



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company Kerr-McGee Oil & Gas Onshore, L.P.

Well Wagner 26C-10HZ

Field Wattenberg

County Weld State Colorado

Location: API #: 05-123-43477

SEC 22 TWP 1N RGE 67W

Permanent Datum Ground Level Elevation 4971'

Log Measured From Kelly Bushing 21 FT

Drilling Measured From Kelly Bushing

Other Services
MIT
JBGR

Elevation

K.B. 4992'

D.F. ---

G.L. 4971'

Date 08-DEC-2017

Run Number Two

Depth Driller 14674 FT

Depth Logger 5810 FT

Bottom Logged Interval 5805 FT

Top Log Interval Surface

Open Hole Size ---

Type Fluid Water

Density / Viscosity 8.34 lb/gal

Max. Recorded Temp. 187°F

E. Estimated Cement Top See Log

Time Well Ready ROA

Time Logger on Bottom 9:00

E. Equipment Number HD-325

Location Fort Lupton, CO

Recorded By C. Sisneros

Witnessed By Justin Cleveland

S. Hopper

Run Number

Bit

From

To

Size

Weight

From

To

Tubing Record

Run Number

Bit

From

To

Size

Weight

From

Casing Record

Run Number

Bit

From

To

Size (in)

Wgt (lbs/ft)

Grade

Surface Casing

Intermediate #1

Intermediate #2

Inner

Size (in)

Wgt (lbs/ft)

Grade

Top

Bottom

Surface

Surface

Surface

Surface

Surface

Surface

Surface

4 1/2

11.6

P-110

5779 FT

5779 FT

5779 FT

5779 FT

14669 FT

<<< Fold Here >>>

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

Log ran as per customer request
Depth referenced to Casing Tally reported Liner Top at 5754 FT
Adjusted -21 FT to correlate with Liner Top
Gauge Ring/Junk Basket ran to 6000 FT with no debris
Log ran from as deep as possible in heel to surface
Recorded with 2800 PSI surface induced pressure
Logging tools were clean and free of any debris upon completion of operations
Thank you for choosing Reliance Oilfield Services, LLC!!

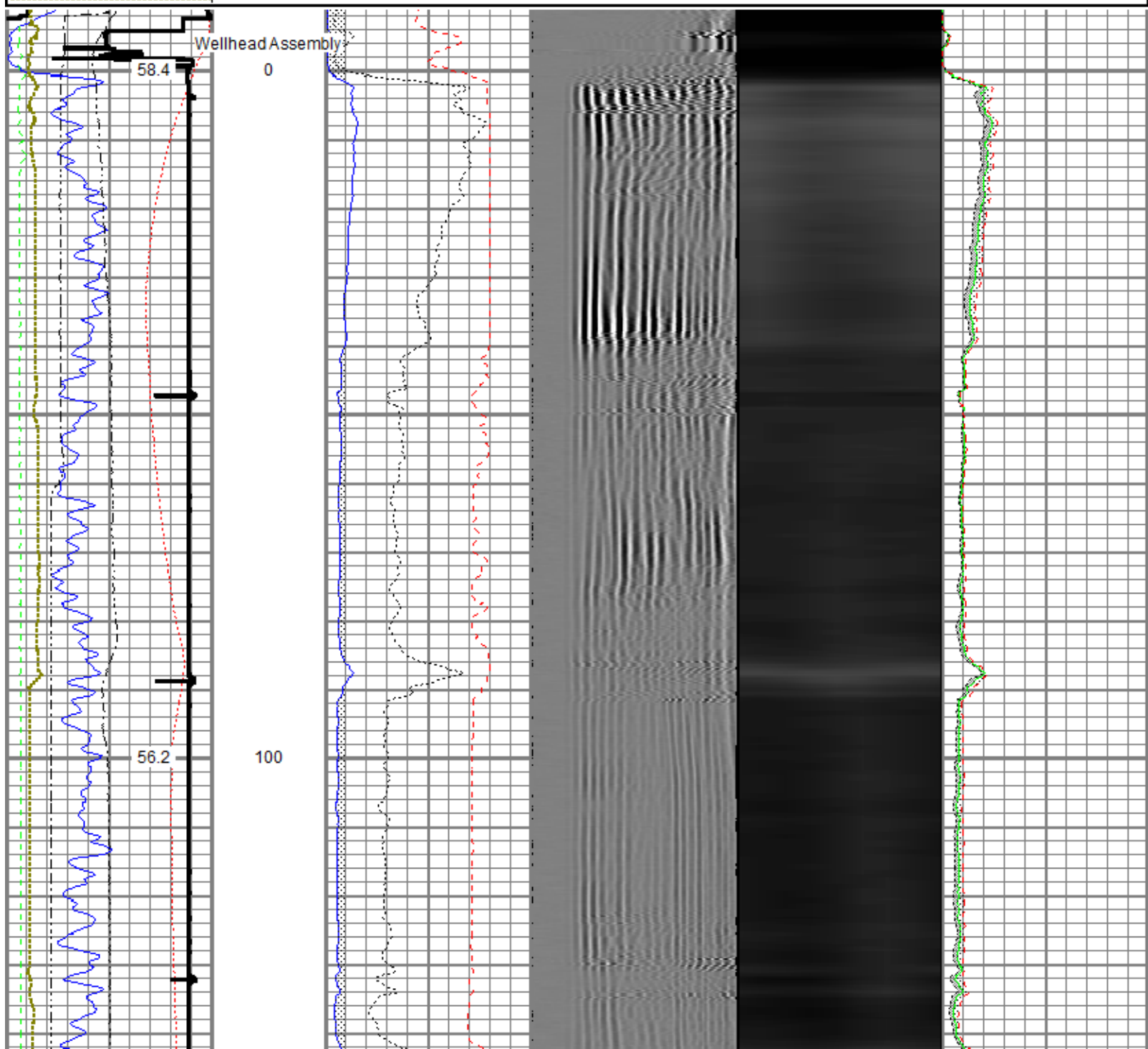
Main Pass

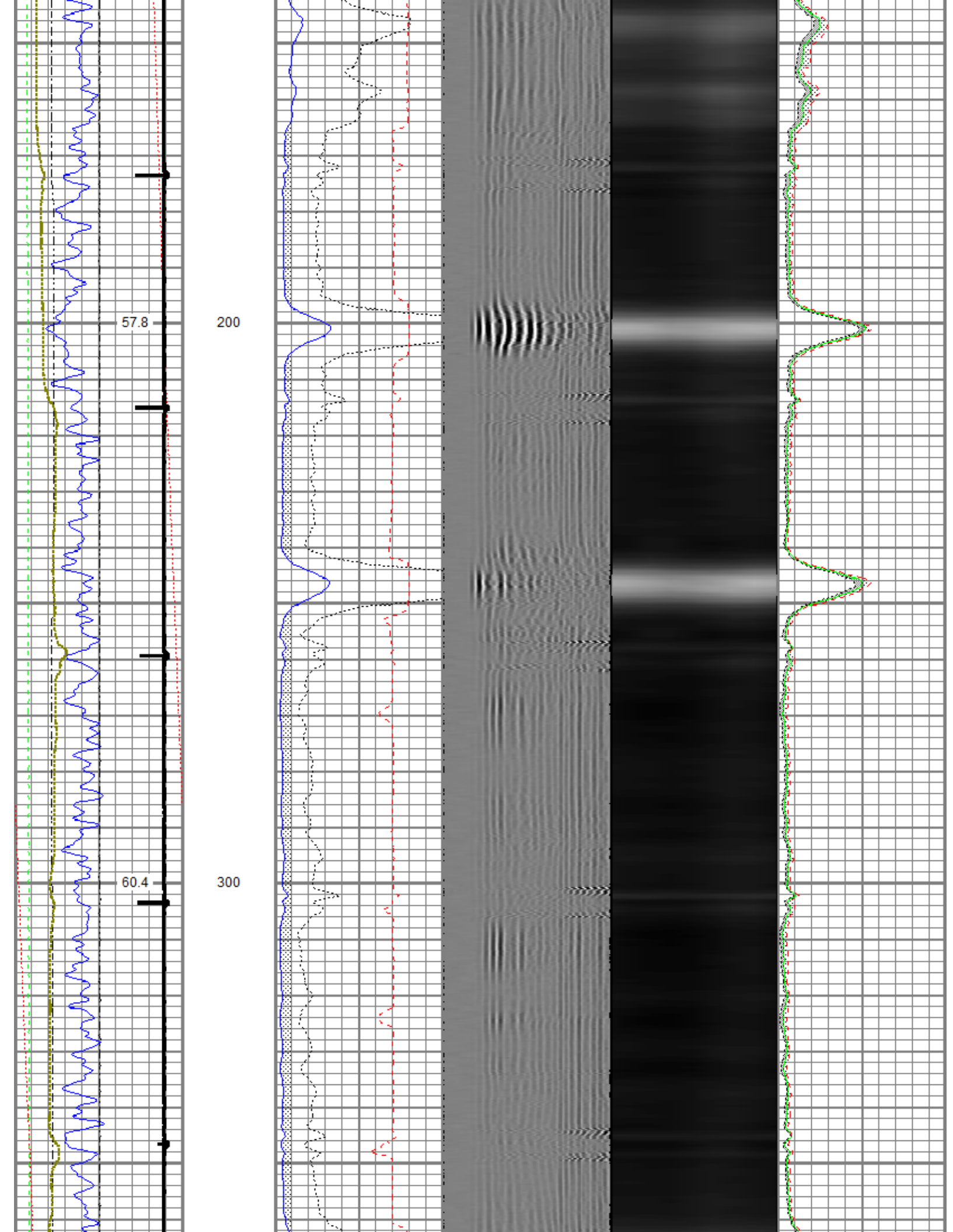


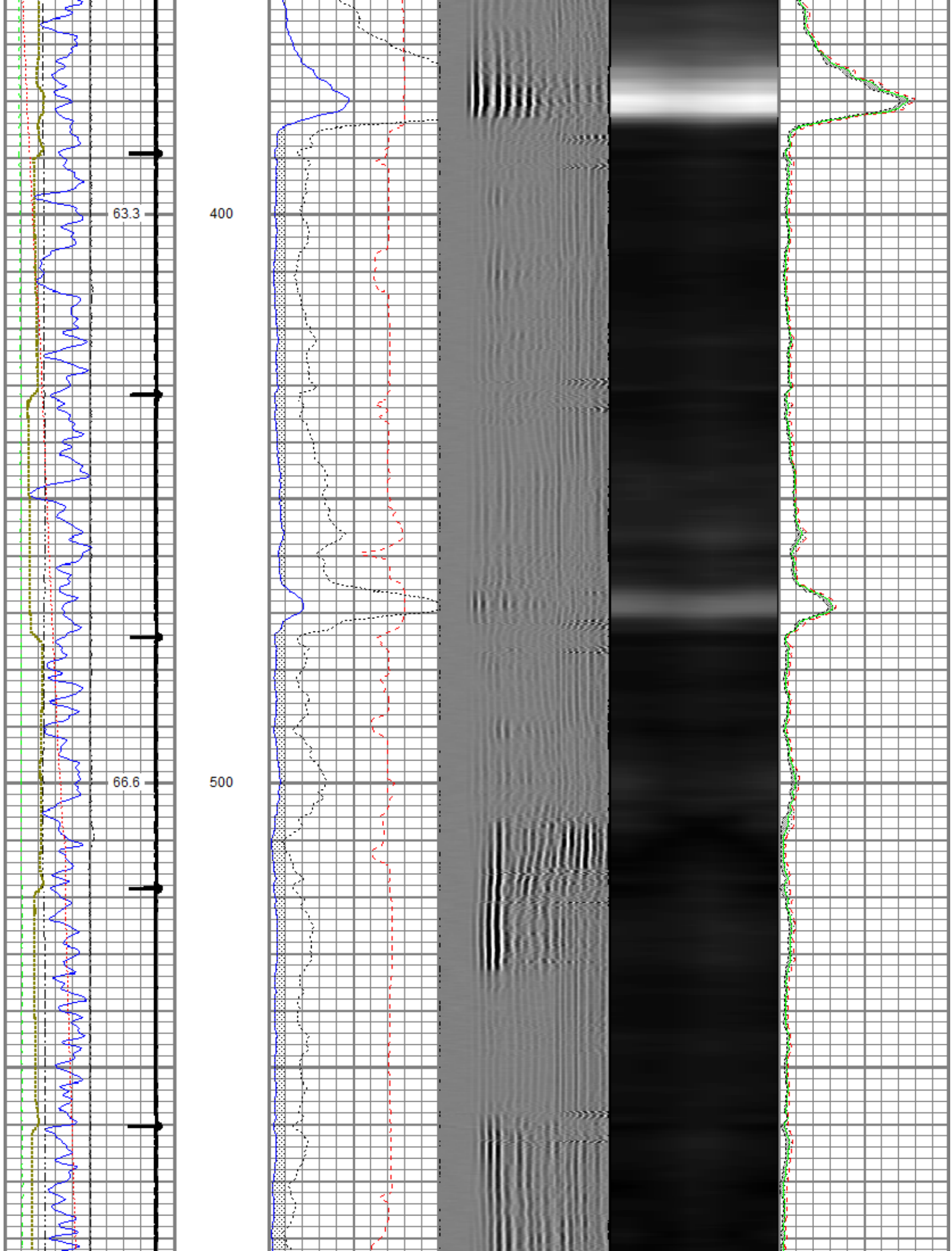
Recorded With 2800 PSI Surface Induced Pressure

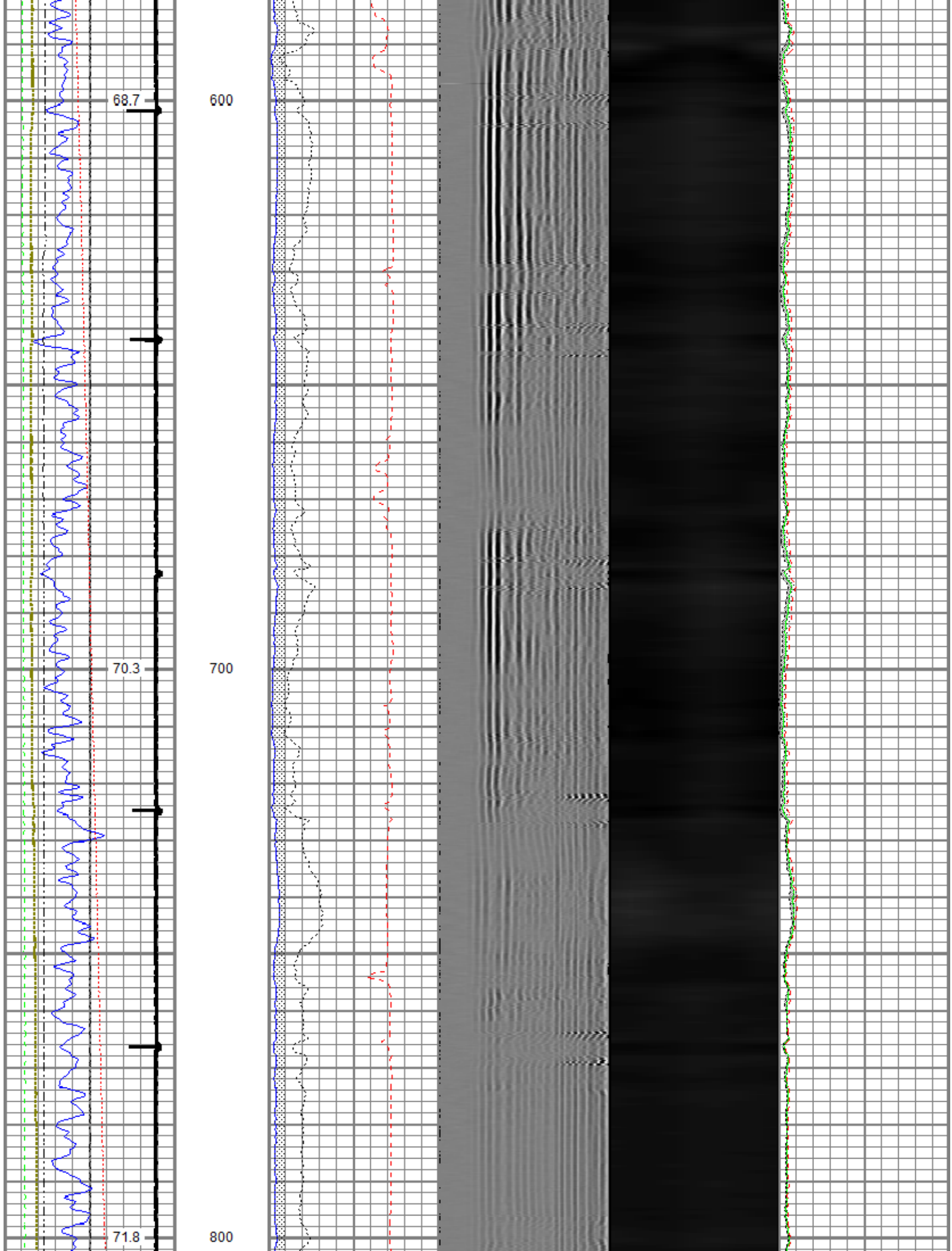
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 Dataset Pathname pass5
 Presentation Format ros_rbt_mit_sx
 Dataset Creation Fri Dec 08 09:31:54 2017
 Charted by Depth in Feet scaled 1:240

