



RADIAL CEMENT BOND LOG  
GAMMA RAY LOG  
CASING COLLAR LOCATOR

FILE NO:	COMPANY	HILCORP ENERGY COMPANY
API NO:	WELL	STATE OF COLORADO A-B #1-16
05001064550000	FIELD	HOLSTER
	COUNTY	ADAMS
	STATE	COLORADO
Ver. 3.87	LOCATION:	
	SEC 18	TWP 2S RGE 68W
PERMANENT DATUM	G.L.	ELEVATION 5242 FT
LOG MEASURED FROM	K.B.	9 FT ABOVE P.D.
DRILL MEAS. FROM	KELLY BUSHING	
		OTHER SERVICES RPA/GR/COL W/C/GR
		ELEVATIONS: KB 5251 FT DF 5250 FT OL 5242 FT
DATE	TRIP	07-Oct-2011
RUN	1	1
SERVICE ORDER	5752291	
DEPTH DRILLER	8320 FT	
DEPTH LOGGER	8320 FT	
BOTTOM LOGGED INTERVAL	8320 FT	
TOP LOGGED INTERVAL	0 FT	
TIME STARTED	11:00	
TIME FINISHED	15:00	
OPERATOR RIG TIME	4 HOURS	
TYPE OF FLUID IN HOLE	WATER	
FLUID DENSITY	8.35 LB/G	
FLUID SALINITY	N/A	
FLUID LEVEL	0 FT	
LOGGED CEMENT TOP	N/A	
WELLHEAD PRESSURE	1500 PSI	
MAXIMUM HOLE DEVIATION	N/A	
NOMINAL LOGGING SPEED	45 F/IN	
MAX. RECORDED TEMP.	N/A	
REFERENCE LOG	SCHUMBERGER	
REFERENCE LOG DATE	18-AUG-1972	
EQUIP. NO.	HL-6670	GRAND JCT
RECORDED BY	OSTLER/DONALDSON	
WITNESSED BY	GRANDLER	

IN MAKING INTERPRETATIONS OF LOGS OUR EMPLOYEES WILL GIVE 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 :
- \* CREW: ROBERTSON/FAVORITE
  - \* THANK YOU FOR CHOOSING BAKER HUGHES WIRELINE SYSTEMS

#### EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	VOL	1426XA	10404539	STOOD OFF
1	1	GR	2459XA	10417456	FREE

MAIN LOG 1500 PSI

## PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/575291/m012a02.prm  
 LOGGING MODE: DEPTH DIRECTION: UP  
 TOP DEPTH: 10.750 ft BOTTOM DEPTH: 8340.641 ft

### SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
GR	FILTER ()	medium (1)		TOP	BOTTOM
AMPLITUDE	FILTER ()	light (2a)		''	''
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*)	201	us	TOP	BOTTOM
	AMP WINDOW START (fgp2*)	201	us	''	''
	AMP WINDOW START (fgp3*)	201	us	''	''
	AMP WINDOW START (fgp4*)	201	us	''	''
	AMP WINDOW START (fgp5*)	201	us	''	''
	AMP WINDOW START (fgp6*)	201	us	''	''
	AMP WINDOW START (fgp7*)	201	us	''	''
	AMP WINDOW START (fgp8*)	201	us	''	''
	AMP WINDOW START (fgp9*)	201	us	''	''
	AMP WINDOW LENGTH	30	us	''	''
TRAVEL TIME WINDOW (NEAR)	TT WINDOW START (ttm*)	211	us	''	''
	TT WINDOW LENGTH	500	us	''	''
	FIRST BRK THRESHOLD (ttm*)	2	mV	''	''
RAL CASING PARAMETERS	PPT NEAR	216.566	us	''	''
RAL TOOL DELAY	TOOL DELAY (str1*)	-77	us	''	''
	TOOL DELAY (str2*)	-77	us	''	''
	TOOL DELAY (str3*)	-77	us	''	''
	TOOL DELAY (str4*)	-77	us	''	''
	TOOL DELAY (str5*)	-77	us	''	''
	TOOL DELAY (str6*)	-77	us	''	''
	TOOL DELAY (str7*)	-77	us	''	''
	TOOL DELAY (str8*)	-77	us	''	''
BASELINE NOISE (NEAR)	NOISE WINDOW START	141	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

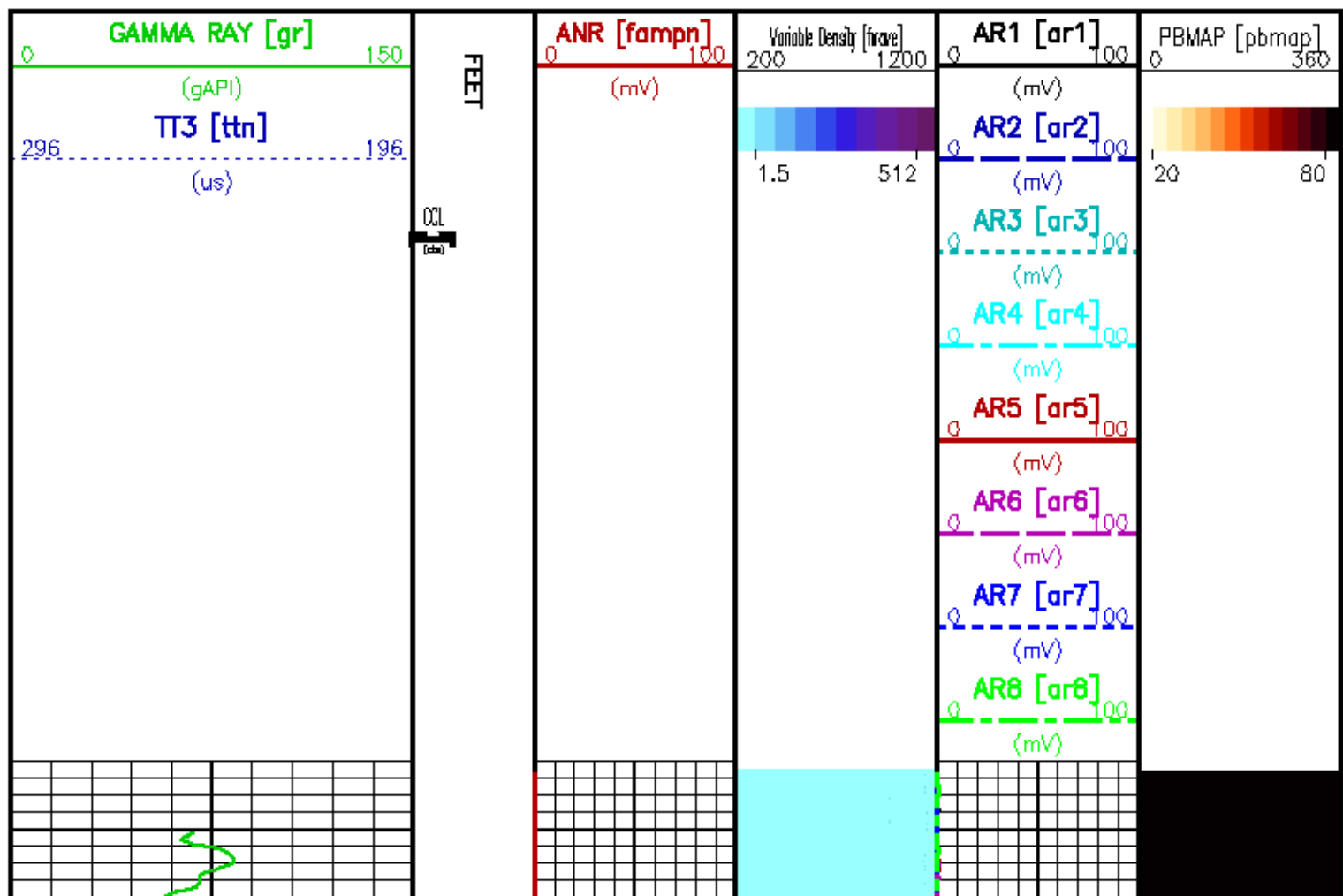
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:AR1	Oct 7 12:21:52 2011	FIXED GATE AMPLITUDE T-R1
F1:AR2	Oct 7 12:21:52 2011	FIXED GATE AMPLITUDE T-R2
F1:AR3	Oct 7 12:21:52 2011	FIXED GATE AMPLITUDE T-R3
F1:AR4	Oct 7 12:21:52 2011	FIXED GATE AMPLITUDE T-R4
F1:AR5	Oct 7 12:21:52 2011	FIXED GATE AMPLITUDE T-R5
F1:AR6	Oct 7 12:21:52 2011	FIXED GATE AMPLITUDE T-R6
F1:AR7	Oct 7 12:21:52 2011	FIXED GATE AMPLITUDE T-R7
F1:AR8	Oct 7 12:21:52 2011	FIXED GATE AMPLITUDE T-R8
F1:CCL	Oct 7 12:21:52 2011	CASING COLLAR LOCATOR
F1:FAMPN	Oct 7 12:21:52 2011	FIXED GATE AMPLITUDE NEAR RECEIVER
F1:FNAVE	Oct 7 12:21:52 2011	FAR NAVE FORM
F1:GR	Oct 7 12:21:52 2011	GAMMA RAY
F1:PBMAP	Oct 7 12:21:52 2011	PERCENT BOND CEMENT MAP
F1:TTN	Oct 7 12:21:52 2011	TRAVELTIME FROM NEAR TRANSMITTER-RECEIVER

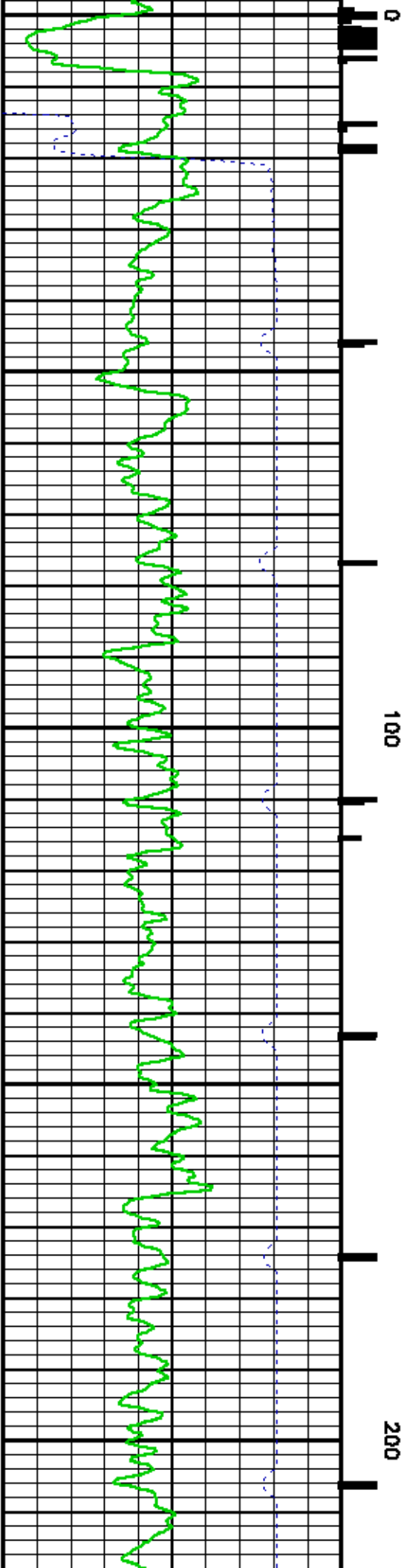
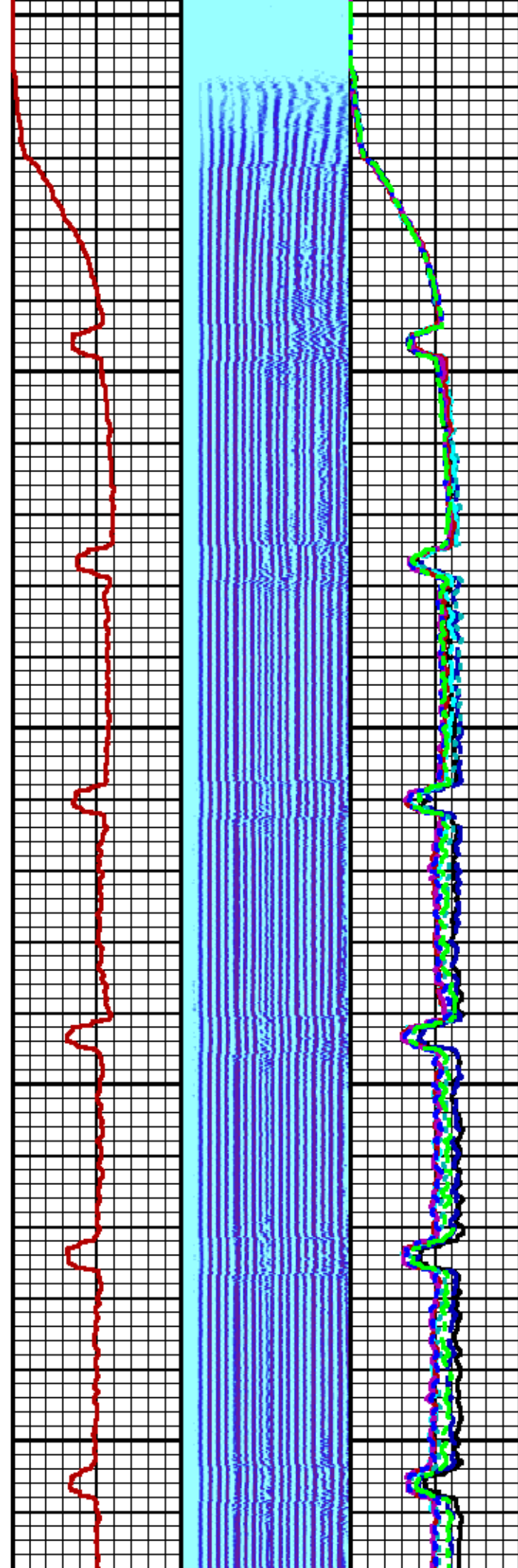
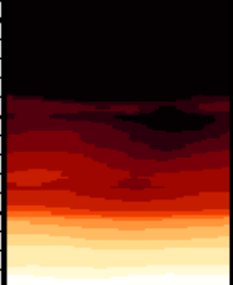
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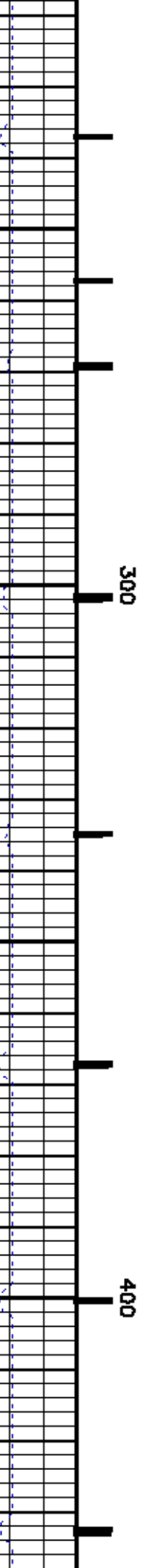
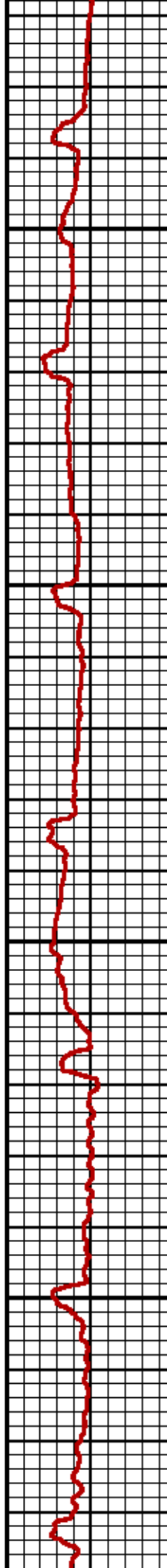
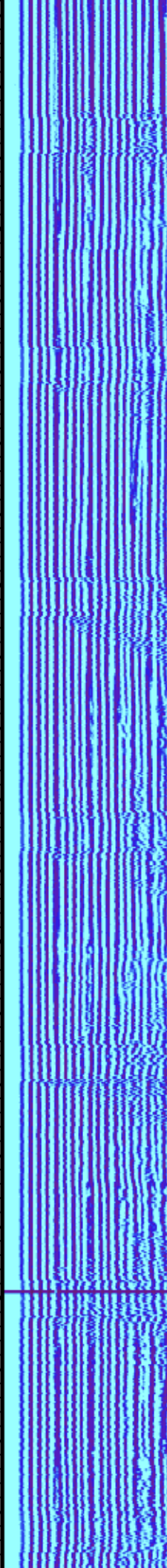
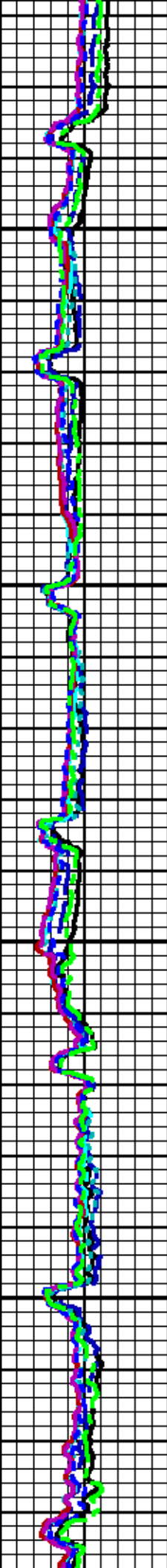
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
AR1	13.75	AR4	13.75	AR7	13.75	FAMPN	13.75
AR2	13.75	AR5	13.75	AR8	13.75	GR	6.50
AR3	13.75	AR6	13.75	CCL	8.50	TTN	13.75

Presentation : HL6670:/dat1a/575291/MAIN\_RAD.pdf [5"/100' Scale]  
 Plot Interval : -17 - 8325.75 Feet

Data File 1 : F1 : HL6670:/dat1a/575291/m012a02\_MAIN\_RAD.dxf  
 Created On : Oct 7 12:21:52 2011  
 Company : HILCORP ENERGY COMPANY  
 Well : STATE OF COLORADO A-B #1-16  
 Field : HOLSTER  
 File Interval : -18 - 8340 Feet  
 Out : m012a



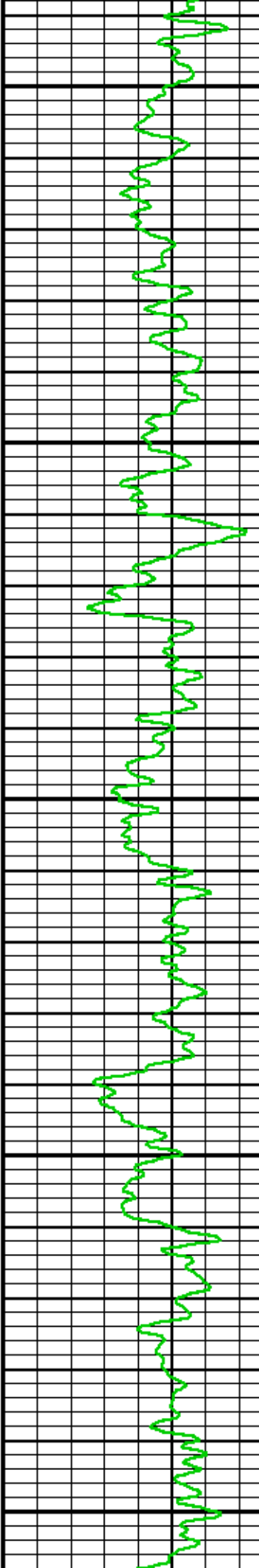
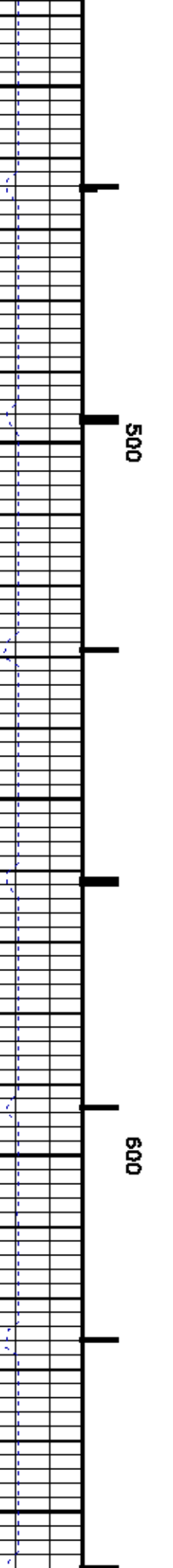
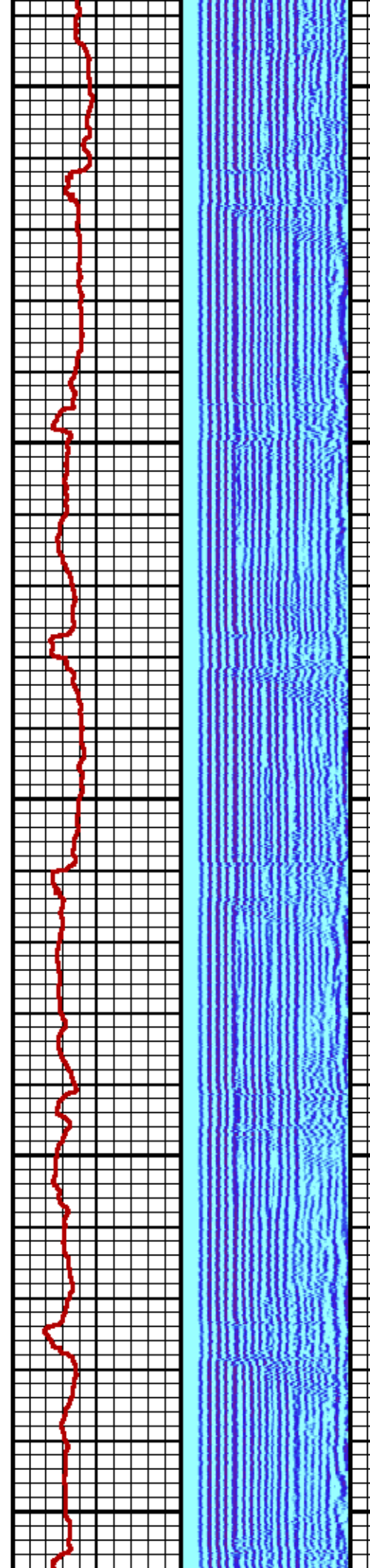
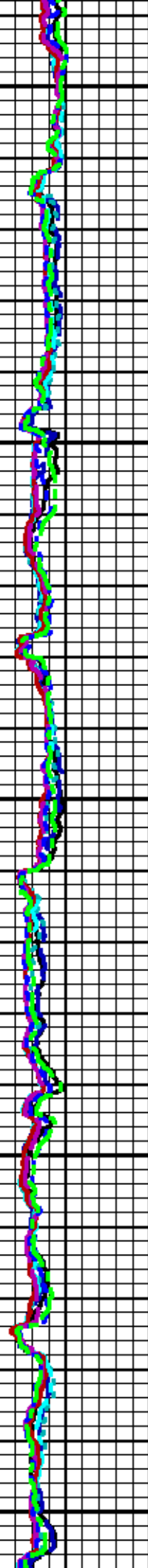


