



RADIAL CEMENT BOND LOG

FILE NO: CH139388	COMPANY LARAMIE ENERGY LLC
API NO: 05045238040000	WELL CC 0697-03-14W
	FIELD GRAND VALLEY
	COUNTY GARFIELD STATE COLORADO

Ver. 4.10	LOCATION: SHL: 3326' FNL & 1320' FWL BHL: 3326' FNL & 1320' FWL SEC 3 TWP 6S RGE 97W	OTHER SERVICES RPM
-----------	---	-----------------------

PERMANENT DATUM LOG MEASURED FROM DRILL. MEAS. FROM	GL ELEVATION 8428 FT KB 30 FT ABOVE P.D. KB	ELEVATIONS: KB 8458 FT DF GL 8428 FT
---	---	---

DATE	TRIP	30-Jun-2018	1
RUN	1	US139388	
SERVICE ORDER		9697 FT	
DEPTH DRILLER		9678 FT	
DEPTH LOGGER		9678 FT	
BOTTOM LOGGED INTERVAL		30 FT	
TOP LOGGED INTERVAL		04:30	
TIME STARTED		07:30	
TIME FINISHED		3 HRS	
OPERATOR RIG TIME		WATER	
TYPE OF FLUID IN HOLE		NA	
FLUID DENSITY		NA	
FLUID SALINITY		62 FT	
FLUID LEVEL		2720 FT	
LOGGED CEMENT TOP		0 PSI	
WELLHEAD PRESSURE		NA	
MAXIMUM HOLE DEVIATION		100 FMN	
NOMINAL LOGGING SPEED		255 DEGF	
MAX. RECORDED TEMP.		NA	
REFERENCE LOG		NA	
REFERENCE LOG DATE		ML-4291	GRAND JCT.
EQUIP. NO.	LOCATION	M. BAUKA	
RECORDED BY		NA	
WITNESSED BY			

IN MAKING INTERPRETATIONS OF LOGS OUR EMPLOYEES WILL GIVE THE CUSTOMER THE BENEFIT OF THEIR BEST JUDGEMENT. BUT SINCE ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS, WE CANNOT, AND WE DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION. WE SHALL NOT BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COST, DAMAGES, OR EXPENSES WHATSOEVER INCURRED OR SUSTAINED BY THE CUSTOMER RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR EMPLOYEES.

REMARKS

RUN 1 TRIP 1: *2 OPERATIONS IN WELLBORE*

OPERATION 1: RAL/GR/CCL RUN CENTRALIZED

OPERATION 2: RPM/GR/CCL RUN IN PNC-3D

LOGGED WITH 0 PSI ON WELLHEAD

SJ: 7550' - 7570'

SJ: 9050' - 9070'

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	RAL	1426XA	11871500	CENTRALIZED
1	1	GR/CCL	1355XA	12670180	CENTRALIZED

MAIN PASS 0 PSI

ECLIPS 7.0i ECLIPS General Release Rel 7.0i Thu Jun 08 20:36:10 CDT 2017

Patches: 4

Plotted: Sat Jun 30 08:36:13 2018

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_CC_0697-03-14W/p012g02.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 16.000 ft BOTTOM DEPTH: 9675.250 ft

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
GR	FILTER ()	medium (1)		TOP	BOTTOM
AMPLITUDE	FILTER ()	medium (1)		"	"
TRAVEL TIME	FILTER ()	medium (1)		"	"

RAL CCL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CCL FLOOR	CCL FLOOR	0.00		TOP	BOTTOM

ANALOG RAL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
AMPLITUDE WINDOW (NEAR)	AMP WINDOW START (fgp1*)	187	us	TOP	BOTTOM
	AMP WINDOW START (fgp2*)	187	us	"	"
	AMP WINDOW START (fgp3*)	187	us	"	"
	AMP WINDOW START (fgp4*)	187	us	"	"
	AMP WINDOW START (fgp5*)	187	us	"	"
	AMP WINDOW START (fgp6*)	187	us	"	"
	AMP WINDOW START (fgp7*)	187	us	"	"
	AMP WINDOW START (fgp8*)	187	us	"	"
	AMP WINDOW START (fgpn*)	187	us	"	"
TRAVEL TIME WINDOW (NEAR)	AMP WINDOW LENGTH	25	us	"	"
	TT WINDOW START (ttn*)	160	us	"	"
	TT WINDOW LENGTH	500	us	"	"
	FIRST BRK THRESHOLD (ttn*)	4	mV	"	"
RAL CASING PARAMETERS	PPT NEAR	200.465	us	"	"
RAL TOOL DELAY	TOOL DELAY (str1*)	-65	us	"	"
	TOOL DELAY (str2*)	-65	us	"	"
	TOOL DELAY (str3*)	-65	us	"	"
	TOOL DELAY (str4*)	-65	us	"	"
	TOOL DELAY (str5*)	-65	us	"	"
	TOOL DELAY (str6*)	-65	us	"	"
	TOOL DELAY (str7*)	-65	us	"	"
	TOOL DELAY (str8*)	-65	us	"	"
BASELINE NOISE (NEAR)	TOOL DELAY (strn*)	-65	us	"	"
	NOISE WINDOW START	125	us	"	"
	NOISE WINDOW LENGTH	25	us	"	"

PERCENT BOND CEMENT MAP

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
RAL FREE PIPE AMPLITUDE	FREE AMP REC 1	80	mV	TOP	BOTTOM
	FREE AMP REC 2	80	mV	"	"
	FREE AMP REC 3	80	mV	"	"
	FREE AMP REC 4	80	mV	"	"
	FREE AMP REC 5	80	mV	"	"
	FREE AMP REC 6	80	mV	"	"
	FREE AMP REC 7	80	mV	"	"
	FREE AMP REC 8	80	mV	"	"
RAL FULL BOND AMPLITUDE	FULL BOND AMP REC 1	2	mV	"	"

FULL BOND AMP REC 2	2	mV	"	"
FULL BOND AMP REC 3	2	mV	"	"
FULL BOND AMP REC 4	2	mV	"	"
FULL BOND AMP REC 5	2	mV	"	"
FULL BOND AMP REC 6	2	mV	"	"
FULL BOND AMP REC 7	2	mV	"	"
FULL BOND AMP REC 8	2	mV	"	"

CURVE DESCRIPTION REPORT

CURVE NAME CREATION DATE

CURVE DESCRIPTION

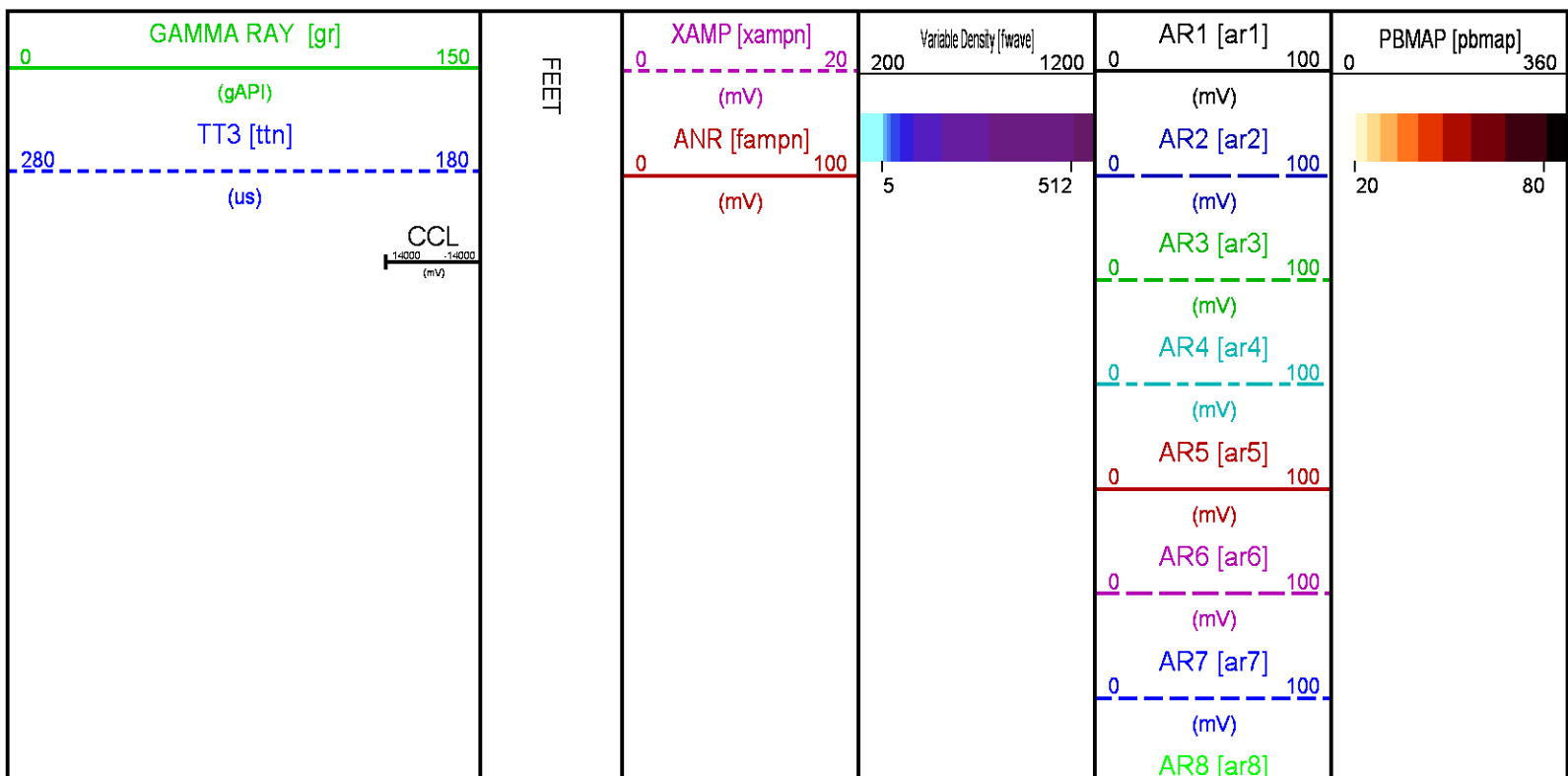
F1:AR1	N/A	FIXED GATE AMPLITUDE T-R1
F1:AR2	N/A	FIXED GATE AMPLITUDE T-R2
F1:AR3	N/A	FIXED GATE AMPLITUDE T-R3
F1:AR4	N/A	FIXED GATE AMPLITUDE T-R4
F1:AR5	N/A	FIXED GATE AMPLITUDE T-R5
F1:AR6	N/A	FIXED GATE AMPLITUDE T-R6
F1:AR7	N/A	FIXED GATE AMPLITUDE T-R7
F1:AR8	N/A	FIXED GATE AMPLITUDE T-R8
F1:CCL	N/A	CASING COLLAR LOCATOR
F1:FAMPN	N/A	FIXED GATE AMPLITUDE NEAR RECEIVER
F1:FWAVE	N/A	FAR WAVE FORM
F1:GR	N/A	GAMMA RAY
F1:PBMAP	N/A	PERCENT BOND CEMENT MAP
F1:TTN	N/A	TRAVELTIME FROM NEAR TRANSMITTER-RECEIVER
F1:XAMPN	N/A	FIXED GATE AMPLITUDE NEAR RECEIVER TIMES FIVE

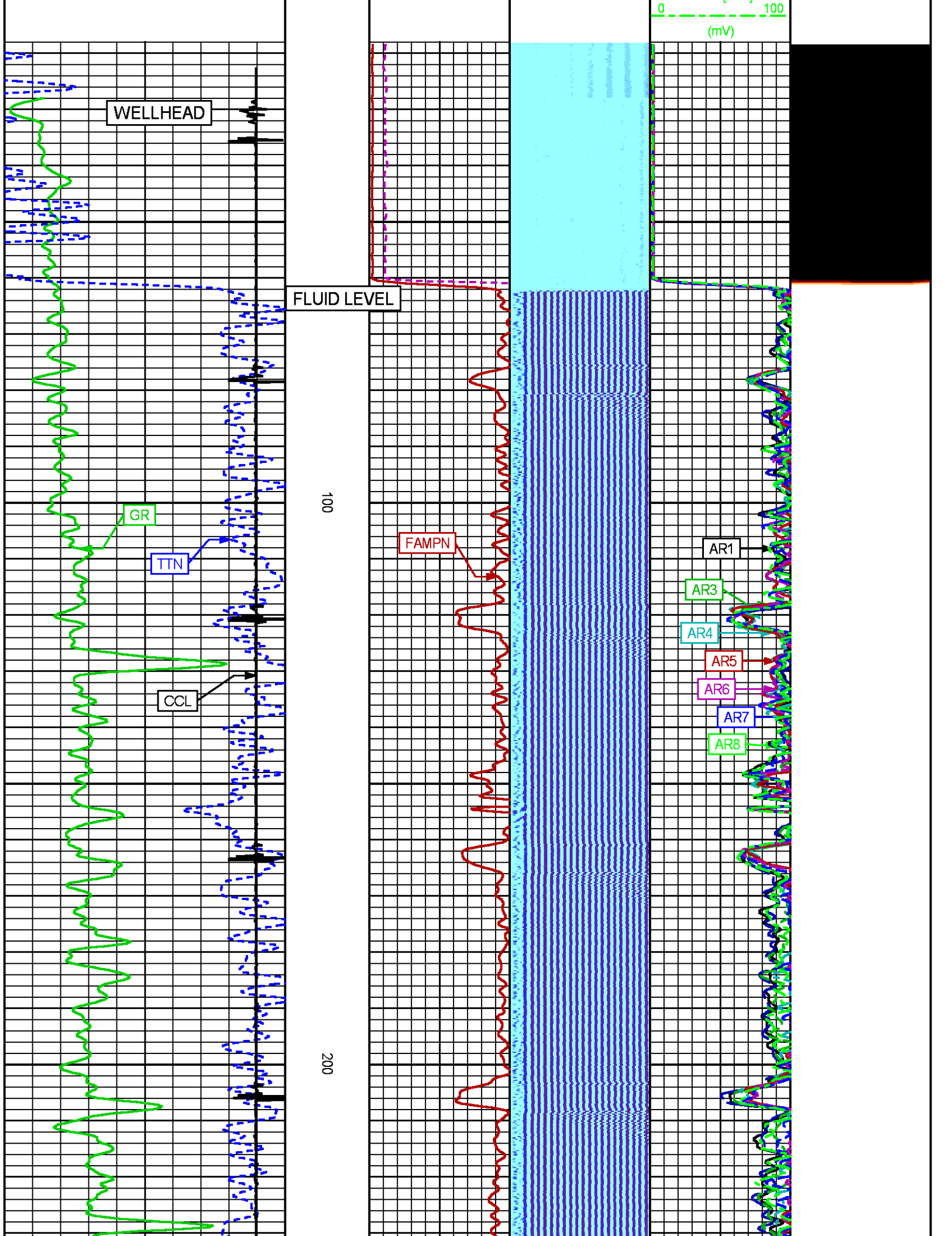
CURVE MEASURE POINT OFFSET

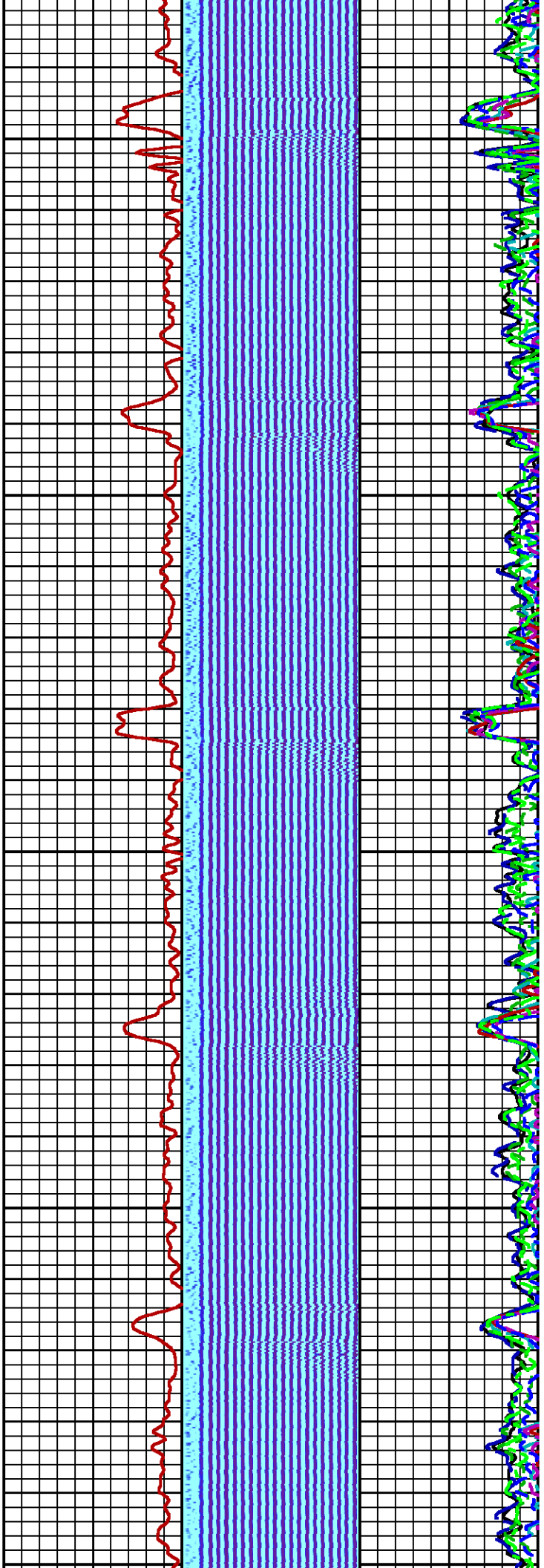
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
AR1	-11.25	AR5	-11.25	CCL	-5.75	XAMPN	-11.25
AR2	-11.25	AR6	-11.25	FAMPN	-11.25		
AR3	-11.25	AR7	-11.25	GR	-1.75		
AR4	-11.25	AR8	-11.25	TTN	-11.25		

Presentation : SysA:/dat1a/LARAMIE_CC_0697-03-14W/0697-03-14W_RAL_MAIN.fvpdf [5"/100' Scale]
Plot Interval : 18.25 - 9686.5 Feet

Data File 1 : F1 : SysA:/dat1a/LARAMIE_CC_0697-03-14W/0697-03-14W_RAL_MAIN.xtf
Created On : N/A
Company : LARAMIE ENERGY LLC
Well : CC_0697_03_14W
Field : GRAND VALLEY
File Interval : 16 - 9687.75 Feet
OCT : p012g

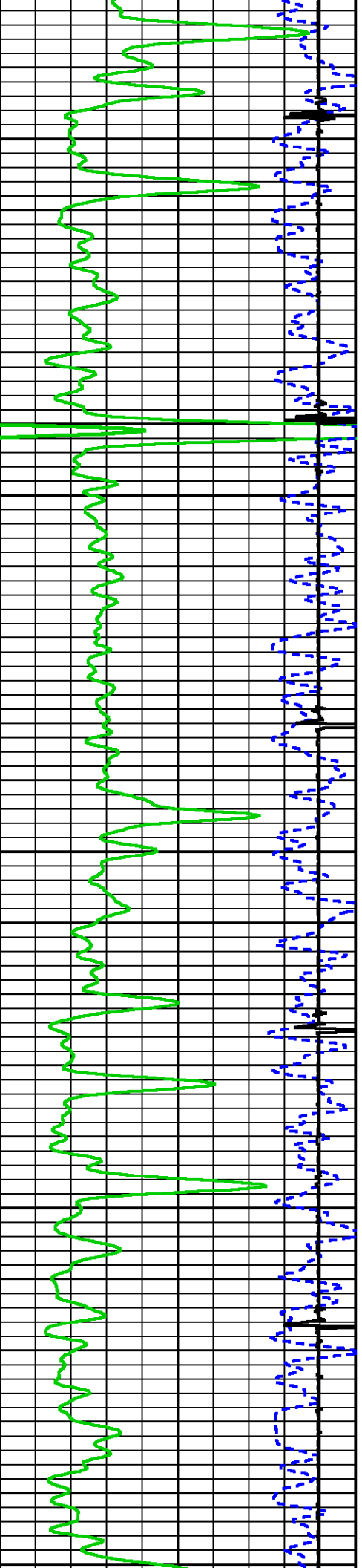


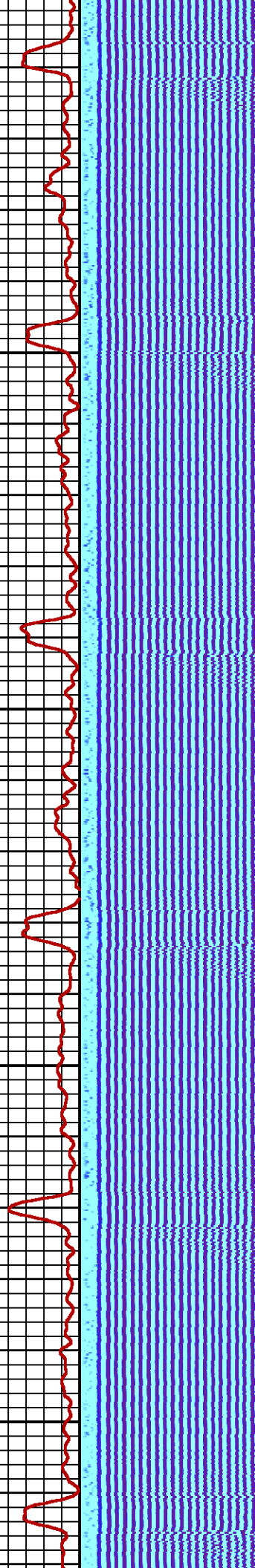
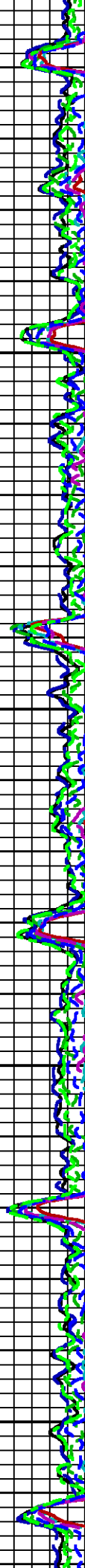




300

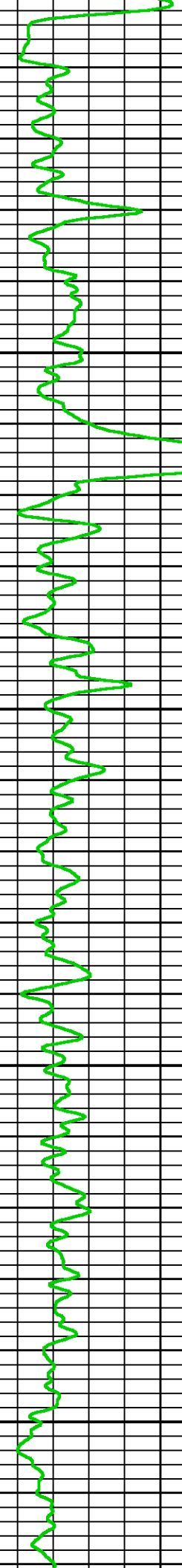
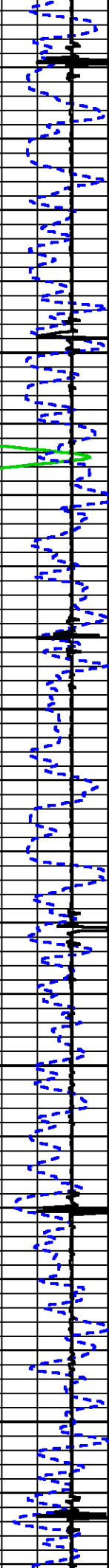
400

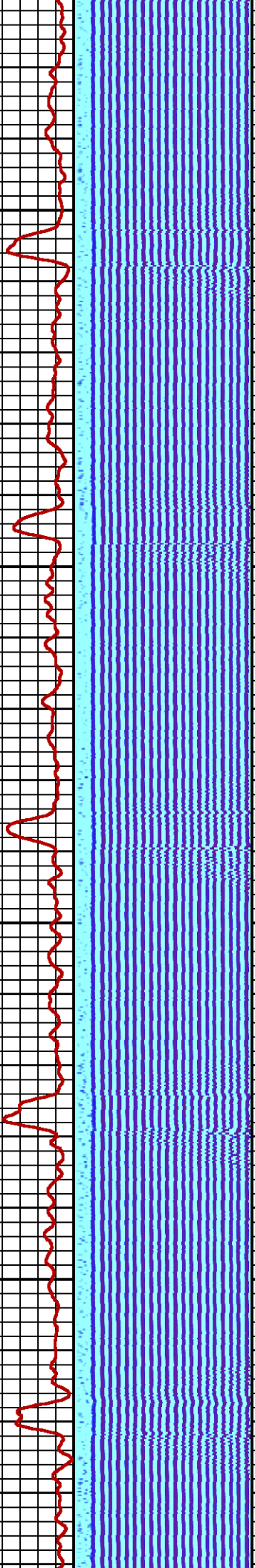
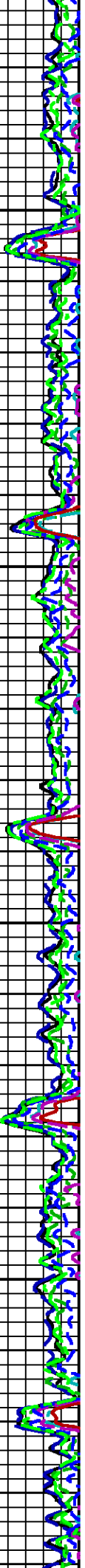




500

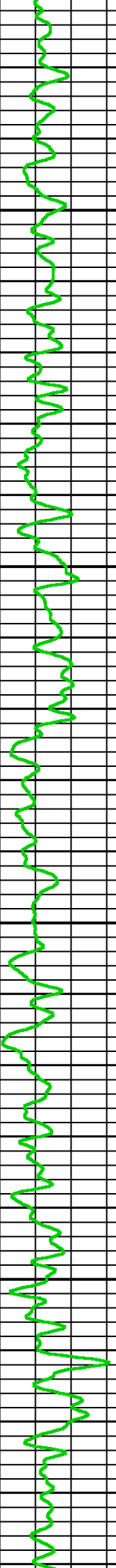
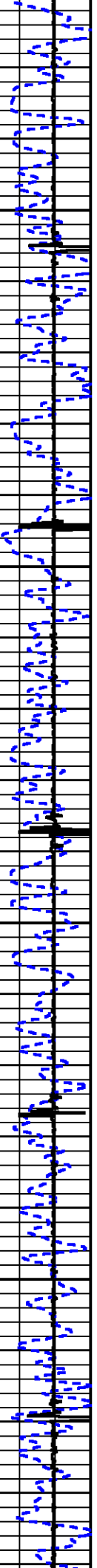
600

