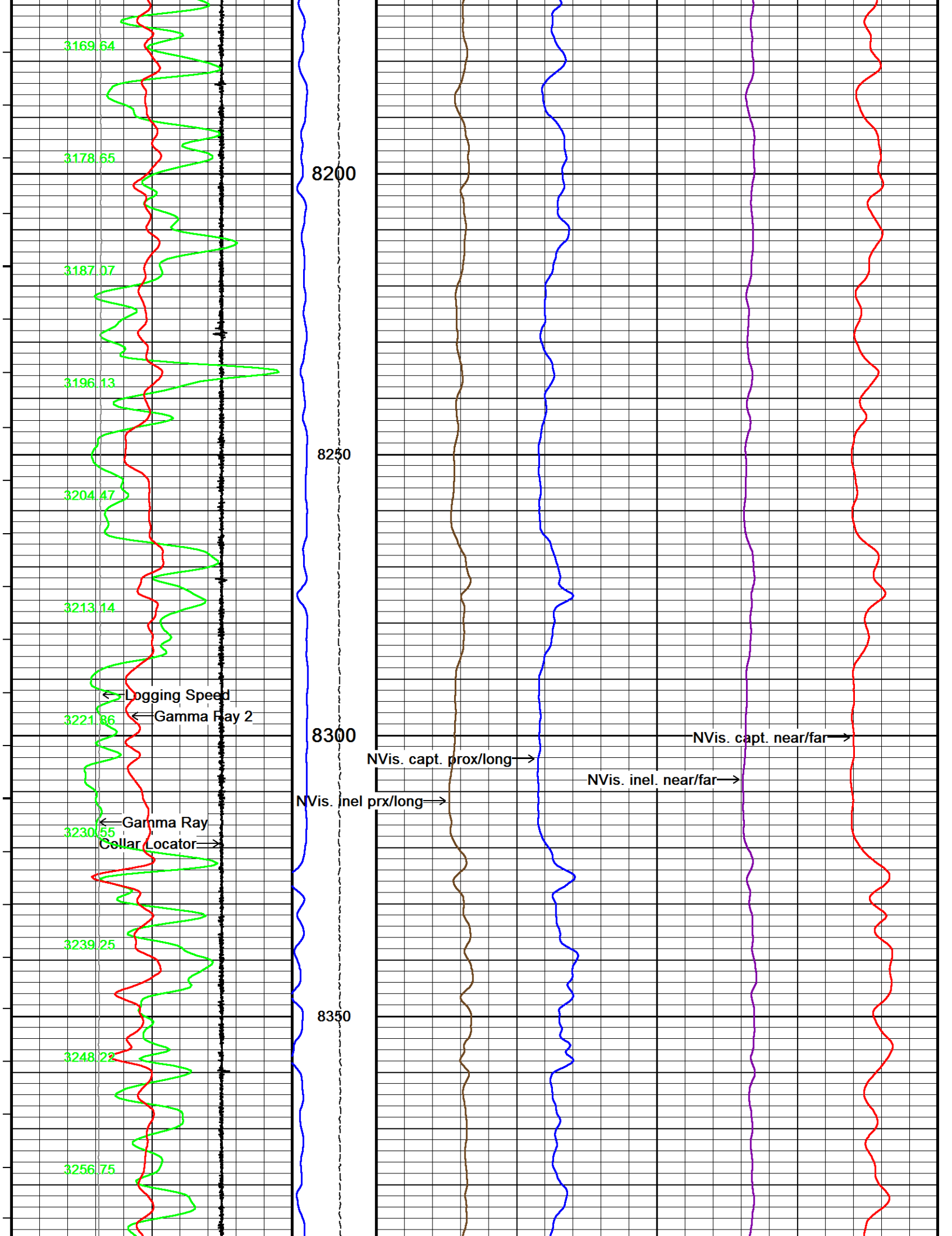


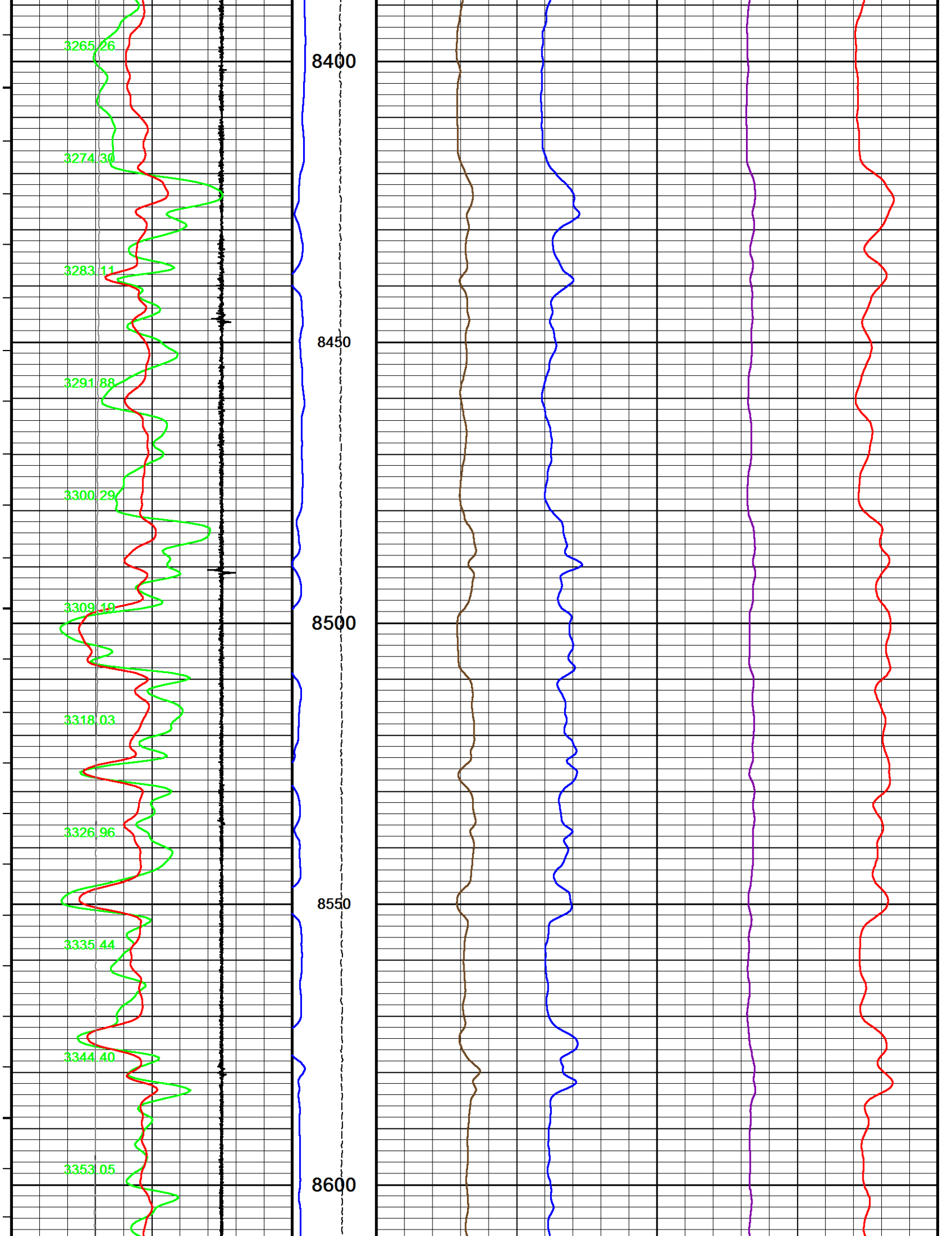


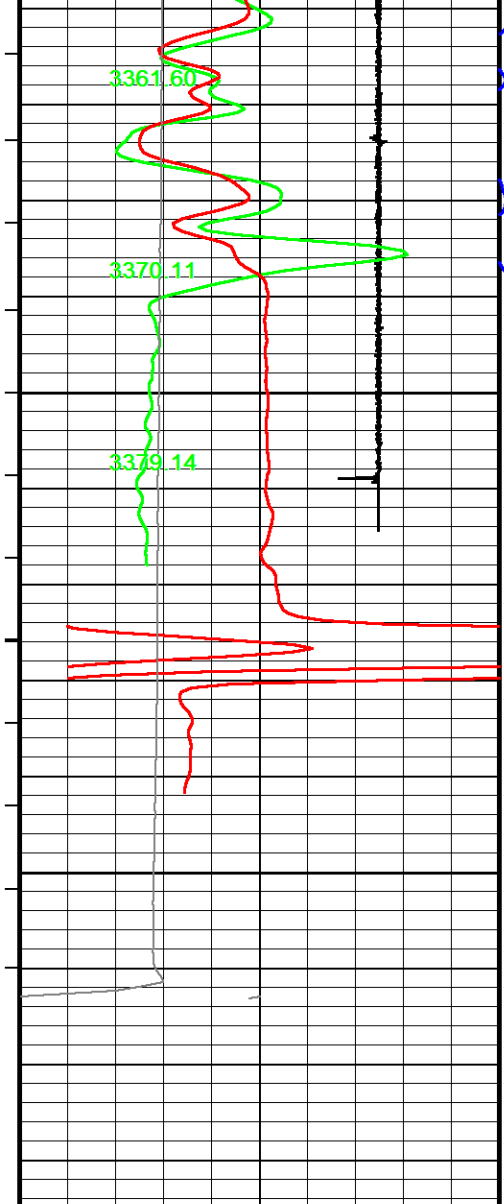




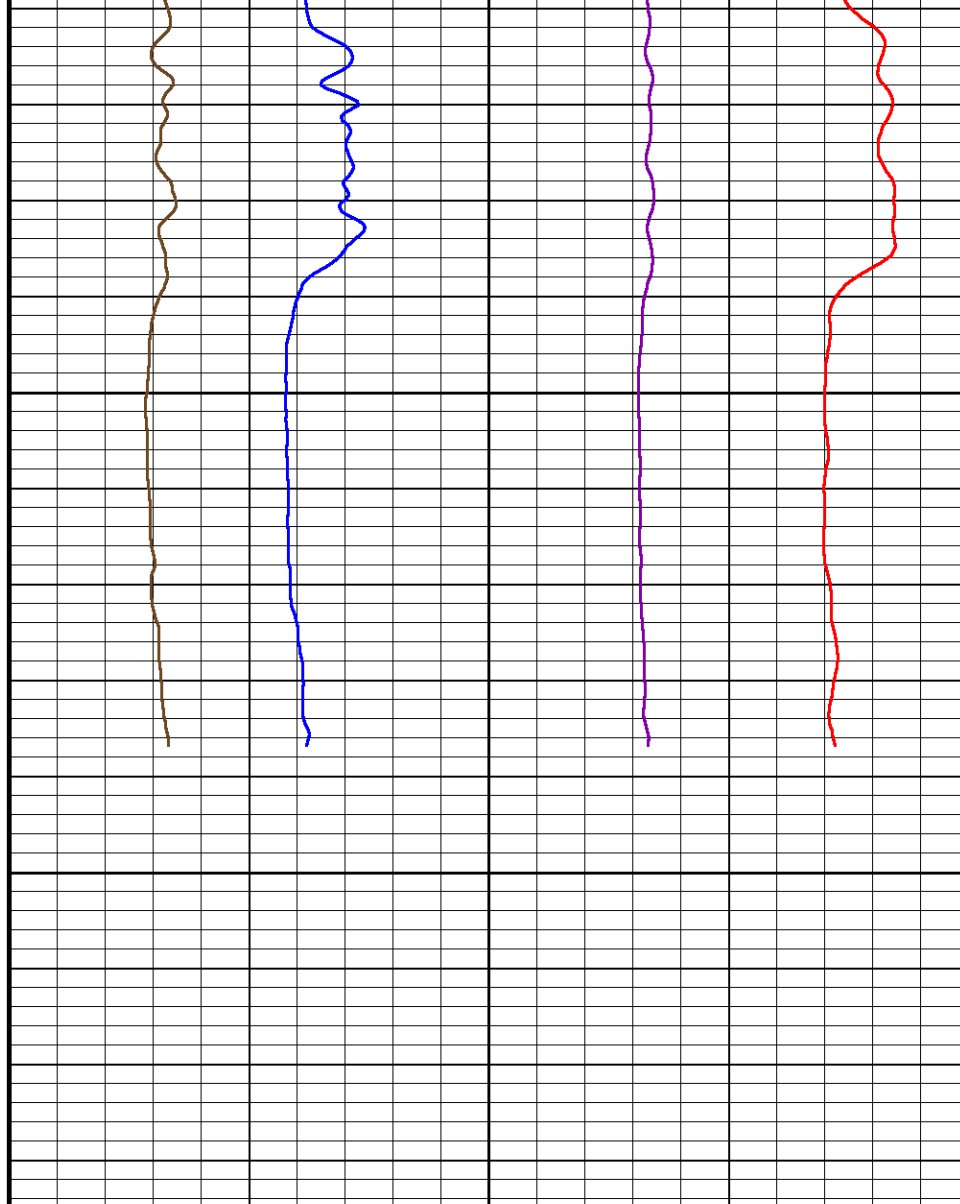








8650  
8700  
8732  