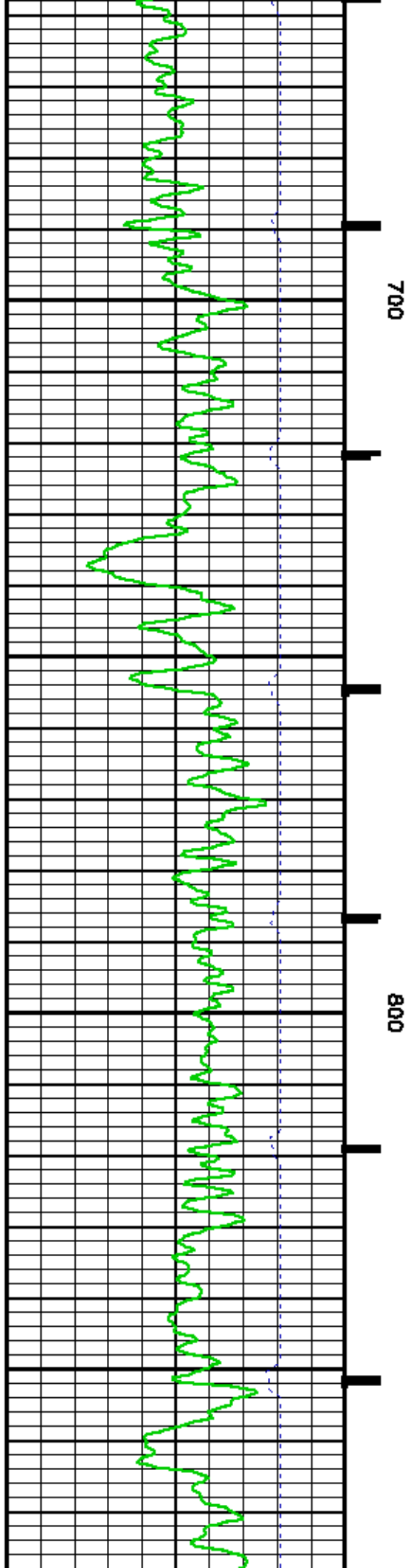
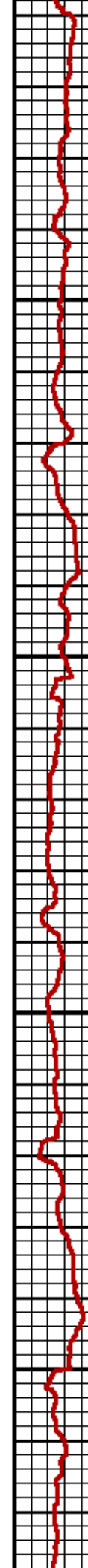
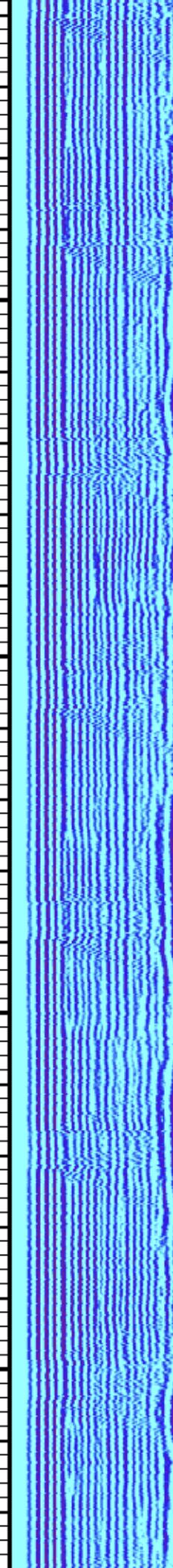
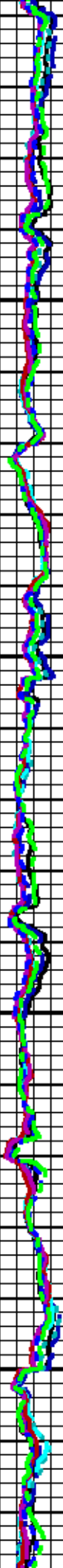
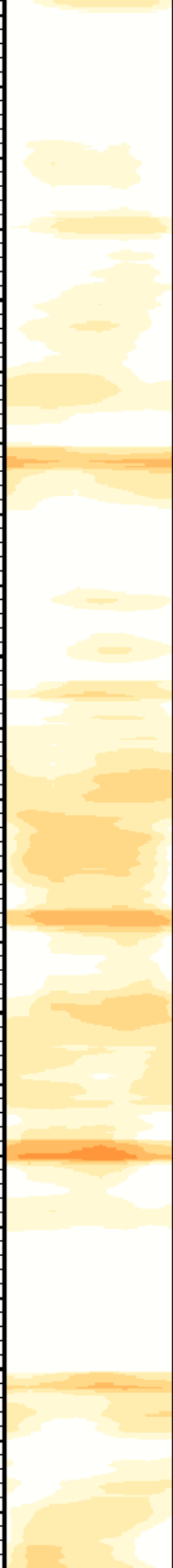


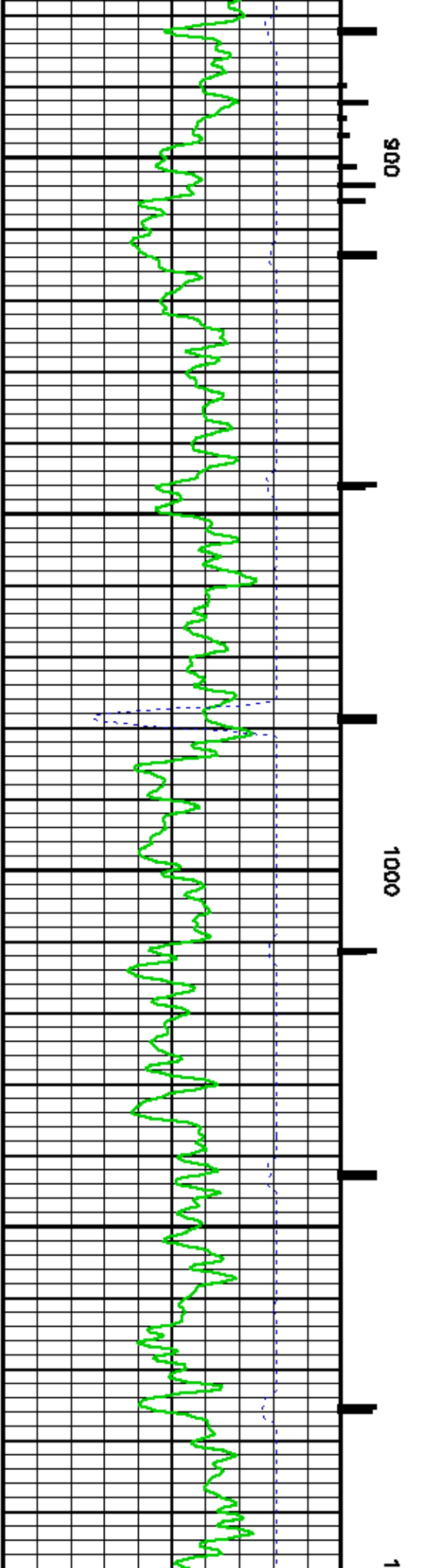
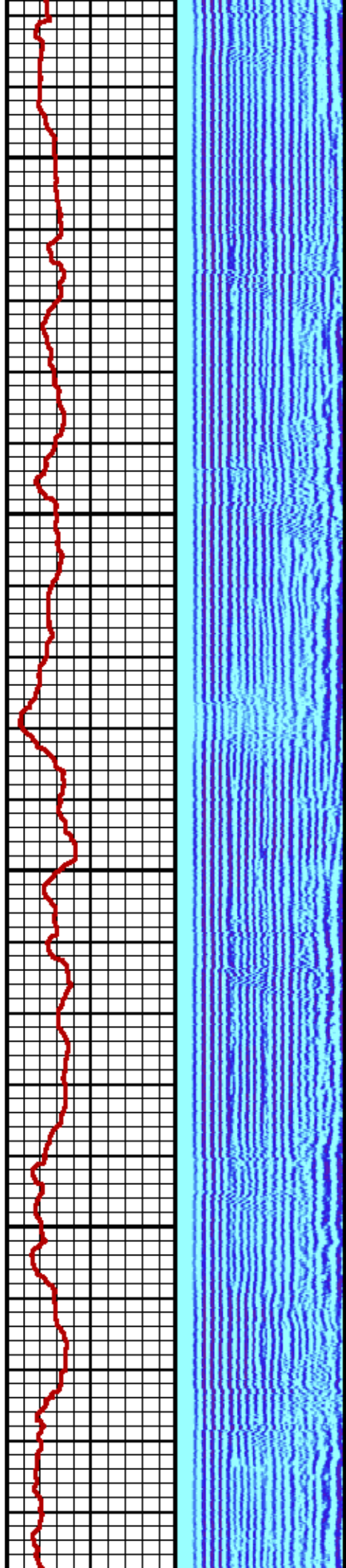
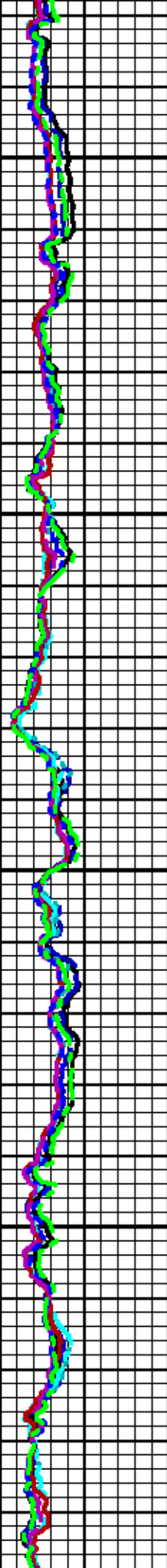
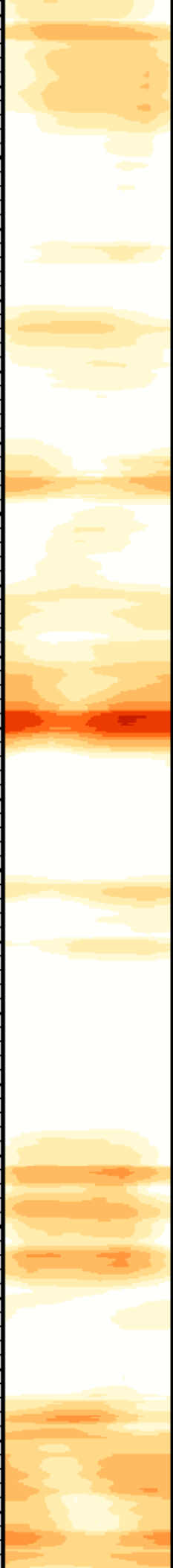
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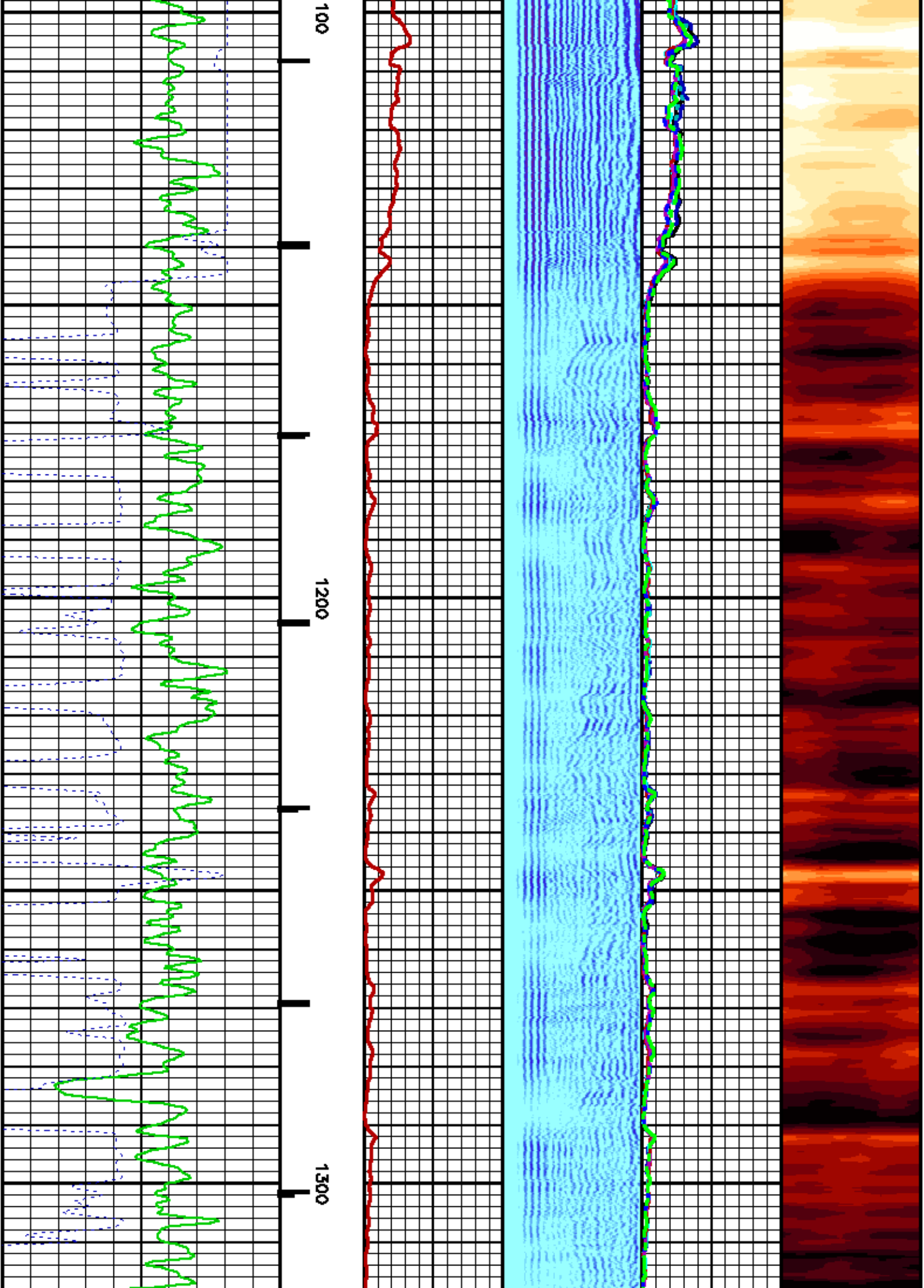


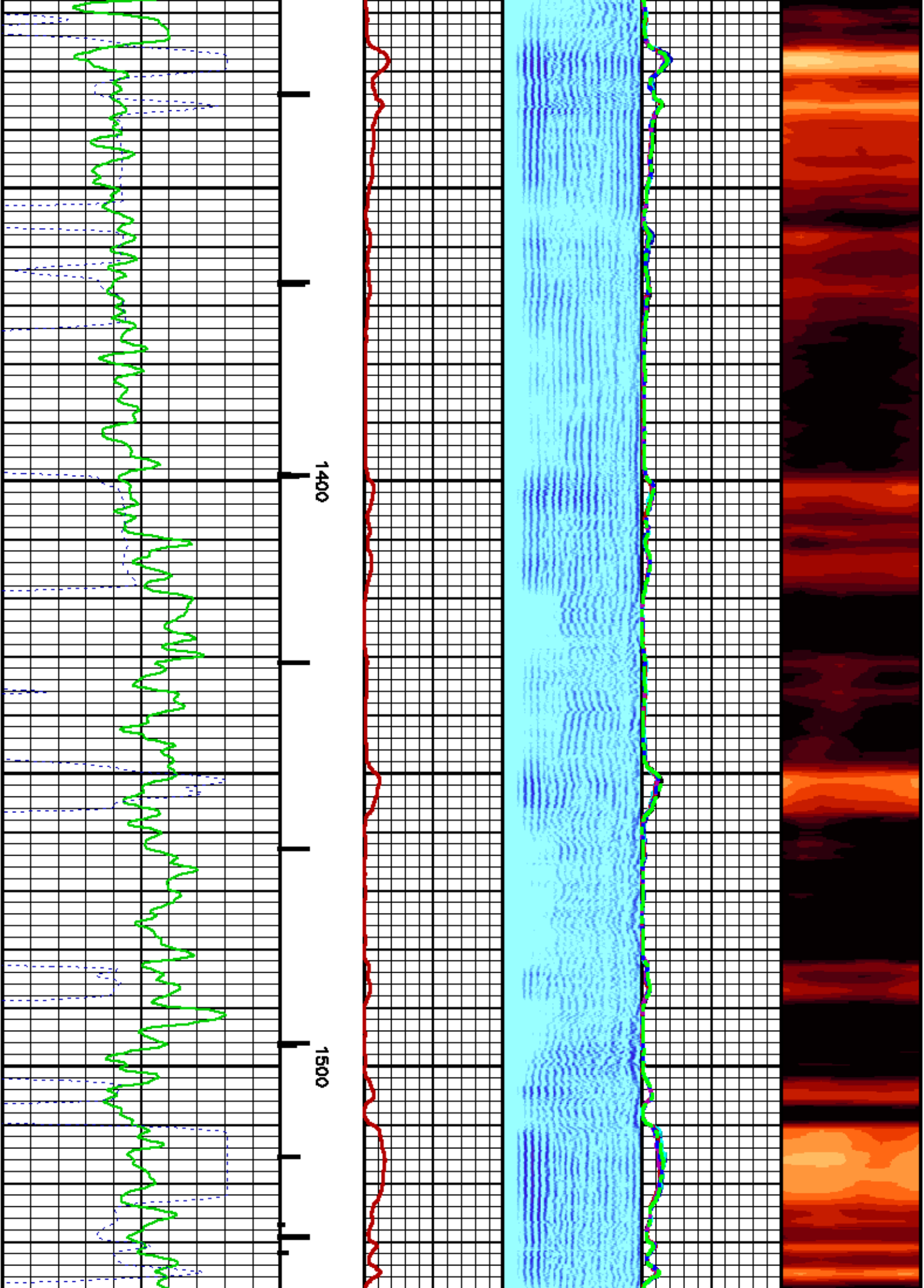


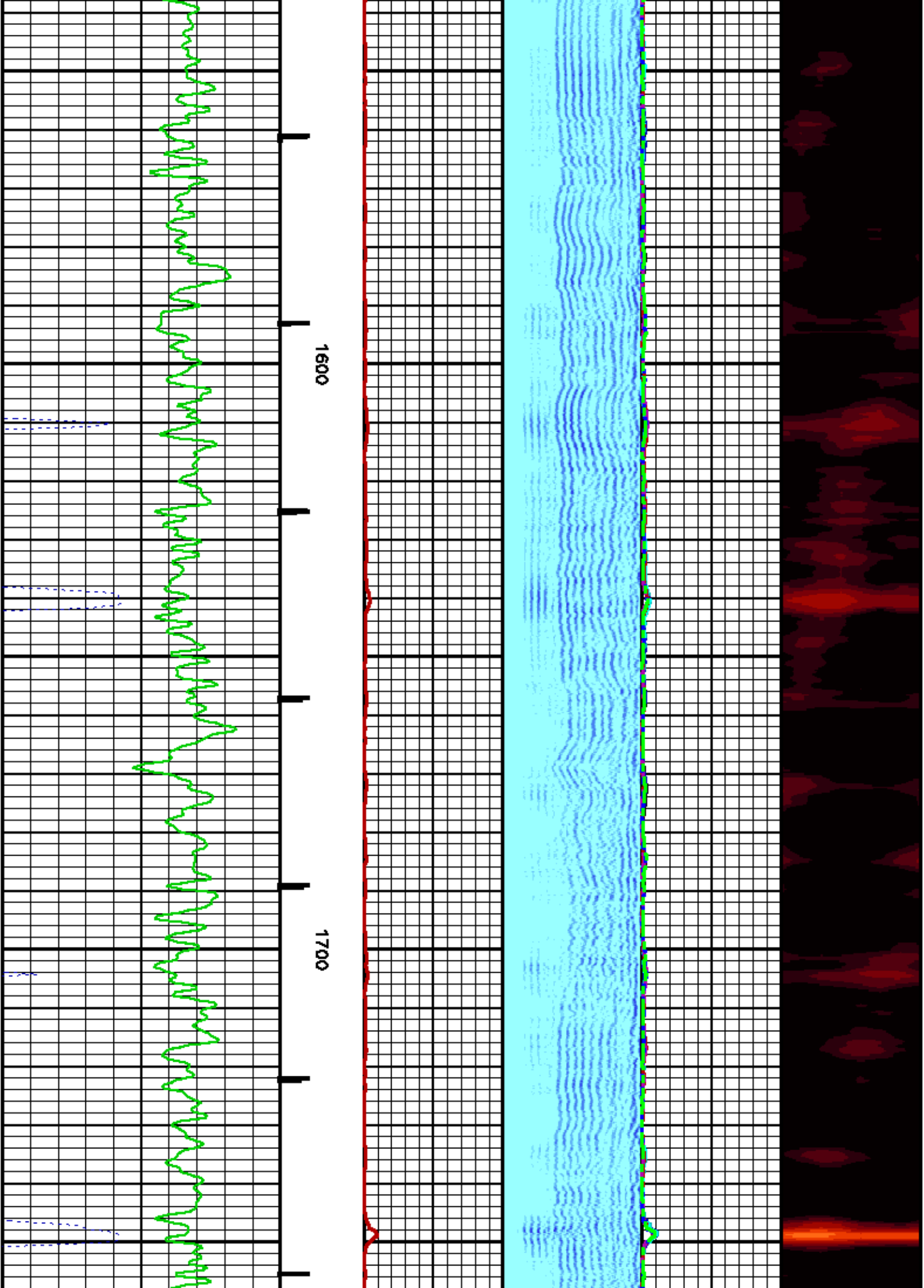


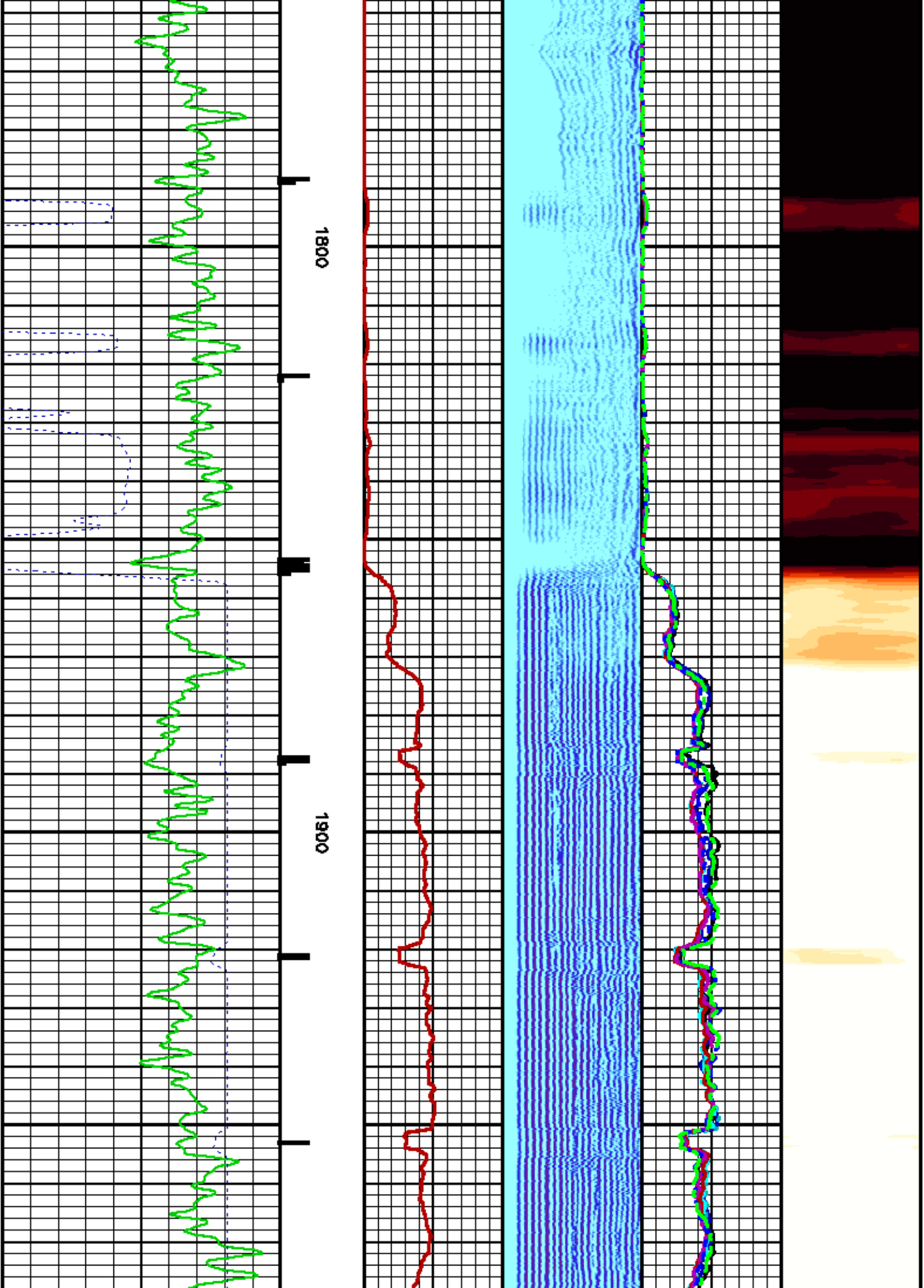




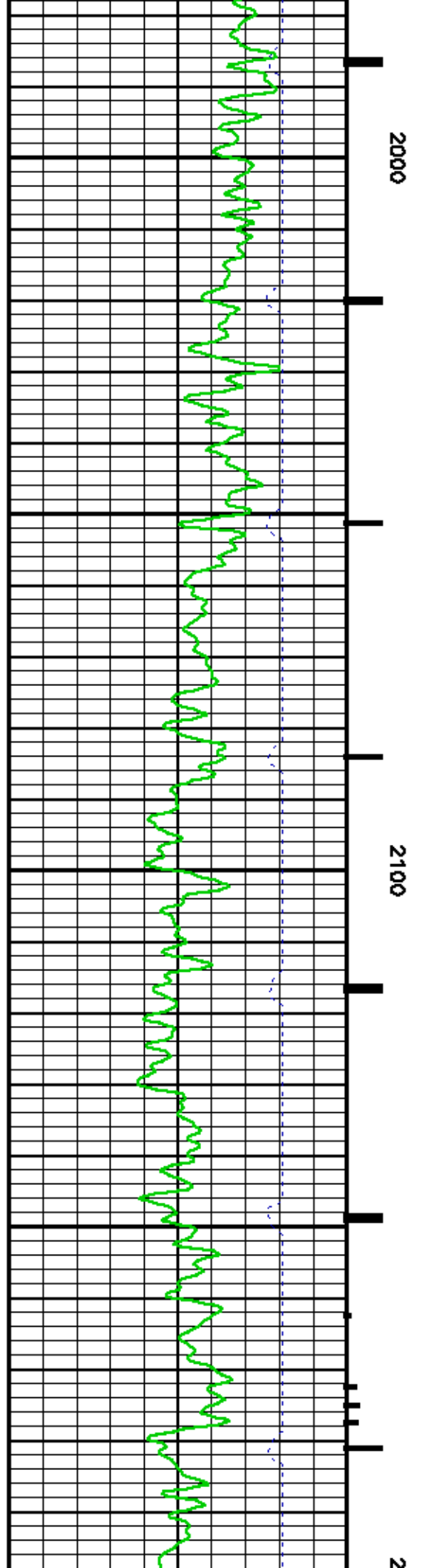
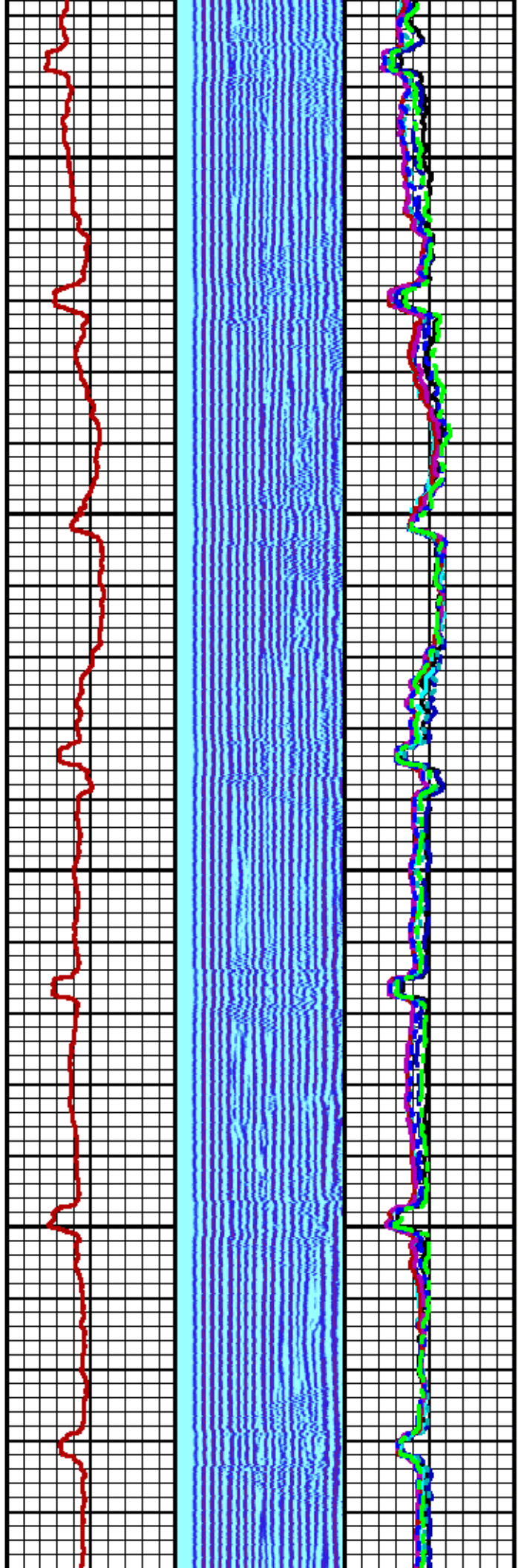


