

FILE NO:  
US625574  
API NO:  
05045217670000

COMPANY  
WELL  
FIELD  
COUNTY

WPX ENERGY  
FEDERAL RU 322-5  
RULISON  
GARFIELD

STATE CO

Ver. 3.87  
S5 T7S R93W  
RU23-5  
NABORS 576

LOCATION:  
SHL: 257' FNL; 261' 4' FWL  
BHL: 1213' FNL; 1941' FWL  
SEC 5 TWP 7S RGE 93W

OTHER SERVICES  
NONE

PERMANENT DATUM  
LOG MEASURED FROM  
DRILL. MEAS. FROM

ELEVATIONS:  
KB 7628 FT  
DF  
GL 7601.6 FT

DATE	03-Sep-2013
RUN	1
TRIP	1
SERVICE ORDER	625574
DEPTH DRILLER	10051 FT
DEPTH LOGGER	10046 FT
BOTTOM LOGGED INTERVAL	10033 FT
TOP LOGGED INTERVAL	0 FT
CASING DRILLER	9.625 IN @ 1104 FT
CASING LOGGER	1102 FT
BIT SIZE	8.75 IN
TYPE OF FLUID IN HOLE	LSND
DENSITY	12 LB/G
VISCOSITY	54 CP
PH	10.5
FLUID LOSS	9.6 C3
SOURCE OF SAMPLE	FLOWLINE
RM AT MEAS. TEMP.	1.04 OHMM @ 80 DEGF
RM AT MEAS. TEMP.	0.78 OHMM @ 80 DEGF
RMC AT MEAS. TEMP.	1.3 OHMM @ 80 DEGF
SOURCE OF RMC	CALCULATED
RMC	0.760 OHMM @ 212 DEGF
RM AT BHT	0.760 OHMM @ 212 DEGF
TIME SINCE CIRCULATION	6 HRS
MAX. RECORDED TEMP.	213 DEGF
EQUIP. NO.	6670
LOCATION	GRAND JUNC
RECORDED BY	PATTON
WITNESSED BY	AL HARTL

IN MAKING INTERPRETATIONS OF LOGS OUR EMPLOYEES WILL GIVE THE CUSTOMER THE BENEFIT OF THEIR BEST JUDGEMENT. BUT SINCE ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS, WE CANNOT, AND WE DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION. WE SHALL NOT BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COST, DAMAGES, OR EXPENSES WHATSOEVER INCURRED OR SUSTAINED BY THE CUSTOMER RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR EMPLOYEES.

#### BOREHOLE RECORD

BIT SIZE	FROM	TO
8.75 IN	0 FT	10051 FT

#### CASING RECORD

SIZE	WEIGHT	GRADE	FROM	TO
9.625 IN	32 LB/F		0 FT	1104 FT

#### REMARKS

RUN 1 TRIP 1: HDIL ZDL CN GR RUN IN COMBINATION

CVOL BVOL CALUGLATED USING CUBIC FEET  
BVOL CALCULATED USING PROPOSED 4.5" CASING  
CALIPER VERIFIED INSIDE CASING

CN MATRIX: SANDSTONE

RHO MATRIX: 2.68 G/CM3  
RHO FLUID: 1.00 G/CM3

HDIL RAN WITH 1.5IN STANDOFFS  
ABC TO CALCULATE MUD CONDUCTIVITY

THANK YOU FOR CHOOSING BAKER HUGHES WIRELINE SERVICES  
CREW: PATTON/HOLLAR/OLSON  
RIG: NABORS 576

## EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	TTMA	3980XA	10120299	FREE
1	1	TEL/GR	3518EG	10139870	FREE
1	1	CN	2436XA	10362459	DECENTRALIZED
1	1	ZDL	2223XA	10090664	PAD DEVICE
1	1	KNUCKLE	3930XA	10139400	FREE
1	1	HDIL	1530XA	10120519	STOOD OFF

## MAIN LOG 2"/100FT SCALE

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

Patches: 1

Plotted: Tue Sep 3 08:11:26 2013

## PARAMETER AND FILTER SUMMARY REPORT

File: /data/625574/n970a02.prm  
LOGGING MODE: DEPTH DIRECTION: UP  
TOP DEPTH: 962.000 ft BOTTOM DEPTH: 10073.055 ft

## SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
GR MED RES	FILTER Q	medium (1)		TOP	BOTTOM
CALIPER	FILTER Q	medium (1)		"	"
TENSION	FILTER Q	medium (1)		"	"
SP-SPDH	FILTER Q	heavy (3)		"	"

## BOREHOLE &amp; CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
BIT SIZE	BIT SIZE	8.750	in	TOP	BOTTOM
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (mbh*)	USE CALIPER		"	"
BOREHOLE CORR DIAMETER	FIXED DIAMETER (mbh*)	8.750	in	"	"
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	80.0	degF	"	"
	MUD SAMPLE RES	1.040	ohm.m	"	"
BH MUD RESISTIVITY SOURCE	RMUD SOURCE (HDIL)	TOOL MEASURED		"	"
BOREHOLE TEMP from GRADIENT	Known BH REF TEMP	80.0	degF	"	"
	at BH REF DEPTH	0.0	ft	"	"
	with TEMP GRADIENT	1.200	0.01 degF/ft	"	"

## ACCELERATION PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
ACCEL CORR SWITCH	ACCEL DEPTH CORR	CORRECTION ON		TOP	BOTTOM

## HDIL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
HDIL TEMPERATURE CORRECTION	TEMP CORRECTION	ON		TOP	BOTTOM
ADAPTIVE BOREHOLE CORRECTION	ABC PROCESSING	ON		"	"
	ABC to CALCULATE	MUD CONDUCTIVITY		"	"
	STANDOFF	1.50	in	"	"

## CURVE DESCRIPTION REPORT

CURVE NAME      CREATION DATE      CURVE DESCRIPTION

F1:GR	Sep 3 04:49:43 2013	GAMMA RAY
F1:MOC6	Sep 3 04:49:43 2013	FOCUSED CONDUCTIVITY, 60-INCH DOI
F1:MOR2	Sep 3 04:49:43 2013	TRUE FOCUSED RESISTIVITY FOR HDIL, 20-INCH DOI
F1:MOR6	Sep 3 04:49:43 2013	TRUE FOCUSED RESISTIVITY FOR HDIL, 60-INCH DOI
F1:SP	Sep 3 04:49:43 2013	SPONTANEOUS POTENTIAL
F1:TEN	Sep 3 04:49:43 2013	DIFFERENTIAL TENSION

## CURVE MEASURE POINT OFFSET

CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
GR	35.00	MOR2	2.75	SP	1.25		
MOC6	2.75	MOR6	2.75	TEN	0.00		

Presentation : HL6670:/dat1a/625574/WPX\_2IN.fvpdf [2"/100' Scale]  
Plot Interval : -3 - 10074.8 Feet

Data File 1 : F1 : HL6670:/dat1a/625574/n970a02-MAIN.xtf  
Created On : Sep 3 04:49:43 2013  
Company : WPX ENERGY  
Well : FEDERAL RU 322-5  
Field : RULISON  
File Interval : -3 - 10074.8 Feet  
OCT : n970a

GR BACKUP

GAMMA RAY [gr]

0 200

SP [sp]

-200 50

FEET

0

100

TOOL STICKING

DEEP [m0r6]

0 100

SHALLOW [m0r2]

0 100 500

AMPLIFIED SHALLOW [m0r2]

0 20

OVERRANGE DEEP [m0r6]

100 1000

OVERRANGE SHALLOW [m0r2]

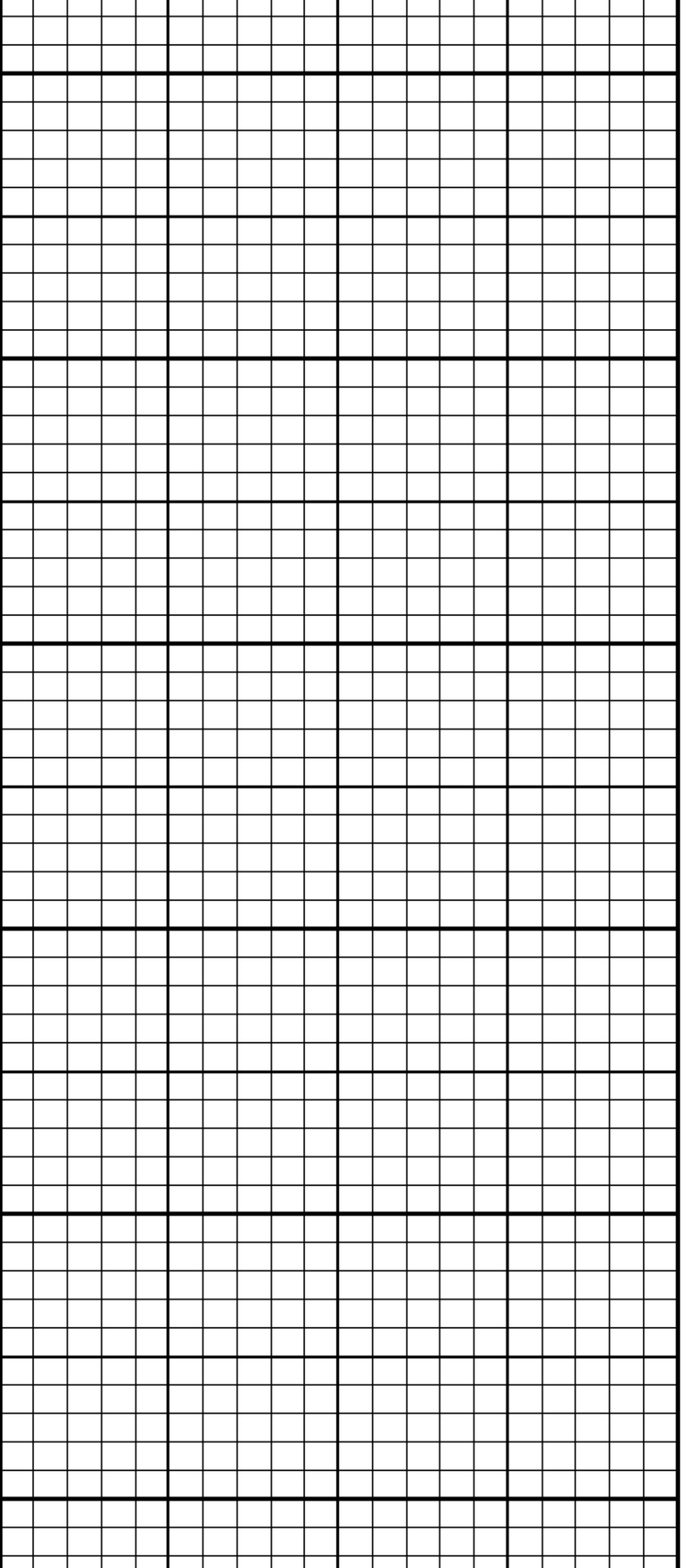
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DIFF. TENSION [kn]

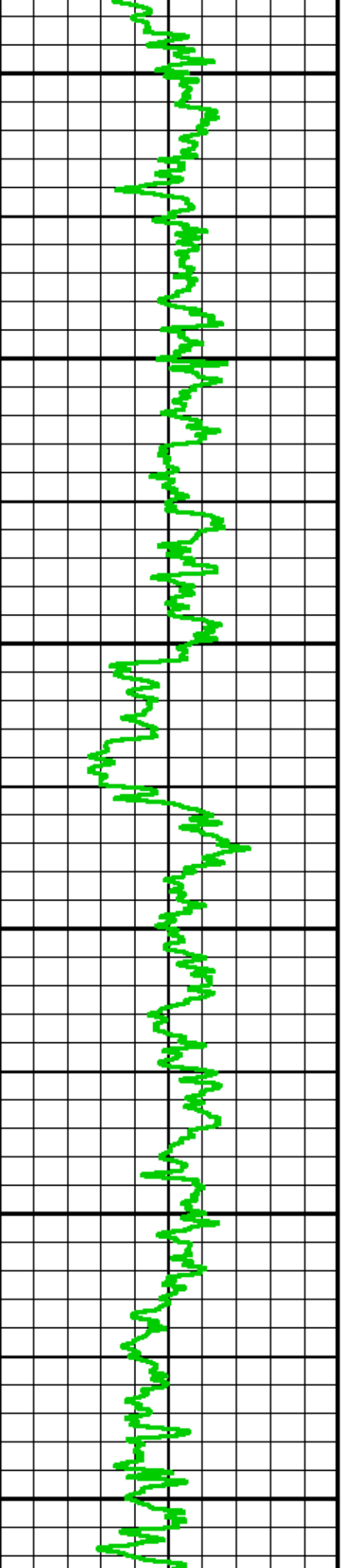
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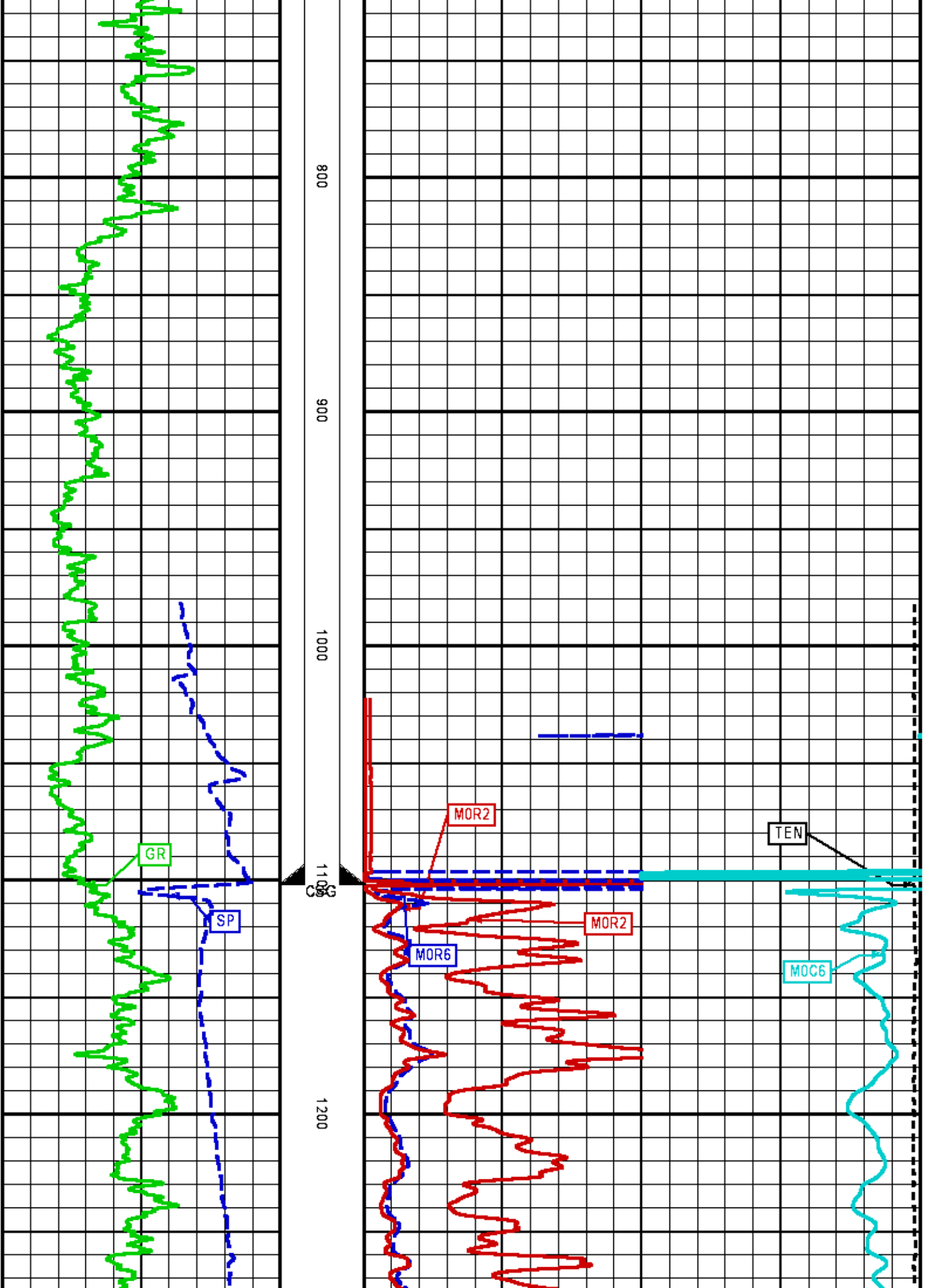
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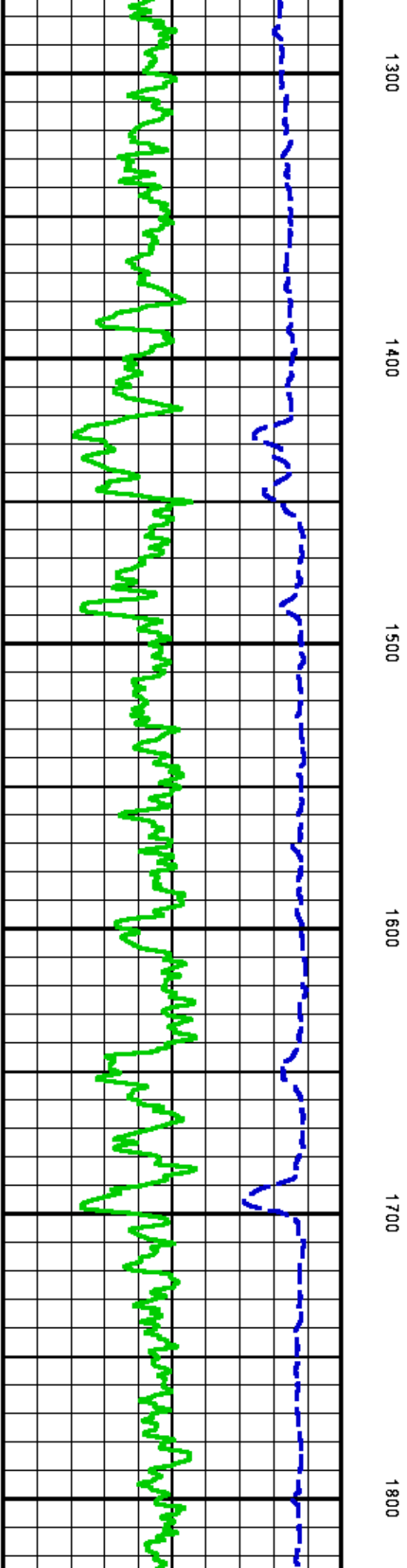
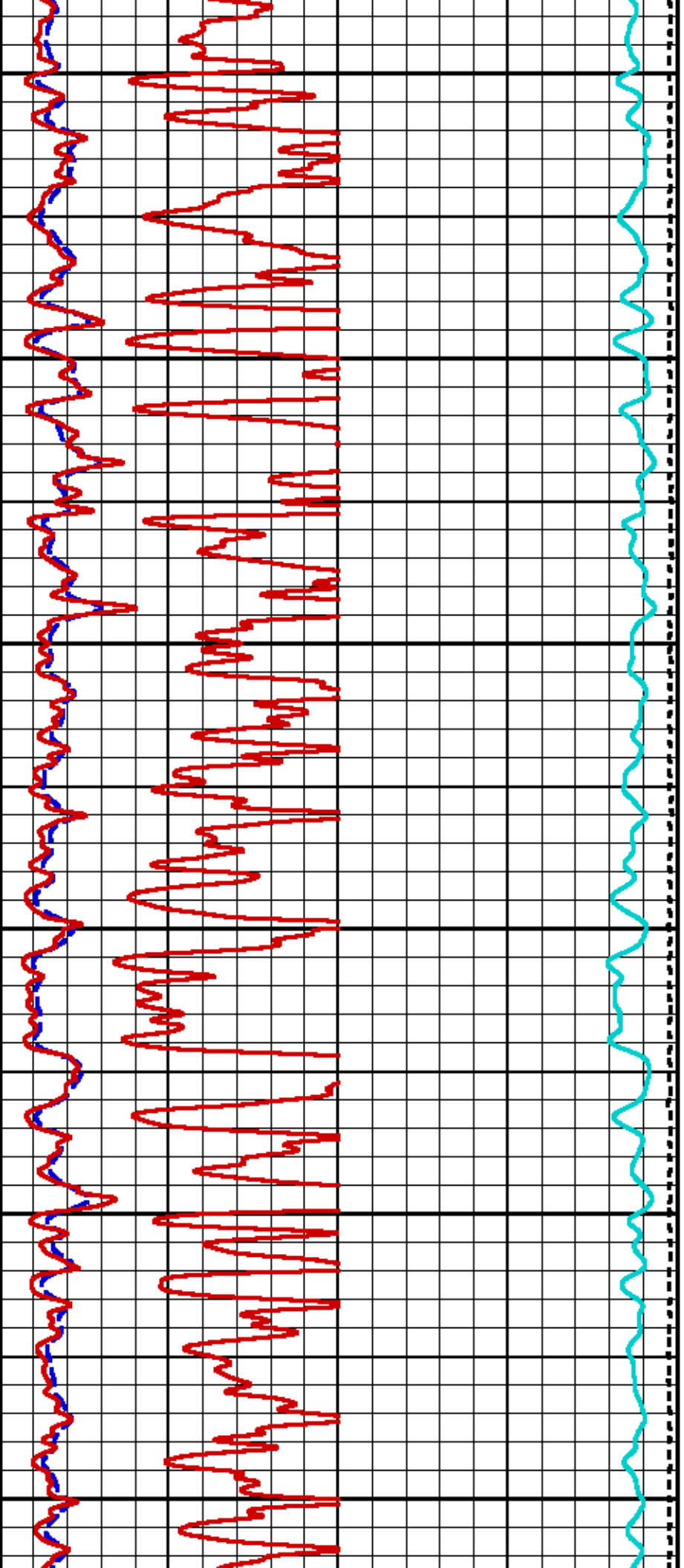
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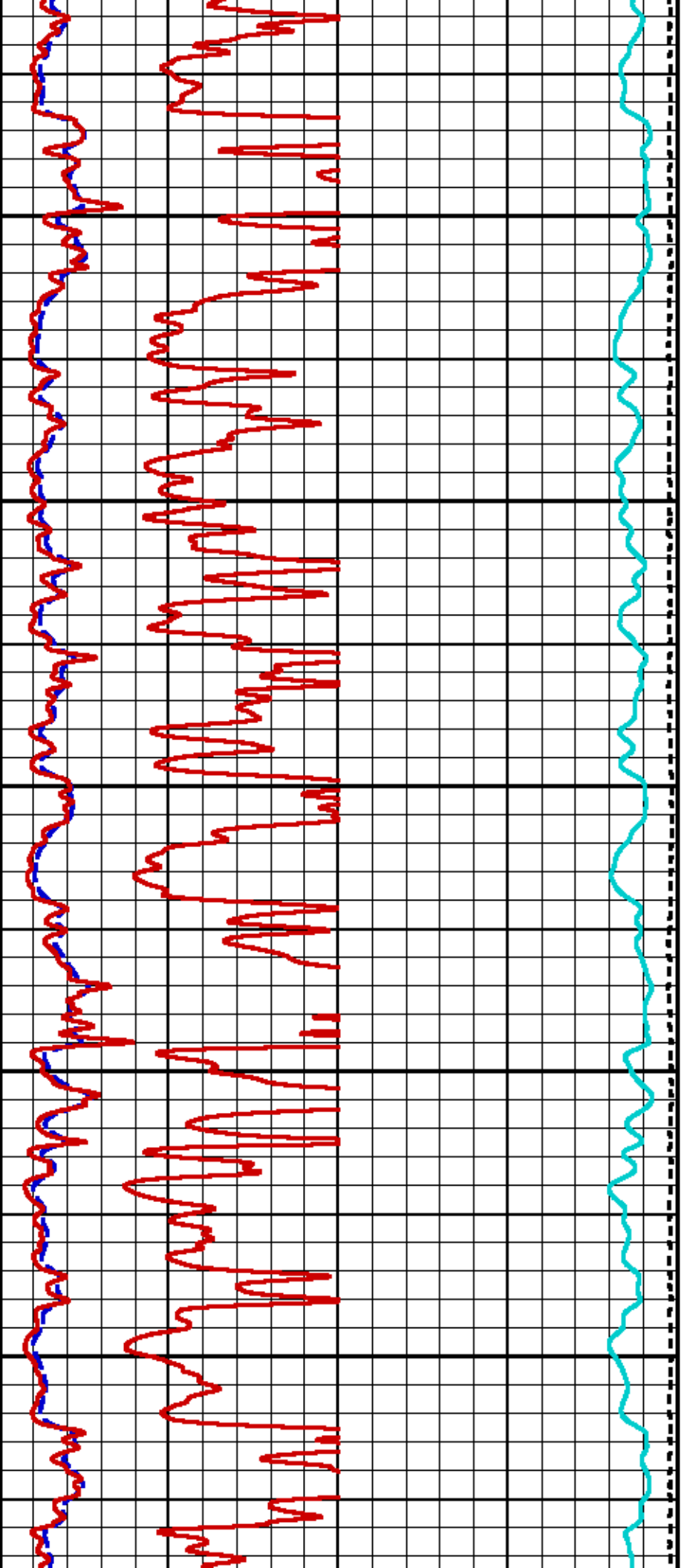


