



RADIAL CEMENT BOND LOG

FILE NO:	COMPANY
API NO: 05077104140000	LARAMIE ENERGY LLC WELL NICHOLS 0994-24-07E FIELD VEGA COUNTY MESA STATE COLORADO

Ver. 4.10	LOCATION: SHL: 39.264481 N; 107.830709 W BHL: 39.265373 N; 107.825923 W SEC 24 TWP 9 S RGE 94 W	OTHER SERVICES RPM
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PERMANENT DATUM	GL	ELEVATION	7137 FT	ELEVATIONS: KB 7161 FT DF 7160 FT GL 7137 FT
LOG MEASURED FROM	KB	24 FT	ABOVE P.D.	
DRILL. MEAS. FROM	KB			

DATE	24-Jan-2018
RUN	1
TRIP	1
SERVICE ORDER	US132014
DEPTH DRILLER	7634 FT
DEPTH LOGGER	7440 FT
BOTTOM LOGGED INTERVAL	7440 FT
TOP LOGGED INTERVAL	24 FT
TIME STARTED	10:00
TIME FINISHED	13:00
OPERATOR RIG TIME	3 HRS
TYPE OF FLUID IN HOLE	FRESH WATER
FLUID DENSITY	NA
FLUID SALINITY	NA
FLUID LEVEL	46 FT
LOGGED CEMENT TOP	2388 FT
WELLHEAD PRESSURE	0 PSI
MAXIMUM HOLE DEVIATION	NA
NOMINAL LOGGING SPEED	90 FMIN
MAX. RECORDED TEMP.	236 DEGF
REFERENCE LOG	NA
REFERENCE LOG DATE	NA
EQUIP. NO.	ML-4291
LOCATION	GRAND JUNCT
RECORDED BY	M.MENTZER
WITNESSED BY	MR. MATT SETTLES

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

LOGGED WITH 0 PSI ON WELLHEAD

SJ: 5720' - 5740'
SJ: 6639' - 6661'

CREW: J.PENA, C.GOLOBY

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	RAL	1426 XA	10417452	CENTRALIZED
1	1	GR/CCL	1355 XA	11871507	CENTRALIZED

MAIN PASS 0 PSI

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

Patches: 2

Plotted: Wed Jan 24 15:00:53 2018

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_NICHOLS_0994_24_07E/p012g02.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 13.750 ft BOTTOM DEPTH: 7454.000 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	0.00		TOP	BOTTOM

ANALOG RAL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
AMPLITUDE WINDOW (NEAR)	AMP WINDOW START (fgp1*)	185	us	TOP	BOTTOM
	AMP WINDOW START (fgp2*)	185	us	"	"
	AMP WINDOW START (fgp3*)	185	us	"	"
	AMP WINDOW START (fgp4*)	185	us	"	"
	AMP WINDOW START (fgp5*)	185	us	"	"
	AMP WINDOW START (fgp6*)	185	us	"	"
	AMP WINDOW START (fgp7*)	185	us	"	"
	AMP WINDOW START (fgp8*)	185	us	"	"
	AMP WINDOW START (fgpn*)	185	us	"	"
	AMP WINDOW LENGTH	30	us	"	"
TRAVEL TIME WINDOW (NEAR)	TT WINDOW START (ttn*)	160	us	"	"
	TT WINDOW LENGTH	500	us	"	"
	FIRST BRK THRESHOLD (ttn*)	6	mV	"	"
RAL CASING PARAMETERS	PPT NEAR	200.391	us	"	"
RAL TOOL DELAY	TOOL DELAY (str1*)	-62	us	"	"
	TOOL DELAY (str2*)	-62	us	"	"
	TOOL DELAY (str3*)	-62	us	"	"
	TOOL DELAY (str4*)	-62	us	"	"
	TOOL DELAY (str5*)	-62	us	"	"
	TOOL DELAY (str6*)	-62	us	"	"
	TOOL DELAY (str7*)	-62	us	"	"
	TOOL DELAY (str8*)	-62	us	"	"
	TOOL DELAY (strn*)	-62	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	"	"

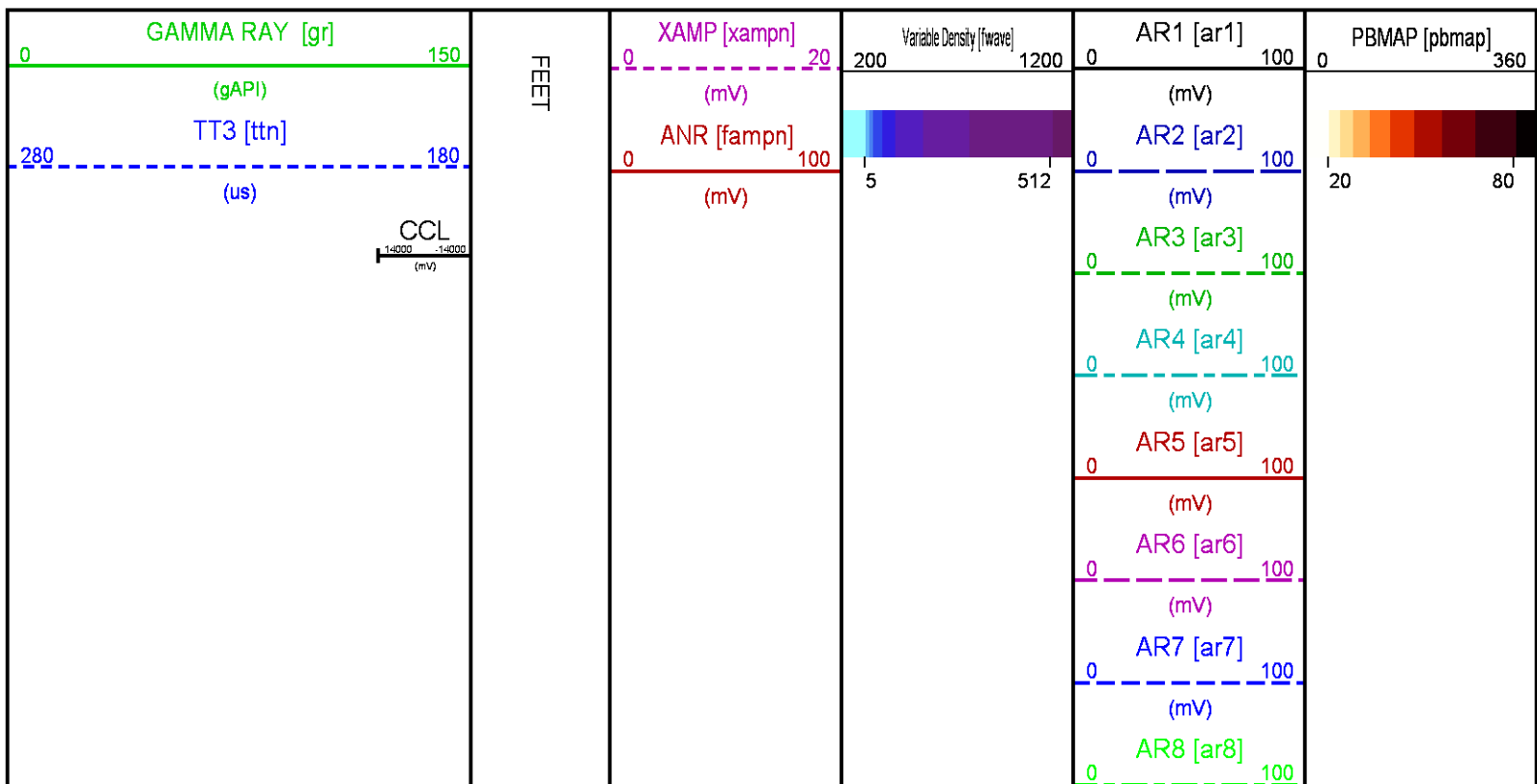
CURVE DESCRIPTION REPORT

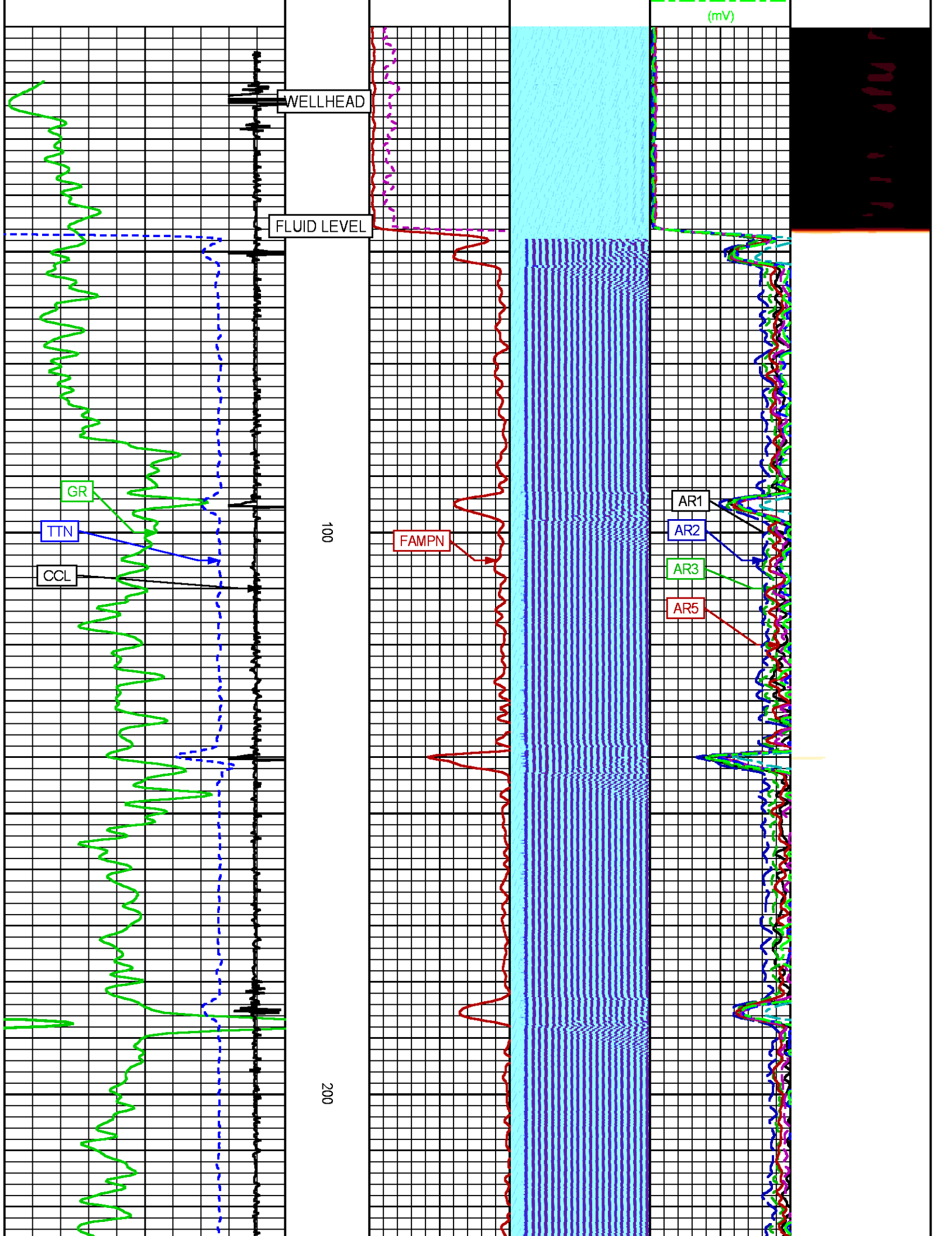
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:AR1	N/A	FIXED GATE AMPLITUDE T-R1
F1:AR2	N/A	FIXED GATE AMPLITUDE T-R2
F1:AR3	N/A	FIXED GATE AMPLITUDE T-R3
F1:AR4	N/A	FIXED GATE AMPLITUDE T-R4
F1:AR5	N/A	FIXED GATE AMPLITUDE T-R5
F1:AR6	N/A	FIXED GATE AMPLITUDE T-R6
F1:AR7	N/A	FIXED GATE AMPLITUDE T-R7
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

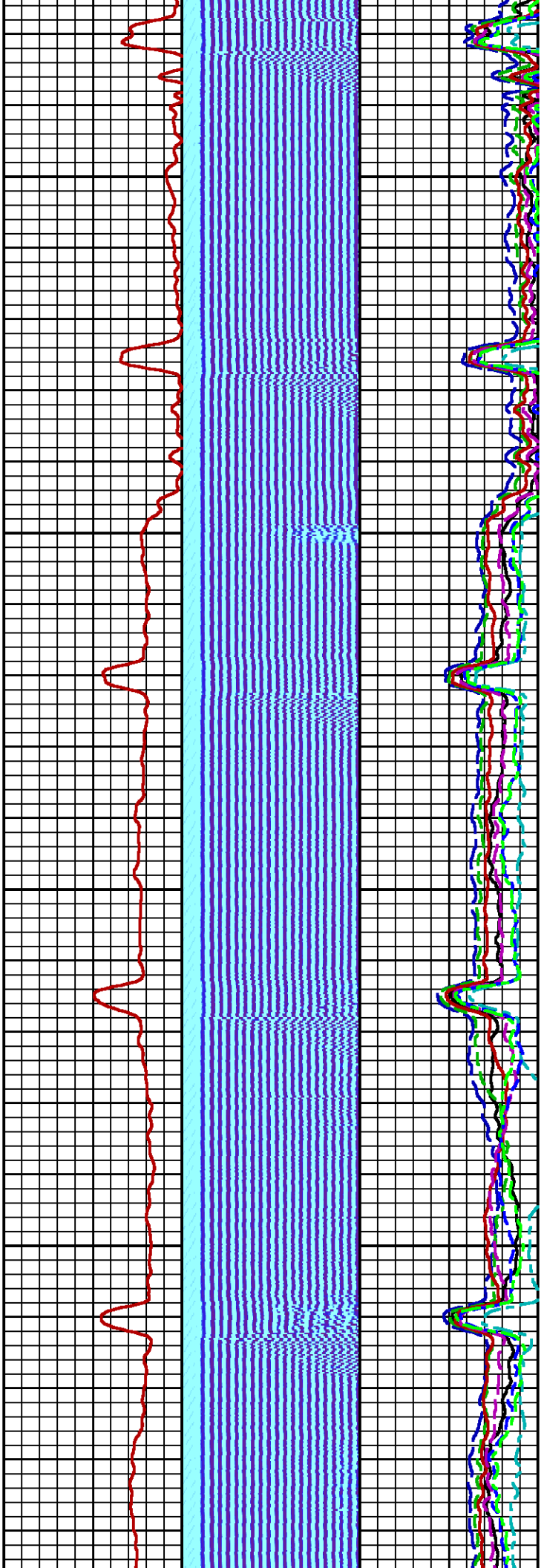
CURVE MEASURE POINT OFFSET

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_NICHOLS_0994_24_07E/LARAMIE_RAL+01-MAIN-RAL_MN_07E-5.fvpdf [5"/100' Scale]
Plot Interval	: 10 - 7459.25 Feet
Data File 1	: F1 : SysA:/dat1a/LARAMIE_NICHOLS_0994_24_07E/RAL_MN_07E.xtf
Created On	: N/A
Company	: LARAMIE ENERGY LLC
Well	: NICHOLS 0994-24-07E
Field	: VEGA
File Interval	: 9 - 7460.5 Feet
OCT	: p012g

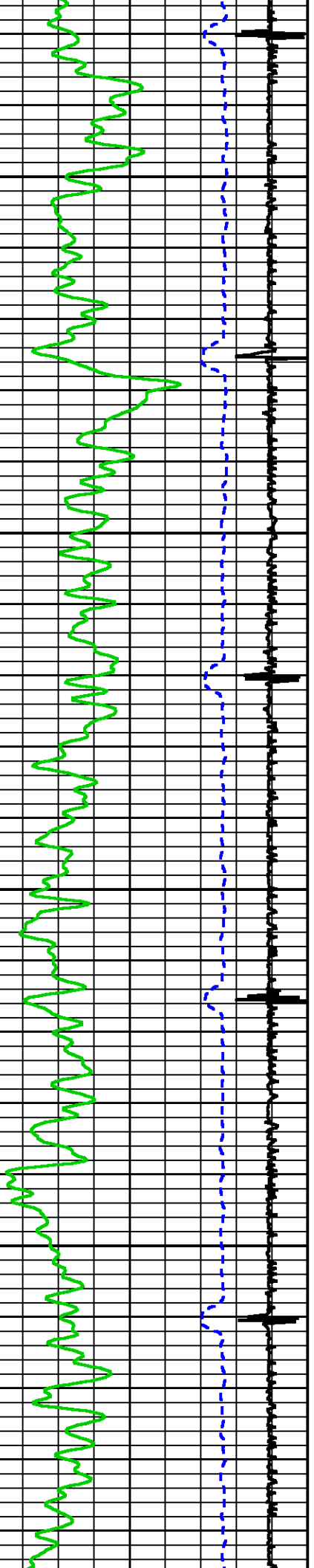


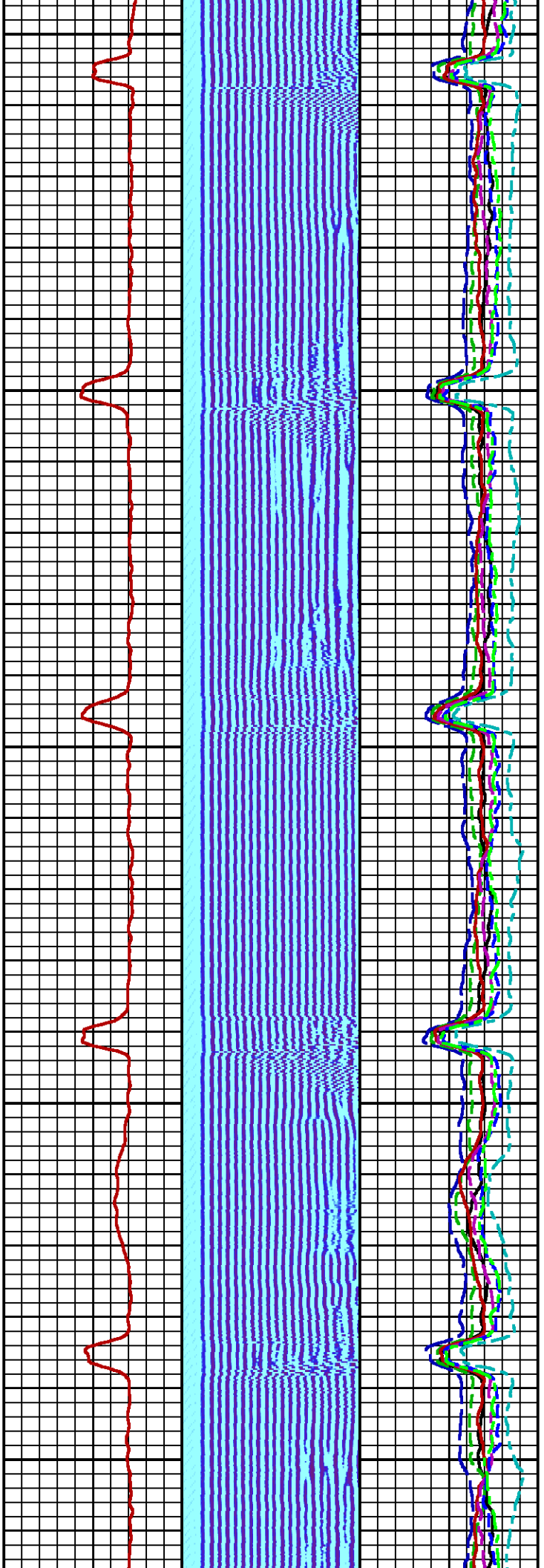




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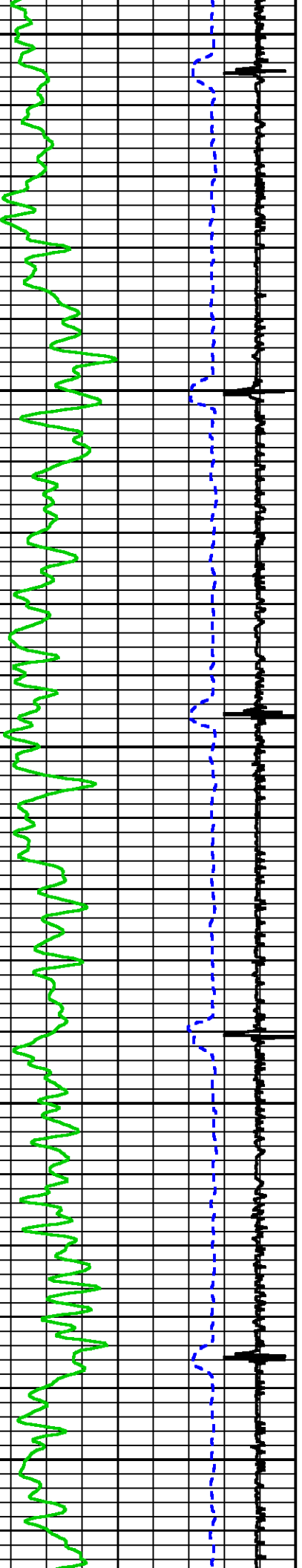
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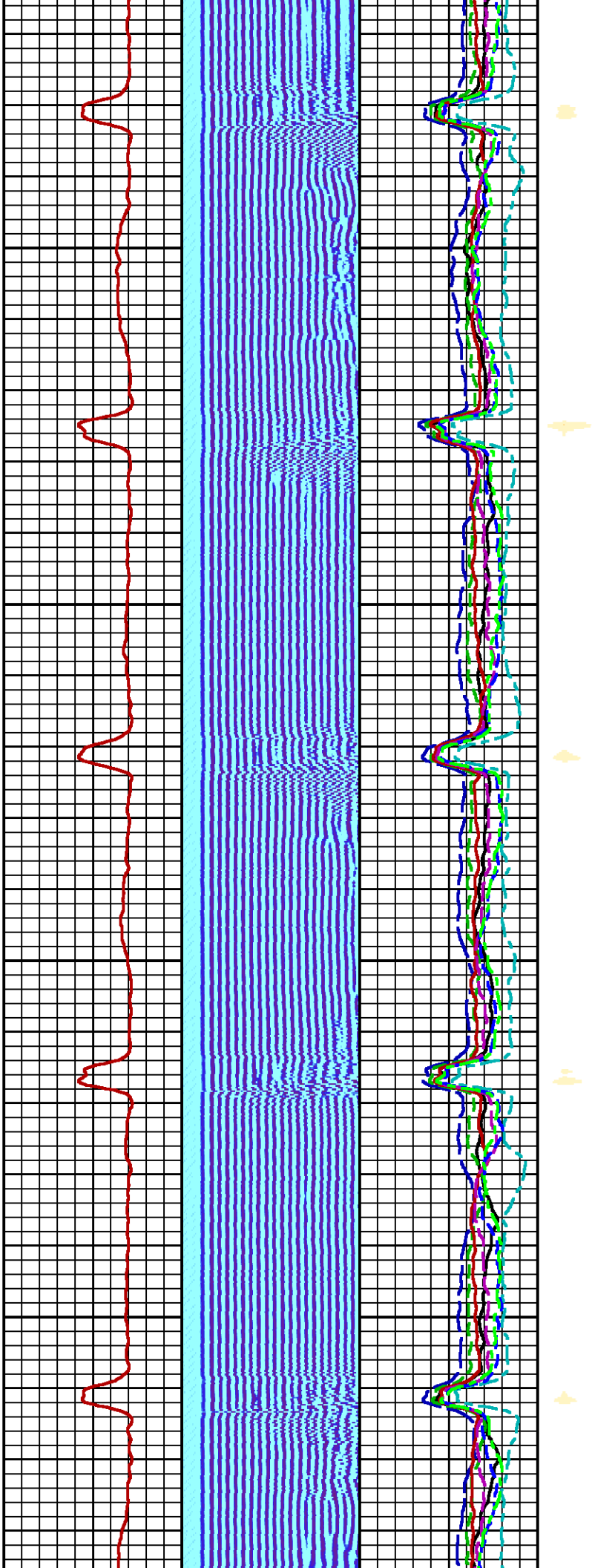




