



FILE NO: US108026
 COMPANY: WHITING OIL AND GAS
 WELL: WRD 23-33-R
 FIELD: WHITE RIVER
 COUNTY: RIO BLANCO
 STATE: COLORADO

Ver. 4.06
 SEC33 T2N R97W
 LOCATION: SHL: 1925' FSL & 2187' FWL
 OTHER SERVICES: 3.625 GRJUB

PERMANENT DATUM: G.L. ELEVATION 6168 FT
 LOG MEASURED FROM: KB 32 FT ABOVE P.D.
 DRILL. MEAS. FROM: KB
 ELEVATIONS: KB 6200 FT, DF, GL 6168 FT

DATE	27-Jun-2016
RUN	1
TRIP	1
SERVICE ORDER	US108026
DEPTH DRILLER	16902 FT
DEPTH LOGGER	11229 FT
BOTTOM LOGGED INTERVAL	11213 FT
TOP LOGGED INTERVAL	32 FT
TIME STARTED	17:30
TIME FINISHED	23:30
OPERATOR RIG TIME	6 HOURS
TYPE OF FLUID IN HOLE	BRINE
FLUID DENSITY	9 LB/G
FLUID SALINITY	NA
FLUID LEVEL	32 FT
LOGGED CEMENT TOP	SEE LOG
WELLHEAD PRESSURE	1500 PSI
MAXIMUM HOLE DEVIATION	NA
NOMINAL LOGGING SPEED	30 FMIN
MAX. RECORDED TEMP.	NA
REFERENCE LOG	CASED HOLE SOLUTIONS CBL
REFERENCE LOG DATE	OCT-15-2015
EQUIP. NO.	6685
LOCATION	GRAND JCT.
RECORDED BY	P. EDWARDS
WITNESSED BY	RYAN SWANN

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.

BIT SIZE	FROM	TO

SIZE	WEIGHT	GRADE	FROM	TO
13.375 IN	68 LB/F	L-80	32 FT	4200 FT
9.625 IN	53.5 LB/F	HCP-110	32 FT	10171 FT
7 IN	29 LB/F	HCP-110	32 FT	13340 FT
4.5 IN	13.5 LB/F	HCP-110	32 FT	15904 FT

REMARKS

RUN 1 TRIP 1: ALL DATA ON THIS LOG IS CORRELATED TO THE GAMMA-RAY CURVE ON CASED HOLE SOLUTIONS CEMENT BOND GAMMA-RAY CCL LOG DATED 15-OCT-2015

TOOL RAN SLICK DUE TO HOLE SIZE RESTRICTION

THANK YOU FOR CHOOSING BAKER HUGHES WIRELINE SERVICES

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	CCL	2330NA		FREE
1	1	GAMMA-RAY	1339XA	10185173	FREE
1	1	TEL	1633EA	11619340	FREE
1	1	BOND TOOL	1424XA	Z119555	CENTRALIZED
1	1	VDL	1424PA	Z172730	FREE

1000 PSI PASS

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

Updates: 1,36 Patches: 9

Plotted: Tue Jun 28 00:18:13 2016

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/CH108026/n331d06.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 51.500 ft BOTTOM DEPTH: 11216.576 ft

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
GR	FILTER ()	light (2) no filter (0) light (2)		TOP 2809.500 2819.500	BOTTOM 2819.500 BOTTOM
SBT	FILTER, 2pf FILTER, 4pf	heavy (3) heavy (3)		TOP "	BOTTOM "

SBT PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
SBT	CASING OD	4.500	in	TOP	BOTTOM
	CASING WT	13.500	lbm/ft	"	"
	FREE PIPE AMP.	90.632	mV	"	"
	FREE PIPE ATTN.	0.744	dB/ft	"	"
	CORR. FACTOR 1 (1424XA 1)	-0.678	dB/ft	"	"
	CORR. FACTOR 2 (1424XA 1)	-0.456	dB/ft	"	"
	CORR. FACTOR 3 (1424XA 1)	-0.267	dB/ft	"	"
	CORR. FACTOR 4 (1424XA 1)	-0.705	dB/ft	"	"
	CORR. FACTOR 5 (1424XA 1)	2.643	dB/ft	"	"
	CORR. FACTOR 6 (1424XA 1)	-0.537	dB/ft	"	"
	SPACING	0.618	ft	"	"
	SPREADING FACTOR	4.857	dB/ft	"	"
	CEMENT STRENGTH	1000	psi	"	"
	HI CUTOFF (1424XA 1)	7.518	dB/ft	"	"
	LOW CUTOFF (1424XA 1)	2.438	dB/ft	"	"

CURVE DESCRIPTION REPORT

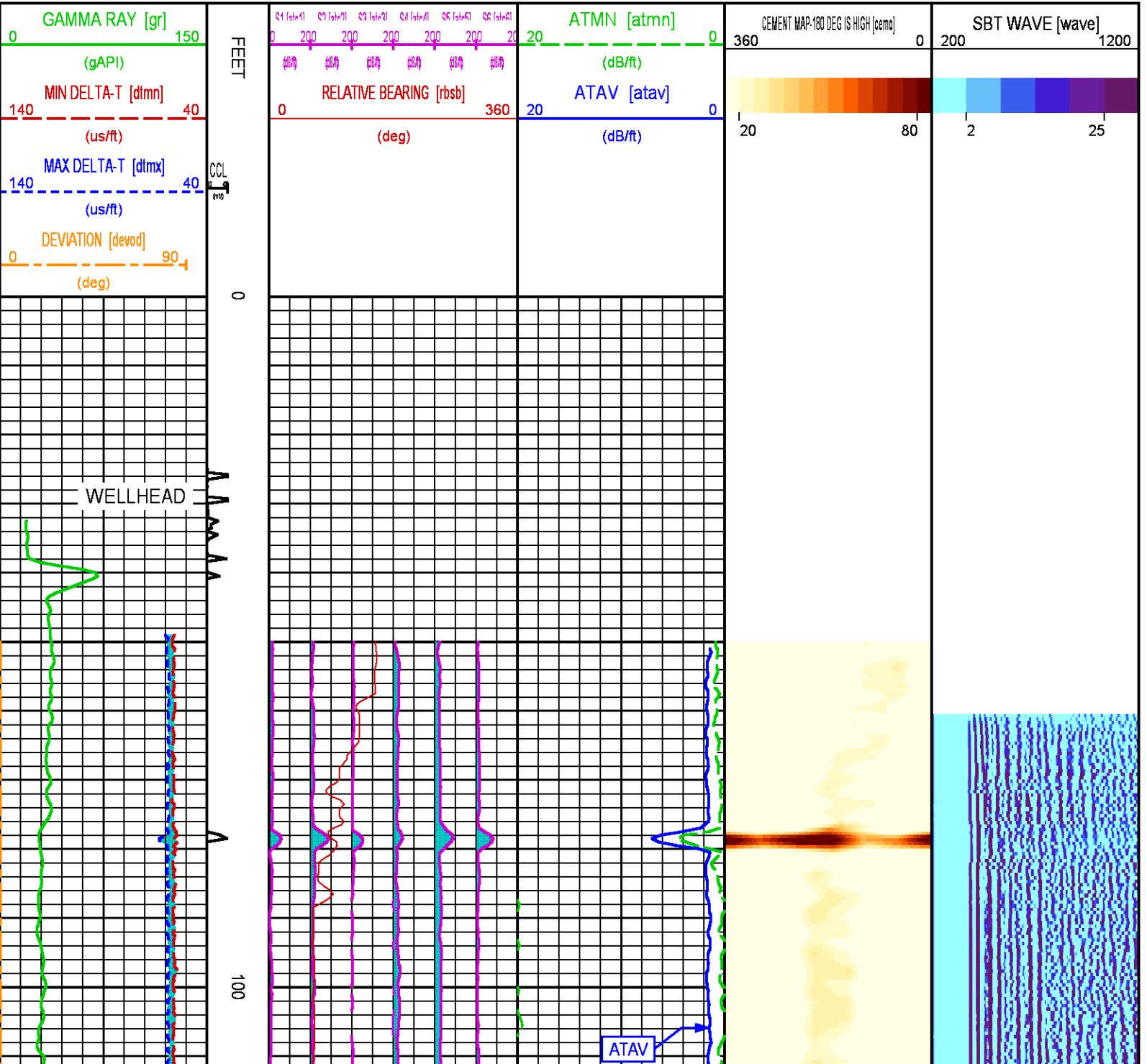
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:ATAV	Jun 27 20:25:43 2016	AVERAGE ATTENUATION
F1:ATC1	Jun 27 20:25:43 2016	ATTENUATION PAD 1
F1:ATC2	Jun 27 20:25:43 2016	ATTENUATION PAD 2
F1:ATC3	Jun 27 20:25:43 2016	ATTENUATION PAD 3
F1:ATC4	Jun 27 20:25:43 2016	ATTENUATION PAD 4
F1:ATC5	Jun 27 20:25:43 2016	ATTENUATION PAD 5
F1:ATC6	Jun 27 20:25:43 2016	ATTENUATION PAD 6
F1:ATMN	Jun 27 20:25:43 2016	ATTENUATION MINIMUM
F1:CCL	Jun 27 20:25:43 2016	CASING COLLAR LOCATOR
F1:CEMO	Jun 27 20:25:43 2016	CALIBRATED AND ORIENTED CEMENT MAP
F1:DEVOD	Jun 27 20:25:43 2016	DEVIATION
F1:DTMN	Jun 27 20:25:43 2016	MINIMAL SLOWNESS
F1:DTMX	Jun 27 20:25:43 2016	MAXIMAL SLOWNESS
F1:GR	Jun 27 20:25:43 2016	GAMMA RAY
F1:RROP	Jun 27 20:25:43 2016	RELATIVE READING (RELATIVE TO BOREHOLE LOW SIDE) FOR SBT

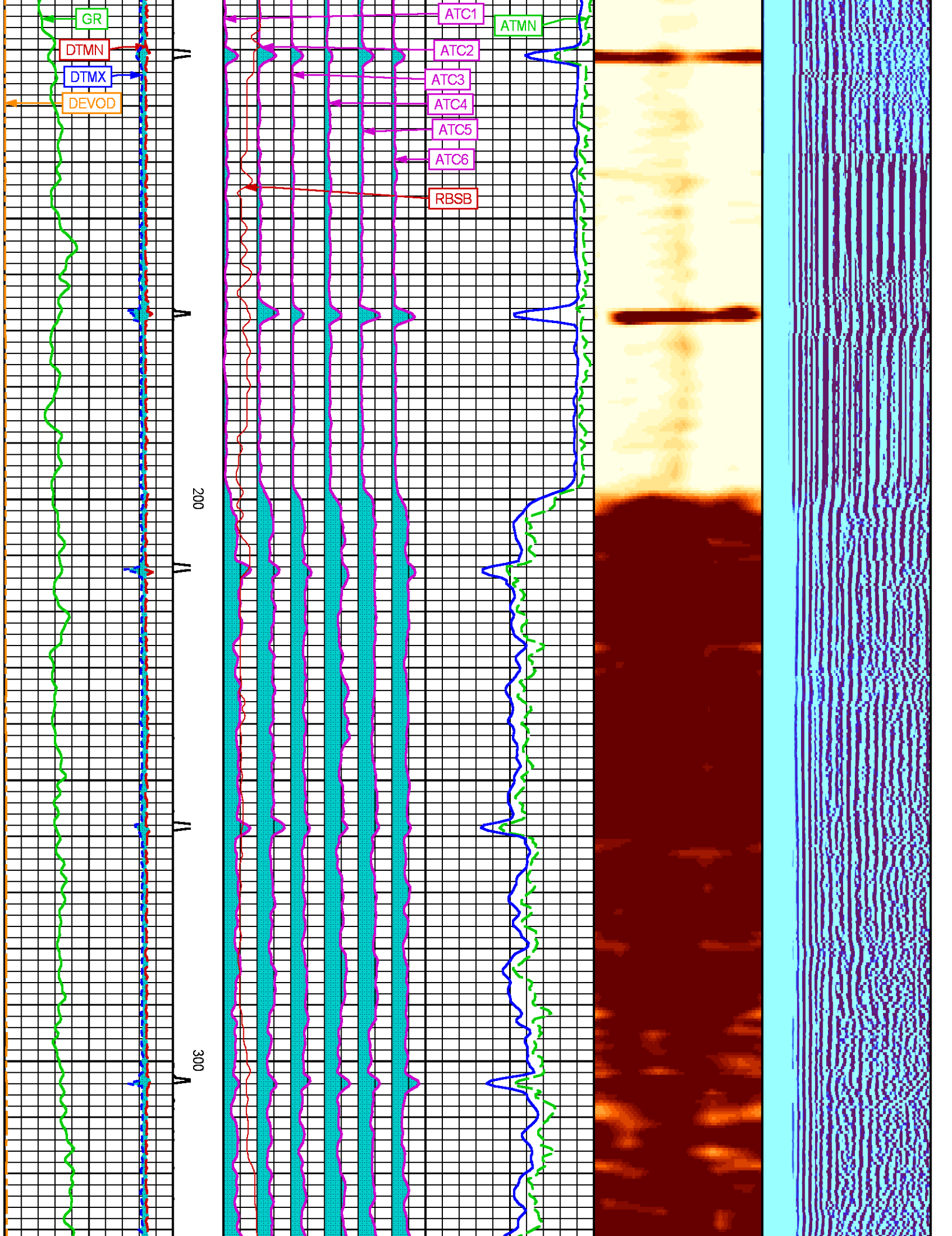
CURVE MEASURE POINT OFFSET

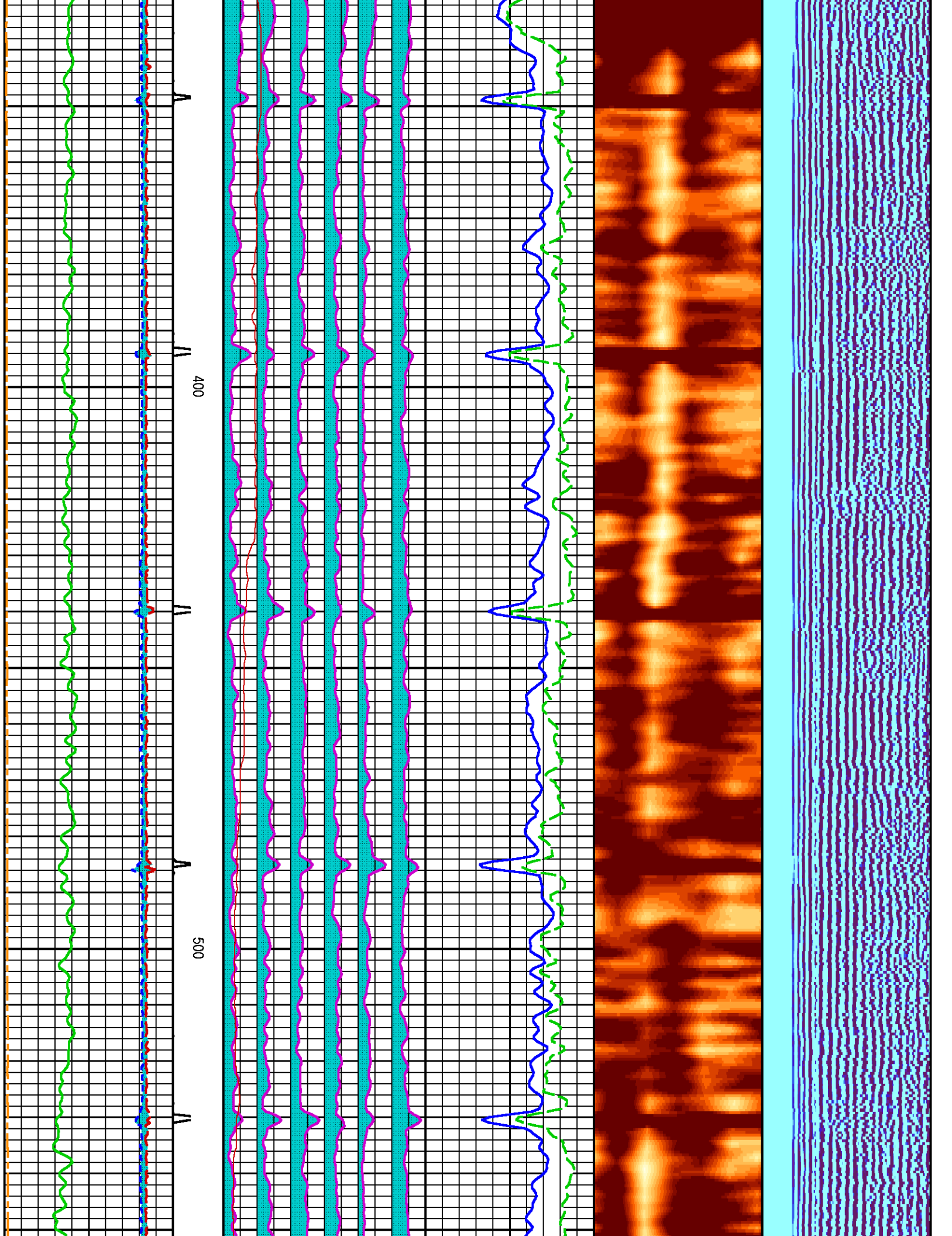
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
ATAV	15.50	ATC4	15.50	CCL	40.00	GR	34.50
ATC1	15.50	ATC5	15.50	DEVOD	15.50	RBSB	15.50
ATC2	15.50	ATC6	15.50	DTMN	15.50		
ATC3	15.50	ATMN	15.50	DTMX	15.50		

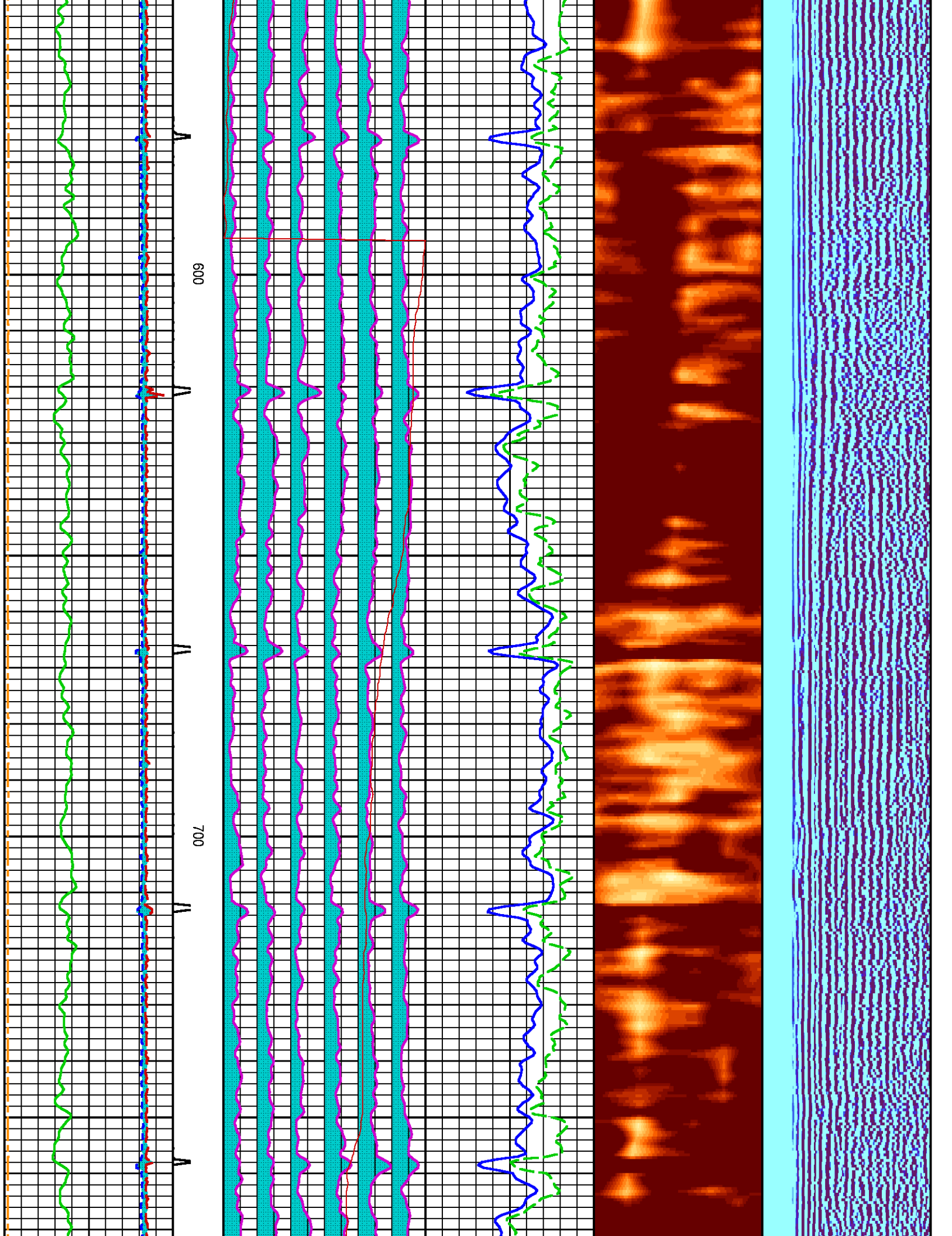
Presentation : cas6685:/dat1a/CH108026/MAIN1000PSIWRD.fvpdf [5"/100' Scale]
Plot Interval : 0 - 11235 Feet

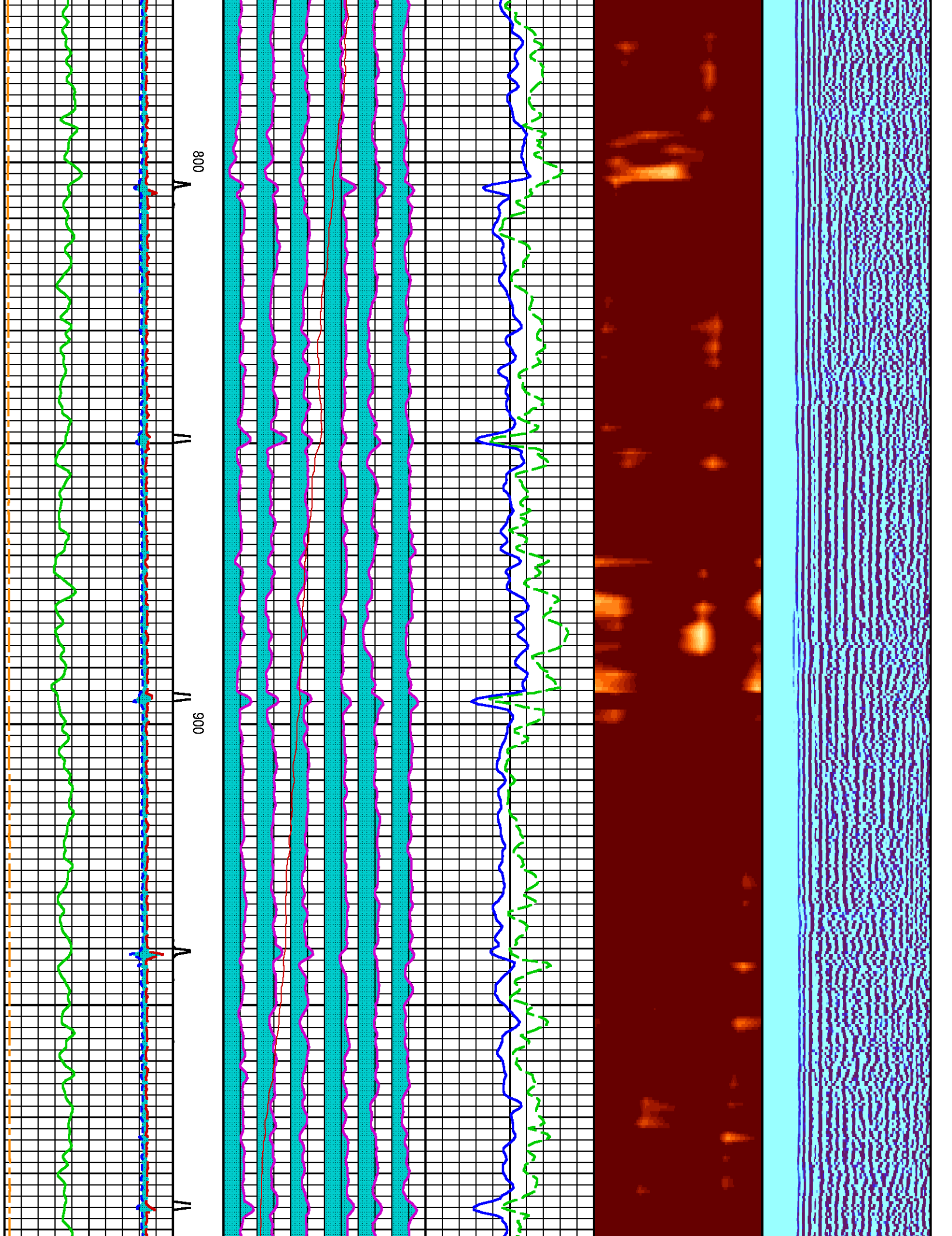
Data File 1 : F1 : cas6685:C:\dat1a\WELLDATA\WHITING\WRD 23-33-R\MAIN1500PSI.xtf
Created On : Jun 27 20:25:43 2016
Company : WHITING OIL AND GAS
Well : WRD 23-33-R
Field : WHITE RIVER DOME
File Interval : 24.5 - 11227 Feet
OCT : n331d