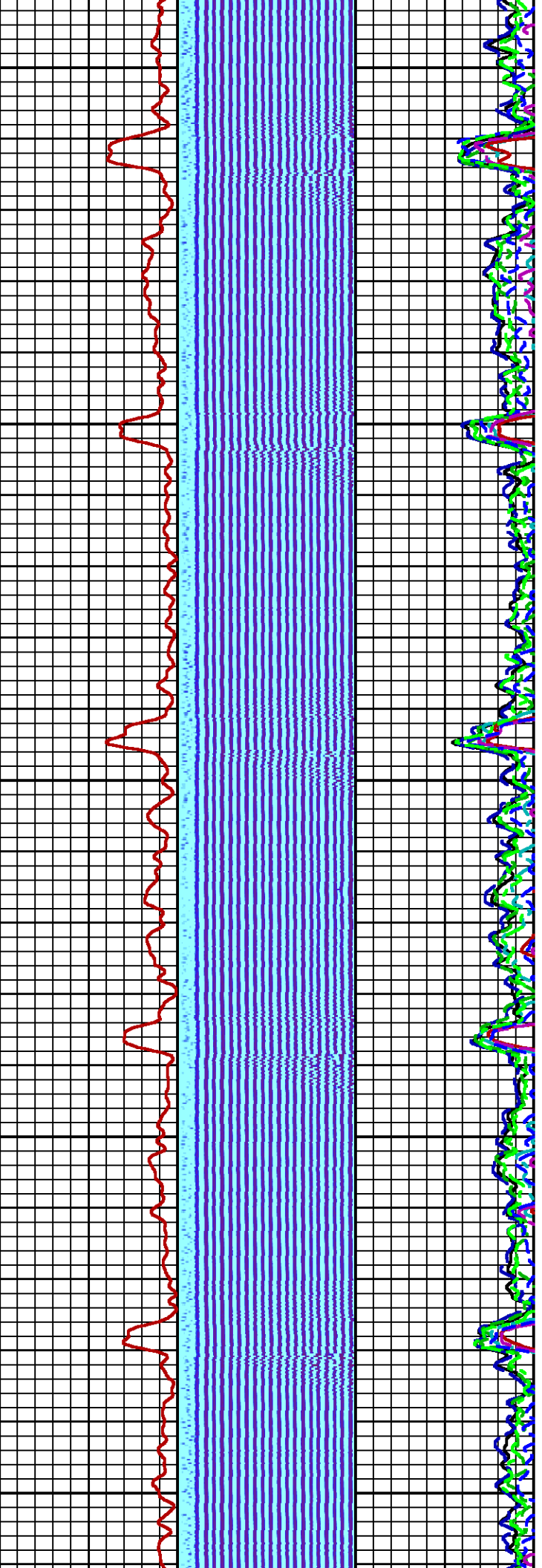




700

800

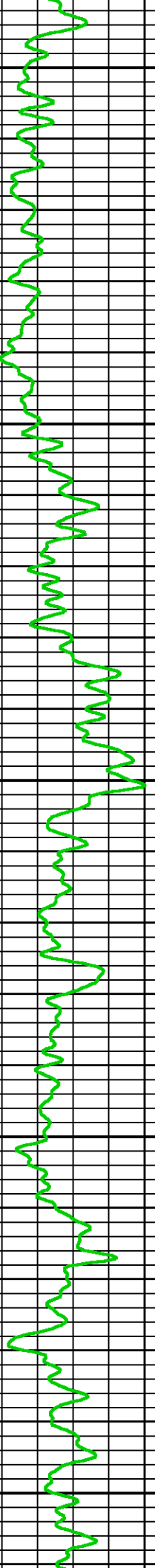
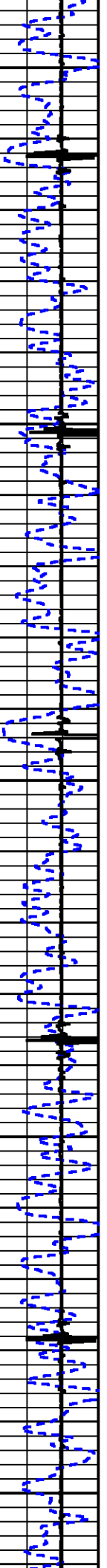


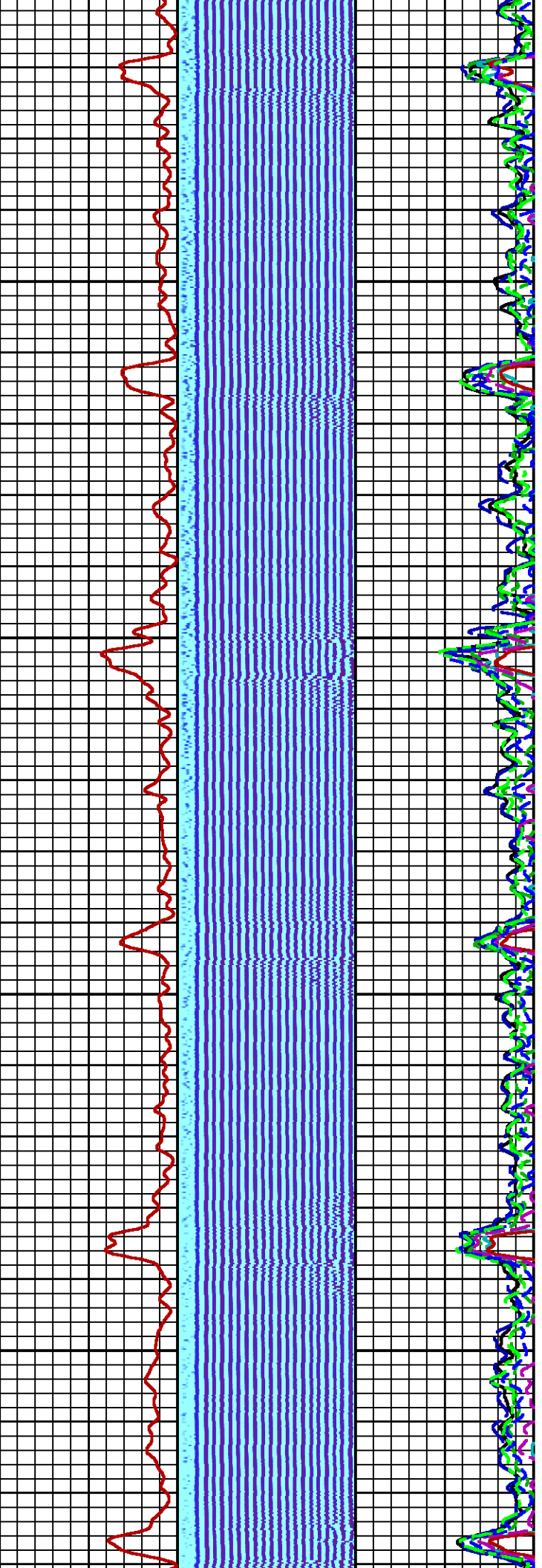


900

1000

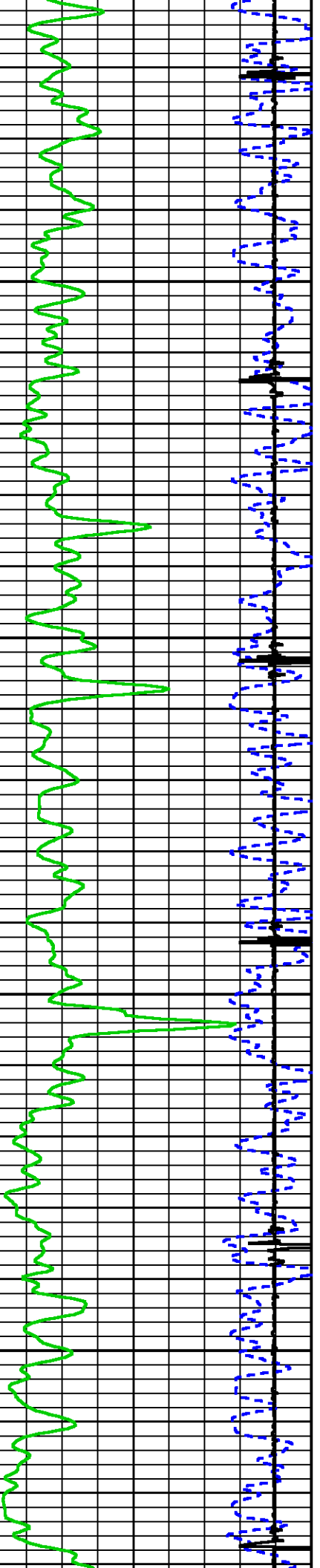
1100

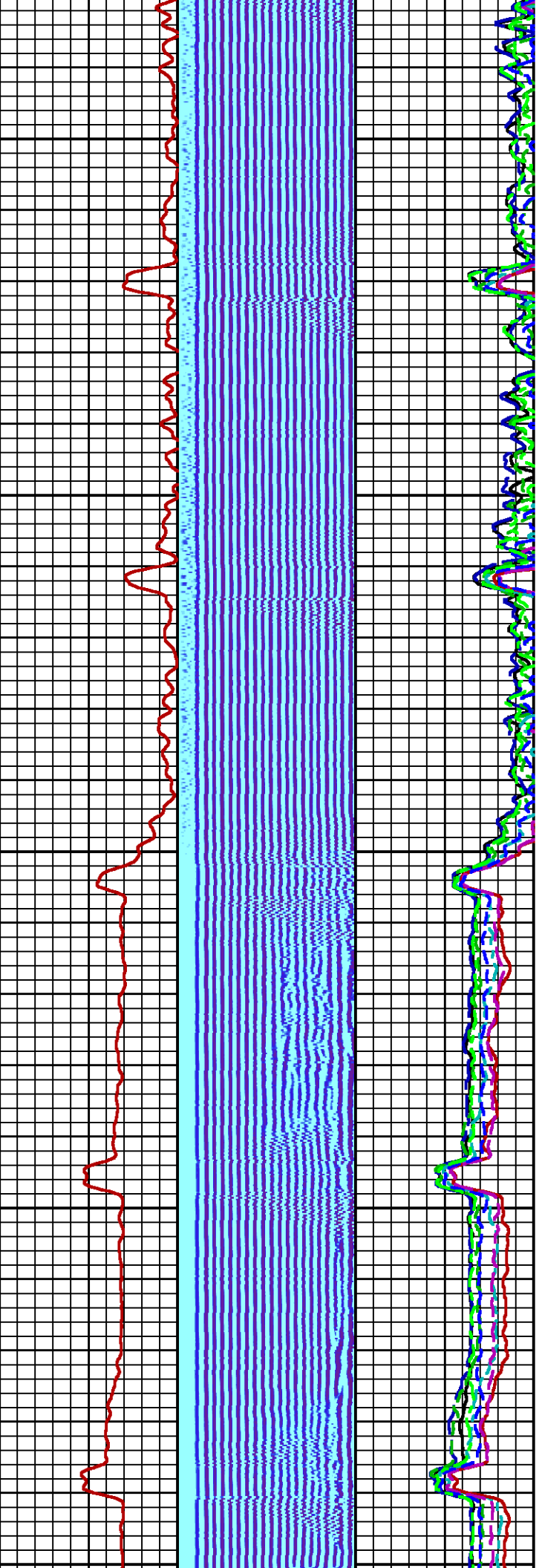




1200

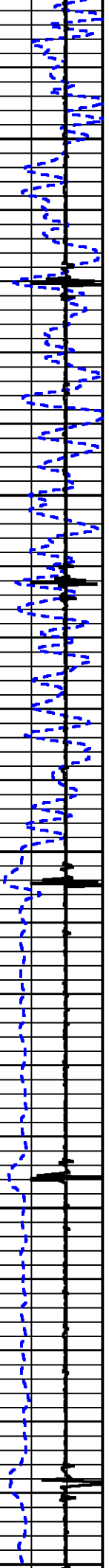
1300

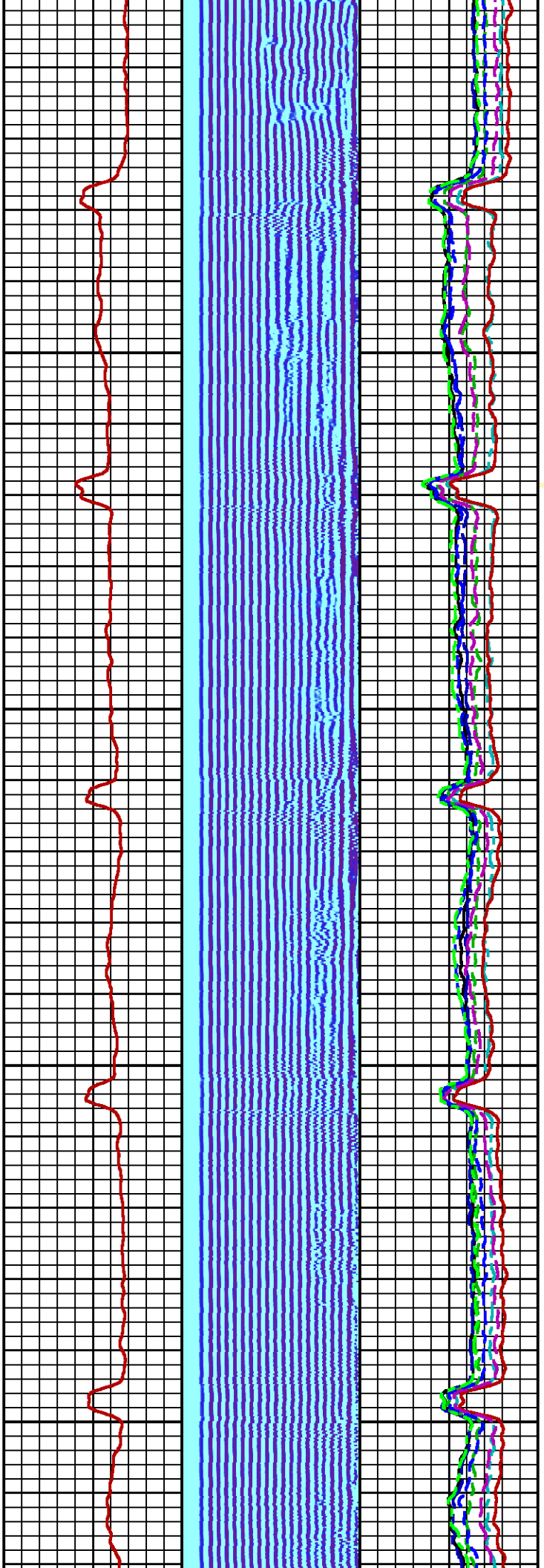




1400

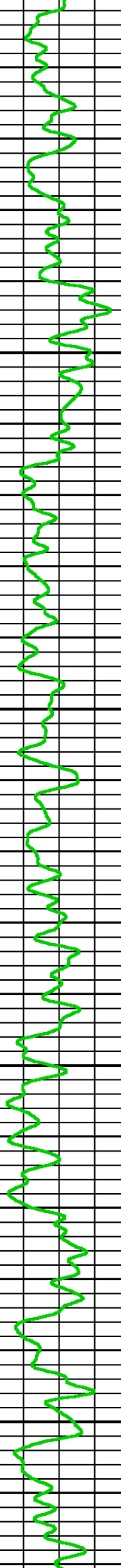
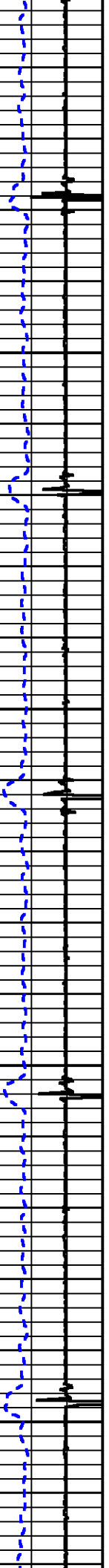
1500

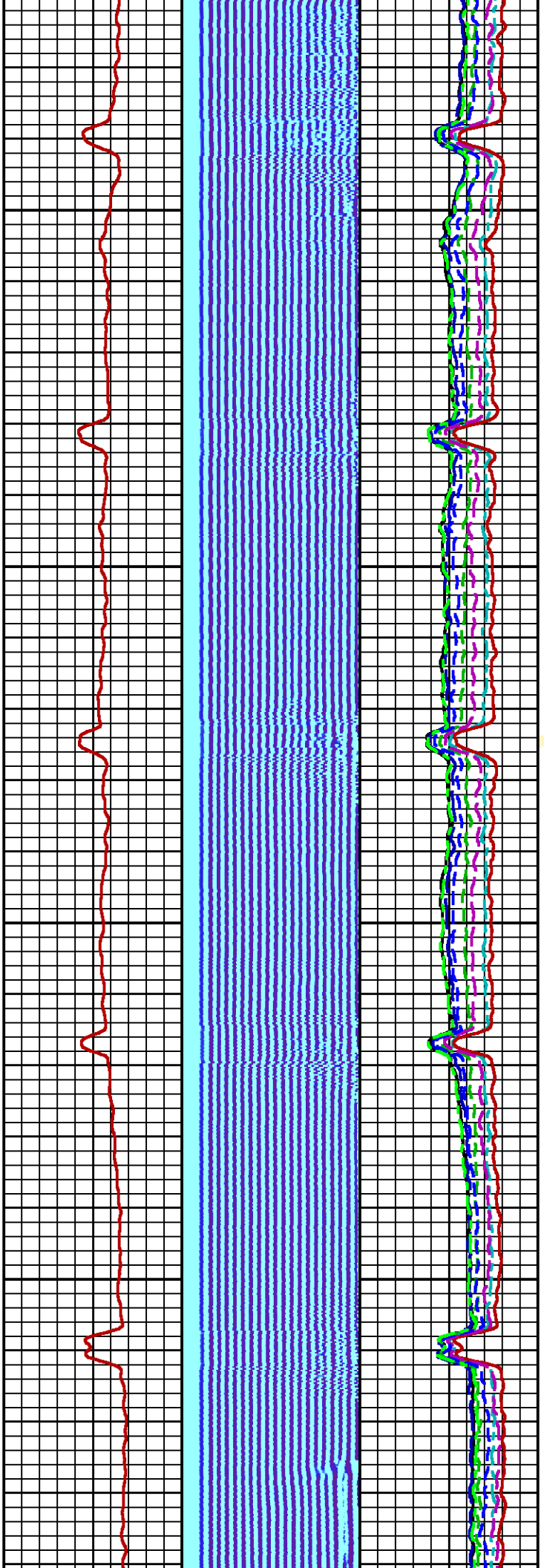




1600

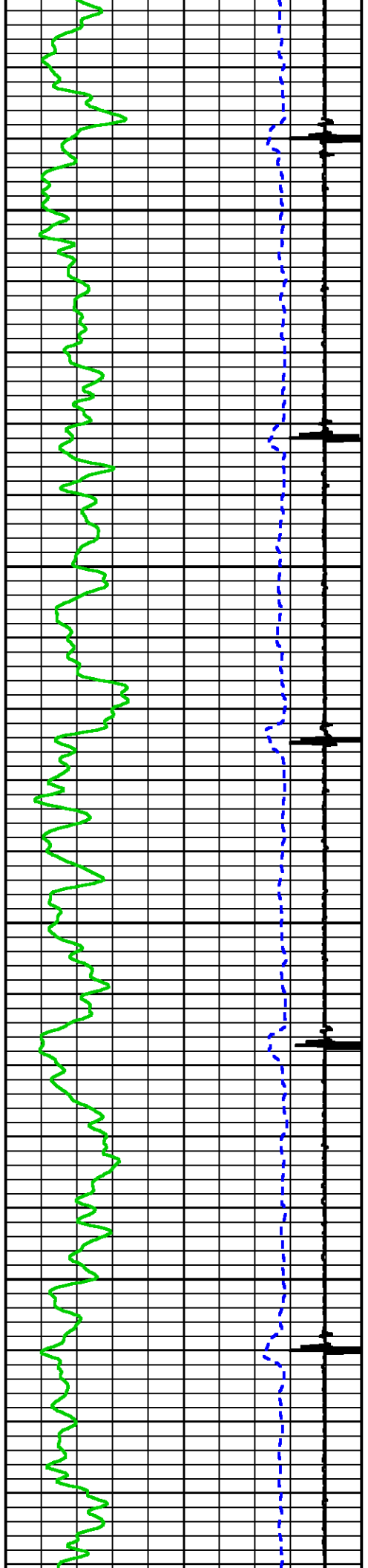
1700

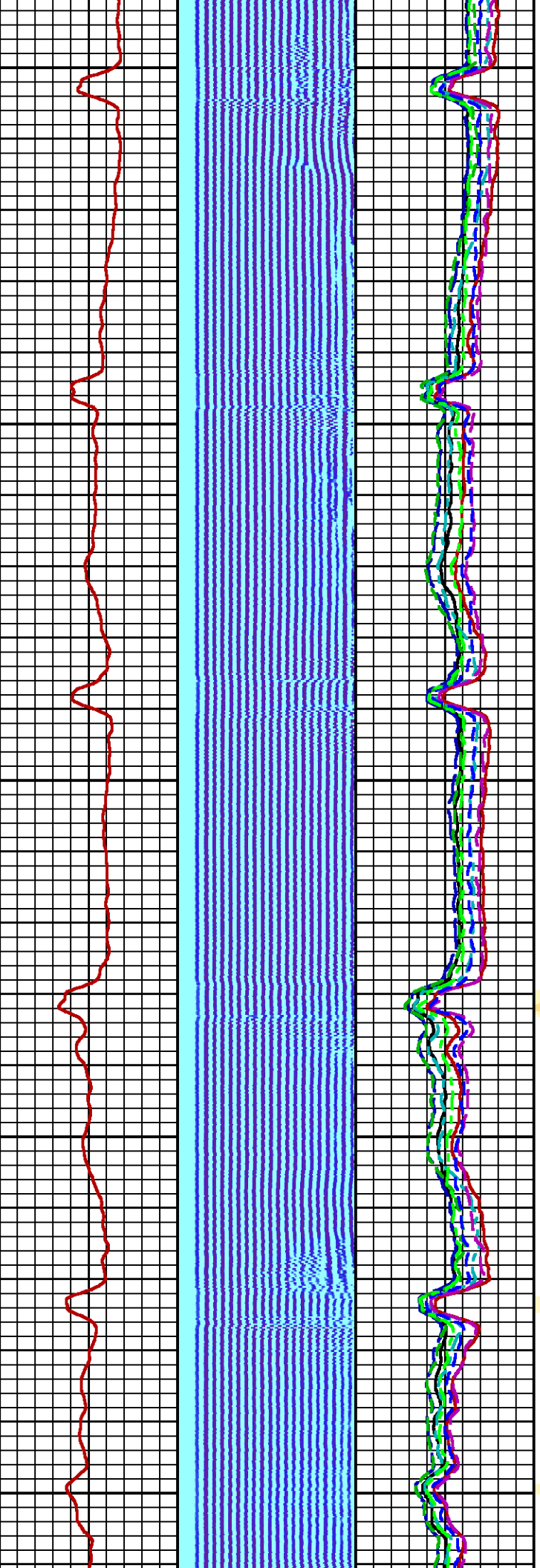




1800

1900

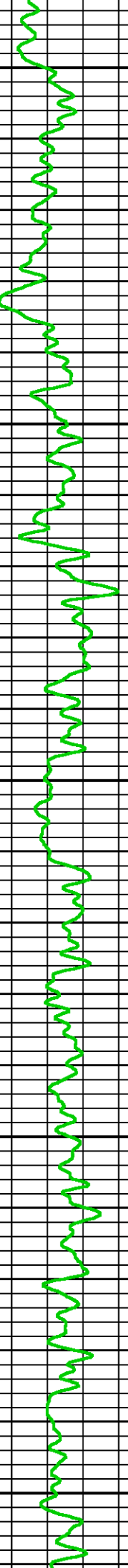
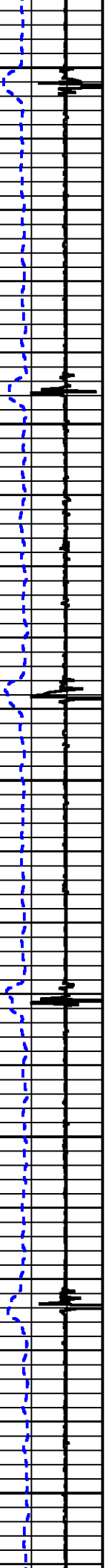


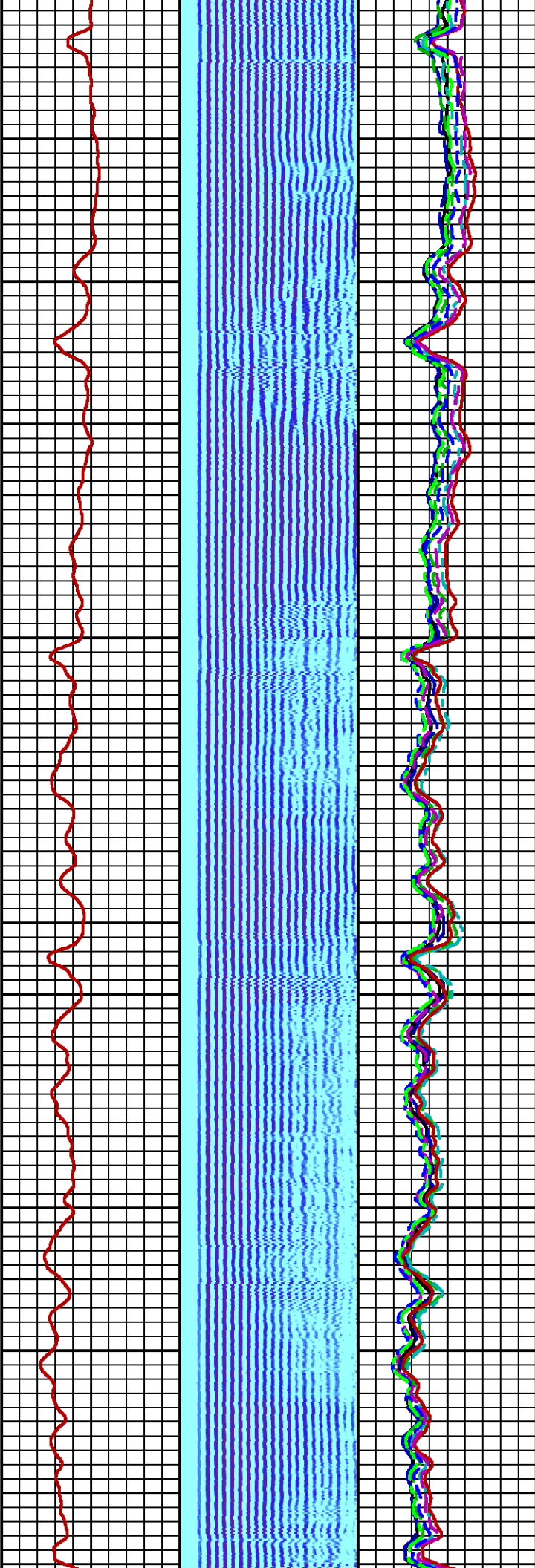
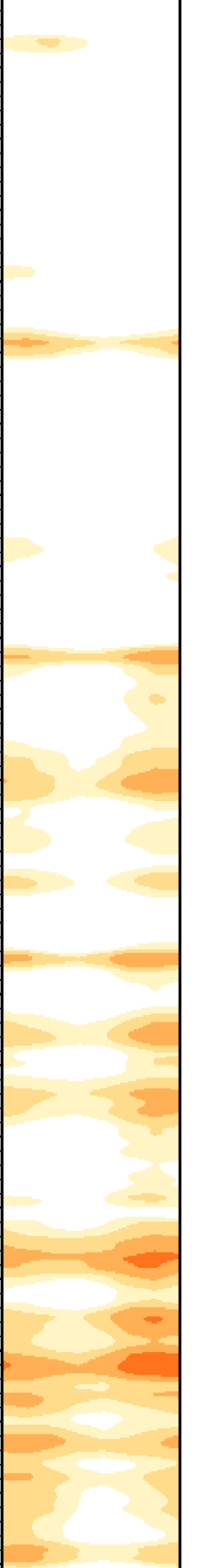