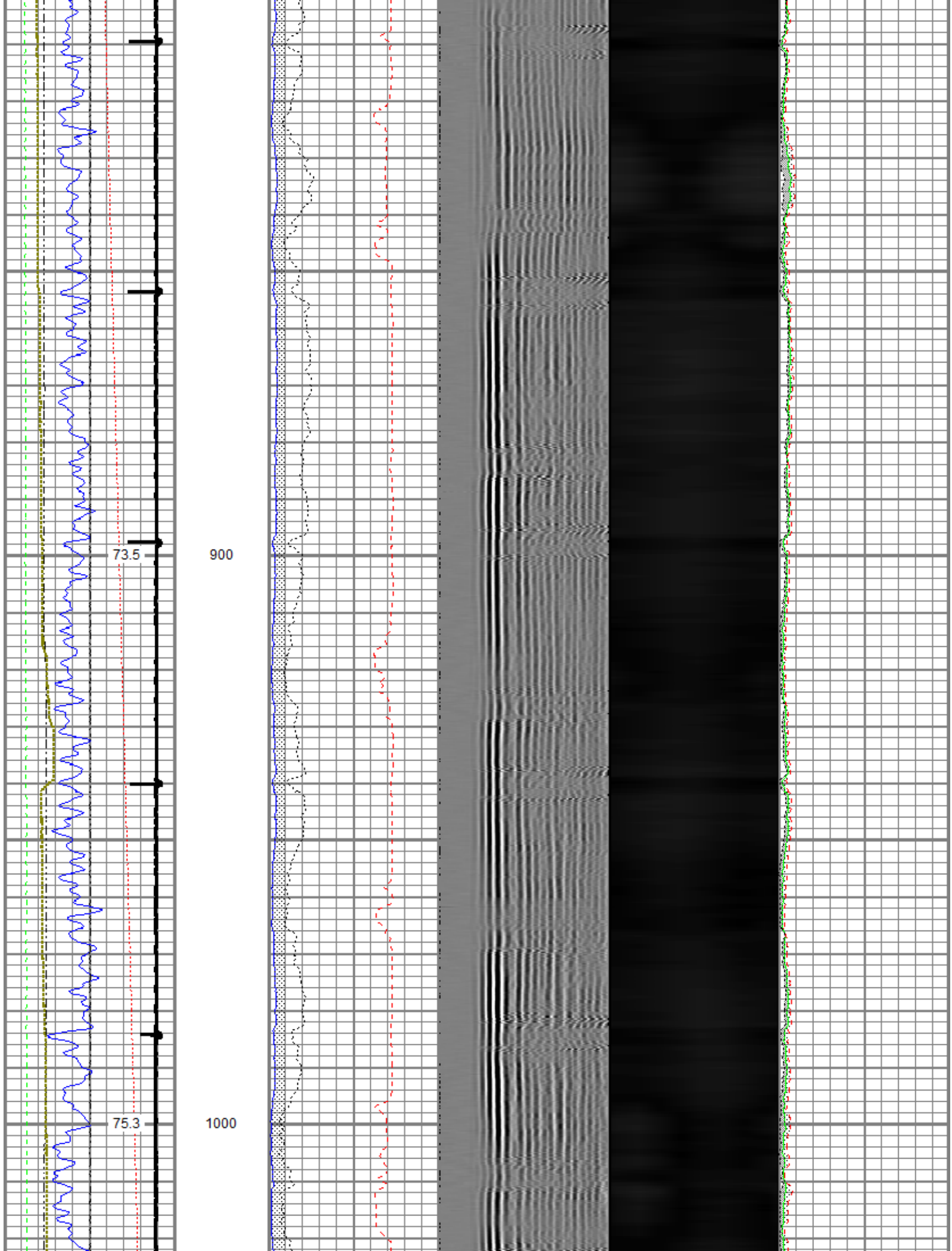
Gamma Ray	0	3' Amplitude (mV) 100	5' Variable Density Log	Sector Map	0	Average Amplitude 100
(GAPI) 120		3' Amplitude x 5	200			Minimum Amplitude
Line Speed	0	(mV) 20			0	100
(ft/min) 100		3' Travel Time				Maximum Amplitude
Line Tension (lb) 2000	0	650 (usec) 150			0	100
Differential Temperature						
(degF) 2						
Temperature (degF) 20						
Casing Collar Locator						
Deviation (deg) 90						