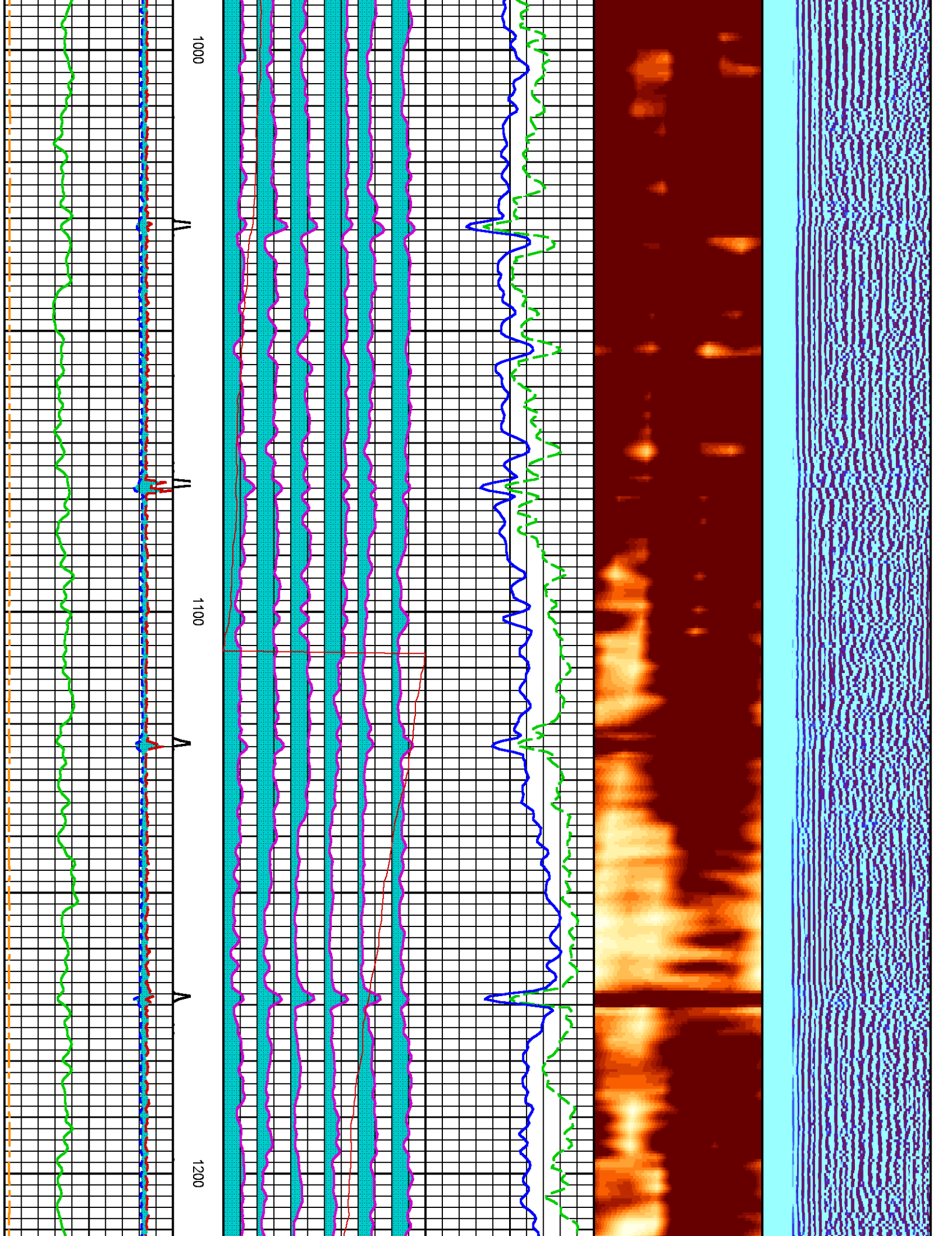


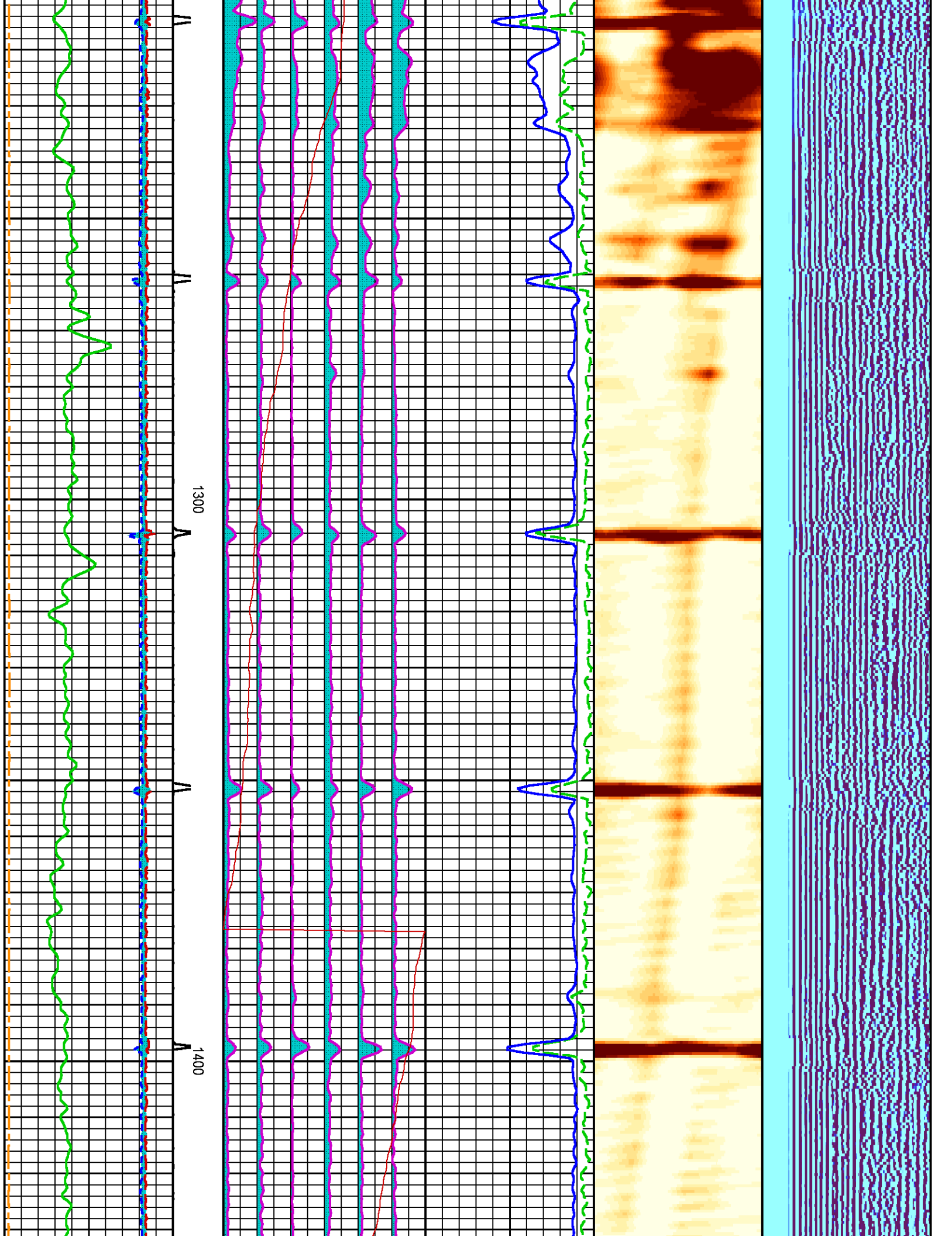


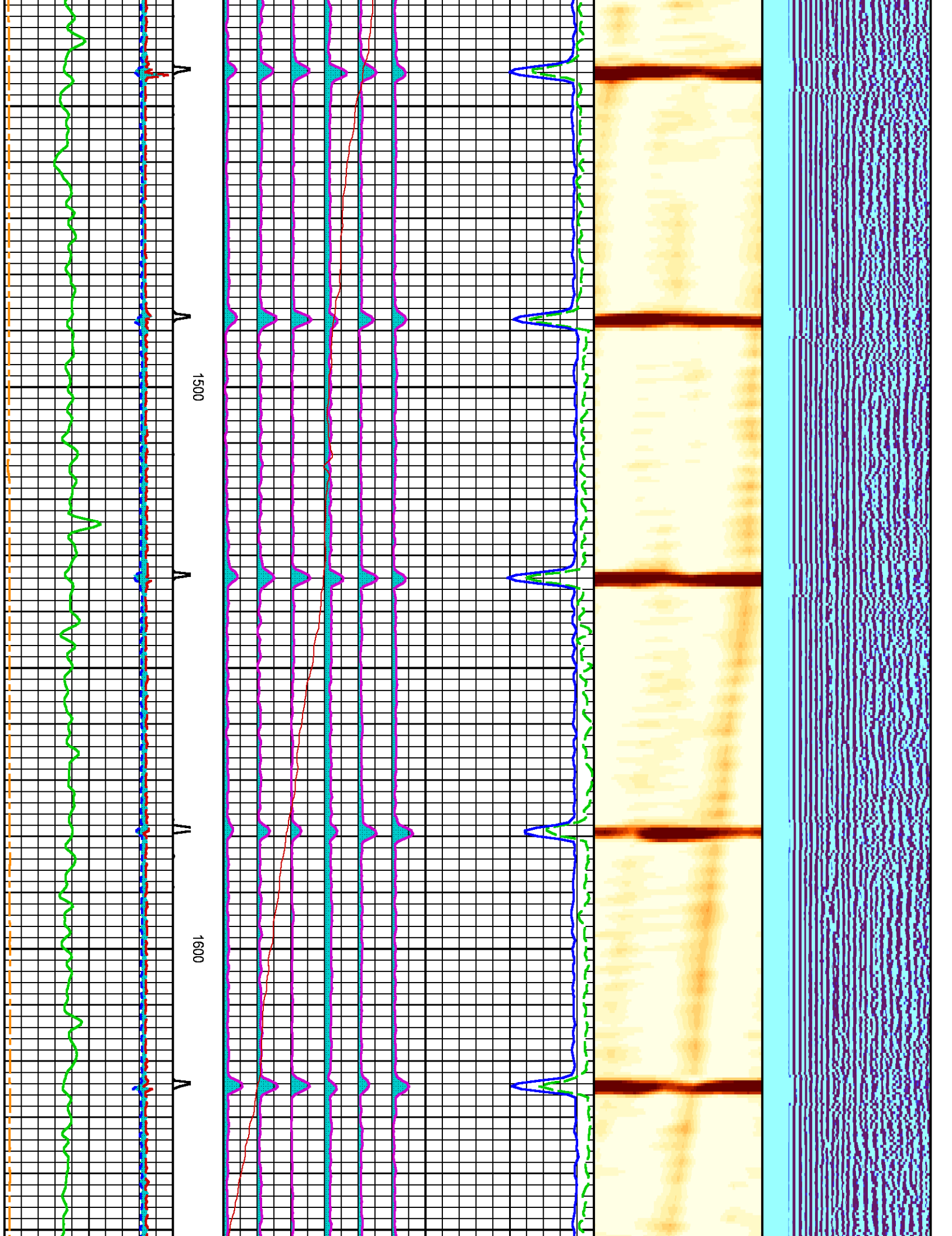


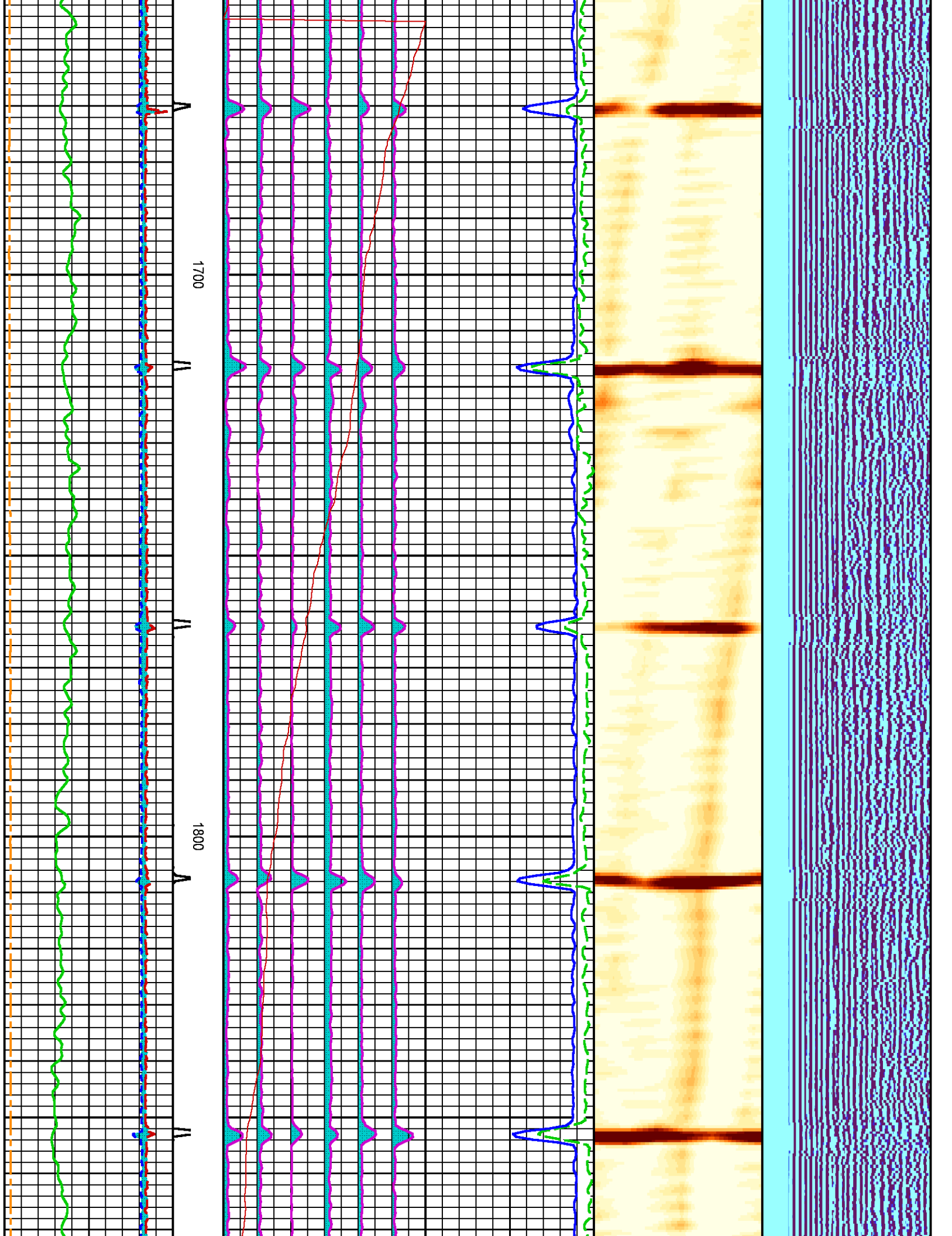


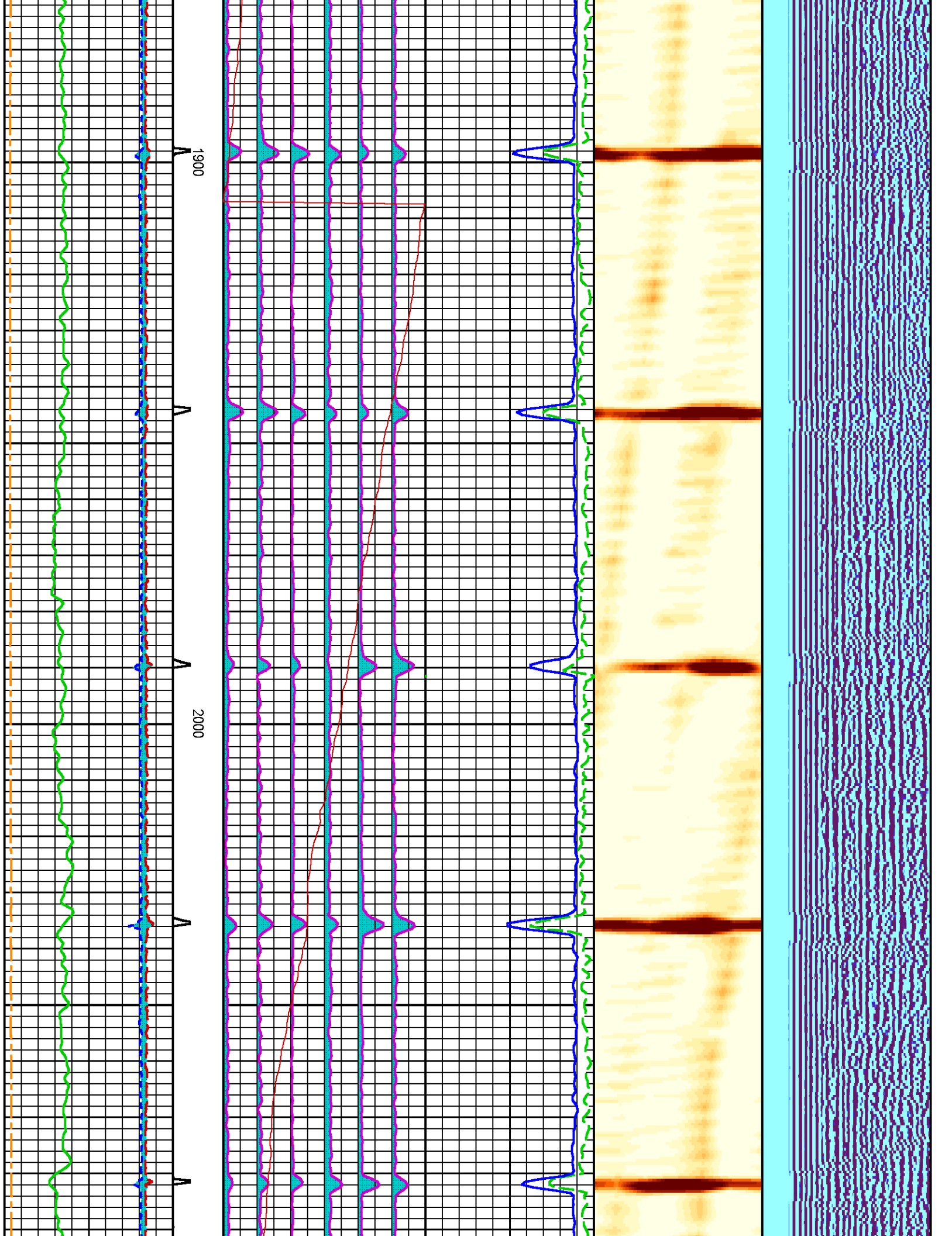


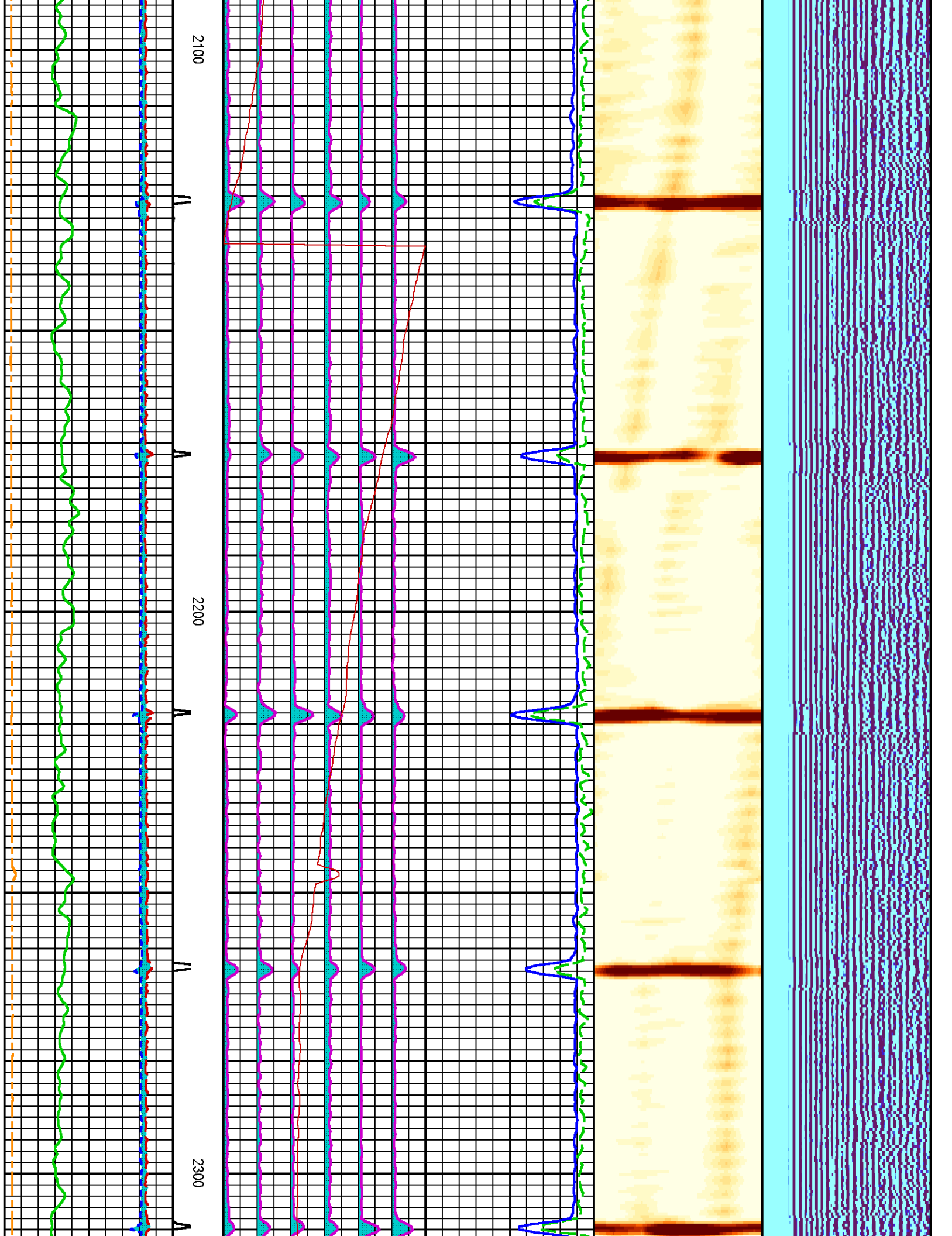


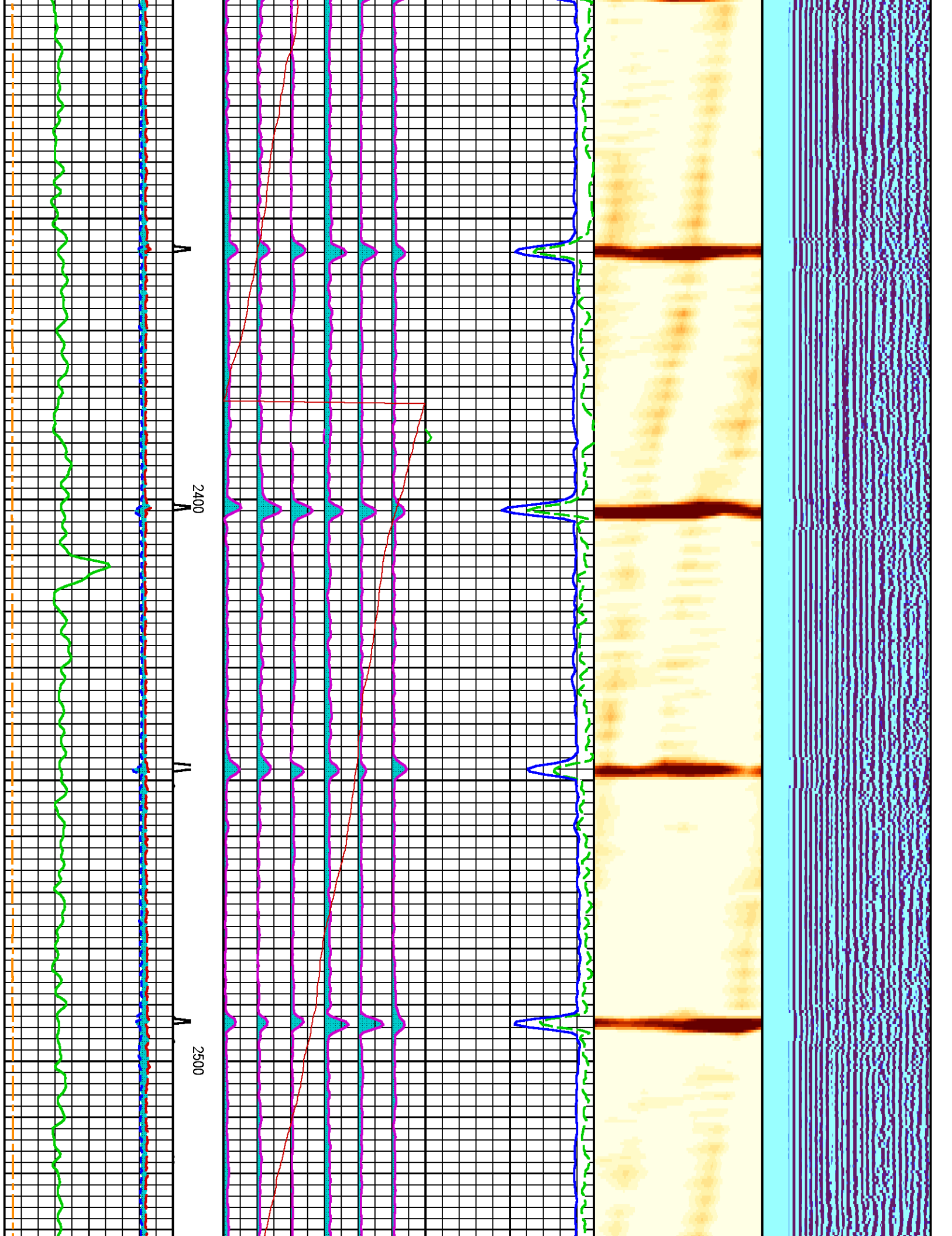


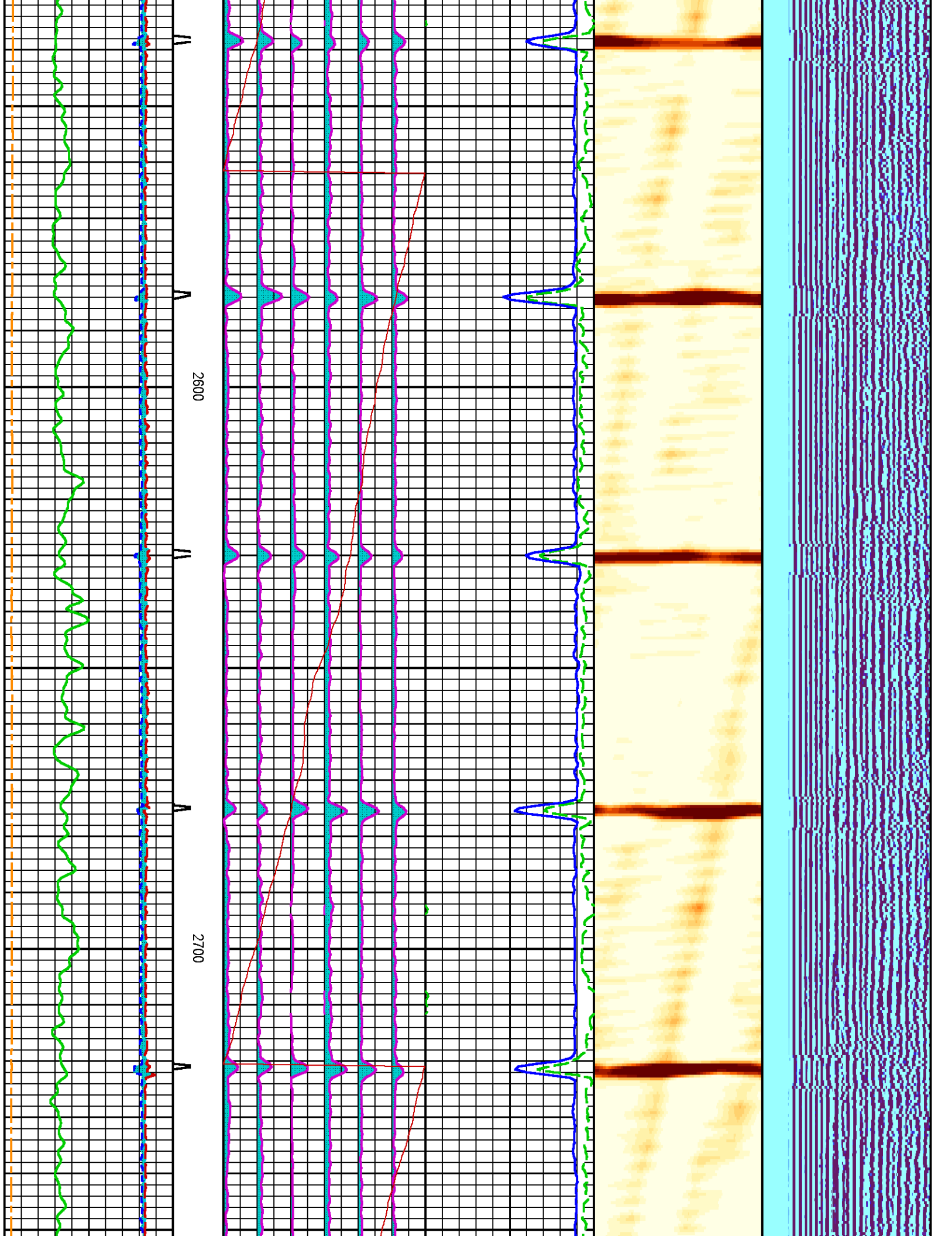


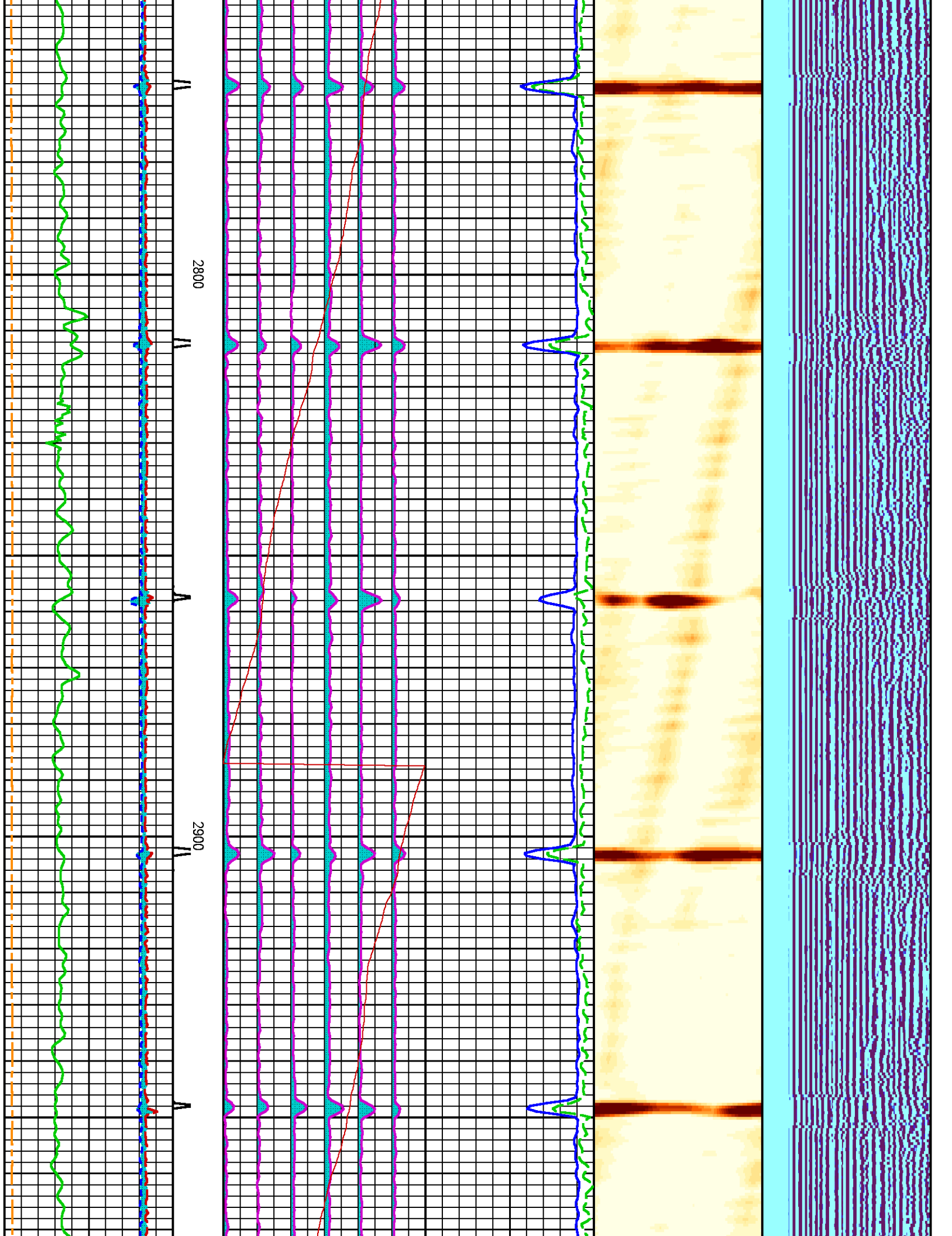


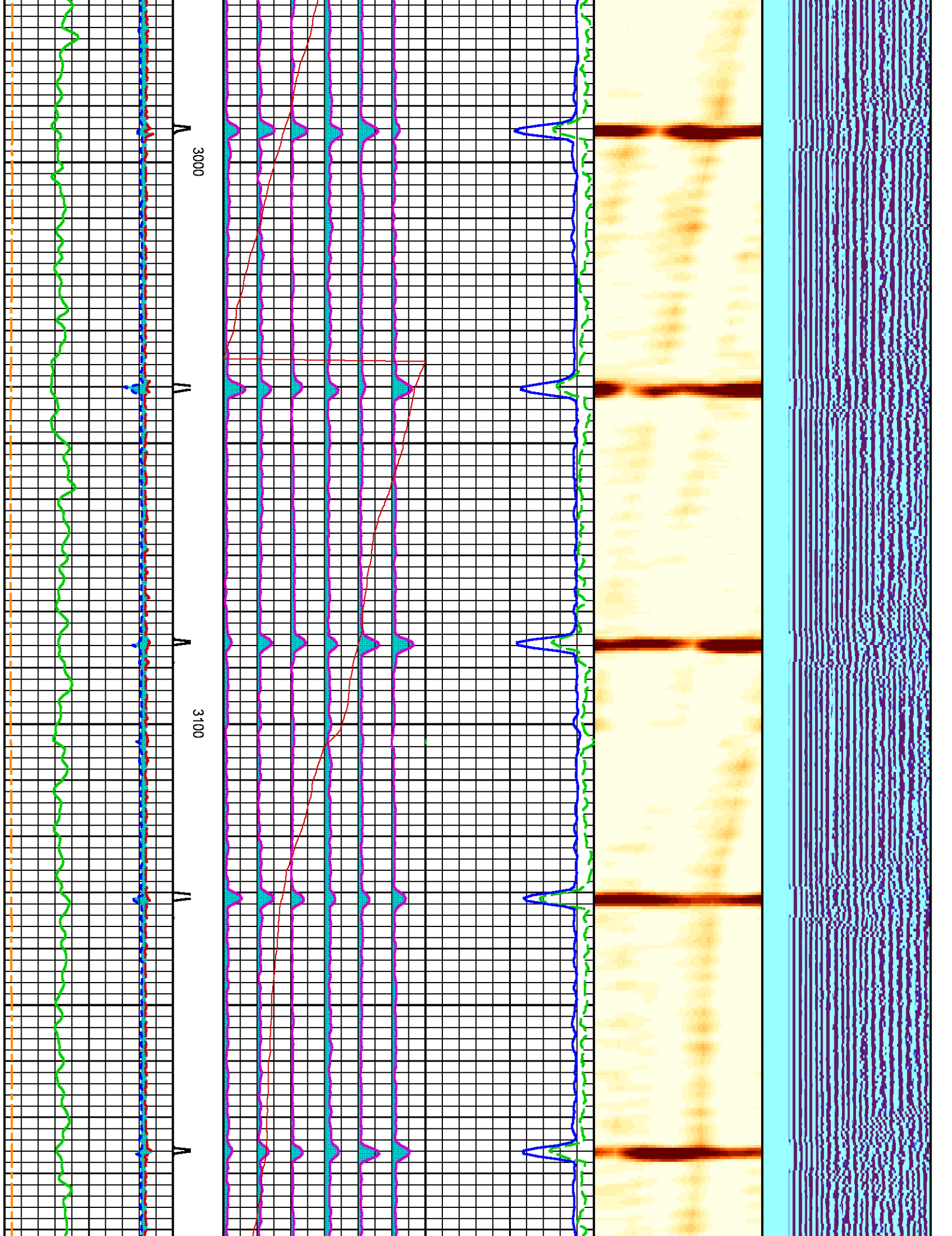


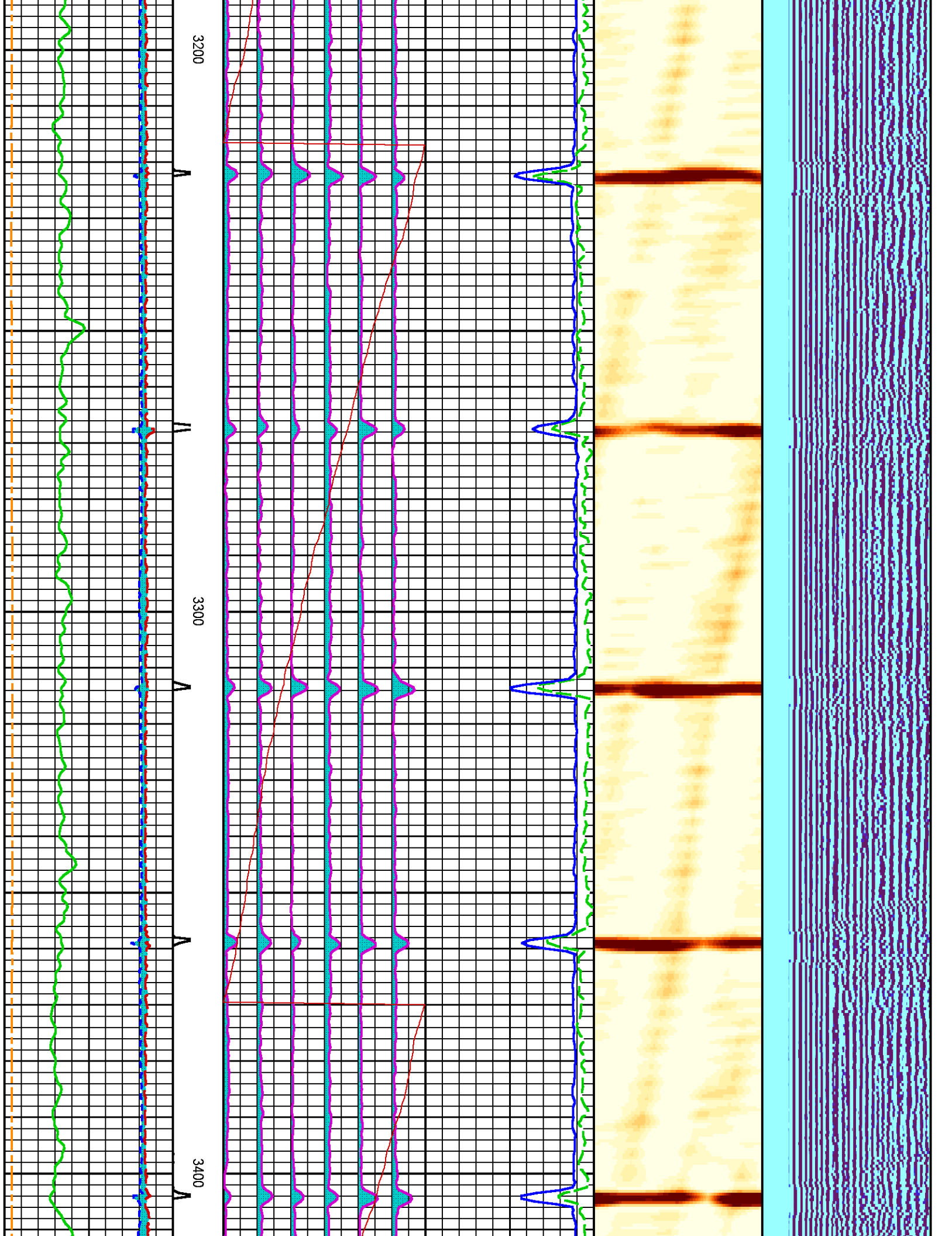


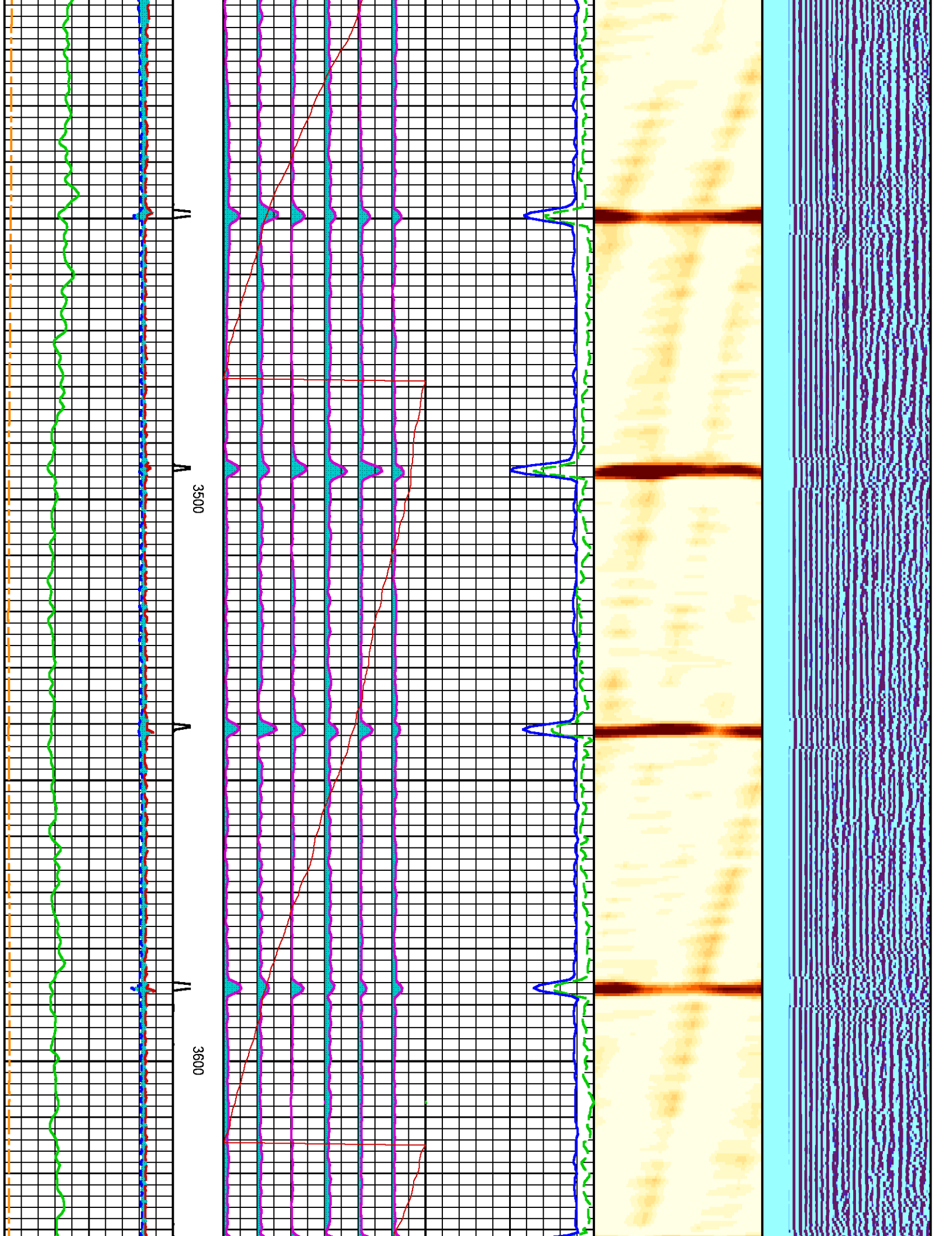


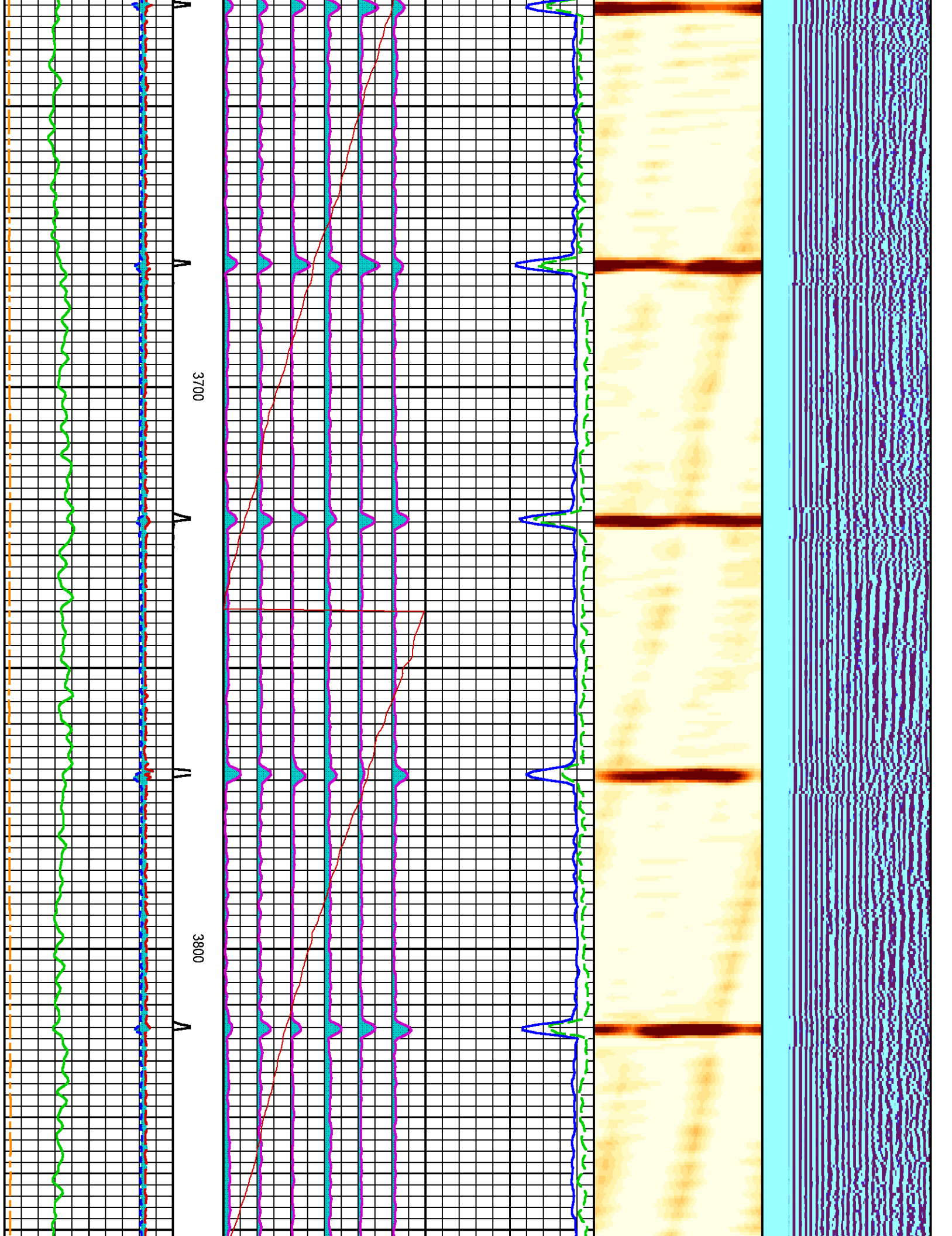


