



RADIAL CEMENT BOND LOG

FILE NO: CH139390J	COMPANY LARAMIE ENERGY LLC
API NO: 05045238010000	WELL CC 0697-03-14E
	FIELD GRAND VALLEY
	COUNTY GARFIELD
	STATE COLORADO

Ver. 4.11	LOCATION: SHL: 3331.0' FNL & 1310.0' FEL SHL: 3331.0' FNL & 1310.0' FEL	OTHER SERVICES RPM
	SEC 3 TWP 6S RGE 97W	

PERMANENT DATUM LOG MEASURED FROM DRILL. MEAS. FROM	GL KB	ELEVATION 30 FT	8428 FT ABOVE P.D.
	KB		

ELEVATIONS: KB 8458 FT DF GL 8428 FT

DATE	TRIP	26-Aug-2018	1
RUN	1		
SERVICE ORDER	US139390J		
DEPTH DRILLER	9716 FT		
DEPTH LOGGER	9680 FT		
BOTTOM LOGGED INTERVAL	9680 FT		
TOP LOGGED INTERVAL	30 FT		
TIME STARTED	09:30		
TIME FINISHED	12:00		
OPERATOR RIG TIME	2.5 HOURS		
TYPE OF FLUID IN HOLE	WATER		
FLUID DENSITY	NA		
FLUID SALINITY	NA		
FLUID LEVEL	64 FT		
LOGGED CEMENT TOP	1618 FT		
WELLHEAD PRESSURE	0 PSI		
MAXIMUM HOLE DEVIATION	NA		
NOMINAL LOGGING SPEED	100 F/MN		
MAX. RECORDED TEMP.	257 DEGF		
REFERENCE LOG	NA		
REFERENCE LOG DATE	NA		
EQUIP. NO.	ML-4291	GRAND JCT.	
RECORDED BY	M. BAUKA		
WITNESSED BY	NA		

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 MODE

LOGGED WITH 0 PSI ON WELLHEAD

SJ: 7536' - 7558'

SJ: 9068' - 9088'

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

Updates: 1

Plotted: Sun Aug 26 12:33:29 2018

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_CC_0697-03-14E/p012g02.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 15.500 ft BOTTOM DEPTH: 9681.750 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*)	-66	us	"	"
	TOOL DELAY (str2*)	-66	us	"	"
	TOOL DELAY (str3*)	-66	us	"	"
	TOOL DELAY (str4*)	-66	us	"	"
	TOOL DELAY (str5*)	-66	us	"	"
	TOOL DELAY (str6*)	-66	us	"	"
	TOOL DELAY (str7*)	-66	us	"	"
	TOOL DELAY (str8*)	-66	us	"	"
BASELINE NOISE (NEAR)	TOOL DELAY (strn*)	-66	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

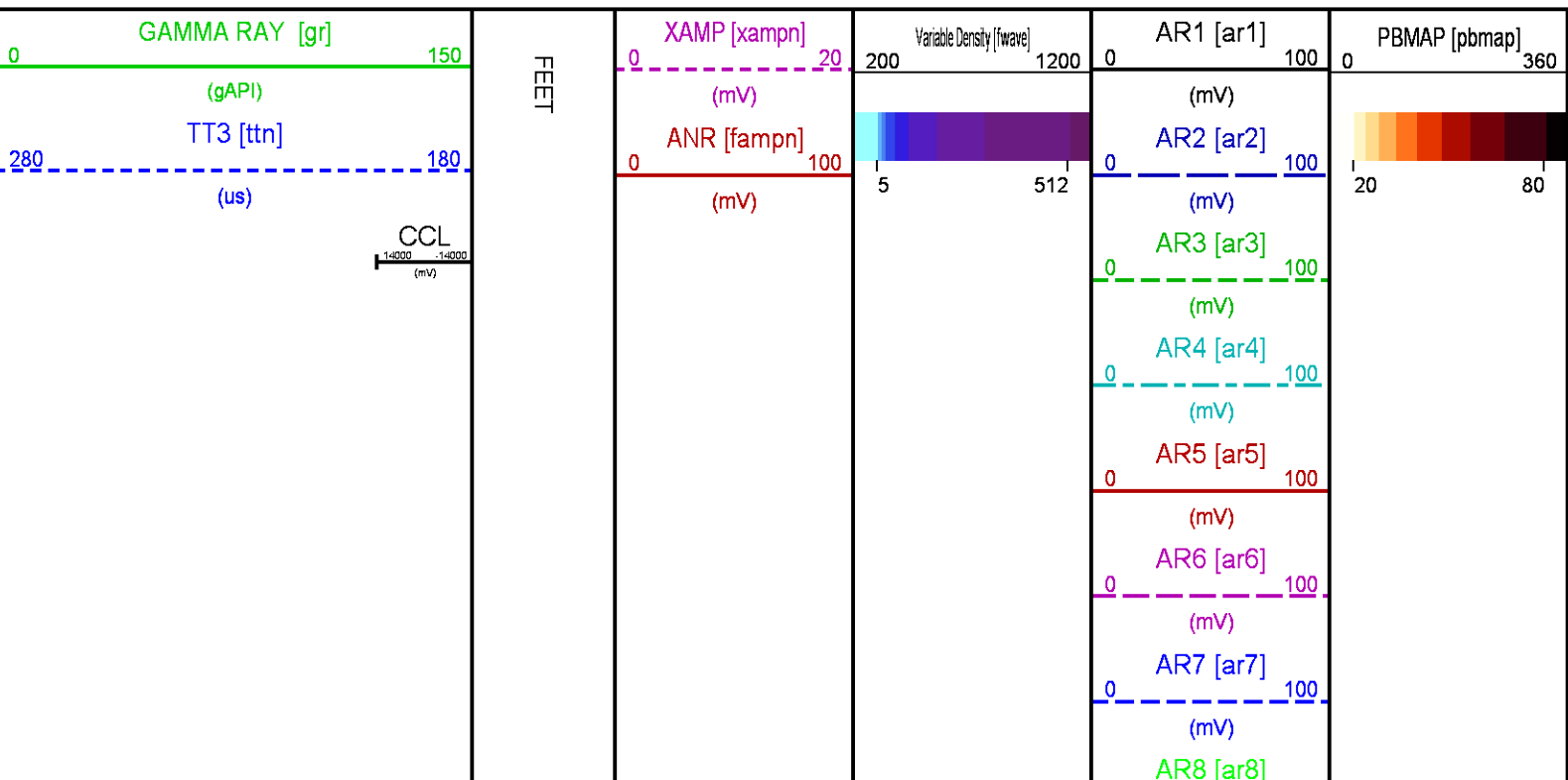
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:AR1	Aug 26 09:43:15 2018	FIXED GATE AMPLITUDE T-R1
F1:AR2	Aug 26 09:43:15 2018	FIXED GATE AMPLITUDE T-R2
F1:AR3	Aug 26 09:43:15 2018	FIXED GATE AMPLITUDE T-R3
F1:AR4	Aug 26 09:43:15 2018	FIXED GATE AMPLITUDE T-R4
F1:AR5	Aug 26 09:43:15 2018	FIXED GATE AMPLITUDE T-R5
F1:AR6	Aug 26 09:43:15 2018	FIXED GATE AMPLITUDE T-R6
F1:AR7	Aug 26 09:43:15 2018	FIXED GATE AMPLITUDE T-R7
F1:AR8	Aug 26 09:43:15 2018	FIXED GATE AMPLITUDE T-R8
F1:CCL	Aug 26 09:43:15 2018	CASING COLLAR LOCATOR
F1:FAMPN	Aug 26 09:43:15 2018	FIXED GATE AMPLITUDE NEAR RECEIVER
F1:FWAVE	Aug 26 09:43:15 2018	FAR WAVE FORM
F1:GR	Aug 26 09:43:15 2018	GAMMA RAY
F1:PBMAP	Aug 26 09:43:15 2018	PERCENT BOND CEMENT MAP
F1:TTN	Aug 26 09:43:15 2018	TRAVELTIME FROM NEAR TRANSMITTER-RECEIVER
F1:XAMPN	Aug 26 09:43:15 2018	FIXED GATE AMPLITUDE NEAR RECEIVER TIMES FIVE

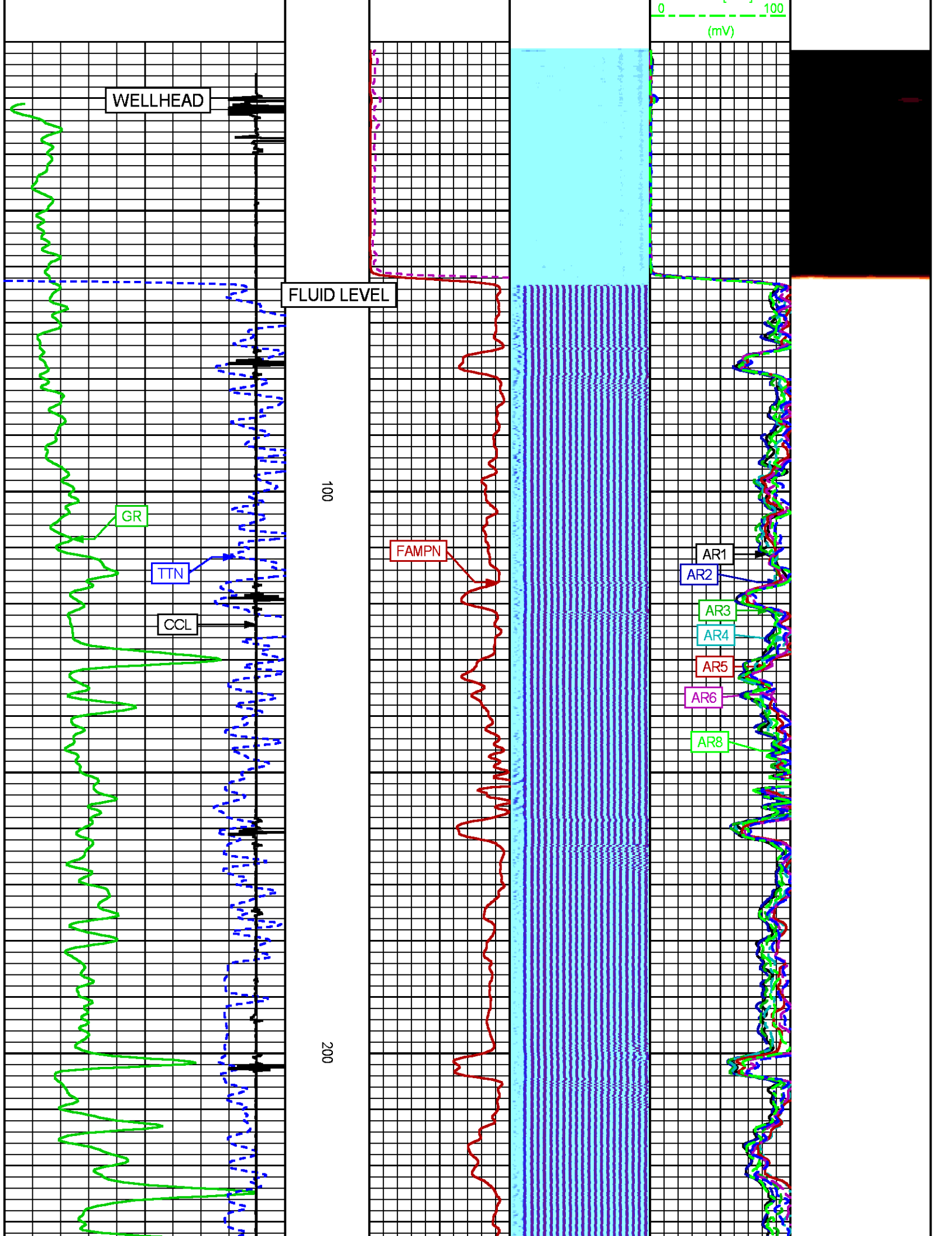
CURVE MEASURE POINT OFFSET

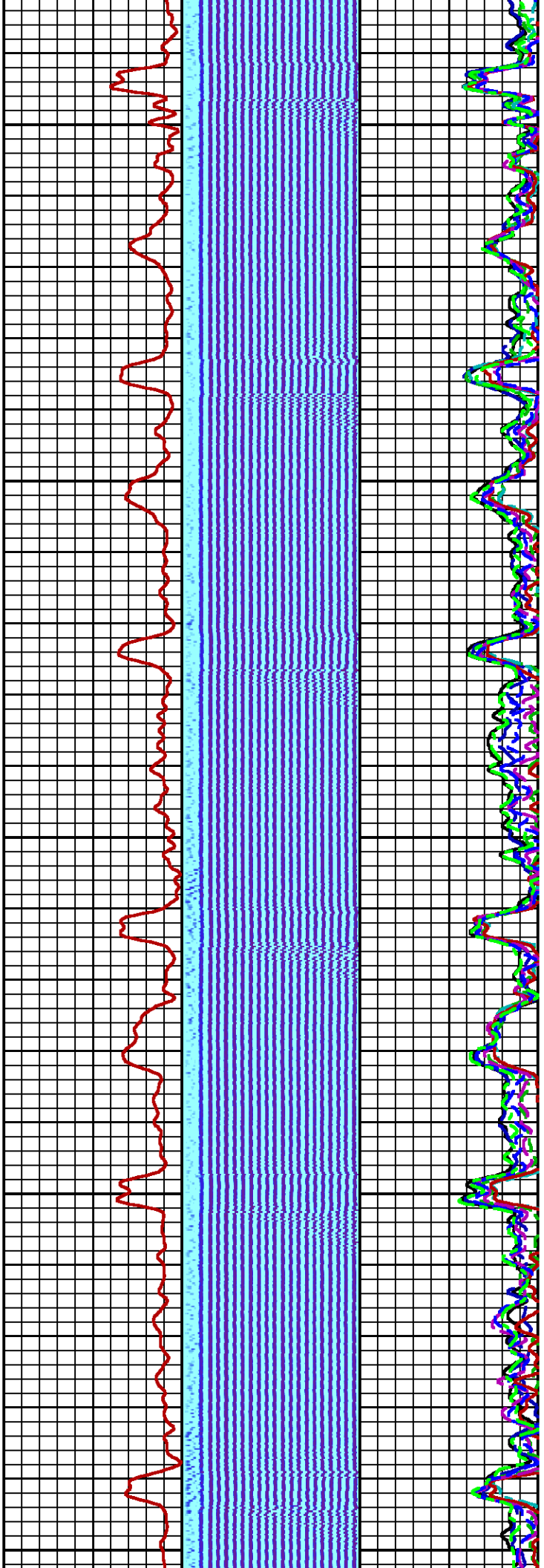
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
AR1	-11.25	AR5	-11.25	CCL	-5.75	XAMPN	-11.25
AR2	-11.25	AR6	-11.25	FAMPN	-11.25		
AR3	-11.25	AR7	-11.25	GR	-1.75		
AR4	-11.25	AR8	-11.25	TTN	-11.25		

Presentation : SysA:/dat1a/LARAMIE_CC_0697-03-14E/CC_0697-03-14E_RAL_MAIN.fvpdf [5"/100' Scale]
Plot Interval : 21.25 - 9696.5 Feet

Data File 1 : F1 : SysA:/dat1a/LARAMIE_CC_0697-03-14E/45_LARAMIE_CC_0697-03-14E_RAL_MAIN.xtf
Created On : Aug 26 09:43:15 2018
Company : LARAMIE ENERGY LLC
Well : CC 0697-03-14E
Field : GRAND VALLEY
File Interval : 15.5 - 9697.75 Feet
OCT : p012g

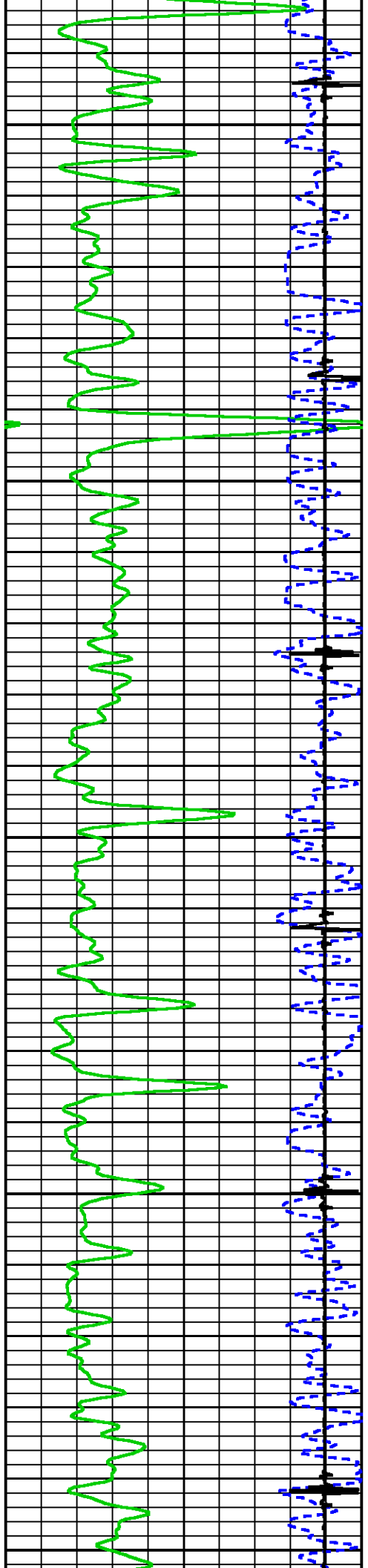


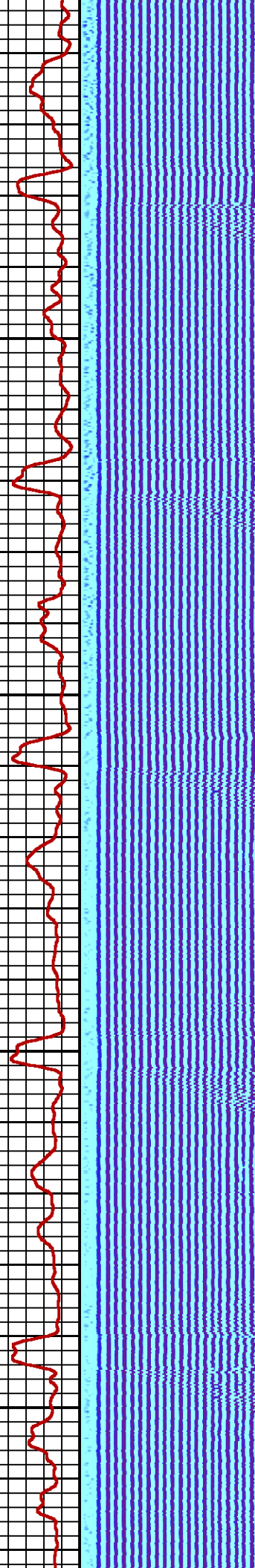
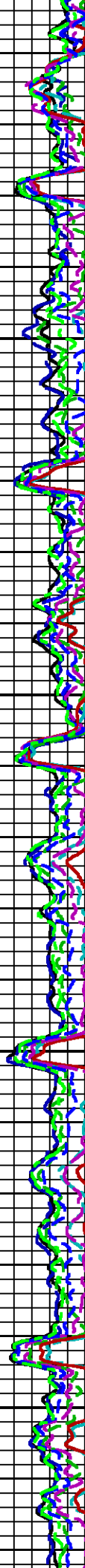




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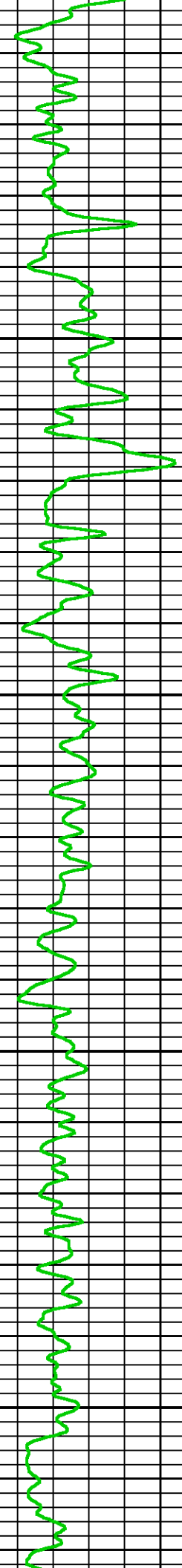
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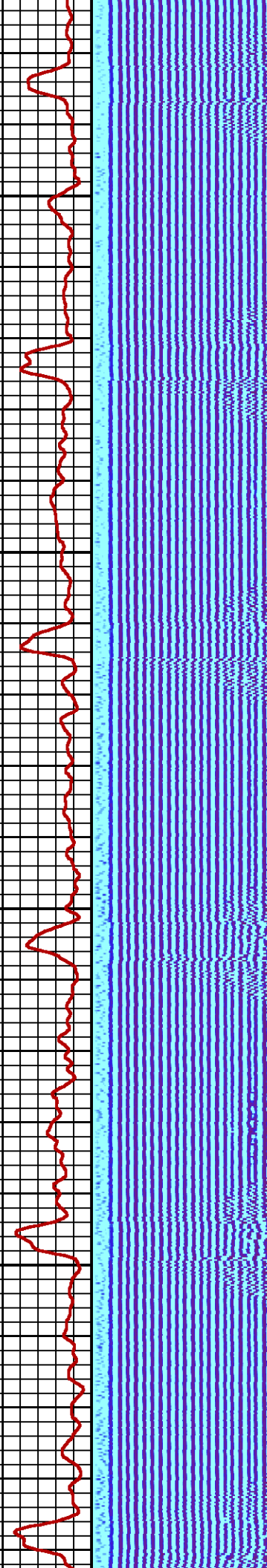
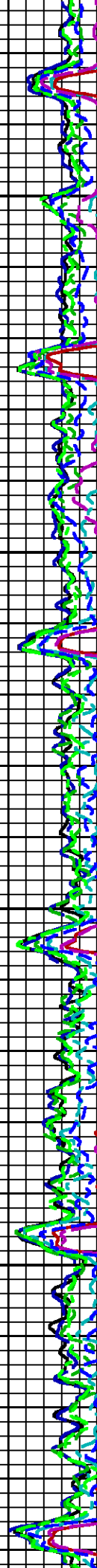




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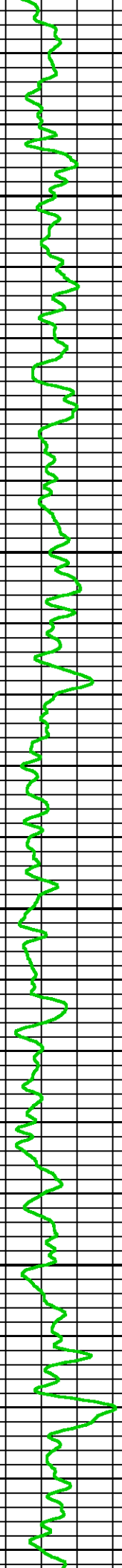
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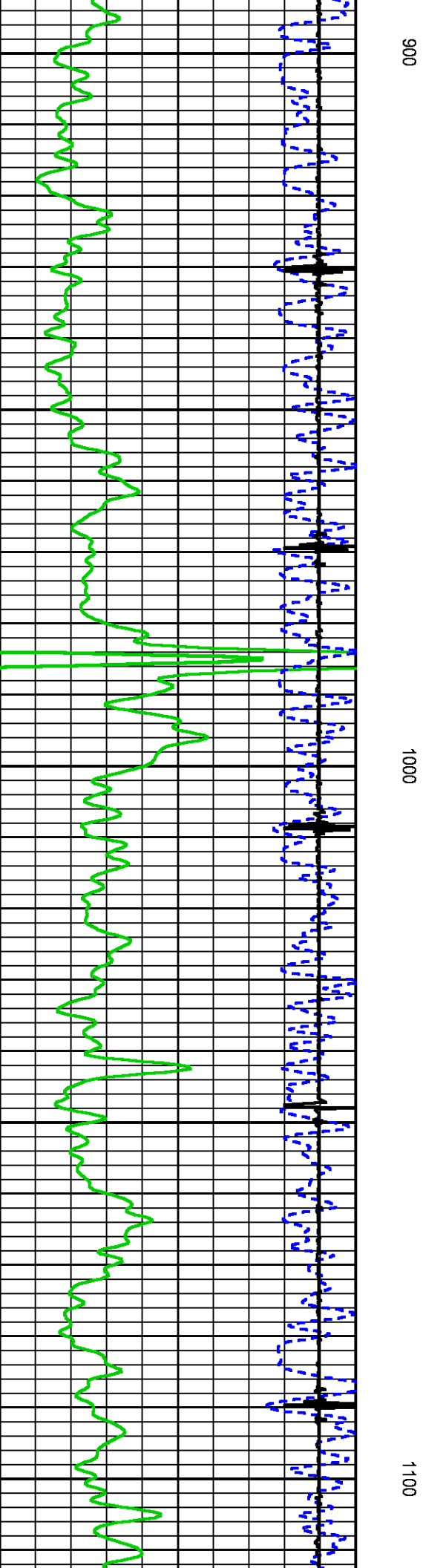
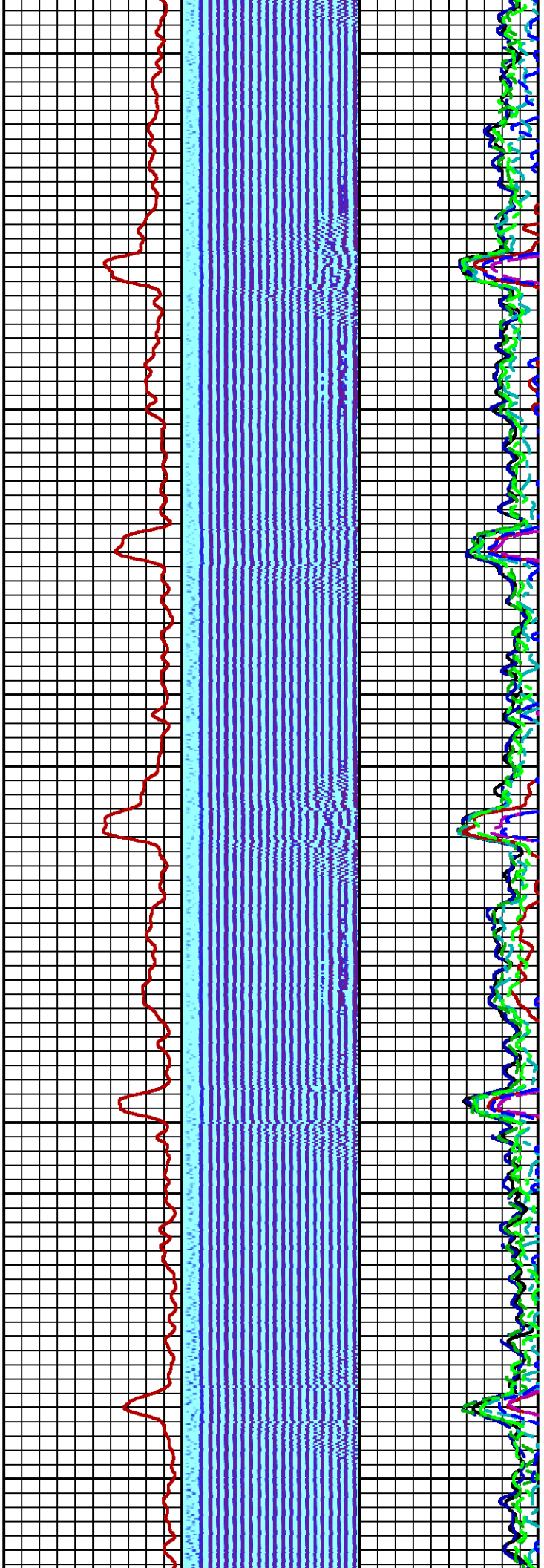