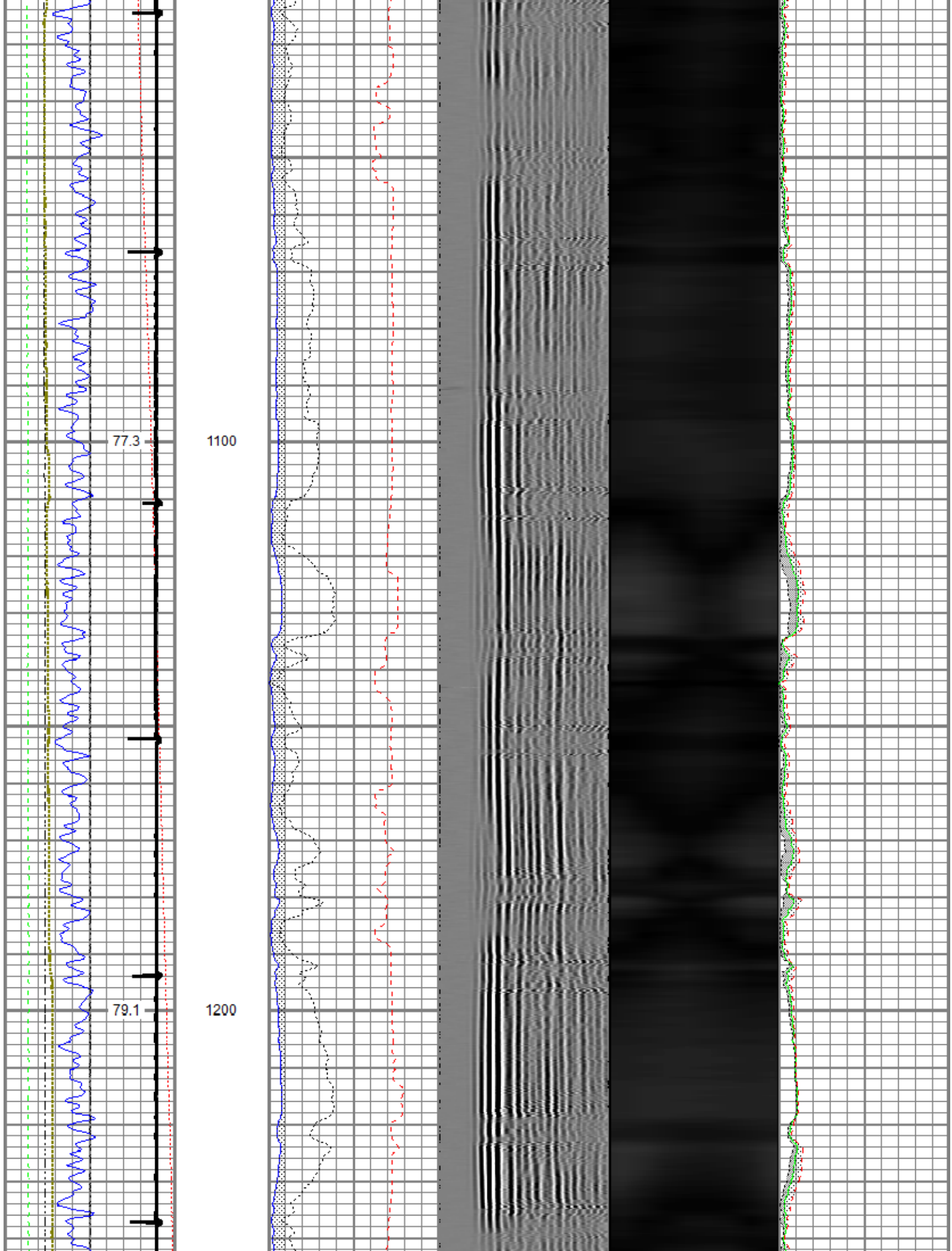


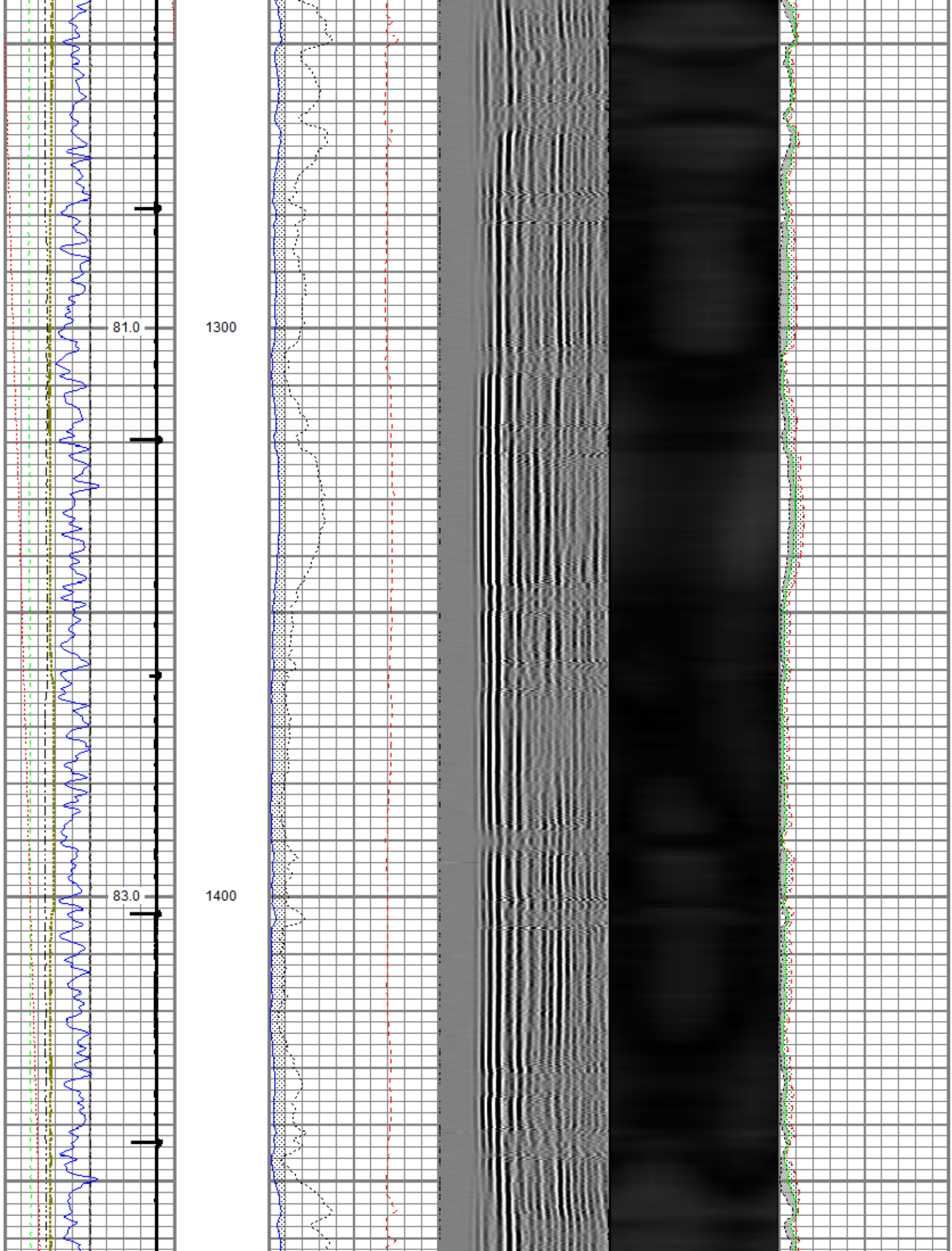


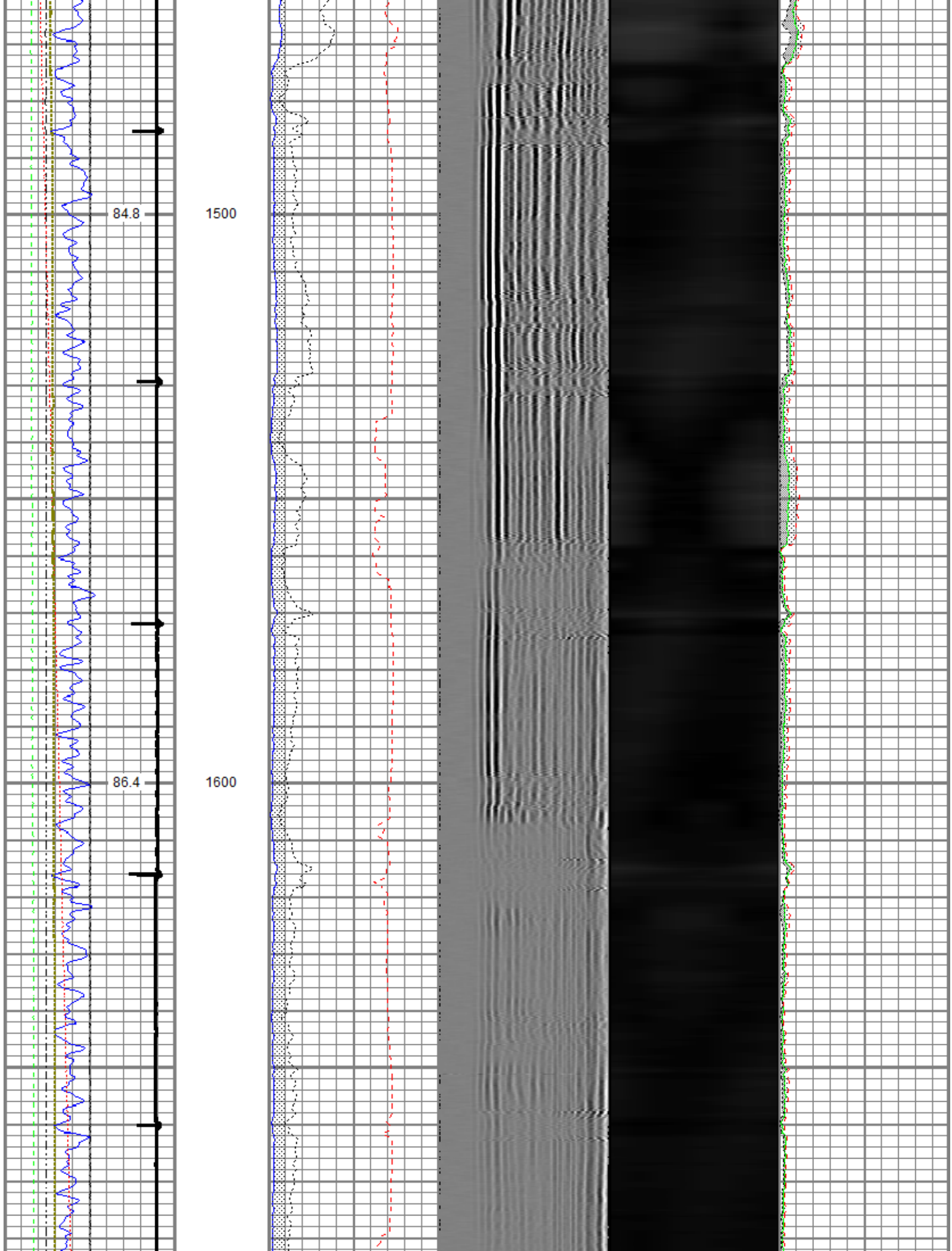


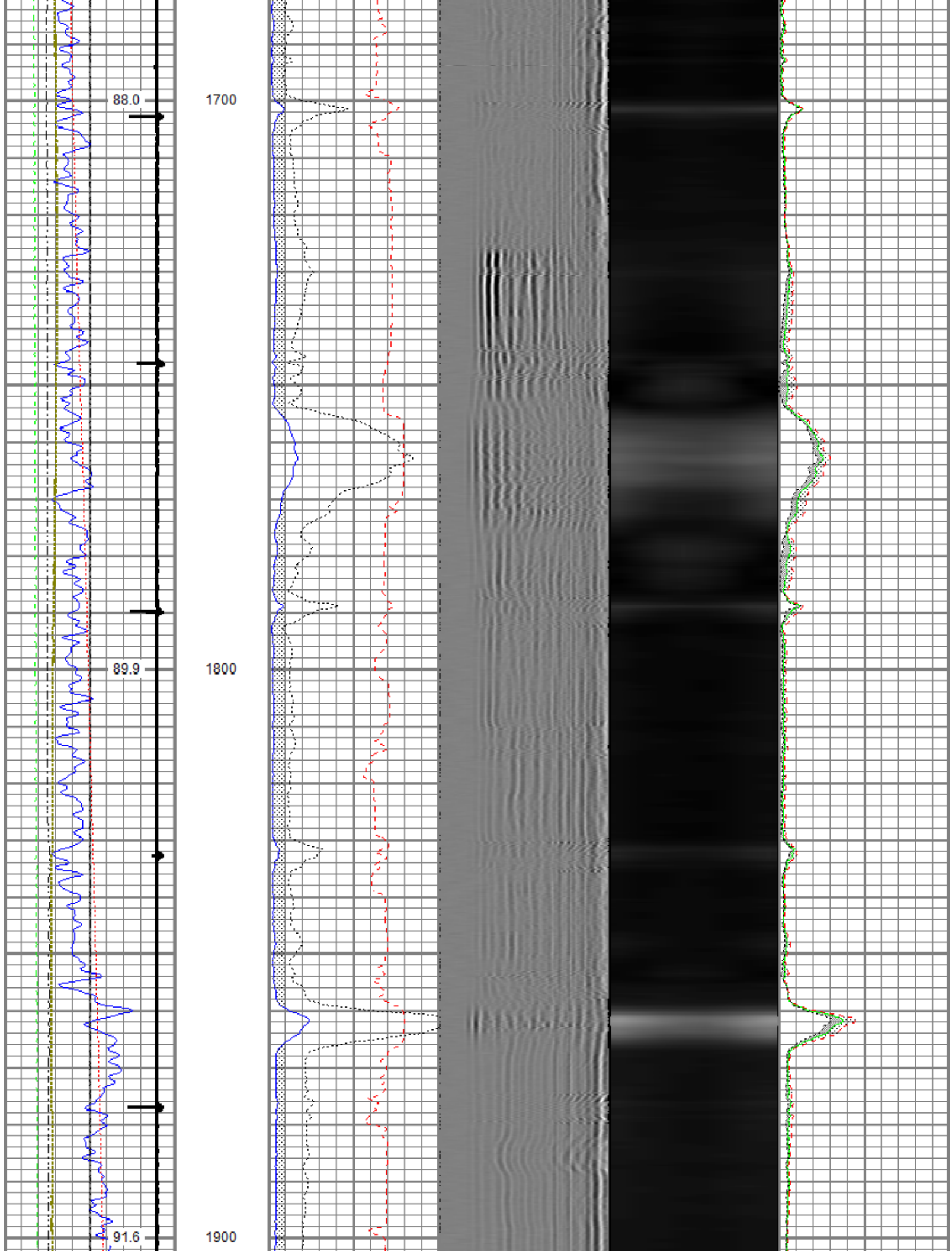


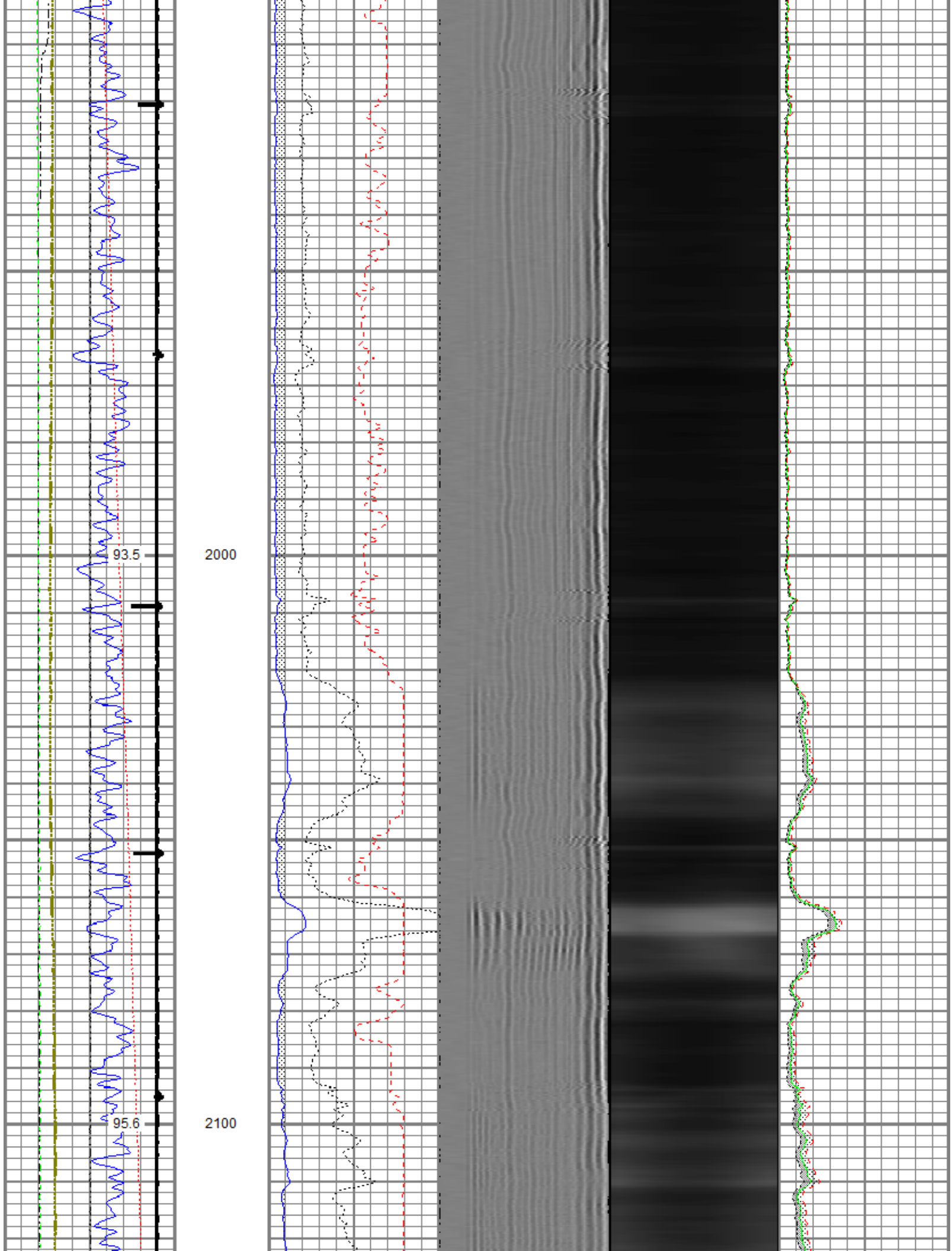


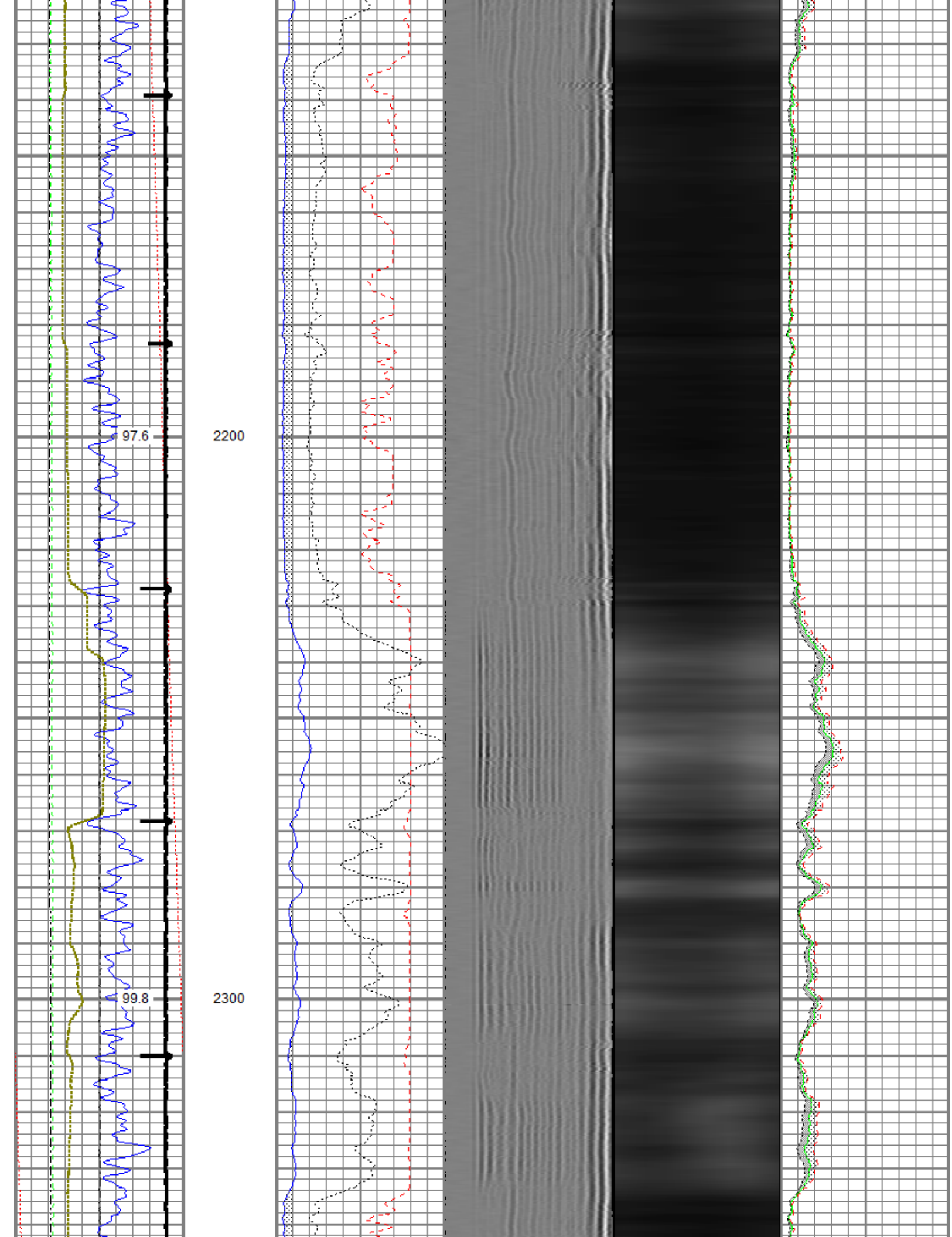


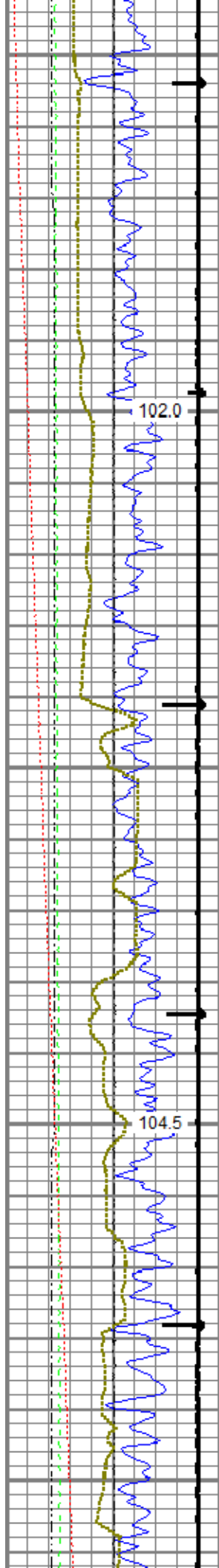










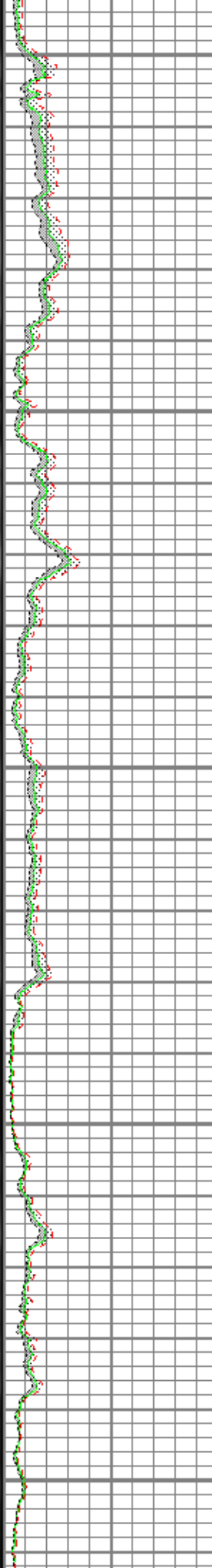
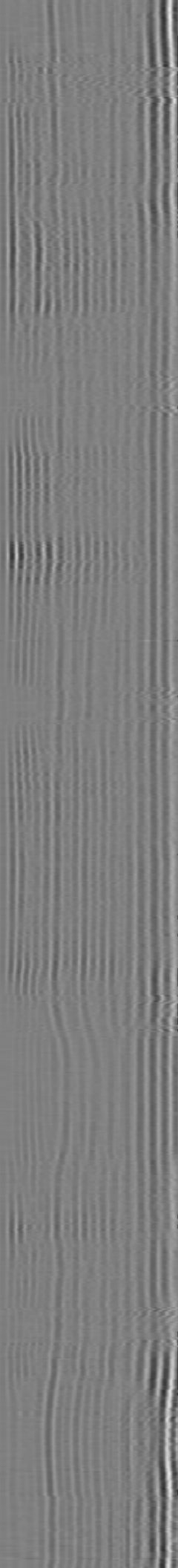
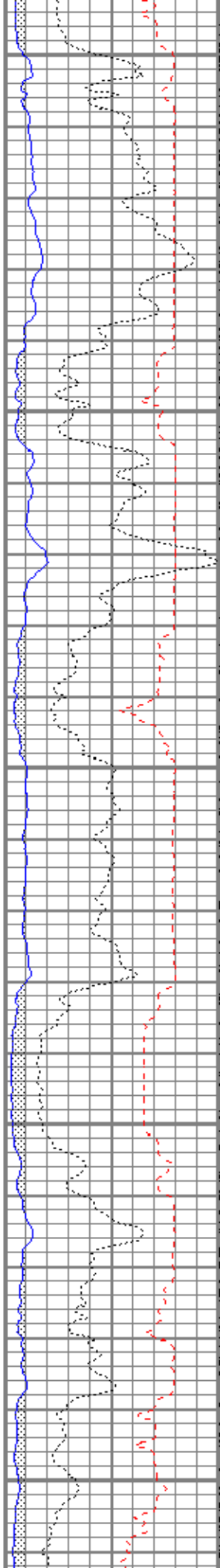