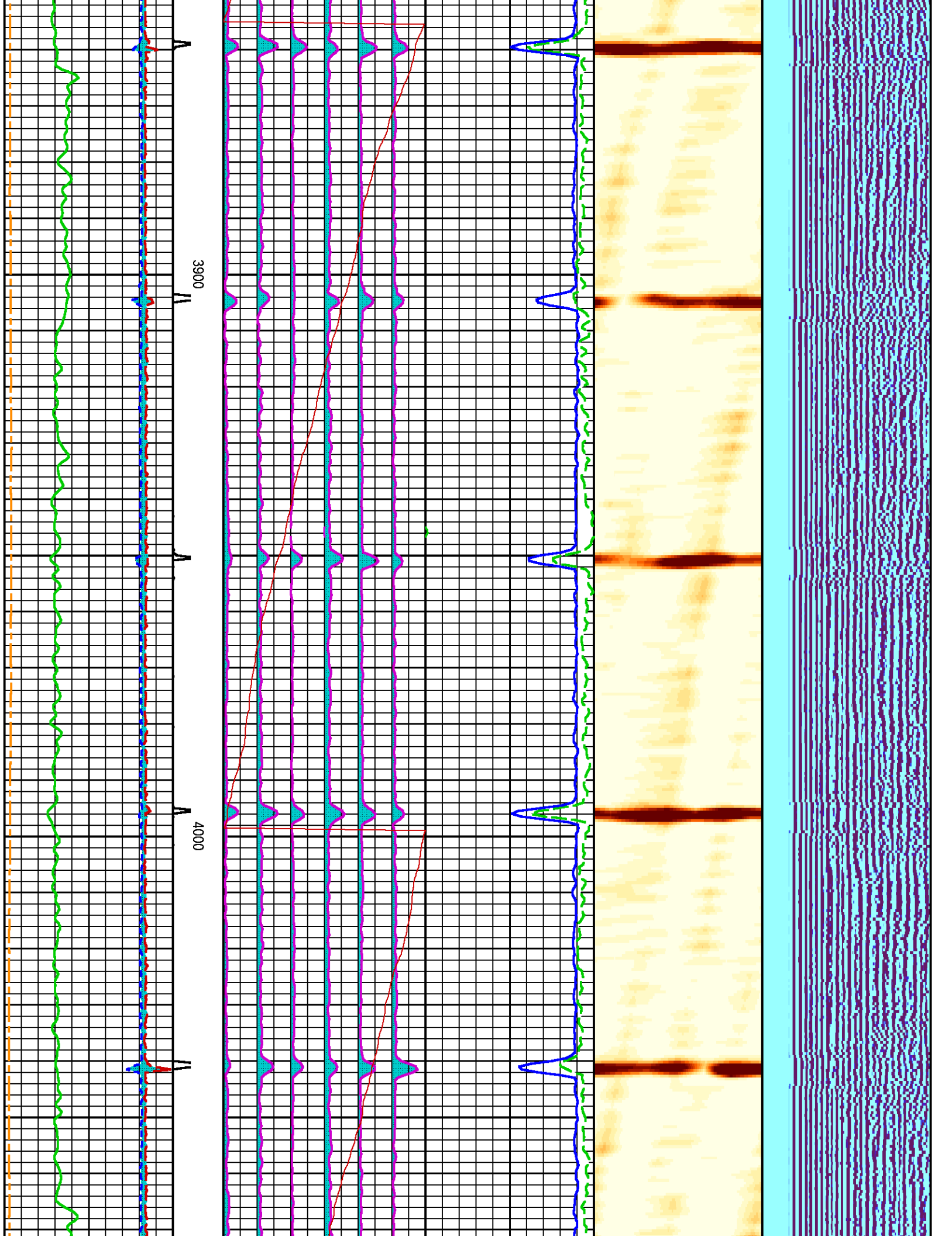


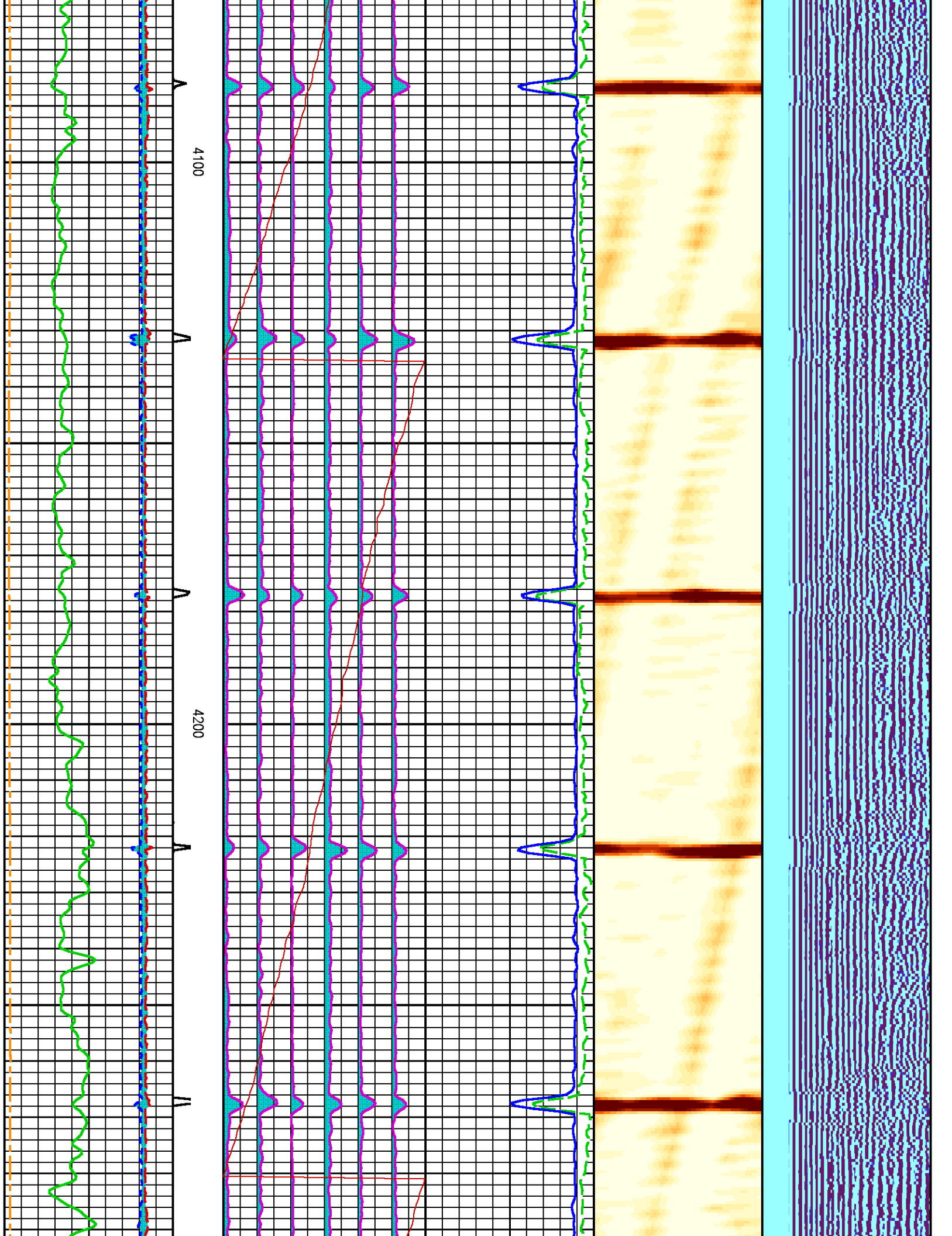


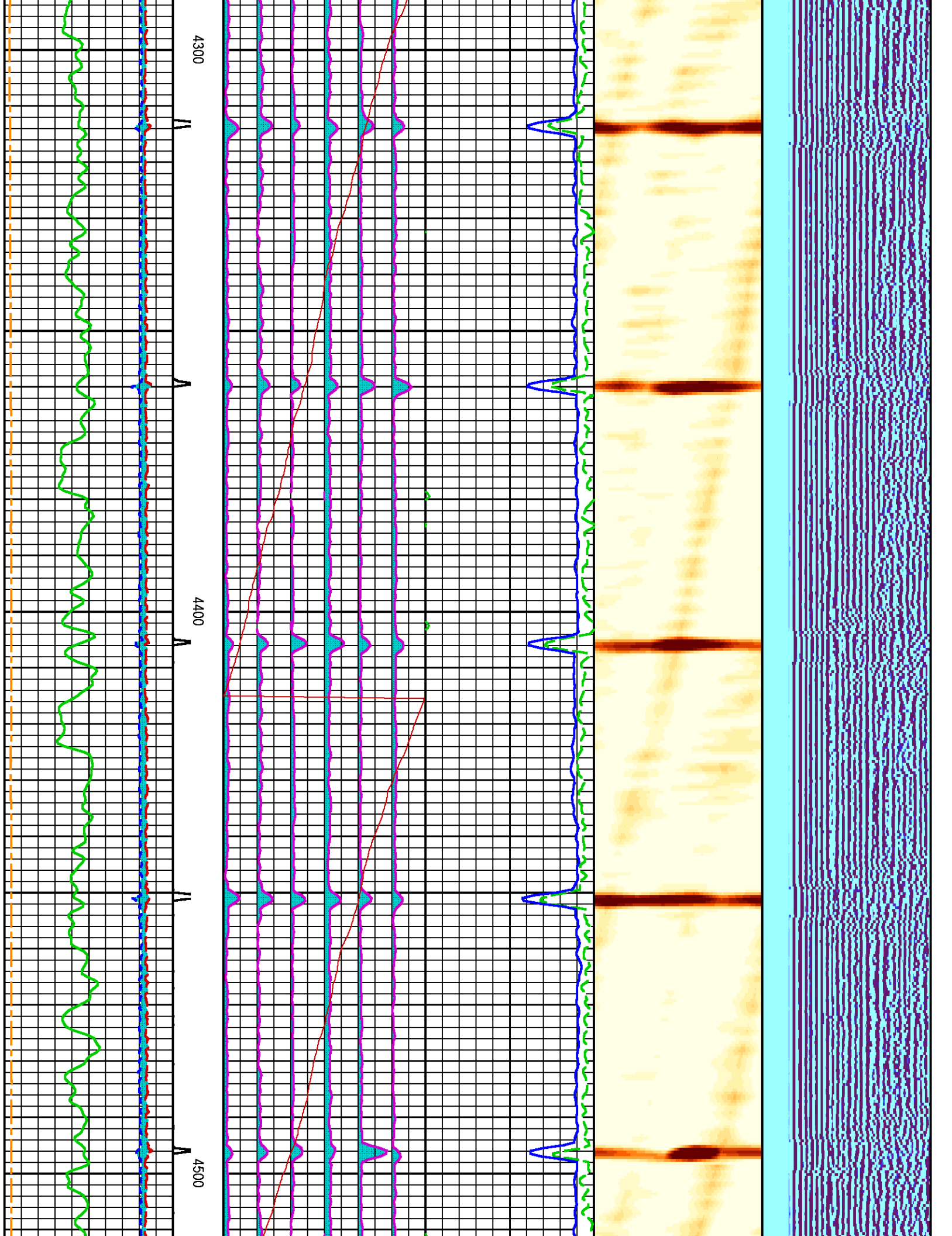


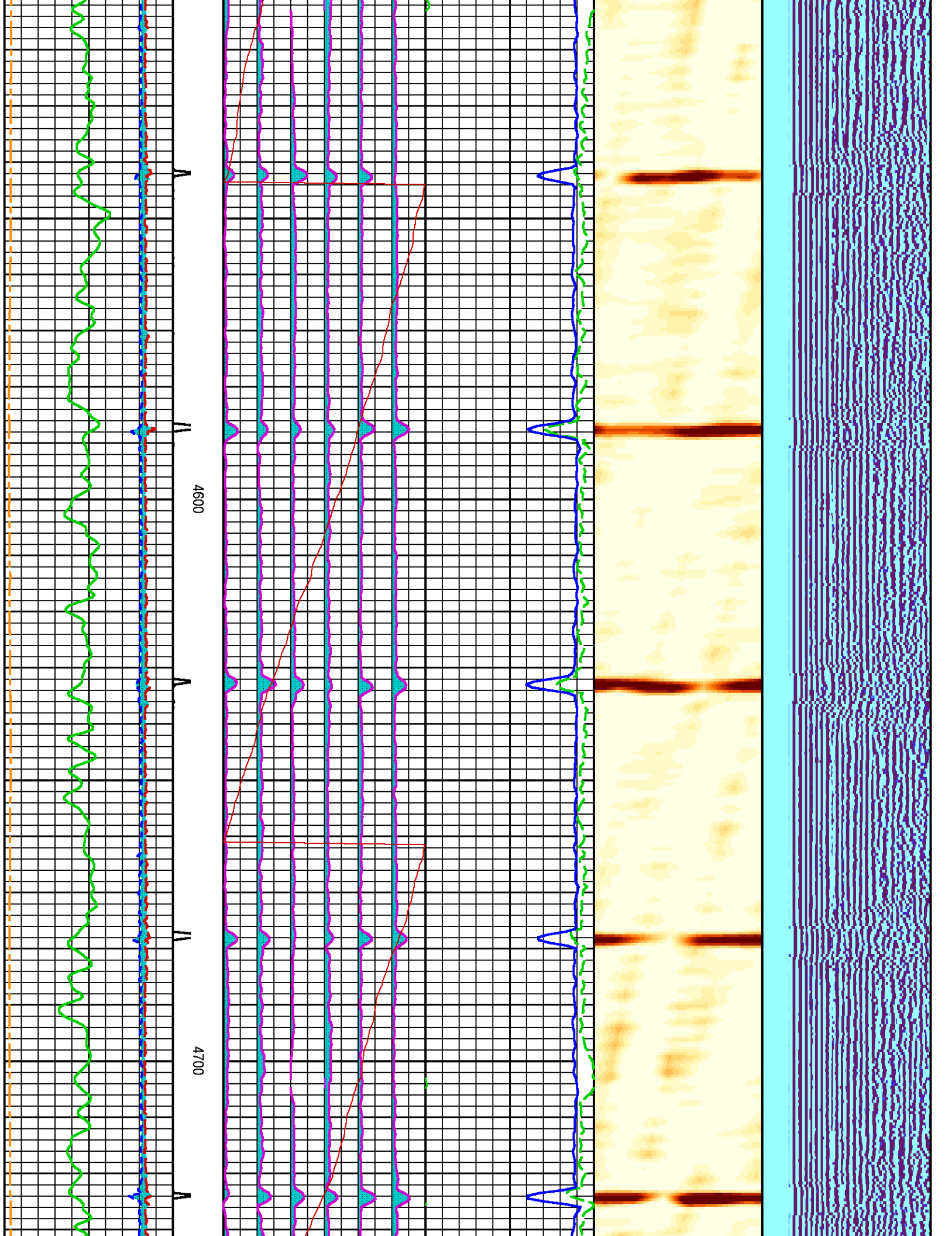


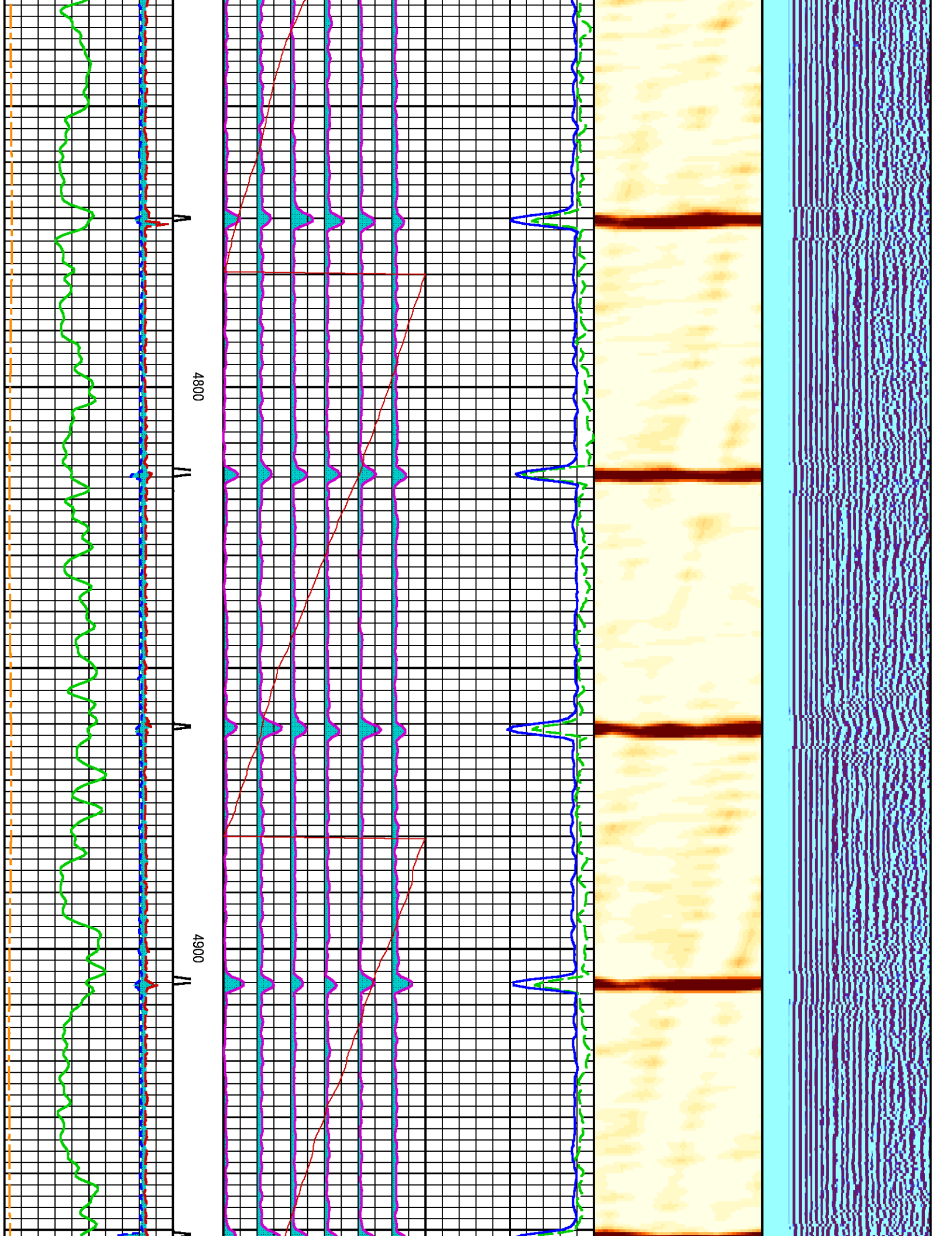


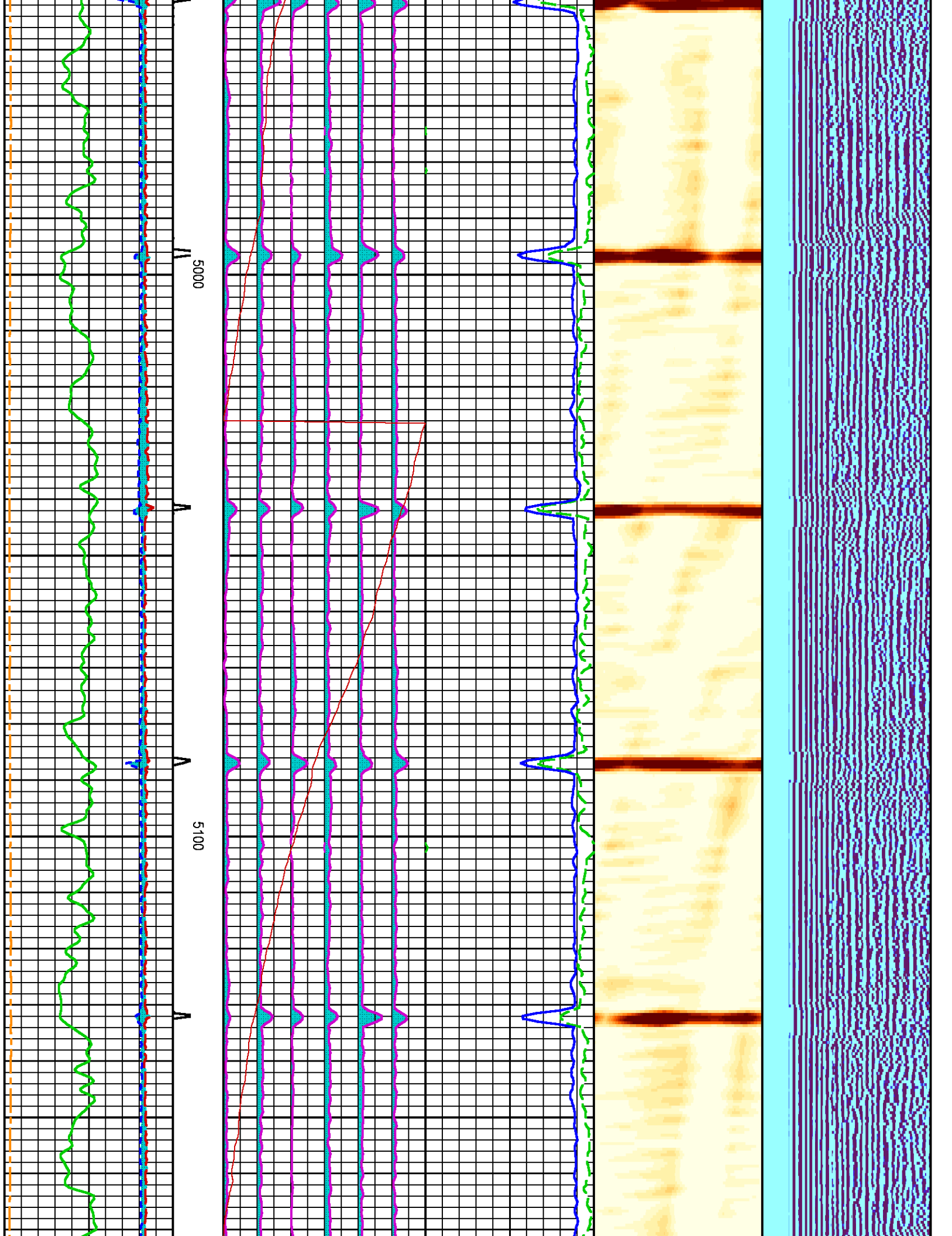


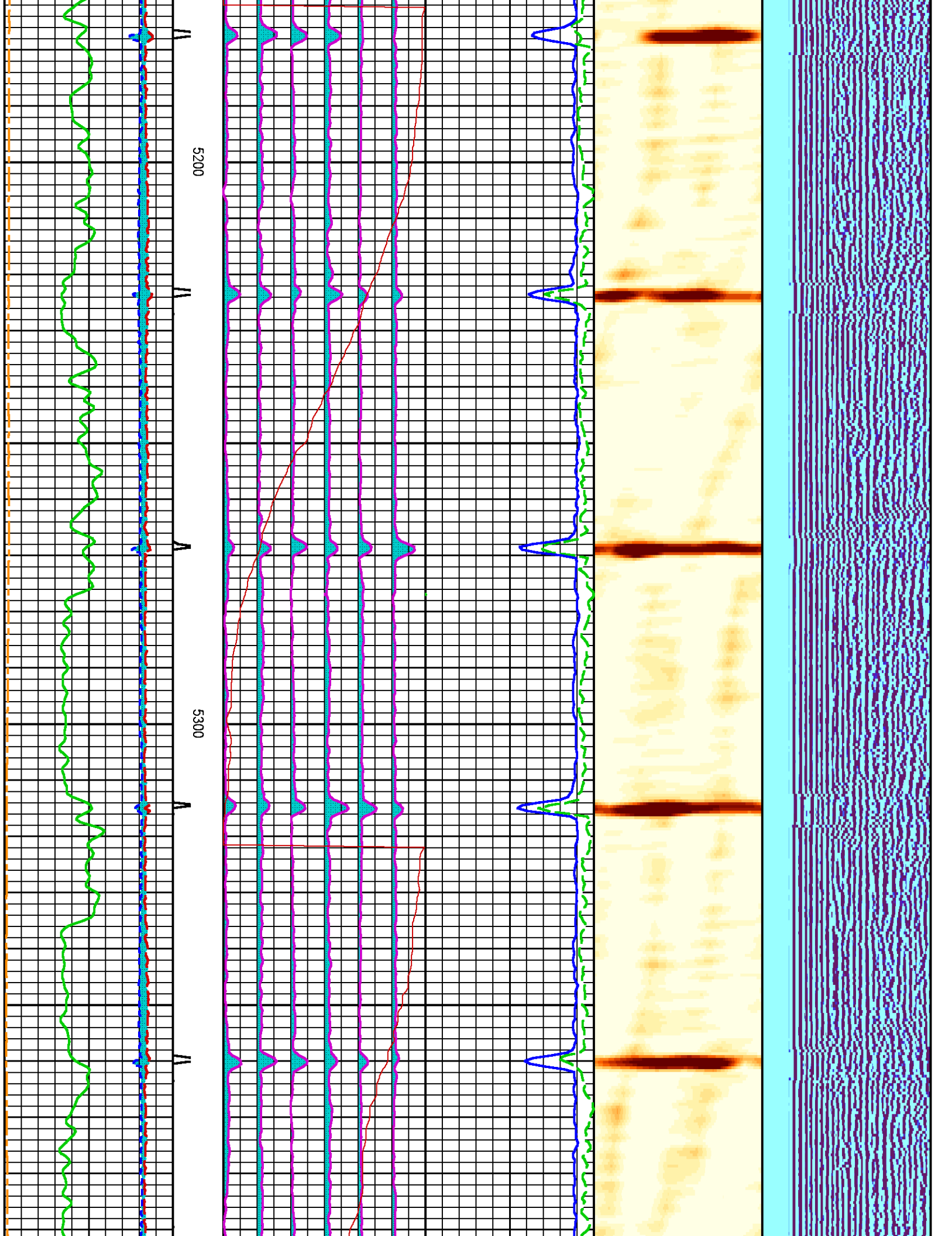


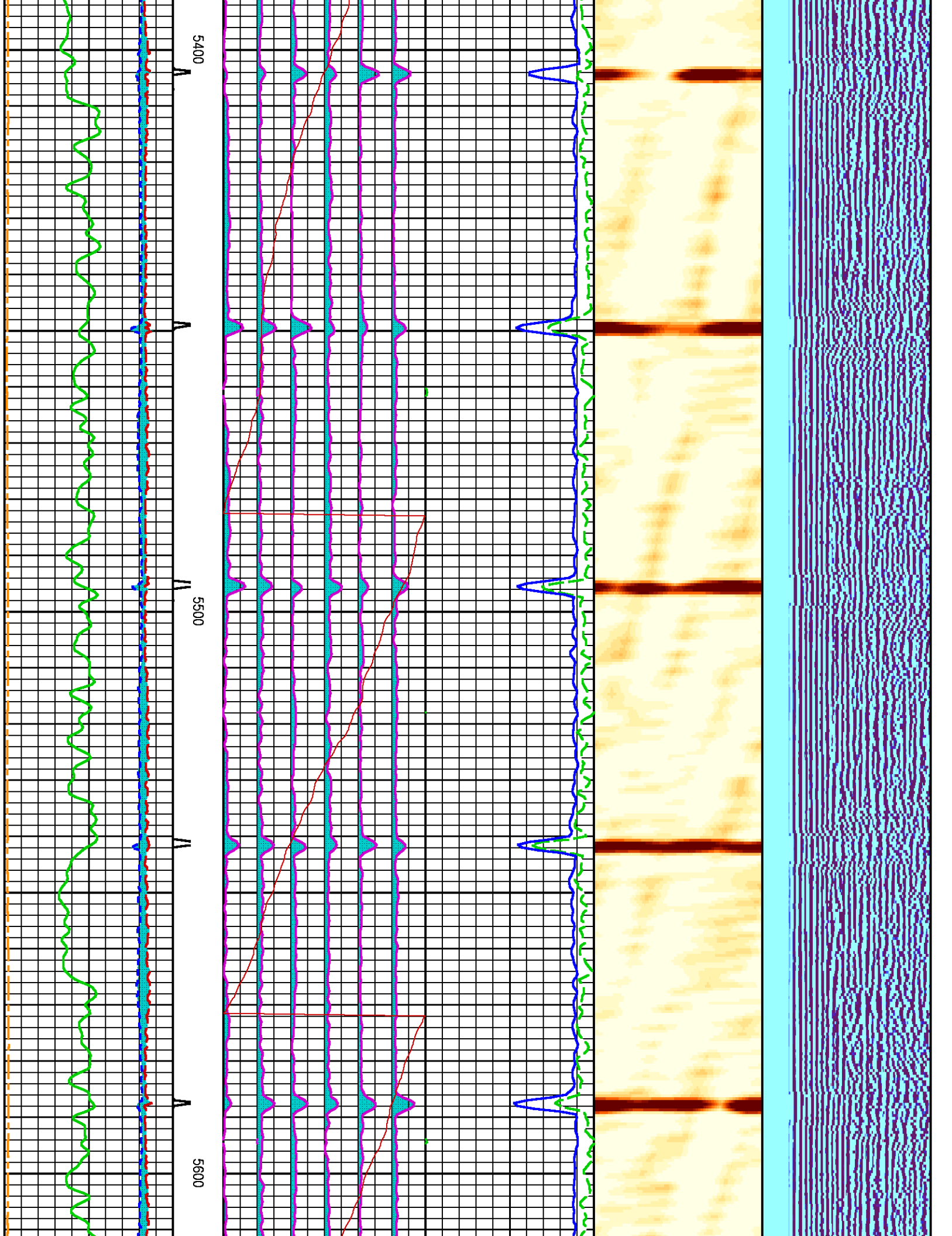


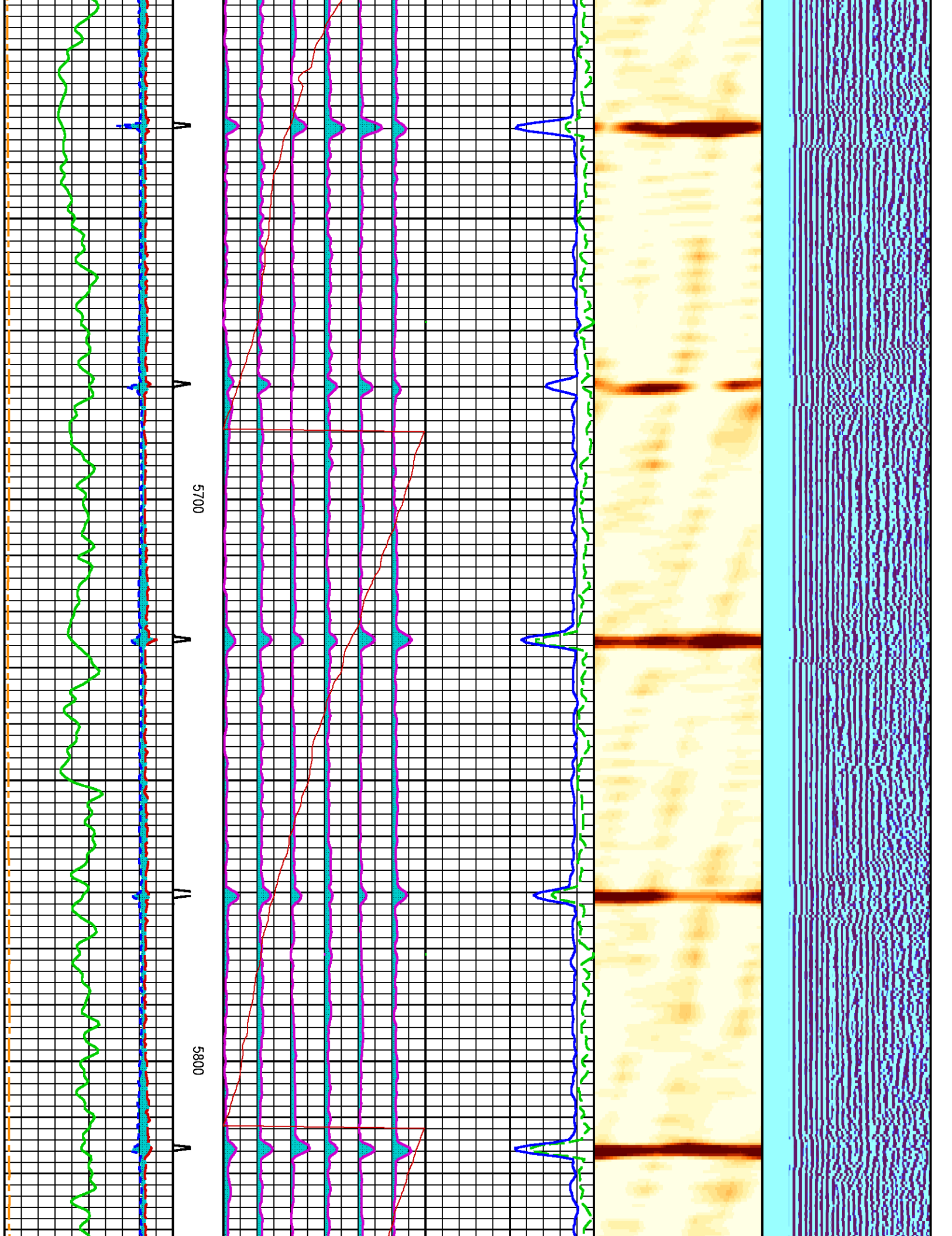


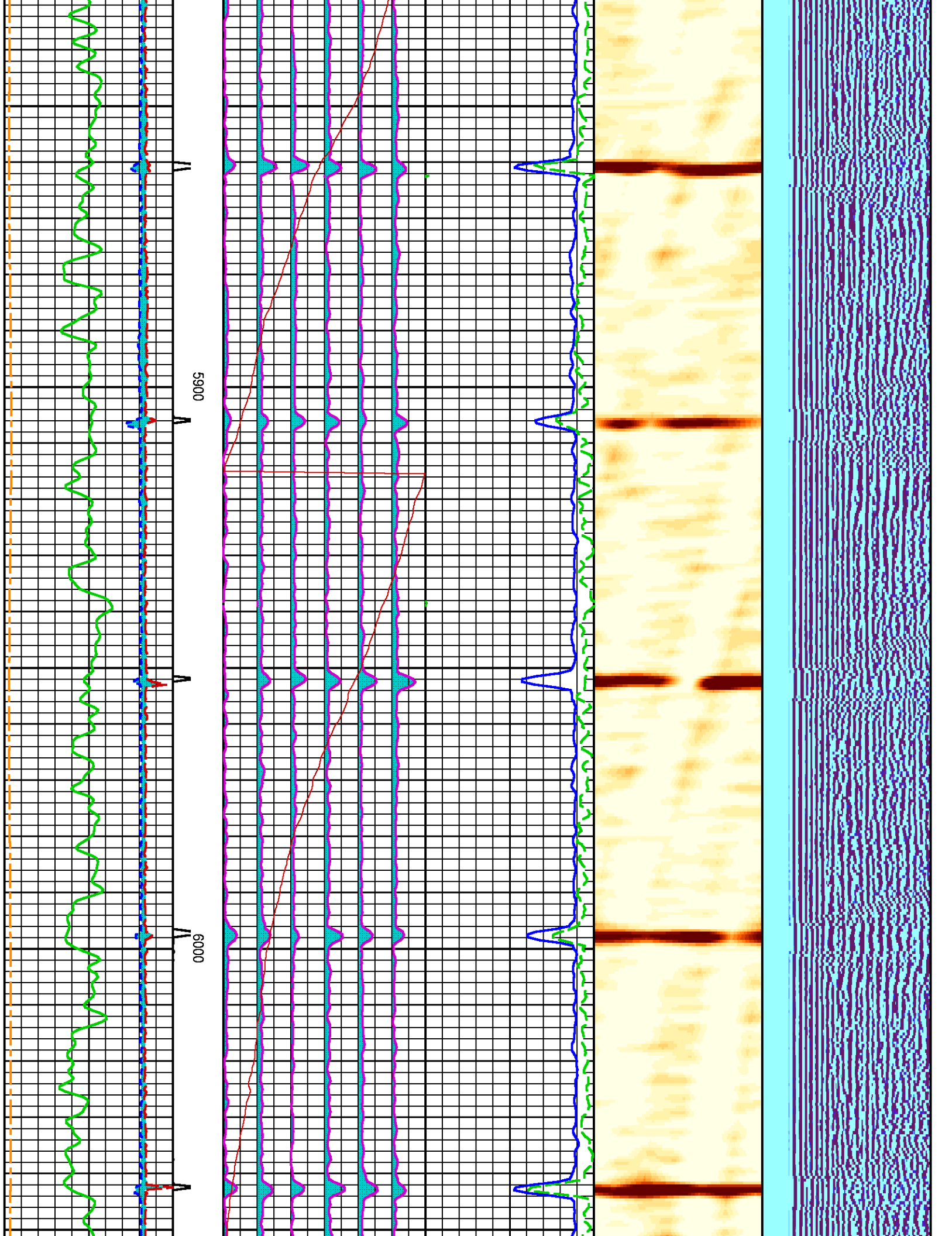


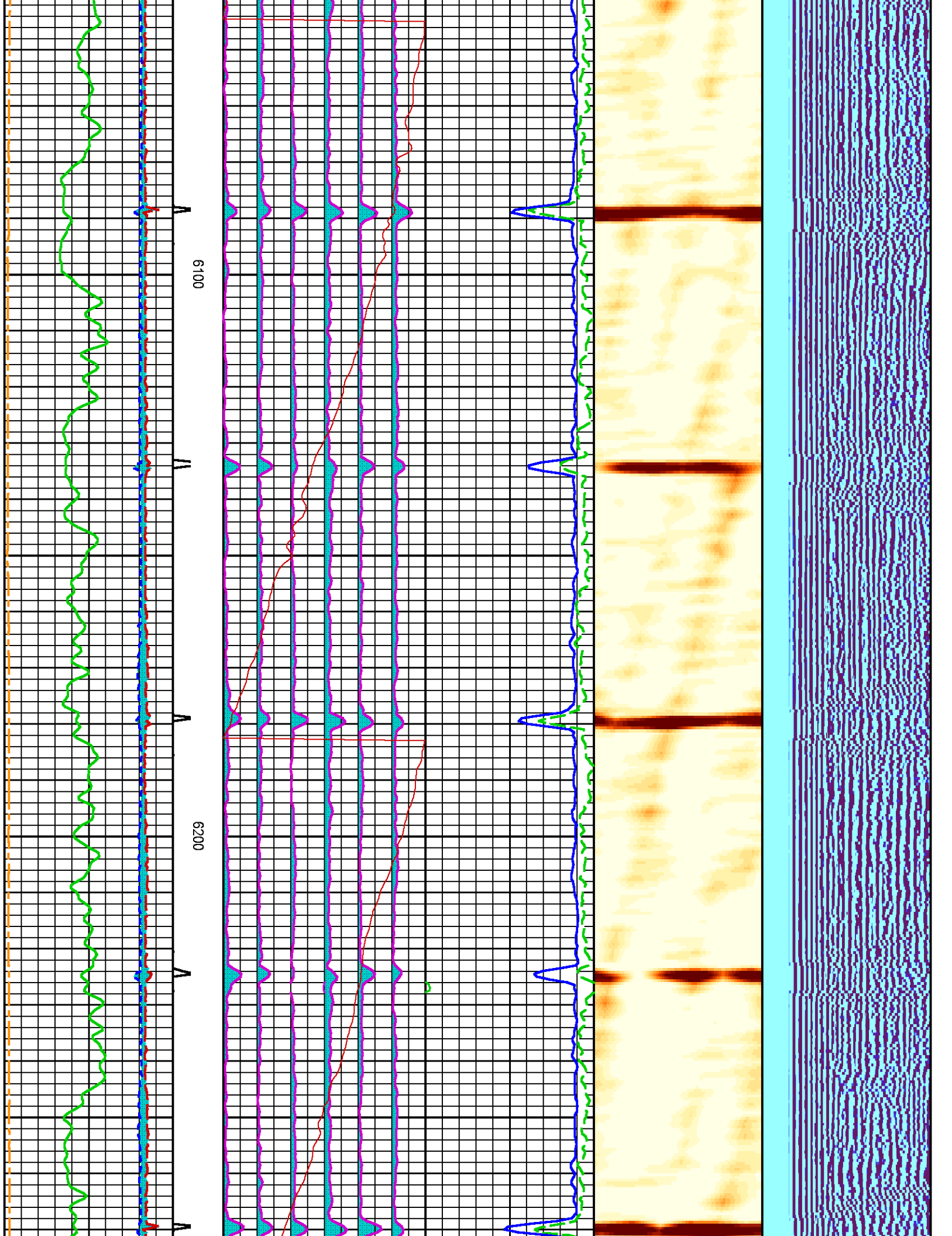


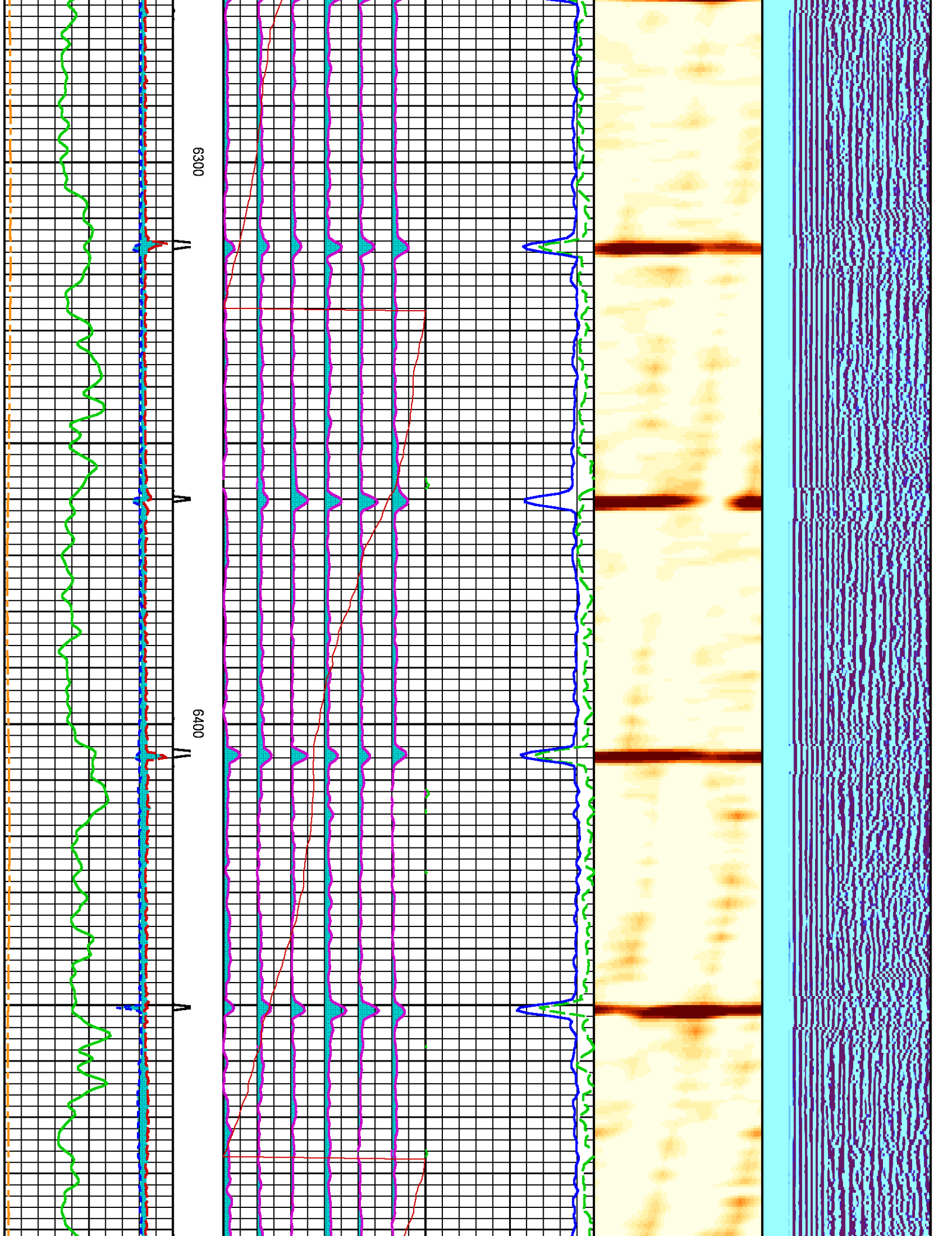


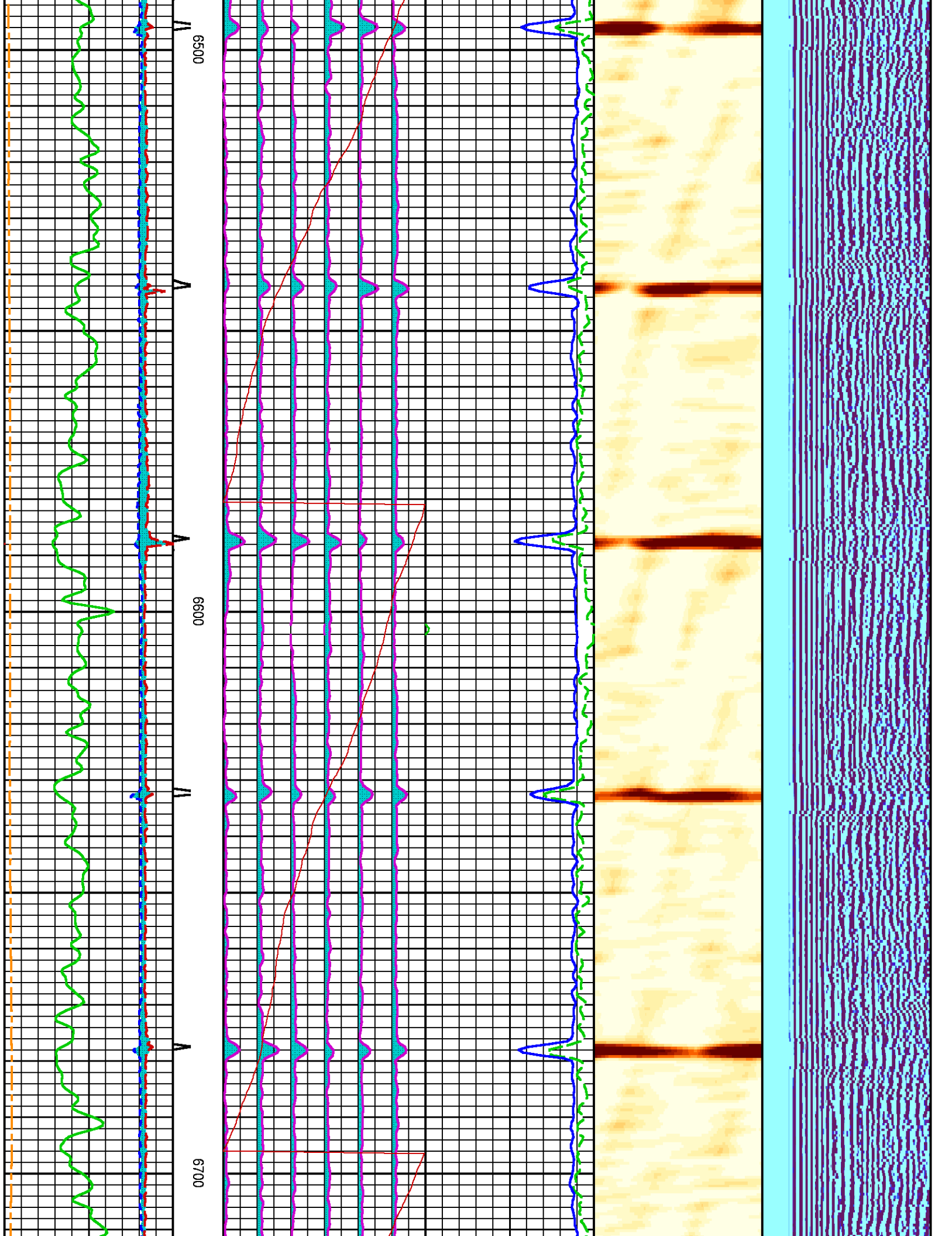


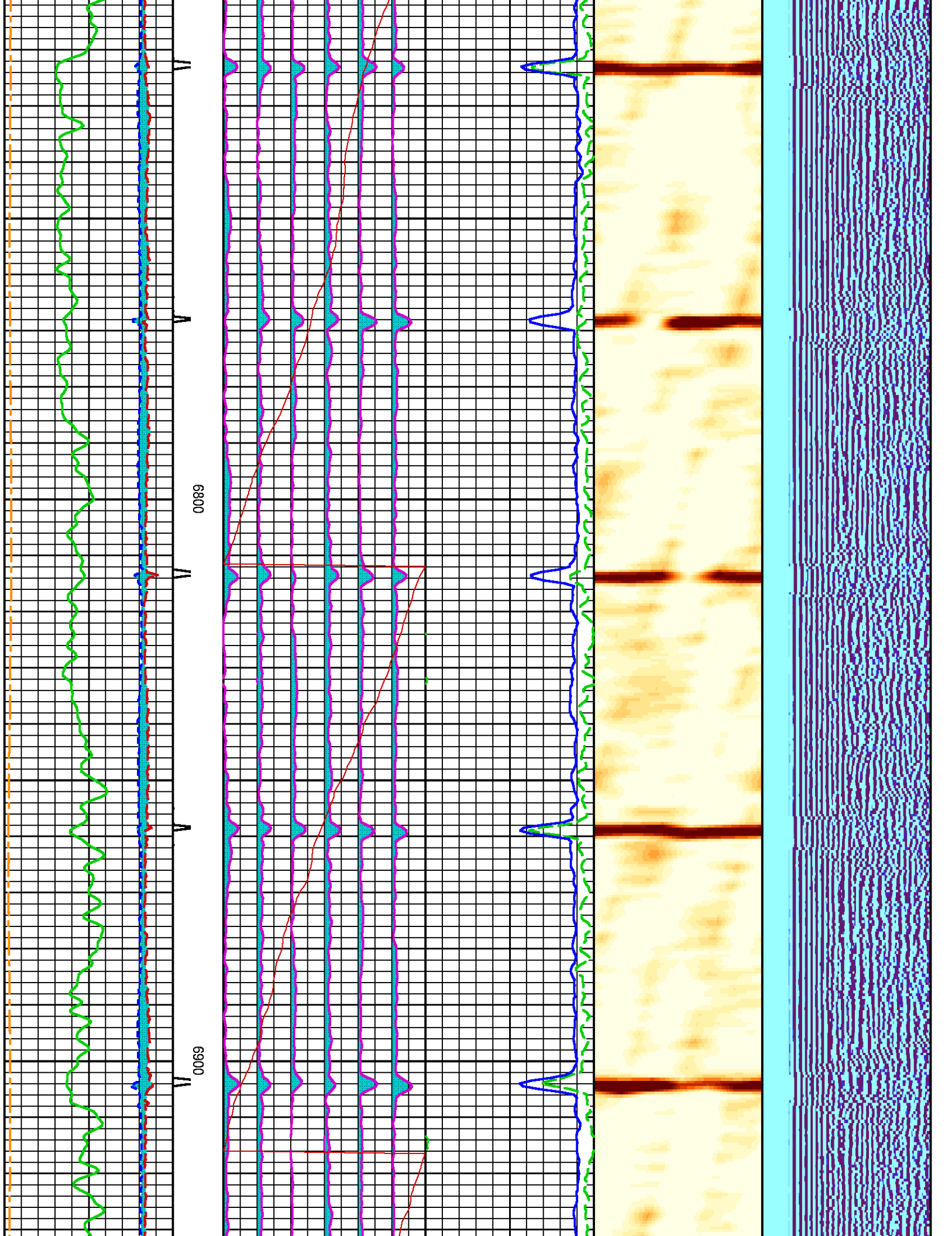