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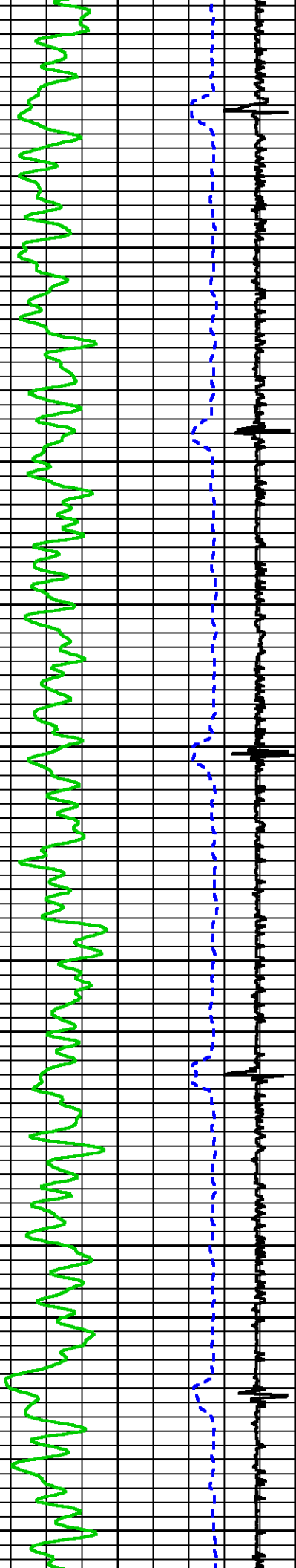
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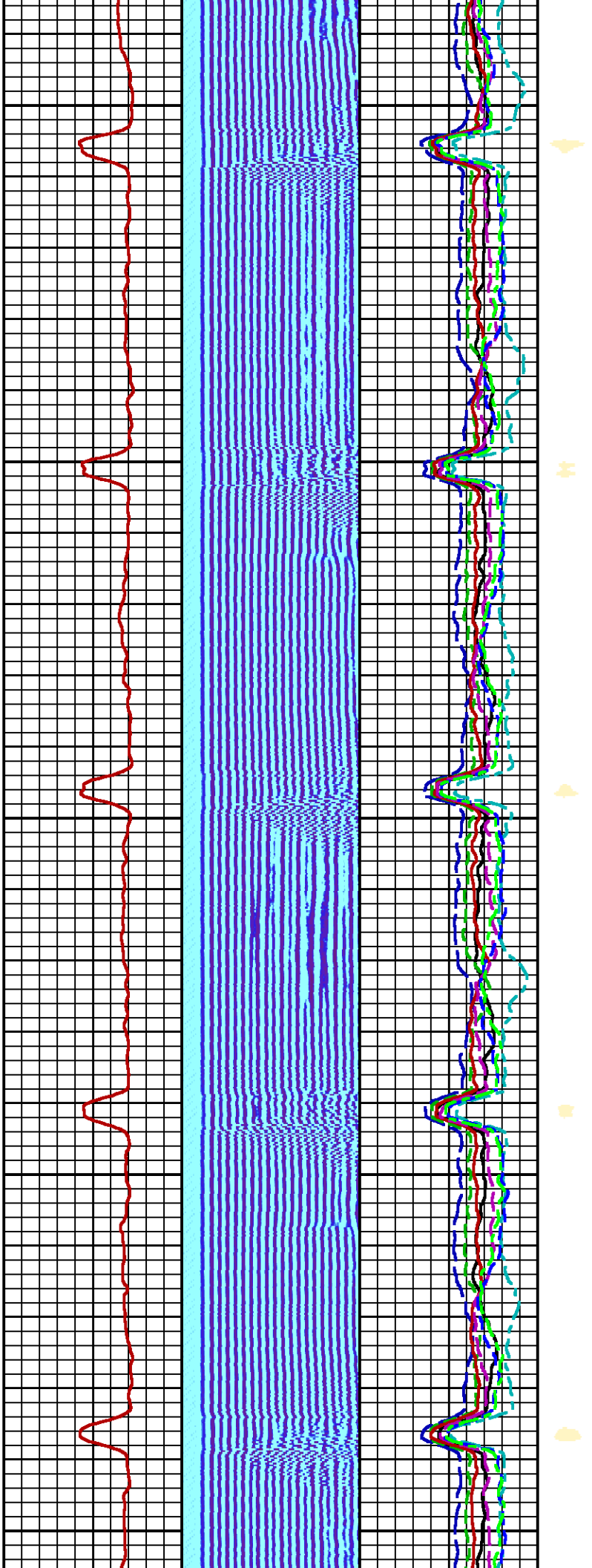




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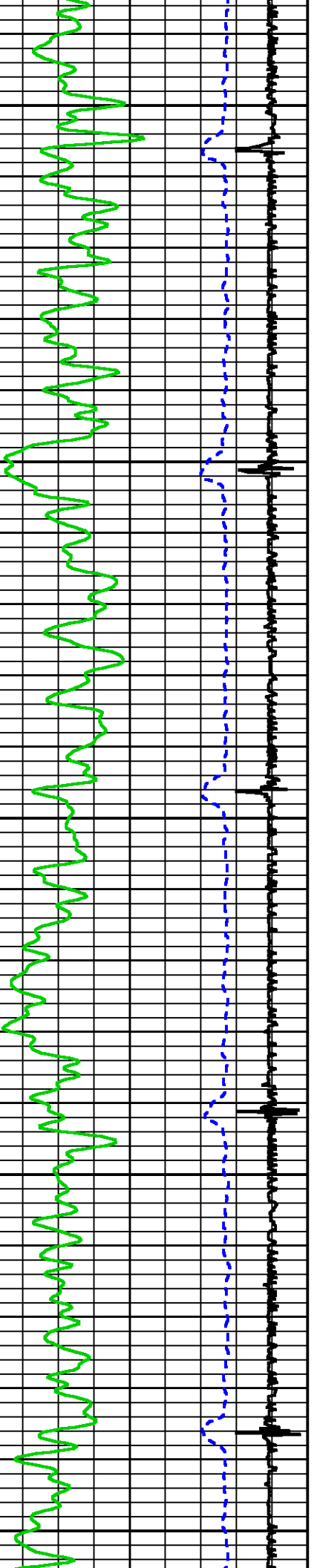


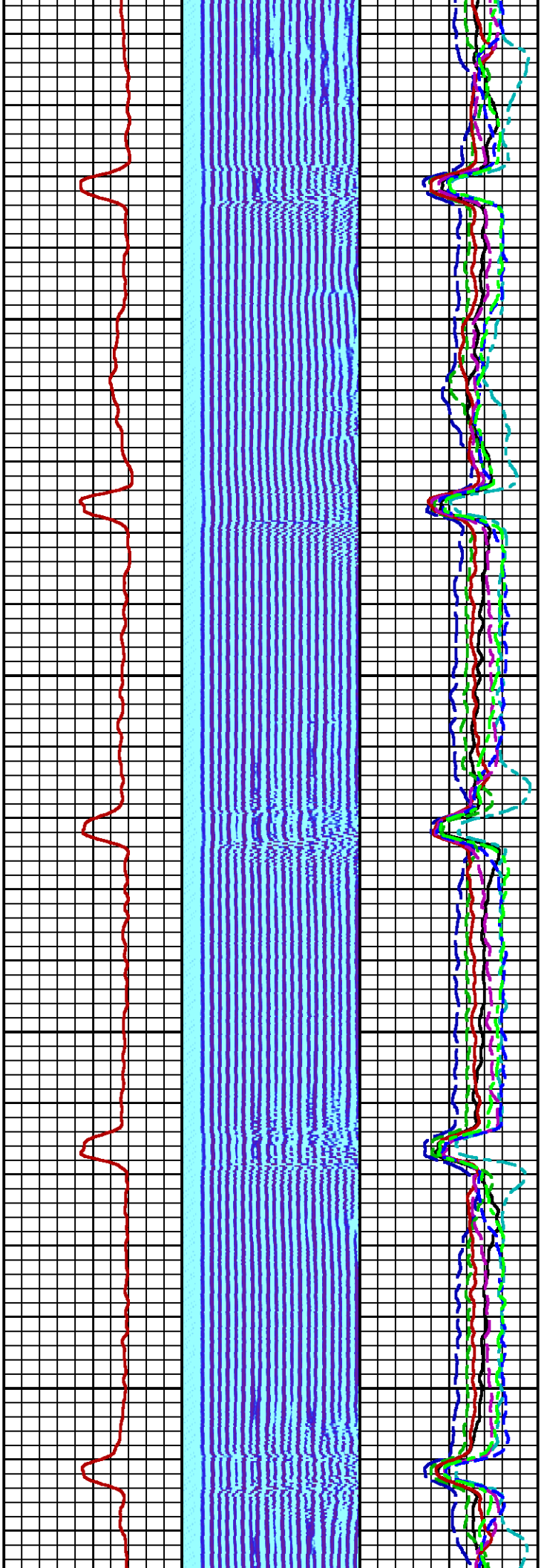


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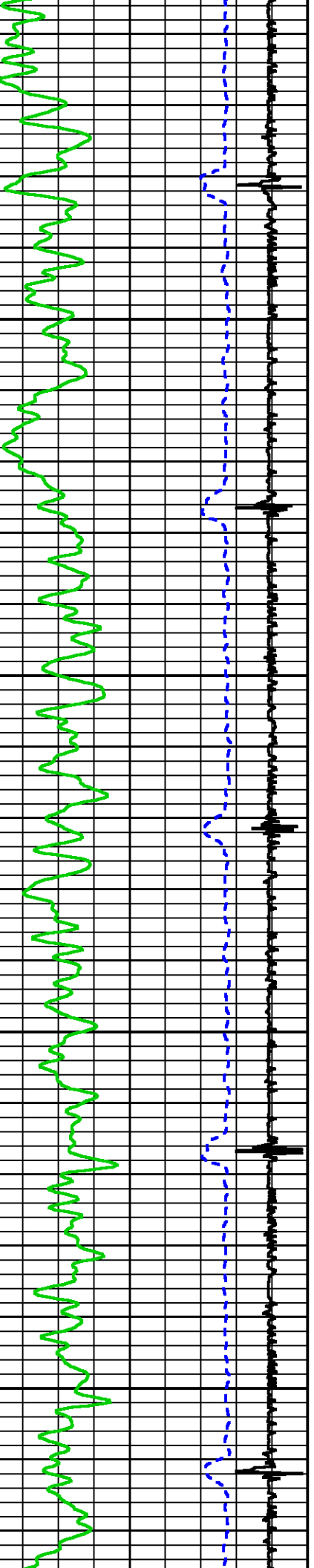
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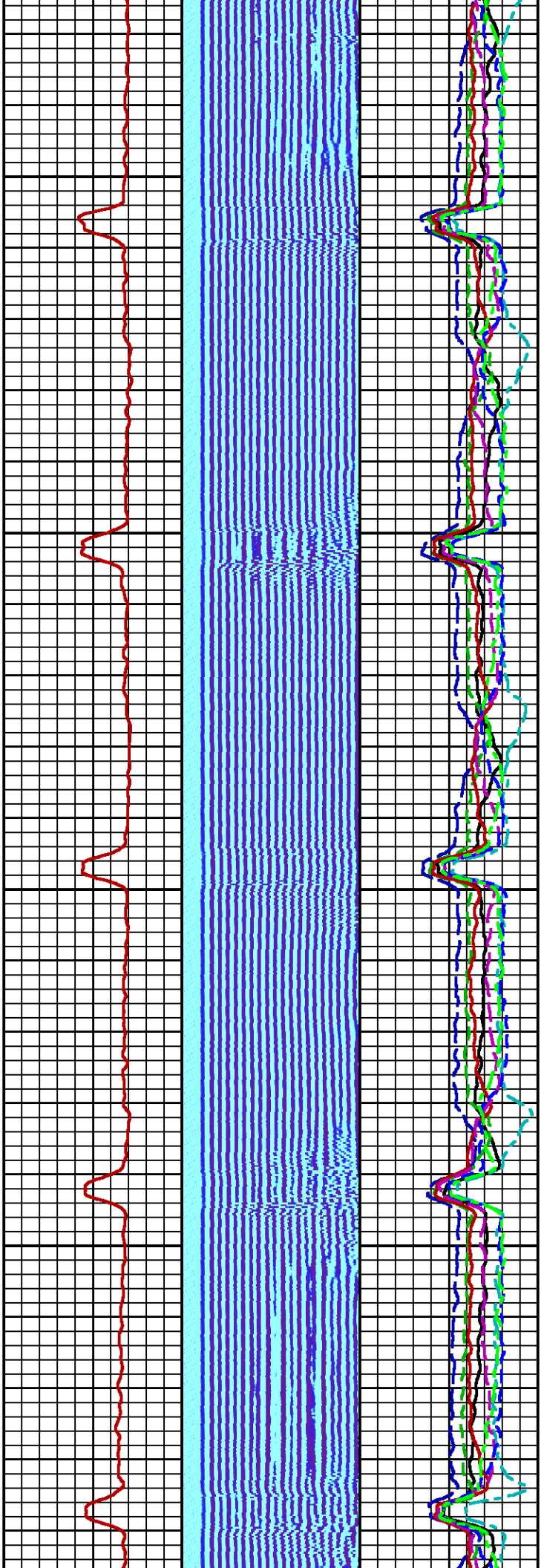




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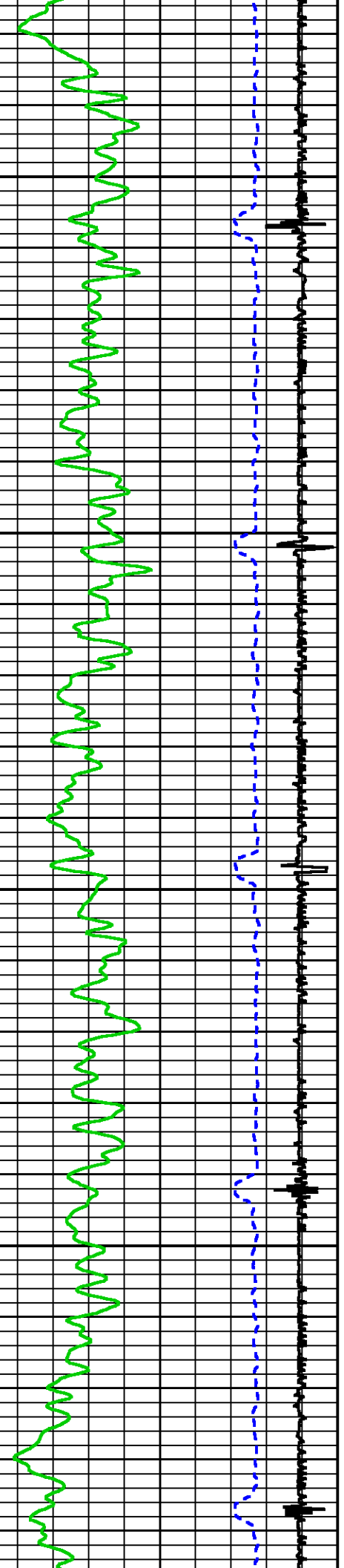
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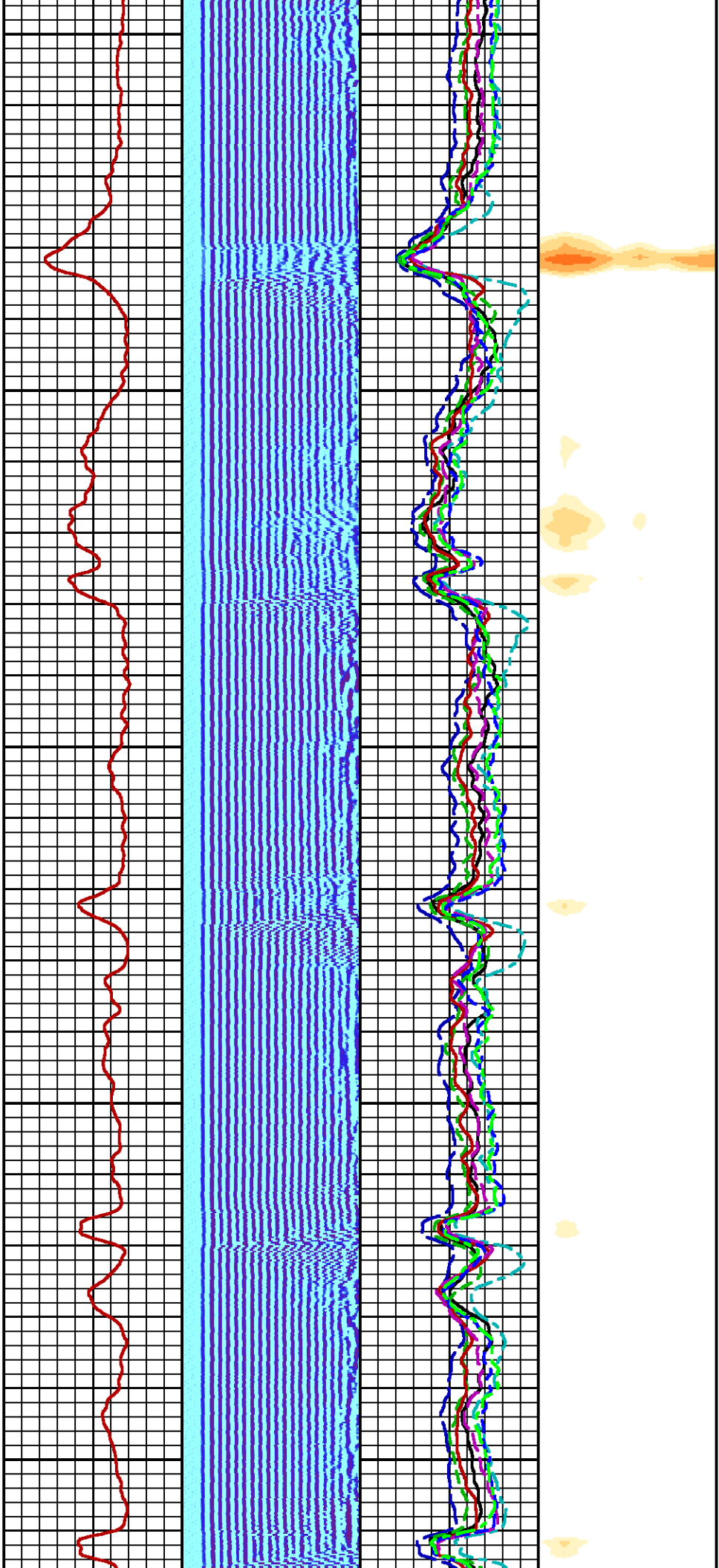