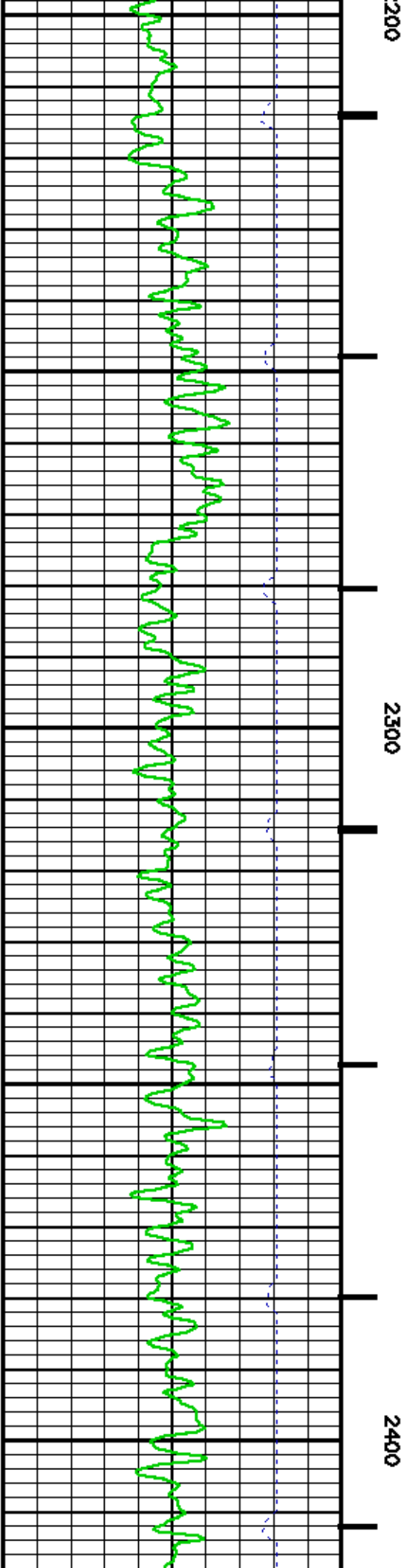
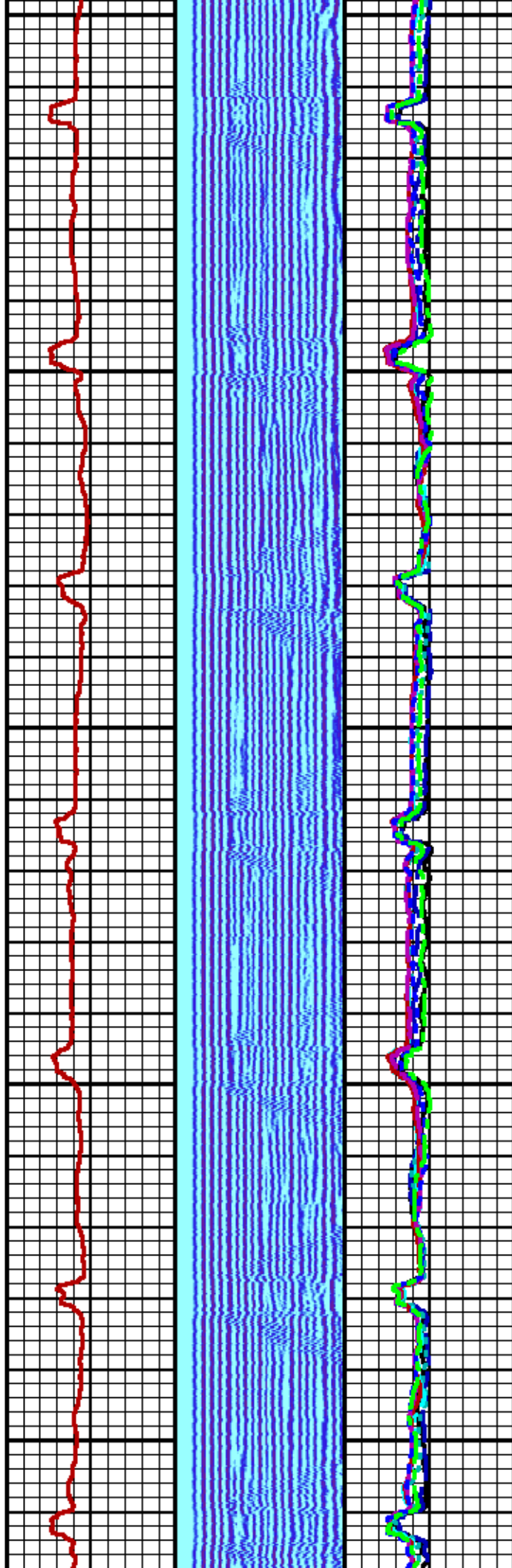


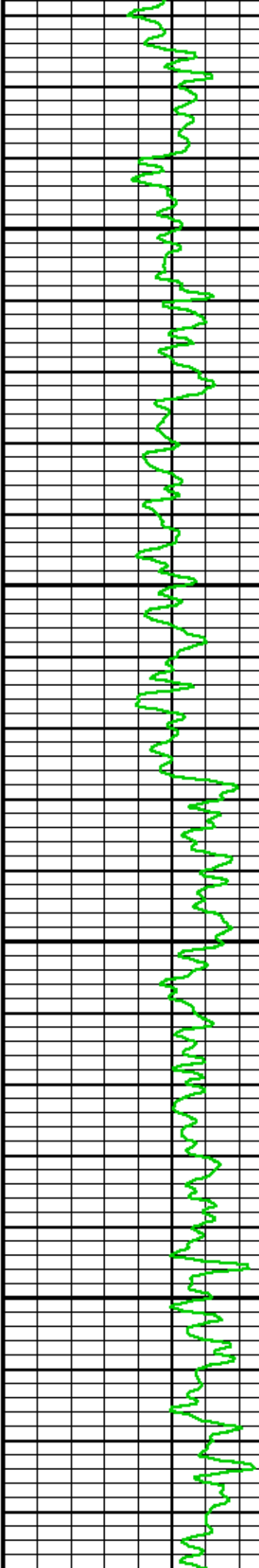
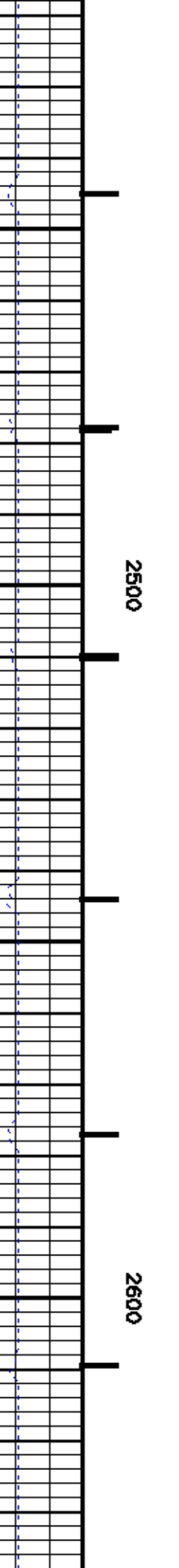
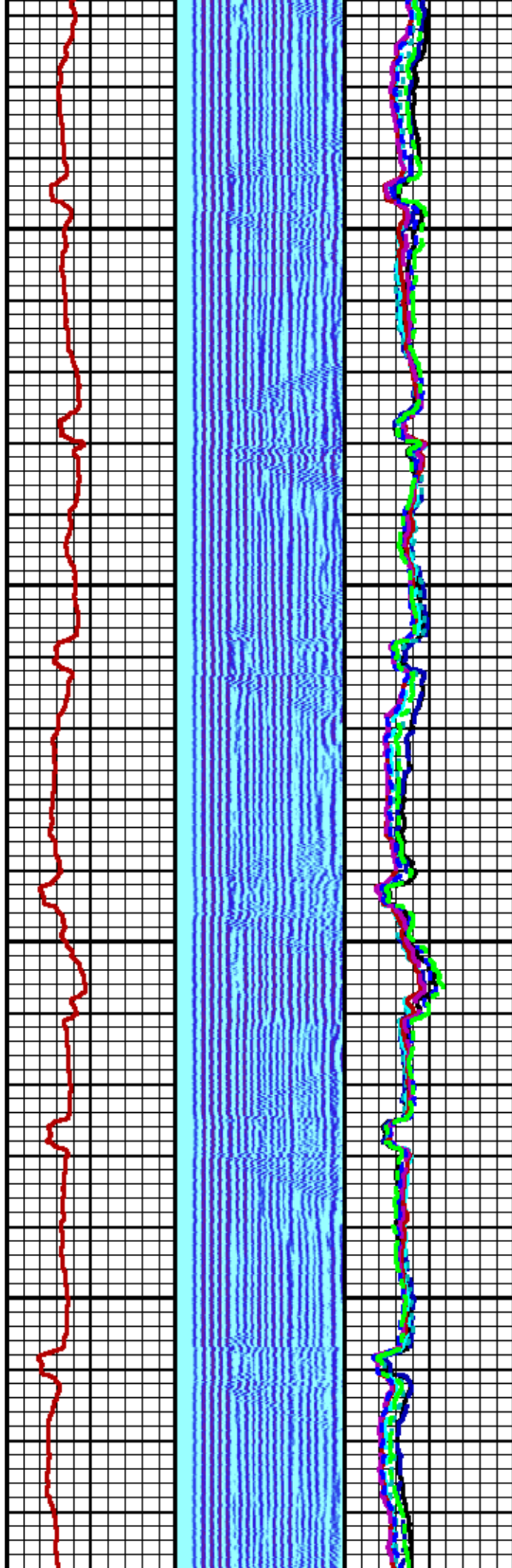




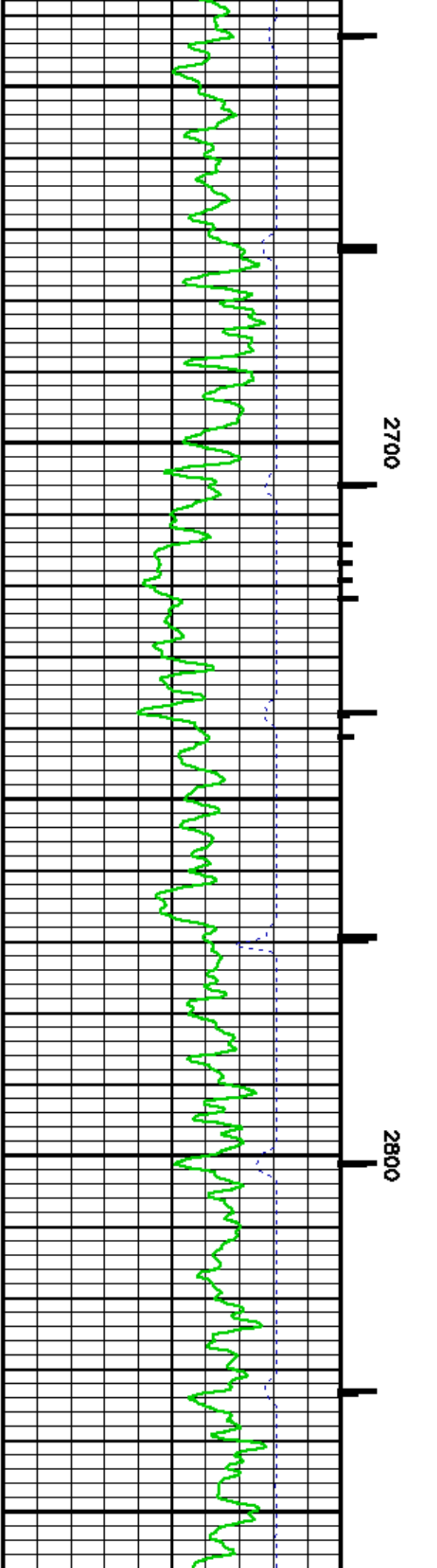
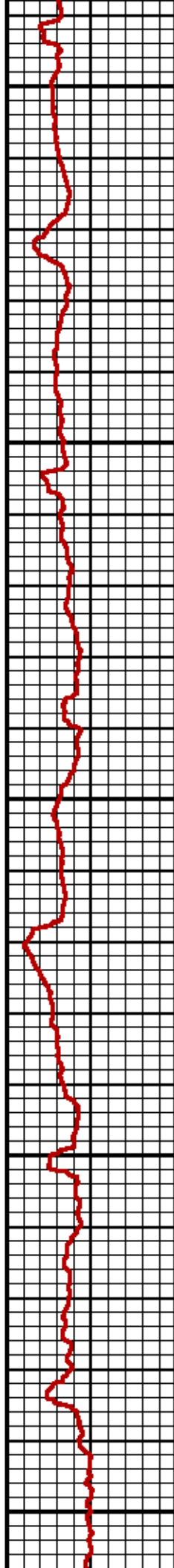
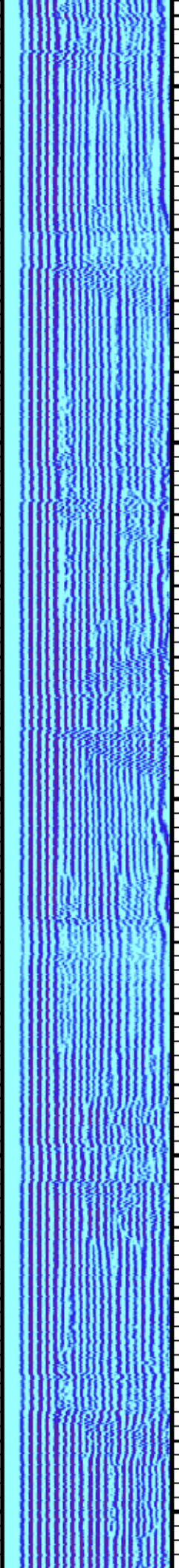
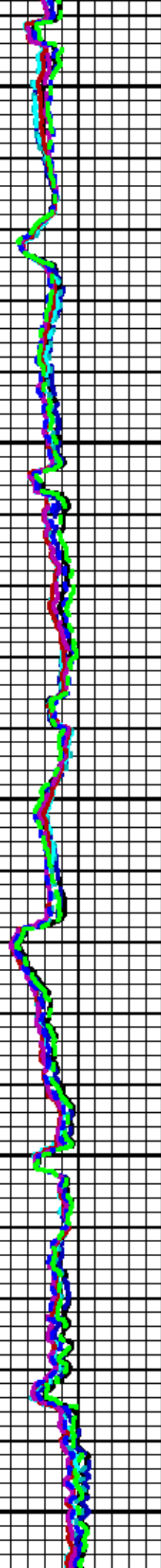




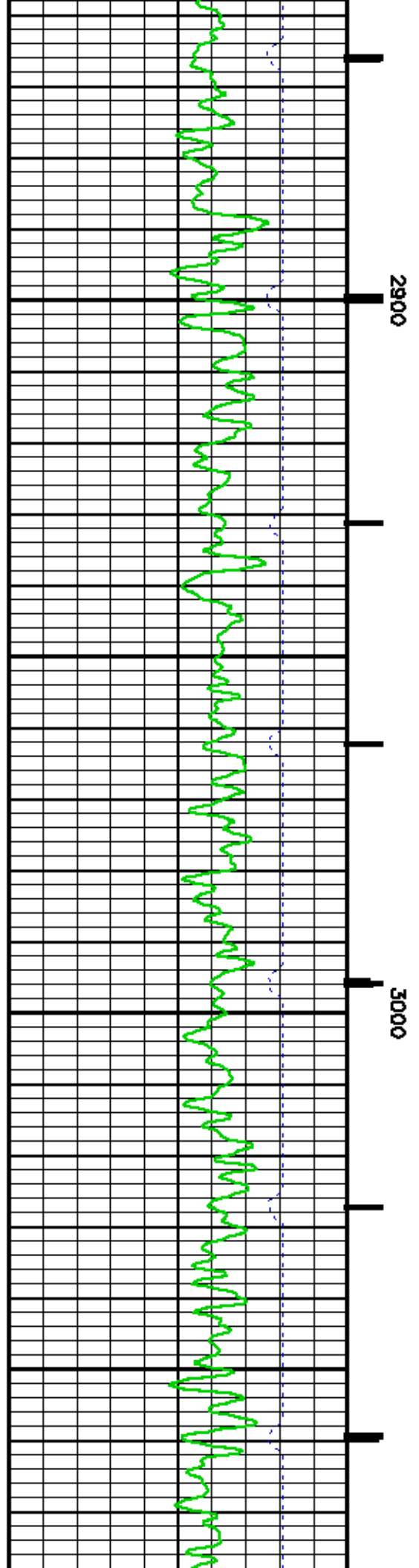
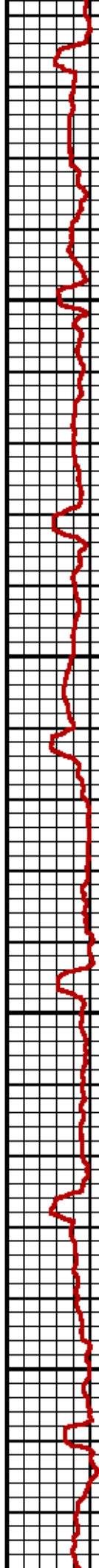
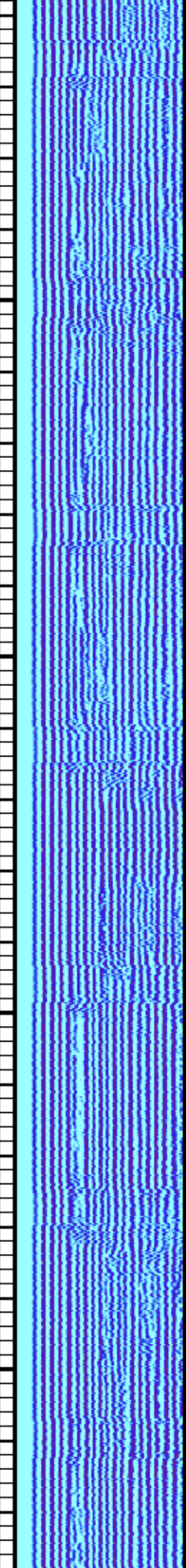
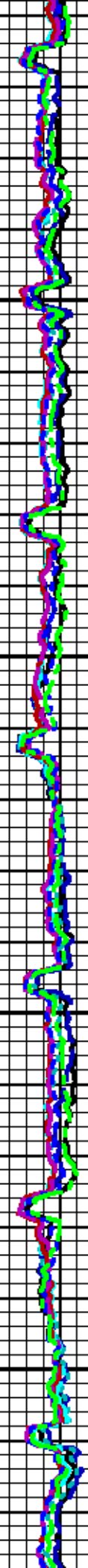


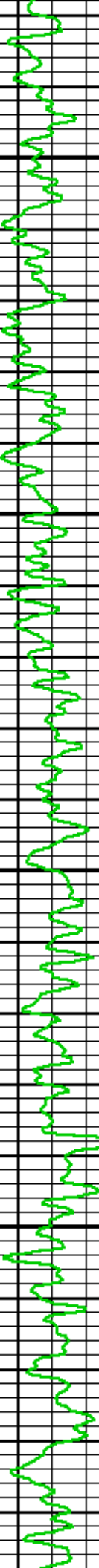
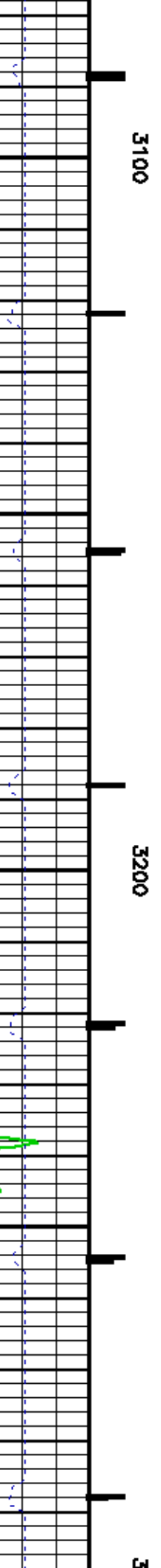
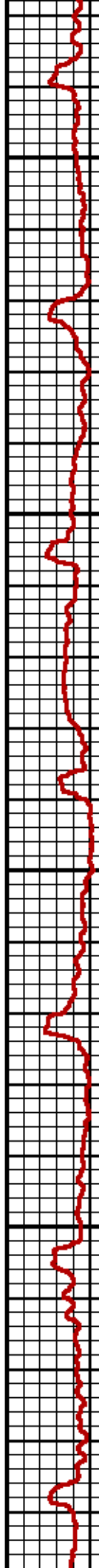
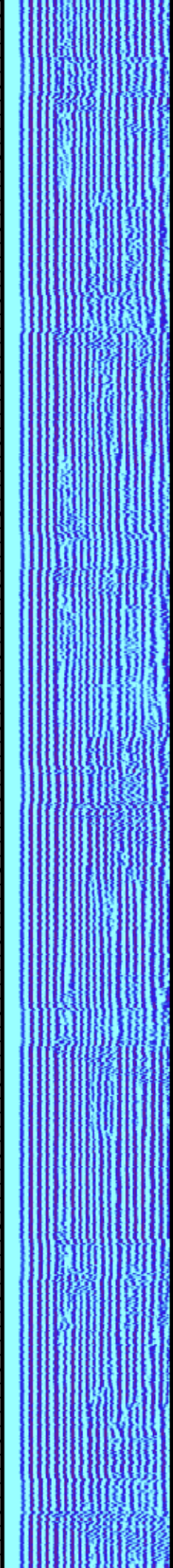
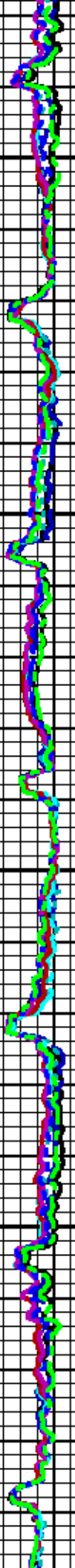








