



FILE NO:	COMPANY	LARAMIE ENERGY
API NO:	WELL	GUNDERSON 20-06W
05077103420000	FIELD	VEGA
	COUNTY	MESA
	STATE	COLORADO

Ver. 4.06	LOCATION:	OTHER SERVICES
	LAT:39.266836N;LONG:107.795317W	RPM
	BHL: LAT:39.265806N;LONG:107.797721W	
	SEC 20 TWP 9S RGE 93W	

PERMANENT DATUM	GL	ELEVATION	7144 FT
LOG MEASURED FROM	KB	30 FT	ABOVE P.D.
DRILL. MEAS. FROM	KB		
		ELEVATIONS:	
		KB	7176 FT
		DF	7176 FT
		GL	7146 FT

DATE	24-AUG-2017
RUN	1
TRIP	1
SERVICE ORDER	US126639
DEPTH DRILLER	7502 FT
DEPTH LOGGER	7431 FT
BOTTOM LOGGED INTERVAL	7431 FT
TOP LOGGED INTERVAL	30 FT
TIME STARTED	13:30
TIME FINISHED	15:30
OPERATOR RIG TIME	2 HOURS
TYPE OF FLUID IN HOLE	WATER
FLUID DENSITY	NA
FLUID SALINITY	NA
FLUID LEVEL	52 FT
LOGGED CEMENT TOP	1027 FT
WELLHEAD PRESSURE	0 PSI
MAXIMUM HOLE DEVIATION	NA
NOMINAL LOGGING SPEED	100 F/MN
MAX. RECORDED TEMP.	243 DEGF
REFERENCE LOG	NA
REFERENCE LOG DATE	NA
EQUIP. NO.	HL-6670
LOCATION	WOODWARD
RECORDED BY	S.YASSA
WITNESSED BY	MR. CHUCK MALLARY

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 WELL*
OPERATION 1: RAL/GR/CCL RUN CENTRALIZED
LOGGED WITH 0 PSI ON WELLHEAD
SJ: 5550' - 5568'
SJ: 6540' - 6558'
CREW: D.HUTCHINSON, G.SUAREZ

EQUIPMENT DATA				
RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.
1	1	RAL	1426XA	10218496
1	1	GAMMA RAY	1355XA	12670180

MAIN PASS 0 PSI

ECLIPS 6.2i ECLIPS General Release Rel 6.2i Wed Jun 12 12:21:40 CDT 2013

Updates: 1 Patches: 9

Plotted: Fri Aug 25 04:39:05 2017

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_GUNDERSON_20_06W/n012g02.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 15.750 ft BOTTOM DEPTH: 7471.746 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		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	200.391	us	"	"
RAL TOOL DELAY	TOOL DELAY (str1*)	-64	us	TOP	79.250
		-62	us	79.250	82.250
		-61	us	82.250	84.750
		-60	us	84.750	85.500
		-58	us	85.500	3697.000
		-60	us	3697.000	BOTTOM
	TOOL DELAY (str2*)	-64	us	TOP	79.250
		-62	us	79.250	82.250
		-61	us	82.250	84.750
		-60	us	84.750	85.500
		-58	us	85.500	3697.000
		-60	us	3697.000	BOTTOM
	TOOL DELAY (str3*)	-64	us	TOP	79.250
		-62	us	79.250	82.250
		-61	us	82.250	84.750
		-60	us	84.750	85.500
		-58	us	85.500	3697.000
		-60	us	3697.000	BOTTOM
	TOOL DELAY (str4*)	-64	us	TOP	79.250
		-62	us	79.250	82.250
		-61	us	82.250	84.750
		-60	us	84.750	85.500
		-58	us	85.500	3697.000
		-60	us	3697.000	BOTTOM
	TOOL DELAY (str5*)	-64	us	TOP	79.250
		-62	us	79.250	82.250
		-61	us	82.250	84.750
		-60	us	84.750	85.500
		-58	us	85.500	3697.000
		-60	us	3697.000	BOTTOM
	TOOL DELAY (str6*)	-64	us	TOP	79.250

		-62	us	79.250	82.250
		-60	us	84.750	85.500
		-58	us	85.500	3697.000
		-60	us	3697.000	BOTTOM
	TOOL DELAY (str7*)	-64	us	TOP	79.250
		-62	us	79.250	82.250
		-61	us	82.250	84.750
		-60	us	84.750	85.500
		-58	us	85.500	3697.000
		-60	us	3697.000	BOTTOM
	TOOL DELAY (str8*)	-64	us	TOP	79.250
		-62	us	79.250	82.250
		-61	us	82.250	84.750
		-60	us	84.750	85.500
		-58	us	85.500	3697.000
		-60	us	3697.000	BOTTOM
	TOOL DELAY (strn*)	-64	us	TOP	79.250
		-62	us	79.250	82.250
		-61	us	82.250	84.750
		-60	us	84.750	85.500
		-58	us	85.500	3697.000
		-60	us	3697.000	BOTTOM
BASLINE NOISE (NEAR)	NOISE WINDOW START	125	us	TOP	BOTTOM
	NOISE WINDOW LENGTH	25	us	"	"

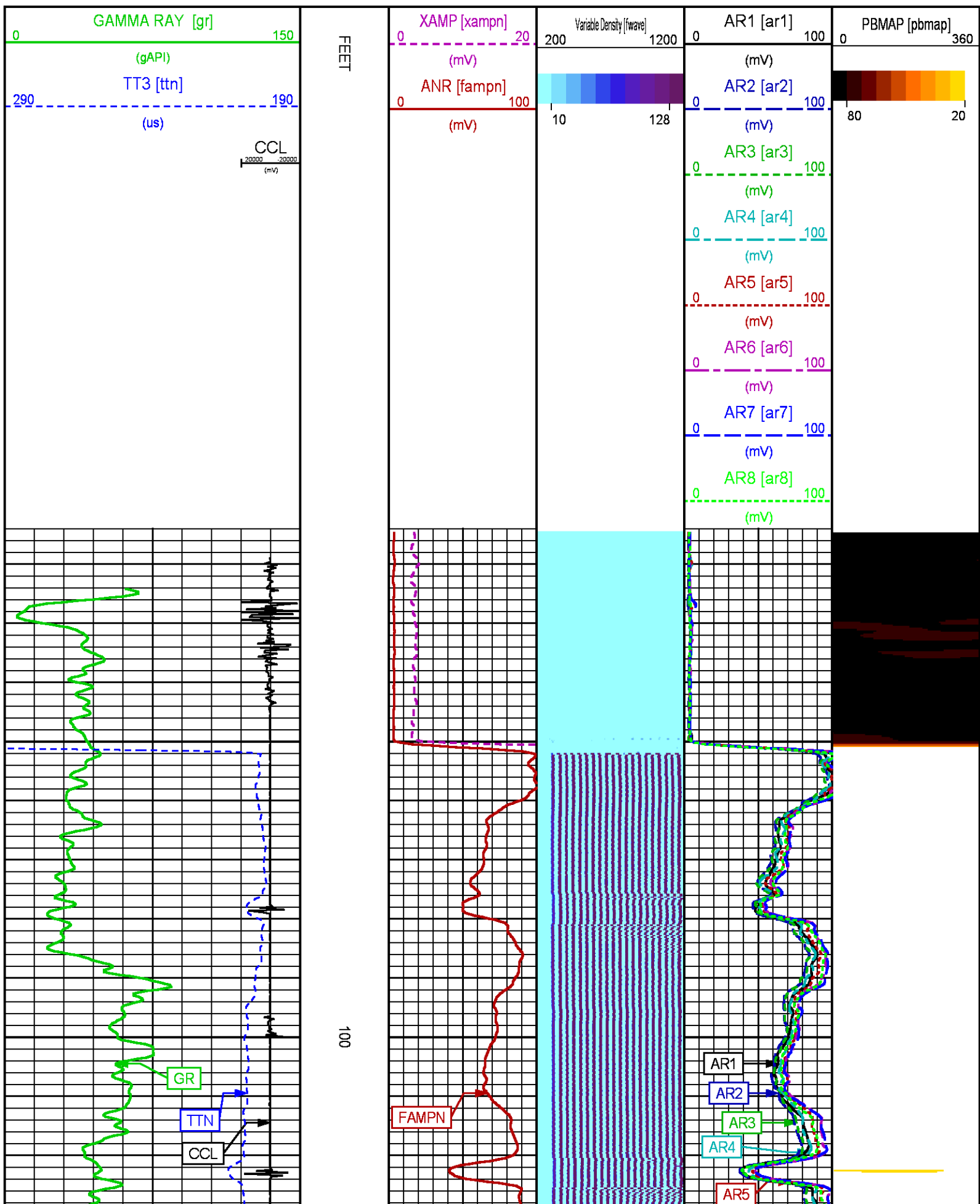
PERCENT BOND CEMENT MAP					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
RAL FREE PIPE AMPLITUDE	FREE AMP REC 1	80	mV	TOP	BOTTOM
	FREE AMP REC 2	80	mV	"	"
	FREE AMP REC 3	80	mV	"	"
	FREE AMP REC 4	80	mV	"	"
	FREE AMP REC 5	80	mV	"	"
	FREE AMP REC 6	80	mV	"	"
	FREE AMP REC 7	80	mV	"	"
	FREE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

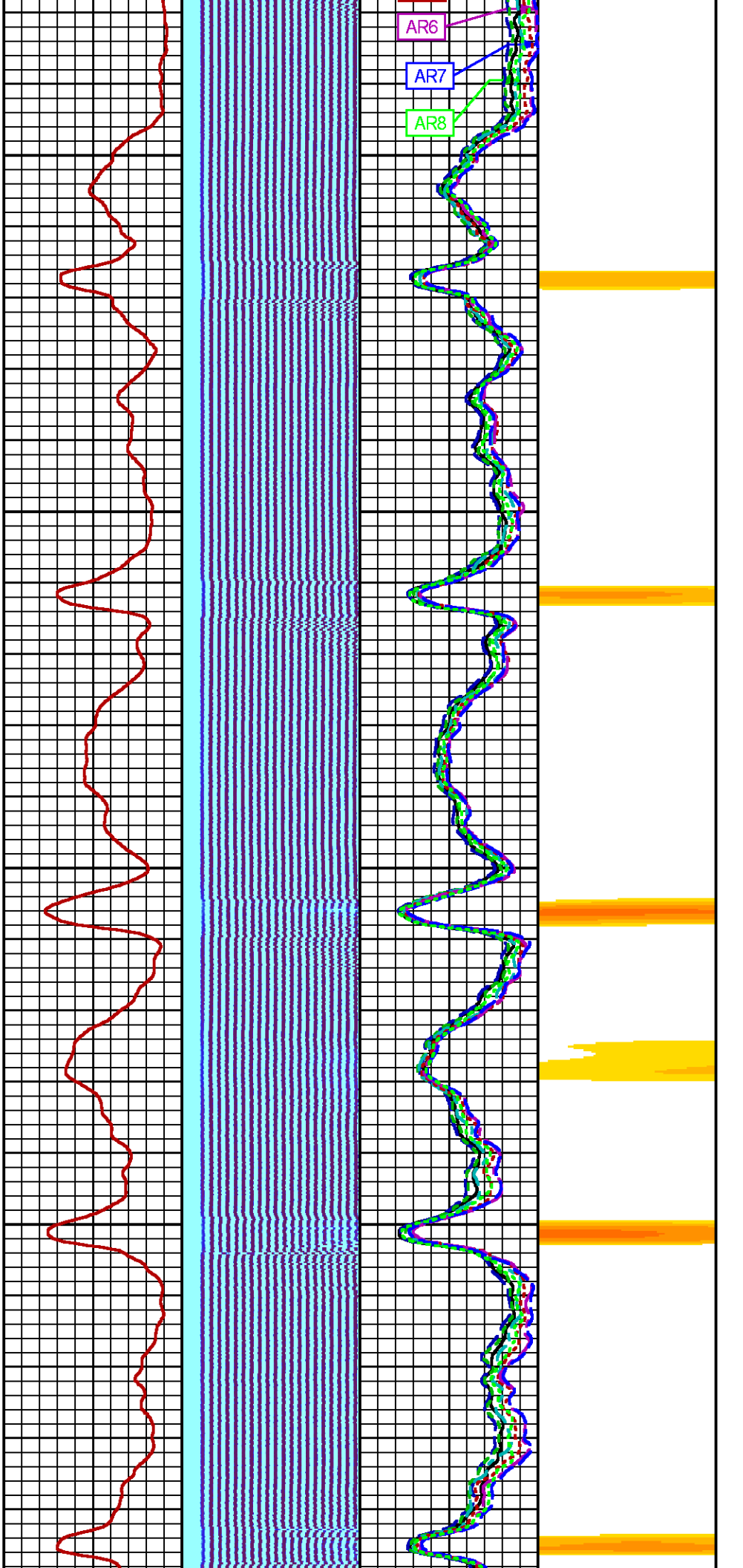
CURVE DESCRIPTION REPORT		
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:AR1	Aug 24 14:12:02 2017	FIXED GATE AMPLITUDE T-R1
F1:AR2	Aug 24 14:12:02 2017	FIXED GATE AMPLITUDE T-R2
F1:AR3	Aug 24 14:12:02 2017	FIXED GATE AMPLITUDE T-R3
F1:AR4	Aug 24 14:12:02 2017	FIXED GATE AMPLITUDE T-R4
F1:AR5	Aug 24 14:12:02 2017	FIXED GATE AMPLITUDE T-R5
F1:AR6	Aug 24 14:12:02 2017	FIXED GATE AMPLITUDE T-R6
F1:AR7	Aug 24 14:12:02 2017	FIXED GATE AMPLITUDE T-R7
F1:AR8	Aug 24 14:12:02 2017	FIXED GATE AMPLITUDE T-R8
F1:CCL	Aug 24 14:12:02 2017	CASING COLLAR LOCATOR
F1:FAMPN	Aug 24 14:12:02 2017	FIXED GATE AMPLITUDE NEAR RECEIVER
F1:FWAVE	Aug 24 14:12:02 2017	FAR WAVE FORM
F1:GR	Aug 24 14:12:02 2017	GAMMA RAY
F1:PBMAP	Aug 24 14:12:02 2017	PERCENT BOND CEMENT MAP
F1:TTN	Aug 24 14:12:02 2017	TRAVELTIME FROM NEAR TRANSMITTER-RECEIVER
F1:XAMPN	Aug 24 14:12:02 2017	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	: cpu100:/dat1a/LARAMIE_GUNDERSON_20_06W/GUNDERSON_20_06W_RAL_MAIN.fvpdf [5"/100' Scale]
Plot Interval	: 14.5 - 7478.25 Feet
Data File 1	: F1 : cpu100:/dat1a/LARAMIE_GUNDERSON_20_06W/GUNDRESON_20_06W_RAL_MAIN.xtf
Created On	: Aug 24 14:12:02 2017

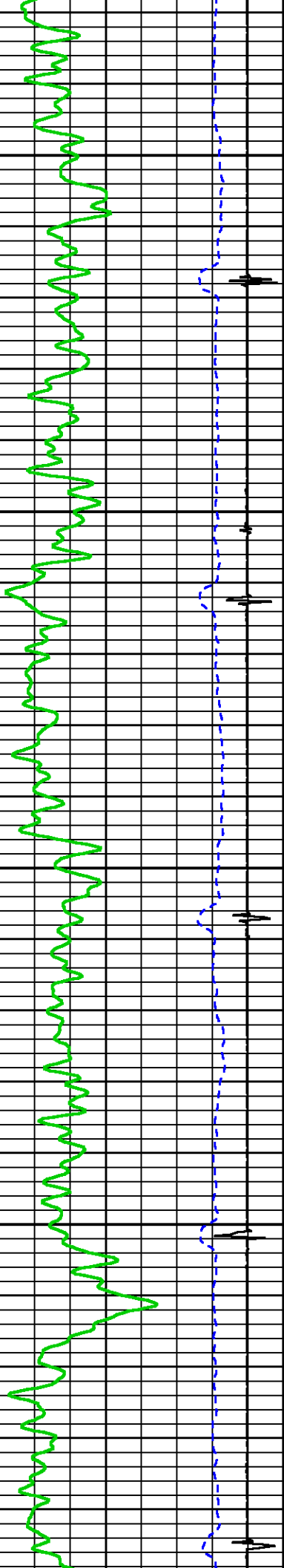
Company : LARAMIE ENERGY
Well : GUNDERSON 20-06W
Field : VEGA
File Interval : 13.5 - 7479.5 Feet
OCT : n012g

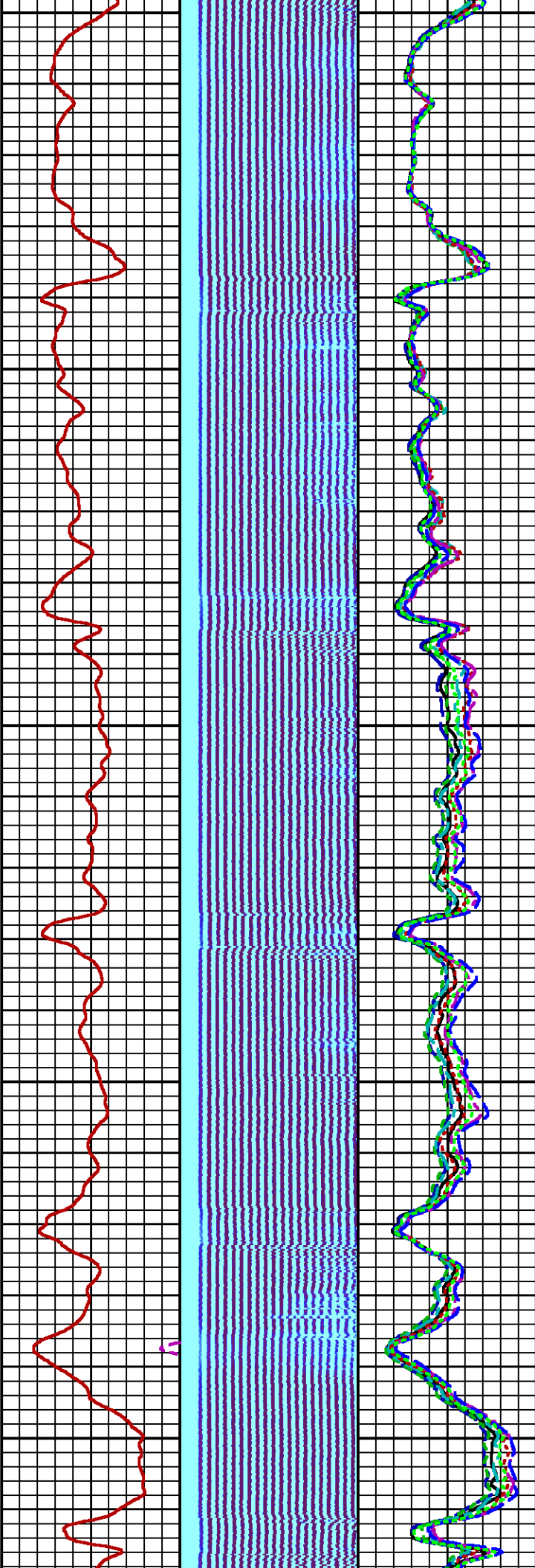
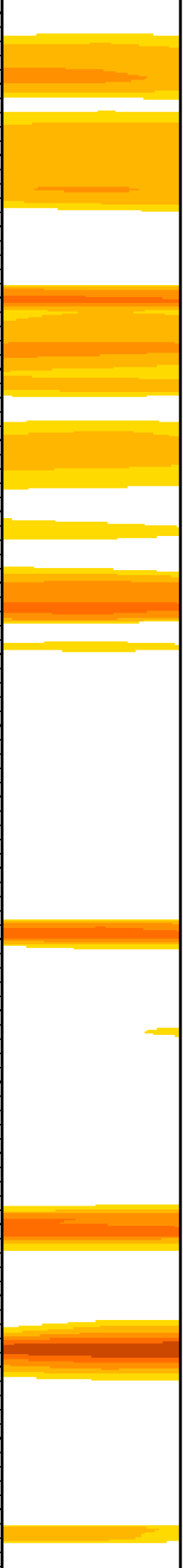