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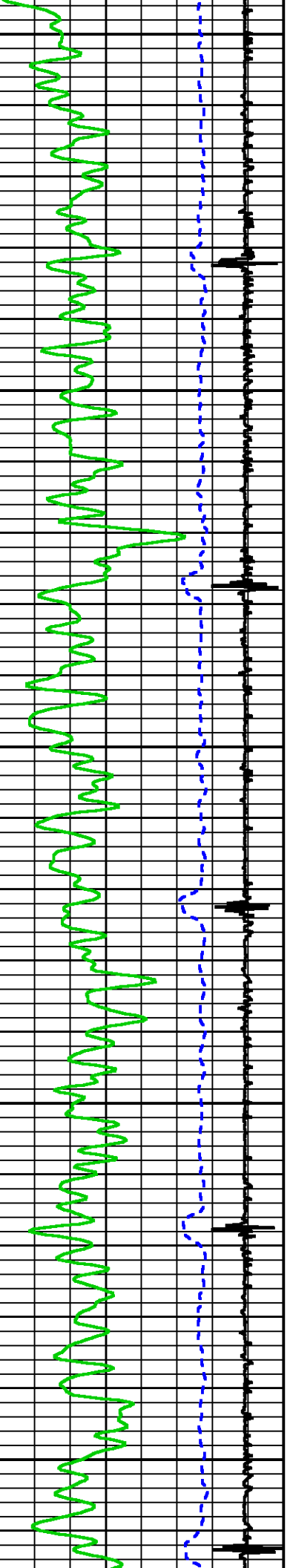
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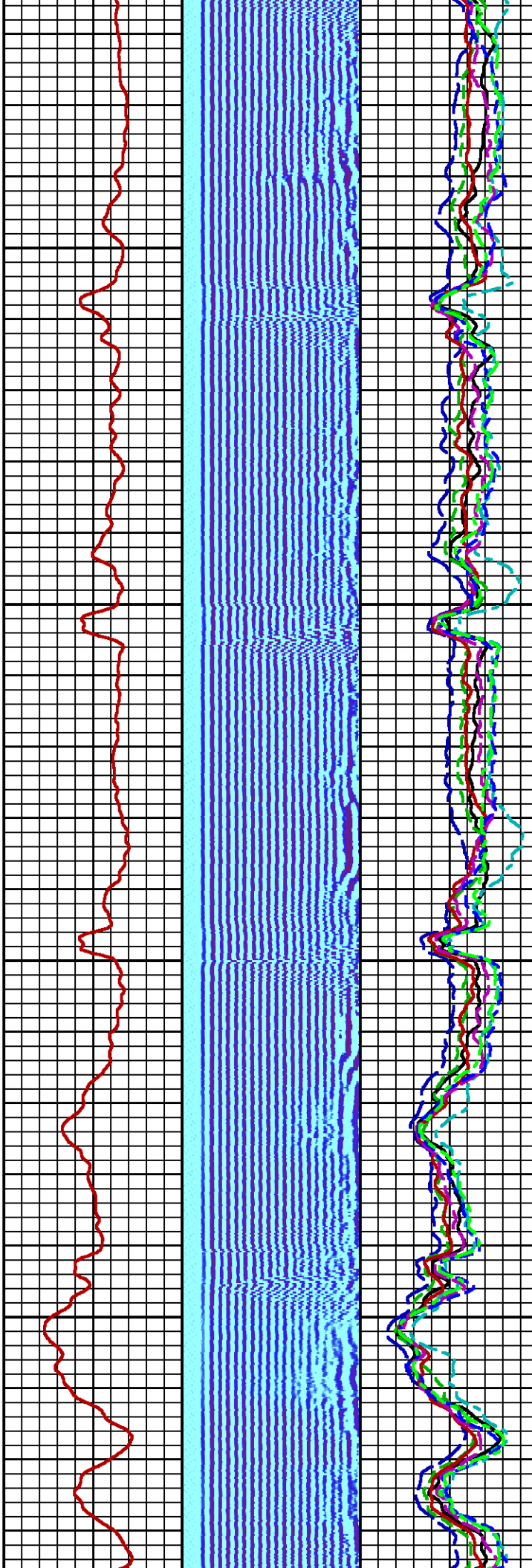
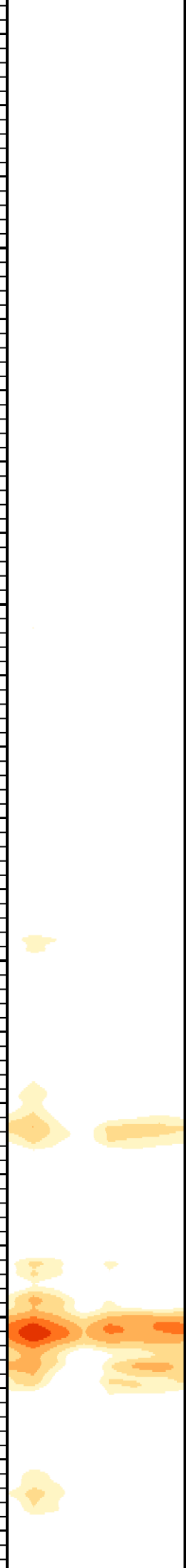




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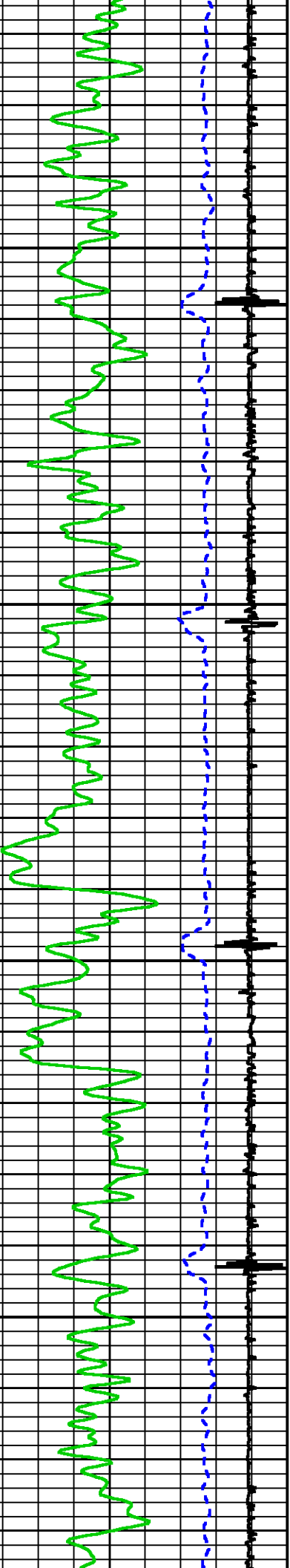
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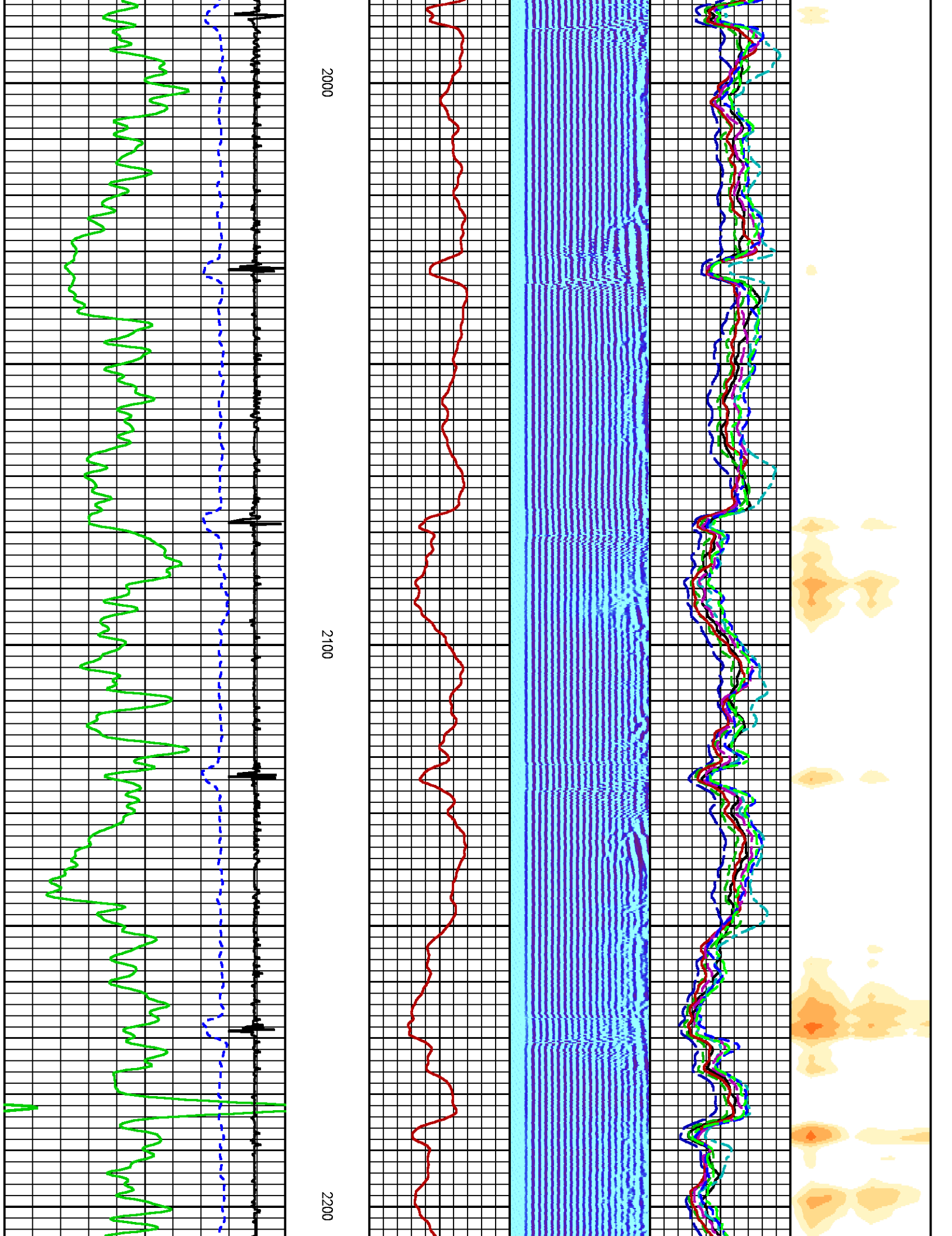


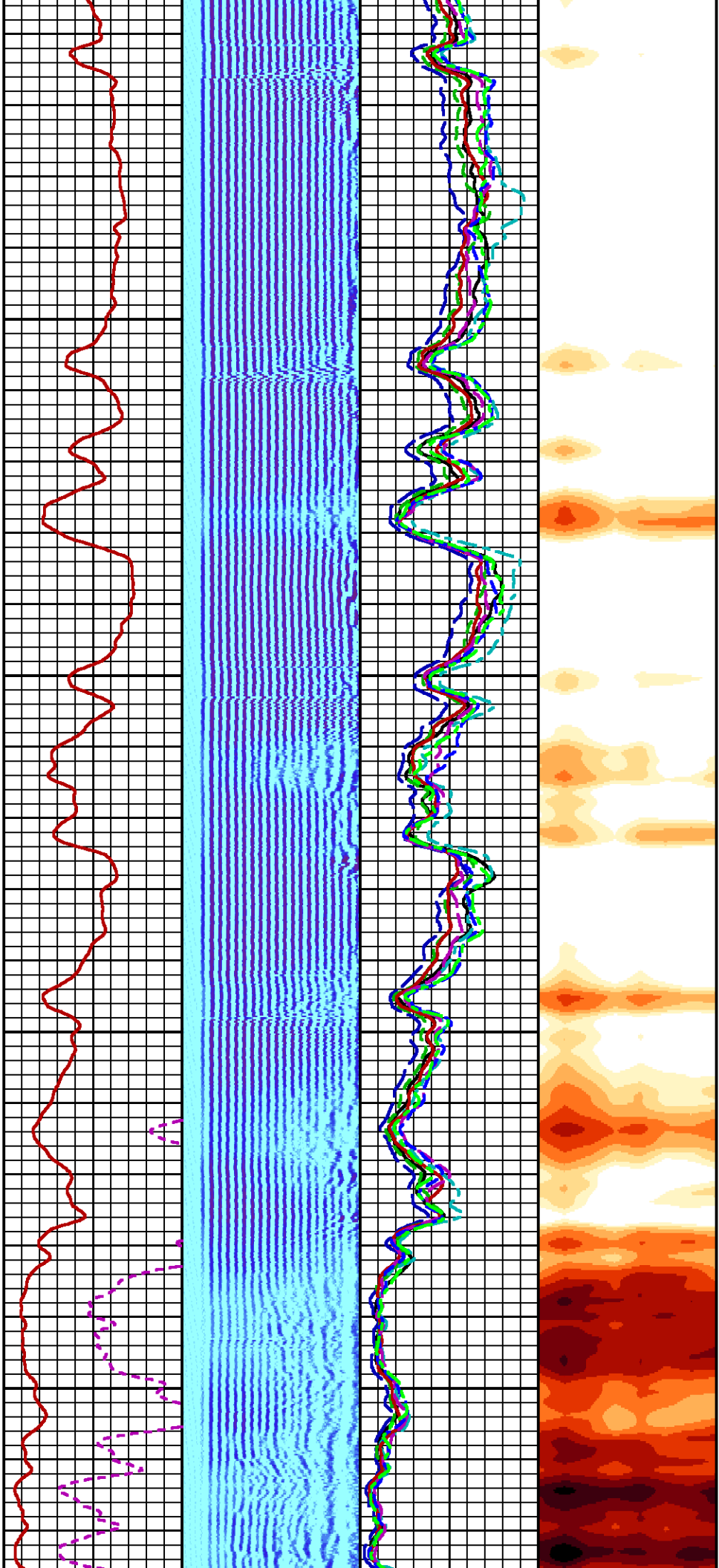


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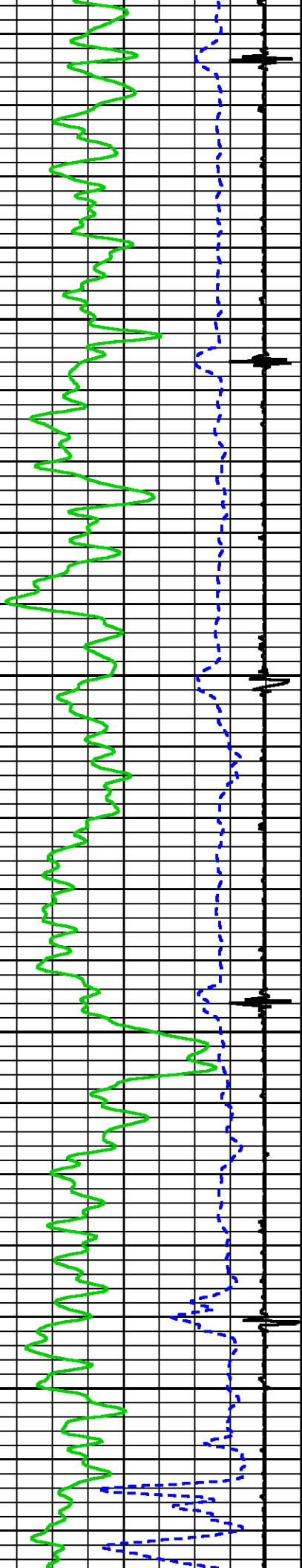


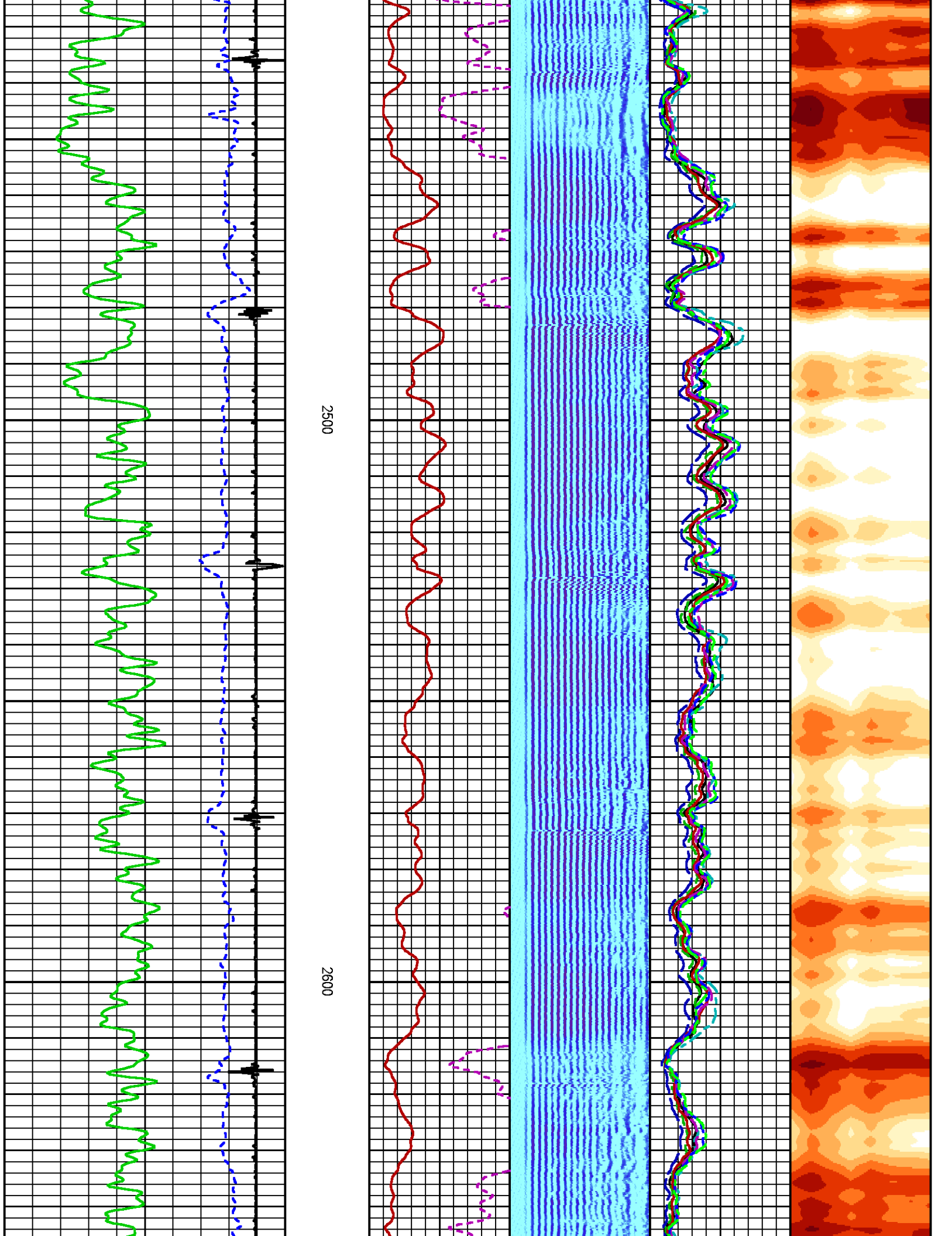


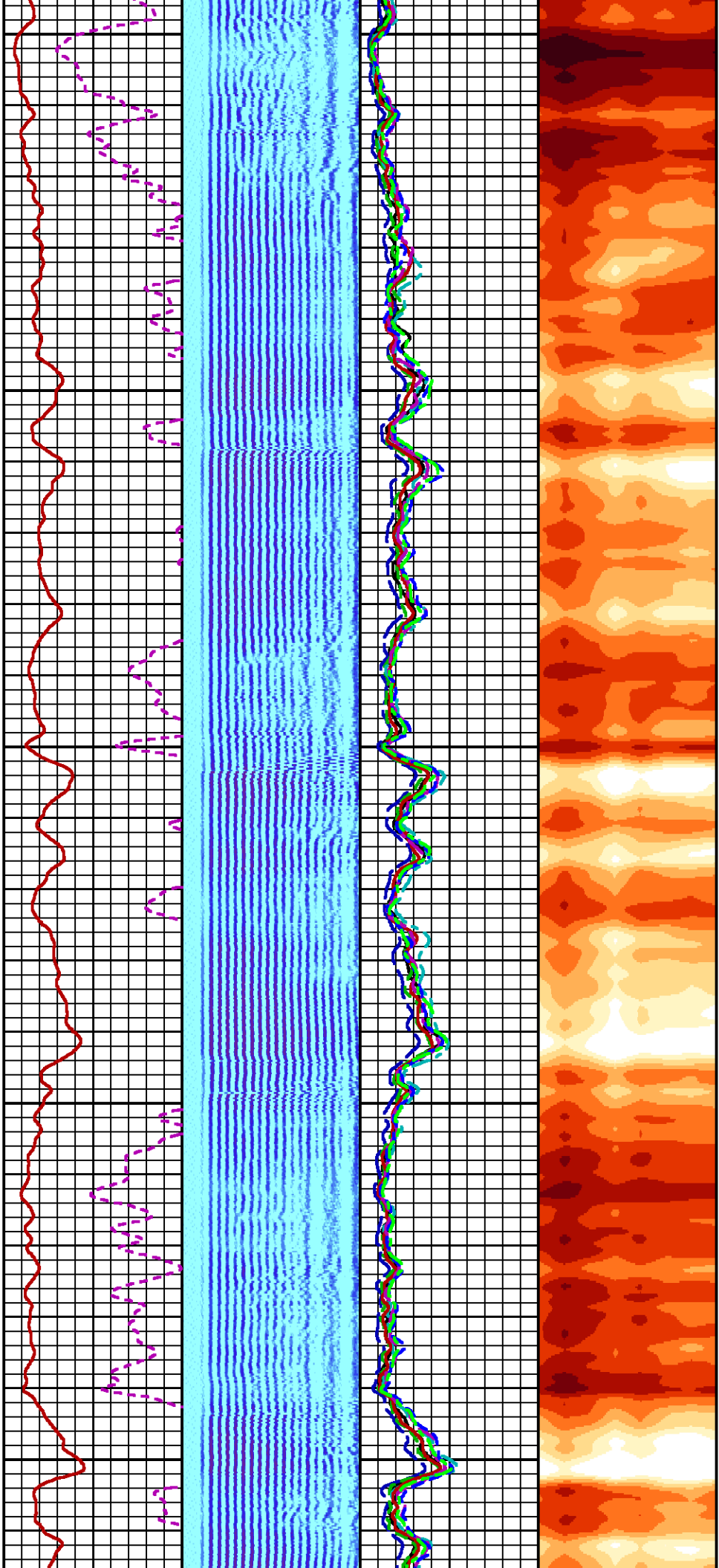
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TOC