2000

2100

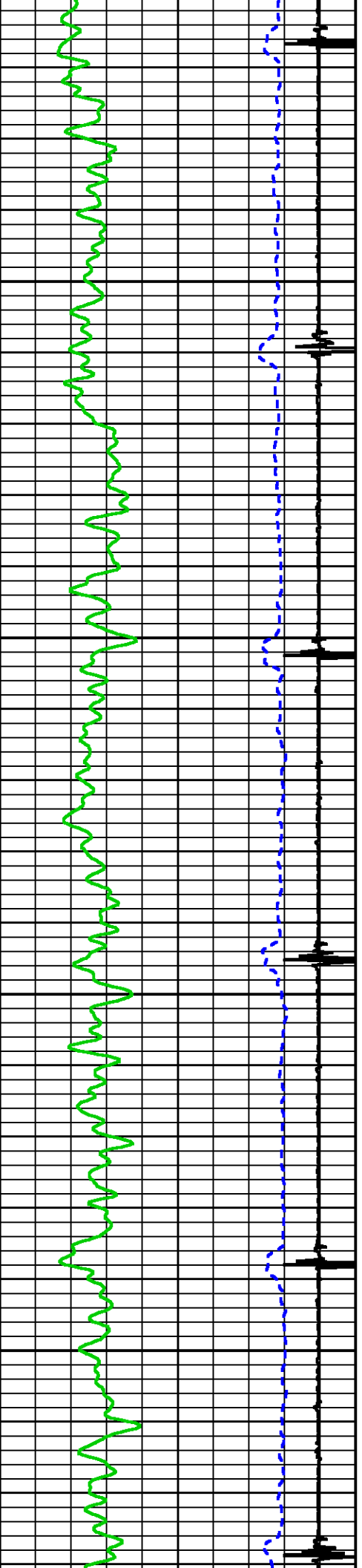
2200

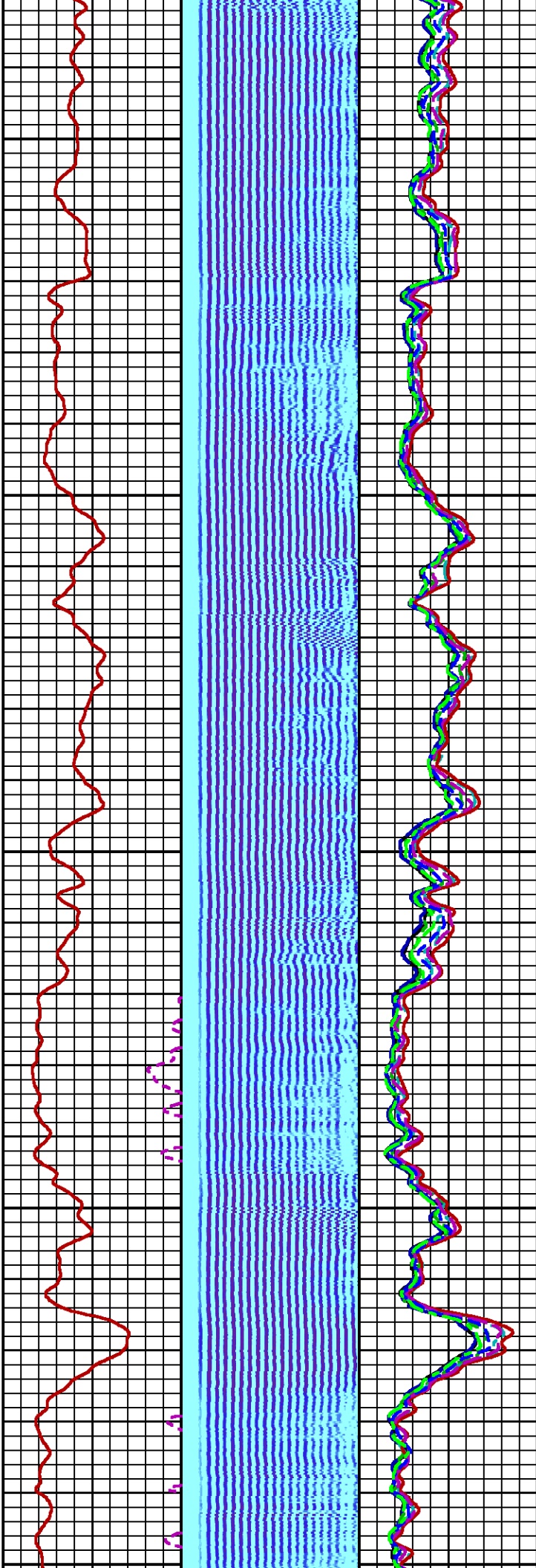
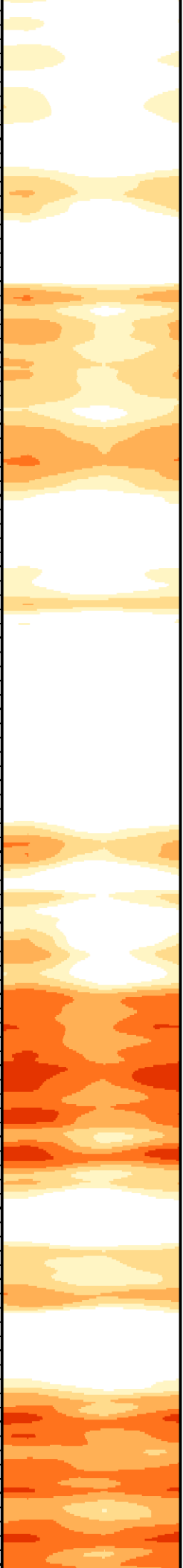




2300

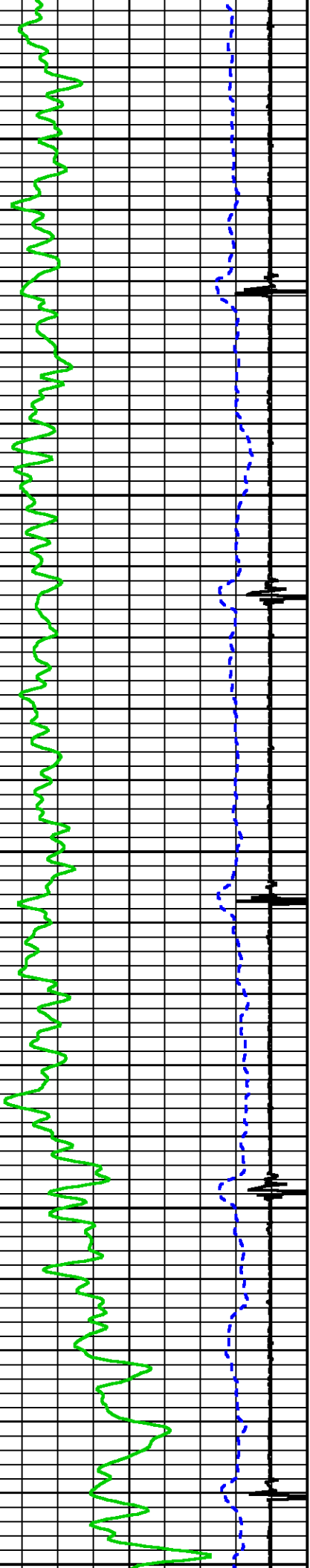
2400

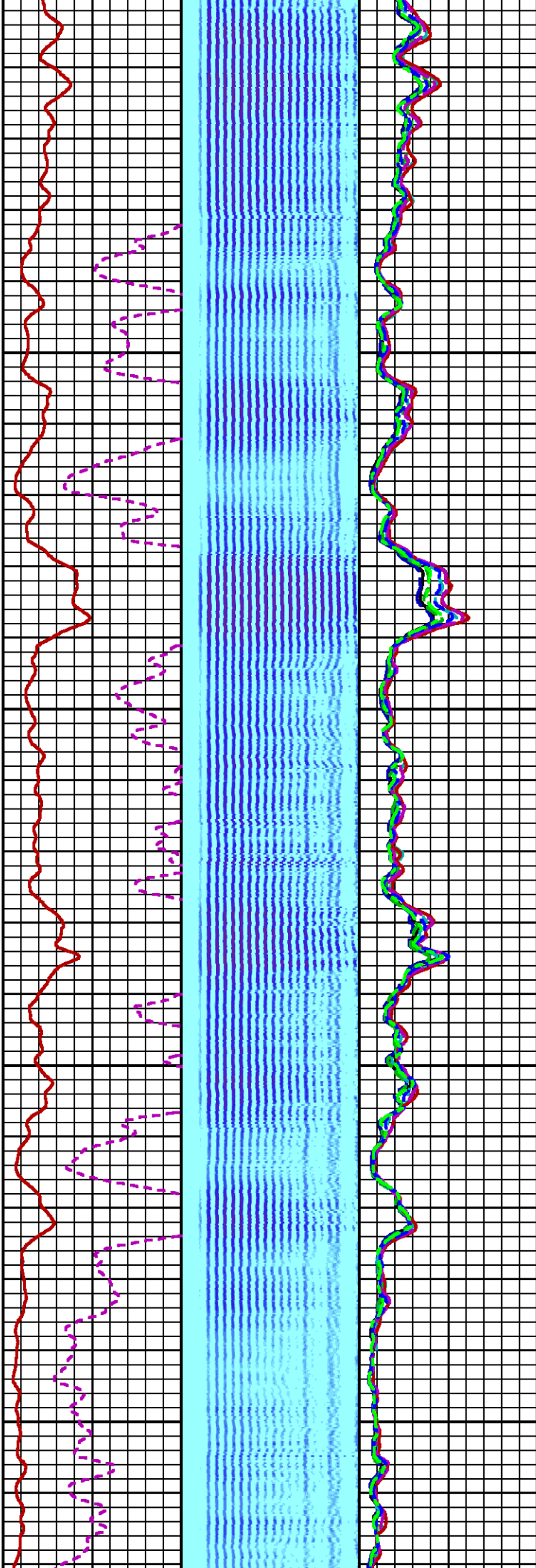
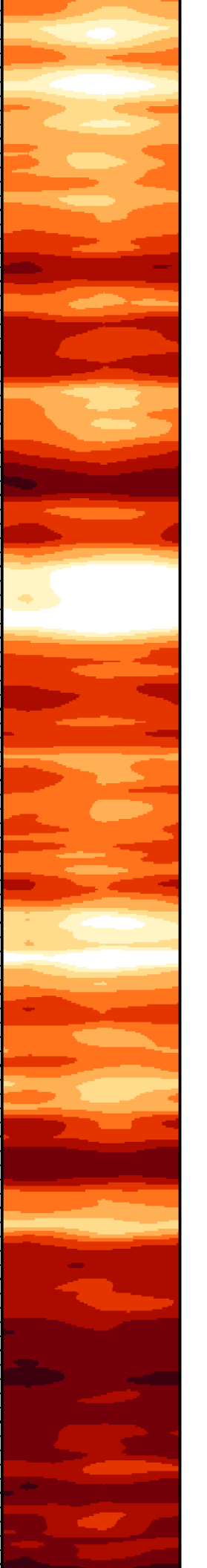




2500

2600

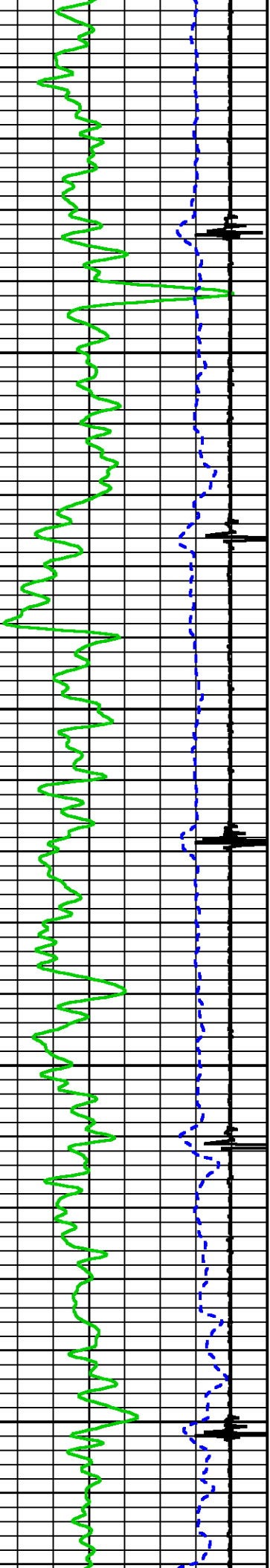


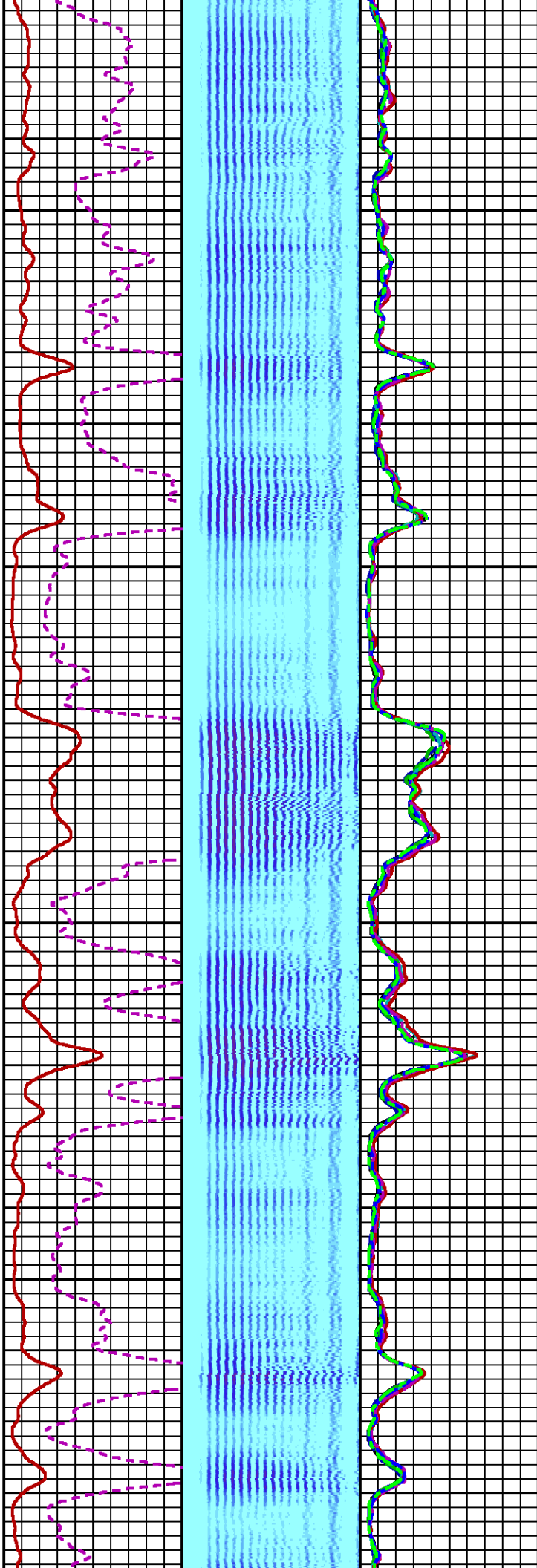
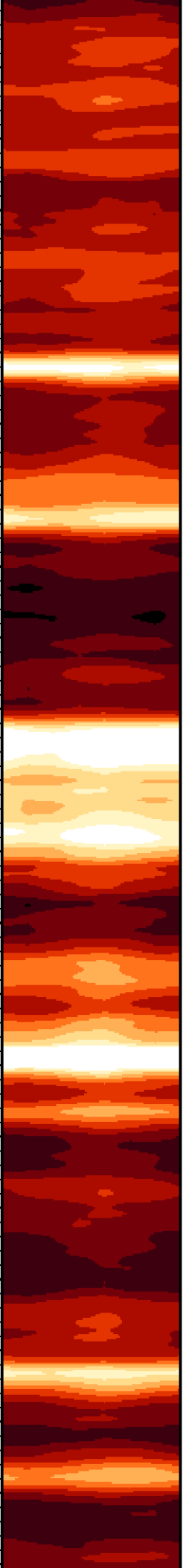


2700

TOC

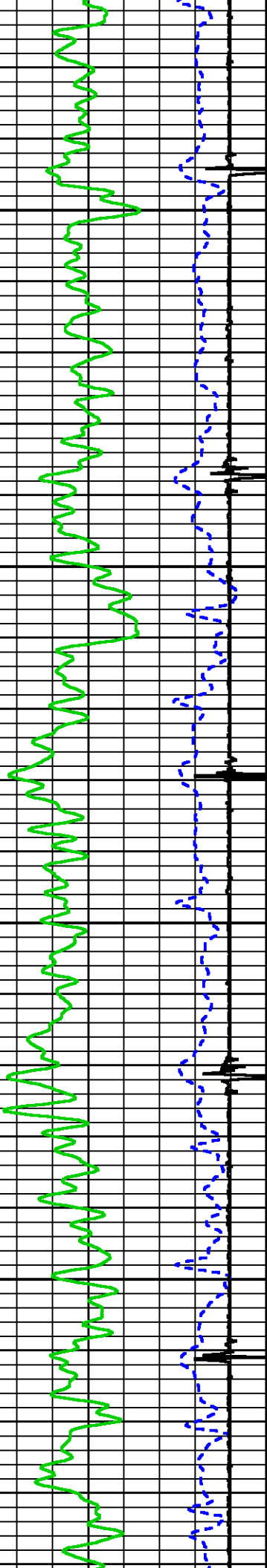
2800

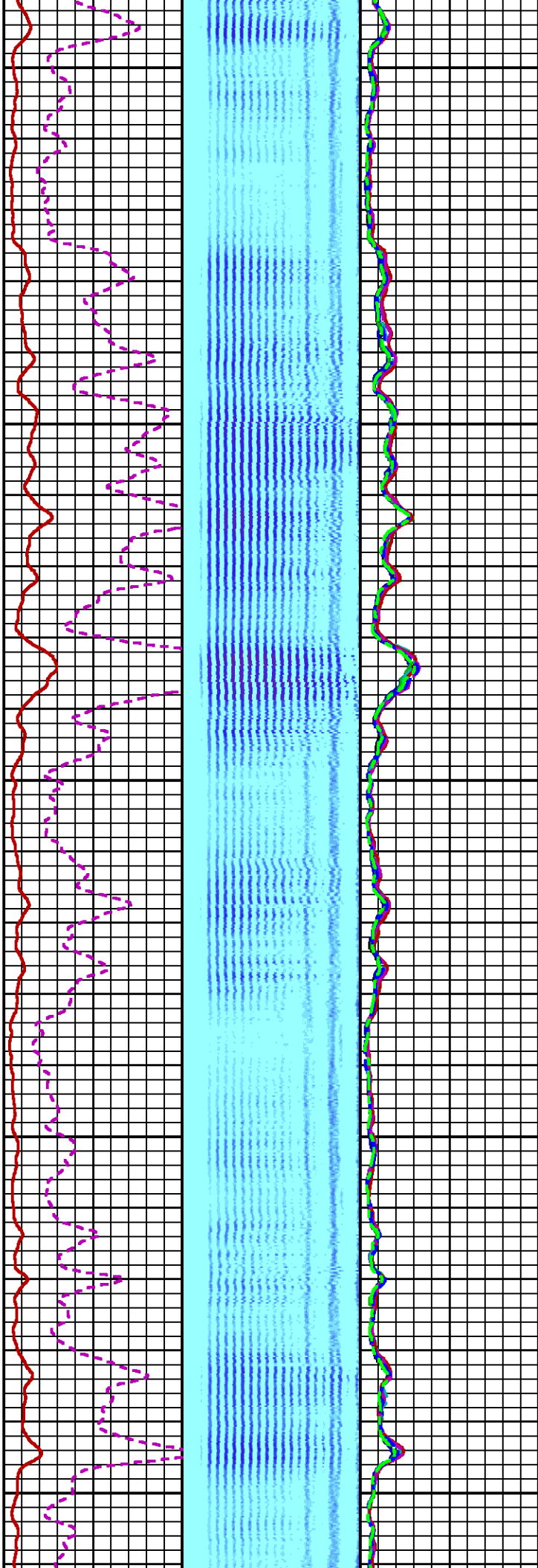




2900

3000

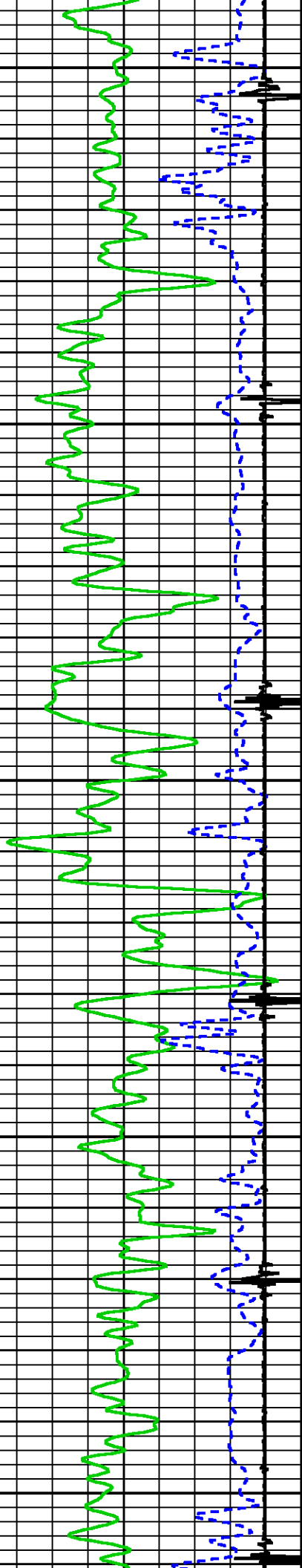


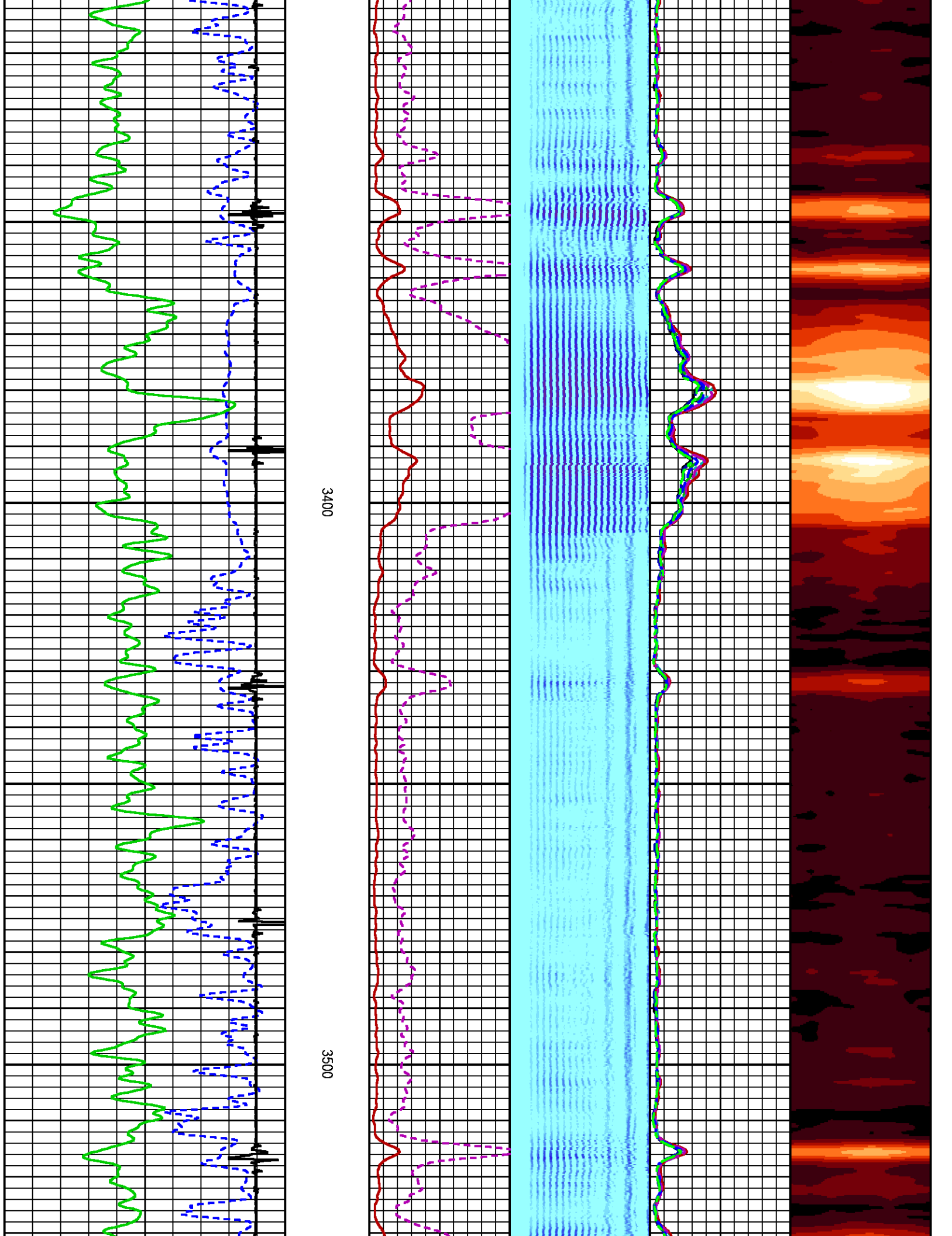


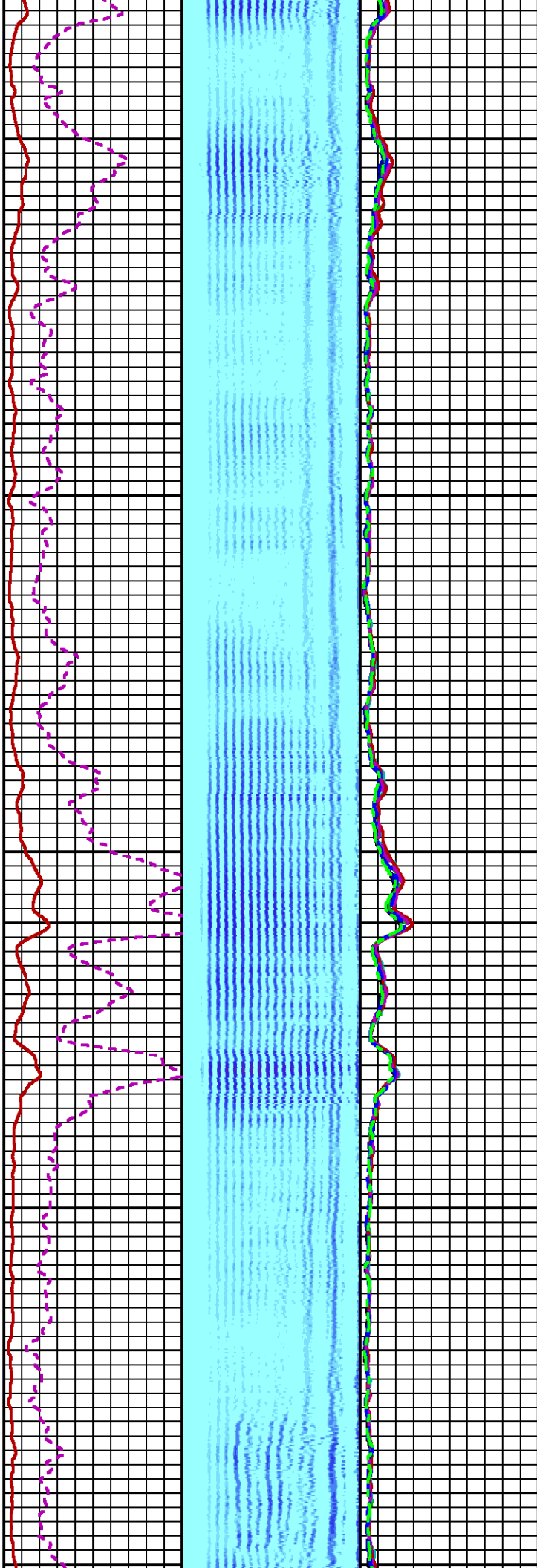
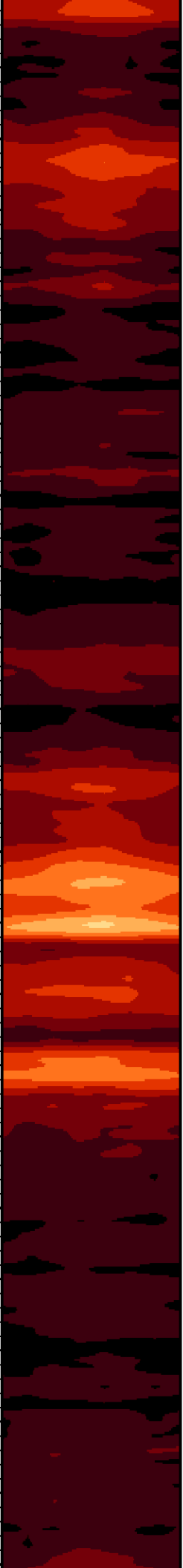
3100