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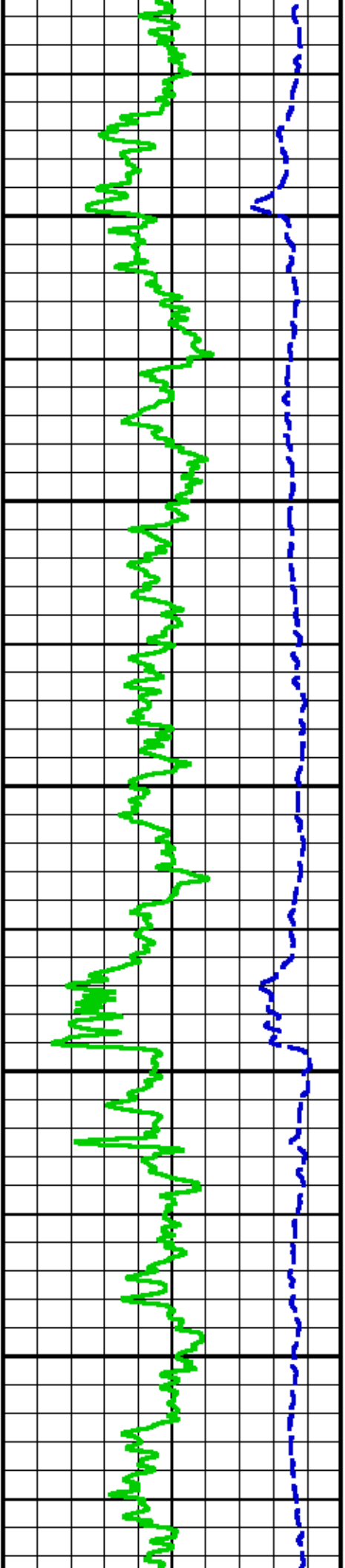
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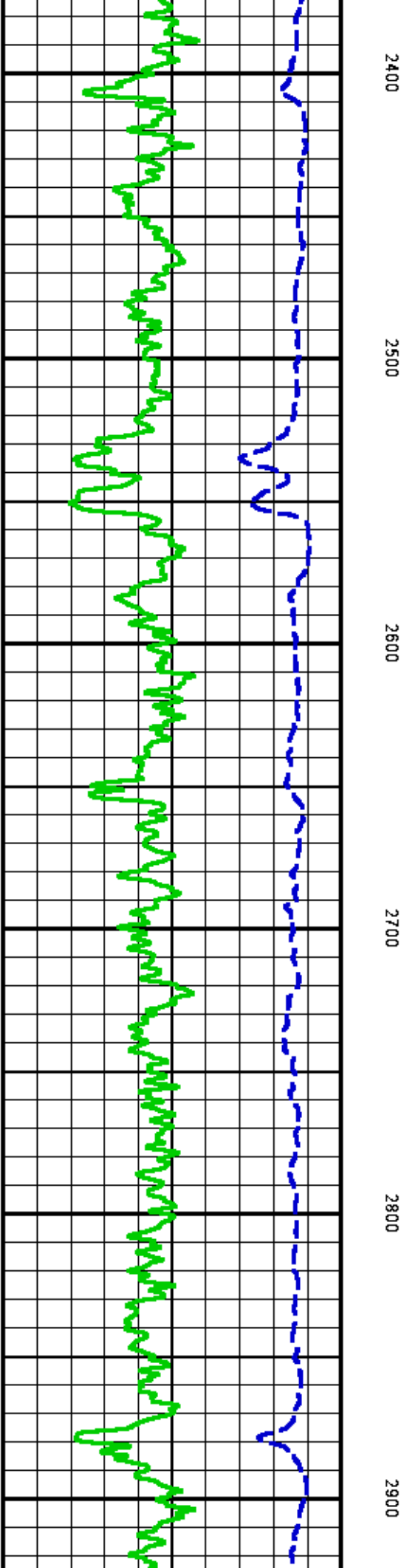
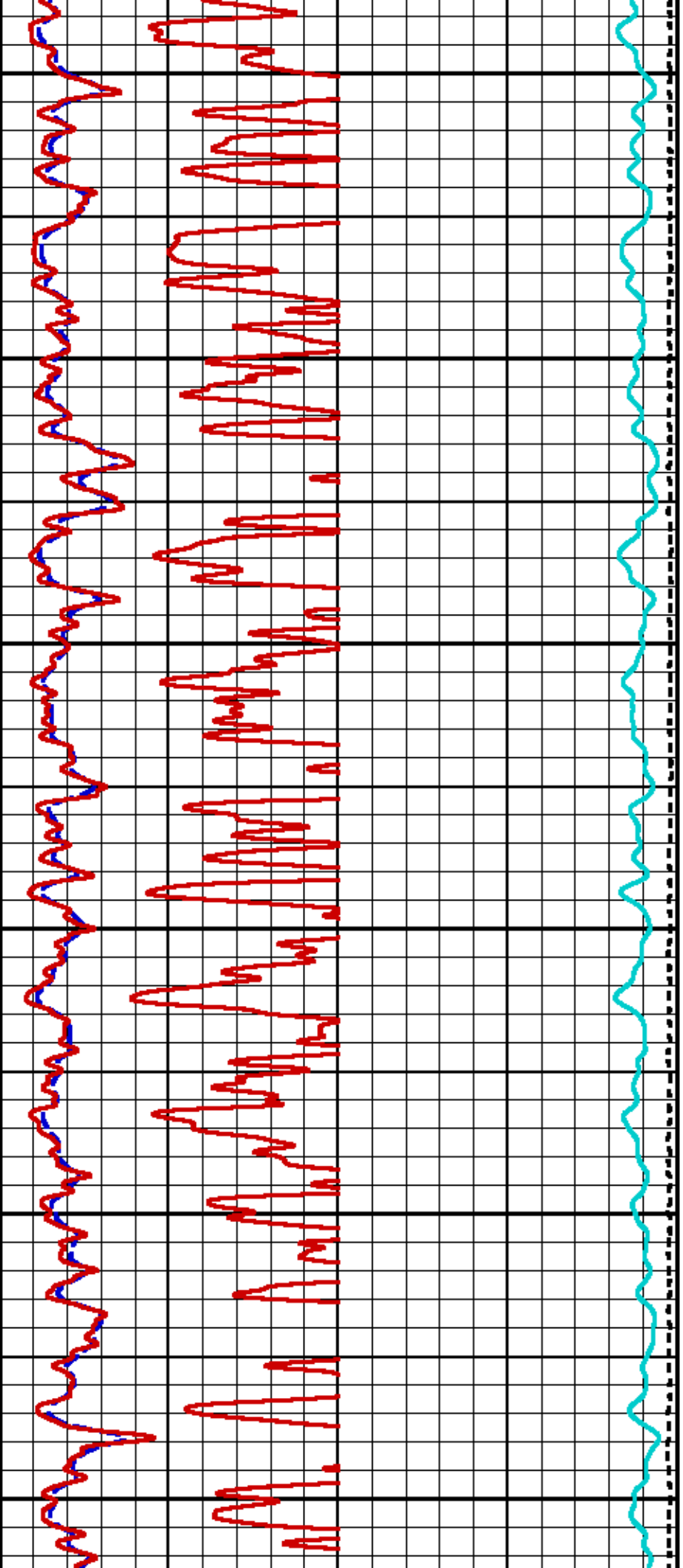
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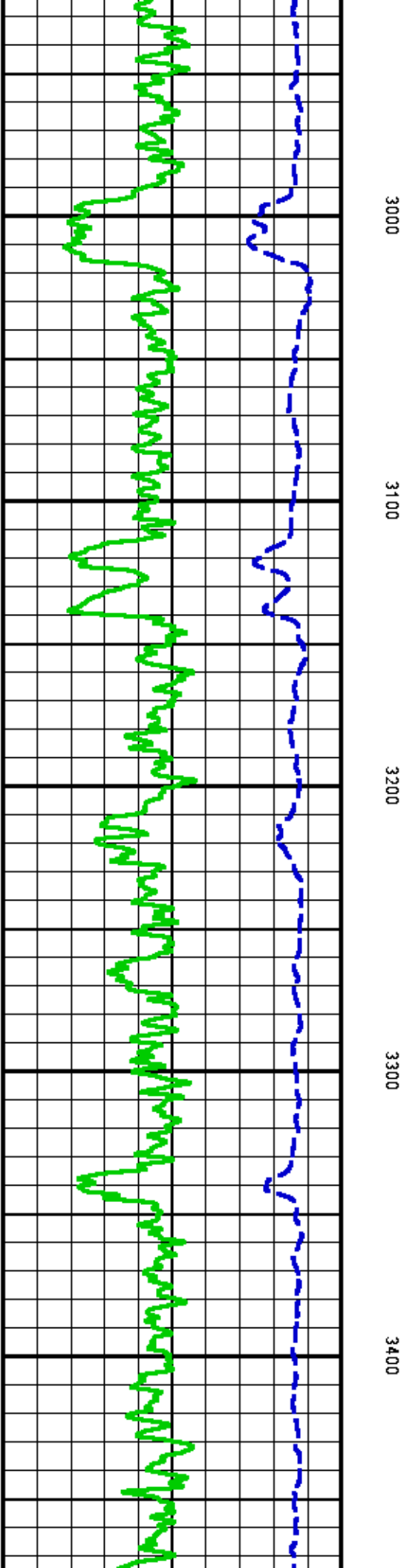
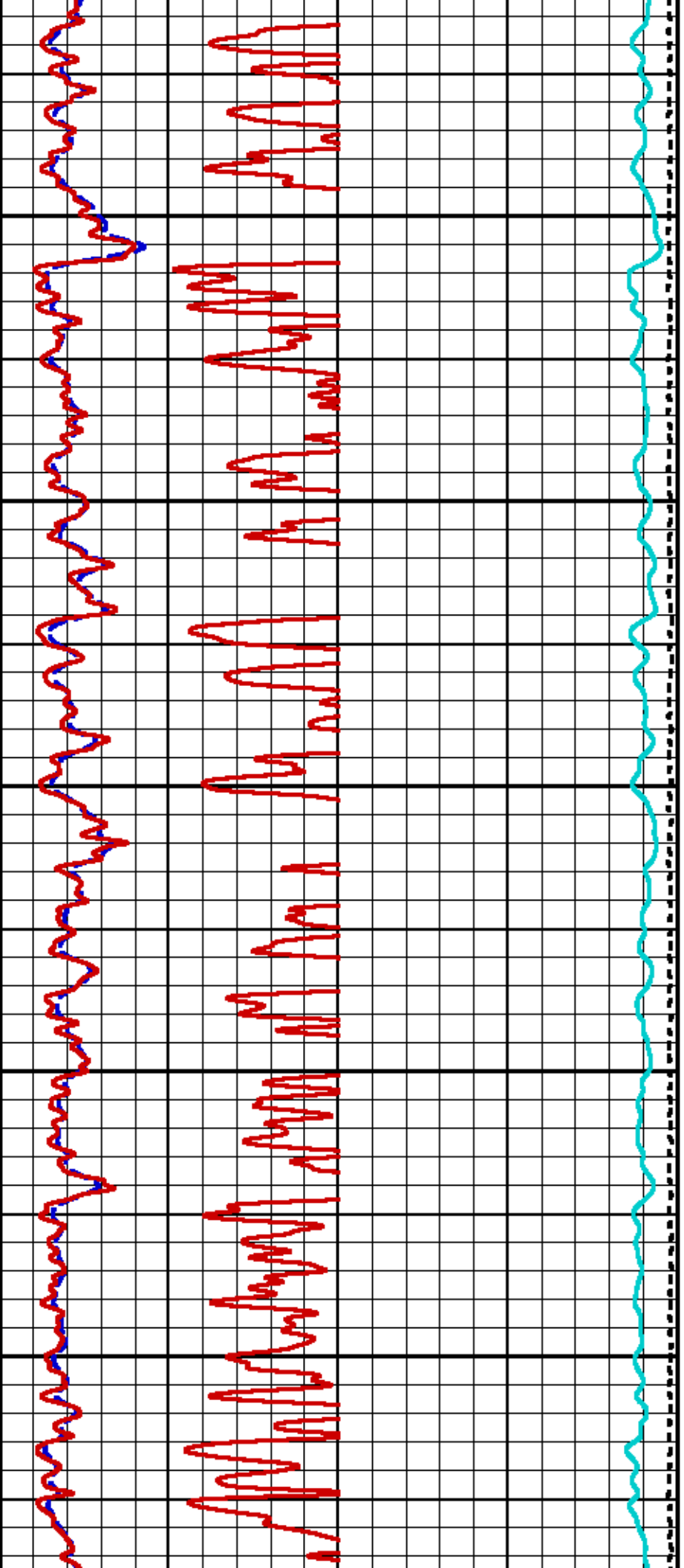
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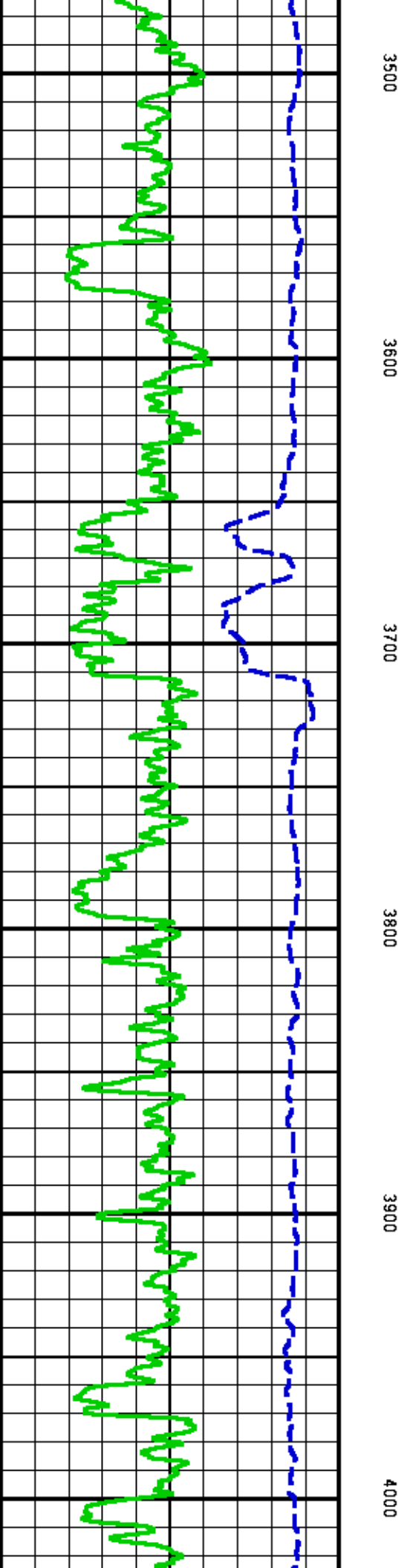
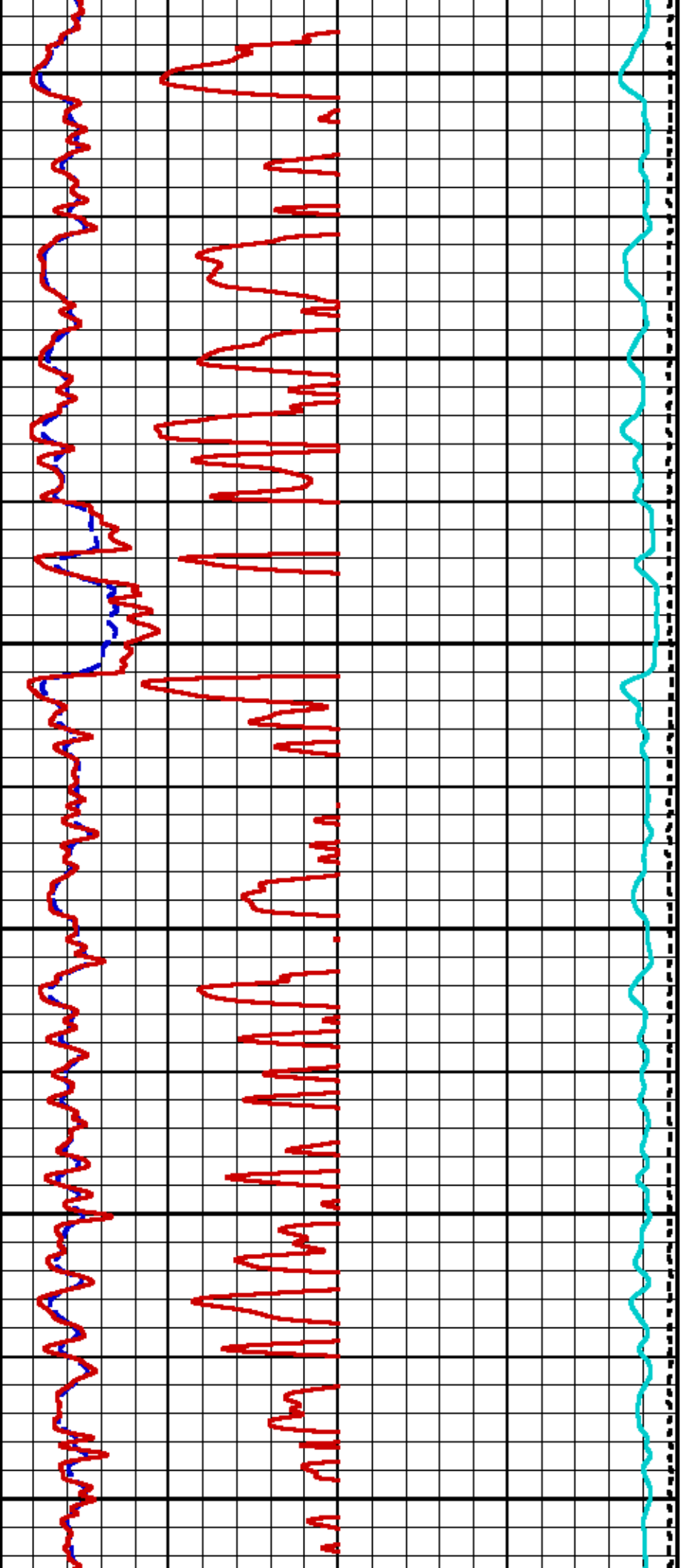
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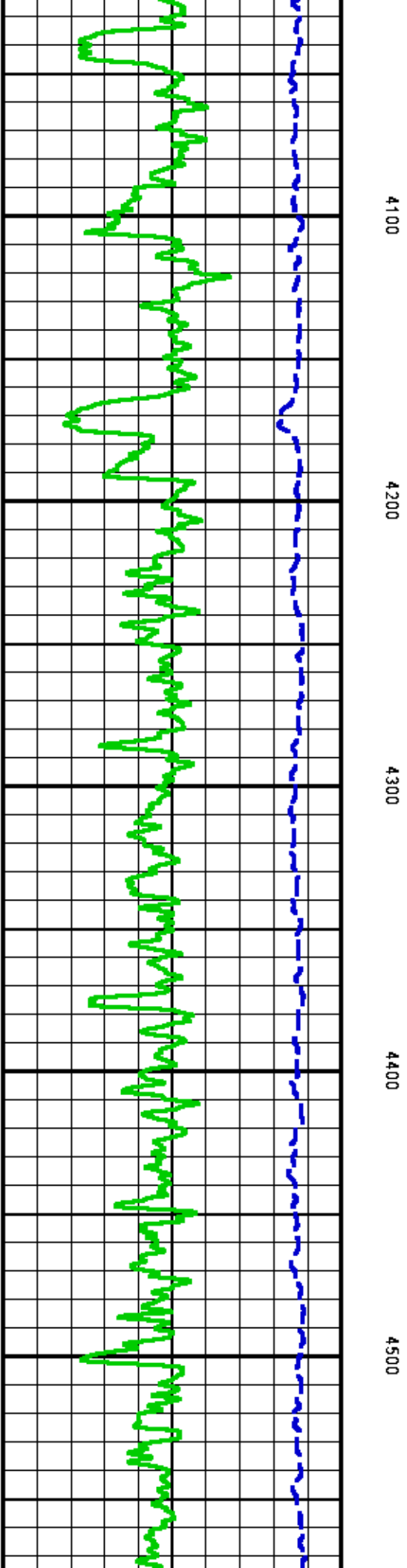
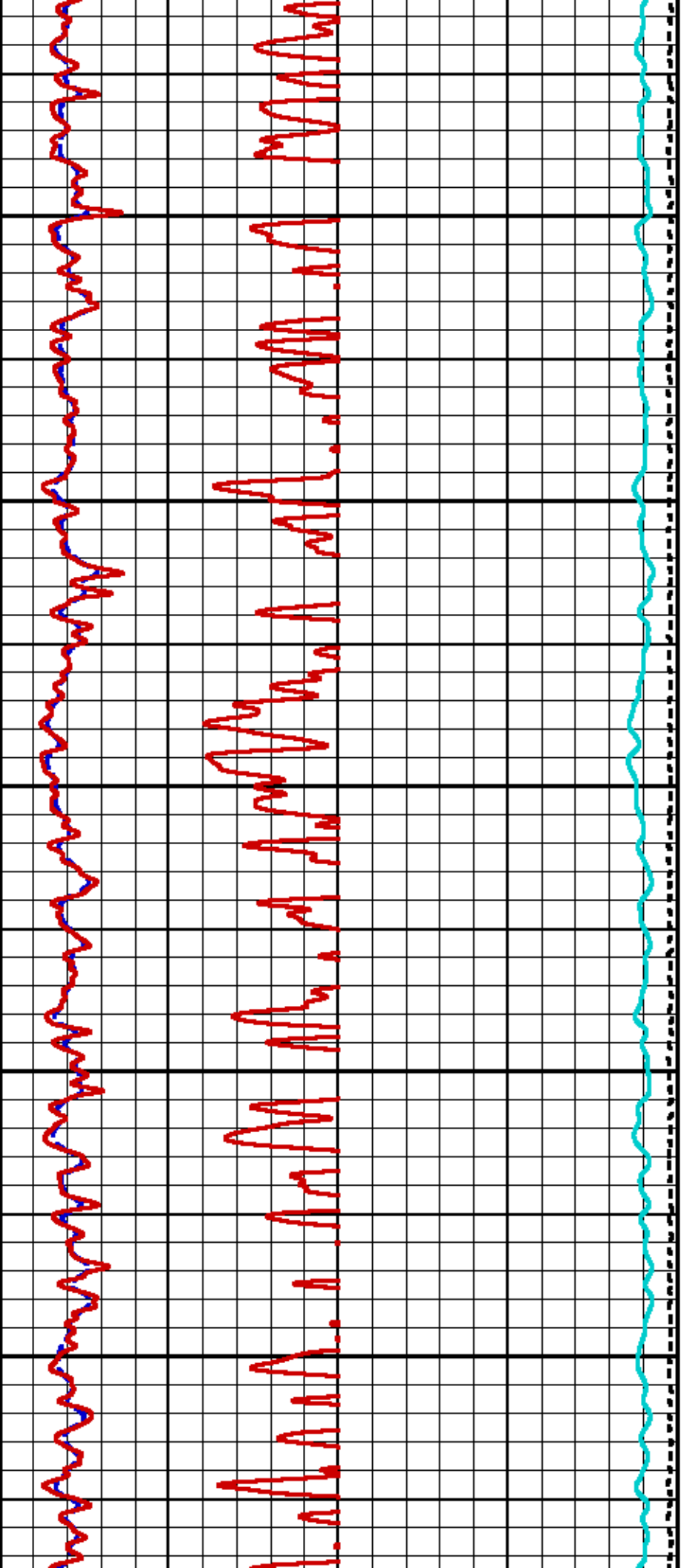


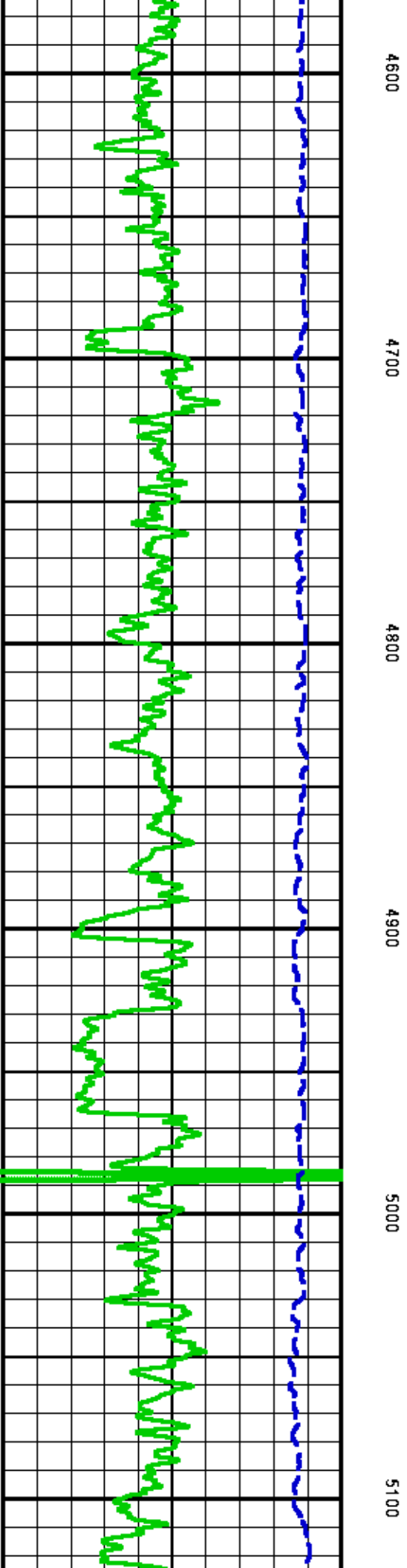
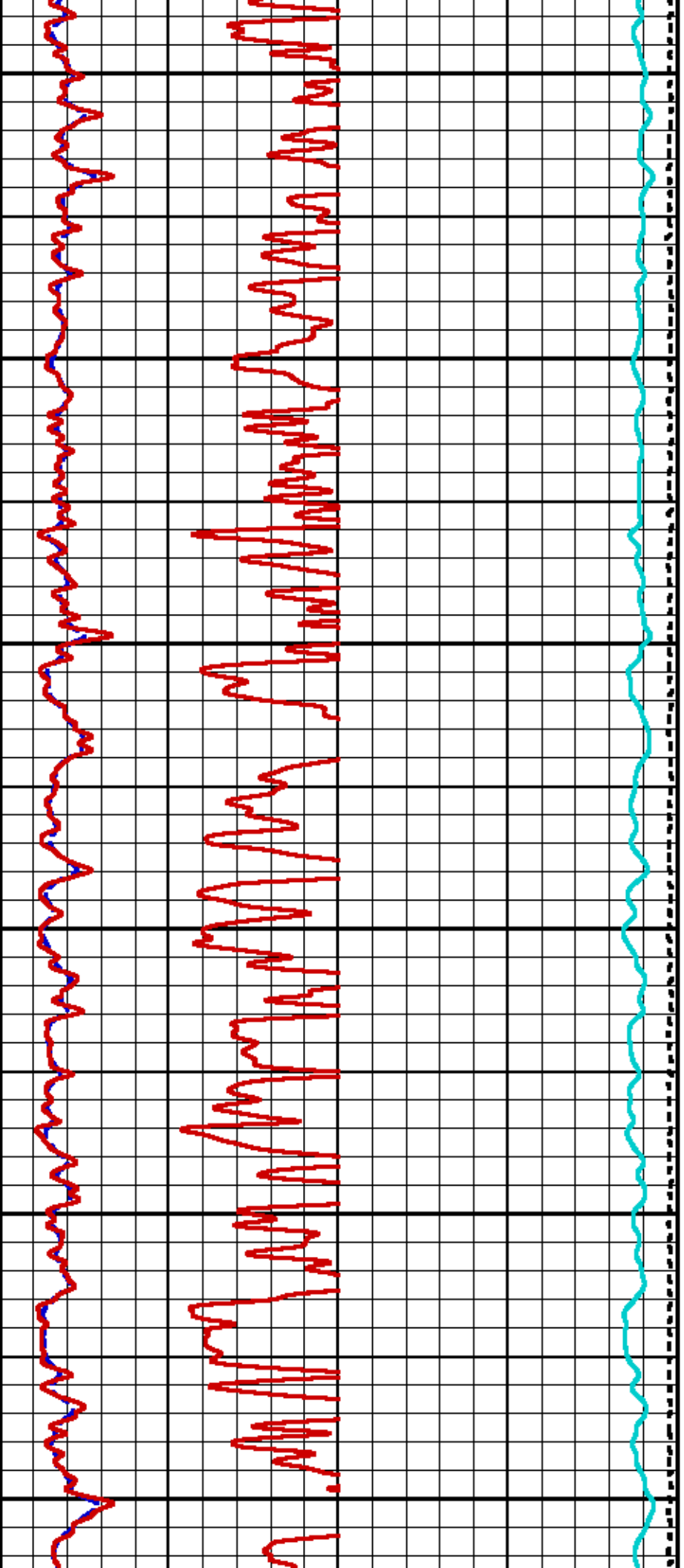


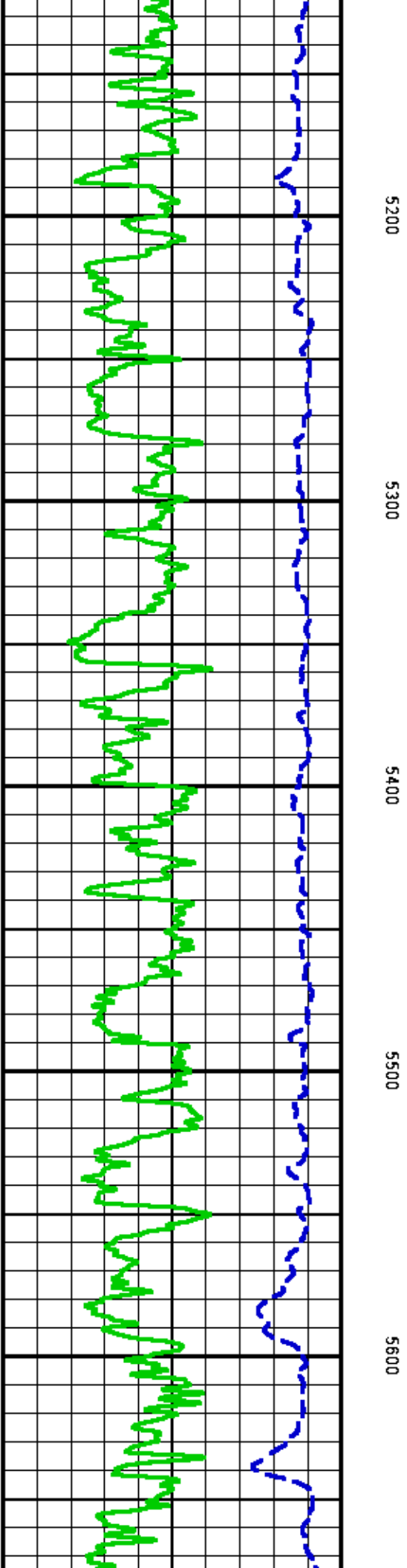
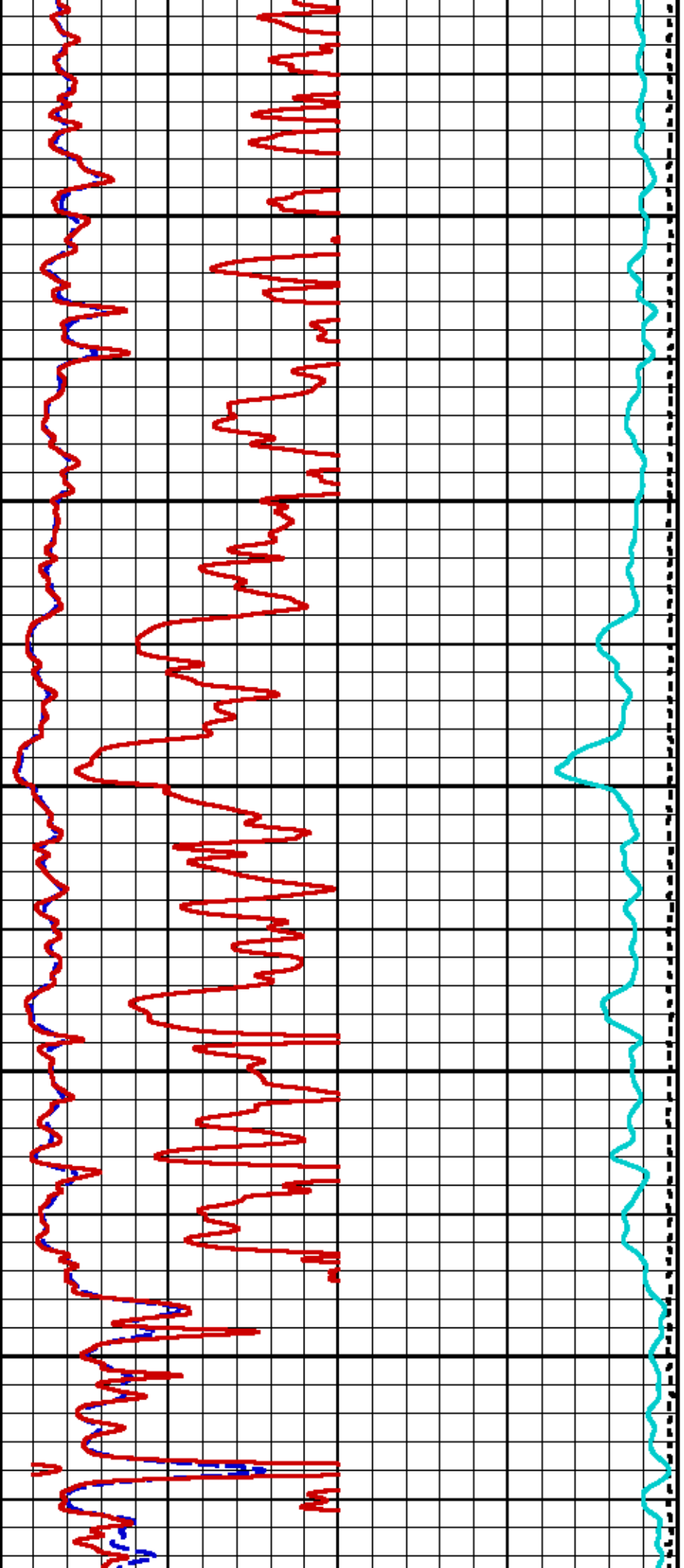


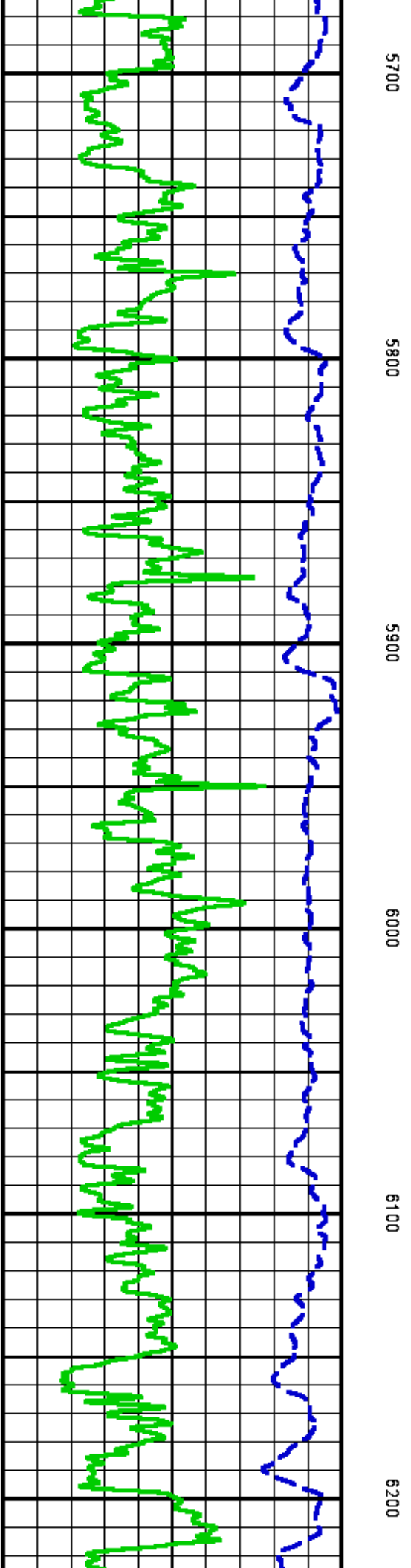
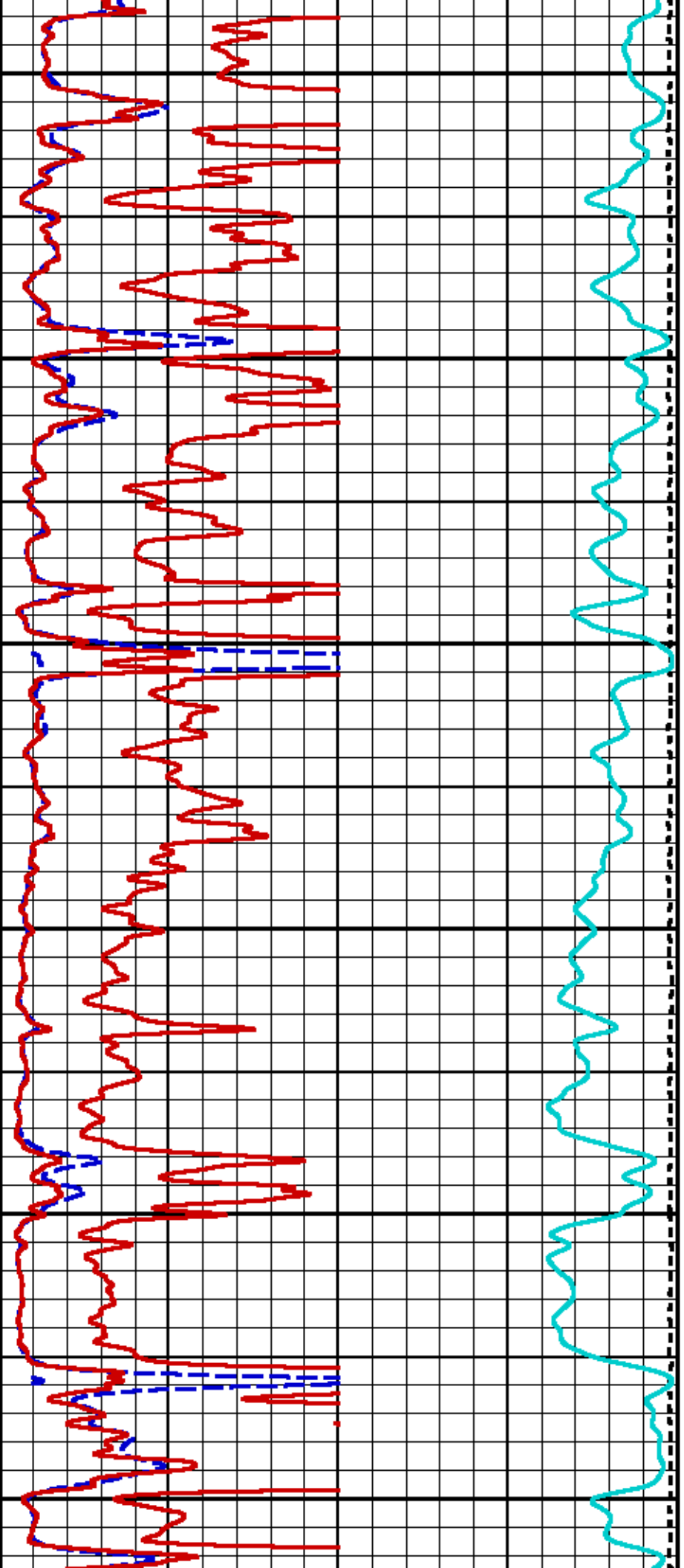


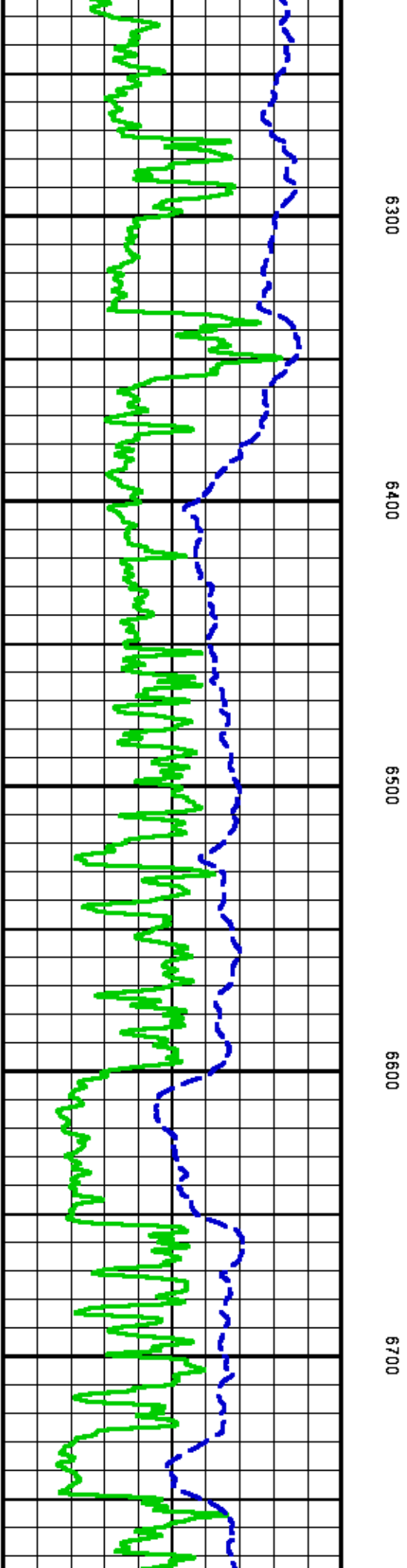
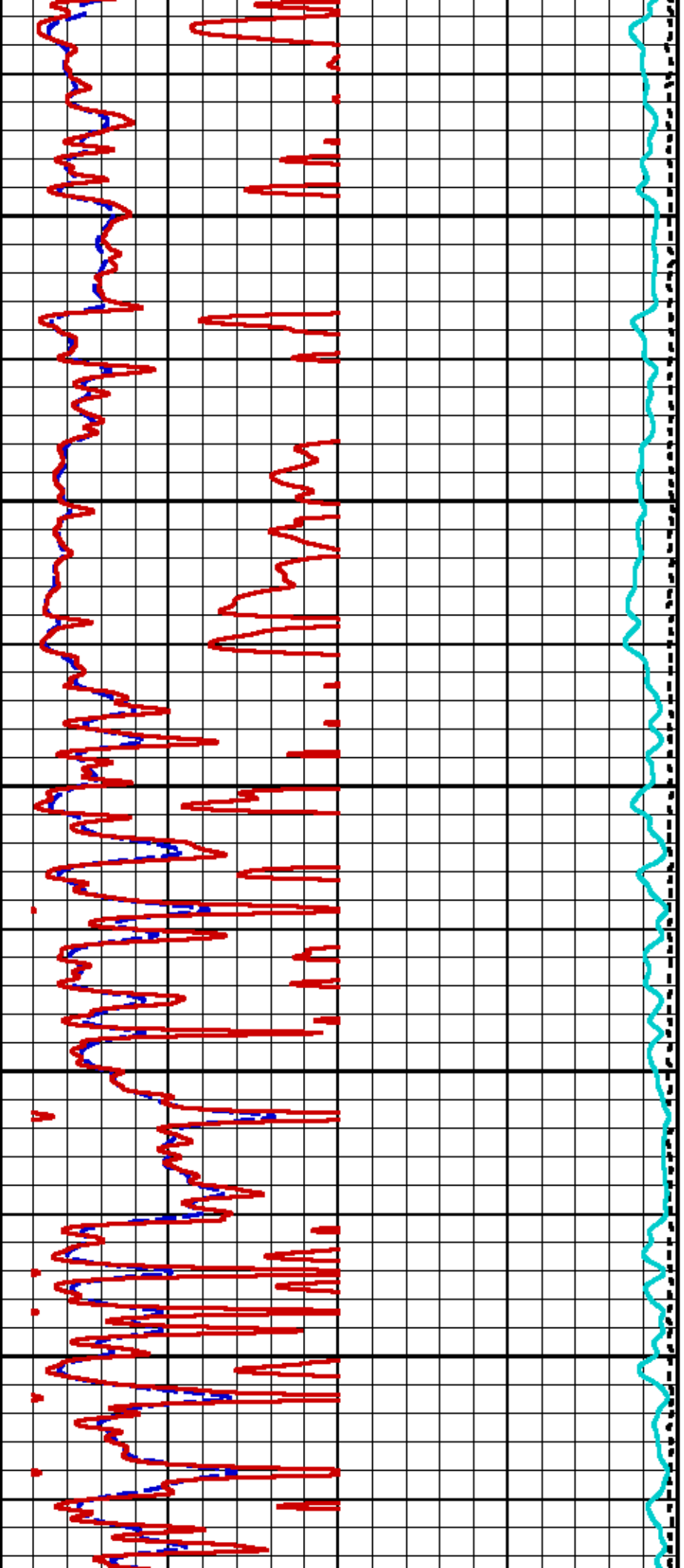