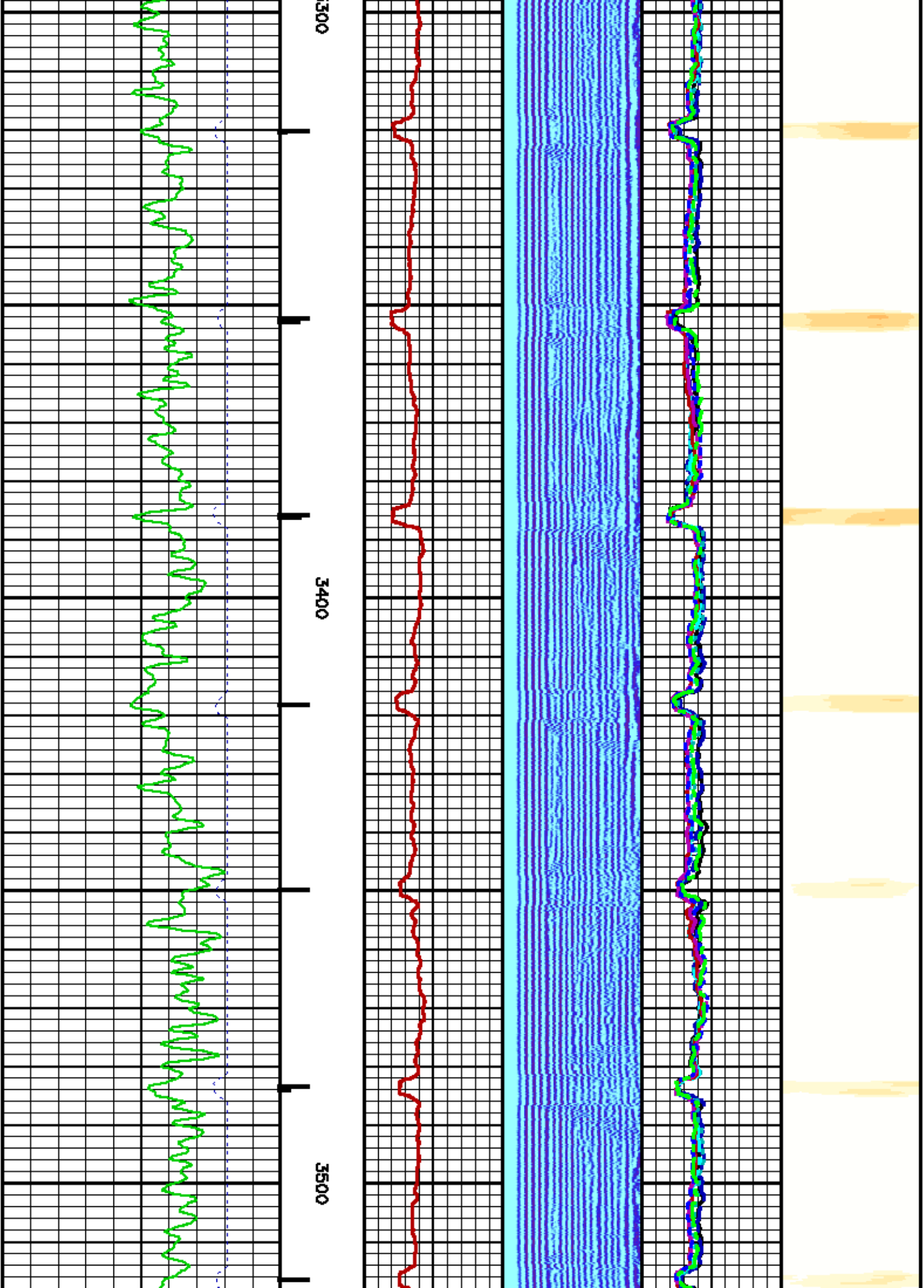




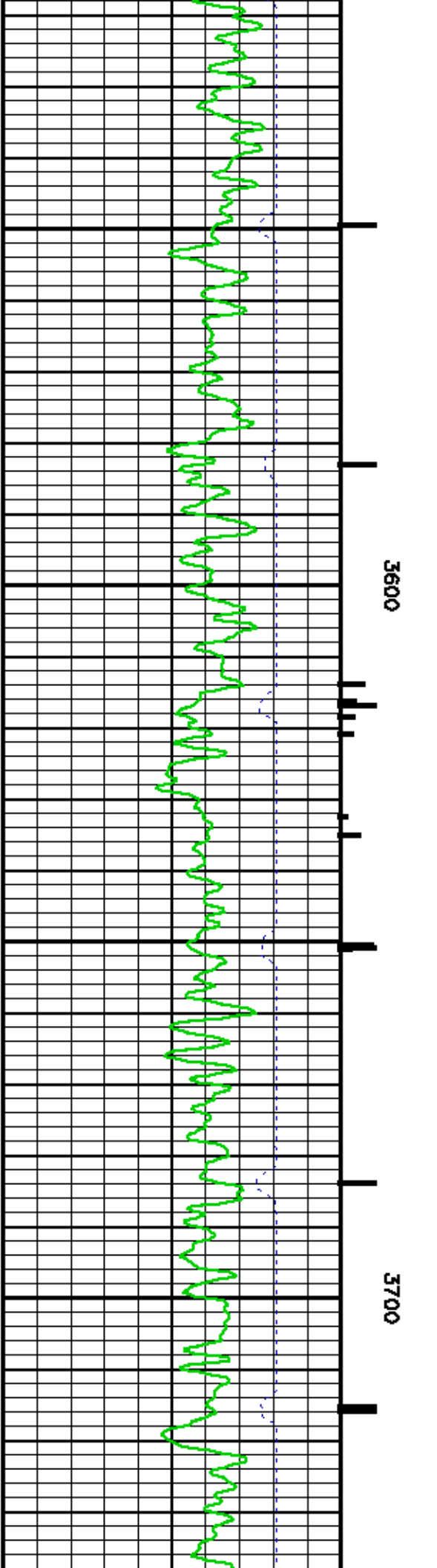
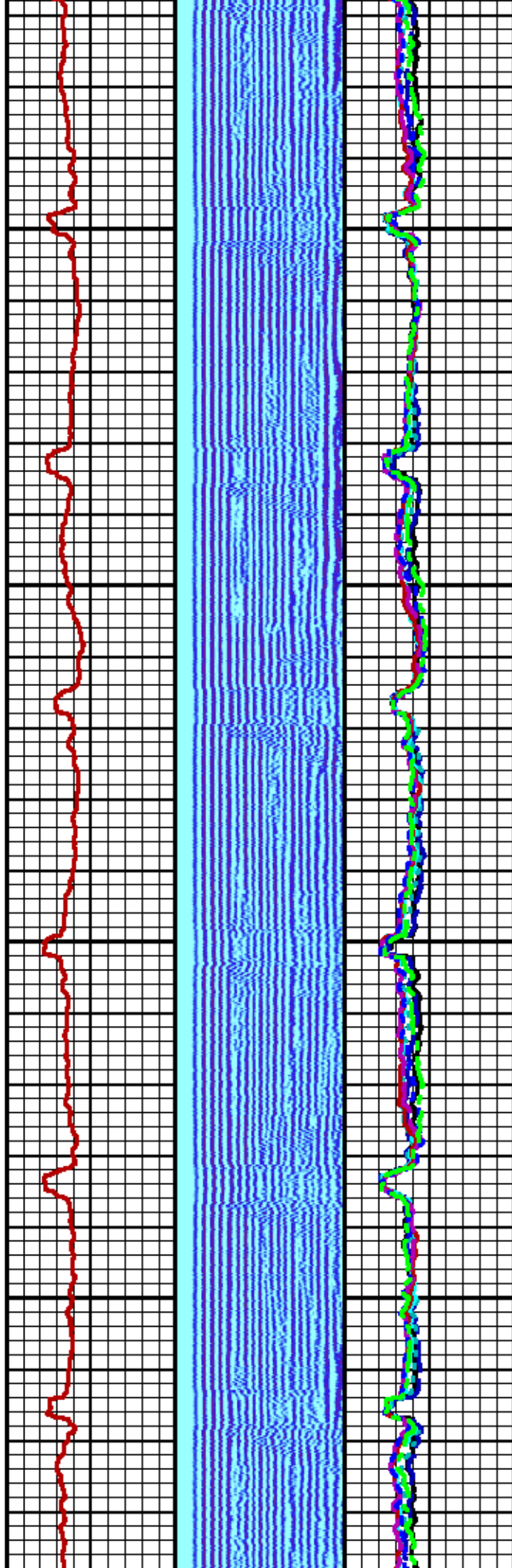
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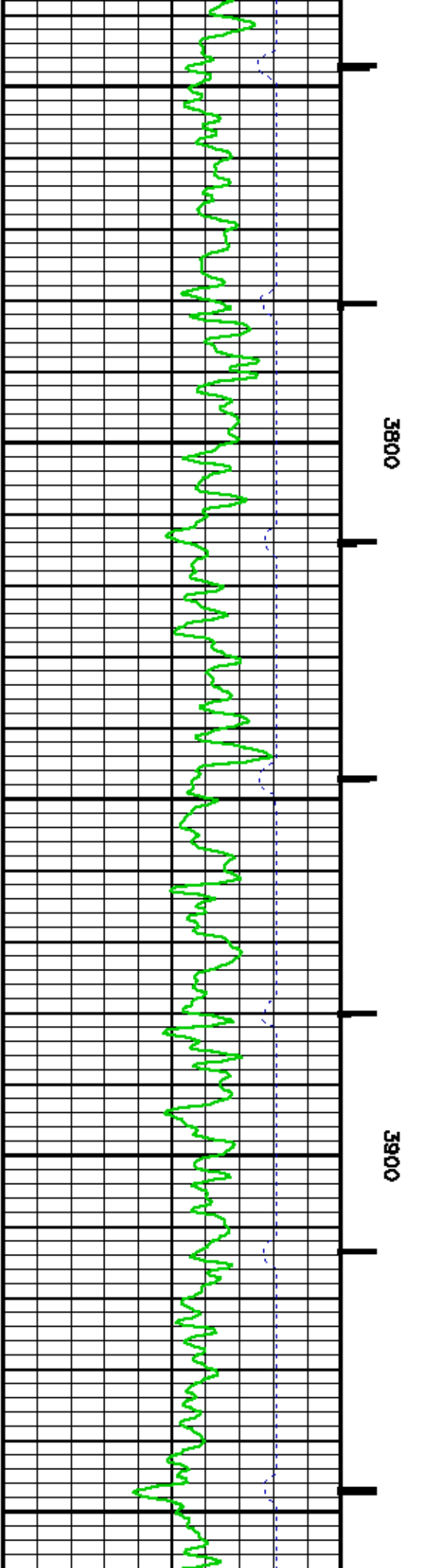
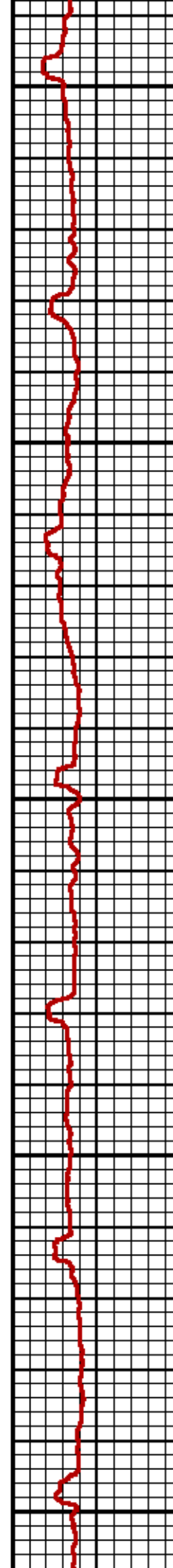
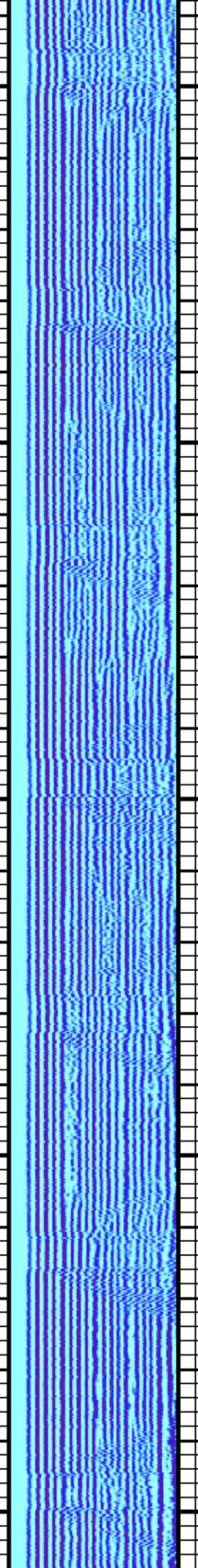
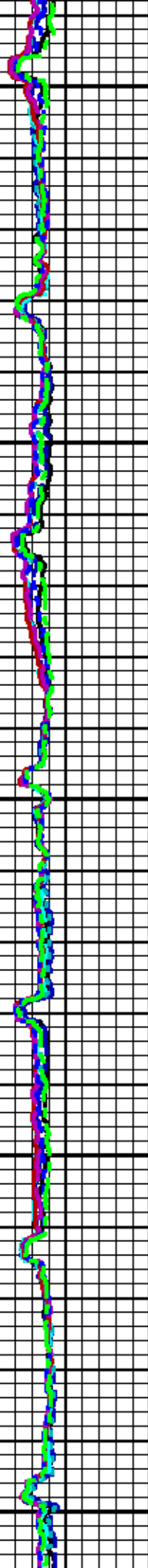
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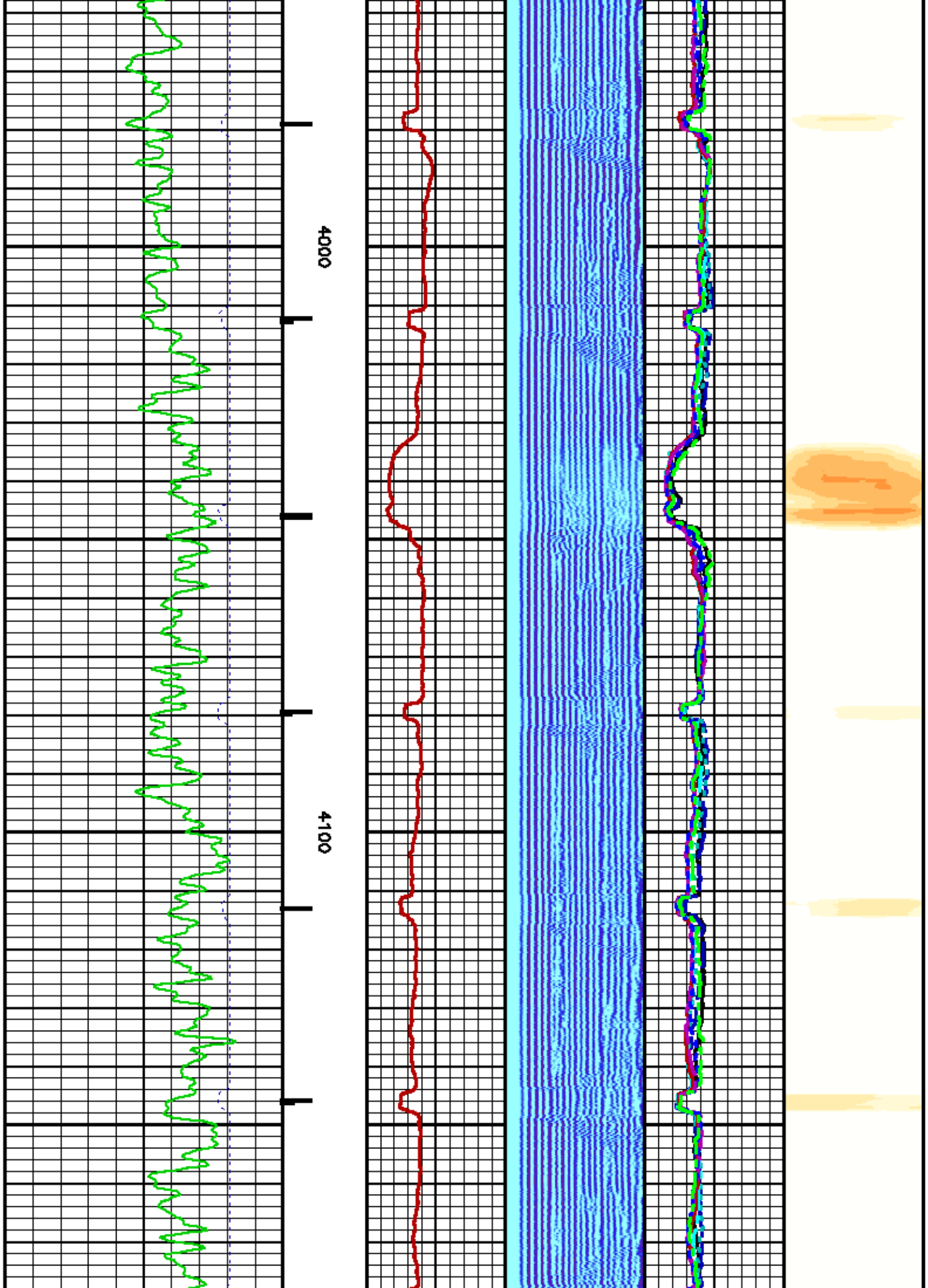


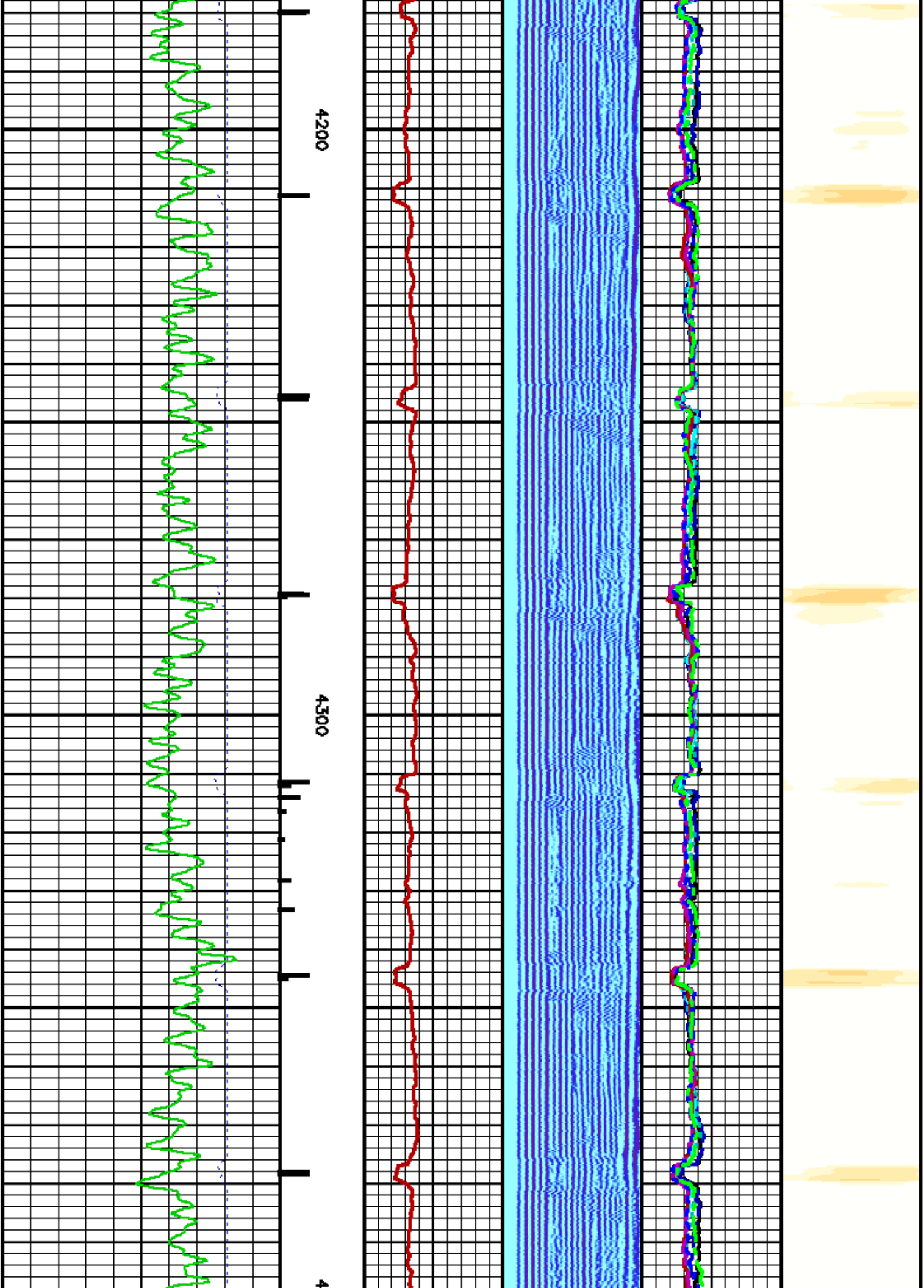




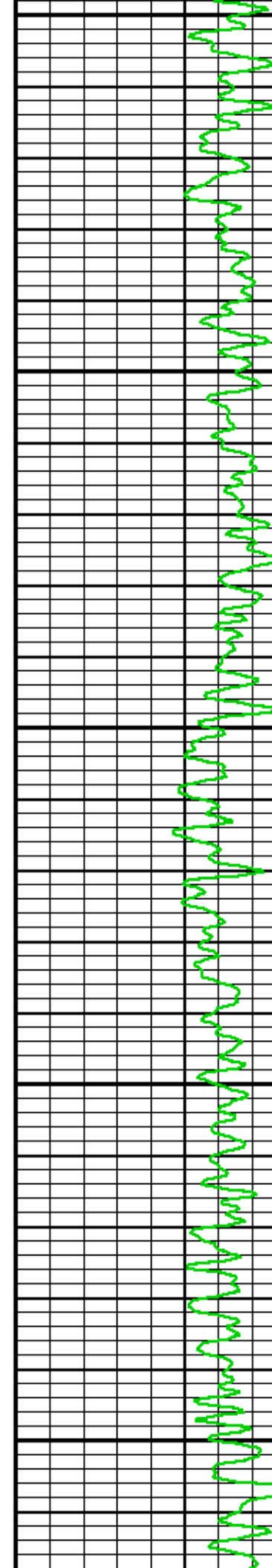
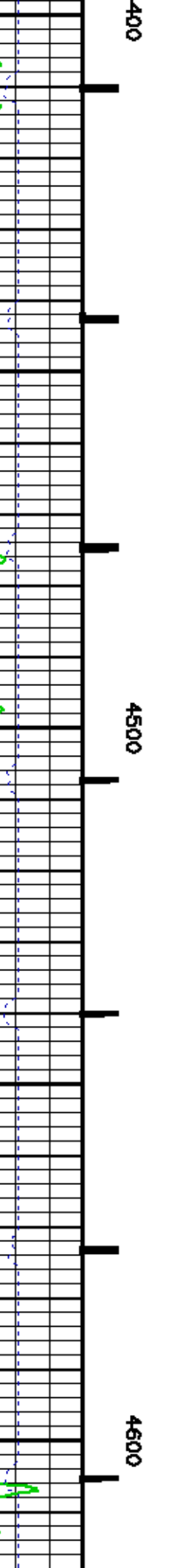
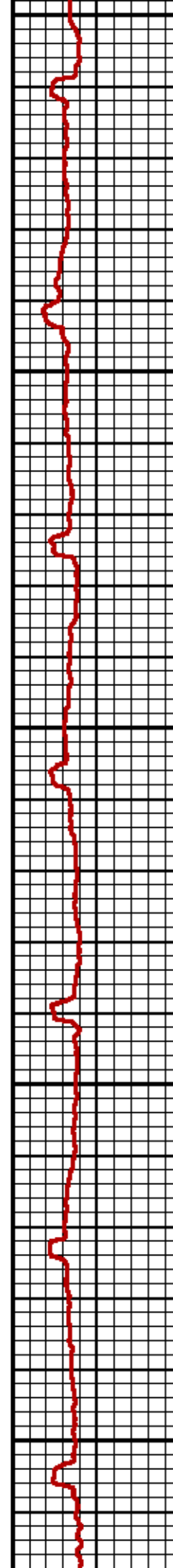
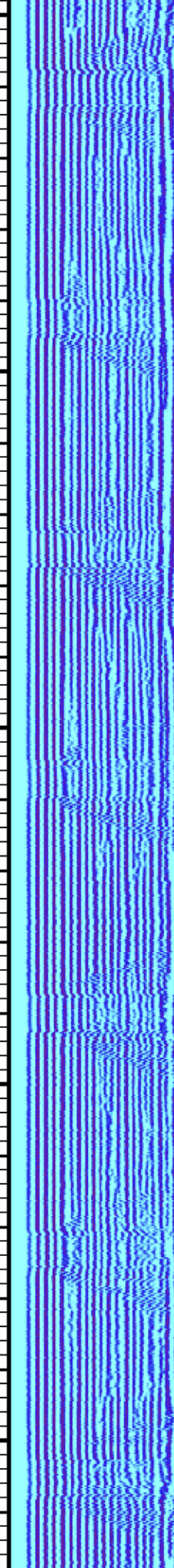
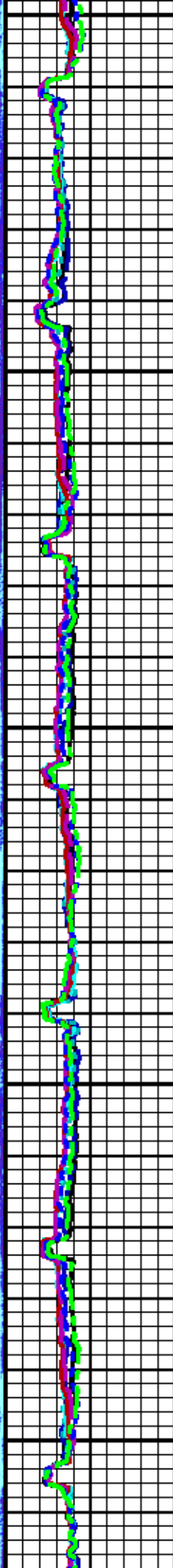