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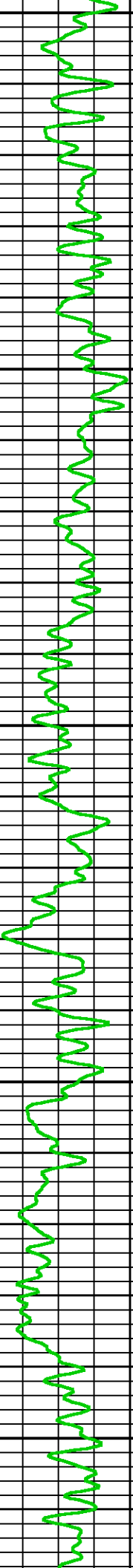
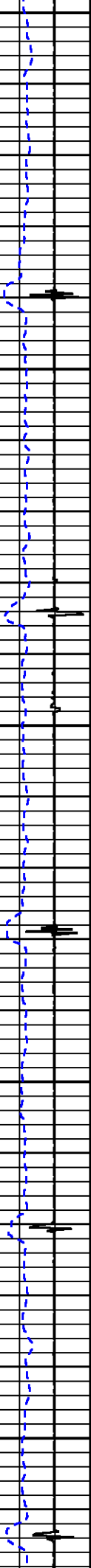
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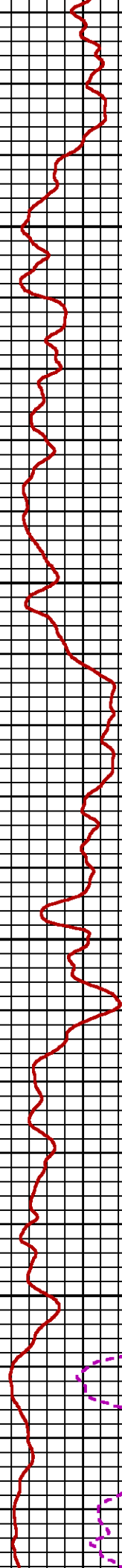
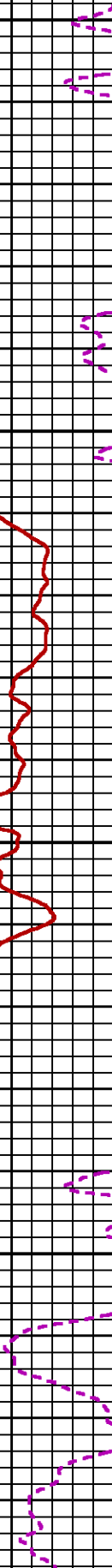
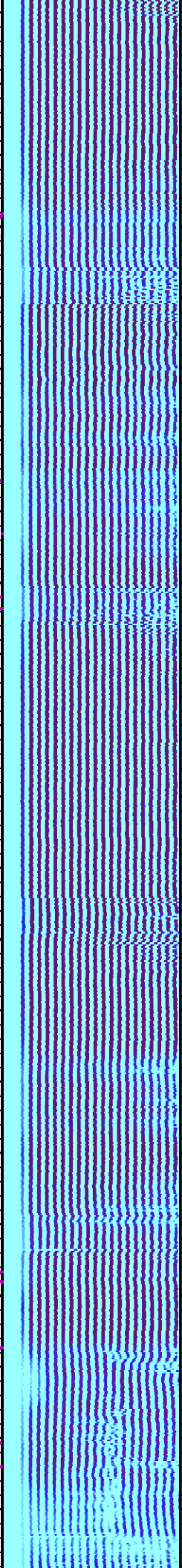
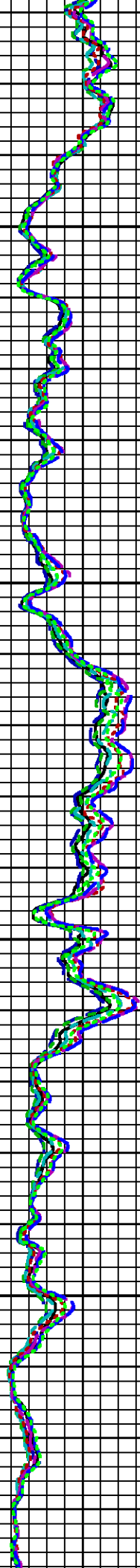
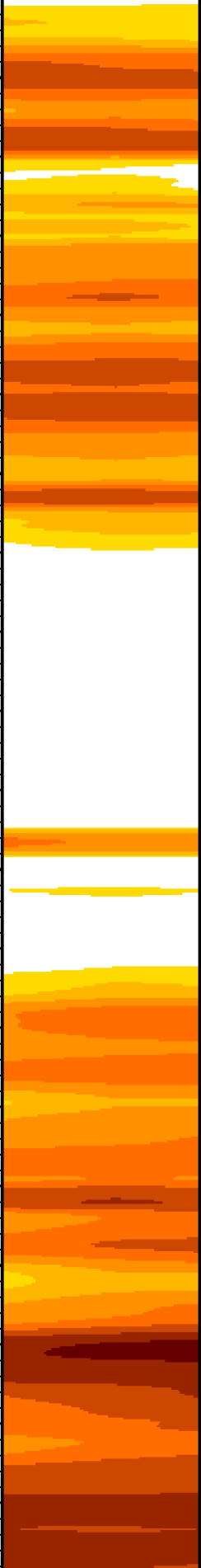




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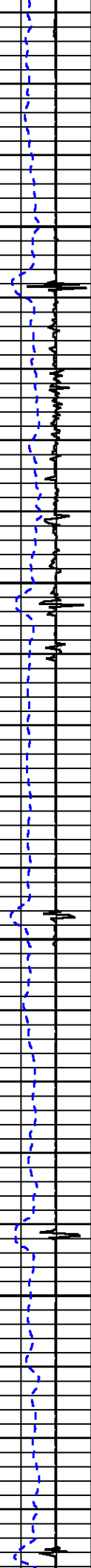
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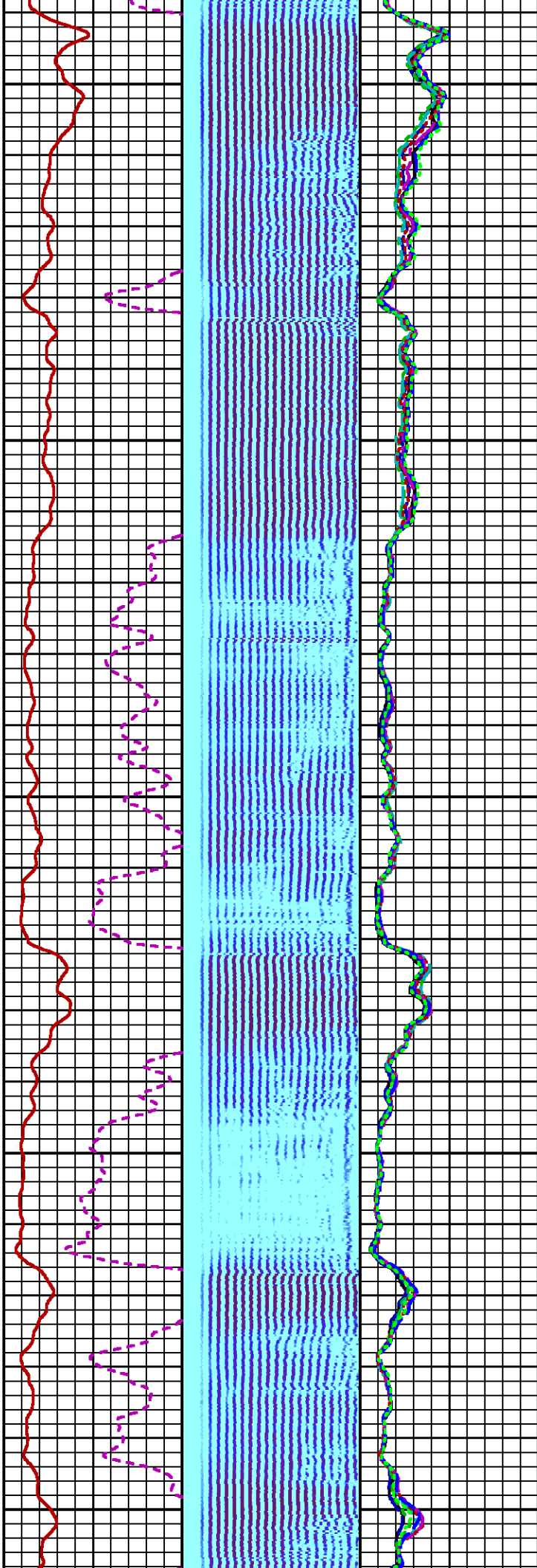




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700

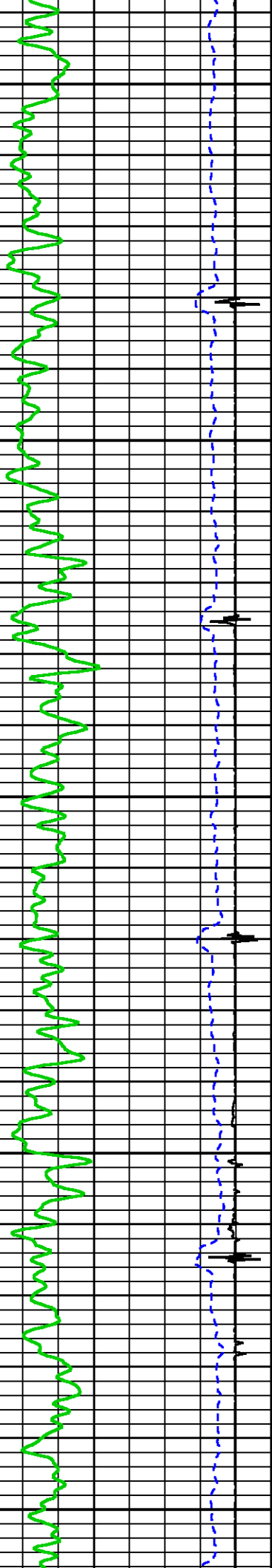


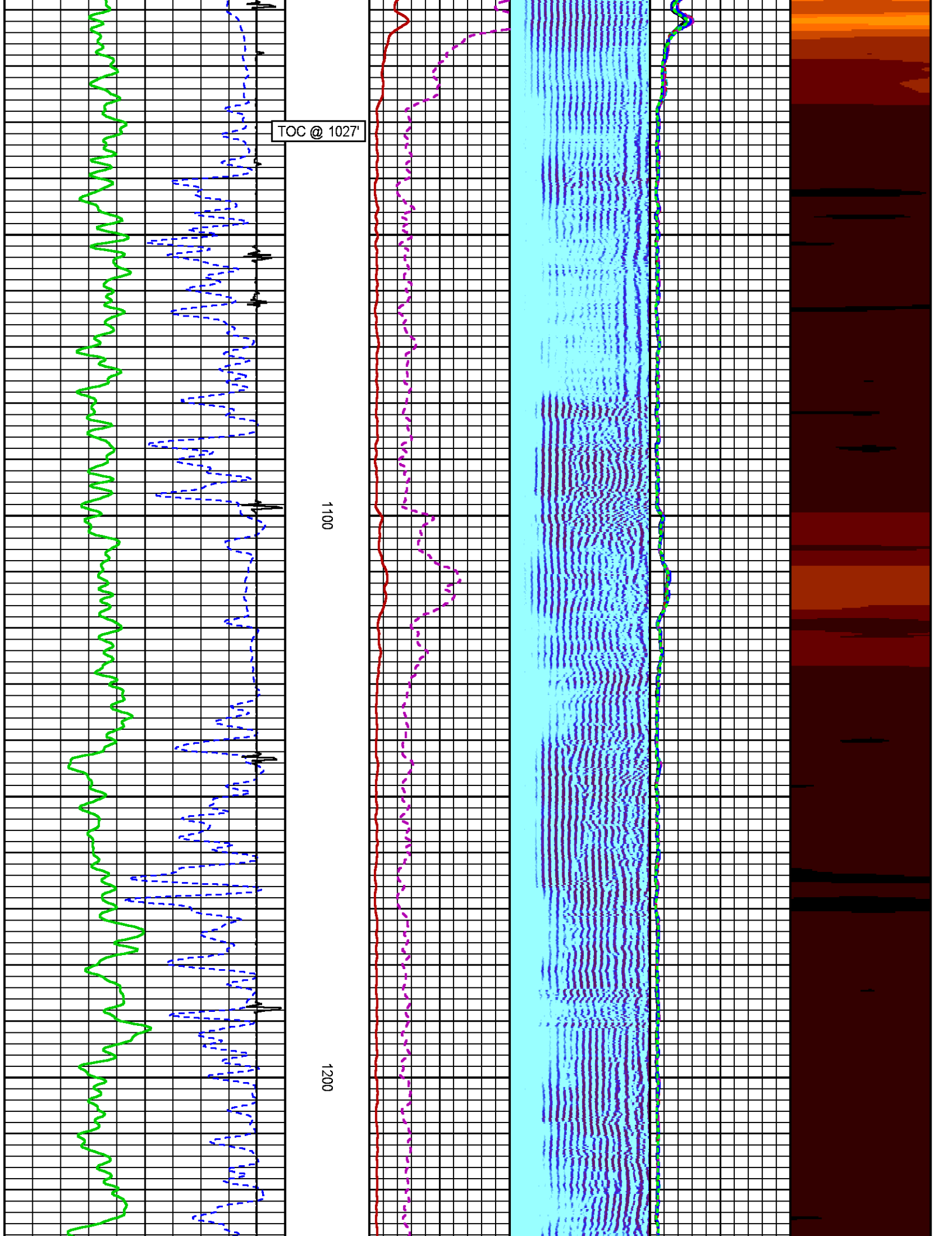


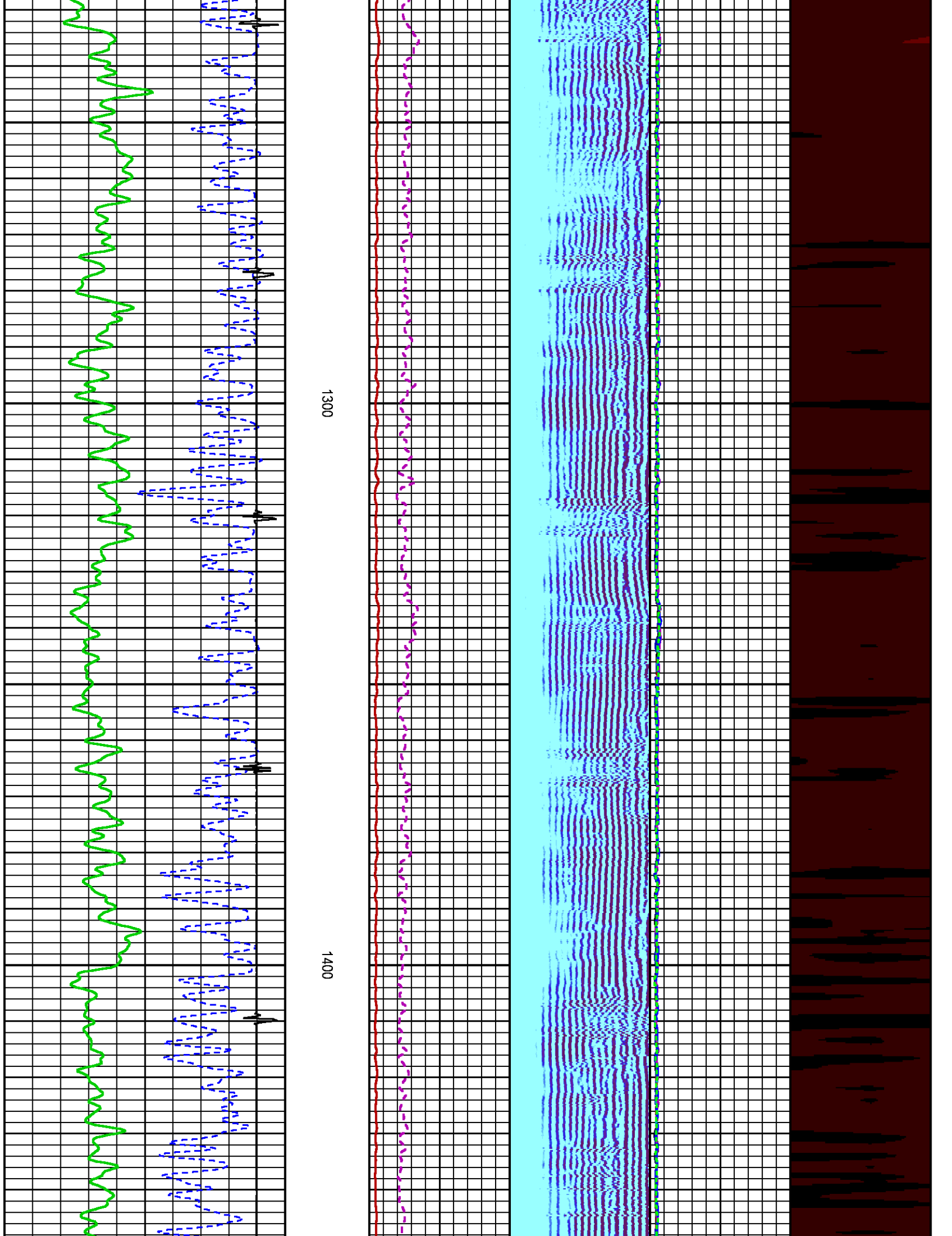
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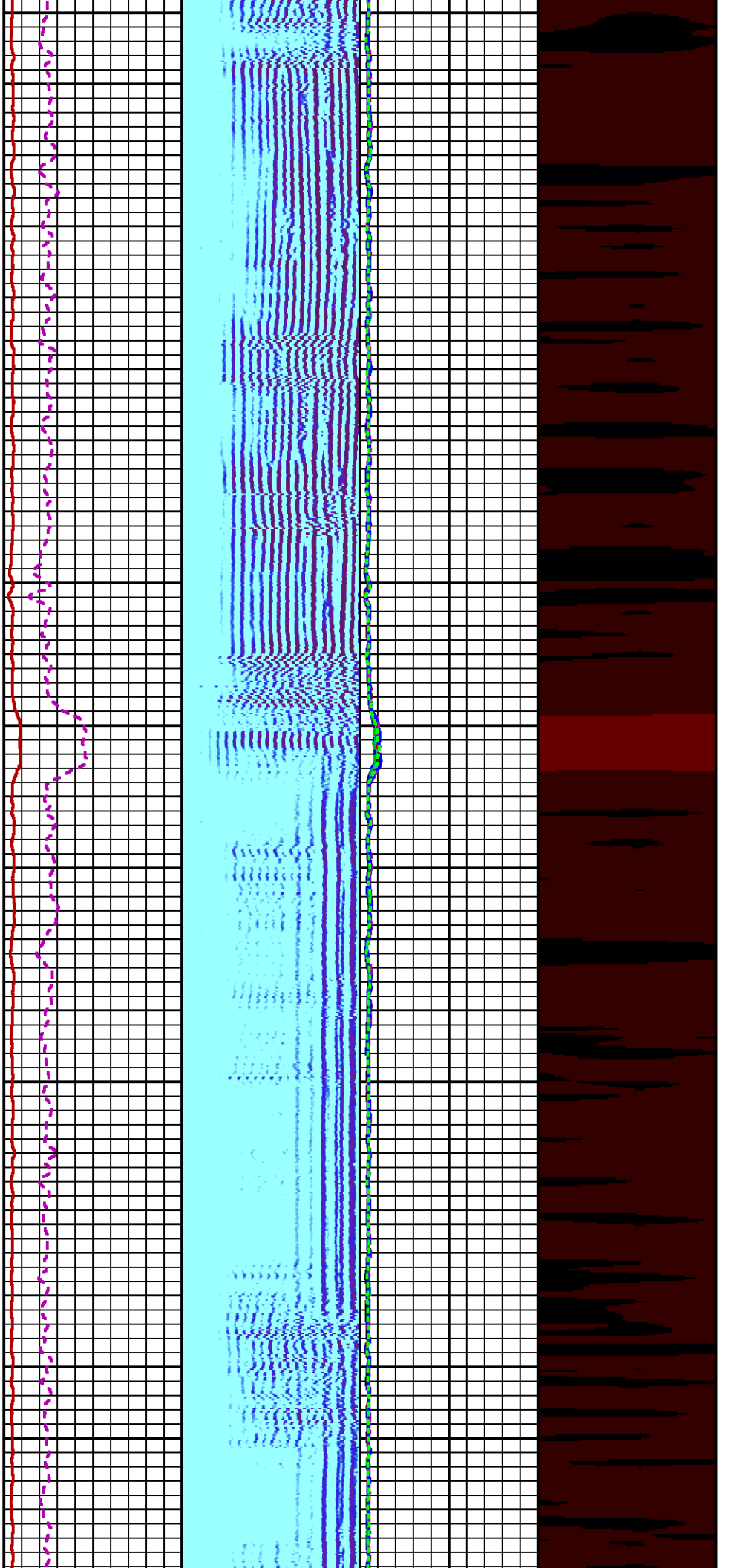
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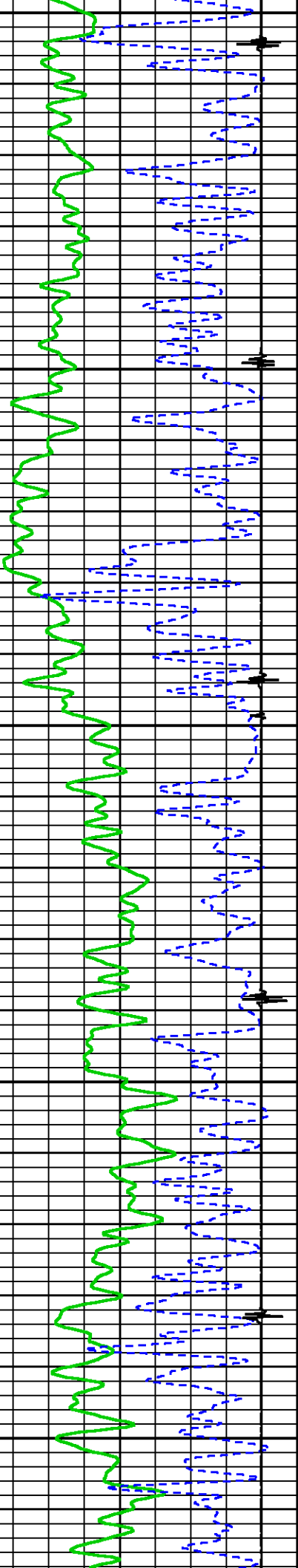