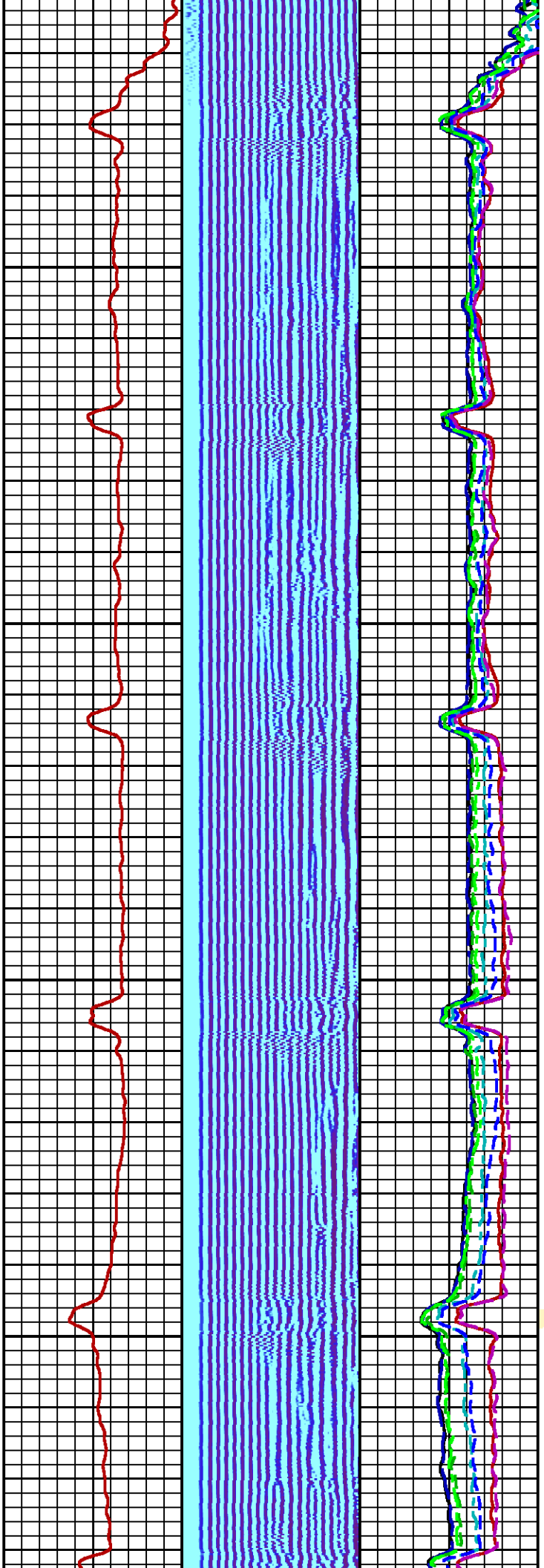


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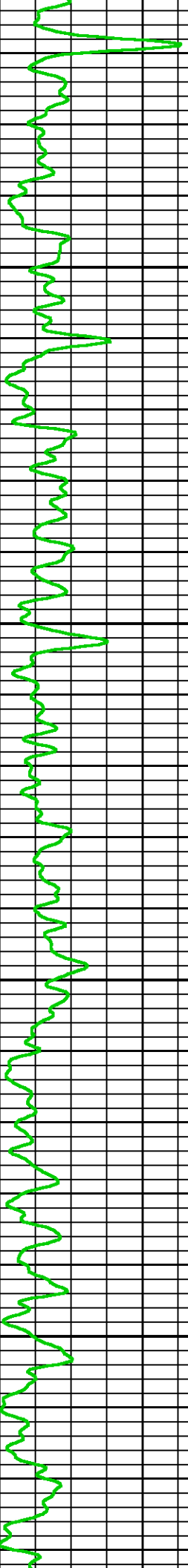
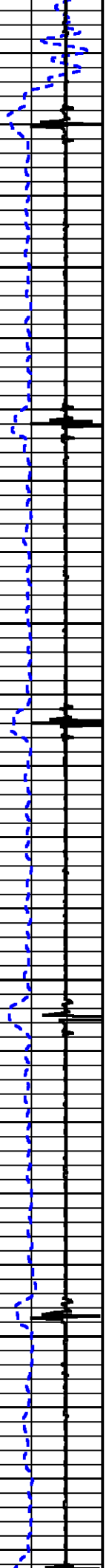


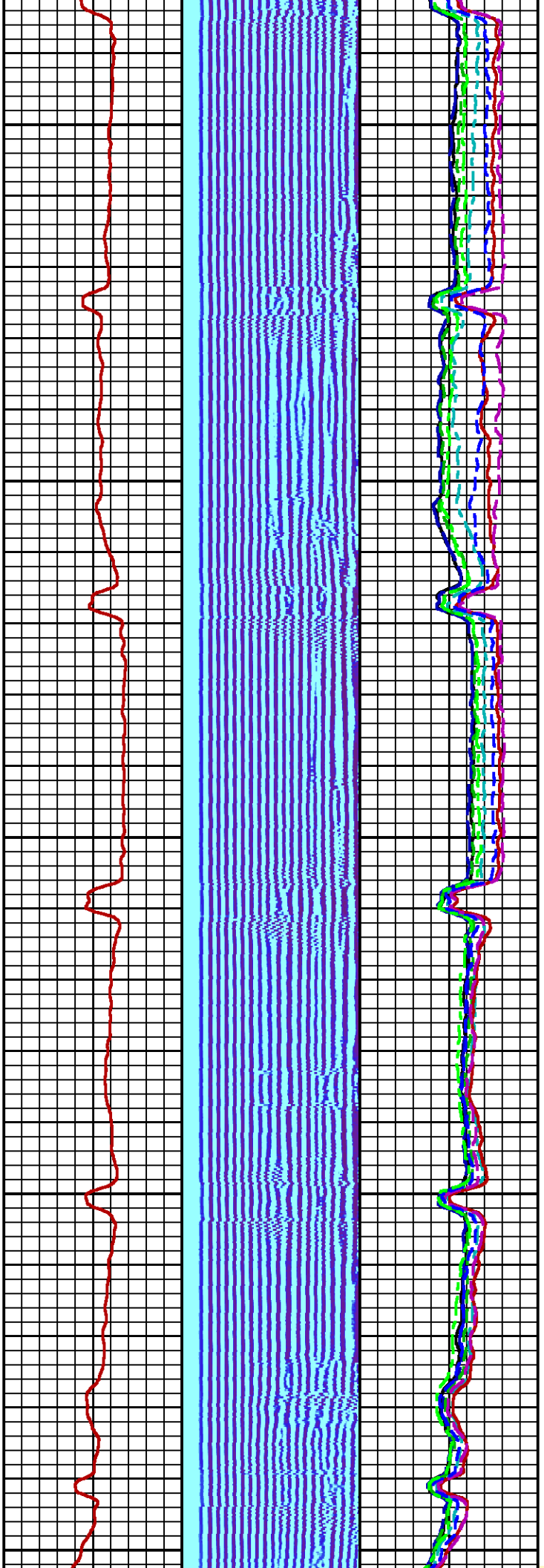




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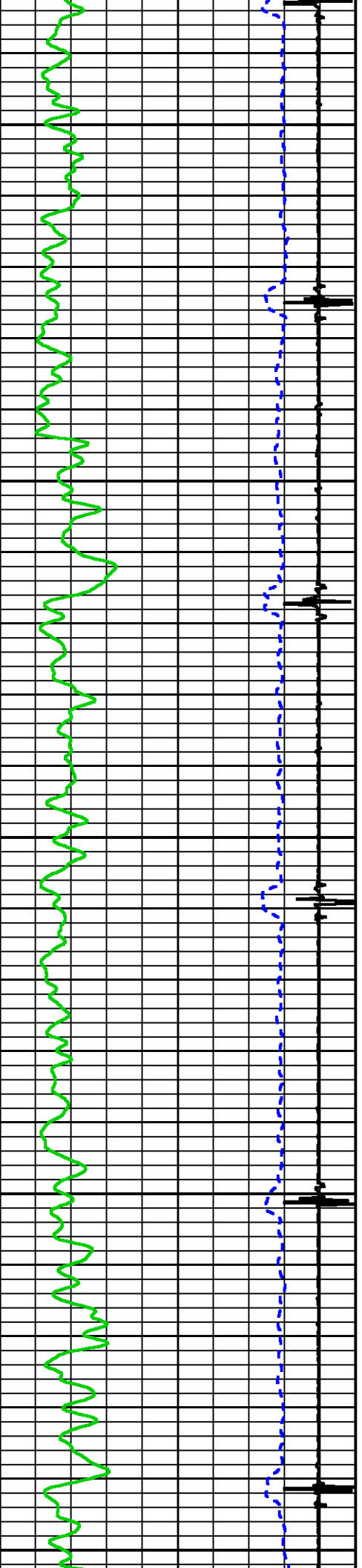
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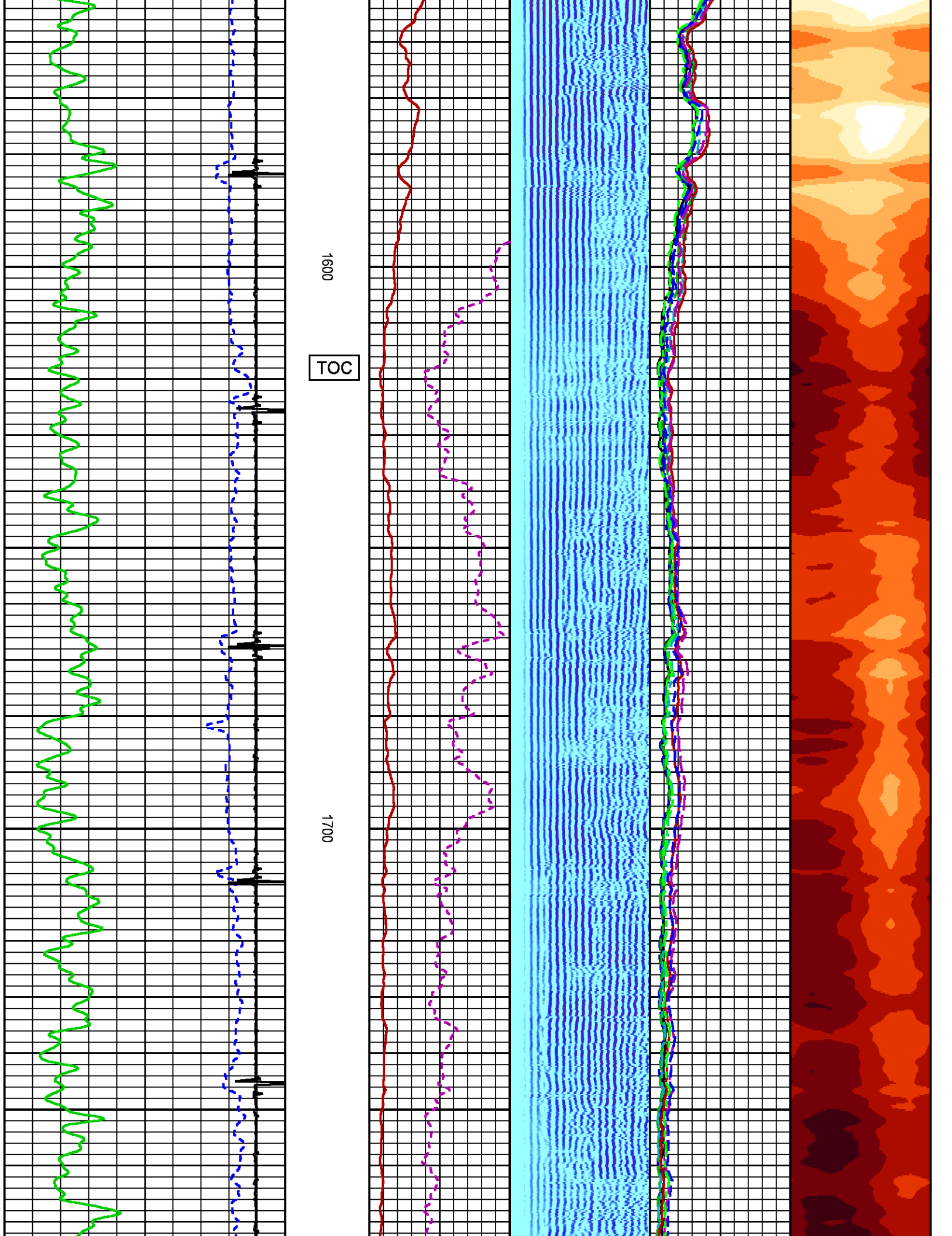


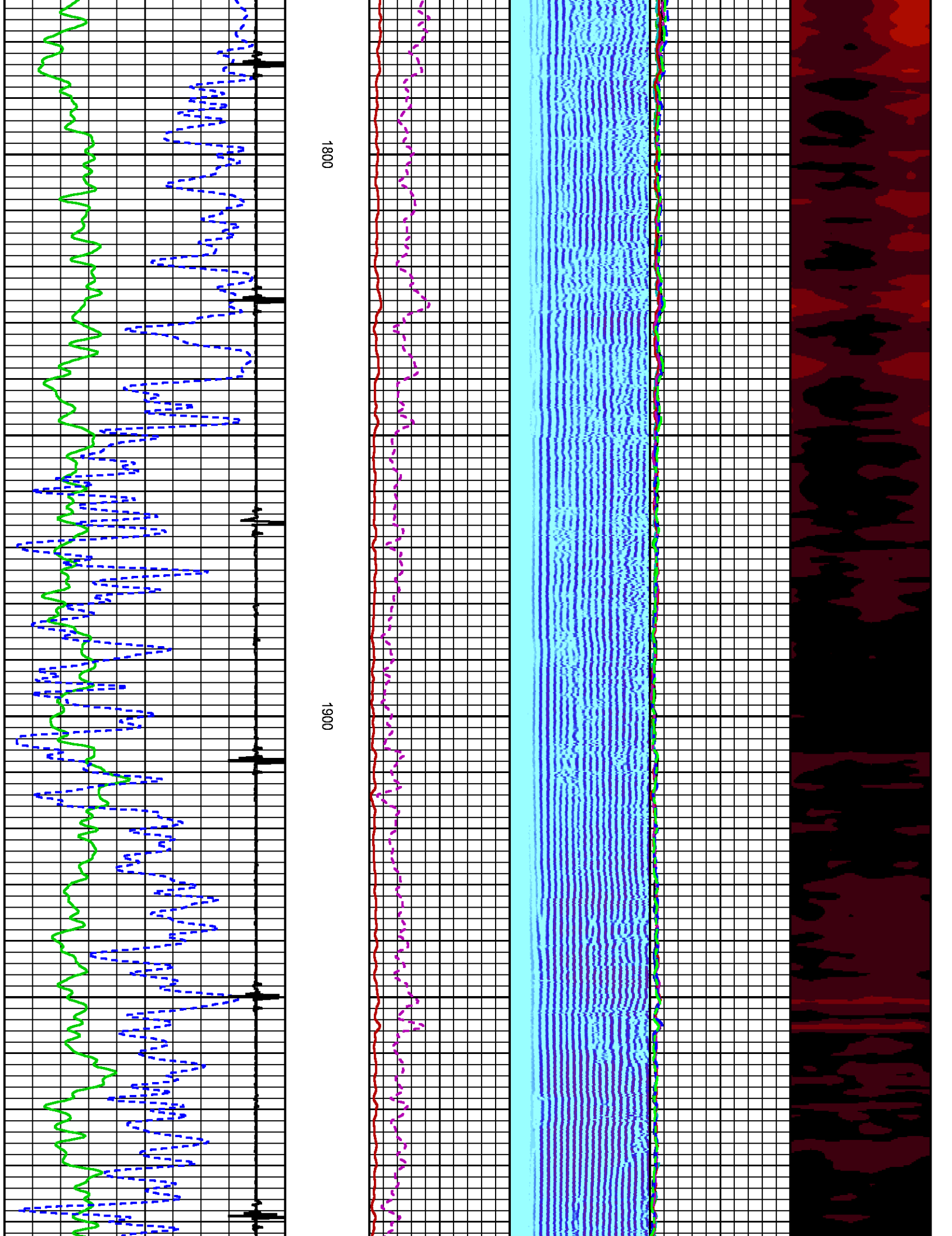


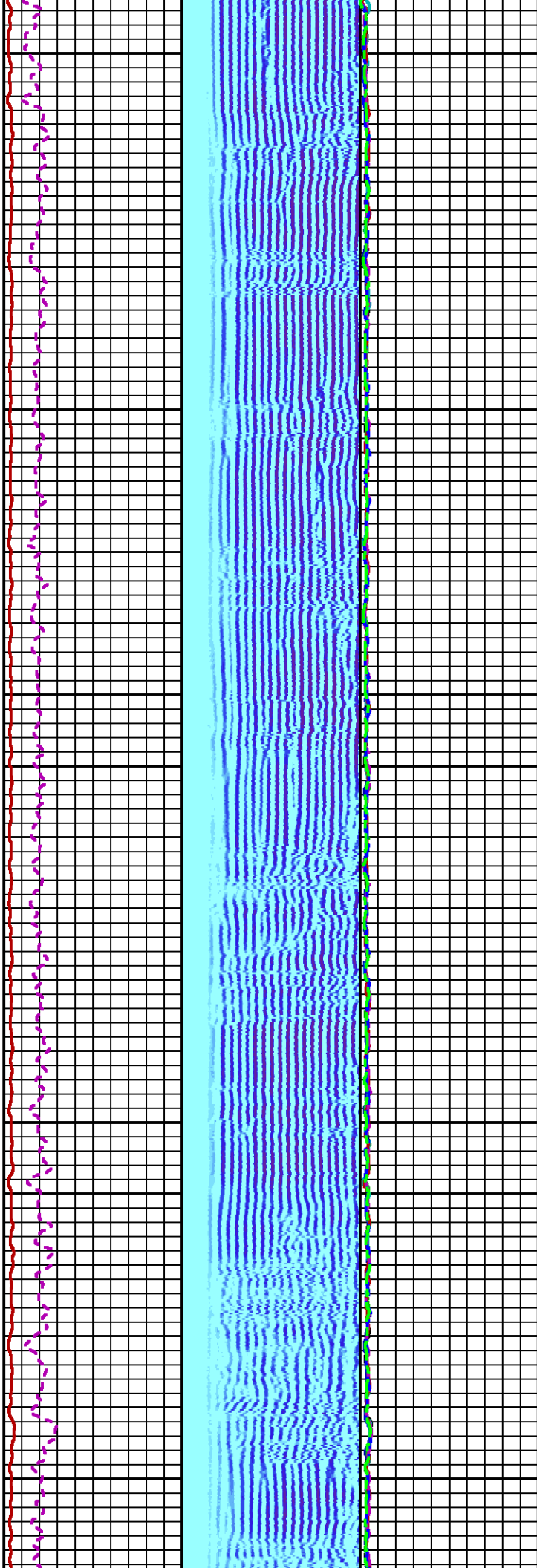
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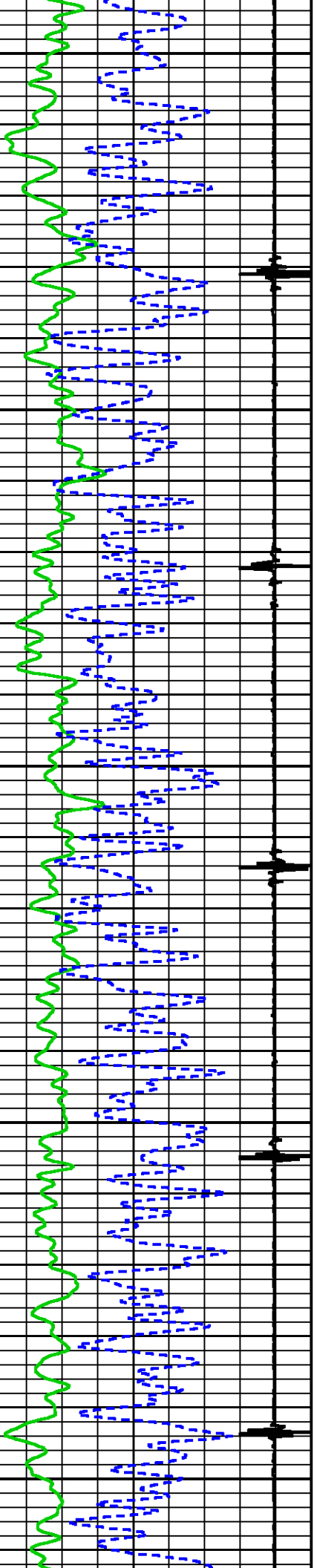