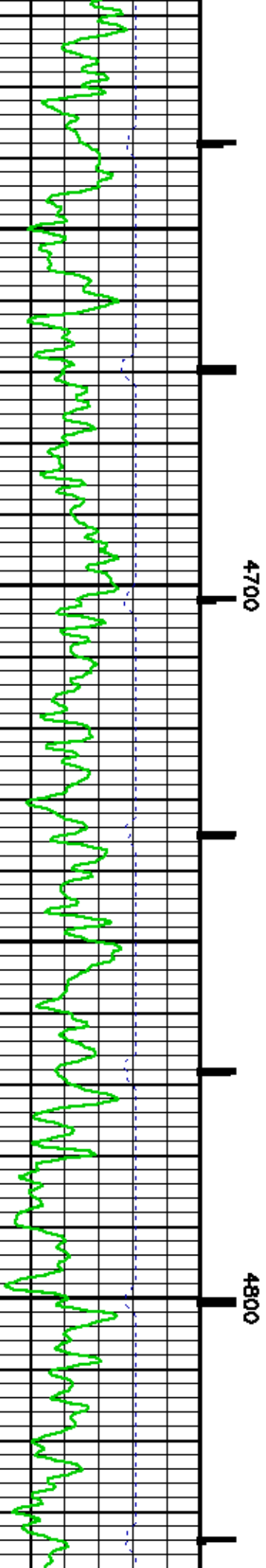
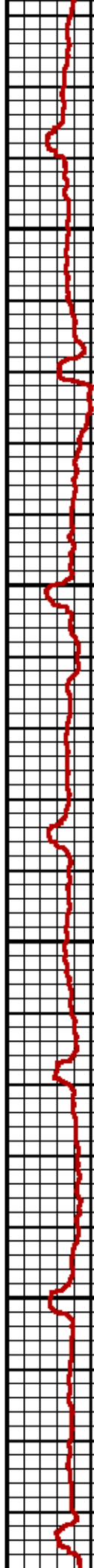
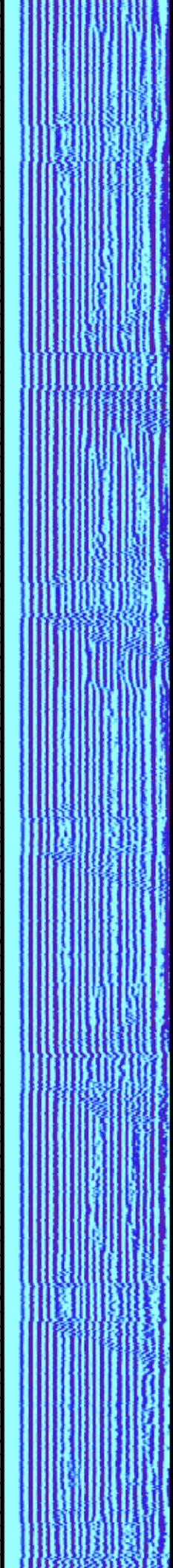
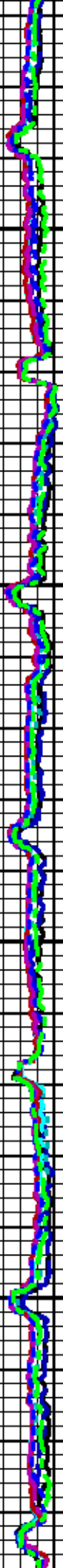






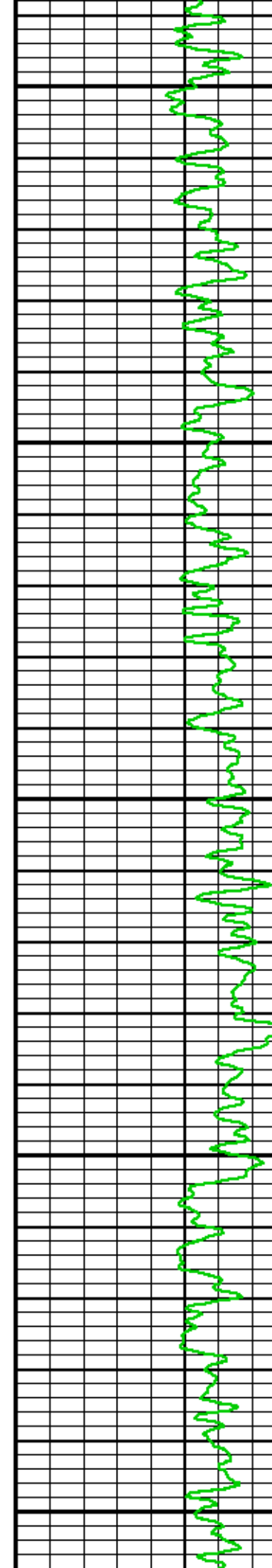
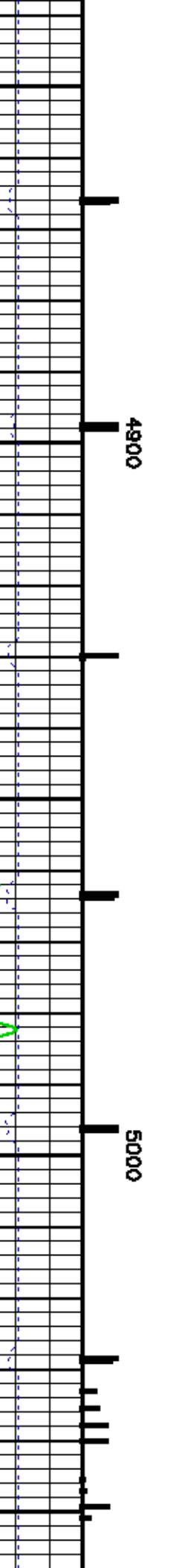
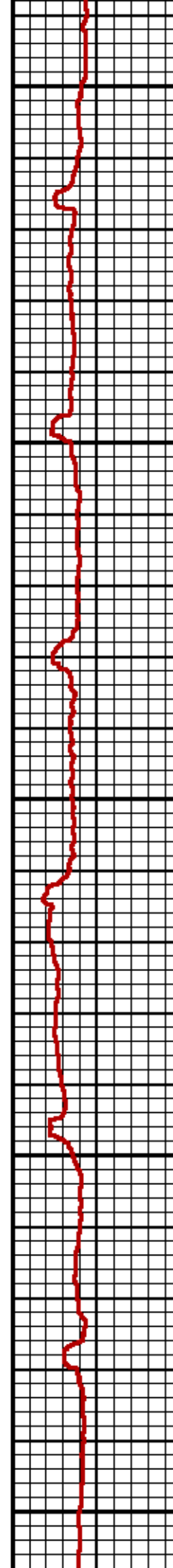
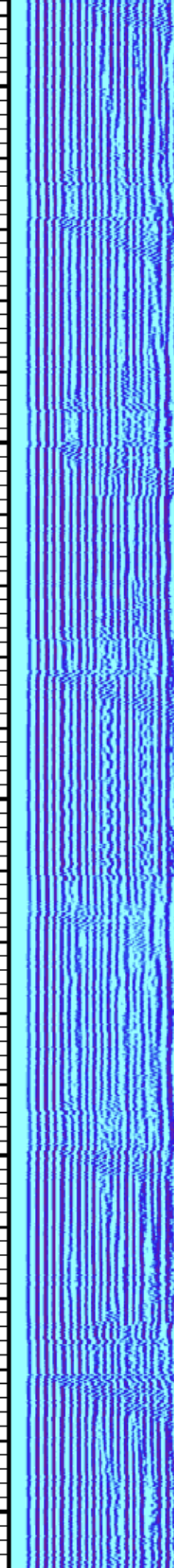
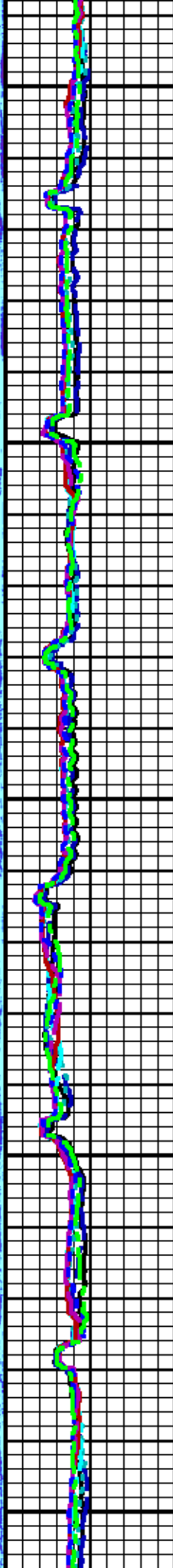
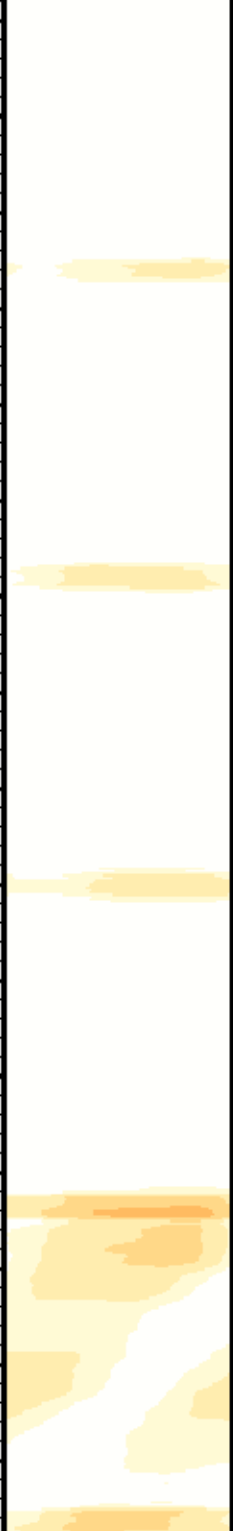


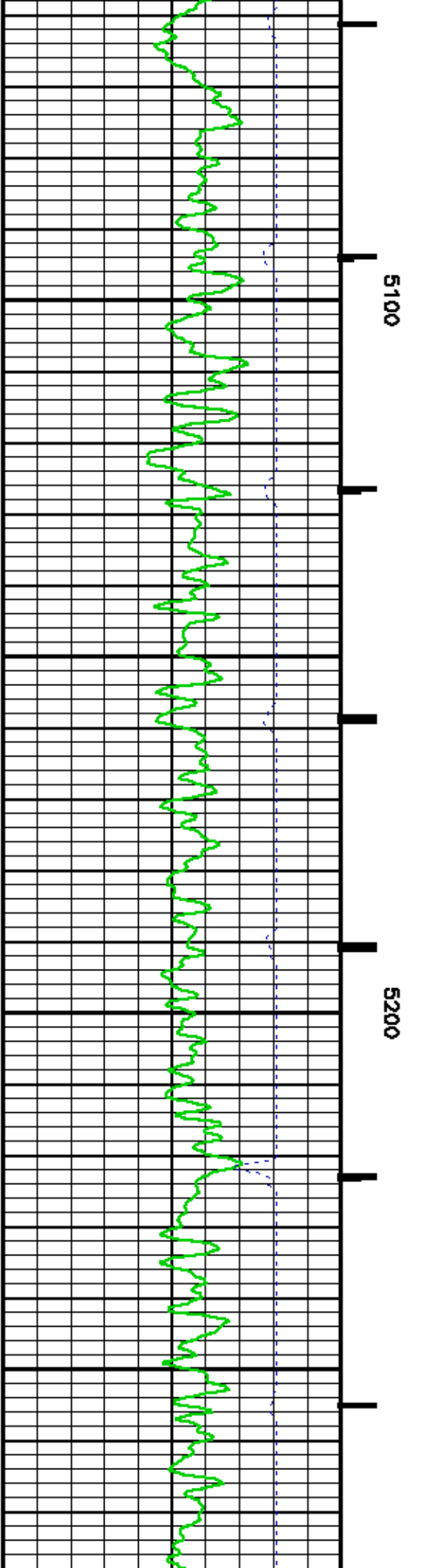
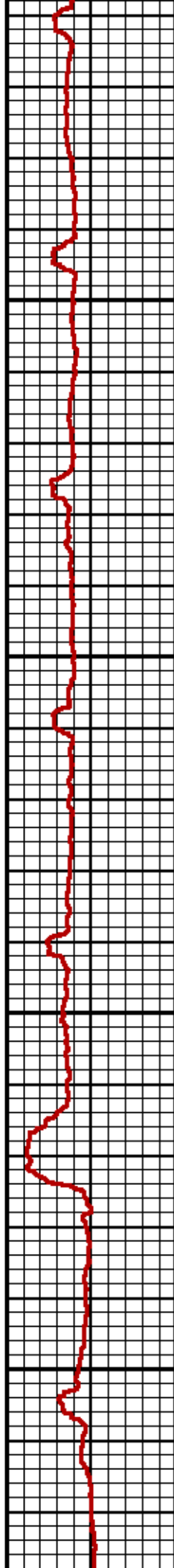
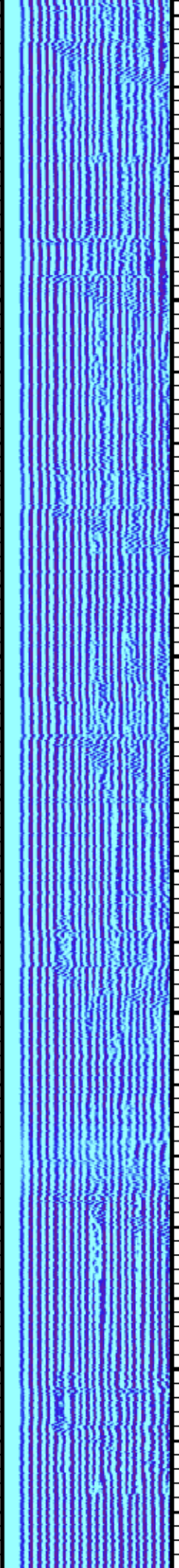
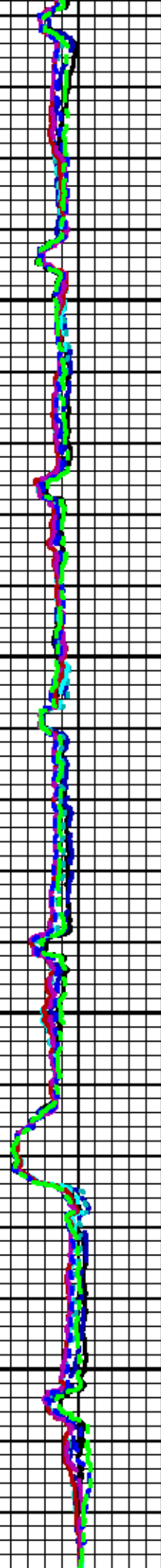




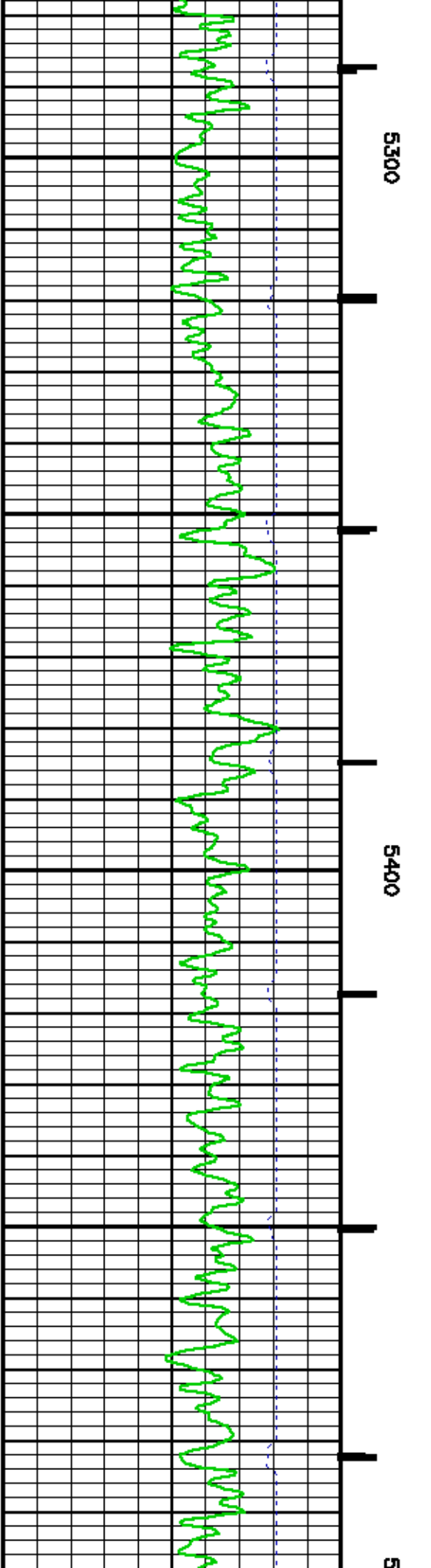
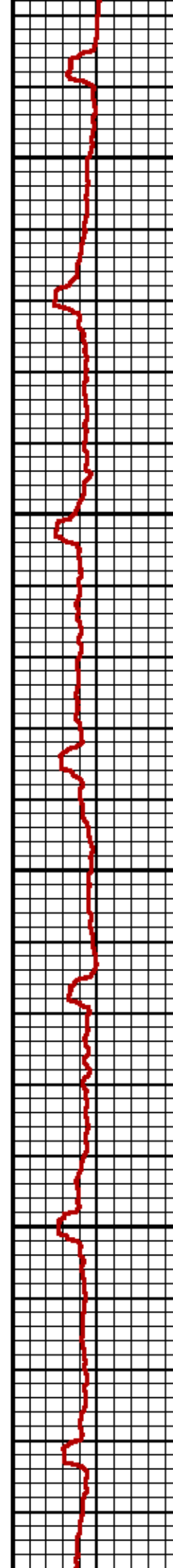
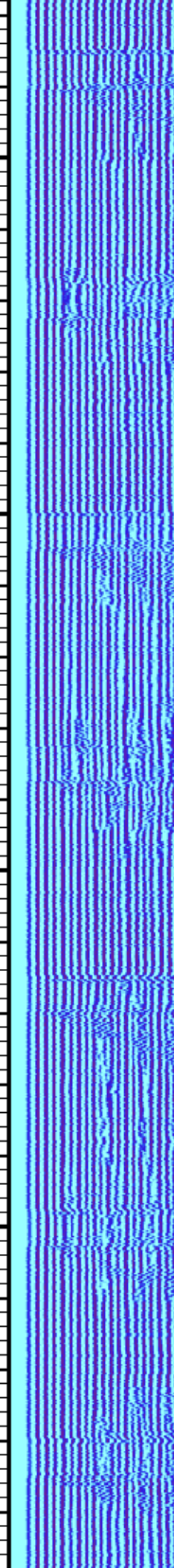
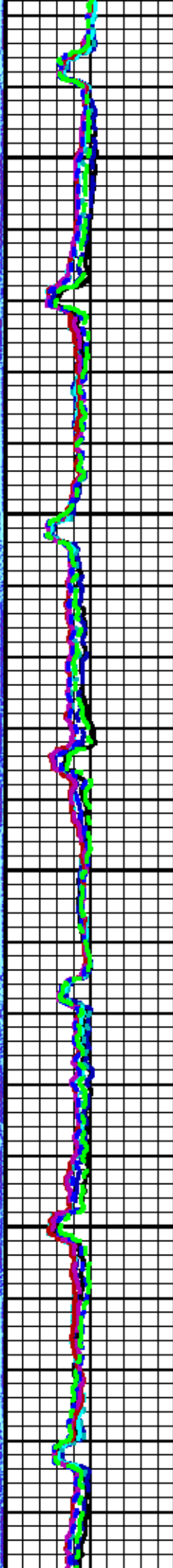
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4800