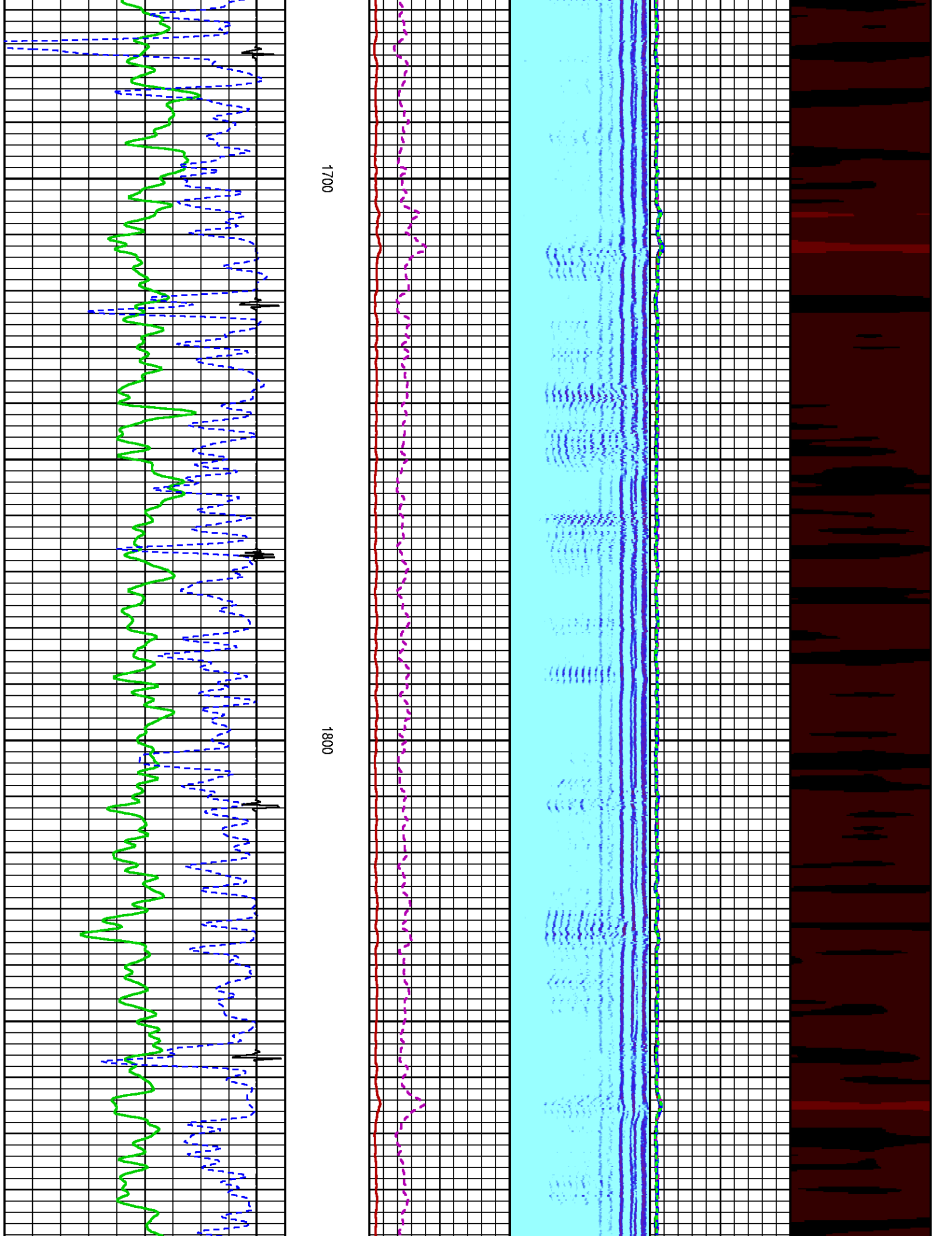


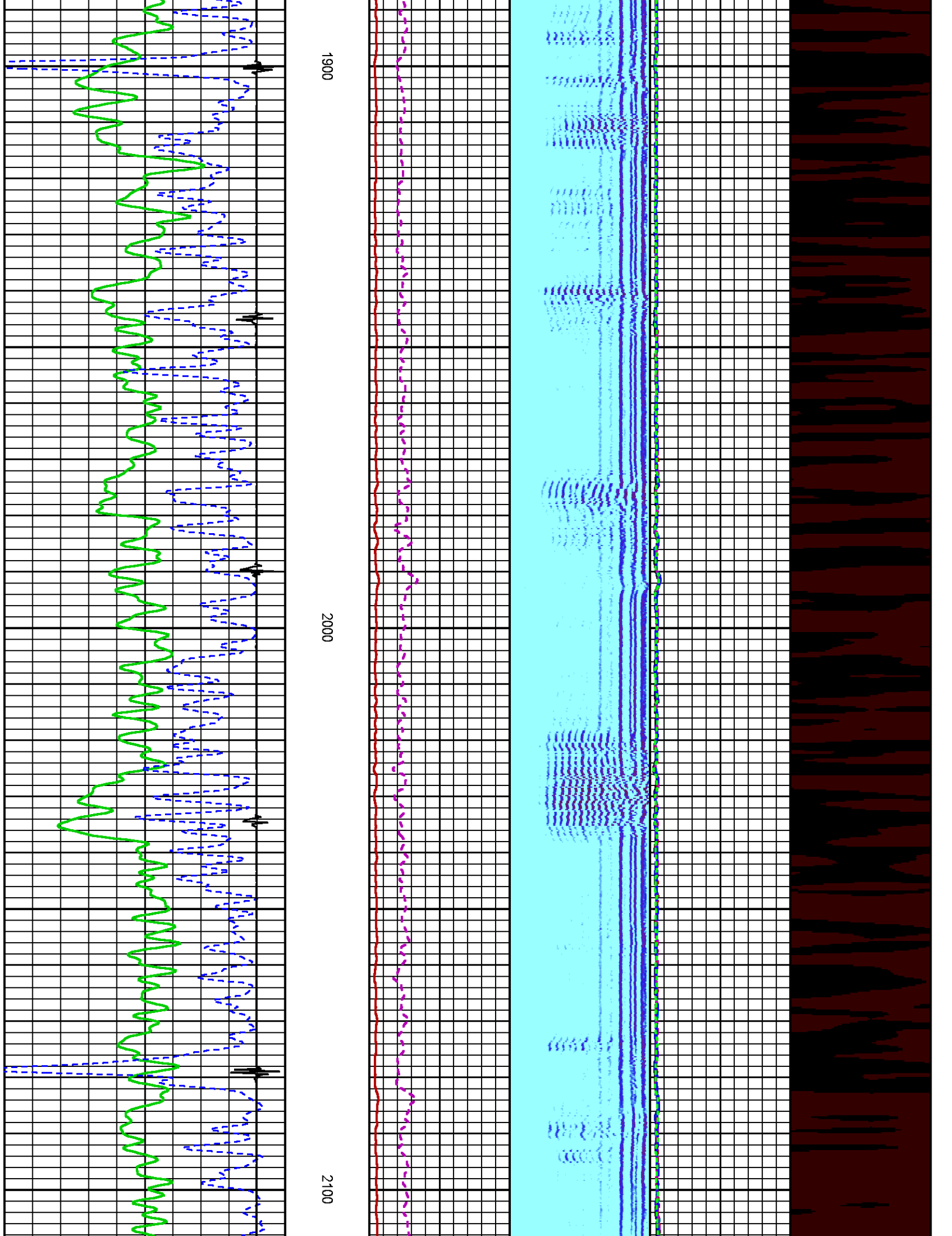


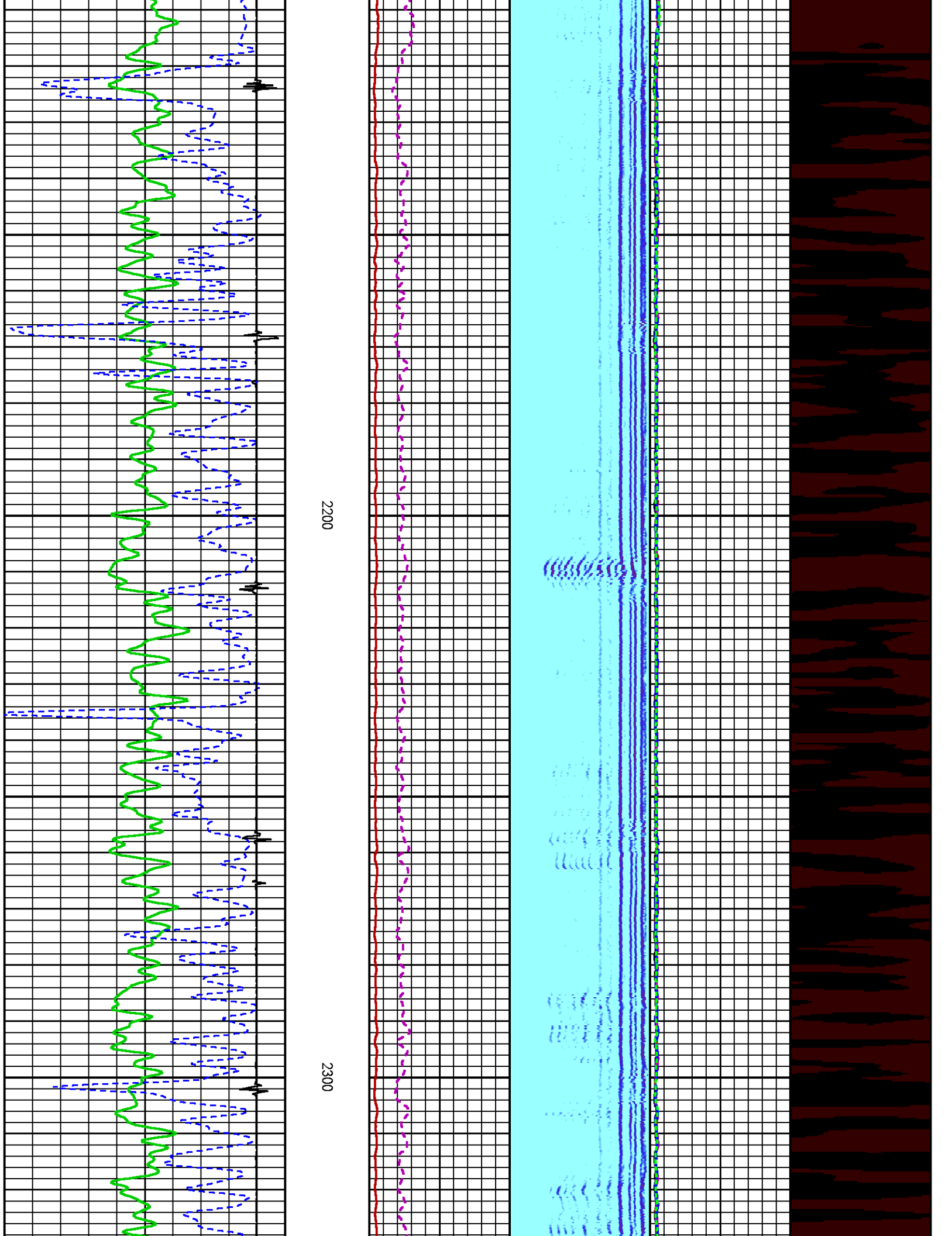
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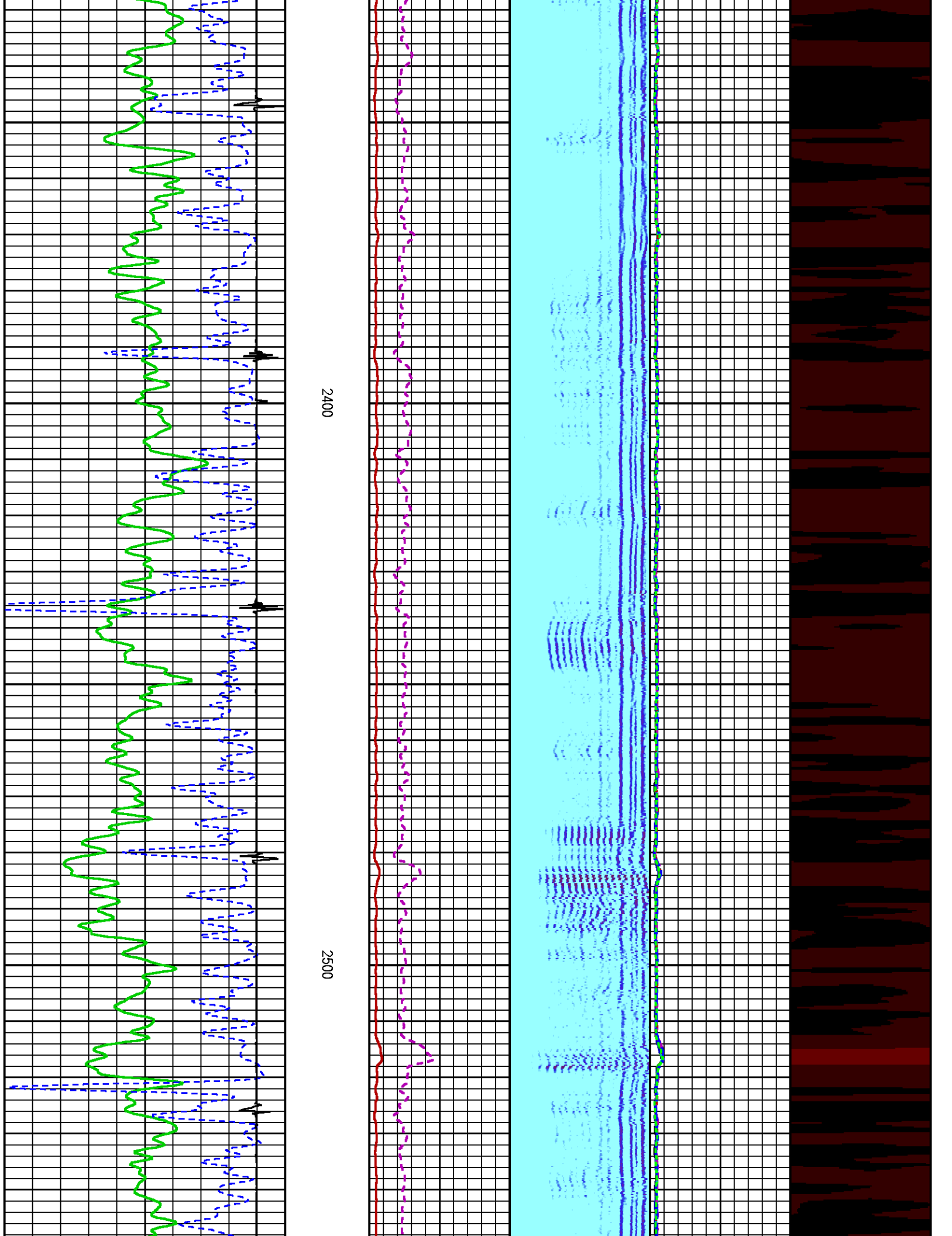
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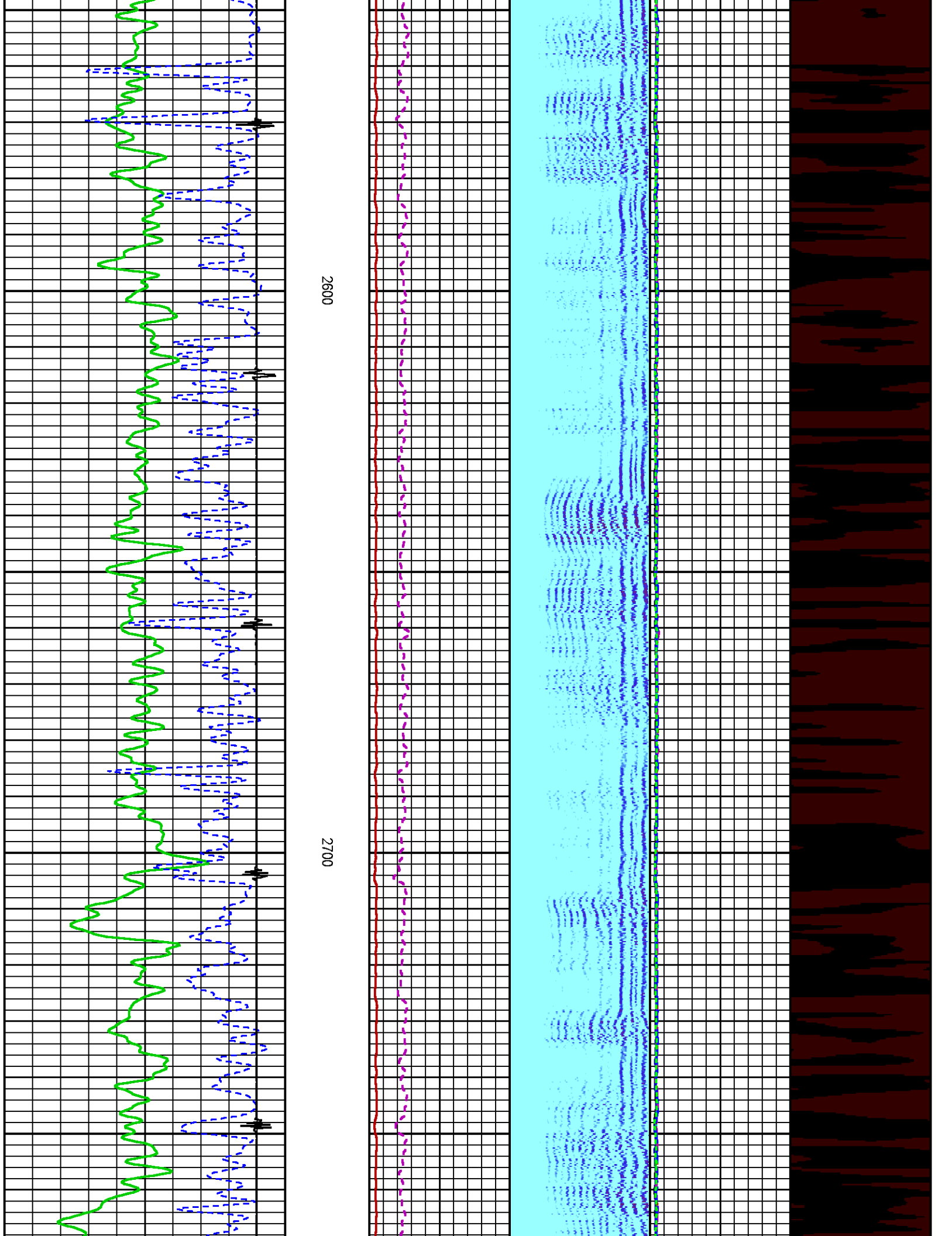