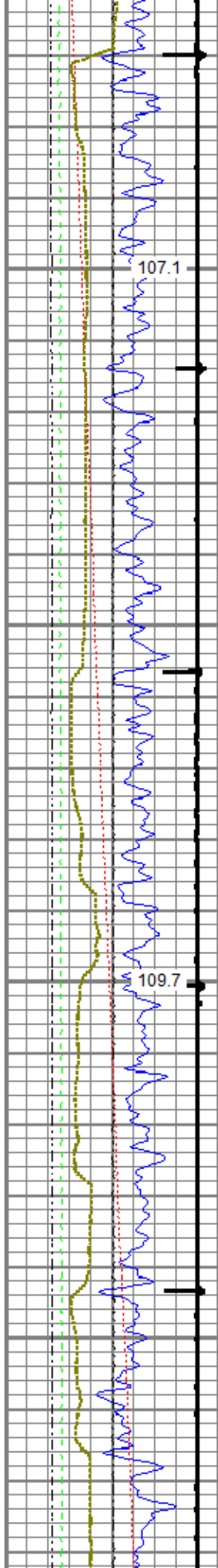
102.0

2400

104.5

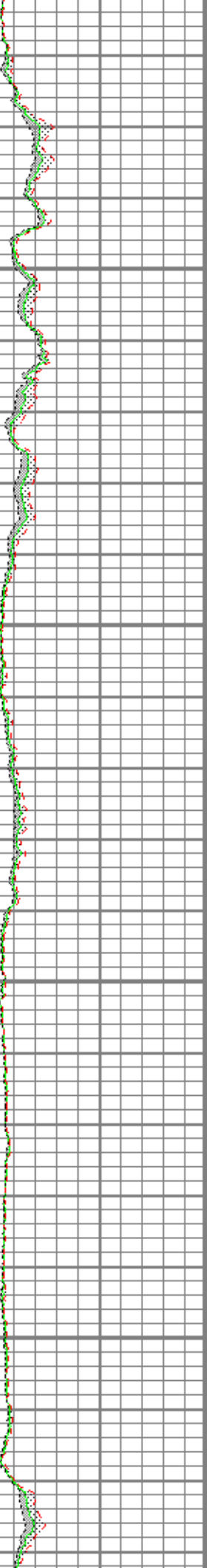
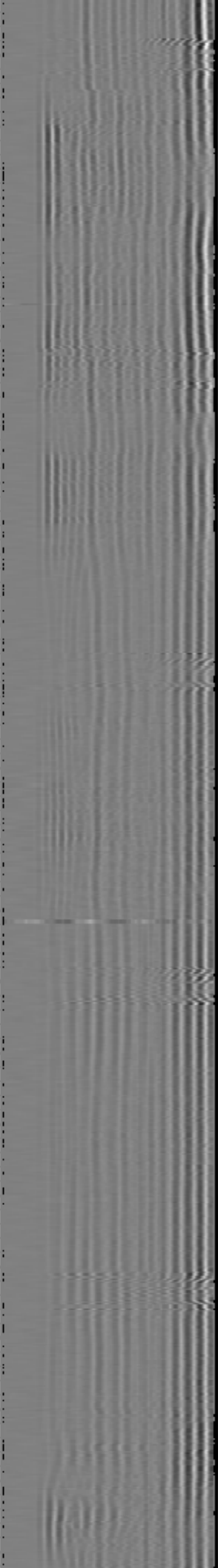
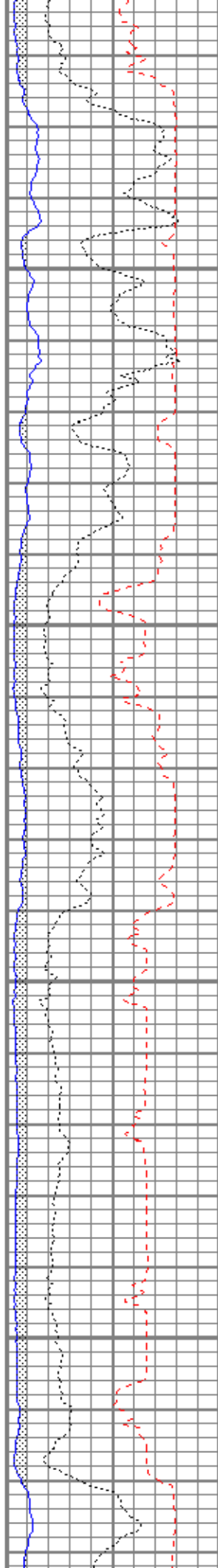
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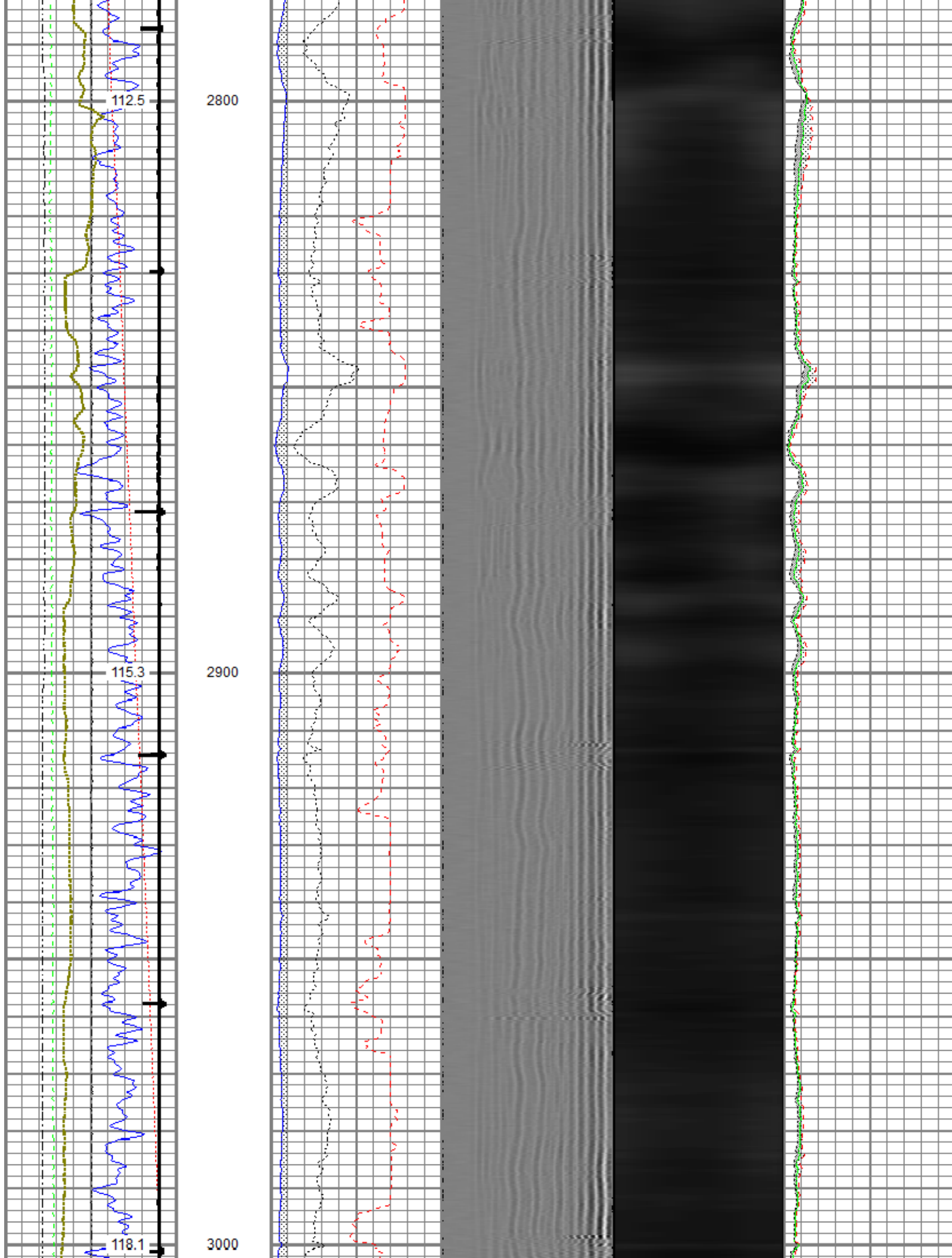