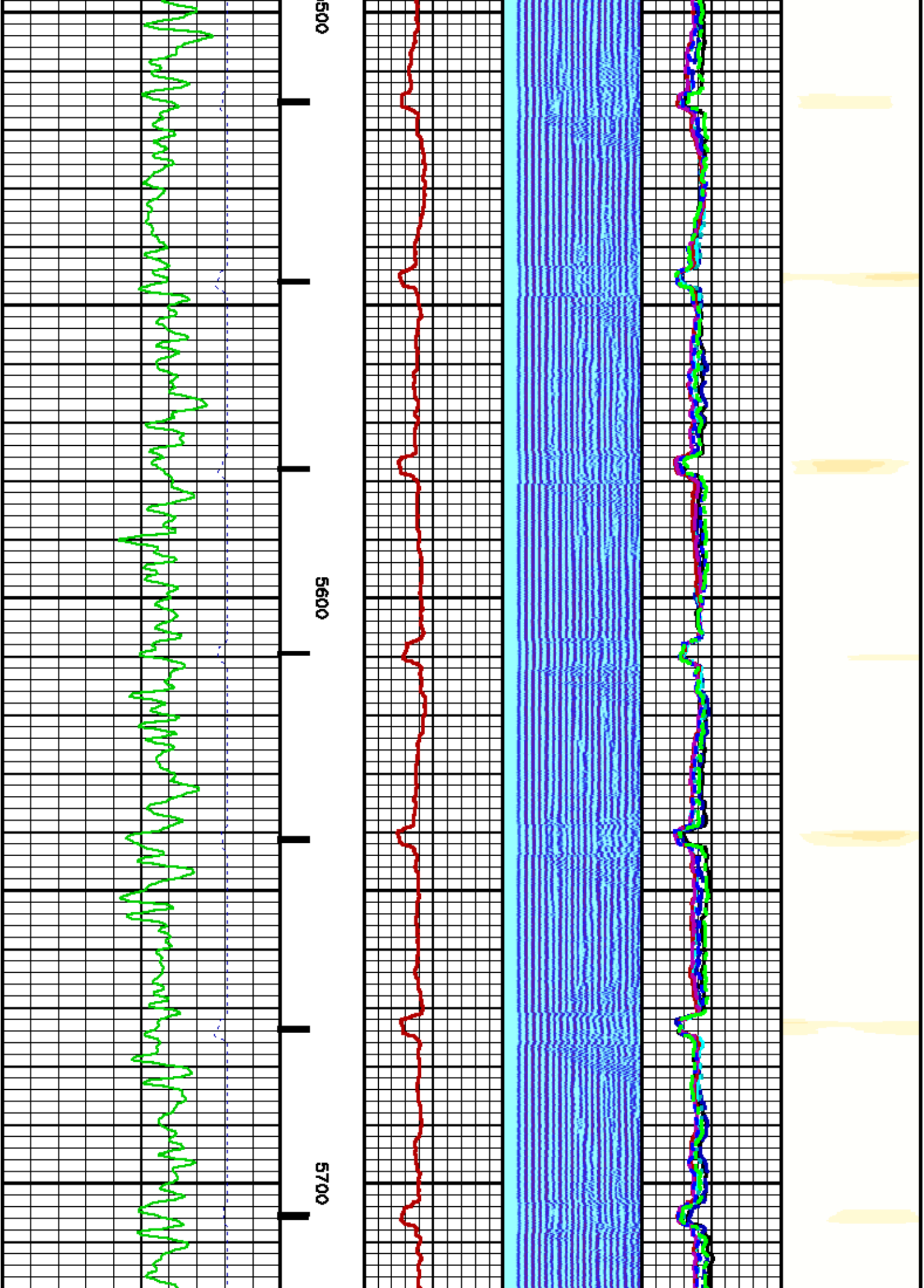


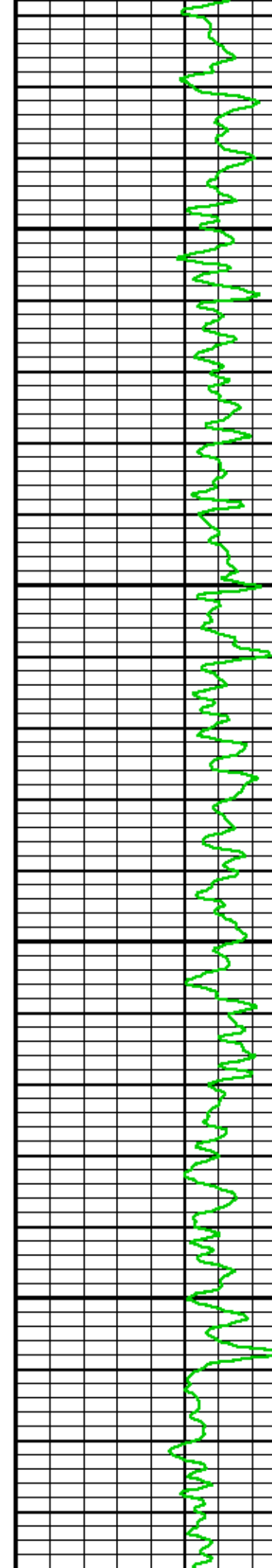
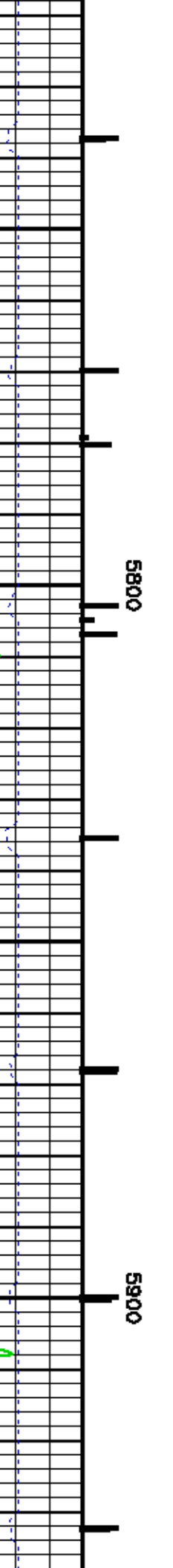
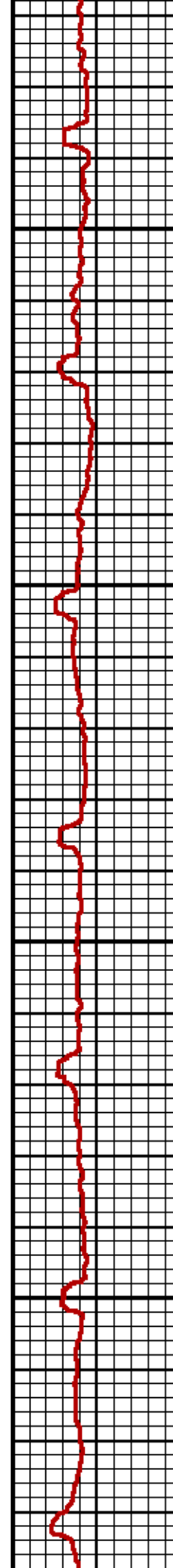
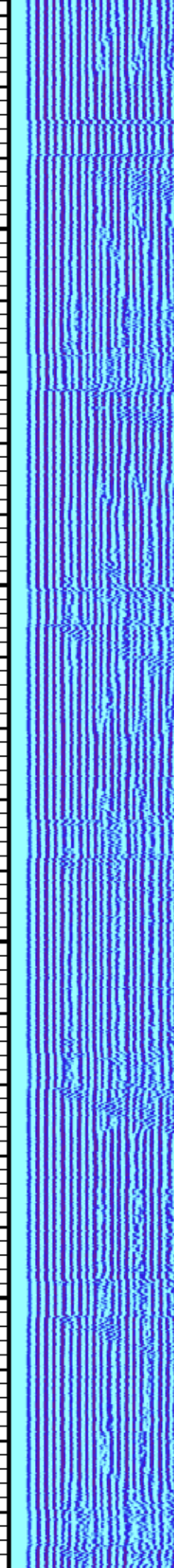
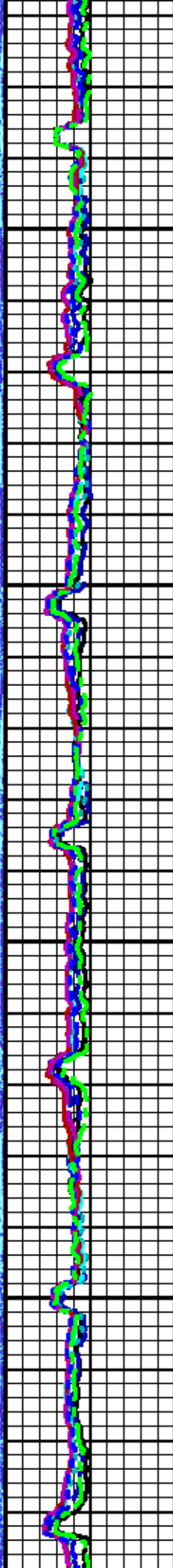


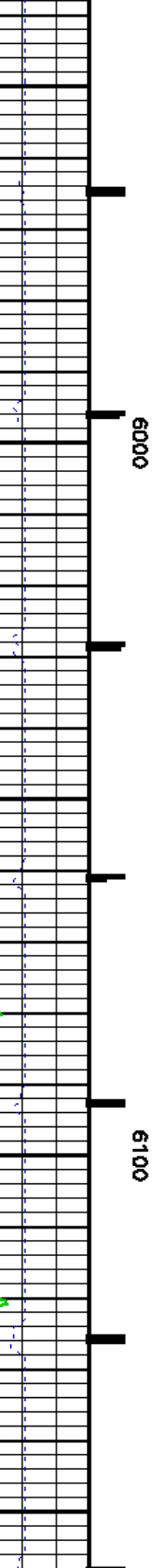
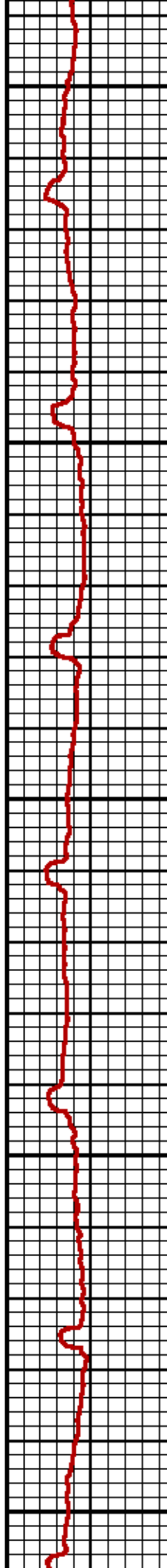
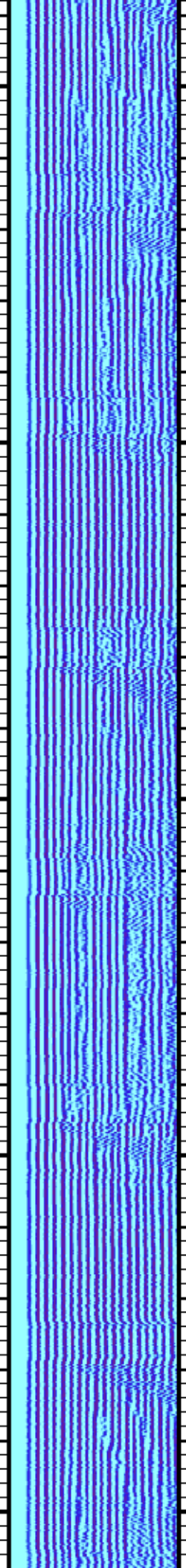
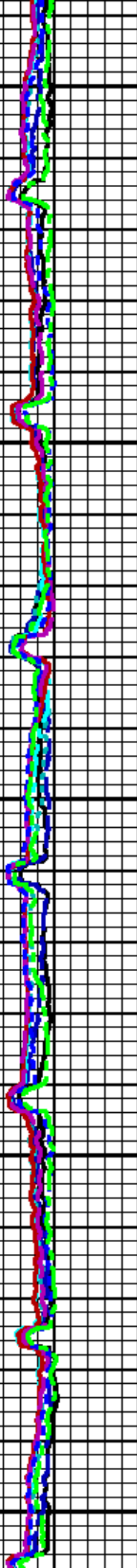
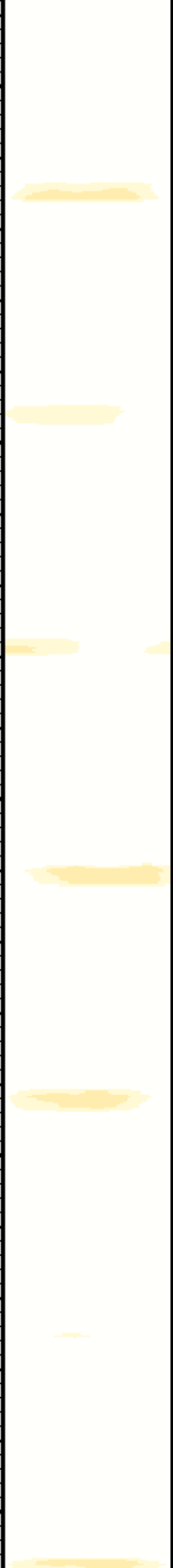




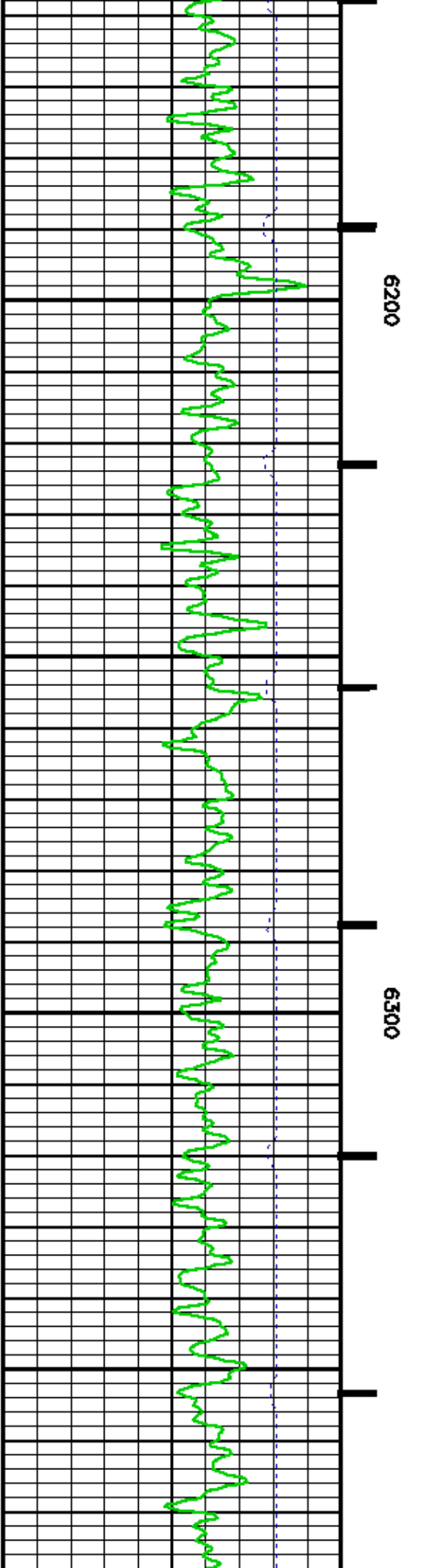
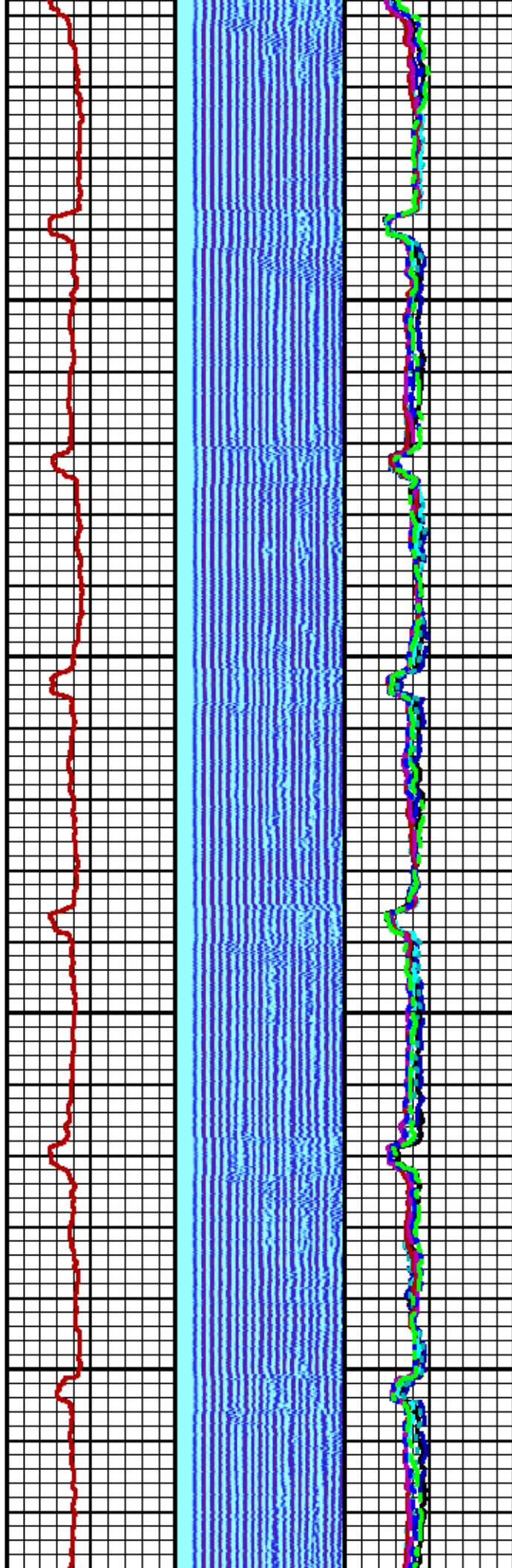




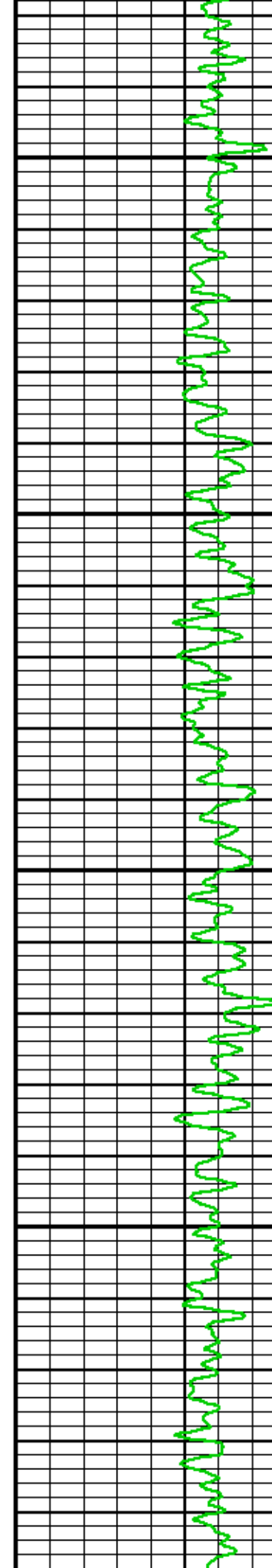
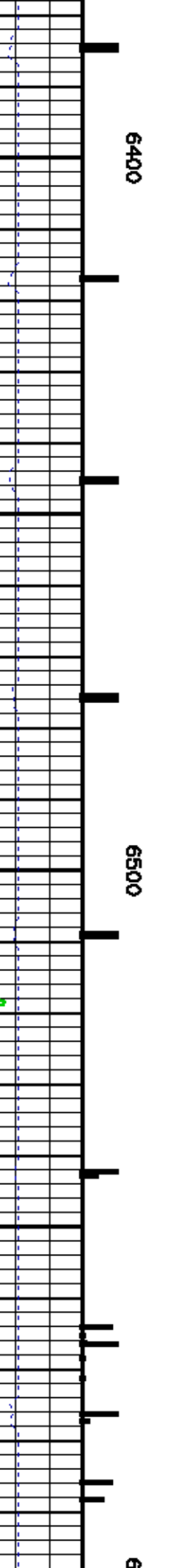
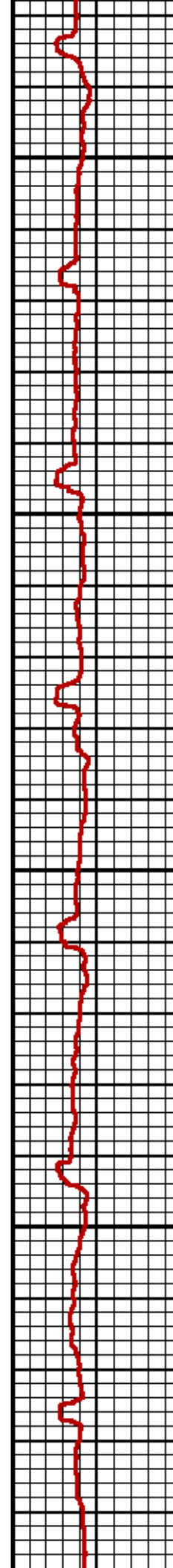
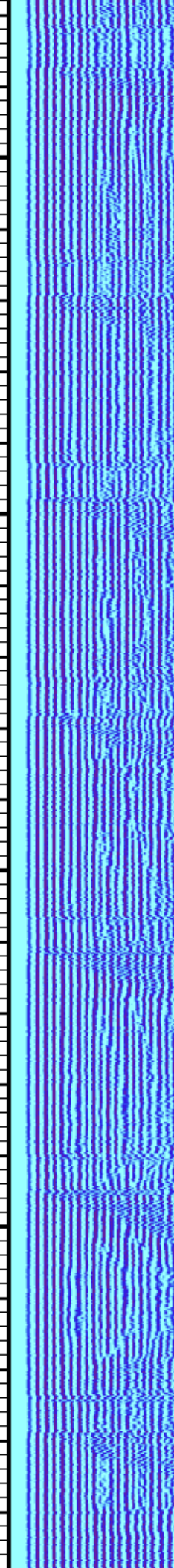
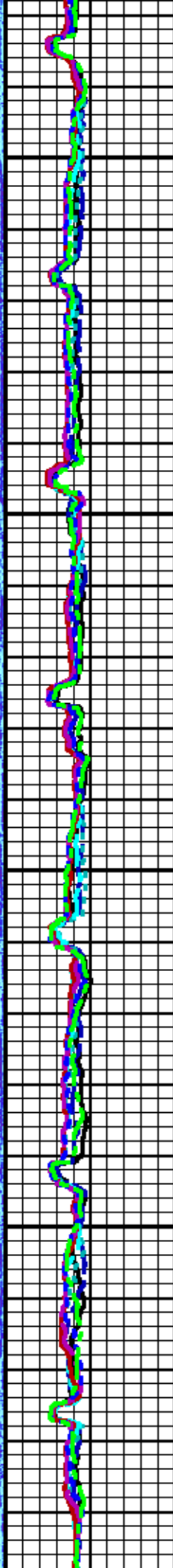


