



FILE NO:	COMPANY	LARAMIE ENERGY
API NO:	WELL	PICEANCE FEDERAL 29-20E
05-077-10363-0000	FIELD	VEGA
	COUNTY	MESA
	STATE	COLORADO
Ver. 4.06	LOCATION:	OTHER SERVICES
	SHL: LAT:39.248633N; LONG:107.788204W	RPM
	BHL: LAT:39.243491N; LONG:107.796581W	
	SEC 29	TWP 09 S
		RGE 93 W
PERMANENT DATUM	GL	ELEVATION
LOG MEASURED FROM	KB	30 FT
DRILL. MEAS. FROM	KB	ABOVE P.D.
		ELEVATIONS:
		KB 7561 FT
		DF
		GL 7531 FT

DATE		26-MAY-2017			
RUN	TRIP	1	1		
SERVICE ORDER		US123647J			
DEPTH DRILLER		8120 FT			
DEPTH LOGGER		7932 FT			
BOTTOM LOGGED INTERVAL		7932 FT			
TOP LOGGED INTERVAL		0 FT			
TIME STARTED		13:00			
TIME FINISHED		16:00			
OPERATOR RIG TIME		3 HRS			
TYPE OF FLUID IN HOLE		WATER			
FLUID DENSITY		NA			
FLUID SALINITY		NA			
FLUID LEVEL		54 FT			
LOGGED CEMENT TOP		1553 FT			
WELLHEAD PRESSURE		0 PSI			
MAXIMUM HOLE DEVIATION		NA			
NOMINAL LOGGING SPEED		100 F/MIN			
MAX. RECORDED TEMP.		NA			
REFERENCE LOG		NA			
REFERENCE LOG DATE		NA			
EQUIP. NO.	LOCATION	HL-6670	WOODWARD		
RECORDED BY	S.YASSA				
WITNESSED BY	R.CATES/A.MCCARTHY				

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.

BOREHOLE RECORD		
BIT SIZE	FROM	TO

CASING RECORD				
SIZE	WEIGHT	GRADE	FROM	TO
4.5 IN	11.6 LB/F	-	0 FT	8120 FT

REMARKS
RUN 1 TRIP 1: *2 OPERATIONS IN WELL*
**OPERATION 1: CCL/GR/RAL RUN IN COMBINATION**
LOGGED WITH 0 PSI AT THE WELLHEAD
SJ1: 7145'-7123'
SJ2: 6322' - 6300'
CREW: JOE.PENA , S.AKKOUCH

EQUIPMENT DATA				
RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.

1	1	RAL	1426 XA	10218497	CENTRALIZED
1	1	GR/CCL	1355 XA	111155	CENTRALIZED

## 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: Sat May 27 11:24:56 2017

### PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE\_PICEANCE\_FEDERAL\_29\_20E/n012g02.prm  
 LOGGING MODE: DEPTH DIRECTION: UP  
 TOP DEPTH: 11.750 ft BOTTOM DEPTH: 7931.538 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*)	178	us	TOP	BOTTOM
	AMP WINDOW START (fgp2*)	178	us	"	"
	AMP WINDOW START (fgp3*)	178	us	"	"
	AMP WINDOW START (fgp4*)	178	us	"	"
	AMP WINDOW START (fgp5*)	178	us	"	"
	AMP WINDOW START (fgp6*)	178	us	"	"
	AMP WINDOW START (fgp7*)	178	us	"	"
	AMP WINDOW START (fgp8*)	178	us	"	"
	AMP WINDOW START (fgpn*)	178	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*)	-75	us	"	"
	TOOL DELAY (str2*)	-75	us	"	"
	TOOL DELAY (str3*)	-75	us	"	"
	TOOL DELAY (str4*)	-75	us	"	"
	TOOL DELAY (str5*)	-75	us	"	"
	TOOL DELAY (str6*)	-75	us	"	"
	TOOL DELAY (str7*)	-75	us	"	"
	TOOL DELAY (str8*)	-75	us	"	"
	TOOL DELAY (strn*)	-75	us	"	"
BASELINE NOISE (NEAR)	NOISE WINDOW START	125	us	"	"
	NOISE WINDOW LENGTH	25	us	"	"

#### PERCENT BOND CEMENT MAP

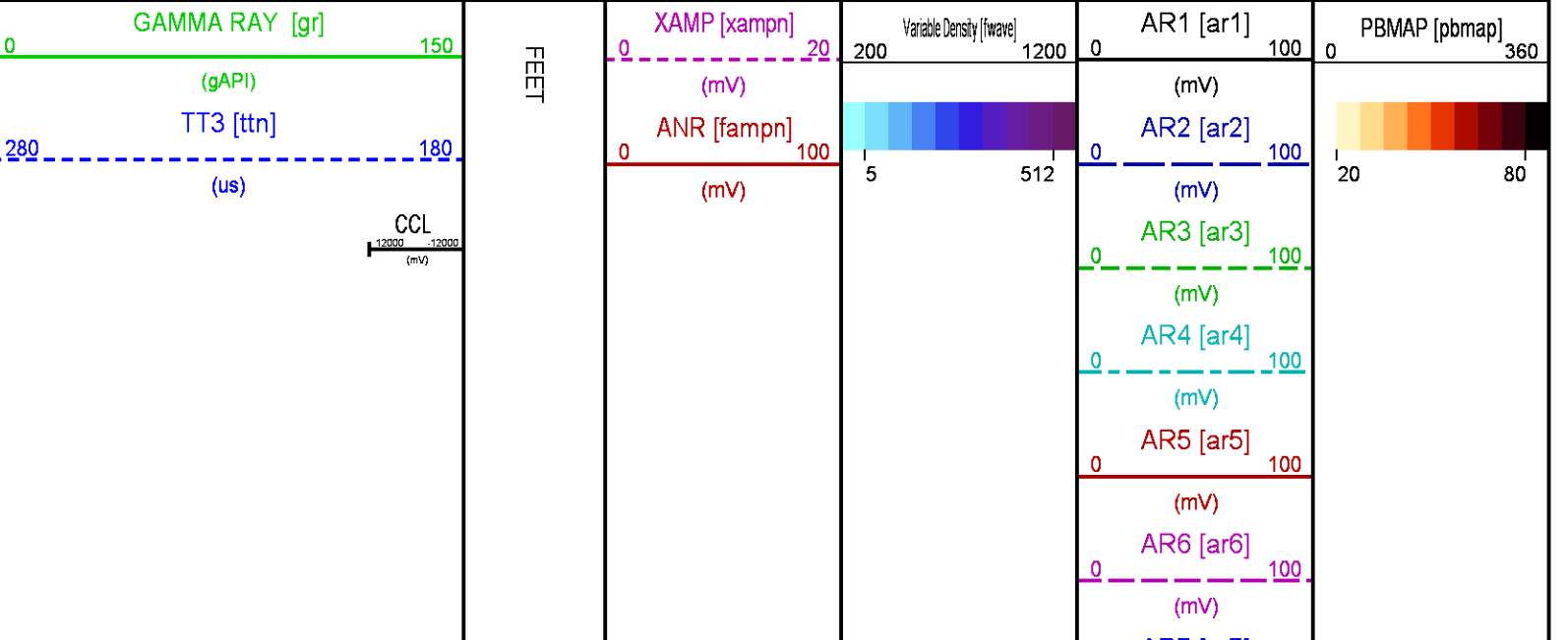
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
RAL FREE PIPE AMPLITUDE	FREE AMP REC 1	80	mV	TOP	BOTTOM
	FREE AMP REC 2	80	mV	"	"
	FREE AMP REC 3	80	mV	"	"
	FREE AMP REC 4	80	mV	"	"
	FREE AMP REC 5	80	mV	"	"

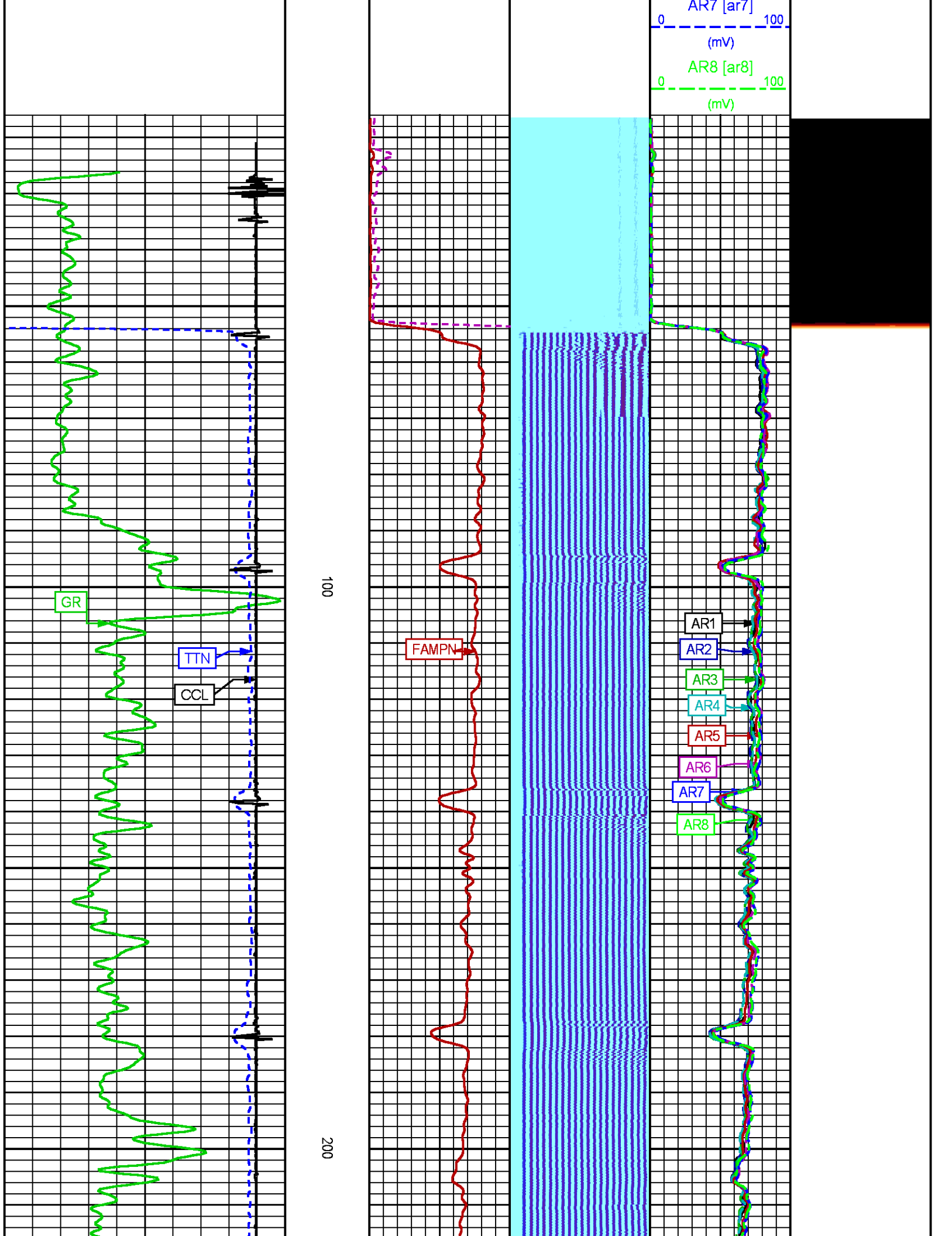
	FREE AMP REC 6	80	mV	"	"
	FREE AMP REC 7	80	mV	"	"
	FREE AMP REC 8	80	mV	"	"
RAL FULL BOND AMPLITUDE	FULL BOND AMP REC 1	2	mV	"	"
	FULL BOND AMP REC 2	2	mV	"	"
	FULL BOND AMP REC 3	2	mV	"	"
	FULL BOND AMP REC 4	2	mV	"	"
	FULL BOND AMP REC 5	2	mV	"	"
	FULL BOND AMP REC 6	2	mV	"	"
	FULL BOND AMP REC 7	2	mV	"	"
	FULL BOND AMP REC 8	2	mV	"	"

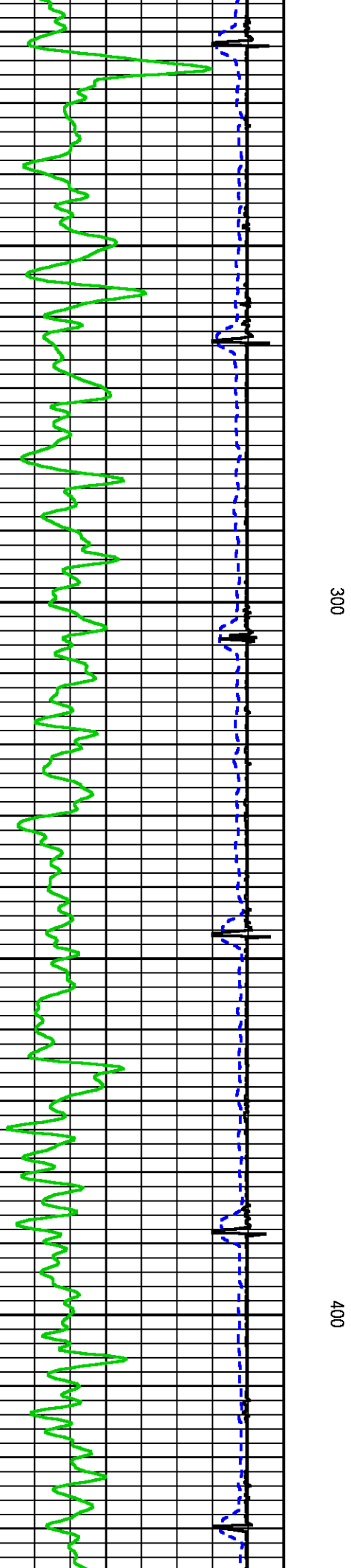
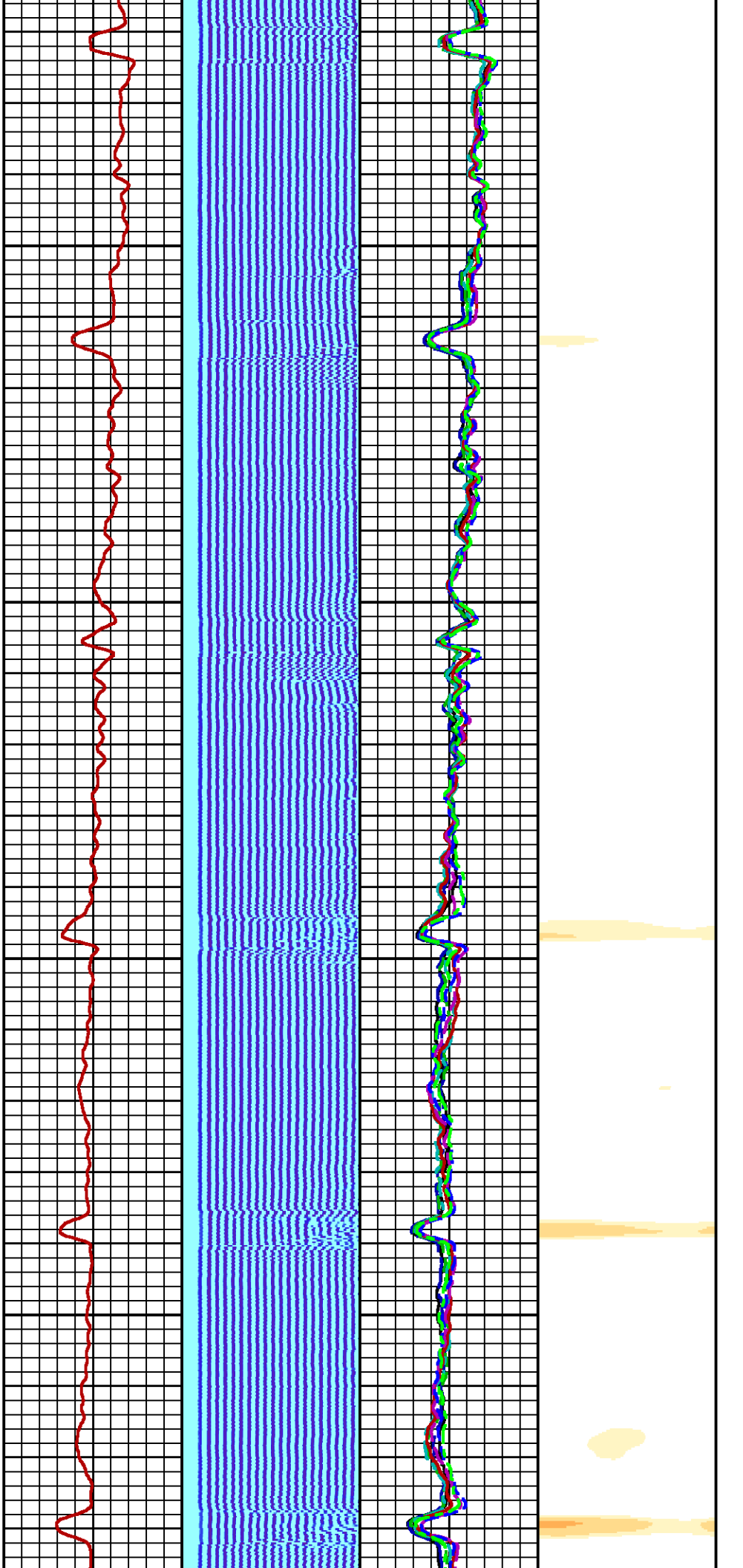
CURVE DESCRIPTION REPORT		
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:AR1	May 26 14:42:53 2017	FIXED GATE AMPLITUDE T-R1
F1:AR2	May 26 14:42:53 2017	FIXED GATE AMPLITUDE T-R2
F1:AR3	May 26 14:42:53 2017	FIXED GATE AMPLITUDE T-R3
F1:AR4	May 26 14:42:53 2017	FIXED GATE AMPLITUDE T-R4
F1:AR5	May 26 14:42:53 2017	FIXED GATE AMPLITUDE T-R5
F1:AR6	May 26 14:42:53 2017	FIXED GATE AMPLITUDE T-R6
F1:AR7	May 26 14:42:53 2017	FIXED GATE AMPLITUDE T-R7
F1:AR8	May 26 14:42:53 2017	FIXED GATE AMPLITUDE T-R8
F1:CCL	May 26 14:42:53 2017	CASING COLLAR LOCATOR
F1:FAMPN	May 26 14:42:53 2017	FIXED GATE AMPLITUDE NEAR RECEIVER
F1:FWAVE	May 26 14:42:53 2017	FAR WAVE FORM
F1:GR	May 26 14:42:53 2017	GAMMA RAY
F1:PBMAP	May 26 14:42:53 2017	PERCENT BOND CEMENT MAP
F1:TTN	May 26 14:42:53 2017	TRAVELTIME FROM NEAR TRANSMITTER-RECEIVER
F1:XAMPN	May 26 14:42:53 2017	FIXED GATE AMPLITUDE NEAR RECEIVER TIMES FIVE

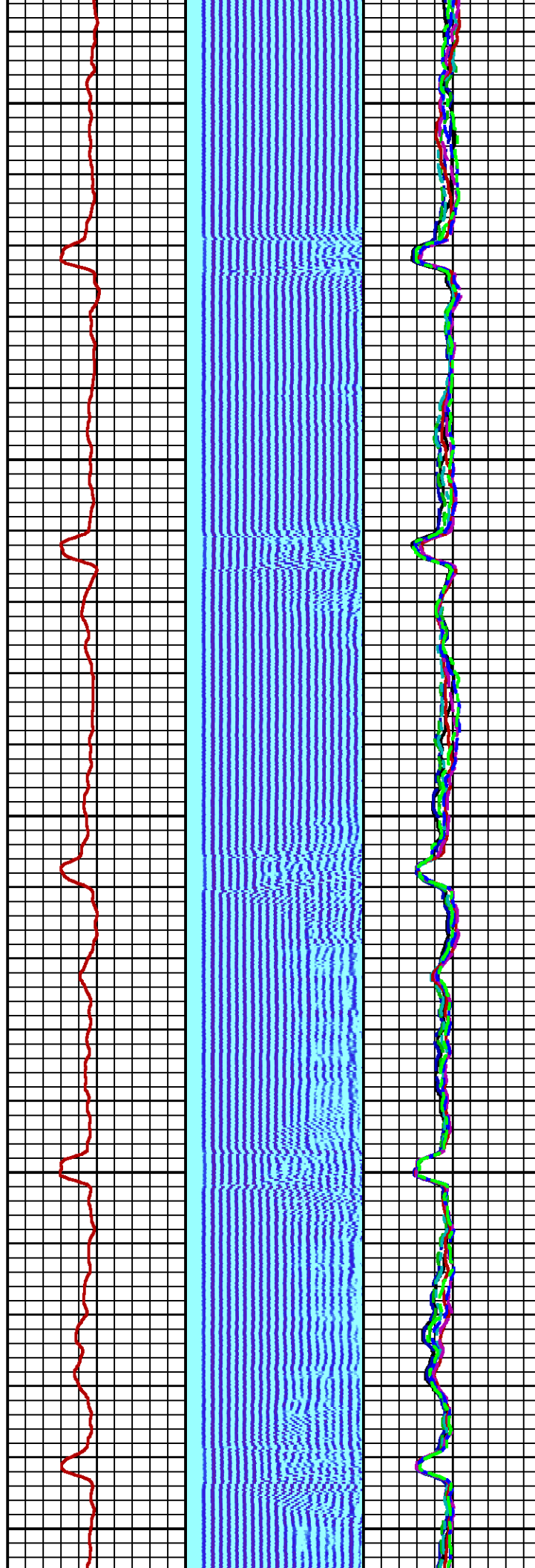
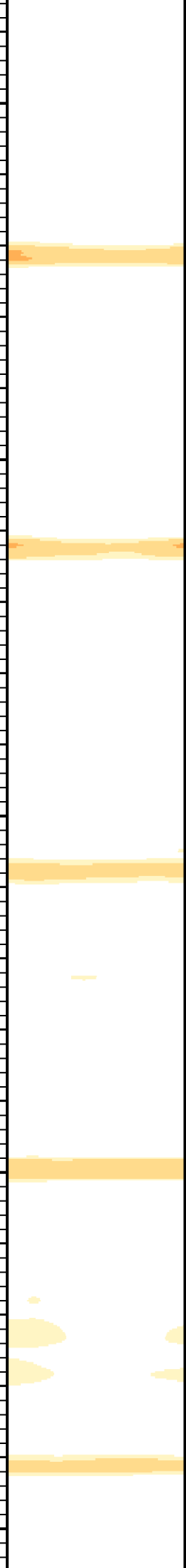
CURVE MEASURE POINT OFFSET							
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
AR1	11.25	AR5	11.25	CCL	5.75	XAMPN	11.25
AR2	11.25	AR6	11.25	FAMPN	11.25		
AR3	11.25	AR7	11.25	GR	1.75		
AR4	11.25	AR8	11.25	TTN	11.25		