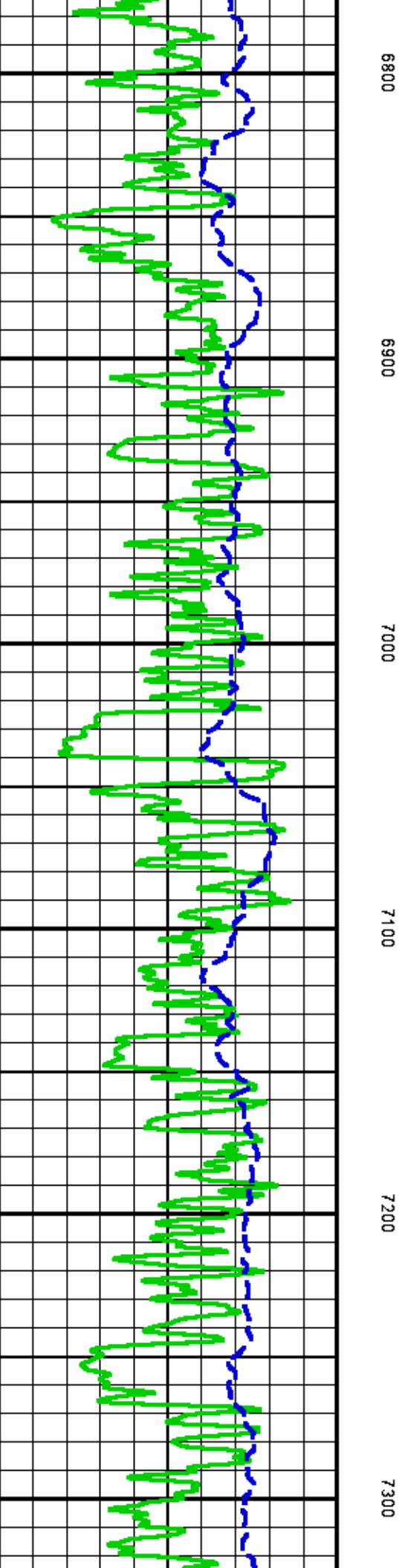
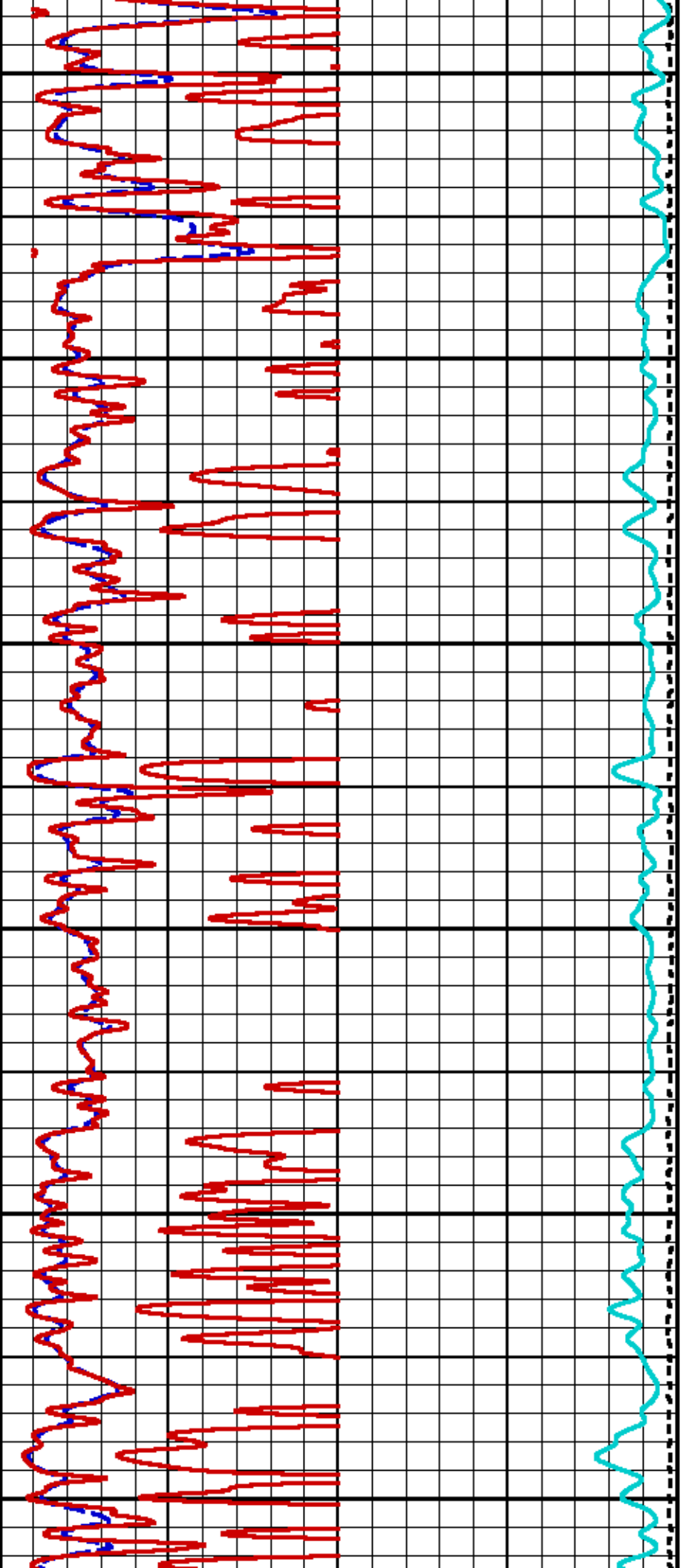




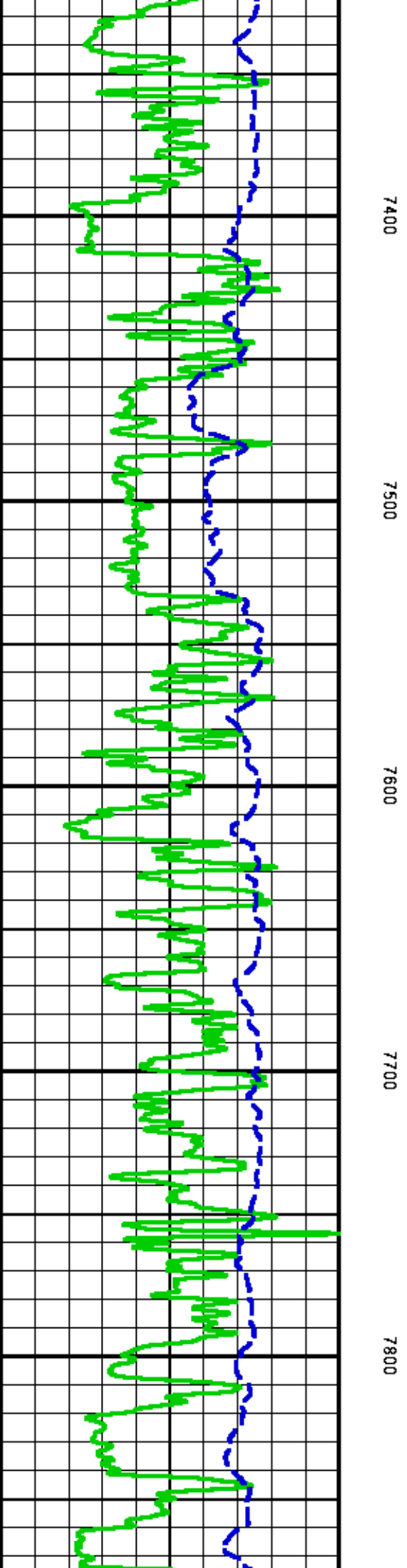
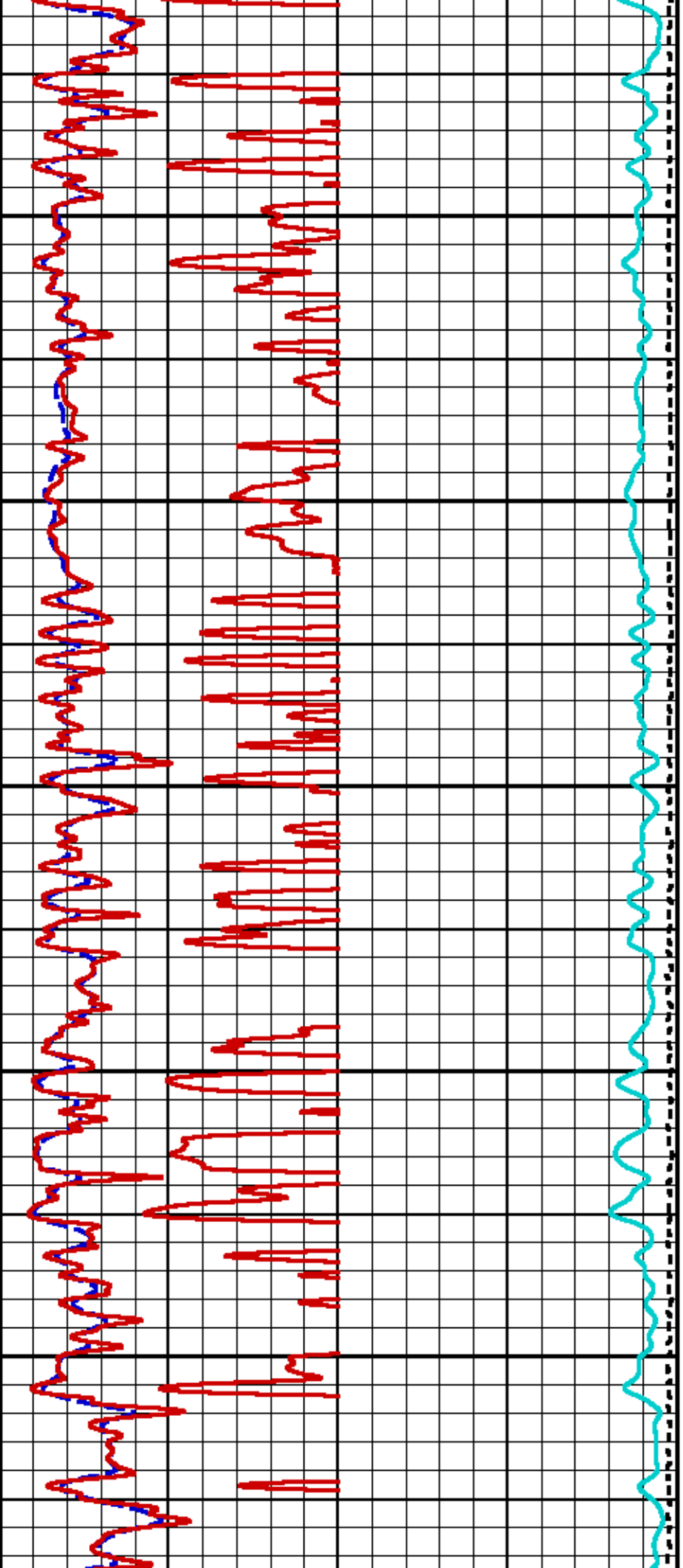


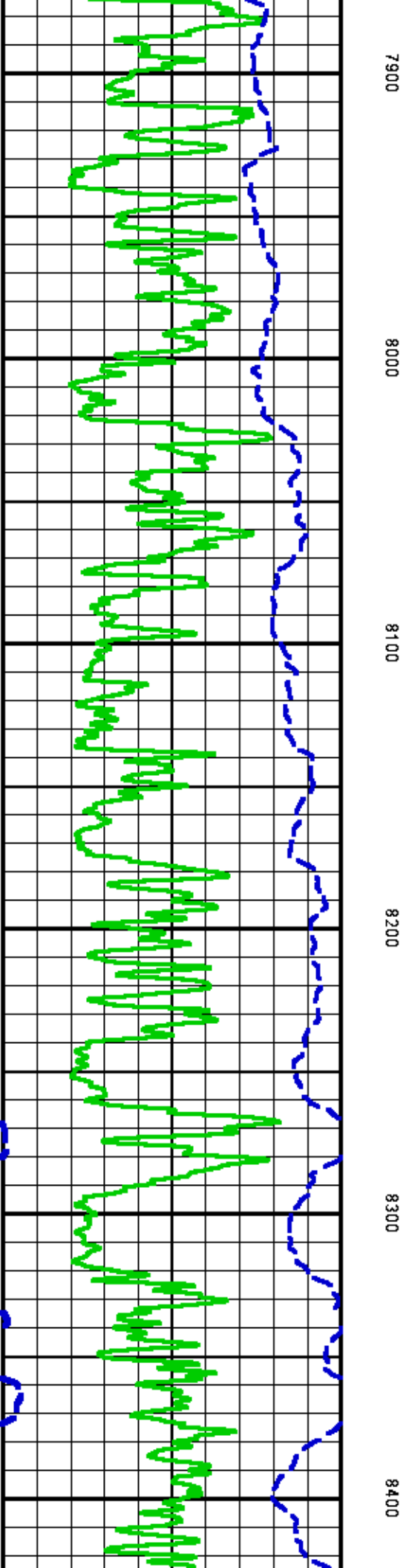
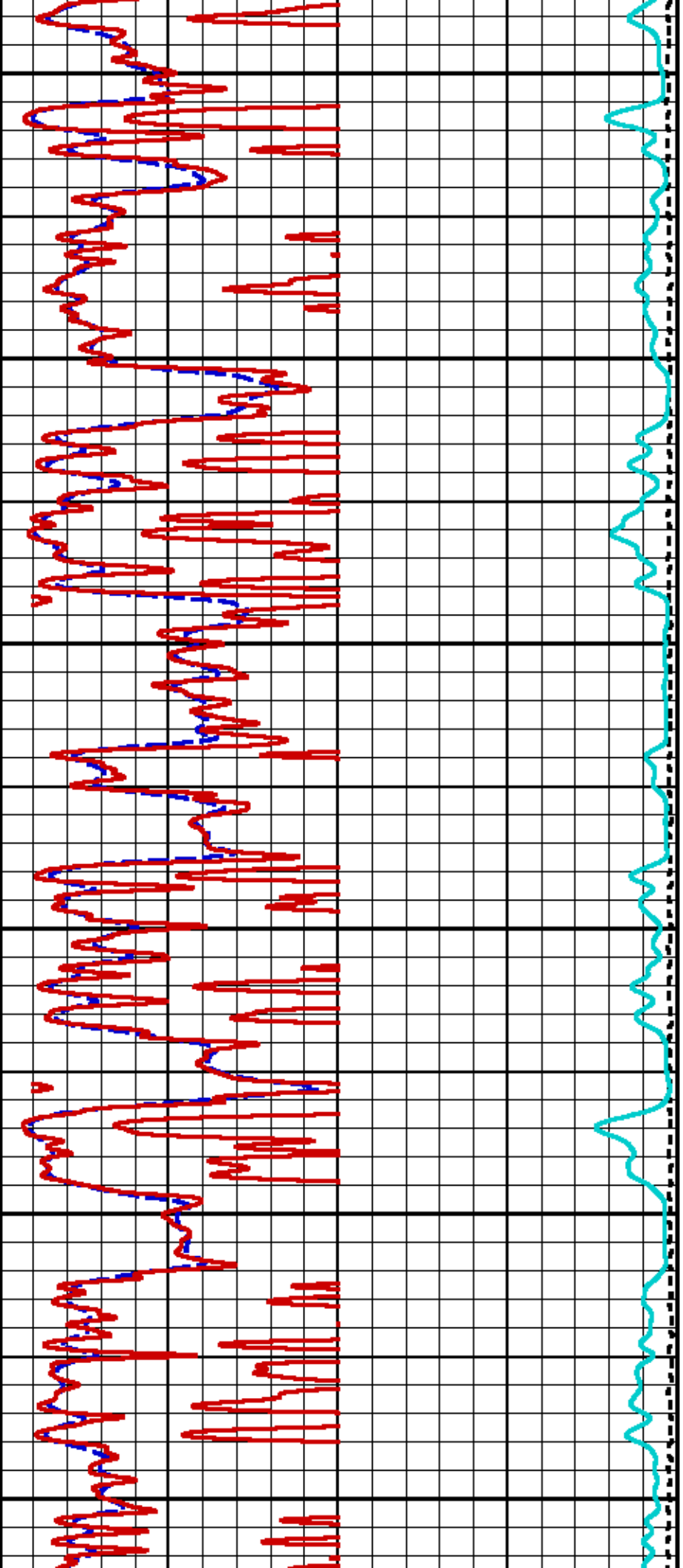


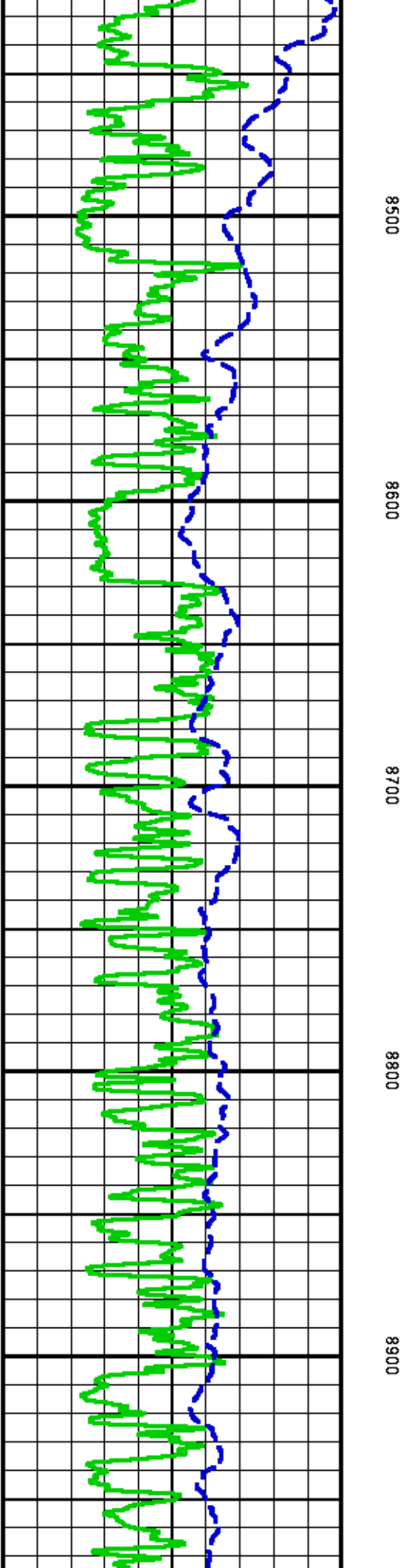
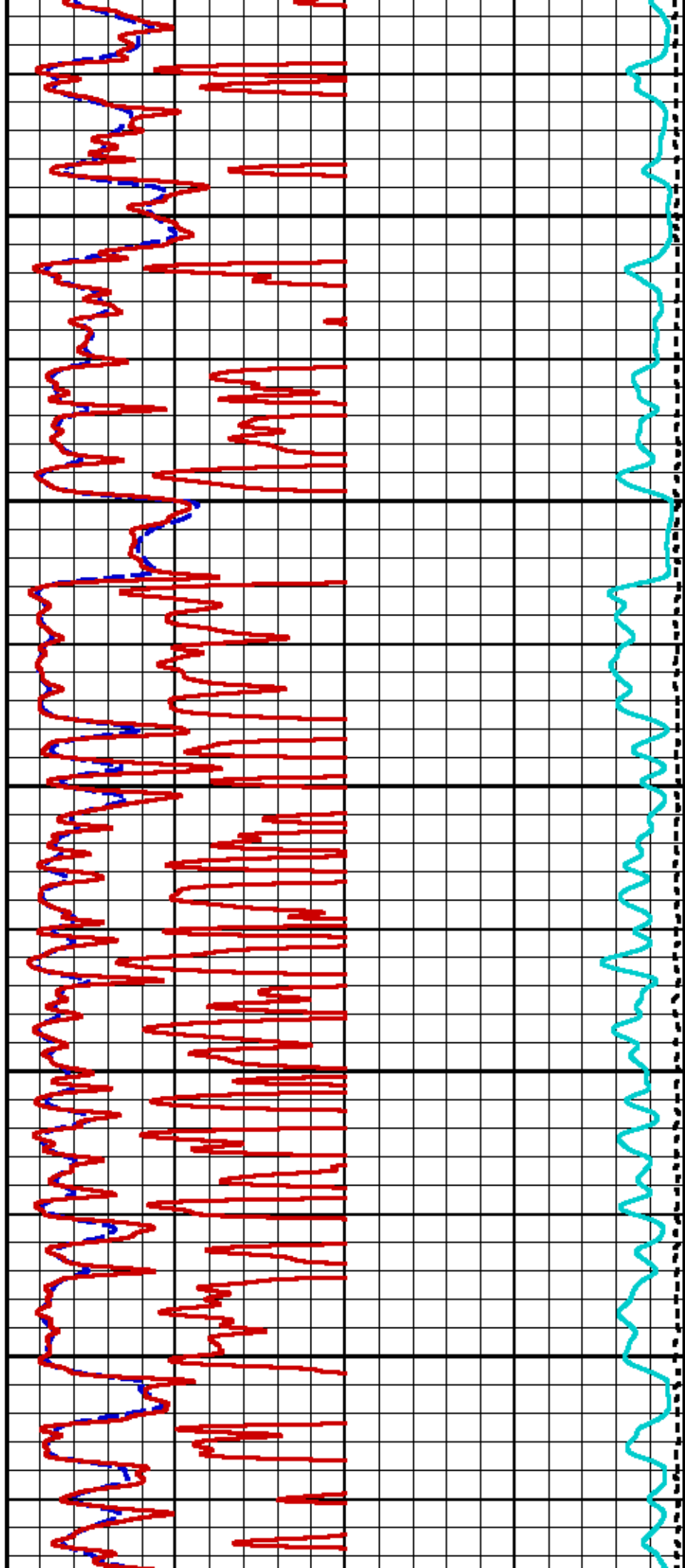


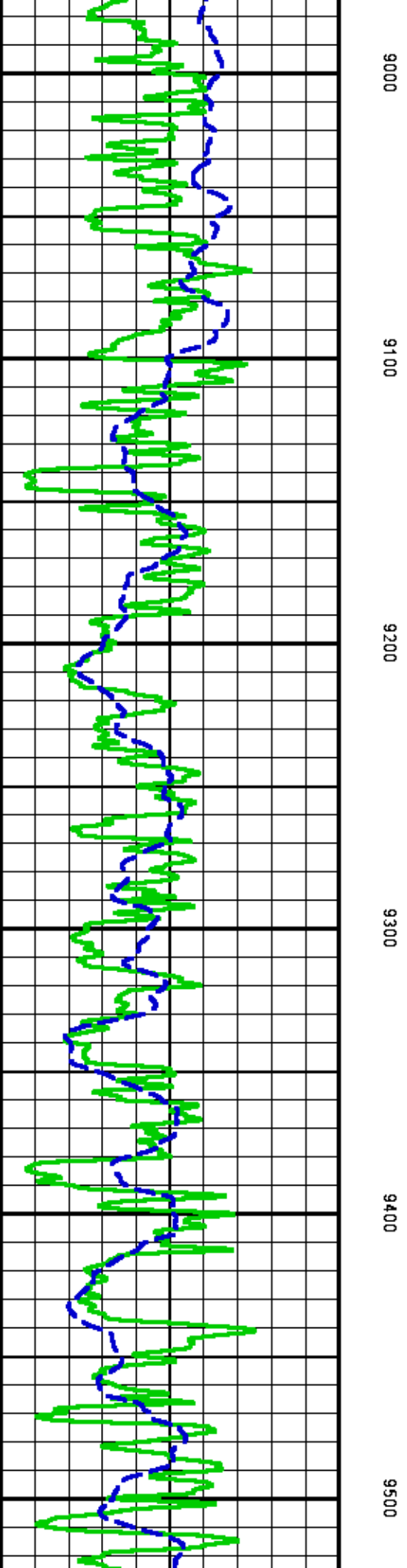
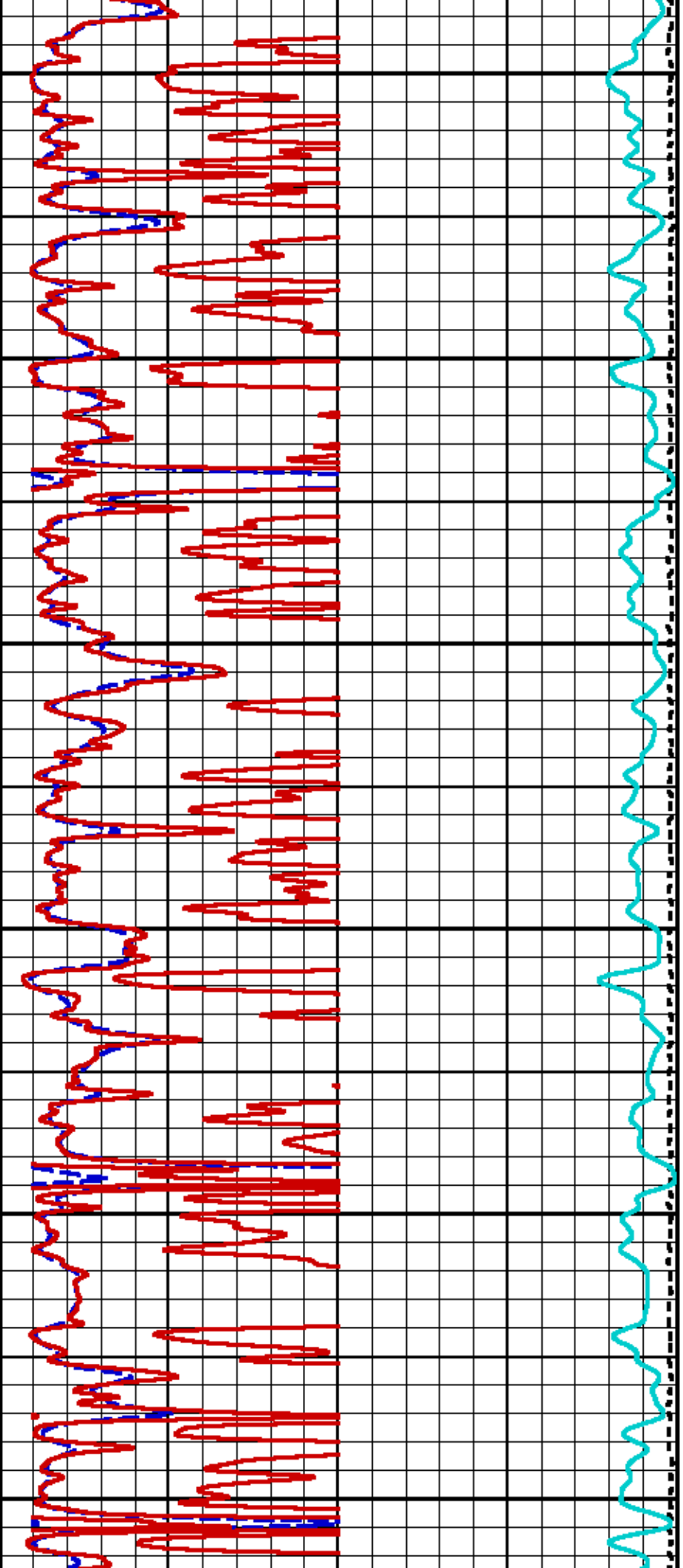


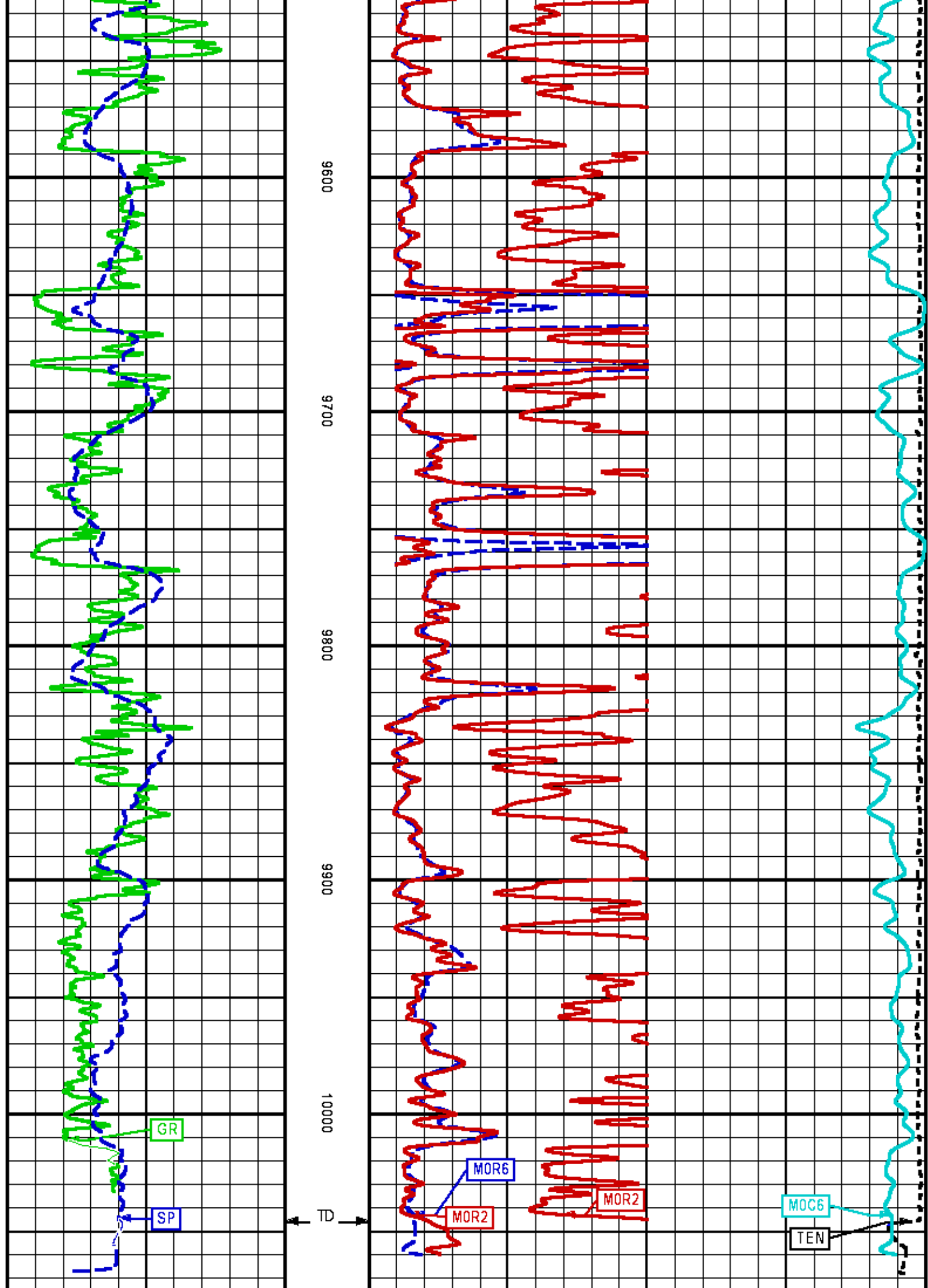


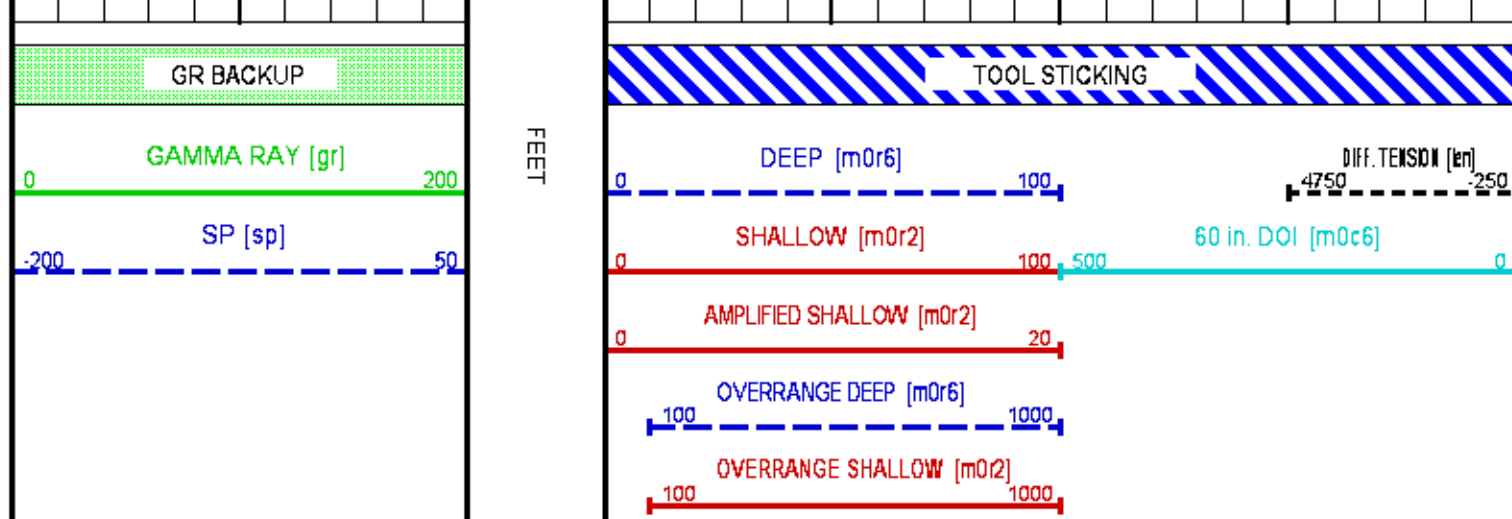












## MAIN LOG 5"/100FT SCALE

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

Patches: 1

Plotted: Tue Sep 3 08:10:34 2013

## PARAMETER AND FILTER SUMMARY REPORT

File: /dat1a/625574/n970a02.prm  
 LOGGING MODE: DEPTH DIRECTION: UP  
 TOP DEPTH: 962.000 ft BOTTOM DEPTH: 10073.055 ft

### SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
GR MED RES	FILTER Q	medium (1)		TOP	BOTTOM
CALIPER	FILTER Q	medium (1)		"	"
TENSION	FILTER Q	medium (1)		"	"
CN MED RES	FILTER Q	medium (1)		"	"
ZDL MED RES	FILTER (hrd1*)	medium		"	"
	FILTER (hrd1*)	medium		"	"
	FILTER (hrd2*)	medium		"	"
	FILTER (hrd2*)	medium		"	"
	FILTER (soff*)	medium		"	"
SP-SPDH	FILTER Q	heavy (3)		"	"

### BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CASING - BOREHOLE & CEMENT VOLUME	CASING O.D.	4.500	in	TOP	BOTTOM
	CASING THICKNESS	0.000	in	"	"
BIT SIZE	BIT SIZE	8.750	in	"	"
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (cnbh*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (mbh*)	USE CALIPER		"	"
BOREHOLE CORR DIAMETER	FIXED DIAMETER (cnbh*)	8.750	in	"	"
	FIXED DIAMETER (mbh*)	8.750	in	"	"
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	80.0	degF	"	"
	MUD SAMPLE RES	1.040	ohm.m	"	"
BH MUD RESISTIVITY SOURCE	RMUD SOURCE (HDIL)	TOOL MEASURED		"	"
BOREHOLE TEMP from GRADIENT	Known BH REF TEMP	80.0	degF	"	"
	at BH REF DEPTH	0.0	ft	"	"
	with TEMP GRADIENT	1.200	0.01 degF/ft	"	"

## ACCELERATION PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
ACCEL CORR SWITCH	ACCEL DEPTH CORR	CORRECTION ON		TOP	BOTTOM

## CN PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CN MATRIX	2436 MATRIX	SANDSTONE		TOP	BOTTOM
CN BOREHOLE CORRECTION	SALINITY	1100	ppm	"	"
	BOREHOLE CORRECTION	ON		"	"
CN TOOL STANDOFF	ENABLE STANDOFF CORR	OFF		"	"
	STANDOFF AMOUNT	0.00	in	"	"
CN CASING & CEMENT CORRECTION	CORRECTION	OFF		"	"
	BIT SIZE BEHIND CSNG	8.750	in	"	"

## ZDL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
DENSITY POROSITY	Air Filled Borehole	NO		TOP	BOTTOM
	RHOmatrix	2.680	g/cm3	"	"
	RHOfluid	1.000	g/cm3	"	"

## HDIL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
HDIL TEMPERATURE CORRECTION	TEMP CORRECTION	ON		TOP	BOTTOM
ADAPTIVE BOREHOLE CORRECTION	ABC PROCESSING	ON		"	"
	ABC to CALCULATE	MUD CONDUCTIVITY		"	"
	STANDOFF	1.50	in	"	"
	TOOL POSITION	ECCENTERED		"	"
	Rmud MULTIPLIER	1.000		"	"

## CURVE DESCRIPTION REPORT

CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:BIT	Sep 3 04:49:43 2013	BIT SIZE
F1:BVOL	Sep 3 04:49:43 2013	BOREHOLE VOLUME
F1:CAL	Sep 3 04:49:43 2013	CALIPER
F1:CNCf	Sep 3 04:49:43 2013	FIELD NORMALIZED COMPENSATED NEUTRON POROSITY
F1:CVOL	Sep 3 04:49:43 2013	CEMENT VOLUME
F1:GR	Sep 3 04:49:43 2013	GAMMA RAY
F1:M2R1	Sep 3 04:49:43 2013	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 10-INCH DOI
F1:M2R6	Sep 3 04:49:43 2013	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 60-INCH DOI
F1:M2R9	Sep 3 04:49:43 2013	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 90-INCH DOI
F1:PE	Sep 3 04:49:43 2013	PHOTO ELECTRIC CROSS-SECTION
F1:PORZ	Sep 3 04:49:43 2013	POROSITY FOR SELECTABLE MATRIX
F1:SP	Sep 3 04:49:43 2013	SPONTANEOUS POTENTIAL
F1:TEN	Sep 3 04:49:43 2013	DIFFERENTIAL TENSION
F1:ZCOR	Sep 3 04:49:43 2013	DENSITY CORRECTION