Depth in Feet



NVis. inel. prx/long    NVis. capt. prox/long    NVis. inel. near/far    NVis. capt. near/far  
0    122,0    60,0    20,0    14

← Timing Marks every 60.0 sec

Gamma Ray  
API  
0    75    150

VRBN  
400000900000

Gamma Ray 2  
API  
0    75    150  
0    750    1500

TENS  
0    3000

QPG Pressure psi every 1 in    Collar Locator millivolts  
-300    300

Logging Speed Feet per minute

Replay

-15

Scale  
1:240

Depth Based Data - Maximum Sampling Increment 12.5cm  
 Plotted on 09-DEC-2015 14:38  
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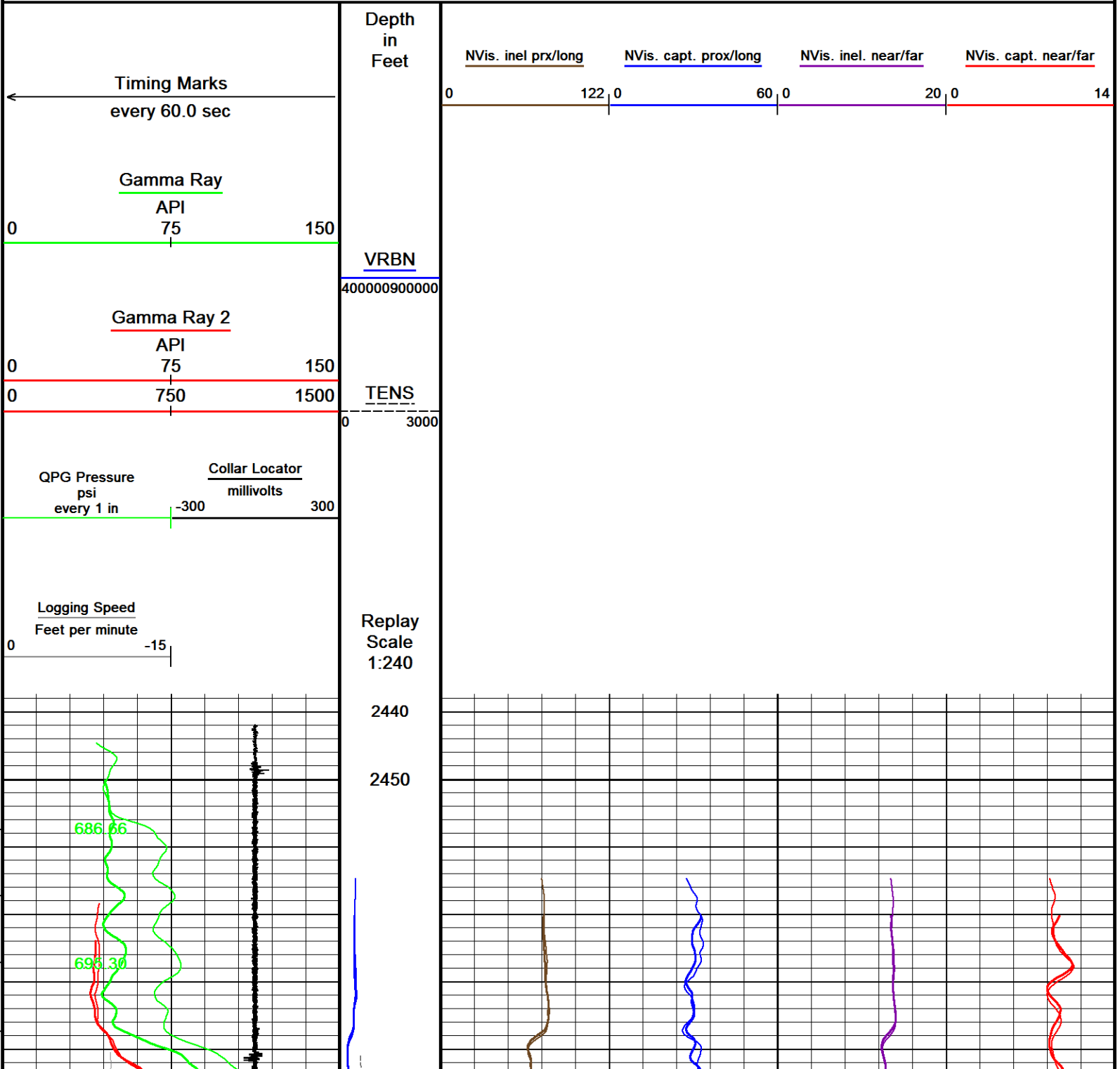
MAIN  
REPEAT 2