Presentation	: cpu100:/dat1a/LARAMIE_PICEANCE_FEDERAL_29_20E/ral_MAIN_20E-5.fvpdf [5"/100' Scale]
Plot Interval	: 16.5 - 7943.5 Feet
Data File 1	: F1 : cpu100:/dat1a/LARAMIE_PICEANCE_FEDERAL_29_20E/RAL_MAIN_20E.xtf
Created On	: May 26 14:42:53 2017
Company	: LARAMIE ENERGY
Well	: PICEANCE 29-20E
Field	: VEGA
File Interval	: 15.5 - 7944.75 Feet
OCT	: n012g



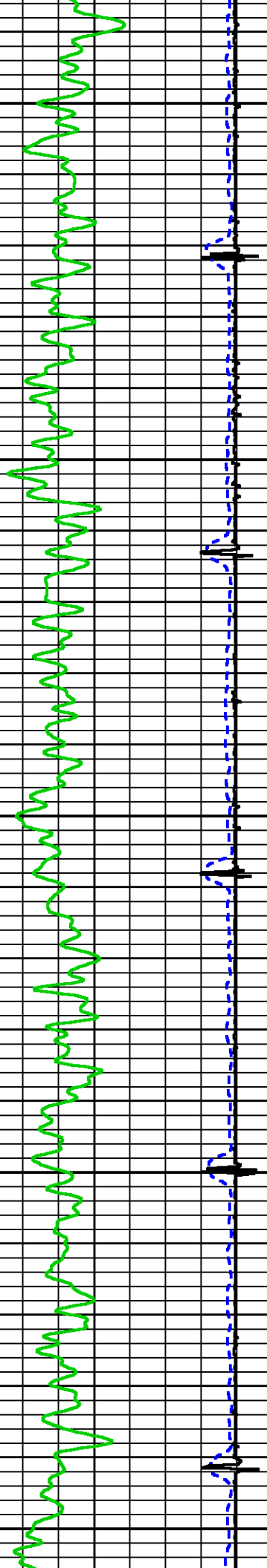




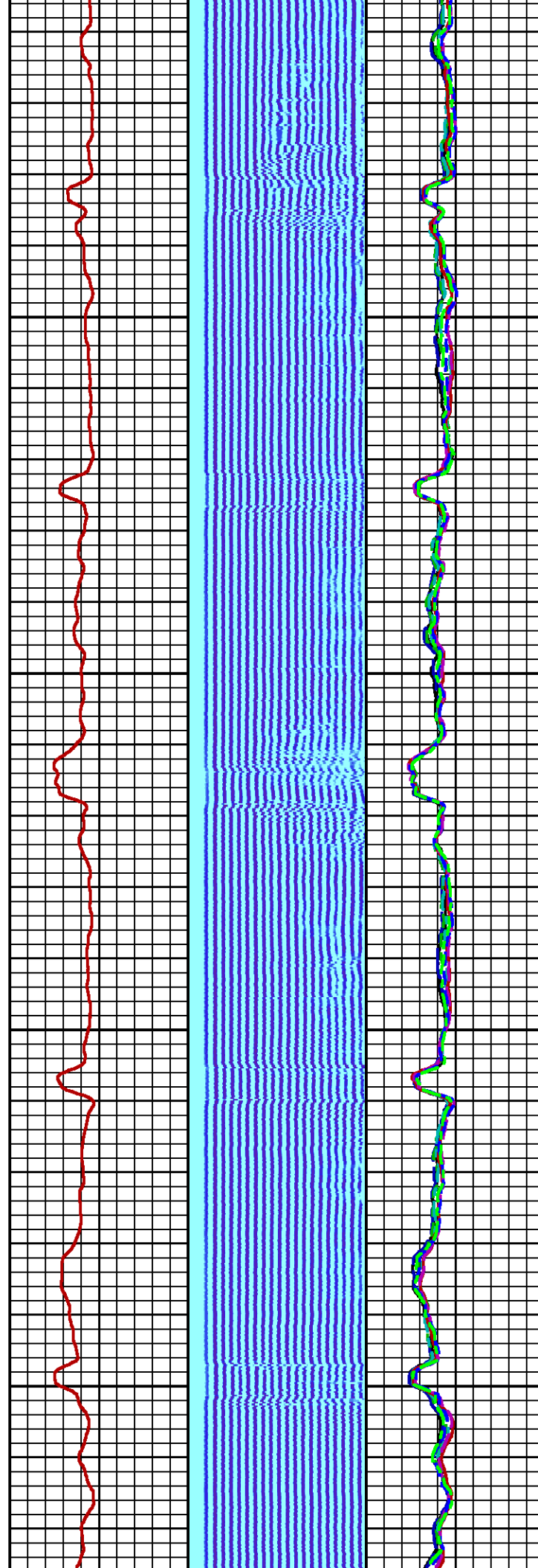
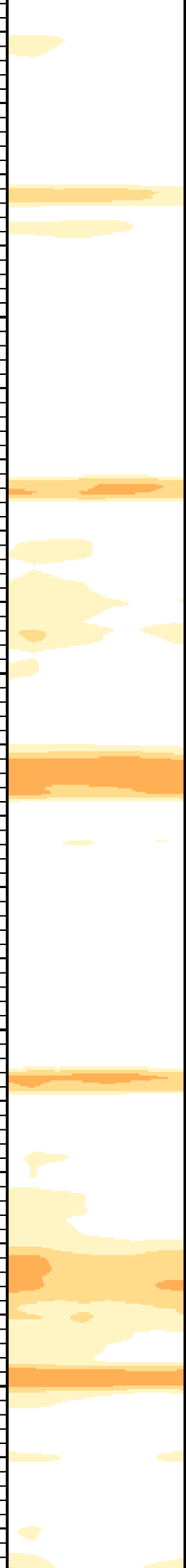


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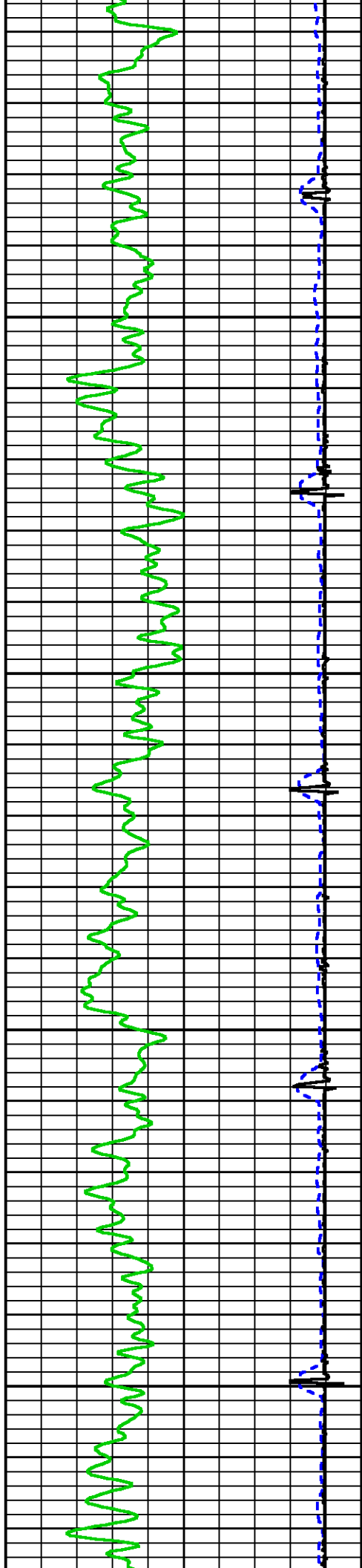


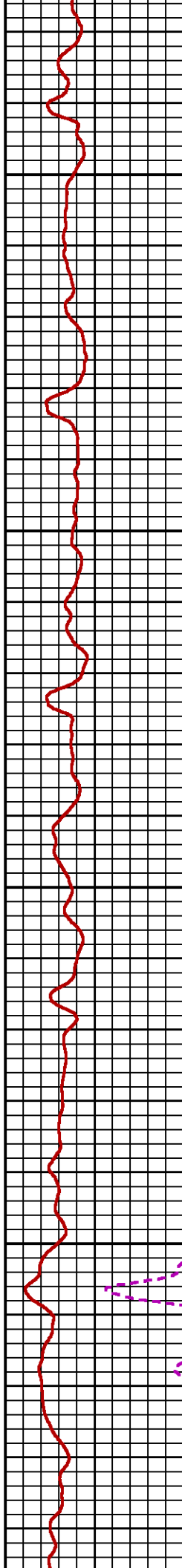
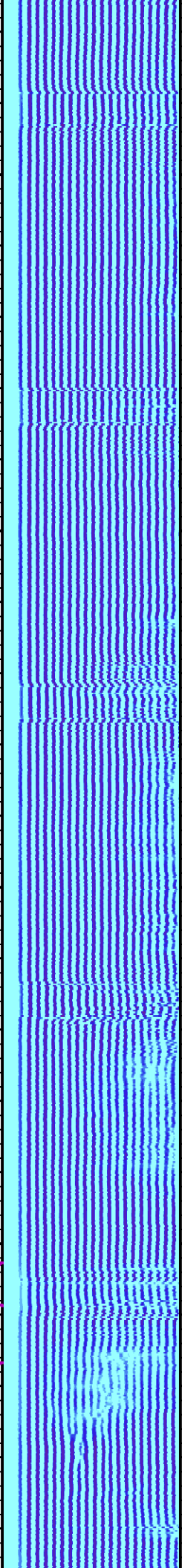
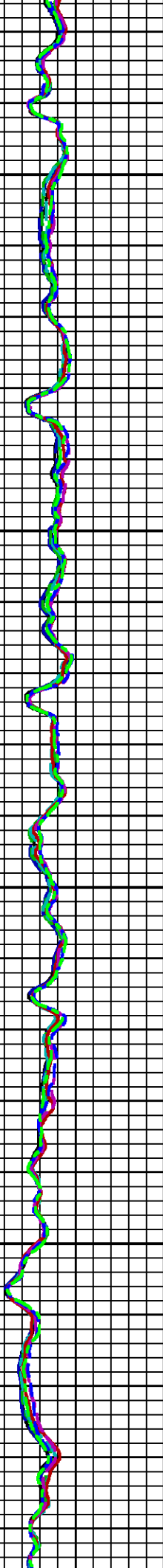
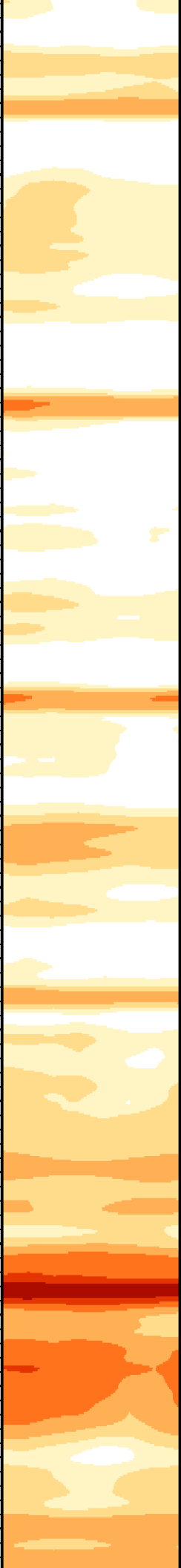




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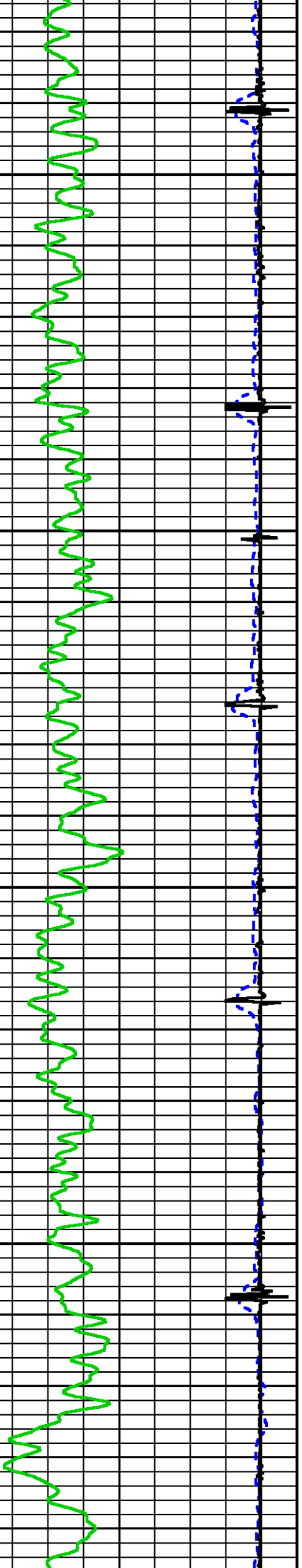
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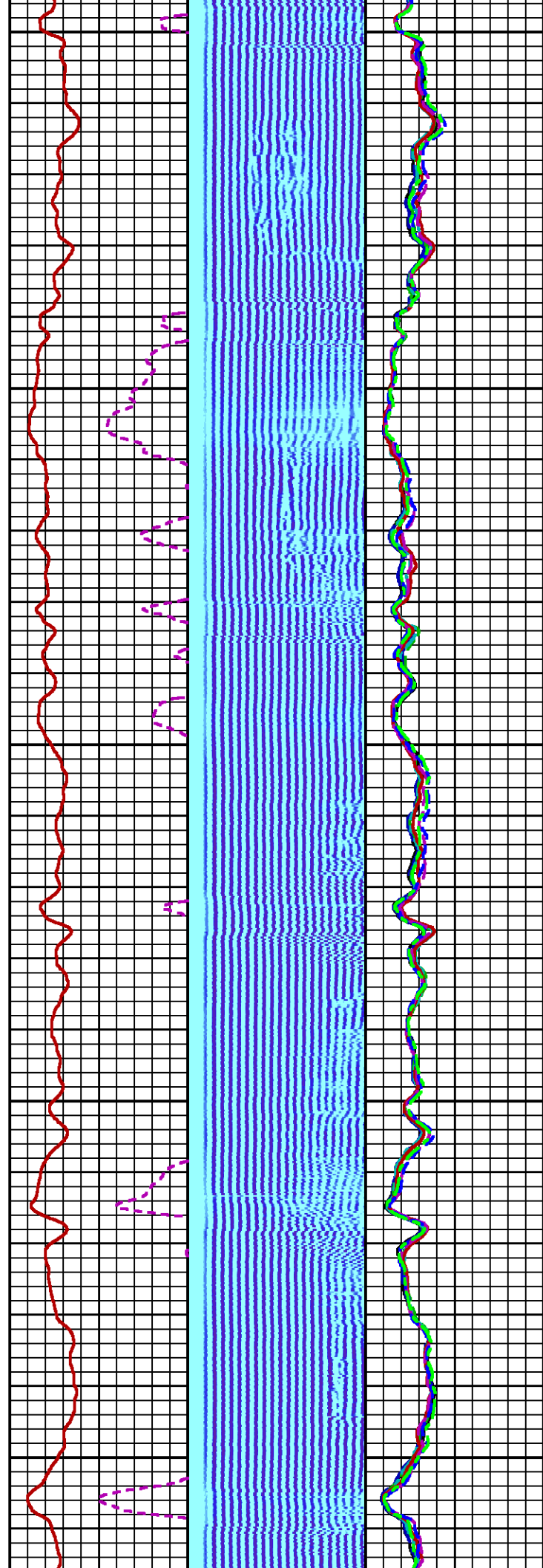
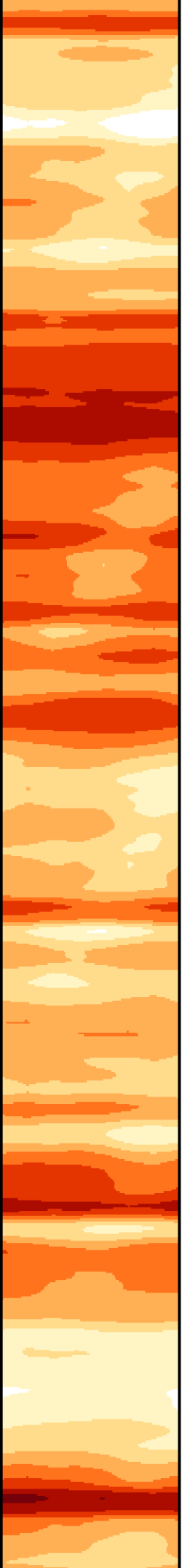


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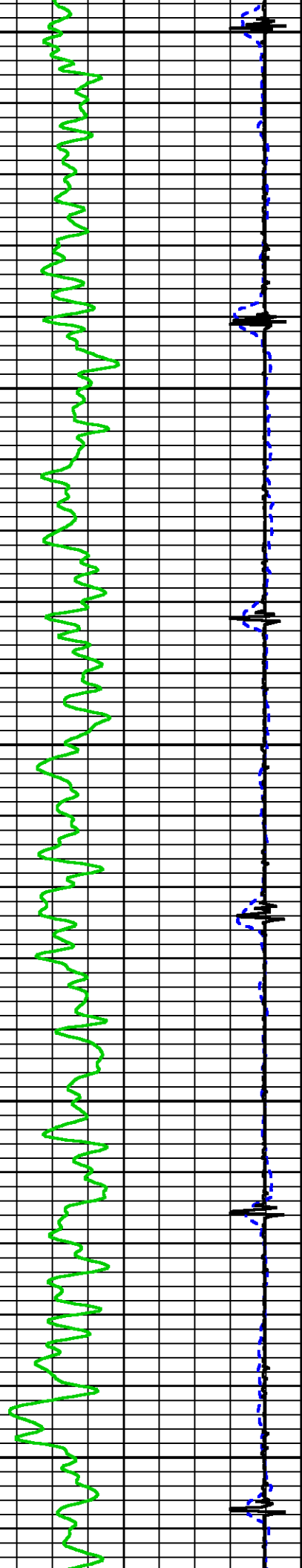