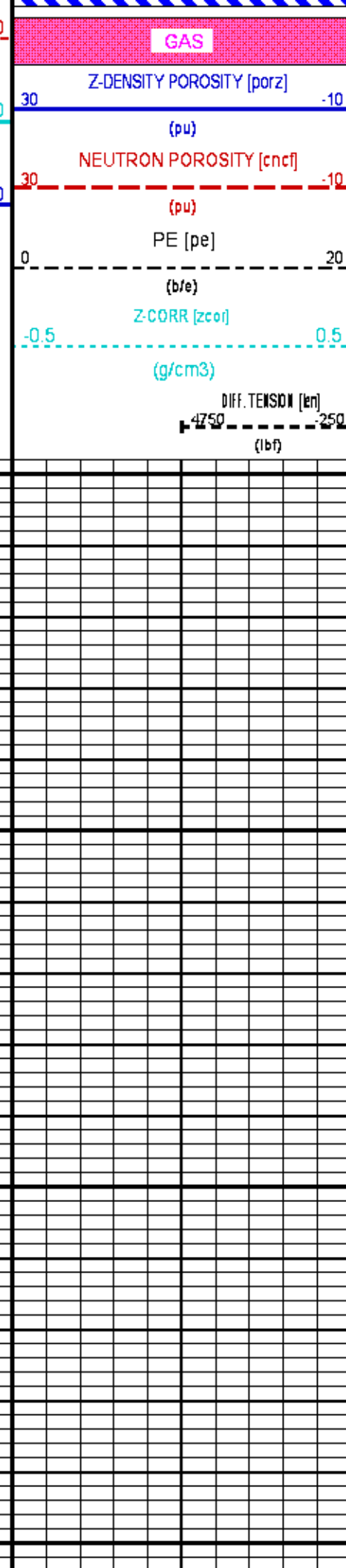
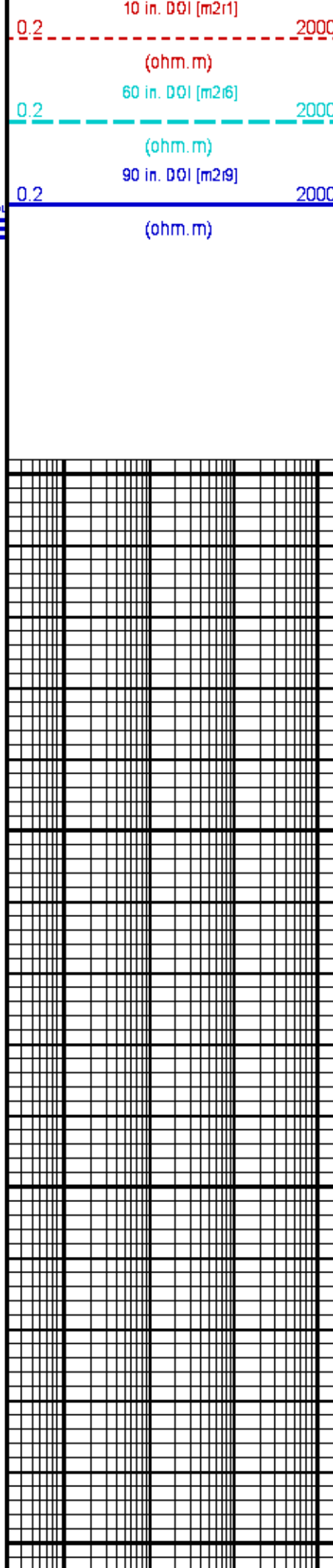
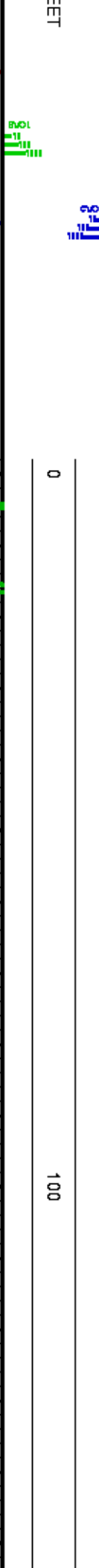
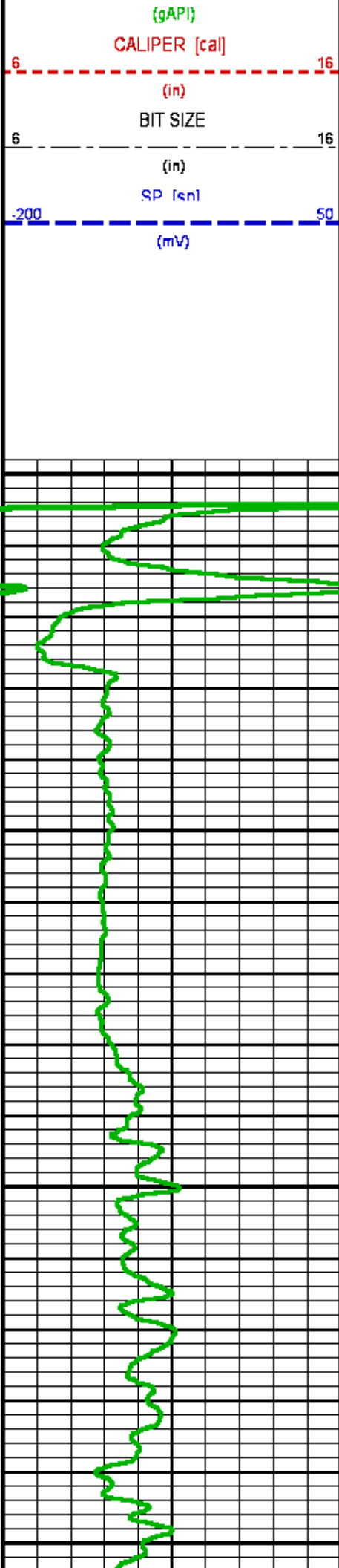
## CURVE MEASURE POINT OFFSET

CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
BIT	0.00	GR	35.00	M2R9	2.75	SP	1.25
CAL	18.12	M2R1	2.75	PE	18.00	TEN	0.00
CNCf	27.38	M2R6	2.75	PORZ	18.00	ZCOR	18.00

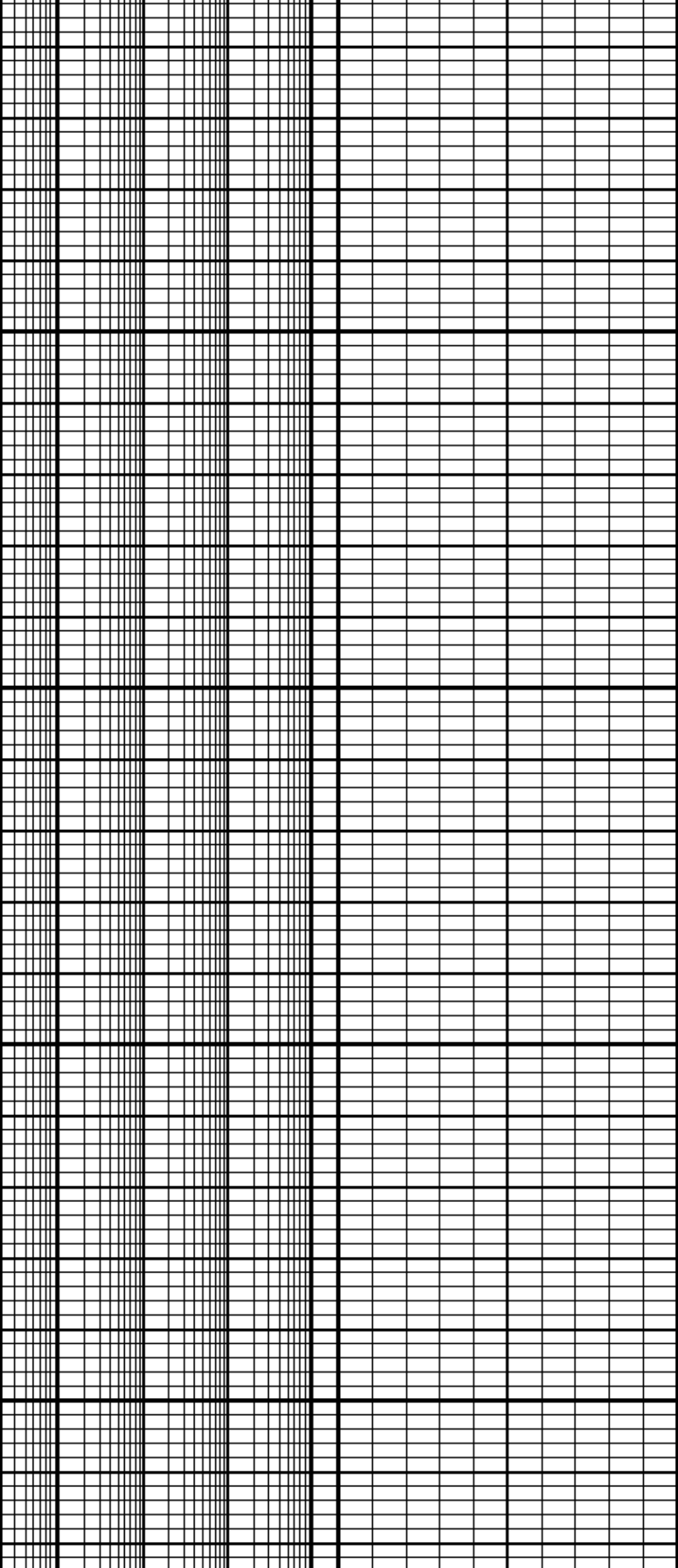
**Presentation** : HL6670:/dat1a/625574/WPX\_MAIN.fvpdf [5"/100' Scale]  
**Plot Interval** : -3 - 10074.8 Feet

**Data File 1** : F1 : HL6670:/dat1a/625574/n970a02-MAIN.xtf  
**Created On** : Sep 3 04:49:43 2013  
**Company** : WPX ENERGY  
**Well** : FEDERAL RU 322-5  
**Field** : RULISON  
**File Interval** : -3 - 10074.8 Feet  
**OCT** : n970a



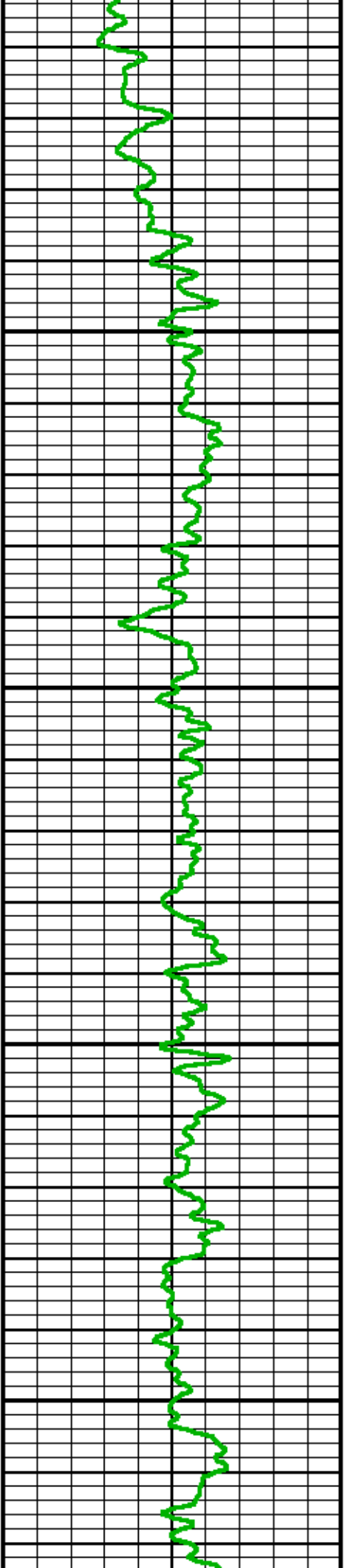


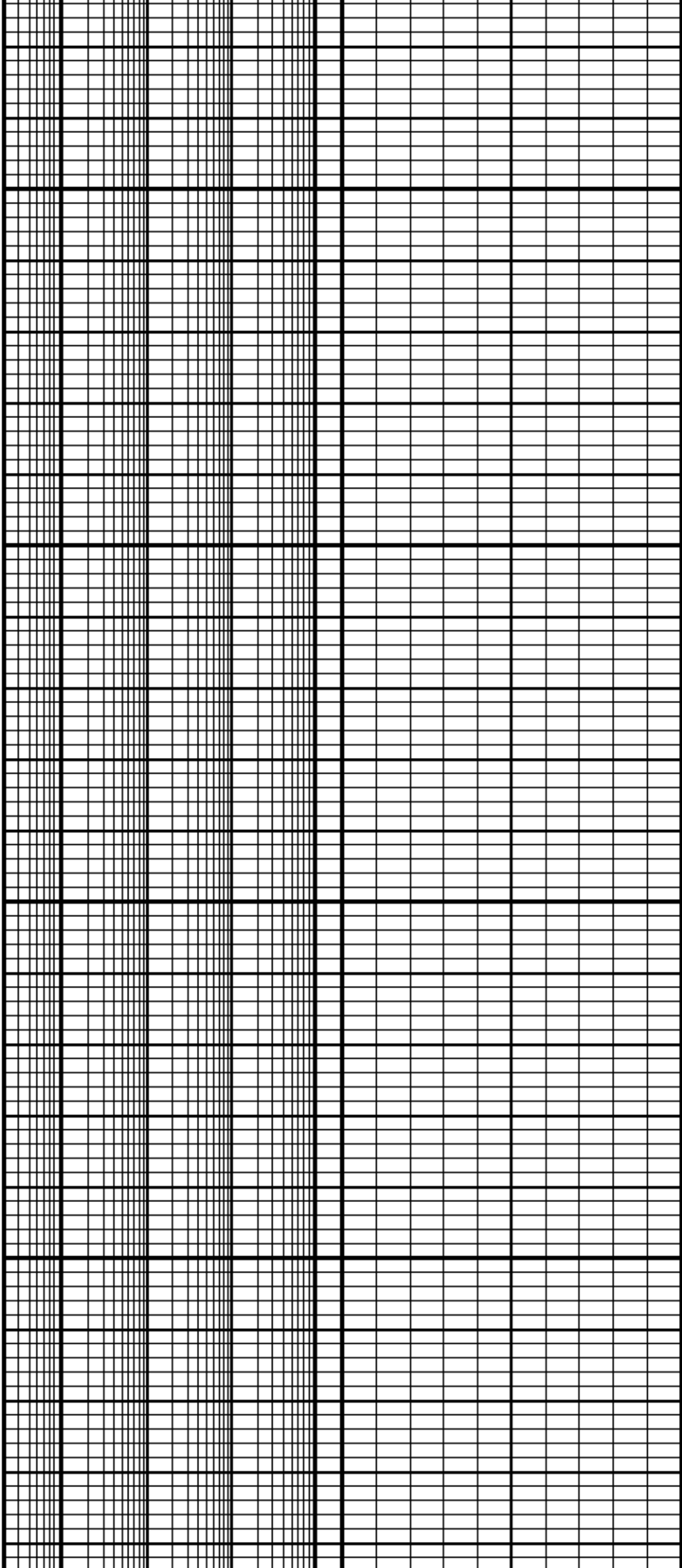




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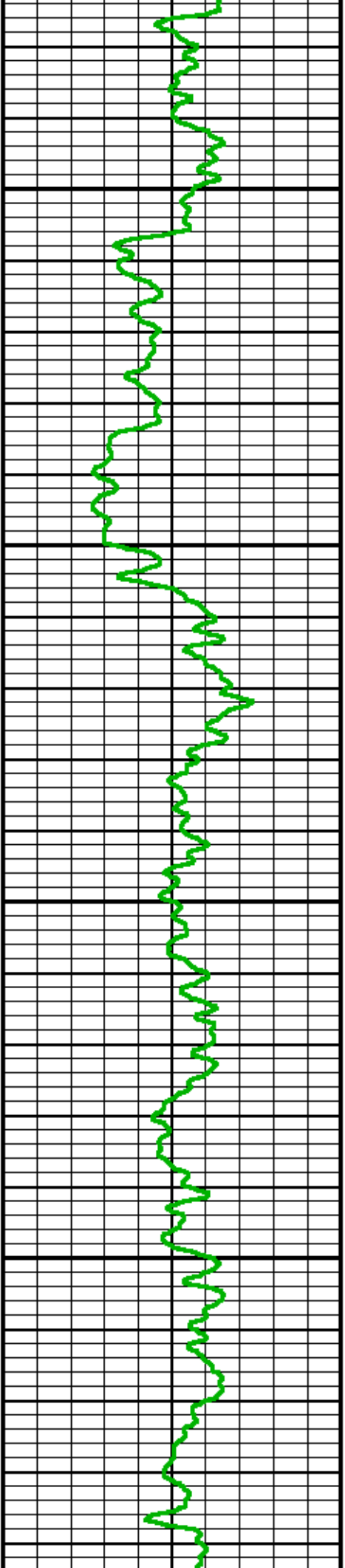
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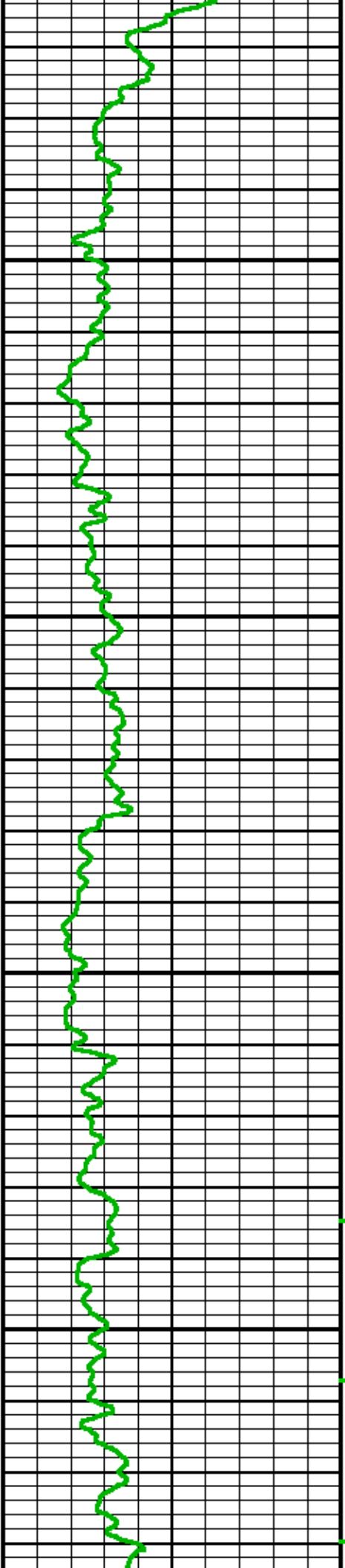


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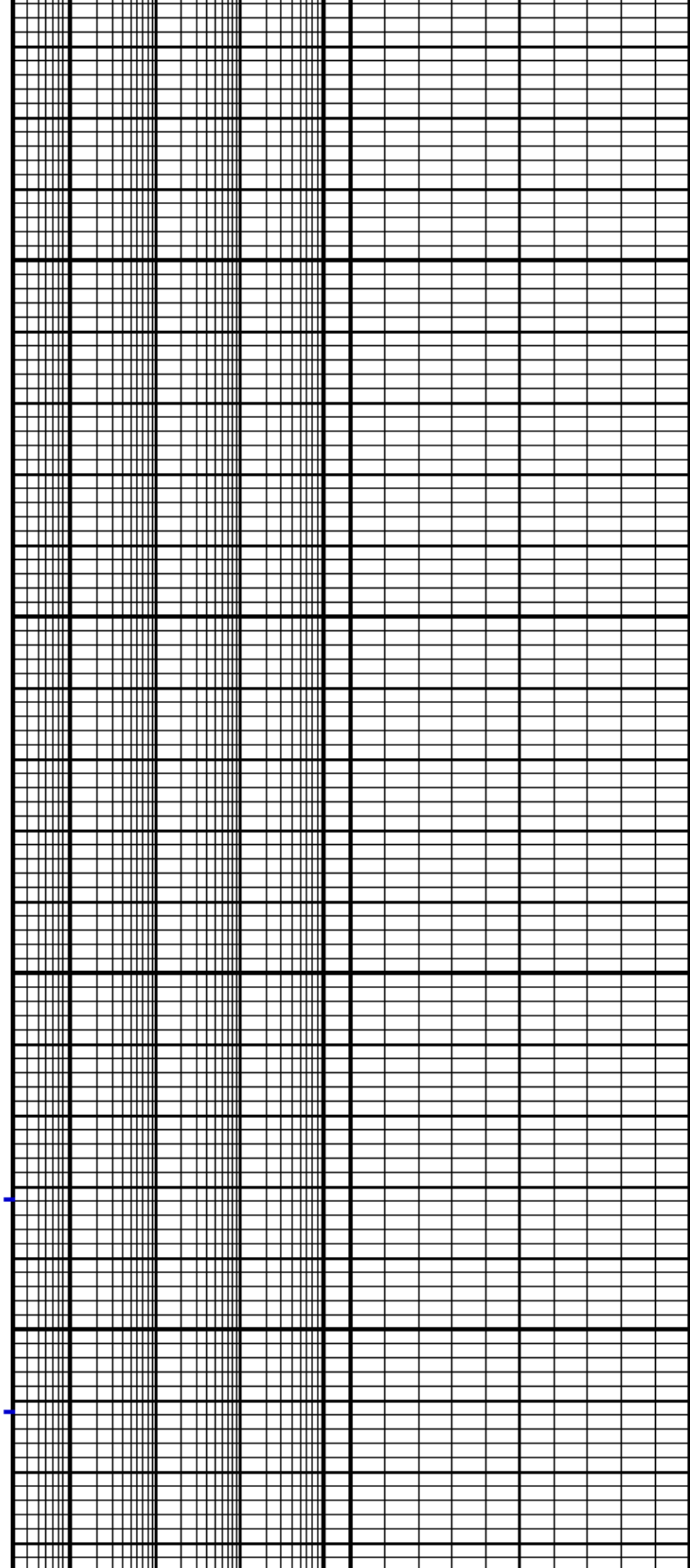


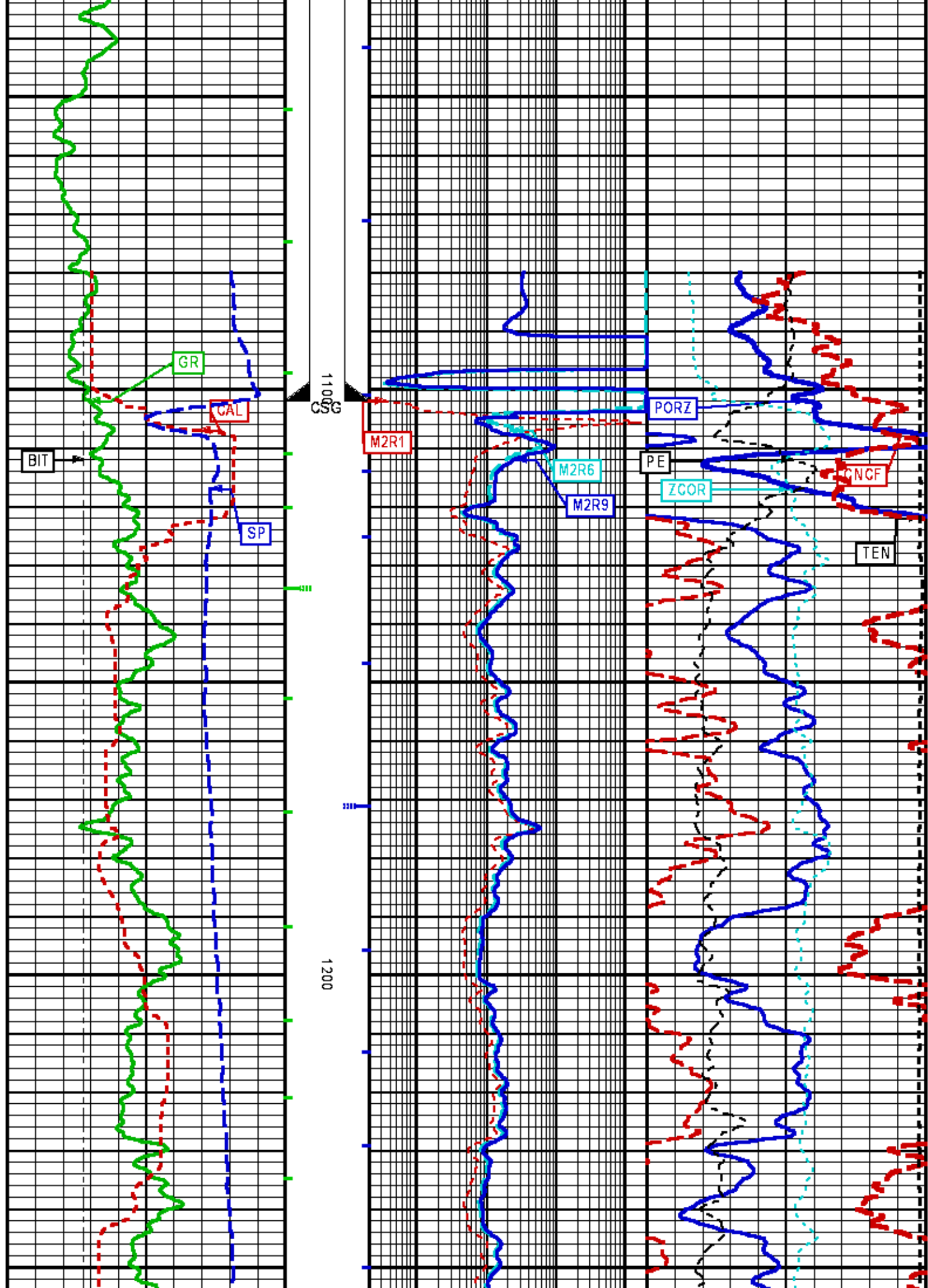


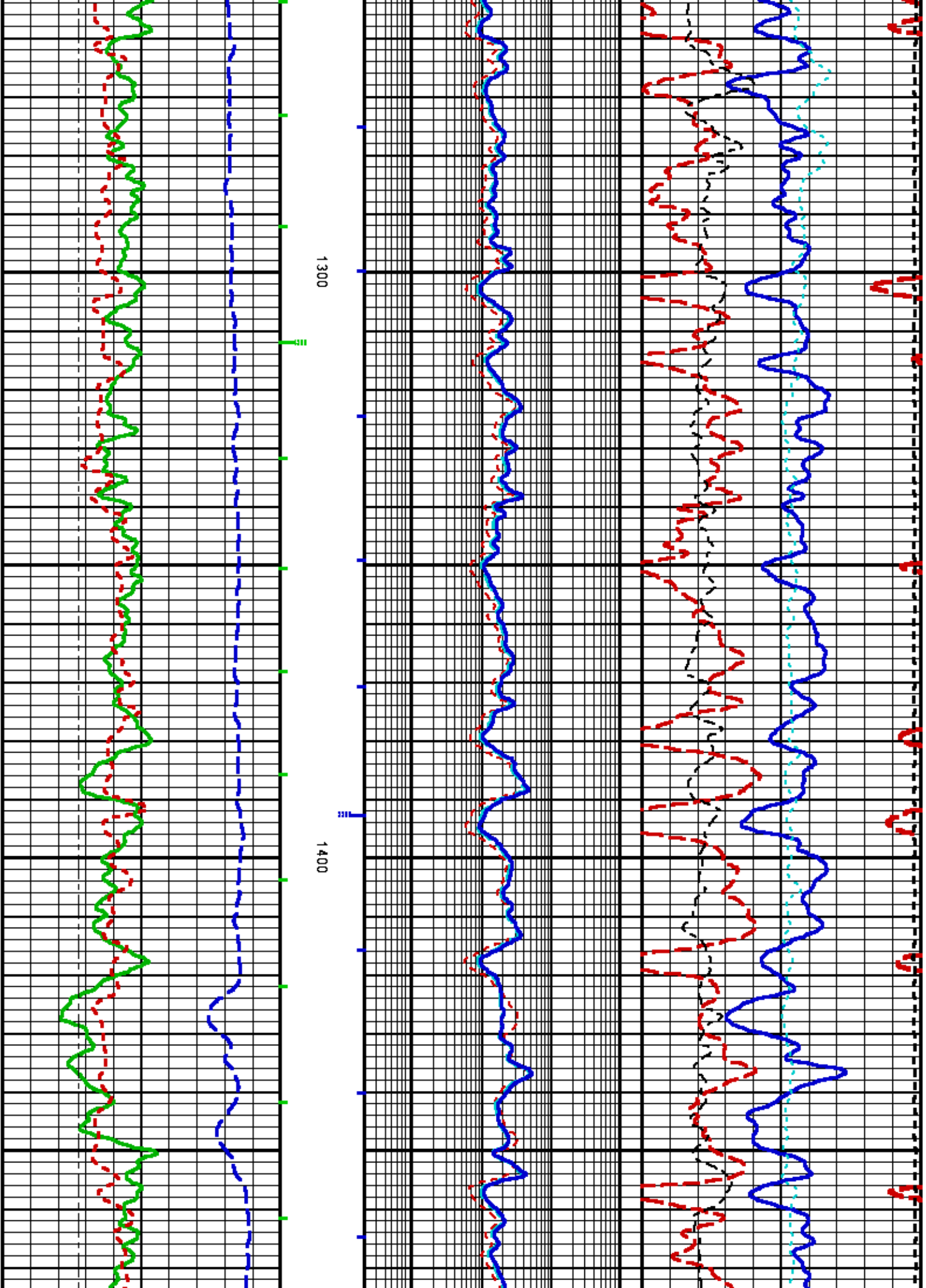


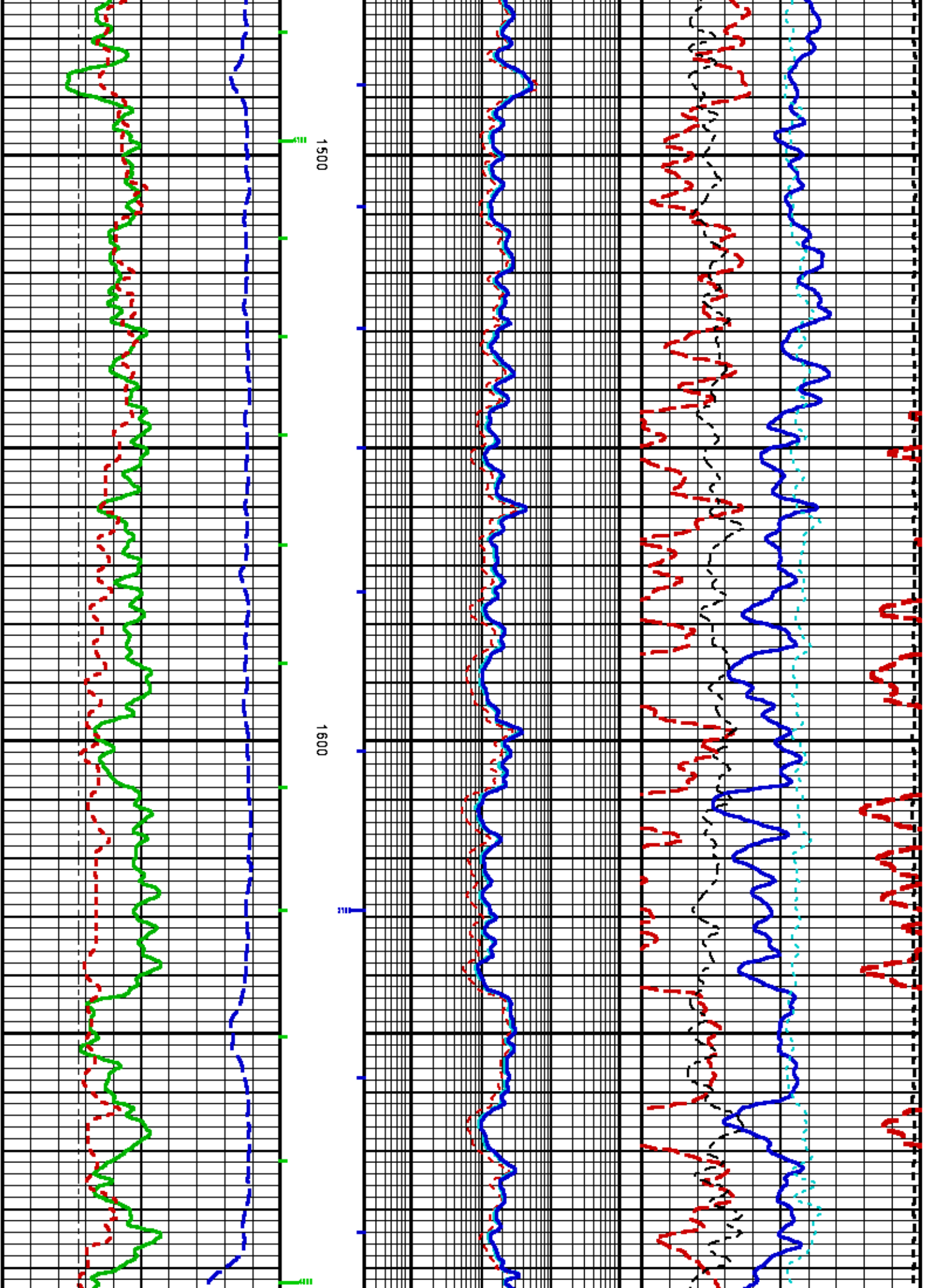
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1000