2400

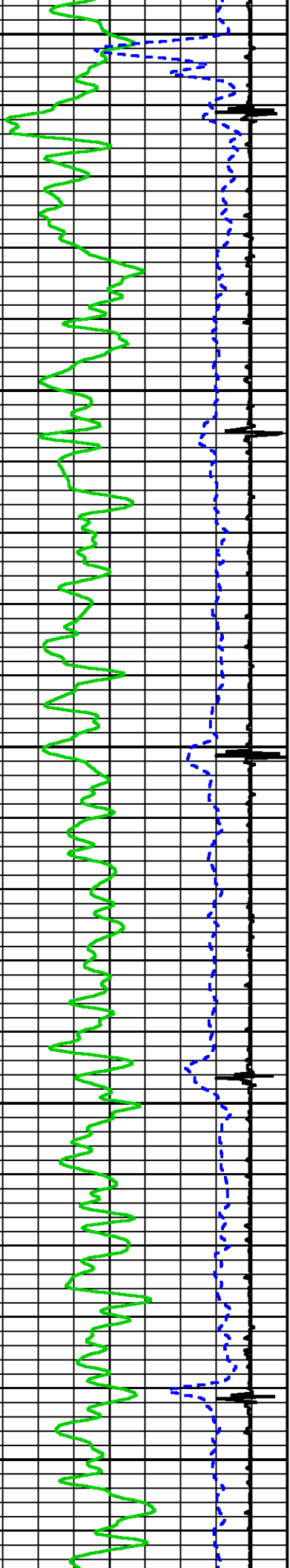


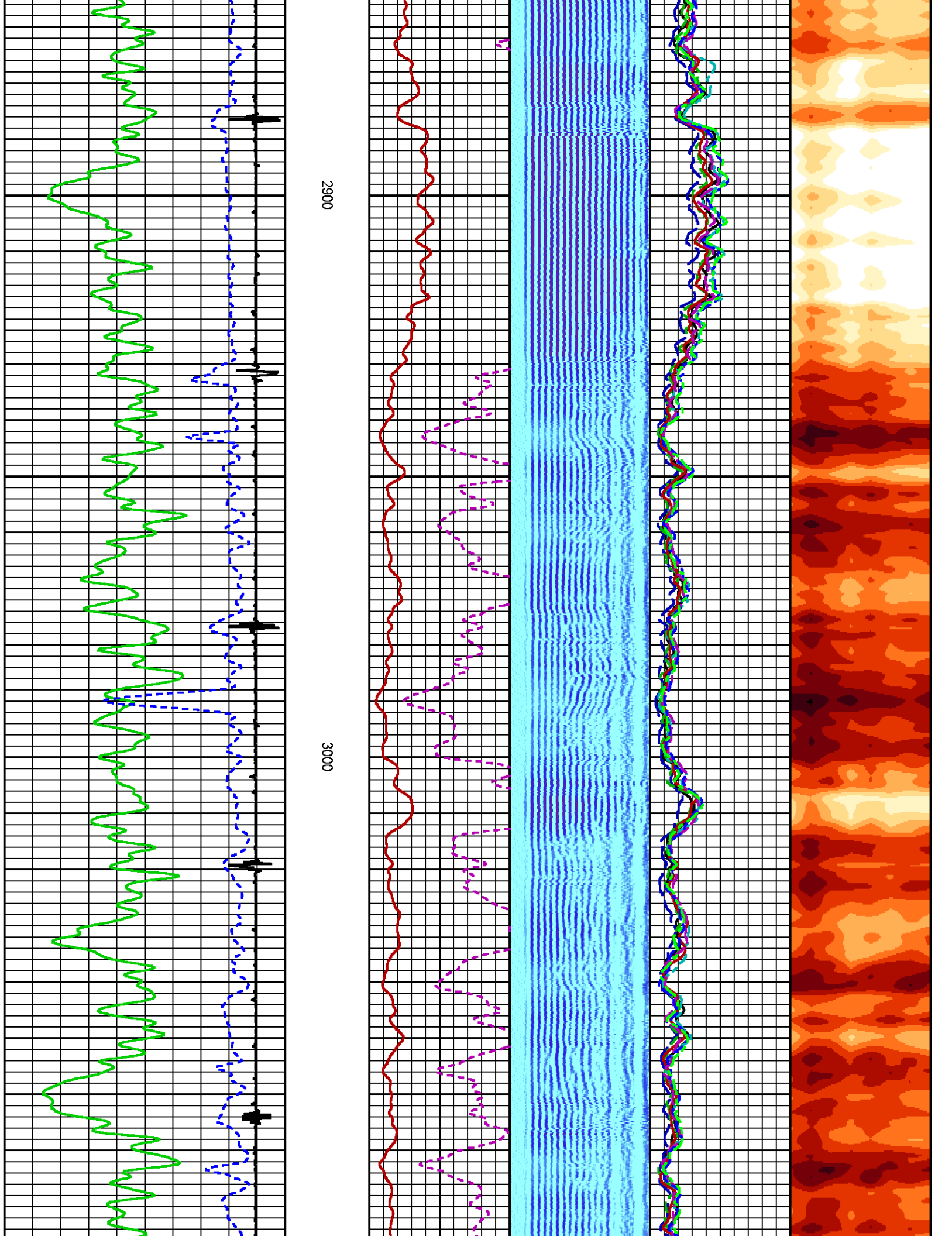


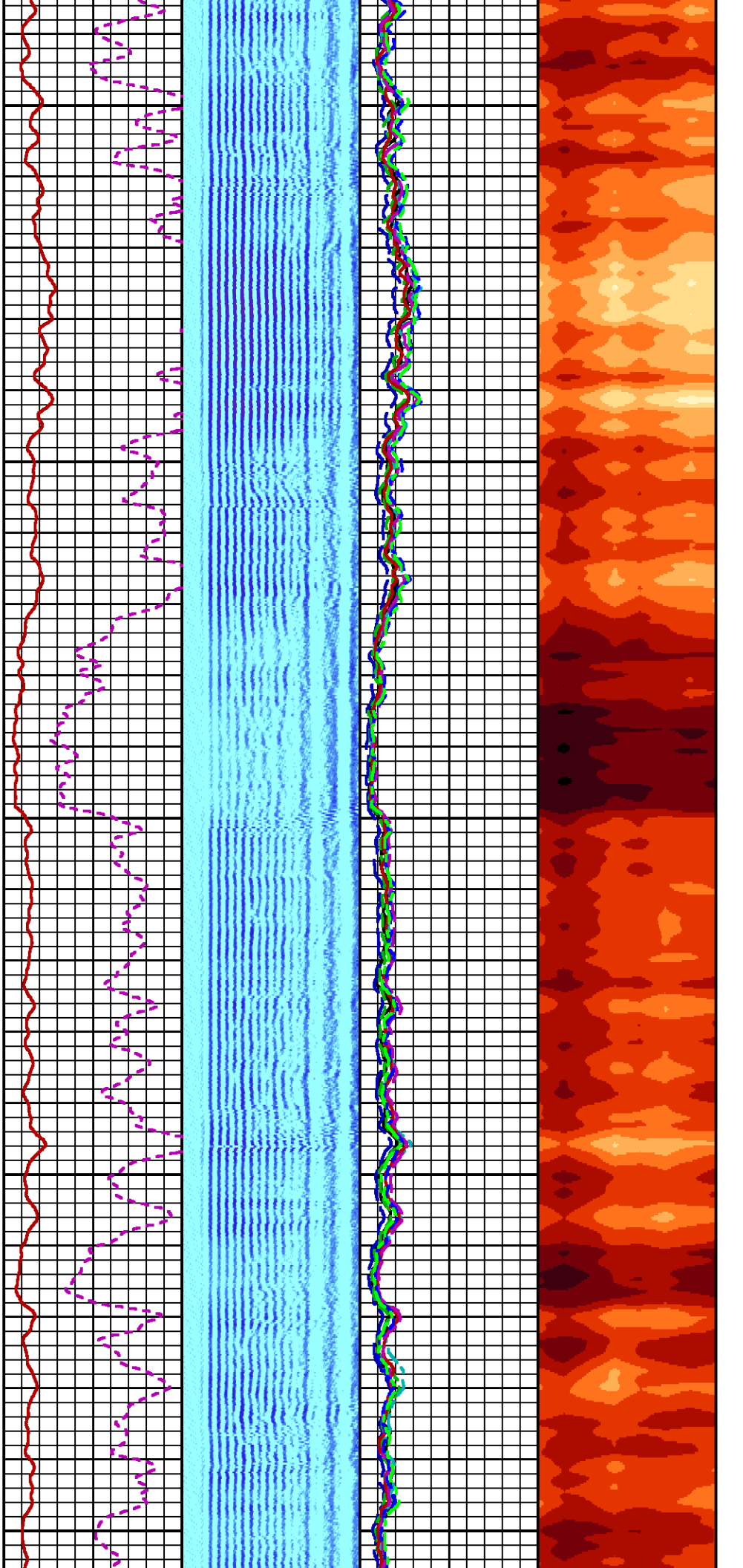


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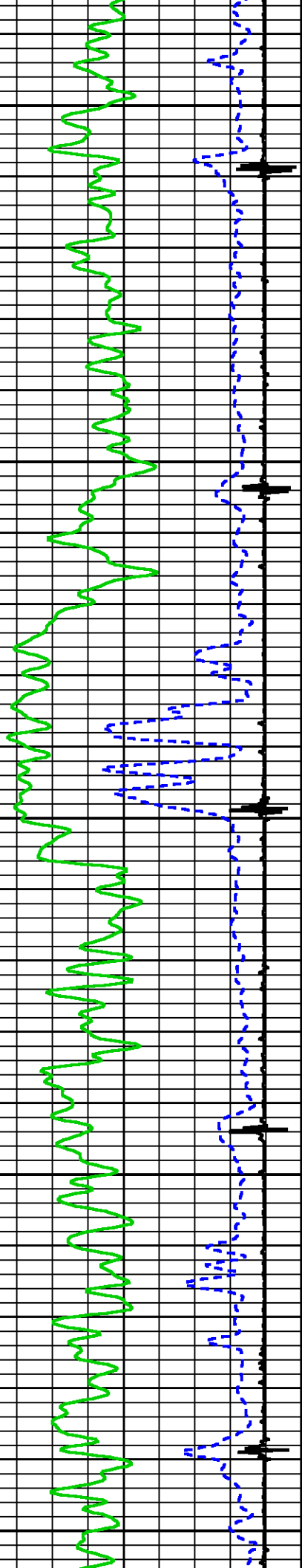


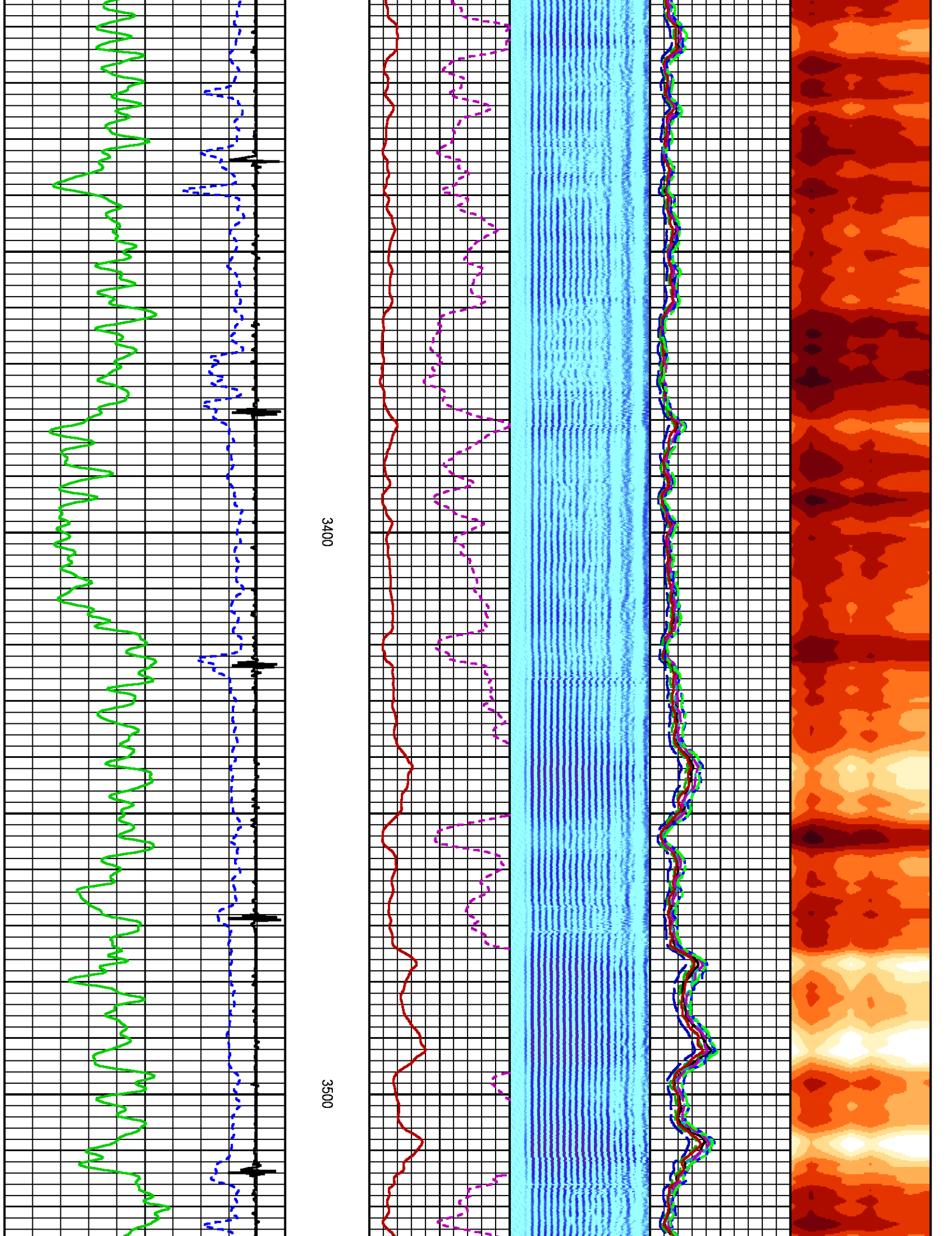


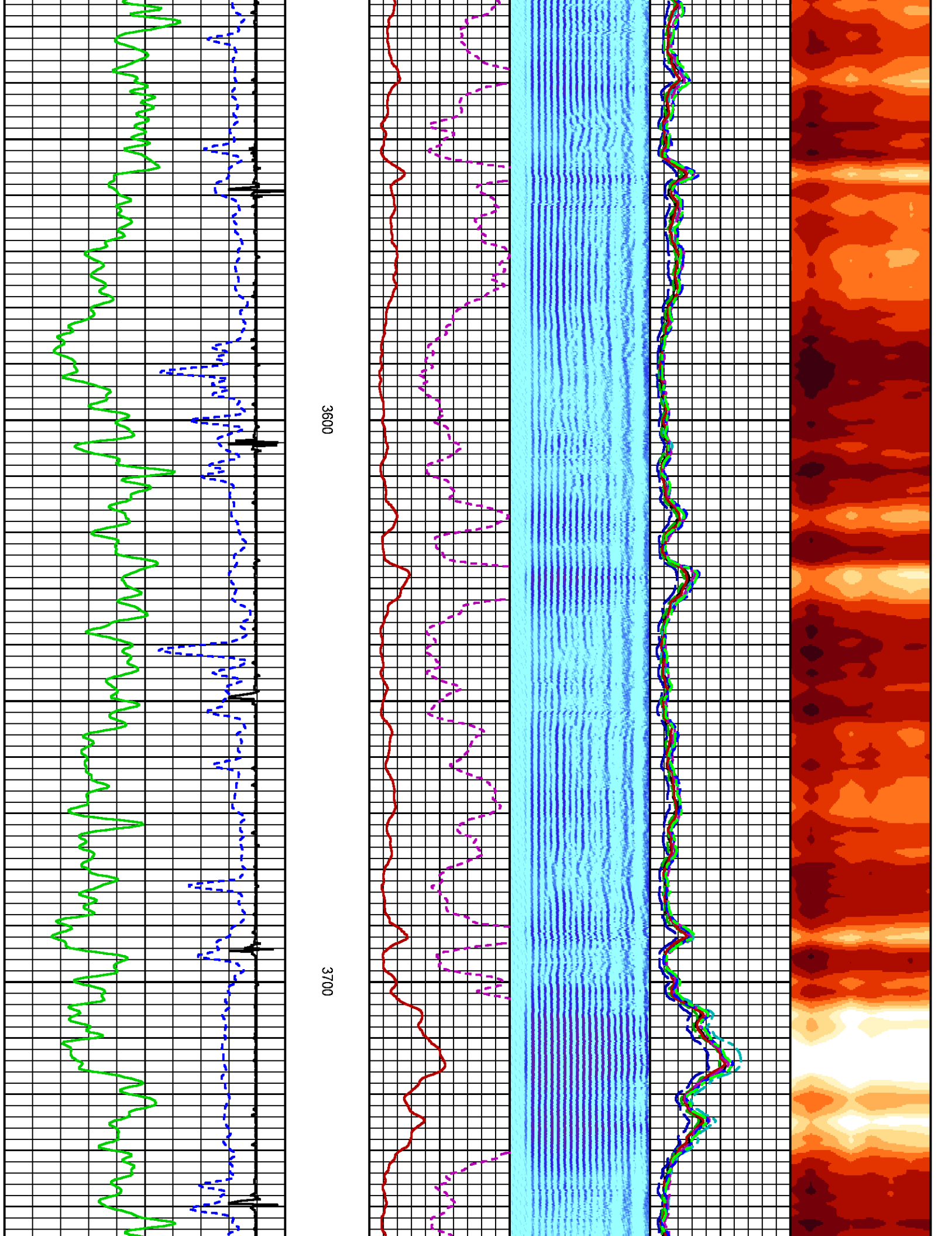
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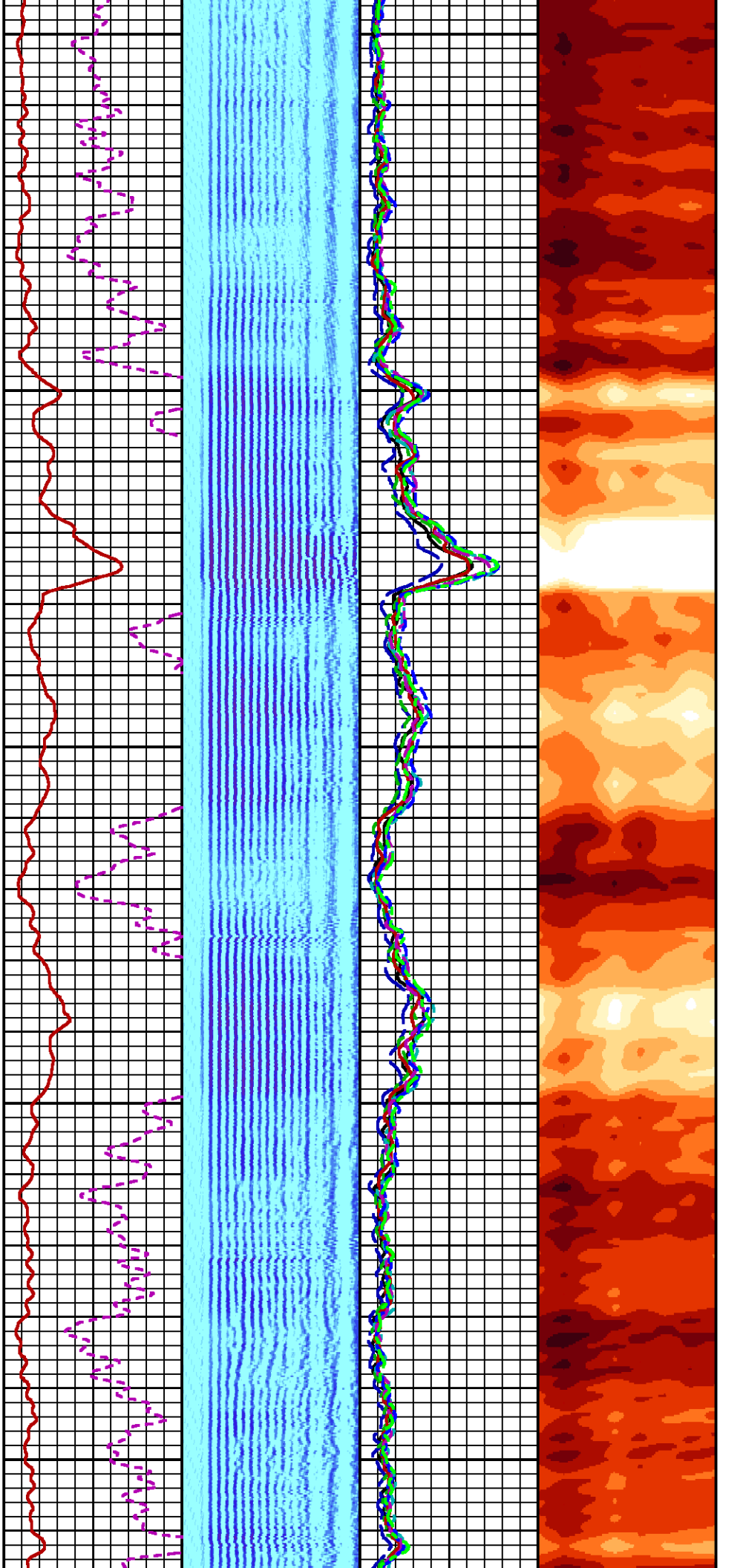
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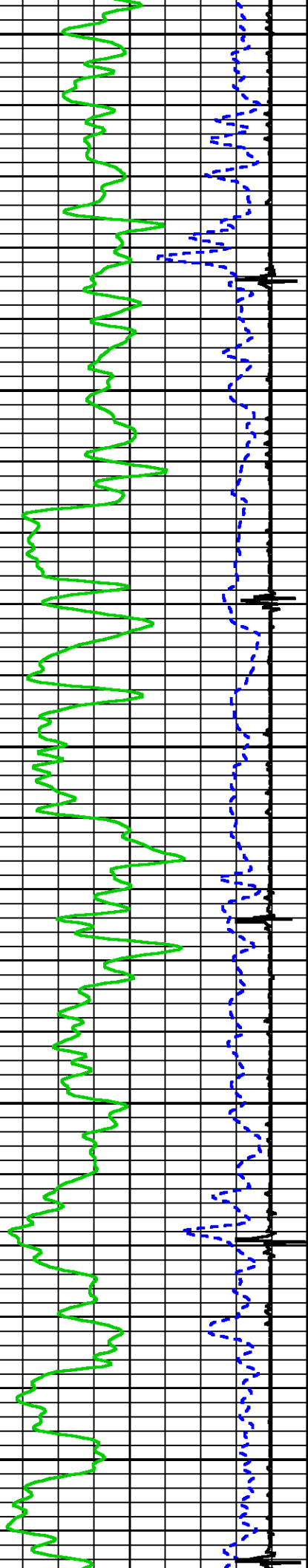