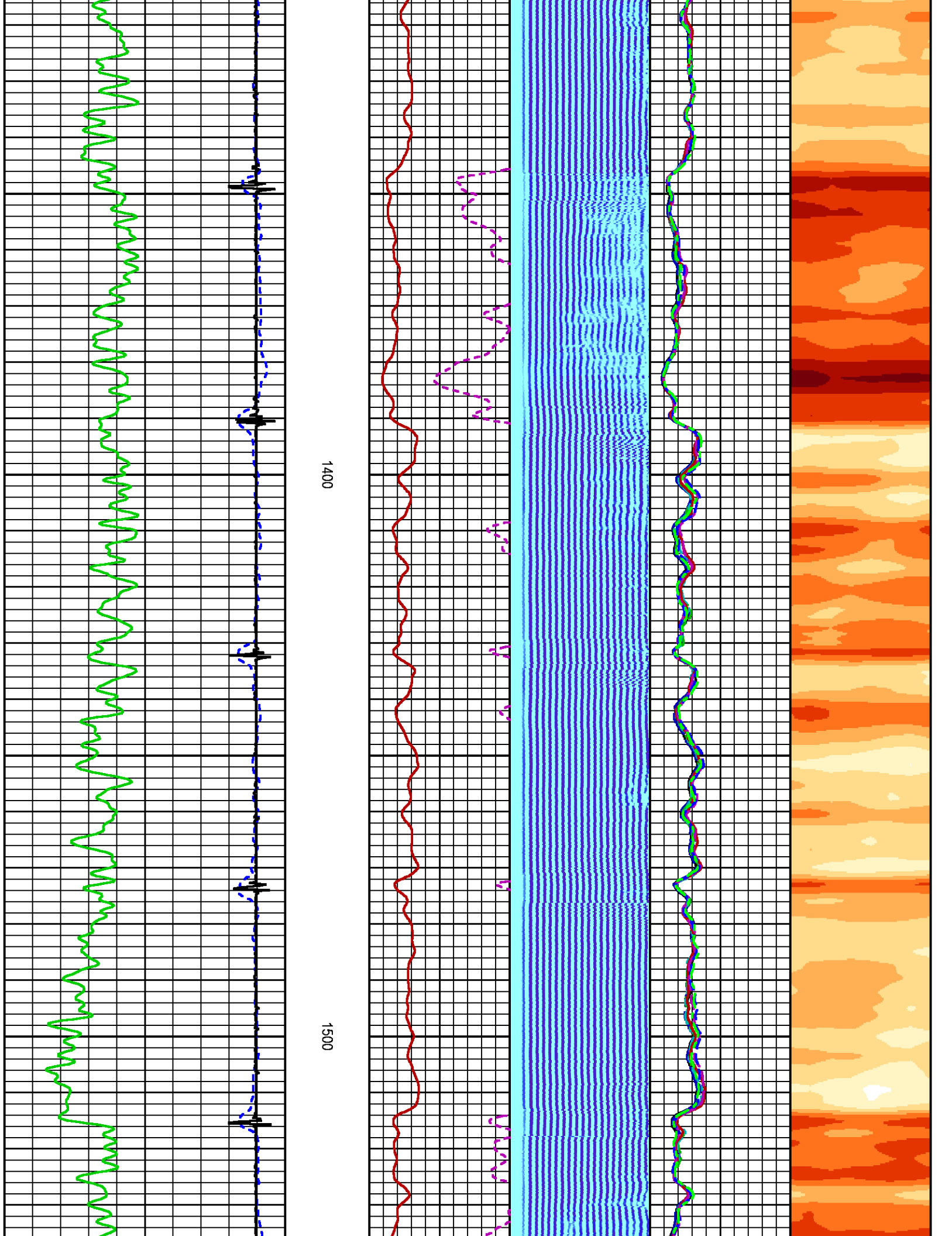


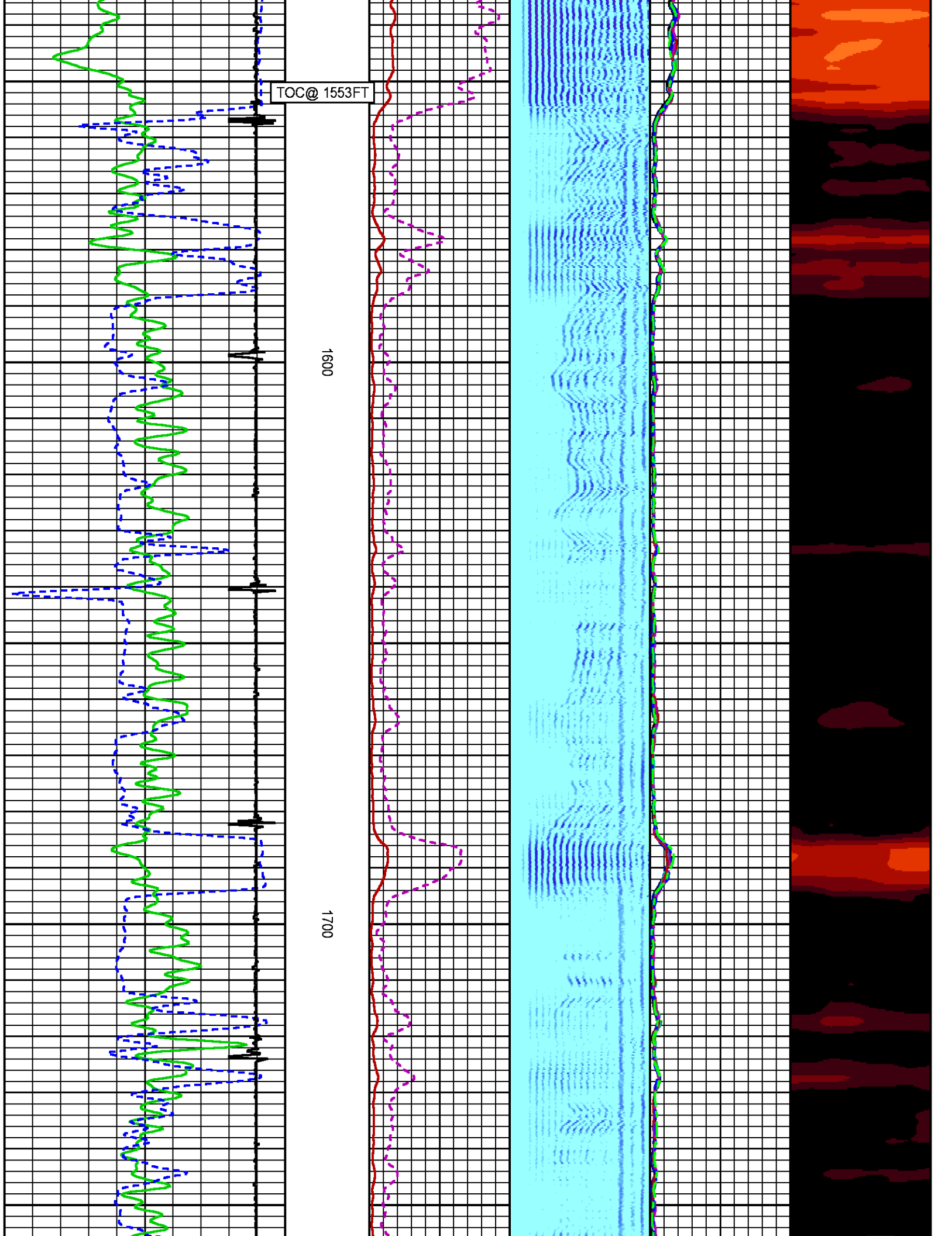
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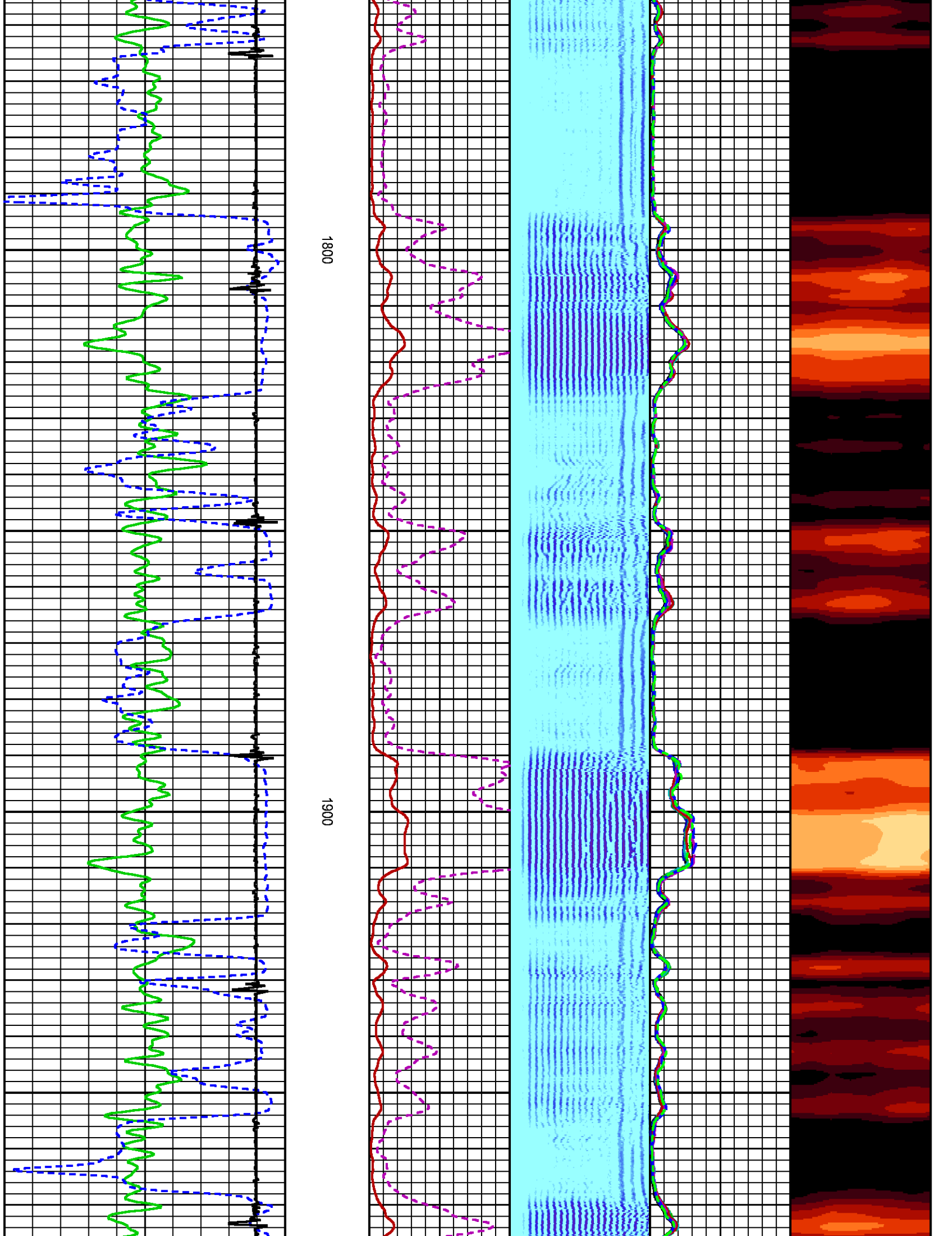
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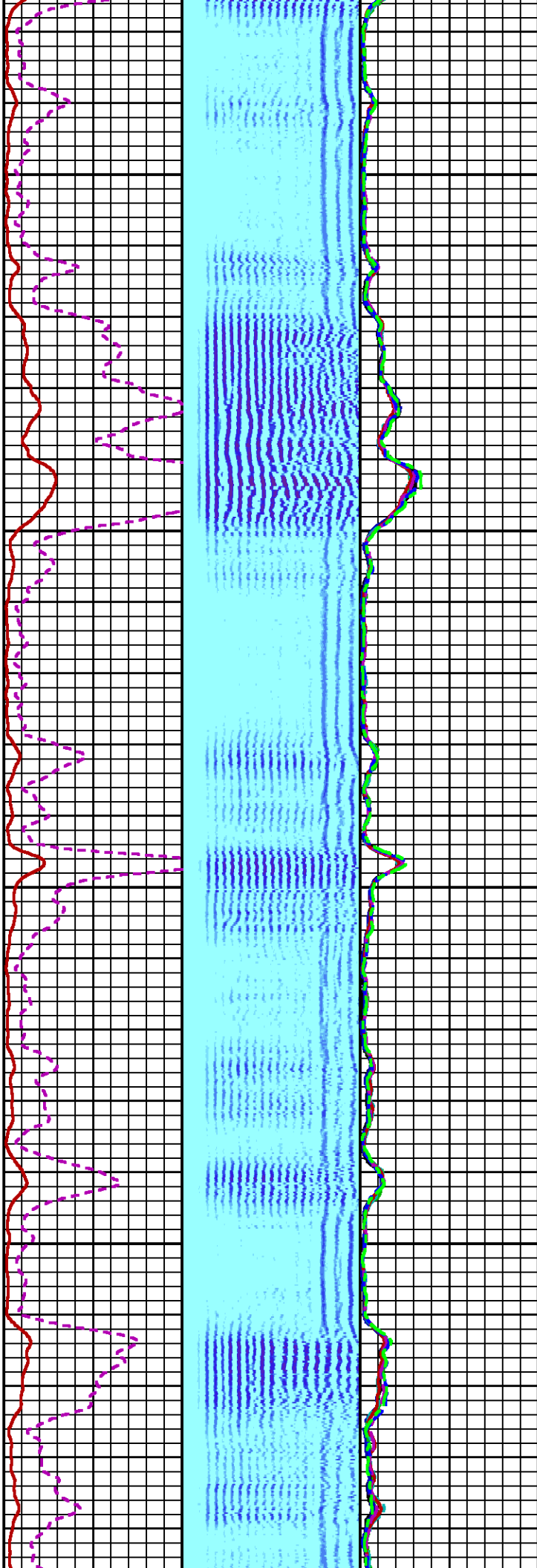
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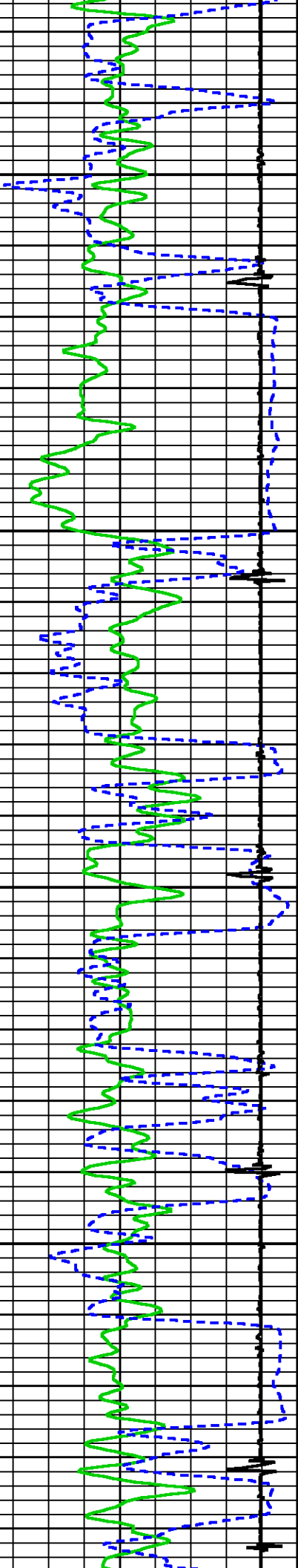




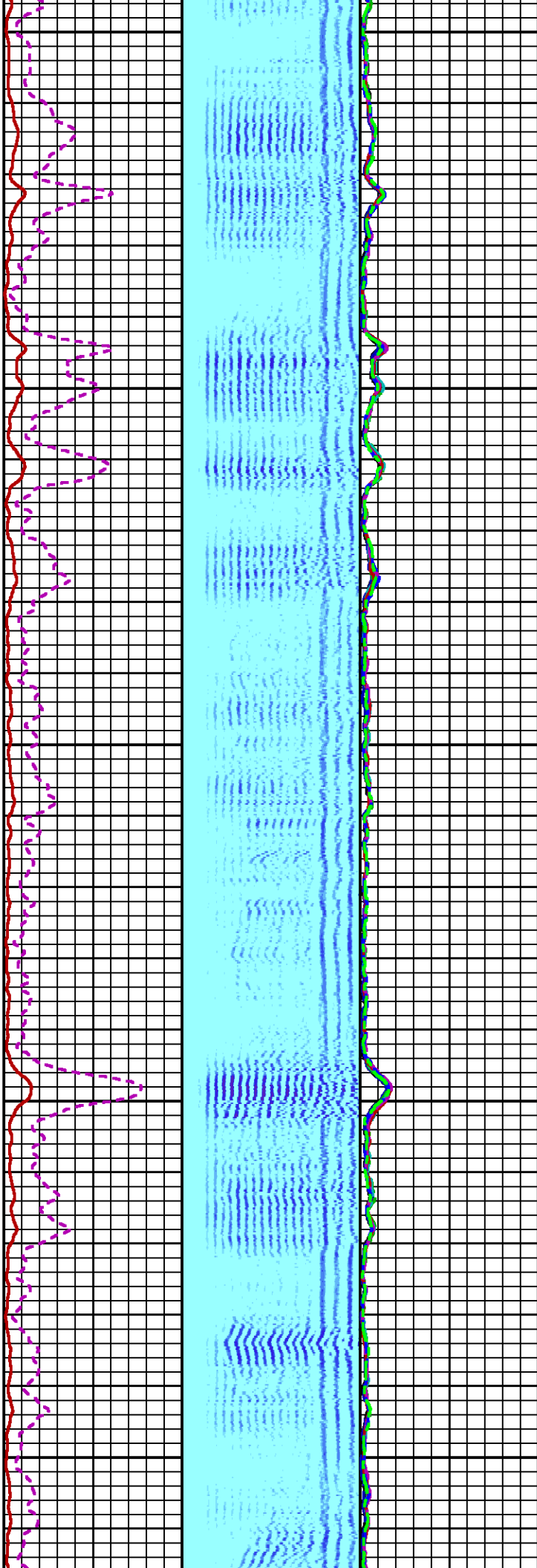


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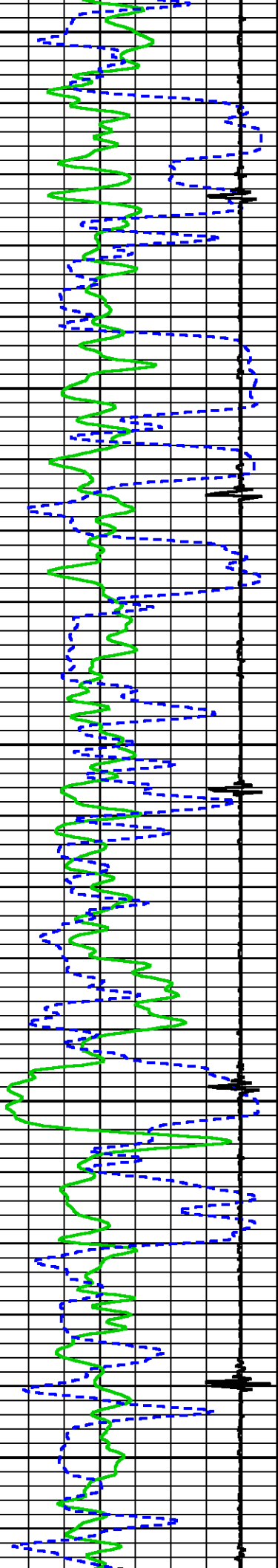




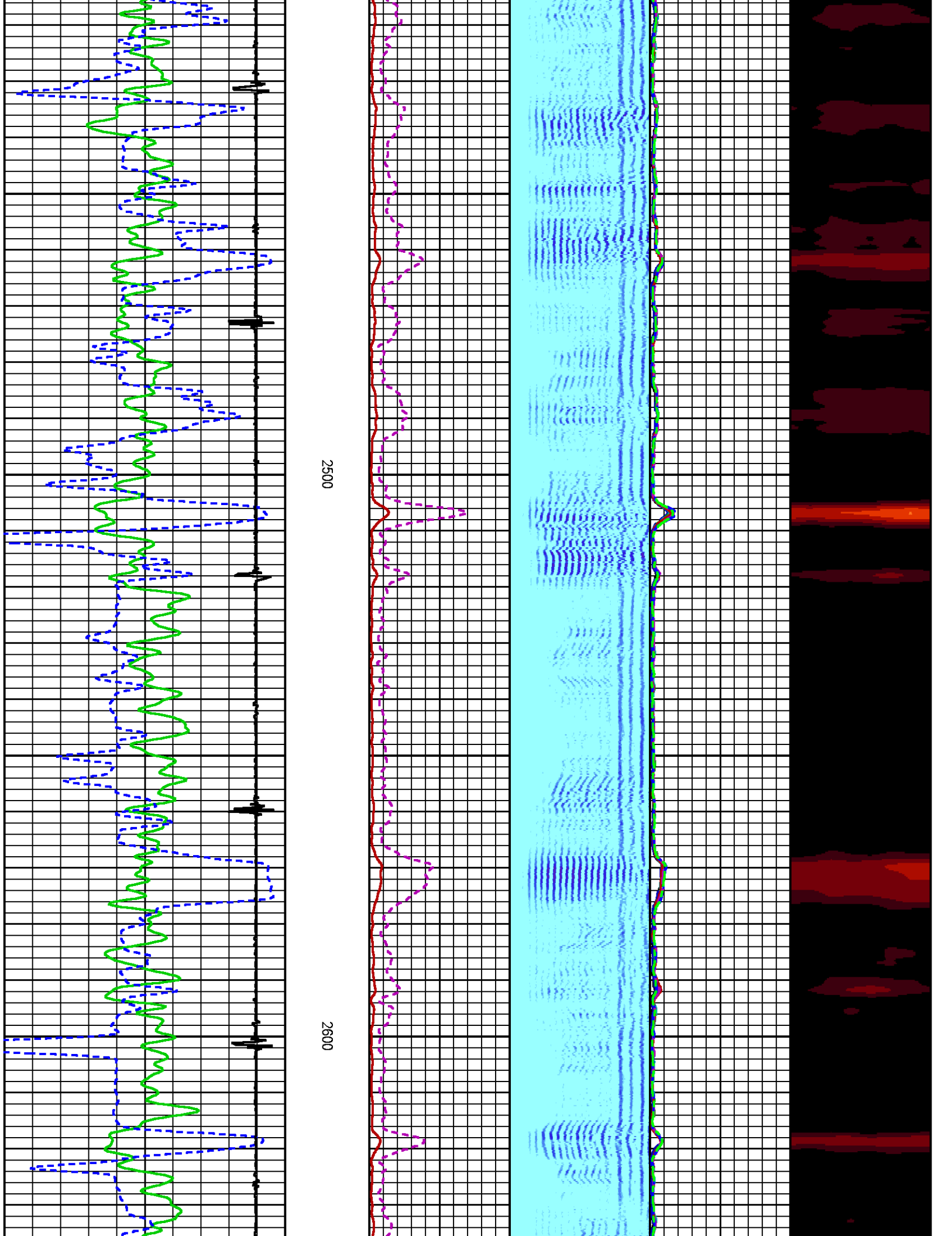
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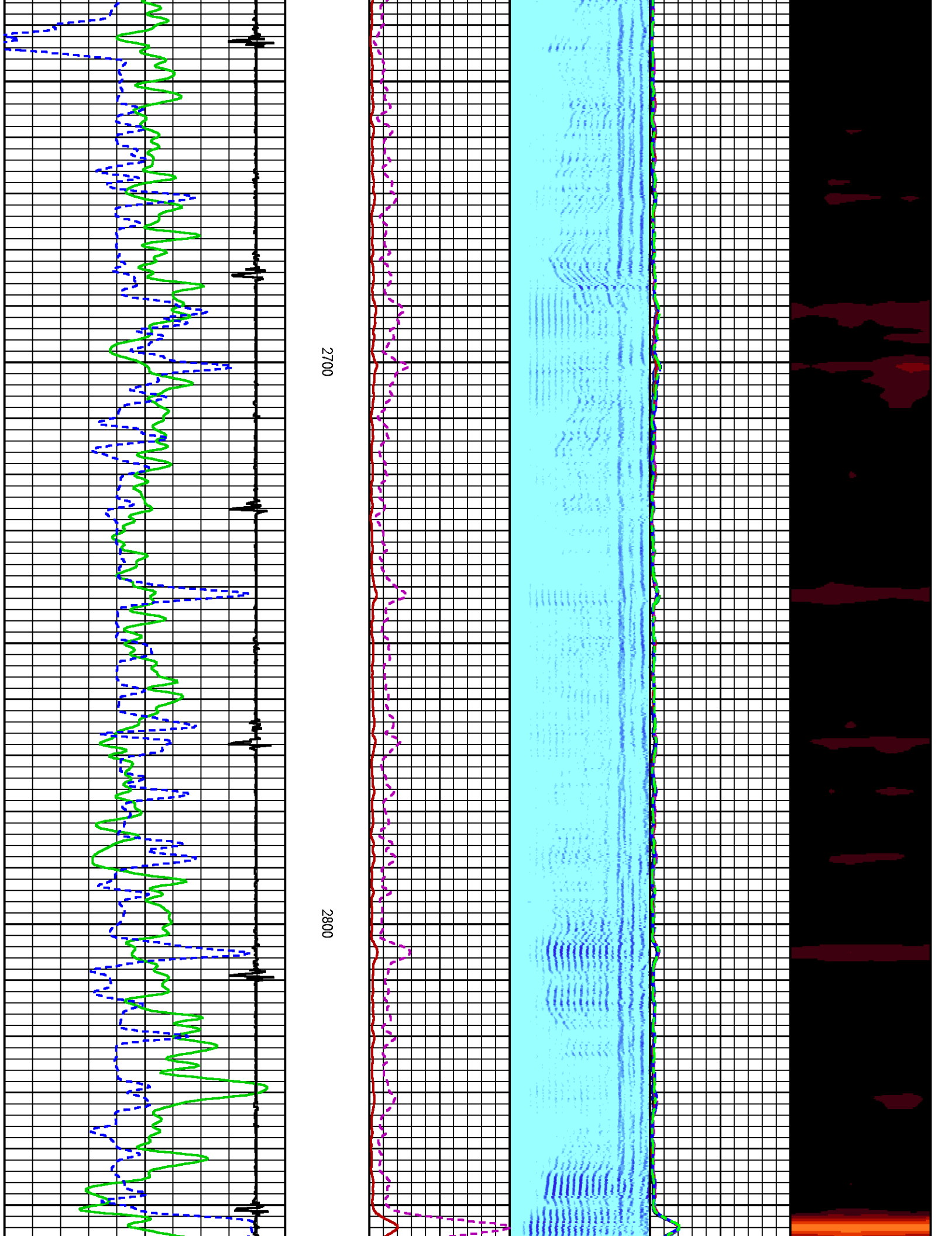
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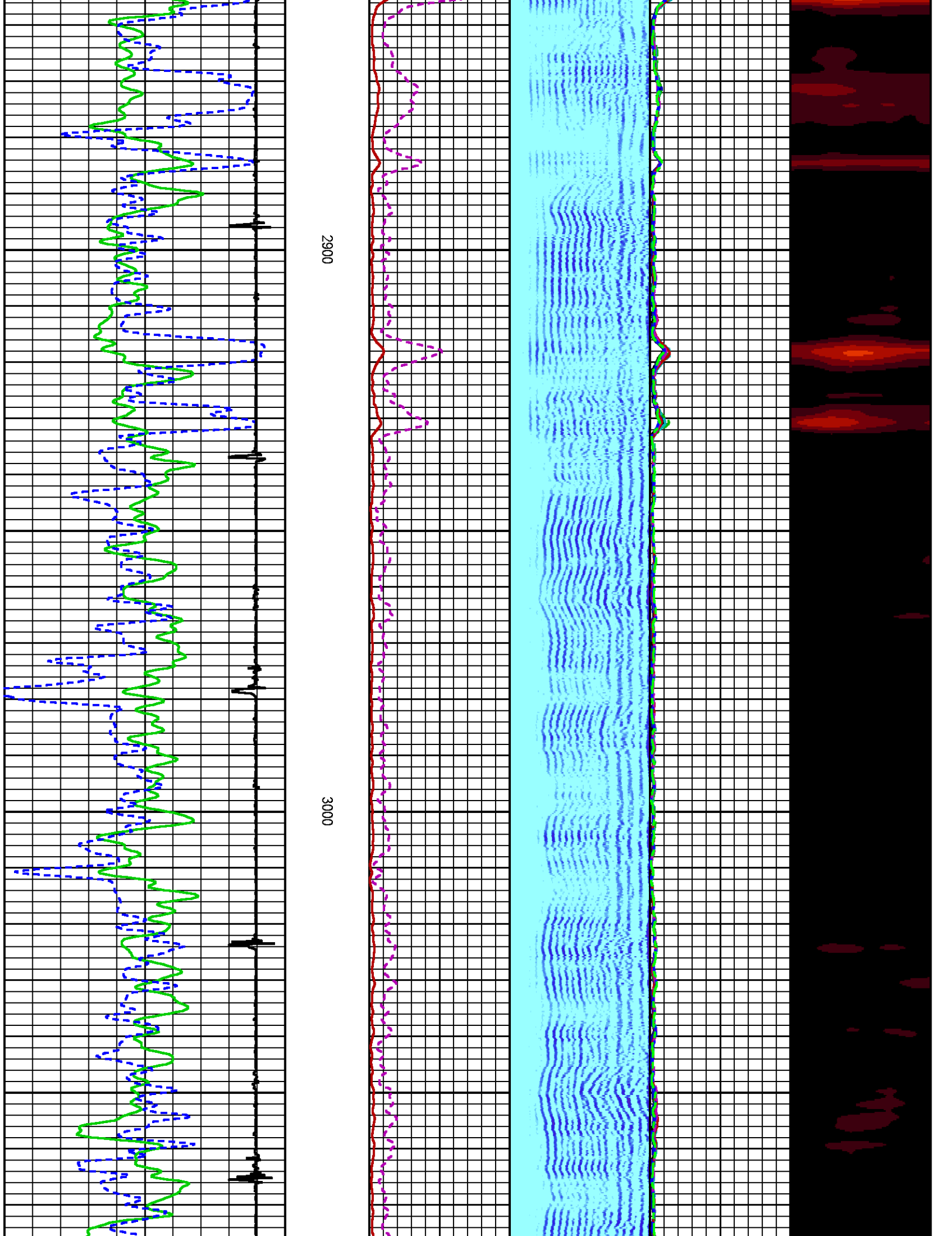
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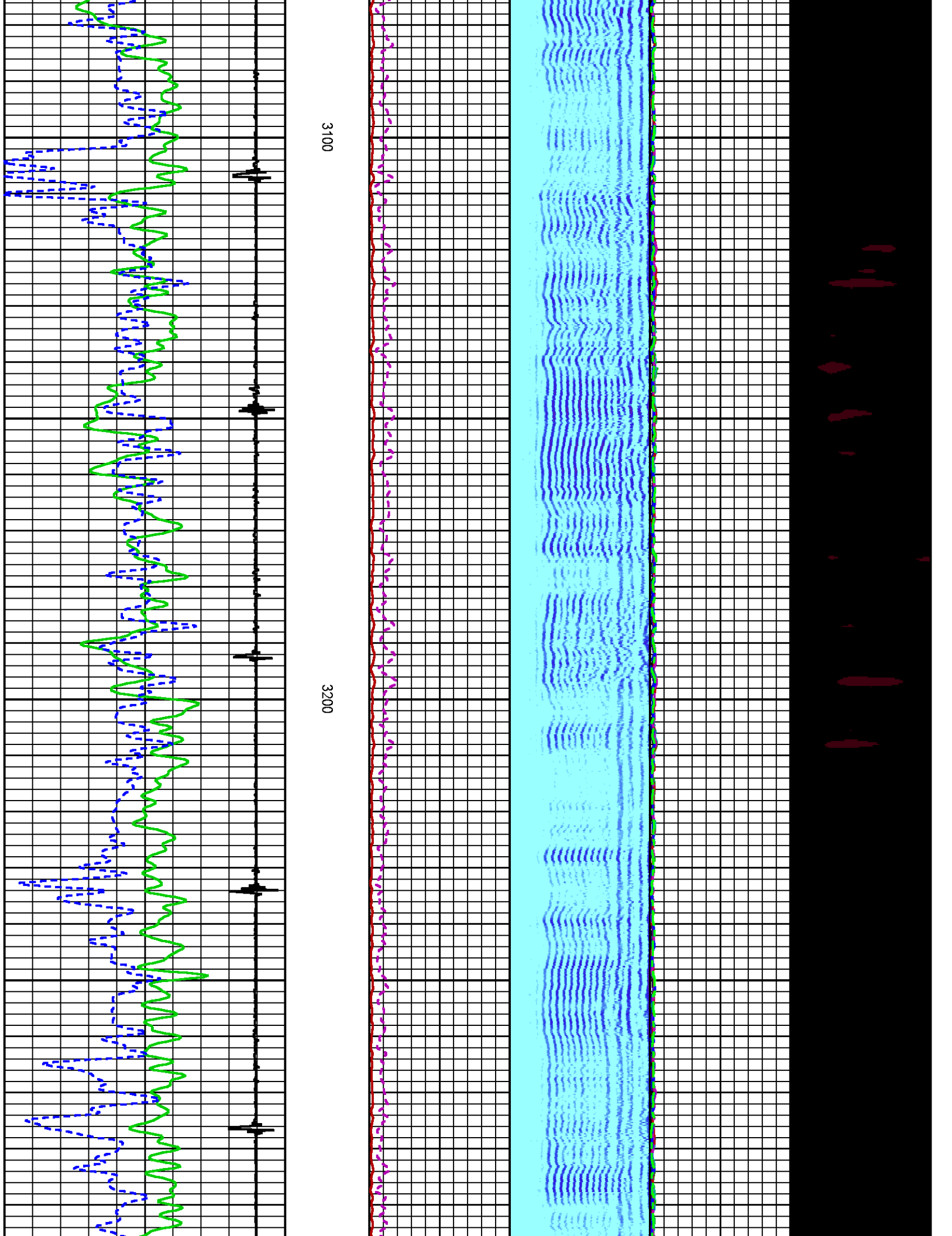