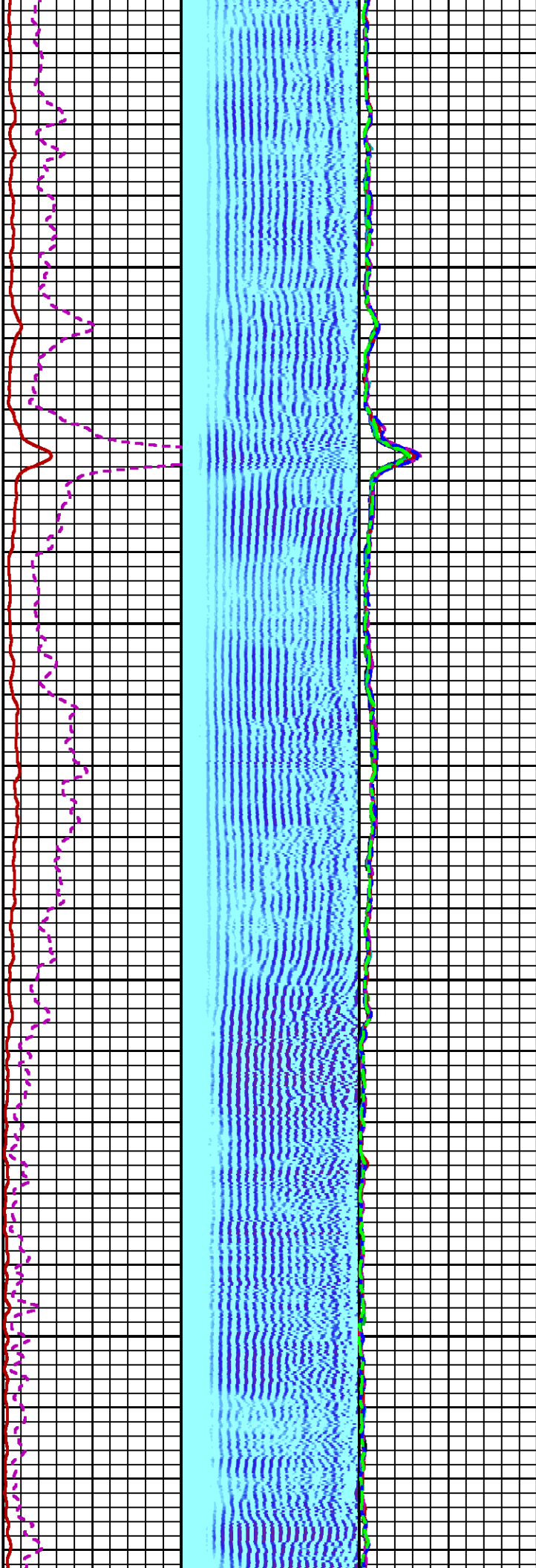


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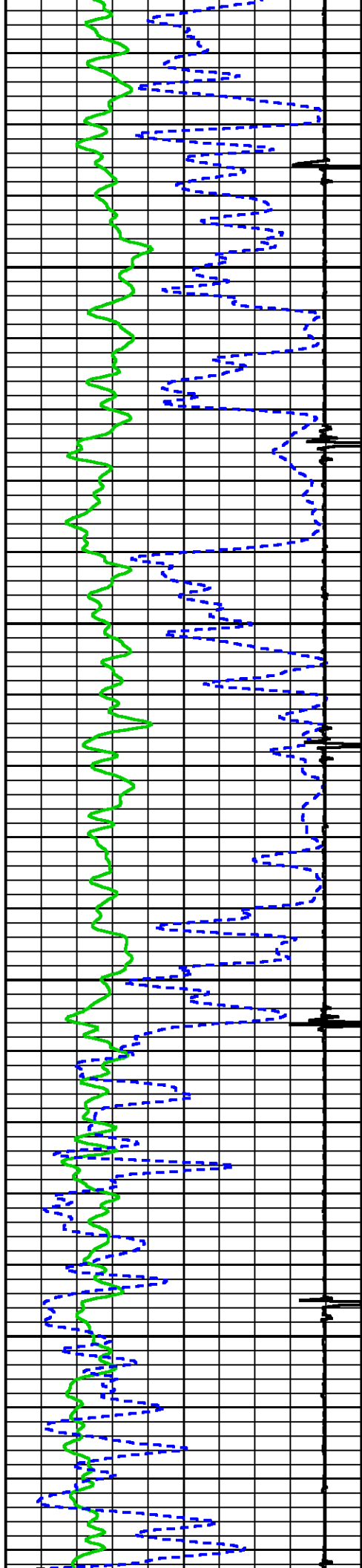
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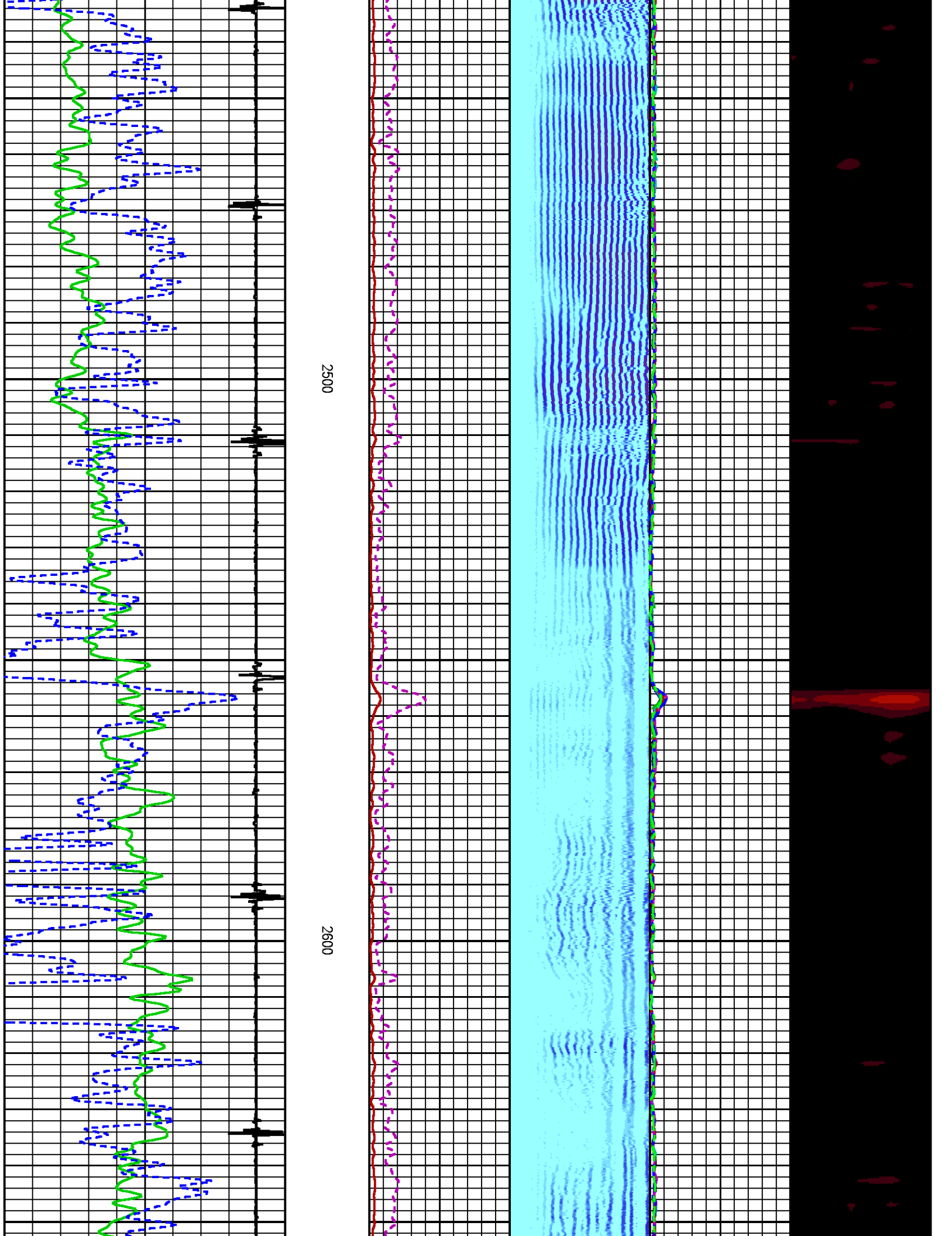


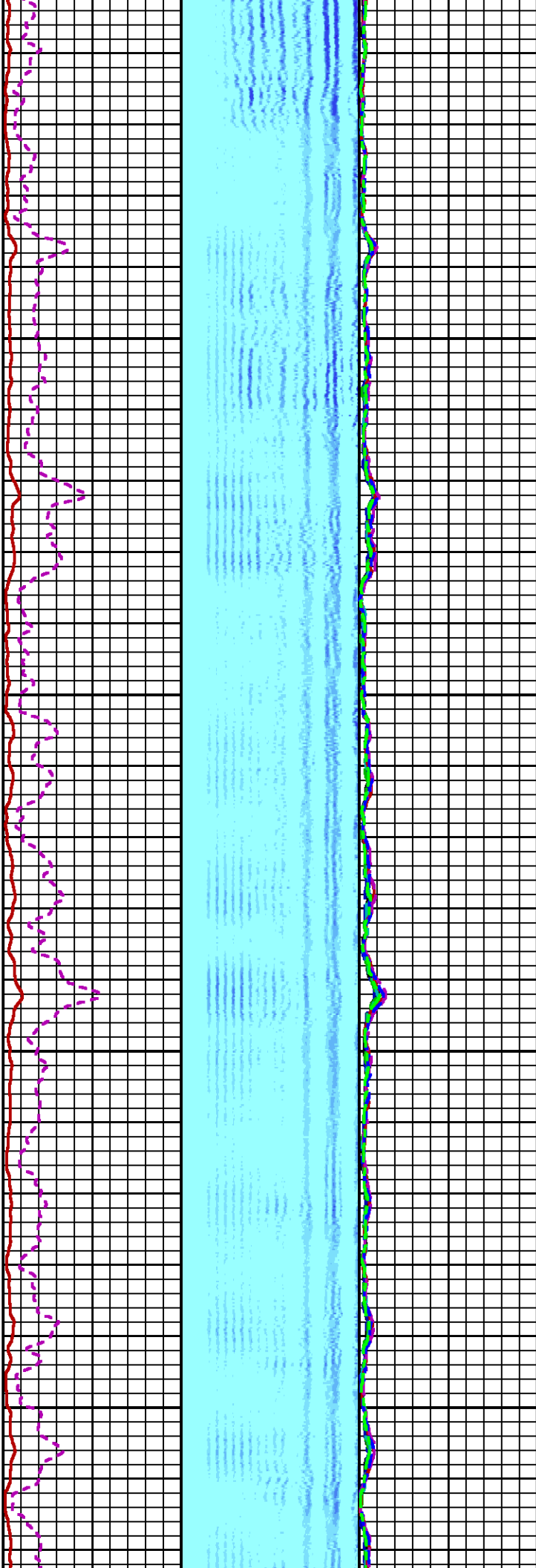


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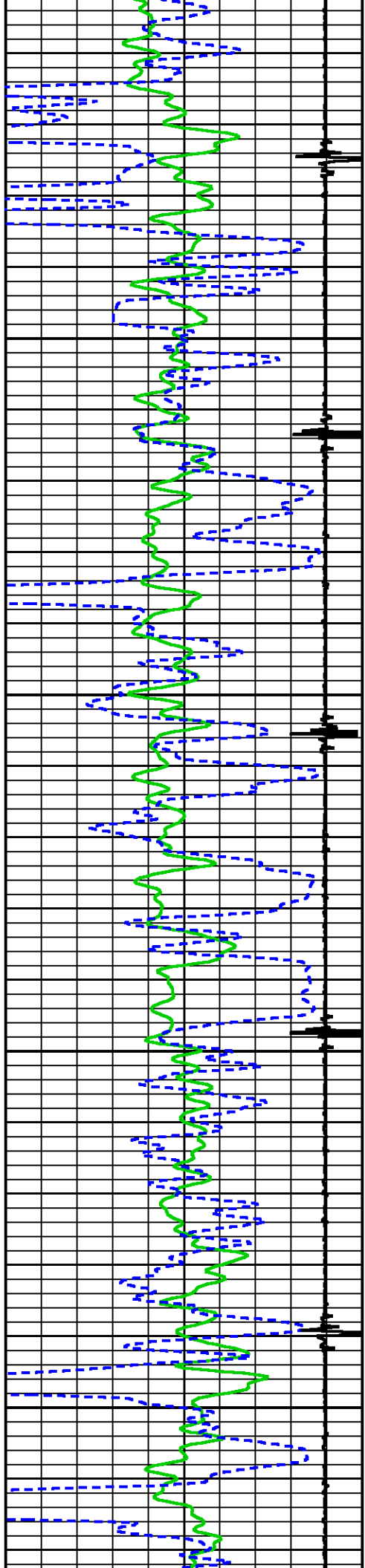


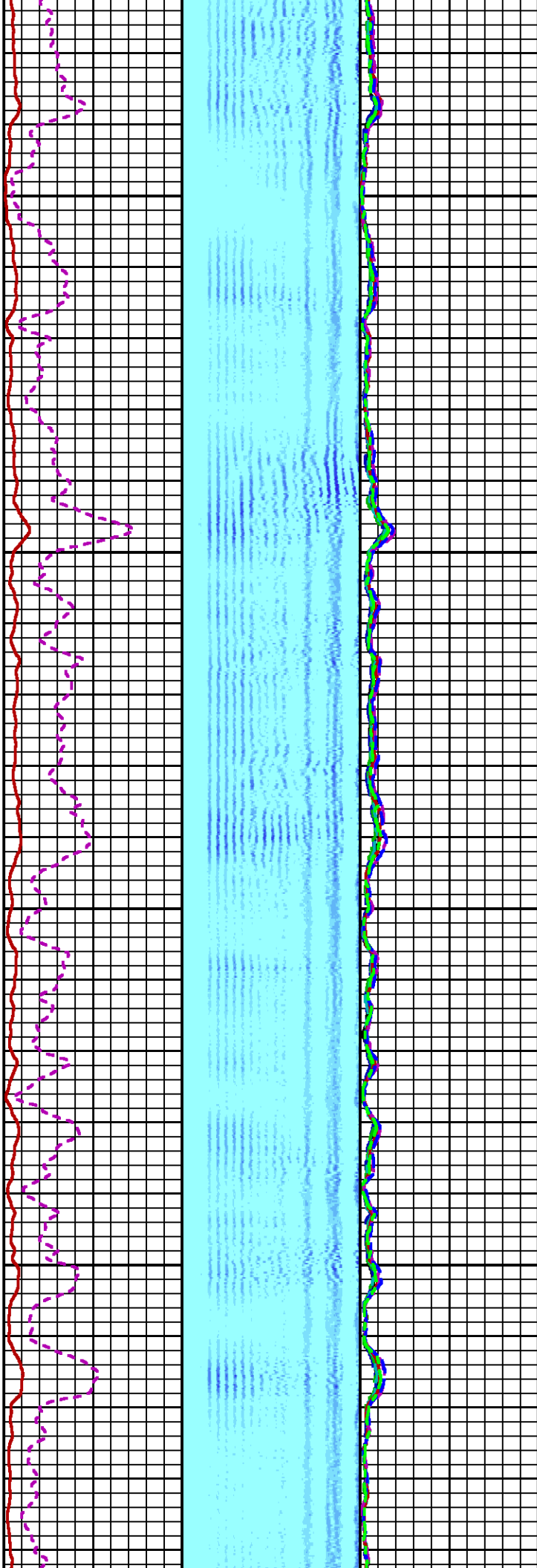




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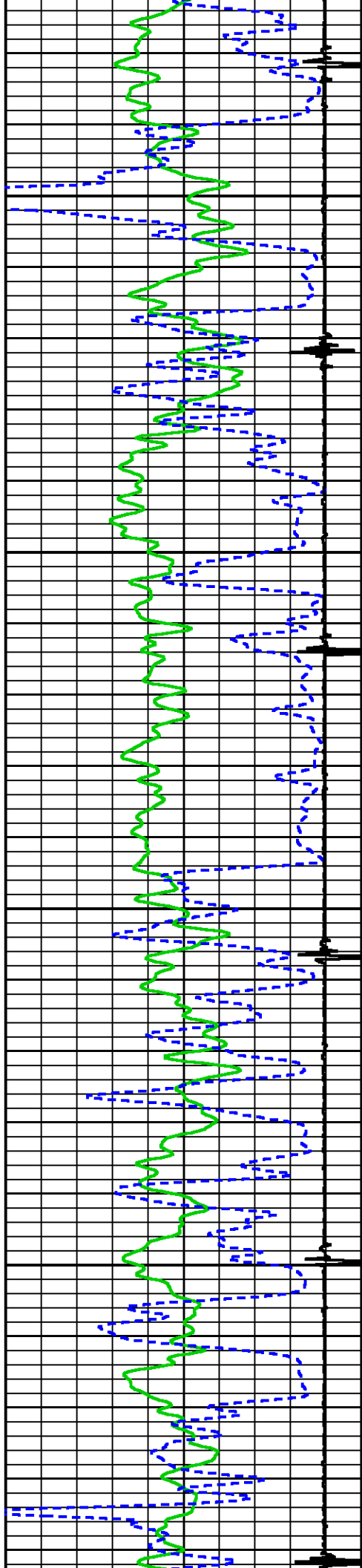
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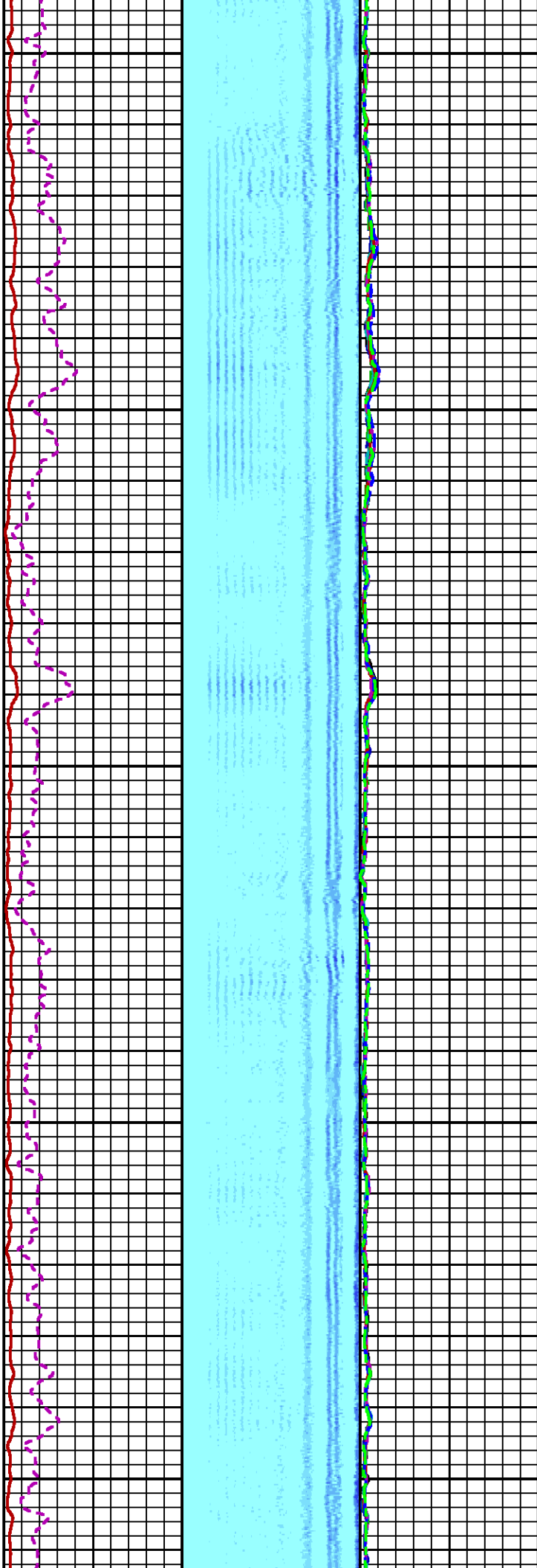




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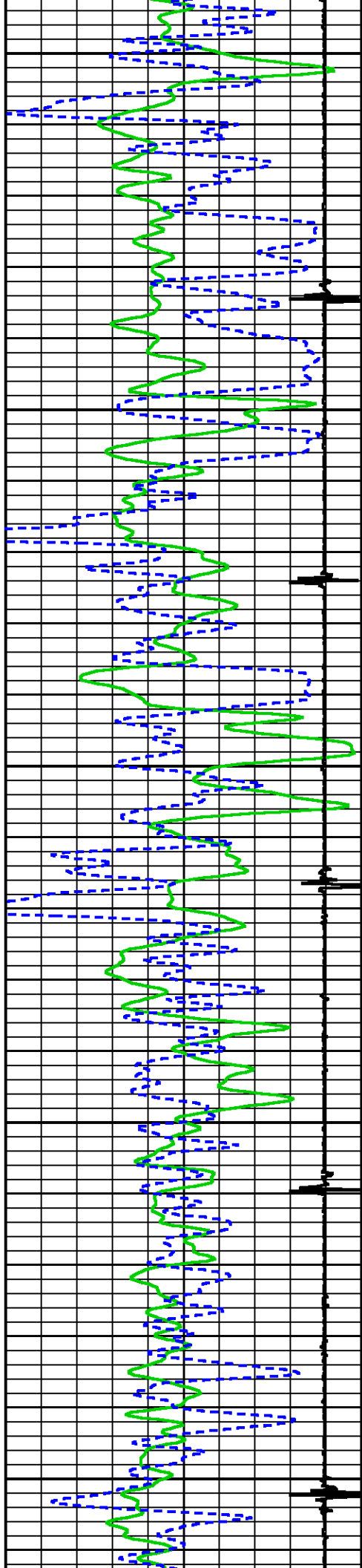


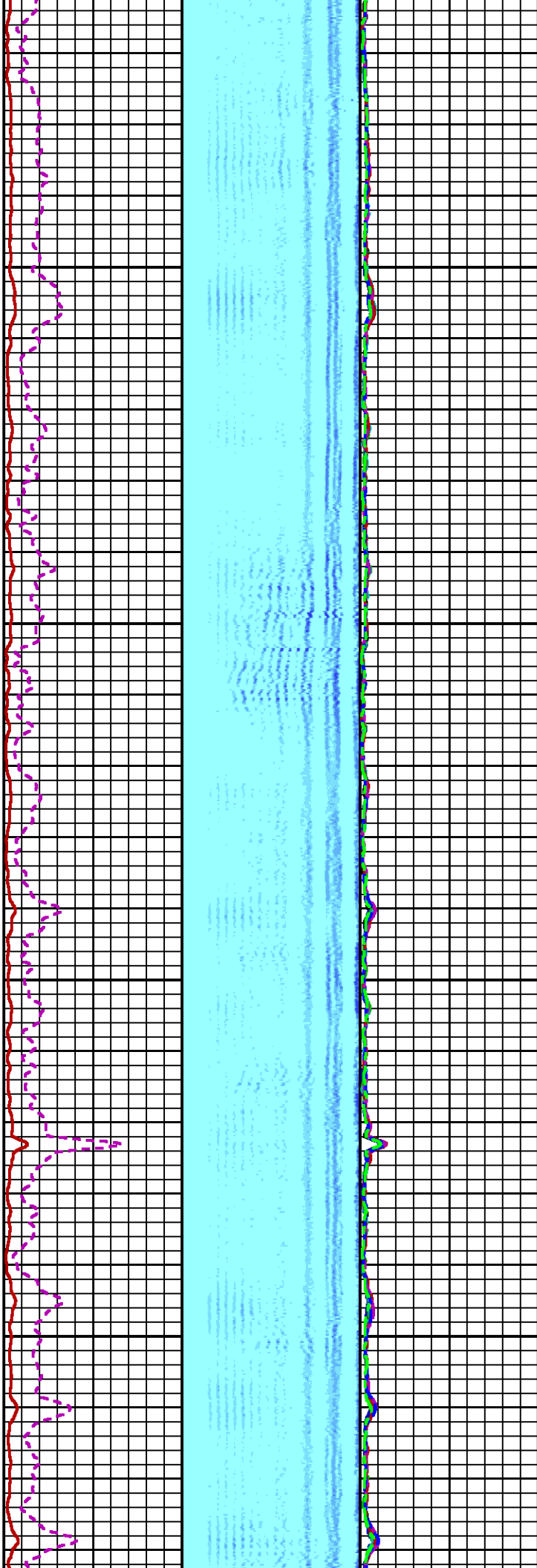


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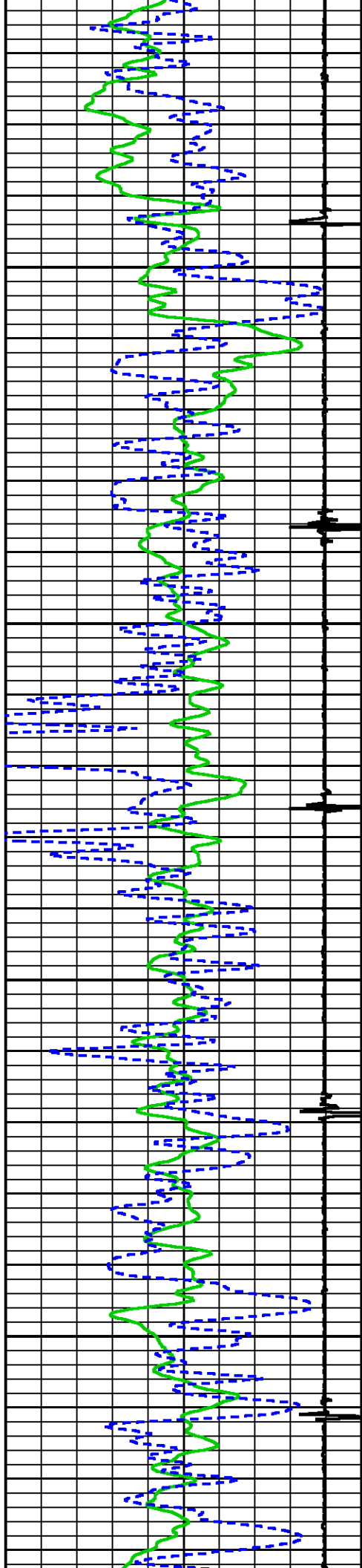
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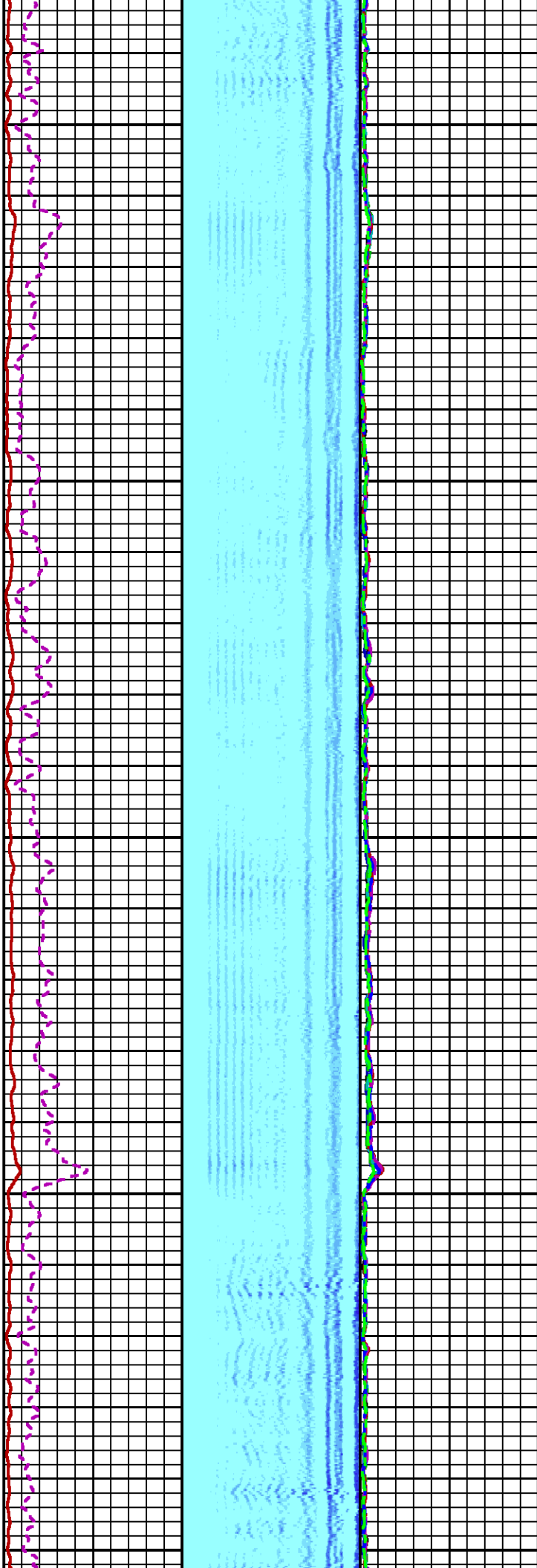