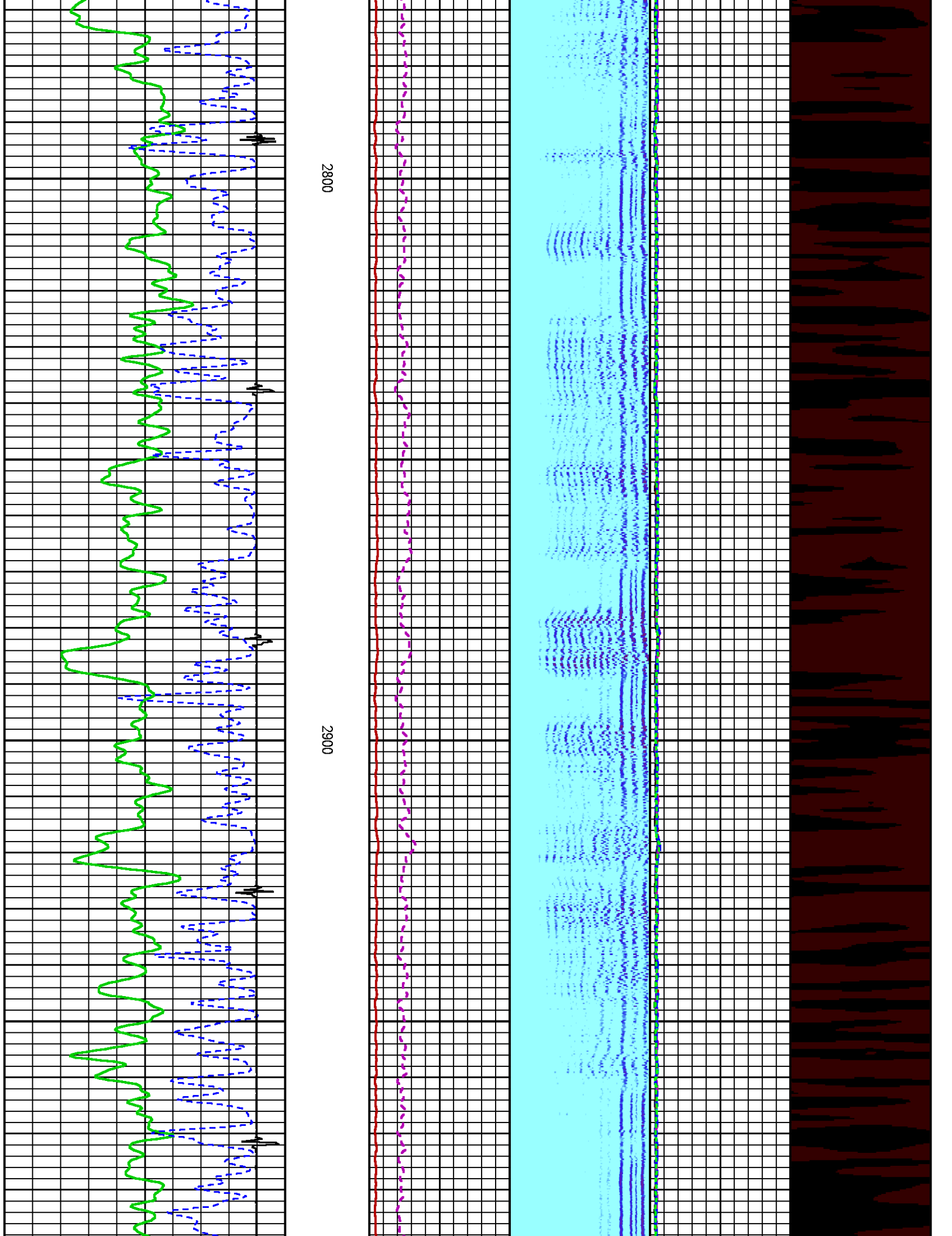


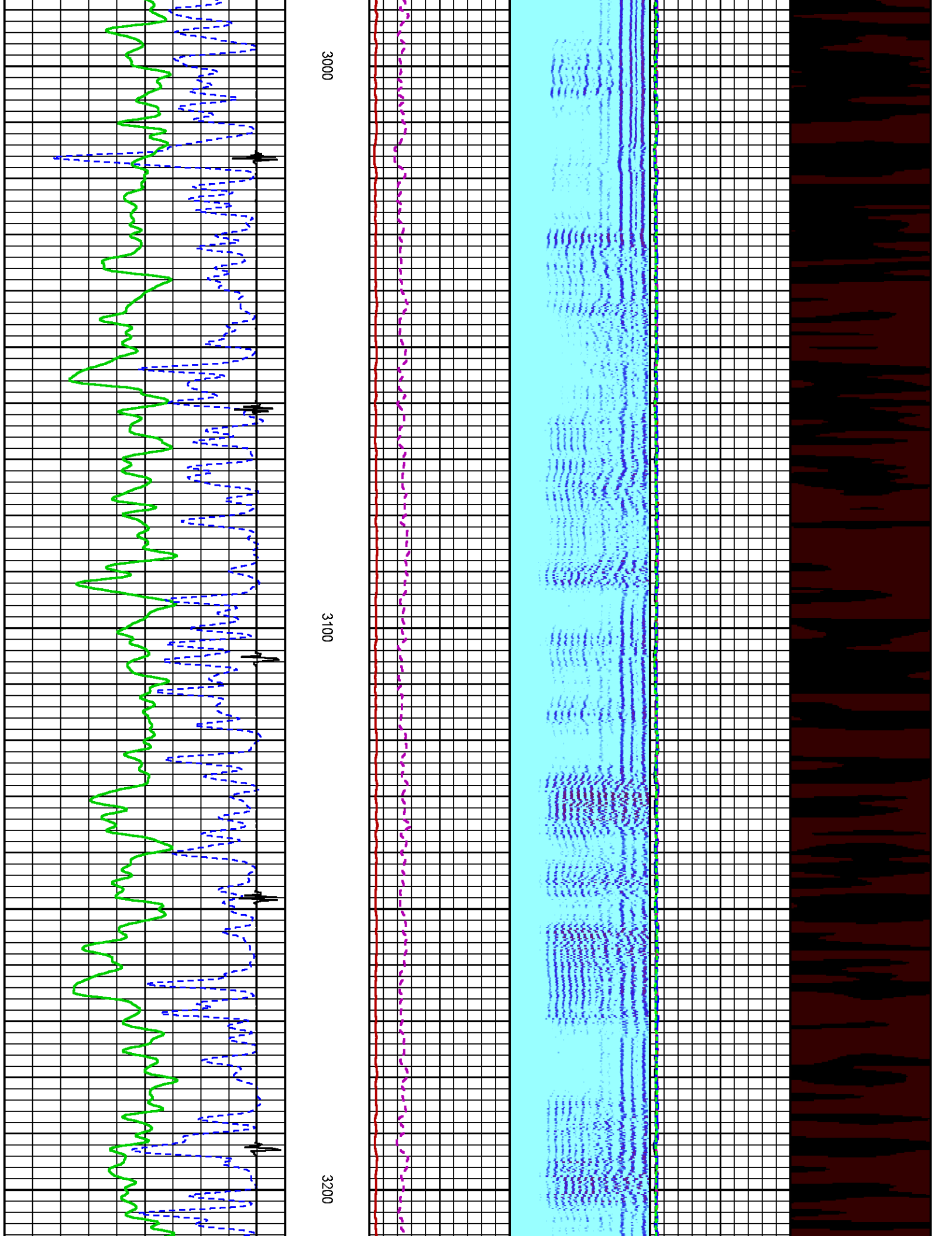


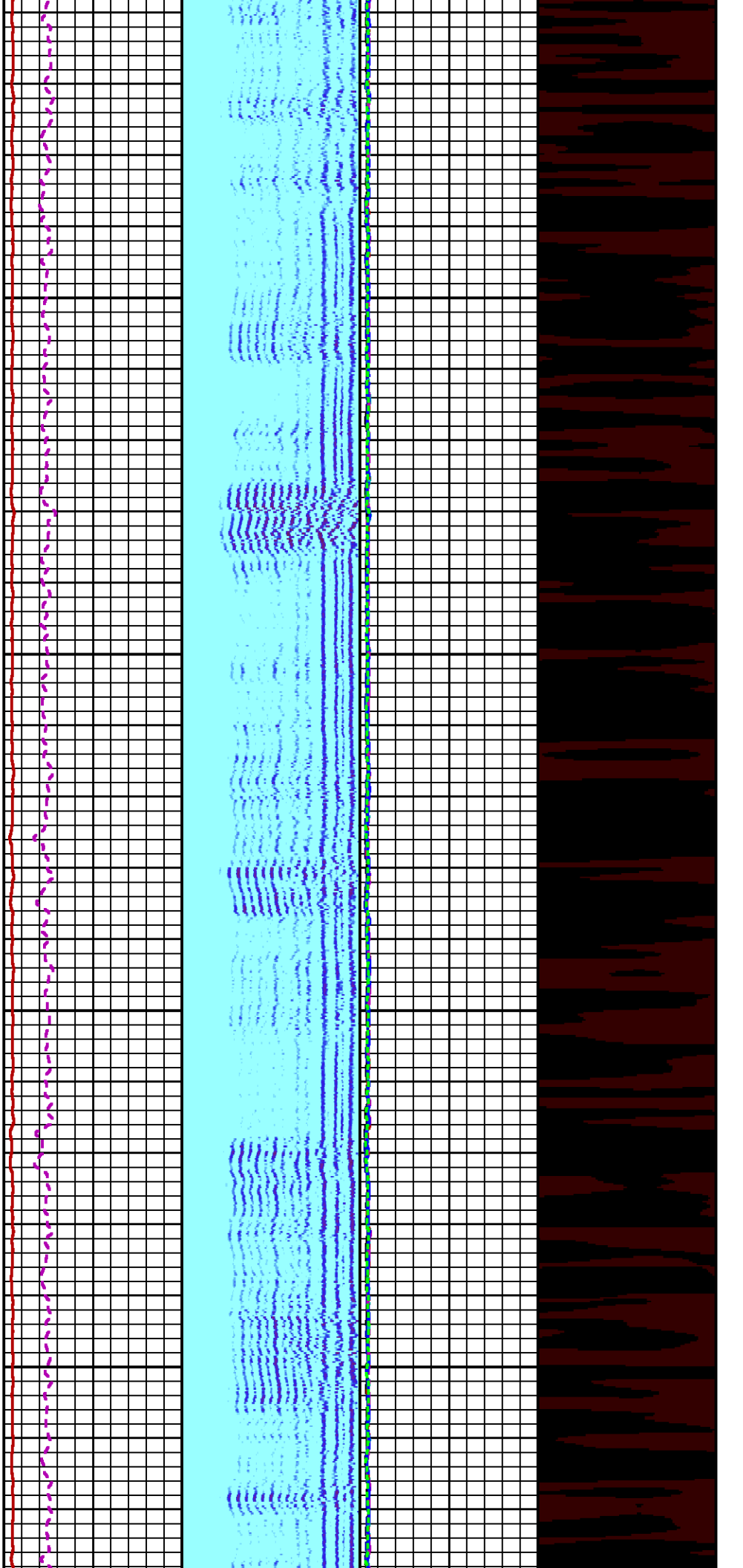






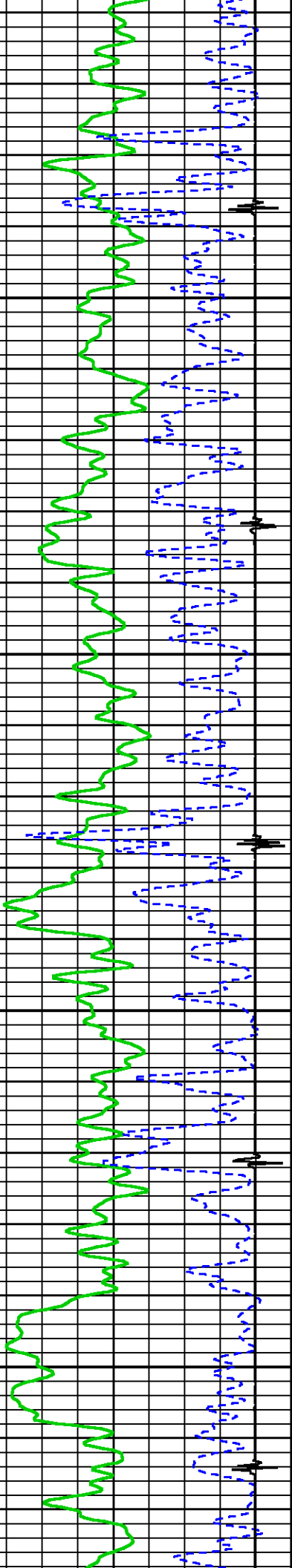


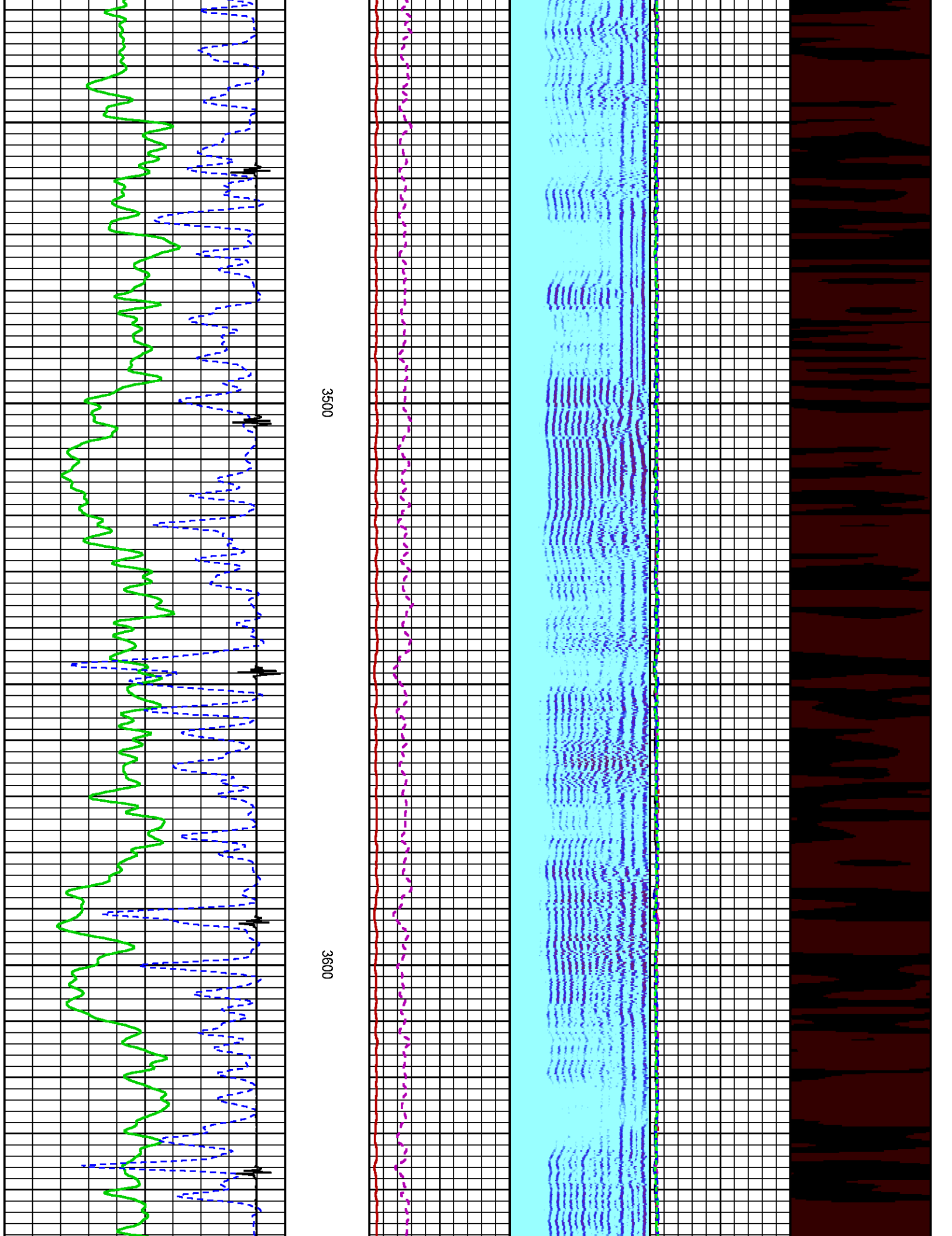


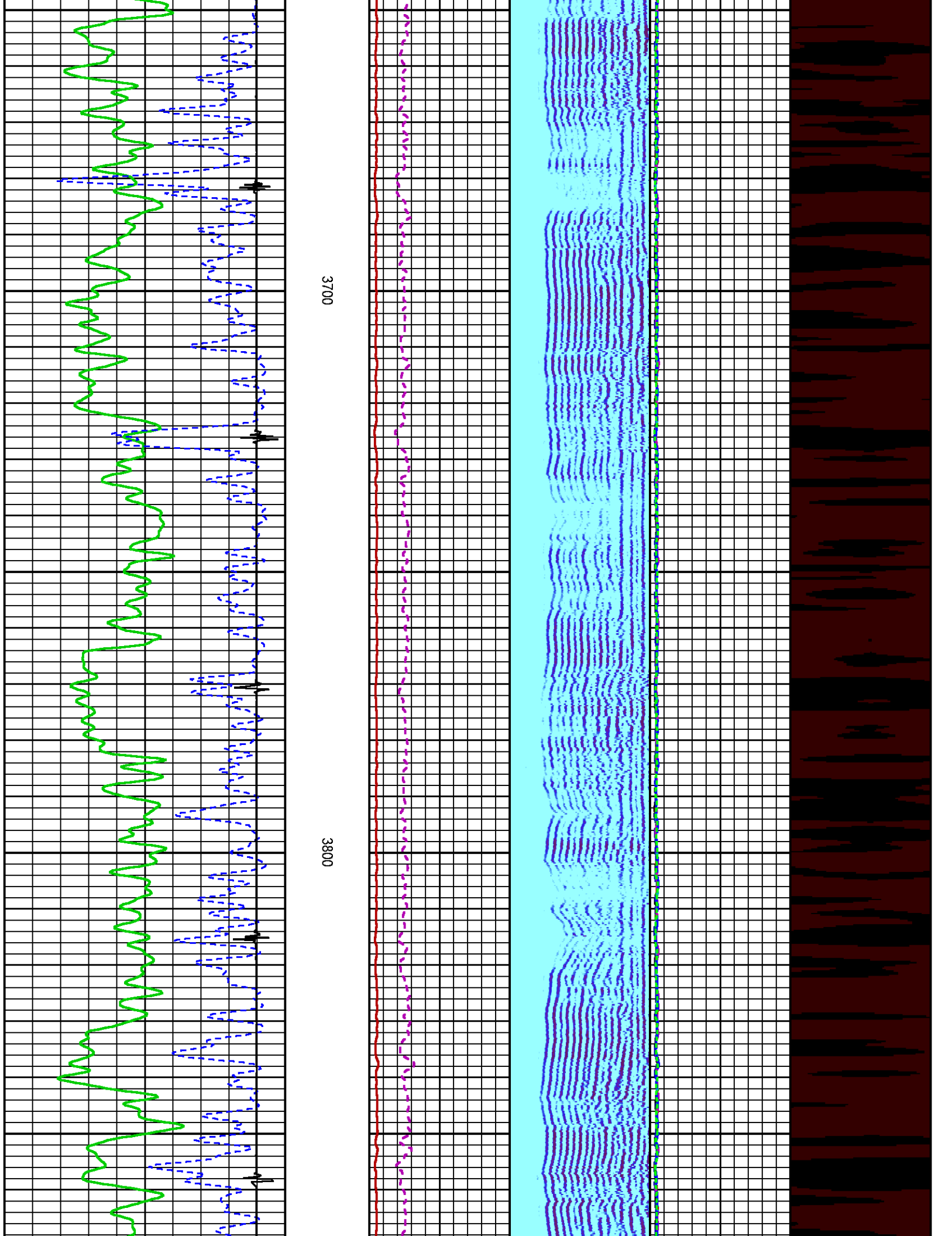


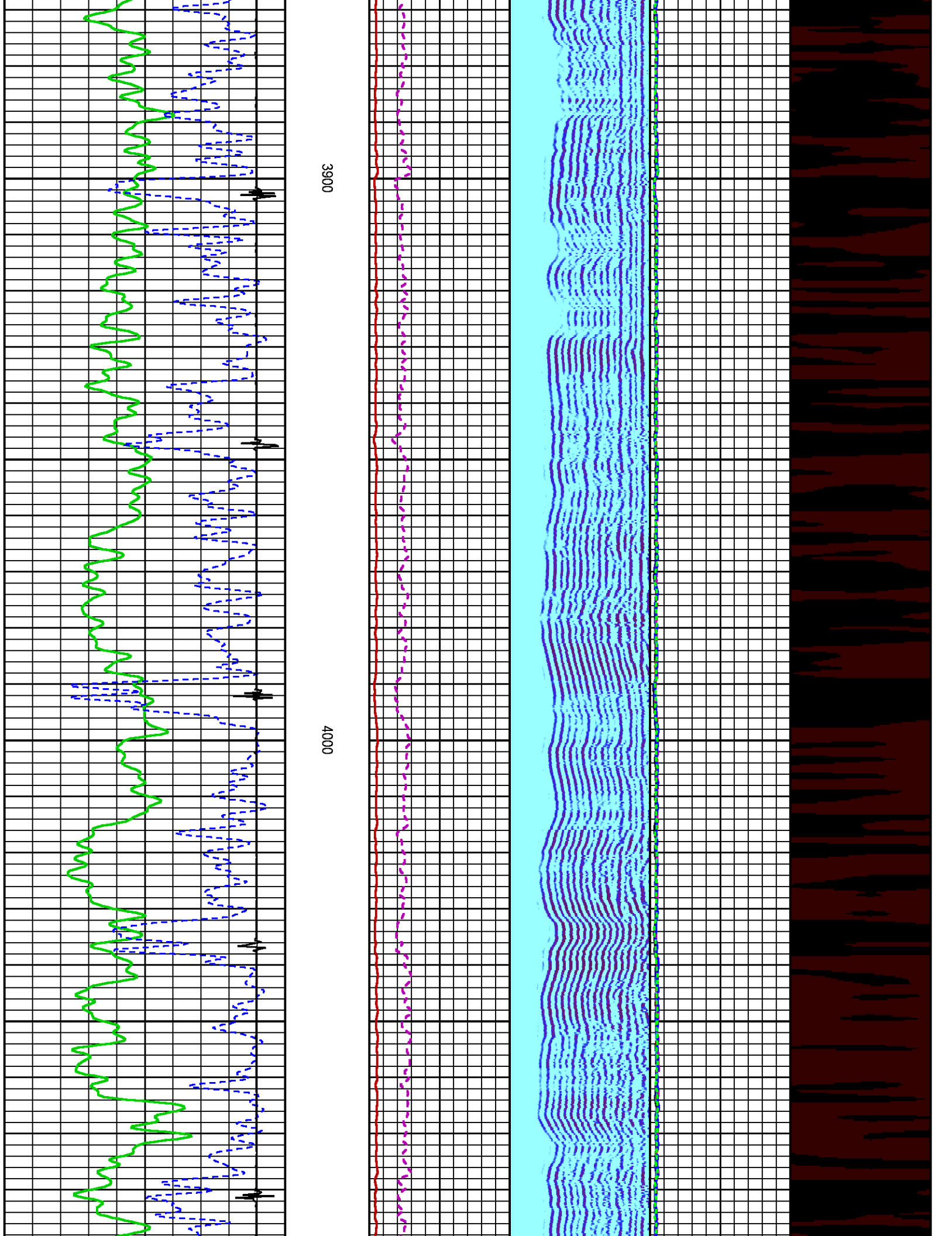
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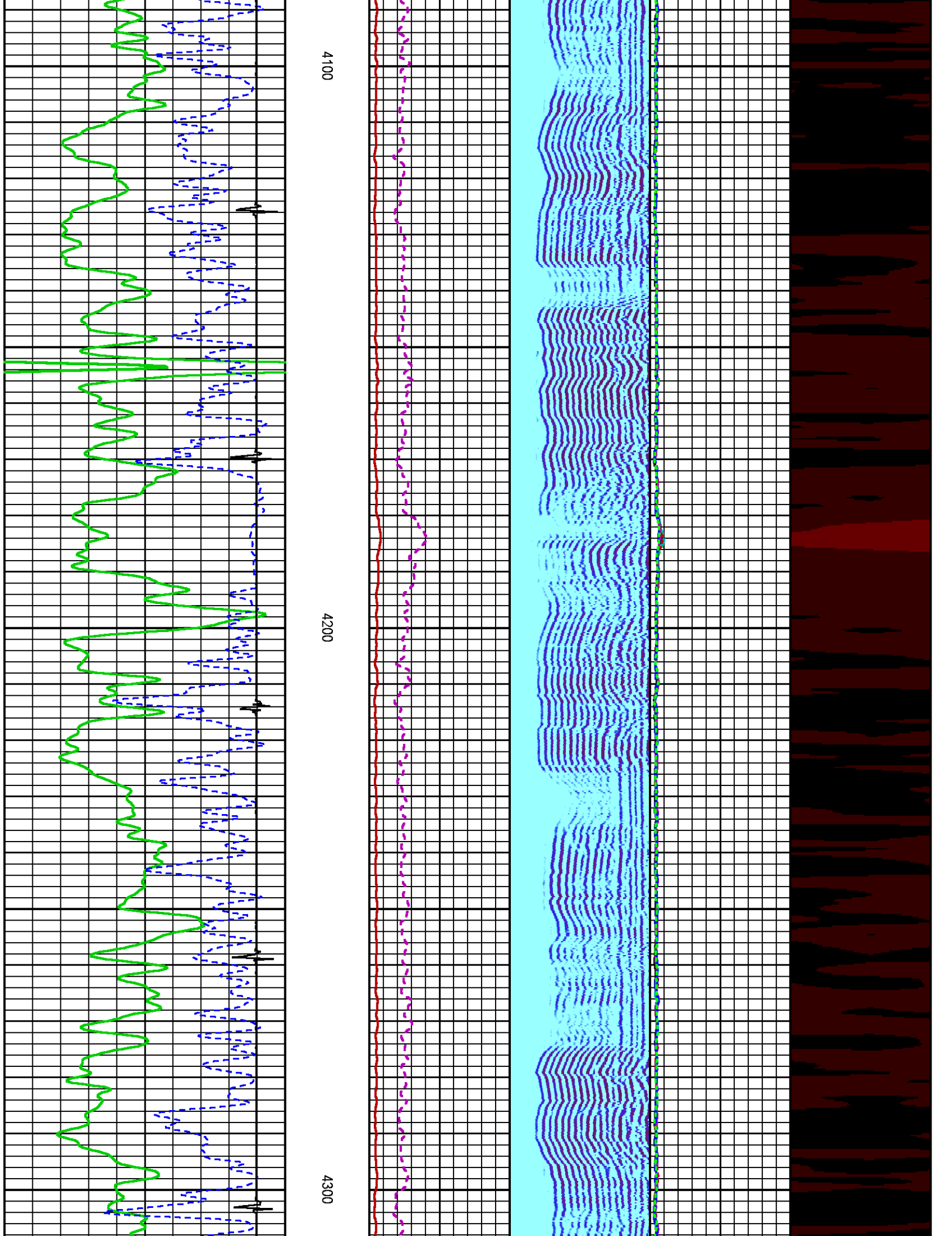