3200

3300

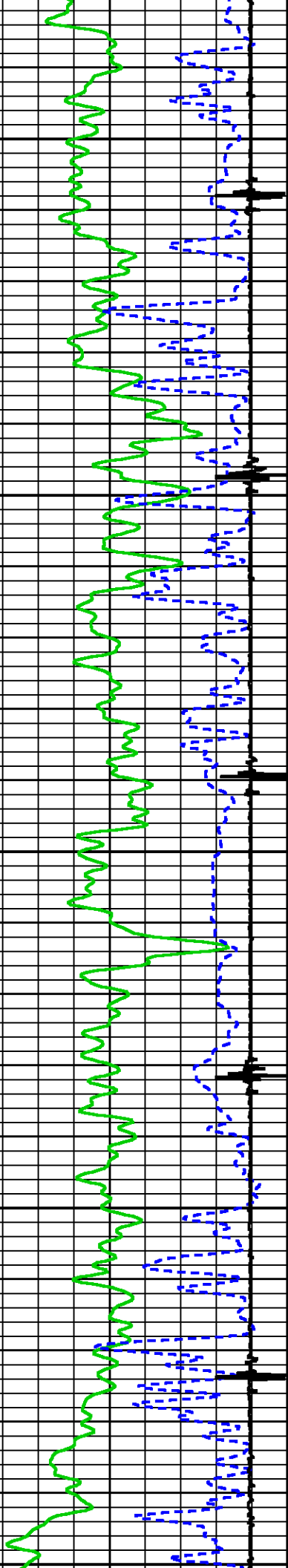


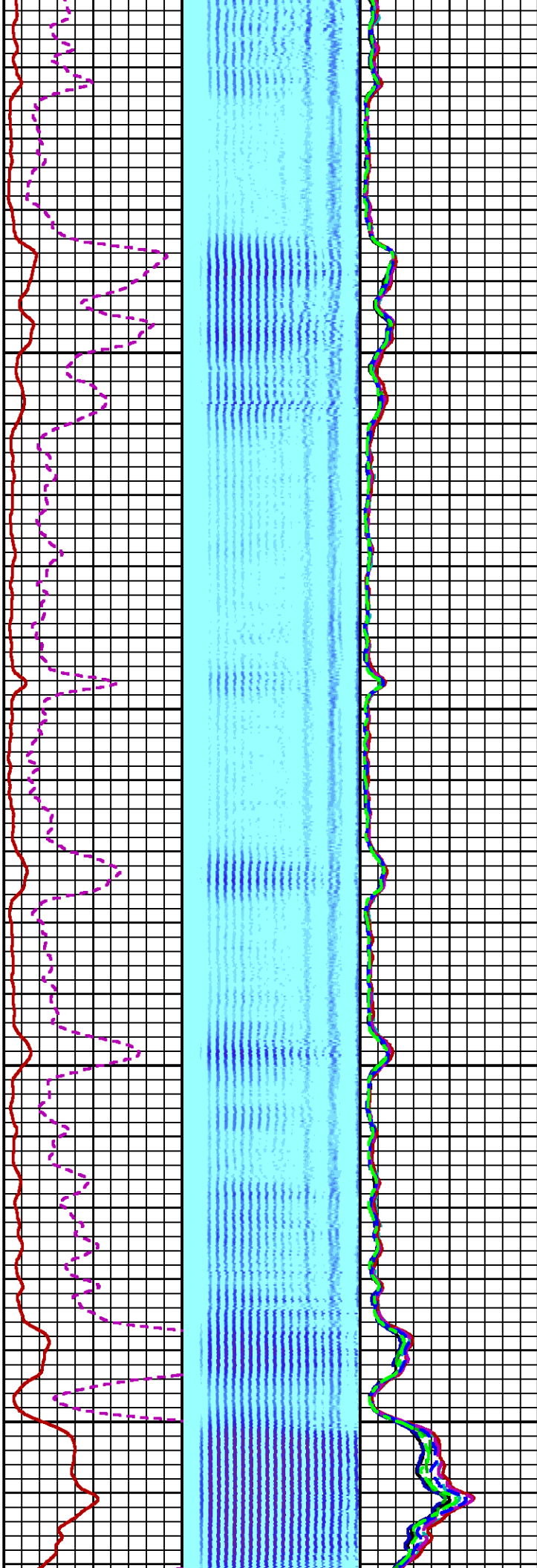




3600

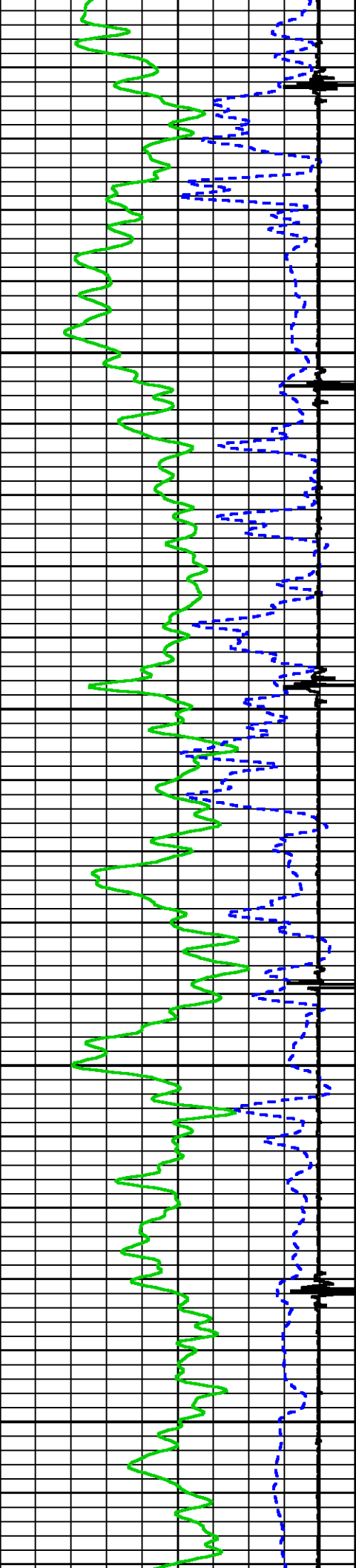
3700

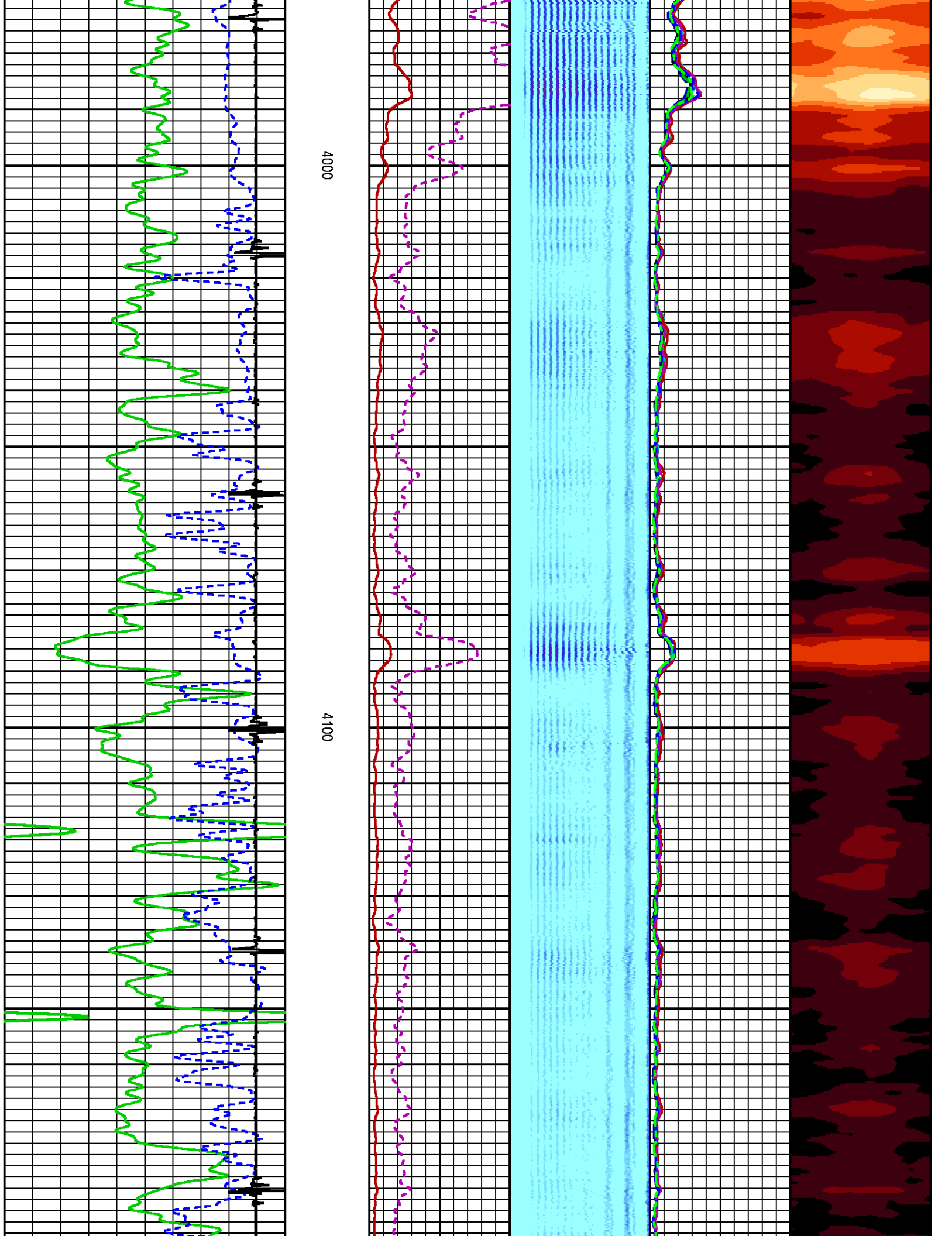


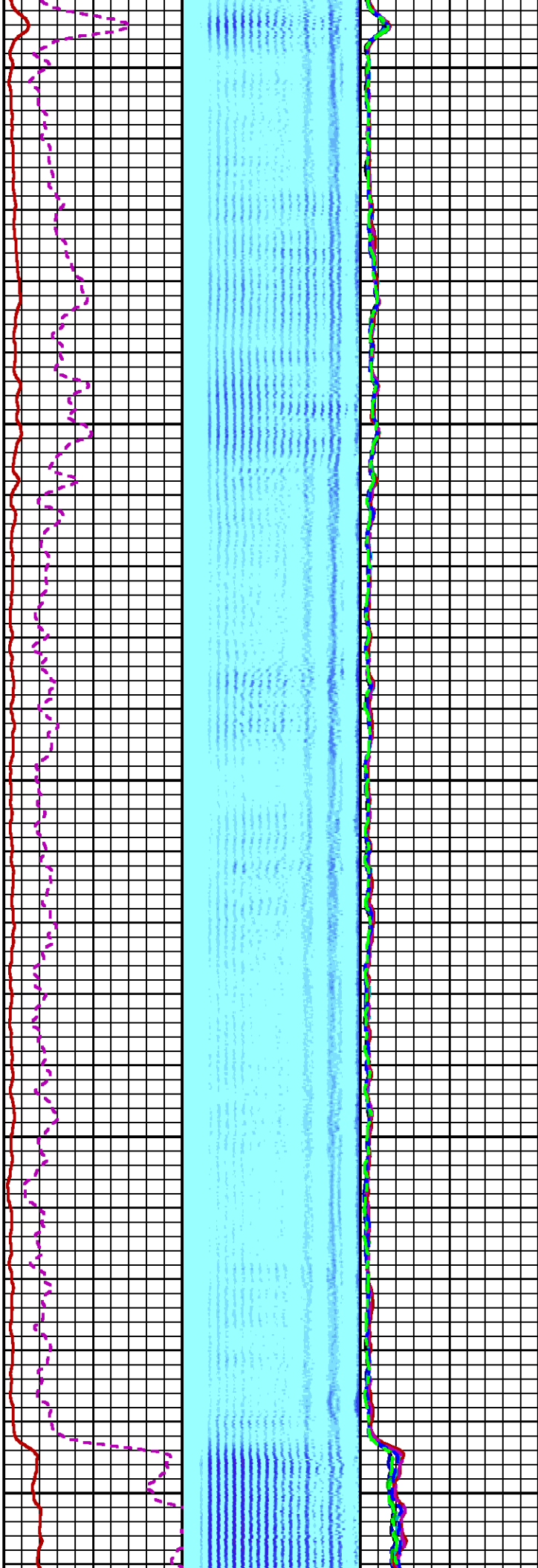


3800

3900



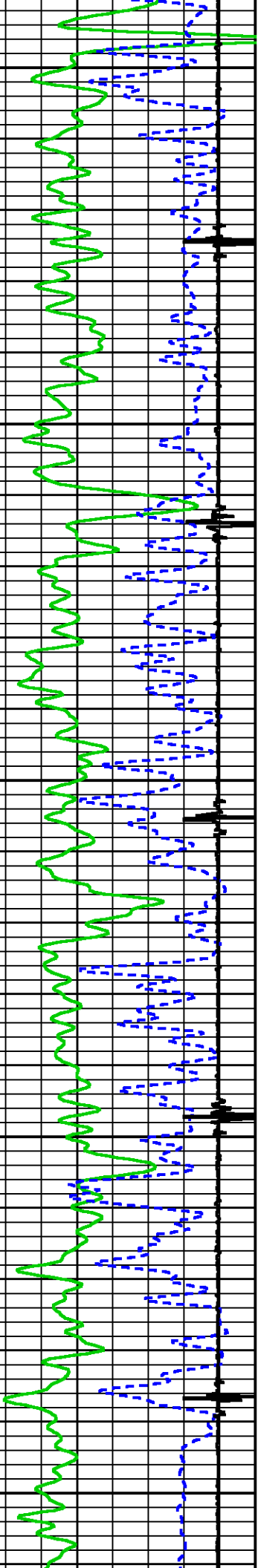


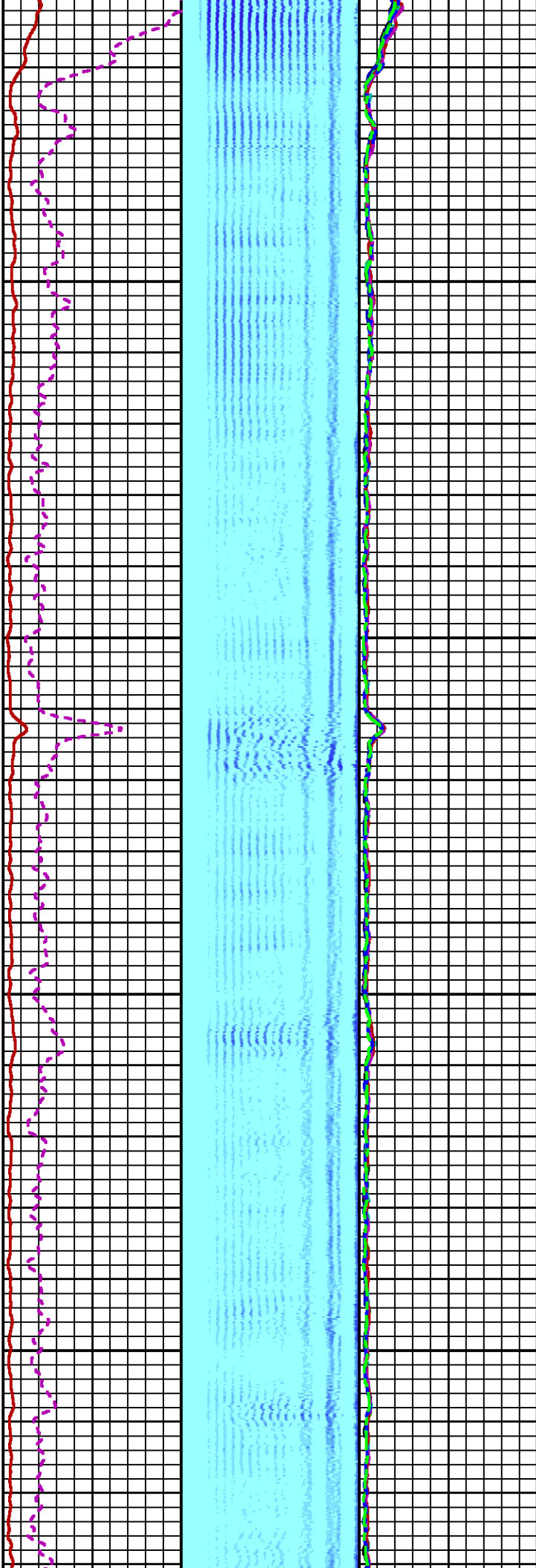


4200

4300

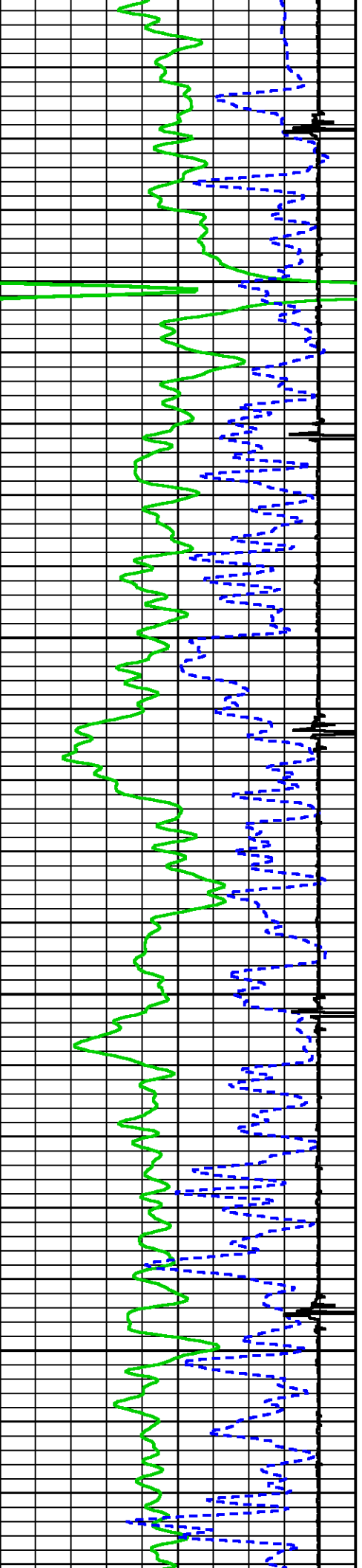
4400

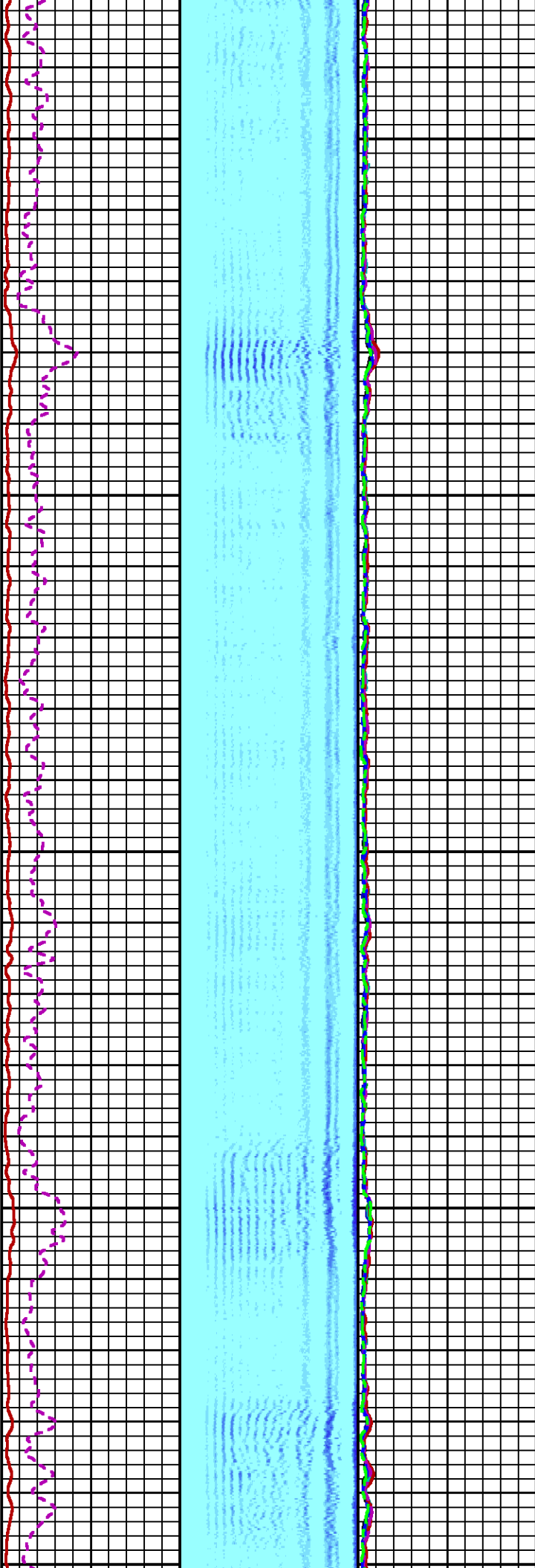




4500

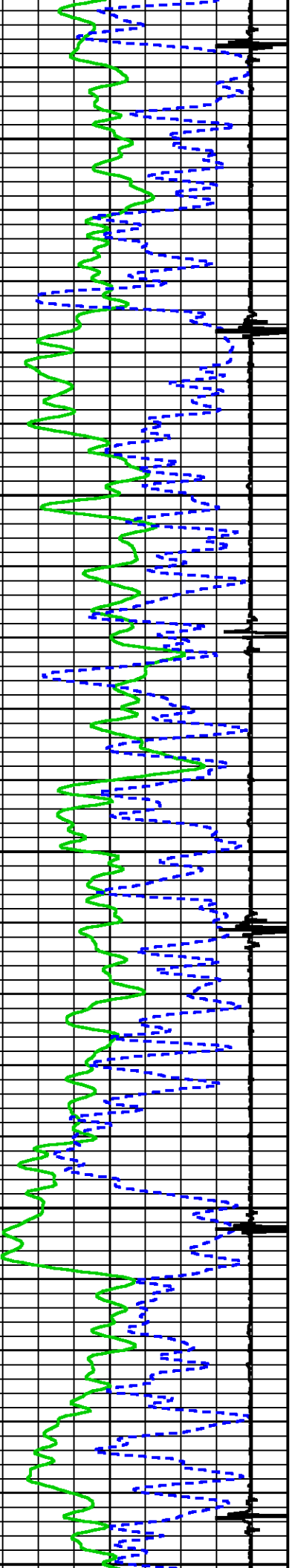
4600

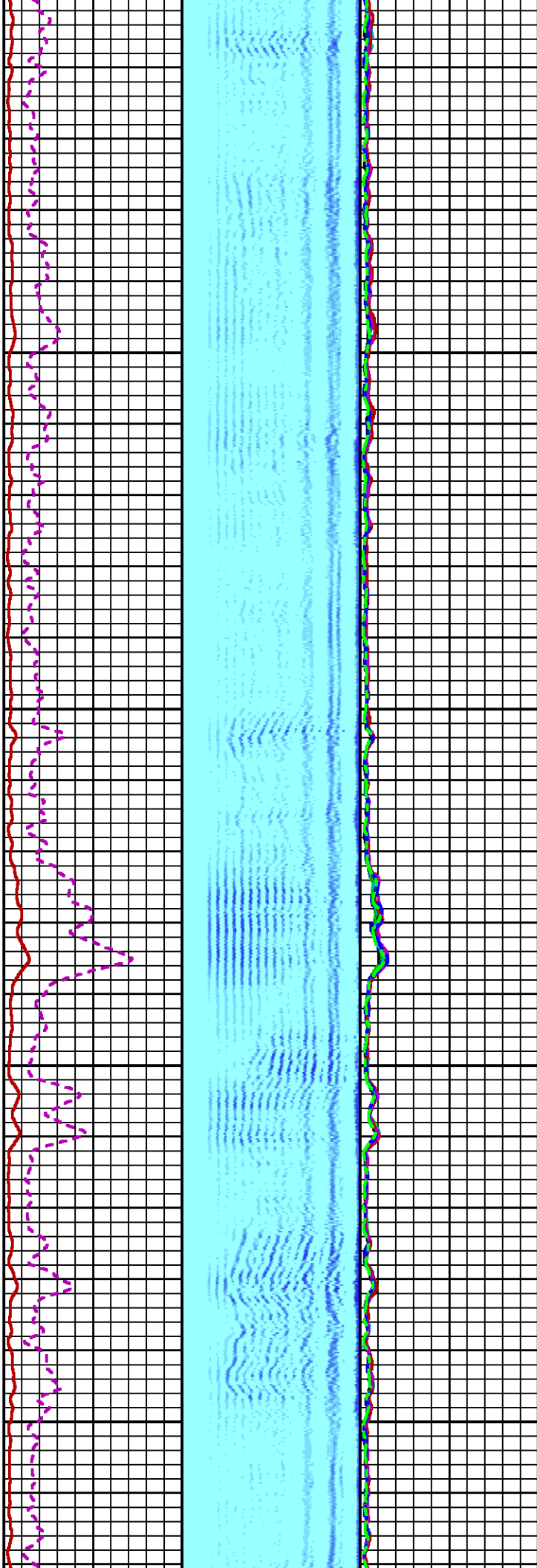




4700

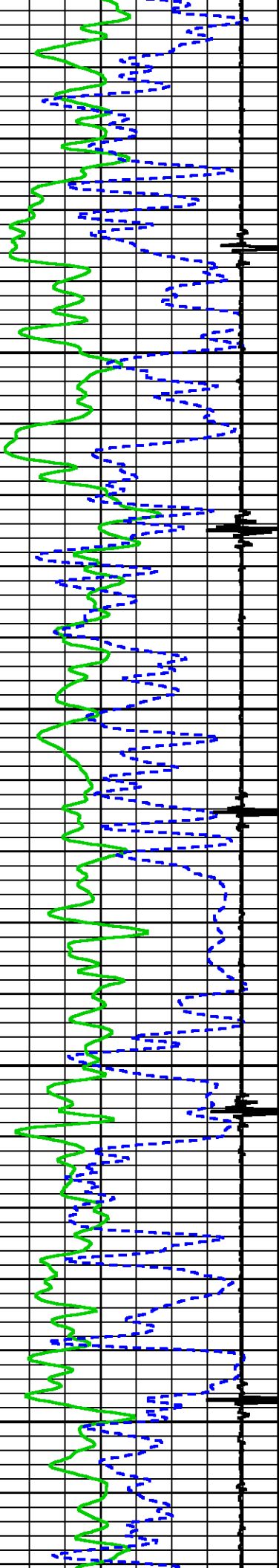