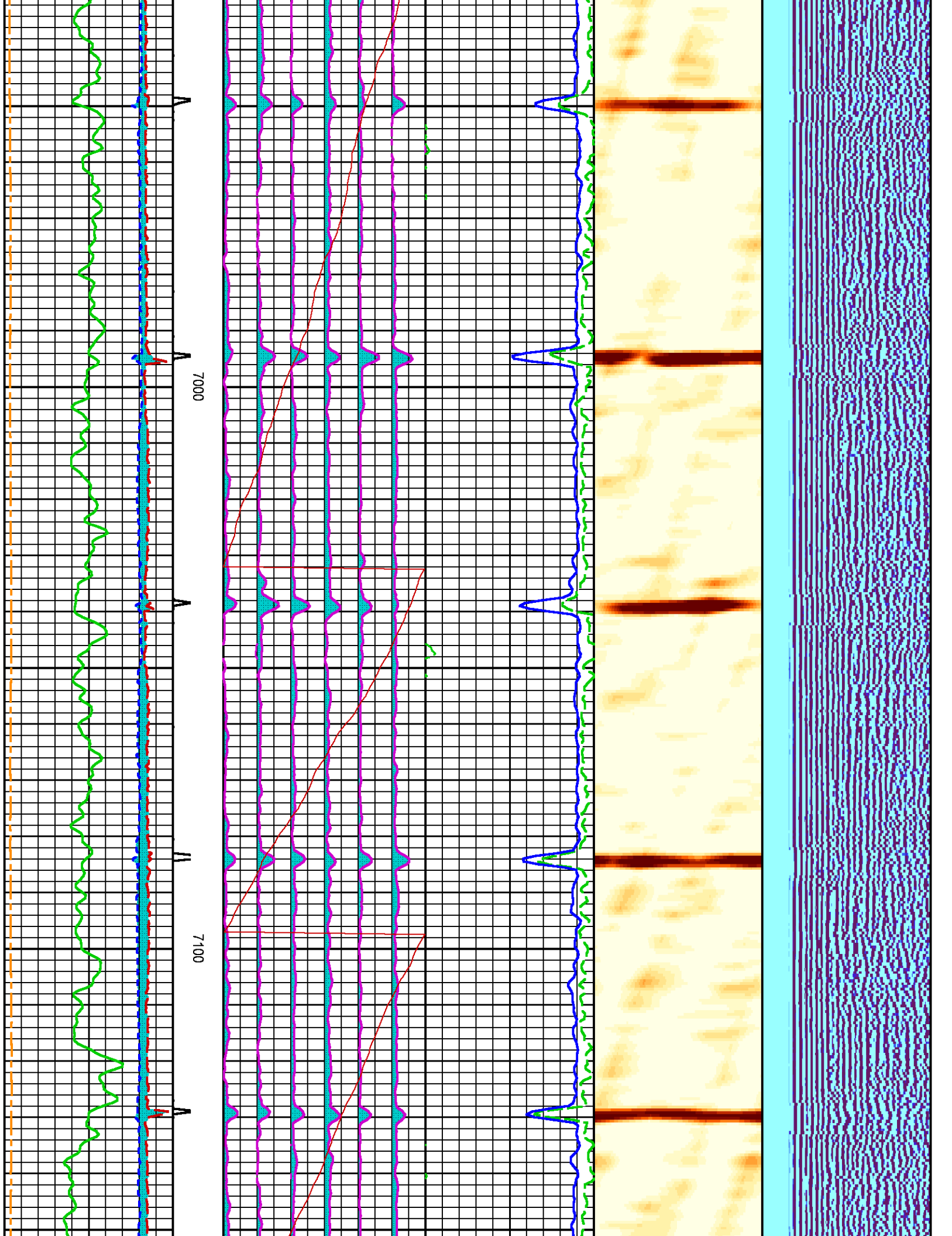


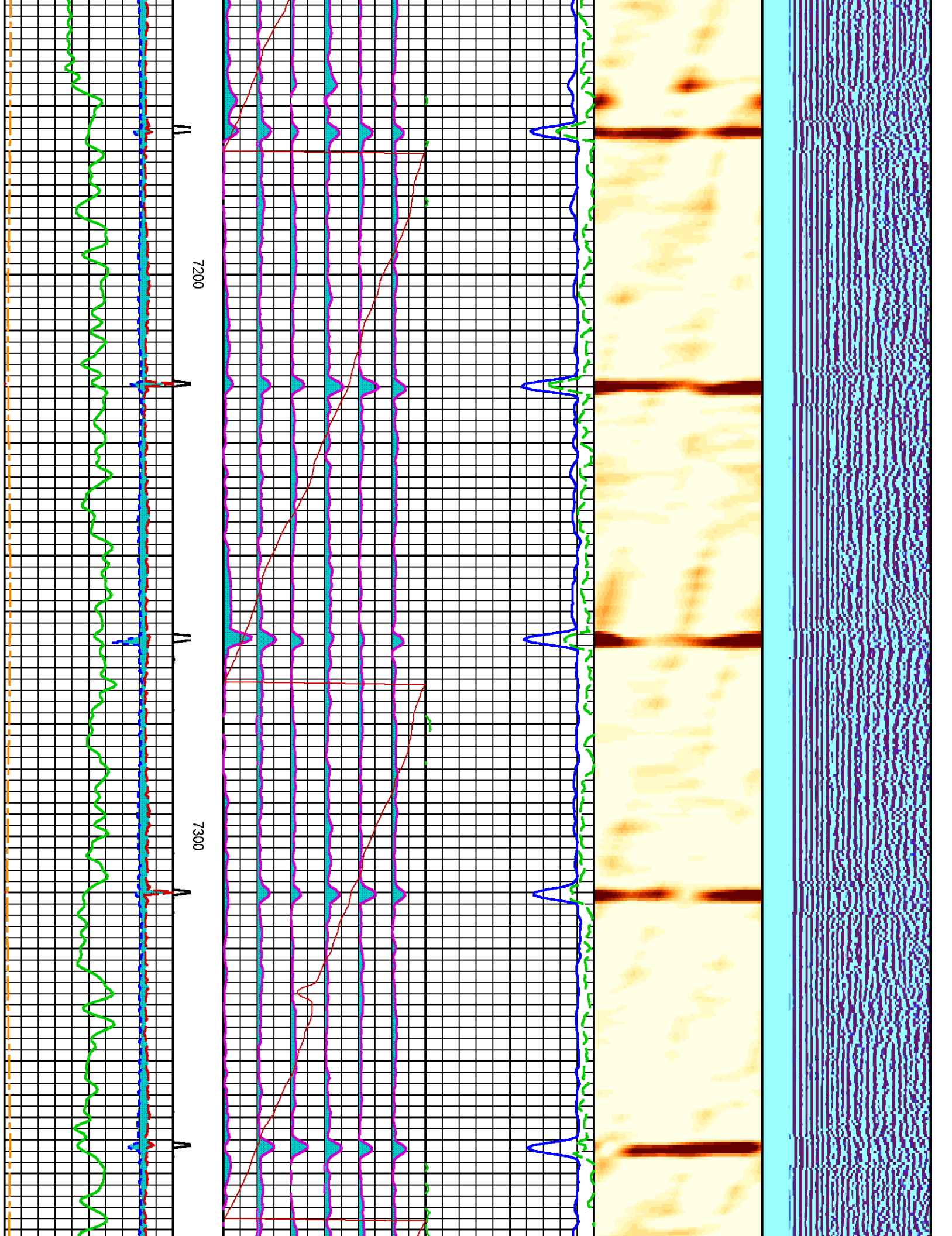


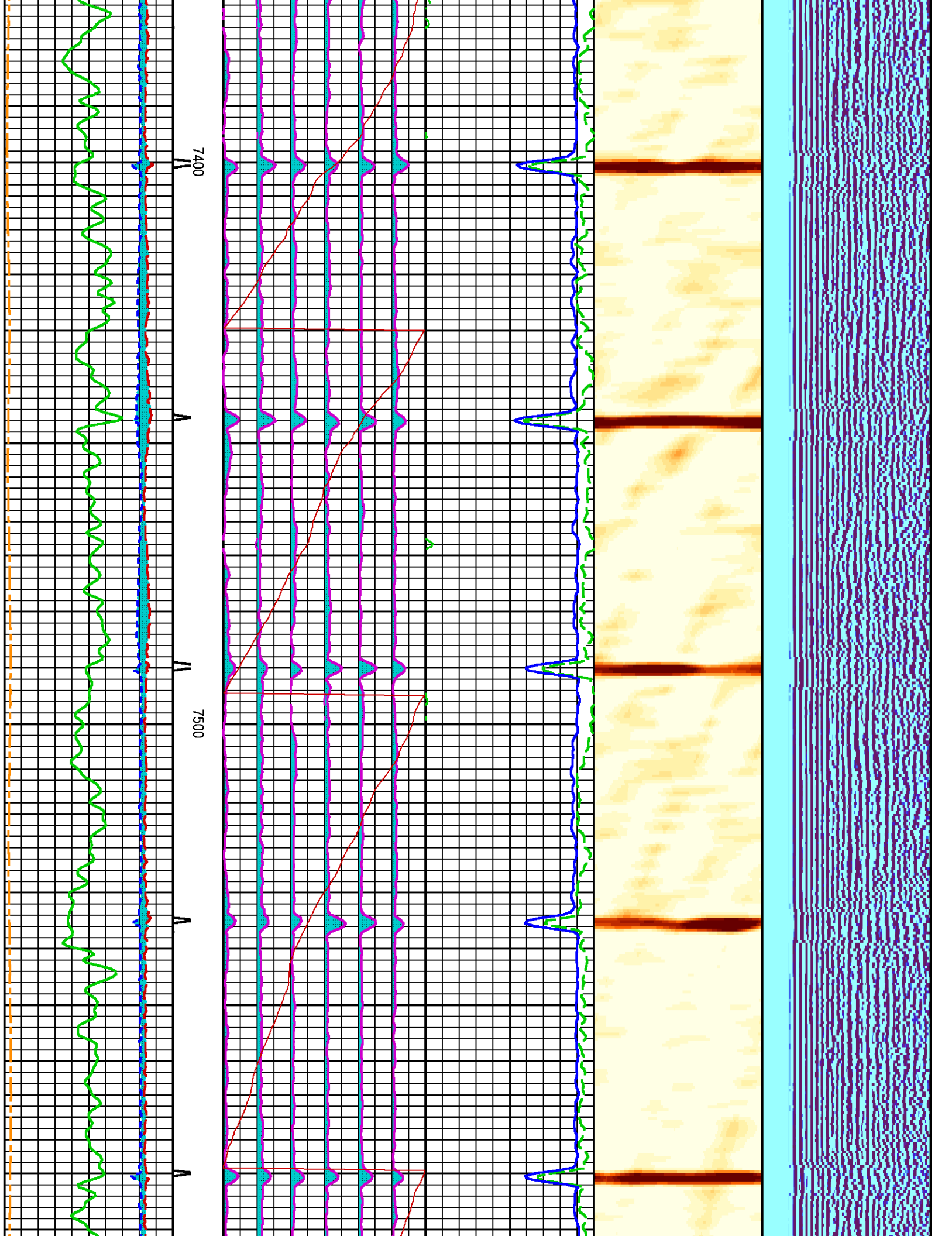


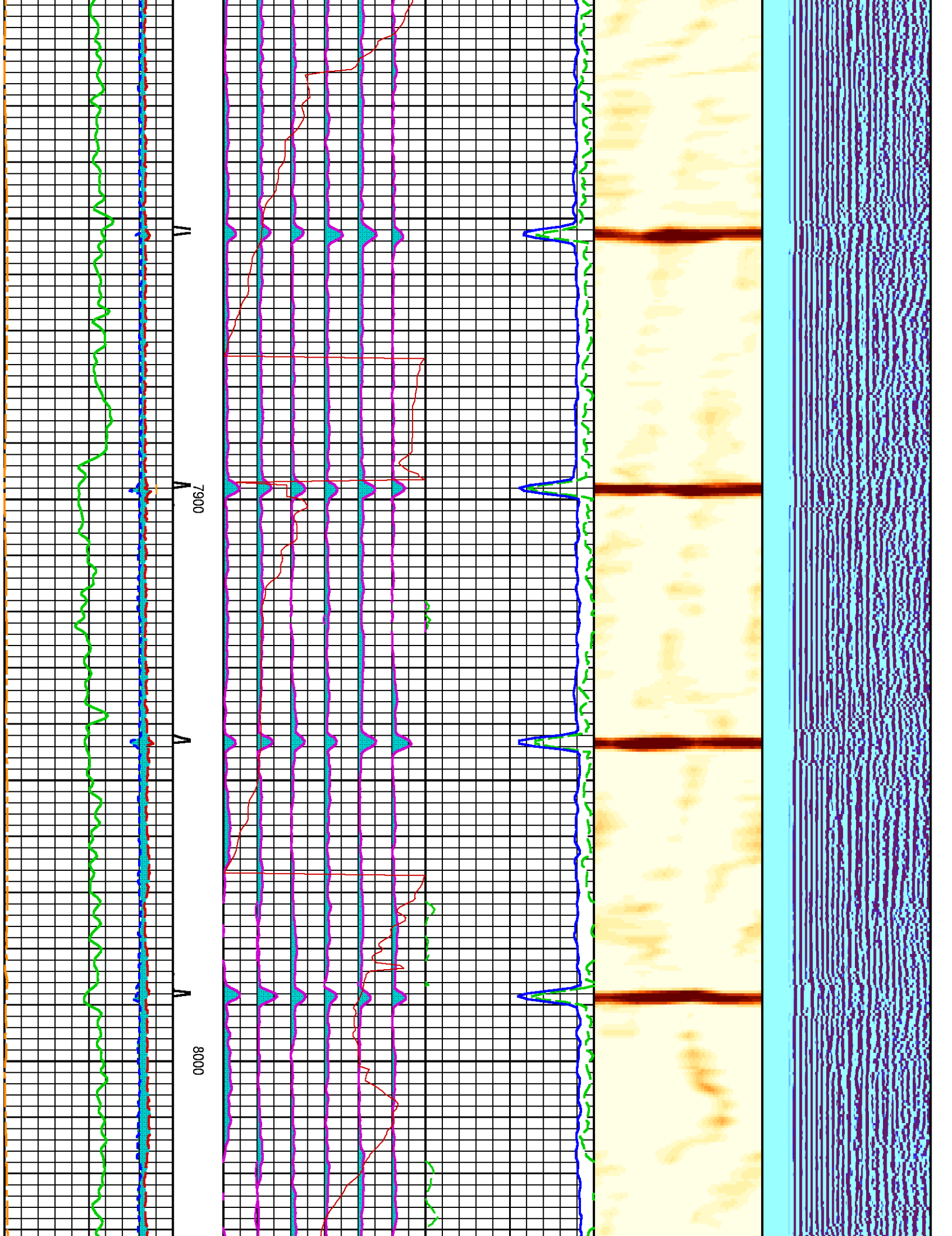


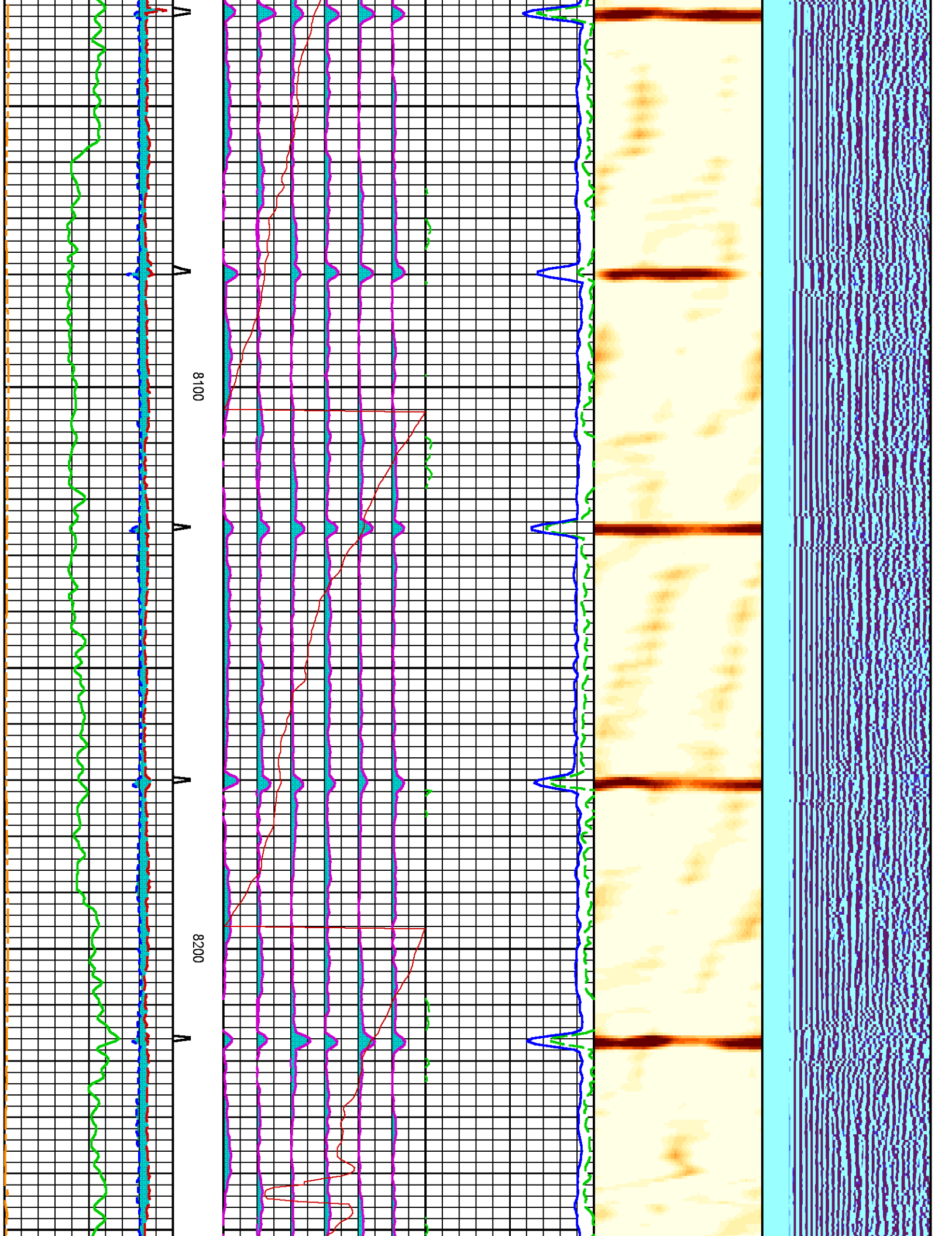


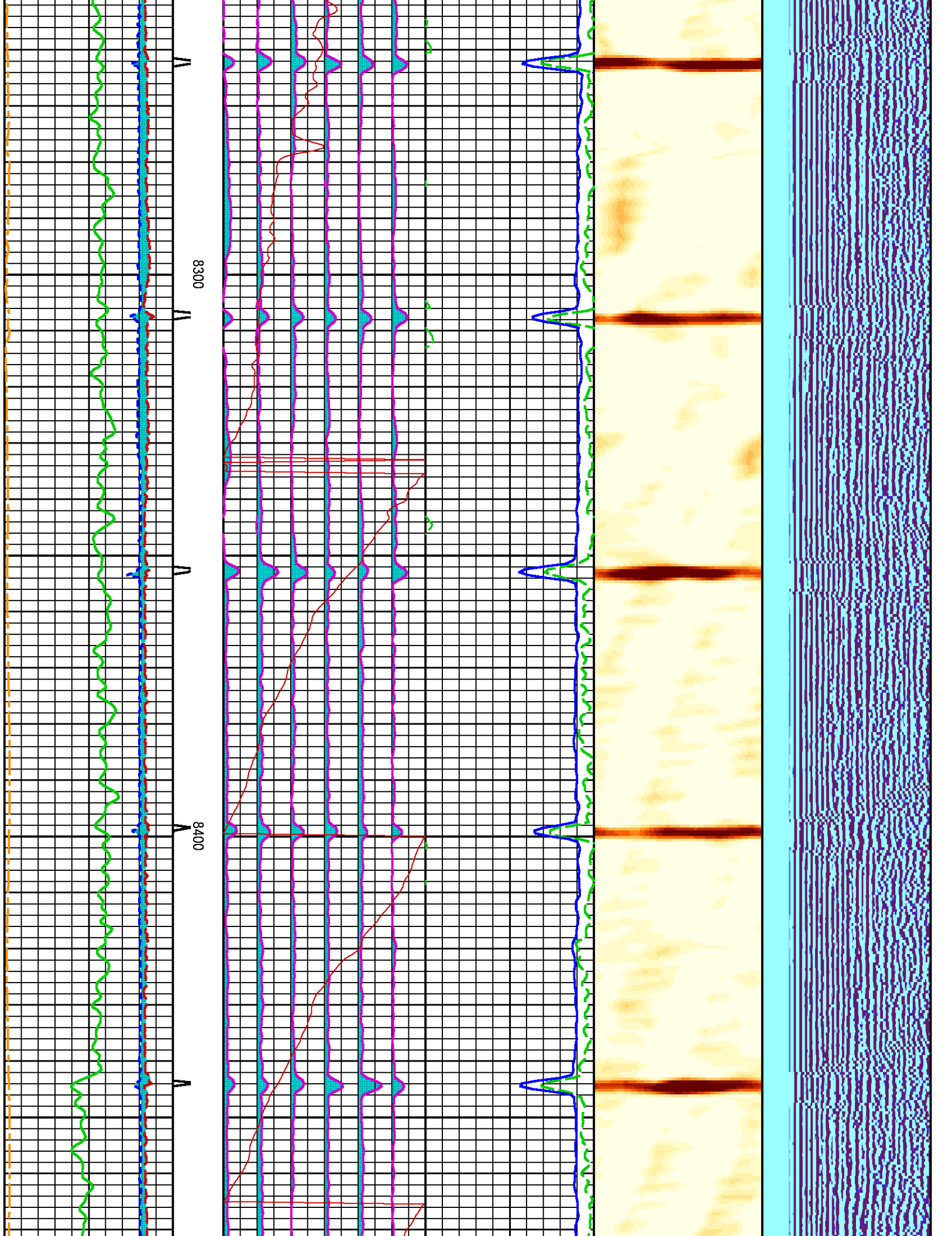


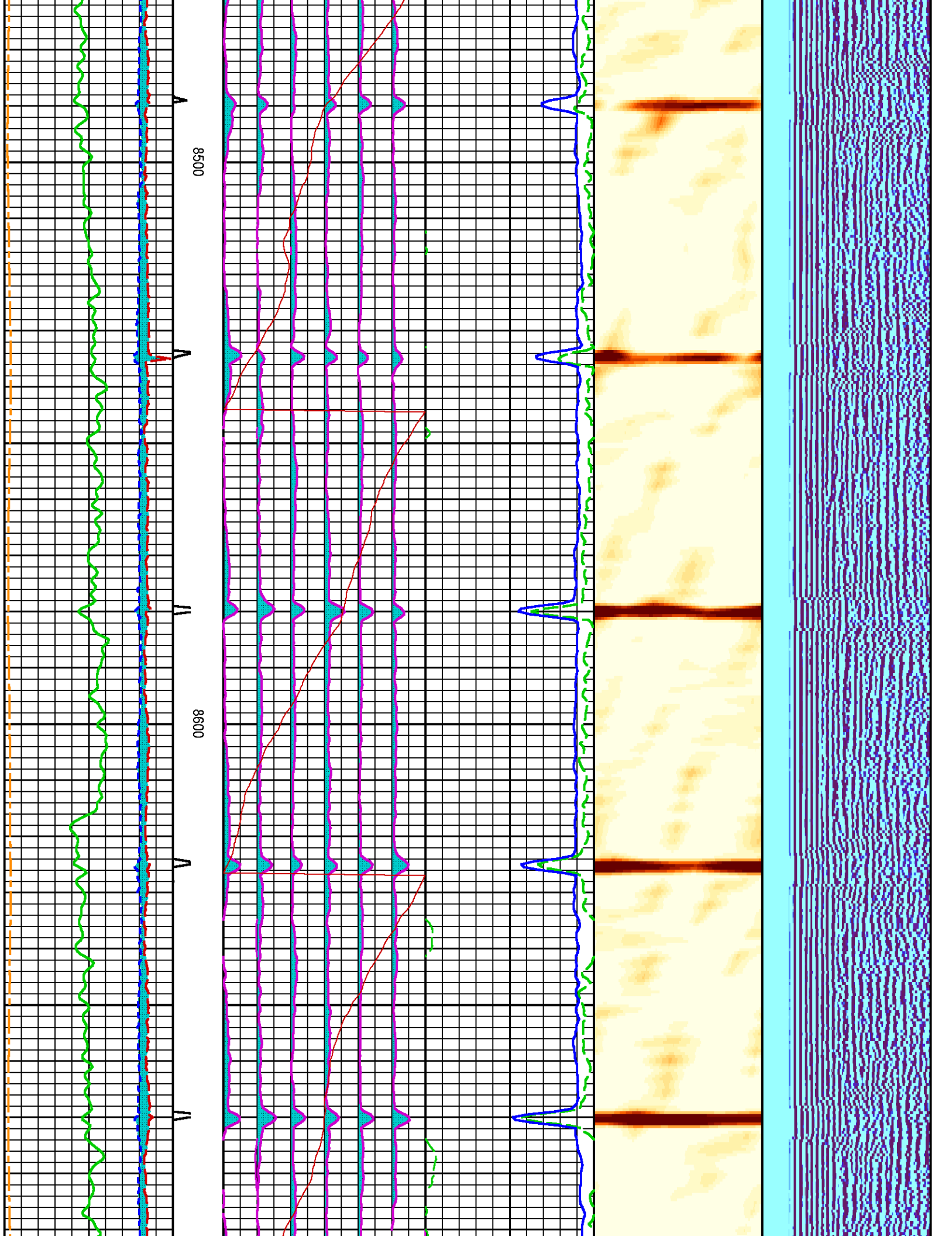


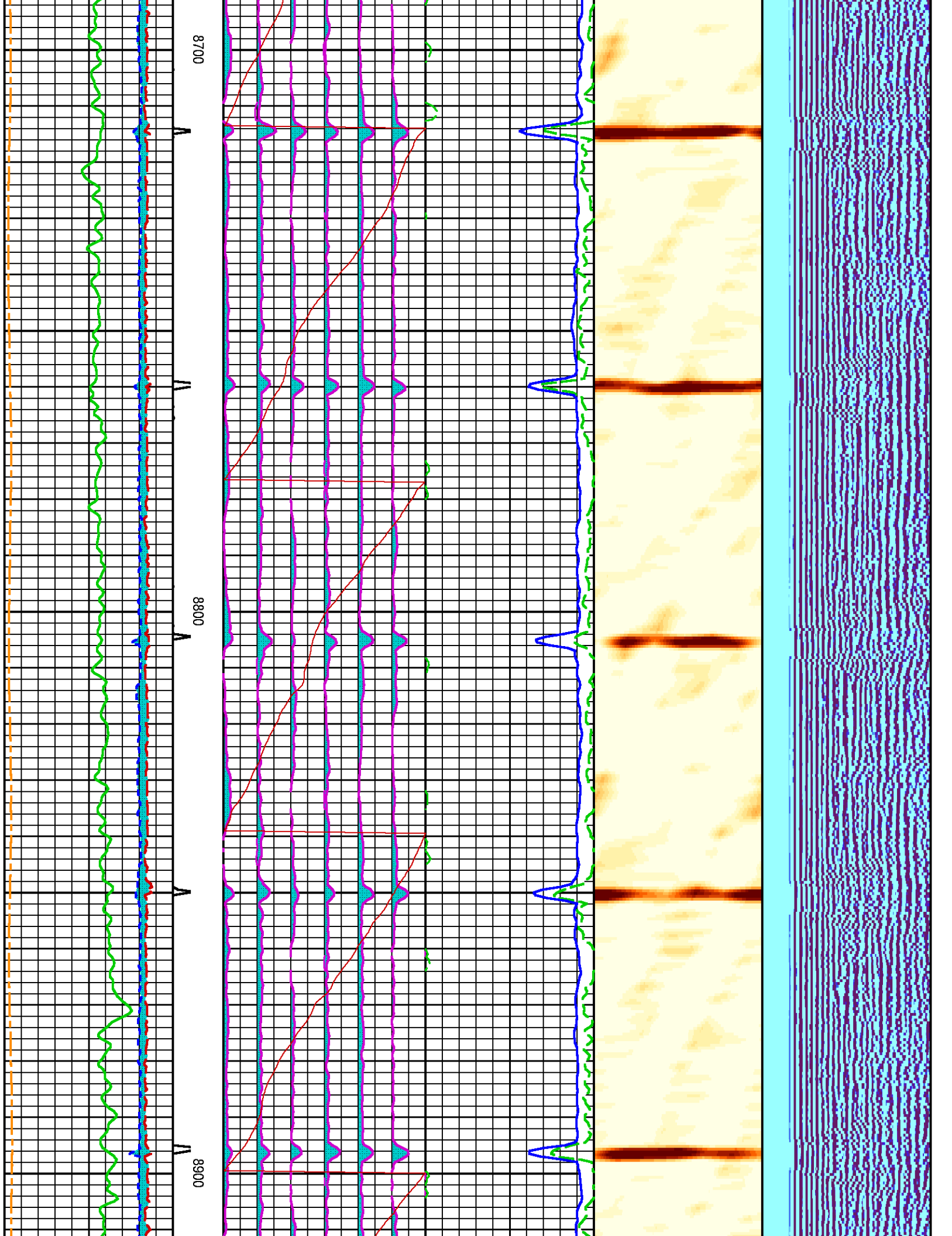


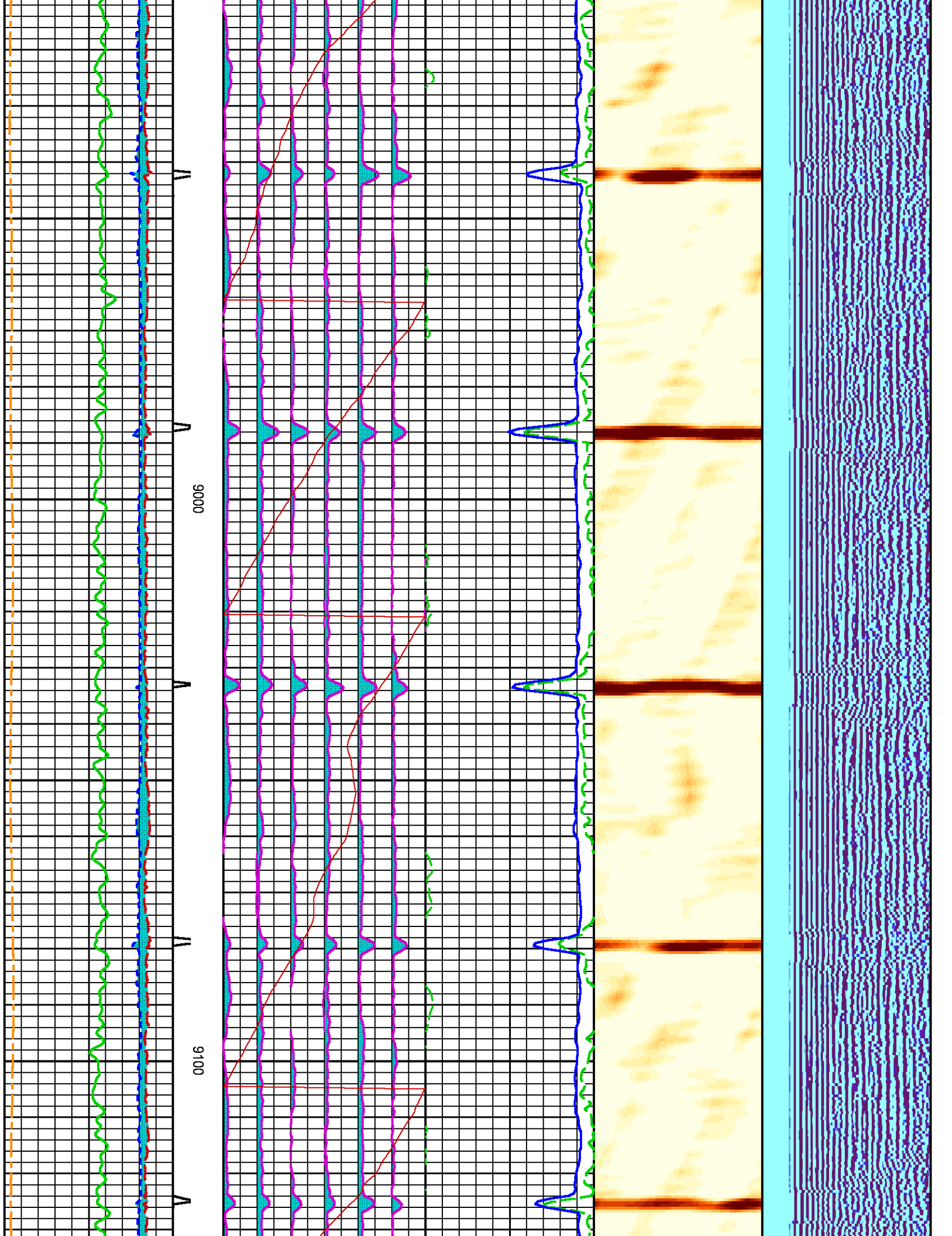


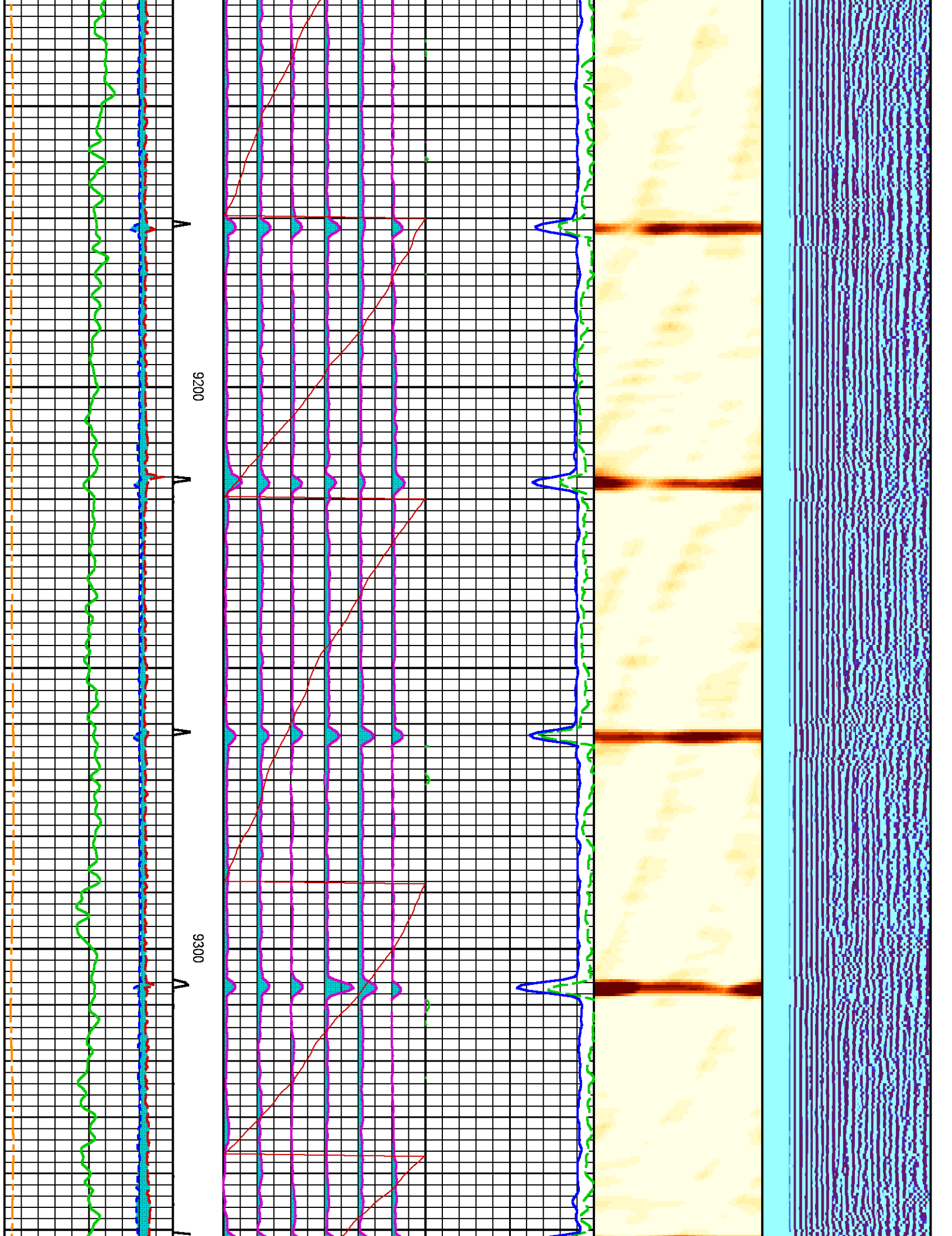


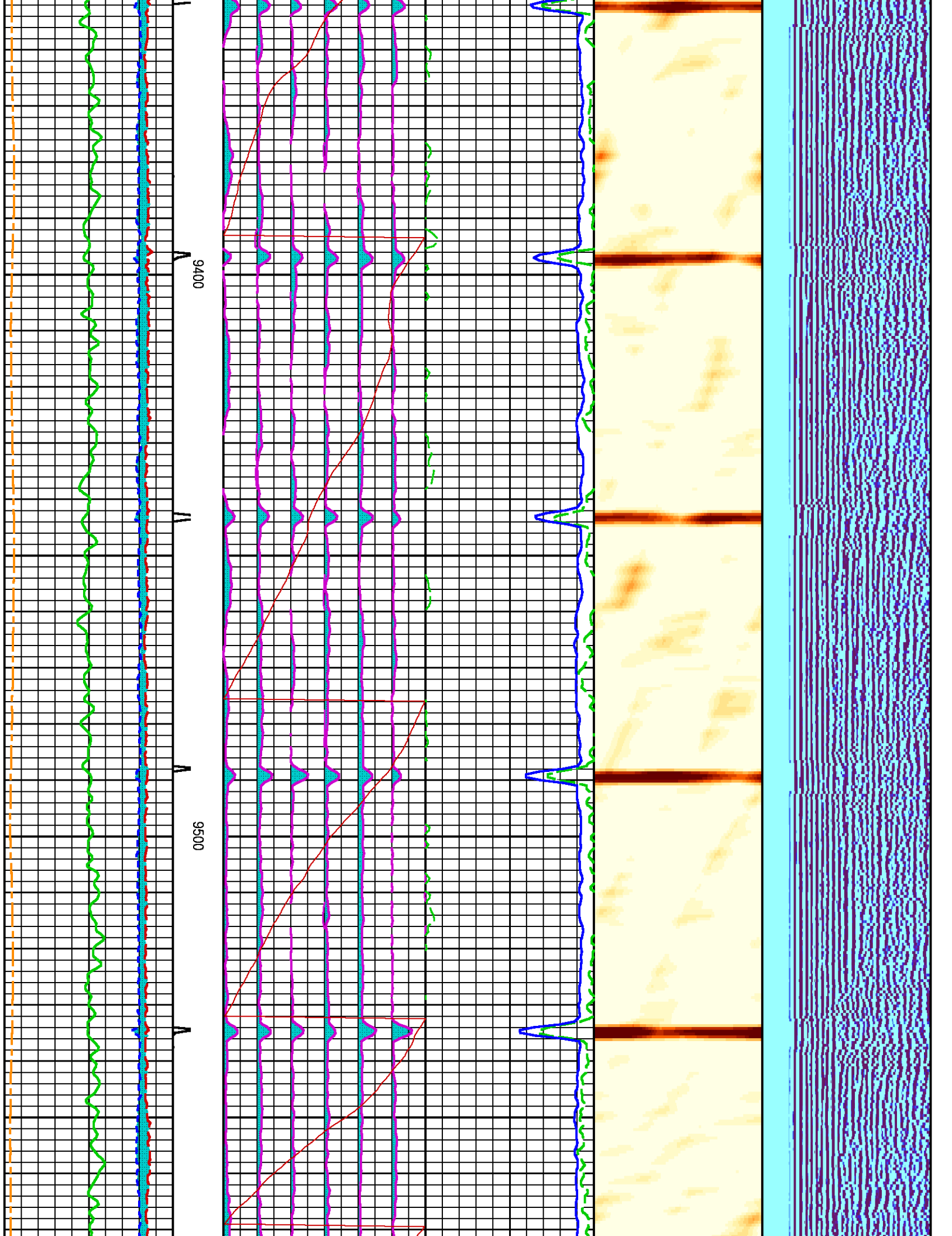


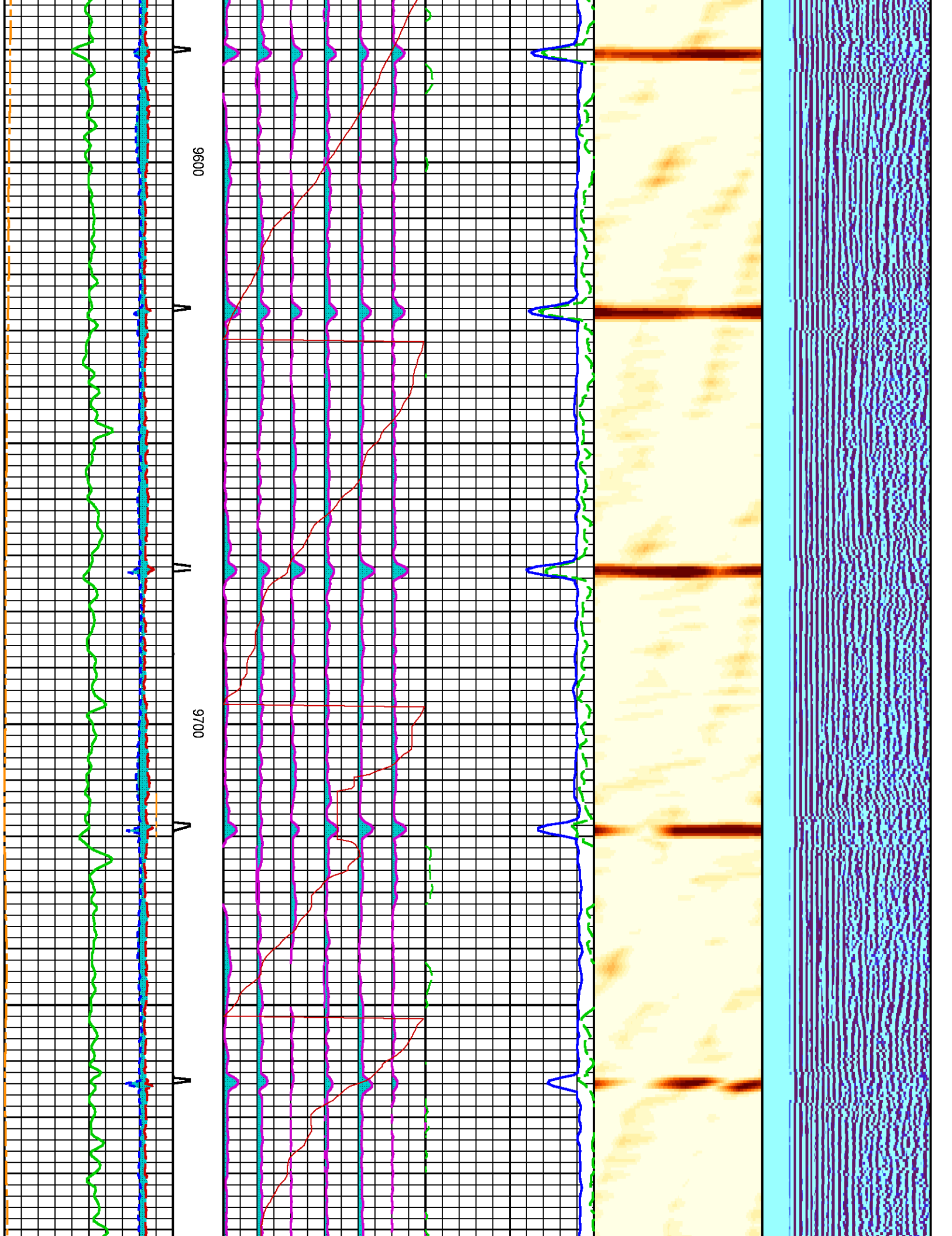


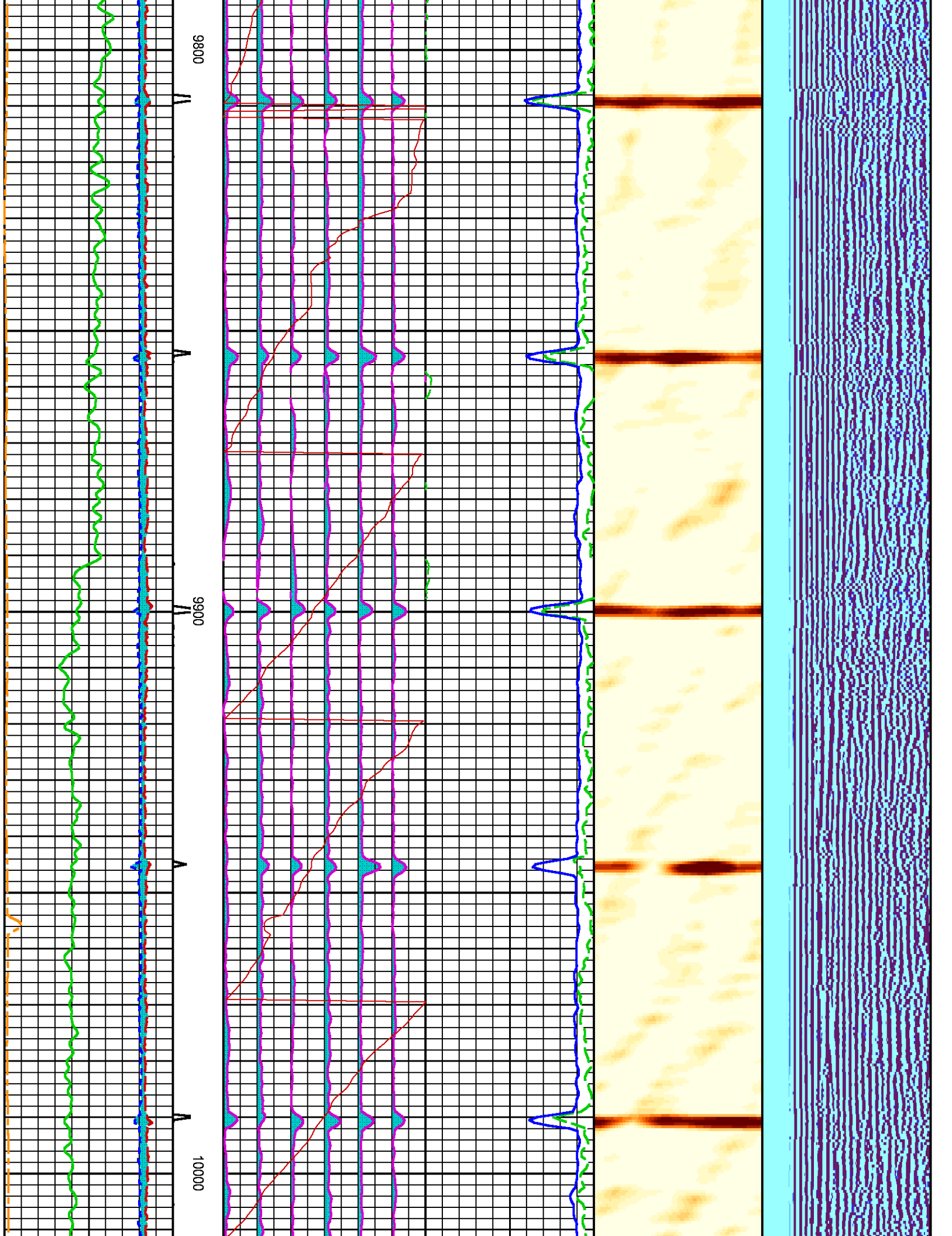