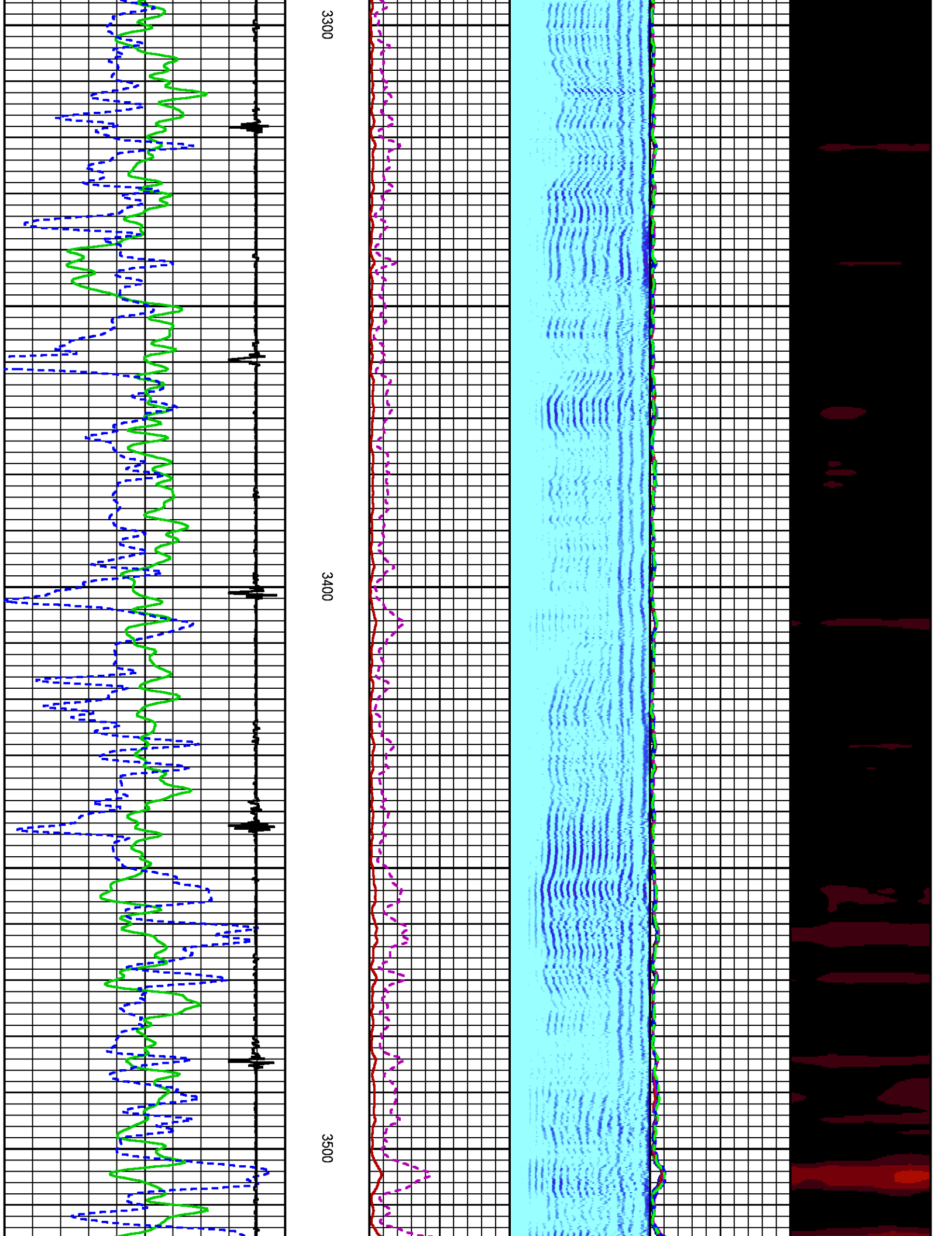




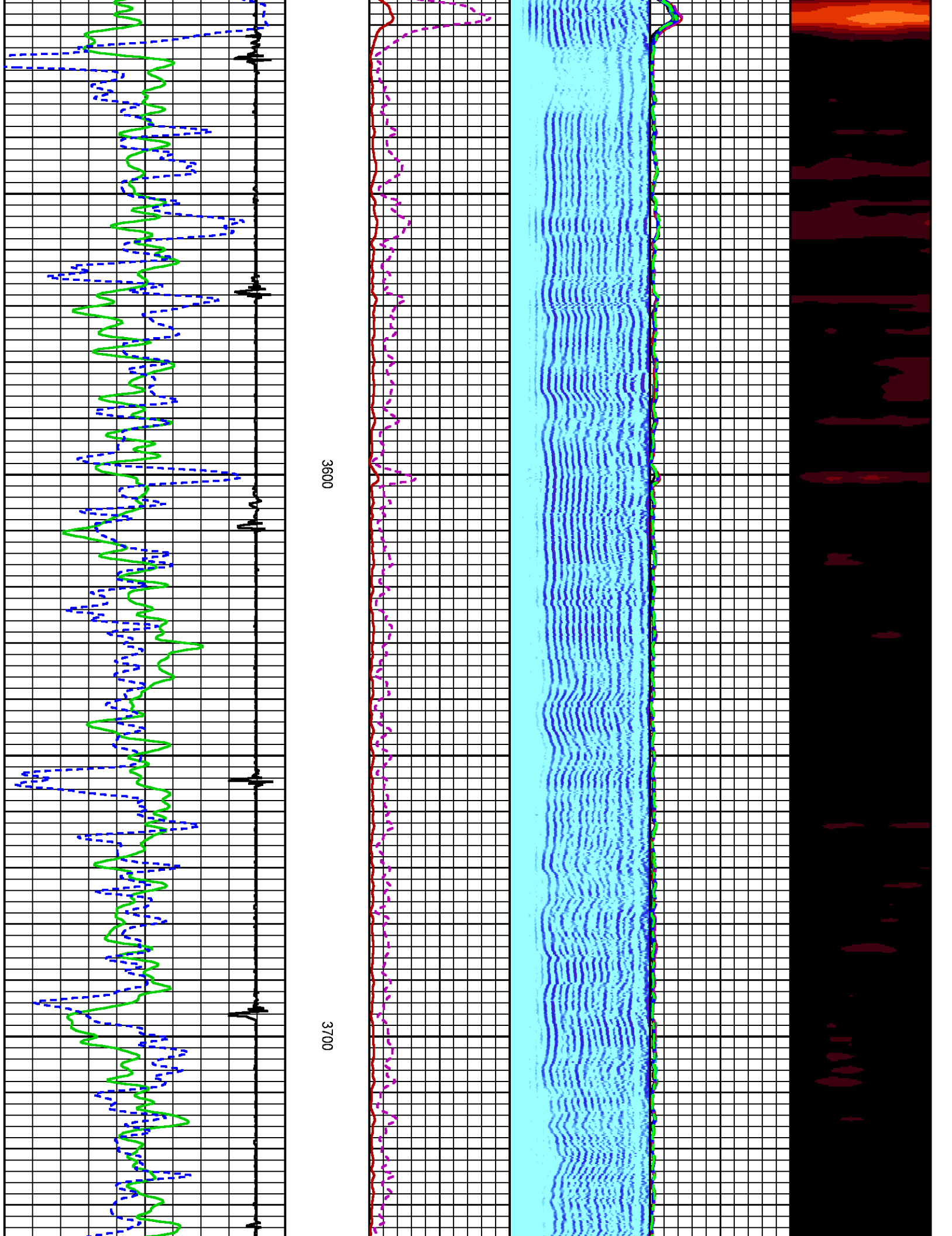




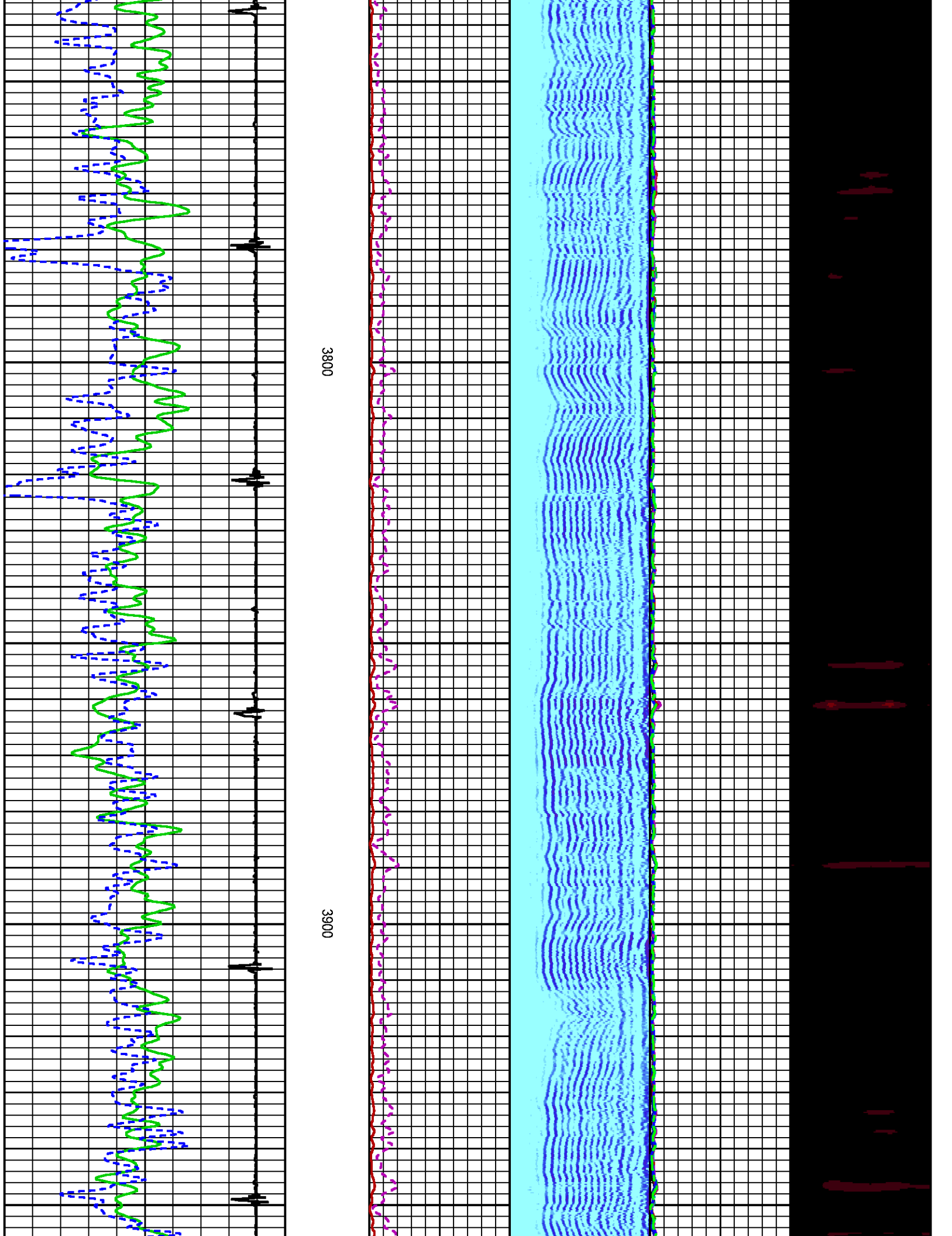


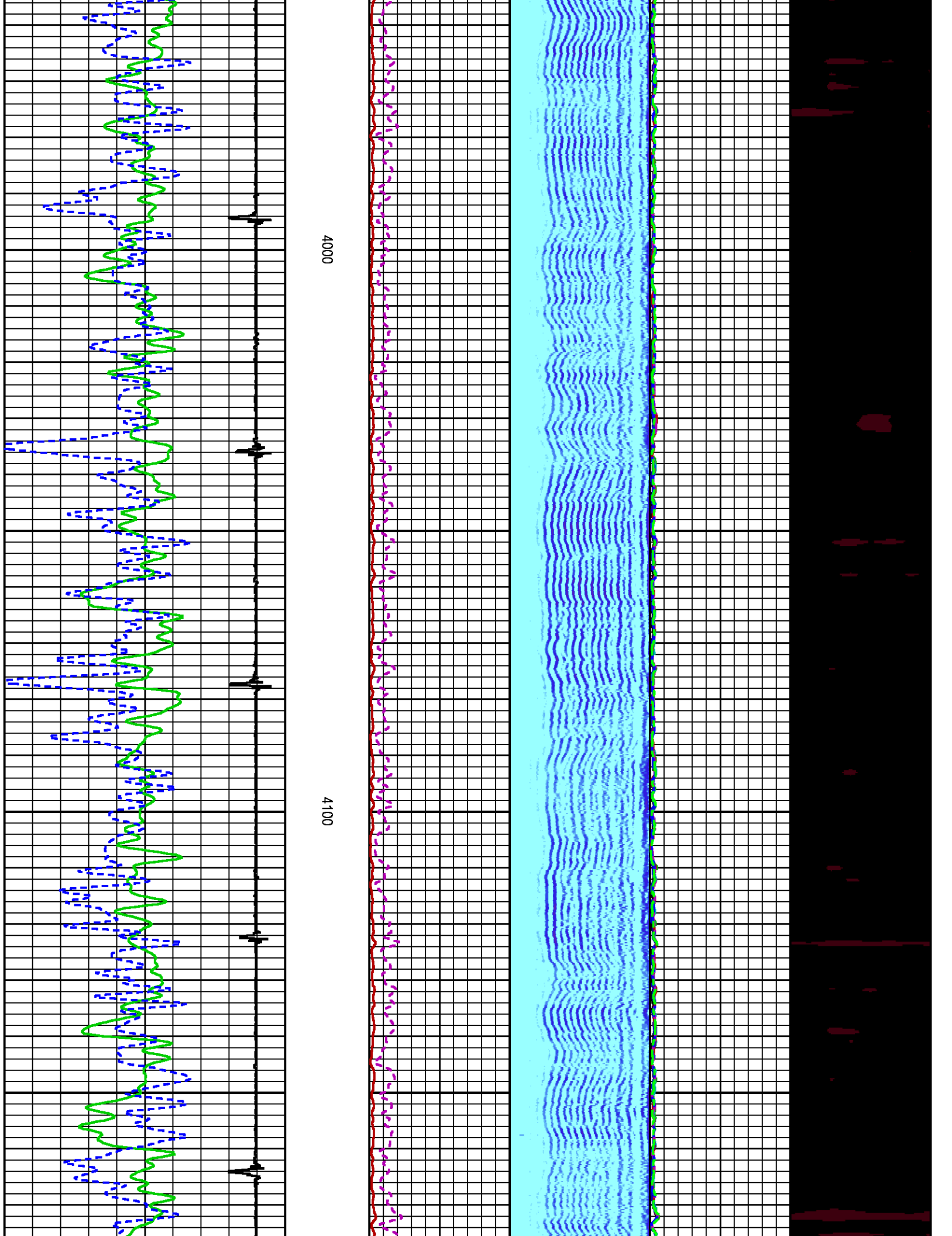


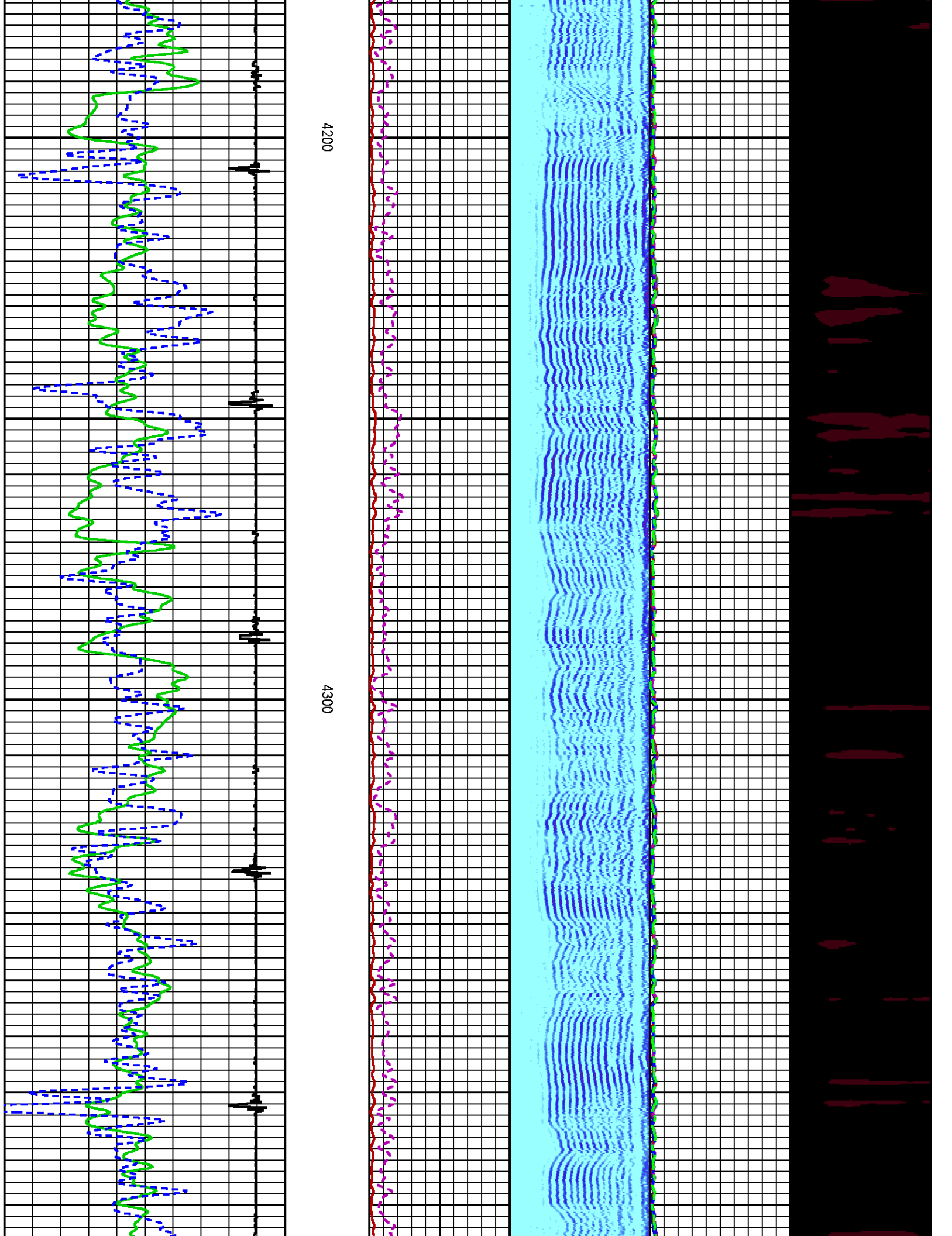


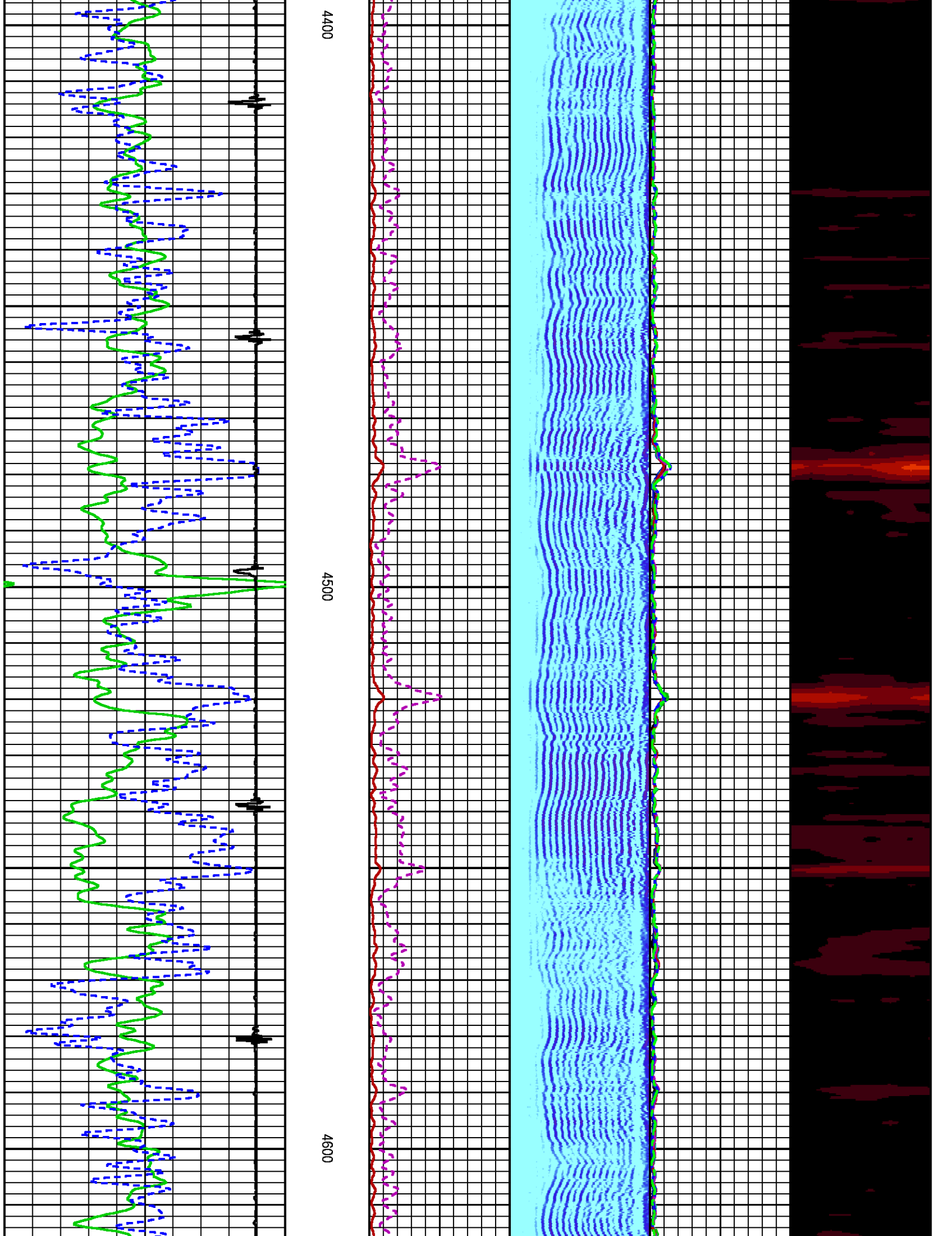




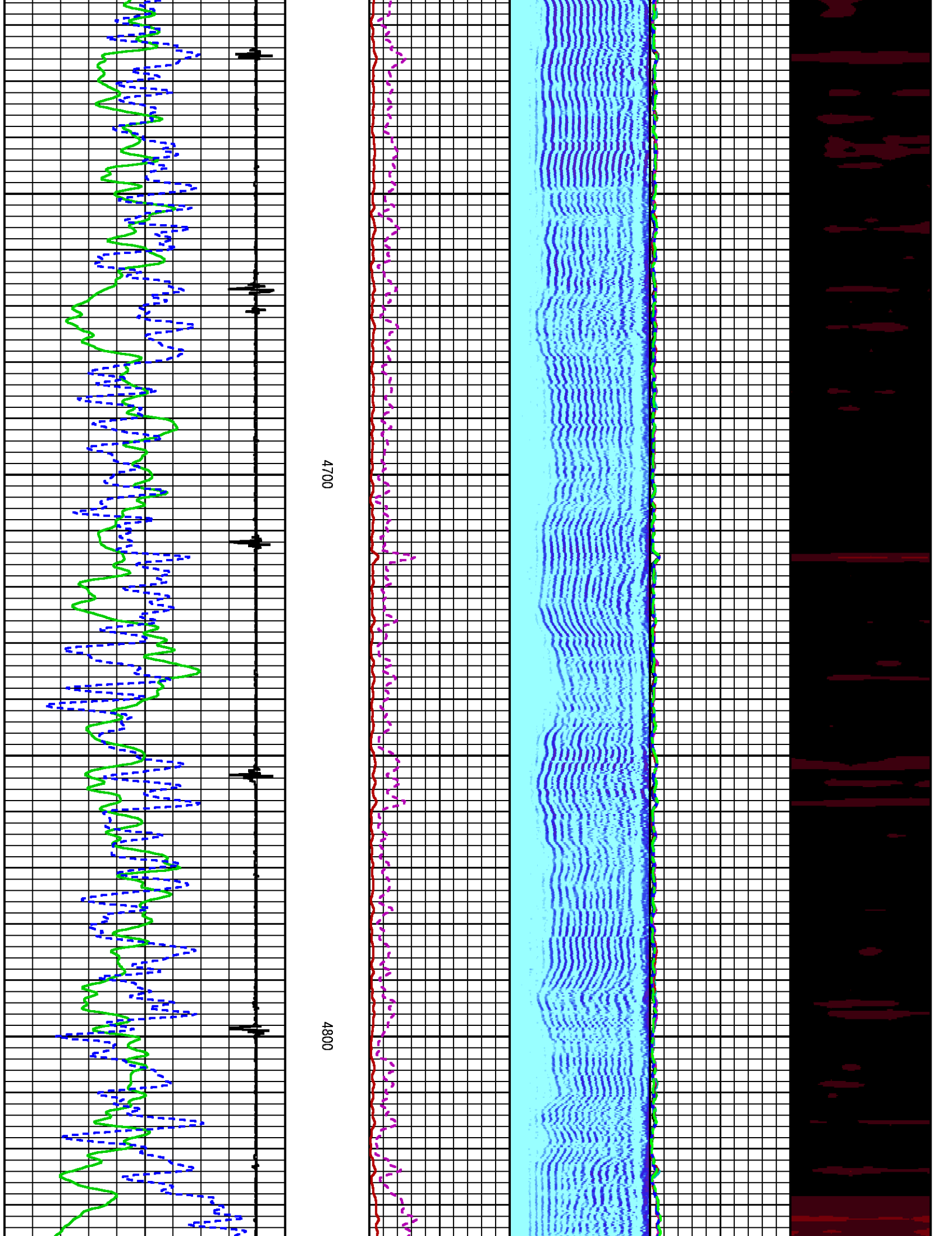