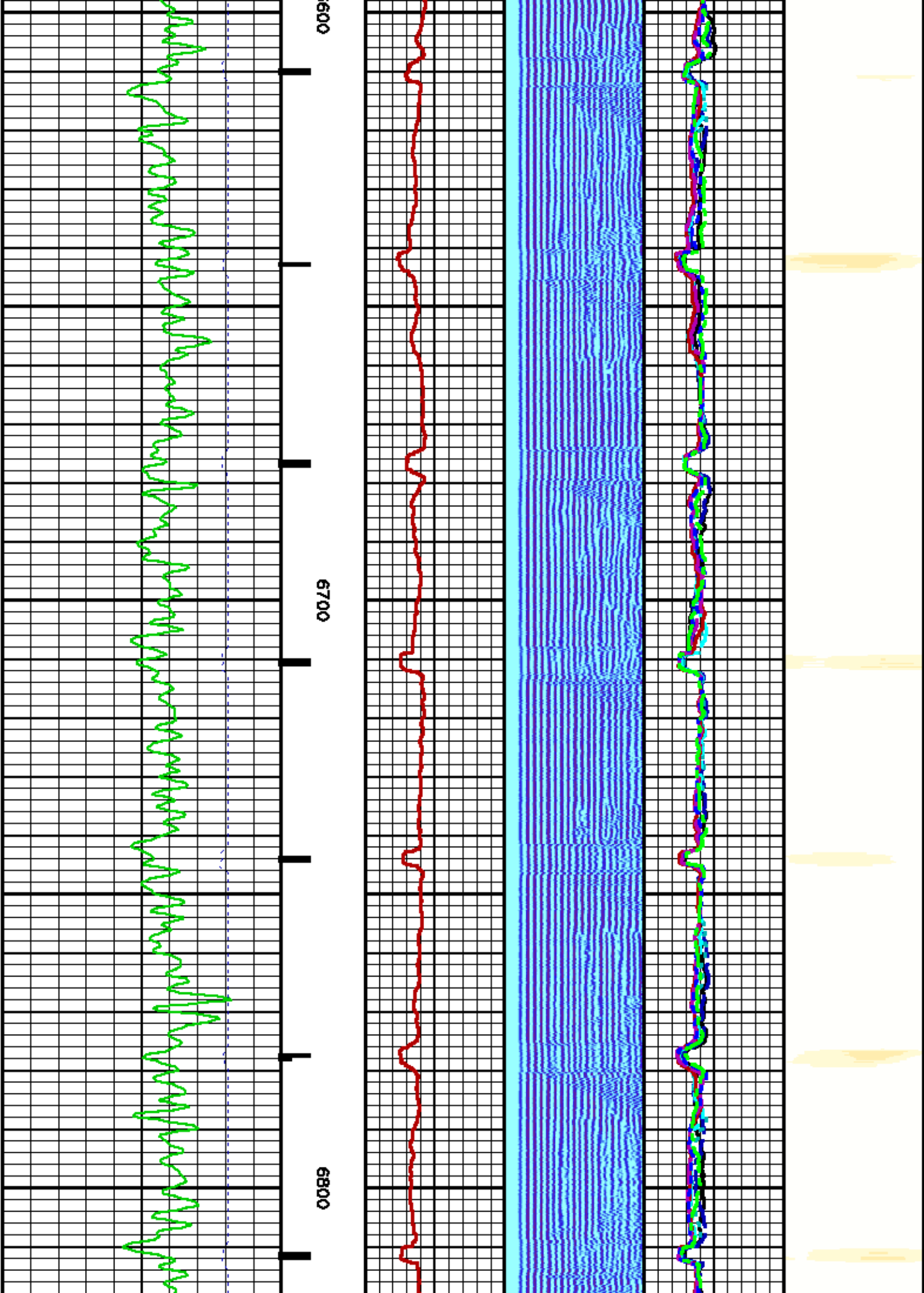


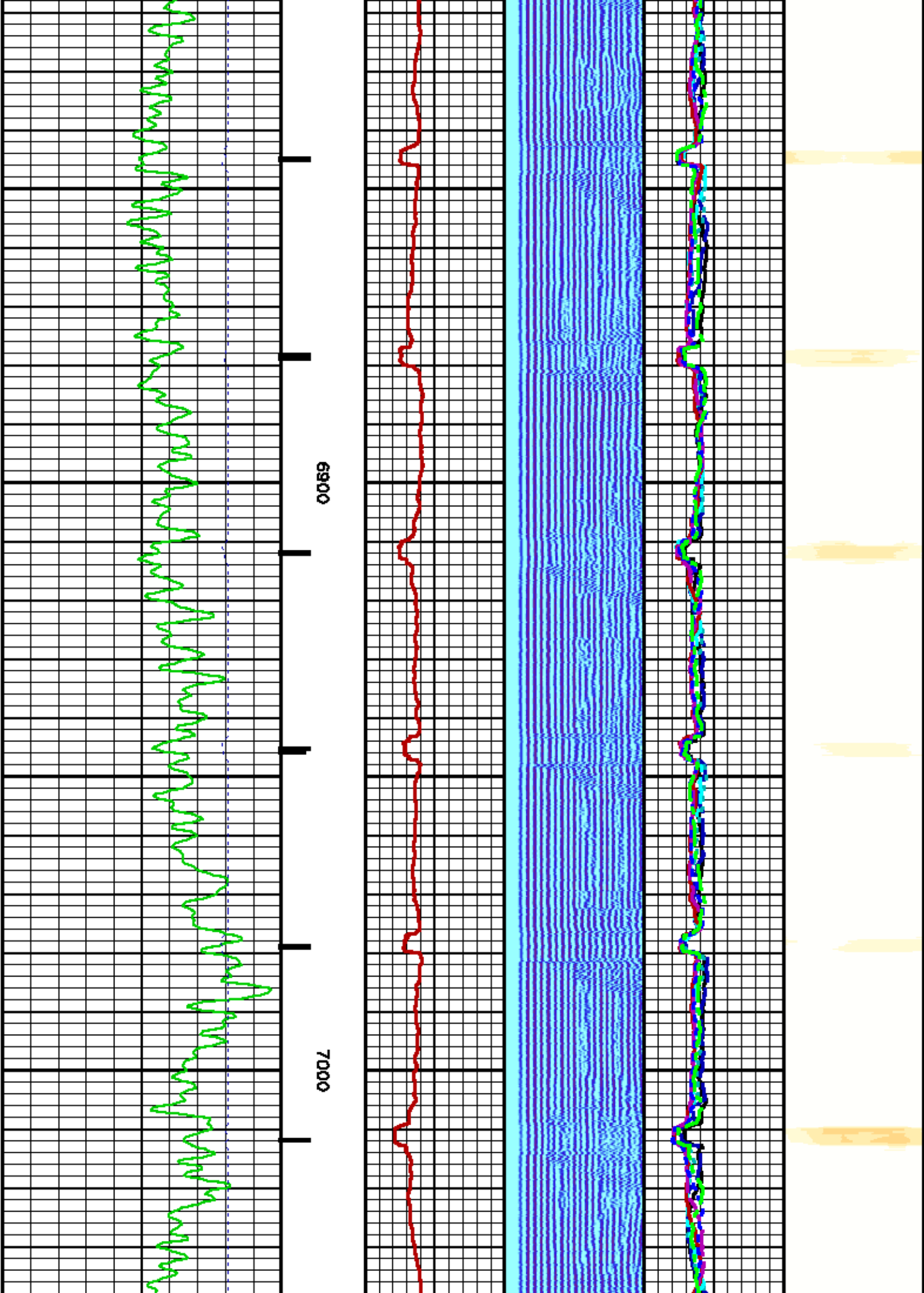




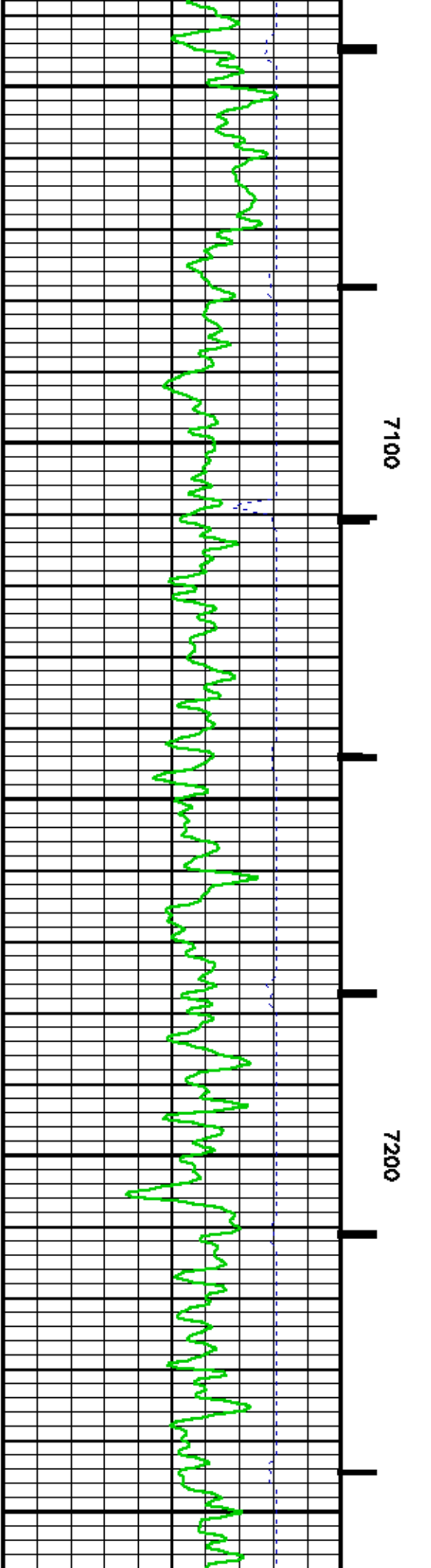
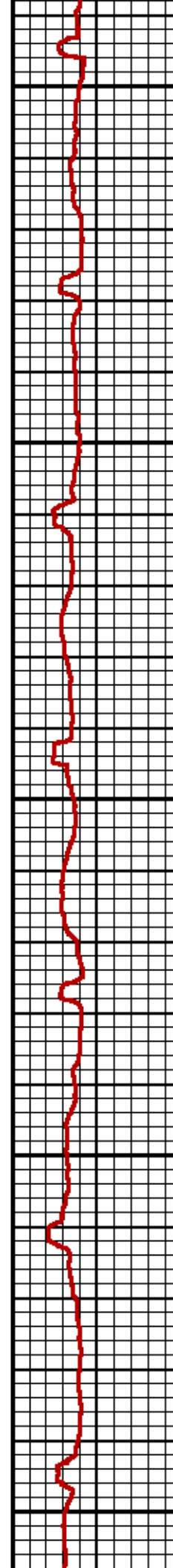
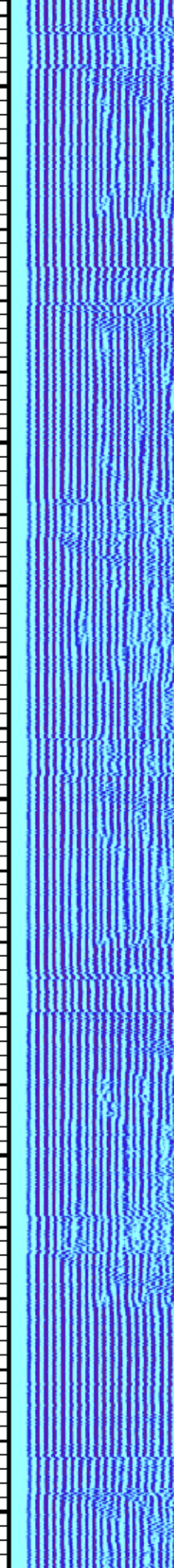
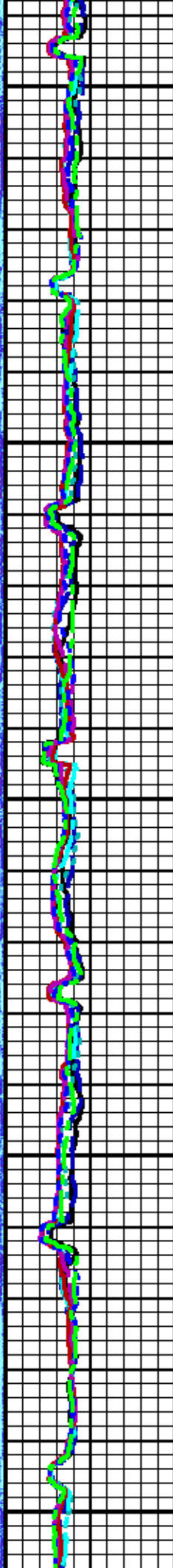
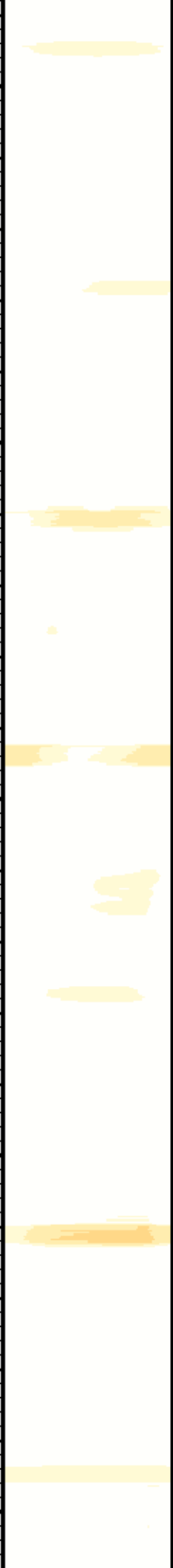




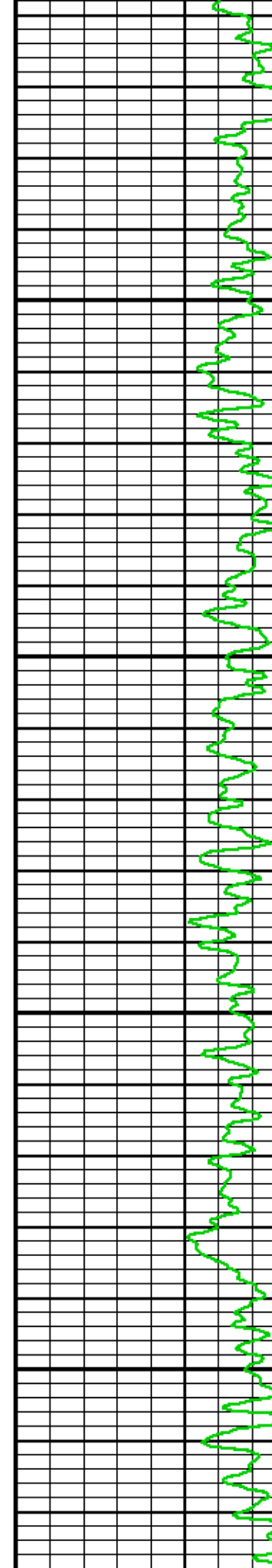
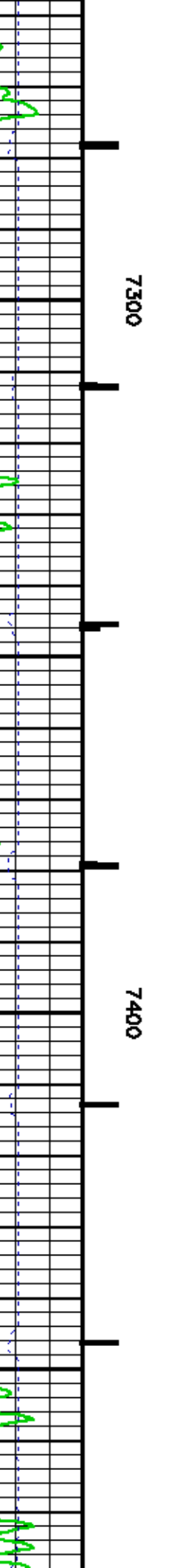
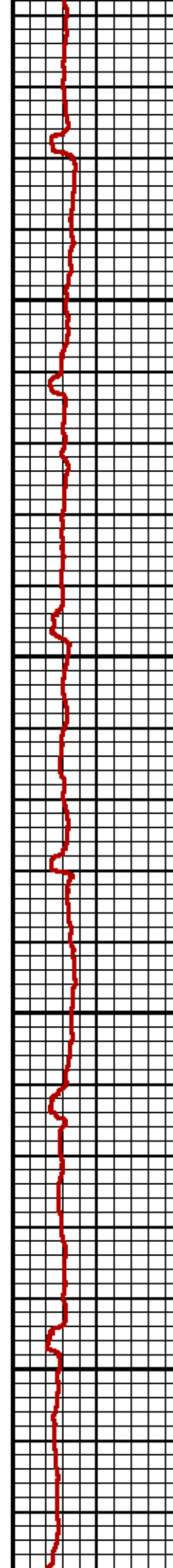
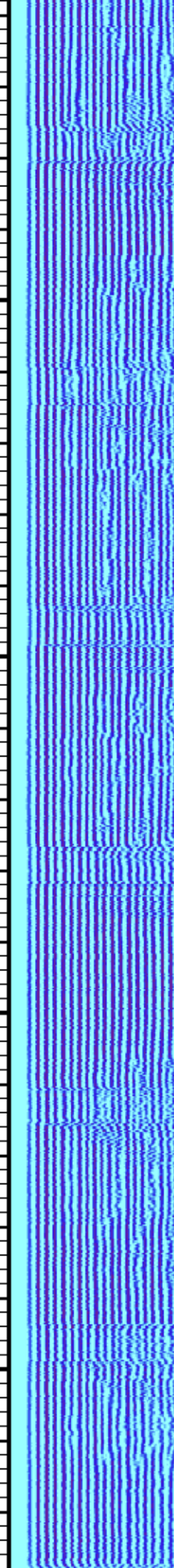
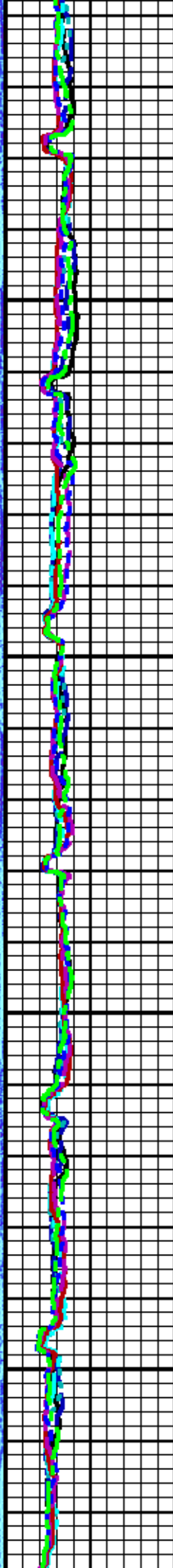


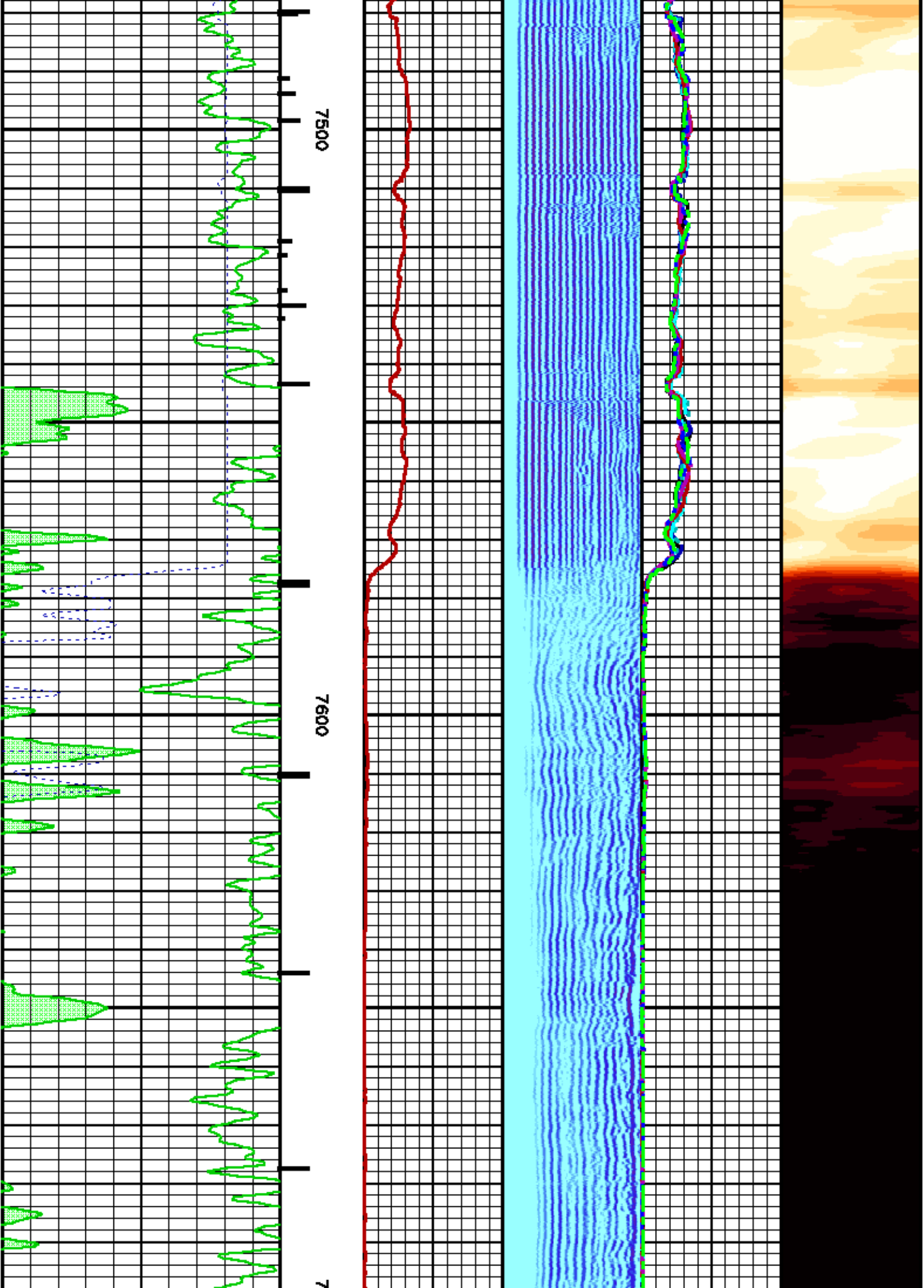


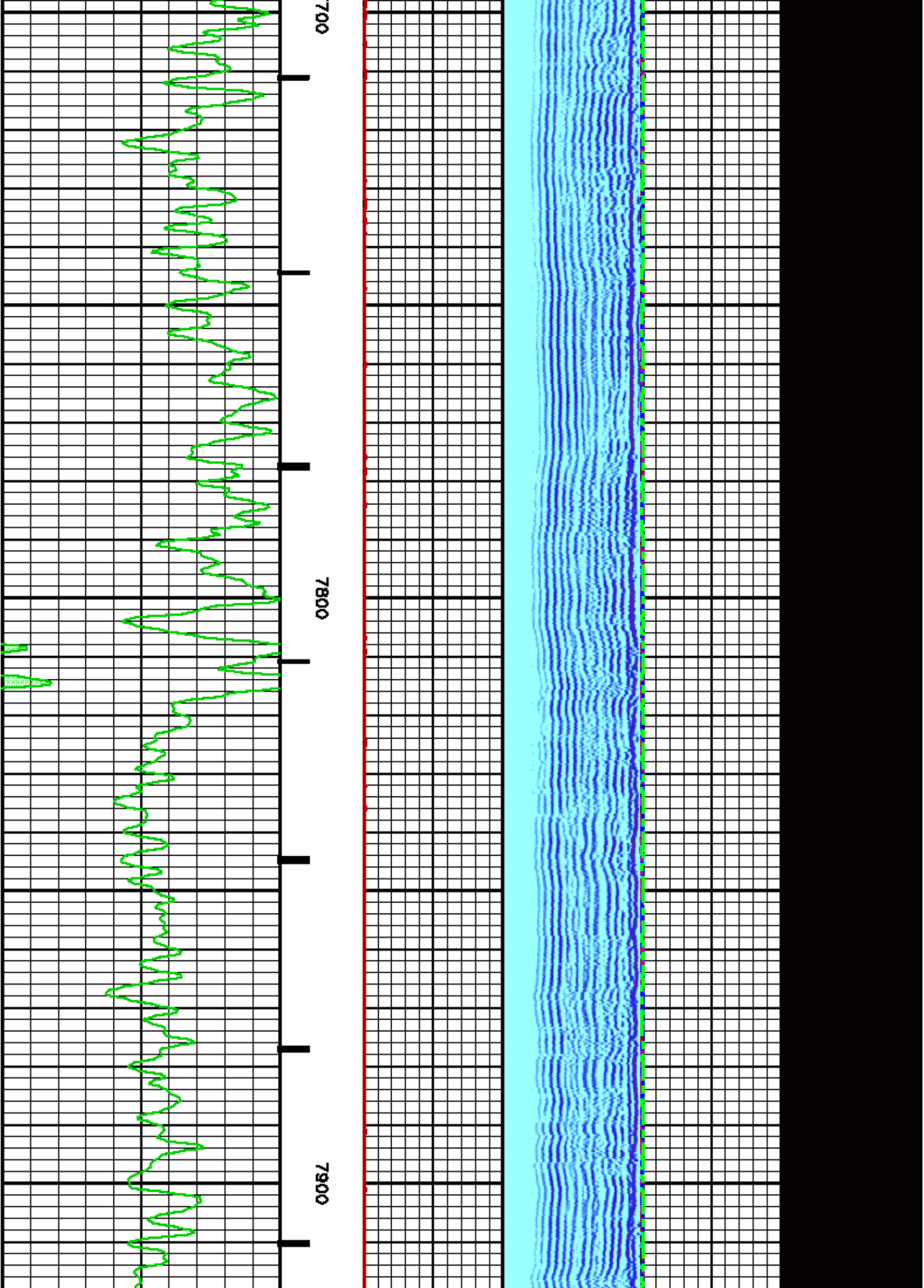


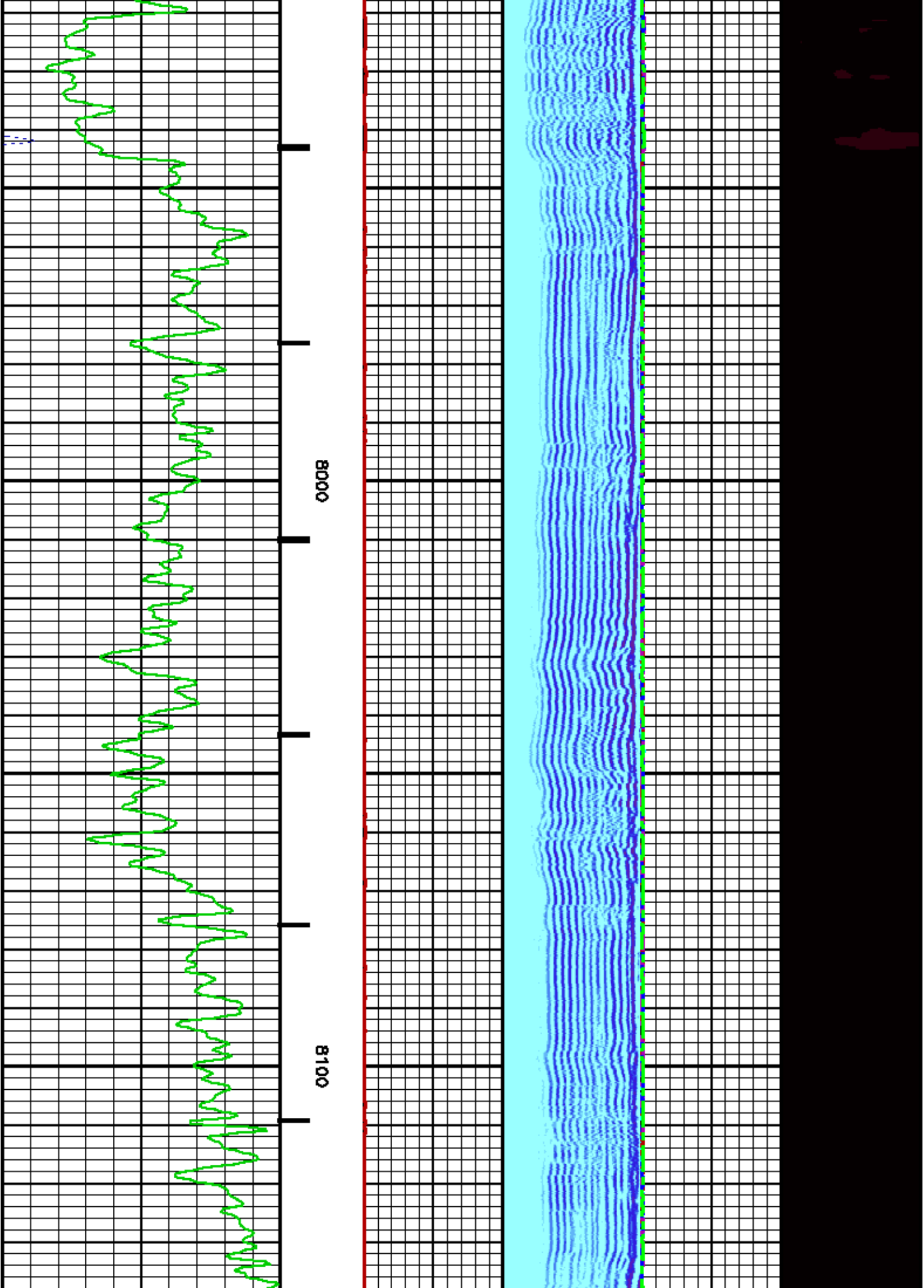




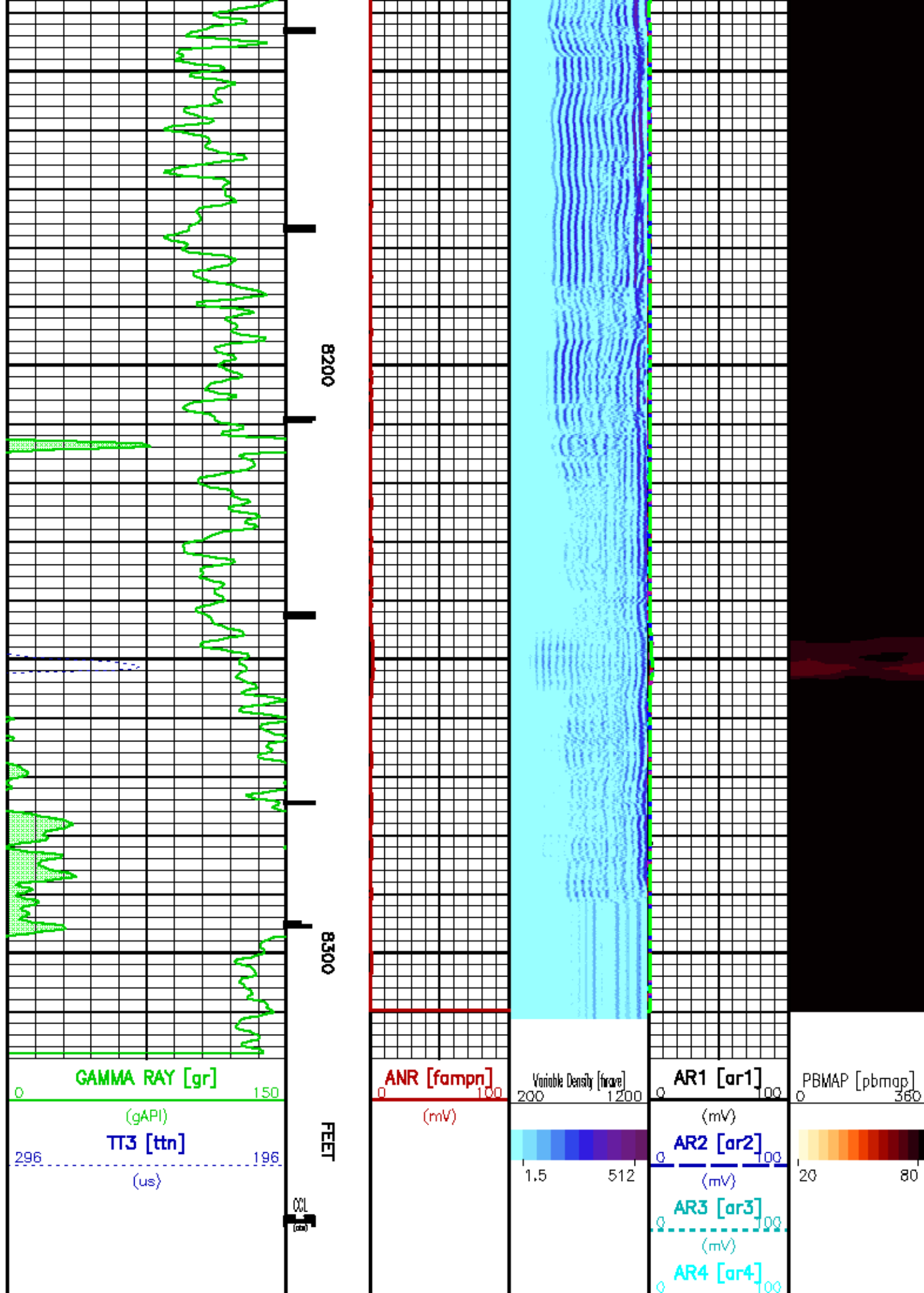












				(mV) AR5 [ar5] 0 100
				(mV) AR6 [ar6] 0 100
				(mV) AR7 [ar7] 0 100
				(mV) AR8 [ar8] 0 100
				(mV)