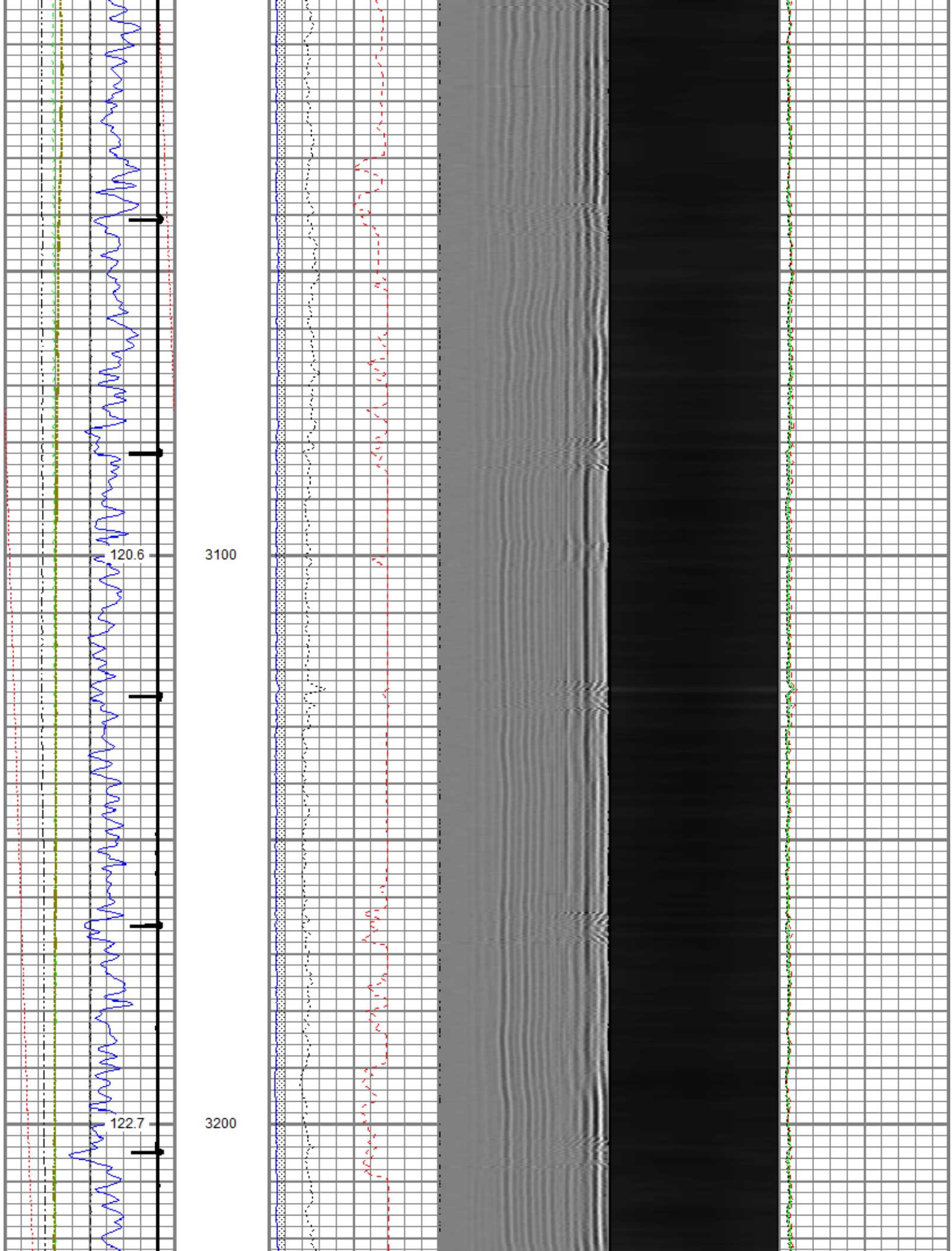


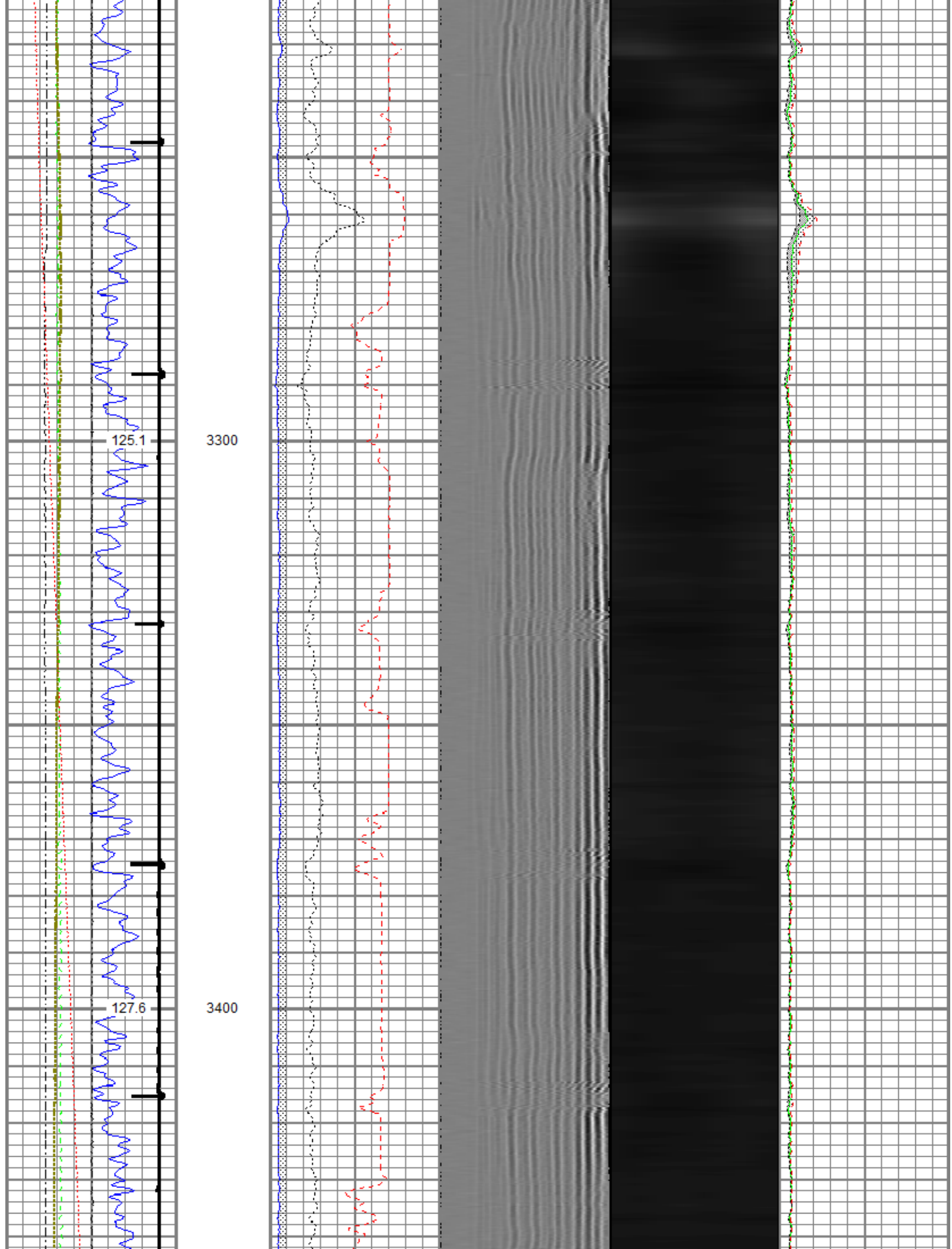
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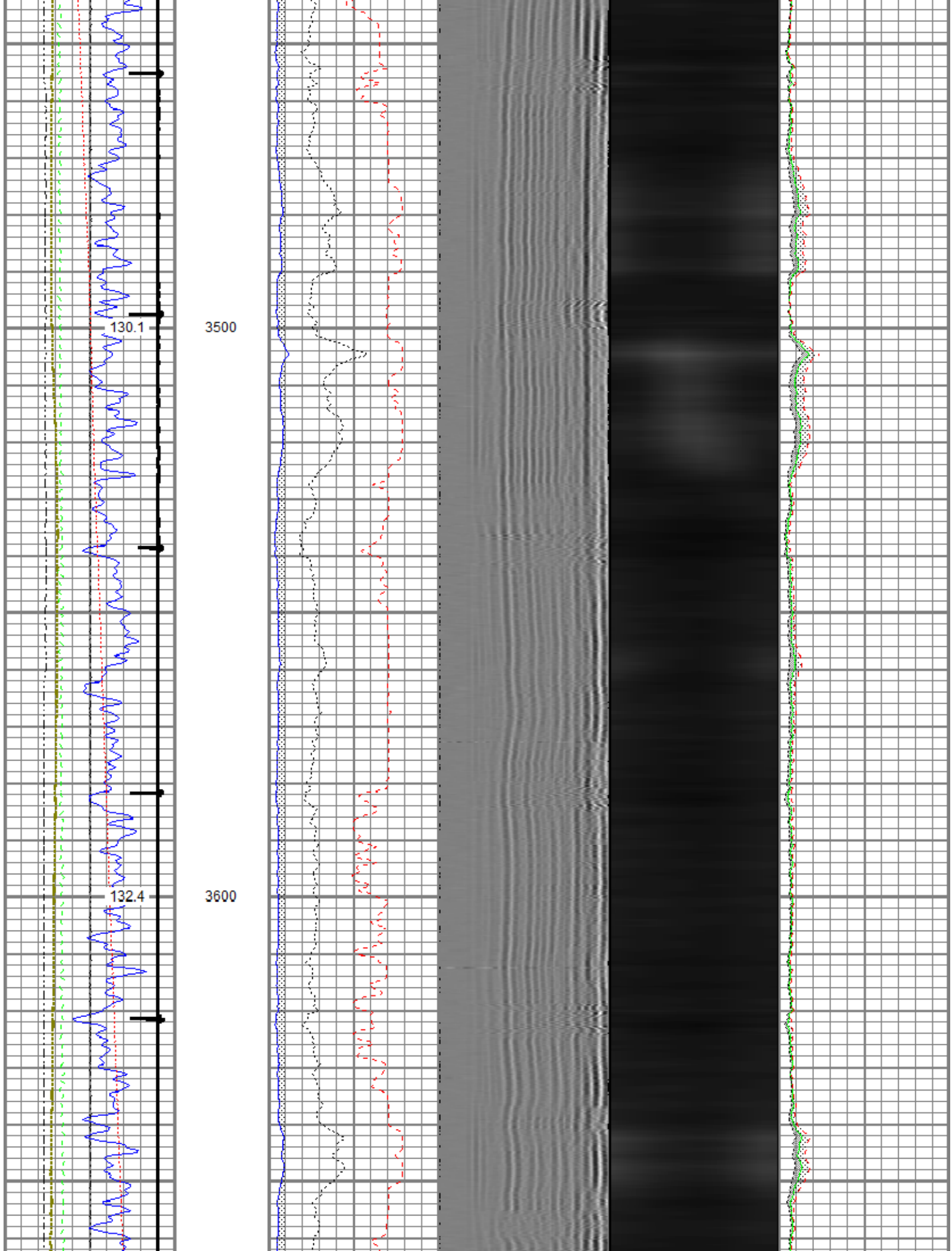
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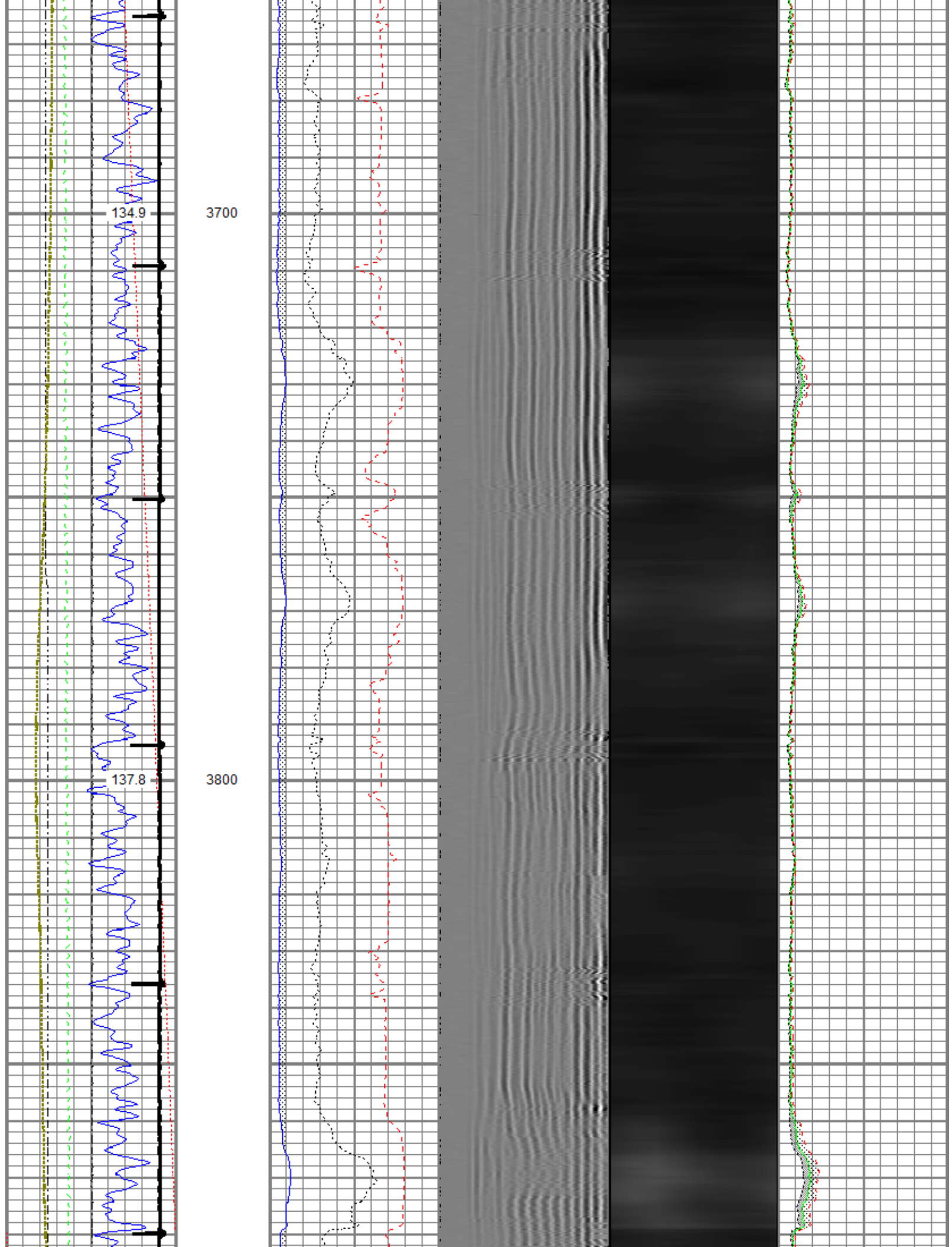