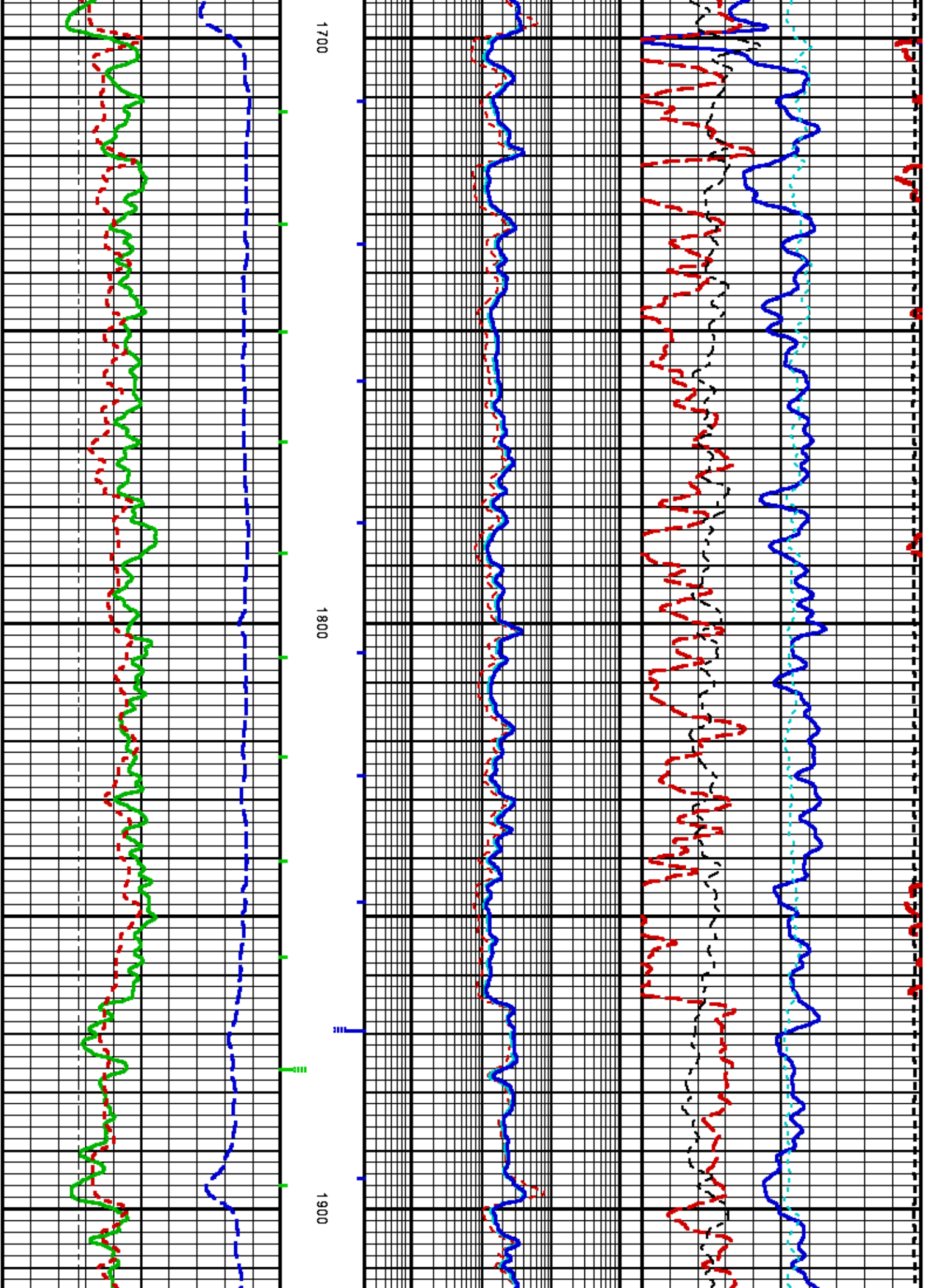




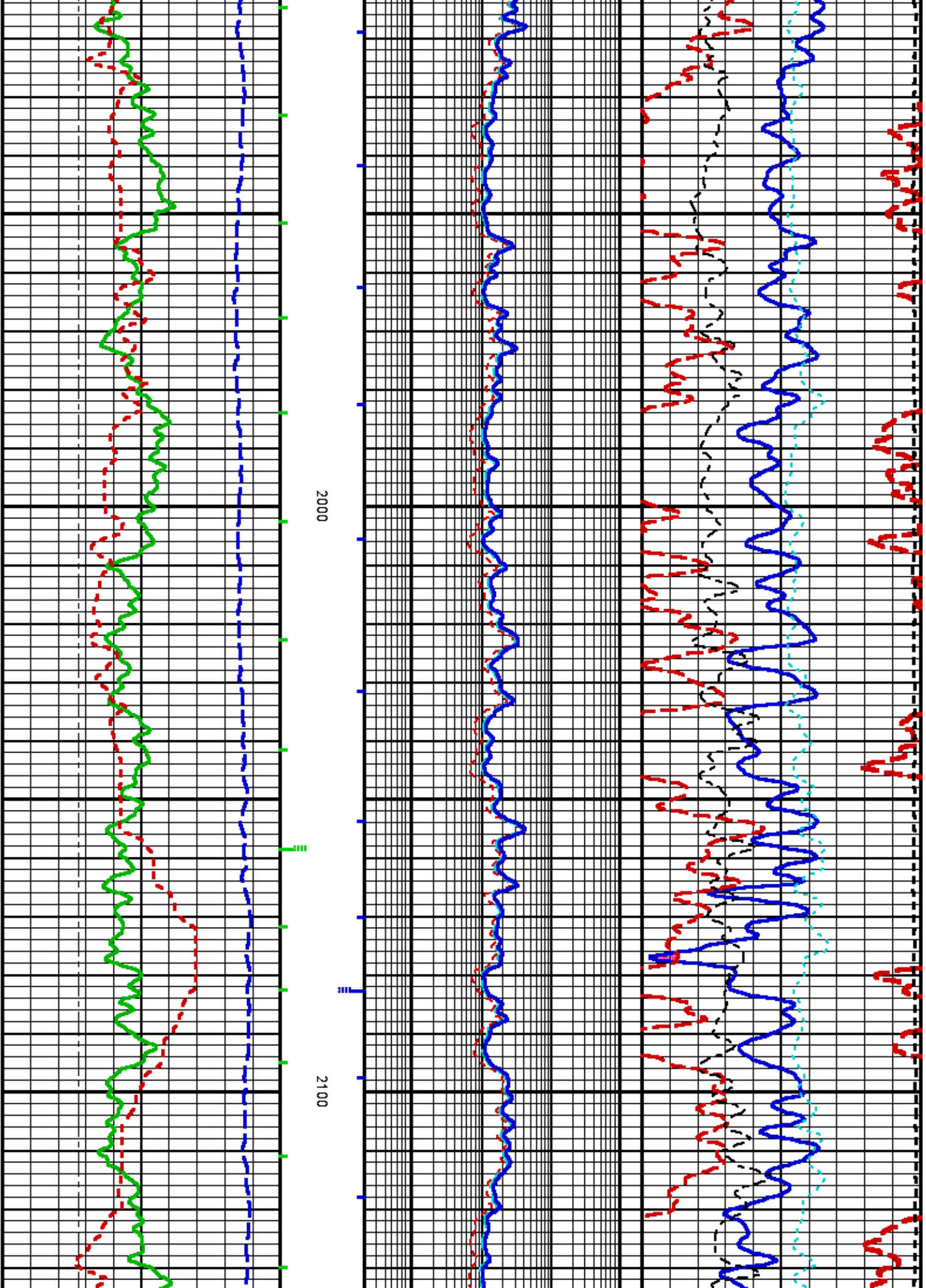


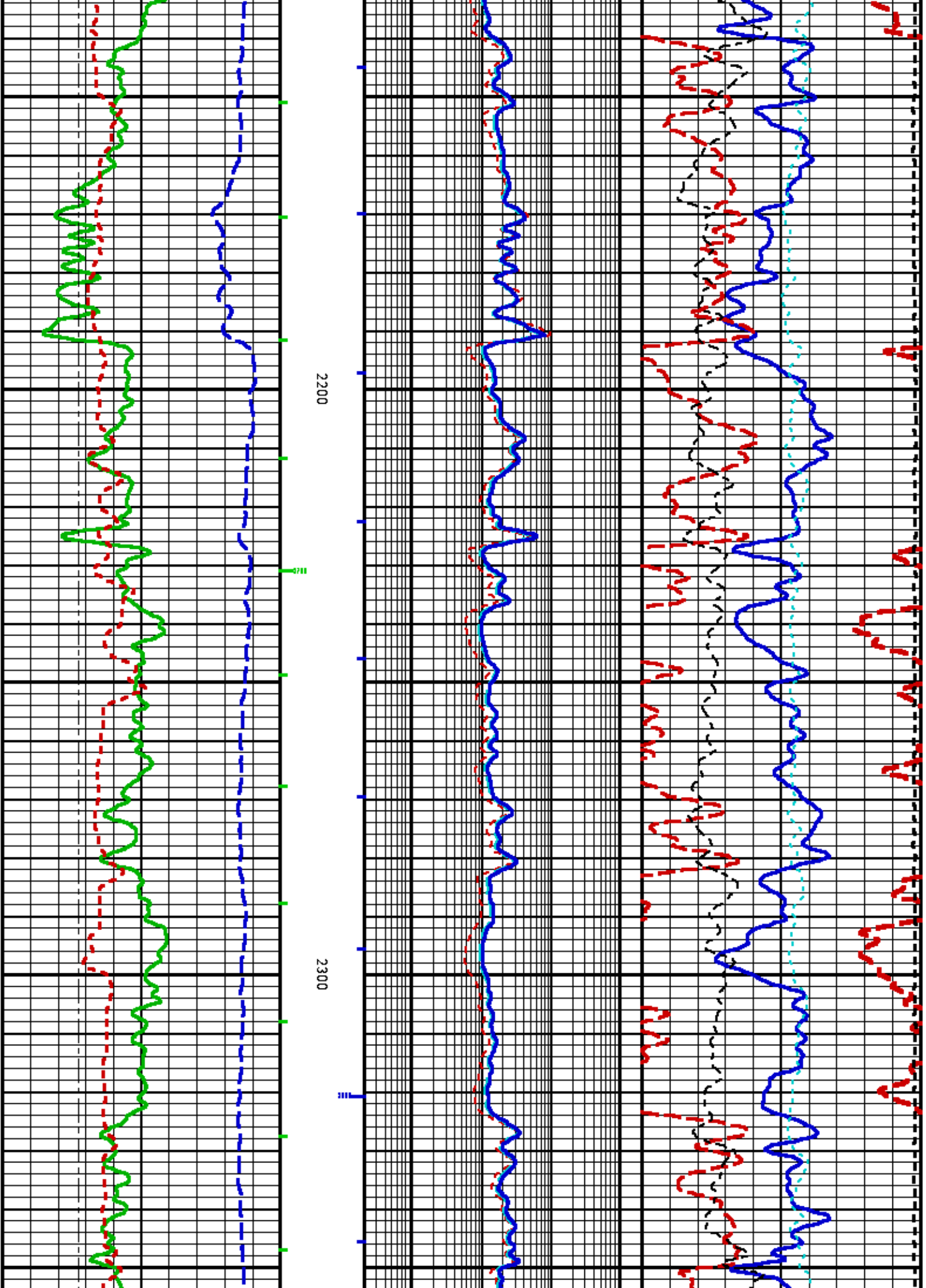


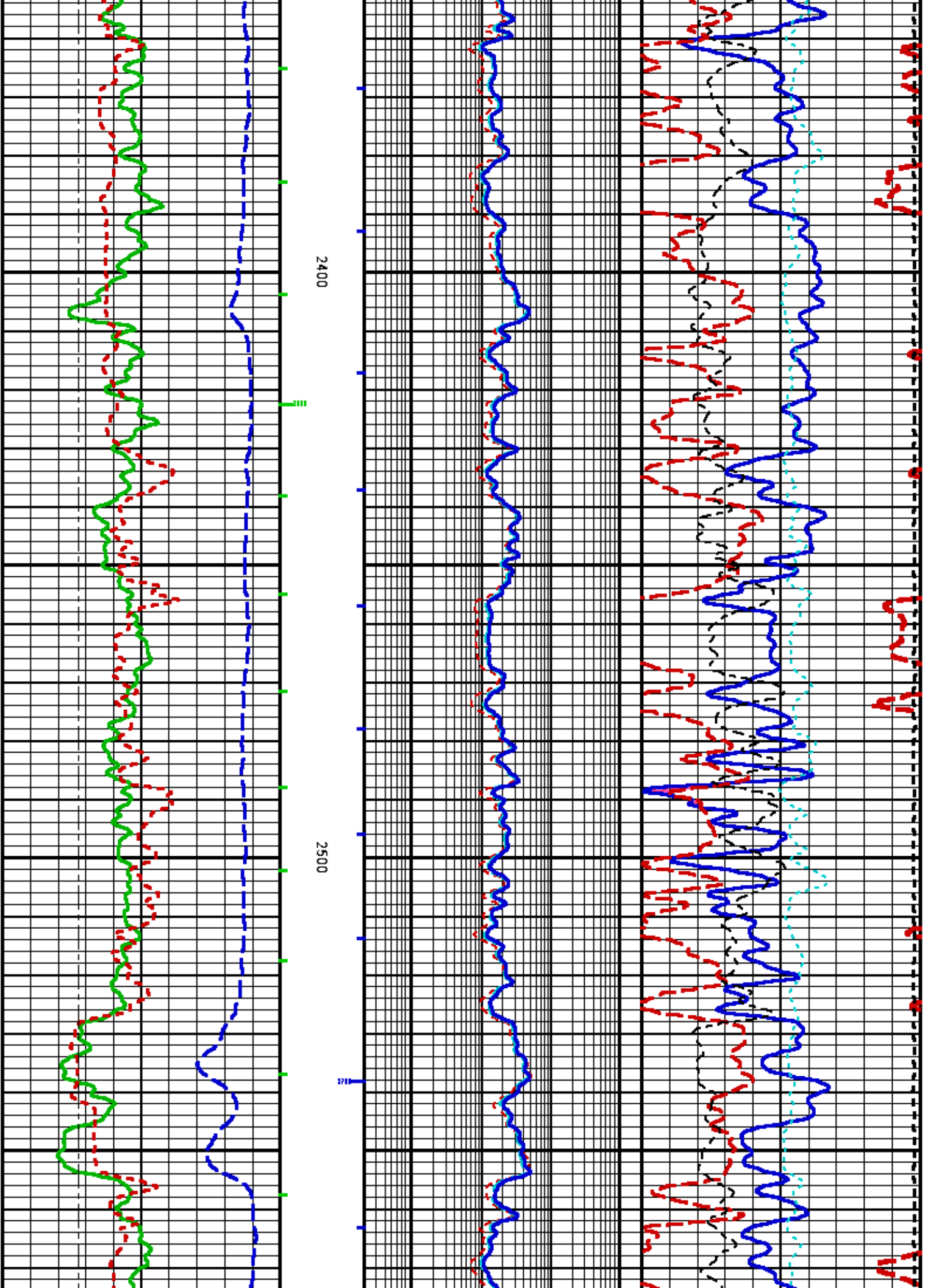


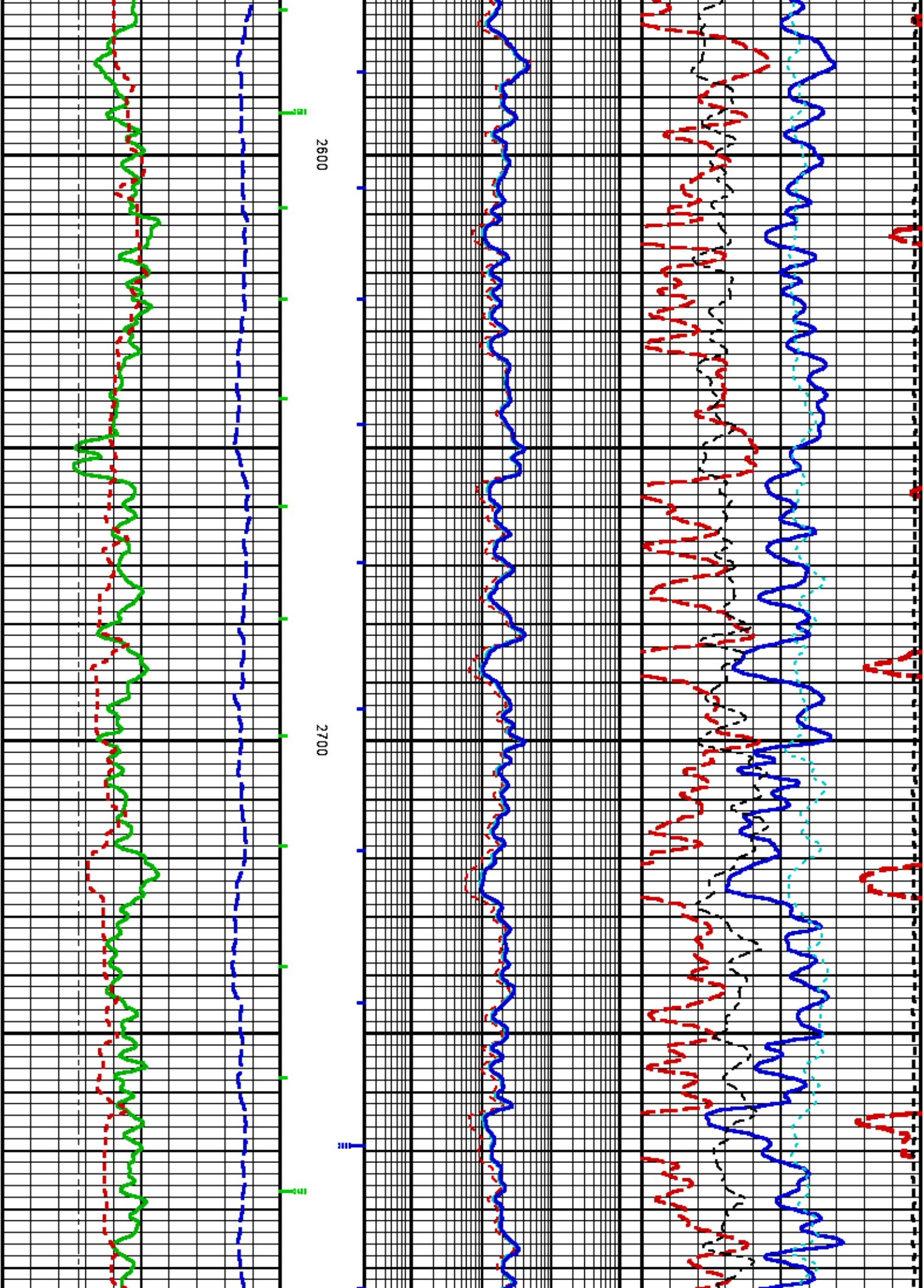


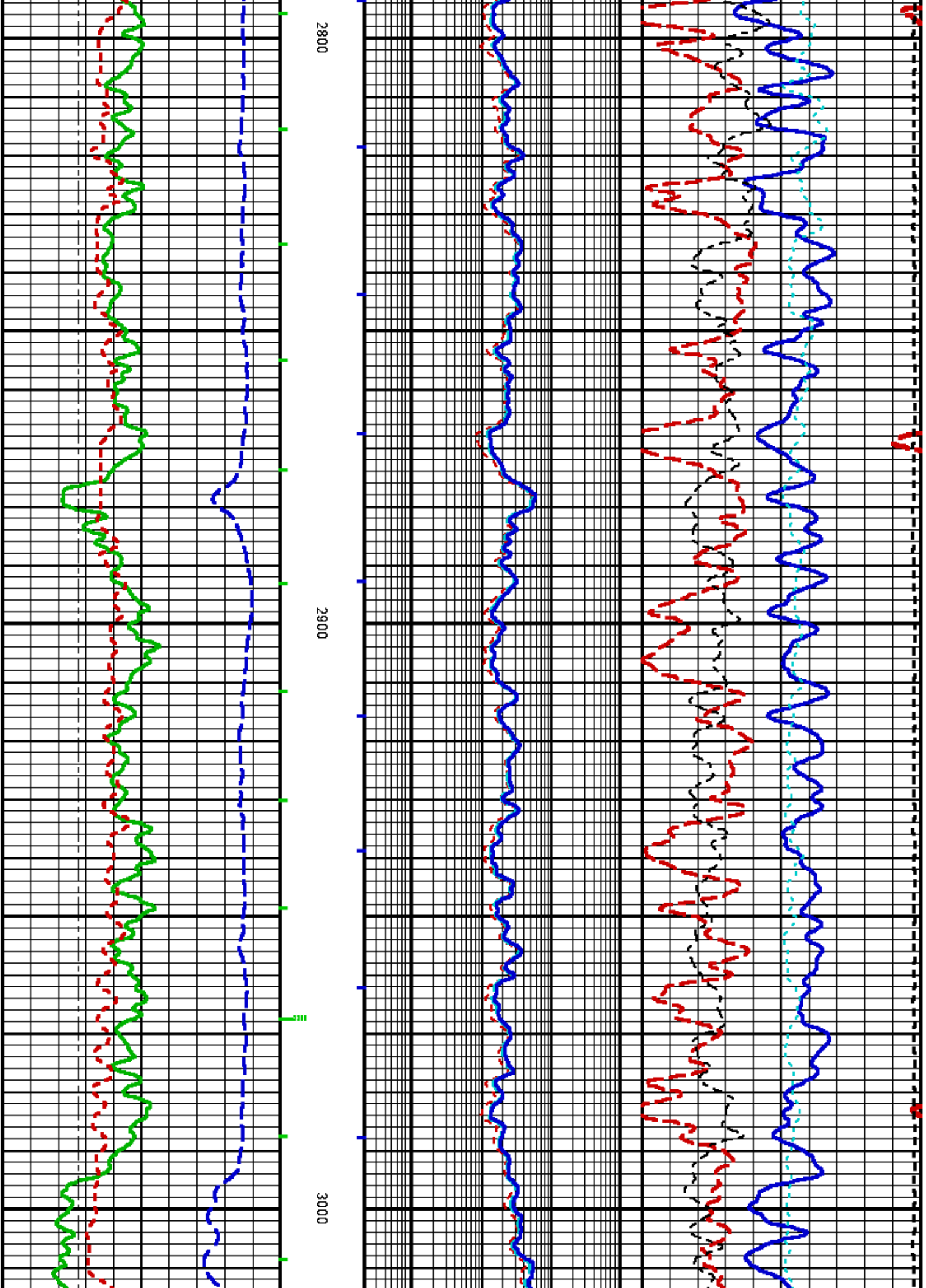




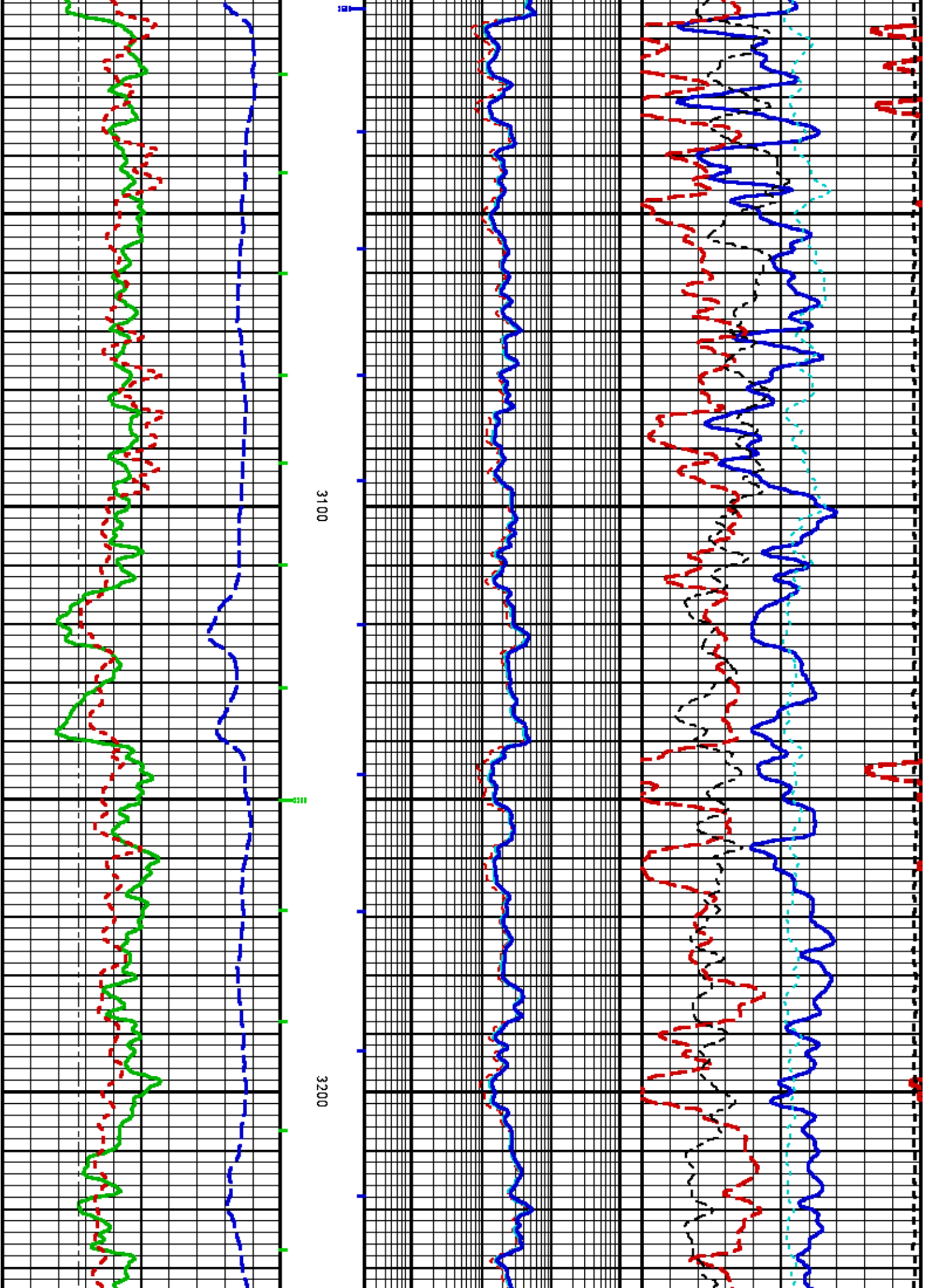


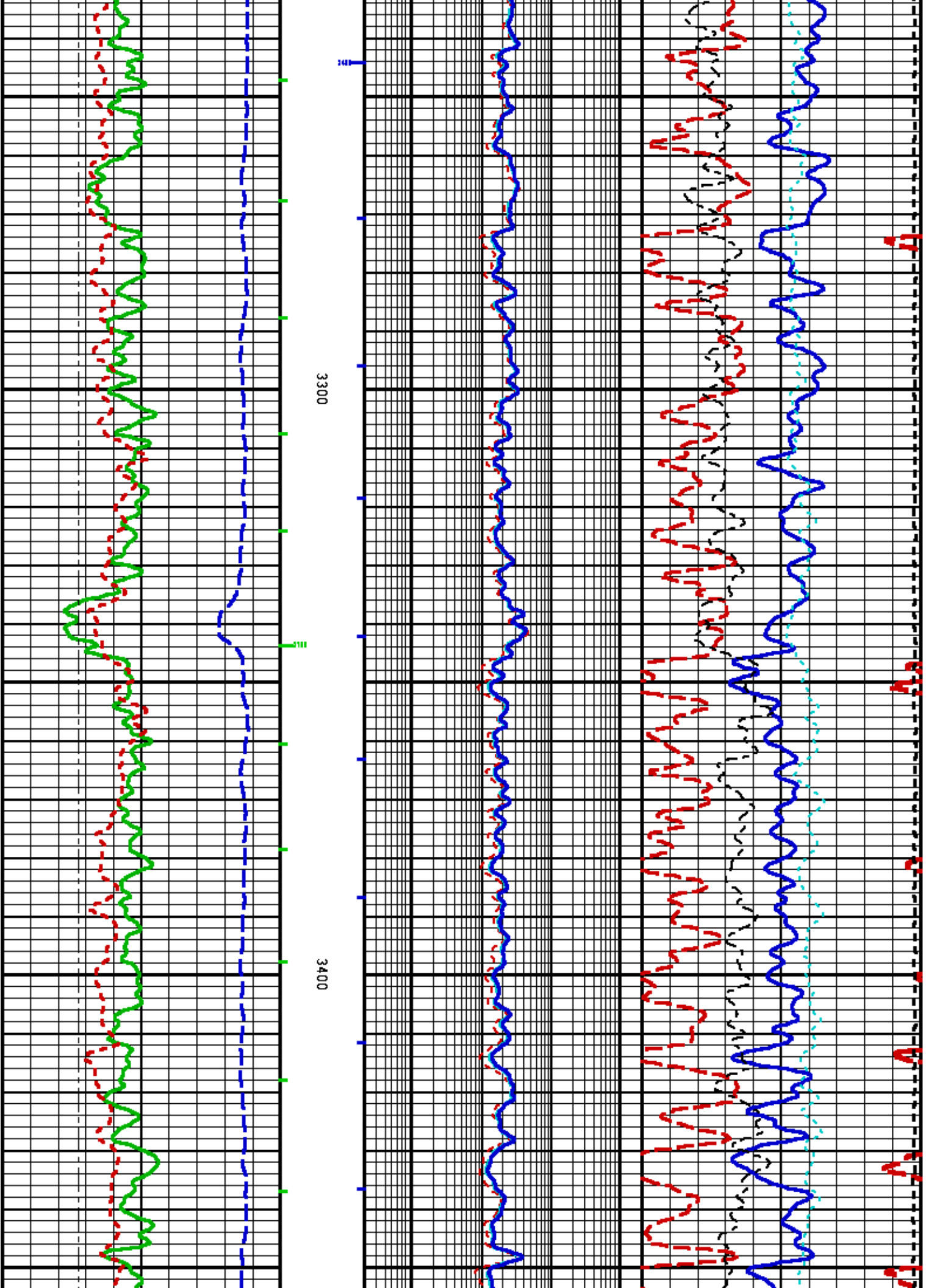


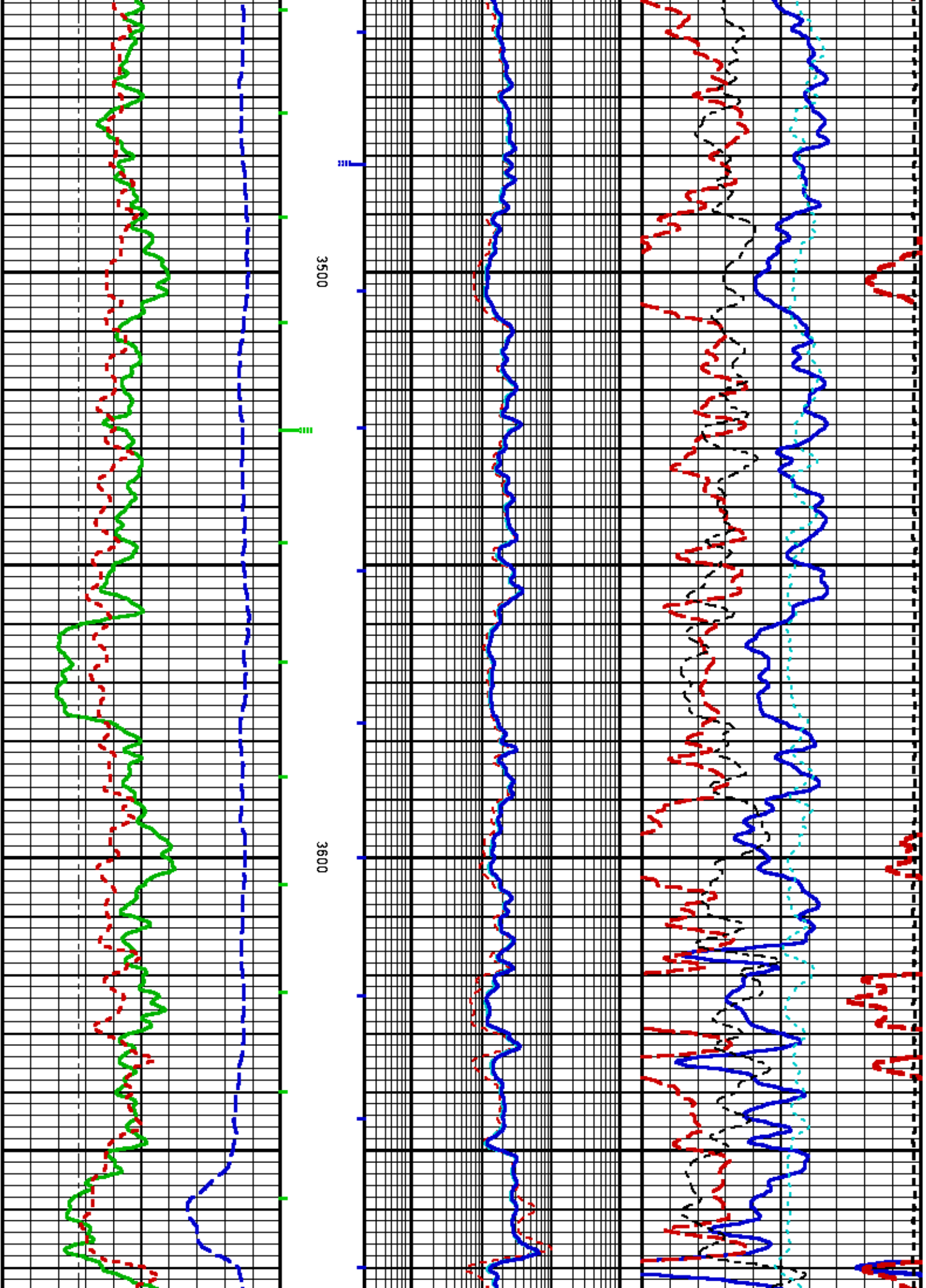




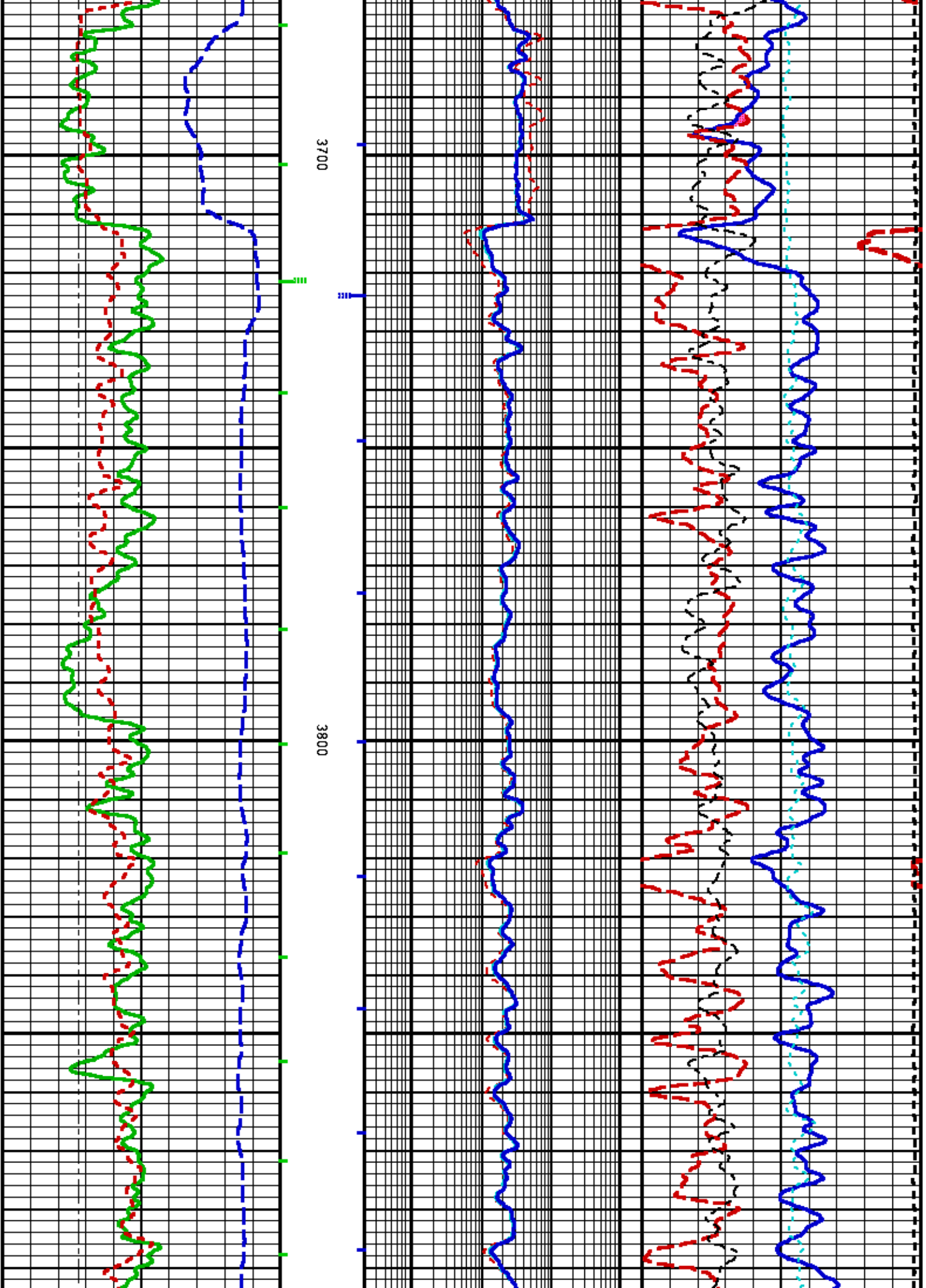


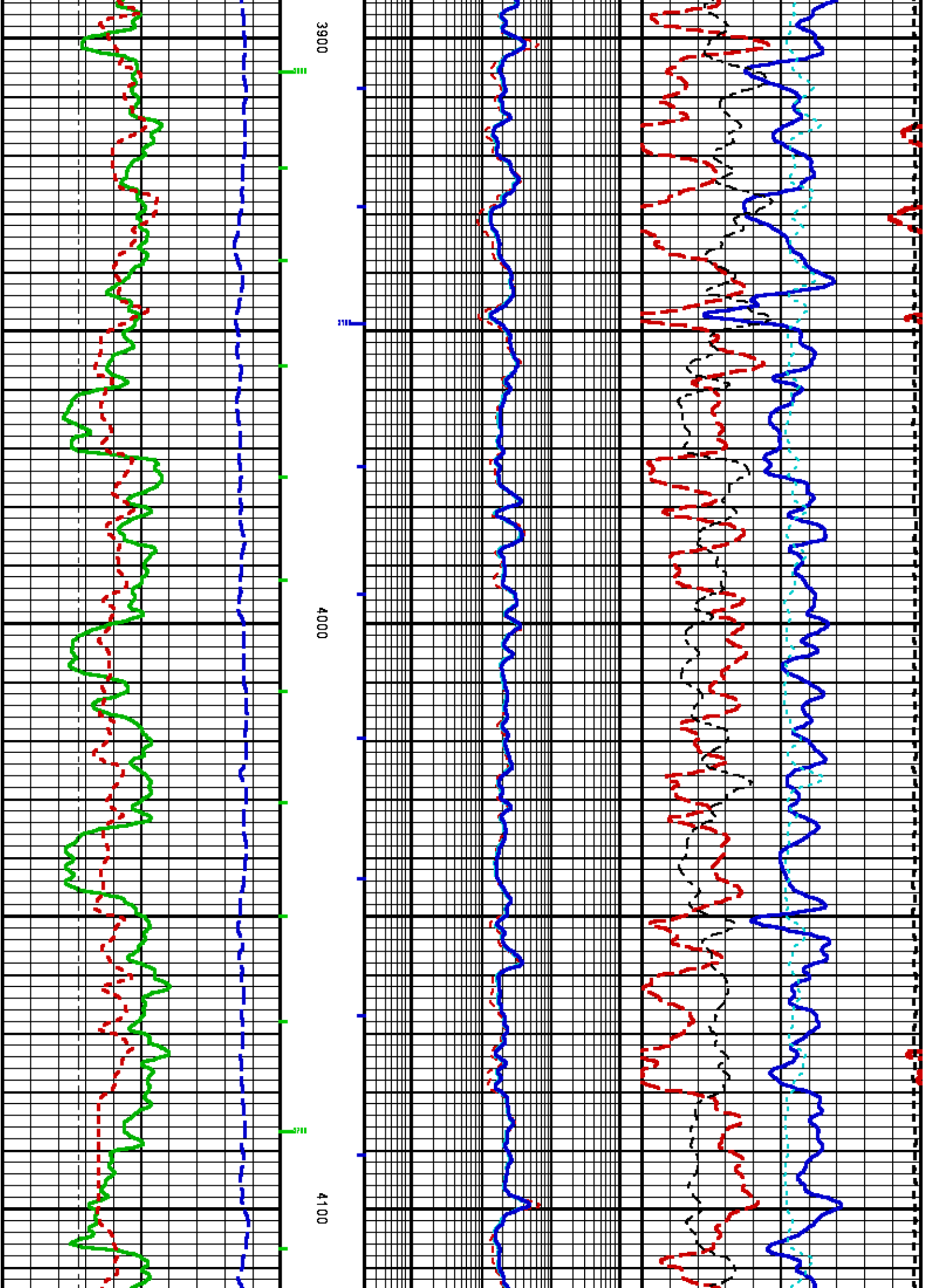


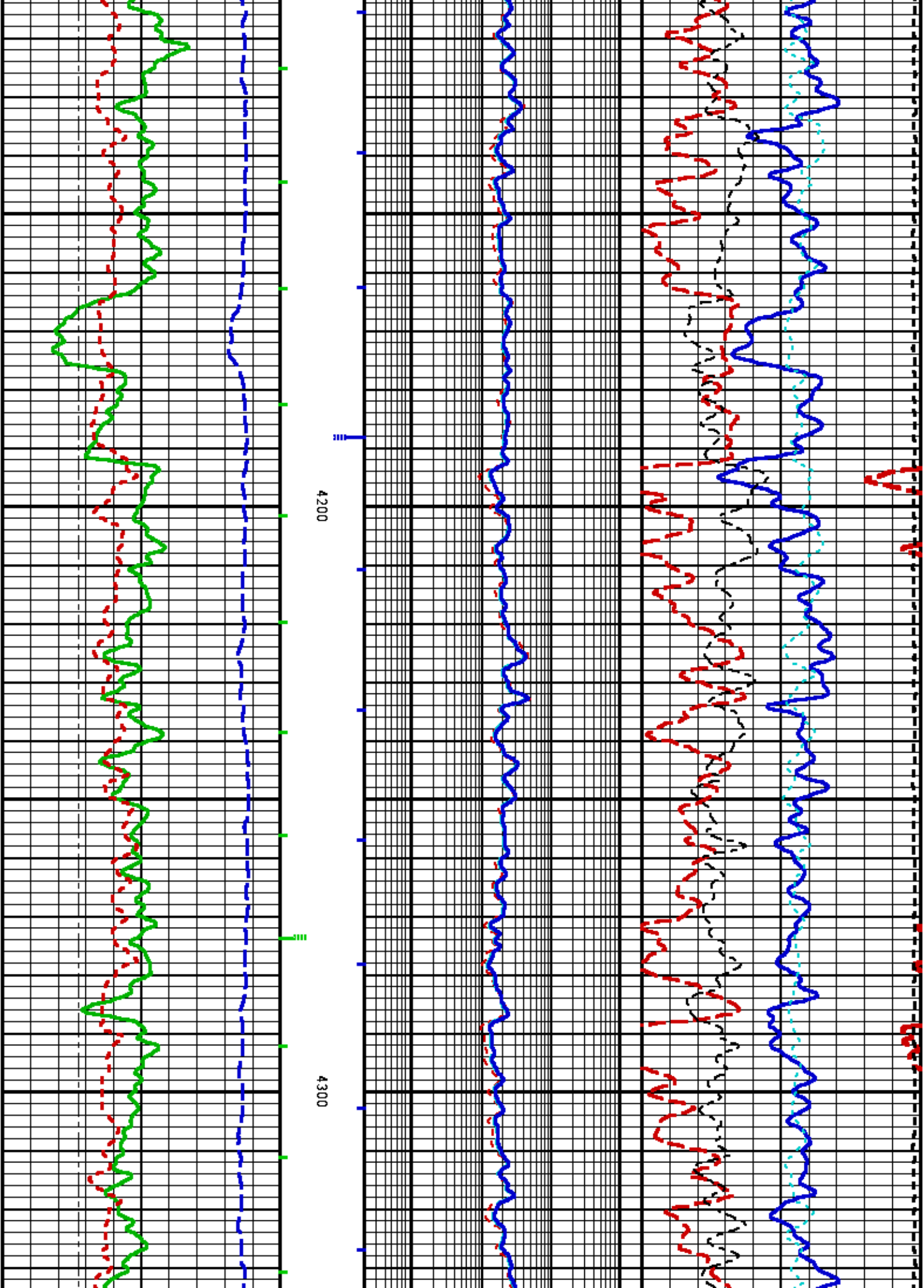