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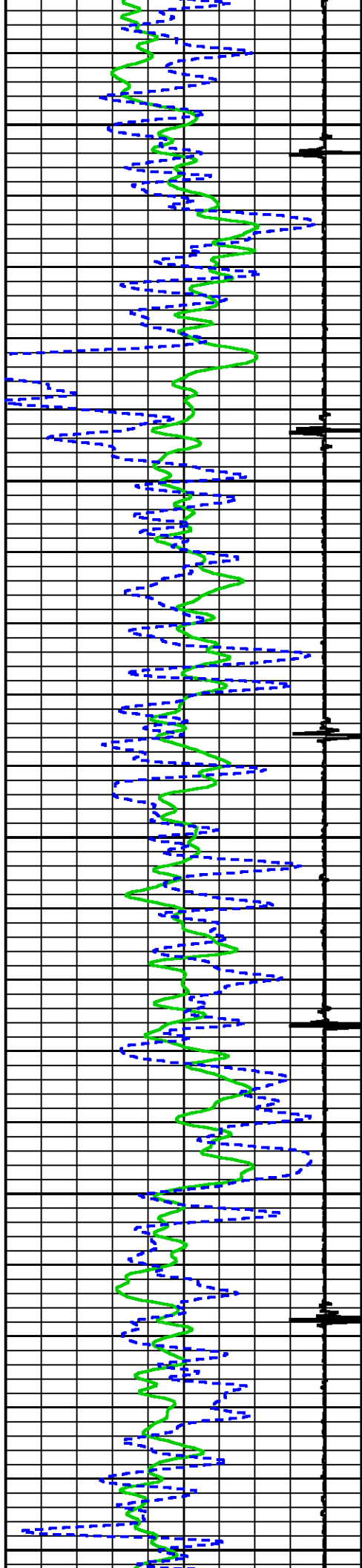
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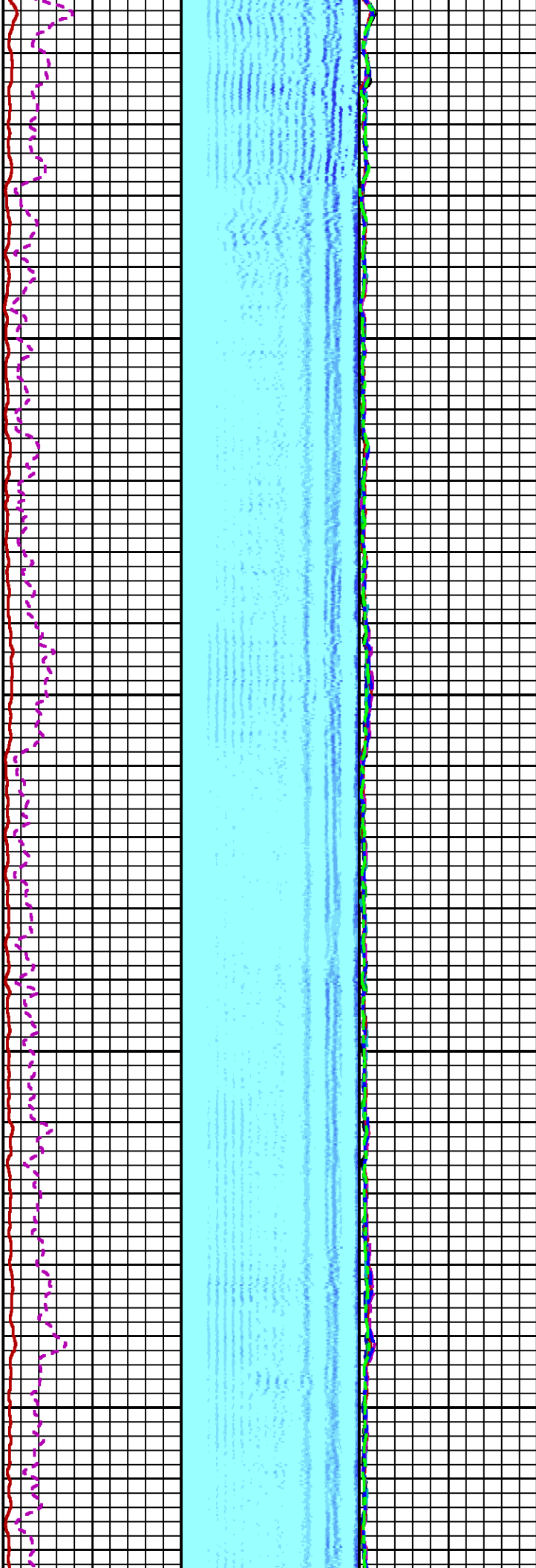
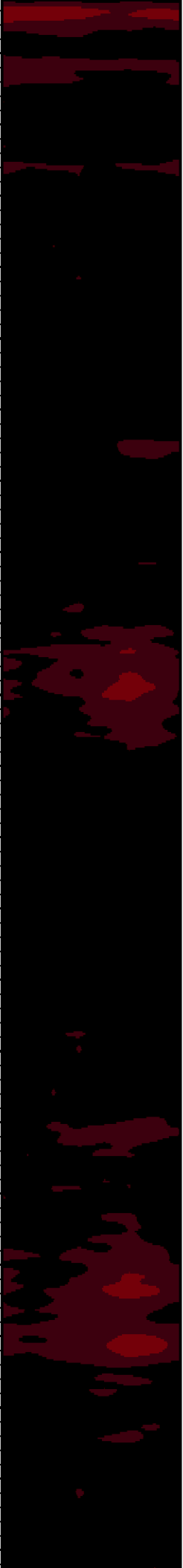




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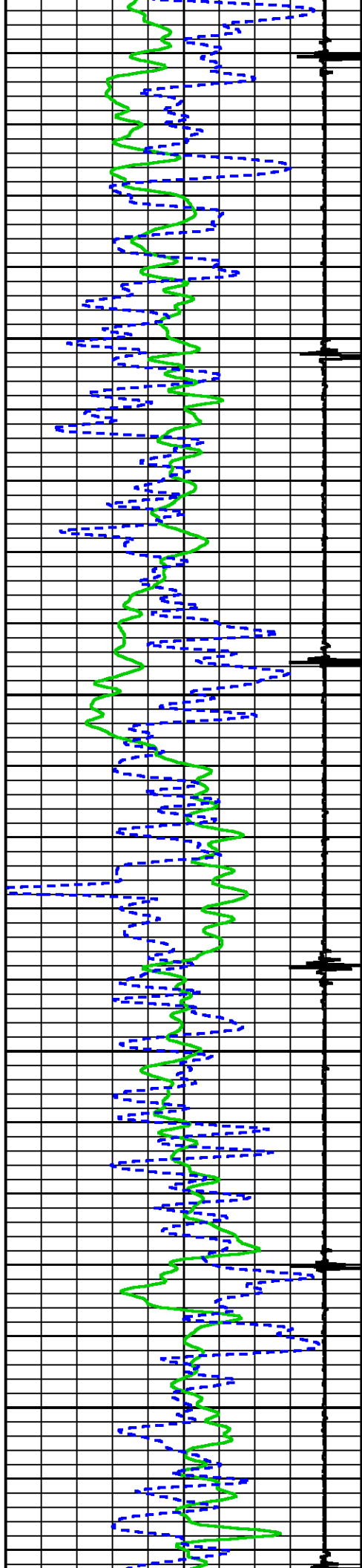
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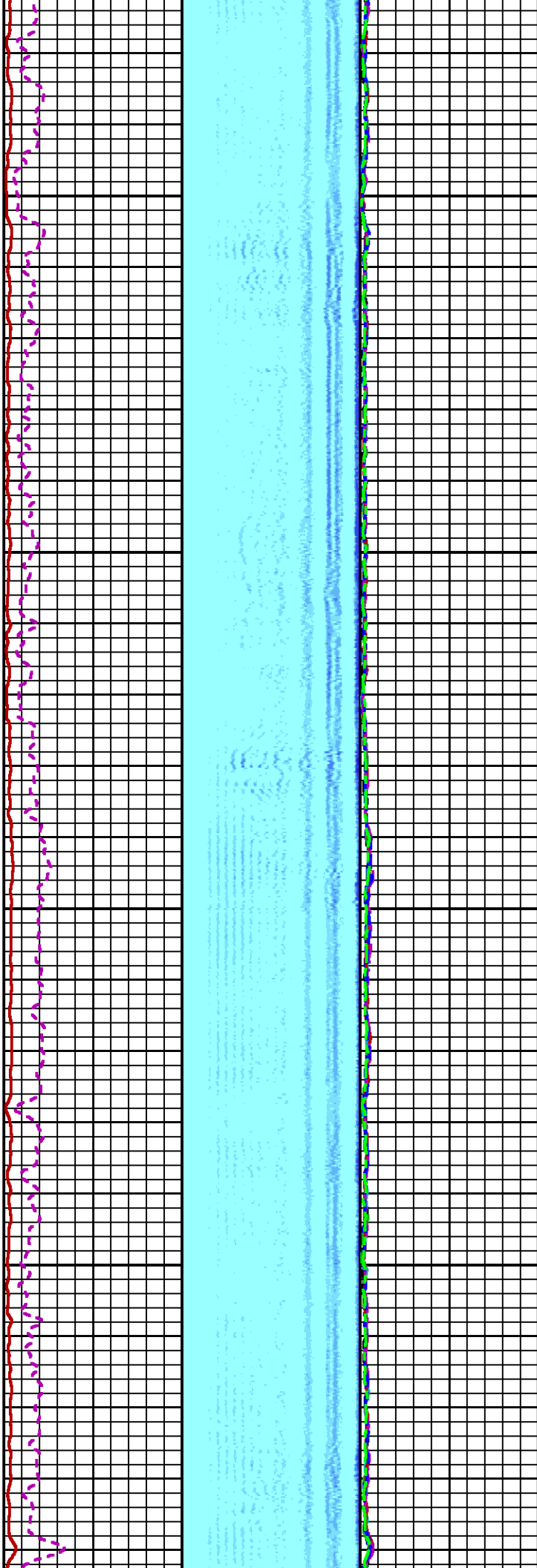




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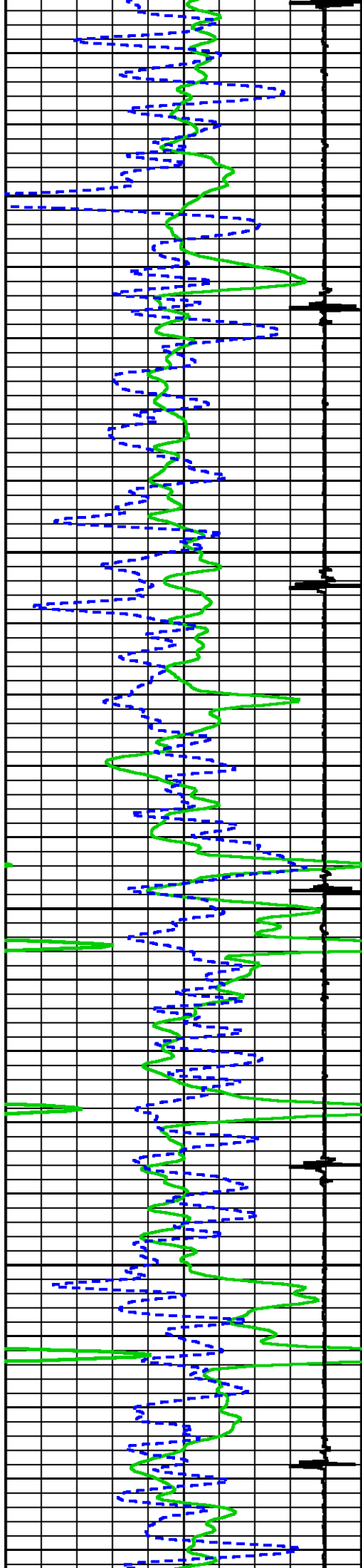
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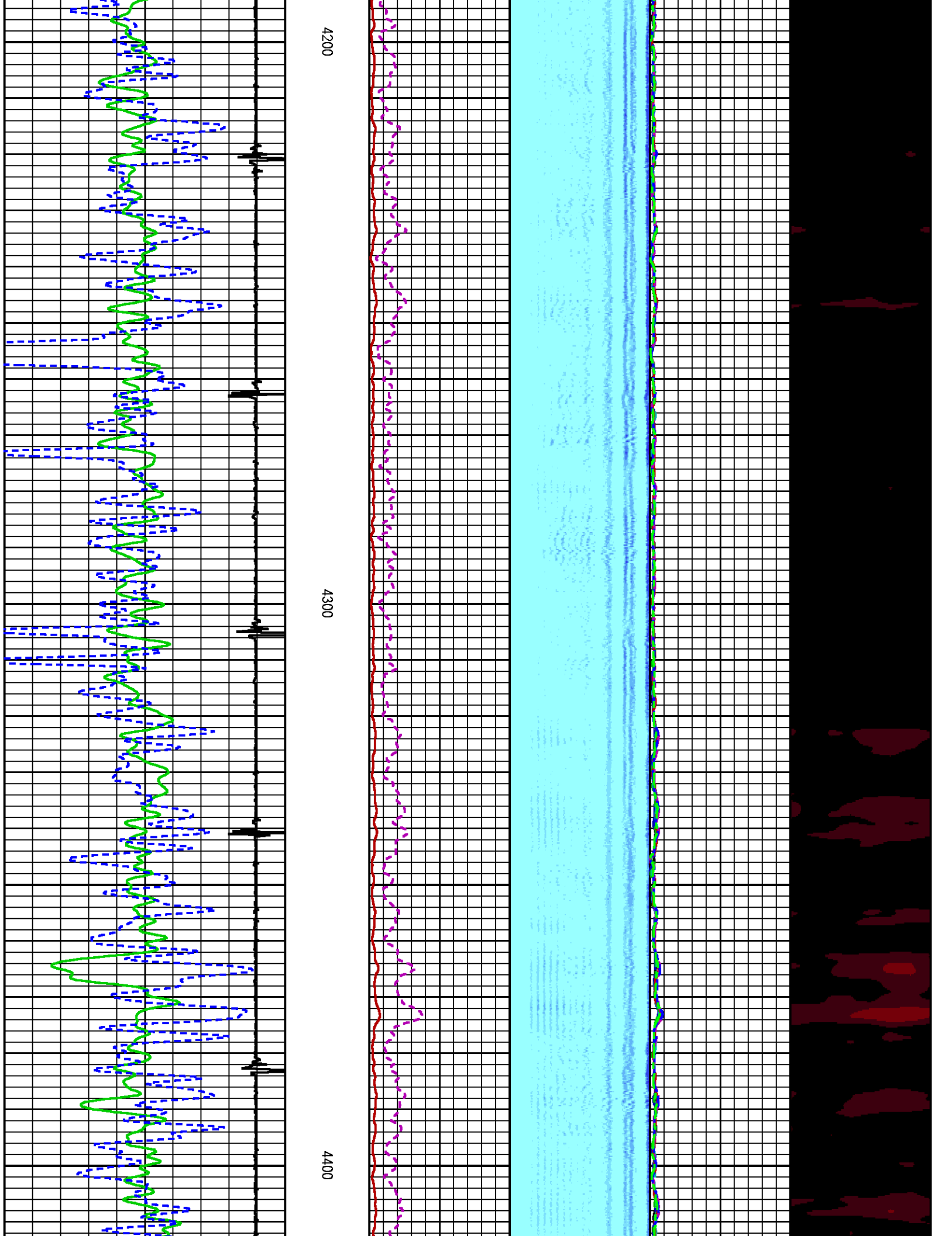


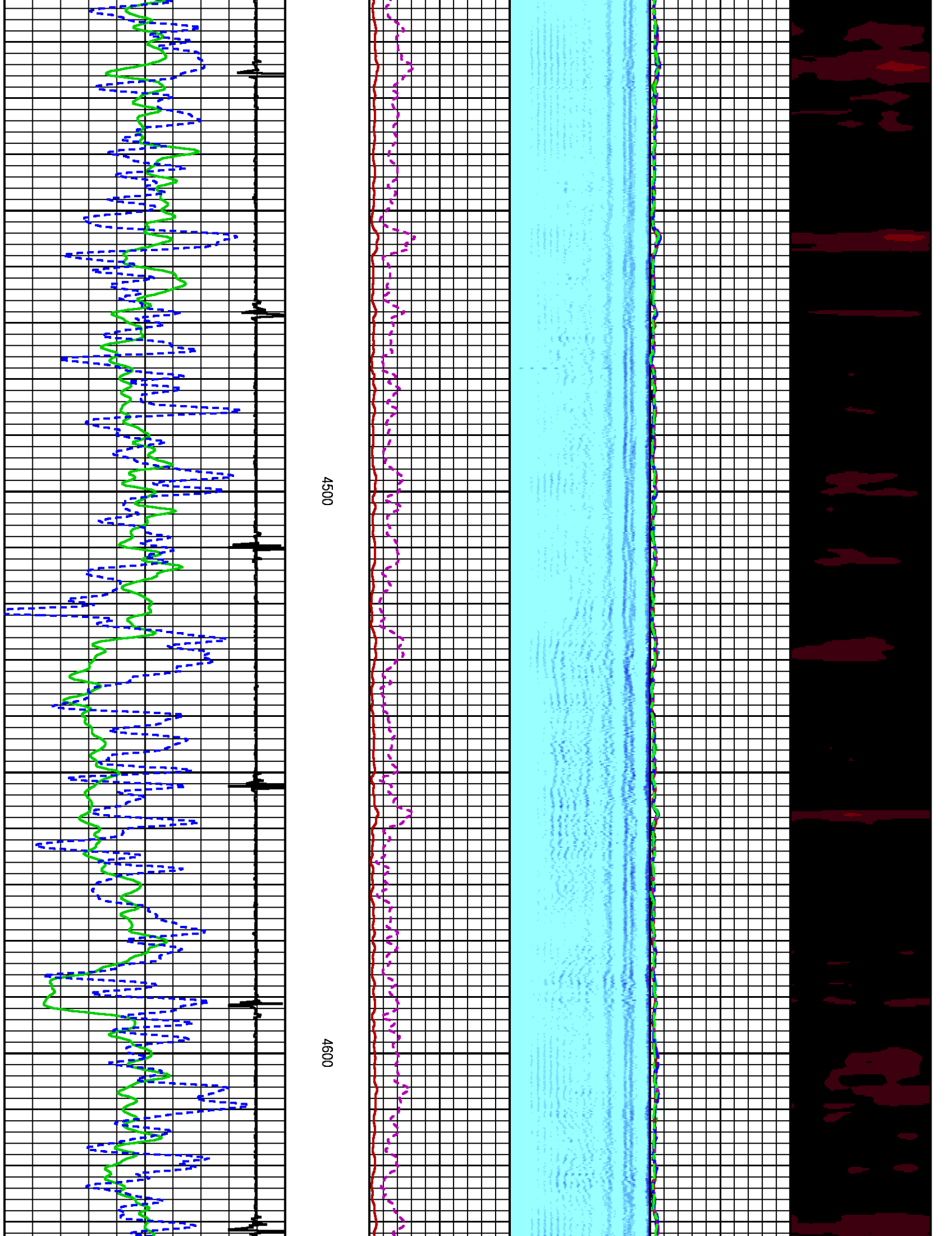


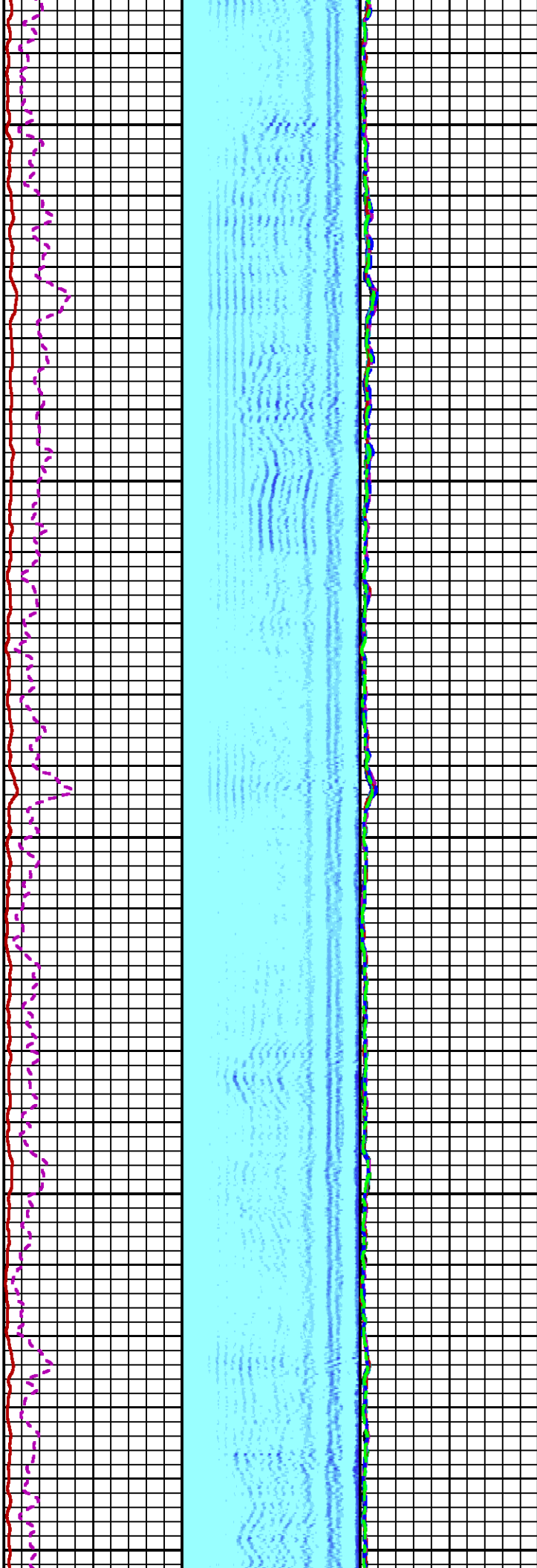
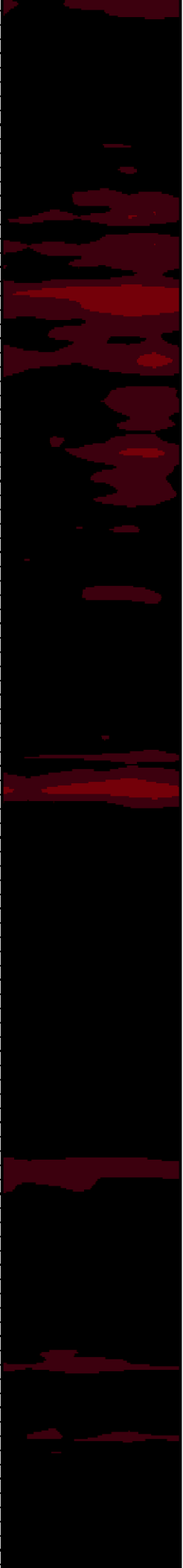
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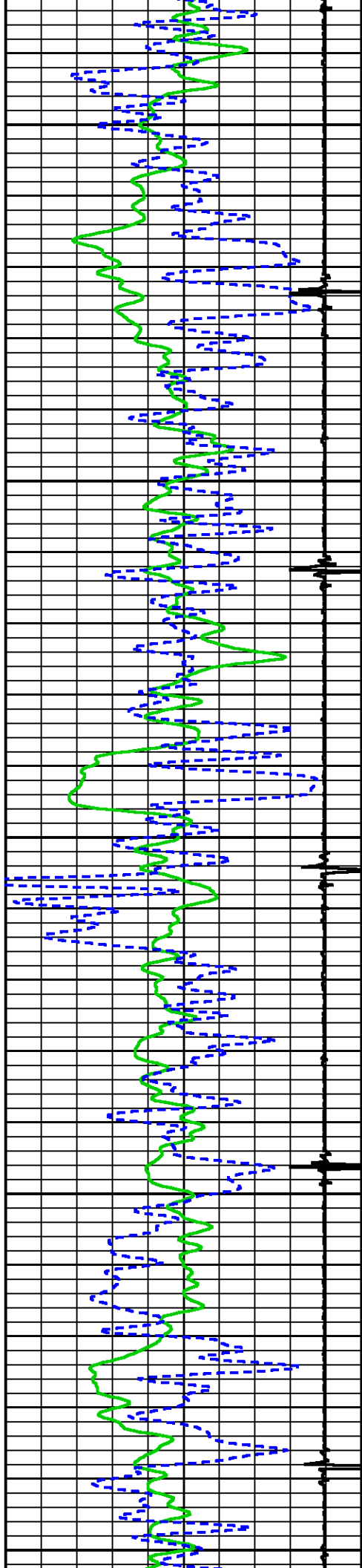