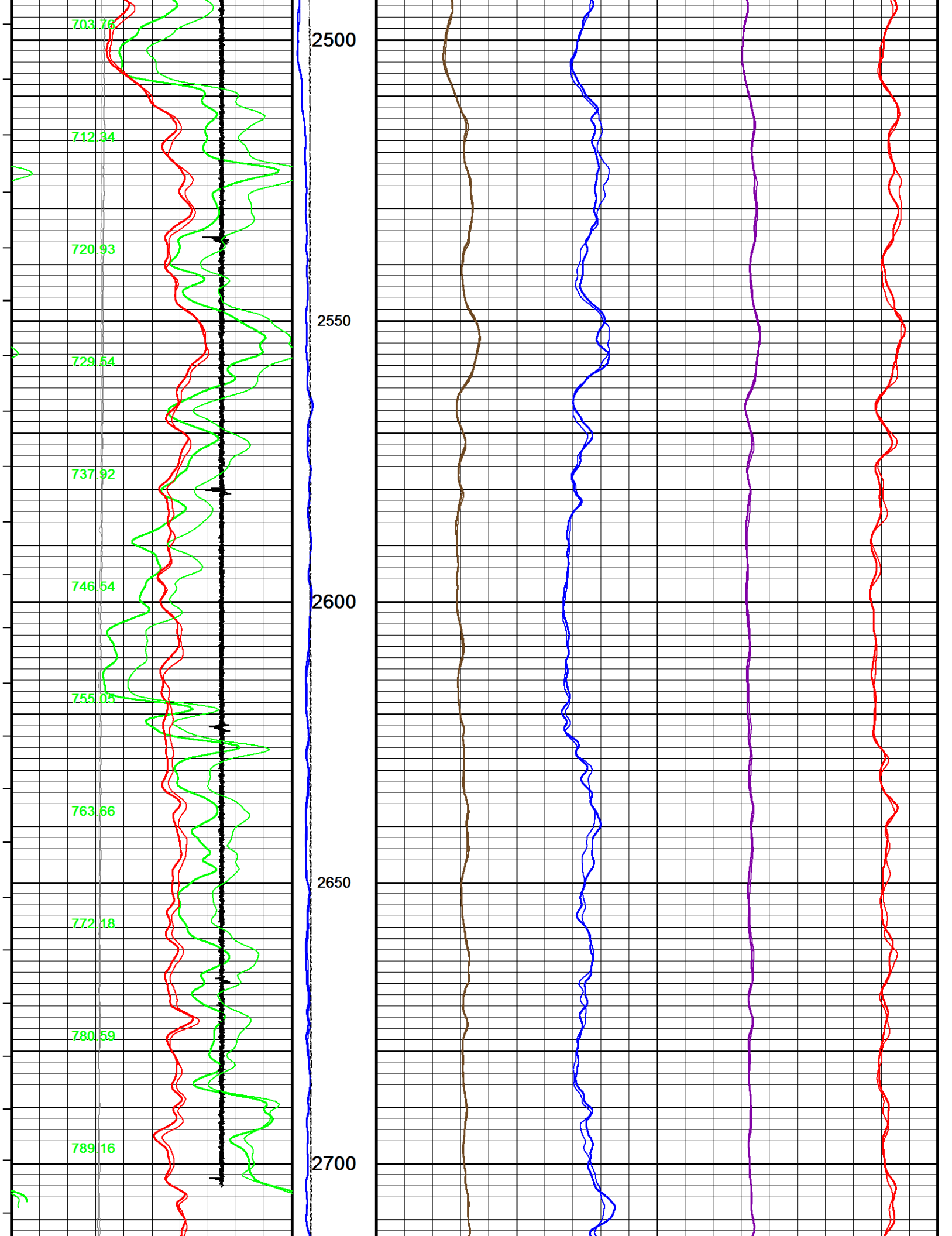


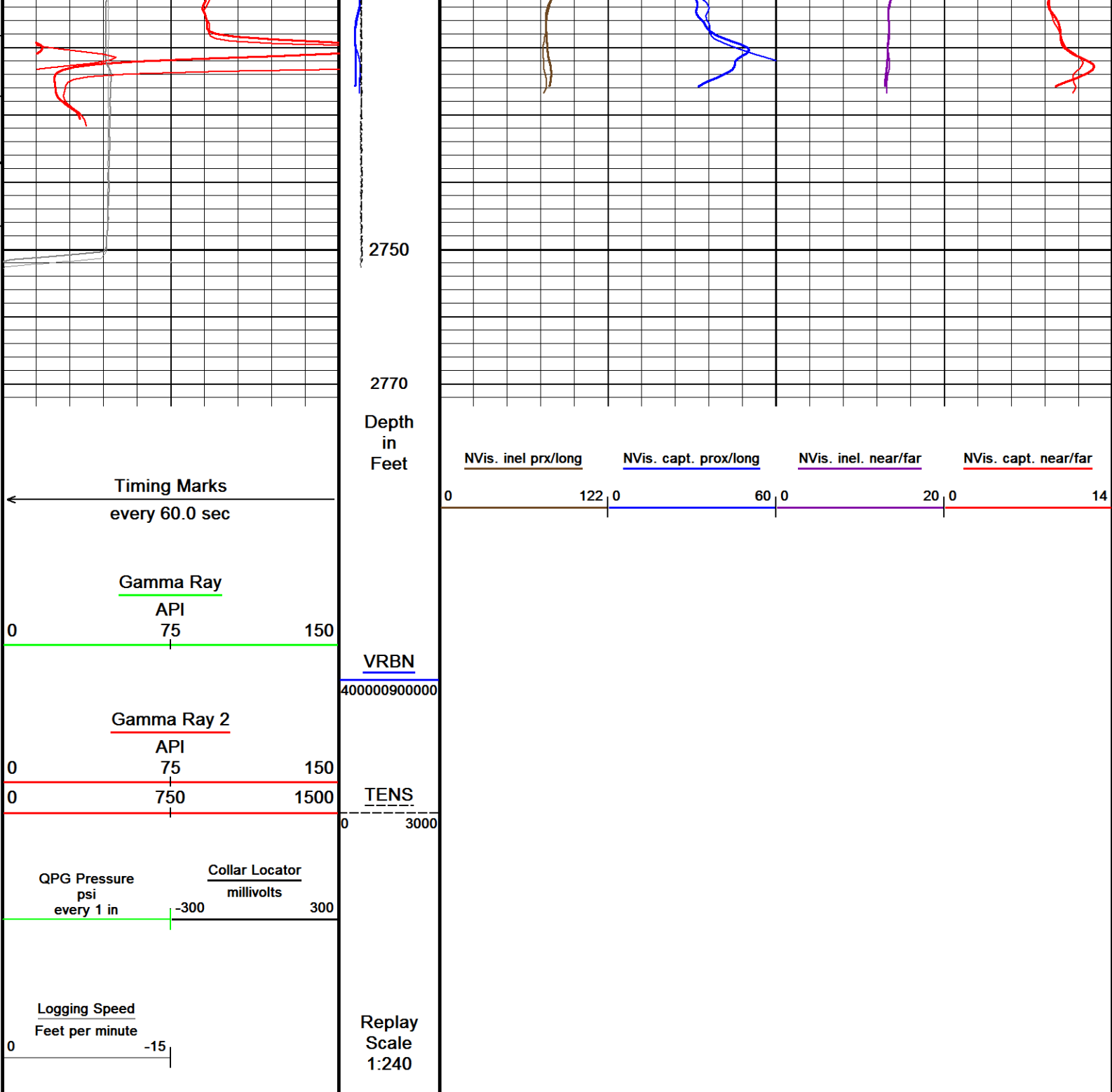
REPEAT 1  
REPEAT 2



Depth Based Data - Maximum Sampling Increment 12.5cm  
 Plotted on 09-DEC-2015 14:38  
 Filename: C:\Logs\Caerus\Puckett 13B-1\CREB-SSB.dta  
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 System Versions: Logged with 16.00.6296 Processed with 16.00.6296 Plotted with 16.00.6296

↑ REPEAT 1 REPEAT 2 ↑

DOWNHOLE EQUIPMENT  
 C:\Logs\Caerus\Puckett 13B-1\CREB-SSB\_001.dta

Mono-Cablehead  
 MCH-AA 0 LG: 1.03 ft WT: 2.2 lb OD: 1.457 in



Comm Sub

WCC-CB 107 LG: 5.97 ft WT: 24.3 lb OD: 1.693 in

Gamma Ray K  
UGR-KA 108 LG: 2.34 ft WT: 17.6 lb OD: 1.693 in

Quartz Press, Dual ITB, 43mm  
QPG-EA 107 LG: 2.23 ft WT: 8.8 lb OD: 1.693 in

Centroller, 43mm, ITB, 3-arm Bi-Direct  