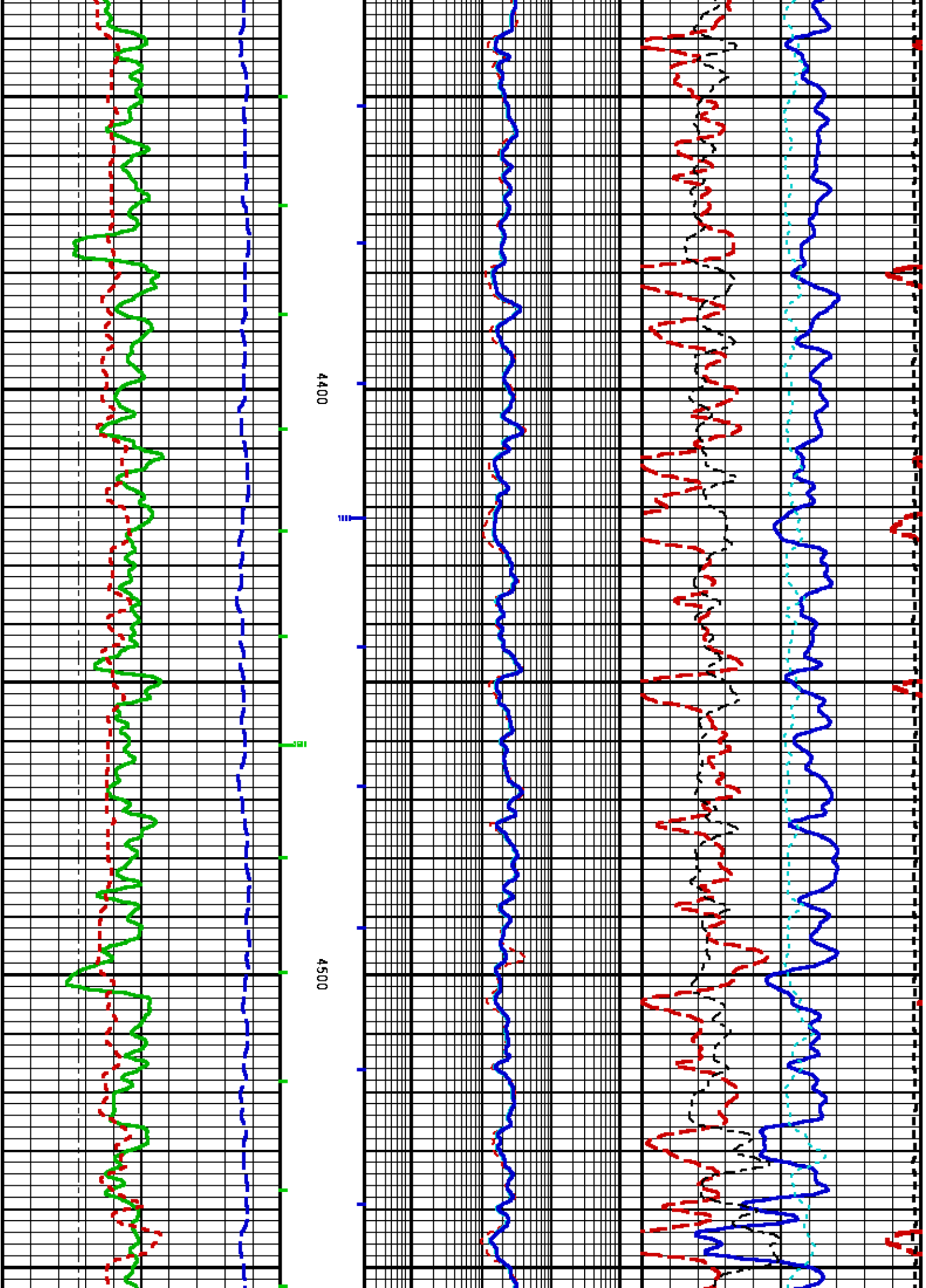


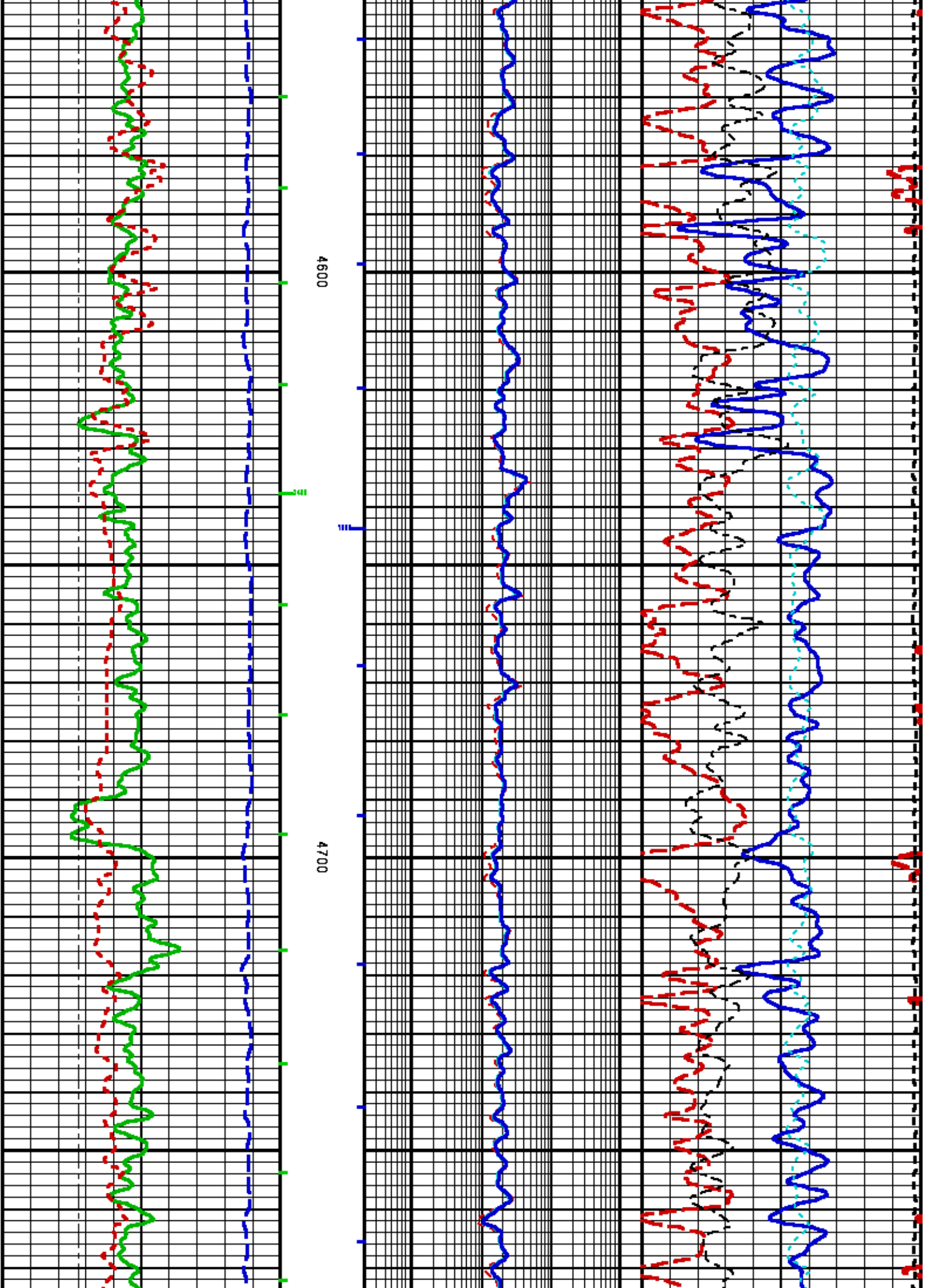




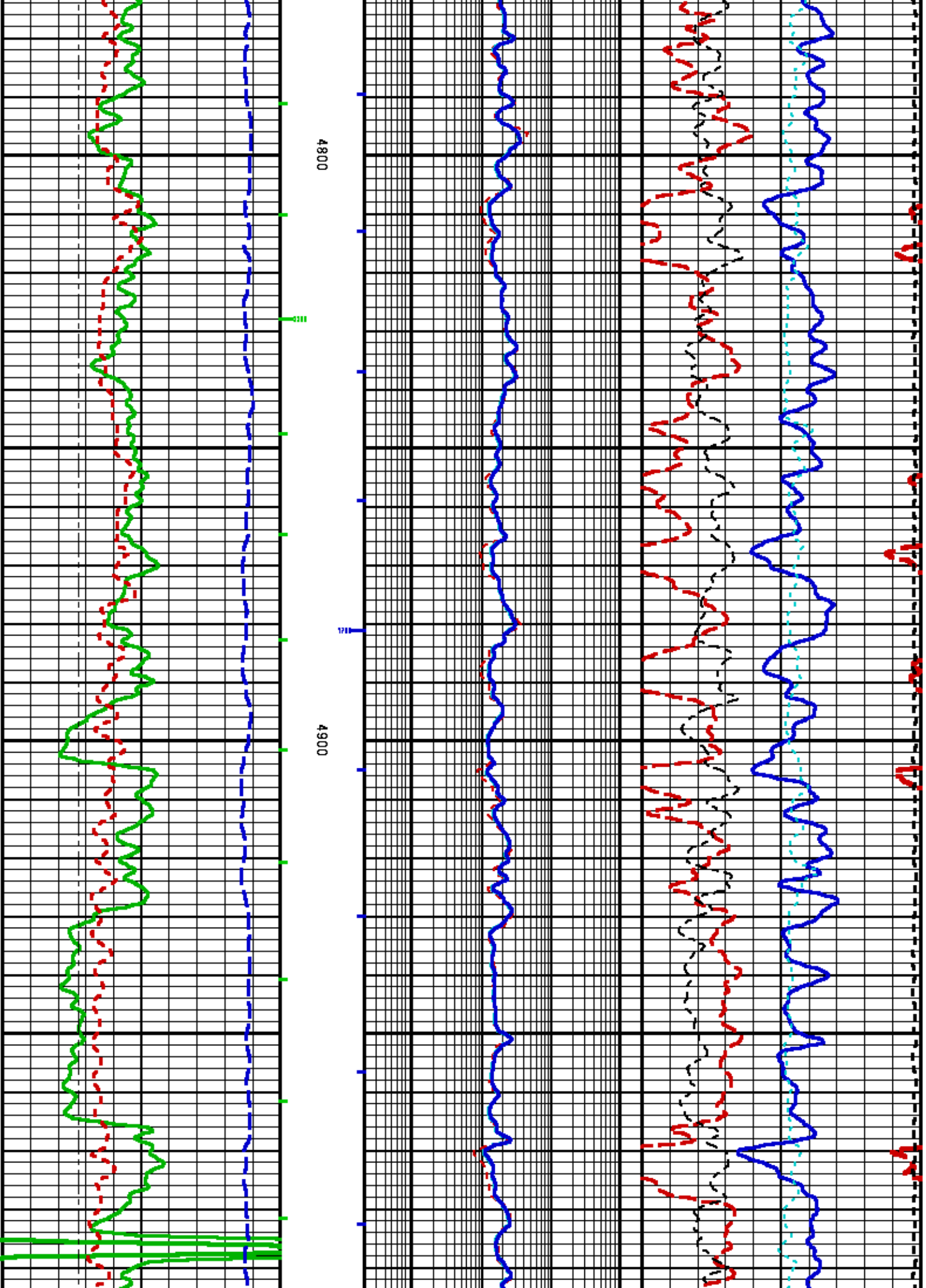


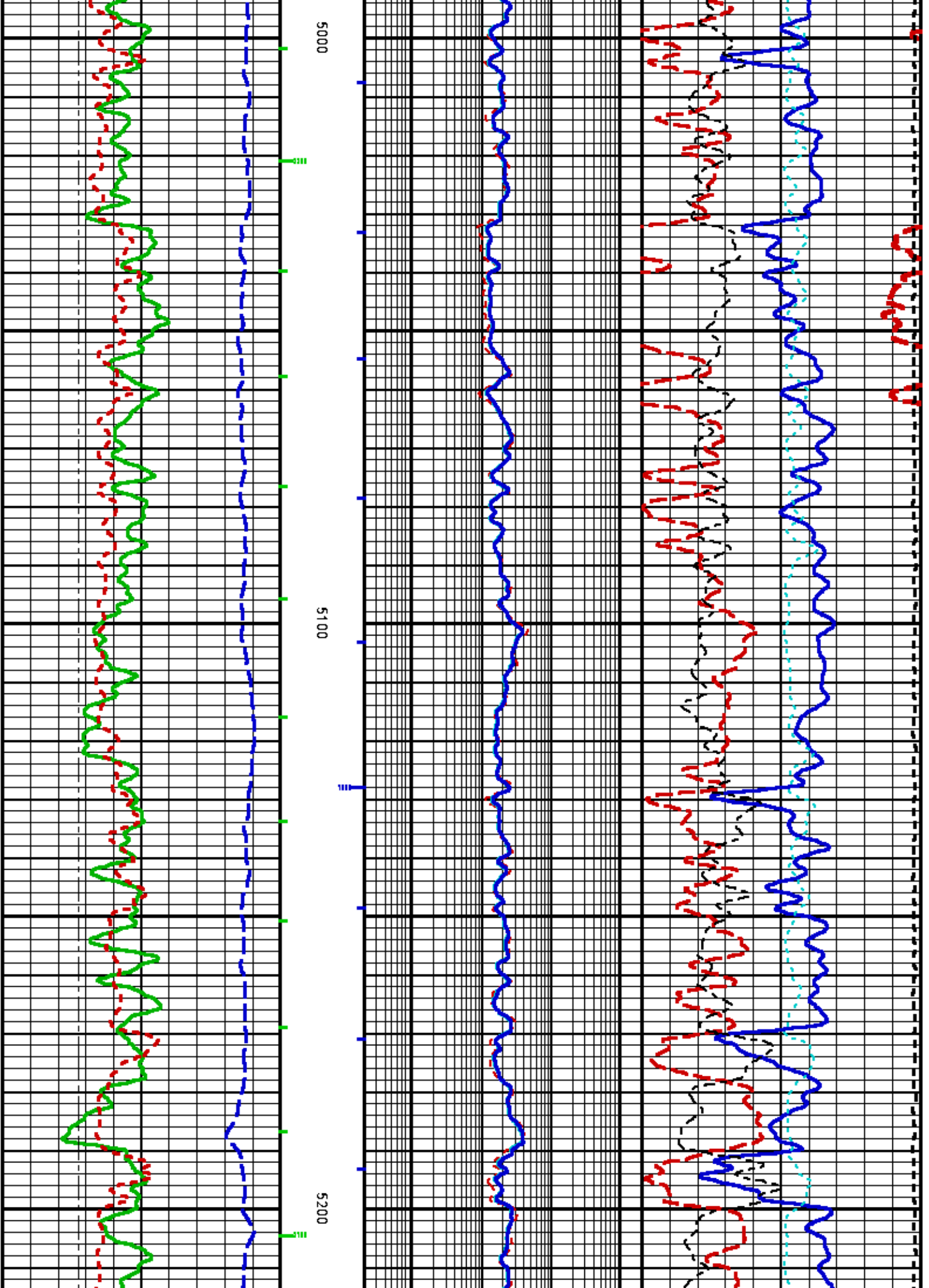


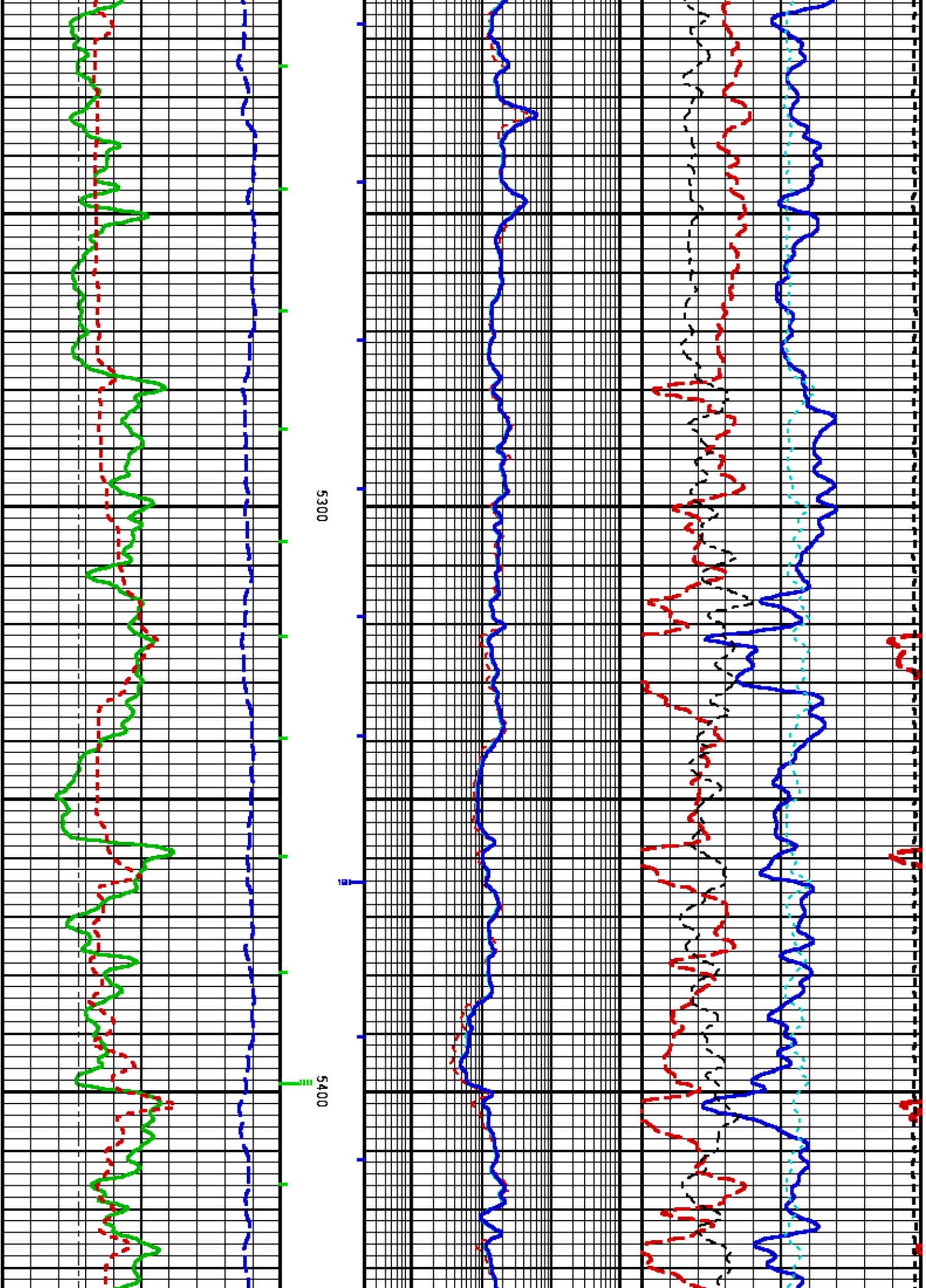




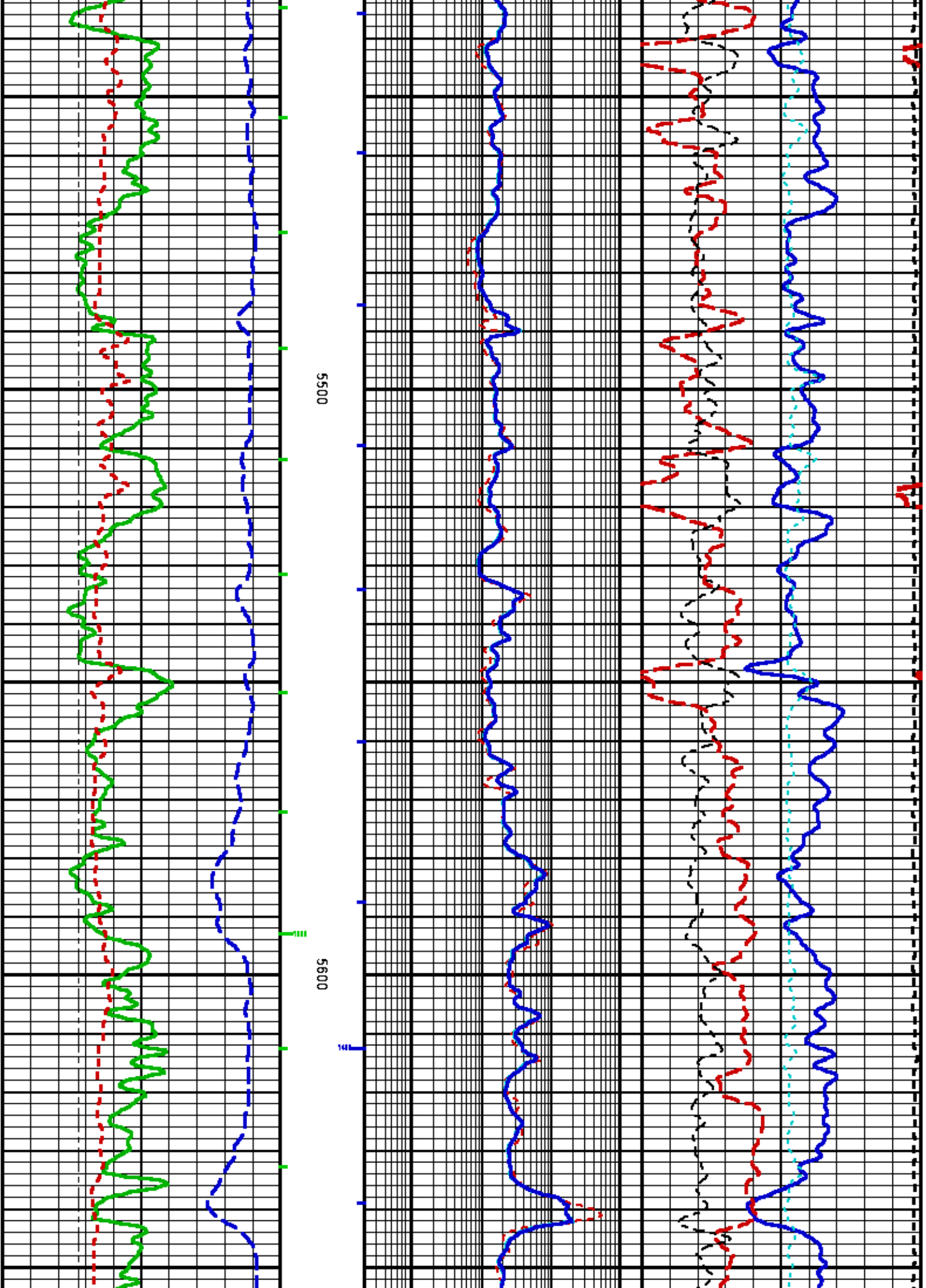


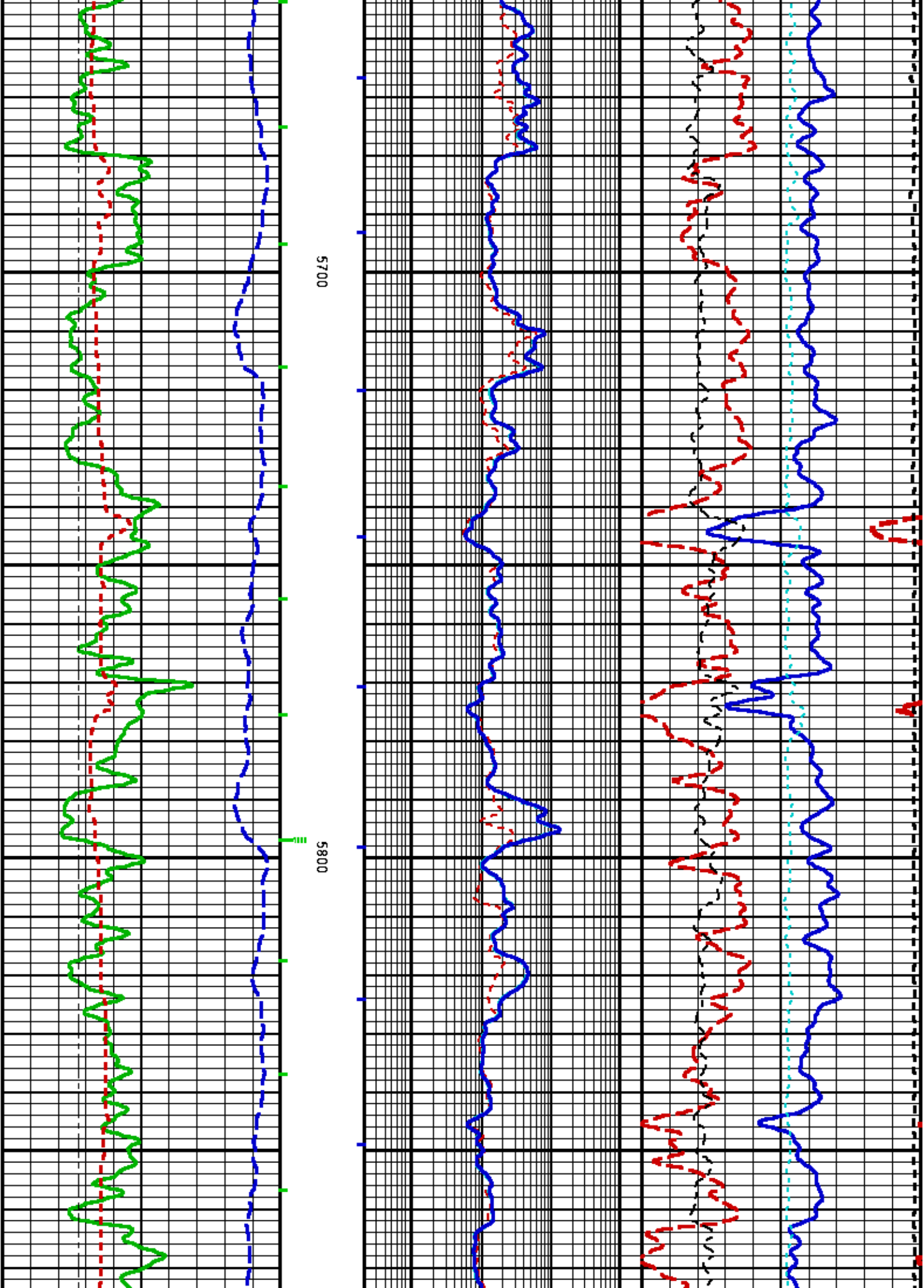


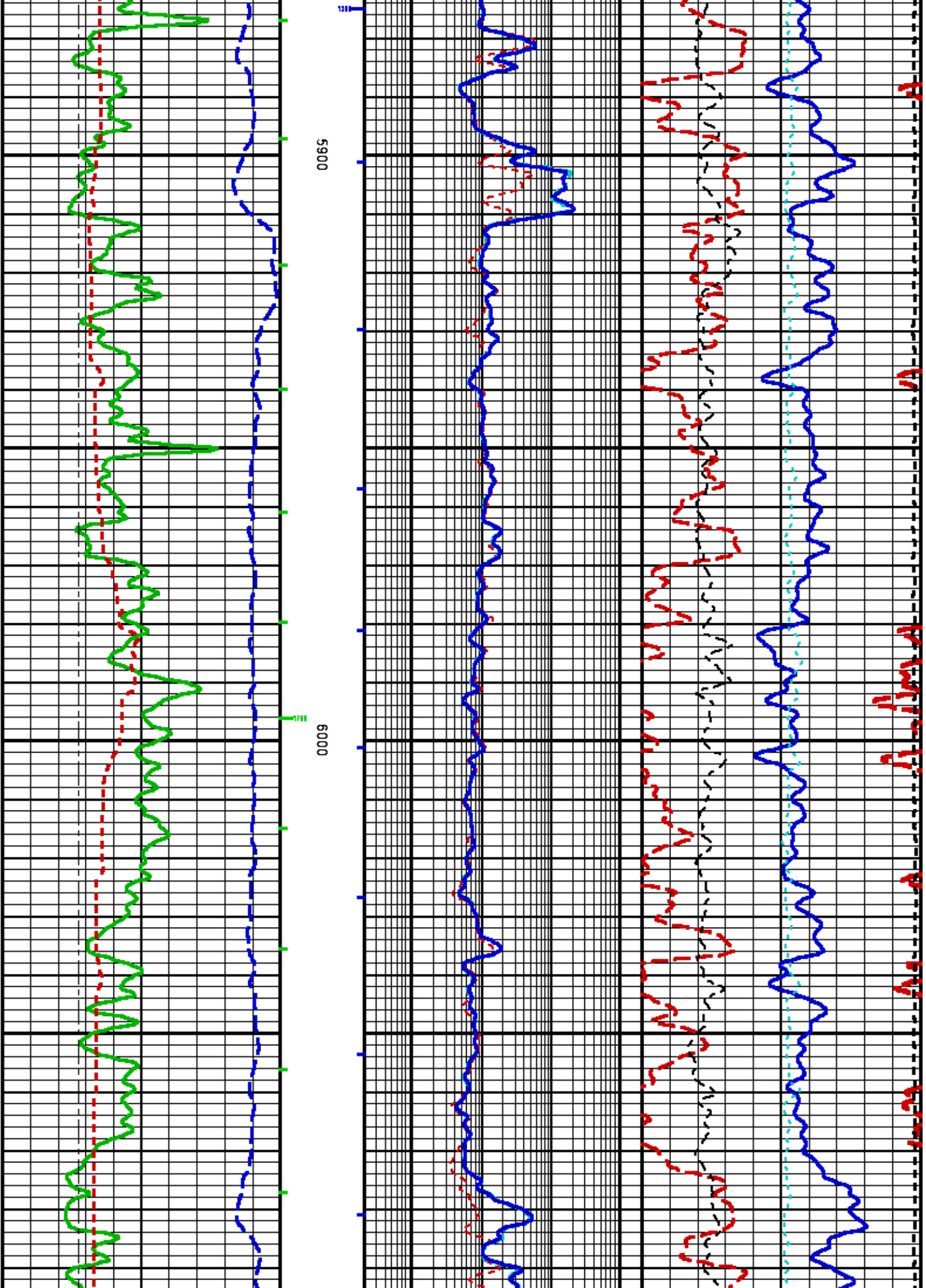


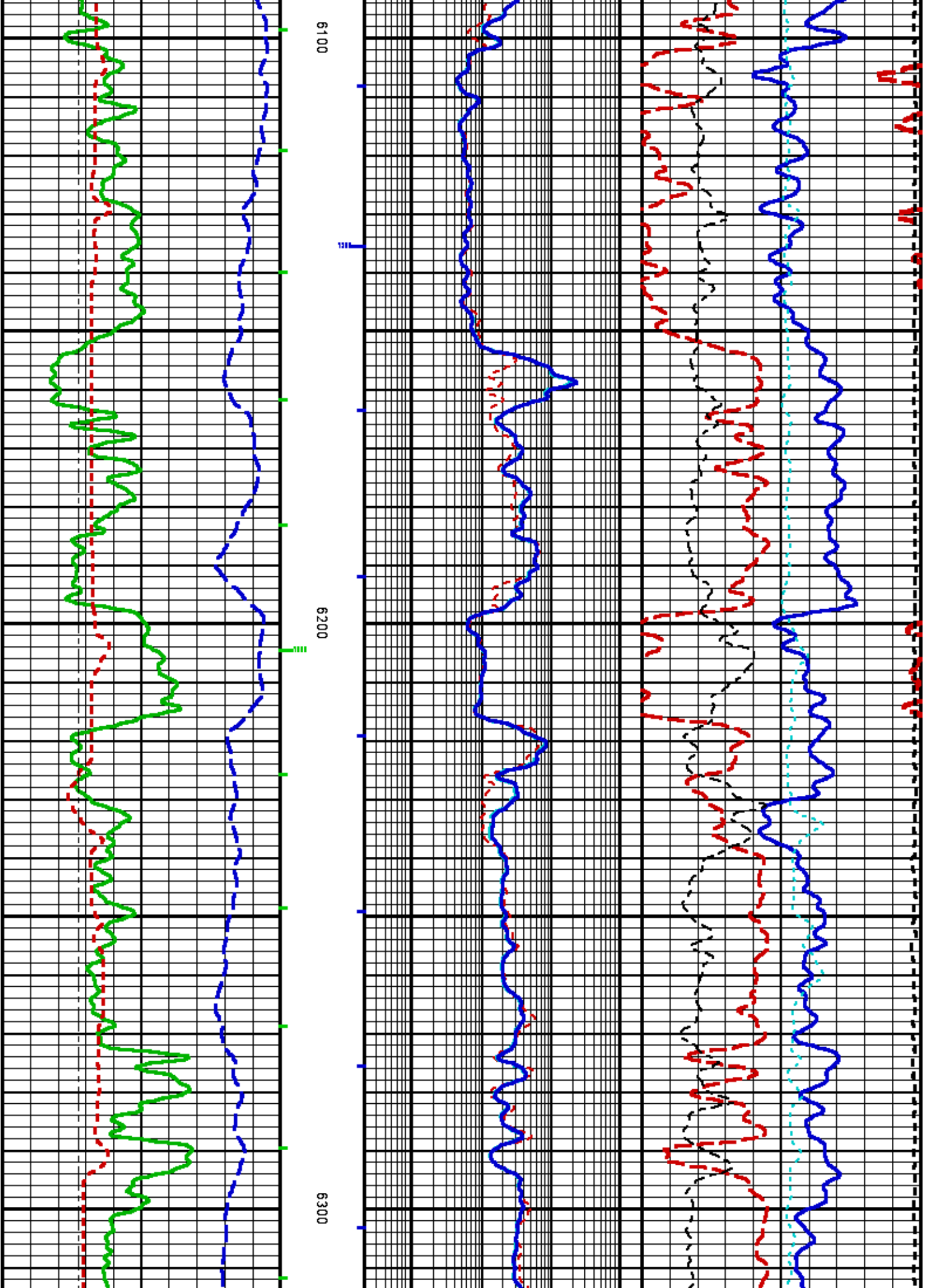


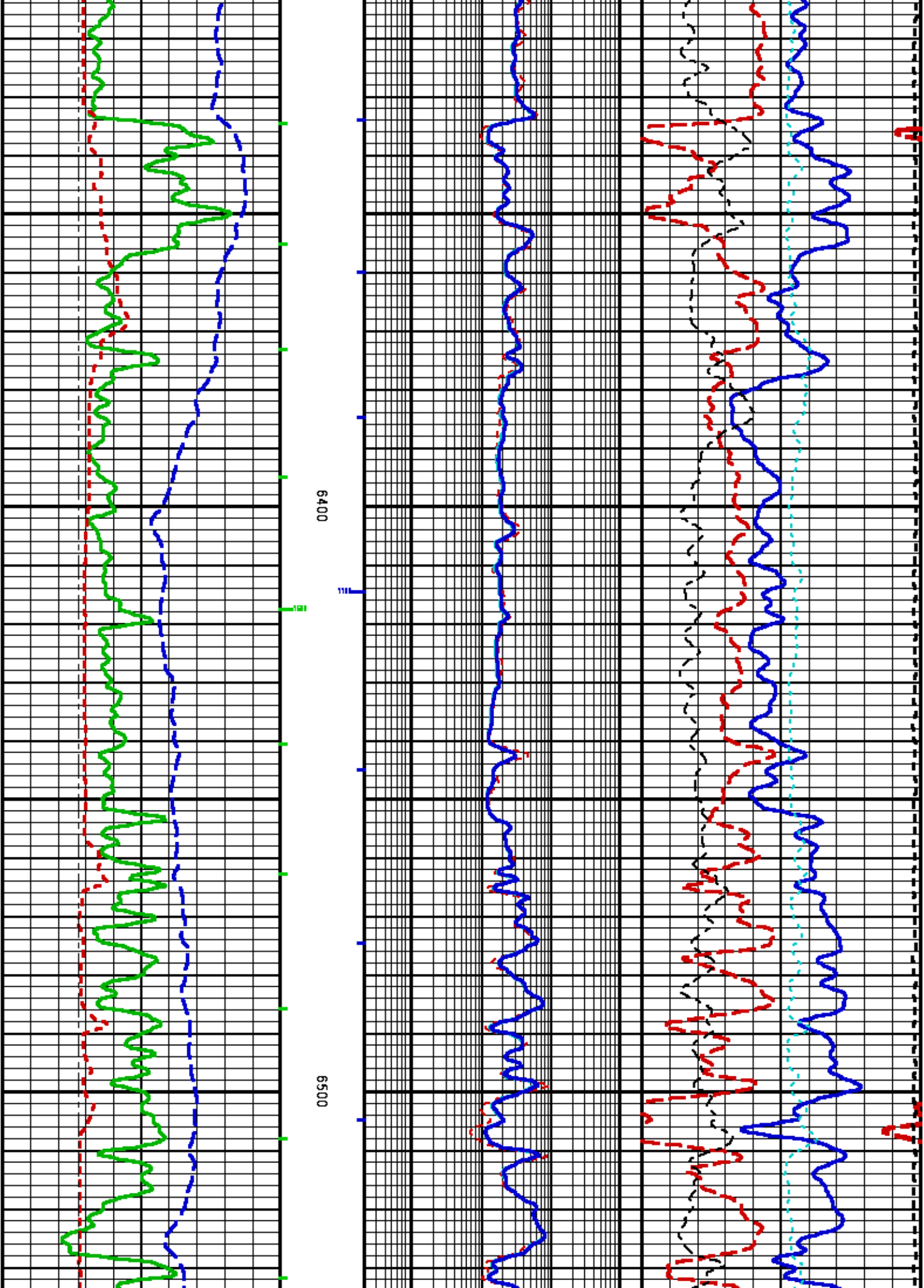




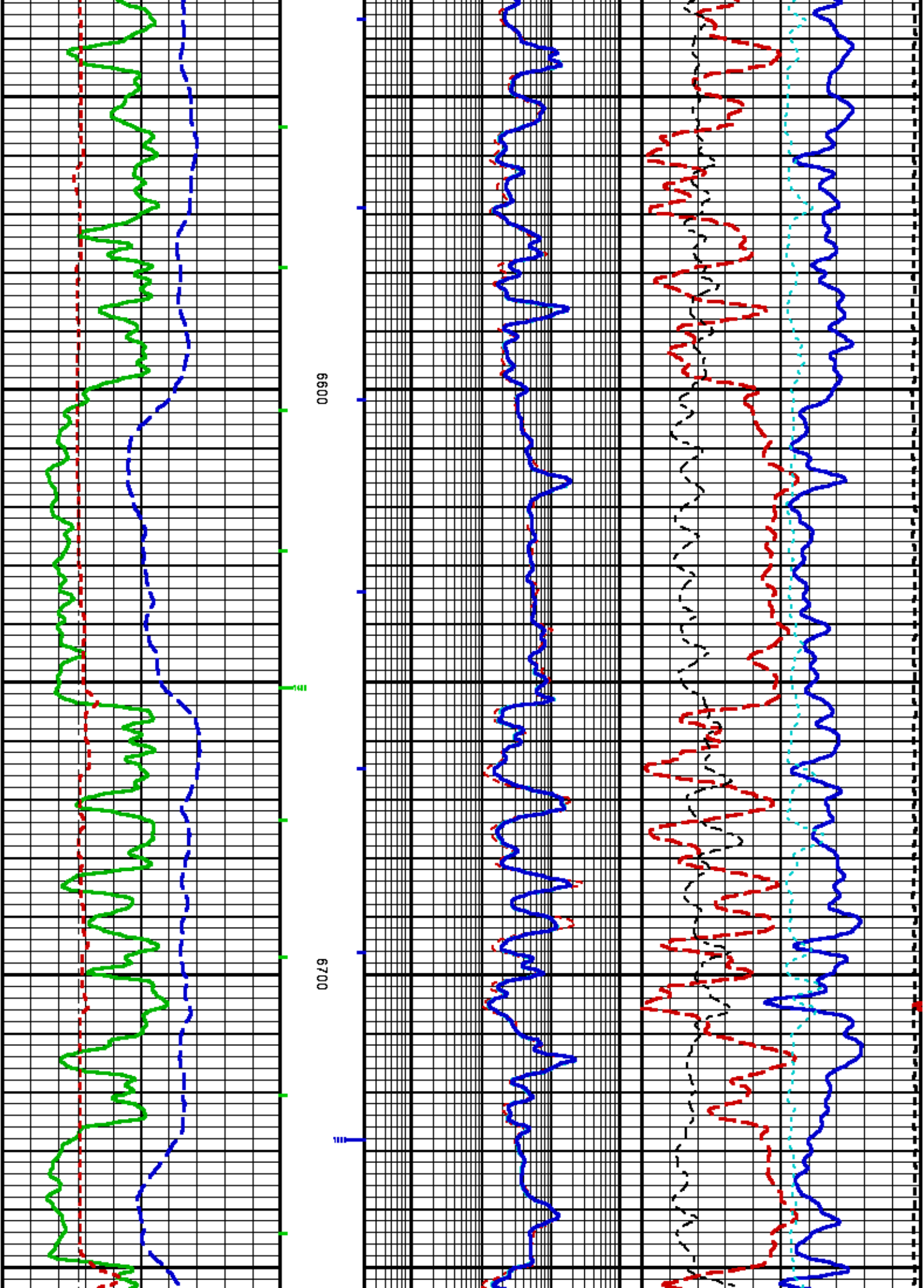


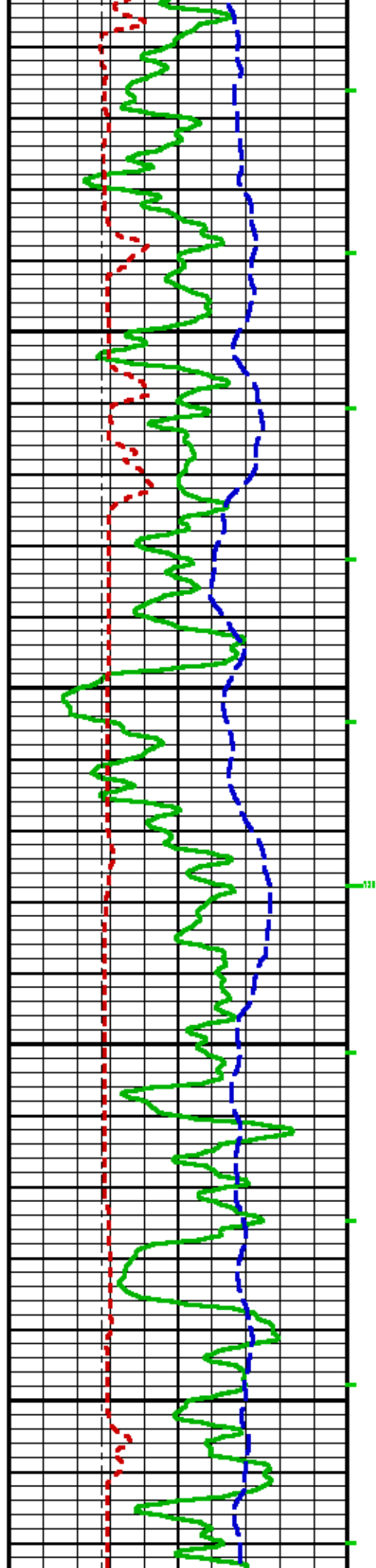