4800

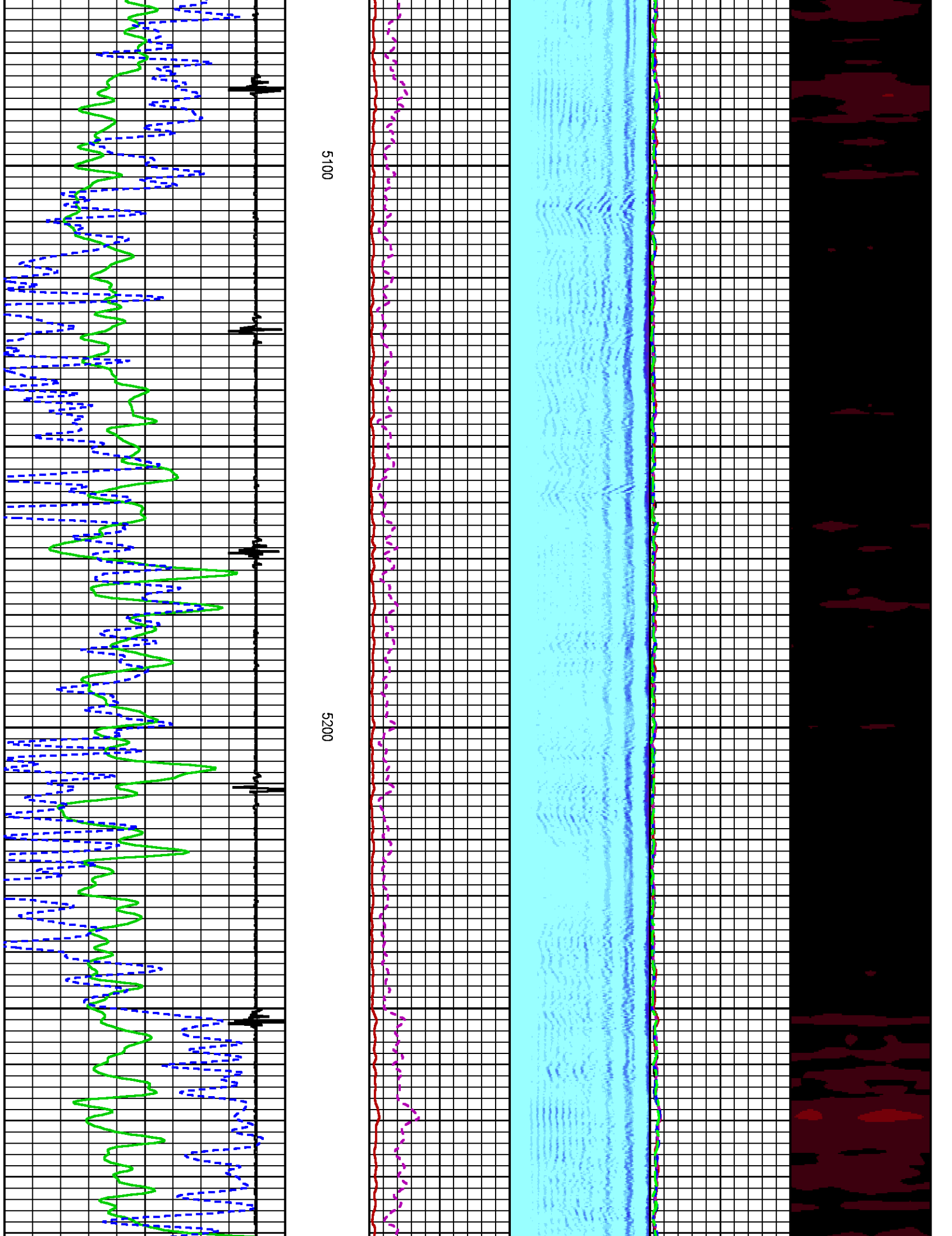


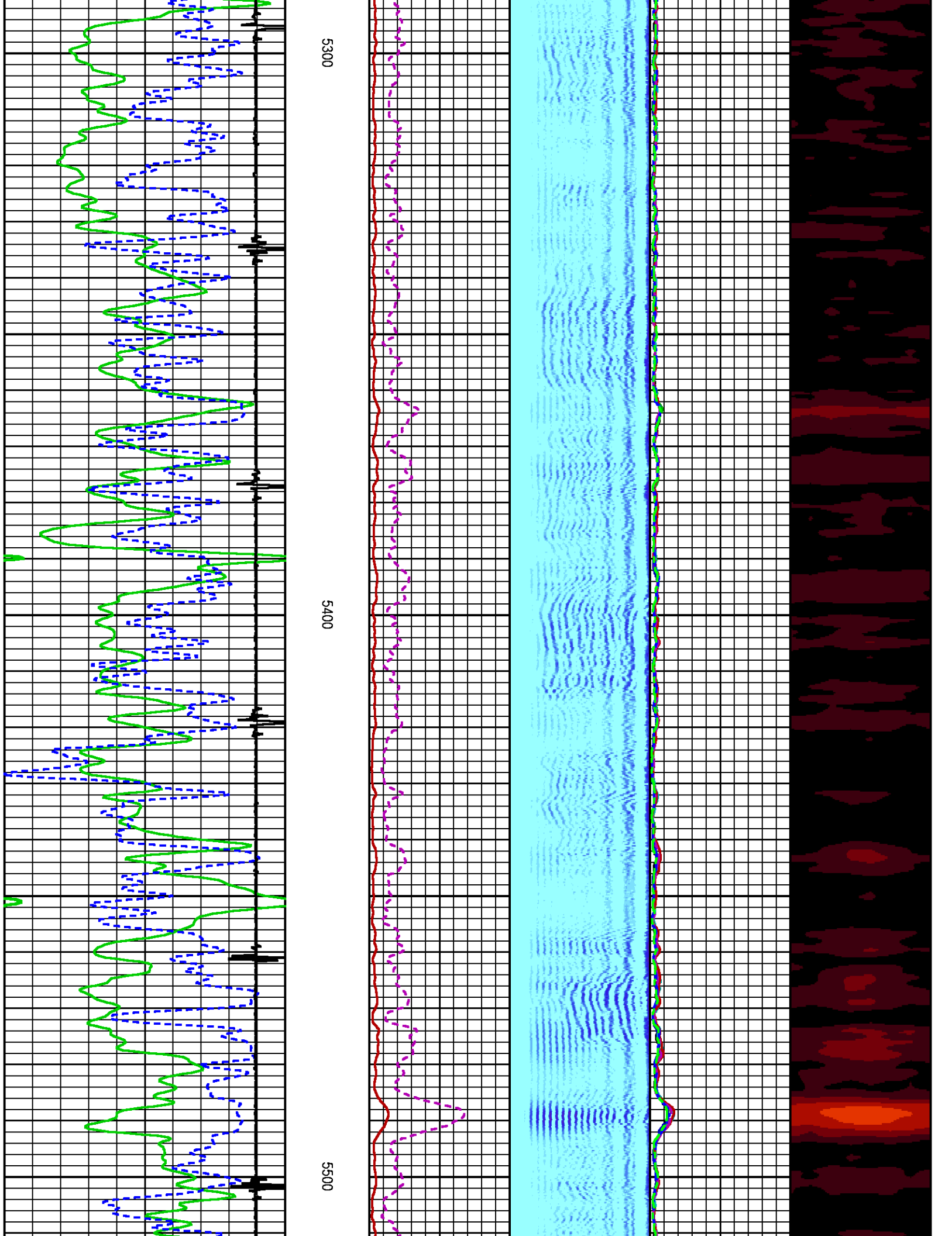


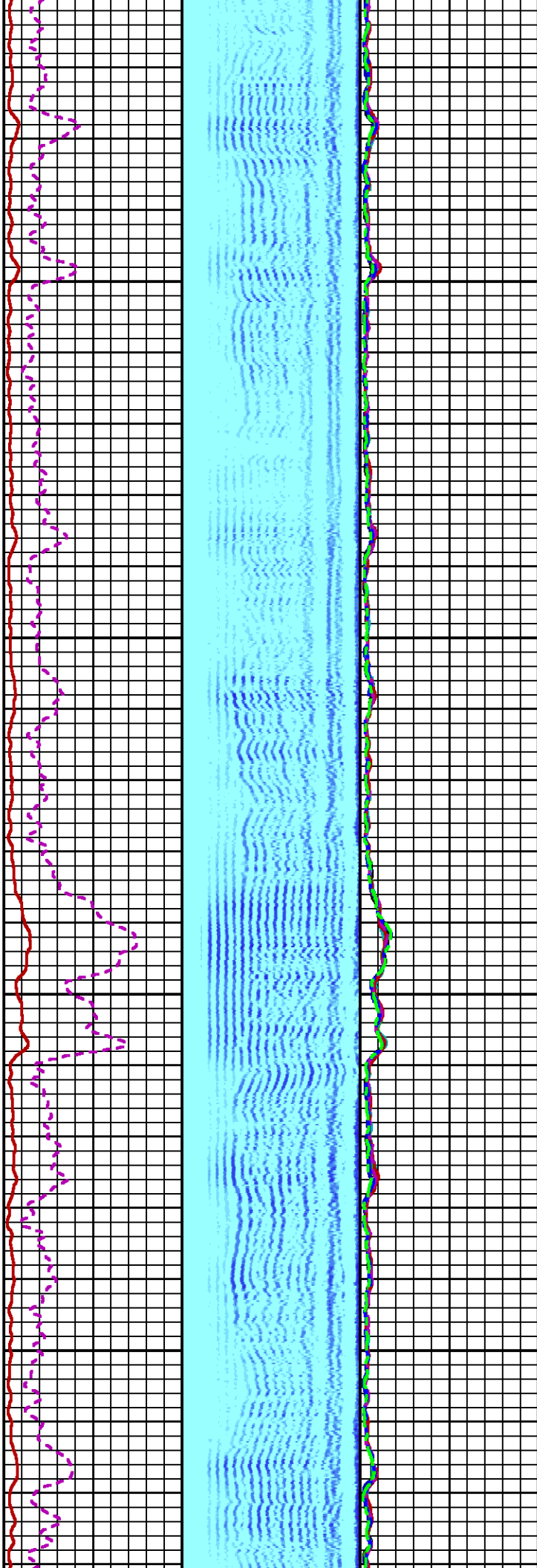
4900

5000



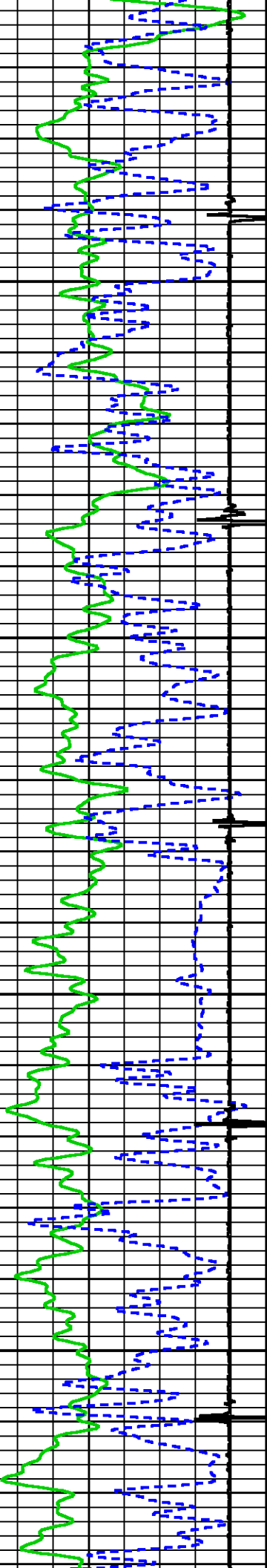


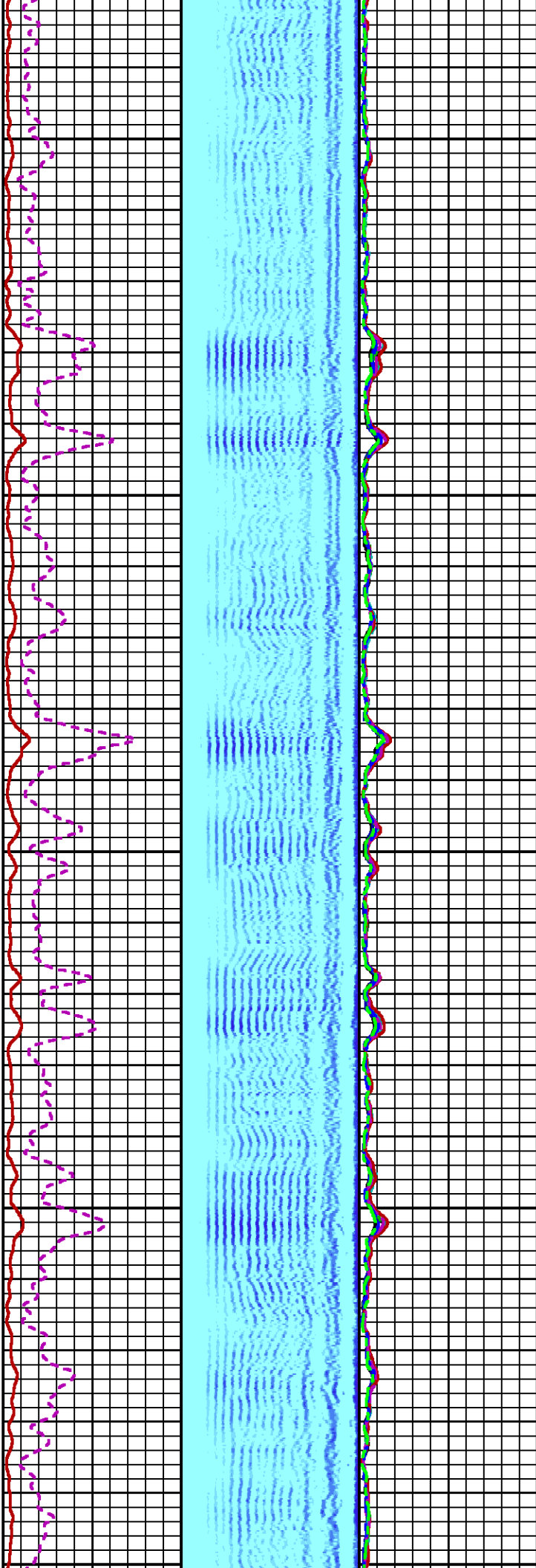
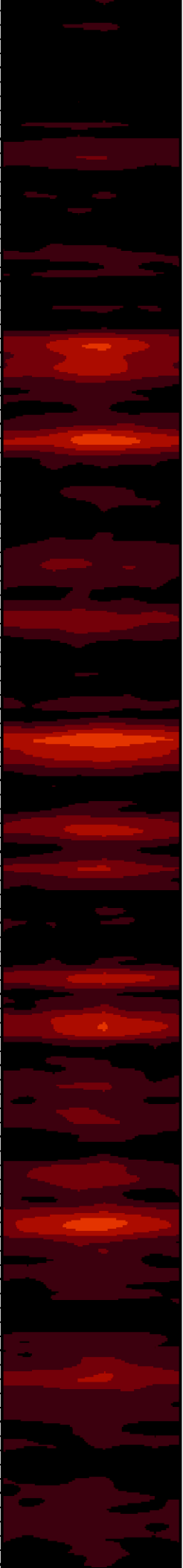




5600

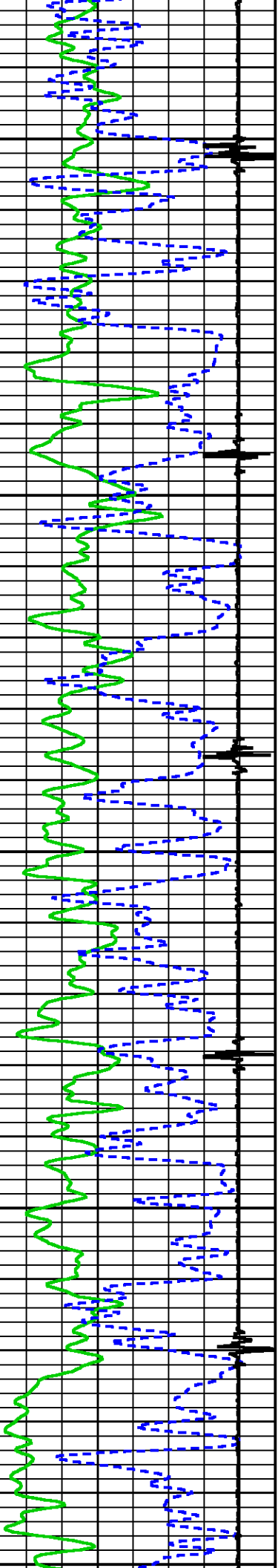
5700

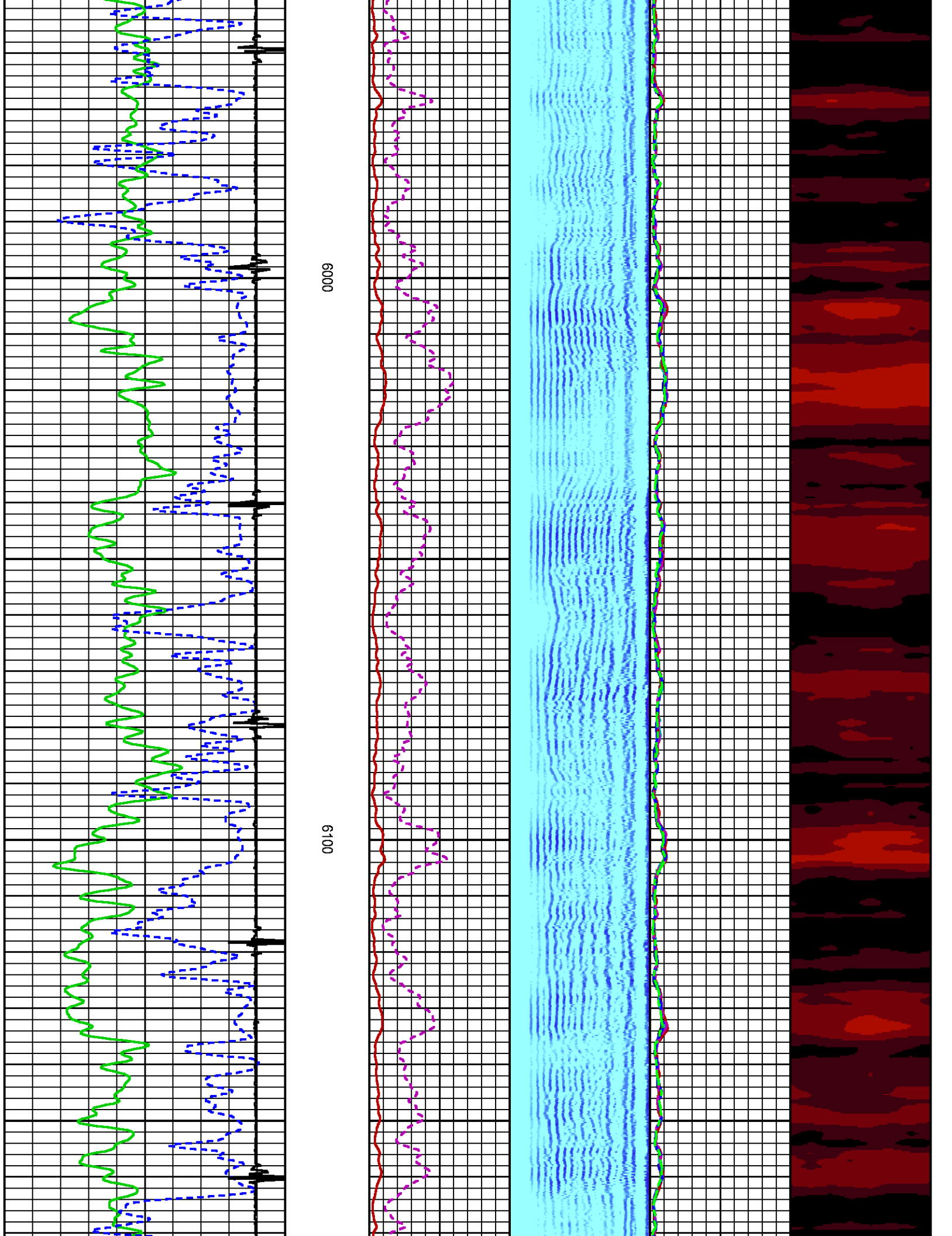


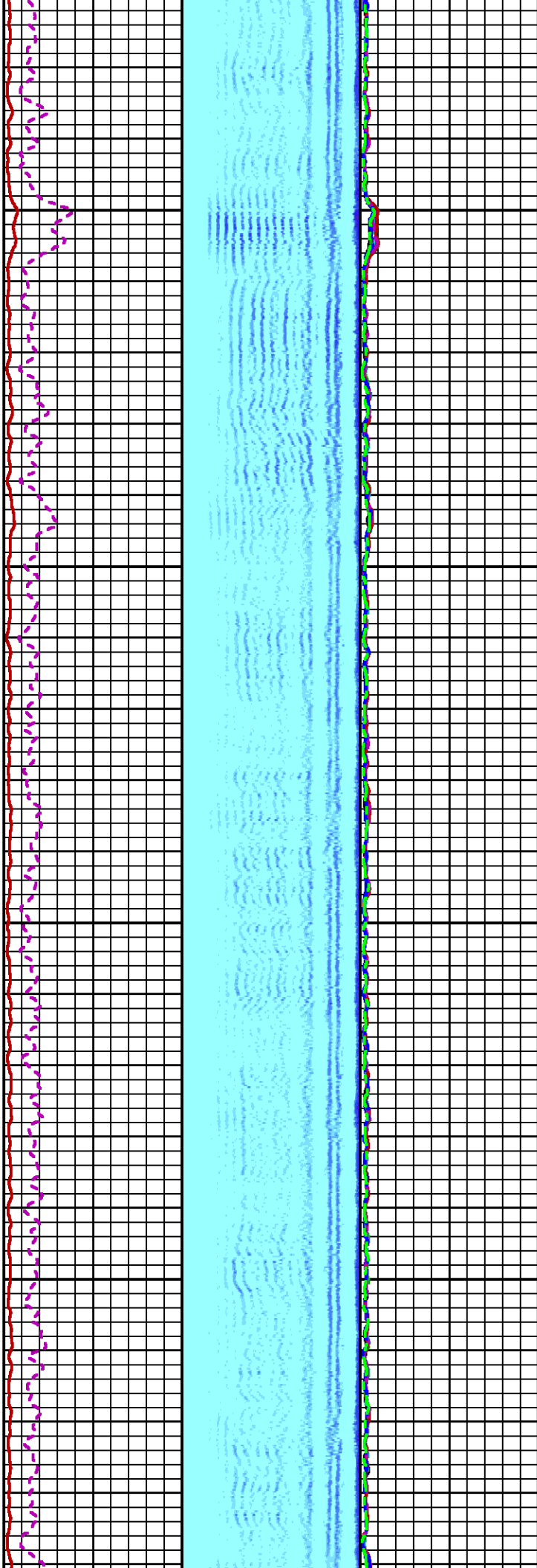


5800

5900

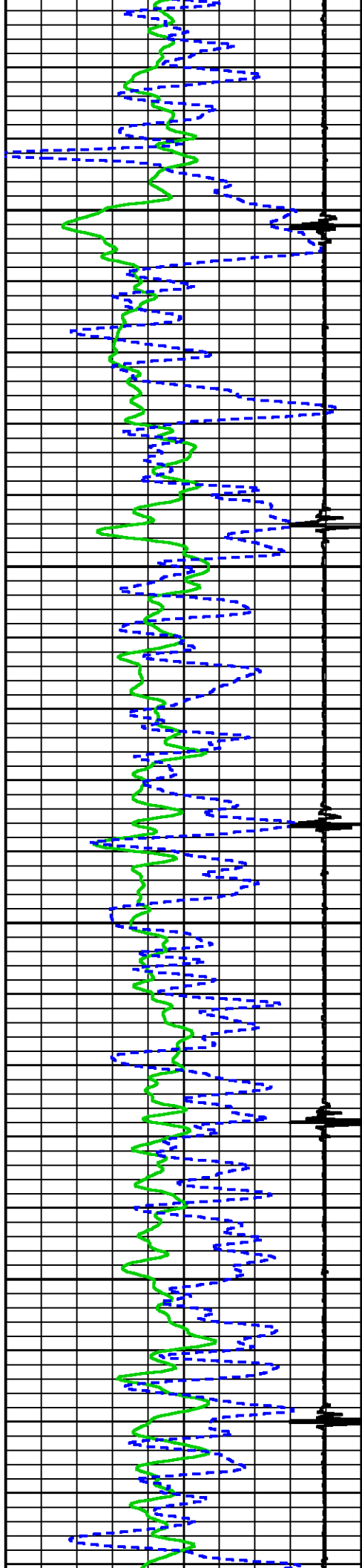


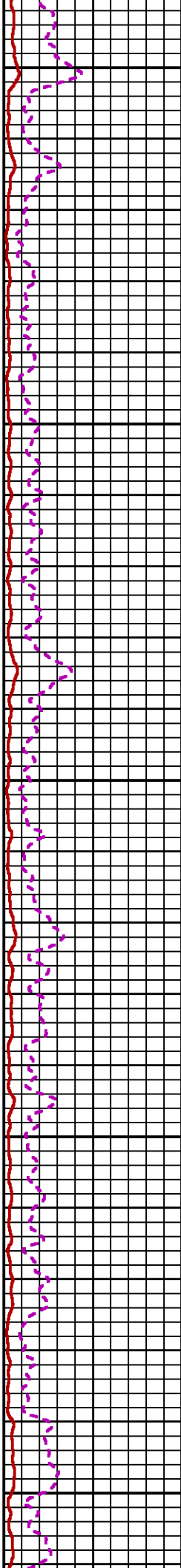
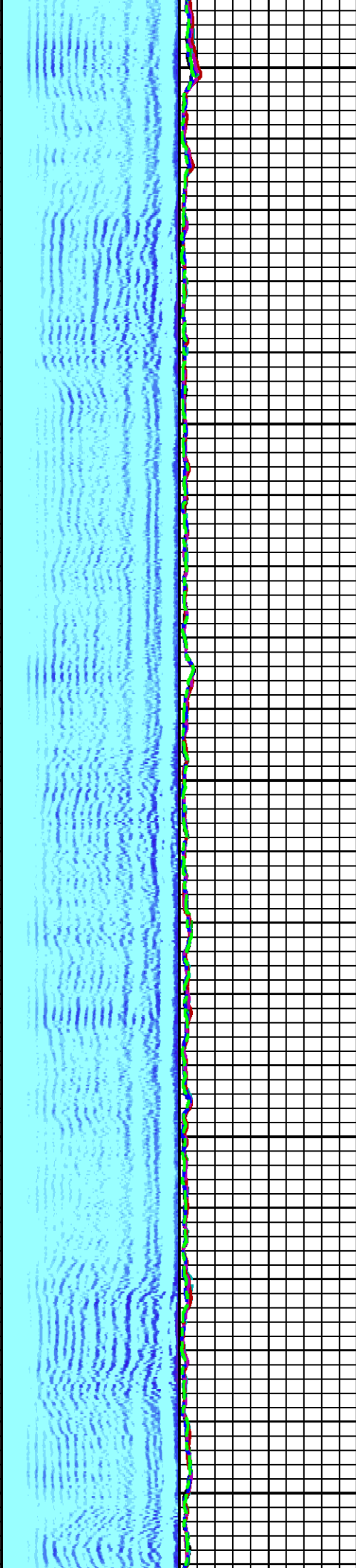