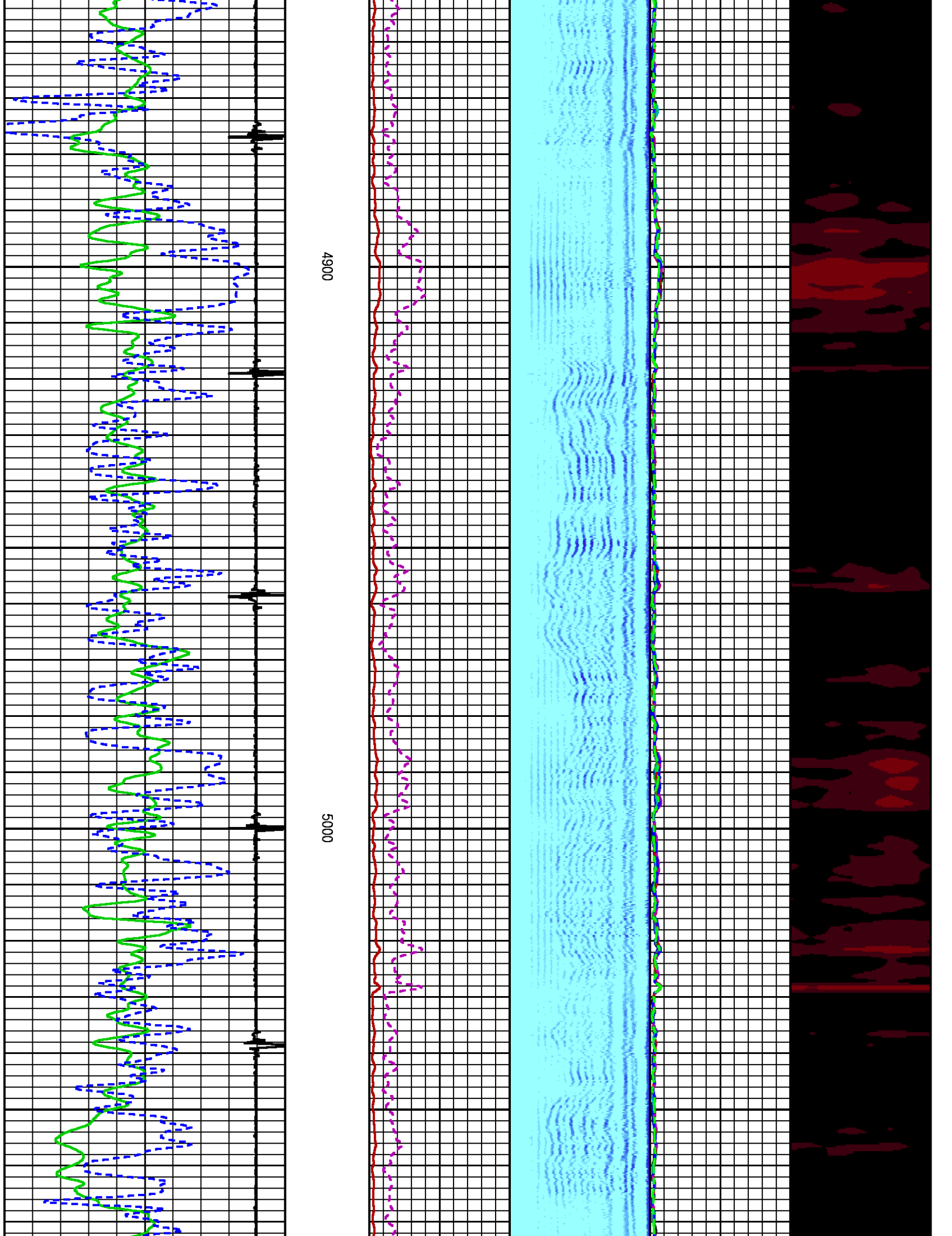


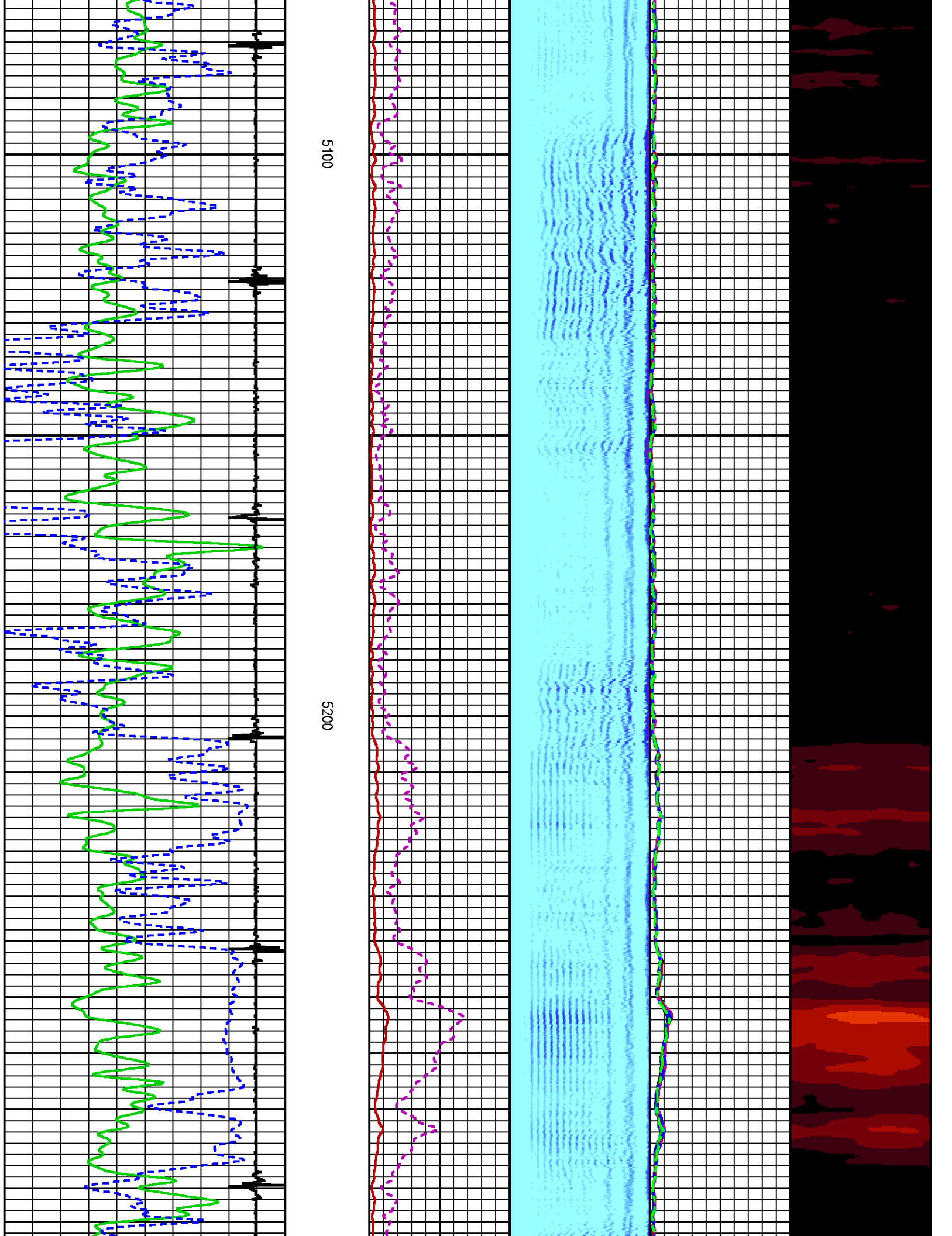


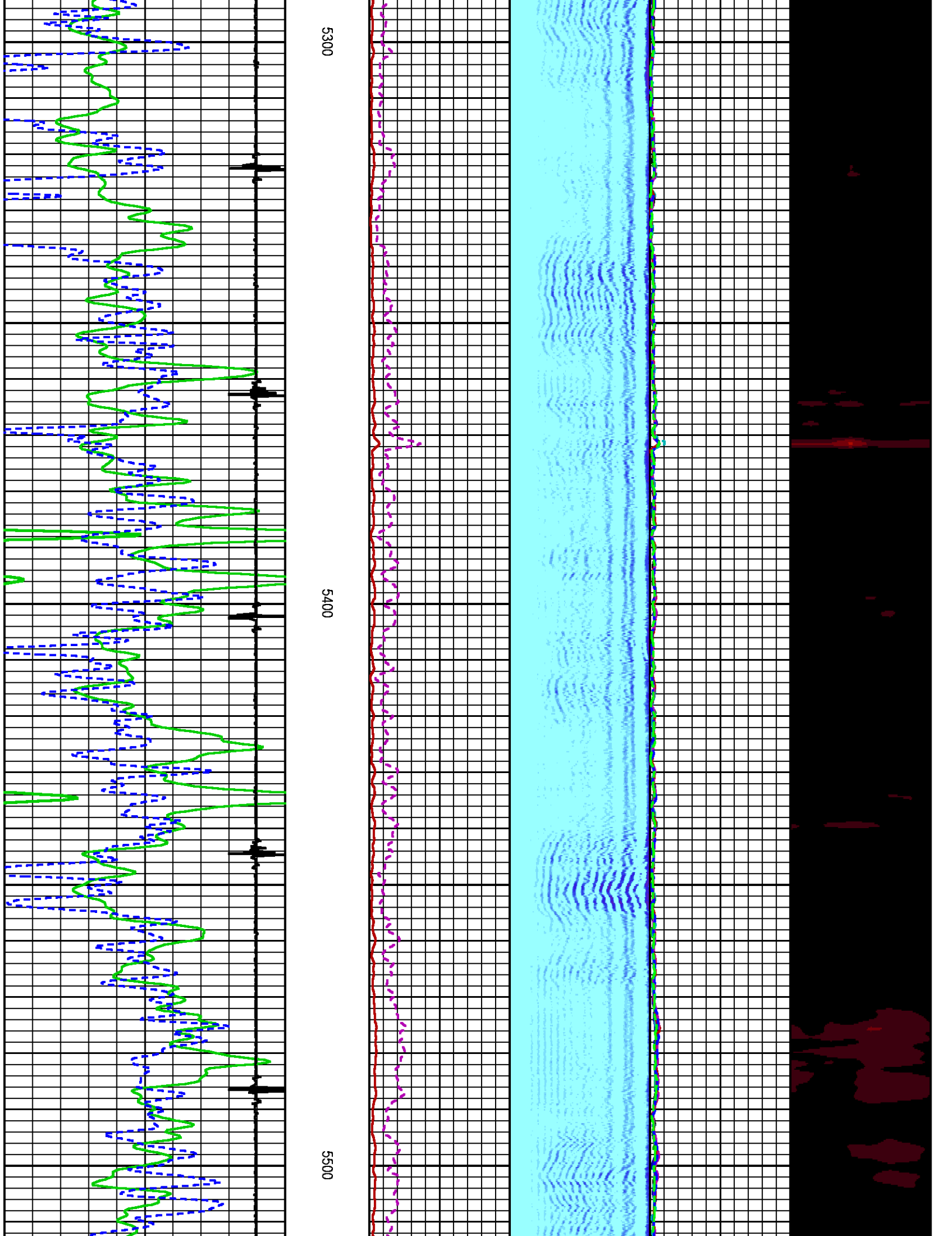
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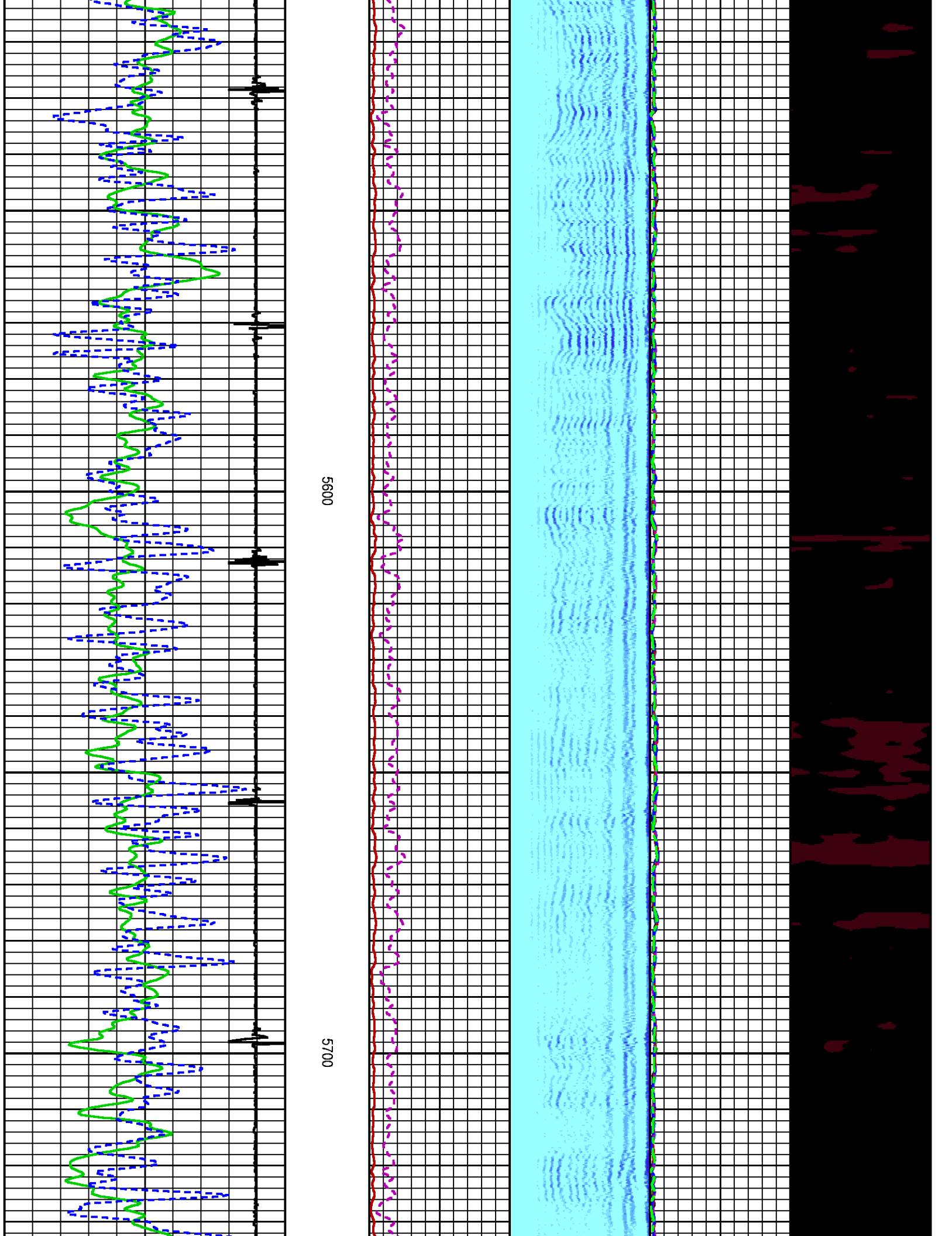
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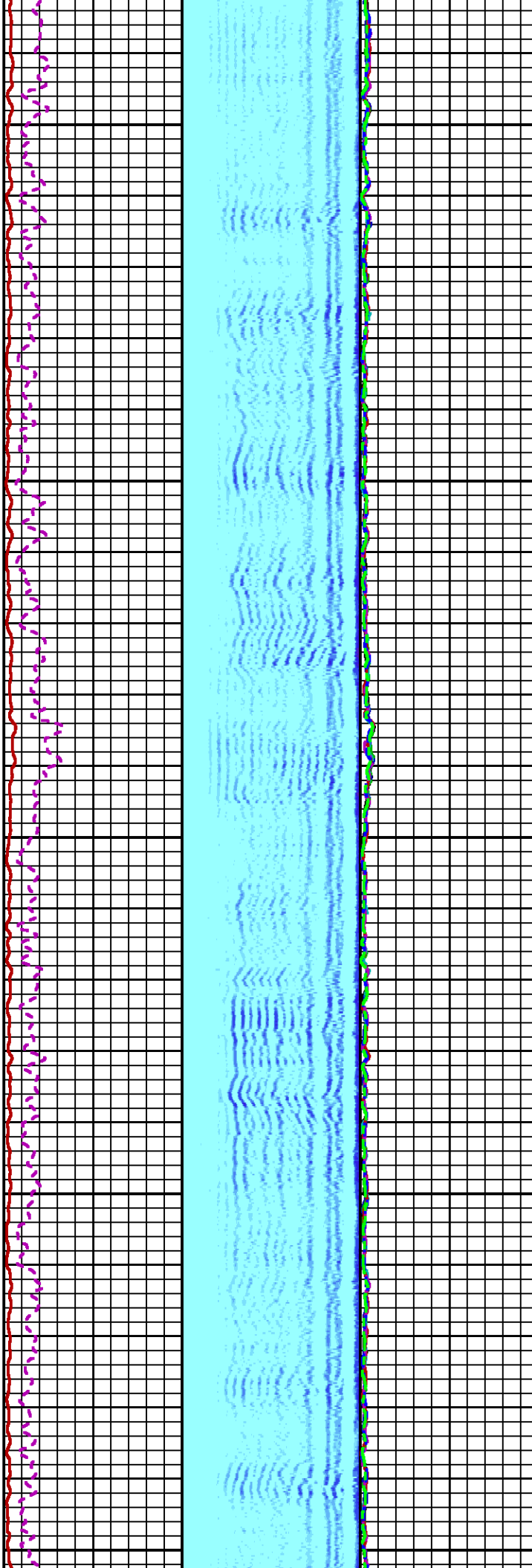
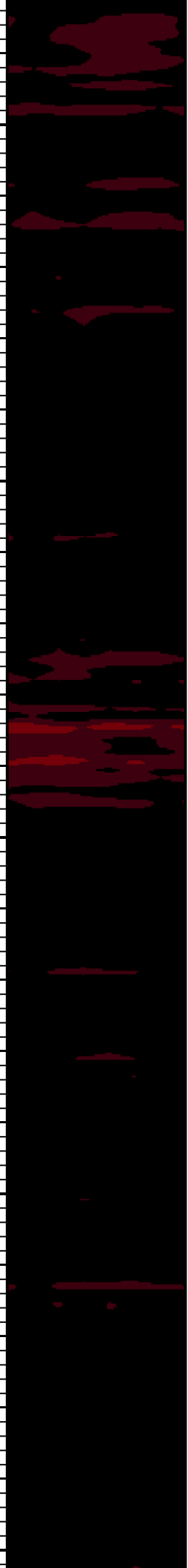






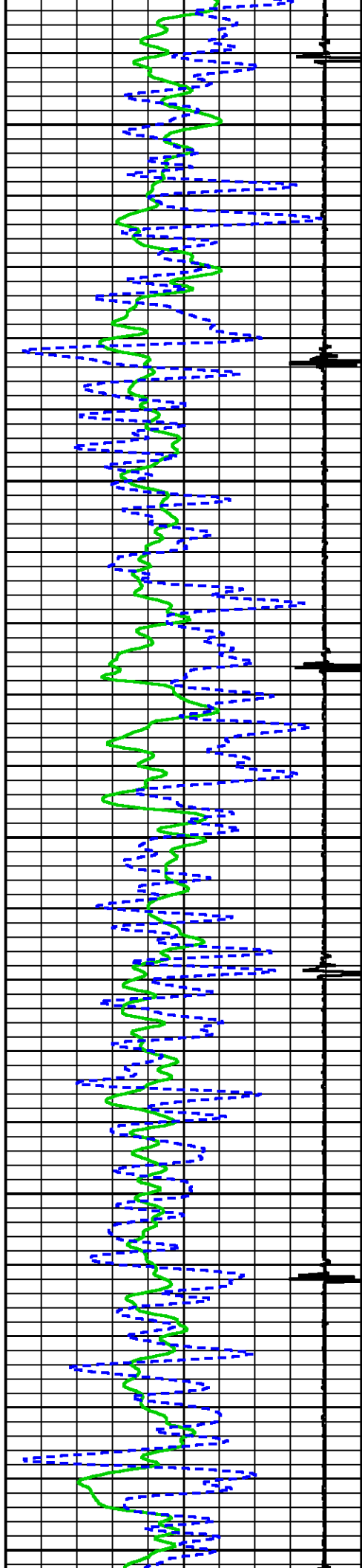


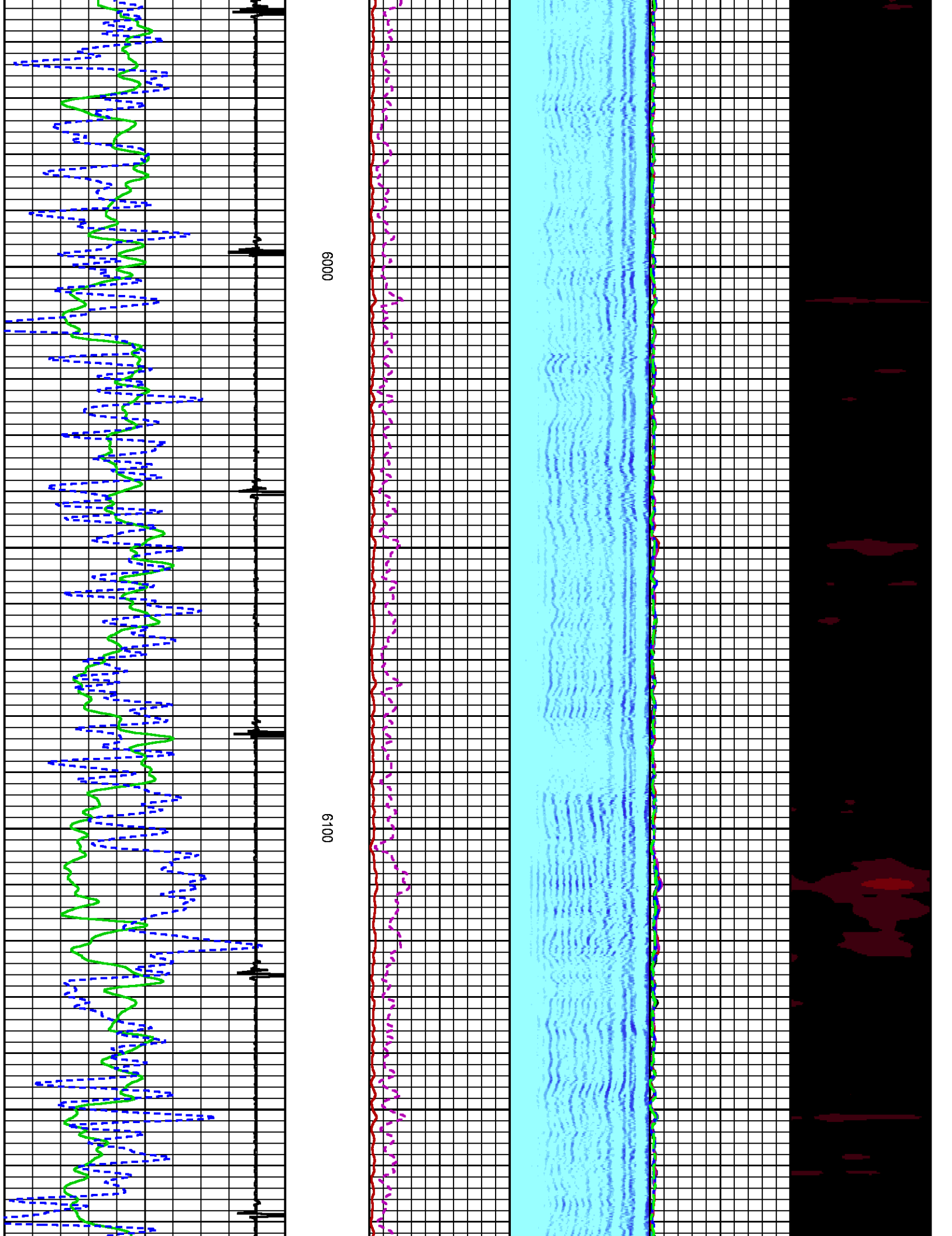


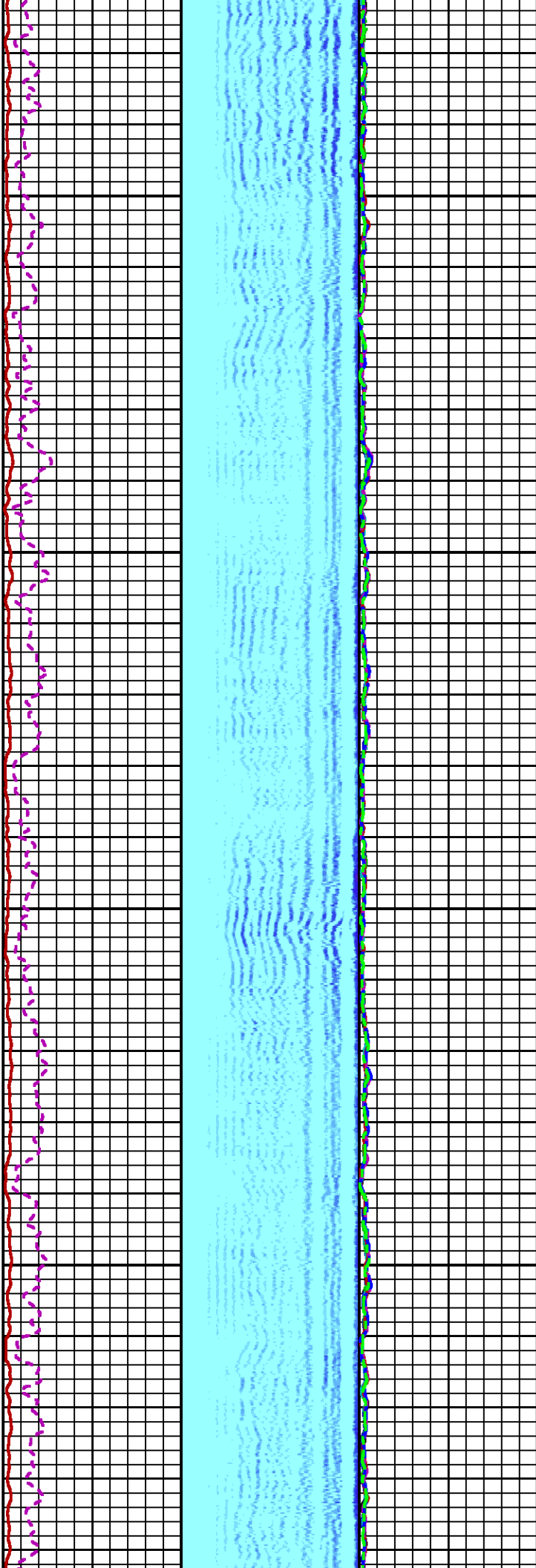


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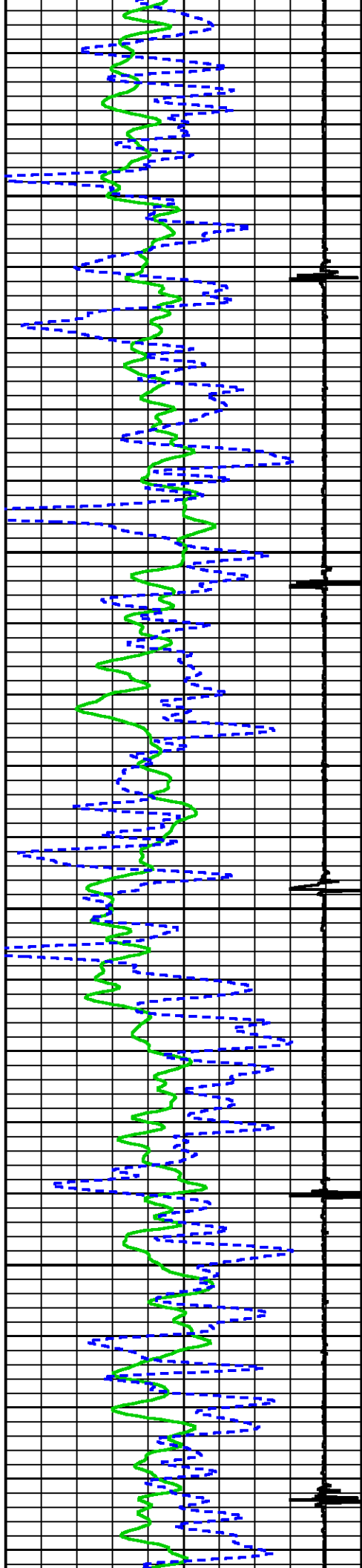