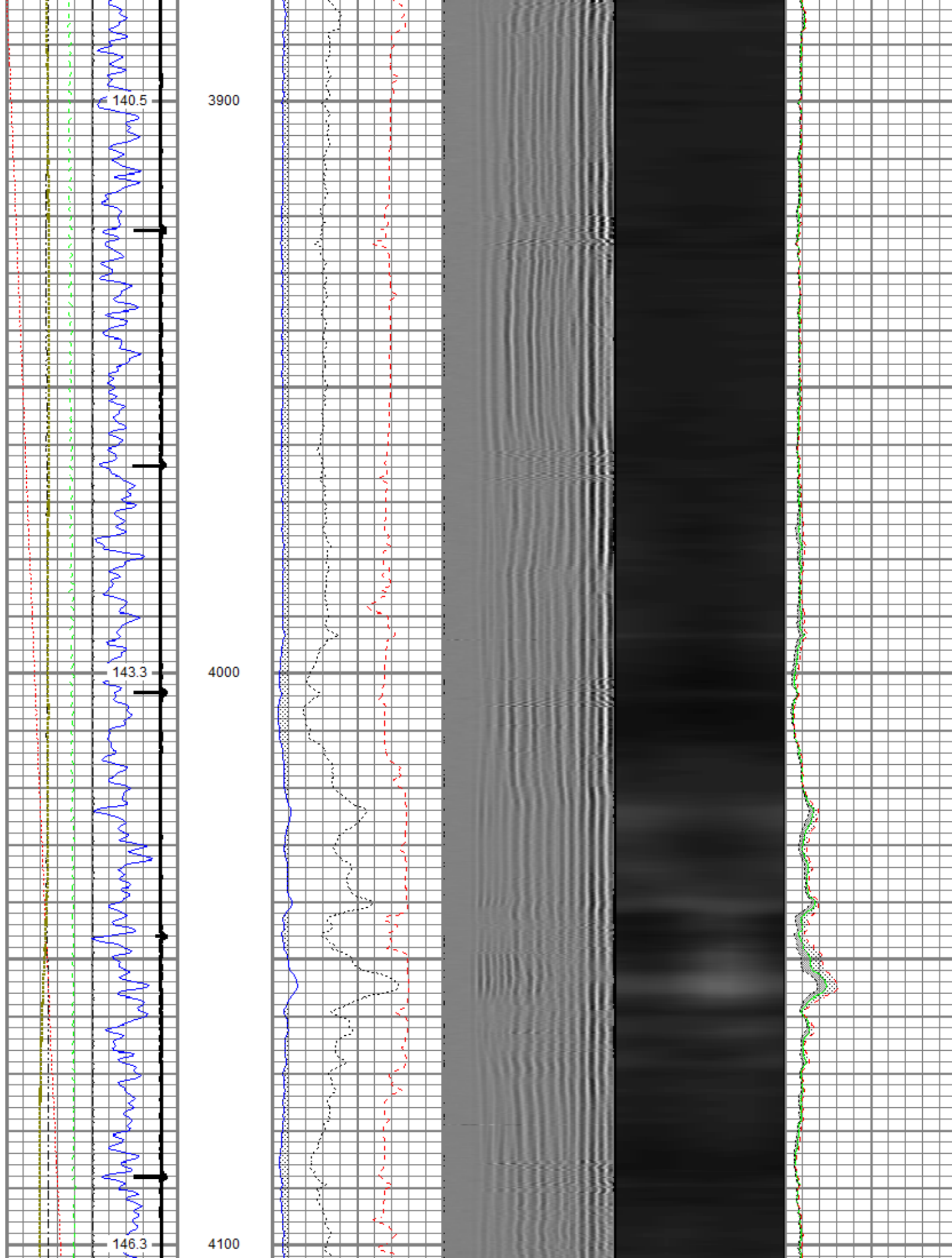


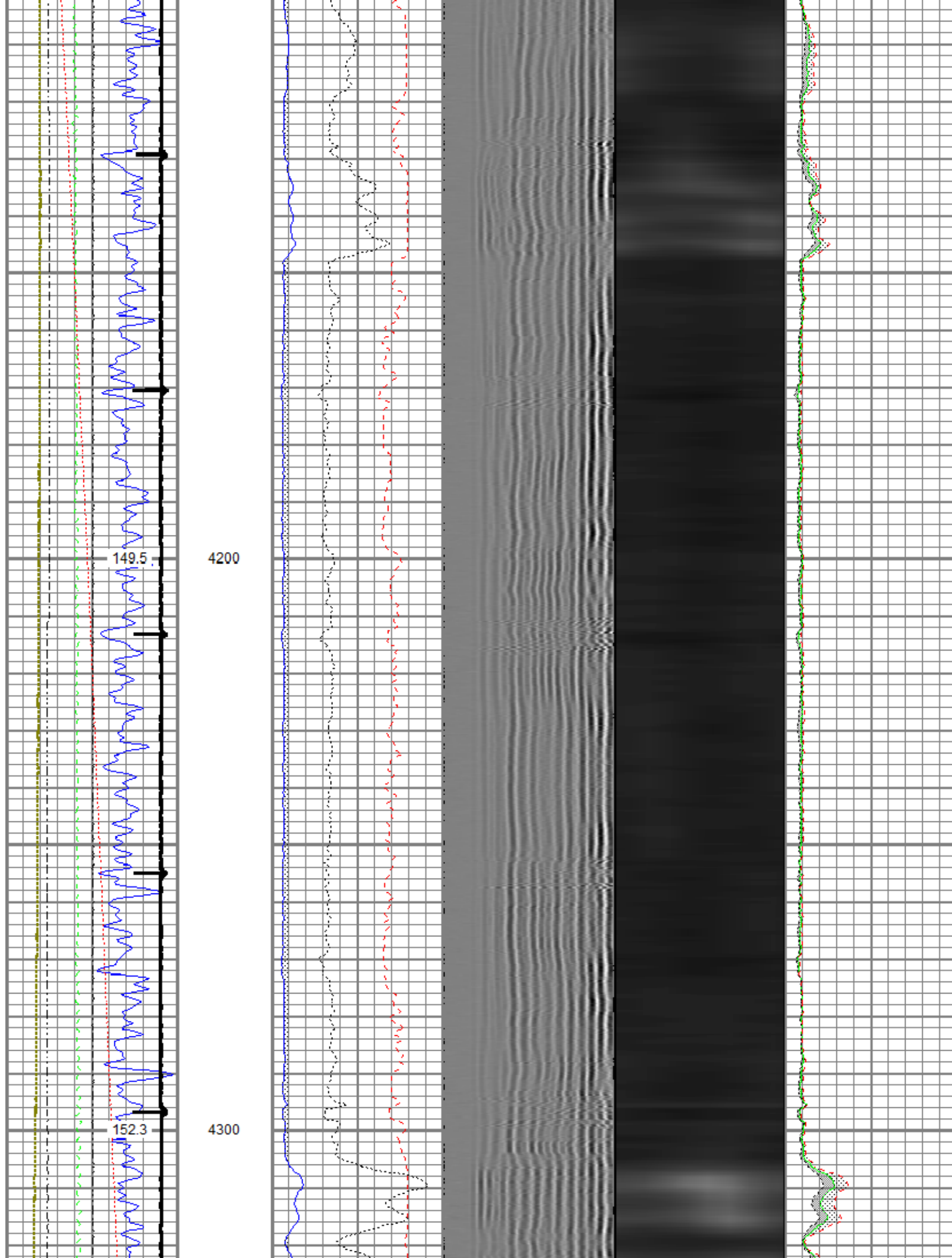


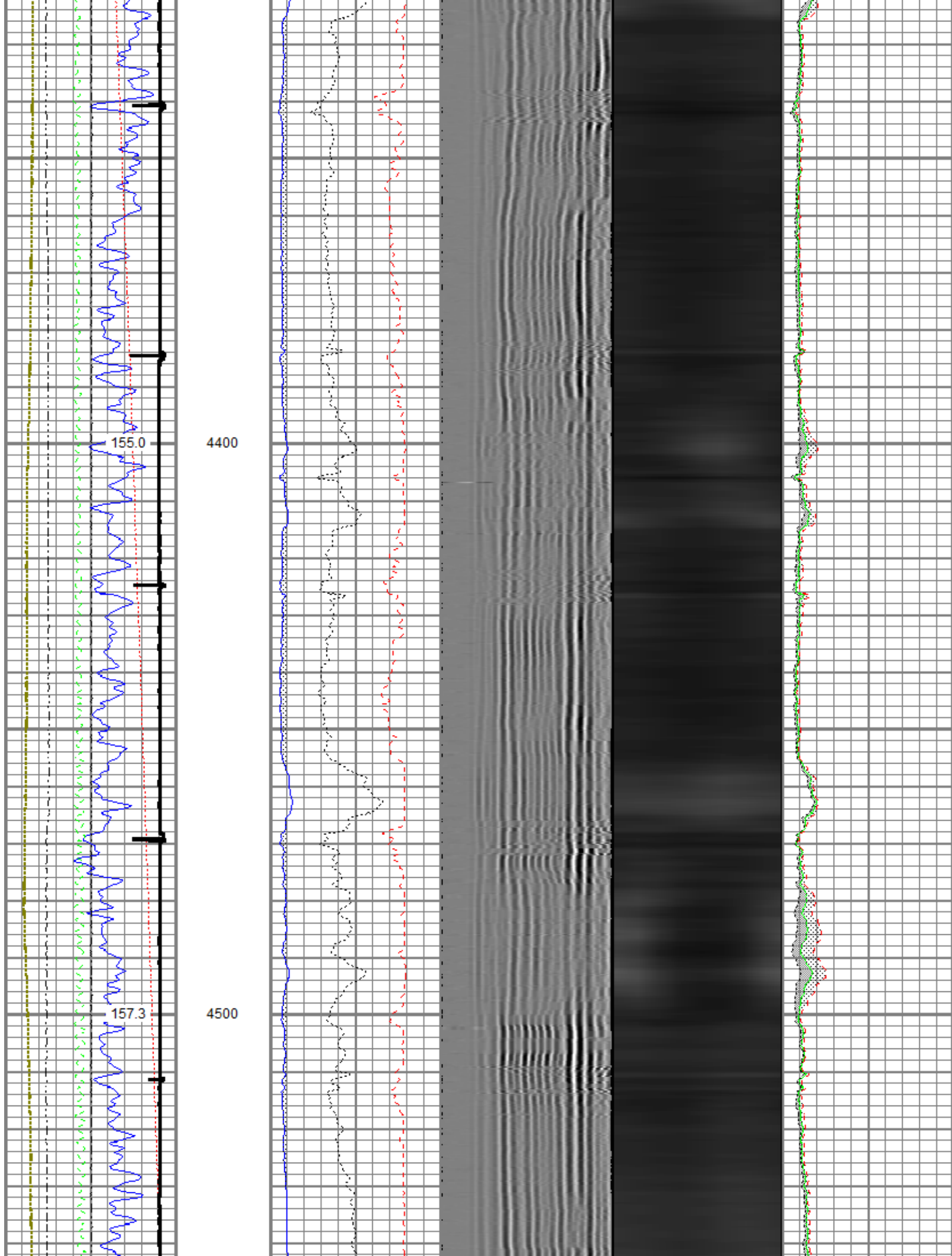


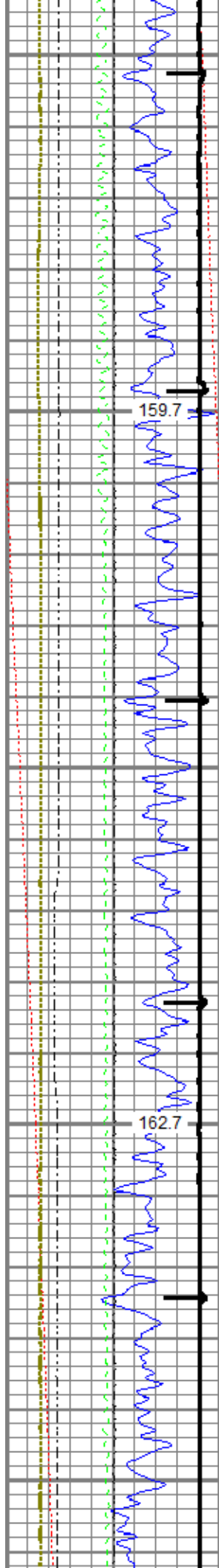






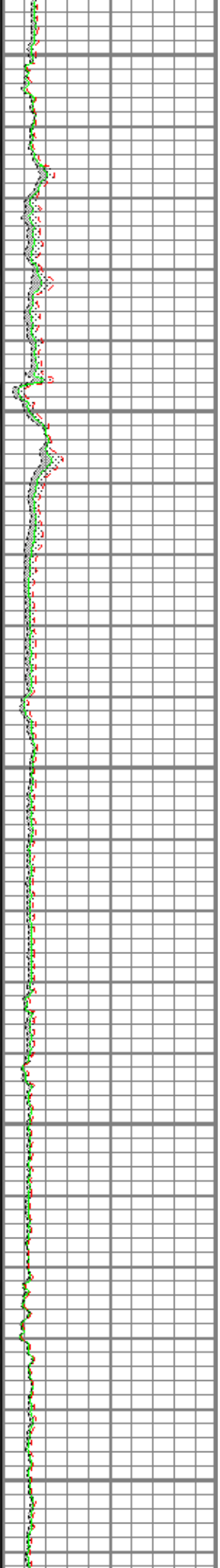
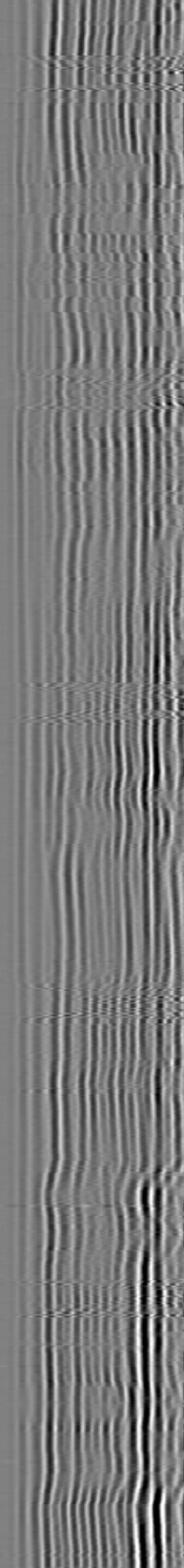
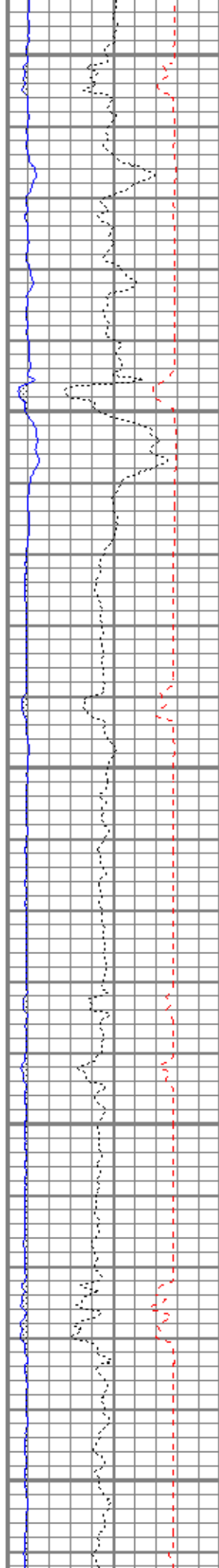