6200

6300

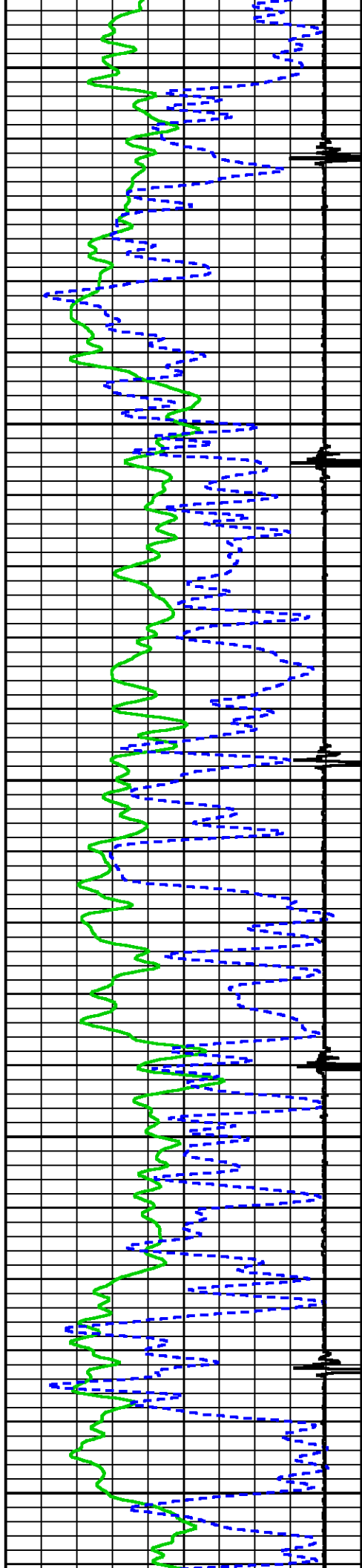


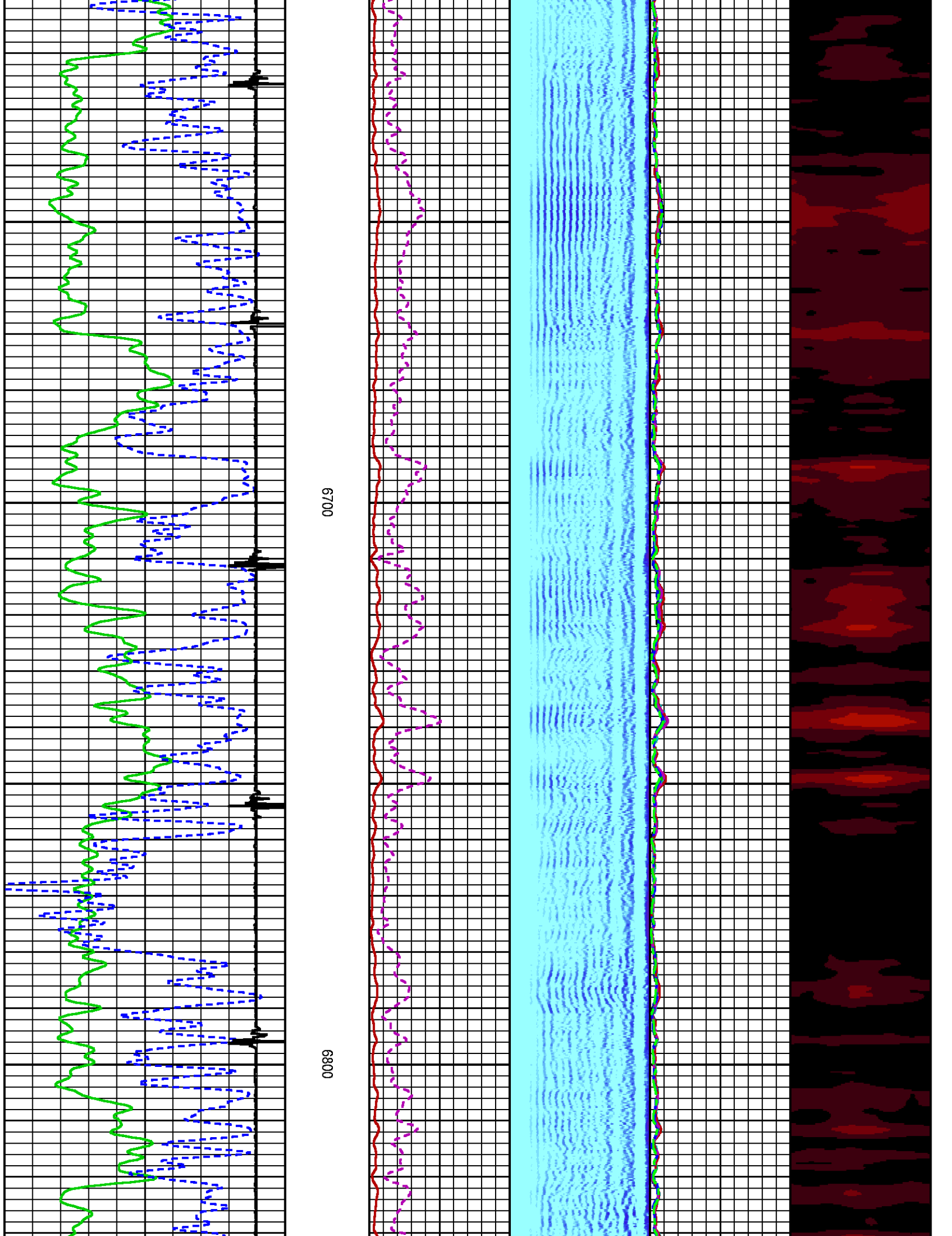


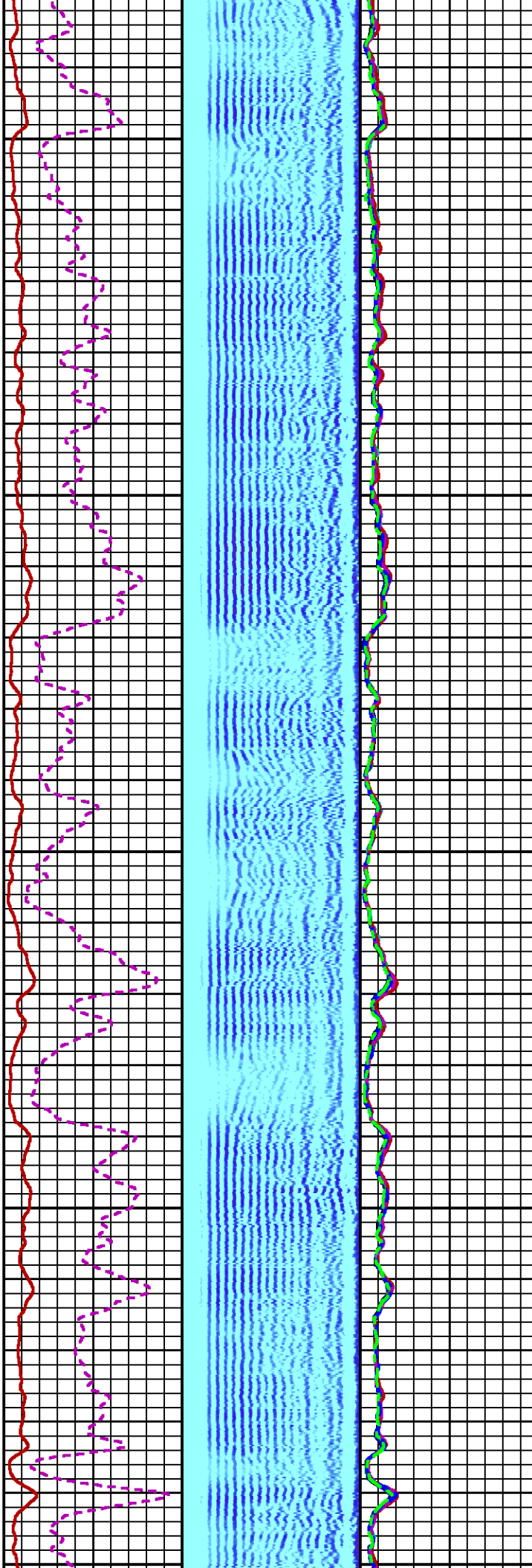
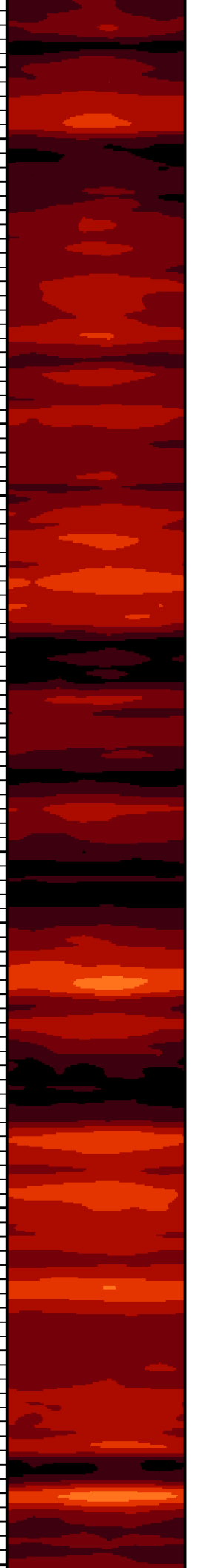
6400

6500

6600

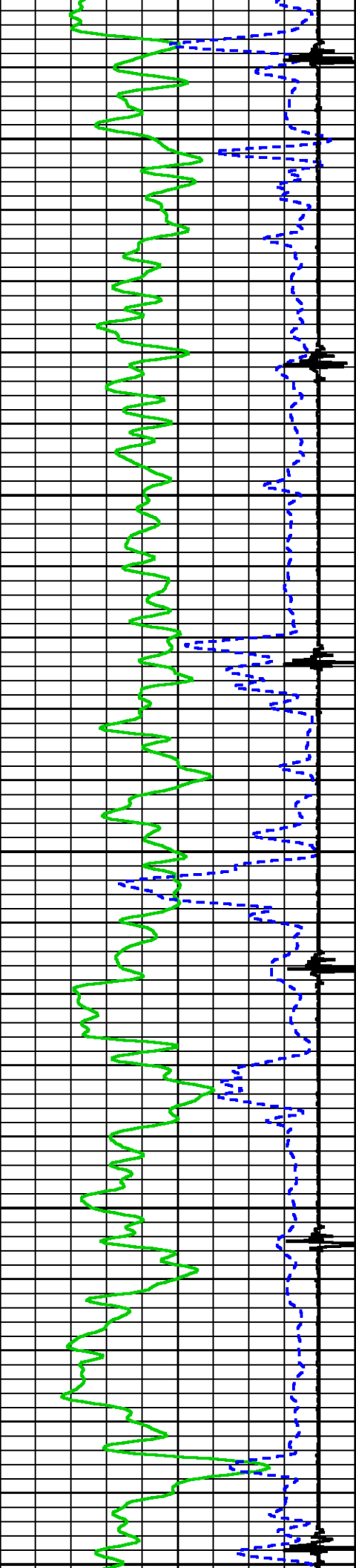


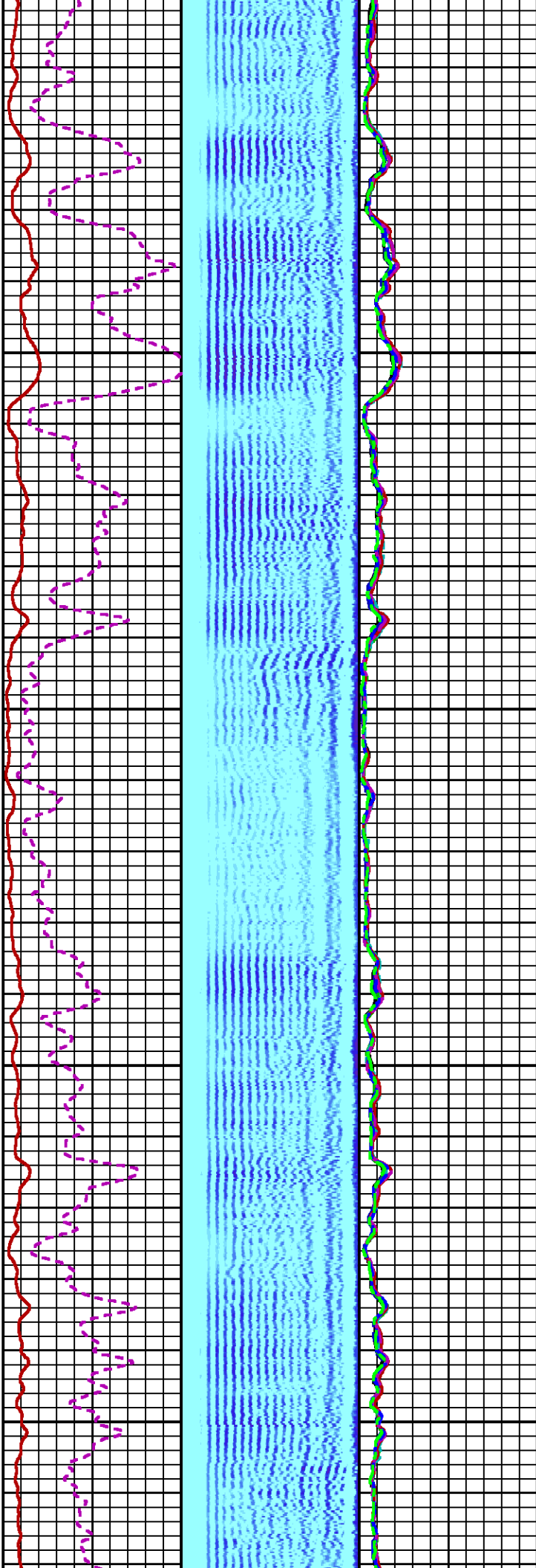




6900

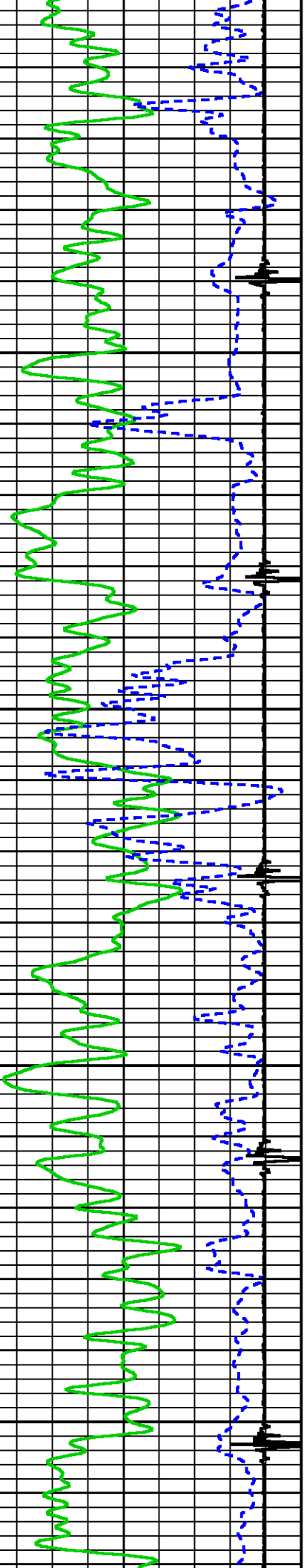
7000

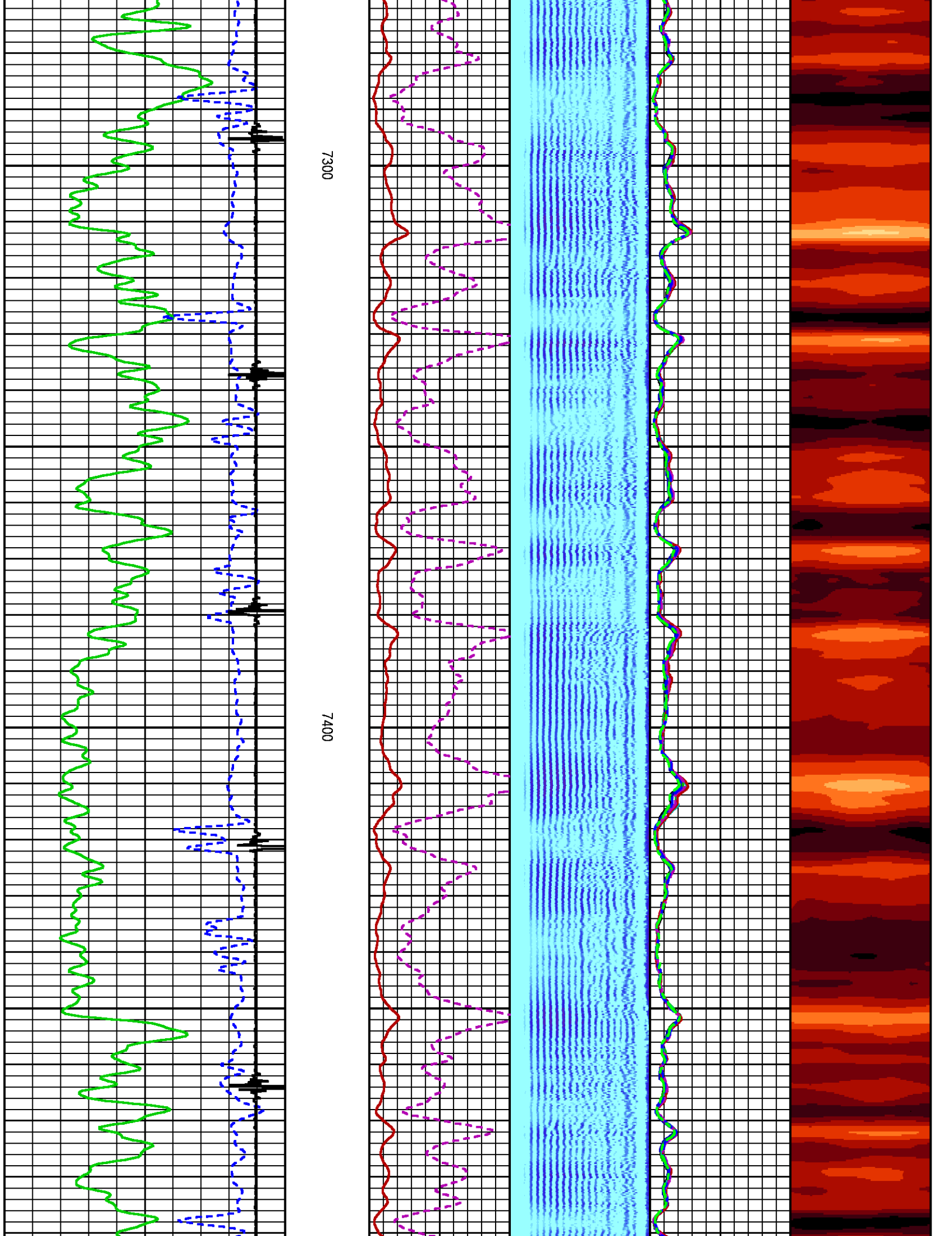


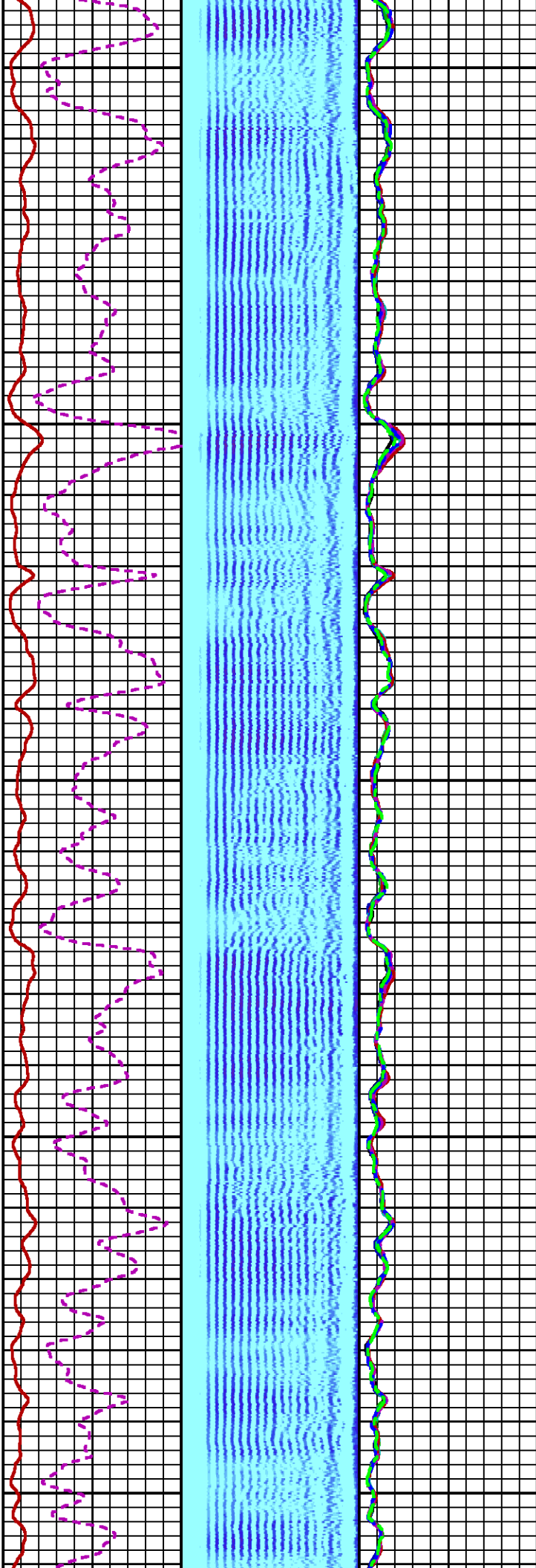
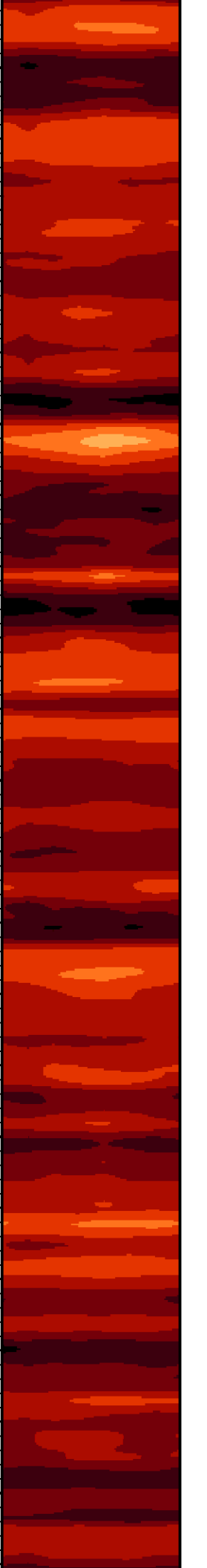