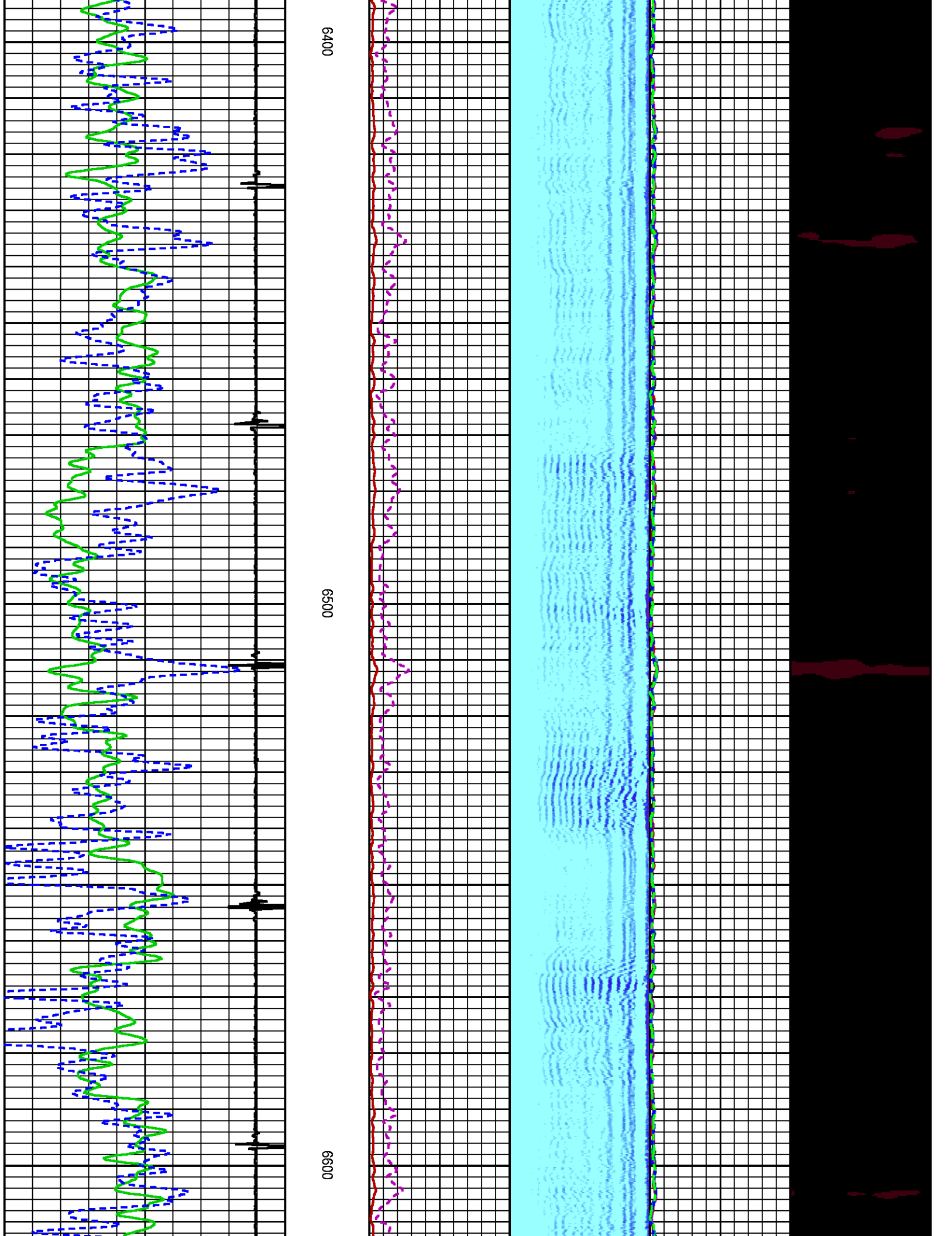


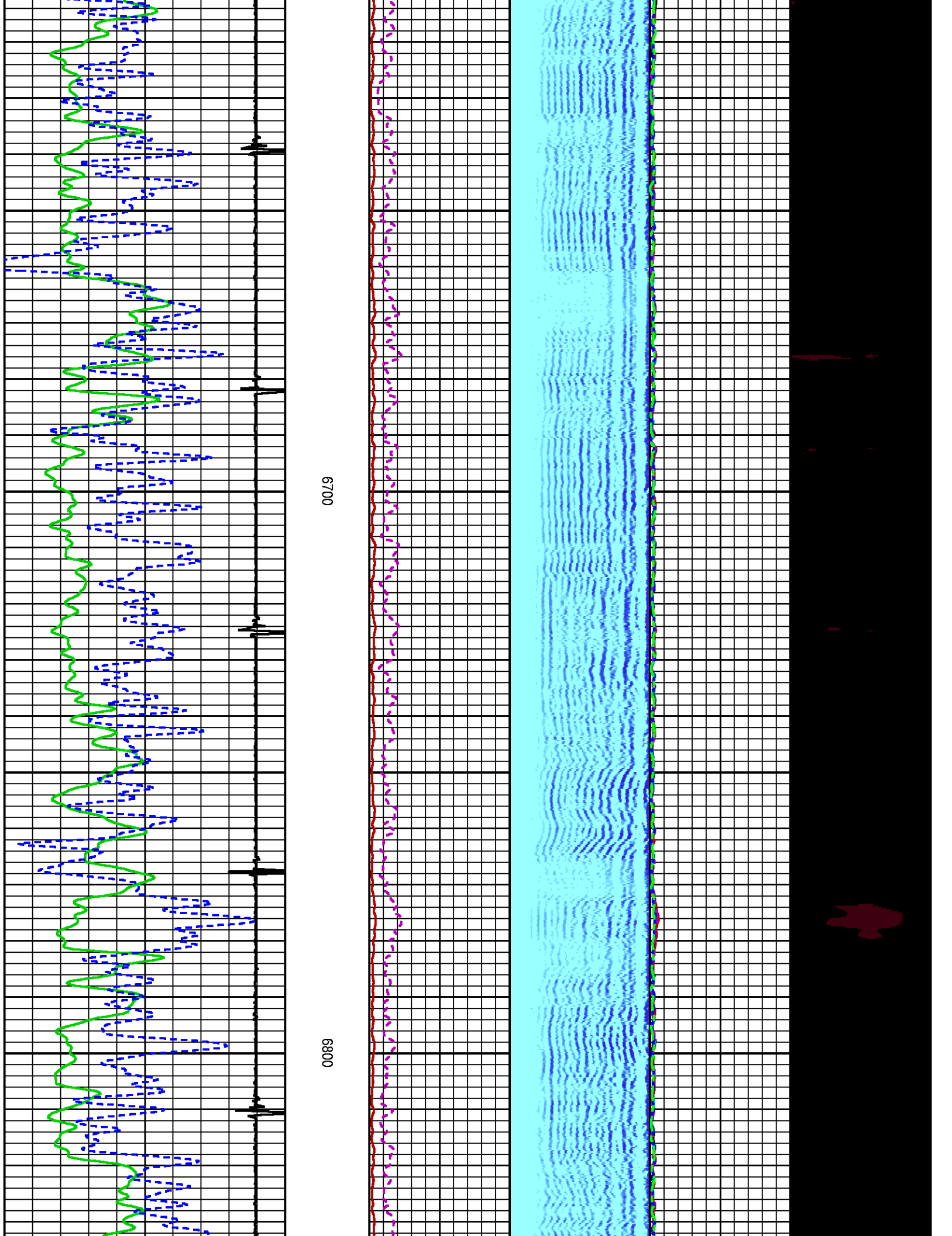


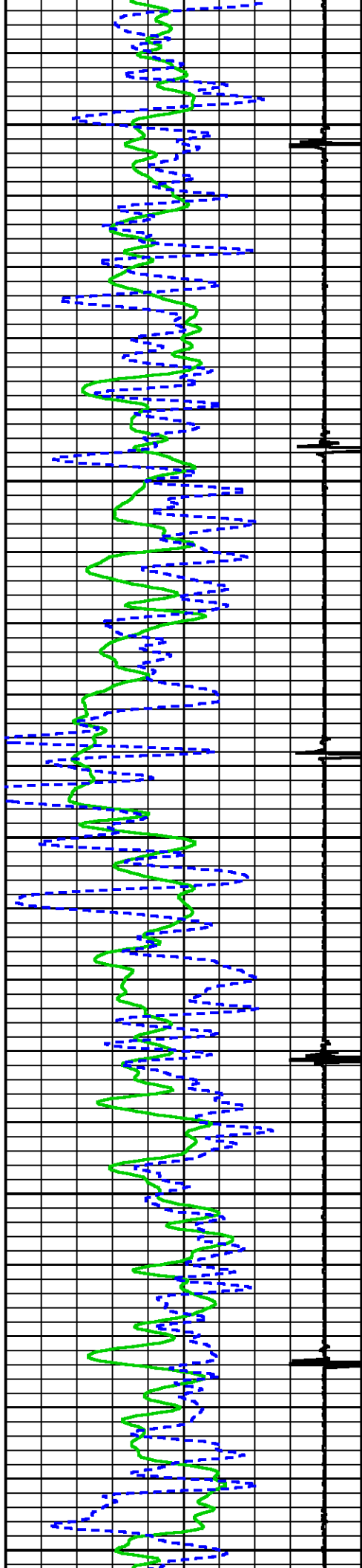
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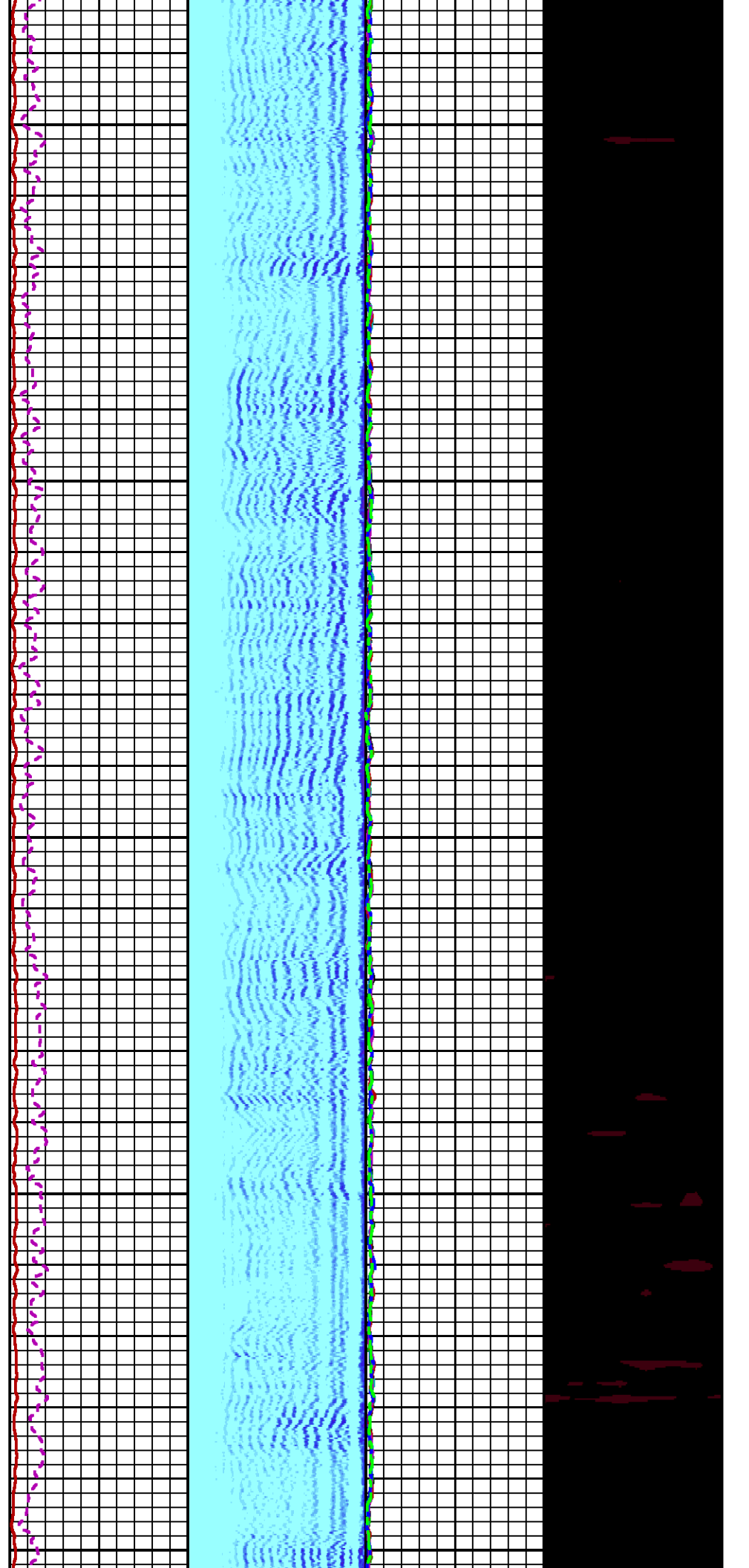