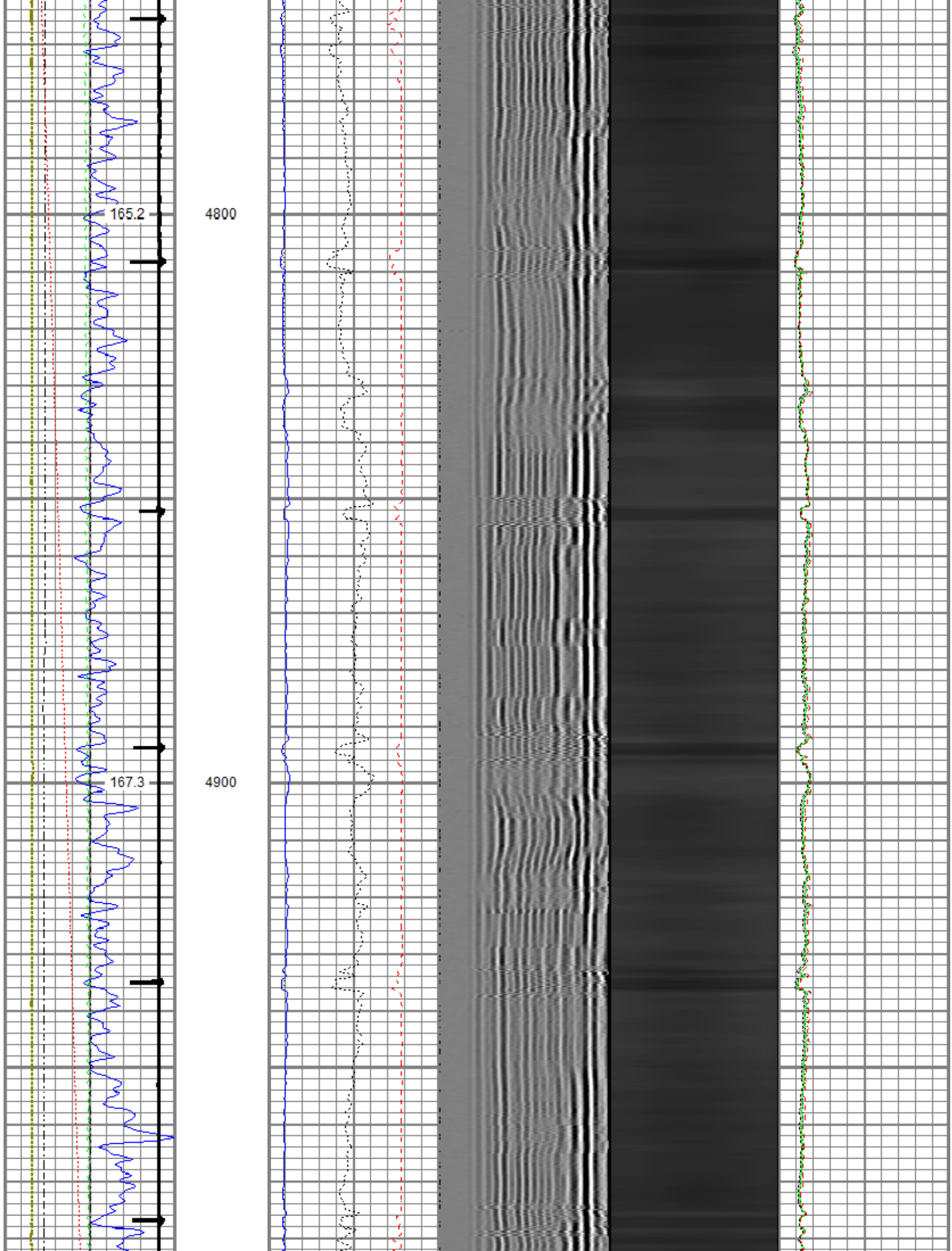


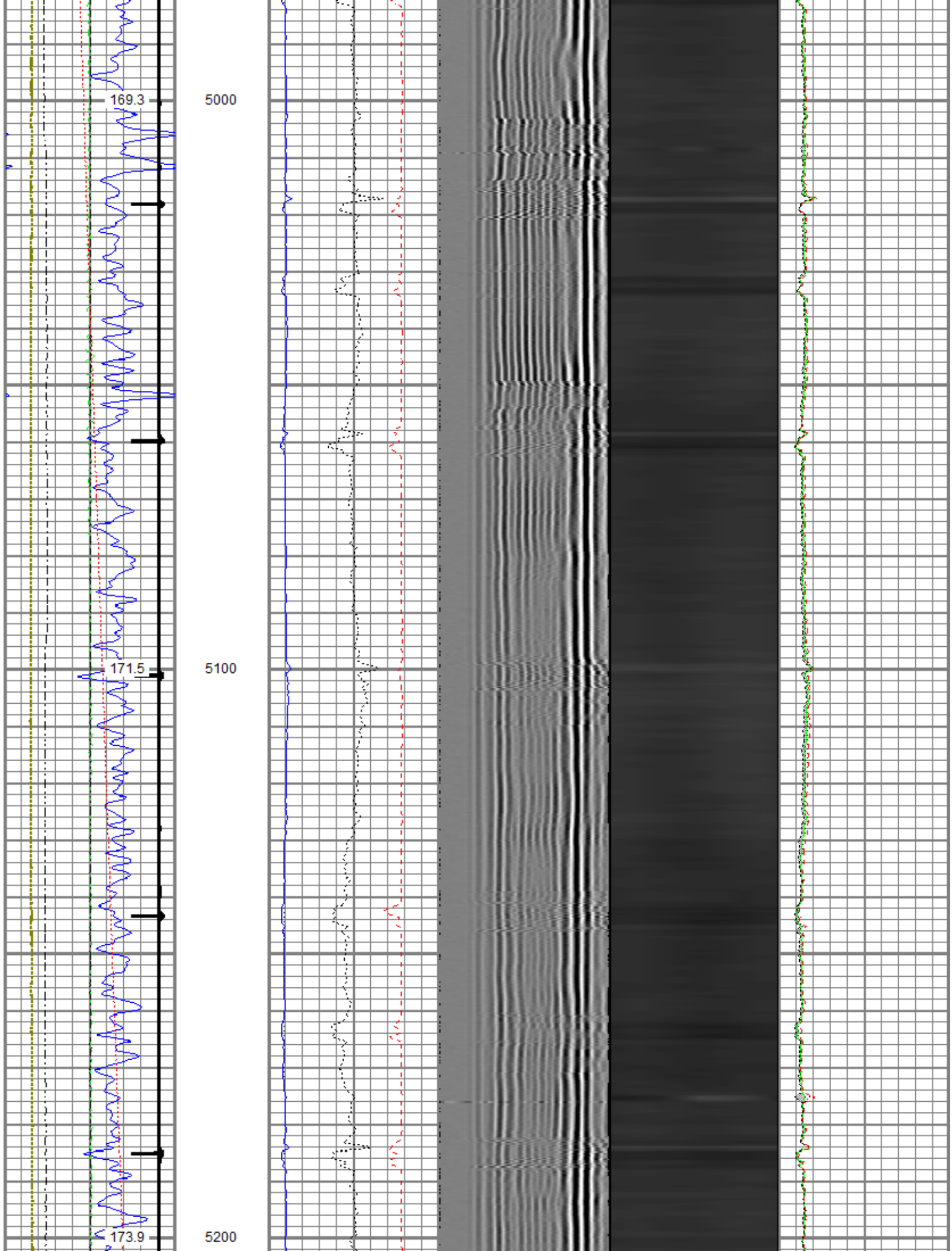


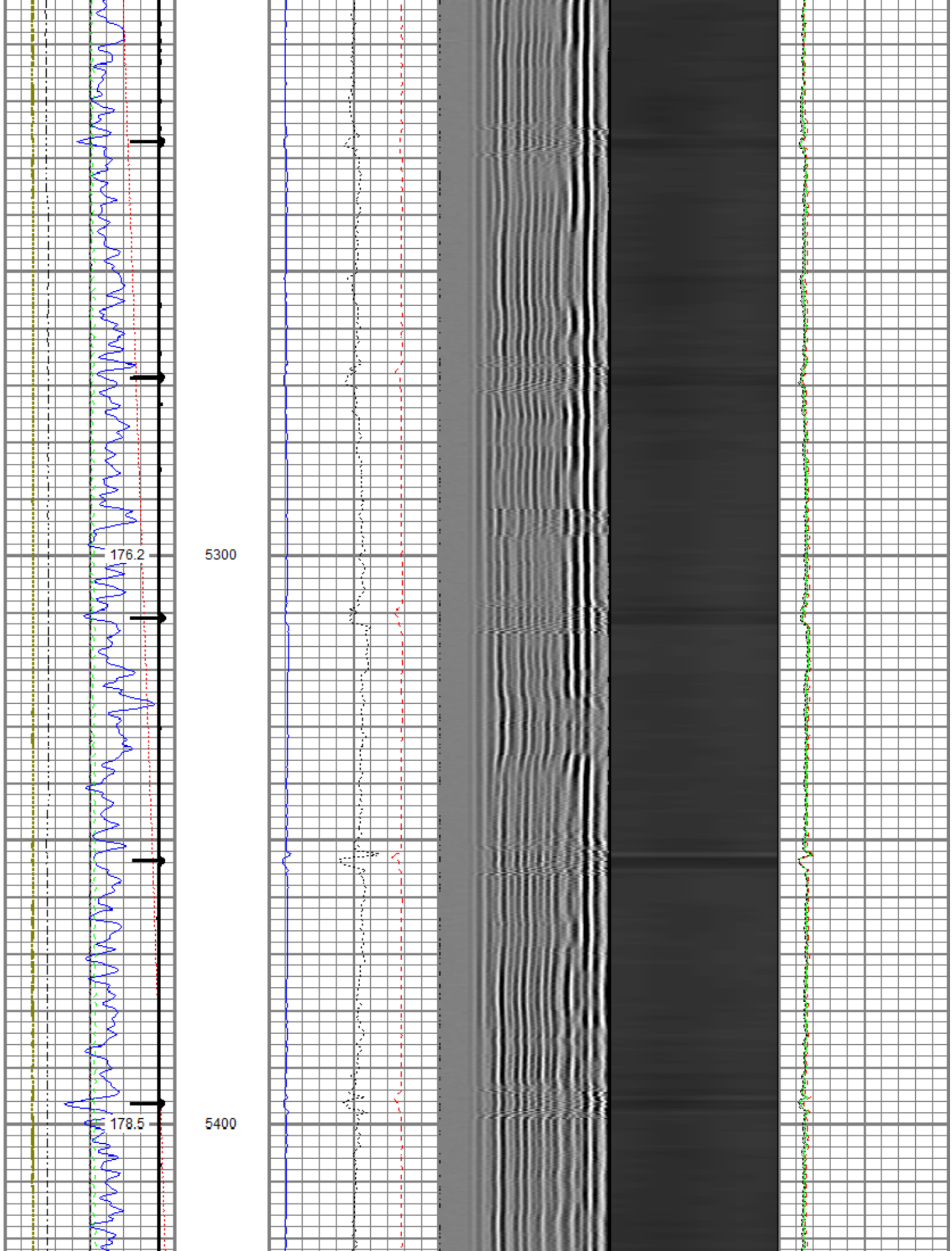
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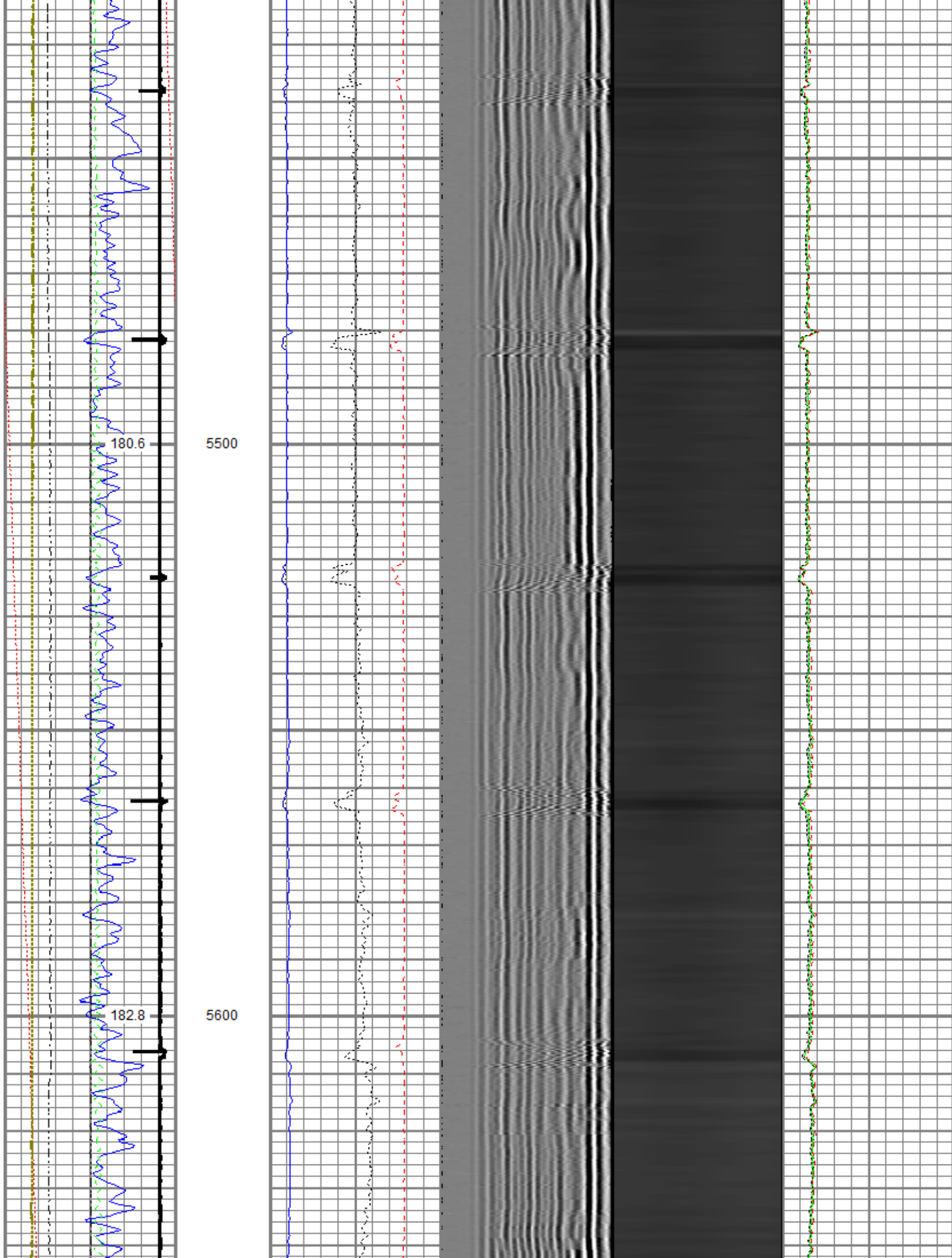
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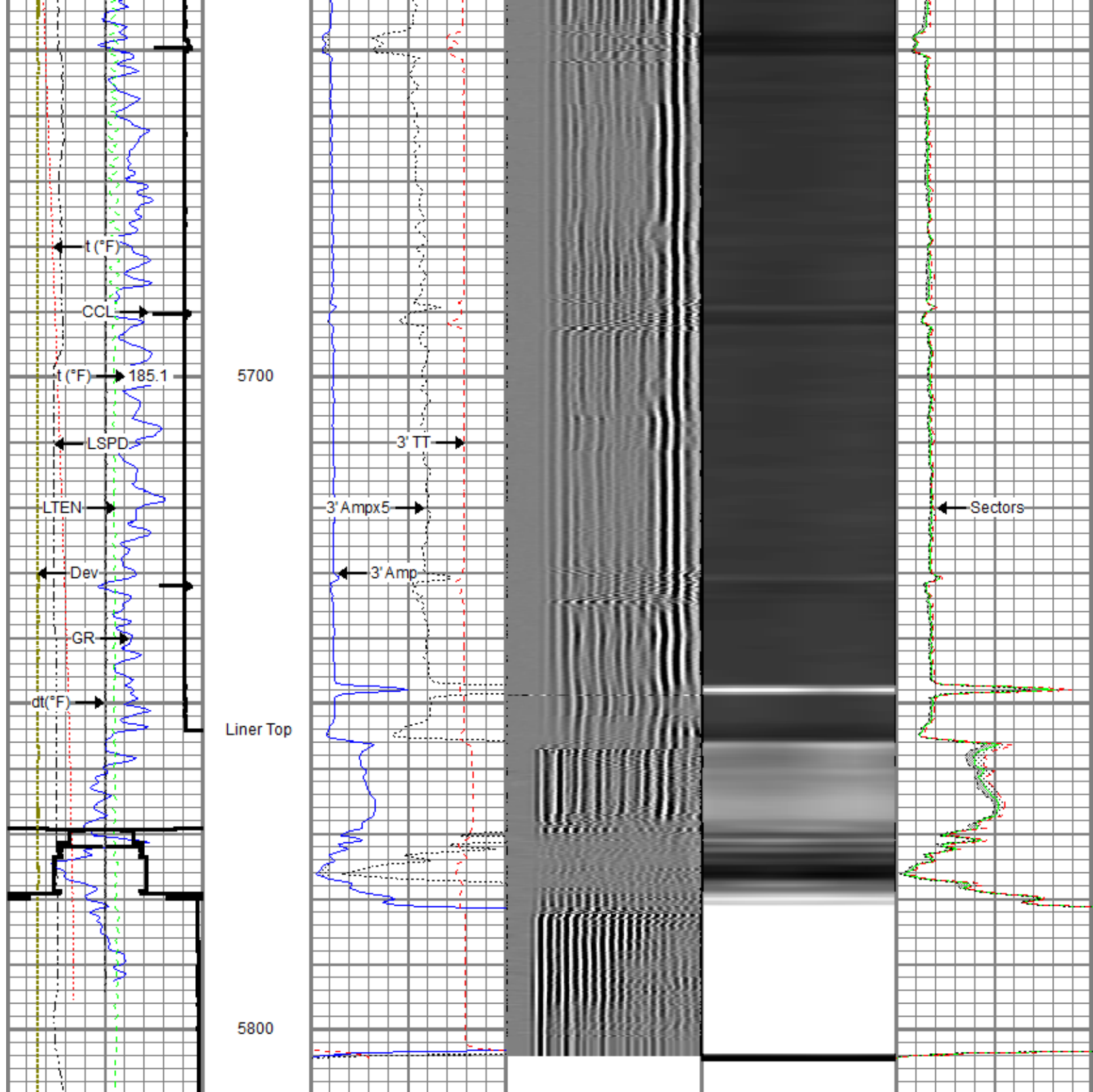












Gamma Ray (GAPI)	0	120
Line Speed (ft/min)	-100	100
Line Tension (lb)	0	2000
Differential Temperature (degF)	-2	2
Temperature (degF)	0	20
Casing Collar Locator Deviation (deg)	-10	90

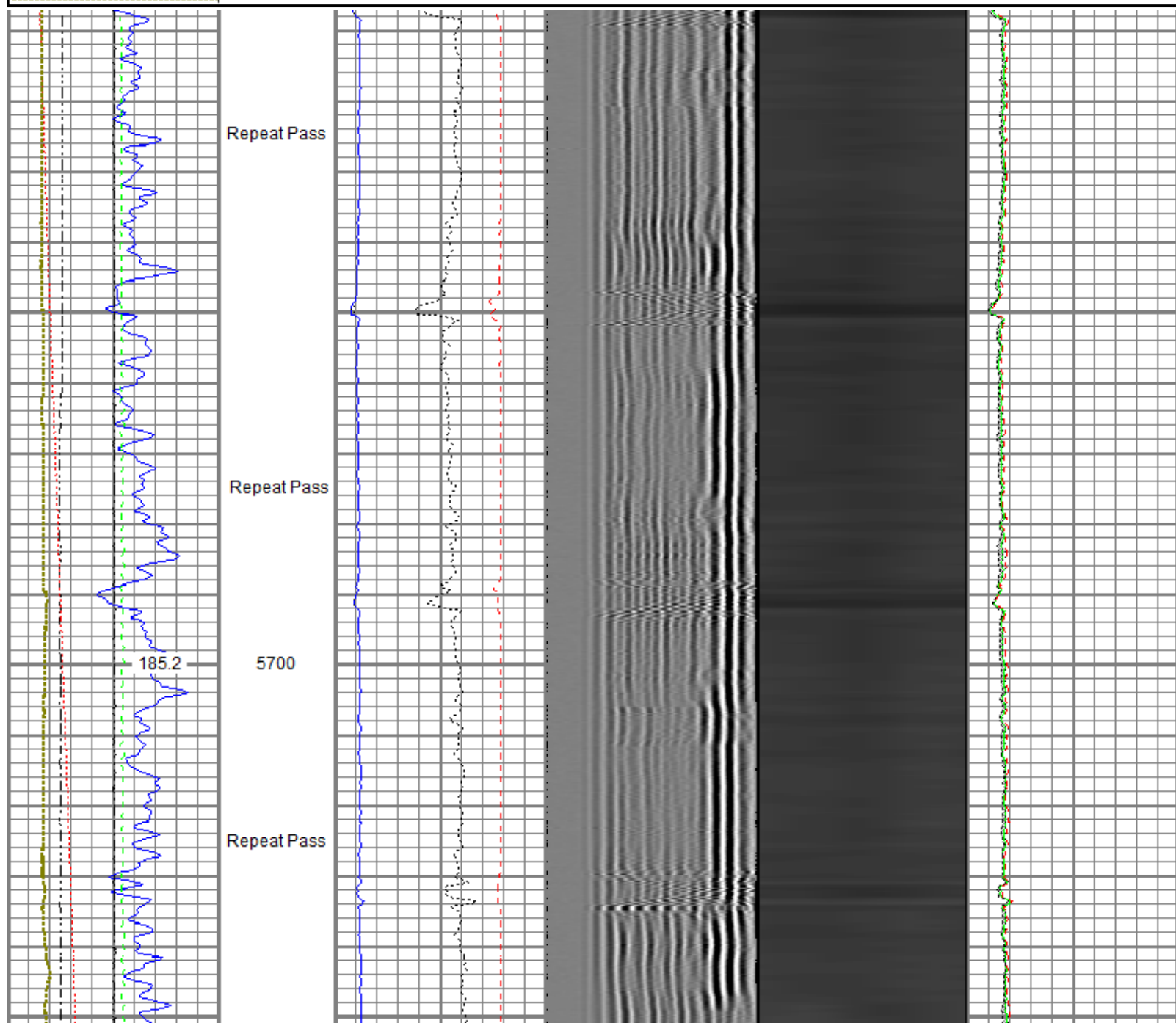
3' Amplitude (mV)	0	100
3' Amplitude x 5 (mV)	0	20
3' Travel Time (usec)	650	150