CR3-BA 106 LG: 2.44 ft WT: 8.8 lb OD: 1.693 in

Tool Temperature, 43mm, 177C, 10-pin ITB  
TMP-NA 106 LG: 1.93 ft WT: 8.8 lb OD: 1.693 in

CRE series II processor section  
CRP-BA 2 LG: 3.31 ft WT: 15.4 lb OD: 1.654 in

Casing Reservoir Evaluation Tool Sonde  
CRM-BA 2 LG: 9.19 ft WT: 46.3 lb OD: 1.693 in

48.70 ft CCL - Collar Locator

46.26 ft GR - Gamma Ray

43.72 ft PRES - QPG Pressure

39.41 ft TMPN - Temperature

26.43 ft FV - far V  
26.43 ft NV - near V  
26.43 ft PV - prox V  
26.43 ft BISP - beam I setpoint  
26.43 ft REPV - ngc rep V  
26.43 ft VRBN - VRBN  
26.43 ft VC24 - NVis. capt. near/far  
26.43 ft VC15 - NVis. capt. prox/long  
26.43 ft VB24 - NVis. incl. near/far  
26.43 ft VB15 - NVis. incl. prx/long  
26.43 ft BEAM - beam current

Centroller, 43mm, ITB, 3-arm Bi-Direct  
CR3-BA 107 LG: 2.44 ft WT: 8.8 lb OD: 1.693 in

26.43 ft BKL - Bkgd long  
26.43 ft BKF - Bkgd Far  
26.43 ft BKN - Bkgd Near  
26.43 ft LV - long V

Gamma Ray K  
UGR-KA 131 LG: 2.34 ft WT: 17.6 lb OD: 1.693 in

22.38 ft GR2 - Gamma Ray 2

SSB Upper Electronics, ITB  
SUE-CA 137 LG: 7.64 ft WT: 26.5 lb OD: 1.650 in

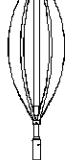
SSB Receiver Sonde  
SSS-BA 117 LG: 8.76 ft WT: 30.9 lb OD: 1.693 in

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

Centralizer, 35mm, ITB, uni-directional  
SEN-LA-222 LG: 2.22 ft WT: 2.2 lb OD: 1.622 in



CEN-LA 220 LG: 2.60 ft Wt: 8.8 lb OD: 1.380 in  
 Total Length: 54.87 ft Weight: 242.5 lb



0.00 ft TENS - Tension  
 Tool Zero (0.00ft from bottom)  
 All measurements relative to tool zero.