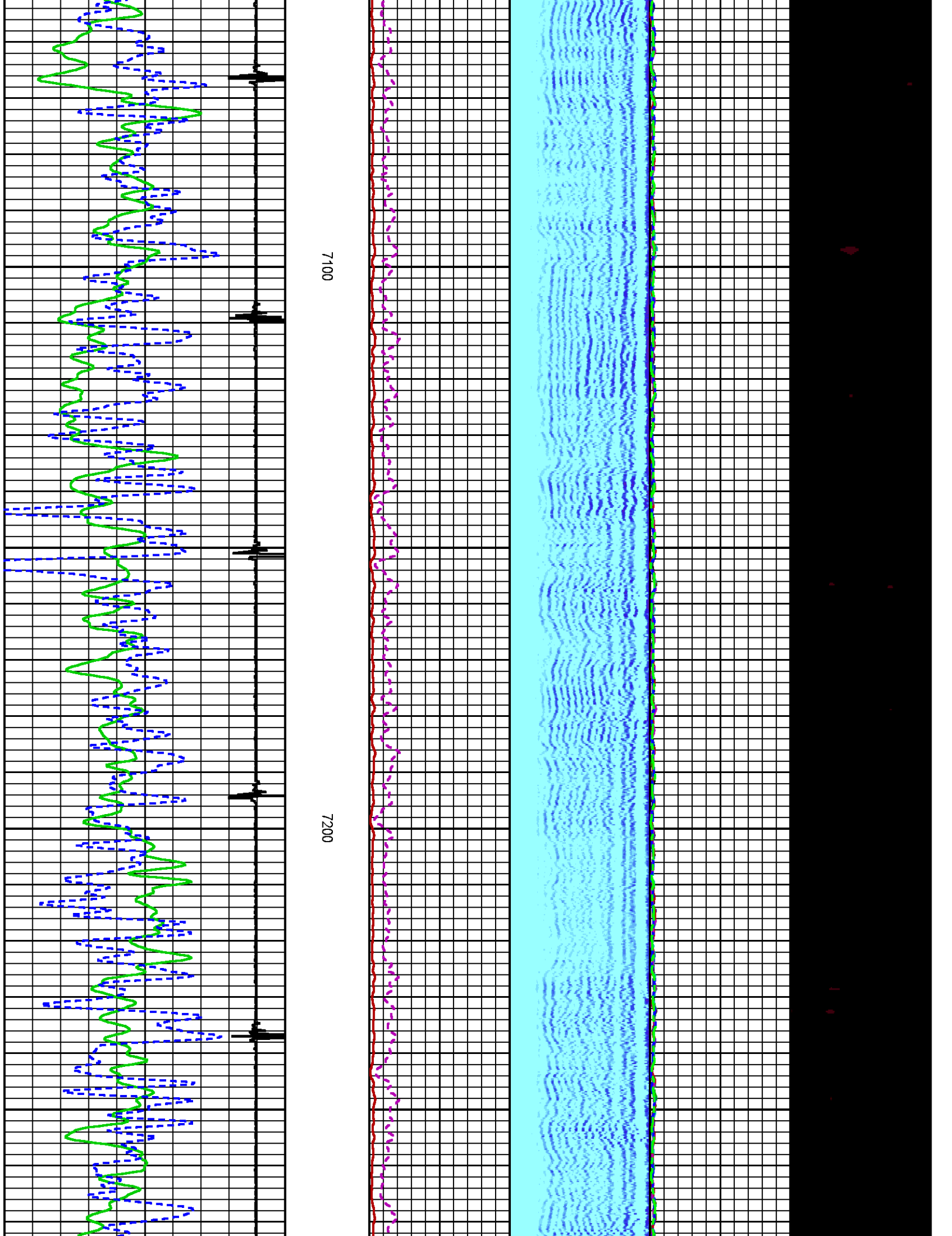


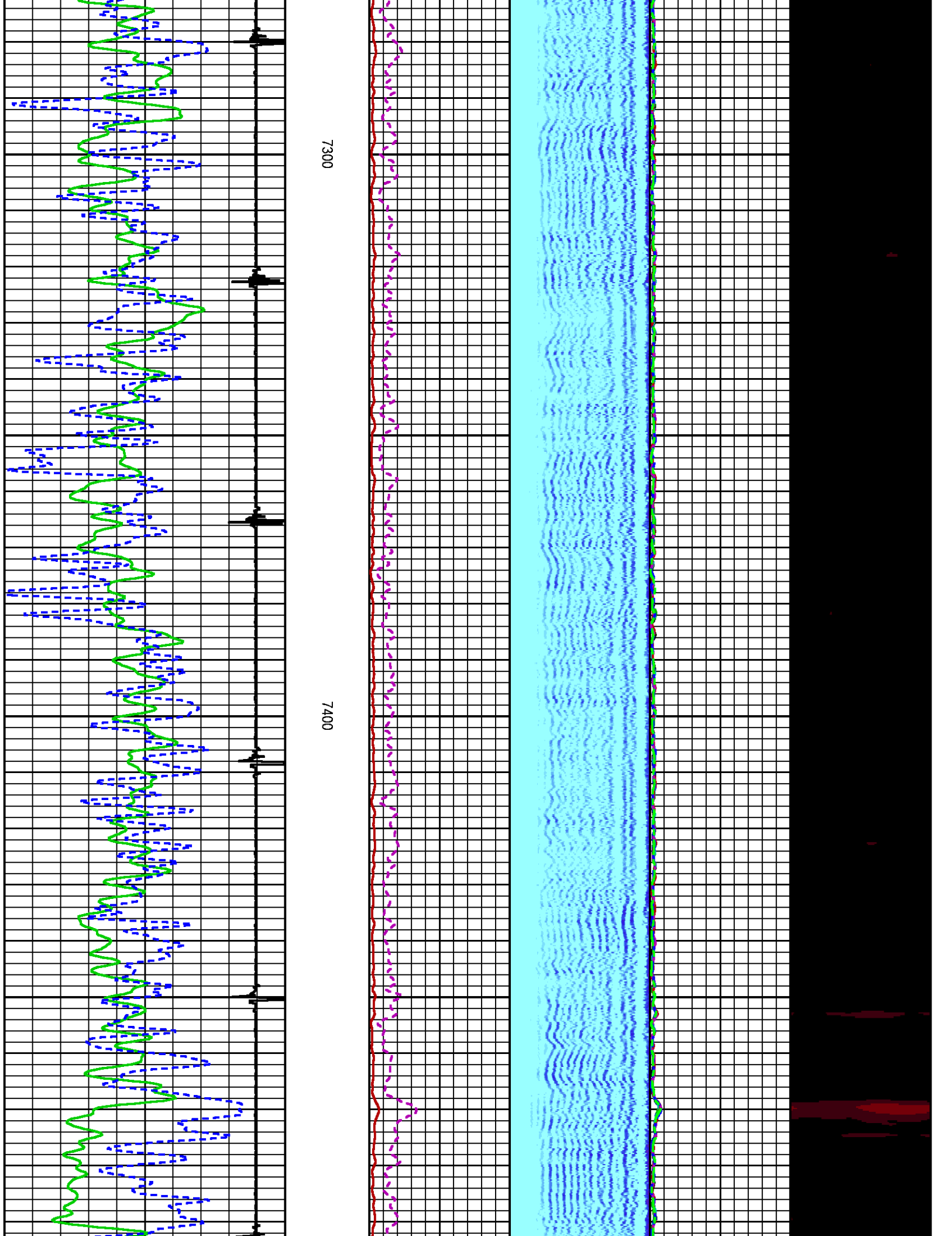


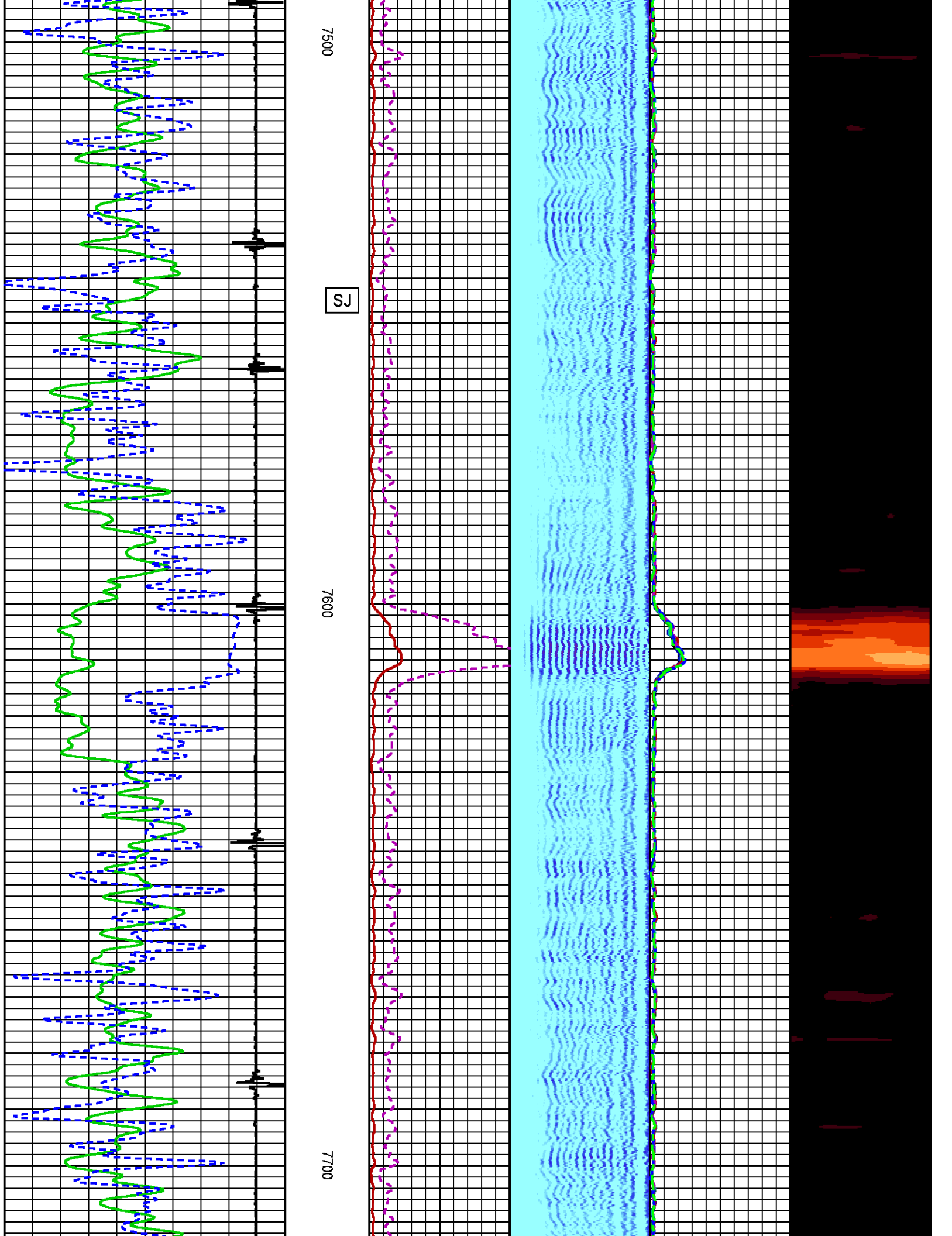
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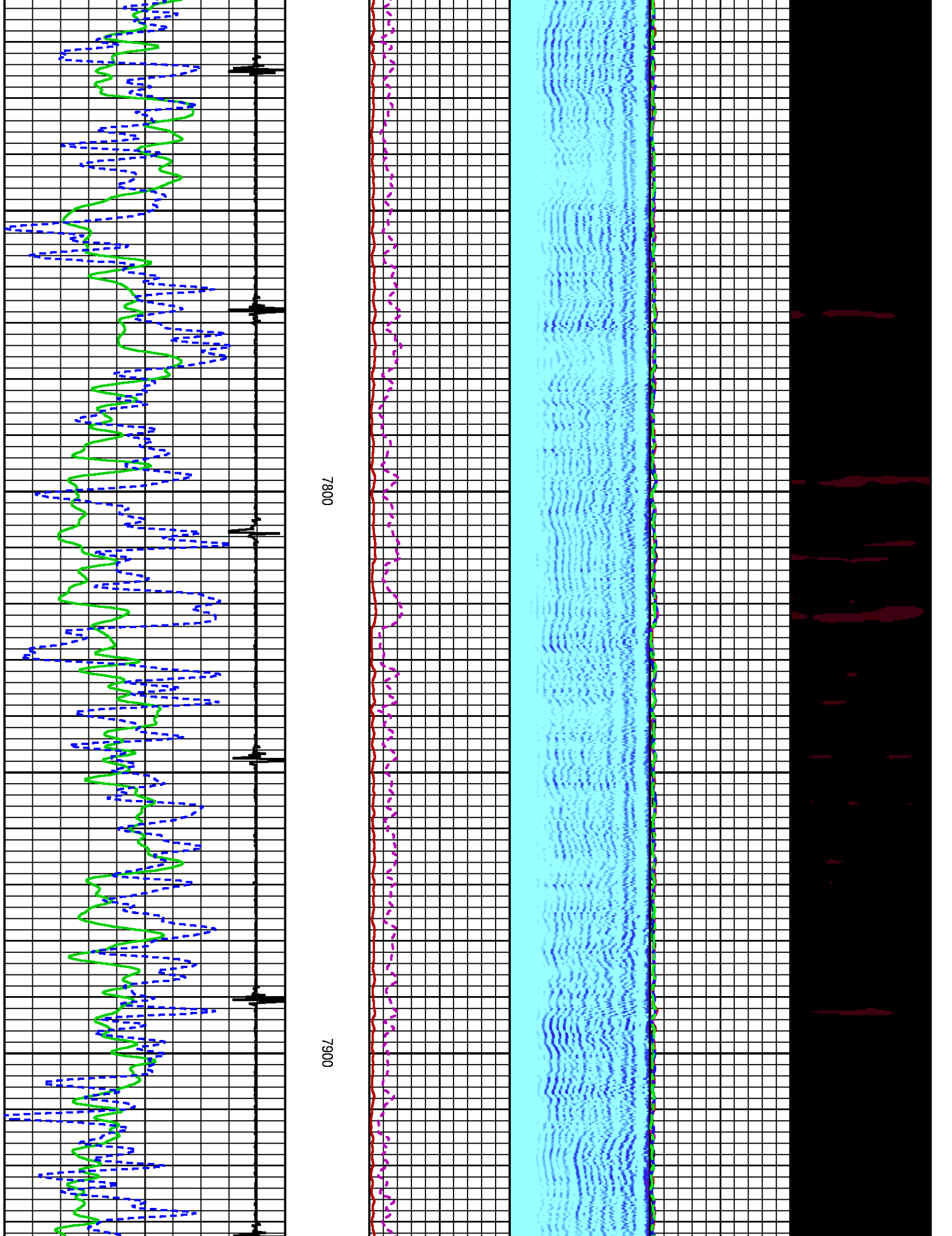
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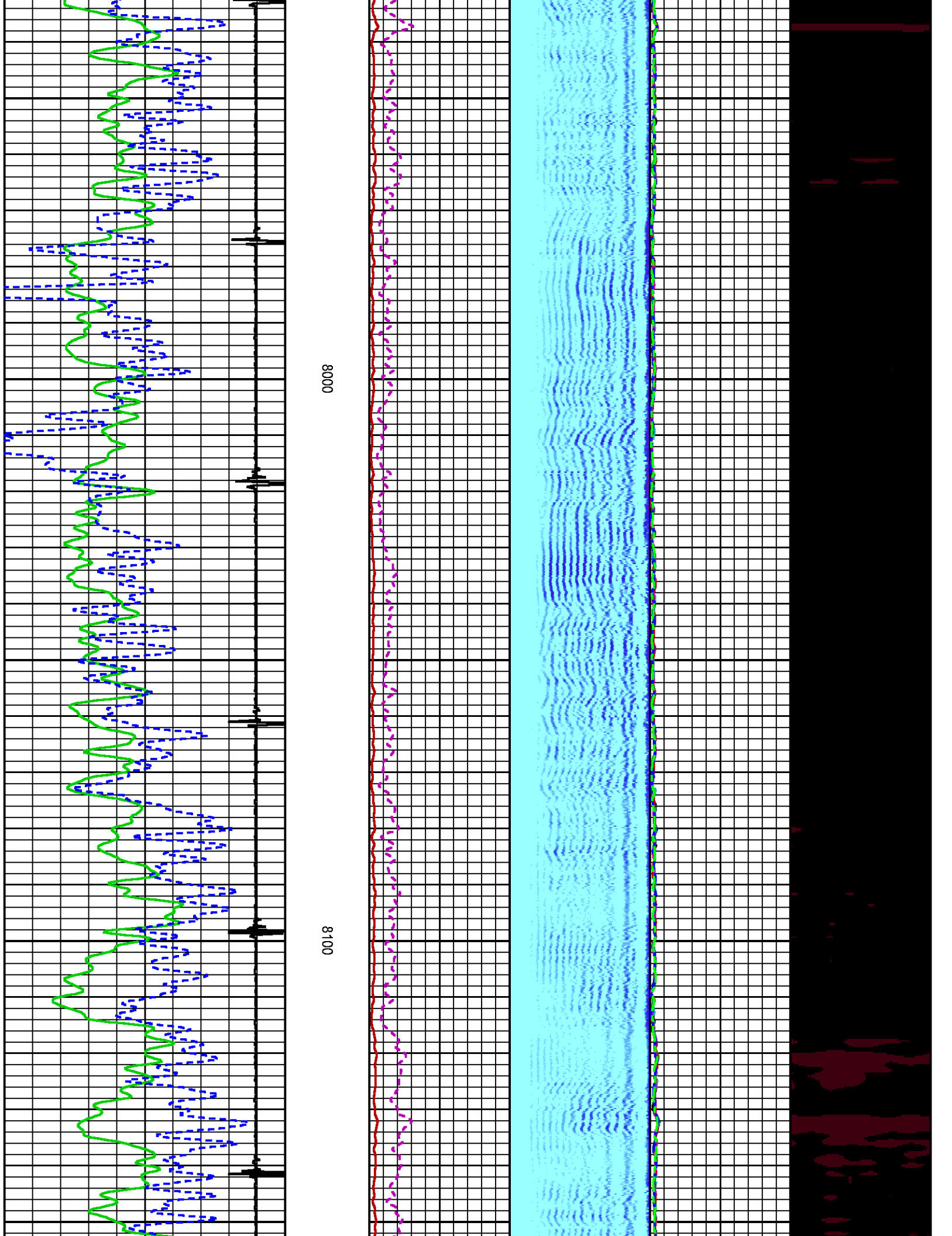


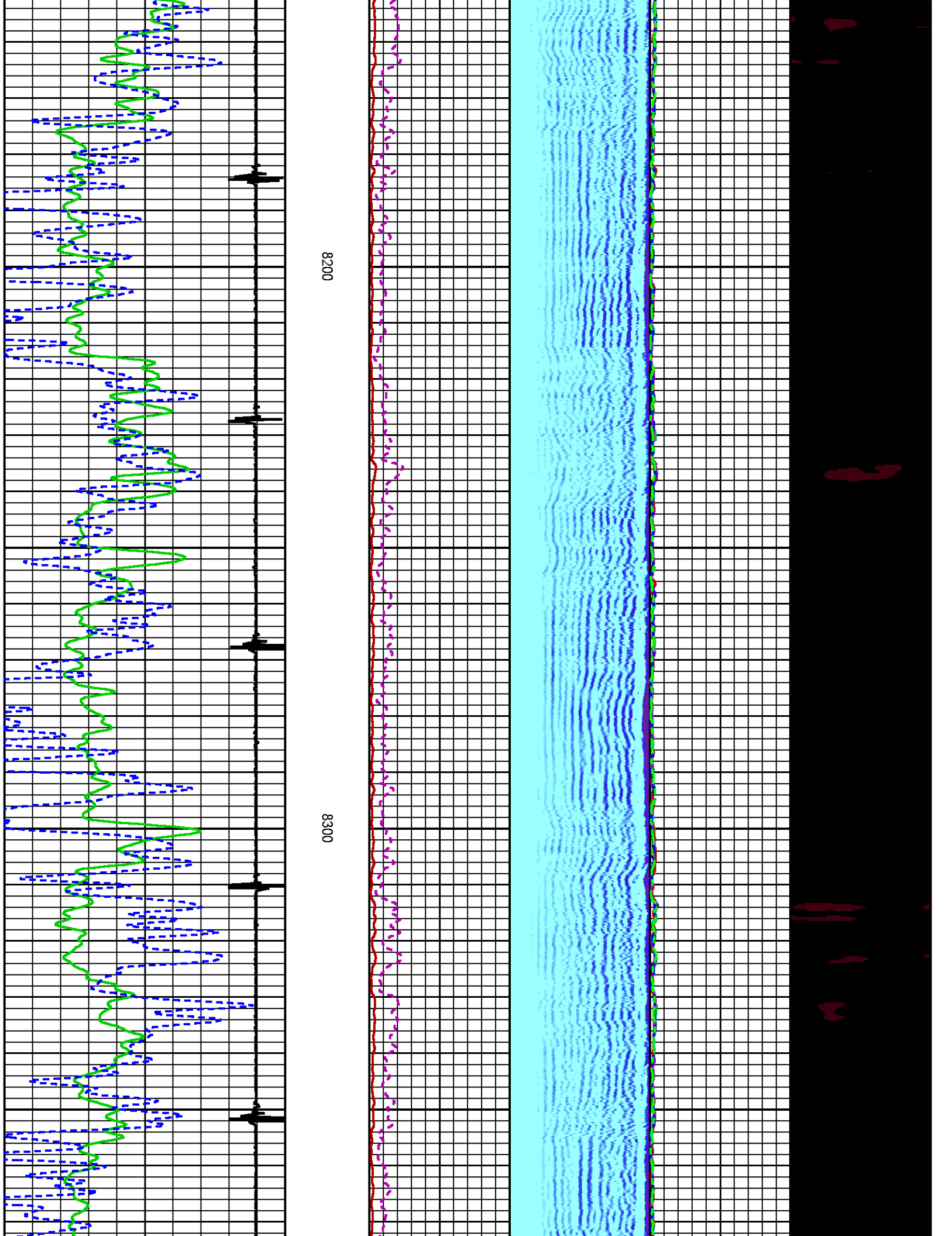


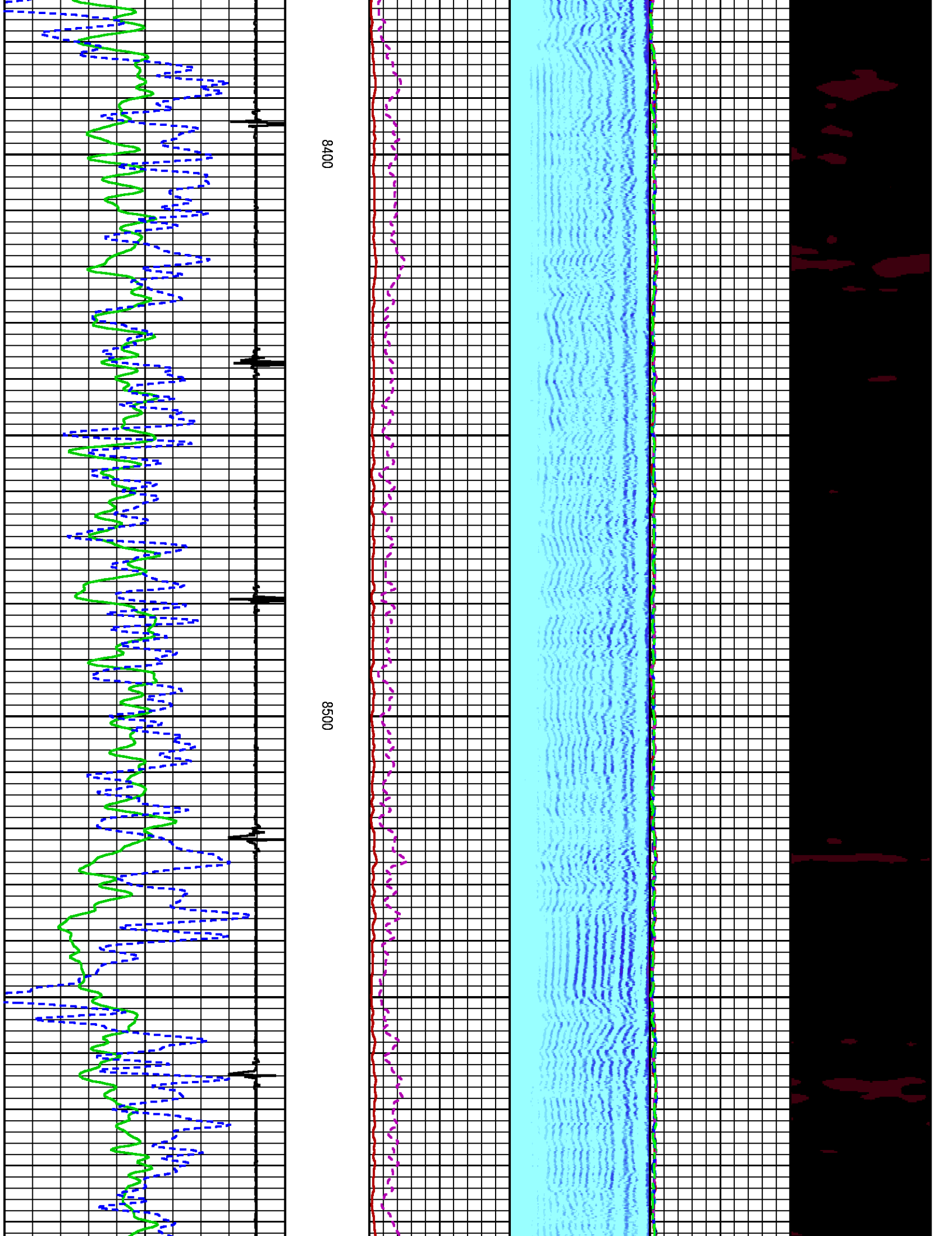


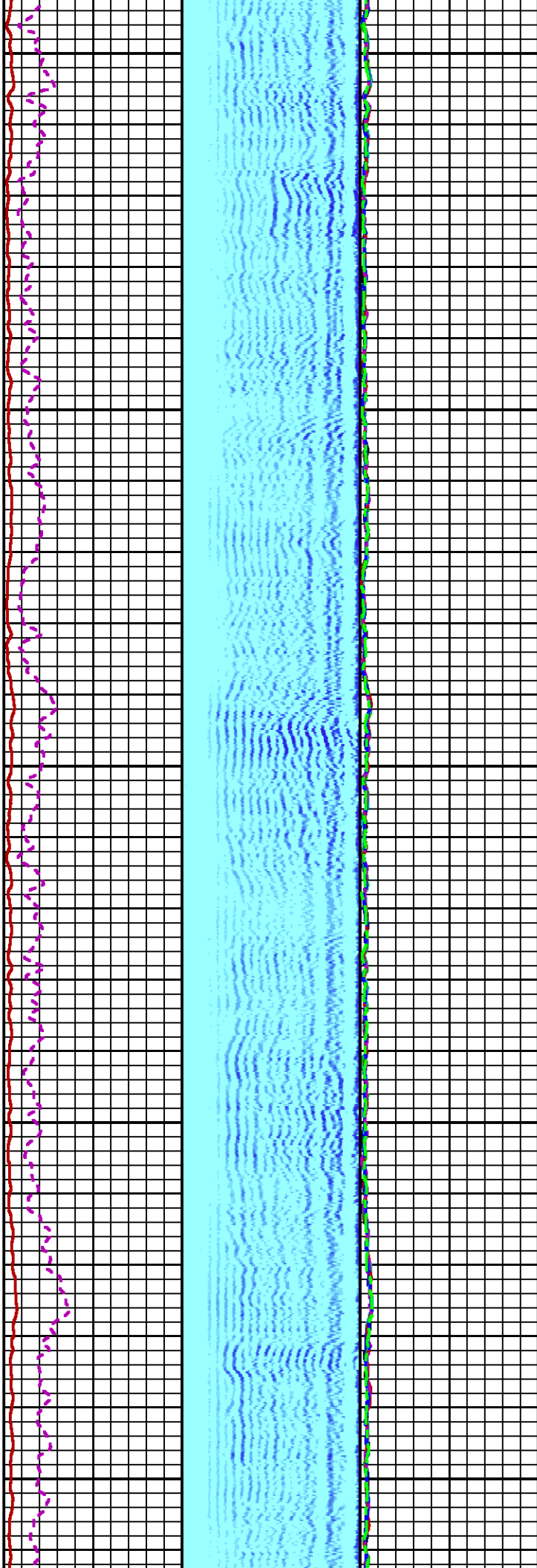








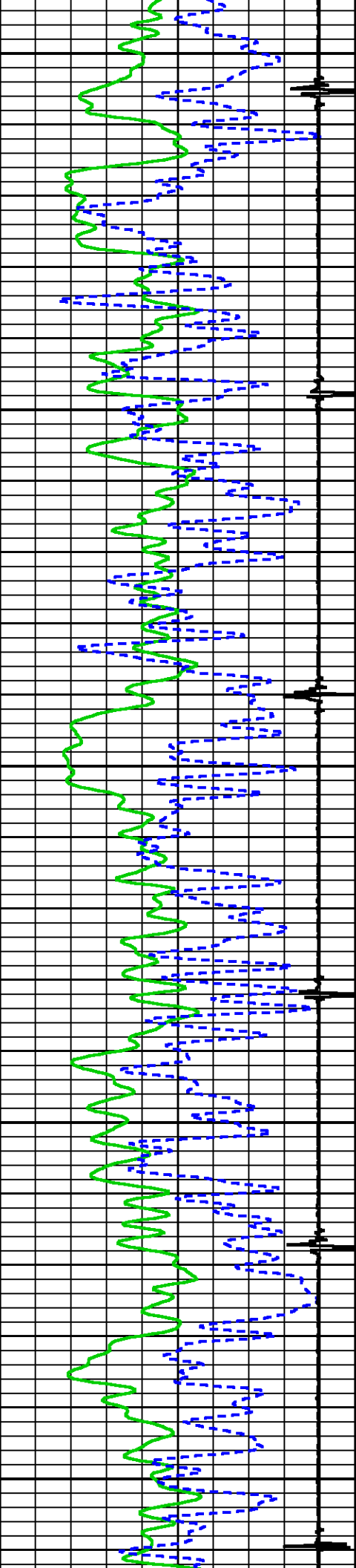


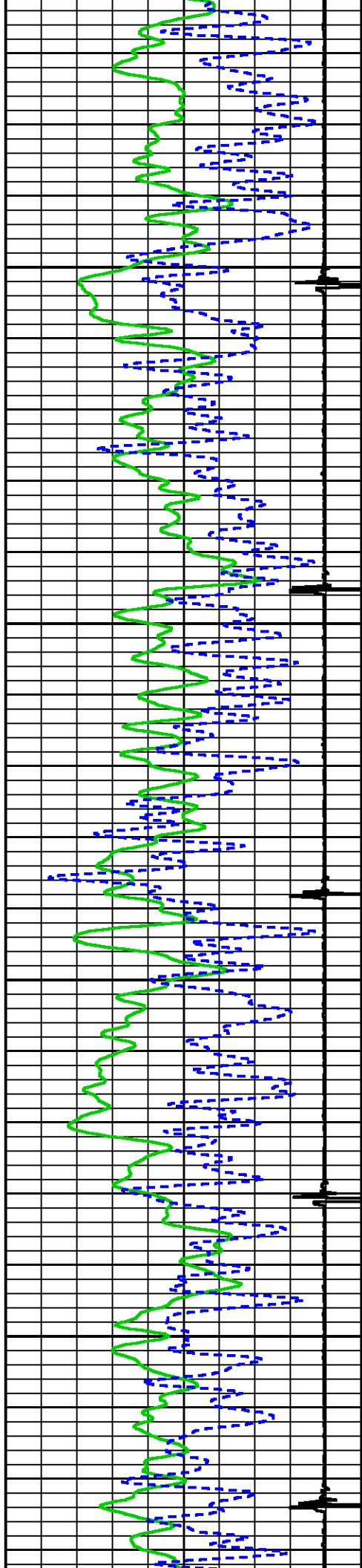


8600

8700

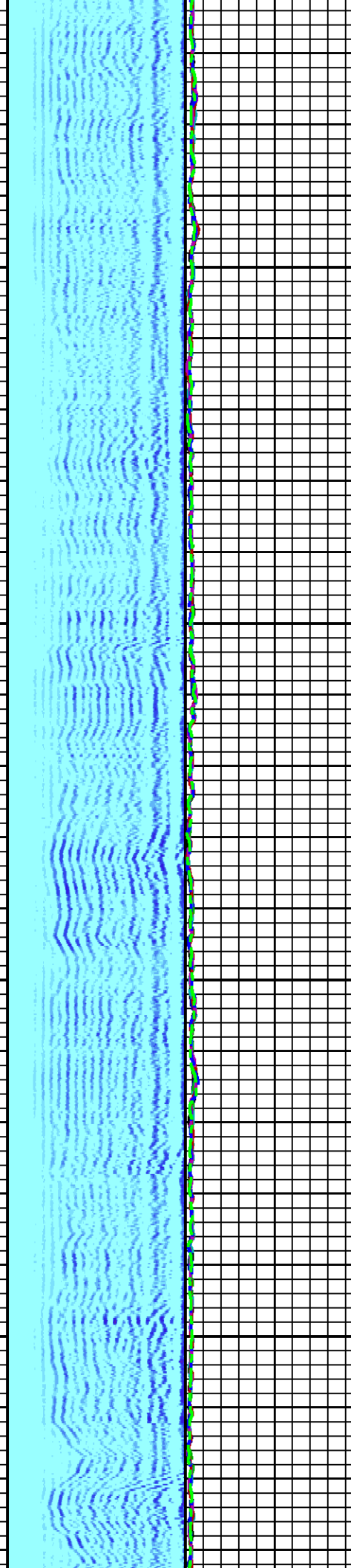
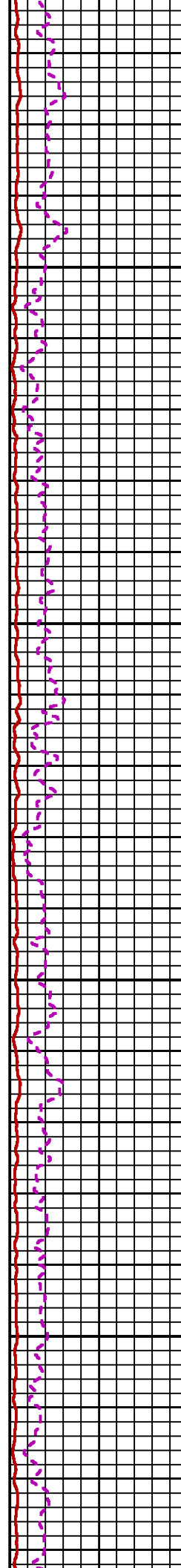
8800