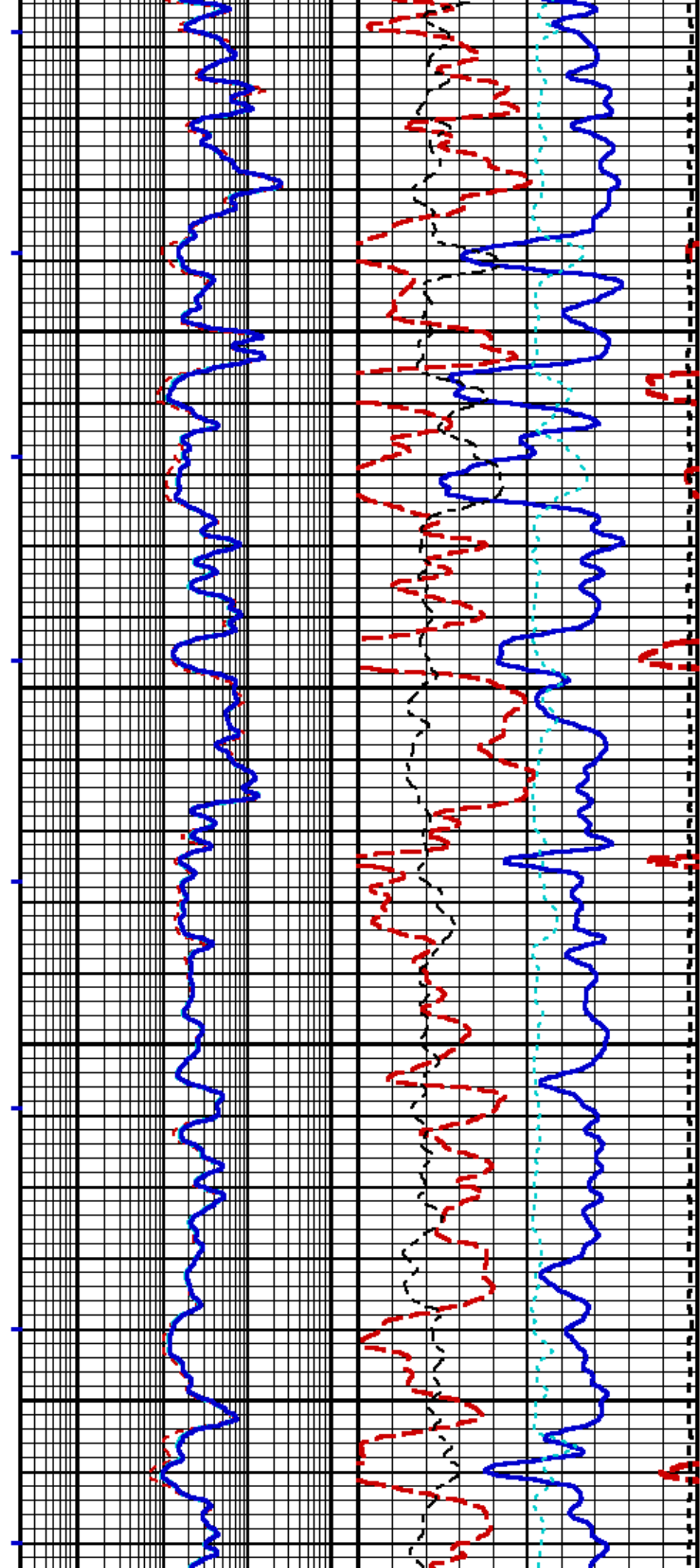


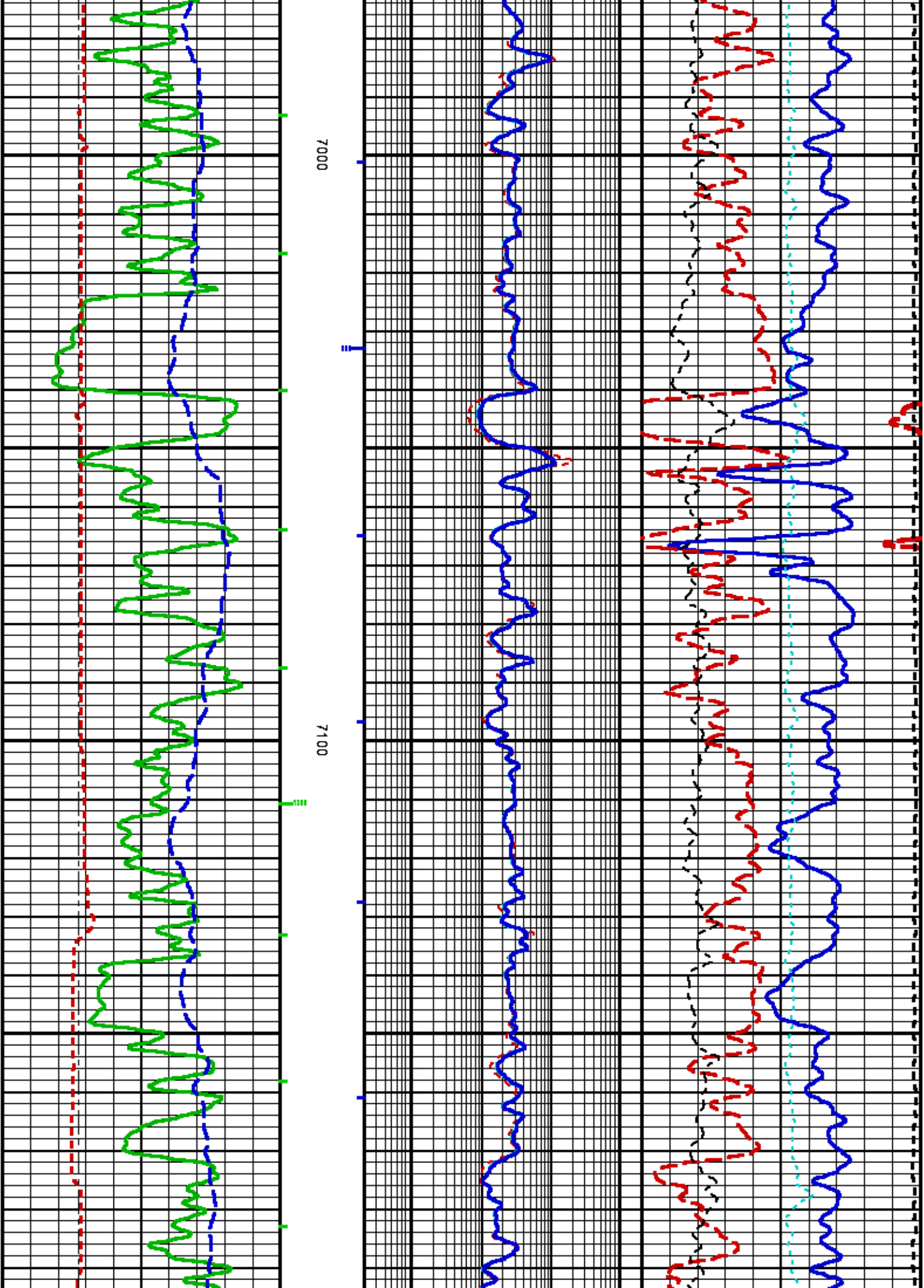




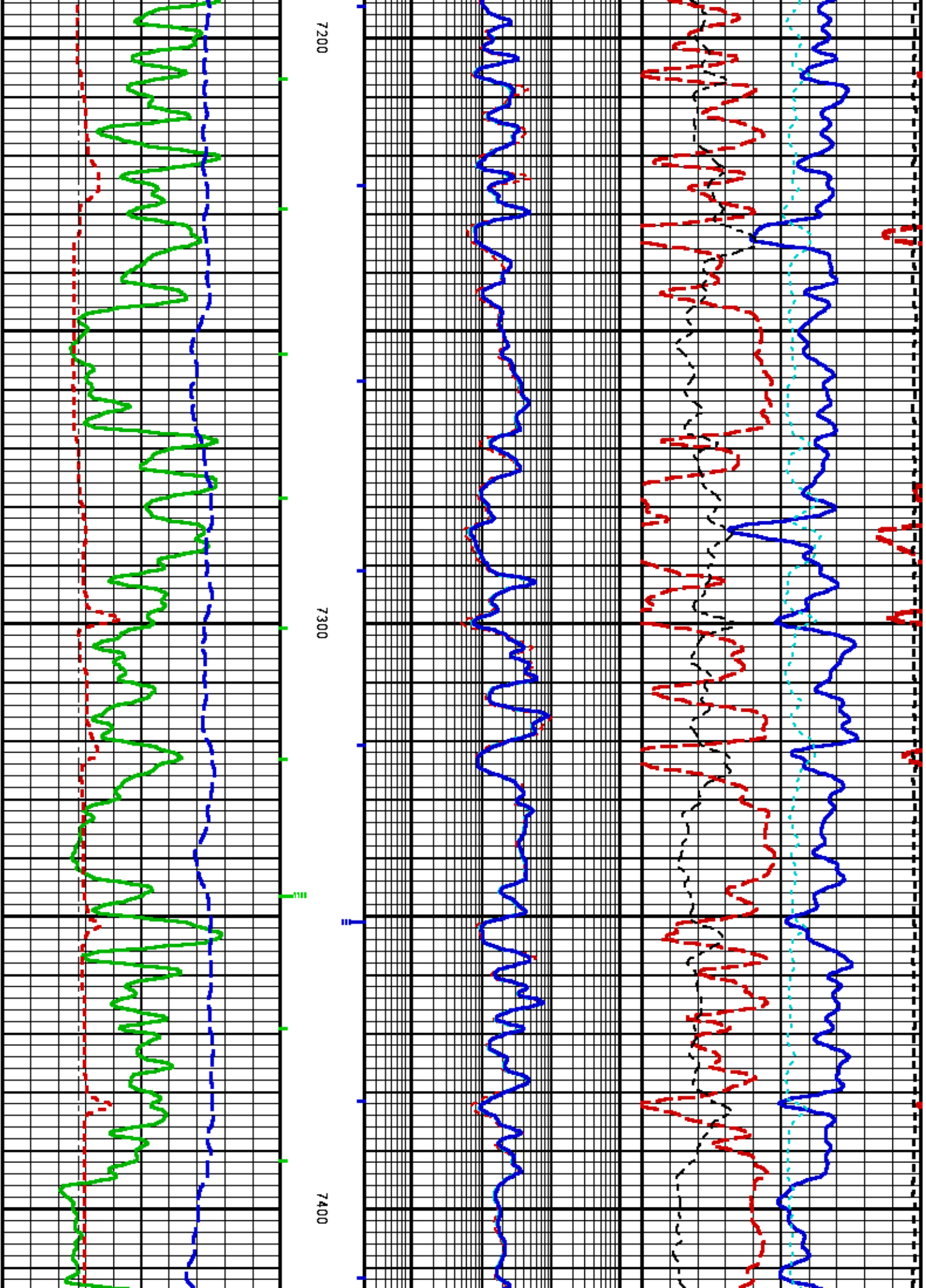
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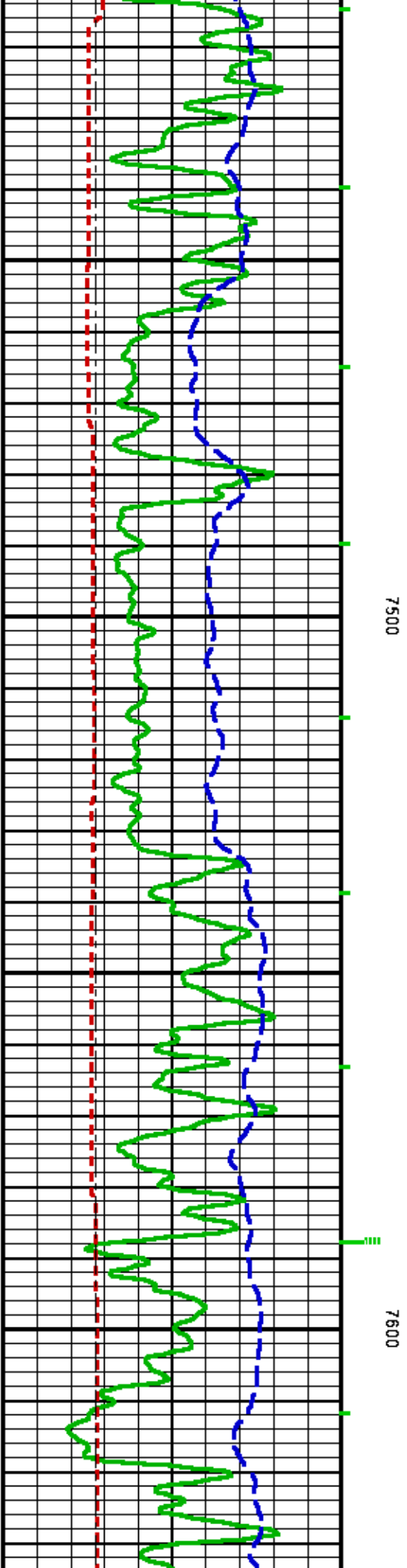
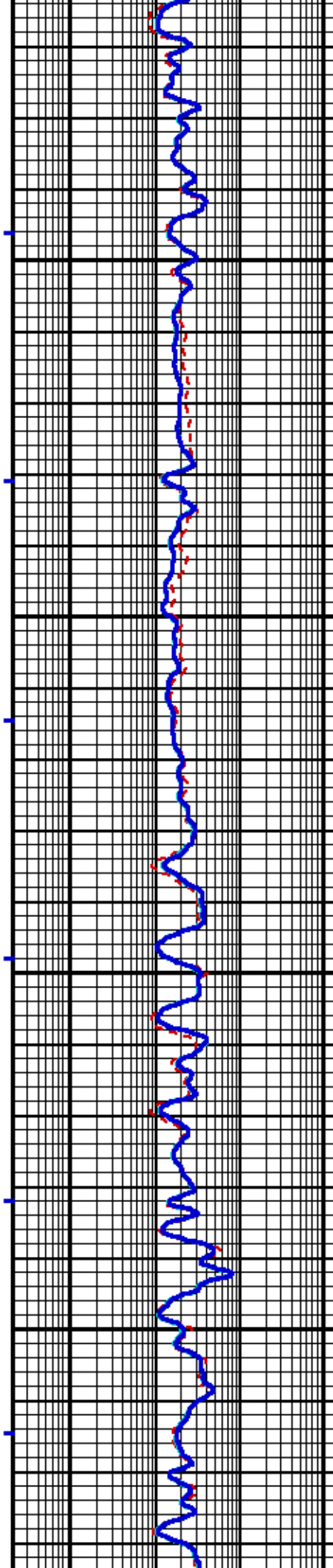
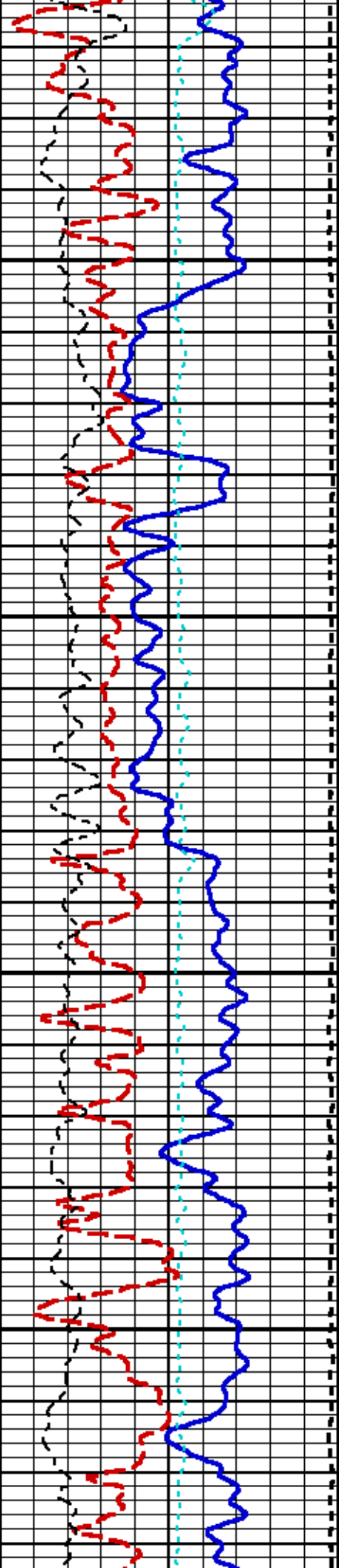
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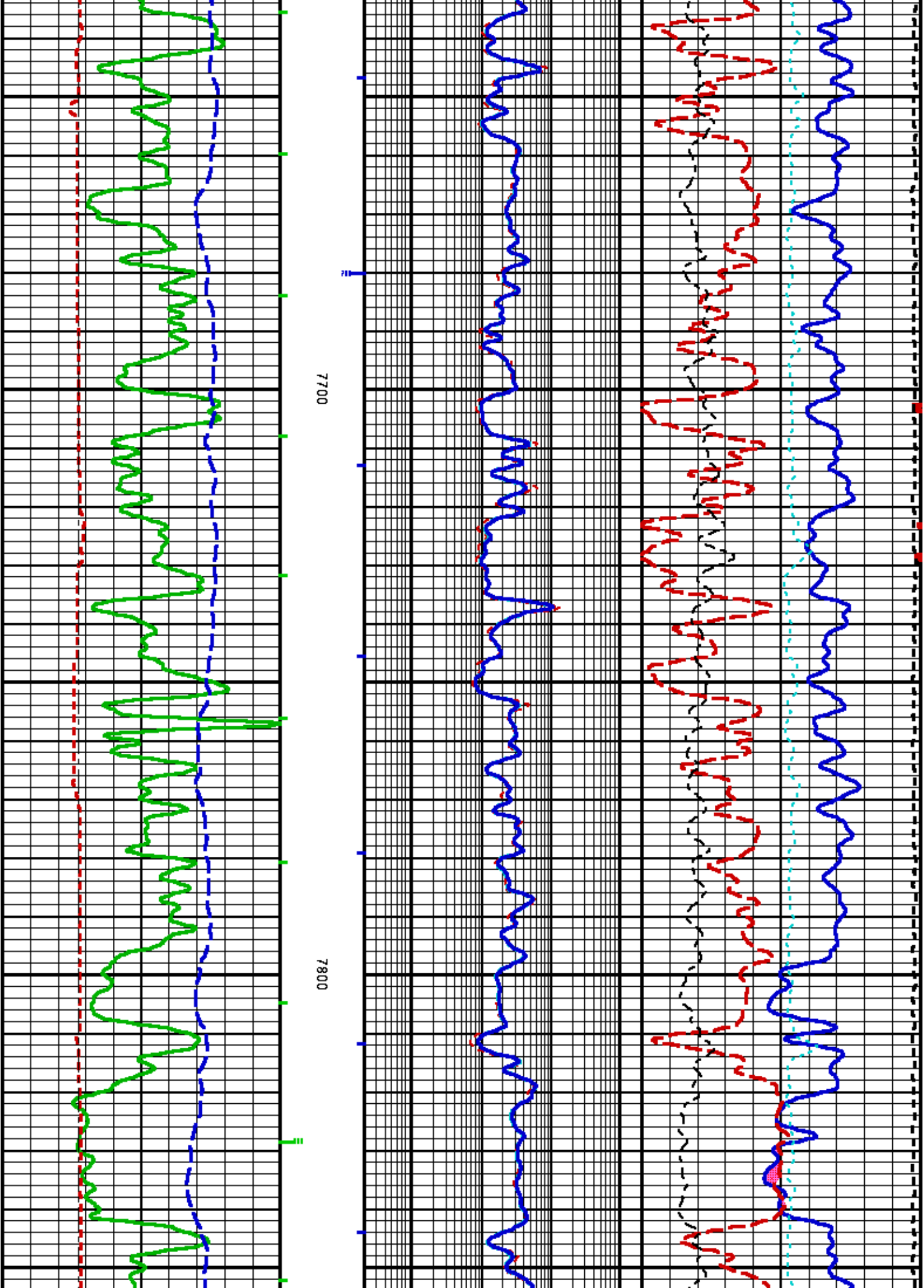


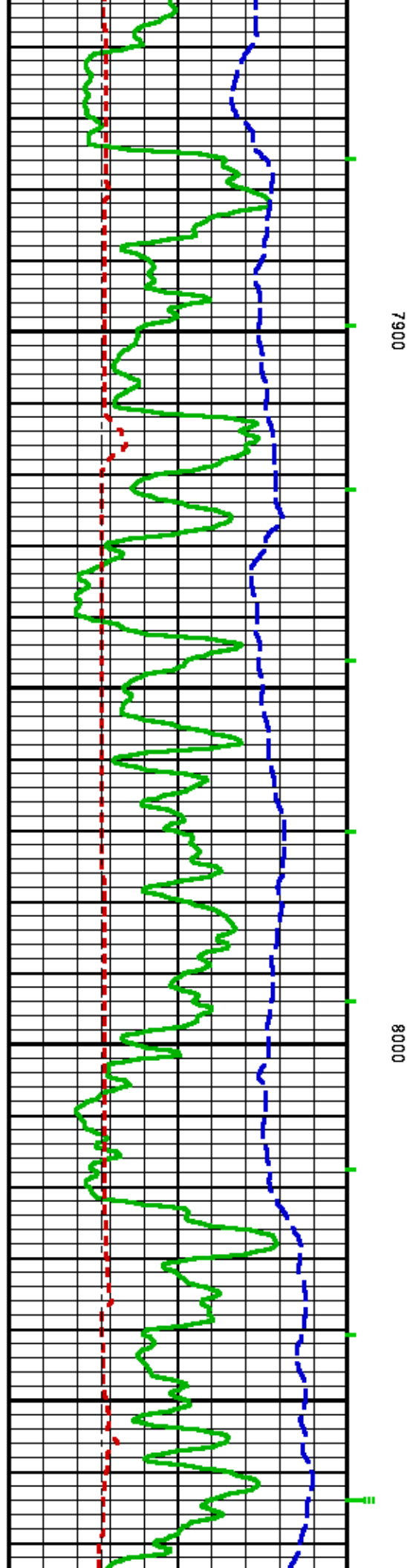
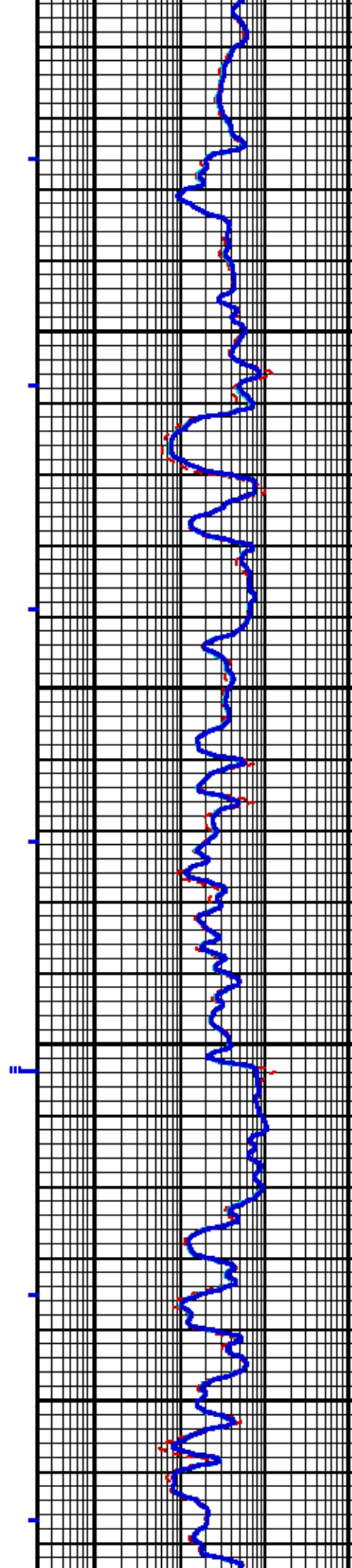
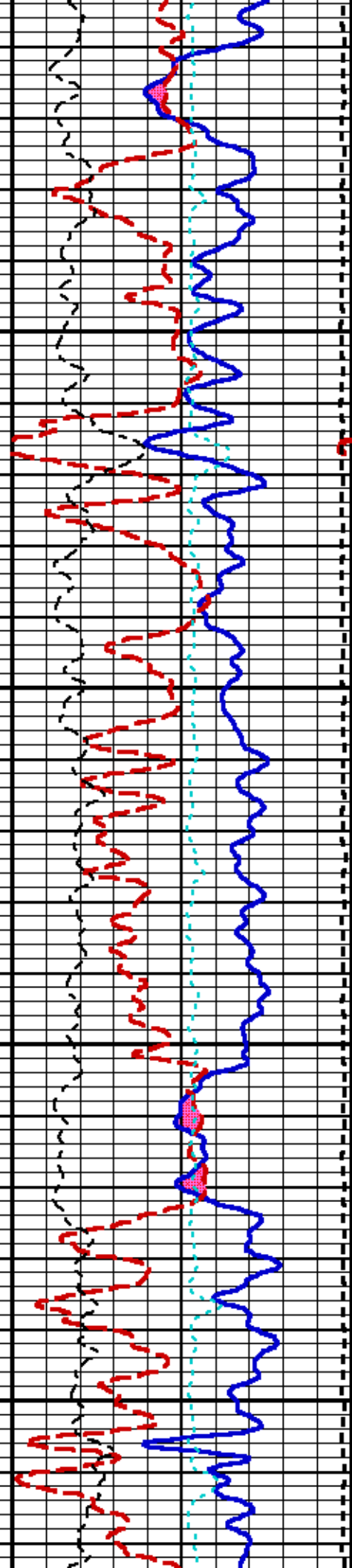