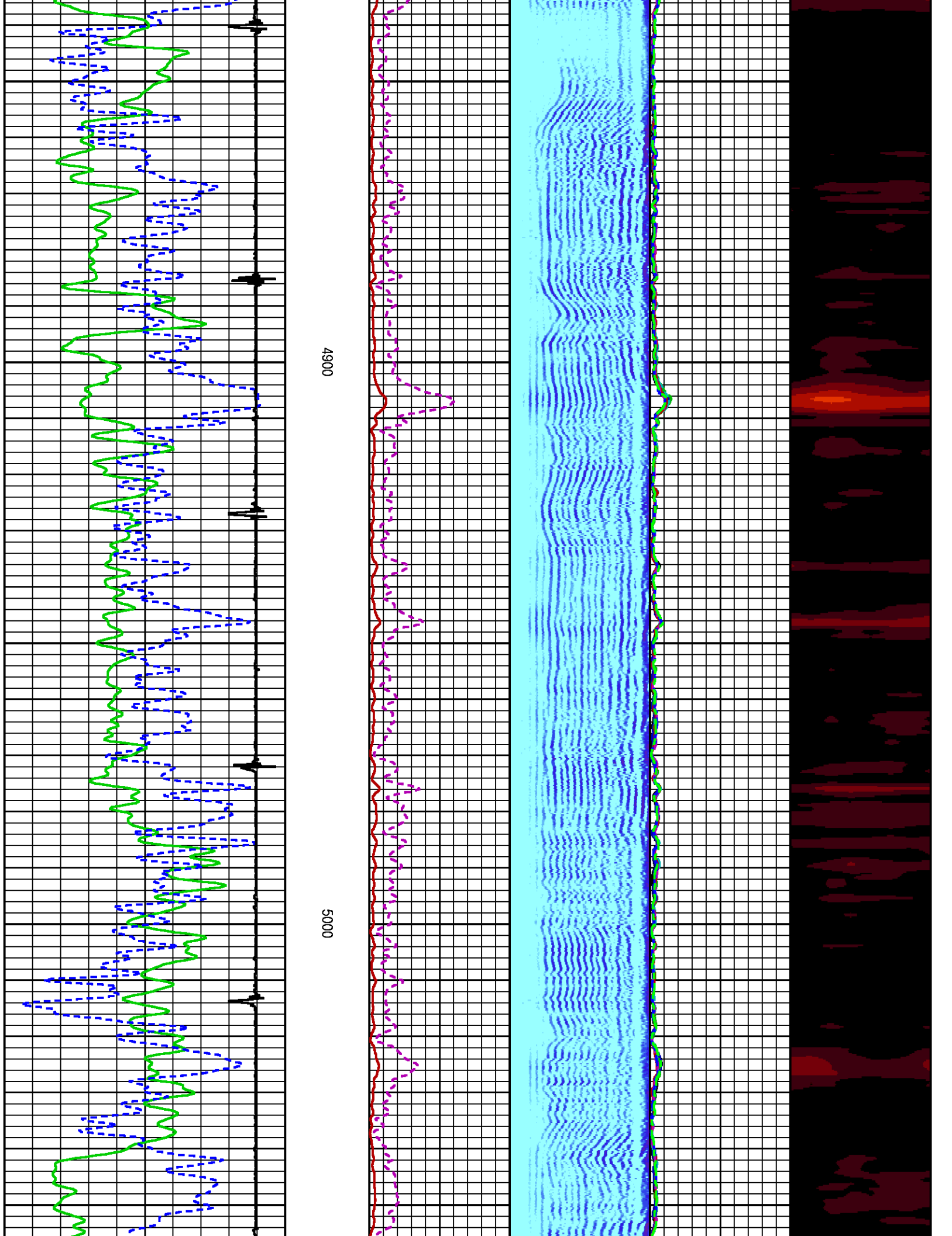




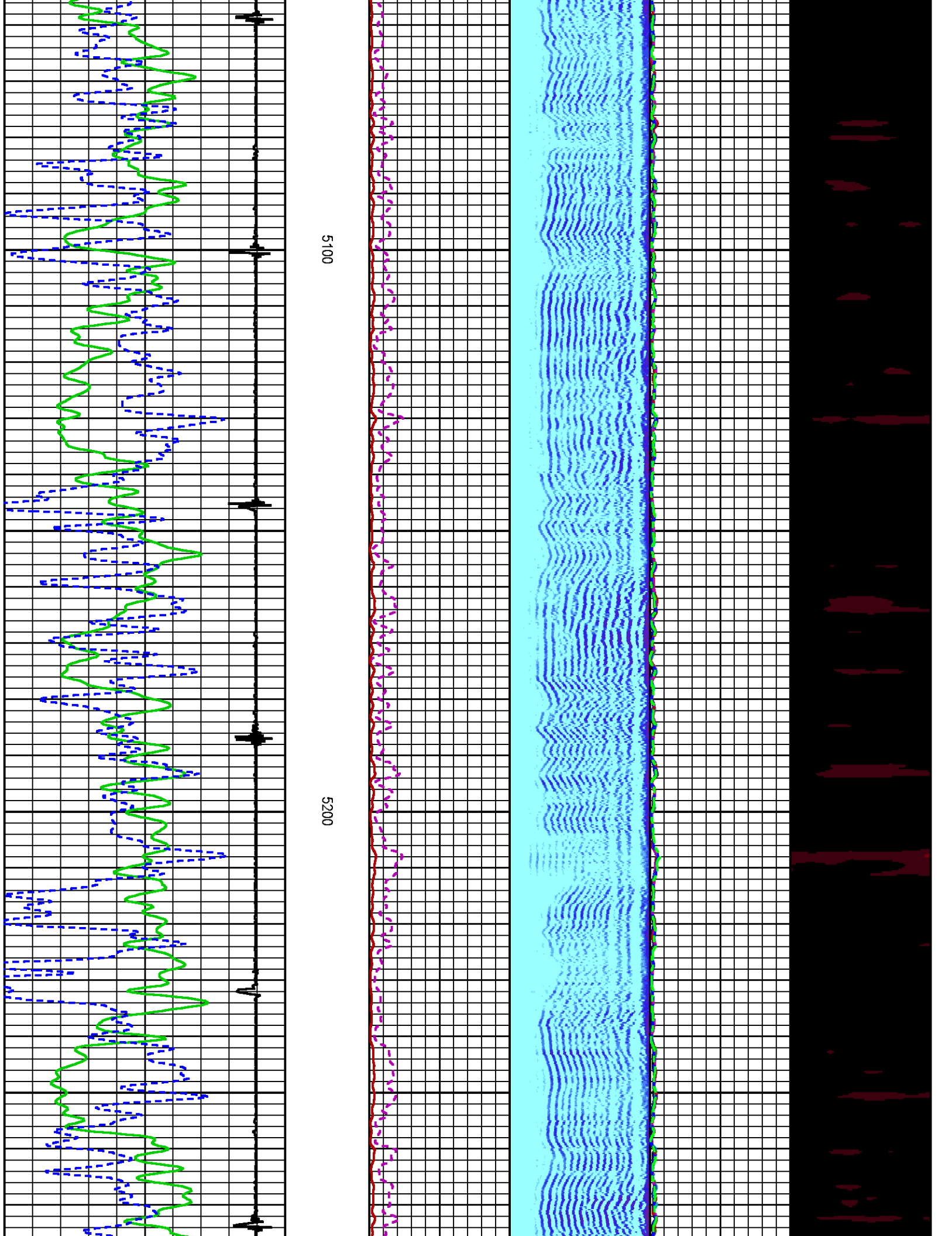


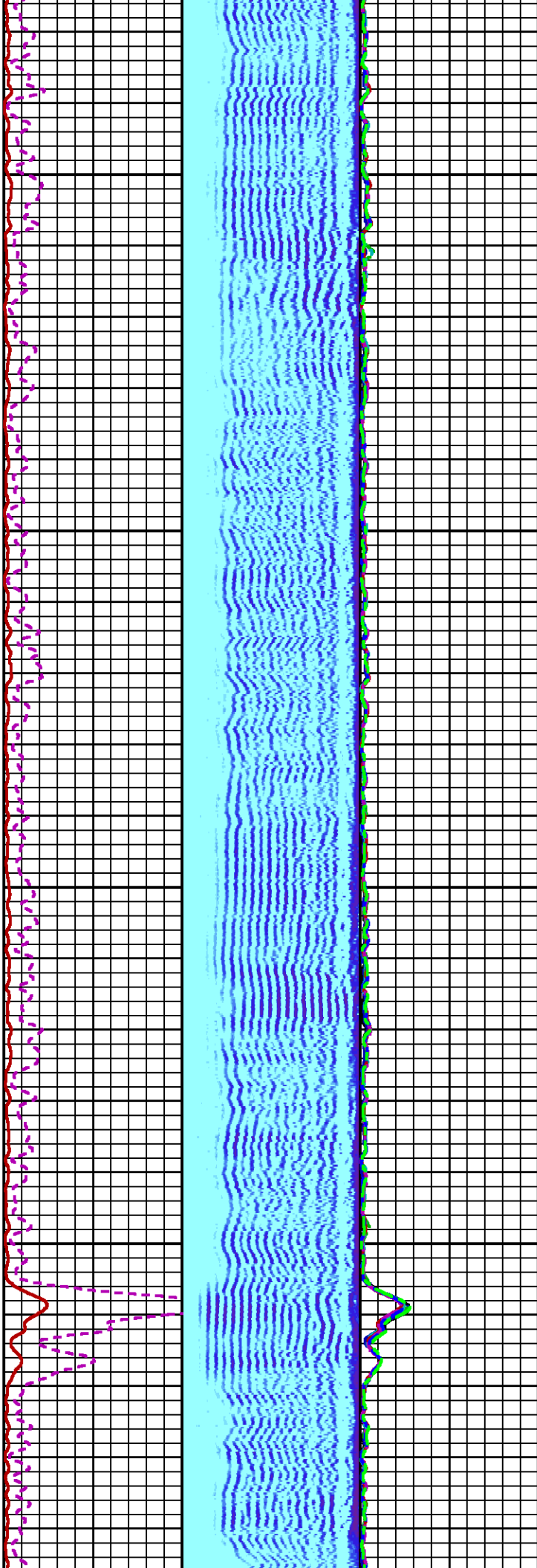






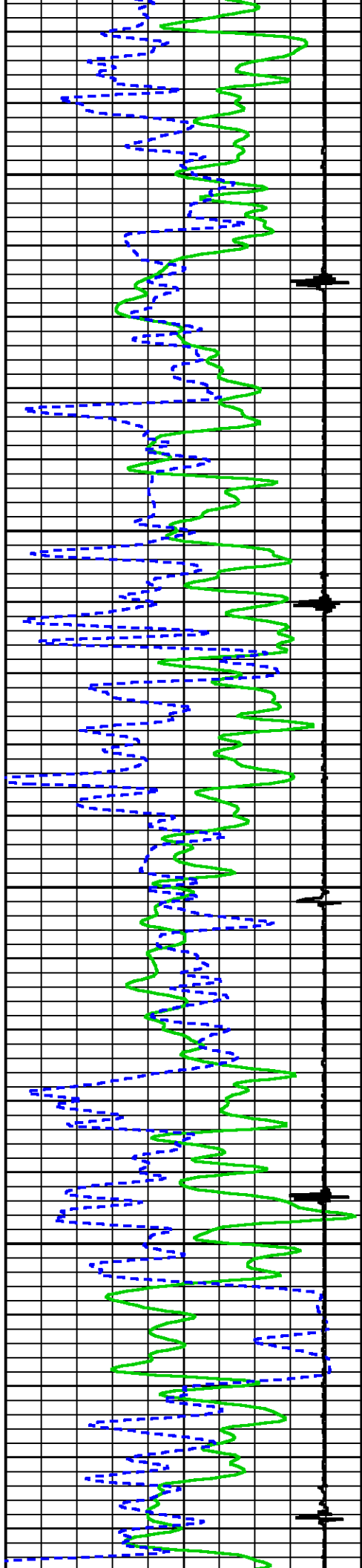


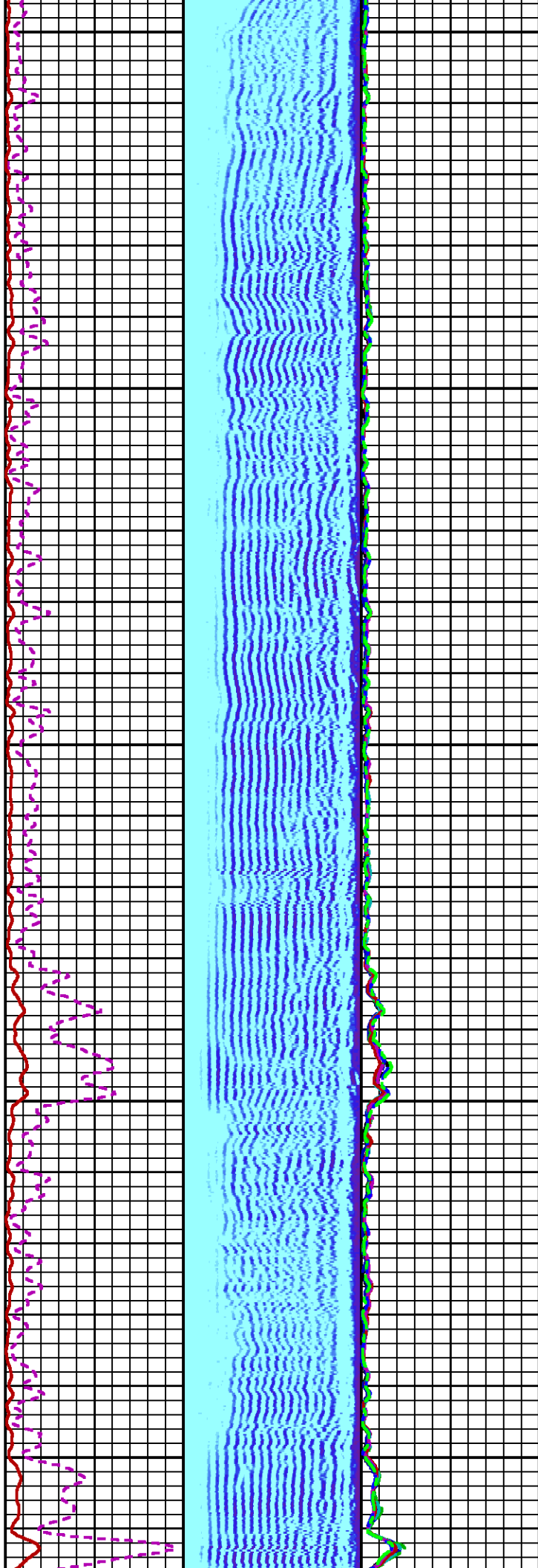




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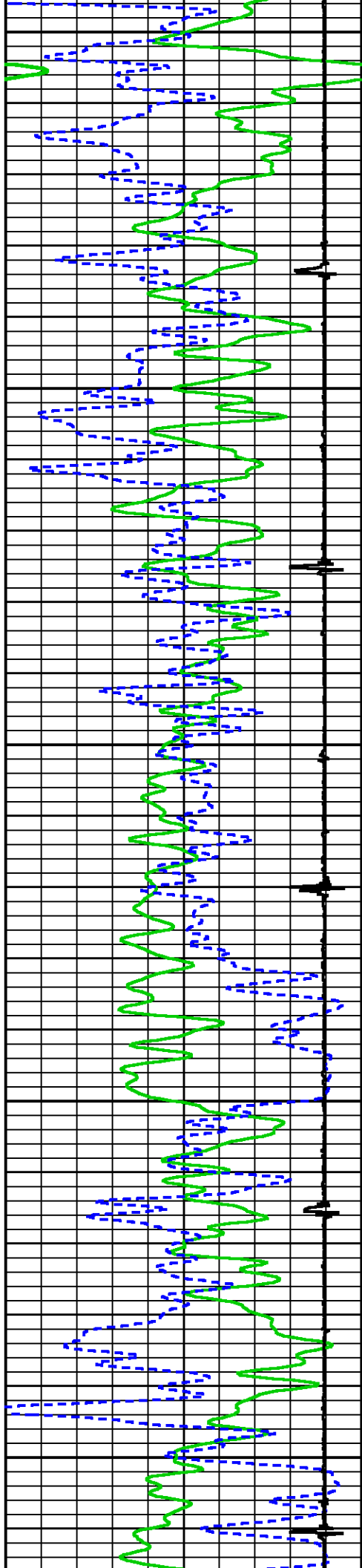