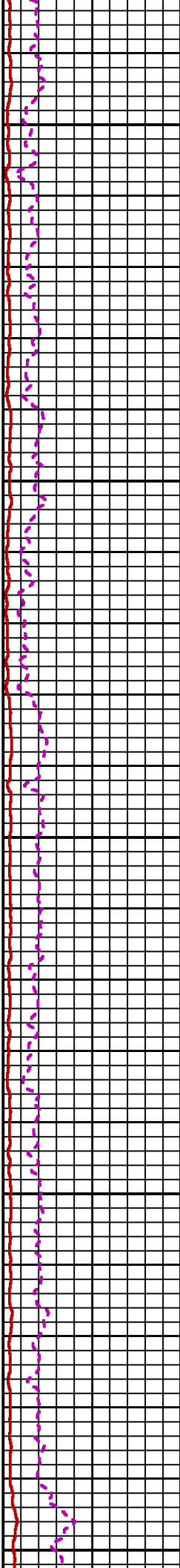
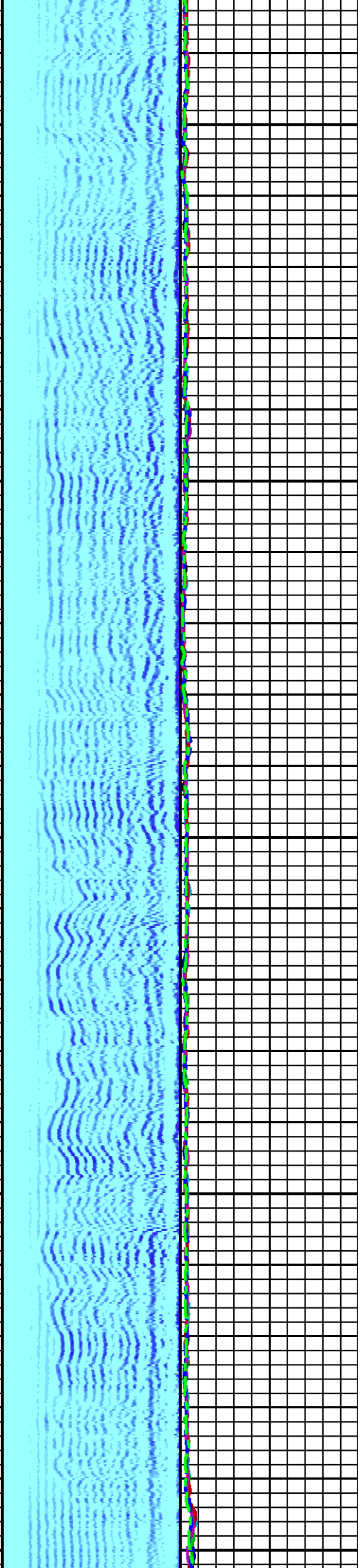




9006

8900

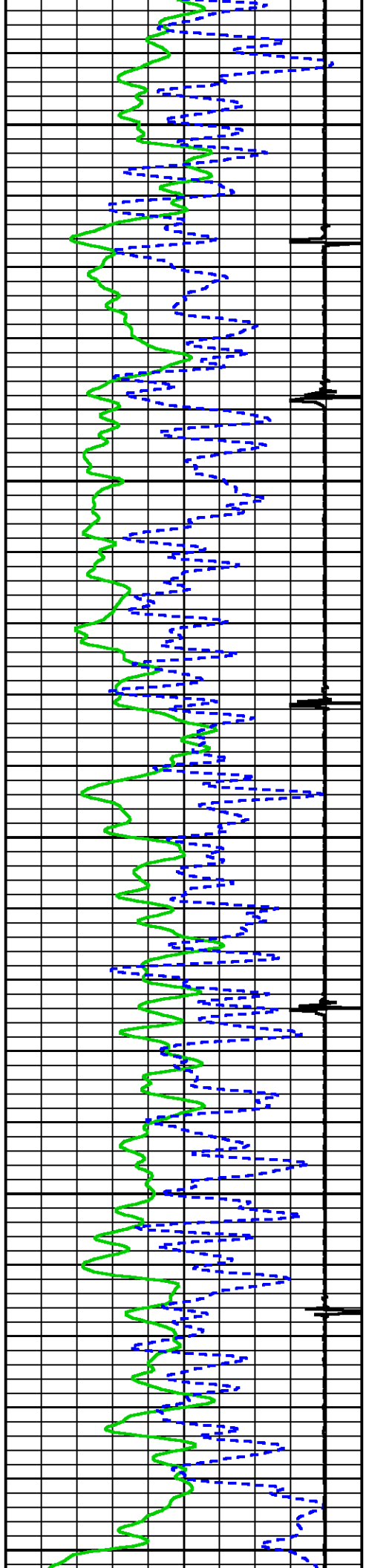


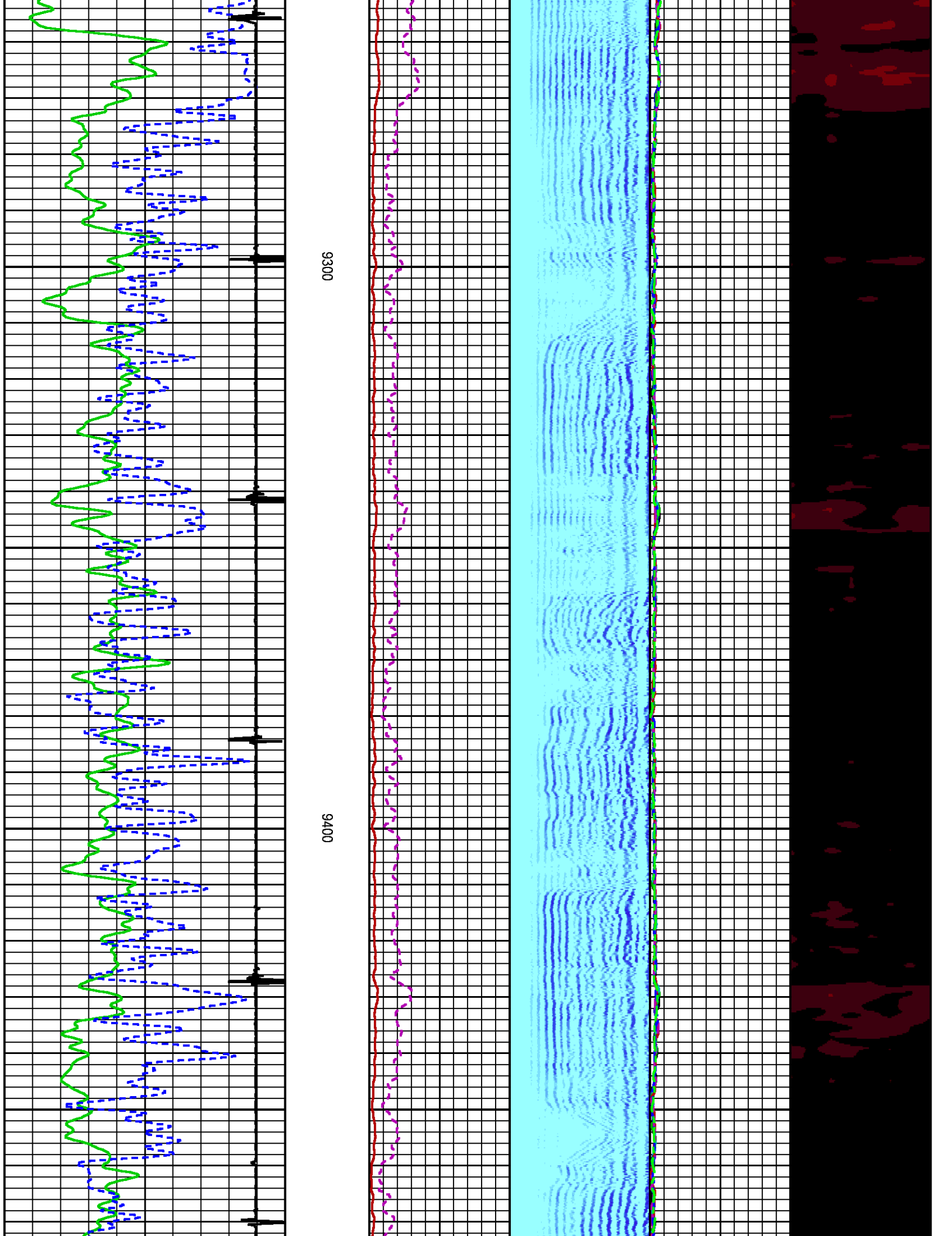


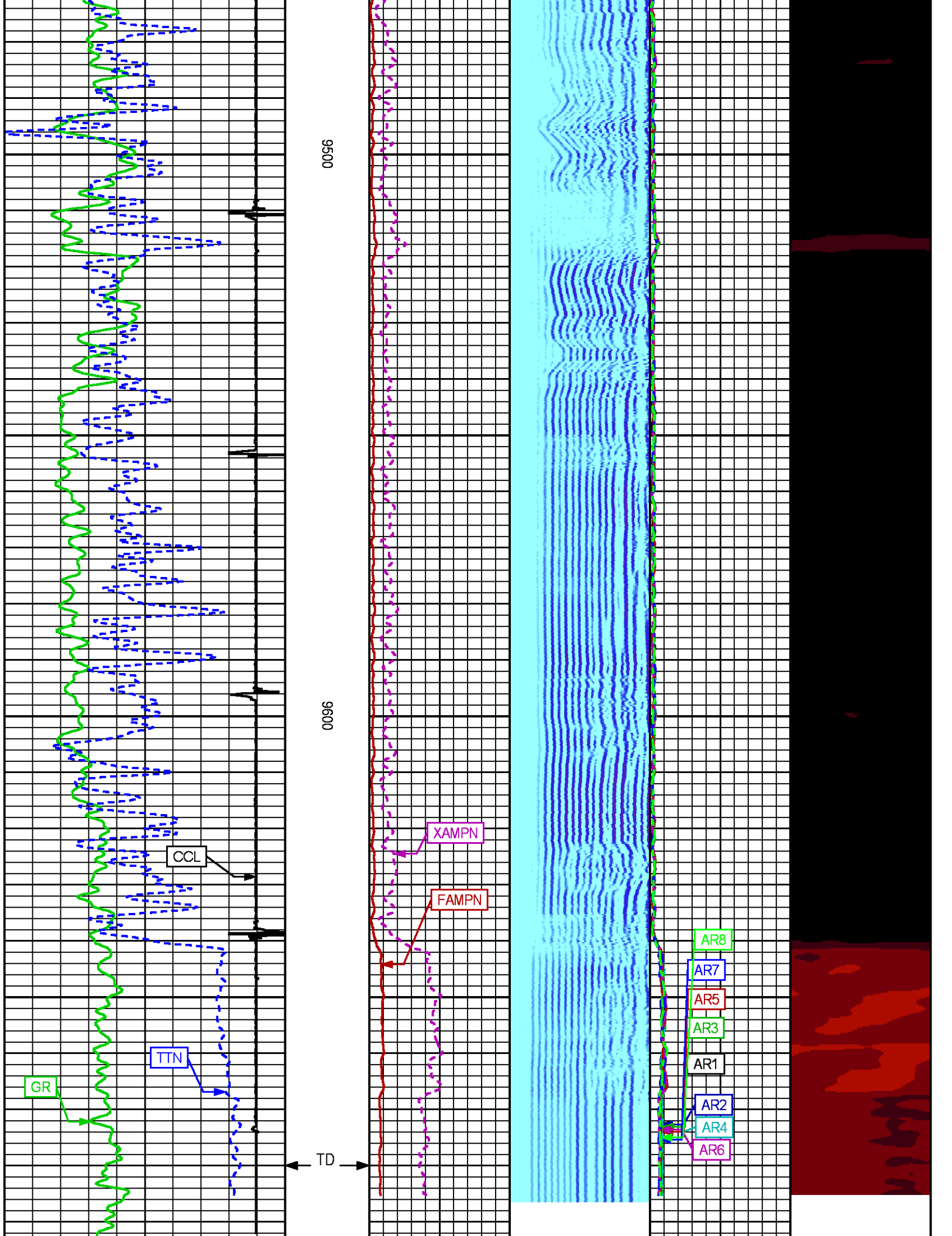
SJ

9100

9200







	AMP WINDOW START (tgp4*)	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*)	-66	us	"	"
	TOOL DELAY (str2*)	-66	us	"	"
	TOOL DELAY (str3*)	-66	us	"	"
	TOOL DELAY (str4*)	-66	us	"	"
	TOOL DELAY (str5*)	-66	us	"	"
	TOOL DELAY (str6*)	-66	us	"	"
	TOOL DELAY (str7*)	-66	us	"	"
	TOOL DELAY (str8*)	-66	us	"	"
	TOOL DELAY (strn*)	-66	us	"	"
BASELINE NOISE (NEAR)	NOISE WINDOW START	125	us	"	"
	NOISE WINDOW LENGTH	25	us	"	"

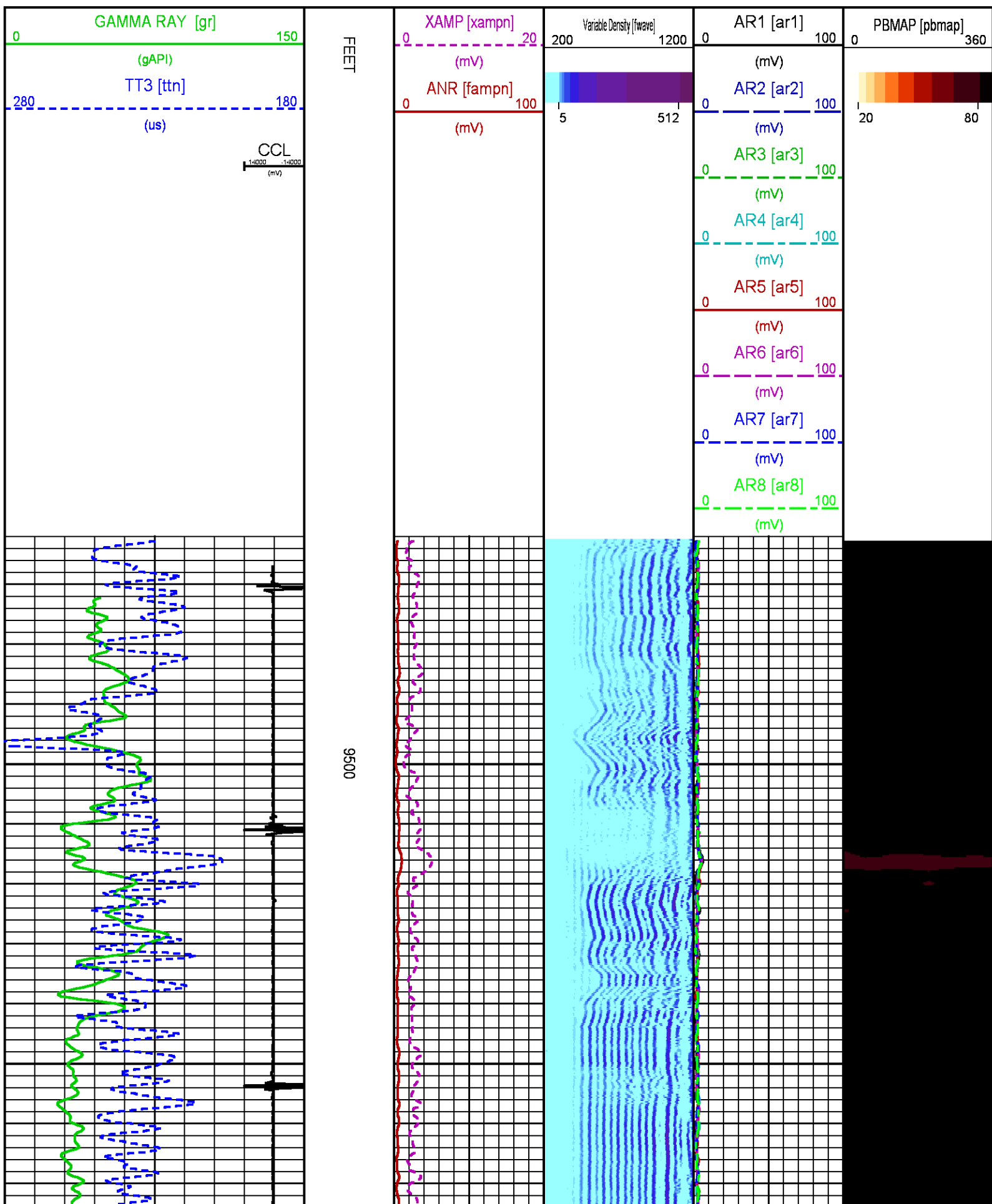
PERCENT BOND CEMENT MAP					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
RAL FREE PIPE AMPLITUDE	FREE AMP REC 1	80	mV	TOP	BOTTOM
	FREE AMP REC 2	80	mV	"	"
	FREE AMP REC 3	80	mV	"	"
	FREE AMP REC 4	80	mV	"	"
	FREE AMP REC 5	80	mV	"	"
	FREE AMP REC 6	80	mV	"	"
	FREE AMP REC 7	80	mV	"	"
	FREE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

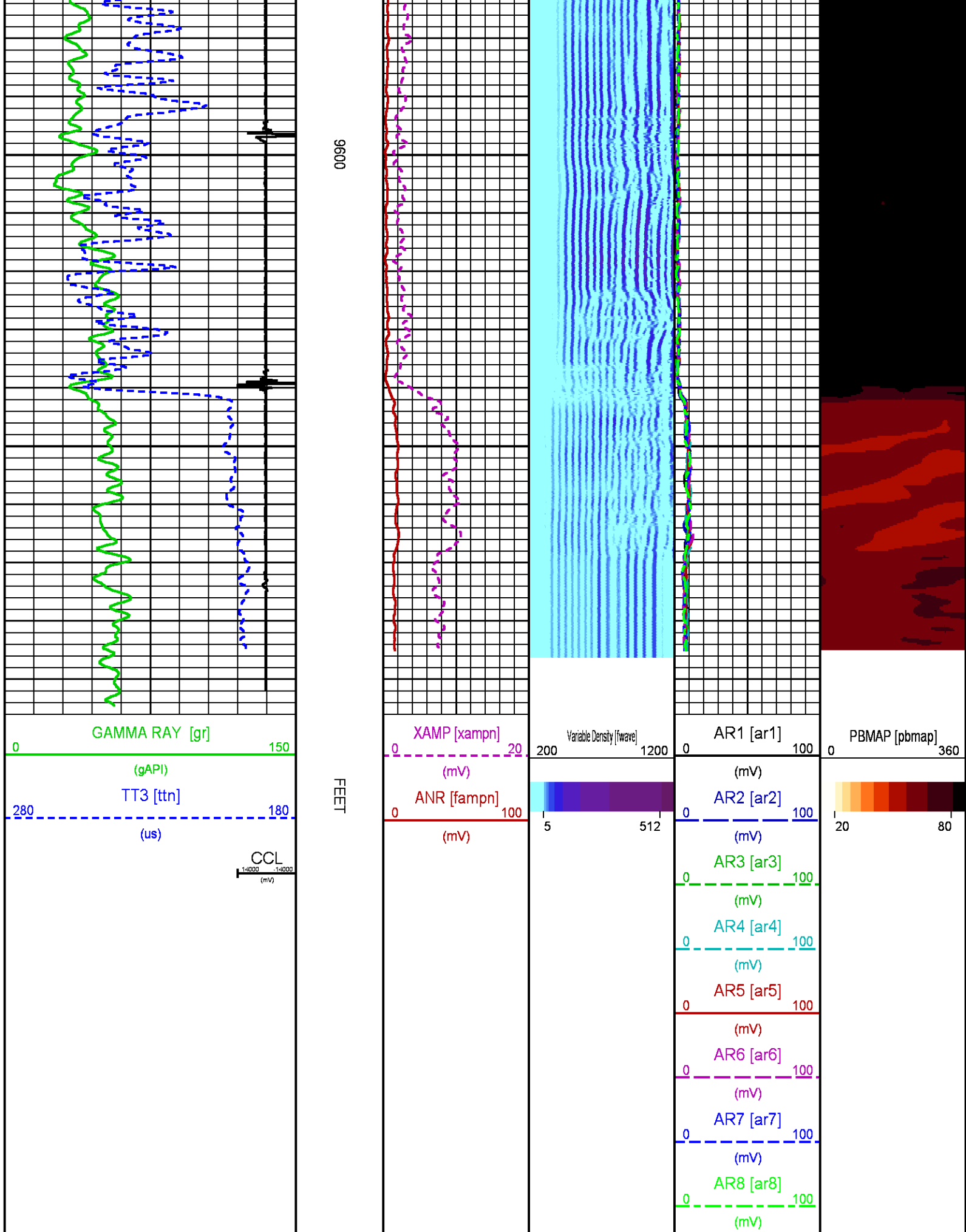
CURVE DESCRIPTION REPORT		
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:AR1	Aug 26 09:38:18 2018	FIXED GATE AMPLITUDE T-R1
F1:AR2	Aug 26 09:38:18 2018	FIXED GATE AMPLITUDE T-R2
F1:AR3	Aug 26 09:38:18 2018	FIXED GATE AMPLITUDE T-R3
F1:AR4	Aug 26 09:38:18 2018	FIXED GATE AMPLITUDE T-R4
F1:AR5	Aug 26 09:38:18 2018	FIXED GATE AMPLITUDE T-R5
F1:AR6	Aug 26 09:38:18 2018	FIXED GATE AMPLITUDE T-R6
F1:AR7	Aug 26 09:38:18 2018	FIXED GATE AMPLITUDE T-R7
F1:AR8	Aug 26 09:38:18 2018	FIXED GATE AMPLITUDE T-R8
F1:CCL	Aug 26 09:38:18 2018	CASING COLLAR LOCATOR
F1:FAMPN	Aug 26 09:38:18 2018	FIXED GATE AMPLITUDE NEAR RECEIVER
F1:FWAVE	Aug 26 09:38:18 2018	FAR WAVE FORM
F1:GR	Aug 26 09:38:18 2018	GAMMA RAY
F1:PBMAP	Aug 26 09:38:18 2018	PERCENT BOND CEMENT MAP
F1:TTN	Aug 26 09:38:18 2018	TRAVELTIME FROM NEAR TRANSMITTER-RECEIVER
F1:XAMPN	Aug 26 09:38:18 2018	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_0697-03-14E/CC_0697-03-14E_RAL_REPEAT.fvpdf [5"/100' Scale]
Plot Interval	: 9462.5 - 9696.25 Feet
Data File 1	: F1 : SysA:/dat1a/LARAMIE_CC_0697-03-14E/45_LARAMIE_CC_0697-03-14E_RAL_REPEAT.xtf

Created On : Aug 26 09:38:18 2018
Company : LARAMIE ENERGY LLC
Well : CC 0697-03-14E
Field : GRAND VALLEY
File Interval : 9457 - 9697.5 Feet
OCT : p012g





CALIBRATION / VERIFICATION SUMMARY

Source File: /dat1a/LARAMIE_CC_0697-03-14E/p012g.tp1

RAL PRIMARY CALIBRATION SUMMARY

TOOL #: 1426XA 11871500

DATE/TIME PERFORMED: Sun Aug 26 09:11:12 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)	-0.27	-0.18	-0.02	-0.26	-0.16	-0.08	-0.09	0.35	-0.01	-0.47	-0.01
AMP FLUID (mV)	42	41	41	42	42	42	42	41	41	56	41
TT (us)	218	218	218	217	217	217	216	216	218	325	218
M FACTOR	2.35	2.43	2.43	2.39	2.36	2.37	2.36	2.46	2.44	2.64	2.47

RAL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 1426XA 11871500

DATE/TIME PERFORMED: Sun Aug 26 09:13:49 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	-0.58	-0.47	-0.06	-0.53	-0.61	-0.14	-0.17	0.28	-0.06	-1.74	-0.01
AMP AIR	0.61	0.48	0.41	0.72	0.69	0.39	0.36	0.44	0.58	2.28	99.89

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

Source File: /dat1a/LARAMIE_CC_0697-03-14E/p012g~RAL-tdg

A3 CABLEHEAD

Diameter : 1.37"

RADIAL BOND TOOL

Diameter : 2.75"
Length : 11.17'
Weight : 126 lbs
Series : 1426XA
Mnemonic : RAL
Measure Point: 5.75': XMTR
Measure Point: 4.21': NEAR MP
Measure Point: 3.25': FAR MP
Measure Point: 2.67': NEAR RCVR
Measure Point: 0.75': FAR RCVR

RAL GR/TEMP/CCL/CHV DETECTOR

Diameter : 2.75"
Length : 6.96'
Weight : 85 lbs
Series : 1355XA
Mnemonic : RAL
Measure Point: 5.79': CCL
Measure Point: 1.67': GR
Measure Point: 0.17': TEMP

TOTAL LENGTH: 18.85'
TOTAL WEIGHT: 227 lbs
MAX DIAMETER: 0'4.00"

18.85'

XMTR 12.71'

NEAR MP 11.17'

FAR MP 10.21'

NEAR RCVR 9.62'

FAR RCVR 7.71'

CCL 5.79'

GR 1.67'

TEMP 0.17'



COUNTY <u>SAN JUAN</u>		STATE <u>COLORADO</u>		<u>98848200010000</u>
LOCATION: SHL: 3331.0' FNL & 1310.0' FEL SHL: 3331.0' FNL & 1310.0' FEL SEC <u>3</u> TWP <u>6S</u> RGE <u>97W</u>			ELEVATIONS: KB 8458 FT DF GL 8428 FT	
			DATE 26-Aug-2018	