7100

7200





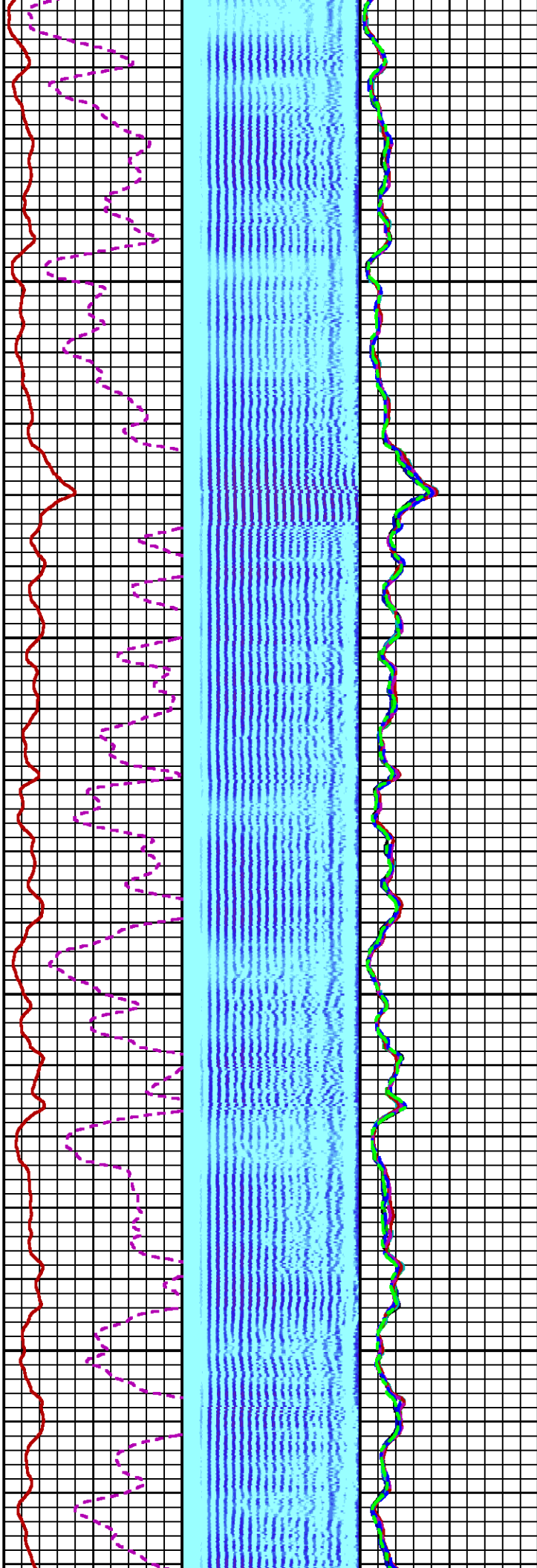


7500

7600

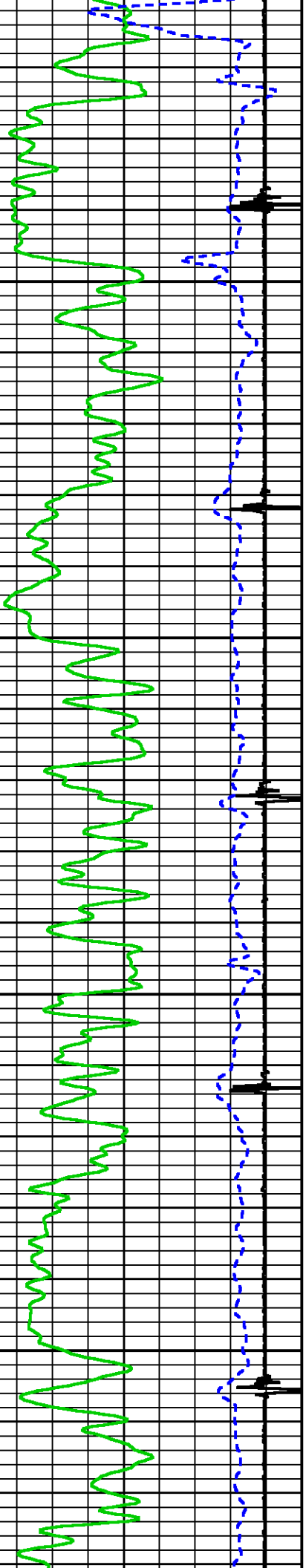
7700

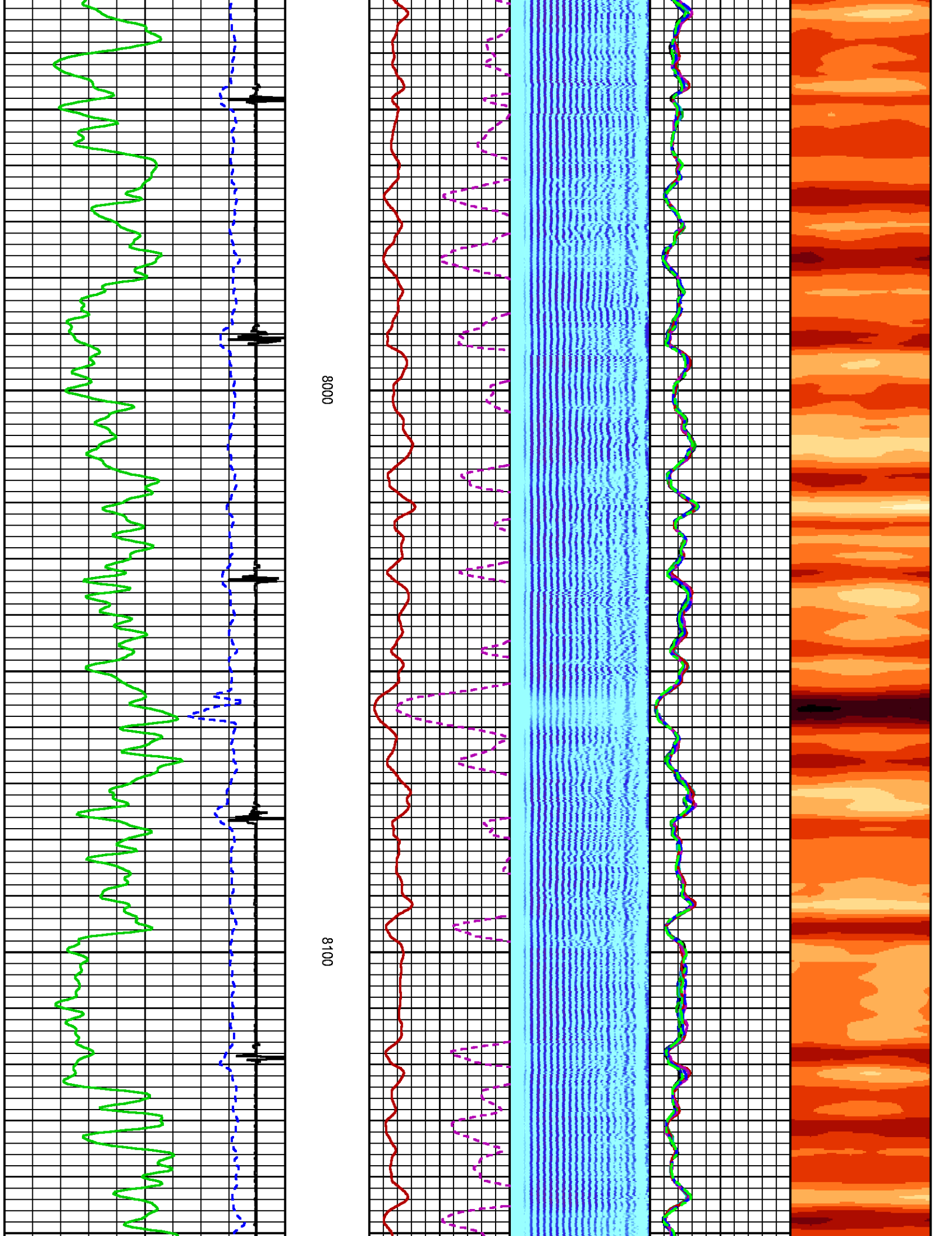
SJ

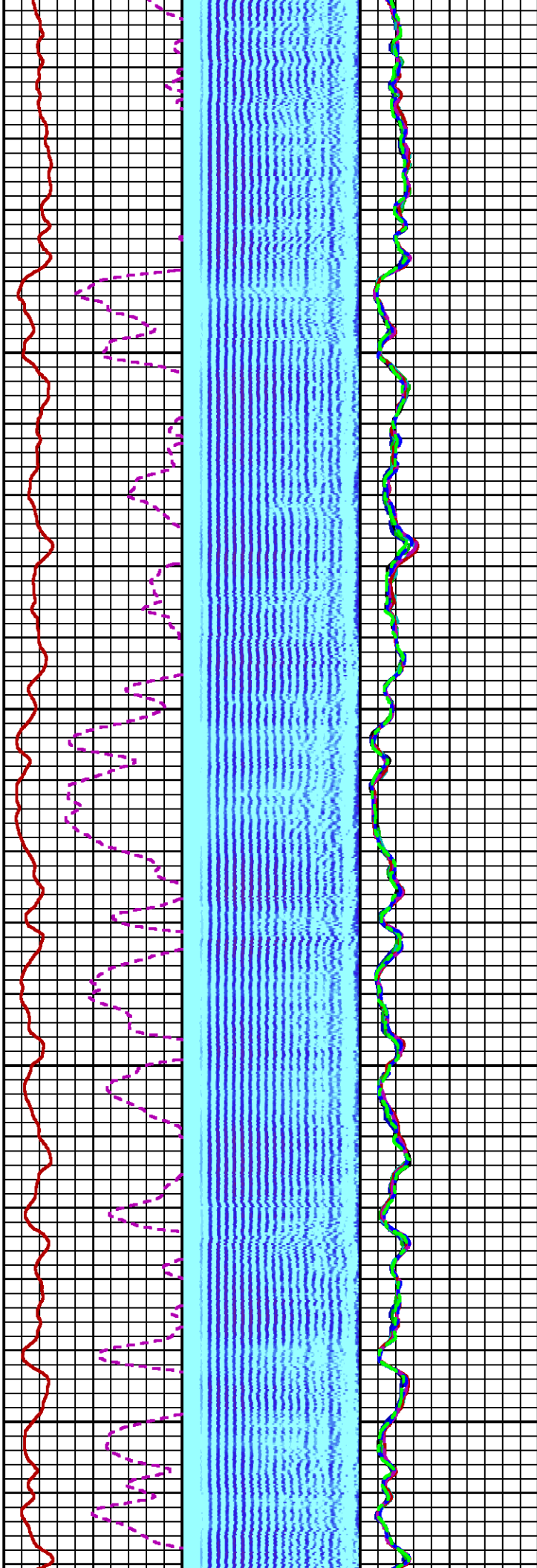
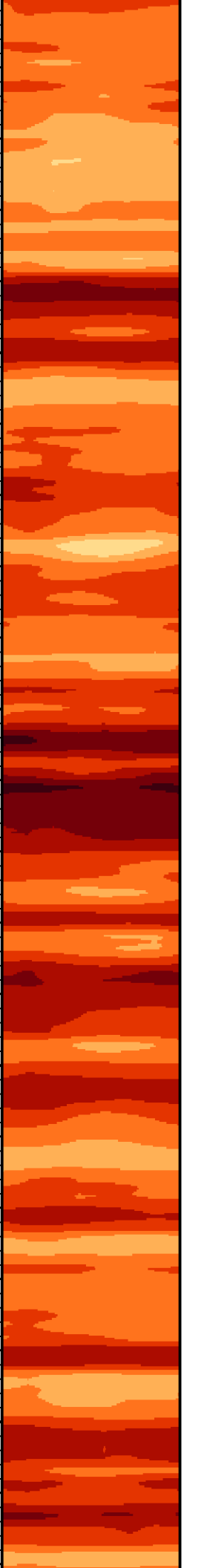


7800

7900

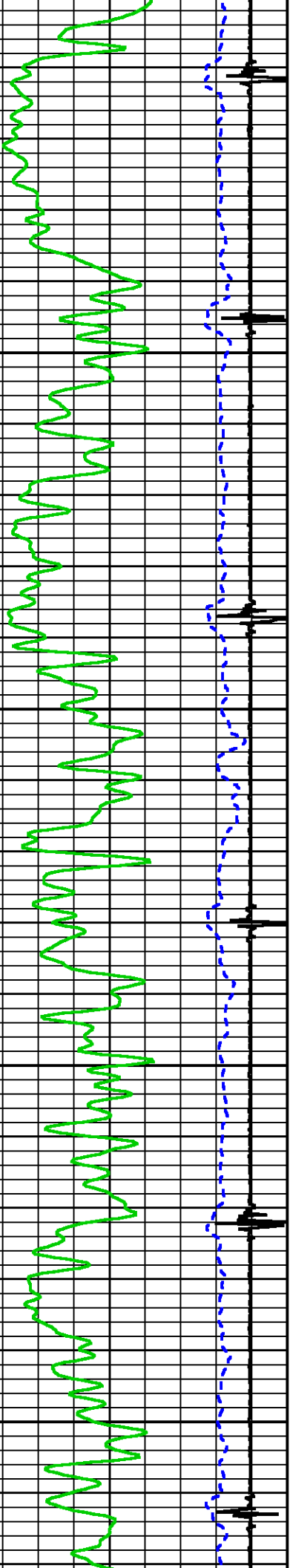


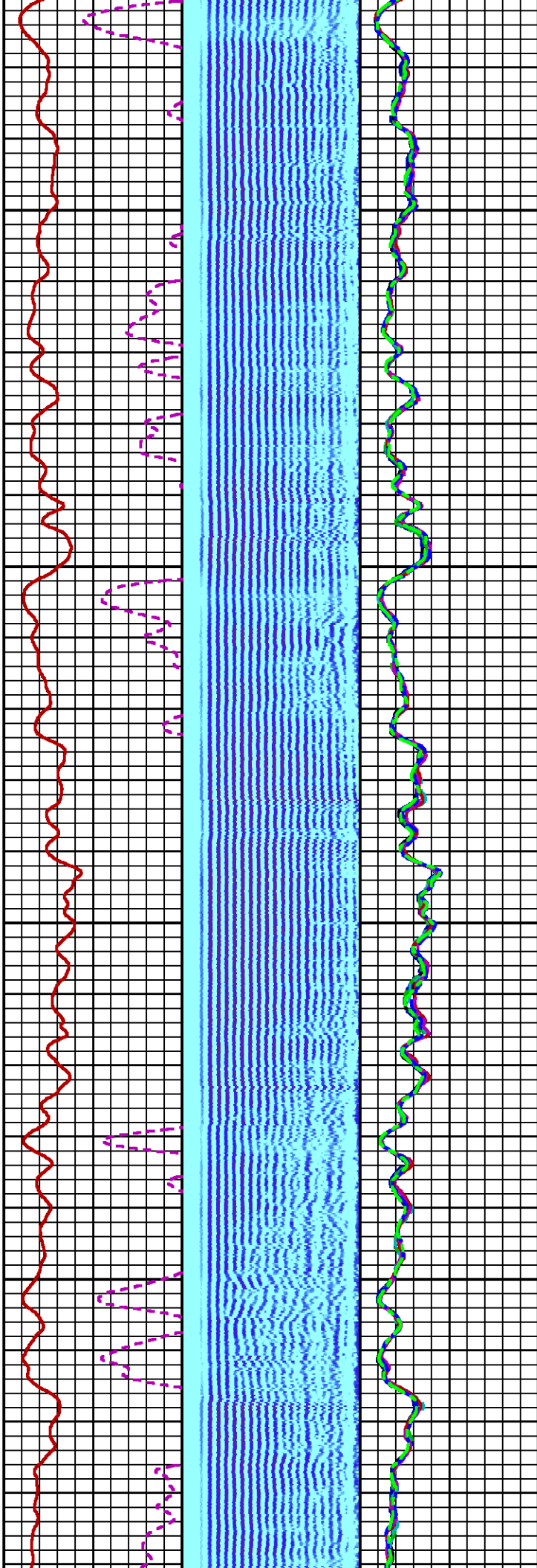
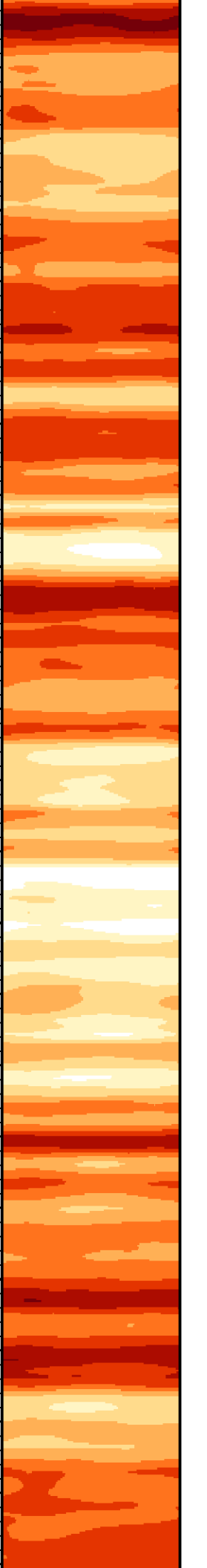