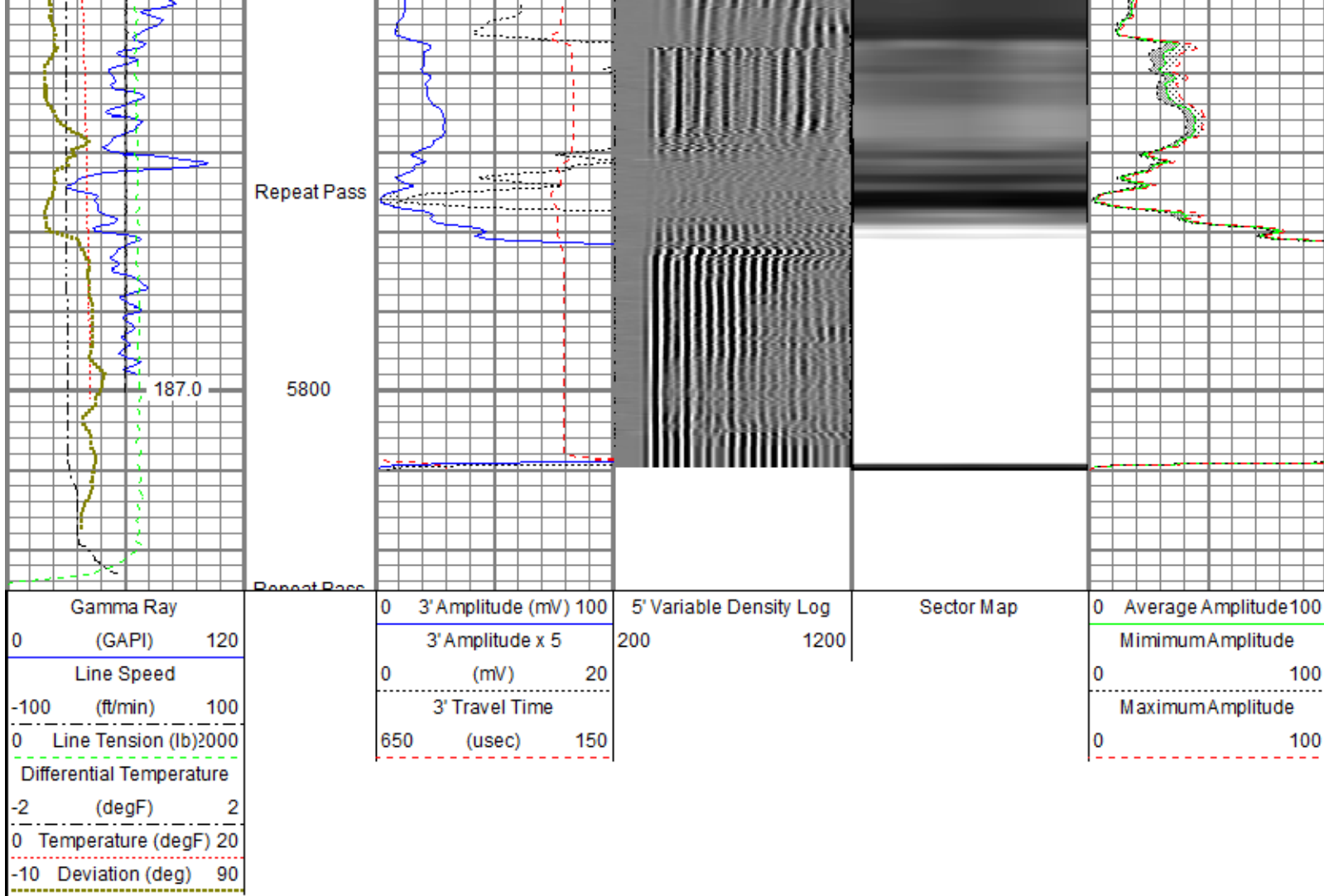
5' Variable Density Log	200	1200
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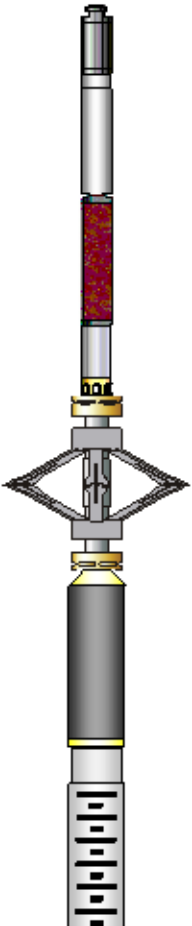

Sector Map	0	100
Average Amplitude	0	100
Minimum Amplitude	0	100
Maximum Amplitude	0	100

Database File anadarko_wagner 26c-10hz\0512343477_anadarko_wagner 26c-10hz_rbl_12-08-17.db
 Dataset Pathname pass3
 Presentation Format ros_rbt_mit_sx
 Dataset Creation Fri Dec 08 09:21:46 2017
 Charted by Depth in Feet scaled 1:240

Gamma Ray (GAPI)	0	120	3' Amplitude (mV)	0	100	5' Variable Density Log		Sector Map		Average Amplitude	0	100
Line Speed (ft/min)	-100	100	3' Amplitude x 5 (mV)	0	20		200			Minimum Amplitude		
Line Tension (lb)	0	2000	3' Travel Time (usec)	650	150					Maximum Amplitude		
Differential Temperature (degF)	-2	2										
Temperature (degF)	0	20										
Deviation (deg)	-10	90										





Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)	
GR	23.58		Titan_Electric_Cable_Heads-Titan_1-11/16" Electric Cable Head with 1" Fishing Neck	1.03	1.69	5.40	
			UW_AGS-UW_AGS_001 (219135) Sondex Adapter - GO Box to Sondex Pin	0.21	1.69	1.00	
			UW_XTU-UW_XTU_002 (051219) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50	
			UW_PGR-UW_PGR_020 (10013902) Production Gamma Ray	1.92	1.69	9.50	
TEMP	22.18		UW_PRT-PRT_016 (10024052) Platinum Resistance Thermometer	1.04	1.69	5.20	
			UW_PRC-DSS_RAC 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00	
CBLROT	15.15			UW_RBT-UW_RBT_004 (1066) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.48	3.13	140.00
CBLTEMP	15.15						

WVFS8	15.15					
WVFS7	15.15					
WVFS6	15.15					
WVFS5	15.15					
WVFS4	15.15					
WVFS3	15.15					
WVFS2	15.15					
WVFS1	15.15					
WVF3FT	15.15					
WVF5FT	14.15					
CBLTEMP	10.02					
			UW_PRC-DSS_RAC 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00
			UW_MIT-UW_MIT40_027 (218949) 40 Multifinger Imaging Tool	4.54	2.75	65.00
			UW_PRC-PRC_057 4 Arm 2-3/4" Production Roller Centralizer	2.71	2.75	32.00
			UW_BUL-UW_BUL_006 (031422) Sondex Ultrawire Bullnose Terminator	0.22	1.69	1.20
Dataset: 0512343477_Anadarko_Wagner 26C-10HZ_RBL_12-08-17.db: field/well/run1/pass1						
Total length: 27.83 ft						
Total weight: 329.80 lb						
O.D.: 3.13 in						

Finger 02:	1460	278.0	1738	286.0	2024	301.0	2325
Finger 03:	1650	280.0	1930	278.0	2208	285.0	2493
Finger 04:	1647	277.0	1924	275.0	2199	280.0	2479
Finger 05:	1548	266.0	1814	270.0	2084	278.0	2362
Finger 06:	1534	257.0	1791	261.0	2052	269.0	2321
Finger 07:	1365	276.0	1641	286.0	1927	301.0	2228
Finger 08:	1544	259.0	1803	264.0	2067	271.0	2338
Finger 09:	1430	273.0	1703	282.0	1985	291.0	2276
Finger 10:	1490	269.0	1759	275.0	2034	278.0	2312
Finger 11:	1483	263.0	1746	273.0	2019	272.0	2291
Finger 12:	1316	285.0	1601	297.0	1898	306.0	2204
Finger 13:	1584	280.0	1864	289.0	2153	286.0	2439
Finger 14:	1419	283.0	1702	298.0	2000	303.0	2303
Finger 15:	1544	262.0	1806	276.0	2082	279.0	2361
Finger 16:	1398	281.0	1679	300.0	1979	303.0	2282
Finger 17:	1623	268.0	1891	283.0	2174	279.0	2453
Finger 18:	1386	284.0	1670	311.0	1981	315.0	2296
Finger 19:	1641	254.0	1895	264.0	2159	261.0	2420
Finger 20:	1513	258.0	1771	281.0	2052	284.0	2336
Finger 21:	1599	244.0	1843	262.0	2105	261.0	2366
Finger 22:	1531	265.0	1796	288.0	2084	290.0	2374
Finger 23:	1350	266.0	1616	294.0	1910	299.0	2209
Finger 24:	1673	253.0	1926	273.0	2199	278.0	2477
Finger 25:	1368	281.0	1649	312.0	1961	320.0	2281
Finger 26:	1535	276.0	1811	299.0	2110	309.0	2419
Finger 27:	1453	252.0	1705	275.0	1980	284.0	2264
Finger 28:	1644	266.0	1910	286.0	2196	295.0	2491
Finger 29:	1468	265.0	1733	288.0	2021	305.0	2326
Finger 30:	1414	262.0	1676	290.0	1966	308.0	2274
Finger 31:	1521	260.0	1781	280.0	2061	290.0	2351
Finger 32:	1340	256.0	1596	282.0	1878	298.0	2176
Finger 33:	1625	295.0	1920	311.0	2231	321.0	2552
Finger 34:	1537	269.0	1806	276.0	2082	290.0	2372
Finger 35:	1441	264.0	1705	280.0	1985	299.0	2284
Finger 36:	1591	279.0	1870	286.0	2156	300.0	2456
Finger 37:	1598	278.0	1876	278.0	2154	297.0	2451
Finger 38:	1496	273.0	1769	285.0	2054	302.0	2356
Finger 39:	1460	281.0	1741	292.0	2033	310.0	2343
Finger 40:	1595	289.0	1884	294.0	2178	305.0	2483

Post Survey Calibration Check								
Performed: Fri Dec 08 11:43:12 2017								
Ring size: (in)	4	Nom. wear	5	Nom. wear	6	Nom. wear	7	Nom. wear
Finger 01:	3.995	-0.003	4.994	-0.003	5.990	-0.005	6.988	-0.006
Finger 02:	3.992	-0.004	4.991	-0.005	5.989	-0.006	6.992	-0.004
Finger 03:	3.995	-0.002	4.994	-0.003	6.003	0.002	7.012	0.006
Finger 04:	3.989	-0.006	5.001	0.001	6.019	0.010	7.033	0.016
Finger 05:	3.986	-0.007	4.988	-0.006	5.984	-0.008	6.992	-0.004
Finger 06:	3.987	-0.006	5.000	-0.000	5.998	-0.001	6.996	-0.002
Finger 07:	3.989	-0.006	4.993	-0.003	5.994	-0.003	6.985	-0.008
Finger 08:	3.995	-0.002	4.997	-0.002	5.992	-0.004	6.994	-0.003
Finger 09:	3.990	-0.005	4.998	-0.001	6.003	0.002	6.999	-0.000
Finger 10:	3.989	-0.005	4.998	-0.001	6.001	0.001	6.999	-0.001
Finger 11:	3.990	-0.005	4.995	-0.003	5.992	-0.004	7.003	0.001
Finger 12:	4.000	-0.000	4.990	-0.005	5.989	-0.005	6.989	-0.005
Finger 13:	3.990	-0.005	5.002	0.001	6.011	0.005	7.003	0.002
Finger 14:	3.999	-0.001	4.997	-0.002	6.002	0.001	7.000	-0.000
Finger 15:	3.991	-0.005	4.992	-0.004	5.995	-0.003	6.996	-0.002
Finger 16:	3.996	-0.002	4.994	-0.003	5.996	-0.002	6.995	-0.002
Finger 17:	3.985	-0.008	4.990	-0.005	5.991	-0.004	7.002	0.001
Finger 18:	3.992	-0.004	4.994	-0.003	6.001	0.000	7.000	-0.000
Finger 19:	3.995	-0.003	4.999	-0.000	5.996	-0.002	6.991	-0.005
Finger 20:	3.990	-0.005	4.992	-0.004	5.991	-0.005	6.995	-0.002
Finger 21:	3.998	-0.001	4.995	-0.003	5.991	-0.004	7.003	0.001
Finger 22:	3.990	-0.005	4.988	-0.006	5.995	-0.002	7.006	0.003
Finger 23:	4.001	0.000	4.997	-0.002	5.999	-0.000	6.994	-0.003
Finger 24:	3.999	-0.000	4.996	-0.002	6.006	0.003	7.000	-0.000
Finger 25:	3.986	-0.007	4.995	-0.002	5.994	-0.003	6.993	-0.004
Finger 26:	3.991	-0.004	4.998	-0.001	6.001	0.001	6.992	-0.004
Finger 27:	3.983	-0.009	4.994	-0.003	5.994	-0.003	6.994	-0.003
Finger 28:	3.986	-0.007	4.996	-0.002	5.998	-0.001	7.006	0.003
Finger 29:	3.995	-0.003	4.998	-0.001	6.002	0.001	7.002	0.001

Finger 29:	3.993	-0.003	4.998	-0.001	6.002	0.001	7.003	0.001
Finger 30:	3.984	-0.008	5.003	0.002	6.004	0.002	7.001	0.000
Finger 31:	3.995	-0.003	4.994	-0.003	5.994	-0.003	7.009	0.005
Finger 32:	3.990	-0.005	4.994	-0.003	5.992	-0.004	7.002	0.001
Finger 33:	3.993	-0.003	4.994	-0.003	5.996	-0.002	6.995	-0.003
Finger 34:	3.993	-0.004	4.991	-0.005	5.993	-0.004	6.988	-0.006
Finger 35:	3.994	-0.003	4.997	-0.002	5.996	-0.002	6.996	-0.002
Finger 36:	3.993	-0.004	4.989	-0.005	5.995	-0.003	6.999	-0.001
Finger 37:	4.004	0.002	4.989	-0.006	6.004	0.002	6.994	-0.003
Finger 38:	3.998	-0.001	5.006	0.003	6.000	-0.000	6.994	-0.003
Finger 39:	3.991	-0.004	4.995	-0.002	5.999	-0.000	6.997	-0.002
Finger 40:	3.988	-0.006	4.995	-0.003	5.993	-0.004	6.996	-0.002
Average:	3.992	-0.004	4.995	-0.002	5.997	-0.001	6.998	-0.001

Segmented Cement Bond Log Calibration Report								
Serial Number:			1066					
Tool Model:			UW_RBT_004					
Calibration Casing Diameter:			7.000		in			
Calibration Depth:			21.037		ft			

Master Calibration, performed Fri Dec 08 08:13:16 2017:						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.002	0.580	0.800	62.165	106.226	0.546
5FT	-0.002	0.568	0.800	62.165	107.645	1.063
S1	0.002	0.567	0.000	100.000	177.194	-0.430
S2	0.001	0.588	0.000	100.000	170.284	-0.208
S3	0.002	0.582	0.000	100.000	172.246	-0.296
S4	0.001	0.592	0.000	100.000	169.288	-0.198
S5	0.002	0.586	0.000	100.000	171.292	-0.364
S6	0.001	0.586	0.000	100.000	170.941	-0.248
S7	0.002	0.592	0.000	100.000	169.610	-0.408
S8	0.003	0.573	0.000	100.000	175.223	-0.473

Temperature Calibration Report					
Serial Number:			10024052		
Tool Model:			PRT_016		
Performed:			Sun Oct 11 12:16:39 2015		
Point #	Reading		Reference		
1	12242.00	cps	68.00	degF	
2	18329.00	cps	104.00	degF	
3	29563.00	cps	176.00	degF	
4	41222.00	cps	248.00	degF	
5	52988.00	cps	320.00	degF	
6	58824.00	cps	356.00	degF	
7		cps		degF	
8		cps		degF	
9		cps		degF	
10		cps		degF	

Gamma Ray Calibration Report			
Serial Number:		10013902	
Tool Model:		UW_PGR_020	
Performed:		(Not Performed)	
Calibrator Value:		1.0	GAPI
Background Reading:		0.0	cps
Calibrator Reading:		1.0	cps
Sensitivity:		1.0000	GAPI/cps



Company	Kerr-McGee Oil & Gas Onshore, L.P.
Well	Wagner 26C-10HZ
Field	Wattenberg
County	Weld
State	Colorado