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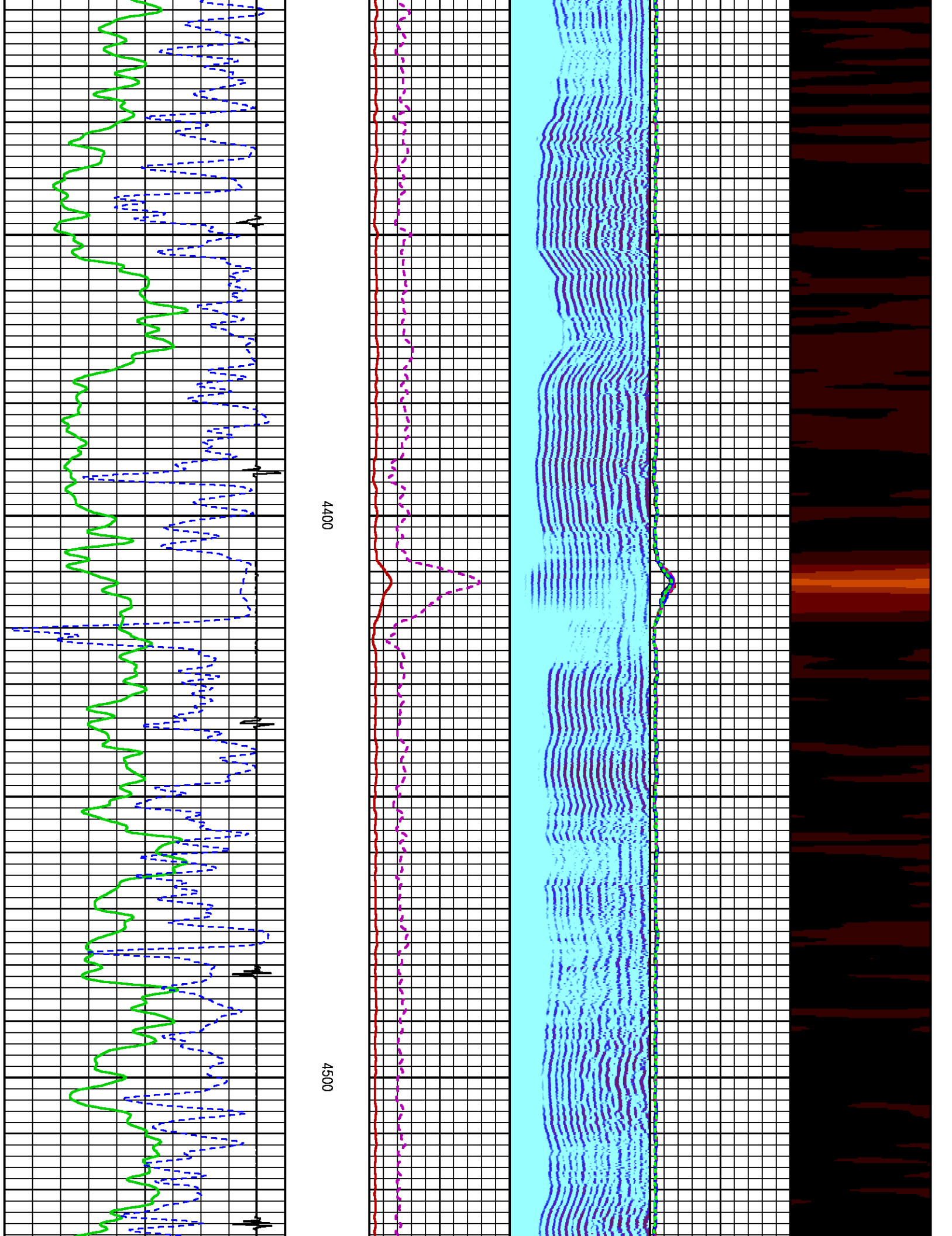


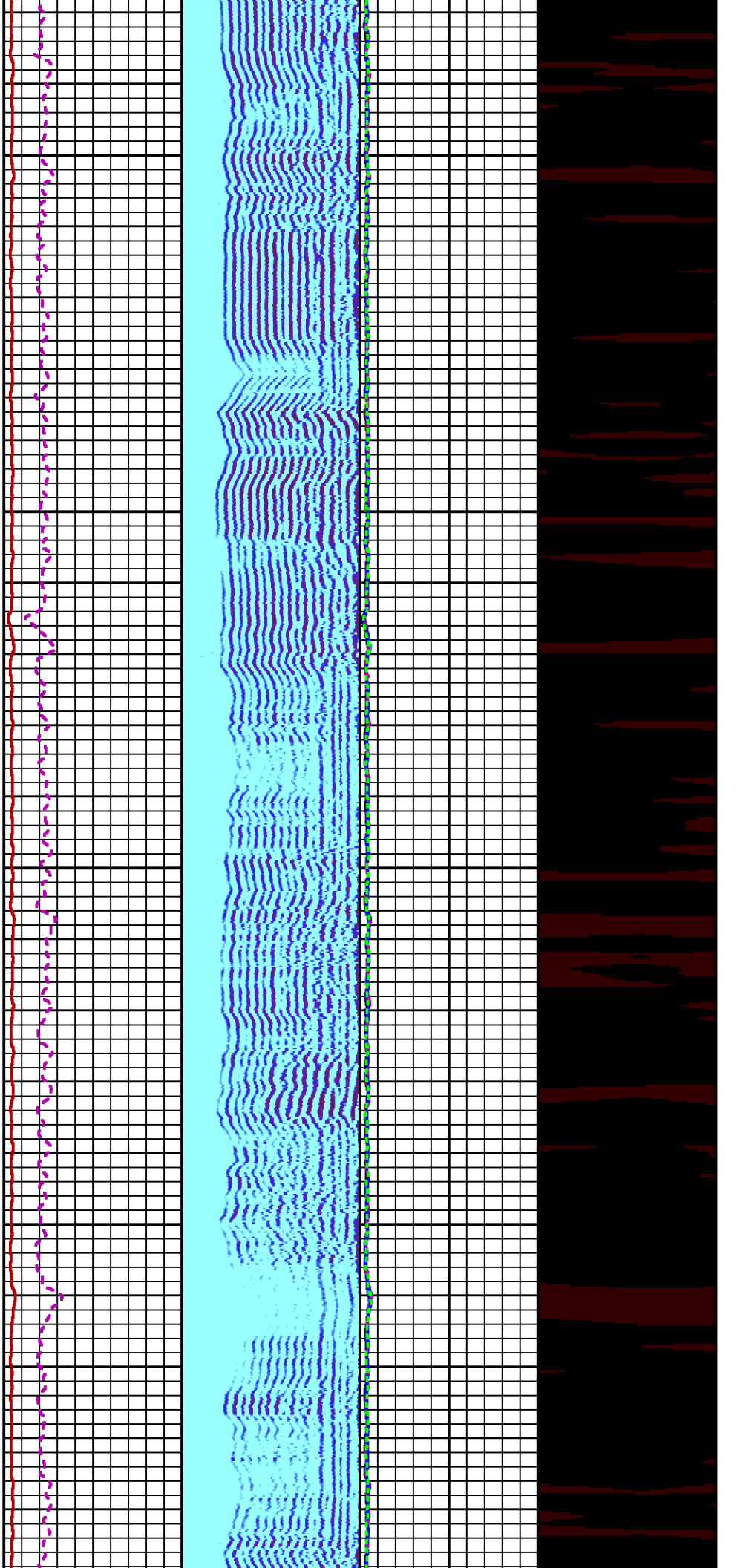






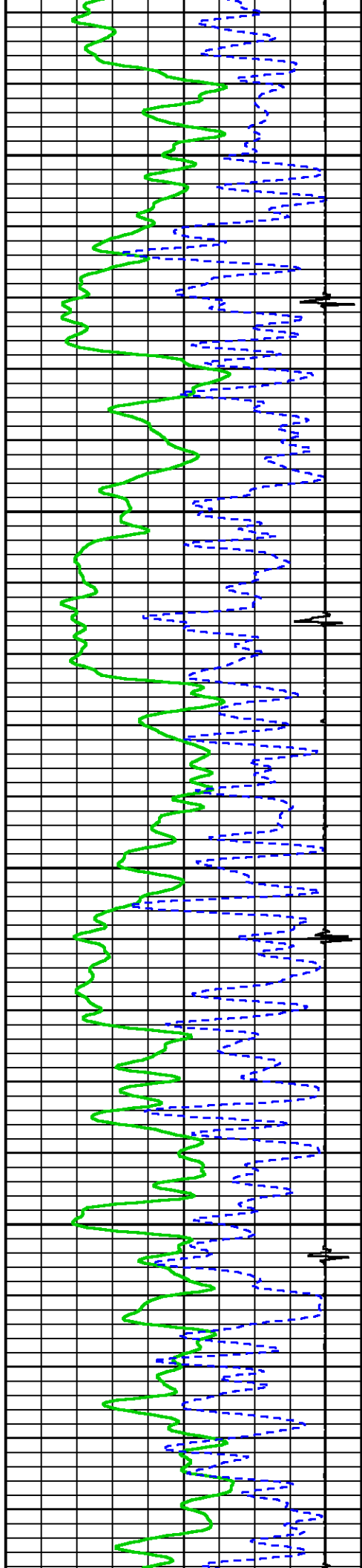


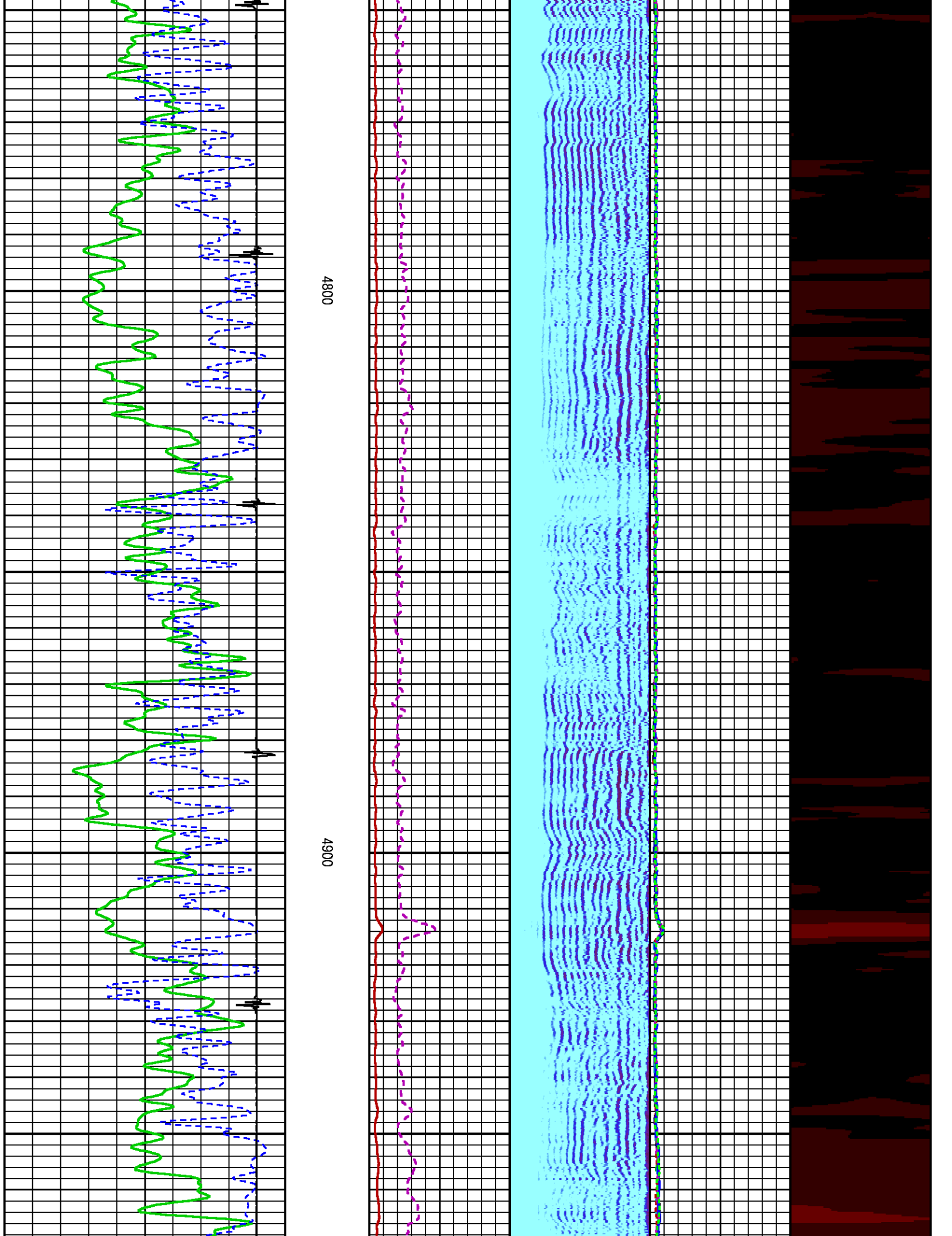


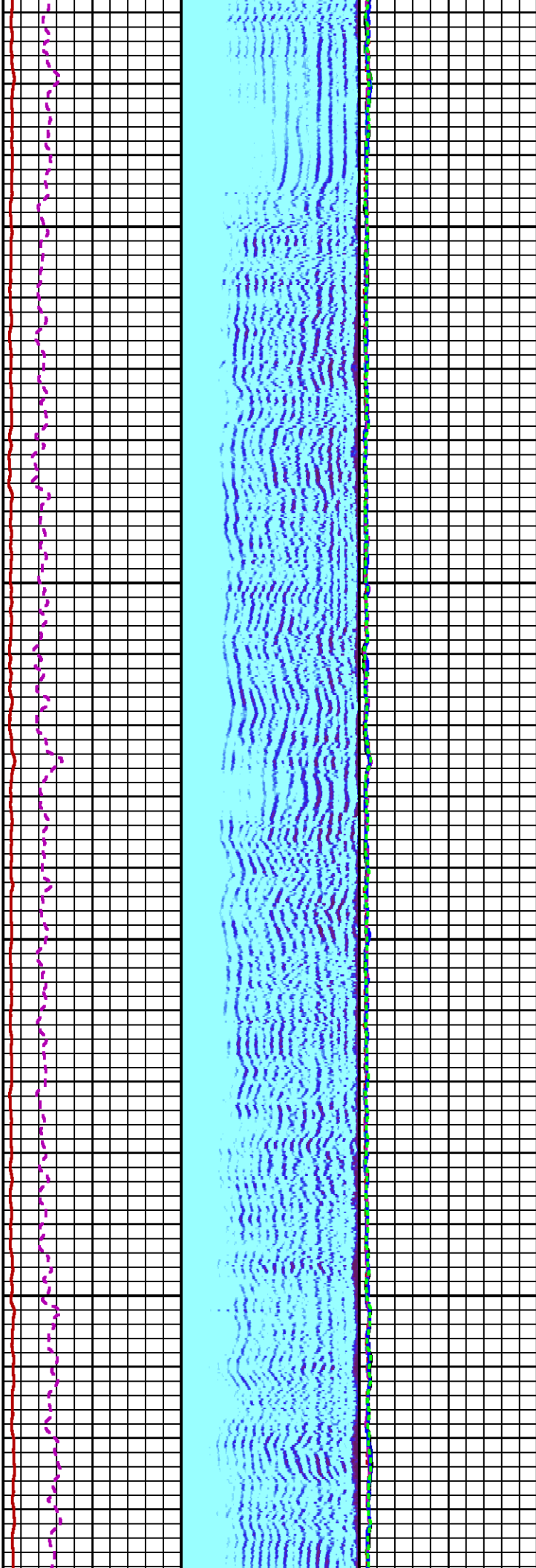


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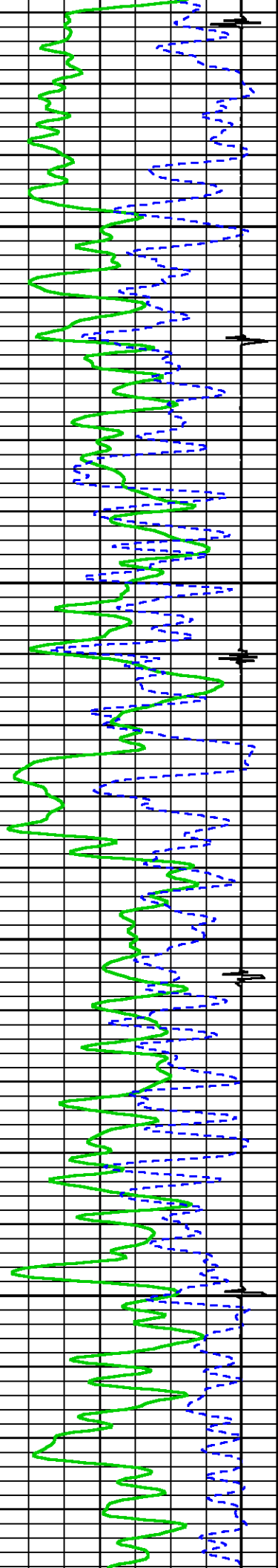