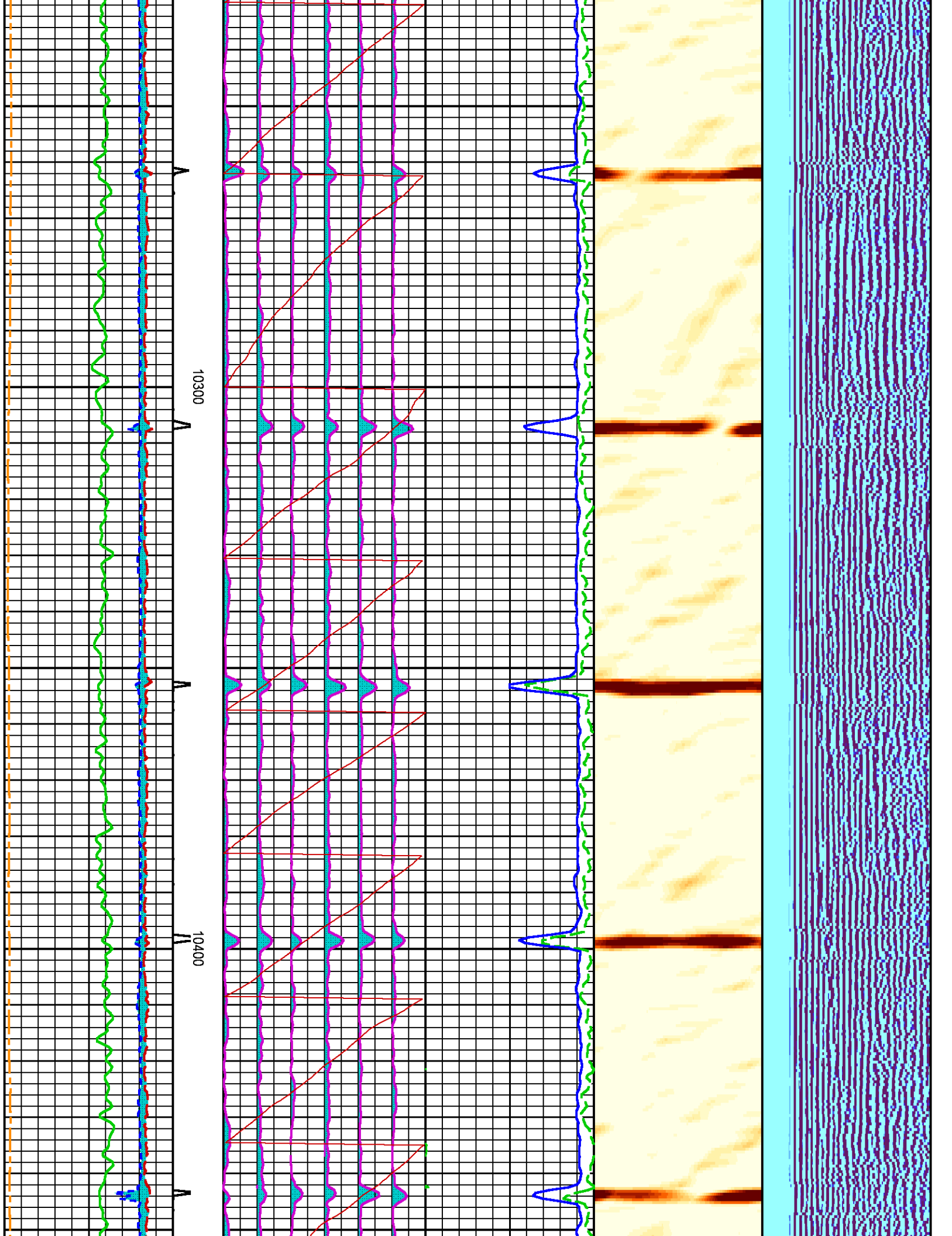


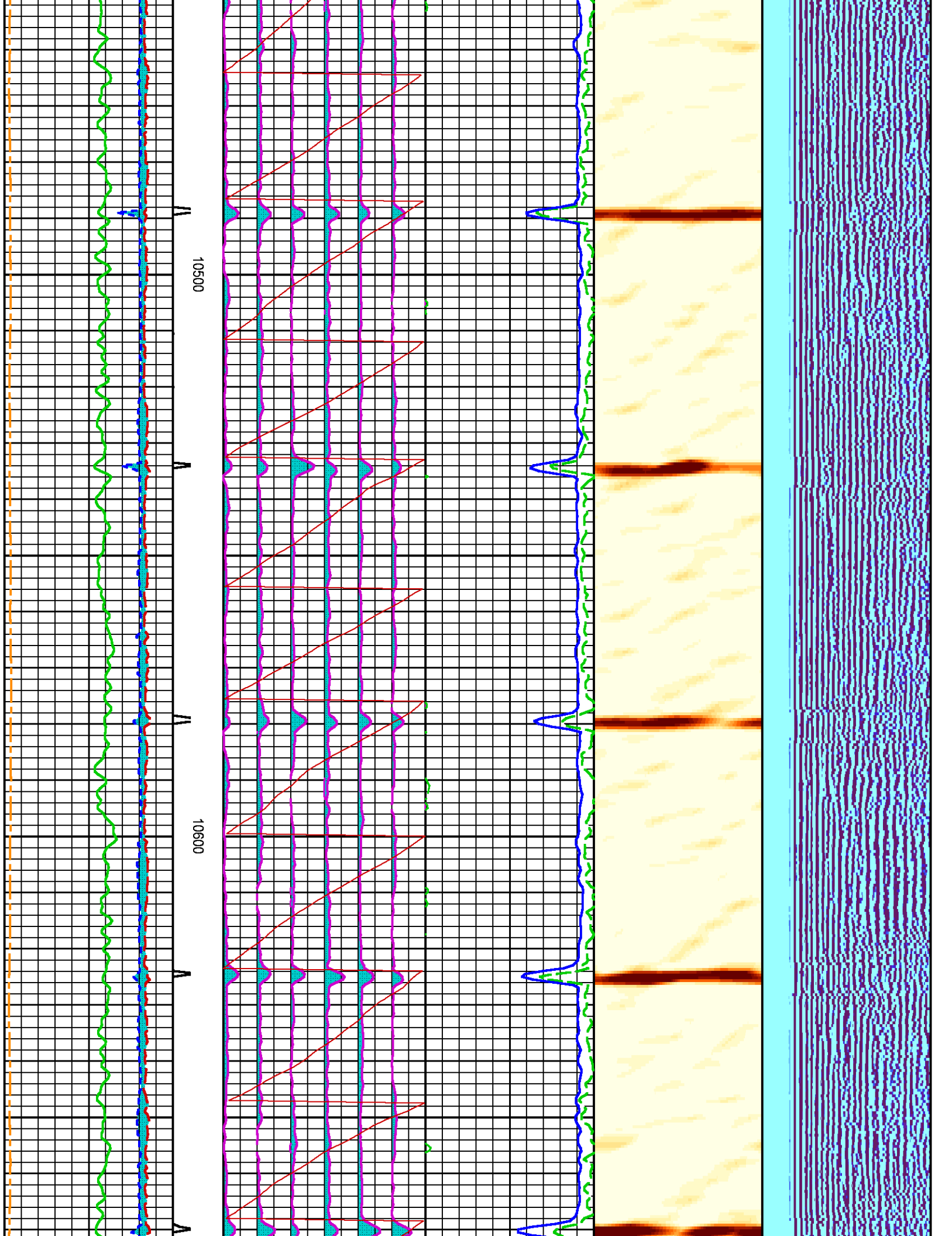


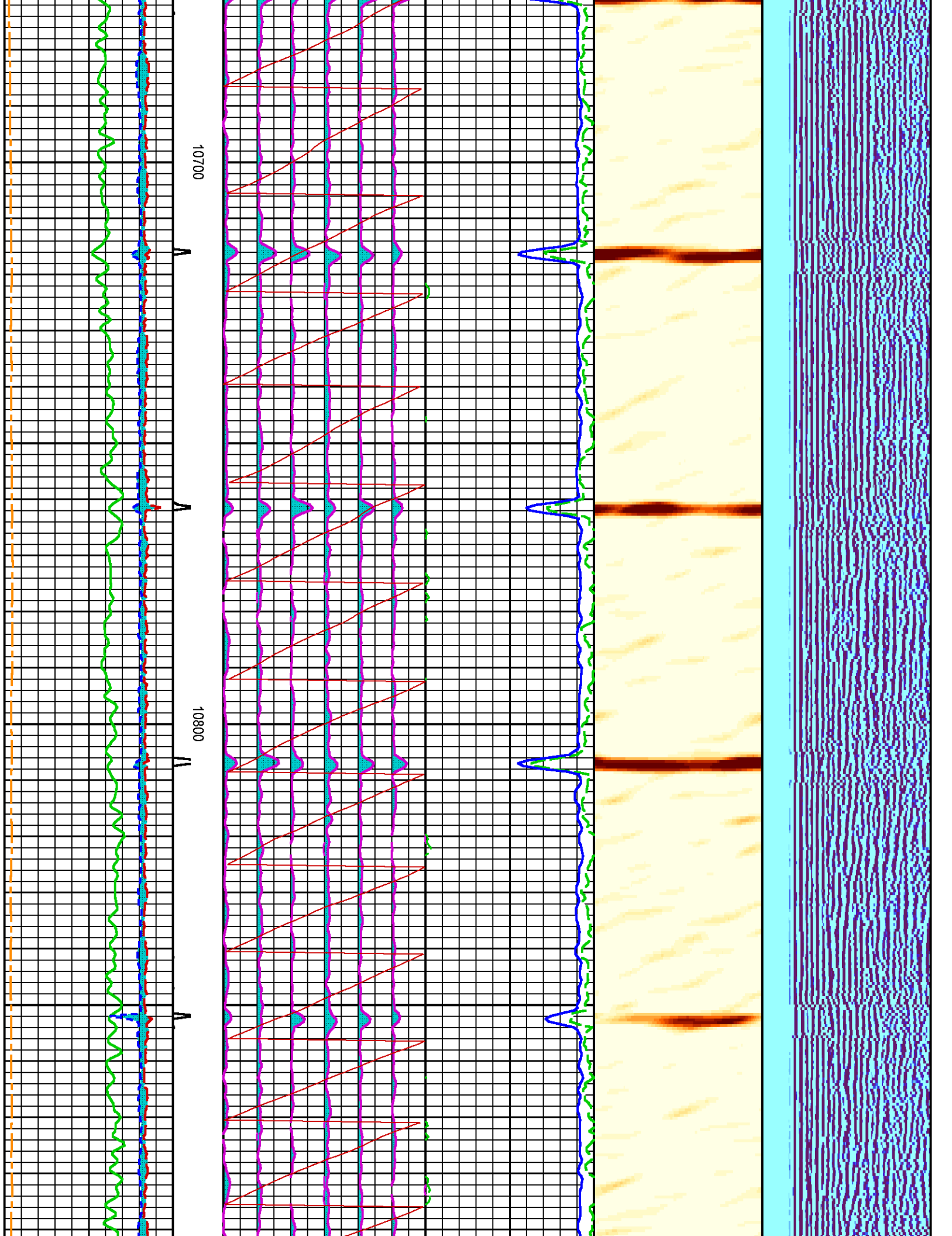


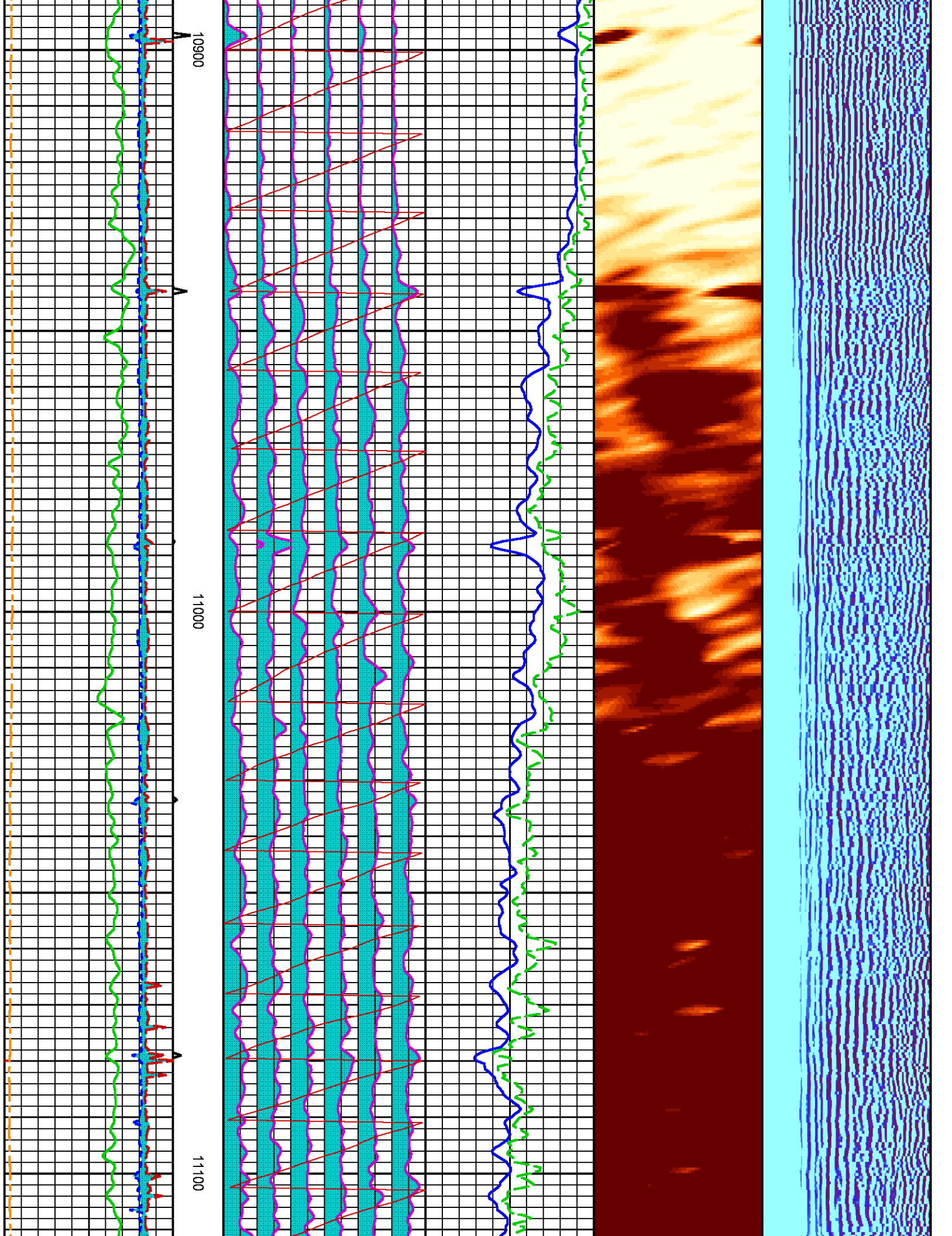


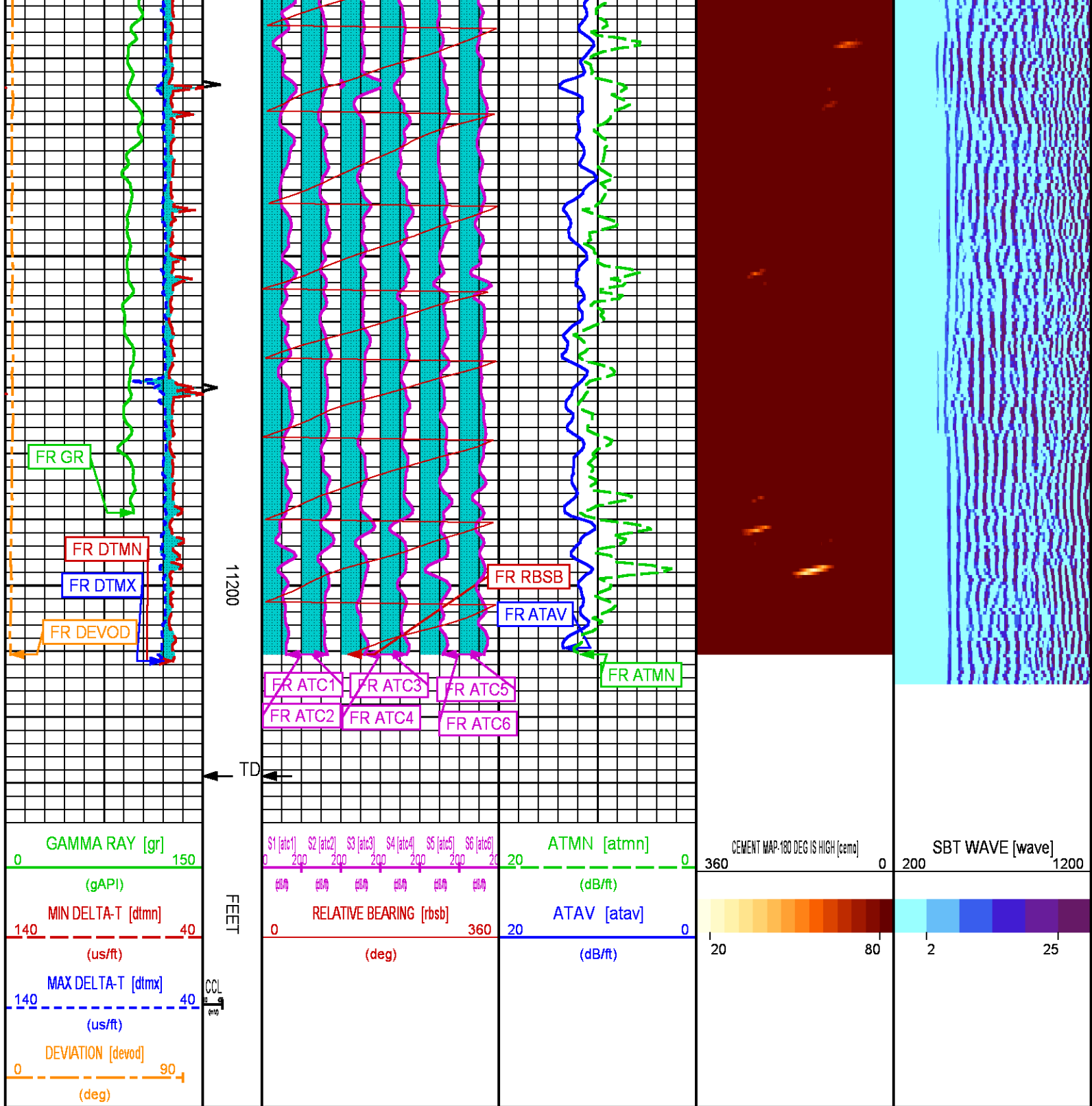












0 PSI PASS

PARAMETER AND FILTER SUMMARY REPORT

FILE: C:\dat1a\WELLDATA\WHITING\WRD 23-33-R\331dR03.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 8809.000 ft BOTTOM DEPTH: 11224.000 ft

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
GR	FILTER ()	light (2)		TOP	BOTTOM
SBT	FILTER, 2pf	heavy (3)		"	"
	FILTER, 4pf	heavy (3)		"	"

SBT PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
SBT	CASING OD	4.500	in	TOP	BOTTOM
	CASING WT	13.500	lbm/ft	"	"
	FREE PIPE AMP.	90.632	mV	"	"
	FREE PIPE ATTN.	0.744	dB/ft	"	"
	CORR. FACTOR 1 (1424XA 1)	-0.678	dB/ft	"	"
	CORR. FACTOR 2 (1424XA 1)	-0.456	dB/ft	"	"
	CORR. FACTOR 3 (1424XA 1)	-0.267	dB/ft	"	"
	CORR. FACTOR 4 (1424XA 1)	-0.705	dB/ft	"	"
	CORR. FACTOR 5 (1424XA 1)	2.643	dB/ft	"	"
	CORR. FACTOR 6 (1424XA 1)	-0.537	dB/ft	"	"
	SPACING	0.618	ft	"	"
	SPREADING FACTOR	4.857	dB/ft	"	"
	CEMENT STRENGTH	2500	psi	"	"
	HI CUTOFF (1424XA 1)	10.517	dB/ft	"	"
	LOW CUTOFF (1424XA 1)	3.187	dB/ft	"	"