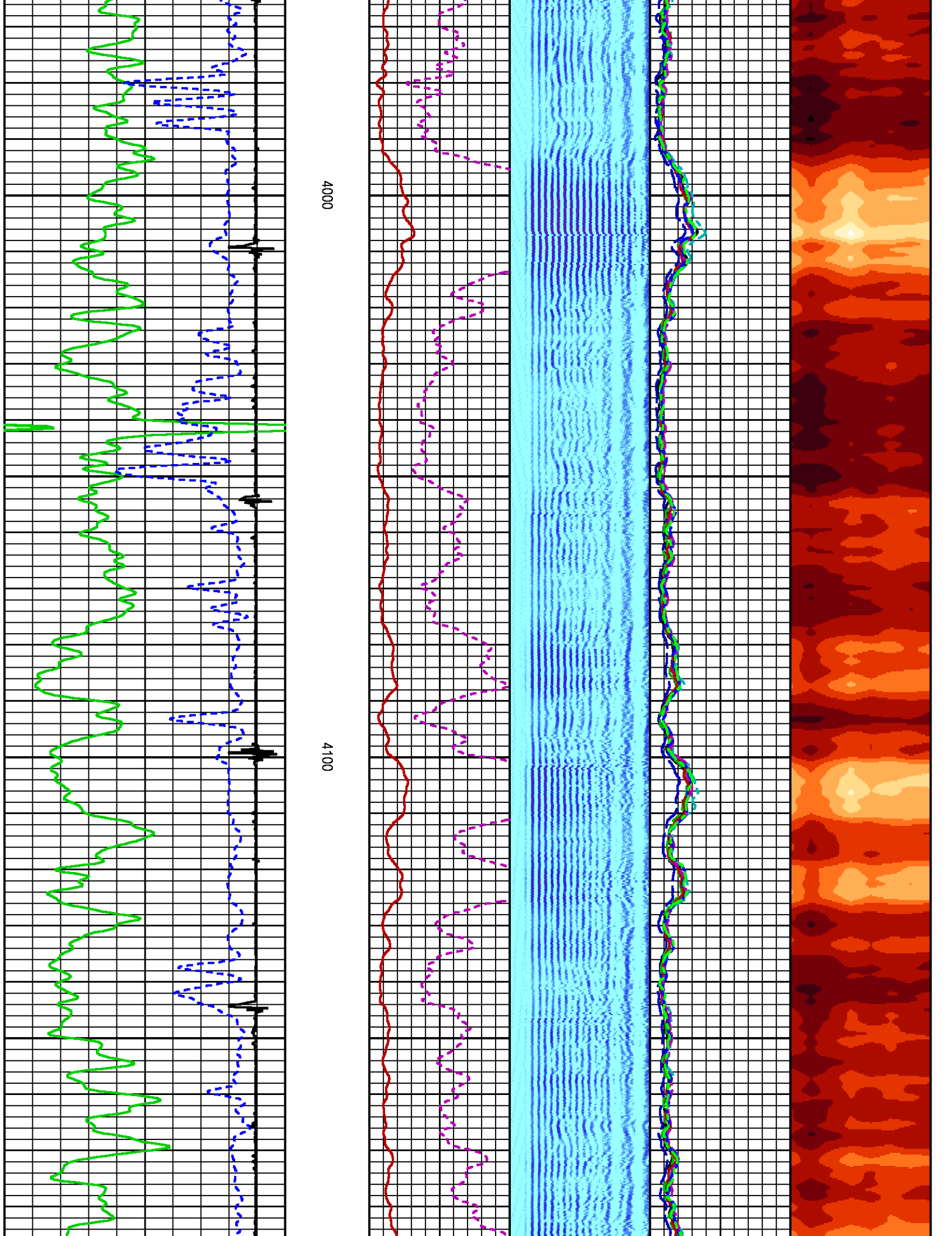


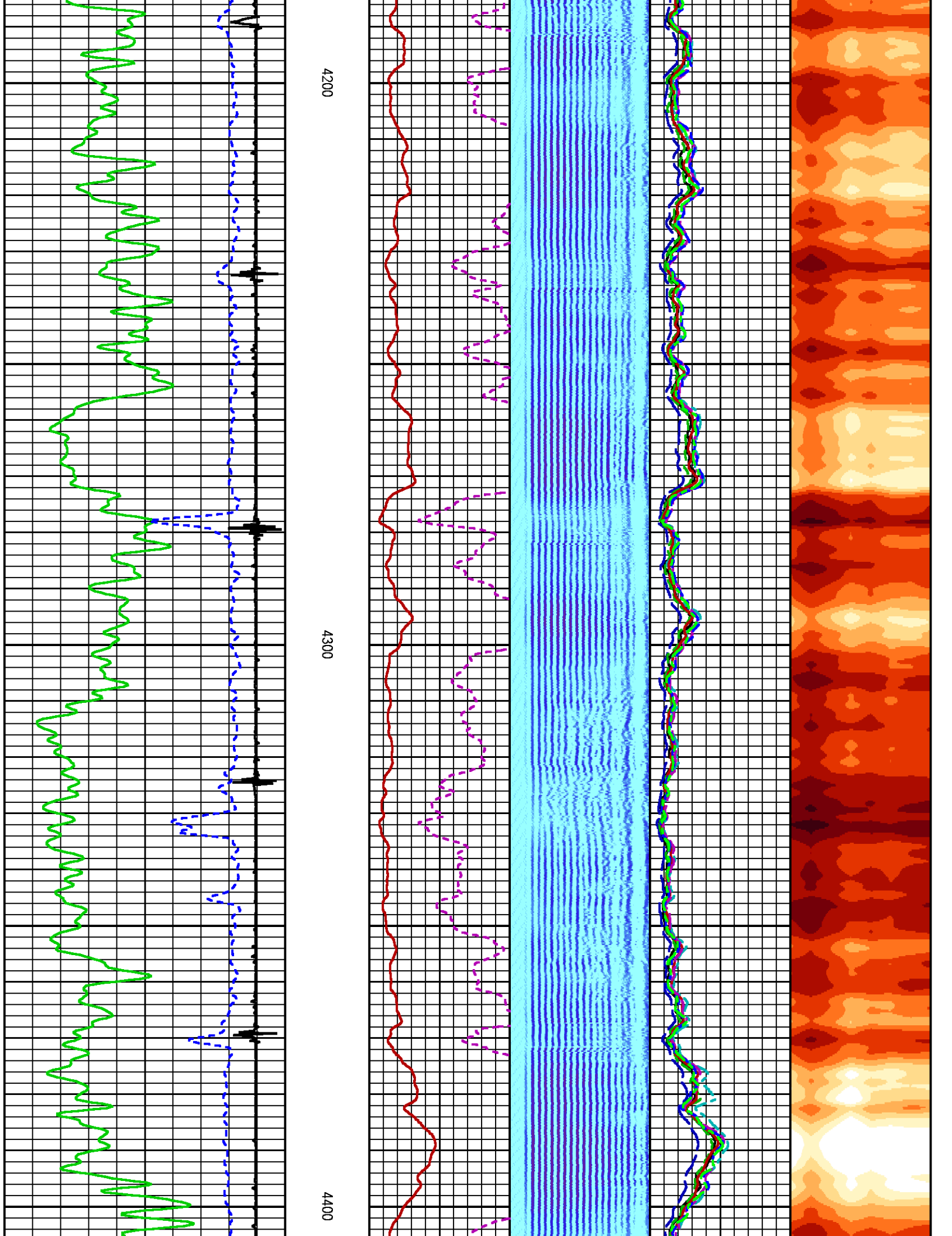


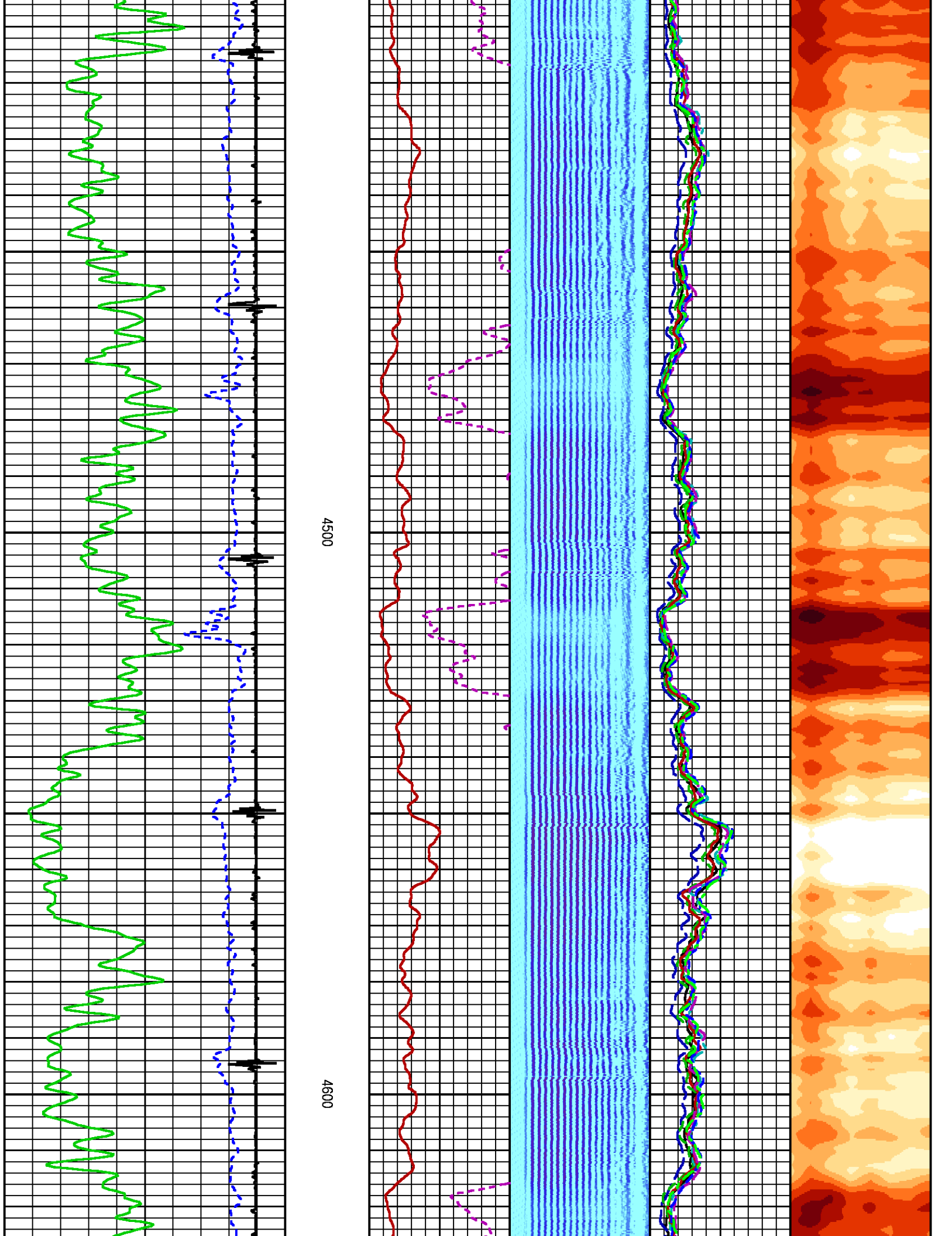
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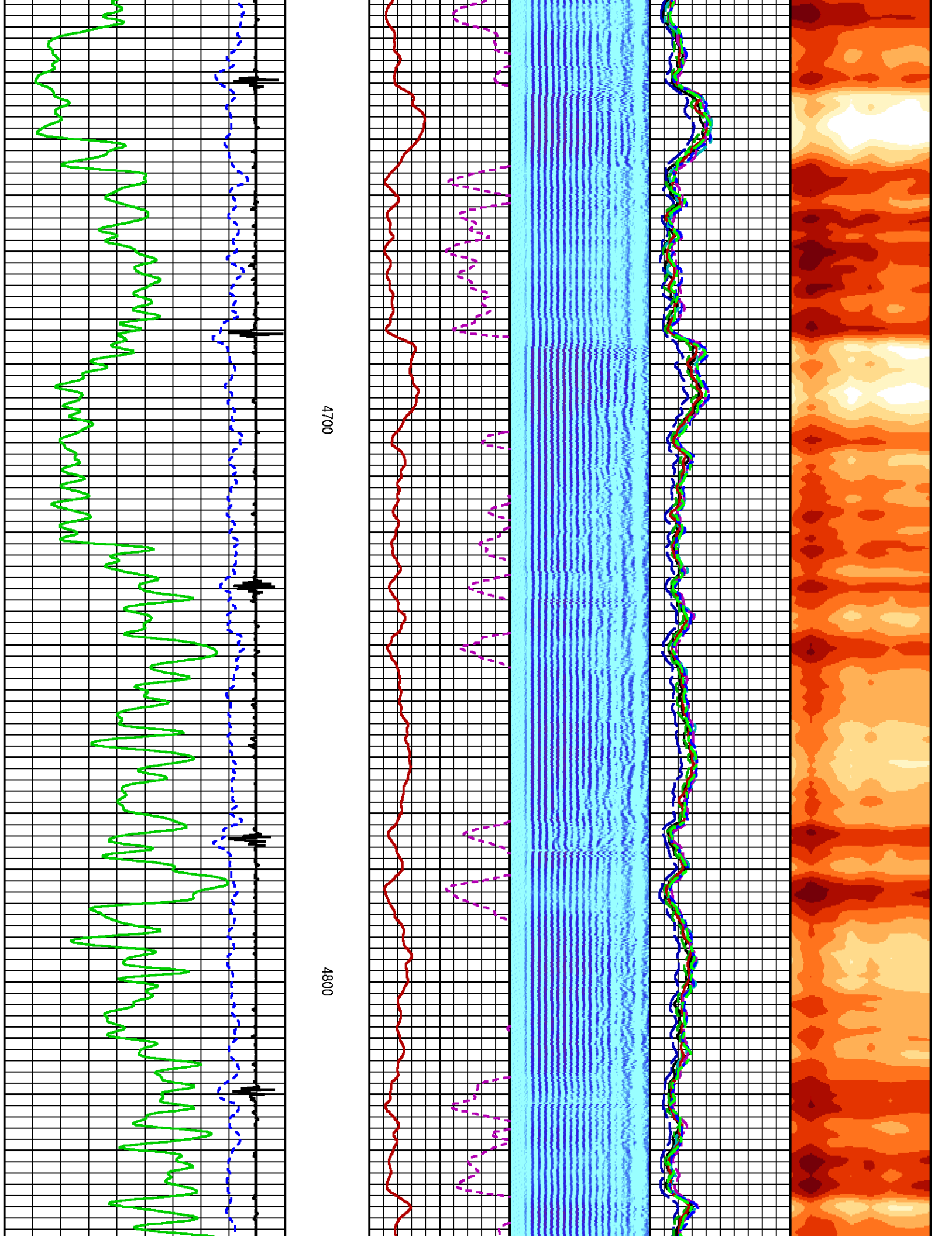
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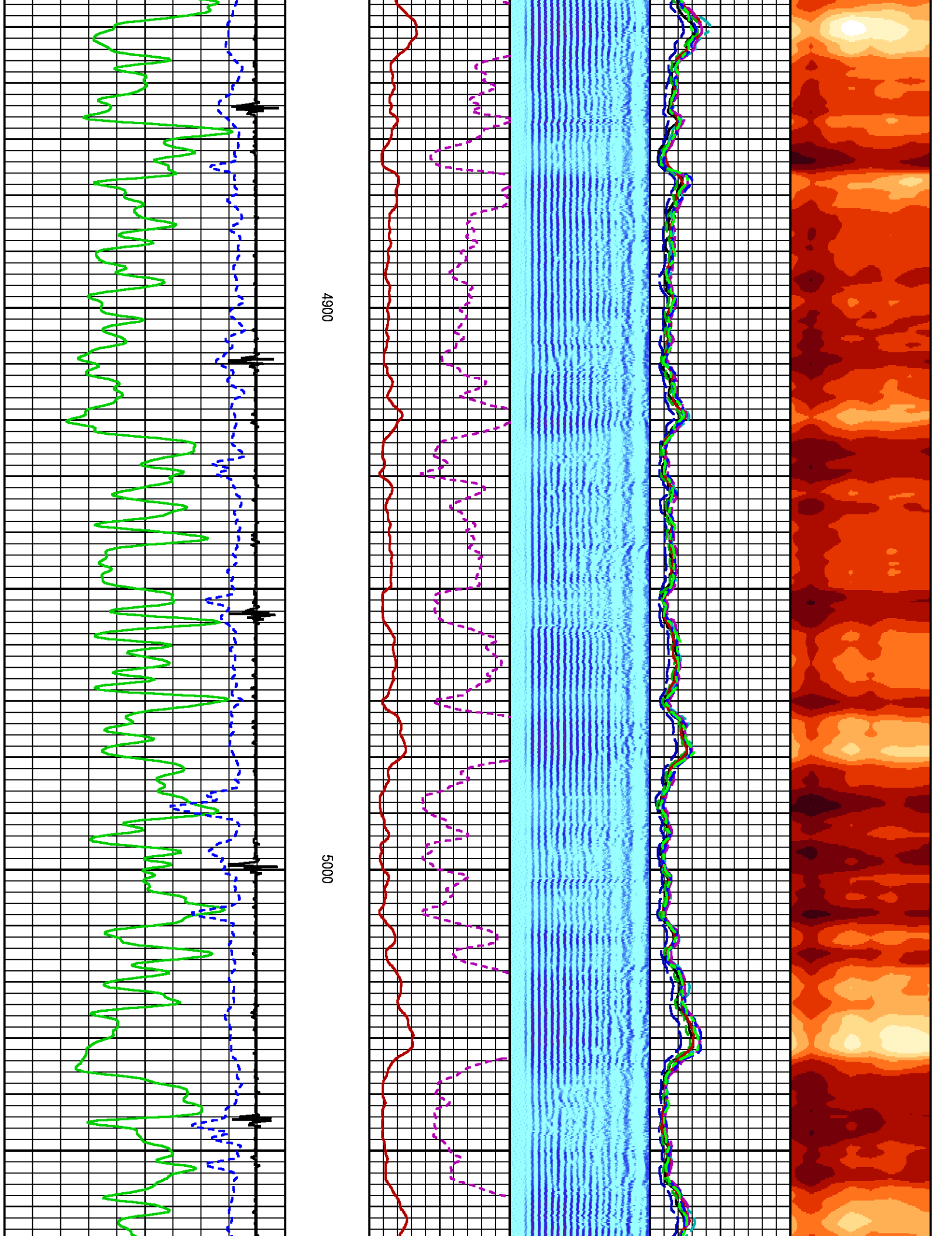