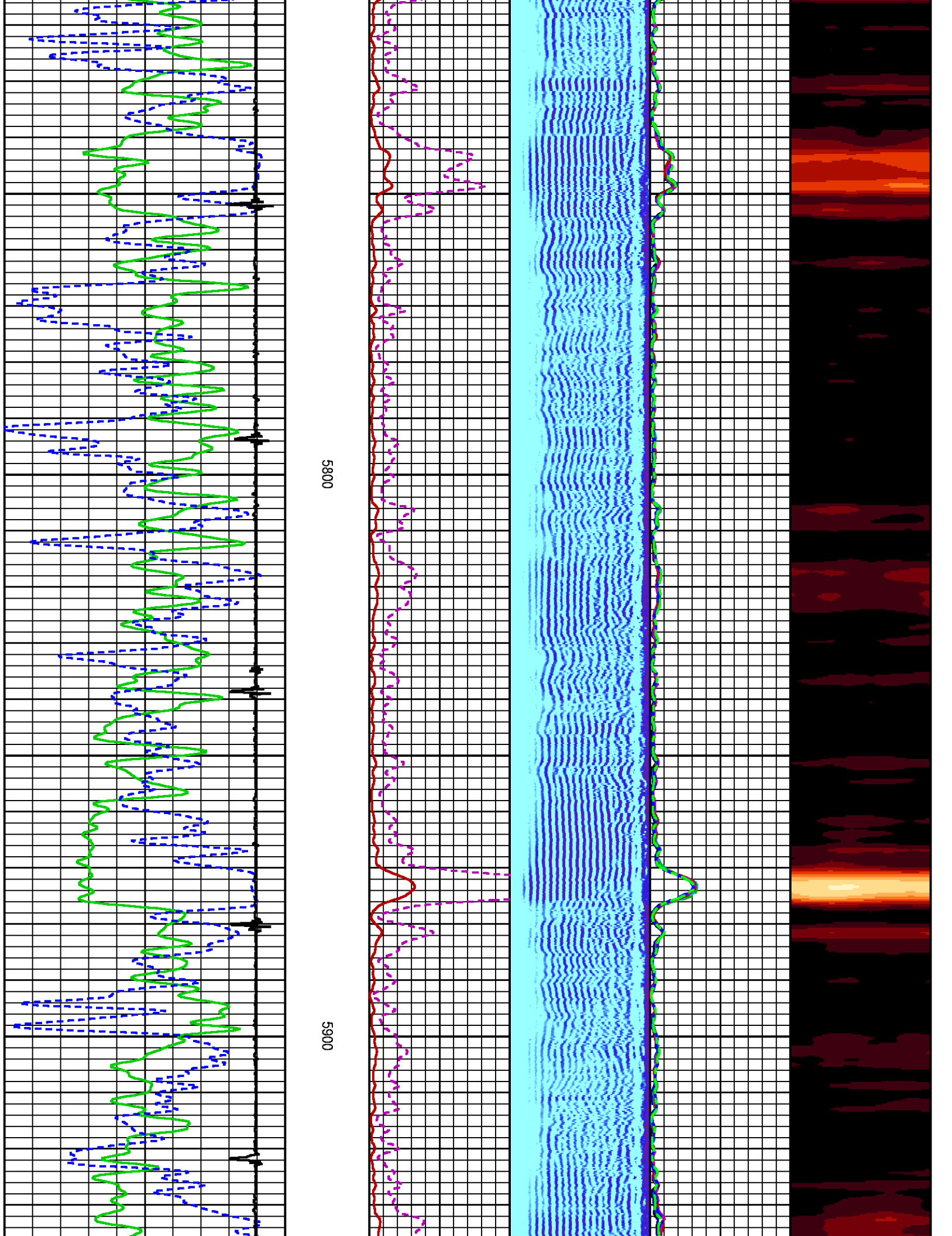


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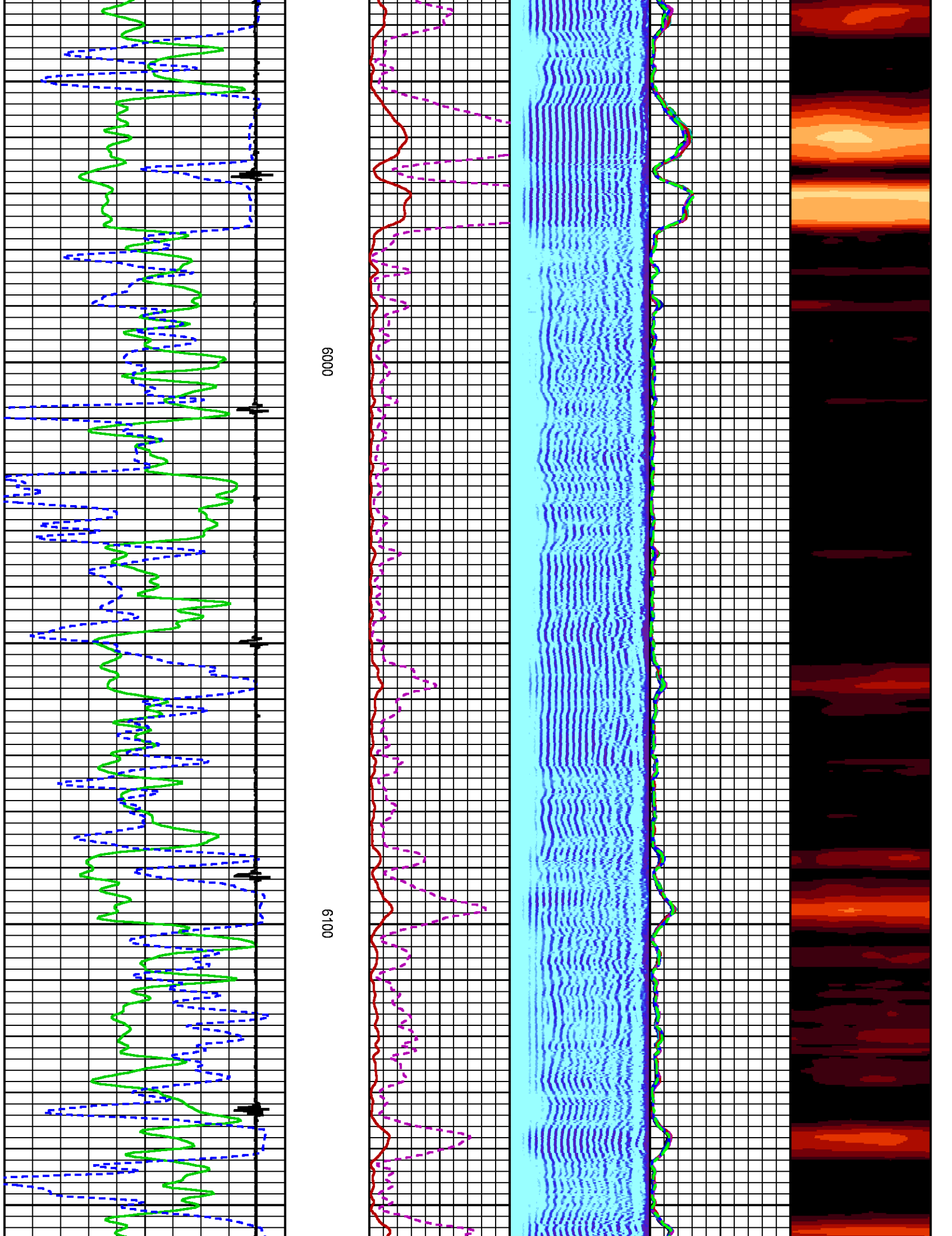
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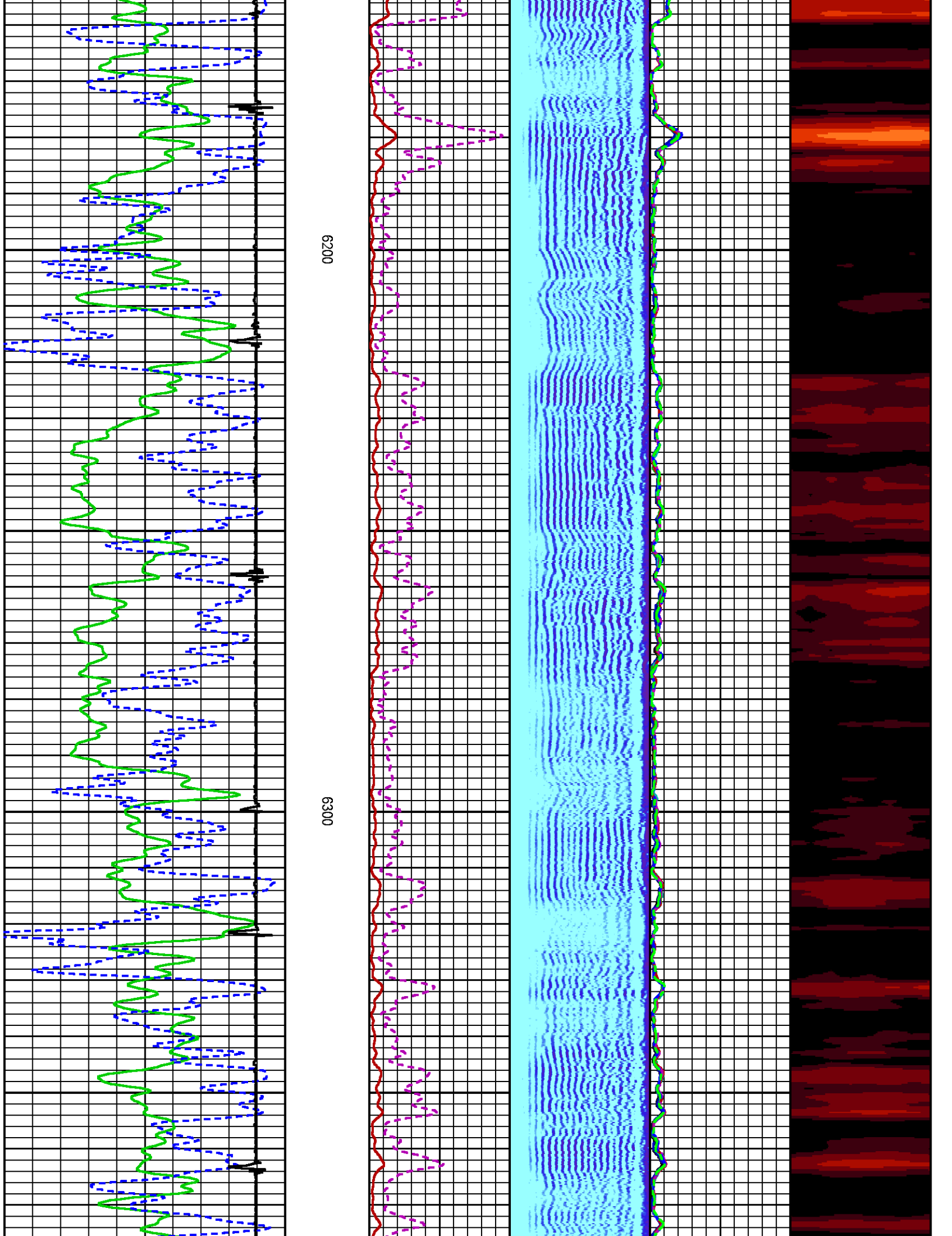


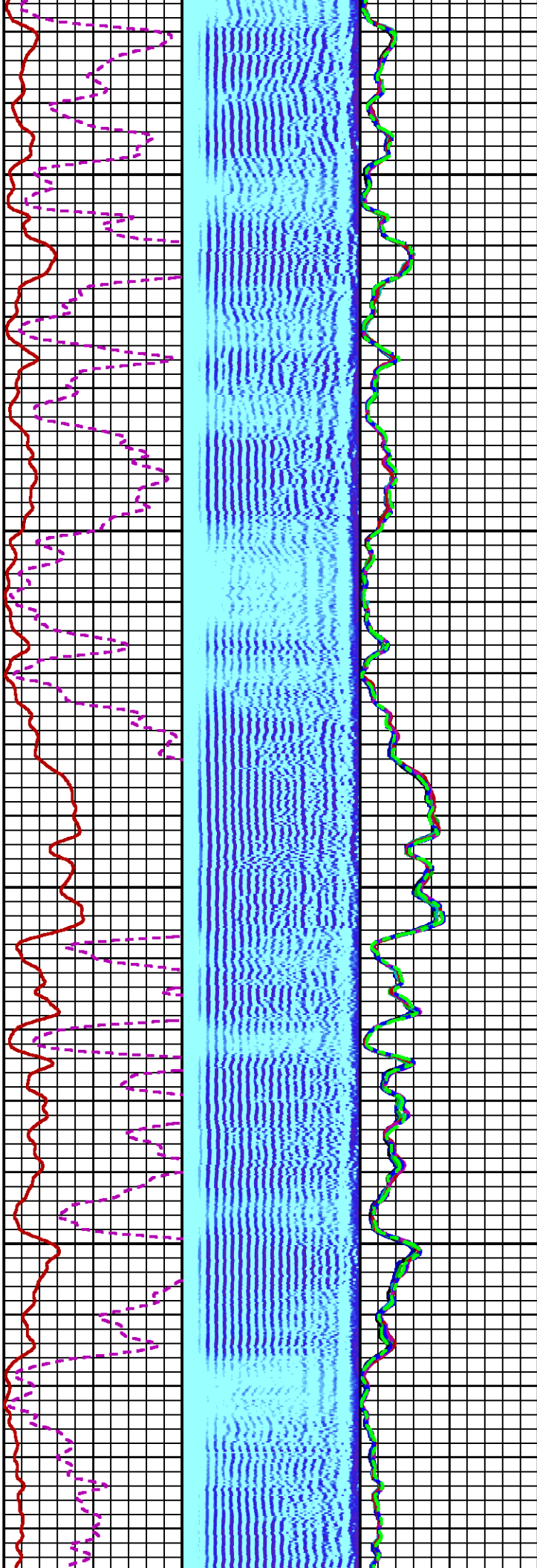
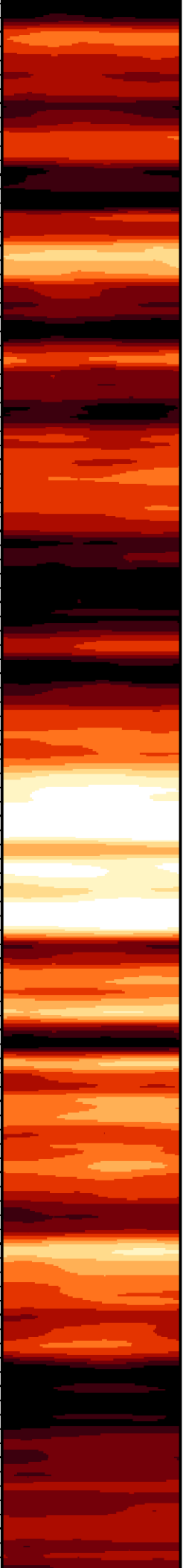






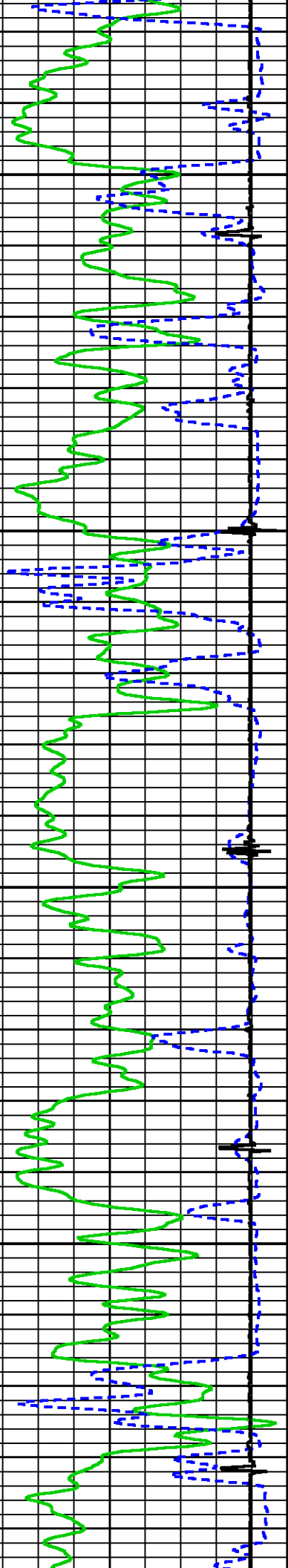


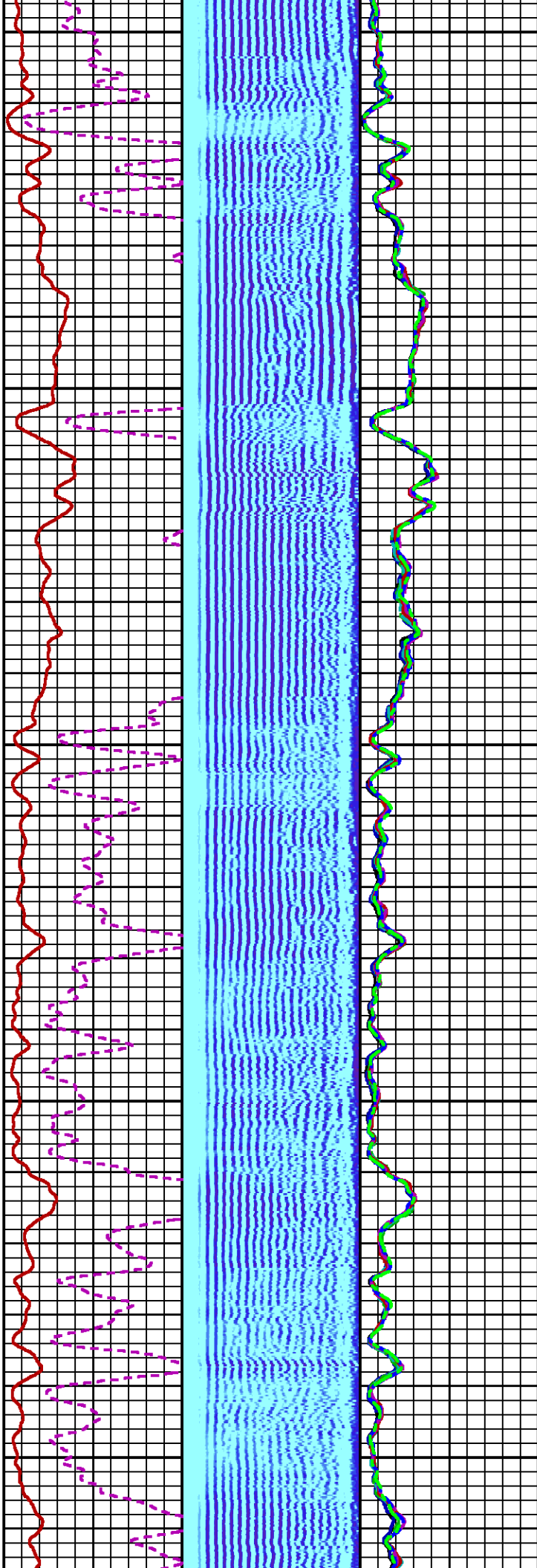
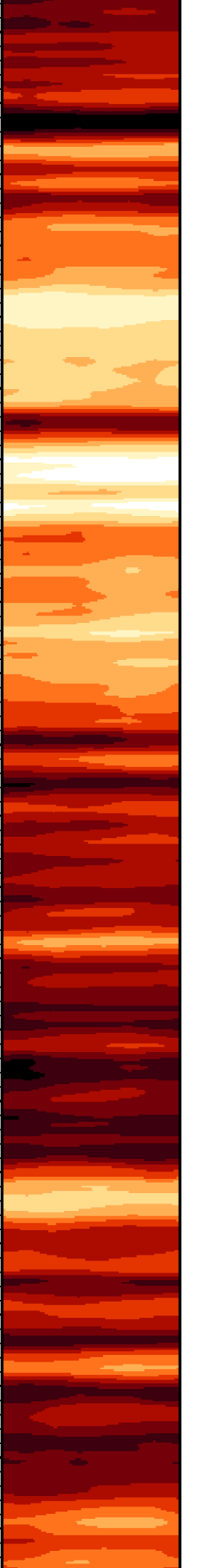