REPEAT LOG 0 PSI

ECLIPS 6.11 Aug 06, 2010  
Updates: 1 Patches: 1

Fri Oct 7 12:23:03 2011

Perplt /main/62

Cplot

Pdf\_Cpp /main/16

Fileview 5.51

## PARAMETER AND FILTER SUMMARY REPORT

FILE: /data/575291/m012e01.prm  
LOGGING MODE: DEPTH DIRECTION: UP  
TOP DEPTH: 7876.250 ft BOTTOM DEPTH: 8298.457 ft

### SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
GR	FILTER ()	medium (1)		TOP	BOTTOM
AMPLITUDE	FILTER ()	light (2a)		"	"
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*)	201	us	TOP	BOTTOM
	AMP WINDOW START (fgp2*)	201	us	"	"
	AMP WINDOW START (fgp3*)	201	us	"	"
	AMP WINDOW START (fgp4*)	201	us	"	"
	AMP WINDOW START (fgp5*)	201	us	"	"
	AMP WINDOW START (fgp6*)	201	us	"	"
	AMP WINDOW START (fgp7*)	201	us	"	"
	AMP WINDOW START (fgp8*)	201	us	"	"
	AMP WINDOW START (fgpn*)	201	us	"	"
	AMP WINDOW LENGTH	30	us	"	"
TRAVEL TIME WINDOW (NEAR)	TT WINDOW START (ttm*)	211	us	"	"
	TT WINDOW LENGTH	500	us	"	"
	FIRST BRK THRESHOLD (ttm*)	2	mV	"	"
RAL CASING PARAMETERS	PPT NEAR	218.588	us	"	"
RAL TOOL DELAY	TOOL DELAY (str1*)	-77	us	"	"
	TOOL DELAY (str2*)	-77	us	"	"
	TOOL DELAY (str3*)	-77	us	"	"
	TOOL DELAY (str4*)	-77	us	"	"
	TOOL DELAY (str5*)	-77	us	"	"

TOOL DELAY {str6°}  
 TOOL DELAY {str7°}  
 TOOL DELAY {str8°}  
 TOOL DELAY {strm°}  
 NOISE WINDOW START  
 NOISE WINDOW LENGTH

-77  
 -77  
 -77  
 -77  
 141  
 25

US  
 US  
 US  
 US  
 US  
 US

""  
 ""  
 ""  
 ""  
 ""  
 ""

""  
 ""  
 ""  
 ""  
 ""  
 ""

BASELINE NOISE (NEAR)

## 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

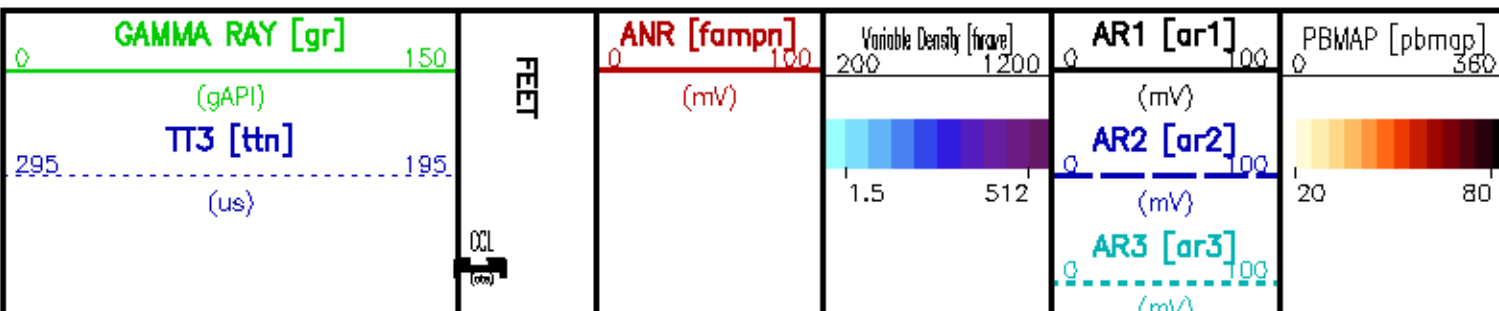
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:AR1	Oct 7 12:04:51 2011	FIXED GATE AMPLITUDE T-R1
F1:AR2	Oct 7 12:04:51 2011	FIXED GATE AMPLITUDE T-R2
F1:AR3	Oct 7 12:04:51 2011	FIXED GATE AMPLITUDE T-R3
F1:AR4	Oct 7 12:04:51 2011	FIXED GATE AMPLITUDE T-R4
F1:AR5	Oct 7 12:04:51 2011	FIXED GATE AMPLITUDE T-R5
F1:AR6	Oct 7 12:04:51 2011	FIXED GATE AMPLITUDE T-R6
F1:AR7	Oct 7 12:04:51 2011	FIXED GATE AMPLITUDE T-R7
F1:AR8	Oct 7 12:04:51 2011	FIXED GATE AMPLITUDE T-R8
F1:CCL	Oct 7 12:04:51 2011	CASINO COLLAR LOCATOR
F1:FAMPN	Oct 7 12:04:51 2011	FIXED GATE AMPLITUDE NEAR RECEIVER
F1:FNAVE	Oct 7 12:04:51 2011	FAR WAVE FORM
F1:GR	Oct 7 12:04:51 2011	GAMMA RAY
F1:PBMAP	Oct 7 12:04:51 2011	PERCENT BOND CEMENT MAP
F1:TTN	Oct 7 12:04:51 2011	TRAVELTIME FROM NEAR TRANSMITTER-RECEIVER

## CURVE MEASURE POINT OFFSET

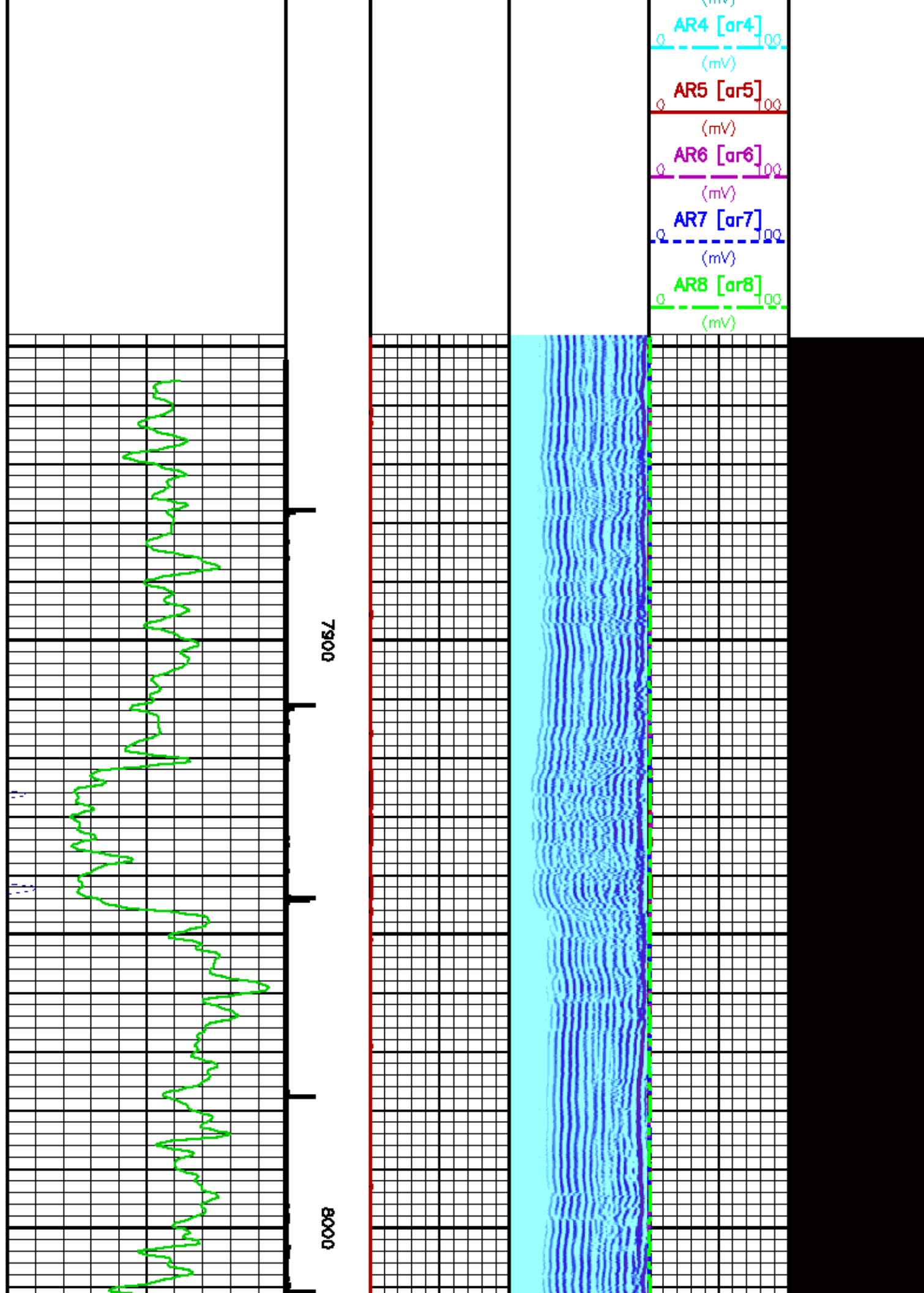
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
AR1	13.75	AR4	13.75	AR7	13.75	FAMPN	13.75
AR2	13.75	AR5	13.75	AR8	13.75	GR	8.50
AR3	13.75	AR6	13.75	CCL	8.50	TTN	13.75

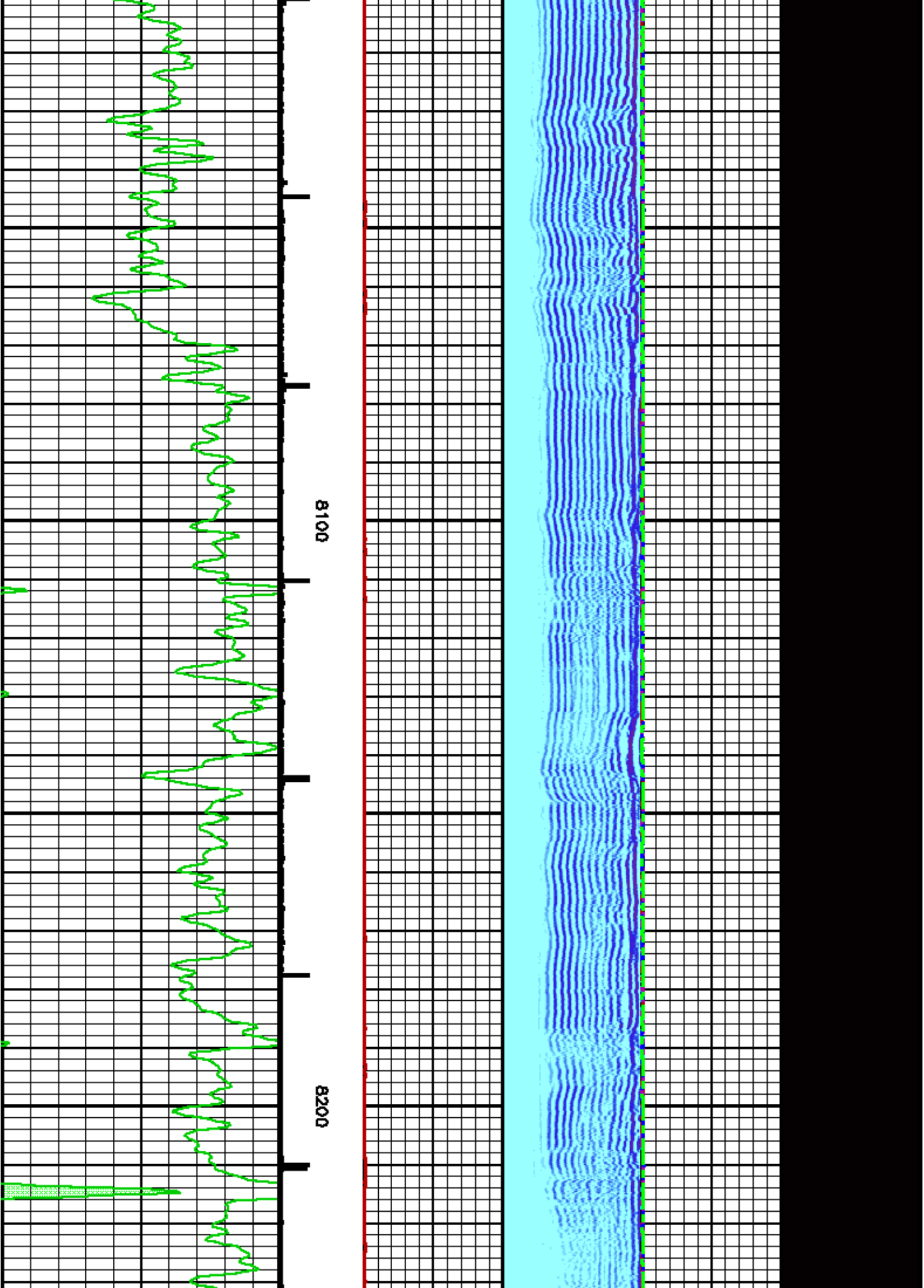
Presentation : HL8670:/data/575291/REPEAT\_RAD.pdf [5"/100' Scale]  
 Plot Interval : 7848.25 - 8280.75 Feet

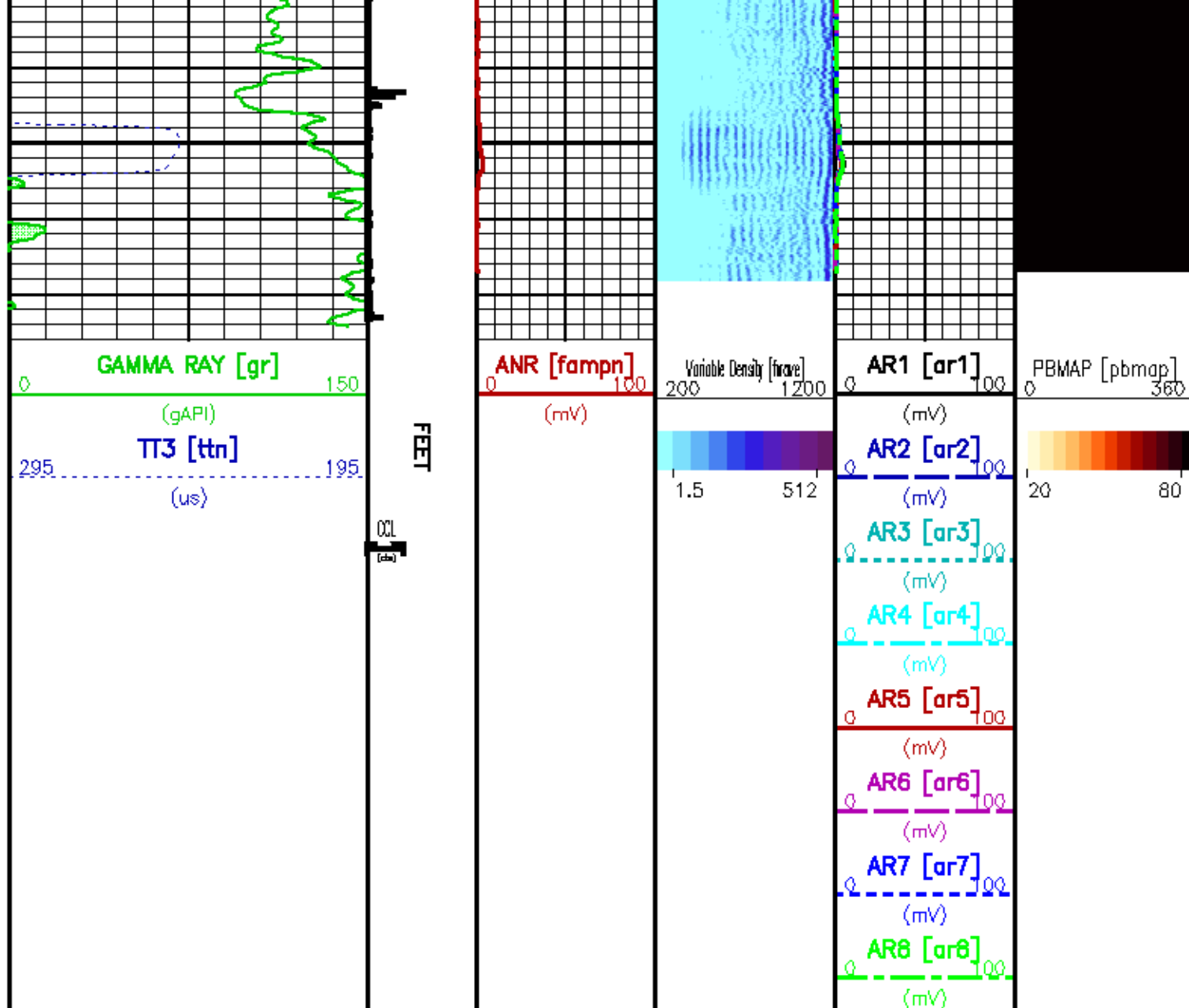
Data File 1 : F1 : HL8670:/data/575291/m012e01\_RAD\_REPEAT.dft  
 Created On : Oct 7 12:04:51 2011  
 Company : HILCORP ENERGY COMPANY  
 Well : STATE OF COLORADO A-B B1-18  
 Field : HOLSTER  
 File Interval : 7847.25 - 8297 Feet  
 Out : m012a











## CALIBRATION / VERIFICATION SUMMARY

### RAL PRIMARY CALIBRATION SUMMARY

TOOL #: 1428XA 10404539

DATE/TIME PERFORMED: Fri Mar 25 17:33:25 2011

UNIT #: 3882TD HL6670

TARGETS	NEAR (mV)	RADIAL (mV)	FAR (mV)
	100.00	100.00	150.00

	NEAR	R1	R2	R3	R4	R5	R6	R7	R8	FAR	CAL
ZERO (mV)	-0.30	-0.28	-0.24	-0.23	-0.18	-0.31	-0.29	-0.29	-0.48	-4.18	0.20
AMP FLUID (mV)	230	228	231	229	230	229	228	230	228	329	223
TT (us)	218	217	217	217	218	216	216	217	218	326	217
M FACTOR	0.43	0.44	0.43	0.44	0.43	0.44	0.44	0.43	0.44	0.45	0.45



# GR PRIMARY CALIBRATION SUMMARY

TOOL #: 2459XA 10417458

DATE/TIME PERFORMED: Thu Oct 6 13:55:51 2011

UNIT #: 3882TD HL6670

CALB JIG #: 4702NK DA-041

	BACKGROUND	CALBRTR ON	CR DIFF	MULT	BACKGROUND	CALBRTR ON	CALBRTR
	(cts)	(cts)	(cts/s)		(gAPI)	(gAPI)	(gAPI)
GR	72.40	254.04	181.8	1.018	73.74	258.74	185

# GR PRIMARY VERIFICATION SUMMARY

TOOL #: 2459XA 10417458

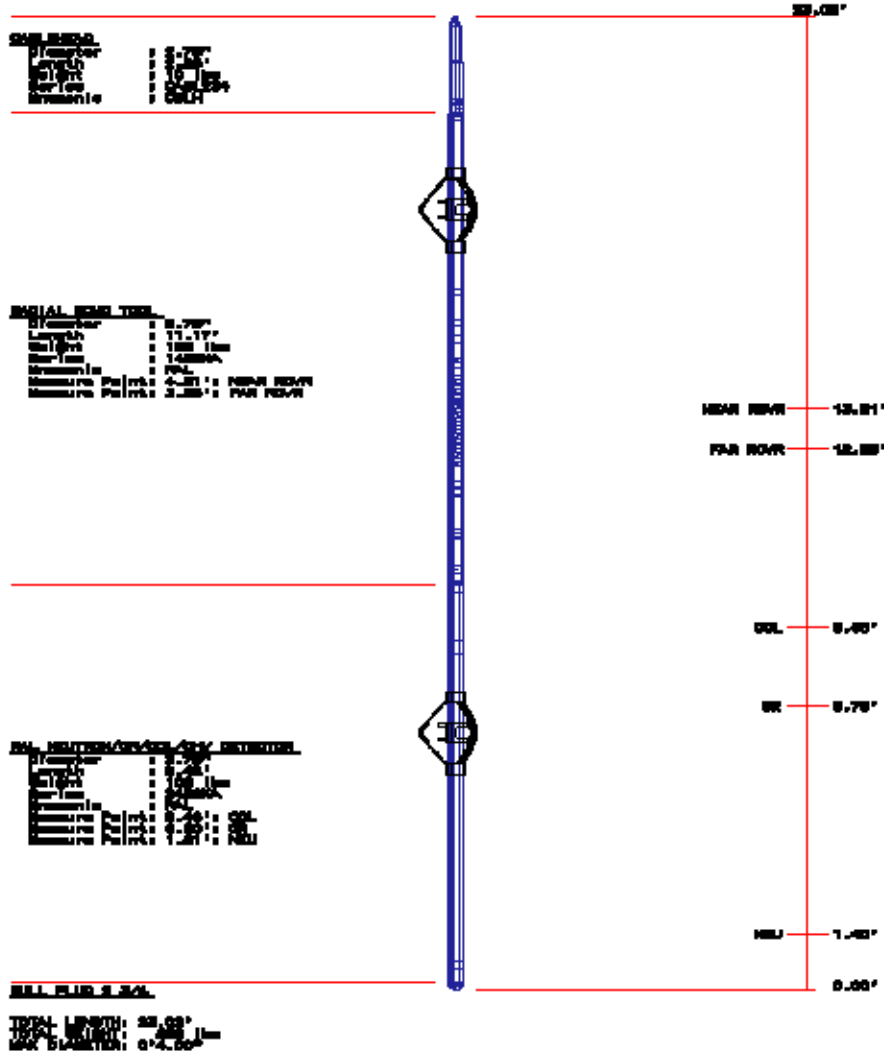
DATE/TIME PERFORMED: Thu Oct 6 13:56:18 2011

UNIT #: 3882TD HL6670

VERI JIG #: 4702NK DA-041

	BACKGROUND	CALBRTR ON	MULT	BACKGROUND	CALBRTR ON	DIFF.
	(cts)	(cts)		(gAPI)	(gAPI)	(gAPI)
GR	62.44	253.29	1.018	63.60	257.97	194.37
						175.00 185.00

# INSTRUMENT CONFIGURATION



COMPANY  
WELL  
FIELD

HILCORP ENERGY COMPANY  
STATE OF COLORADO A-B #1-16  
HOLSTER

FILE NO:  
API NO:



COUNTY	<u>ADAMS</u>	STATE	<u>COLORADO</u>	<u>05001064550000</u>
LOCATION:		ELEVATIONS:		
		KB <u>5251 FT</u>		
		DF <u>5250 FT</u>		
		GL <u>5242 FT</u>		
SEC	<u>16</u>	TWP	<u>25</u>	RGE <u>66W</u>
DATE				<u>07-Oct-2011</u>