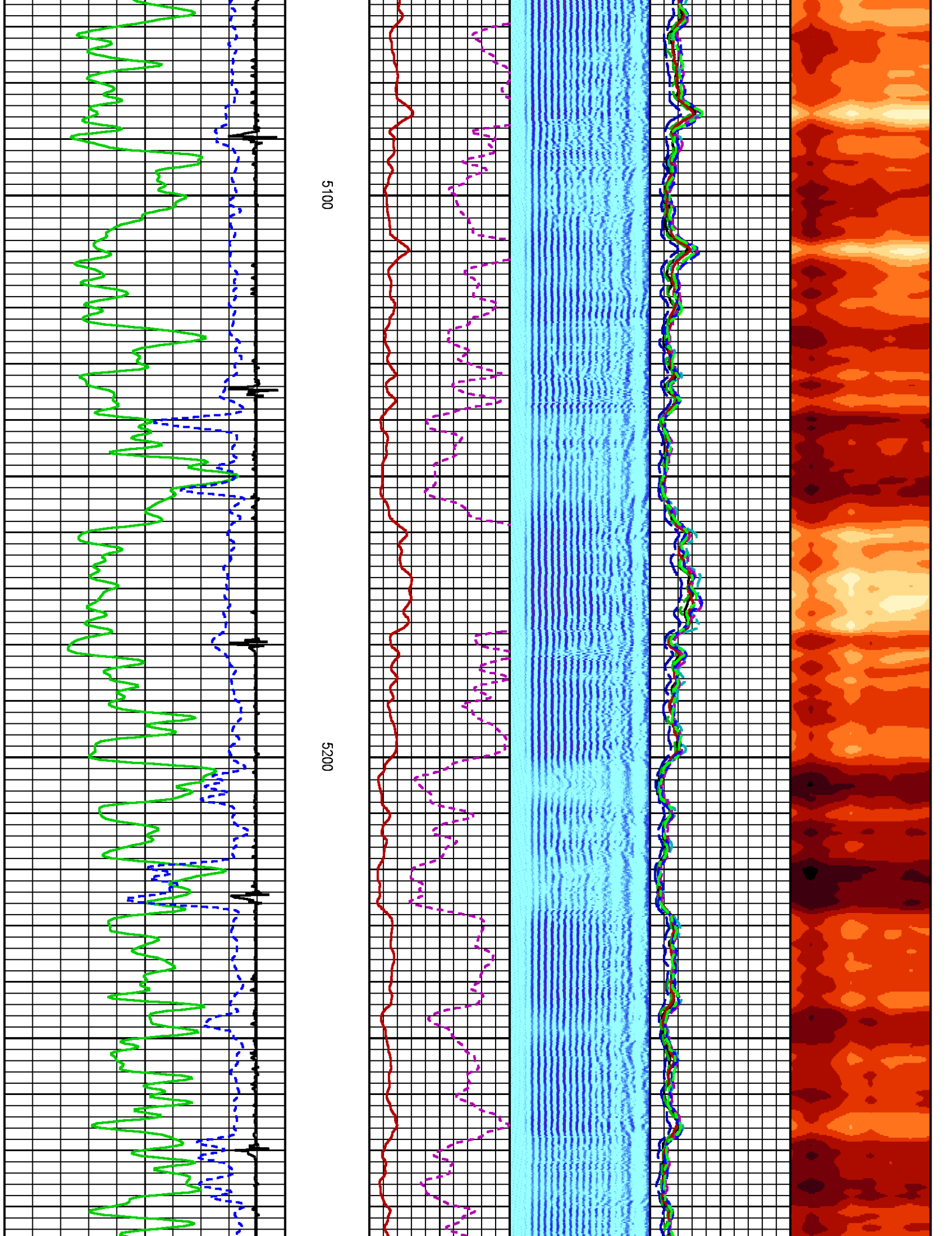


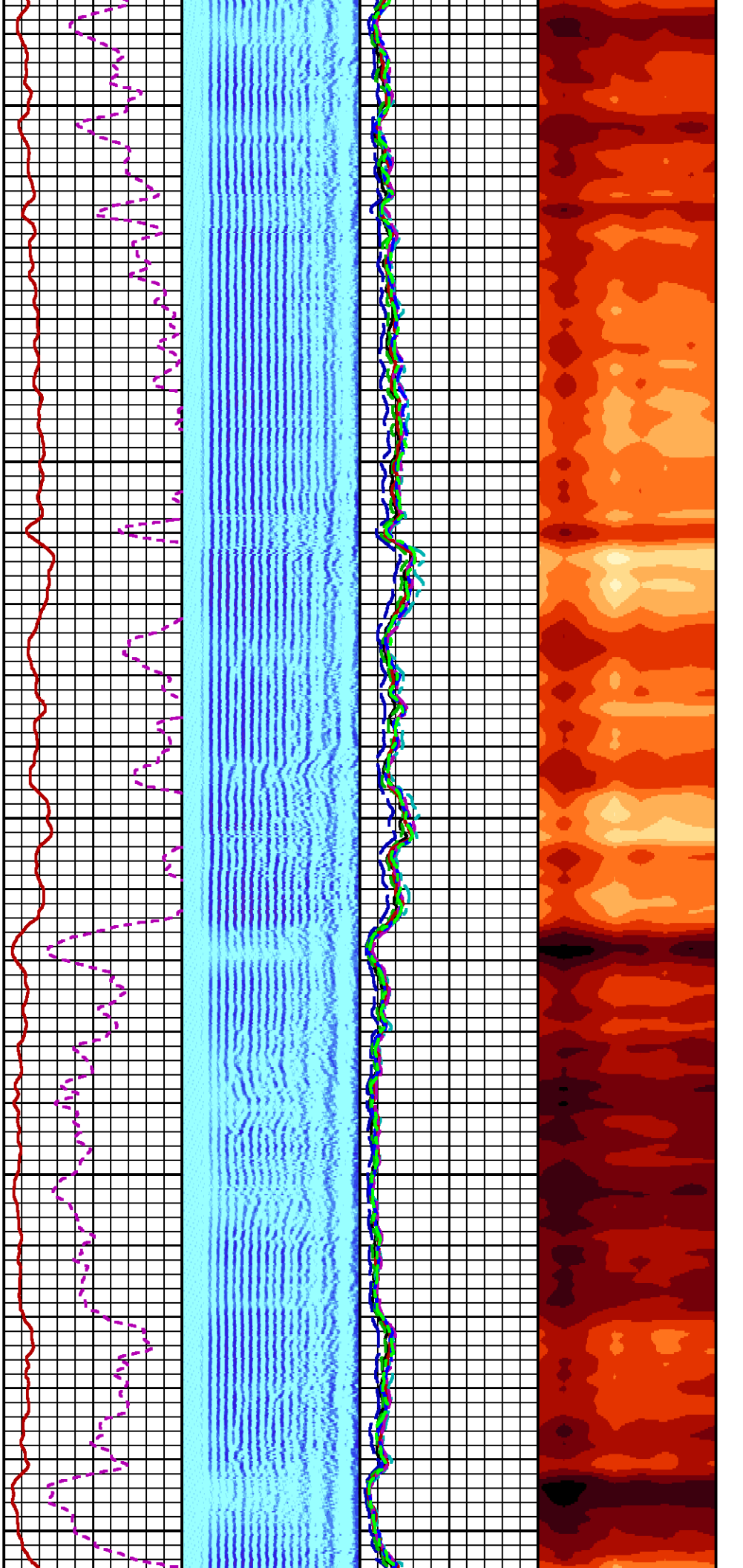








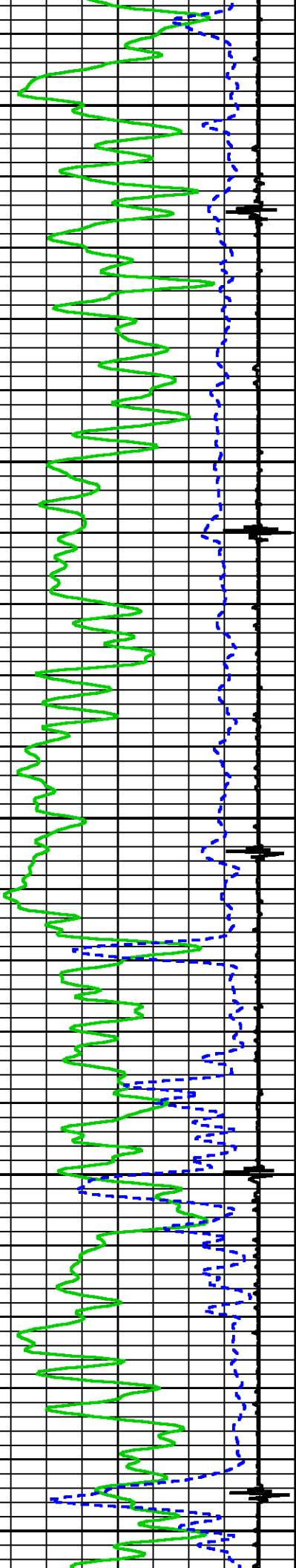


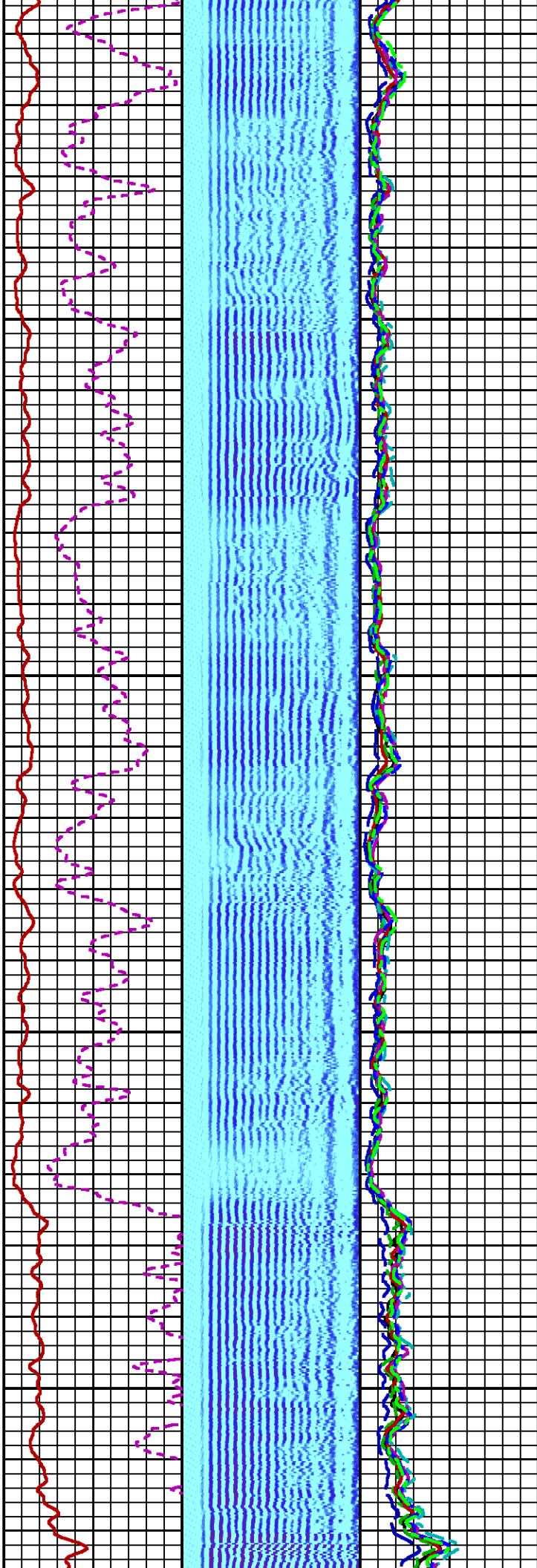
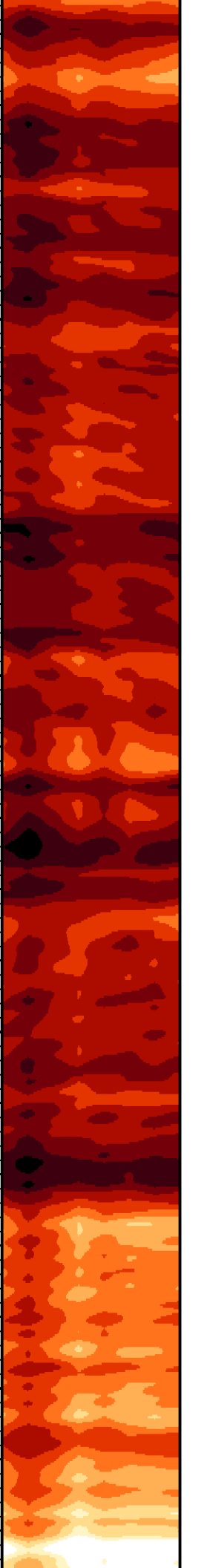


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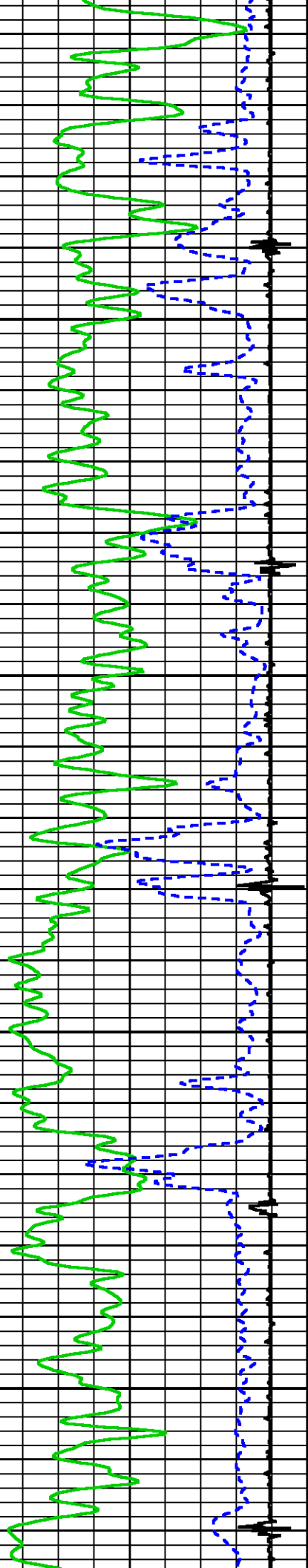
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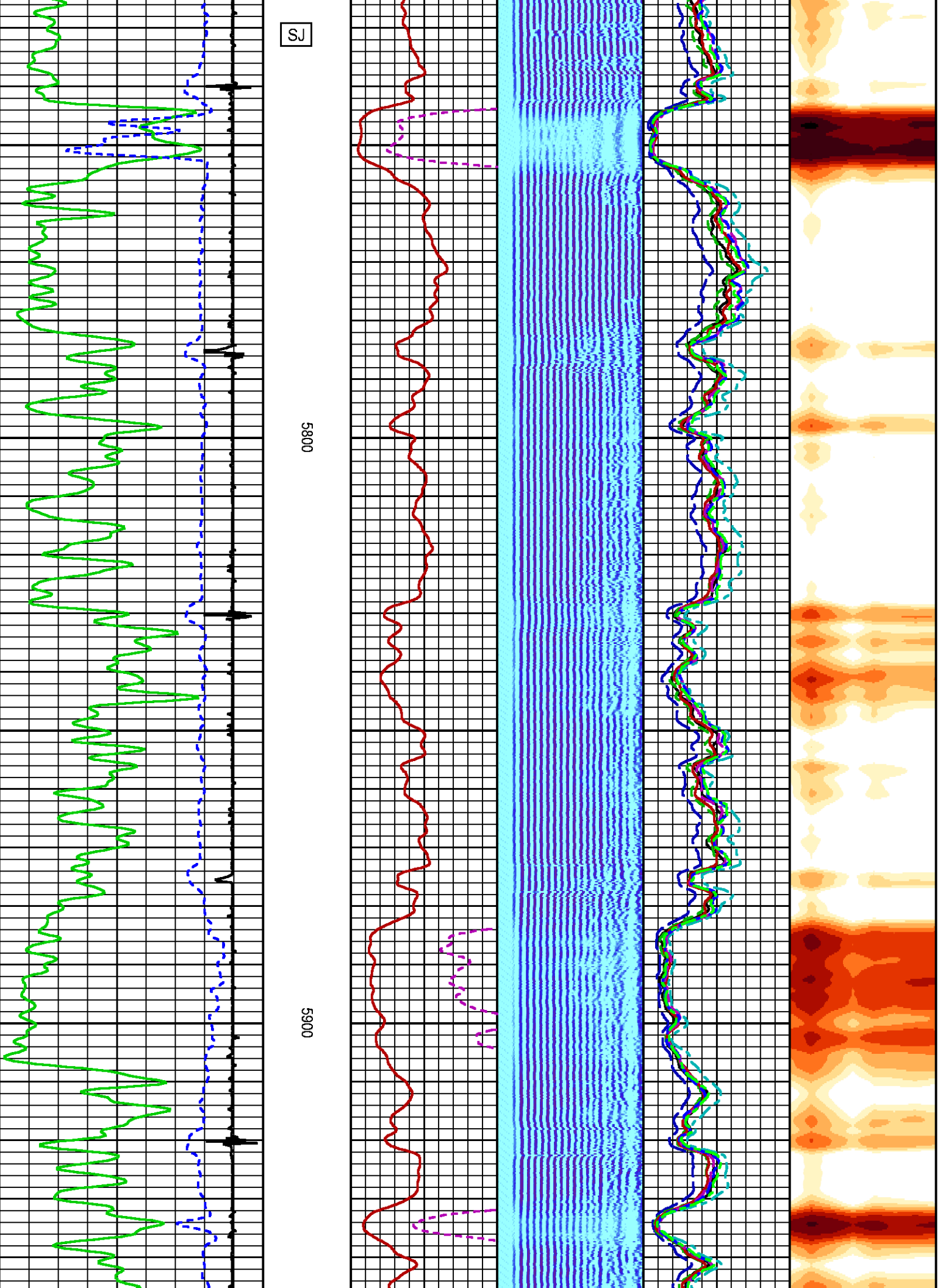
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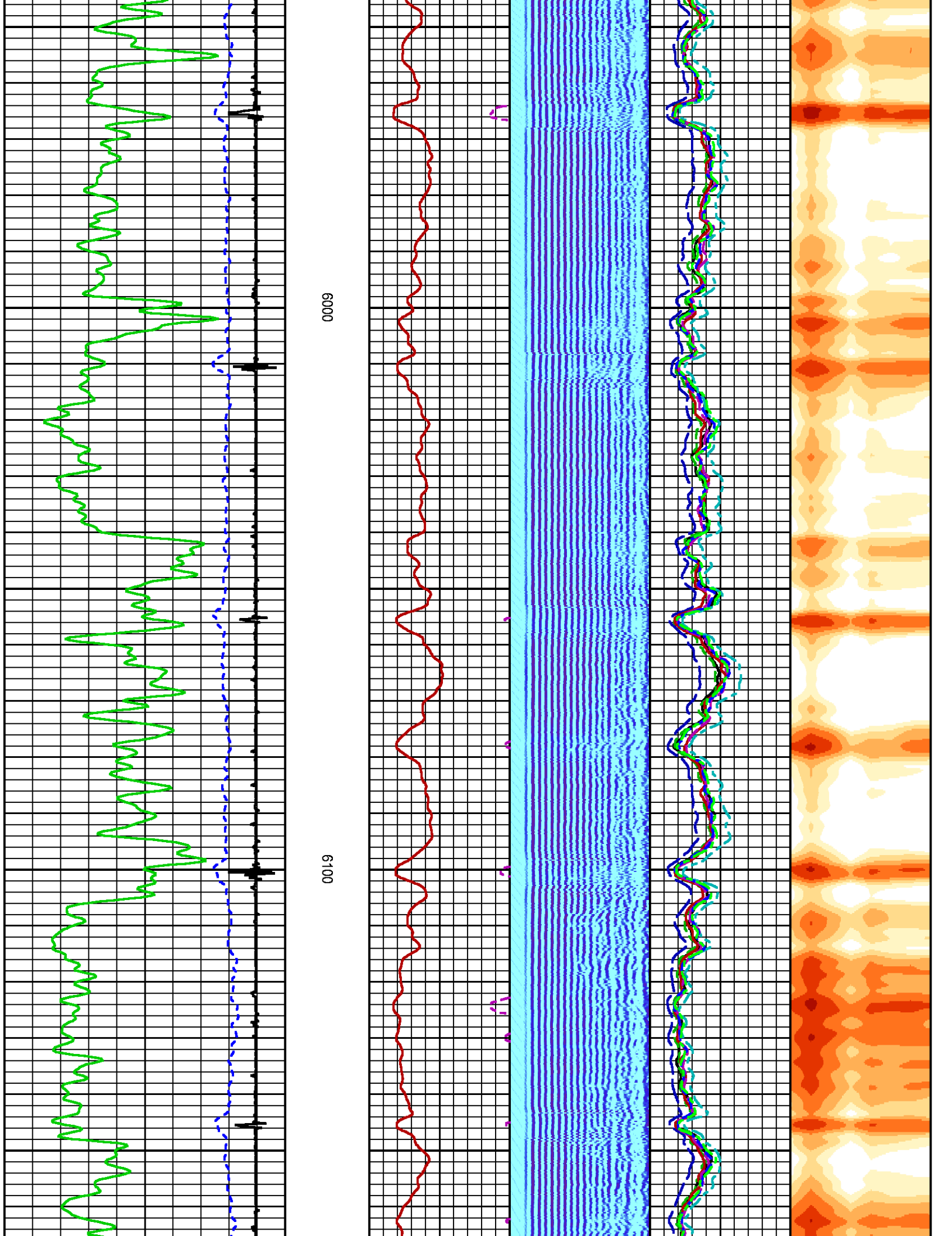