CURVE DESCRIPTION REPORT

CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:ATAV	Jun 27 20:52:00 2016	AVERAGE ATTENUATION
F1:ATC1	Jun 27 20:52:00 2016	ATTENUATION PAD 1
F1:ATC2	Jun 27 20:52:00 2016	ATTENUATION PAD 2
F1:ATC3	Jun 27 20:52:00 2016	ATTENUATION PAD 3
F1:ATC4	Jun 27 20:52:00 2016	ATTENUATION PAD 4
F1:ATC5	Jun 27 20:52:00 2016	ATTENUATION PAD 5
F1:ATC6	Jun 27 20:52:00 2016	ATTENUATION PAD 6
F1:ATMN	Jun 27 20:52:00 2016	ATTENUATION MINIMUM
F1:CCL	Jun 27 20:52:00 2016	CASING COLLAR LOCATOR
F1:CEMO	Jun 27 20:52:00 2016	CALIBRATED AND ORIENTED CEMENT MAP
F1:DEVOD	Jun 27 20:52:00 2016	DEVIATION
F1:DTMN	Jun 27 20:52:00 2016	MINIMAL SLOWNESS
F1:DTMX	Jun 27 20:52:00 2016	MAXIMAL SLOWNESS
F1:GR	Jun 27 20:52:00 2016	GAMMA RAY
F1:RBSB	Jun 27 20:52:00 2016	RELATIVE BEARING (RELATIVE TO BOREHOLE LOW SIDE) FOR SBT
F1:WAVE	Jun 27 20:52:00 2016	DIGITIZED WAVEFORM

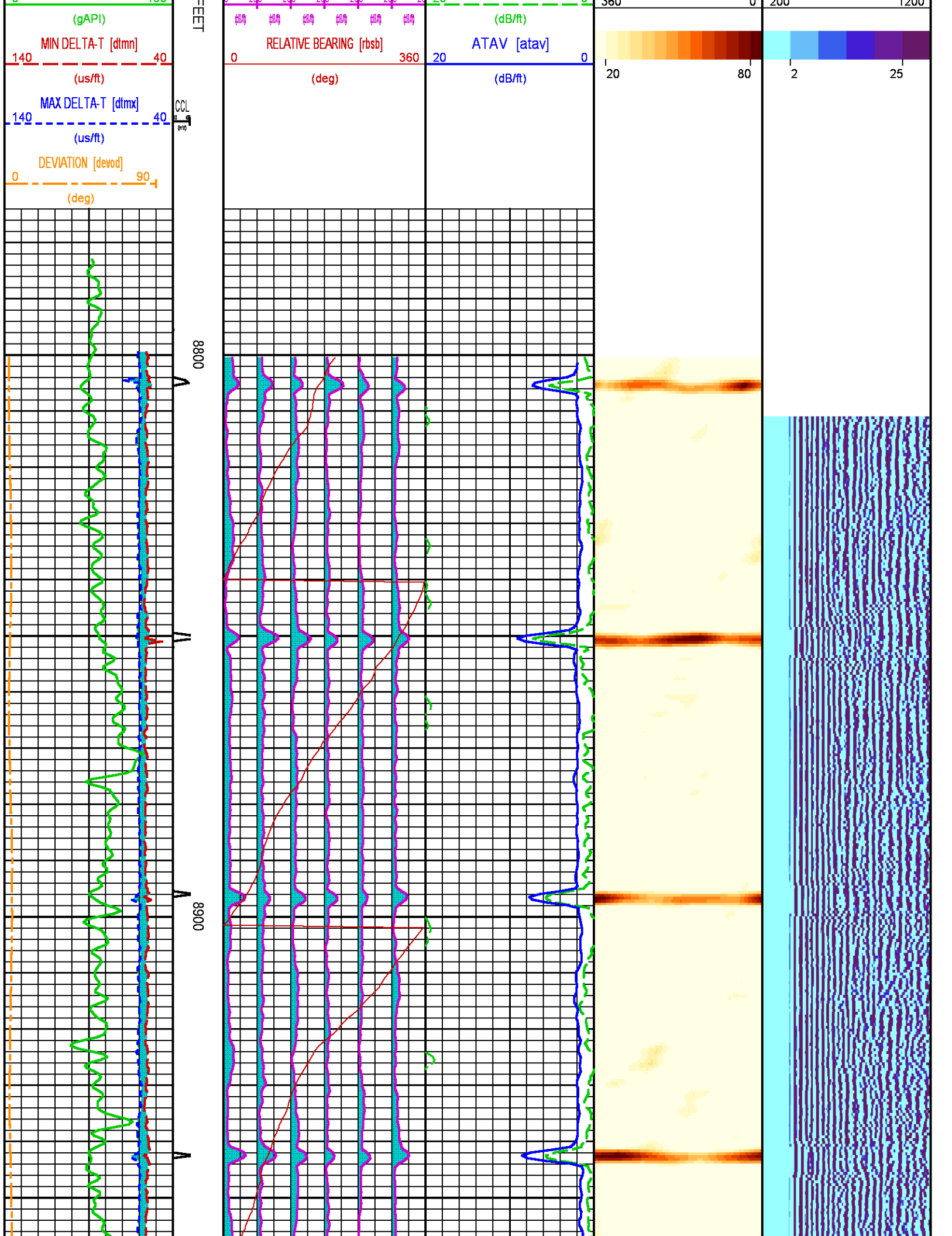
CURVE MEASURE POINT OFFSET

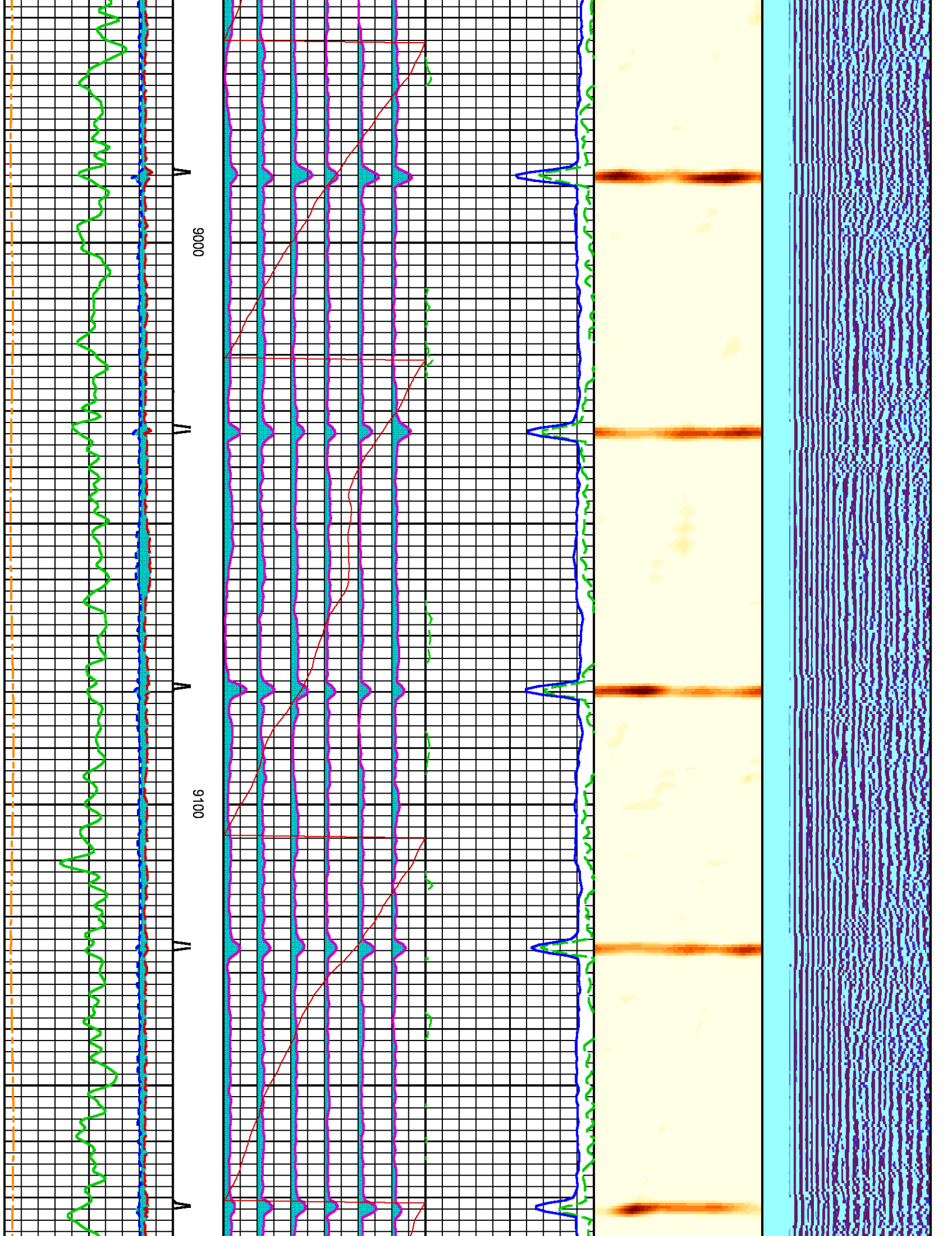
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
ATAV	15.50	ATC4	15.50	CCL	40.00	GR	34.50
ATC1	15.50	ATC5	15.50	DEVOD	15.50	RBSB	15.50
ATC2	15.50	ATC6	15.50	DTMN	15.50		
ATC3	15.50	ATMN	15.50	DTMX	15.50		

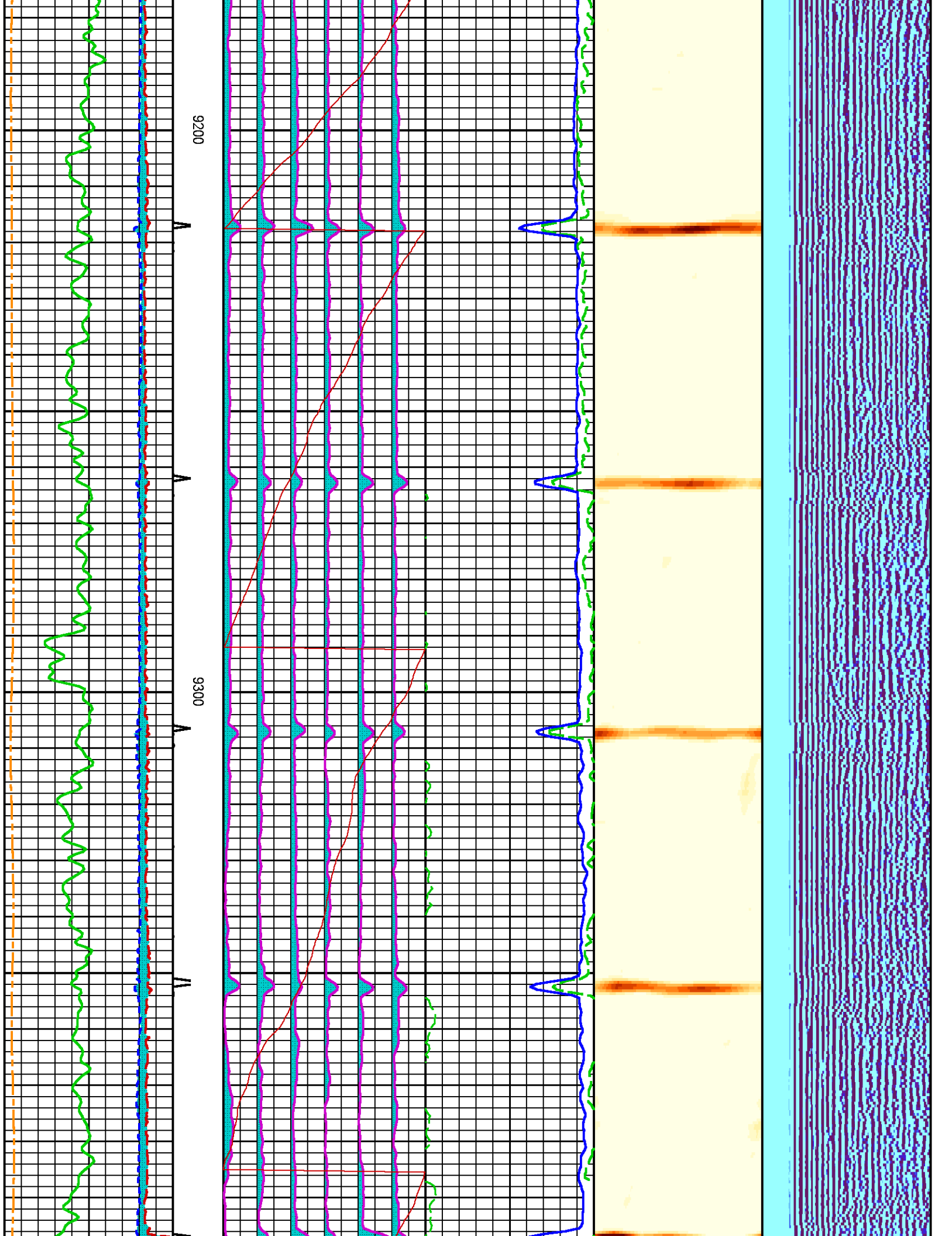
Presentation : BHI9G15WM1:C:\dat1a\WELLDATA\WHITING\WRD 23-33-R\0_PSI.fvpdf [5"/100" Scale]
Plot Interval : 8775 - 11232.5 Feet

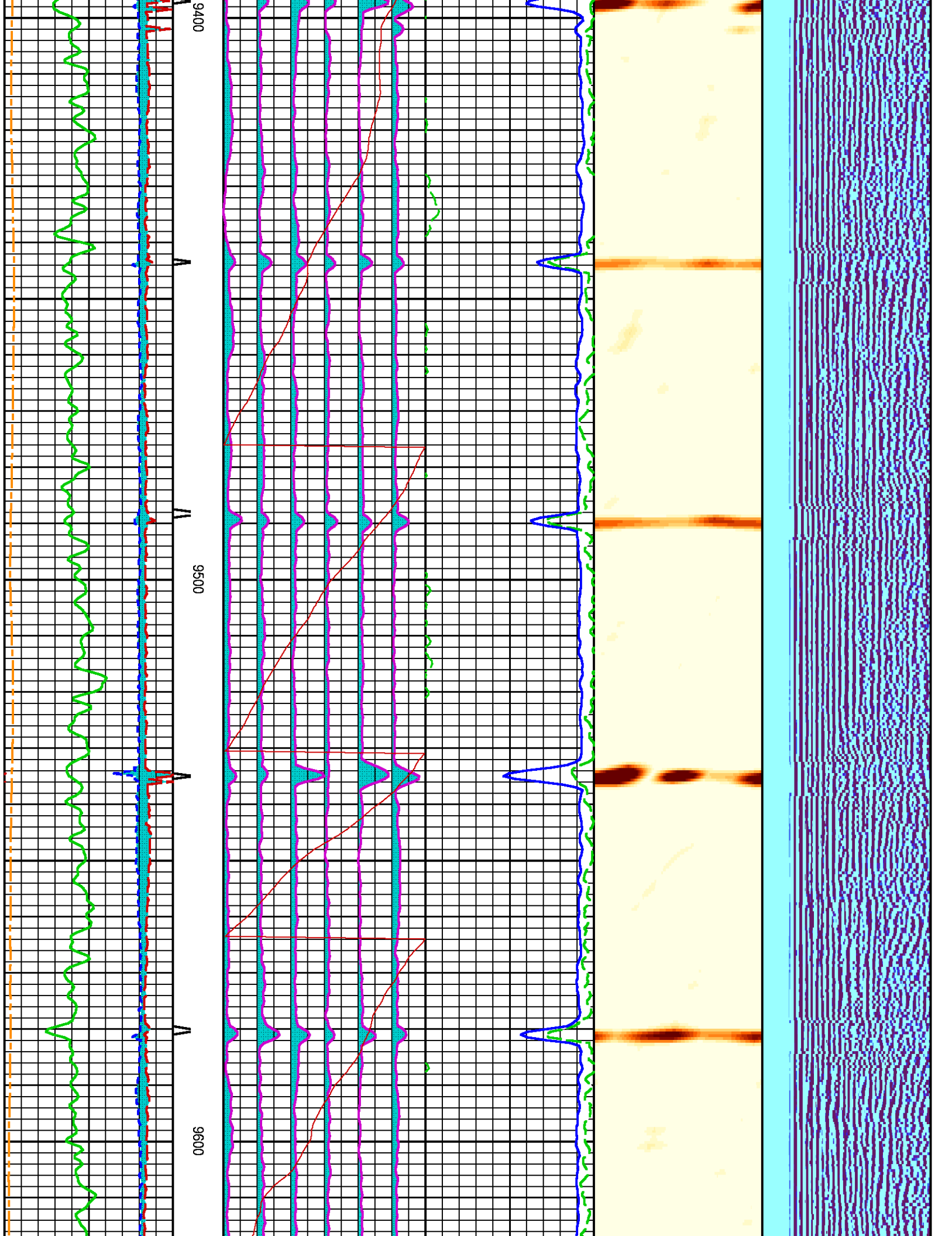
Data File 1 : F1 : BHI9G15WM1:C:\dat1a\WELLDATA\WHITING\WRD 23-33-R\0_PSI.fvpdf
Created On : Jun 27 20:52:00 2016
Company : WHITING OIL AND GAS
Well : WRD 23-33-R
Field : WHITE RIVER DOME
File Interval : 8775 - 11235 Feet
OCT : n331d

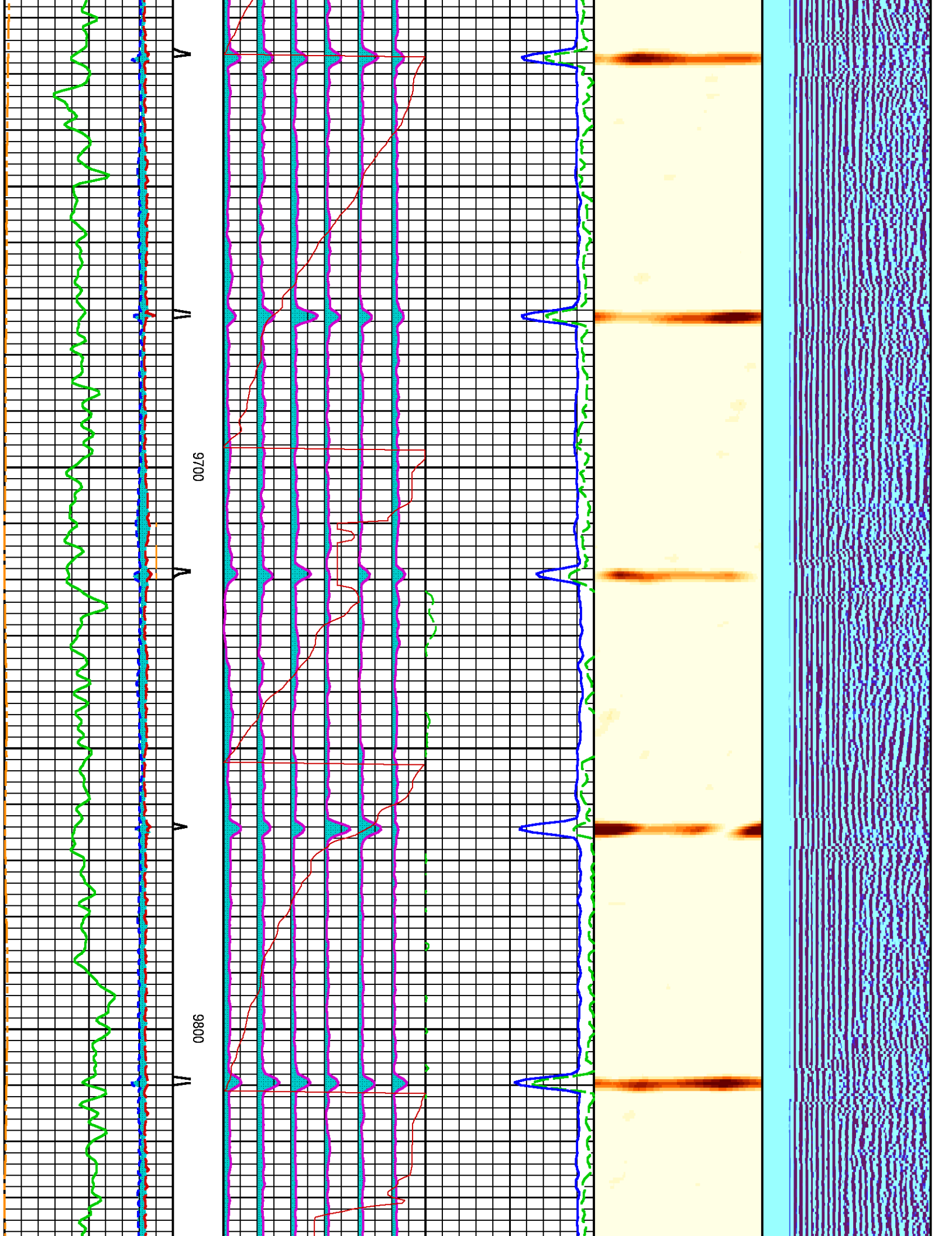
GAMMA RAY [gr]	ATMN [atmn]	CEMENT MAP-180 DEG IS HIGH [cemo]	SBT WAVE [wave]
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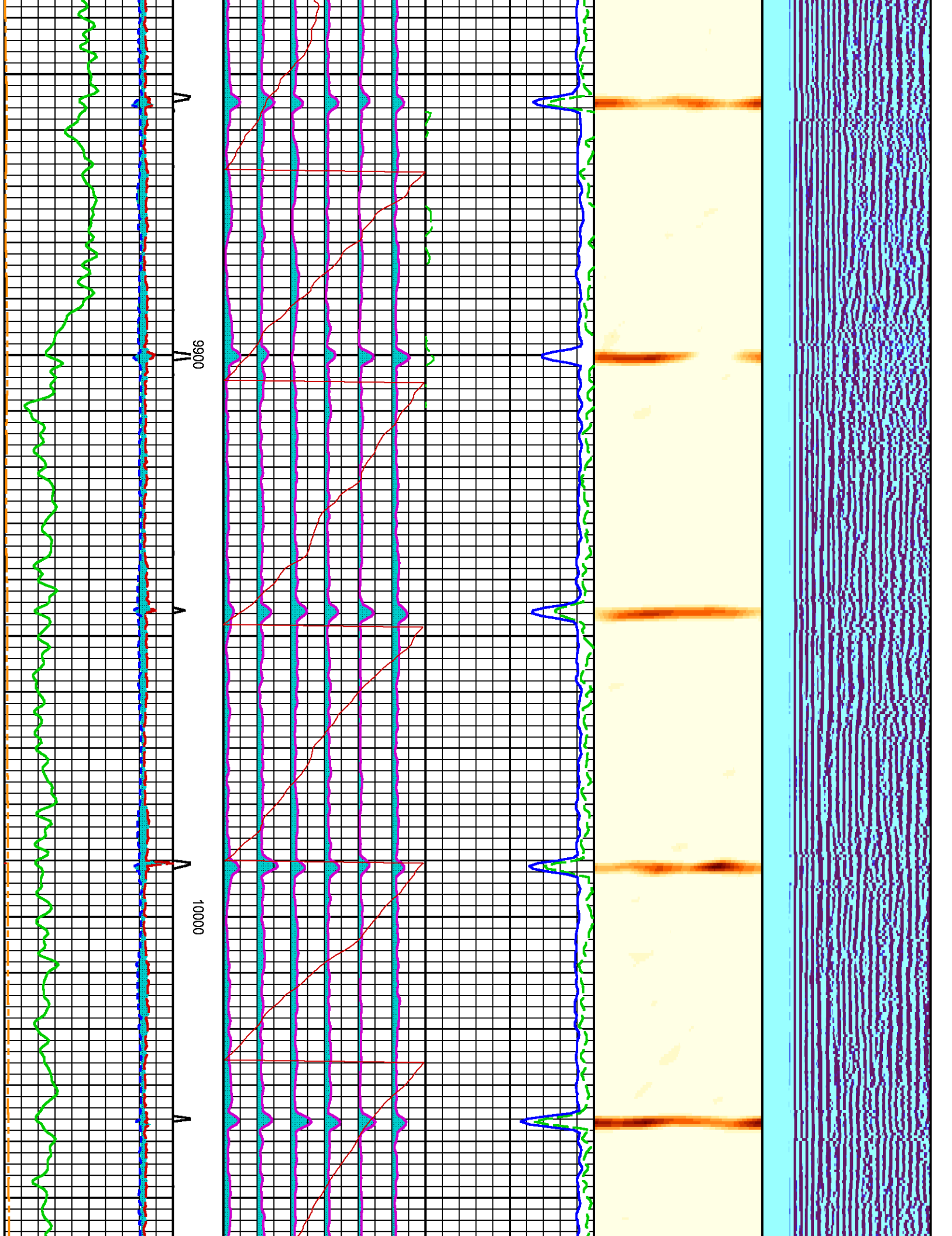