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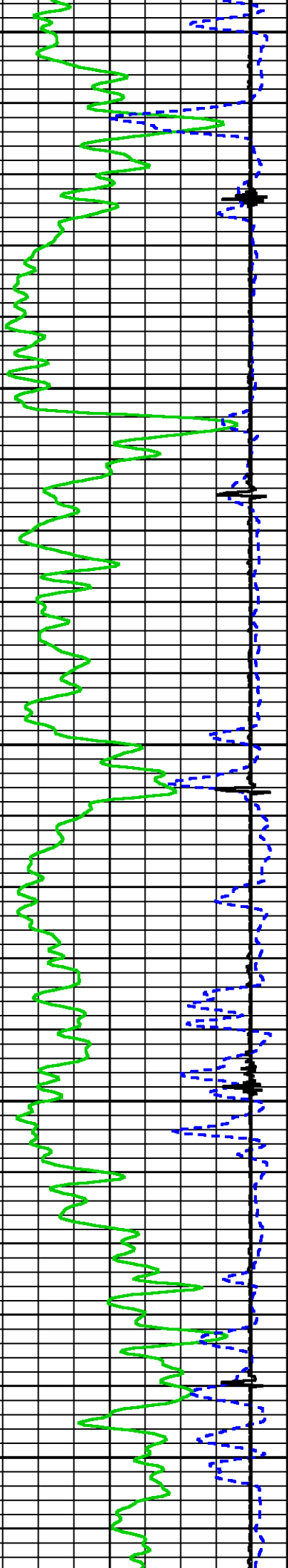


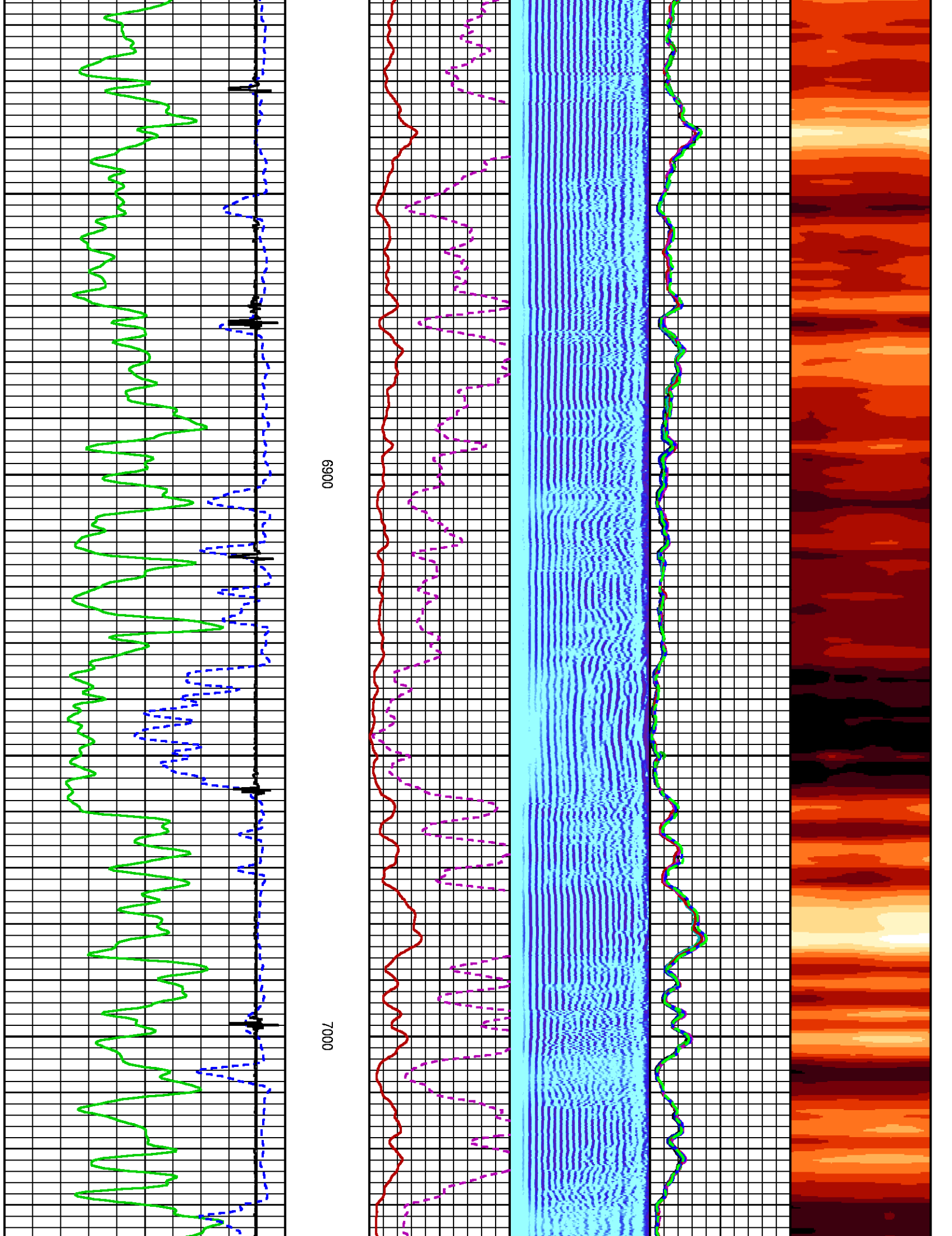


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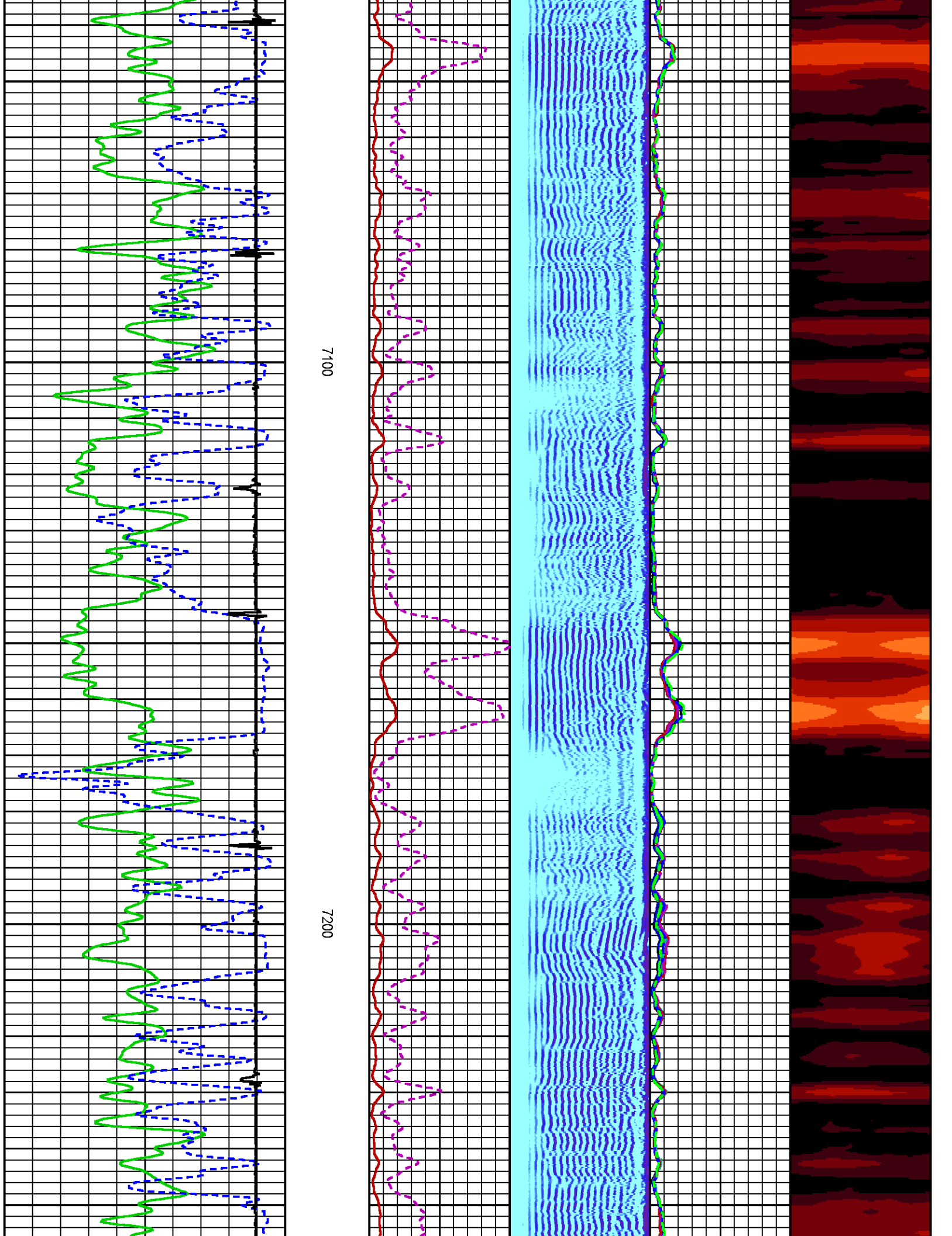
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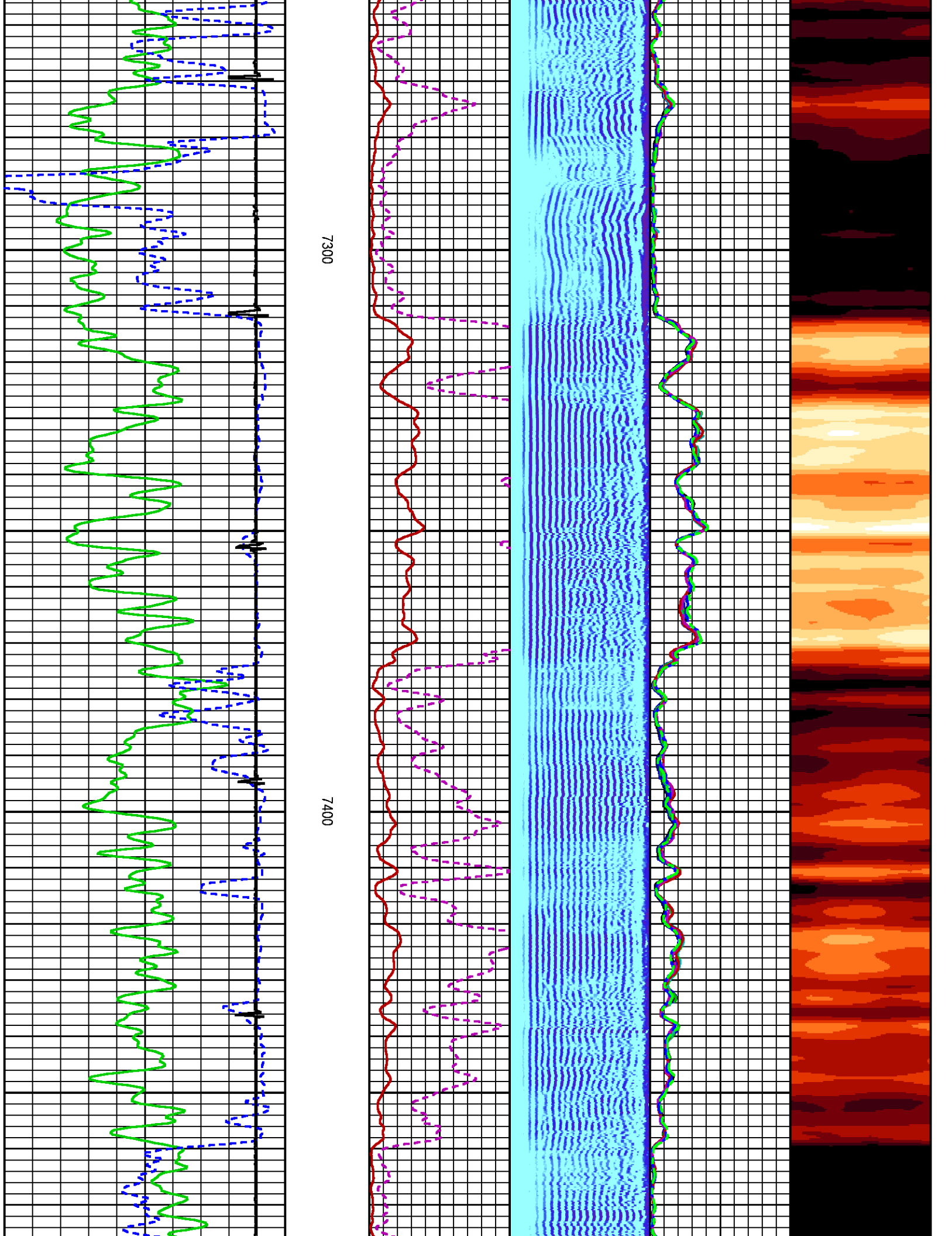


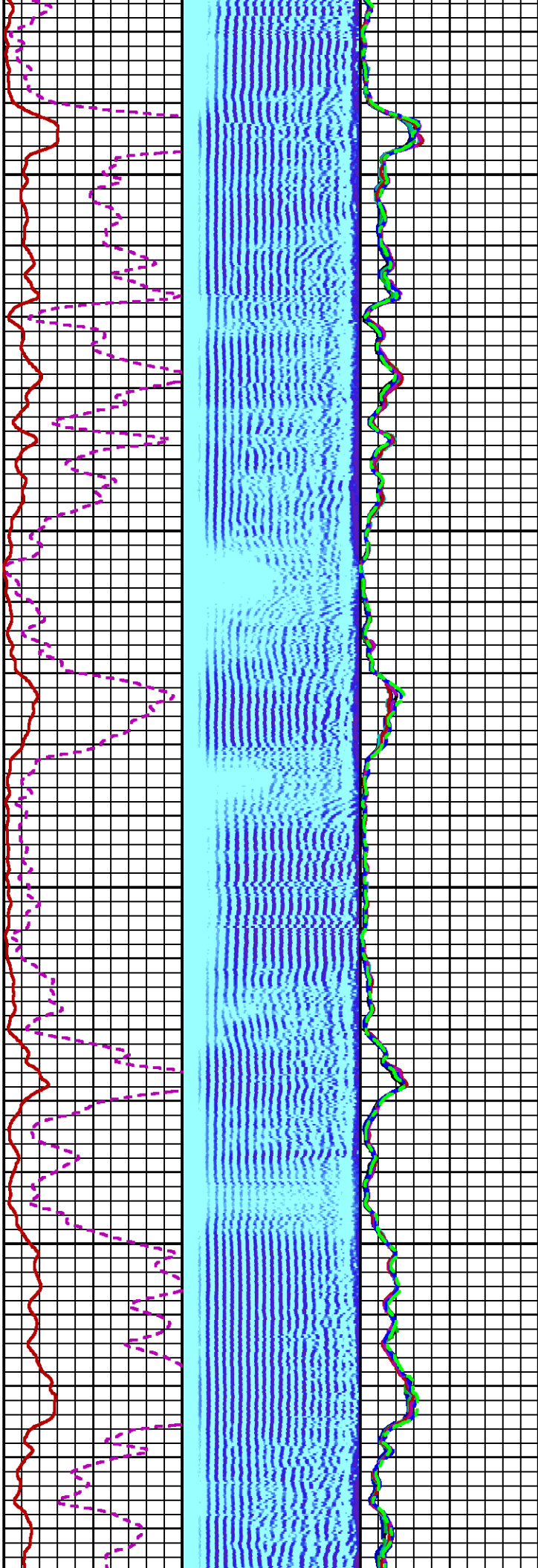
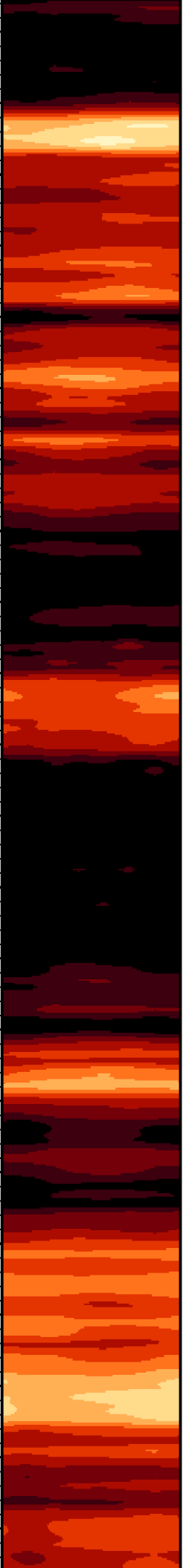






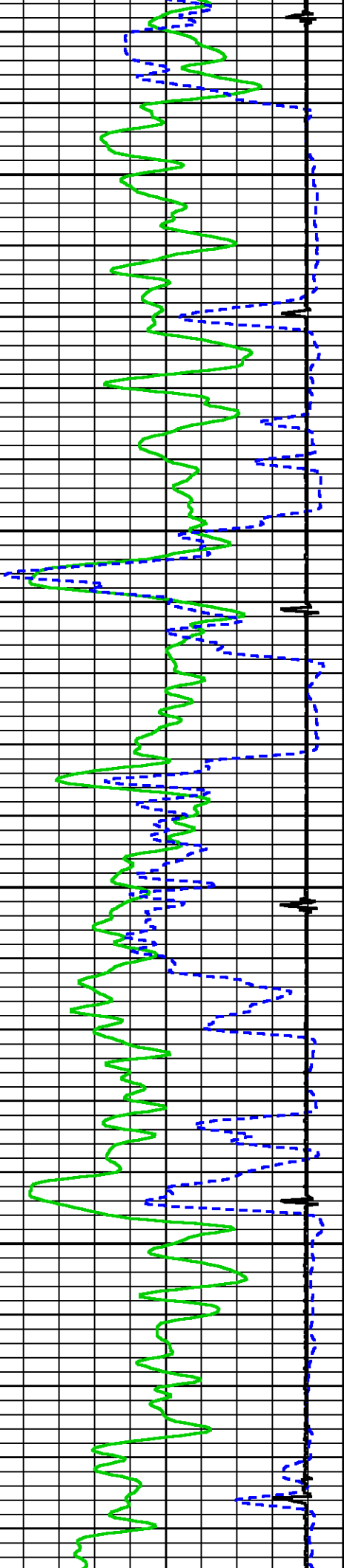


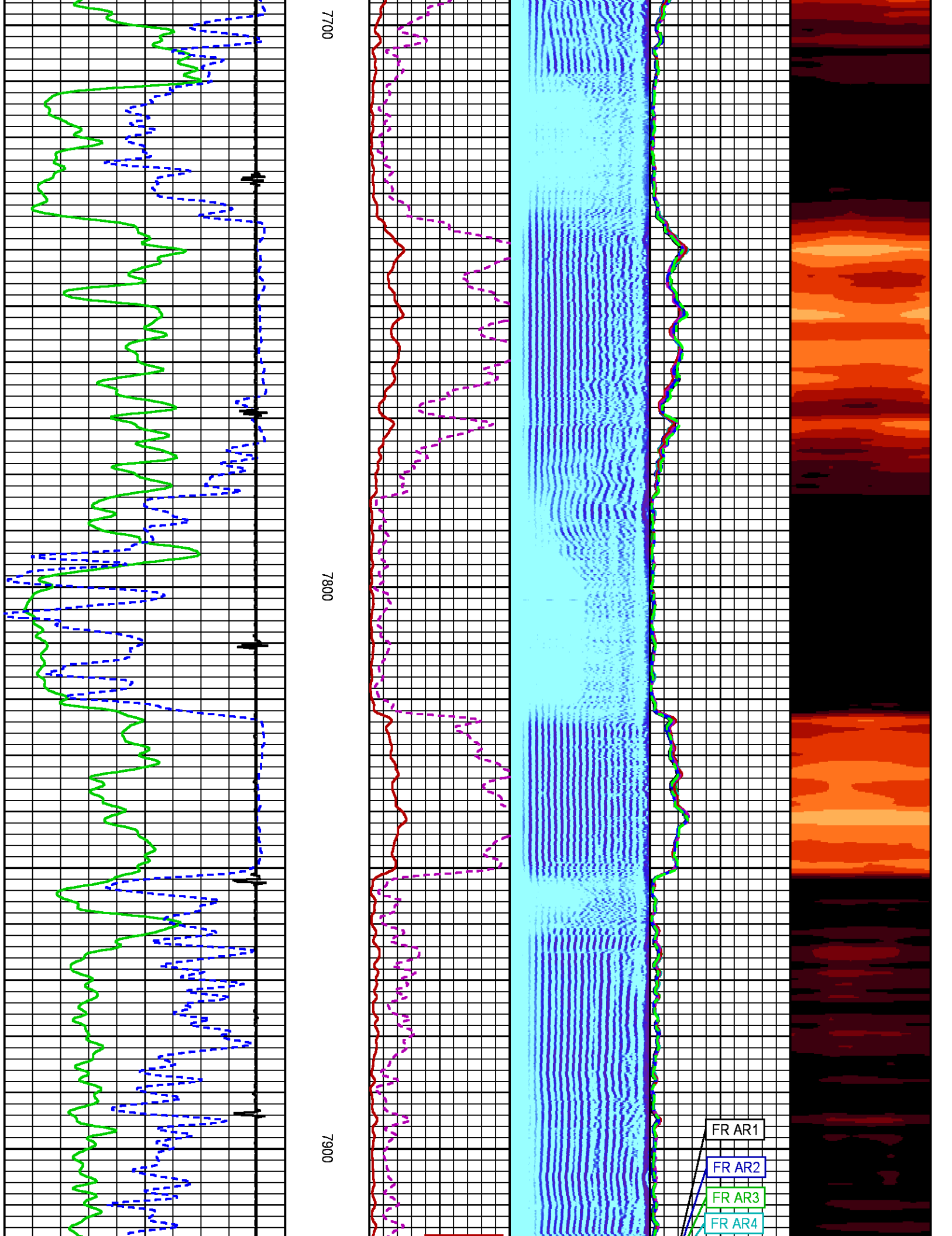


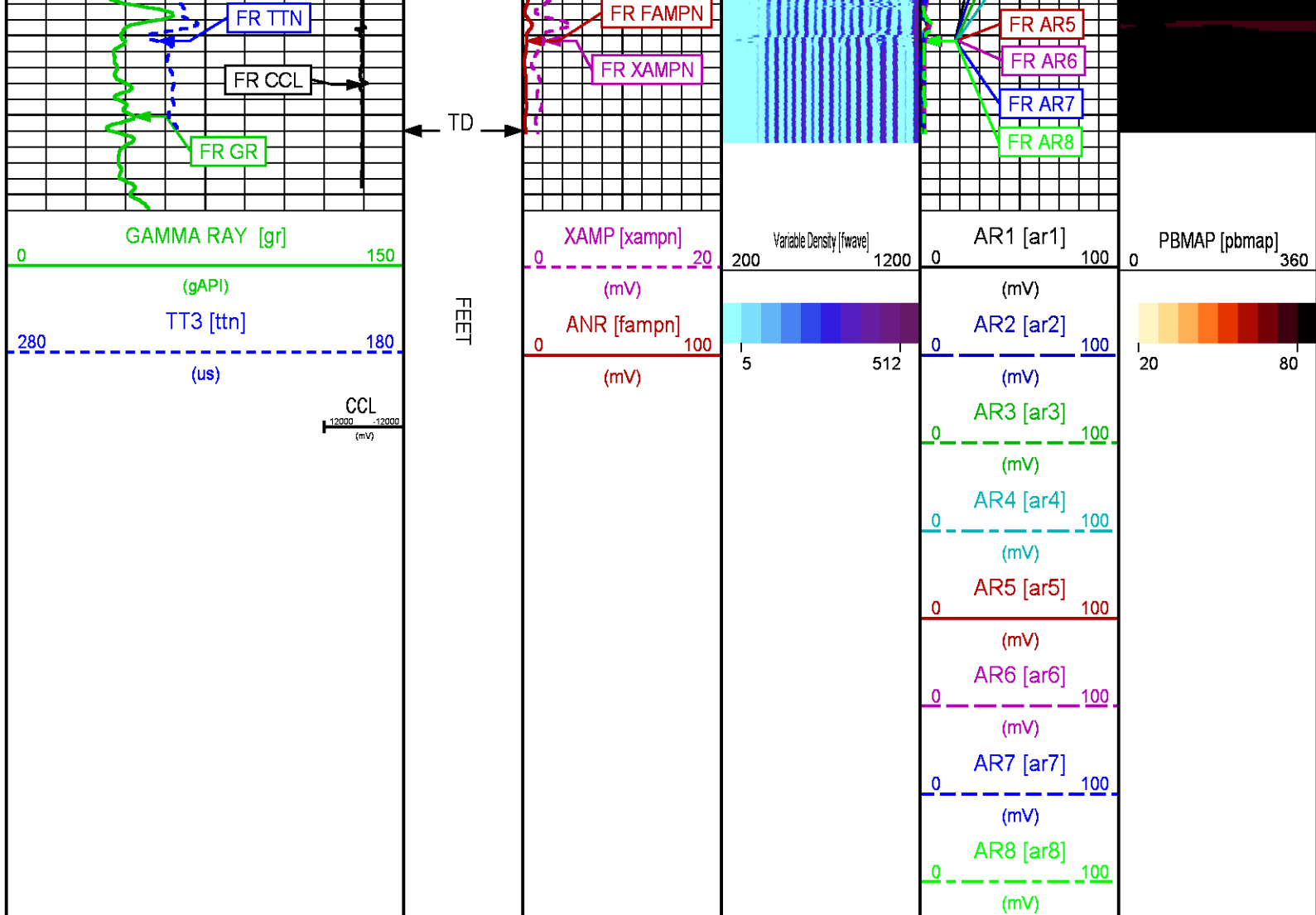


7500

7600







REPEAT 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 May 26 16:34:03 2017

## PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE\_PICEANCE\_FEDERAL\_29\_20E/n012g01.prm  
 LOGGING MODE: DEPTH DIRECTION: UP  
 TOP DEPTH: 7293.500 ft BOTTOM DEPTH: 7946.000 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

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
AMPLITUDE WINDOW (NEAR)	AMP WINDOW START (fgp1*)	178	us	TOP	BOTTOM
	AMP WINDOW START (fgp2*)	178	us	"	"
	AMP WINDOW START (fgp3*)	178	us	"	"
	AMP WINDOW START (fgp4*)	178	us	"	"
	AMP WINDOW START (fgp5*)	178	us	"	"
	AMP WINDOW START (fgp6*)	178	us	"	"
	AMP WINDOW START (fgp7*)	178	us	"	"
	AMP WINDOW START (fgp8*)	178	us	"	"
	AMP WINDOW START (fgpn*)	178	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*)	-75	us	"	"
	TOOL DELAY (str2*)	-75	us	"	"
	TOOL DELAY (str3*)	-75	us	"	"
	TOOL DELAY (str4*)	-75	us	"	"
	TOOL DELAY (str5*)	-75	us	"	"
	TOOL DELAY (str6*)	-75	us	"	"
	TOOL DELAY (str7*)	-75	us	"	"
	TOOL DELAY (str8*)	-75	us	"	"
	TOOL DELAY (strn*)	-75	us	"	"
BASELINE NOISE (NEAR)	NOISE WINDOW START	125	us	"	"
	NOISE WINDOW LENGTH	25	us	"	"

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 NAME	CREATION DATE	CURVE DESCRIPTION
F1:AR1	May 26 14:30:16 2017	FIXED GATE AMPLITUDE T-R1
F1:AR2	May 26 14:30:16 2017	FIXED GATE AMPLITUDE T-R2
F1:AR3	May 26 14:30:16 2017	FIXED GATE AMPLITUDE T-R3
F1:AR4	May 26 14:30:16 2017	FIXED GATE AMPLITUDE T-R4
F1:AR5	May 26 14:30:16 2017	FIXED GATE AMPLITUDE T-R5
F1:AR6	May 26 14:30:16 2017	FIXED GATE AMPLITUDE T-R6
F1:AR7	May 26 14:30:16 2017	FIXED GATE AMPLITUDE T-R7
F1:AR8	May 26 14:30:16 2017	FIXED GATE AMPLITUDE T-R8
F1:CCL	May 26 14:30:16 2017	CASING COLLAR LOCATOR
F1:FAMPN	May 26 14:30:16 2017	FIXED GATE AMPLITUDE NEAR RECEIVER
F1:FWAVE	May 26 14:30:16 2017	FAR WAVE FORM
F1:GR	May 26 14:30:16 2017	GAMMA RAY
F1:PBMAP	May 26 14:30:16 2017	PERCENT BOND CEMENT MAP
F1:TTN	May 26 14:30:16 2017	TRAVELTIME FROM NEAR TRANSMITTER-RECEIVER
F1:XAMPN	May 26 14:30:16 2017	FIXED GATE AMPLITUDE NEAR RECEIVER TIMES FIVE

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\_PICEANCE\_FEDERAL\_29\_20E/  
ral\_all+01-REPEAT-RAL\_REPEAT\_20E-5.fvpdf [5"/100" Scale]

Plot Interval
: 7614.5 - 7959.5 Feet

Data File 1
: F1 : cpu100:/dat1a/LARAMIE\_PICEANCE\_FEDERAL\_29\_20E/RAL\_RPT\_20E.xtf

Created On
: May 26 14:30:16 2017

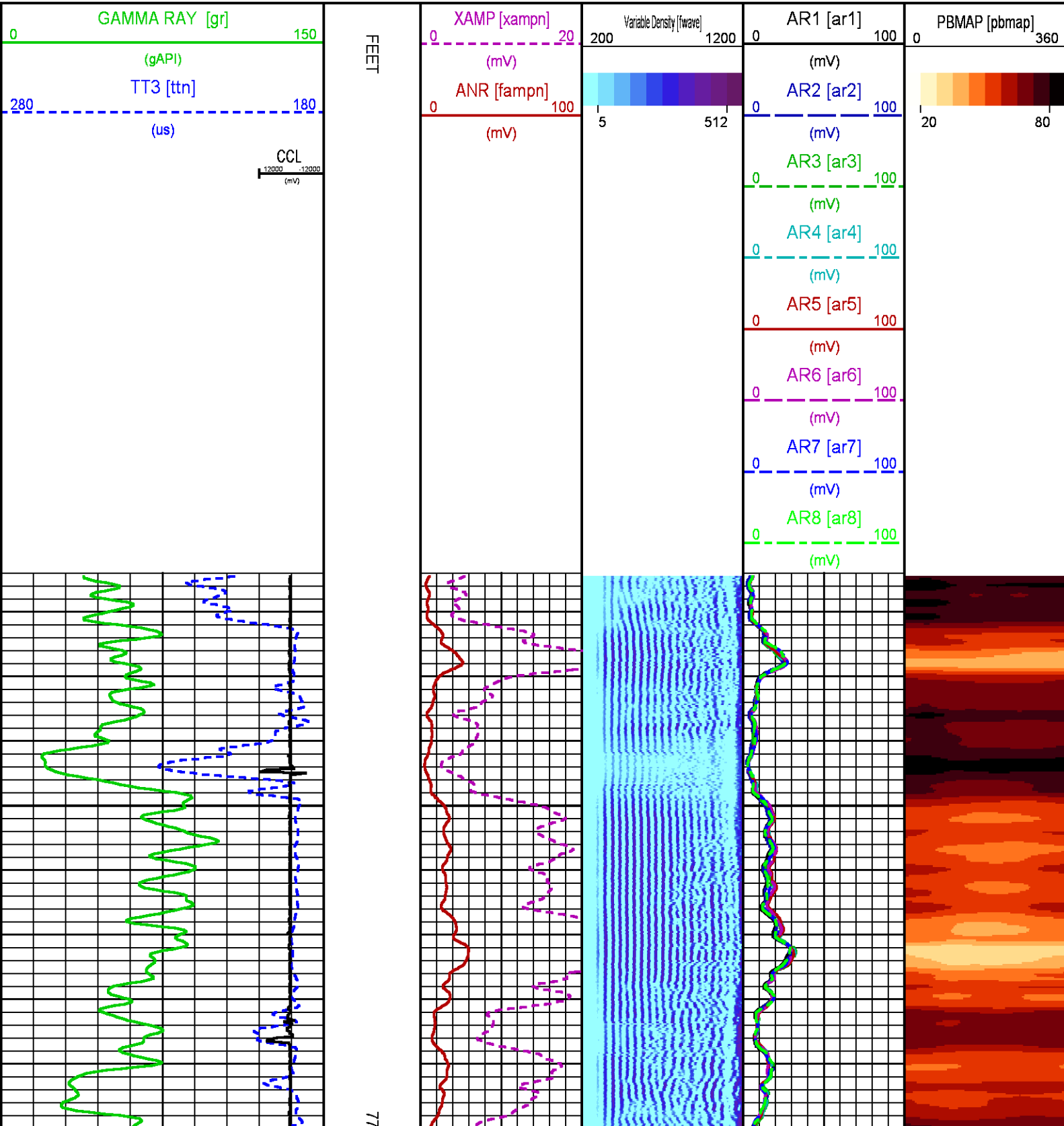
Company
: LARAMIE ENERGY

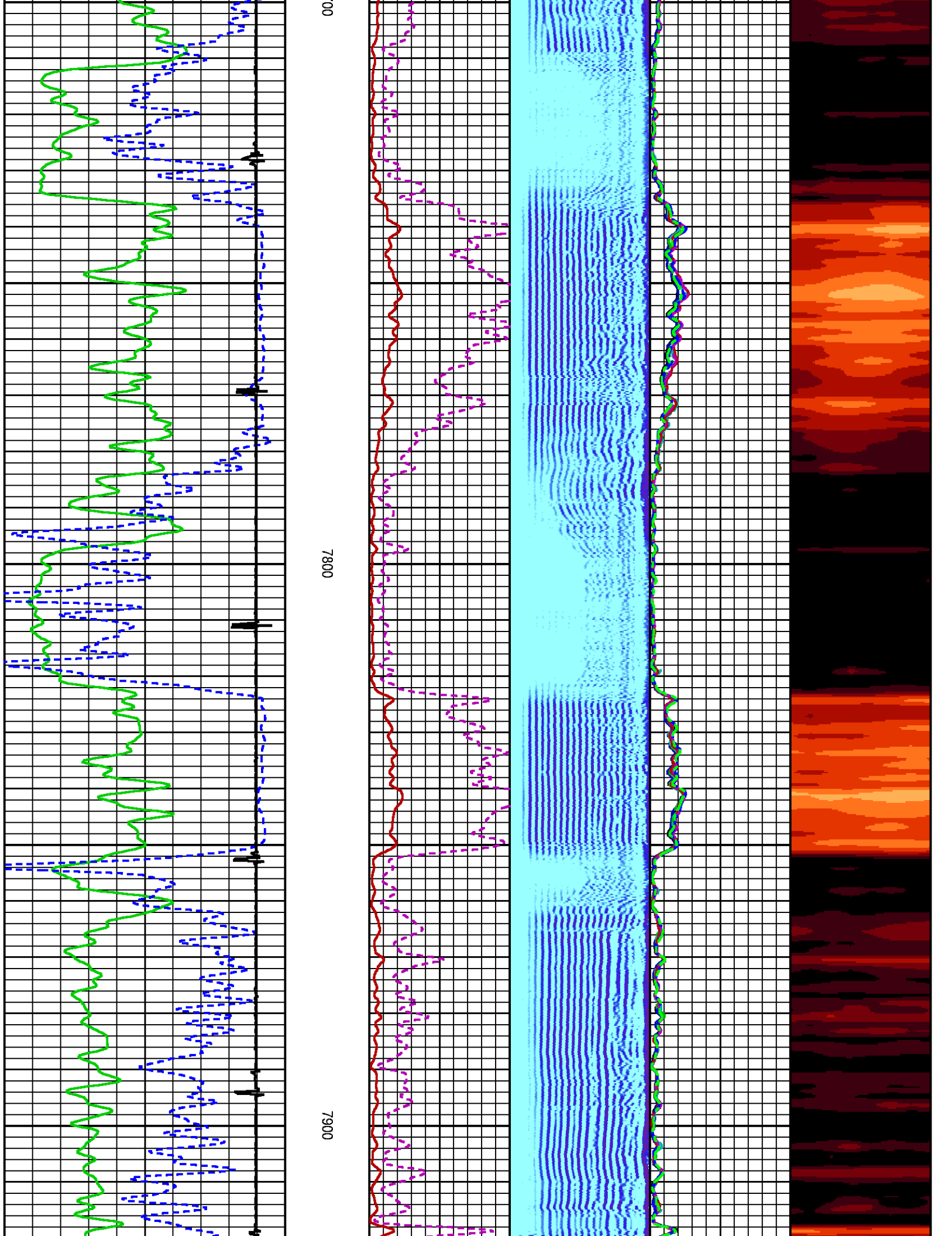
Well
: PICEANCE 29-20E

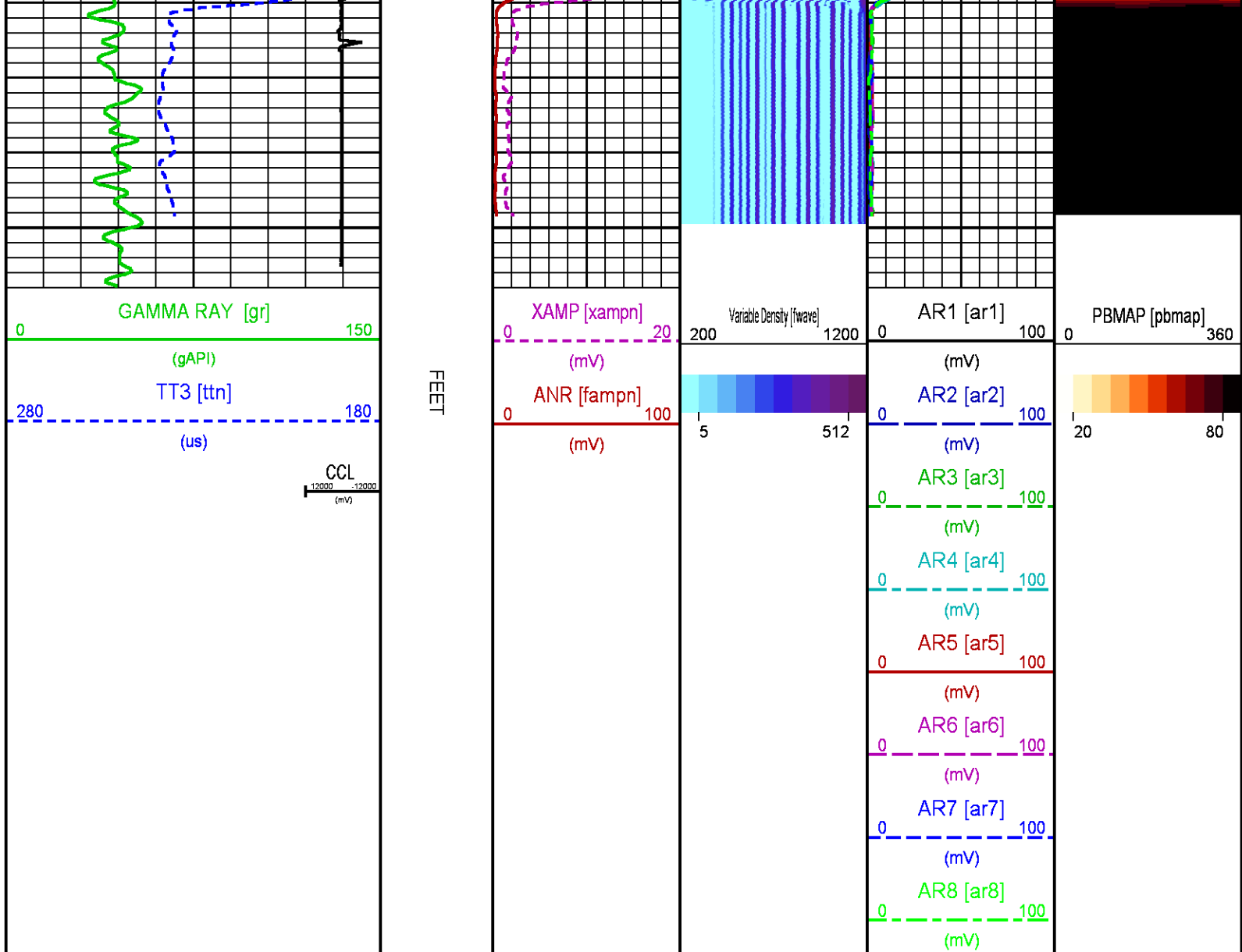
Field
: VEGA

File Interval
: 7614.5 - 7960.75 Feet

OCT
: n012g







### CALIBRATION / VERIFICATION SUMMARY

Source File: \\data1\at\ARAME\_PICEANCE\_FEDERAL\_29\_20Eh012g1.ppt

RAL PRIMARY CALIBRATION SUMMARY

TOOL #:

1426XA10218497

DATE/TIME PERFORMED:

Fri May 26 10:02:14 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)

-0.07

0.00

-0.01

0.00

-0.04

-0.06

-0.03

-0.04

0.01

0.13

-0.02

AMP FLUID (mV)

96

97

97

95

96

96

97

97

97

152

95

TT (us)

212

212

212

211

211

211

211

211

213

324

212

M FACTOR

1.04

1.03

1.04

1.05

1.04

1.04

1.03

1.03

1.04

0.99

1.05

RAL BEFORE LOG VERIFICATION SUMMARY

TOOL #:

1426XA10218497

DATE/TIME PERFORMED:

Fri May 26 10:03:31 2017

DAYS SINCE CAL:

n

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

0.00

0.02

-0.02

0.03

0.00

0.03

-0.03

0.00

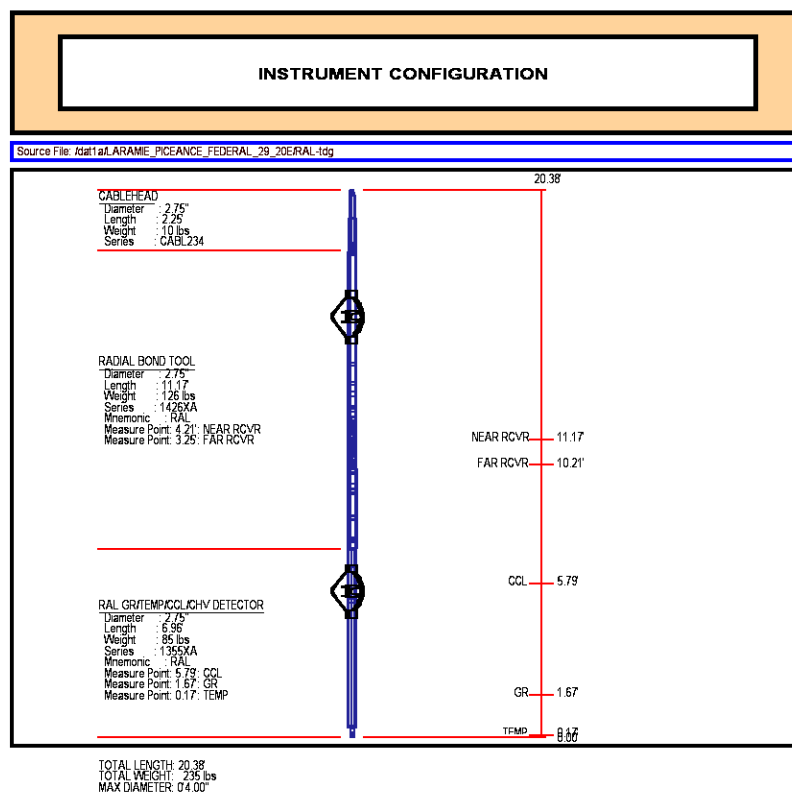
-0.02

0.09

-0.01

AMP AIR	0.20	-0.28	-0.42	0.50	0.59	0.31	0.51	0.24	-0.02	0.79	99.99
<div> <div>SHOP</div> <div>M FACTOR</div> <div>1.05</div> </div> <div> <div>SHOP</div> <div>A FACTOR</div> <div>0.00</div> </div> <div> <div>WIRELINE</div> <div>FACTOR</div> <div>1.00</div> </div>											

GR PRIMARY CALIBRATION SUMMARY						
TOOL #: 1355XA111155		DATE/TIME PERFORMED: Tue Nov 15 11:09:30 2016				
UNIT #: 3880TA HL6670		CALB JIG #: 4702NK DA_228				
BACKGROUND	CALBTR ON	GR DIFF	MULT	BACKGROUND	CALBTR ON	CALBTR
(cts)	(cts)	(cts/fs)		(gAPI)	(gAPI)	(gAPI)
GR 73.82	227.20	153.4	0.652	48.13	148.13	100
GR PRIMARY VERIFICATION SUMMARY						
TOOL #: 1355XA111155		DATE/TIME PERFORMED: Tue Nov 15 11:10:37 2016				
UNIT #: 3880TA HL6670		VERI JIG #: 4702NK DA_228				
BACKGROUND	CALBTR ON	MULT	BACKGROUND	CALBTR ON	DIFF	
(cts)	(cts)		(gAPI)	(gAPI)	(gAPI)	
GR 76.31	230.40	0.652	49.75	150.22	100.46	
					100.00	110.00



	<b>COMPANY</b> <u>LARAMIE ENERGY</u> <b>WELL</b> <u>PICEANCE FEDERAL 29-20E</u> <b>FIELD</b> <u>VEGA</u> <b>COUNTY</b> <u>MESA</u> <b>STATE</b> <u>COLORADO</u>	<b>FILE NO:</b> _____ <b>API NO:</b> <u>05-077-10363-0000</u>	
	<b>LOCATION:</b> SHL: LAT:39.248633N; LONG:107.788204W BHL: LAT:39.243491N; LONG:107.796581W SEC <u>29</u> TWP <u>09 S</u> RGE <u>93 W</u>	<b>ELEVATIONS:</b> KB 7561 FT DF GL 7531 FT	
	<b>DATE</b> <u>26-MAY-2017</u>		