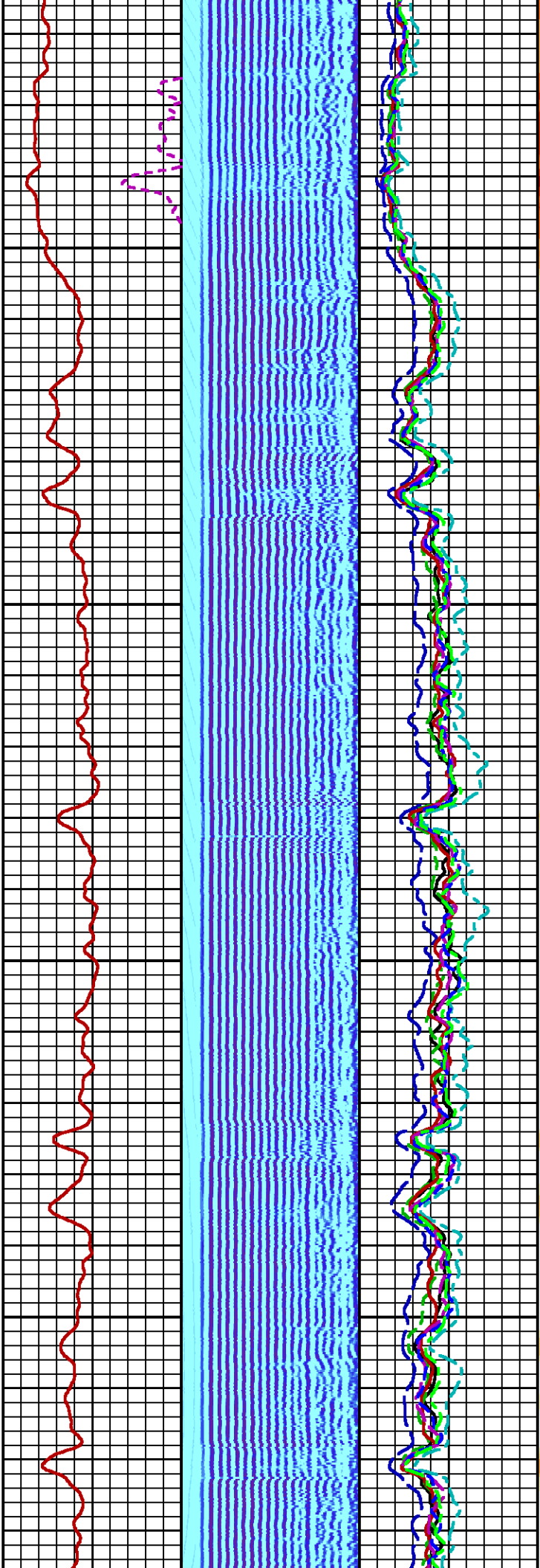
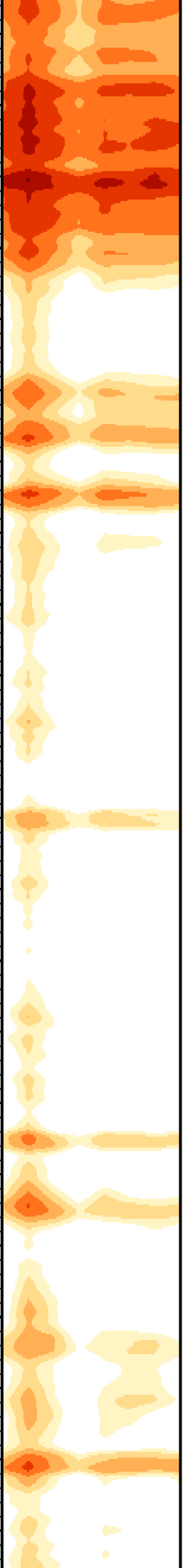
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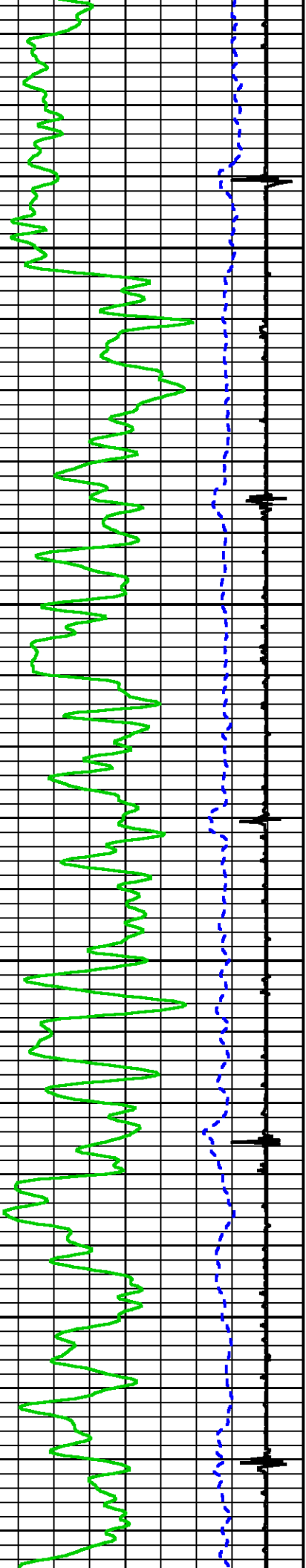


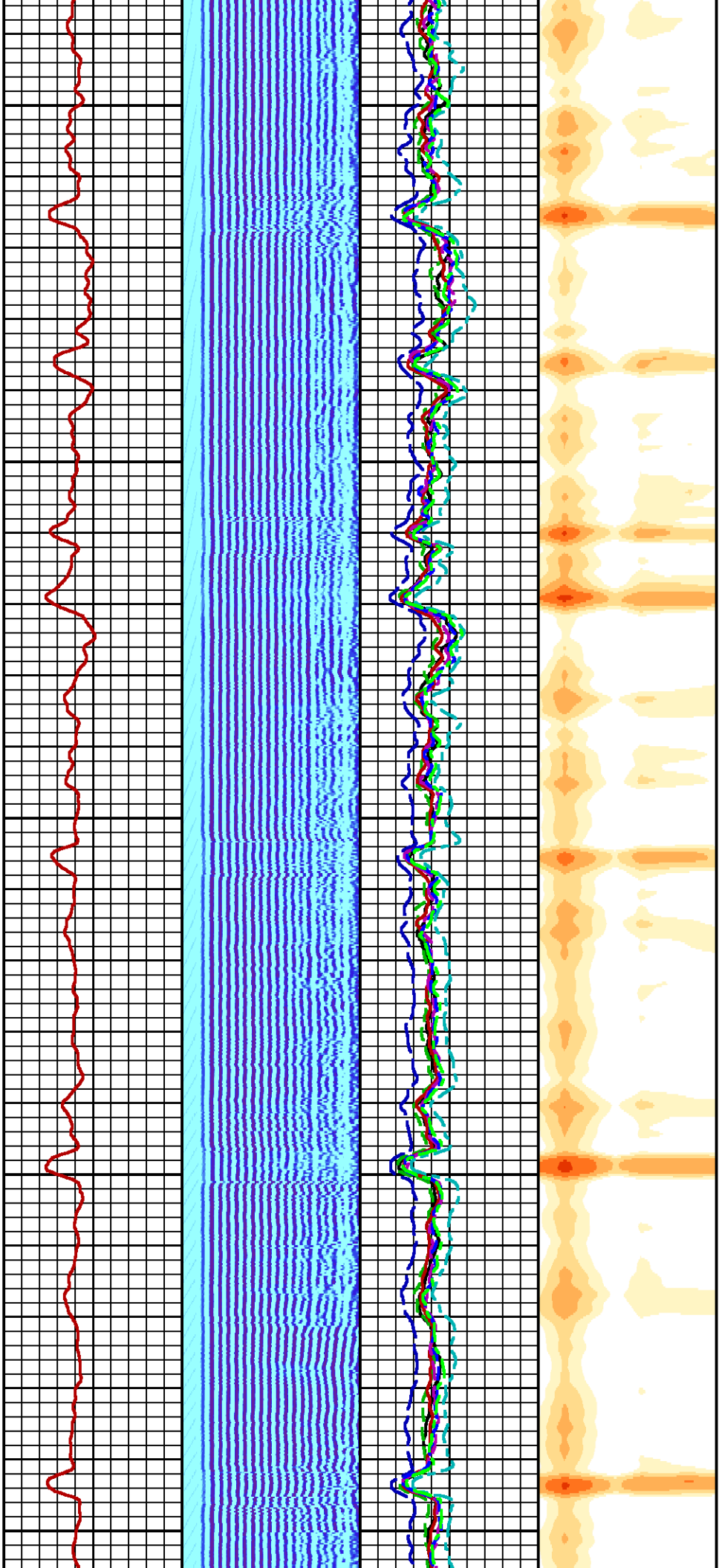




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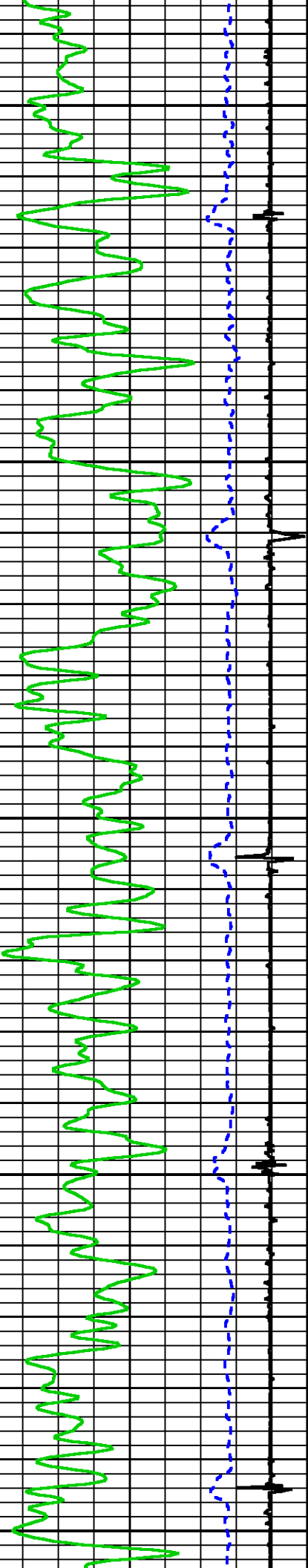


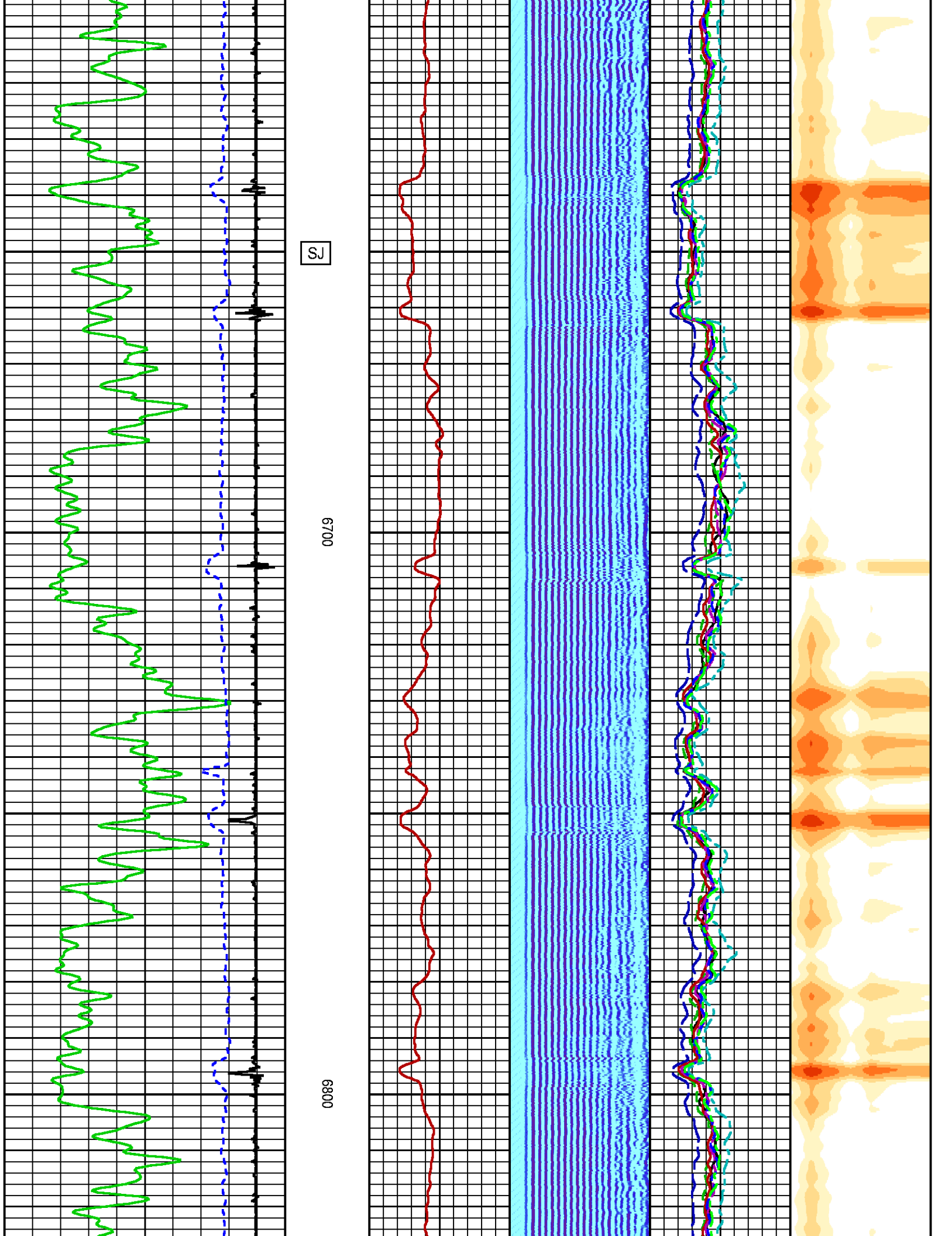


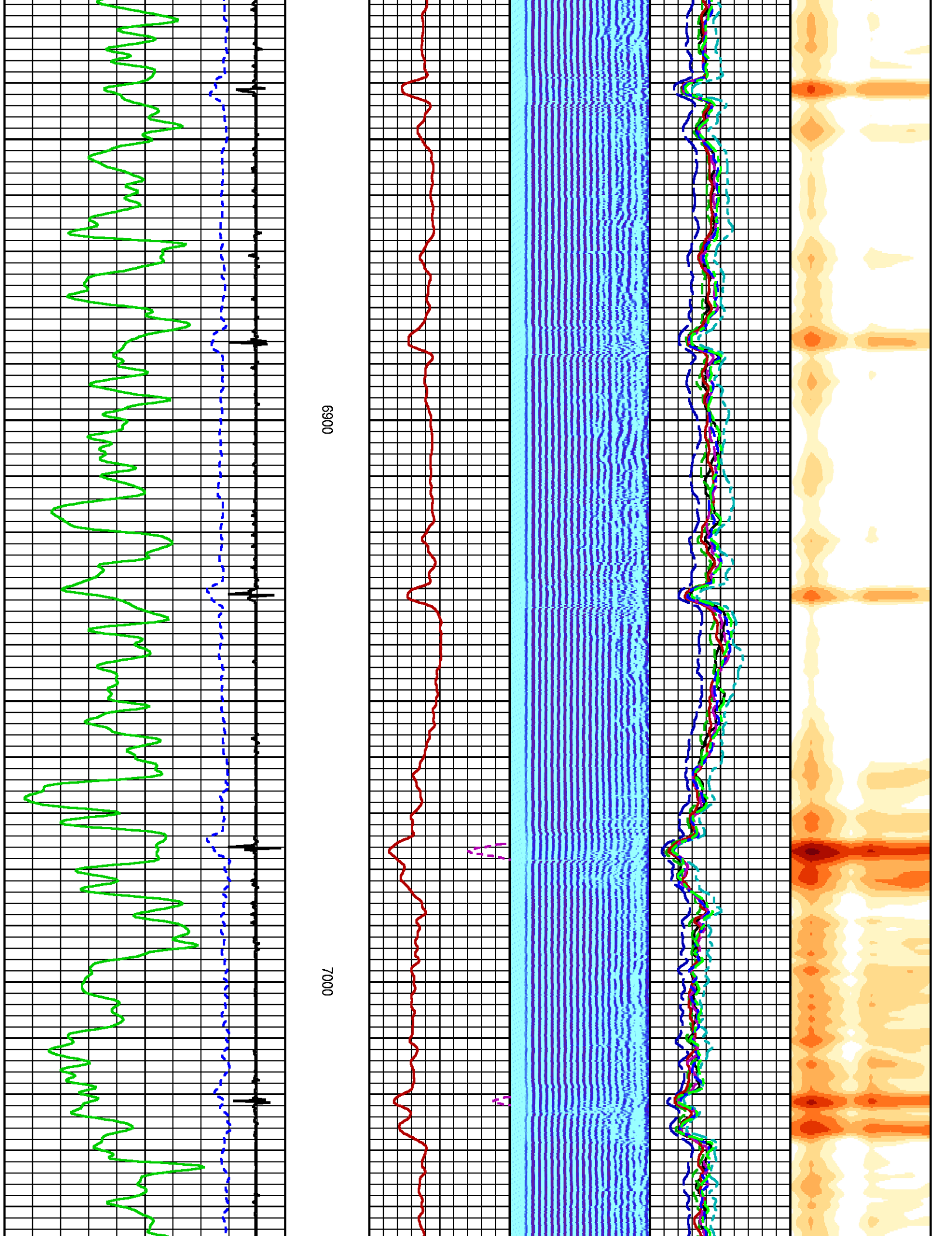
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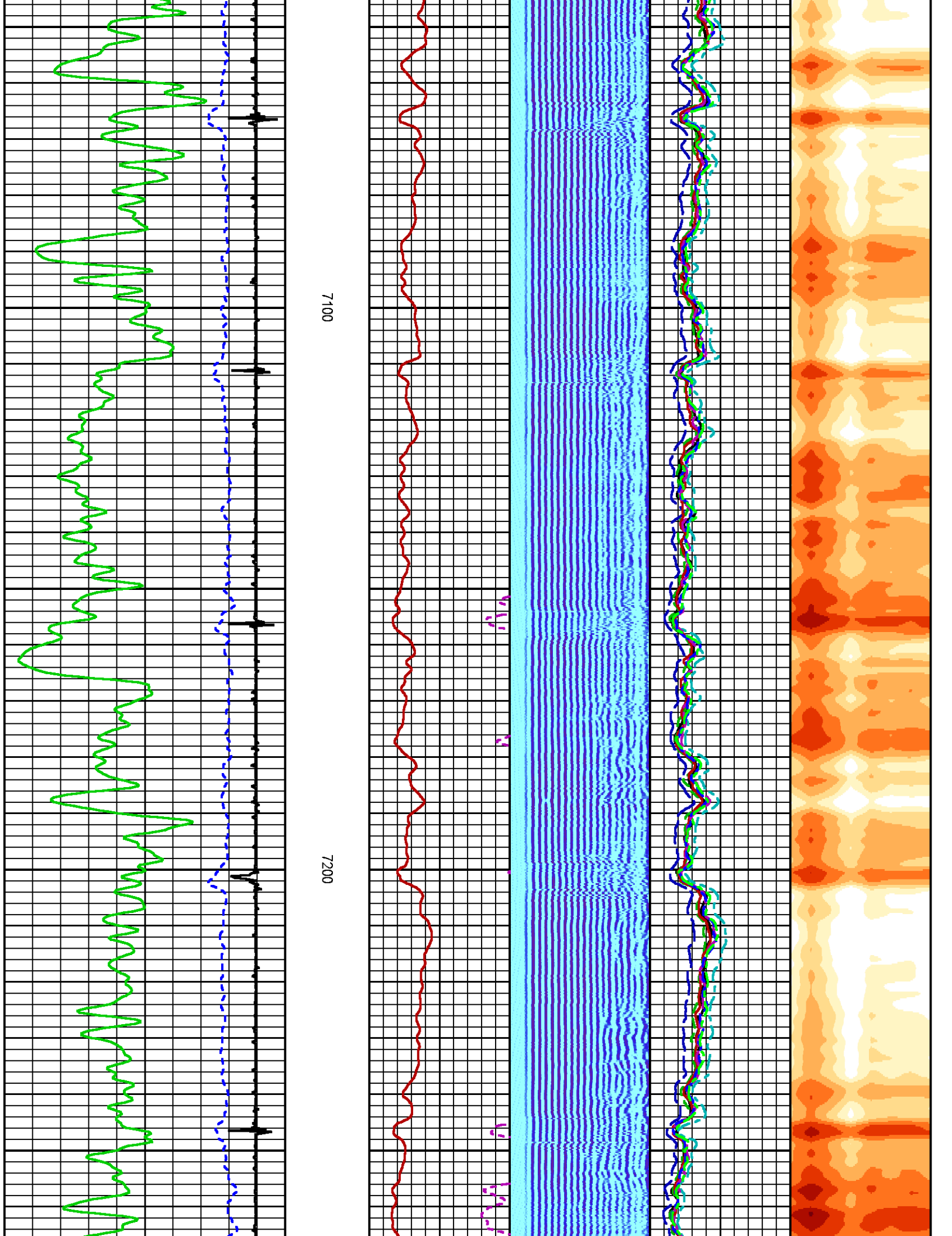
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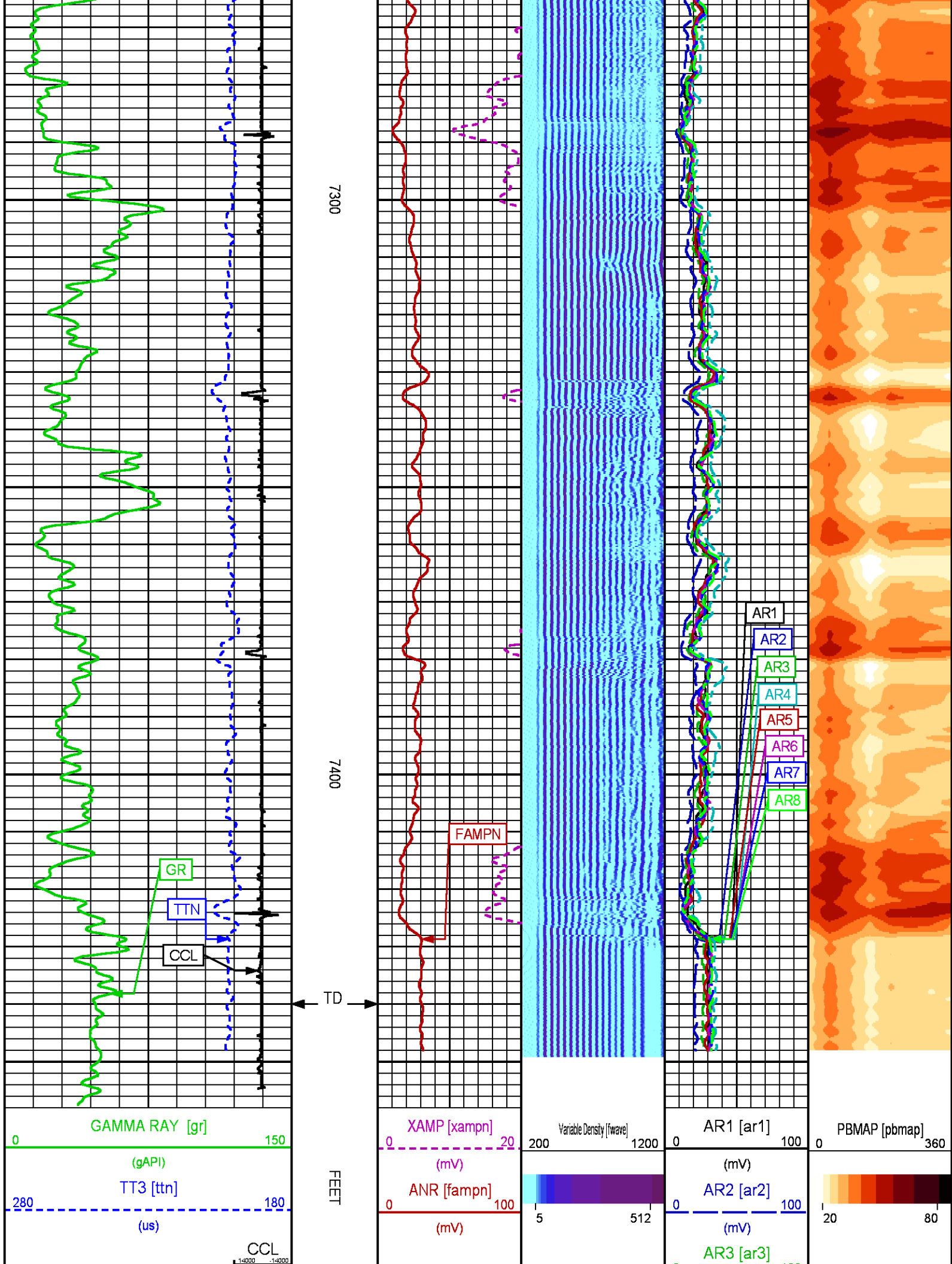
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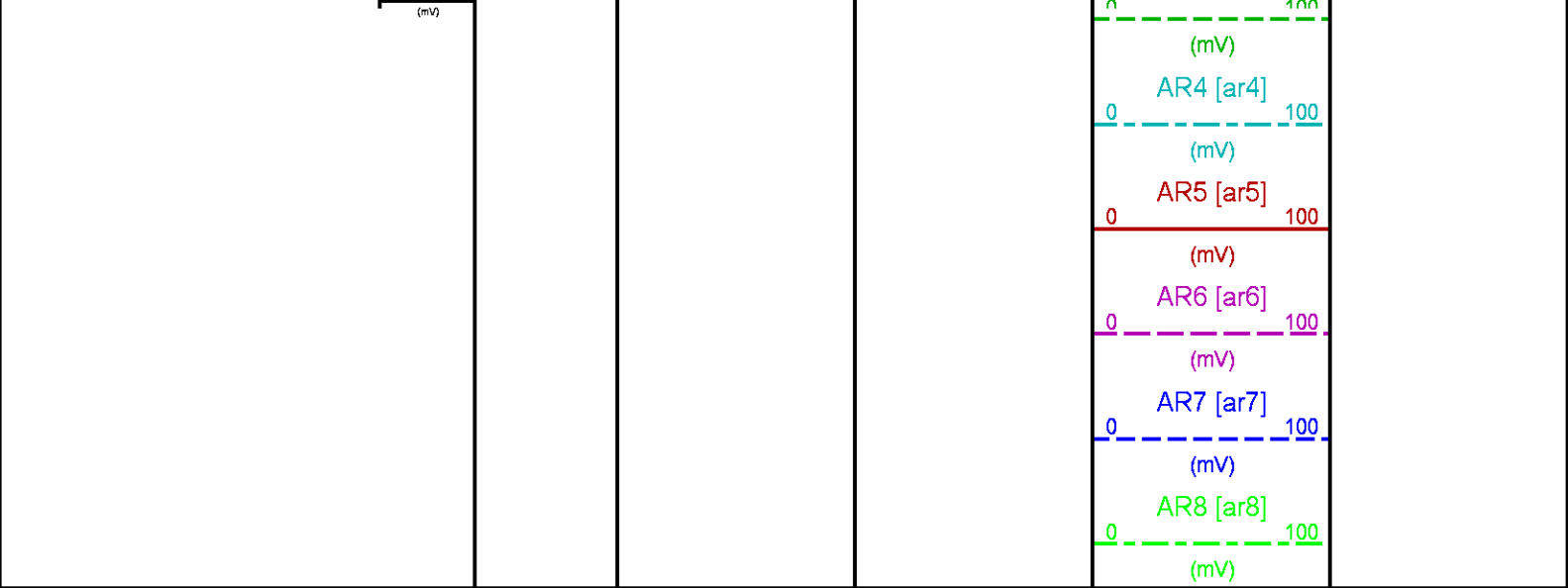