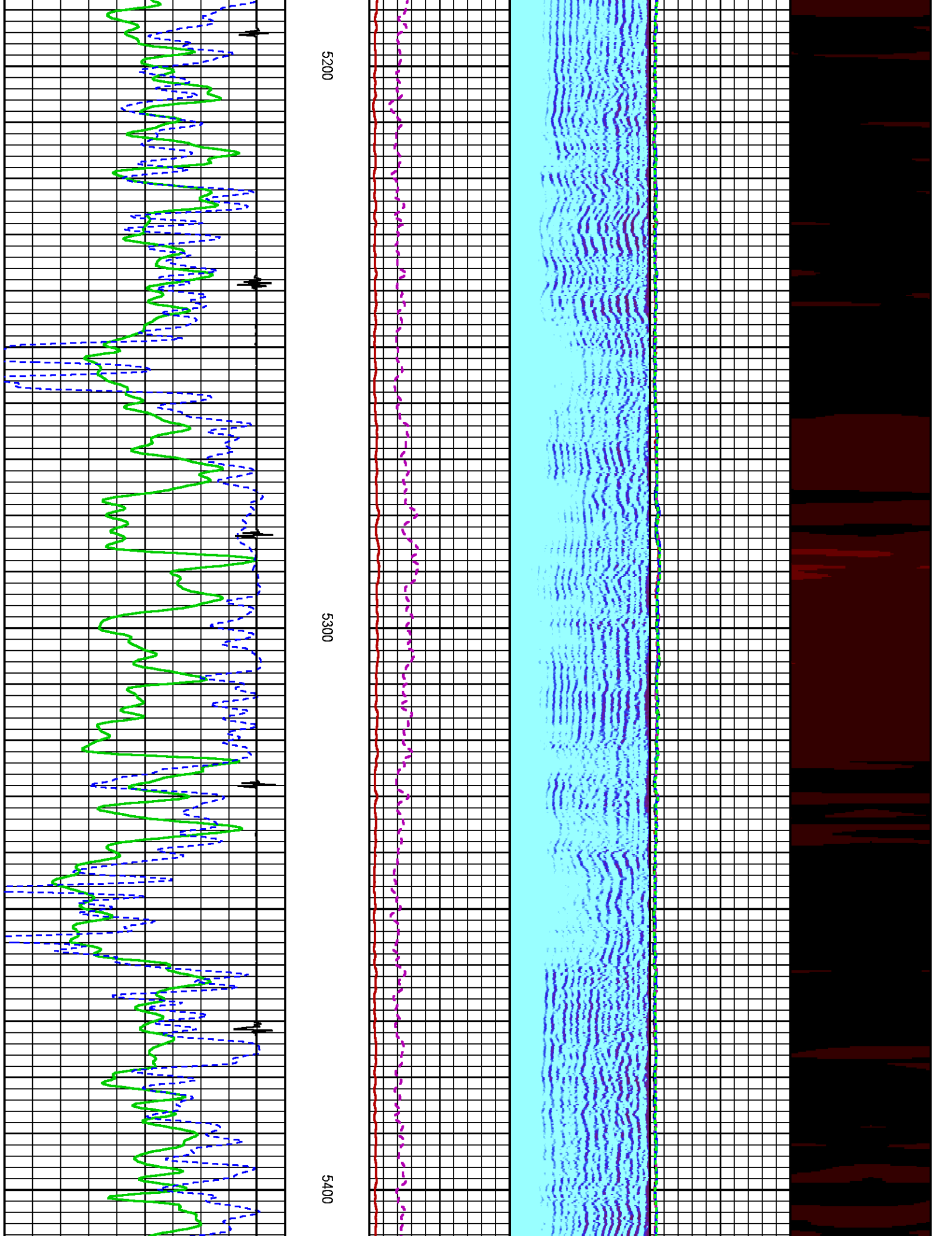


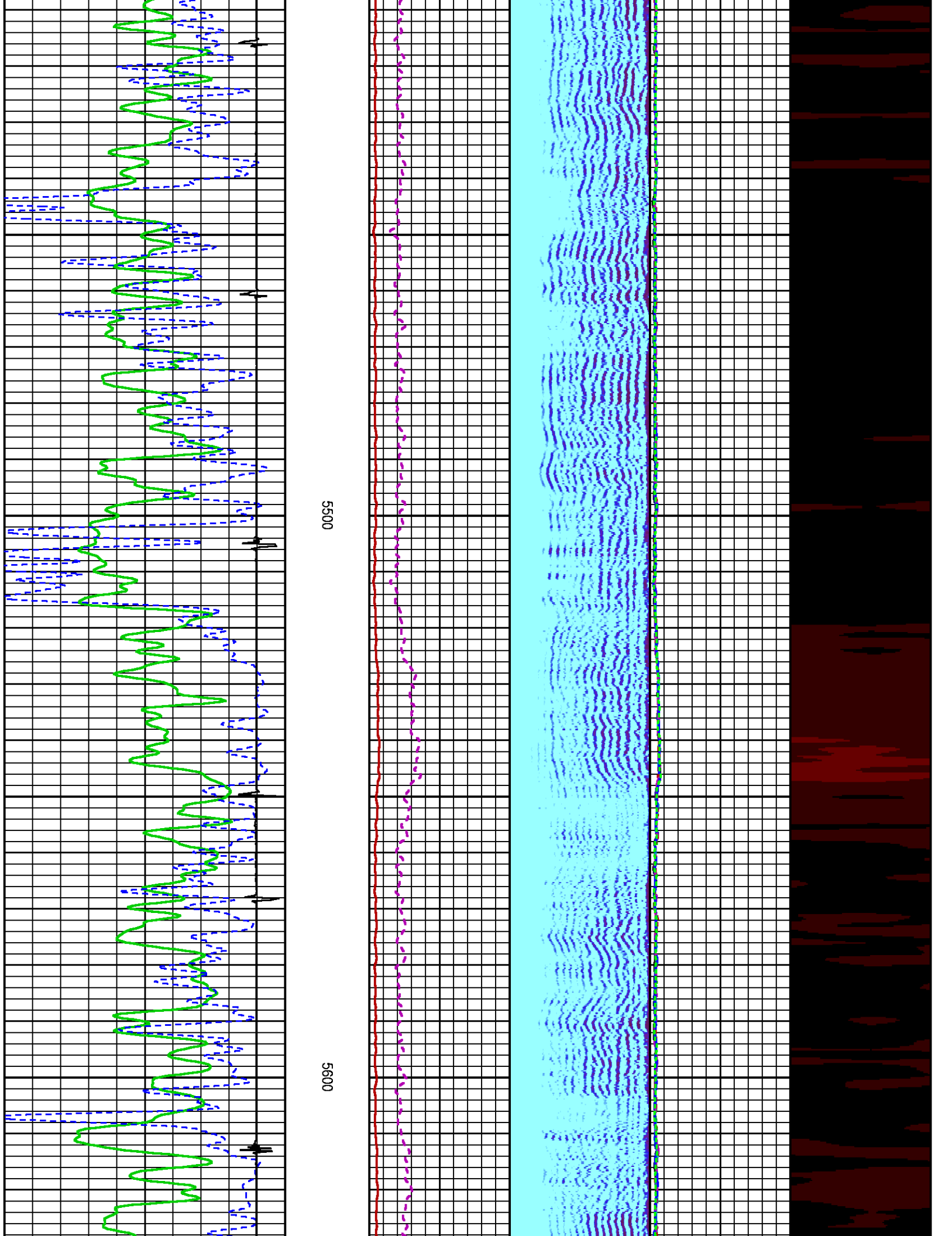


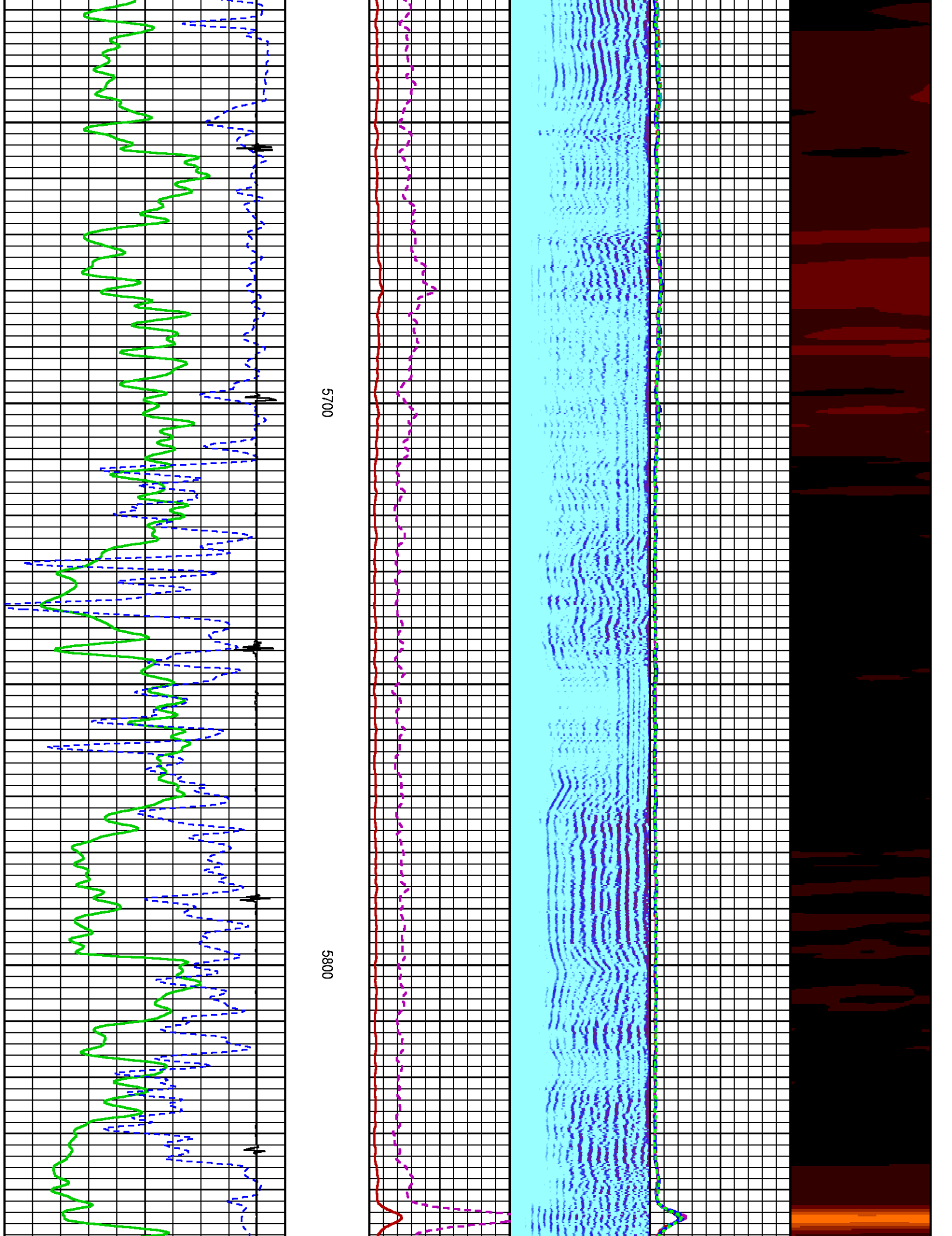
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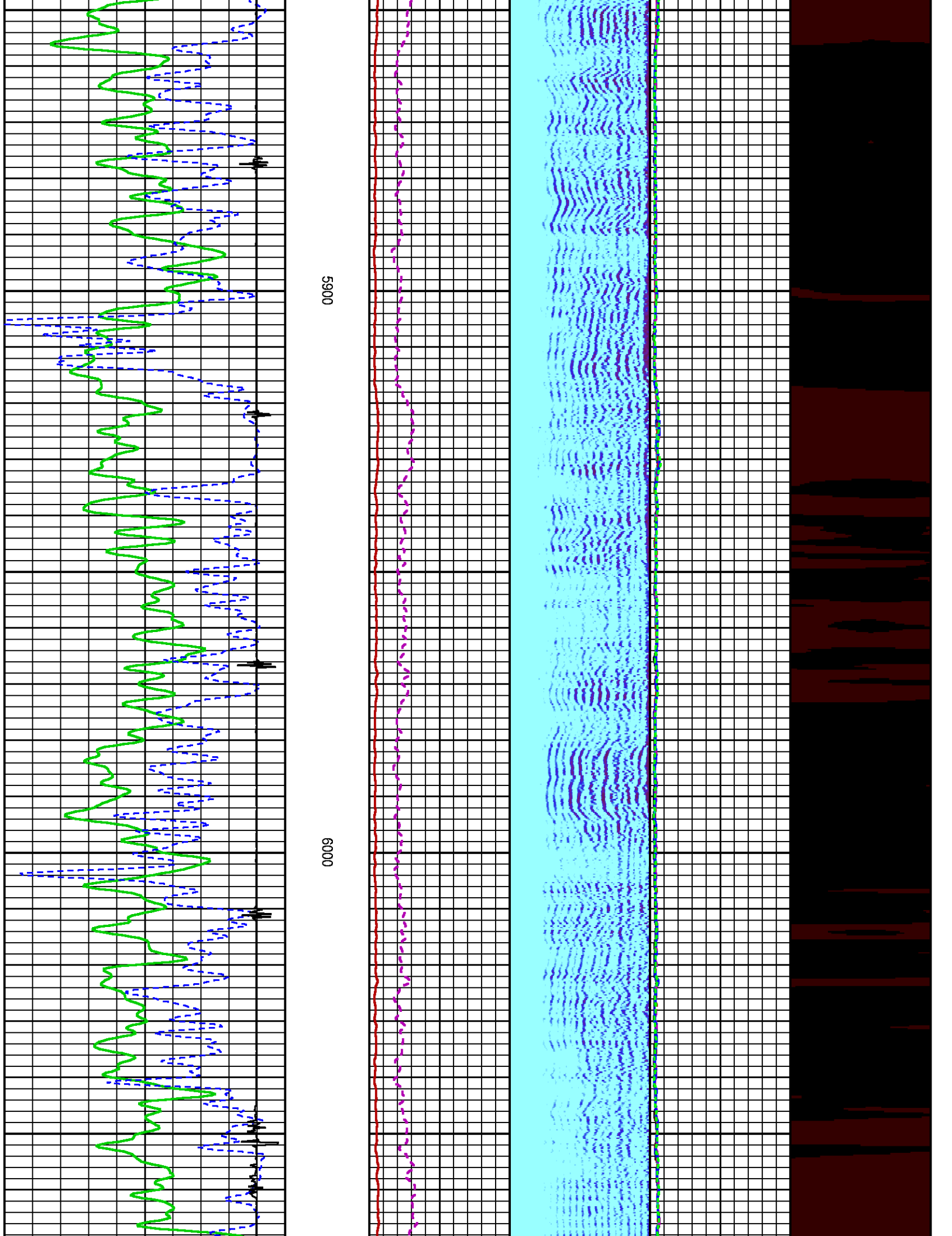
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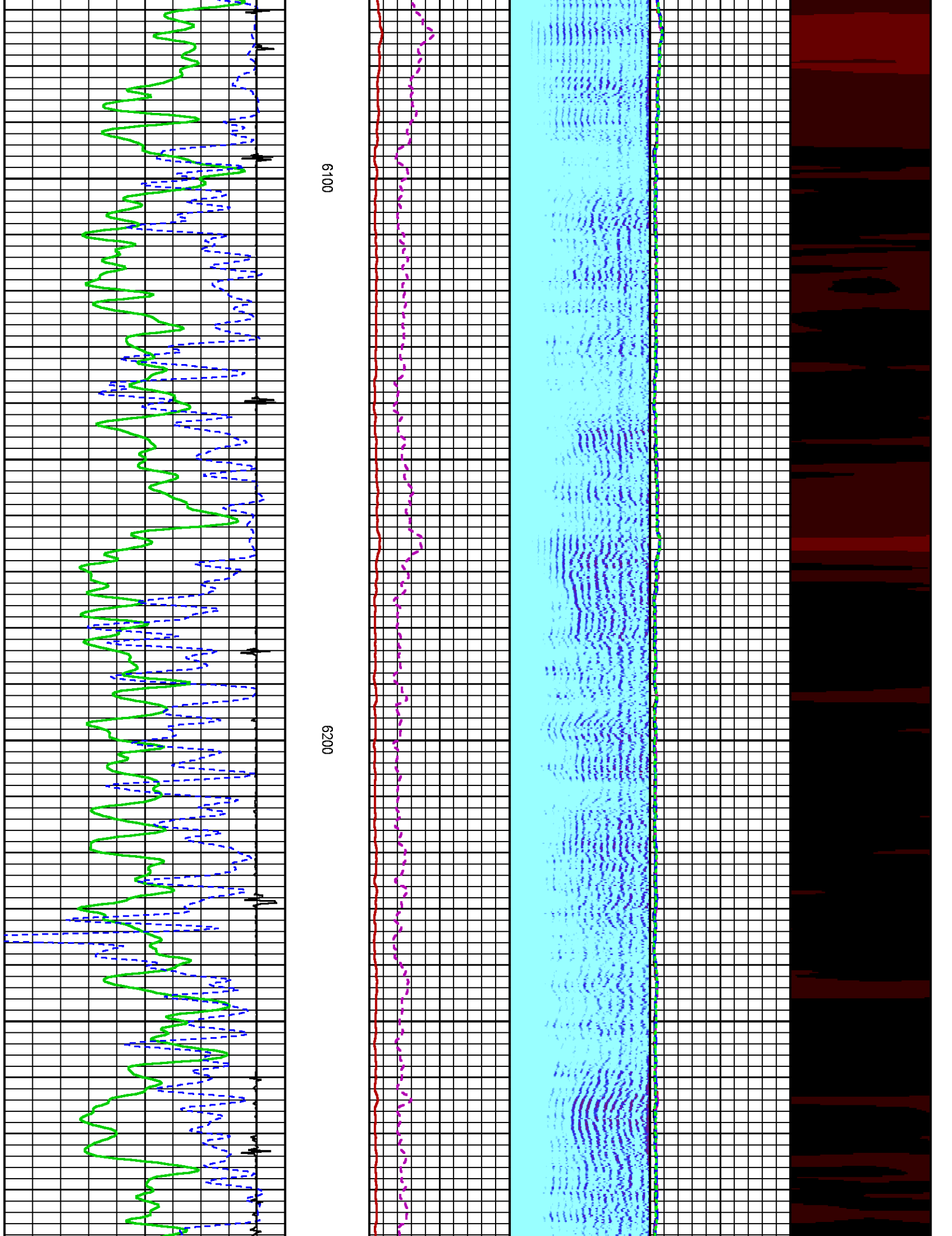