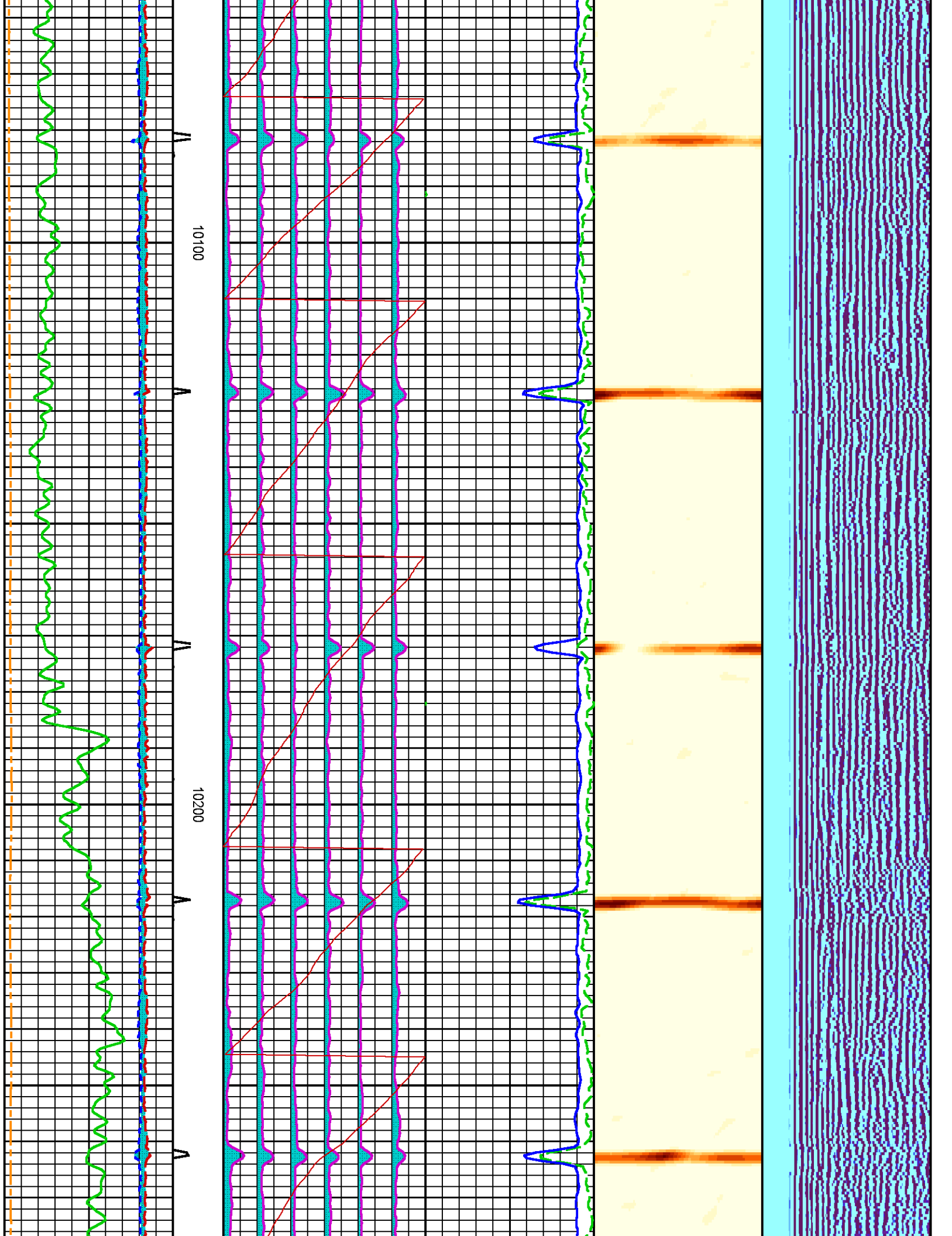


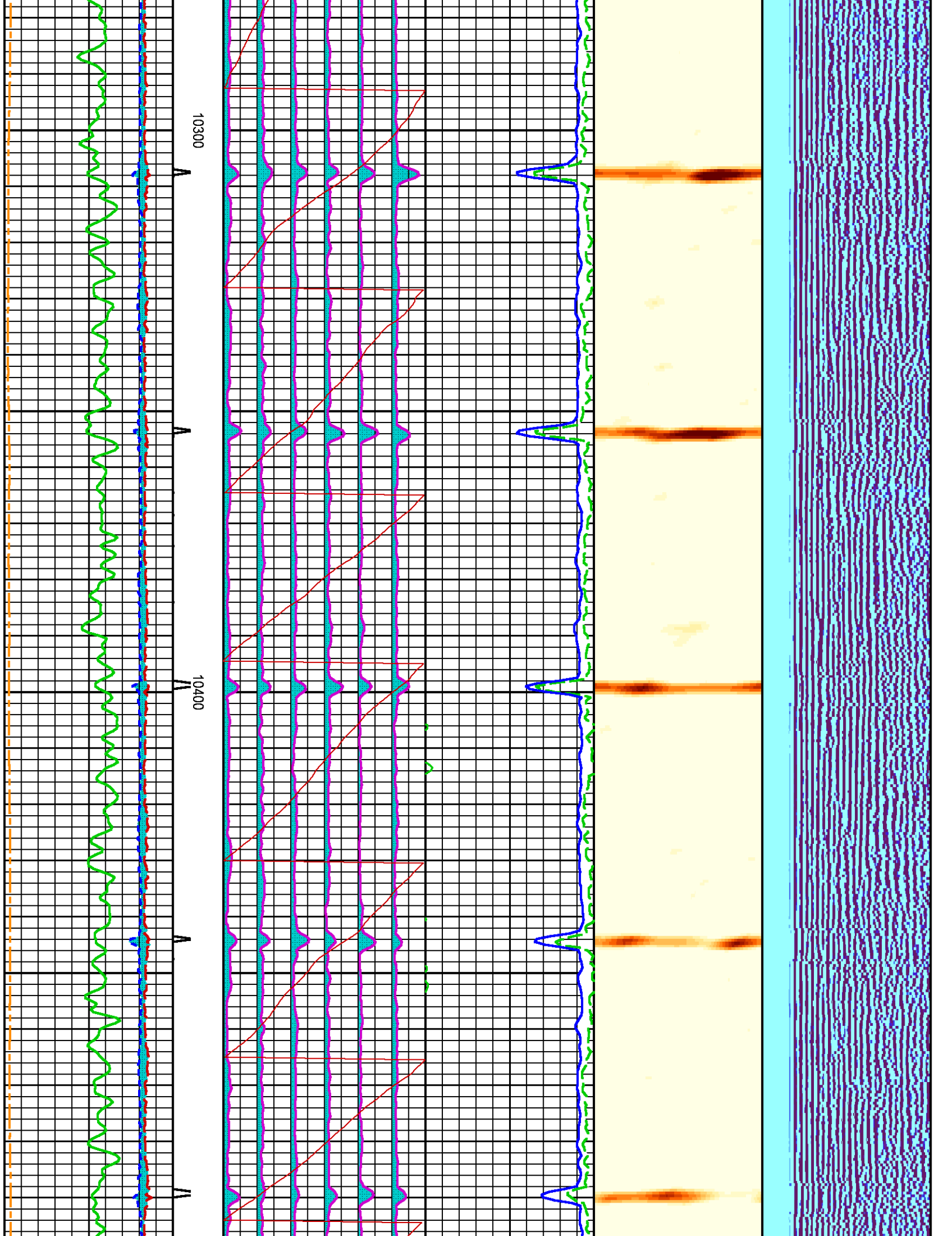


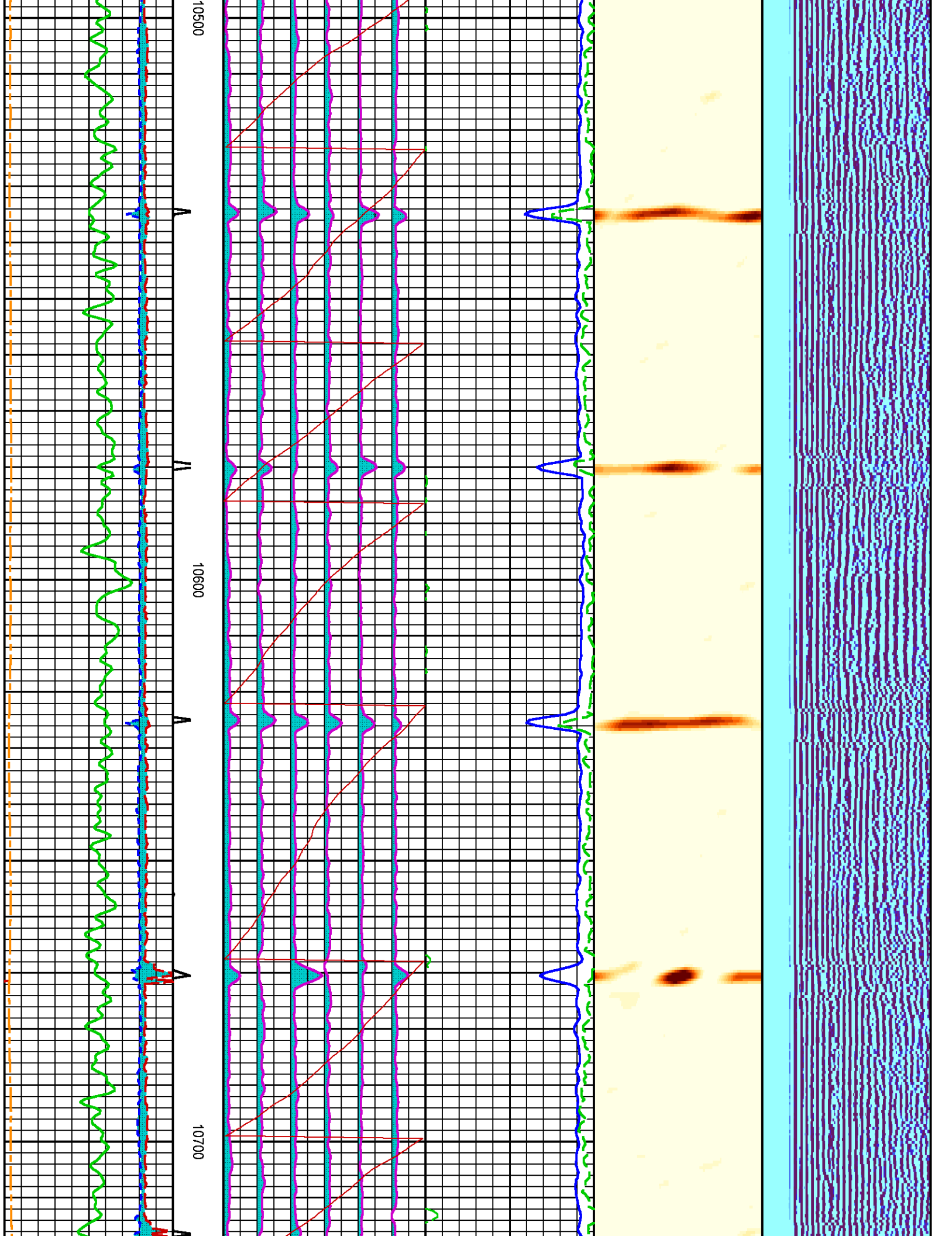


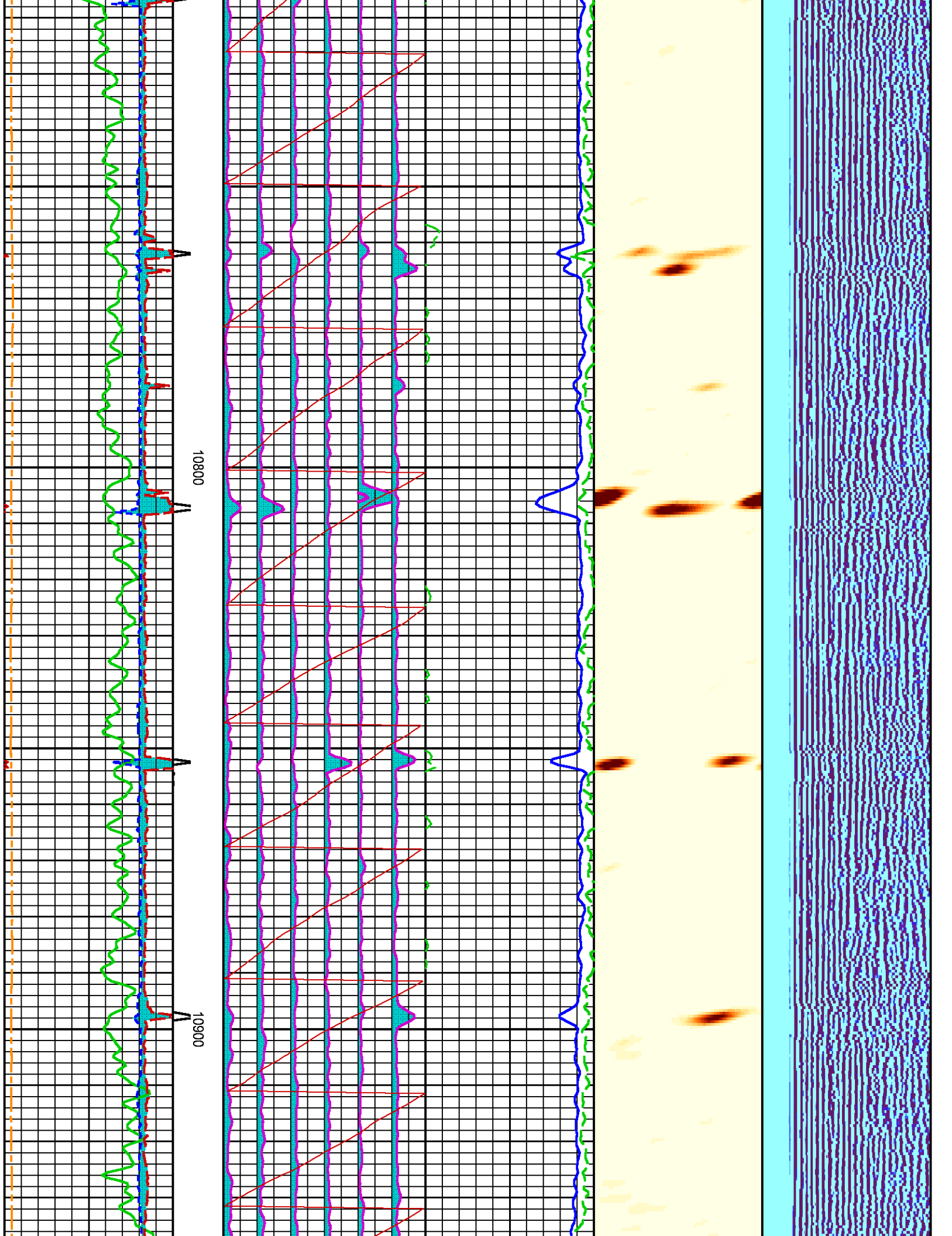


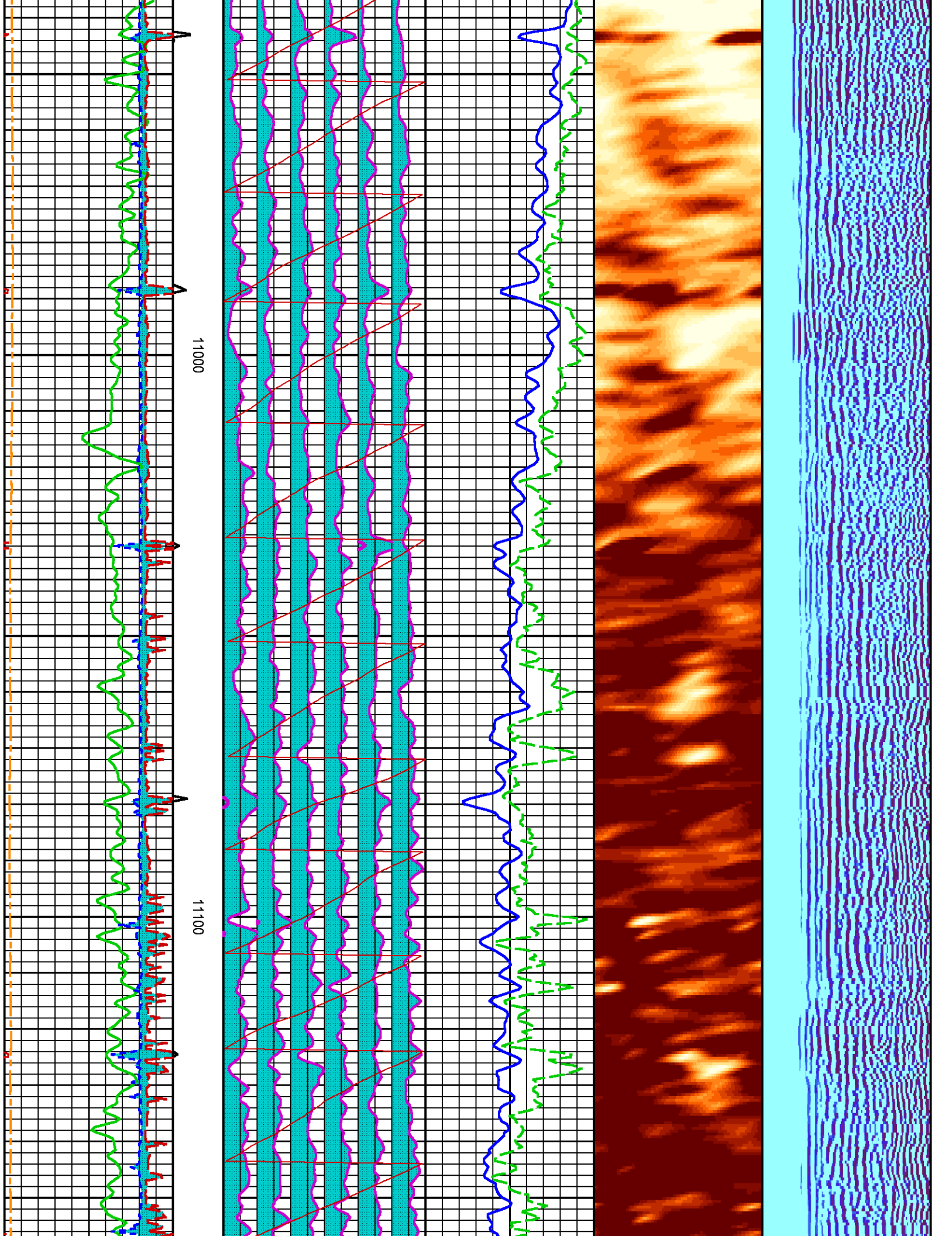


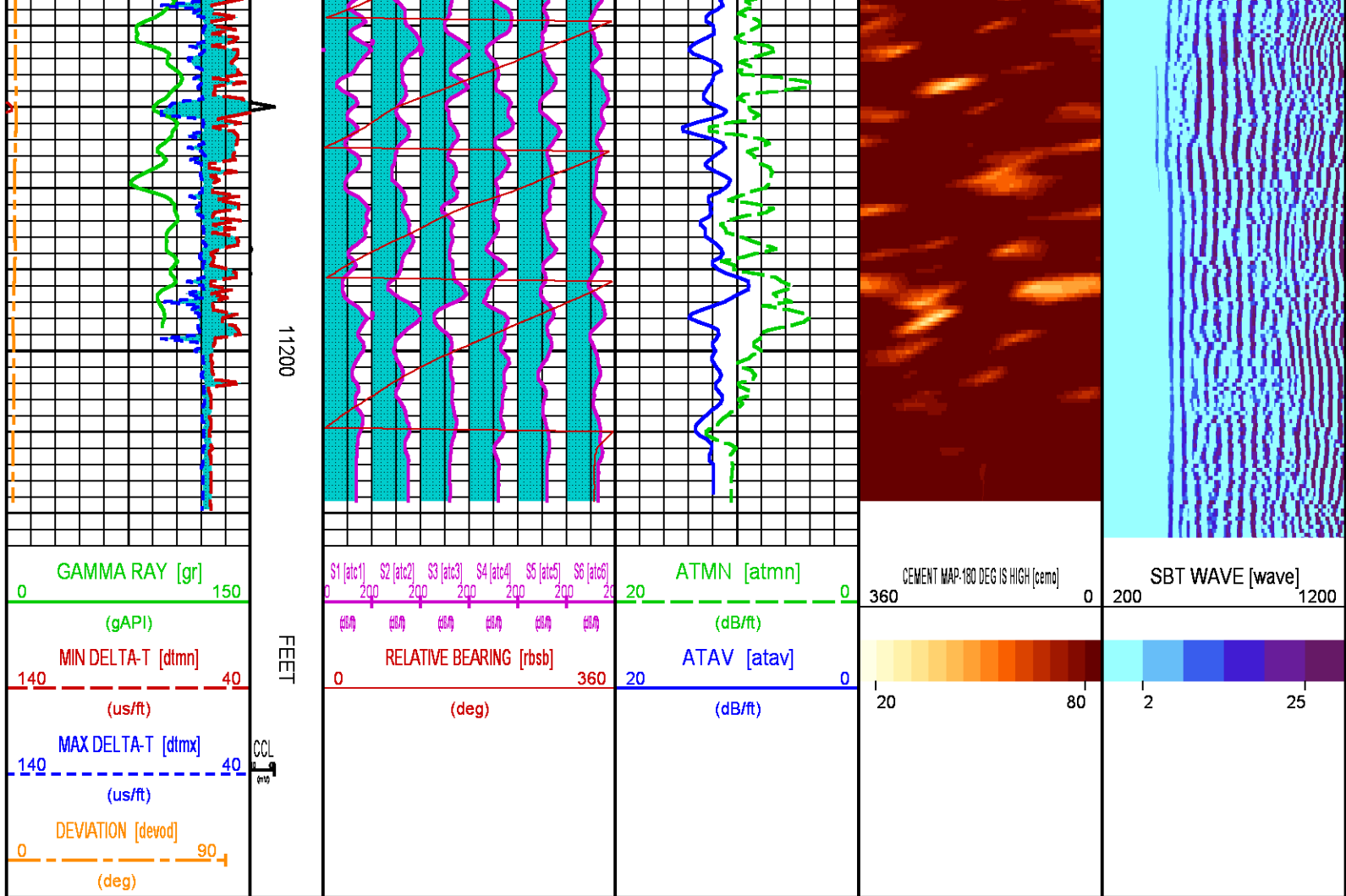












REPEAT PASS 0 PSI

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

Updates: 1,36 Patches: 9

Plotted: Mon Jun 27 22:18:47 2016

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/CH108026/n331dR04.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 10892.500 ft BOTTOM DEPTH: 11224.000 ft

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
GR	FILTER ()	light (2)		TOP	BOTTOM
SBT	FILTER, 2pf	heavy (3)		"	"
	FILTER, 4pf	heavy (3)		"	"
TENSION	FILTER ()	medium (1)		"	"

SBT PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
SBT	CASING OD	4.500	in	TOP	BOTTOM
	CASING WT	13.500	lbm/ft	"	"

CASING WT	13.500	lbm/ft	"	"
FREE PIPE AMP.	90.632	mV	"	"
FREE PIPE ATTN.	0.744	dB/ft	"	"
CORR. FACTOR 1 (1424XA 1)	-0.678	dB/ft	"	"
CORR. FACTOR 2 (1424XA 1)	-0.456	dB/ft	"	"
CORR. FACTOR 3 (1424XA 1)	-0.267	dB/ft	"	"
CORR. FACTOR 4 (1424XA 1)	-0.705	dB/ft	"	"
CORR. FACTOR 5 (1424XA 1)	2.643	dB/ft	"	"
CORR. FACTOR 6 (1424XA 1)	-0.537	dB/ft	"	"
SPACING	0.618	ft	"	"
SPREADING FACTOR	4.857	dB/ft	"	"
CEMENT STRENGTH	2500	psi	"	"
HI CUTOFF (1424XA 1)	10.517	dB/ft	"	"
LOW CUTOFF (1424XA 1)	3.187	dB/ft	"	"

CURVE DESCRIPTION REPORT

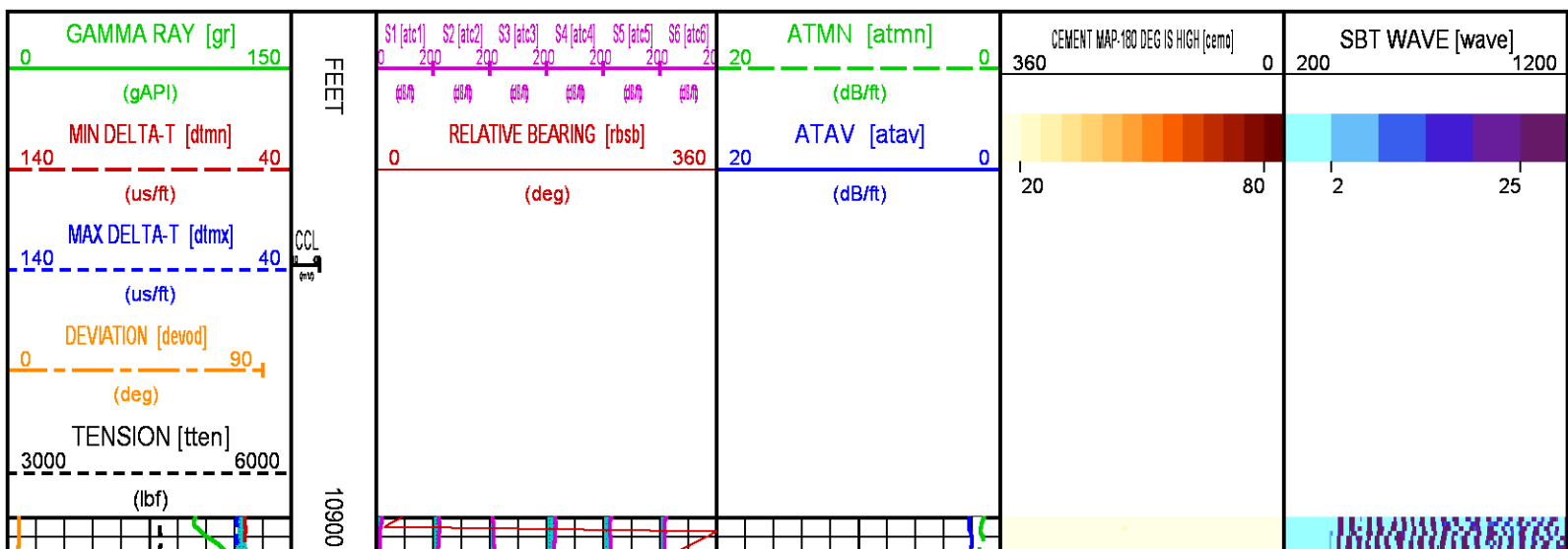
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:ATAV	Jun 27 20:54:23 2016	AVERAGE ATTENUATION
F1:ATC1	Jun 27 20:54:23 2016	ATTENUATION PAD 1
F1:ATC2	Jun 27 20:54:23 2016	ATTENUATION PAD 2
F1:ATC3	Jun 27 20:54:23 2016	ATTENUATION PAD 3
F1:ATC4	Jun 27 20:54:23 2016	ATTENUATION PAD 4
F1:ATC5	Jun 27 20:54:23 2016	ATTENUATION PAD 5
F1:ATC6	Jun 27 20:54:23 2016	ATTENUATION PAD 6
F1:ATMN	Jun 27 20:54:23 2016	ATTENUATION MINIMUM
F1:CCL	Jun 27 20:54:23 2016	CASING COLLAR LOCATOR
F1:CEMO	Jun 27 20:54:23 2016	CALIBRATED AND ORIENTED CEMENT MAP
F1:DEVOD	Jun 27 20:54:23 2016	DEVIATION
F1:DTMN	Jun 27 20:54:23 2016	MINIMAL SLOWNESS
F1:DTMX	Jun 27 20:54:23 2016	MAXIMAL SLOWNESS
F1:GR	Jun 27 20:54:23 2016	GAMMA RAY
F1:RBSB	Jun 27 20:54:23 2016	RELATIVE BEARING (RELATIVE TO BOREHOLE LOW SIDE) FOR SBT
F1:TEN	Jun 27 20:54:23 2016	TOTAL TENSION
F1:WAVE	Jun 27 20:54:23 2016	DIGITIZED WAVEFORM

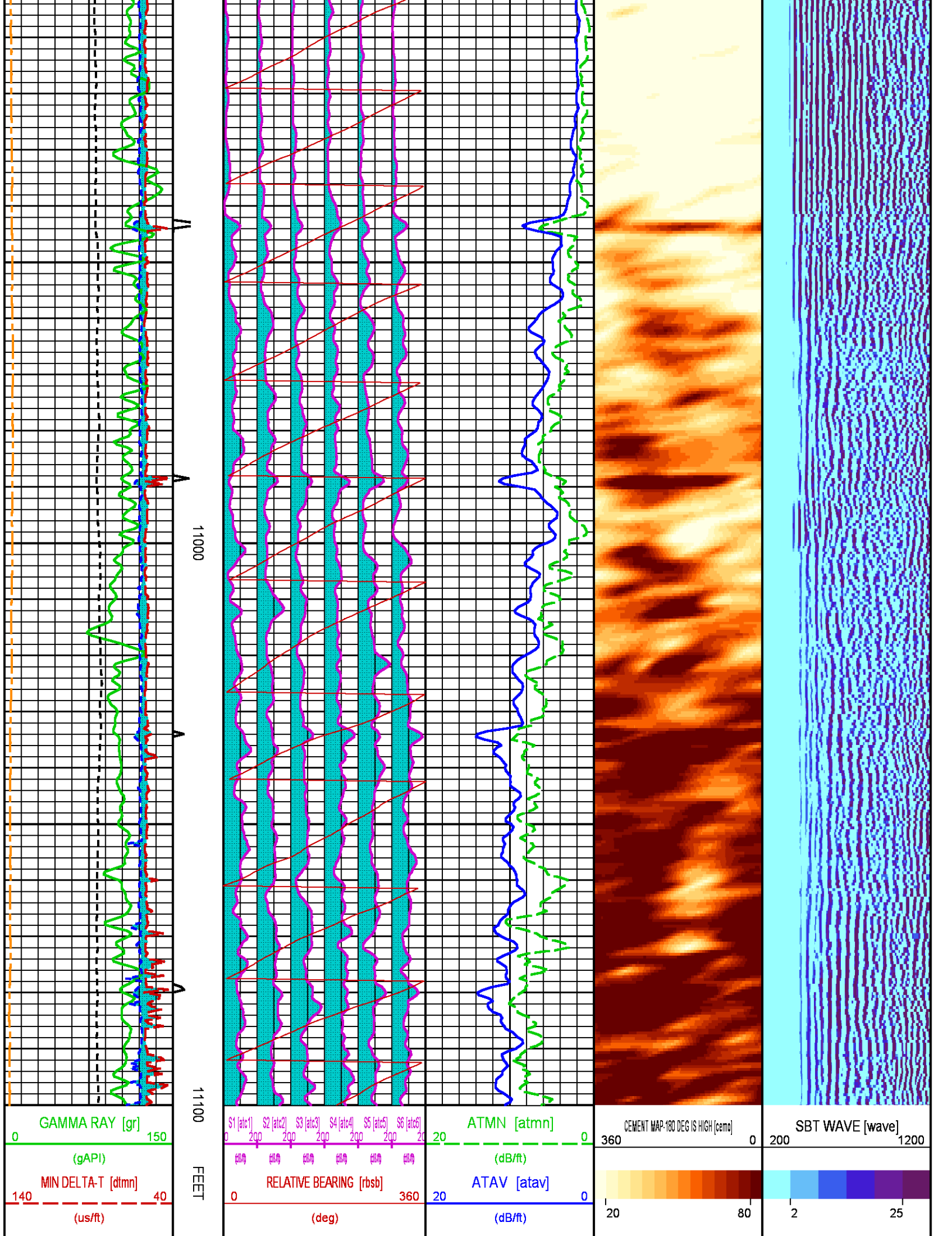
CURVE MEASURE POINT OFFSET

CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
ATAV	15.50	ATC4	15.50	CCL	40.00	GR	34.50
ATC1	15.50	ATC5	15.50	DEVOD	15.50	RBSB	15.50
ATC2	15.50	ATC6	15.50	DTMN	15.50	TEN	0.00
ATC3	15.50	ATMN	15.50	DTMX	15.50		

Presentation : cas6685:/dat1a/CH108026/REPEATWRD.fvpdf [5"/100' Scale]
Plot Interval : 10900 - 11100 Feet

Data File 1 : F1 : cas6685:C:/dat1a/WELLDATA/WHITINGWRD 23-33-R/REPEATR.xtf
Created On : Jun 27 20:54:23 2016
Company : WHITING OIL AND GAS
Well : WRD 23-33-R
Field : WHITE RIVER DOME
File Interval : 10858.5 - 11235 Feet
OCT : n331d





MAX DELTA-T [dtmx] 140 ----- 40 (us/ft)	CCL			
DEVIATION [devod] 0 ----- 90 (deg)				
TENSION [tten] 3000 ----- 6000 (lbf)				

CALIBRATION / VERIFICATION SUMMARY

Source File: C:\dat1a\WELLDATA\WHITINGWRD 23-33-R\331d.tp1

GR PRIMARY CALIBRATION SUMMARY

TOOL #: 1339XA 10185173 DATE/TIME PERFORMED: Thu Jun 23 10:50:29 2016

UNIT #: 3880TA HL6670 CALB JIG #: 4702NK BA-856

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	CR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	CALBRTR (gAPI)
GR	61.56	220.93	159.4 <small>155.0 195.0</small>	0.941	57.93	207.93	150

GR PRIMARY VERIFICATION SUMMARY

TOOL #: 1339XA 10185173 DATE/TIME PERFORMED: Thu Jun 23 10:52:36 2016

UNIT #: 3880TA HL6670 VERI JIG #: 4702NK BA-856

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	61.87	220.02	0.941	58.23	207.08	148.85 <small>140.00 160.00</small>

RB PRIMARY CALIBRATION SUMMARY

TOOL #: 1424XA 119555 DATE/TIME PERFORMED: Wed Jun 22 15:56:12 2016

UNIT #: 3880TA HL6670

	X-ATT (raw)	Y-ATT (raw)	OFFSET (deg)	X-MAX	Y-MAX	RB (deg)
PAD 2	-164.3	-415.0				0.00

PAD 3 -438.0 -57.6

355.00 5.00
60.79
 55.00 65.00

-68.21 -442.53 446.95

SBT PRIMARY CALIBRATION SUMMARY

TOOL #: 1424XA 119555

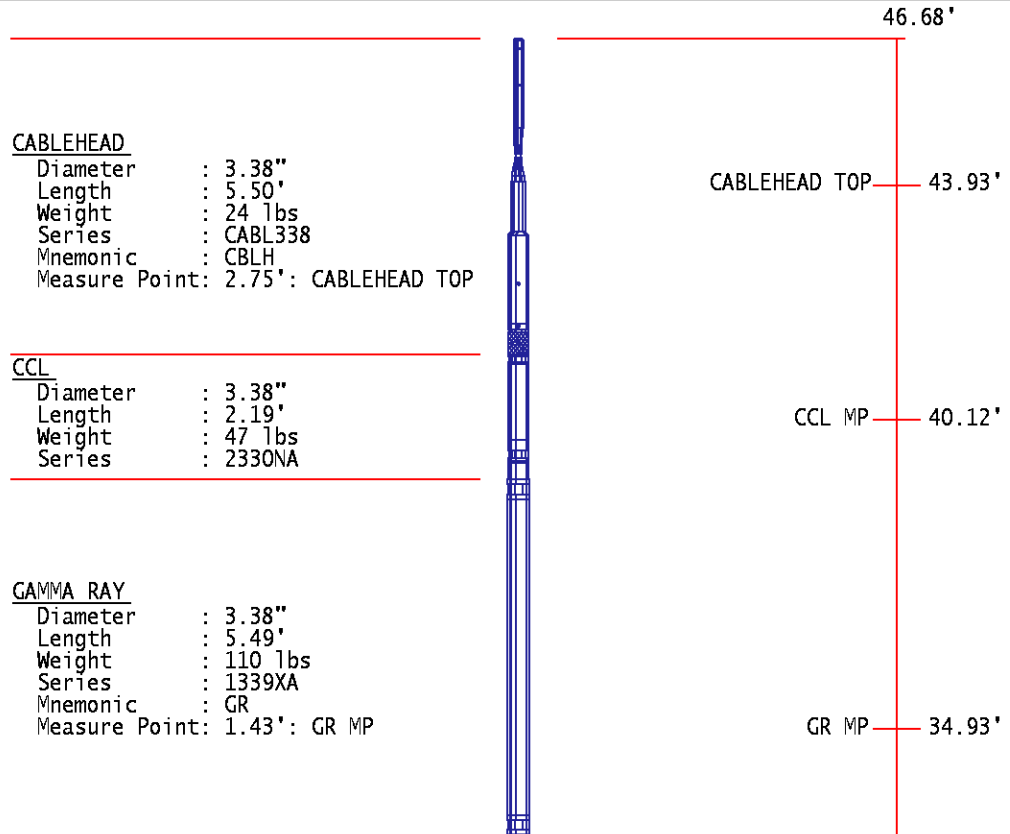
DATE/TIME PERFORMED: Mon Jun 27 14:11:16 2016

UNIT #: 3885TC 6685

	PAD 1	PAD 2	PAD 3	PAD 4	PAD 5	PAD 6
NOISE LEVEL	2.6	2.7	2.3	1.8	2.1	2.8
	10.0	10.0	10.0	10.0	10.0	10.0
PAD SENS	167.9	182.5	288.4	242.9	360.4	242.4
	150.0	150.0	150.0	150.0	150.0	150.0

INSTRUMENT CONFIGURATION

Source File: C:\dat1a\WELLDATA\WHITINGWRD 23-33-R\SBT_n331d~tdg



ACOUSTIC DIGITIZER

Diameter : 3.38"
Length : 8.00'
Weight : 133 lbs
Series : 1633EA
Mnemonic : AC

SEGMENTED BOND TOOL

Diameter : 3.38"
Length : 17.33'
Weight : 240 lbs
Series : 1424XA
Mnemonic : SBT
Measure Point: 7.54': ATT MP

ATT MP — 15.71'

SEGMENTED BOND TOOL VDL SUB

Diameter : 3.38"
Length : 7.89'
Weight : 108 lbs
Series : 1424PA
Mnemonic : SBT
Measure Point: 4.00': SBT MP

SBT MP — 4.28'

BULL PLUG 3 3/8

0.00'

TOTAL LENGTH: 46.68'
TOTAL WEIGHT: 664 lbs
MAX DIAMETER: 0'3.38"





COMPANY WHITING OIL AND GAS
WELL WRD 23-33-R
FIELD WHITE RIVER
COUNTY RIO BLANCO STATE COLORADO

FILE NO:
US108026
API NO:
051031193101

LOCATION:
SHL: 1925' FSL & 2187' FWL

SEC 33 TWP 2N RGE 97W

ELEVATIONS:
KB 6200 FT
DF
GL 6168 FT

DATE 27-Jun-2016

SEC33 T2N R97W