REPEAT PASS 0 PSI

ECLIPS 7.0i ECLIPS General Release Rel 7.0i Thu Jun 08 20:36:10 CDT 2017
Patches: 2

Plotted: Wed Jan 24 11:52:31 2018

PARAMETER AND FILTER SUMMARY REPORT					
FILE: /dat1a/LARAMIE_NICHOLS_0994_24_07E/p012g01.prm LOGGING MODE: DEPTH DIRECTION: UP TOP DEPTH: 7205.750 ft BOTTOM DEPTH: 7457.250 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*)	185	us	TOP	BOTTOM
	AMP WINDOW START (fgp2*)	185	us	"	"
	AMP WINDOW START (fgp3*)	185	us	"	"
	AMP WINDOW START (fgp4*)	185	us	"	"
	AMP WINDOW START (fgp5*)	185	us	"	"
	AMP WINDOW START (fgp6*)	185	us	"	"
	AMP WINDOW START (fgp7*)	185	us	"	"
	AMP WINDOW START (fgp8*)	185	us	"	"
	AMP WINDOW START (fgpn*)	185	us	"	"
	AMP WINDOW LENGTH	30	us	"	"
TRAVEL TIME WINDOW (NEAR)	TT WINDOW START (ttn*)	160	us	"	"
	TT WINDOW LENGTH	500	us	"	"
	FIRST BRK THRESHOLD (ttn*)	6	mV	"	"
RAL CASING PARAMETERS	PPT NEAR	200.391	us	"	"

RAL TOOL DELAY	TOOL DELAY (str1*)	-62	us	"	"
	TOOL DELAY (str2*)	-62	us	"	"
	TOOL DELAY (str3*)	-62	us	"	"
	TOOL DELAY (str4*)	-62	us	"	"
	TOOL DELAY (str5*)	-62	us	"	"
	TOOL DELAY (str6*)	-62	us	"	"
	TOOL DELAY (str7*)	-62	us	"	"
	TOOL DELAY (str8*)	-62	us	"	"
	TOOL DELAY (strn*)	-62	us	"	"
	NOISE WINDOW START	125	us	"	"
BASELINE NOISE (NEAR)	NOISE WINDOW LENGTH	25	us	"	"

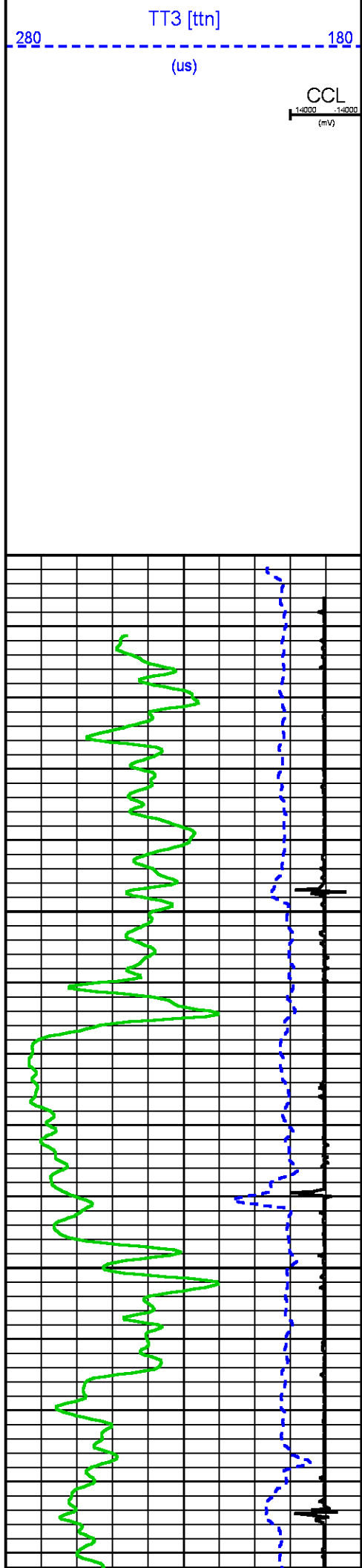
PERCENT BOND CEMENT MAP					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
RAL FREE PIPE AMPLITUDE	FREE AMP REC 1	80	mV	TOP	BOTTOM
	FREE AMP REC 2	80	mV	"	"
	FREE AMP REC 3	80	mV	"	"
	FREE AMP REC 4	80	mV	"	"
	FREE AMP REC 5	80	mV	"	"
	FREE AMP REC 6	80	mV	"	"
	FREE AMP REC 7	80	mV	"	"
	FREE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

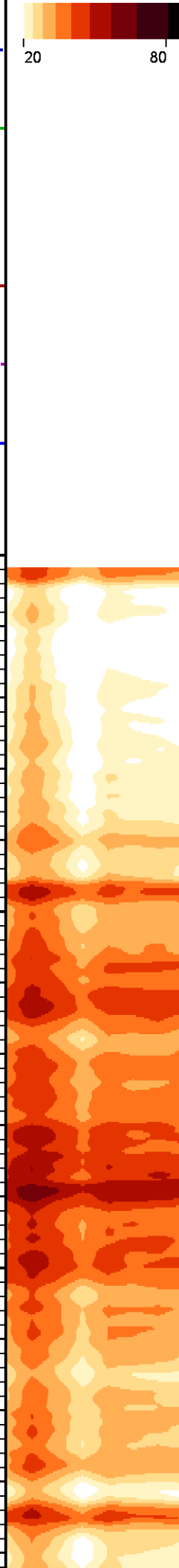
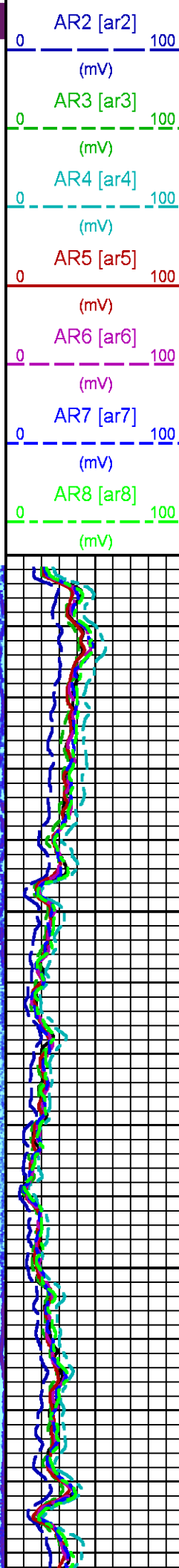
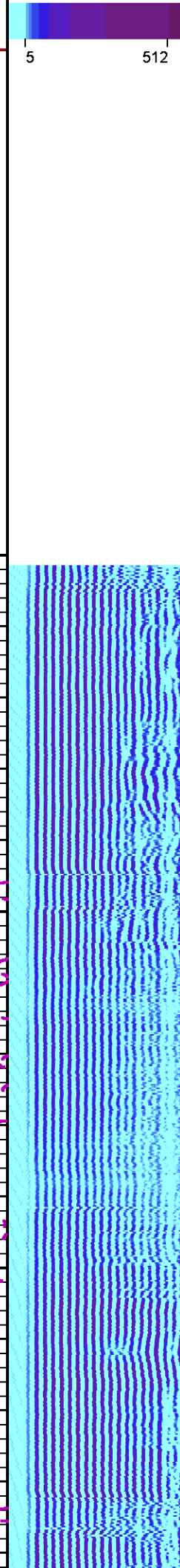
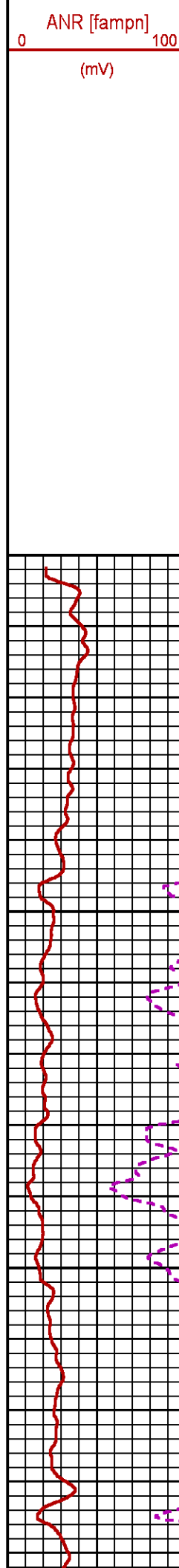
CURVE MEASURE POINT OFFSET							
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
AR1	-11.25	AR5	-11.25	CCL	-5.75	XAMPN	-11.25
AR2	-11.25	AR6	-11.25	FAMPN	-11.25		
AR3	-11.25	AR7	-11.25	GR	-1.75		
AR4	-11.25	AR8	-11.25	TTN	-11.25		

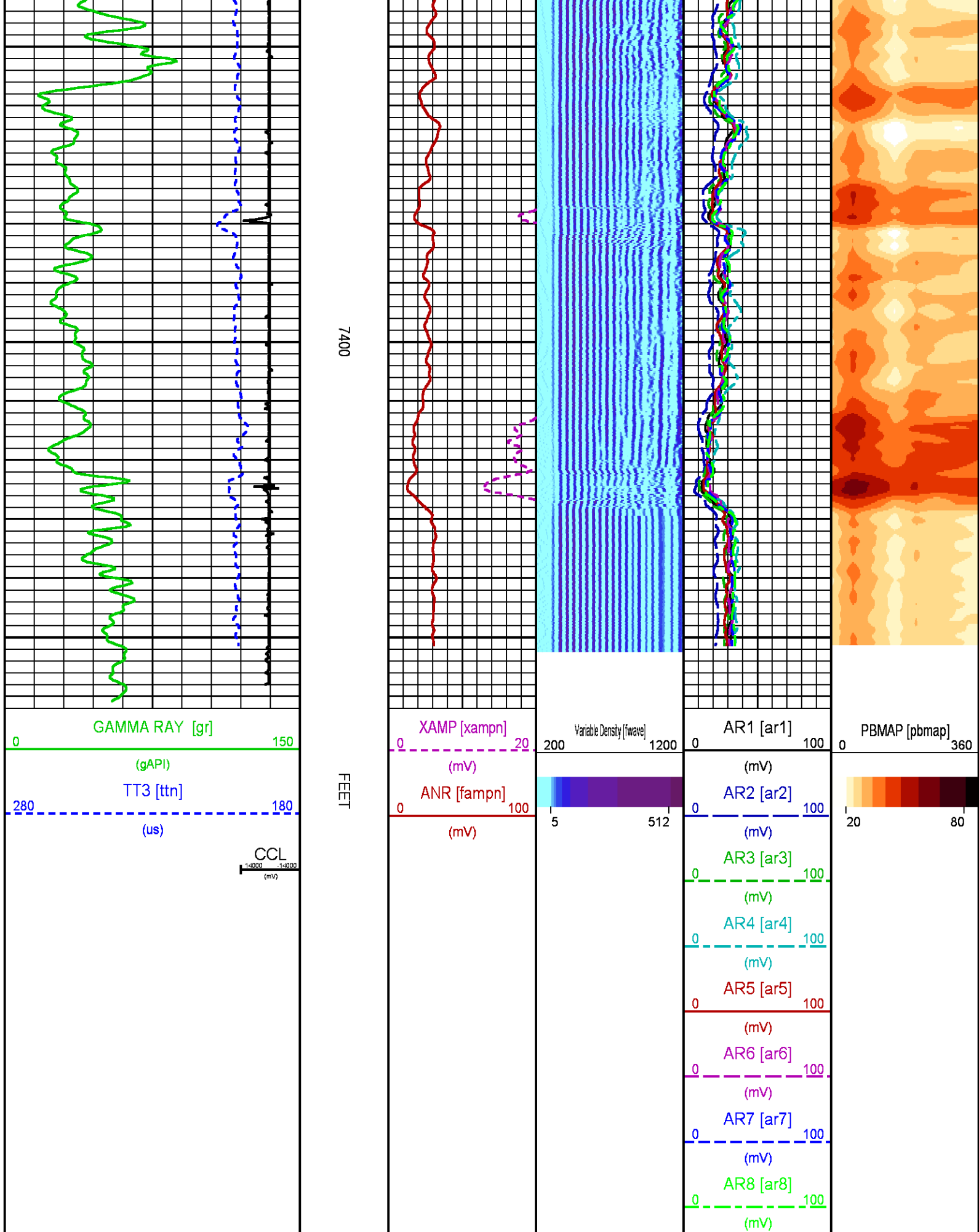
Presentation	: SysA:/dat1a/LARAMIE_NICHOLS_0994_24_07E/LARAMIE_RAL+01-REPEAT-RAL_RPT_07E-5.fvpdf [5"/100' Scale]
Plot Interval	: 7195 - 7456 Feet
Data File 1	: F1 : SysA:/dat1a/LARAMIE_NICHOLS_0994_24_07E/RAL_RPT_07E.xtf
Created On	: N/A
Company	: LARAMIE ENERGY LLC
Well	: NICHOLS 0994-24-07E
Field	: VEGA
File Interval	: 7194 - 7457.25 Feet
OCT	: p012g

GAMMA RAY [gr]		FEET	XAMP [xampn]		Variable Density [fwave]	AR1 [ar1]		PBMAP [pbmap]	
0	150		0	20		0	100	0	360
(gAPI)			(mV)			(mV)			



7300





CALIBRATION / VERIFICATION SUMMARY

Source File: /dat1a/ARAME_NICHOLS_0994_24_07Ep012g.lp1

RAL PRIMARY CALIBRATION SUMMARY

TOOL #: 1426XA10417452

DATE/TIME PERFORMED: Wed Jan 24 11:16:09 2018

UNIT #: 5753XD111111

	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)	0.05	-0.08	0.07	0.01	-0.02	0.01	0.06	-0.10	-0.03	0.10	-0.07
AMP FLUID (mV)	44	44	43	43	42	42	43	44	44	56	43
TT (us)	216	213	216	215	216	215	216	215	216	321	215
M FACTOR	2.29	2.29	2.30	2.32	2.40	2.36	2.33	2.28	2.28	2.68	2.30

RAL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 1426XA10417452

DATE/TIME PERFORMED: Wed Jan 24 11:17:48 2018

DAYS SINCE CAL: 0

UNIT #: 5753XD111111

CABLE #: 4291CH SMALLLINE

	NEAR (mV)	R1 (mV)	R2 (mV)	R3 (mV)	R4 (mV)	R5 (mV)	R6 (mV)	R7 (mV)	R8 (mV)	FAR (mV)	CAL (mV)
ZERO	-0.03	0.02	-0.02	0.11	0.15	-0.09	-0.02	0.21	0.04	0.36	0.03
AMP AIR	4.64	4.22	3.38	4.44	4.67	5.83	5.64	3.85	4.52	4.89	99.44

	SHOP M FACTOR	SHOP A FACTOR	WIRELINE FACTOR
	2.30	0.00	1.01

GR PRIMARY CALIBRATION SUMMARY

TOOL #: 1355XA11871507

DATE/TIME PERFORMED: Fri Nov 17 14:10:53 2017

UNIT #: 3882TD HL6728

CALB JIG #: 4702NK DA_228

	BACKGROUND (cts)	CALBTR ON (cts)	GR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBTR ON (gAPI)	CALBTR (gAPI)
GR	59.07	162.98	103.9	0.962	56.84	156.84	100

GR PRIMARY VERIFICATION SUMMARY

TOOL #: 1355XA11871507

DATE/TIME PERFORMED: Fri Nov 17 14:12:49 2017

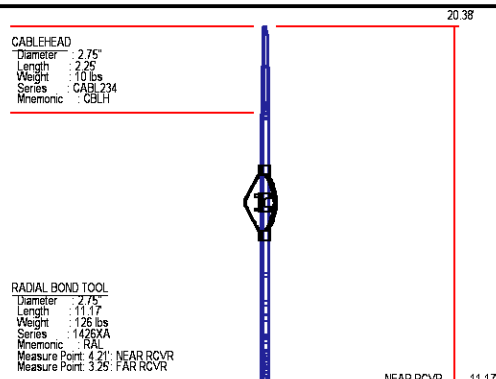
UNIT #: 3882TD HL6728

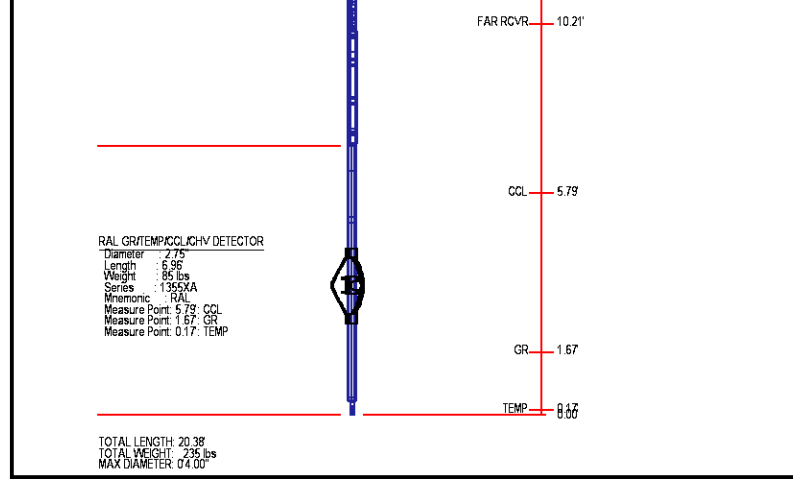
VERI JIG #: 4702NK DA_228

	BACKGROUND (cts)	CALBTR ON (cts)	MULT	BACKGROUND (gAPI)	CALBTR ON (gAPI)	DIFF. (gAPI)
GR	59.73	170.53	0.962	57.49	164.11	106.63

INSTRUMENT CONFIGURATION

Source File: /dat1a/ARAME_NICHOLAS_0994_24_09ERAL55-1dg





**BAKER
HUGHES**
a GE company



ECLIPS

COMPANY LARAMIE ENERGY LLC
WELL NICHOLS 0994-24-07E
FIELD VEGA
COUNTY MESA **STATE** COLORADO

FILE NO: _____
API NO: 05077104140000

LOCATION:
 SHL: 39.264481 N; 107.830709 W
 BHL: 39.265373 N; 107.825923 W
SEC 24 **TWP** 9 S **RGE** 94 W

ELEVATIONS:
 KB 7161 FT
 DF 7160 FT
 GL 7137 FT
DATE 24-Jan-2018