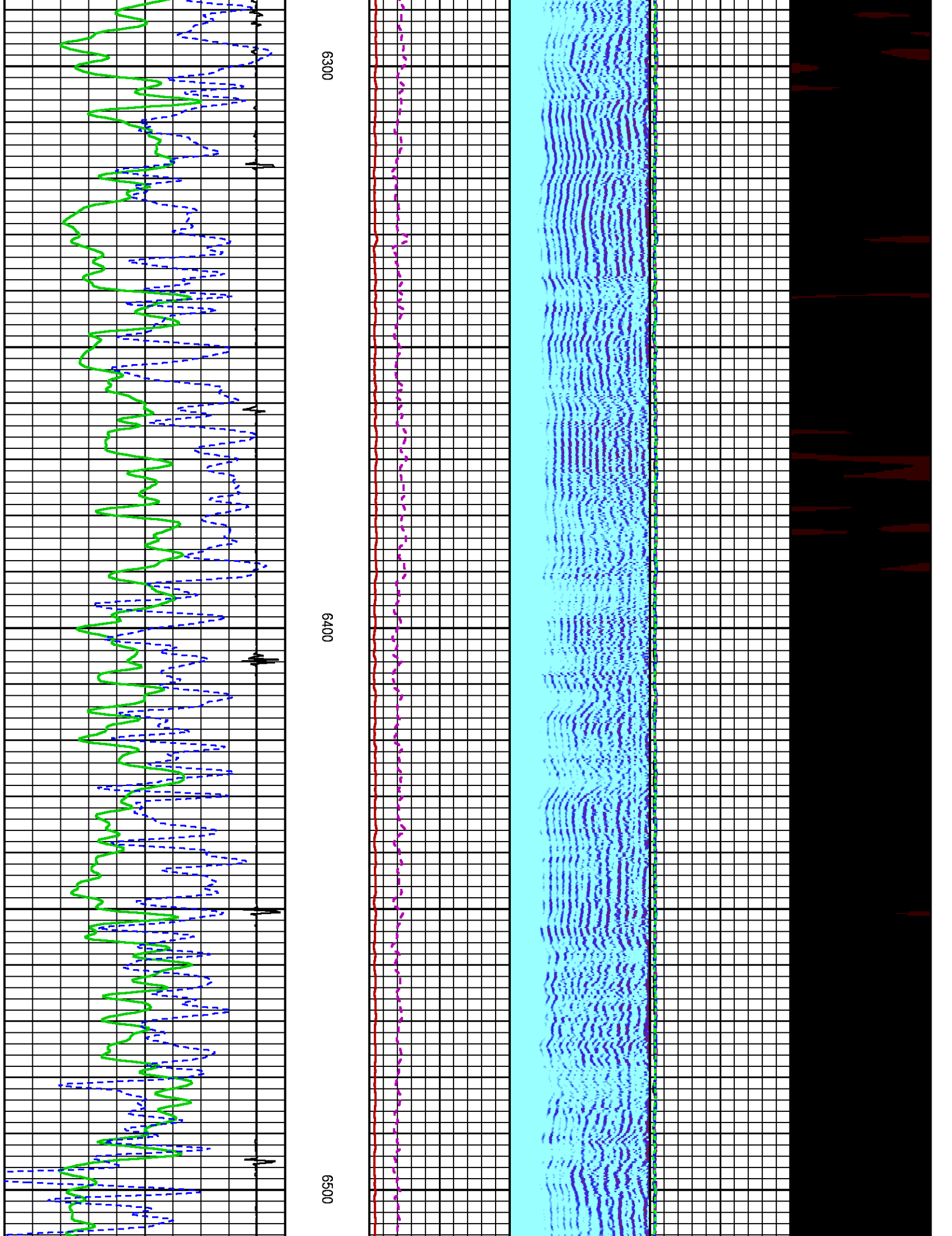


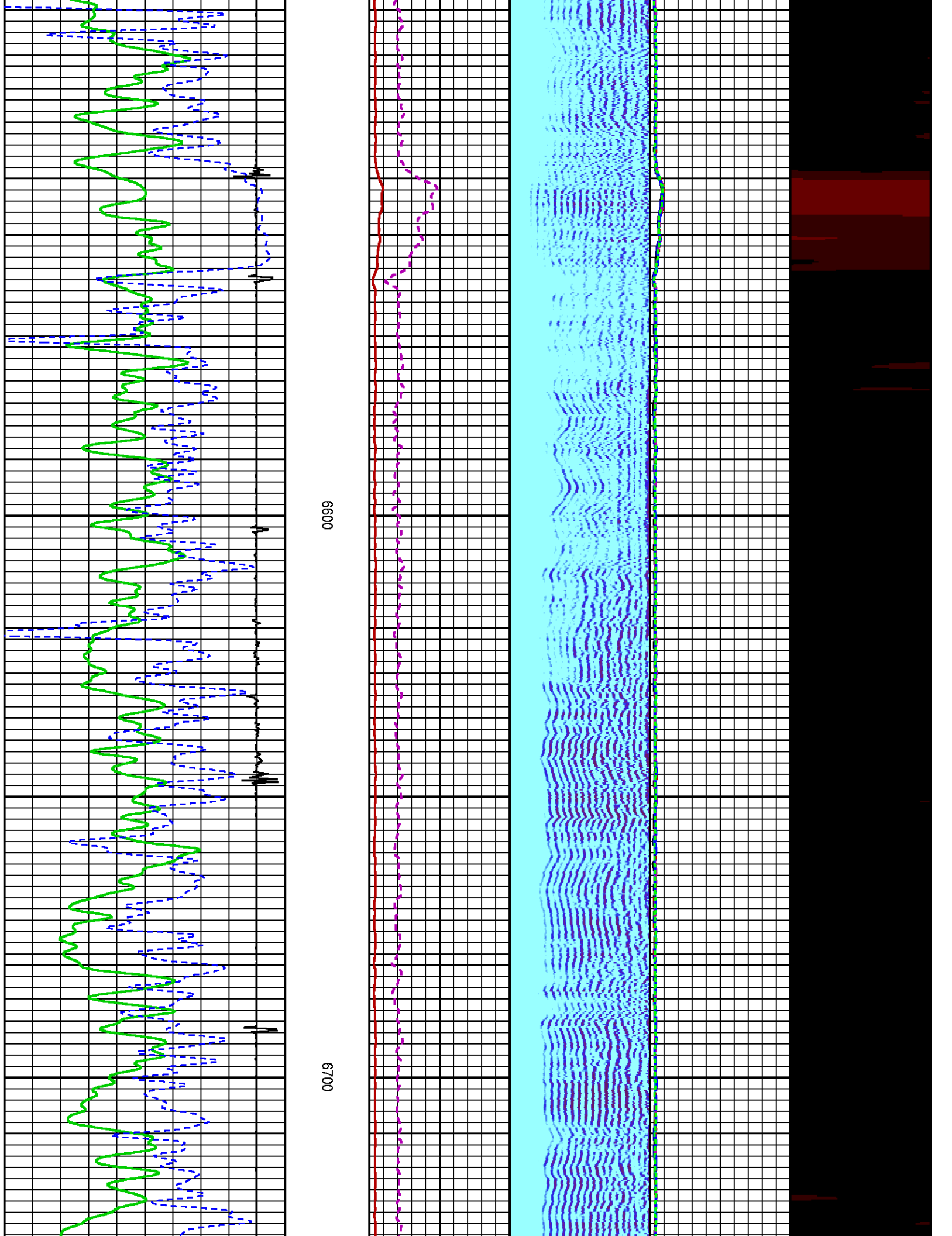


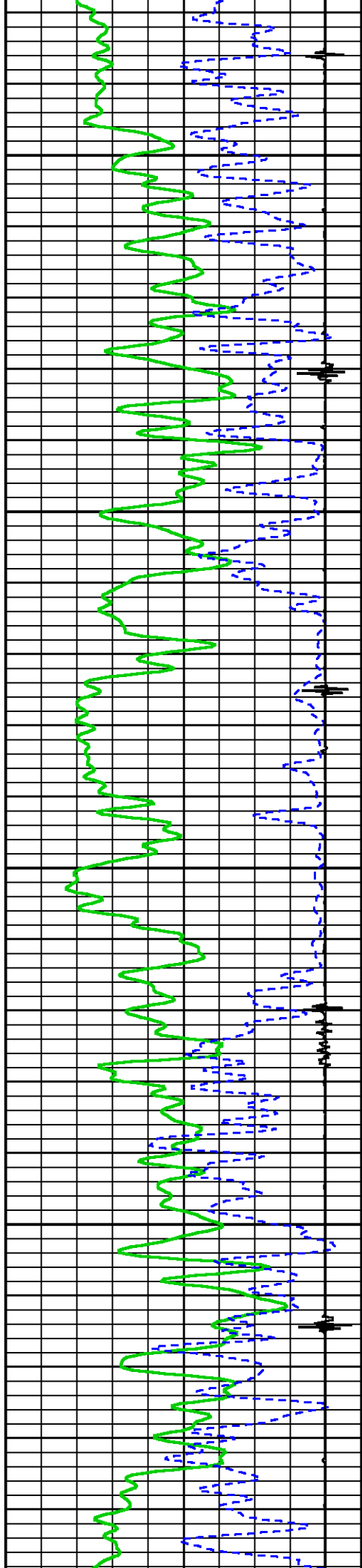






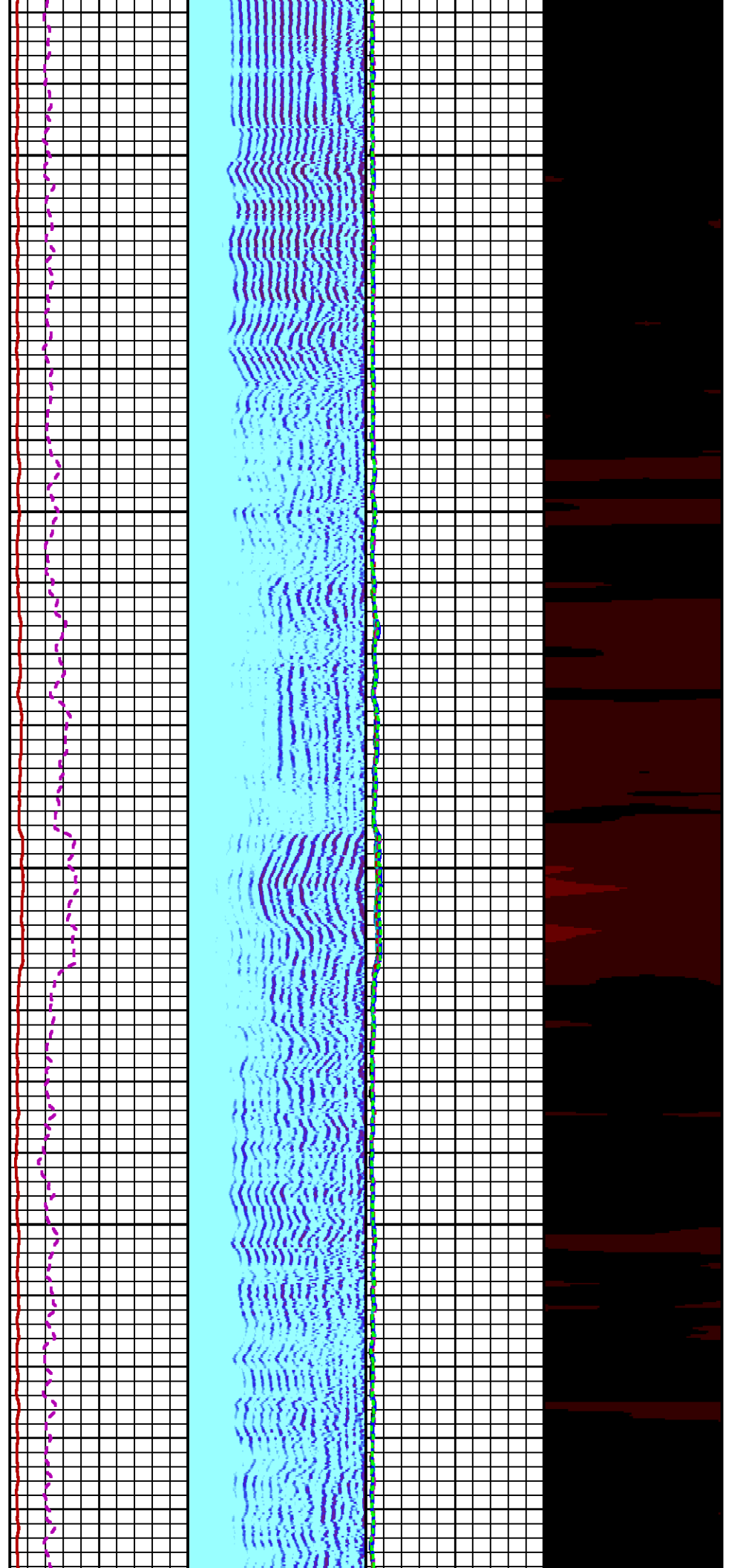


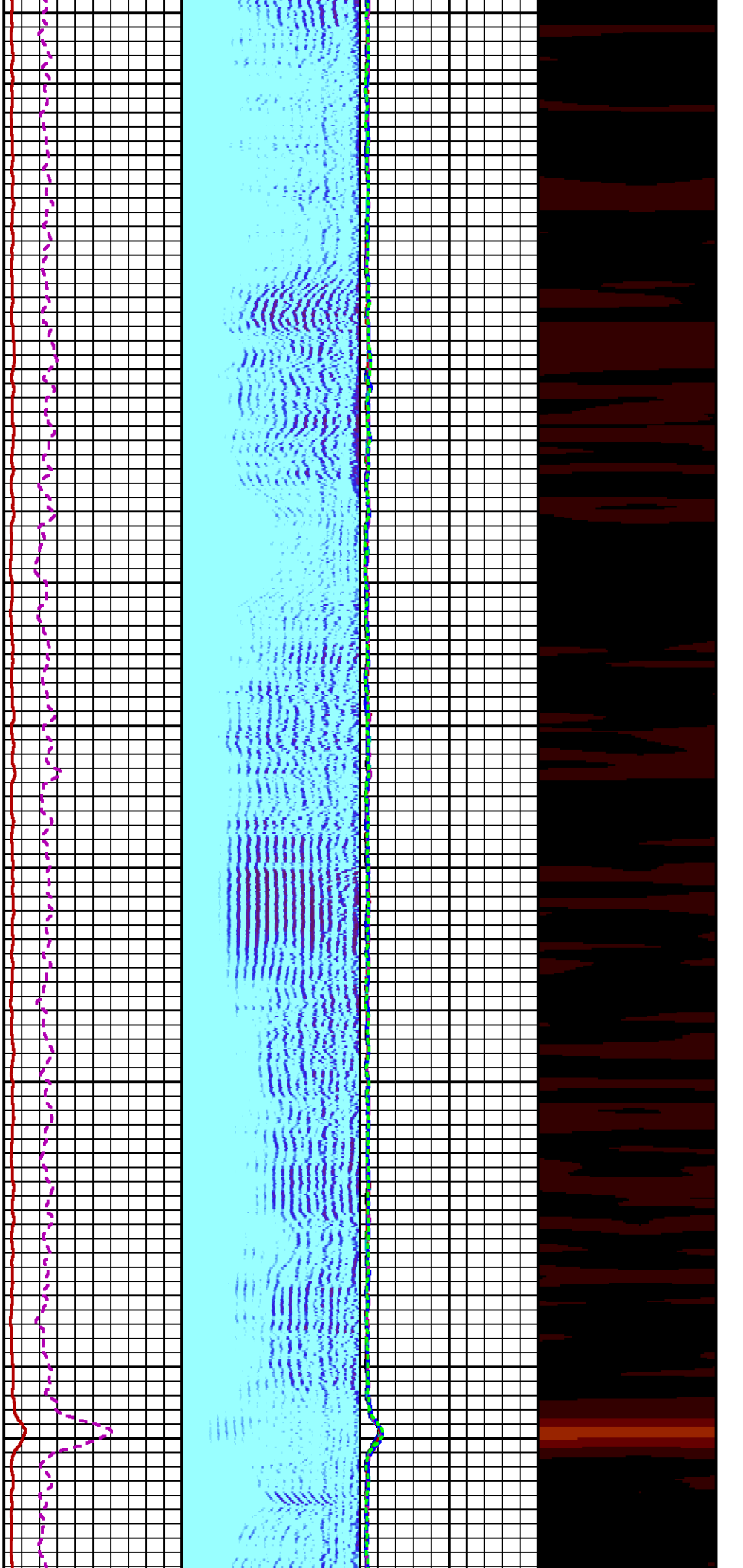




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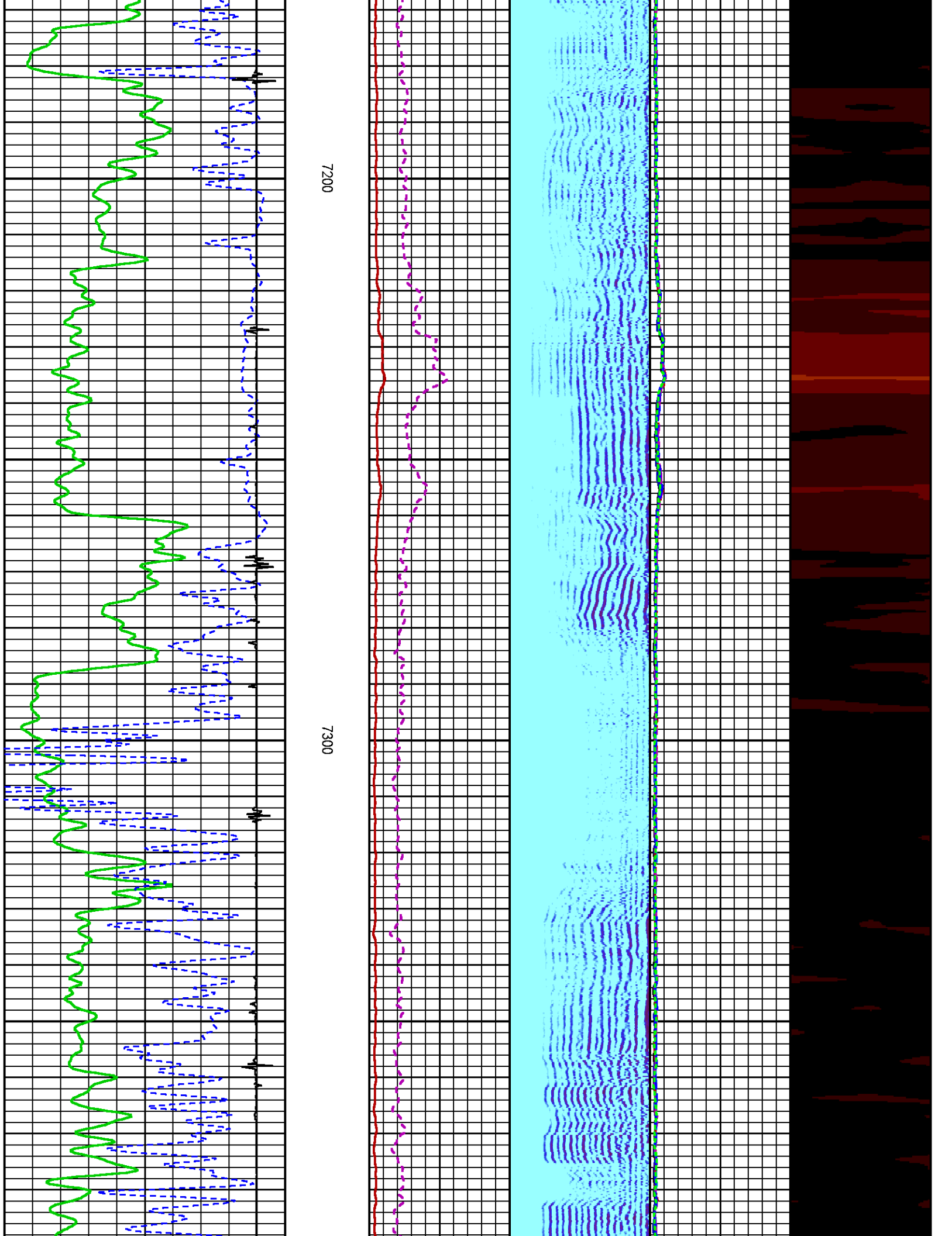
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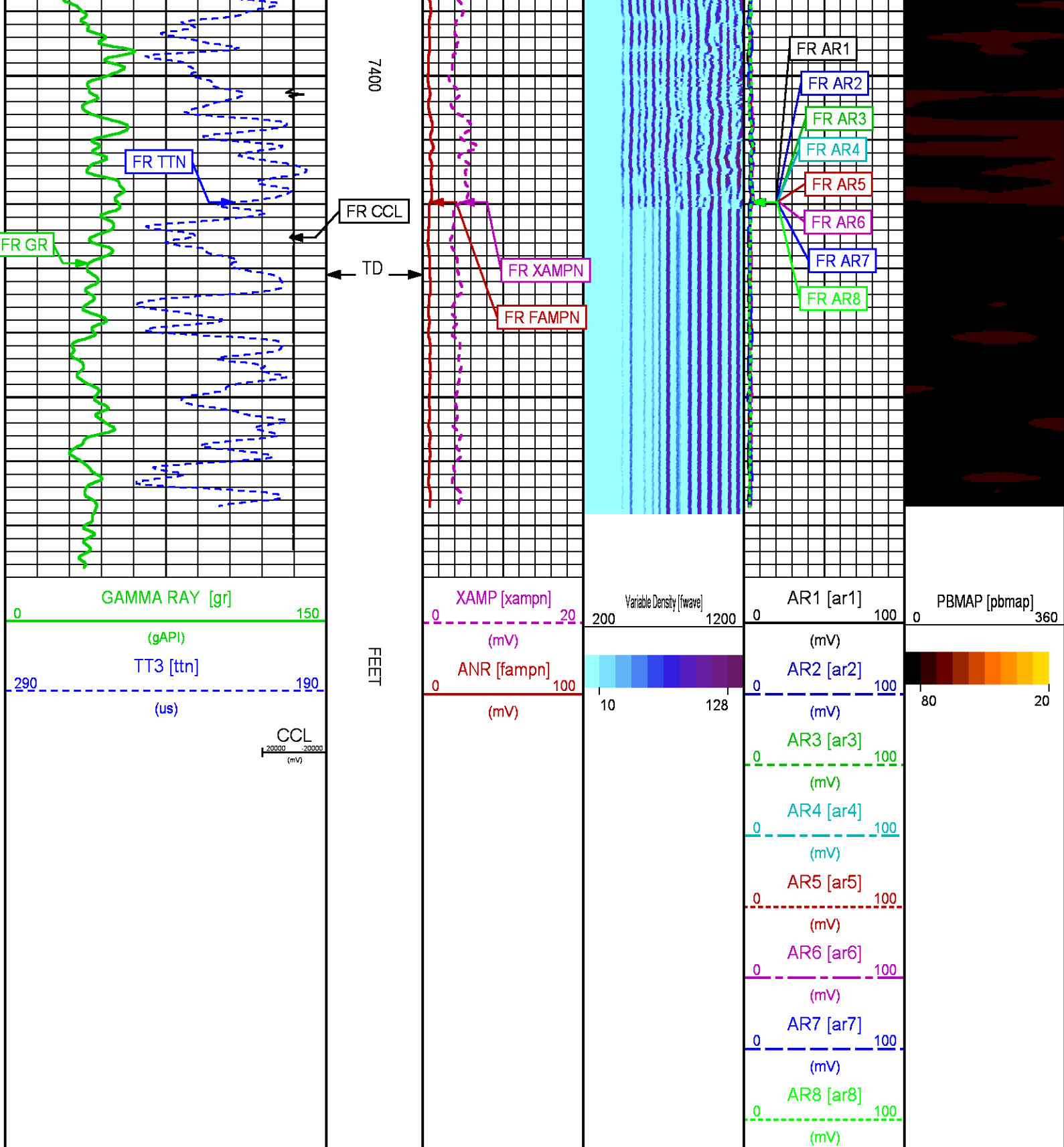




7000

7100





REPEAT PASS 0 PSI

PARAMETER AND FILTER SUMMARY REPORT					
FILE: /dat1a/LARAMIE_GUNDERSON_20_06W/n012g01.prm LOGGING MODE: DEPTH DIRECTION: UP TOP DEPTH: 7109.000 ft BOTTOM DEPTH: 7453.750 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		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	200.391	us	"	"
RAL TOOL DELAY	TOOL DELAY (str1*)	-60	us	TOP	7131.500
		-62	us	7131.500	BOTTOM
	TOOL DELAY (str2*)	-60	us	TOP	7131.500
		-62	us	7131.500	BOTTOM
	TOOL DELAY (str3*)	-60	us	TOP	7131.500
		-62	us	7131.500	BOTTOM
	TOOL DELAY (str4*)	-60	us	TOP	7131.500
		-62	us	7131.500	BOTTOM
	TOOL DELAY (str5*)	-60	us	TOP	7131.500
		-62	us	7131.500	BOTTOM
	TOOL DELAY (str6*)	-60	us	TOP	7131.500
		-62	us	7131.500	BOTTOM
	TOOL DELAY (str7*)	-60	us	TOP	7131.500
		-62	us	7131.500	BOTTOM
	TOOL DELAY (str8*)	-60	us	TOP	7131.500
		-62	us	7131.500	BOTTOM
BASELINE NOISE (NEAR)	TOOL DELAY (strn*)	-60	us	TOP	7131.500
		-62	us	7131.500	BOTTOM
	NOISE WINDOW START	125	us	TOP	BOTTOM
	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 9
FULL BOND AMP REC 7
FULL BOND AMP REC 8