8200

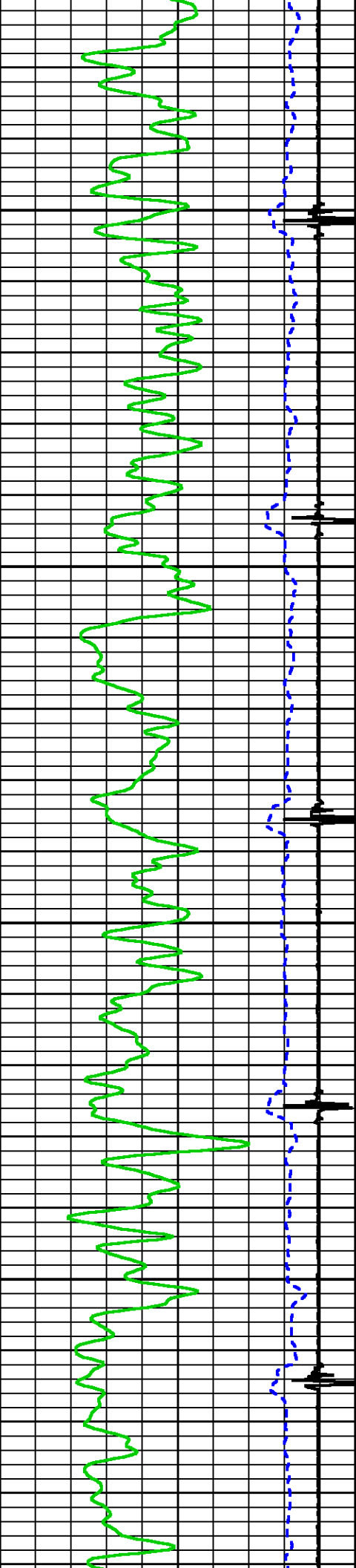
8300

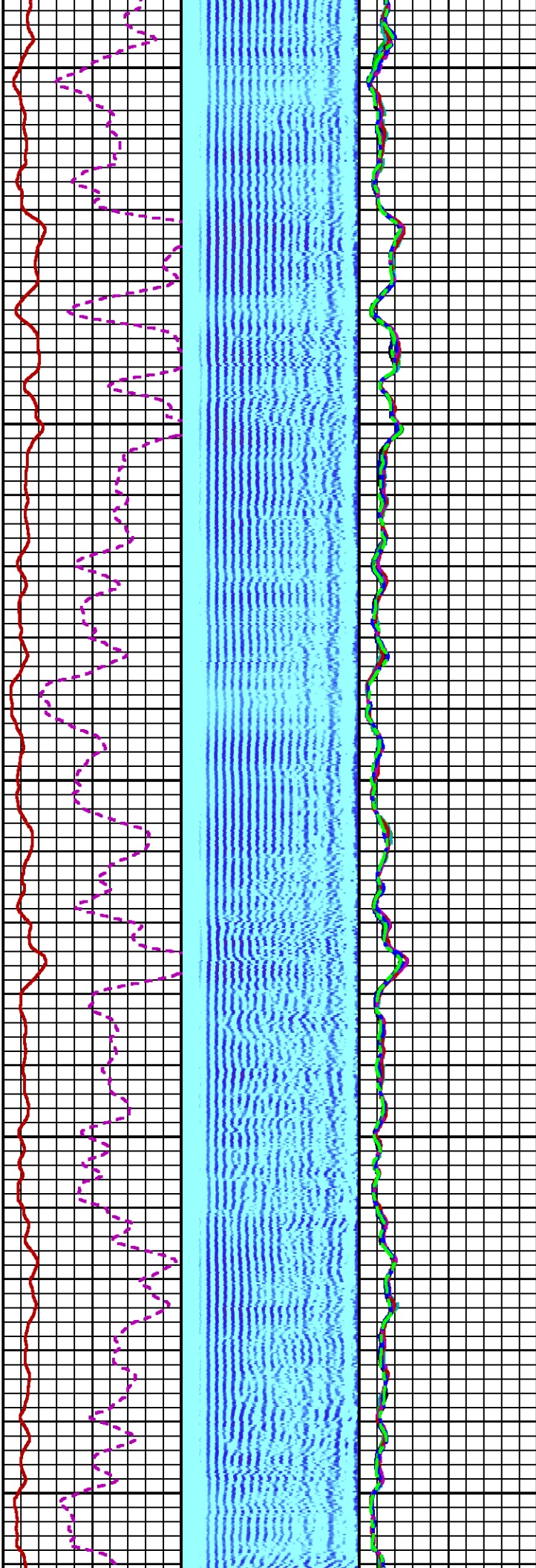




8400

8500

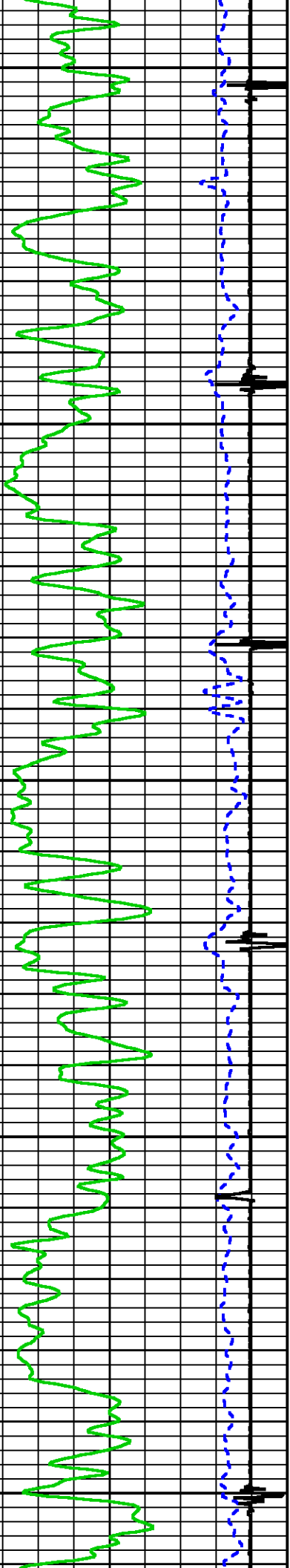


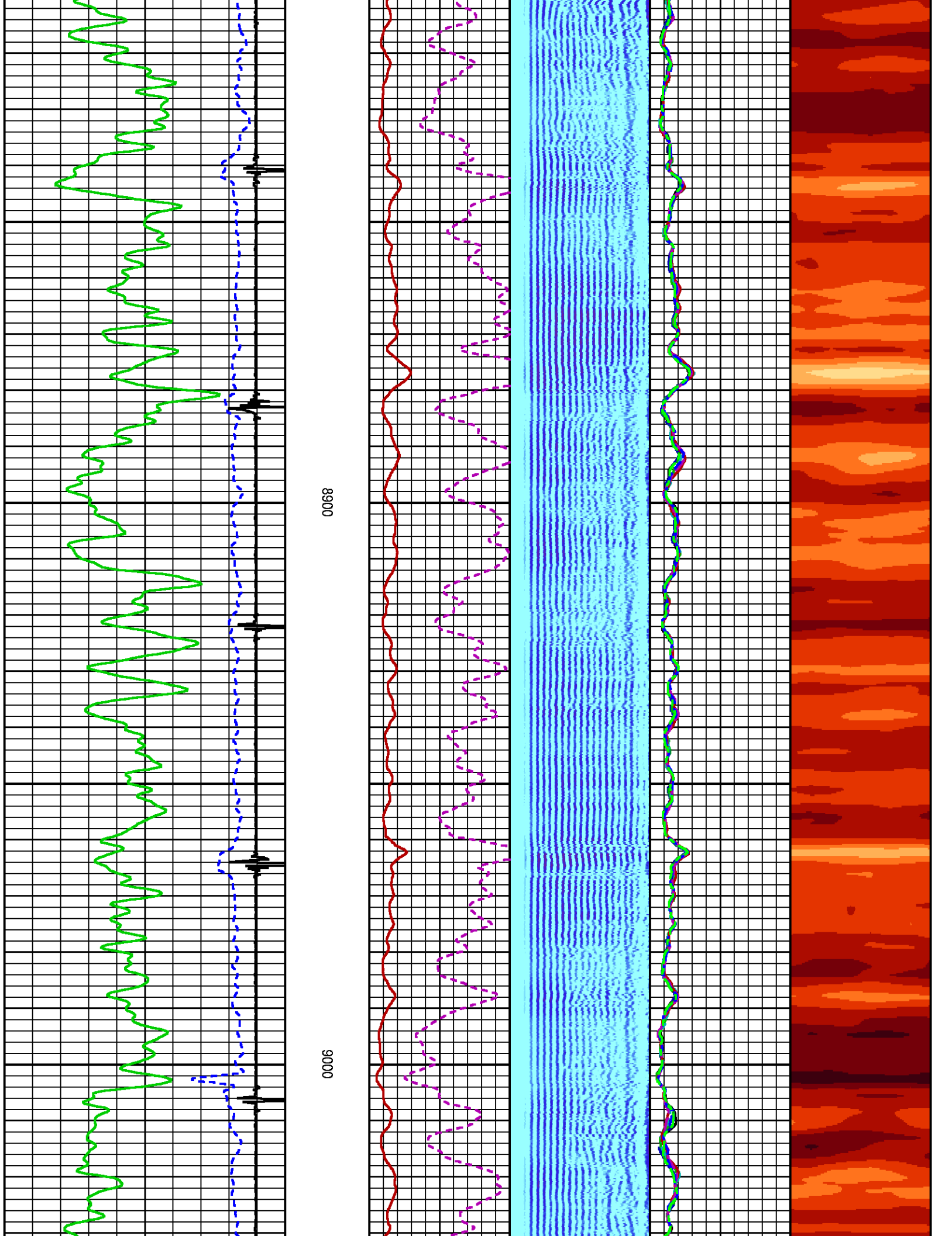


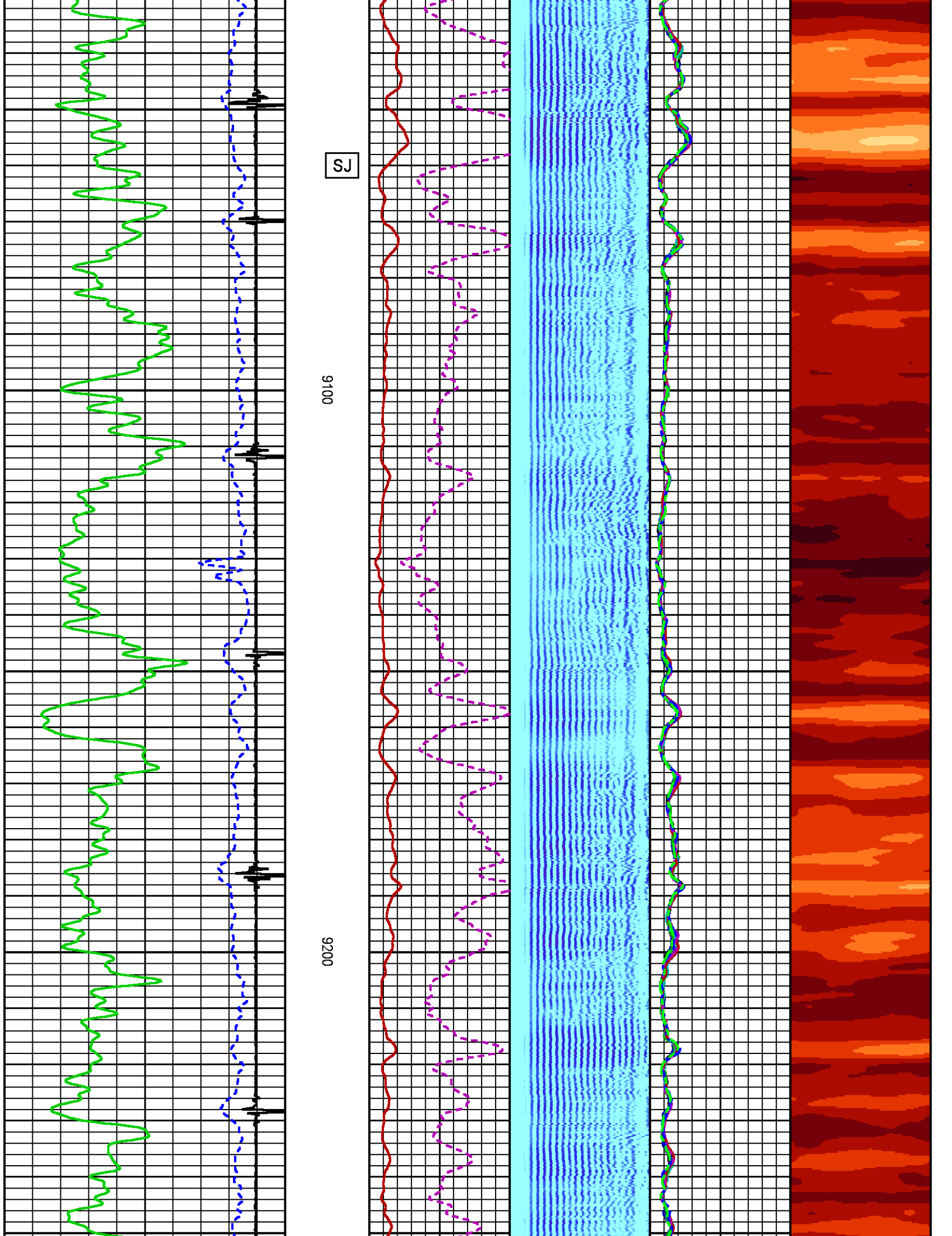
8600

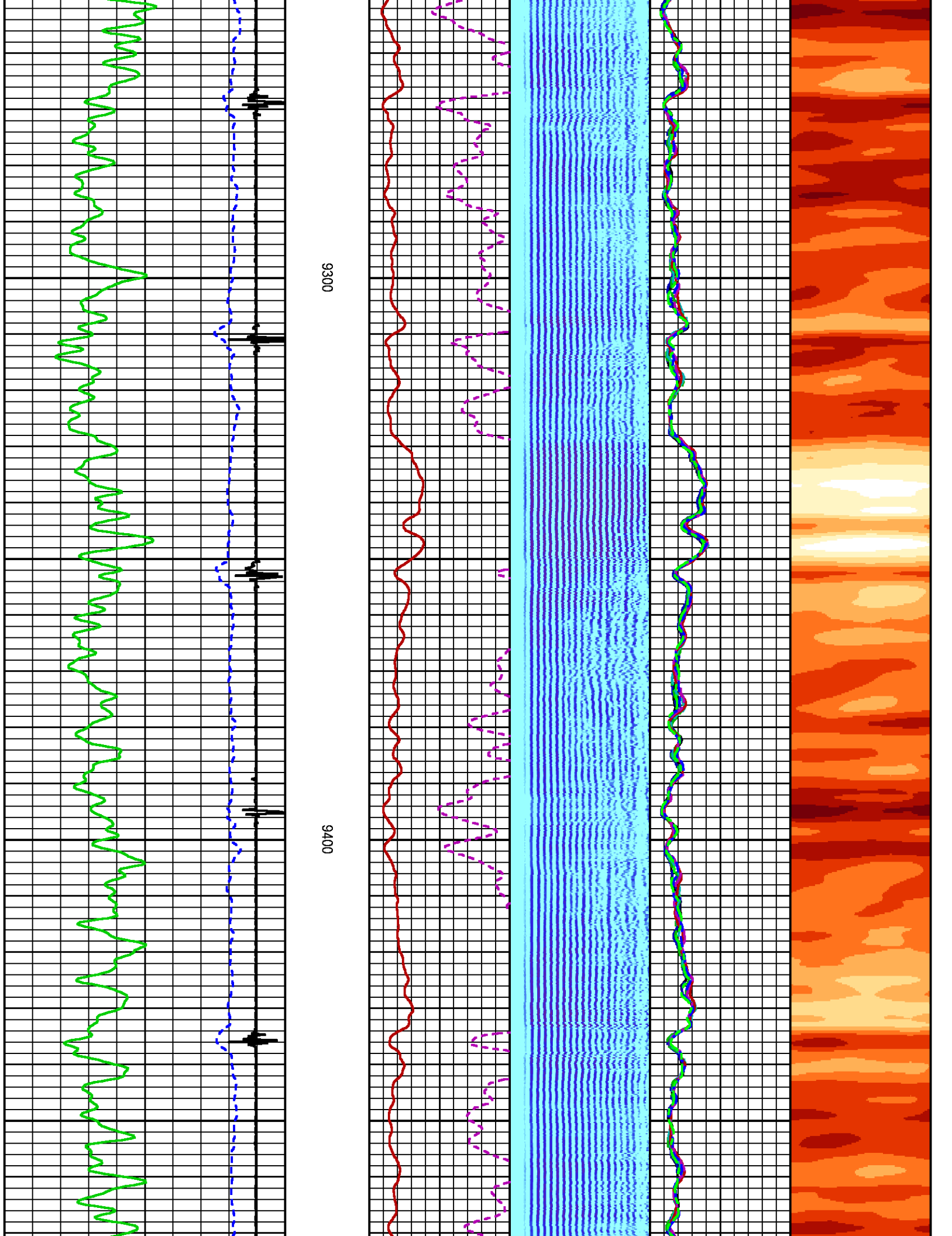
8700

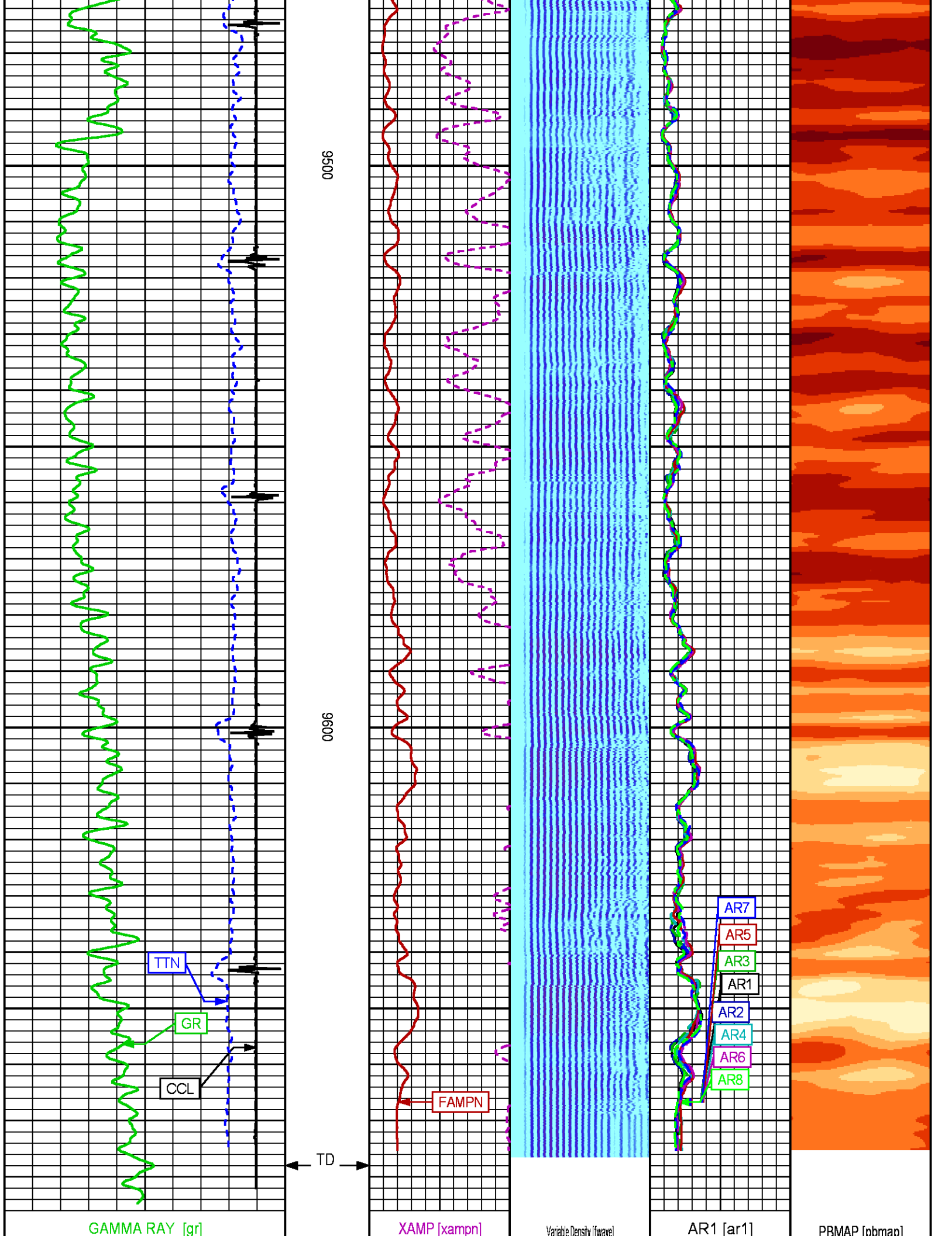
8800

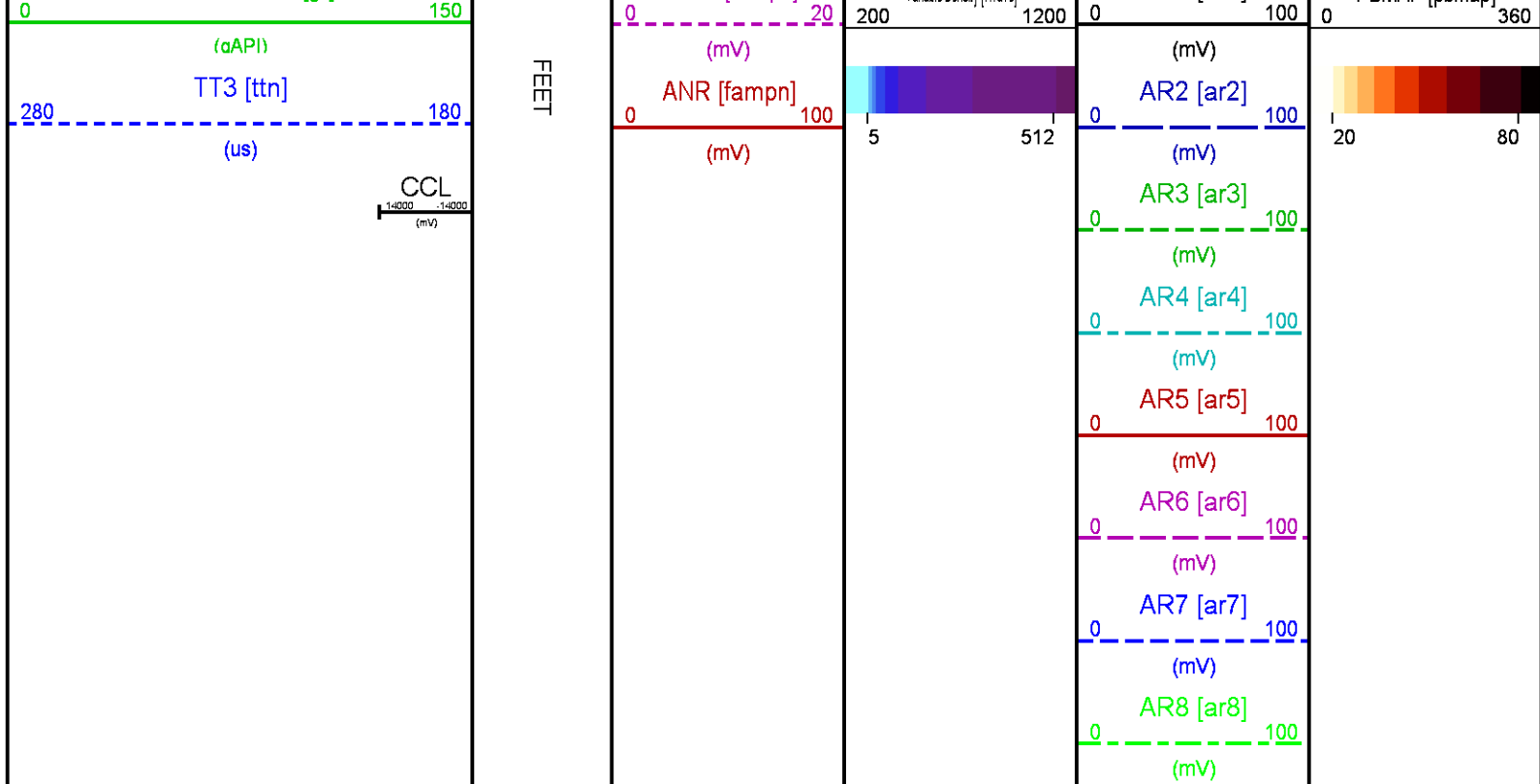












REPEAT PASS 0 PSI

ECLIPS 7.0i ECLIPS General Release Rel 7.0i Thu Jun 08 20:36:10 CDT 2017

Patches: 4

Plotted: Sat Jun 30 08:30:15 2018

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_CC_0697-03-14W/p012g01.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 9387.250 ft BOTTOM DEPTH: 9595.739 ft

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
GR	FILTER ()	medium (1)		TOP	BOTTOM
AMPLITUDE	FILTER ()	medium (1)		"	"
TRAVEL TIME	FILTER ()	medium (1)		"	"

RAL CCL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CCL FLOOR	CCL FLOOR	0.00		TOP	BOTTOM

ANALOG RAL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
AMPLITUDE WINDOW (NEAR)	AMP WINDOW START (fgp1*)	187	us	TOP	BOTTOM
	AMP WINDOW START (fgp2*)	187	us	"	"
	AMP WINDOW START (fgp3*)	187	us	"	"
	AMP WINDOW START (fgp4*)	187	us	"	"
	AMP WINDOW START (fgp5*)	187	us	"	"
	AMP WINDOW START (fgp6*)	187	us	"	"

	AMP WINDOW START (fgp7*)	187	us	"	"
	AMP WINDOW START (fgp8*)	187	us	"	"
	AMP WINDOW START (fgpn*)	187	us	"	"
	AMP WINDOW LENGTH	25	us	"	"
TRAVEL TIME WINDOW (NEAR)	TT WINDOW START (ttn*)	160	us	"	"
	TT WINDOW LENGTH	500	us	"	"
	FIRST BRK THRESHOLD (ttn*)	4	mV	"	"
RAL CASING PARAMETERS	PPT NEAR	200.465	us	"	"
RAL TOOL DELAY	TOOL DELAY (str1*)	-65	us	"	"
	TOOL DELAY (str2*)	-65	us	"	"
	TOOL DELAY (str3*)	-65	us	"	"
	TOOL DELAY (str4*)	-65	us	"	"
	TOOL DELAY (str5*)	-65	us	"	"
	TOOL DELAY (str6*)	-65	us	"	"
	TOOL DELAY (str7*)	-65	us	"	"
	TOOL DELAY (str8*)	-65	us	"	"
	TOOL DELAY (strn*)	-65	us	"	"
BASELINE NOISE (NEAR)	NOISE WINDOW START	125	us	"	"
	NOISE WINDOW LENGTH	25	us	"	"

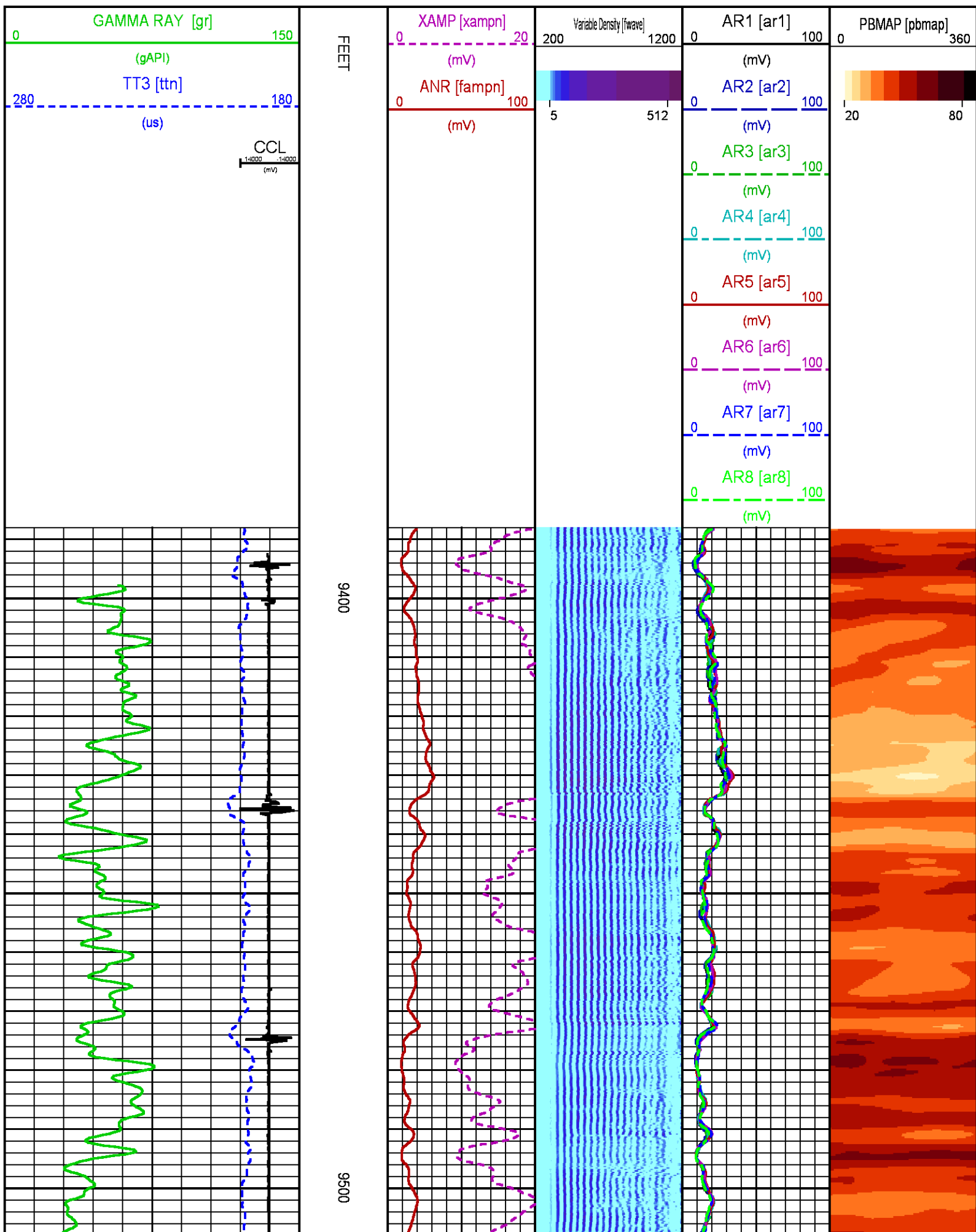
PERCENT BOND CEMENT MAP					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
RAL FREE PIPE AMPLITUDE	FREE AMP REC 1	80	mV	TOP	BOTTOM
	FREE AMP REC 2	80	mV	"	"
	FREE AMP REC 3	80	mV	"	"
	FREE AMP REC 4	80	mV	"	"
	FREE AMP REC 5	80	mV	"	"
	FREE AMP REC 6	80	mV	"	"
	FREE AMP REC 7	80	mV	"	"
	FREE AMP REC 8	80	mV	"	"
RAL FULL BOND AMPLITUDE	FULL BOND AMP REC 1	2	mV	"	"
	FULL BOND AMP REC 2	2	mV	"	"
	FULL BOND AMP REC 3	2	mV	"	"
	FULL BOND AMP REC 4	2	mV	"	"
	FULL BOND AMP REC 5	2	mV	"	"
	FULL BOND AMP REC 6	2	mV	"	"
	FULL BOND AMP REC 7	2	mV	"	"
	FULL BOND AMP REC 8	2	mV	"	"

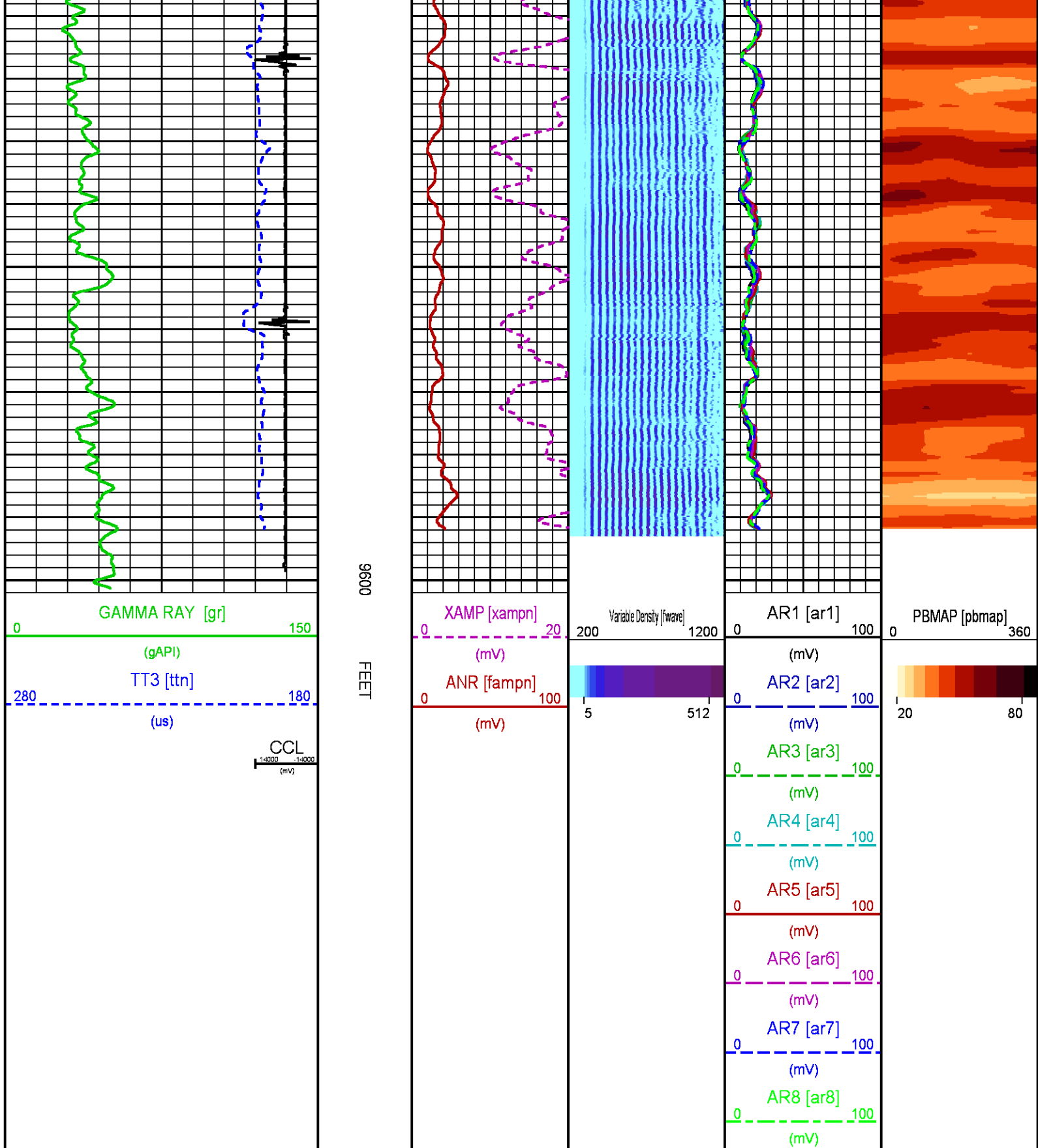
CURVE DESCRIPTION REPORT		
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:AR1	N/A	FIXED GATE AMPLITUDE T-R1
F1:AR2	N/A	FIXED GATE AMPLITUDE T-R2
F1:AR3	N/A	FIXED GATE AMPLITUDE T-R3
F1:AR4	N/A	FIXED GATE AMPLITUDE T-R4
F1:AR5	N/A	FIXED GATE AMPLITUDE T-R5
F1:AR6	N/A	FIXED GATE AMPLITUDE T-R6
F1:AR7	N/A	FIXED GATE AMPLITUDE T-R7
F1:AR8	N/A	FIXED GATE AMPLITUDE T-R8
F1:CCL	N/A	CASING COLLAR LOCATOR
F1:FAMPN	N/A	FIXED GATE AMPLITUDE NEAR RECEIVER
F1:FWAVE	N/A	FAR WAVE FORM
F1:GR	N/A	GAMMA RAY
F1:PBMAP	N/A	PERCENT BOND CEMENT MAP
F1:TTN	N/A	TRAVELTIME FROM NEAR TRANSMITTER-RECEIVER
F1:XAMPN	N/A	FIXED GATE AMPLITUDE NEAR RECEIVER TIMES FIVE

CURVE MEASURE POINT OFFSET							
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
AR1	-11.25	AR5	-11.25	CCL	-5.75	XAMPN	-11.25
AR2	-11.25	AR6	-11.25	FAMPN	-11.25		
AR3	-11.25	AR7	-11.25	GR	-1.75		
AR4	-11.25	AR8	-11.25	TTN	-11.25		

Presentation	: SysA:/dat1a/LARAMIE_CC_0697-03-14W/0697-03-14W_RAL_REPEAT.fvpdf [5"/100' Scale]
Plot Interval	: 9388 - 9603 Feet
Data File 1	: F1 : SysA:/dat1a/LARAMIE_CC_0697-03-14W/0697-03-14W_RAL_REPEAT.xtf
Created On	: N/A
Company	: LARAMIE ENERGY LLC
Well	: CC 0697 03 14W

Field : GRAND VALLEY
File Interval : 9387 - 9604.25 Feet
OCT : p012g





CALIBRATION / VERIFICATION SUMMARY

RAL PRIMARY CALIBRATION SUMMARY

TOOL #: 1426XA 11871500

DATE/TIME PERFORMED: Sat Jun 30 05:16:14 2018

UNIT #: 5753XD 111111

	NEAR (mV)	RADIAL (mV)	FAR (mV)
TARGETS	100.00	100.00	150.00

	NEAR	R1	R2	R3	R4	R5	R6	R7	R8	FAR	CAL
ZERO (mV)	-0.31	-0.17	-0.02	-0.23	-0.18	-0.10	-0.09	0.31	-0.02	-0.45	0.00
AMP FLUID (mV)	42	41	41	41	42	42	42	41	41	56	40
TT (us)	218	219	218	218	218	217	217	217	219	326	219
M FACTOR	2.38	2.46	2.45	2.42	2.39	2.39	2.39	2.48	2.46	2.67	2.50

RAL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 1426XA 11871500

DATE/TIME PERFORMED: Sat Jun 30 05:23:52 2018

DAYS SINCE CAL: 0

UNIT #: 5753XD 111111

CABLE #: ML4291 SMALL1

	NEAR (mV)	R1 (mV)	R2 (mV)	R3 (mV)	R4 (mV)	R5 (mV)	R6 (mV)	R7 (mV)	R8 (mV)	FAR (mV)	CAL (mV)
ZERO	-1.88	-2.35	-2.03	-2.51	-2.30	-2.13	-2.21	-1.39	-1.61	-4.51	-0.04
AMP AIR	1.91	2.42	2.07	2.49	2.46	2.25	2.22	1.47	1.49	3.97	100.44

SHOP M FACTOR	SHOP A FACTOR	WIRELINE FACTOR
2.50	0.00	1.00

GR PRIMARY CALIBRATION SUMMARY

TOOL #: 1355XA 12670180

DATE/TIME PERFORMED: Thu Mar 29 16:39:27 2018

UNIT #: 4352 ML4352

CALB JIG #: 4702NK DA_228

	BACKGROUND (cts)	CALBRTR ON (cts)	CR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	CALBRTR (gAPI)
GR	41.51	221.16	179.6	0.557	23.11	123.11	100

GR PRIMARY VERIFICATION SUMMARY

TOOL #: 1355XA 12670180

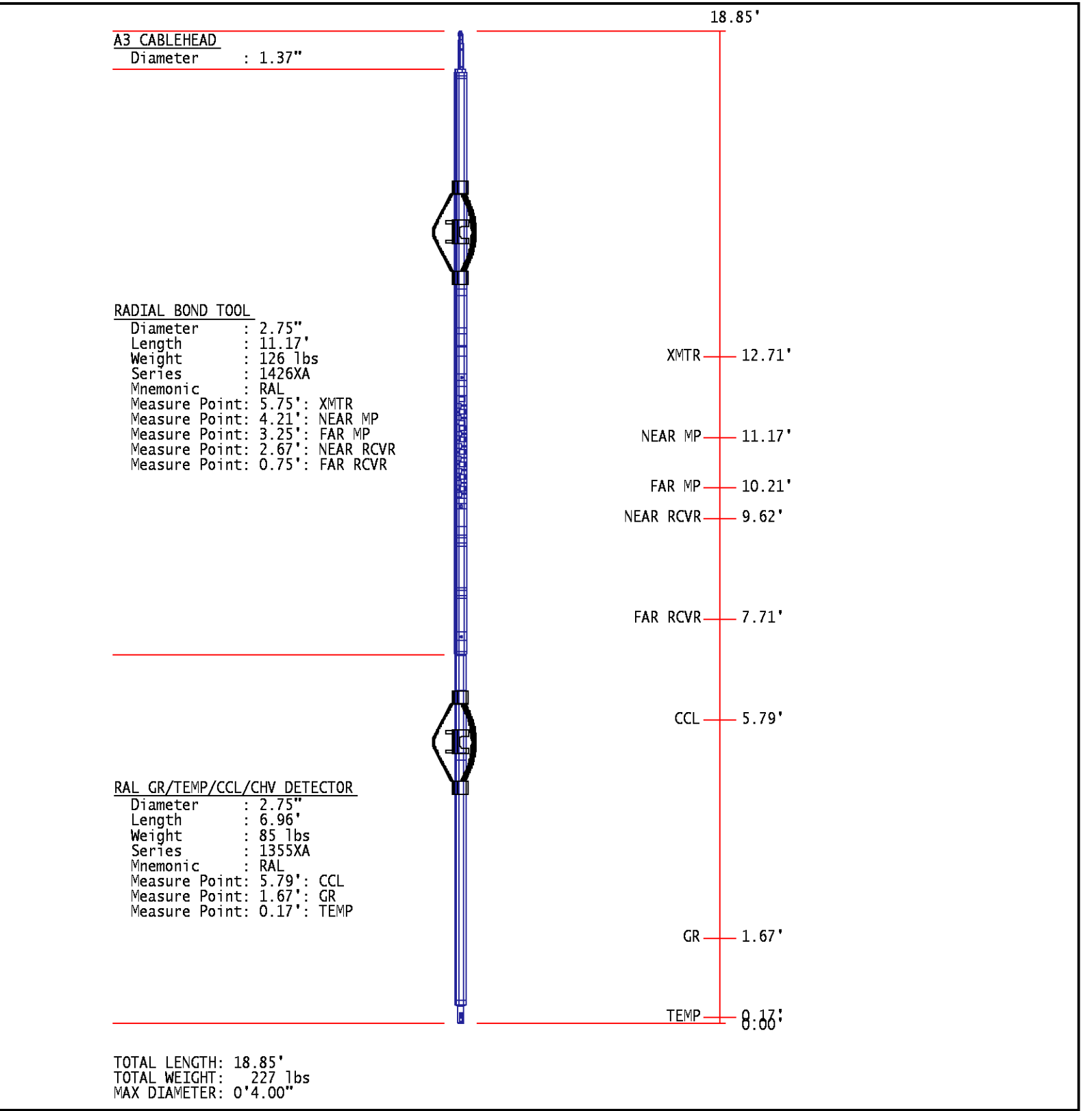
DATE/TIME PERFORMED: Thu Mar 29 16:50:56 2018

UNIT #: 4352 ML4352

VERI JIG #: 4702NK DA_228

	BACKGROUND (cts)	CALBRTR ON (cts)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	40.09	214.13	0.557	22.32	119.20	96.88
						90.00 110.00

INSTRUMENT CONFIGURATION



COMPANY	LARAMIE ENERGY LLC	
WELL	CC 0697-03-14W	
FIELD	GRAND VALLEY	
COUNTY	GARFIELD	STATE COLORADO

FILE NO:	CH139388
API NO:	05045238040000

LOCATION:	ELEVATIONS:
SHL: 3326' FNL & 1320' FWL	KB 8458 FT
BHL: 3326' FNL & 1320' FWL	DF





BHE: 3320 TNE & 1320 TWE

GL 8428 FT

SEC 3 TWP 6S RGE 97W

DATE 30-Jun-2018