SHOP AND FIELD CALIBRATIONS

C:\Logs\Caerus\Puckett 13B-1\CREB-SSB\_001.dta

UGK Before survey cal UGR-KA 108

Field calibration on 05-OCT-2015 16:31

Gamma Ray Before Survey Calibration

Tool Type: UGR-KA Serial No: 108  
 Calibrator No: 99

Background	Calibrator	Standard	Units
42.7	1067.9	631.5	API
Delta Counts Per Sec: 1025.2		CPS/API = 1.623	

QPG Master Calibration QPG-EA 107

Gauge

Serial Number 220929 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	14.1363	-0.231359	-0.0199948	9.69338e-006	
P1	9.69338e-006	42.6942	-0.0212493	2.7973e-005	
P2	2.7973e-005	-5.21212e-008	-0.00210258	8.46866e-006	
P3	8.46866e-006	-4.68837e-008	2.25752e-011	7.55316e-007	
P4					

Temperature

Temperature polynomial order 3

	T0	T1	T2	T3	T4
	25.2281	-0.730006	-0.000855483	-6.83633e-007	

Temperature Tool Shop Survey Calibration TMP-NA 106

Temperature Tool Shop Survey Calibration  
Tool Type: TMP-NA Serial No: 106

Calibration

Standard	Measured
32 DEGF	36714 Hz
212 DEGF	50849 Hz

UGK Before Survey Cal UGR-KA 131

Field calibration on 23-OCT-2015 14:59

Gamma Ray Before Survey Calibration

Tool Type: UGR-KA Serial No: 131  
Calibrator No: 101

Background	Calibrator	Standard	Units
43.9	778.4	470.2	API

Delta Counts Per Sec: 734.5 CPS/API = 1.562

SSBC Field calibration SSS-BA 117

Field calibration on 19-NOV-2015 17:43

Slim Sector Bond Field Calibration

Tool Type	SSS-BA	Serial No	117
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Sensor	Description	Standard	Measured
AMP 3FT	100% Bond	2.70	12.30
	Free Pipe	81.00	310.20
AMP 5FT	100% Bond	1.80	10.80
	Free Pipe	54.00	198.80
1 SECTOR AMP	100% Bond	5.00	47.70
	Free Pipe	95.00	84.90
2 SECTOR AMP	100% Bond	5.00	38.50
	Free Pipe	95.00	87.80
3 SECTOR AMP	100% Bond	5.00	50.10
	Free Pipe	95.00	115.30
4 SECTOR AMP	100% Bond	5.00	20.00
	Free Pipe	95.00	42.70

5 SECTOR AMP	100% Bond Free Pipe	5.00 95.00	25.00 58.40
6 SECTOR AMP	100% Bond Free Pipe	5.00 95.00	56.10 104.20

SSBC Constants SSS-BA 117

Last Edited on 00-JAN-1988 00:00

Min Ampl 100% Bond	2.00 MV
Max Ampl 0% Bond	81.00 MV
Casing Size	4.50 IN
Casing Weight	11.6 LB/F
3' TT Correction	-999.3 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
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COMPANY	CAERUS OIL & GAS LLC
WELL	PUCKETT 13B-1
FIELD	GRAND VALLEY
PROVINCE/COUNTY	GARFIELD
COUNTRY/STATE	USA / COLORADO

Elevation Kelly Bushing	8351.00	feet	Bottom Log Interval	8709.00	feet
Elevation Drill Floor	8351.00	feet	Depth Driller	8805.00	feet
Elevation Ground Level	8329.00	feet	Depth Logger	8713.00	feet



**Weatherford**<sup>®</sup>

RAPTOR NVISION LOG