2
2
2

mV
mV
mV

"
"
"

"
"
"

CURVE DESCRIPTION REPORT

CURVE NAME CREATION DATE

CURVE DESCRIPTION

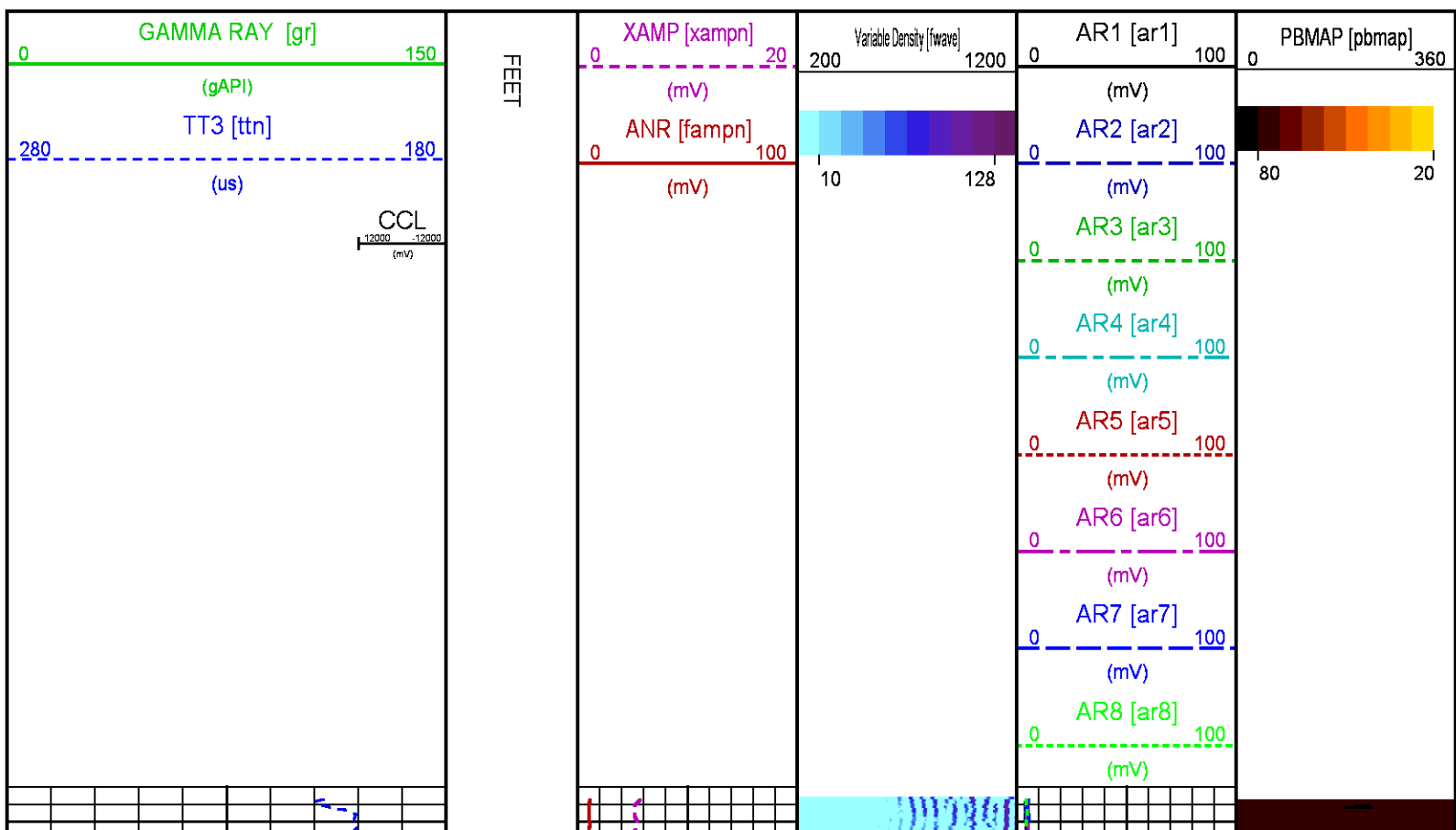
F1:AR1	Aug 24 14:05:31 2017	FIXED GATE AMPLITUDE T-R1
F1:AR2	Aug 24 14:05:31 2017	FIXED GATE AMPLITUDE T-R2
F1:AR3	Aug 24 14:05:31 2017	FIXED GATE AMPLITUDE T-R3
F1:AR4	Aug 24 14:05:31 2017	FIXED GATE AMPLITUDE T-R4
F1:AR5	Aug 24 14:05:31 2017	FIXED GATE AMPLITUDE T-R5
F1:AR6	Aug 24 14:05:31 2017	FIXED GATE AMPLITUDE T-R6
F1:AR7	Aug 24 14:05:31 2017	FIXED GATE AMPLITUDE T-R7
F1:AR8	Aug 24 14:05:31 2017	FIXED GATE AMPLITUDE T-R8
F1:CCL	Aug 24 14:05:31 2017	CASING COLLAR LOCATOR
F1:FAMPN	Aug 24 14:05:31 2017	FIXED GATE AMPLITUDE NEAR RECEIVER
F1:FWAVE	Aug 24 14:05:31 2017	FAR WAVE FORM
F1:GR	Aug 24 14:05:31 2017	GAMMA RAY
F1:PBMAP	Aug 24 14:05:31 2017	PERCENT BOND CEMENT MAP
F1:TTN	Aug 24 14:05:31 2017	TRAVELTIME FROM NEAR TRANSMITTER-RECEIVER
F1:XAMPN	Aug 24 14:05:31 2017	FIXED GATE AMPLITUDE NEAR RECEIVER TIMES FIVE

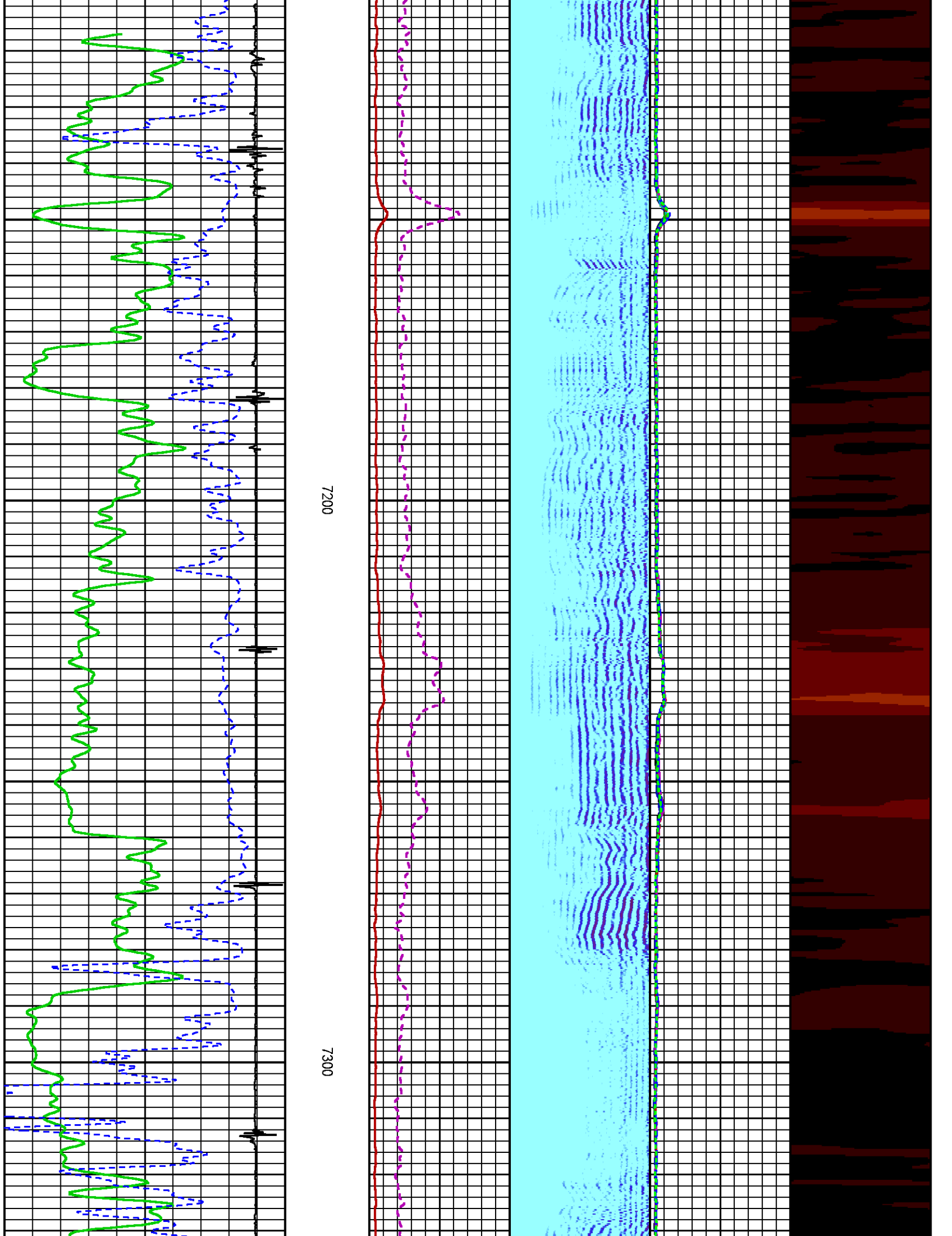
CURVE MEASURE POINT OFFSET

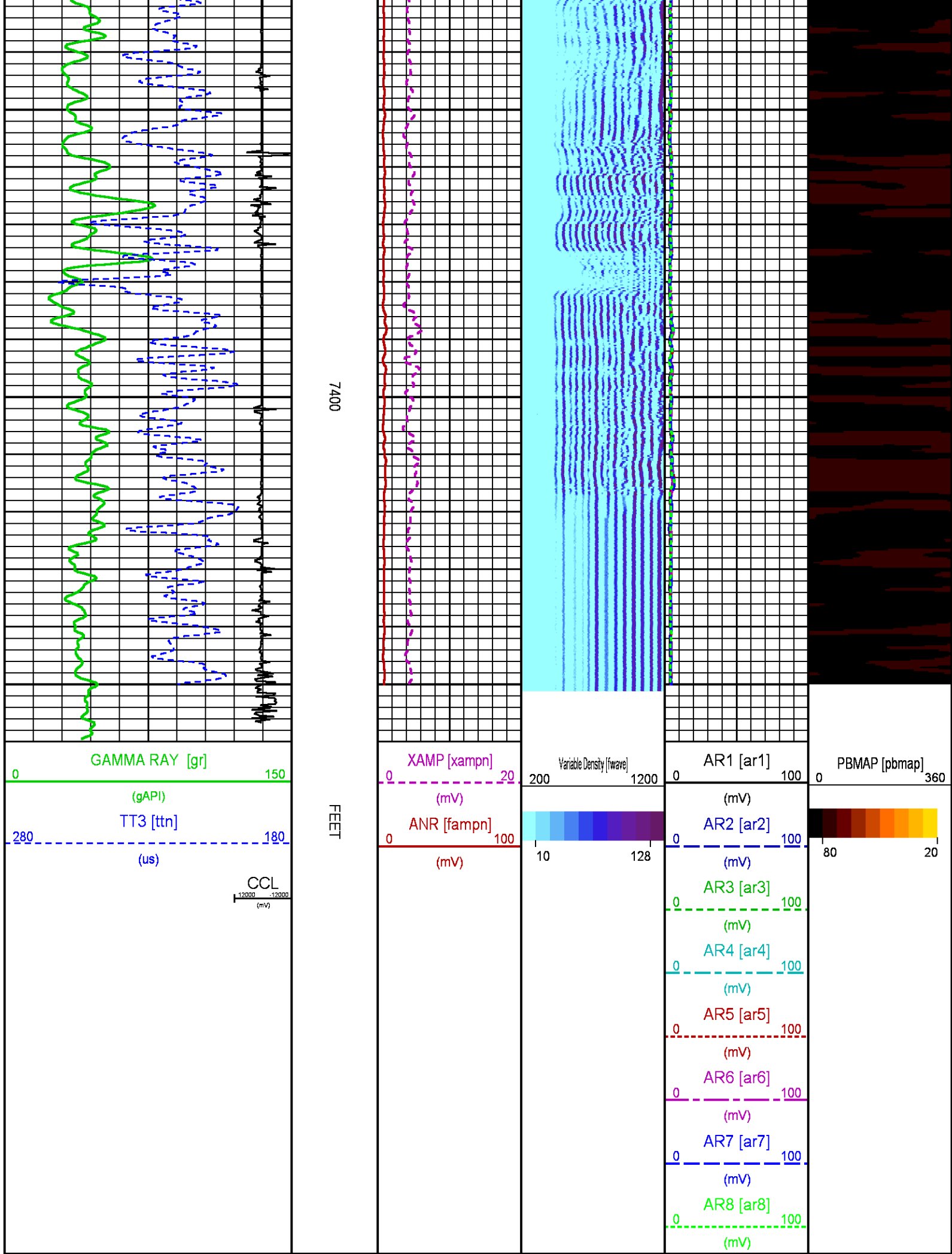
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
AR1	11.25	AR5	11.25	CCL	5.75	XAMPN	11.25
AR2	11.25	AR6	11.25	FAMPN	11.25		
AR3	11.25	AR7	11.25	GR	1.75		
AR4	11.25	AR8	11.25	TTN	11.25		

Presentation : cpu100:GUNDERSON_20_06W_RAL_REPEAT.fvpdf [5"/100' Scale]
Plot Interval : 7098.75 - 7452.75 Feet

Data File 1 : F1 : cpu100:/dat1a/LARAMIE_GUNDERSON_20_06W/GUNDRESON_20_06W_RAL_RPT.xtf
Created On : Aug 24 14:05:31 2017
Company : LARAMIE ENERGY
Well : GUNDERSON 20-06W
Field : VEGA
File Interval : 7097.75 - 7454 Feet
OCT : n012g







CALIBRATION / VERIFICATION SUMMARY

Source File: /dat1a/LARAMIE_GUNDERSON_20_06W/m012g.tp1

RAL PRIMARY CALIBRATION SUMMARY

TOOL #: 1426XA 10218496

DATE/TIME PERFORMED: Wed Aug 23 08:23:52 2017

UNIT #: 3880TA HL6670

	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)	-0.00	-0.07	0.05	-0.05	0.22	0.14	0.13	-0.01	0.01	1.03	0.01
AMP FLUID (mV)	86	85	84	84	86	86	87	87	86	114	84
TT (us)	201	202	202	202	200	199	199	199	202	310	202
M FACTOR	1.16	1.18	1.19	1.19	1.17	1.16	1.15	1.15	1.17	1.32	1.19

RAL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 1426XA 10218496

DATE/TIME PERFORMED: Wed Aug 23 08:24:49 2017

DAYS SINCE CAL: 0

UNIT #: 3880TA HL6670

CABLE #: HL6670 6670SL

	NEAR (mV)	R1 (mV)	R2 (mV)	R3 (mV)	R4 (mV)	R5 (mV)	R6 (mV)	R7 (mV)	R8 (mV)	FAR (mV)	CAL (mV)
ZERO	0.12	0.07	0.08	0.05	0.07	0.09	0.10	0.05	0.06	0.71	-0.03
AMP AIR	2.67	2.09	2.21	2.27	2.21	2.88	2.66	2.51	2.19	2.52	100.29

SHOP M FACTOR	SHOP A FACTOR	WIRELINE FACTOR
1.19	0.00	1.00

GR PRIMARY CALIBRATION SUMMARY

TOOL #: 1355XA 12670180

DATE/TIME PERFORMED: Fri Dec 23 11:53:22 2016

UNIT #: 3880TA HL6670

CALB JIG #: 4702NK DA_228

	BACKGROUND (cts)	CALBRTR ON (cts)	CR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	CALBRTR (gAPI)
GR	75.82	247.07	171.2	0.584	44.28	144.28	100

GR PRIMARY VERIFICATION SUMMARY

TOOL #: 1355XA 12670180

DATE/TIME PERFORMED: Fri Dec 23 11:54:47 2016

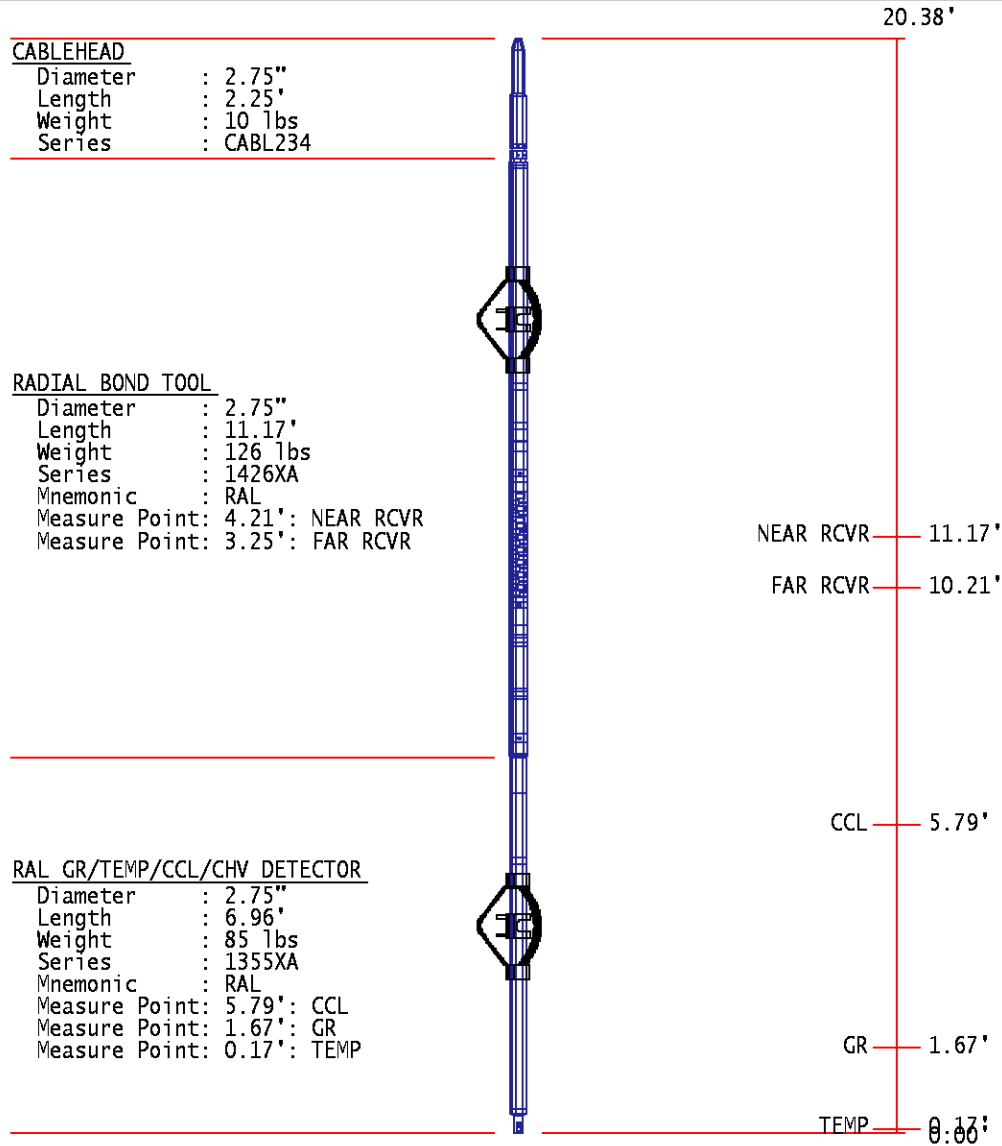
UNIT #: 3880TA HL6670

VERI JIG #: 4702NK DA_228



	BACKGROUND (cts)	CALBRTR ON (cts)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	77.11	254.76	0.584	45.03	148.77	103.74
						90.00 110.00

INSTRUMENT CONFIGURATION

Source File: /dat1a/LARAMIE_GUNDERSON_20_06W/RAL-tdg



TOTAL LENGTH: 20.38'
TOTAL WEIGHT: 235 lbs
MAX DIAMETER: 0'4.00"

 BAKER HUGHES 	COMPANY <u>LARAMIE ENERGY</u>		FILE NO: _____
	WELL <u>GUNDERSON 20-06W</u>		
	FIELD <u>VEGA</u>		API NO: _____
	COUNTY <u>MESA</u>	STATE <u>COLORADO</u>	<u>05077103420000</u>
	LOCATION:		ELEVATIONS:
LAT:39.266836N;LONG:107.795317W		KB 7176 FT	
BHL: LAT:39.265806N;LONG:107.797721W		DF 7176 FT	
		GL 7146 FT	



SEC 20 TWP 9S RGE 93W

DATE 24-AUG-2017