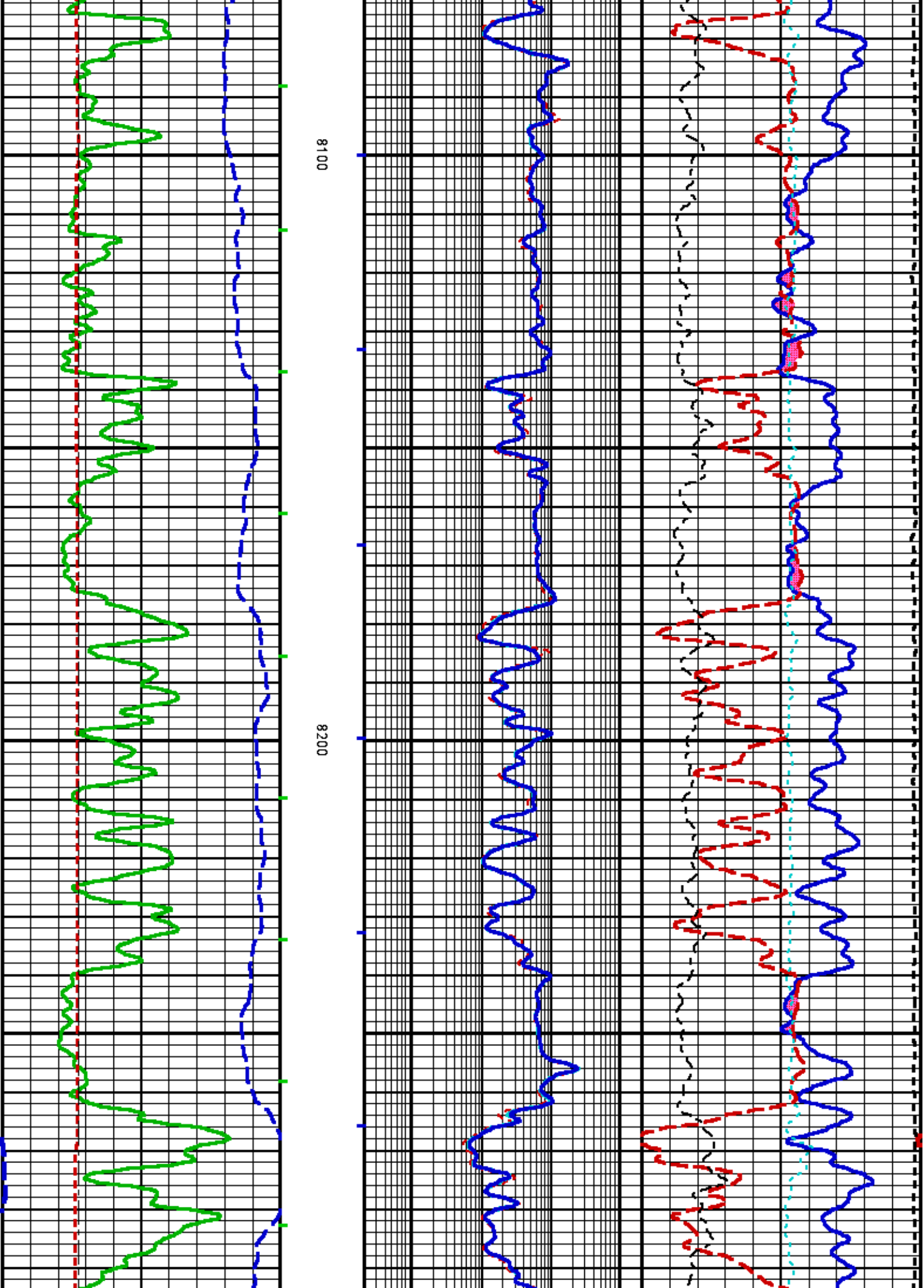




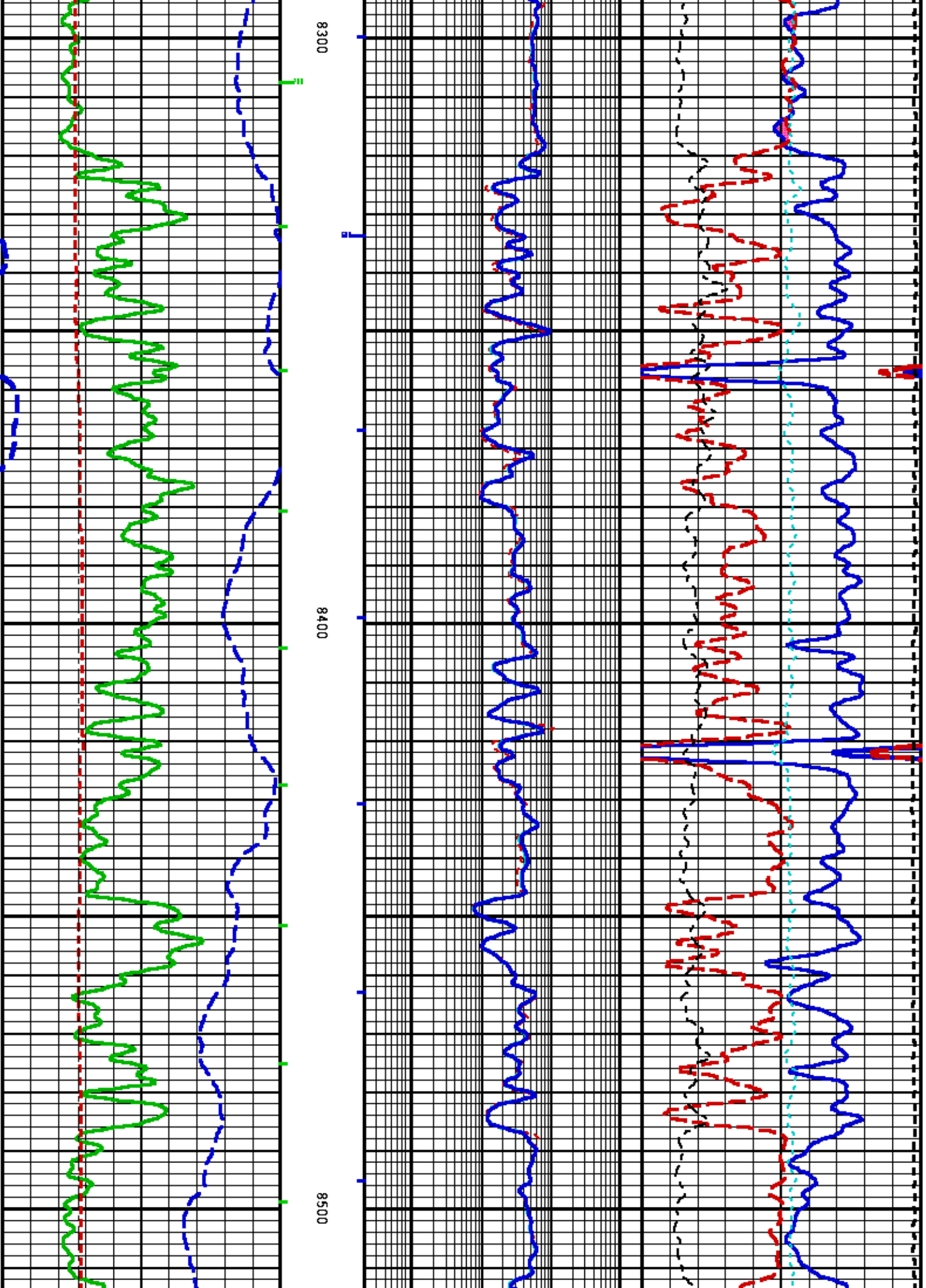


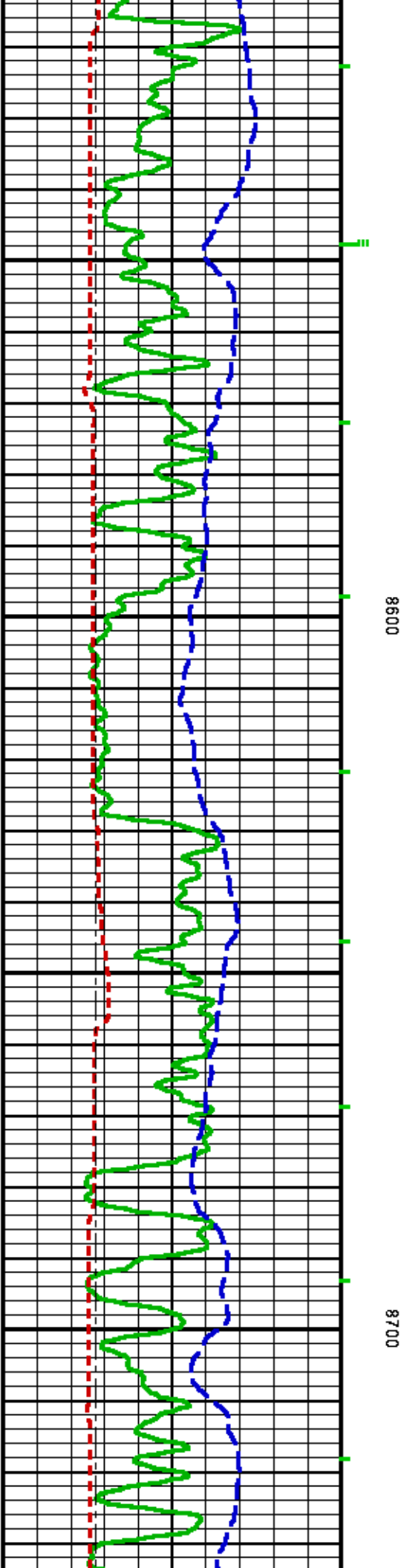
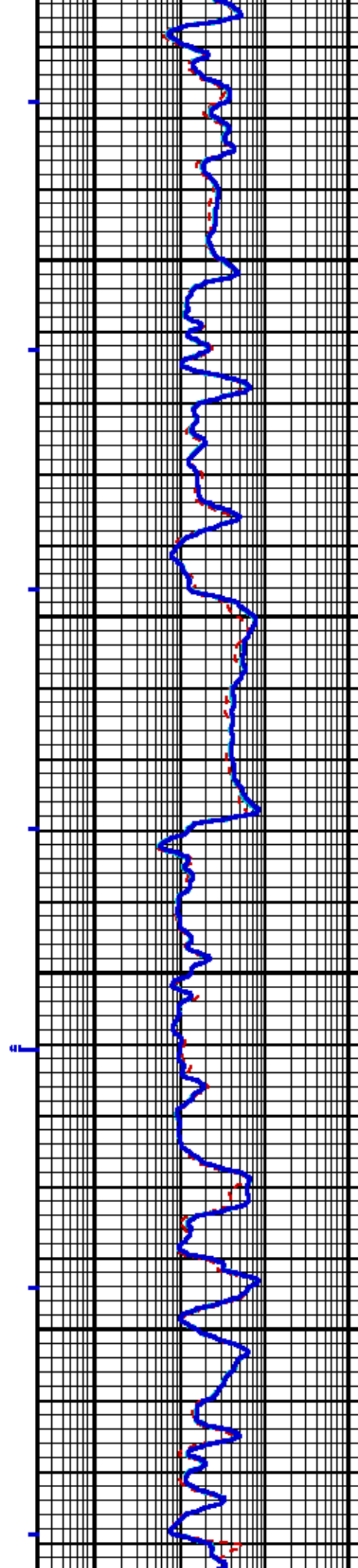
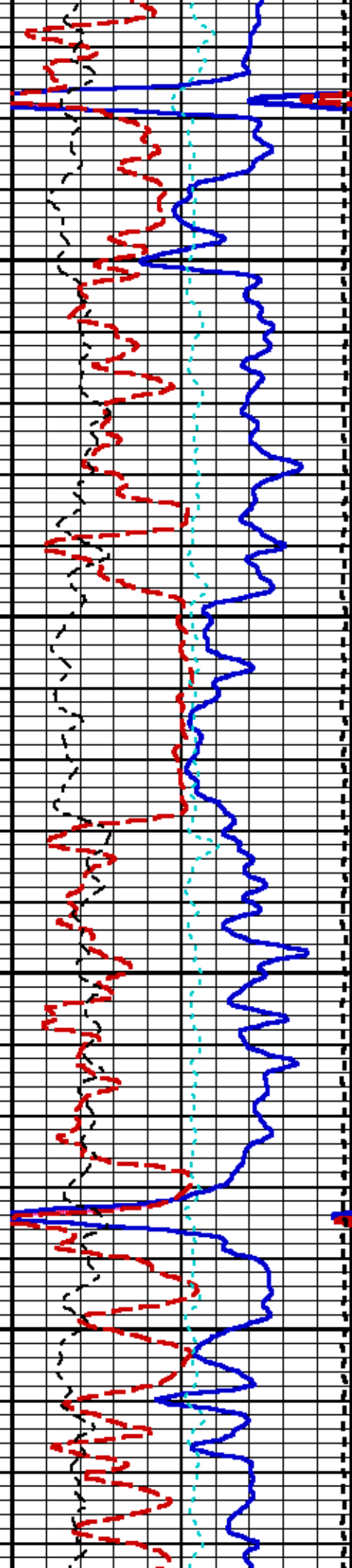


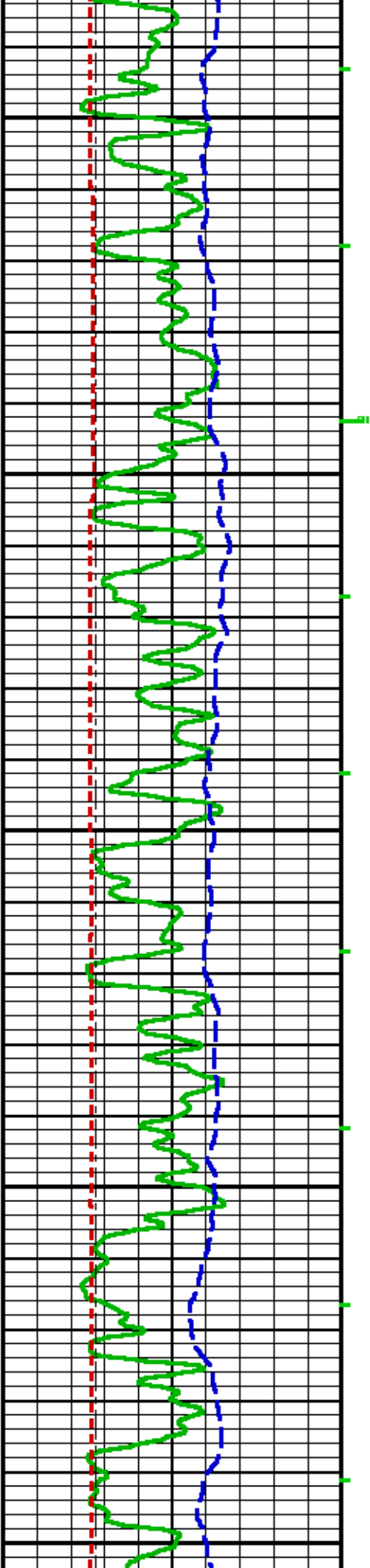






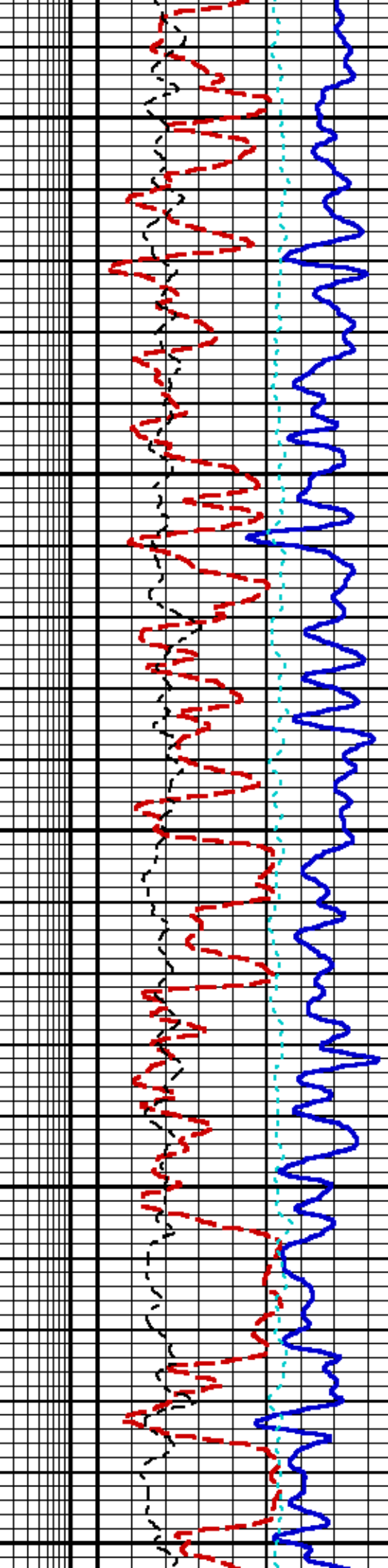
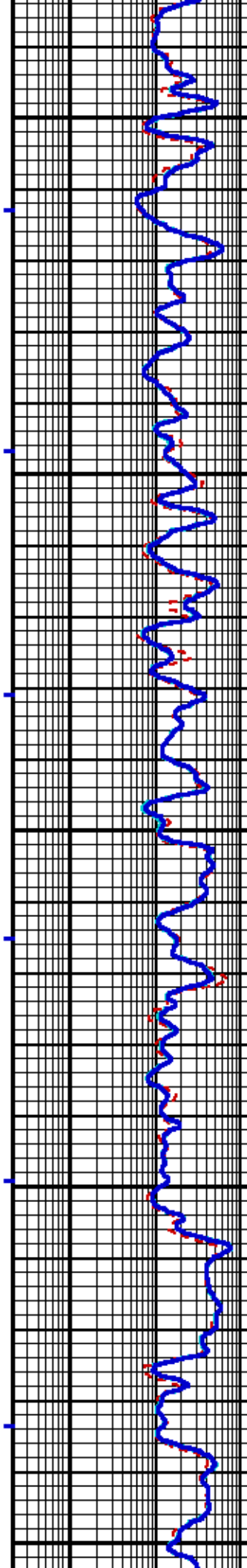




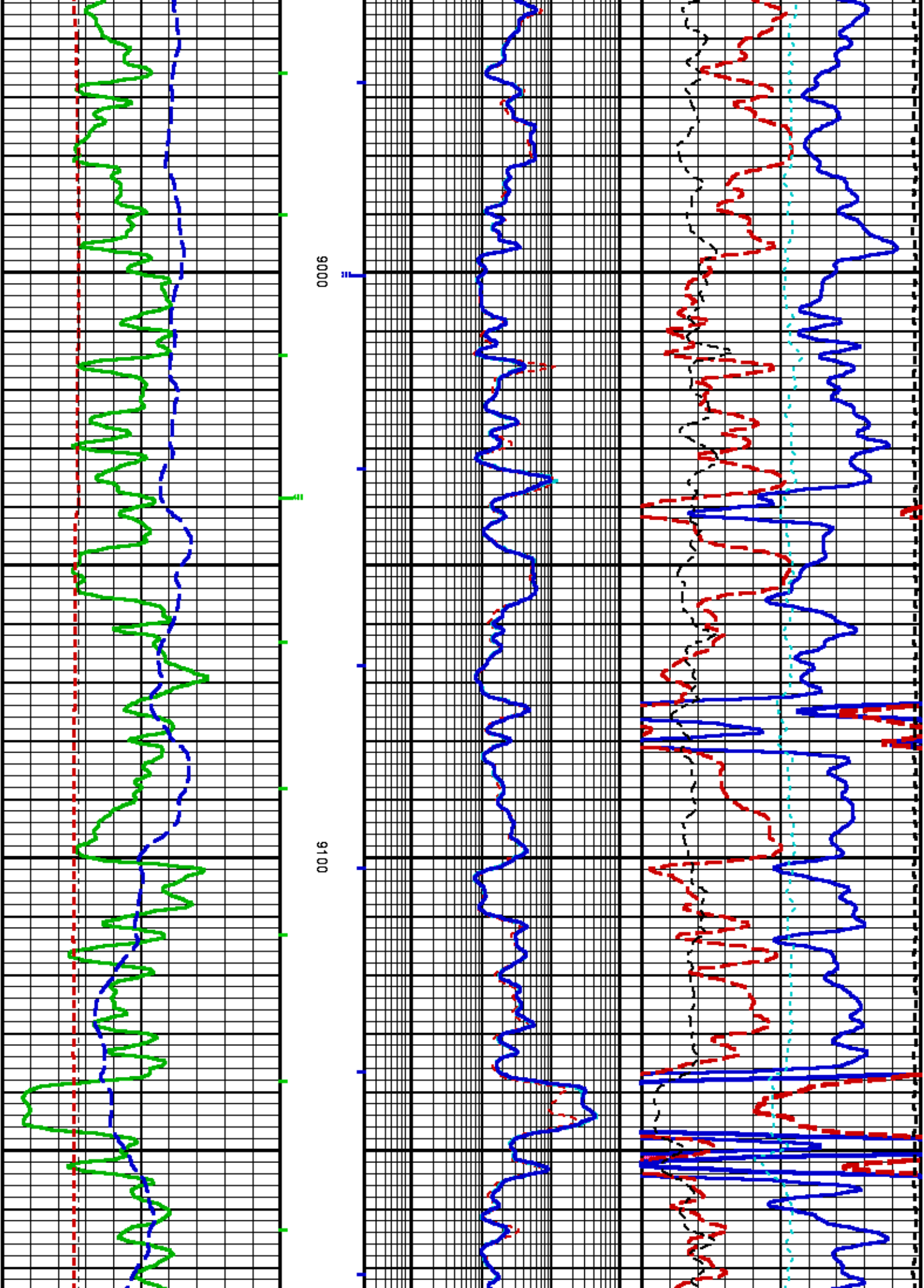


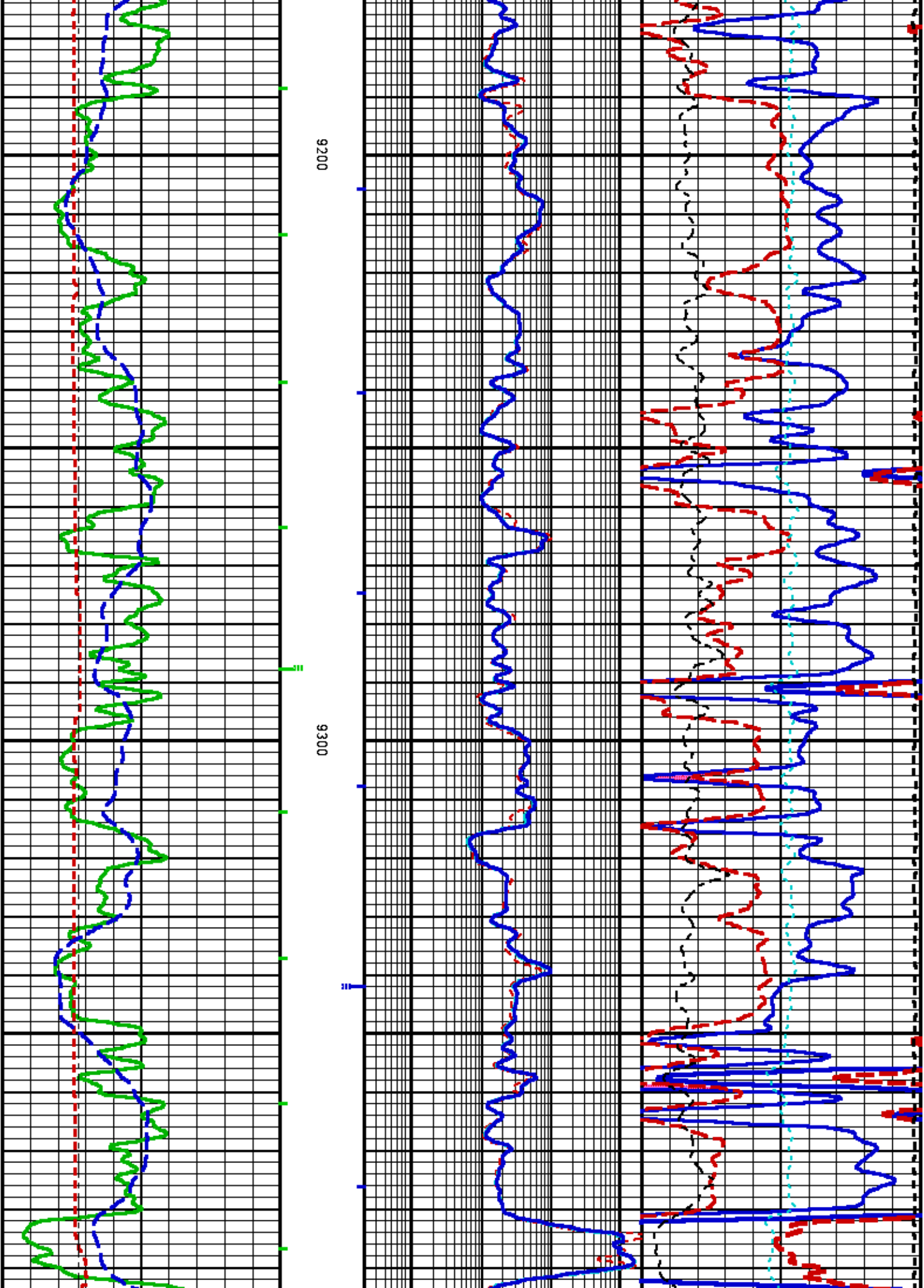
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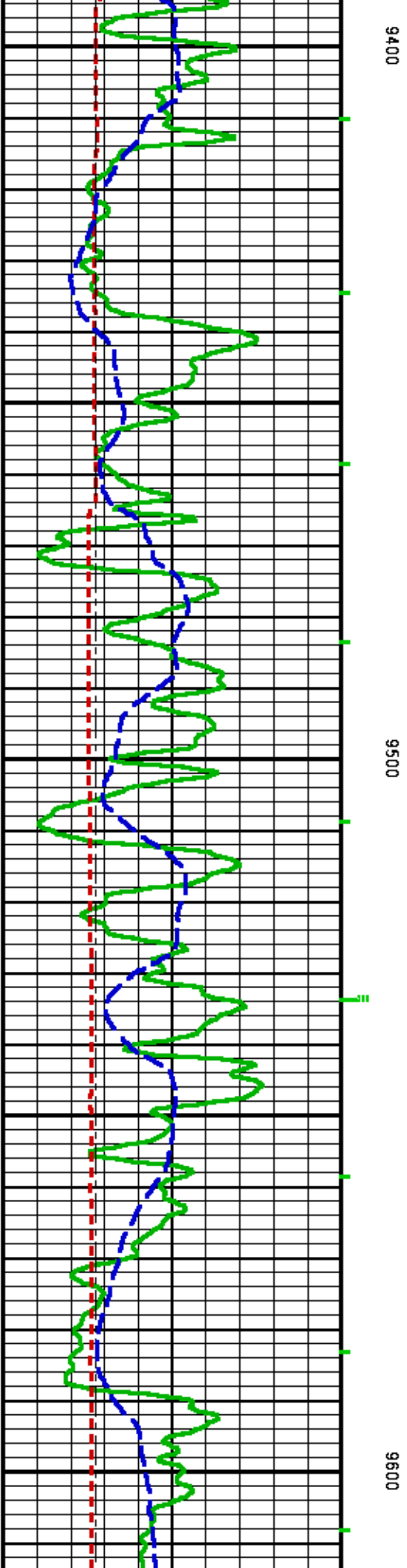
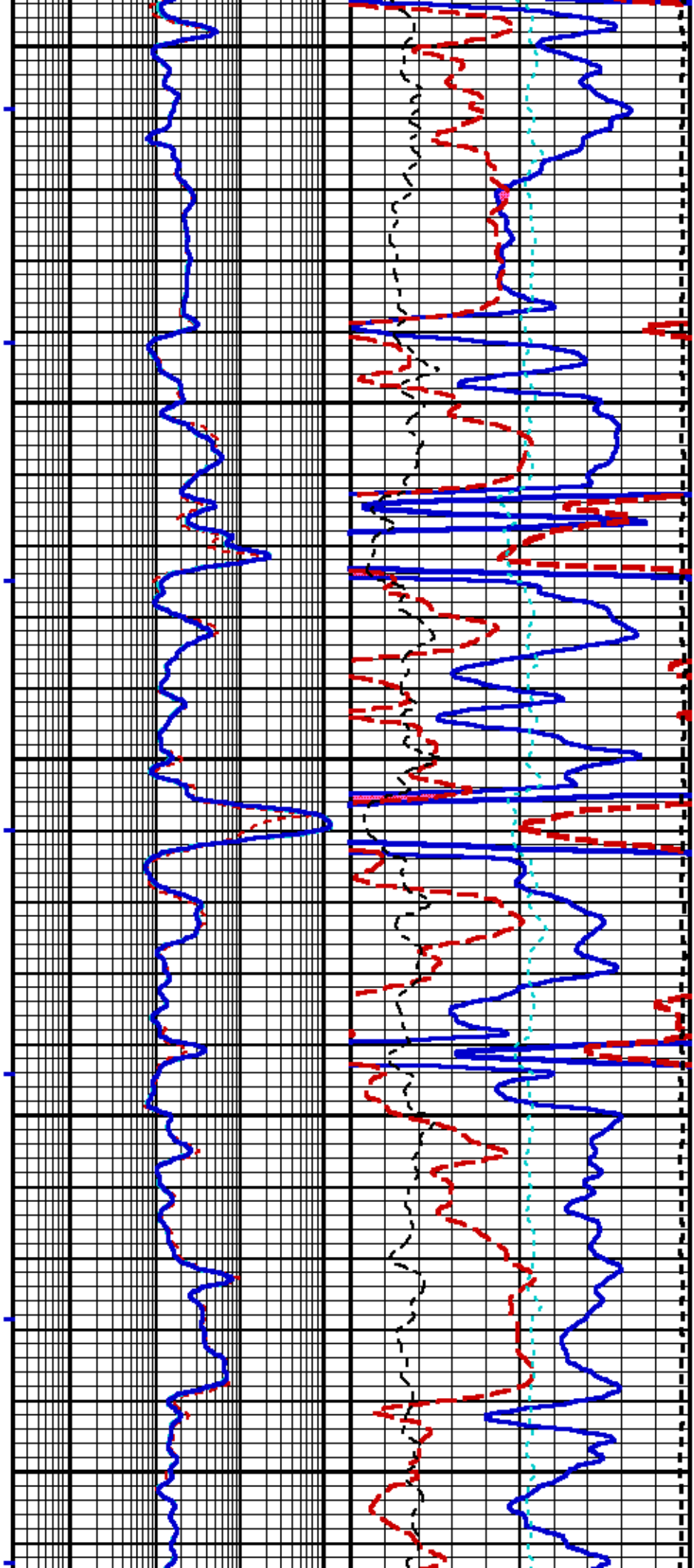
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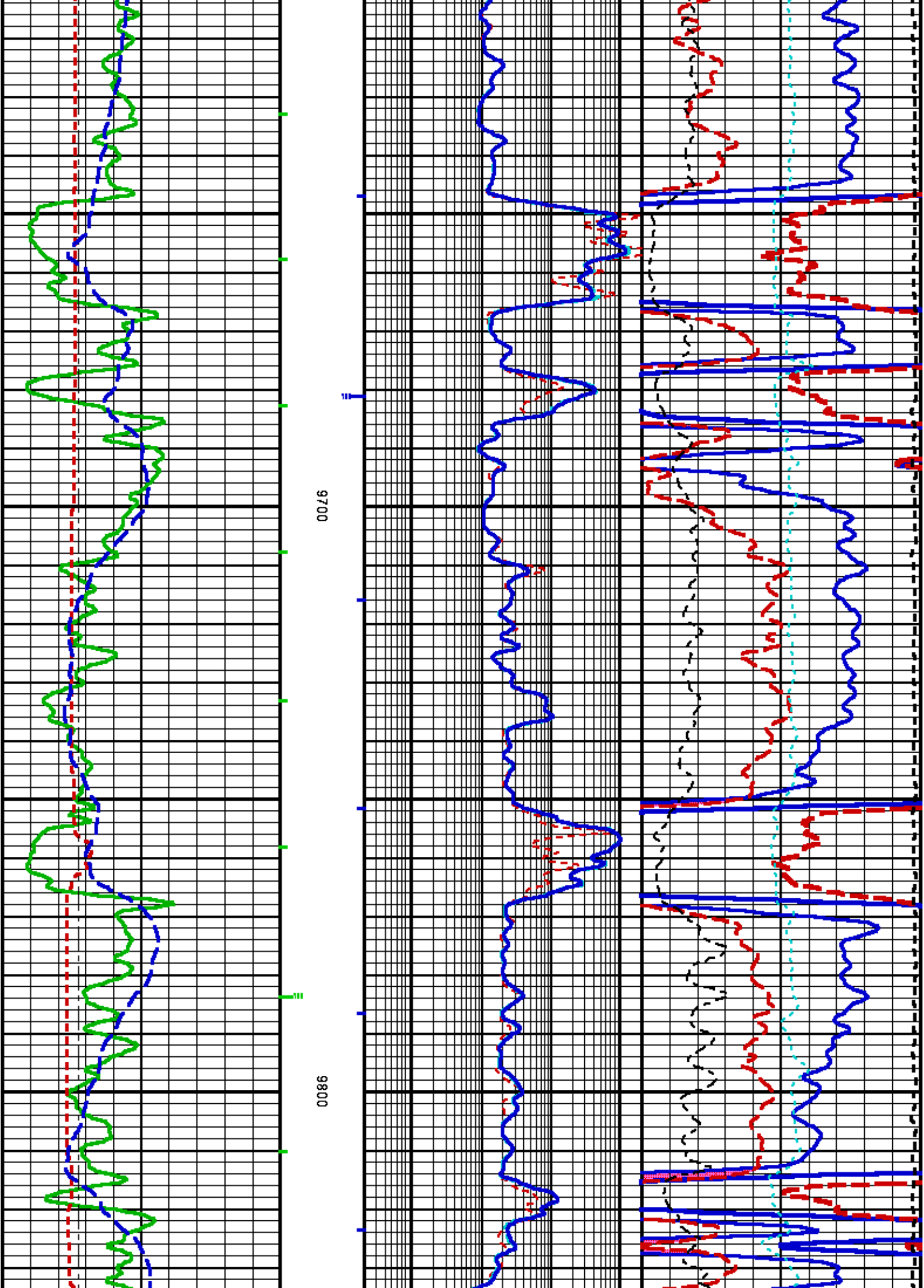


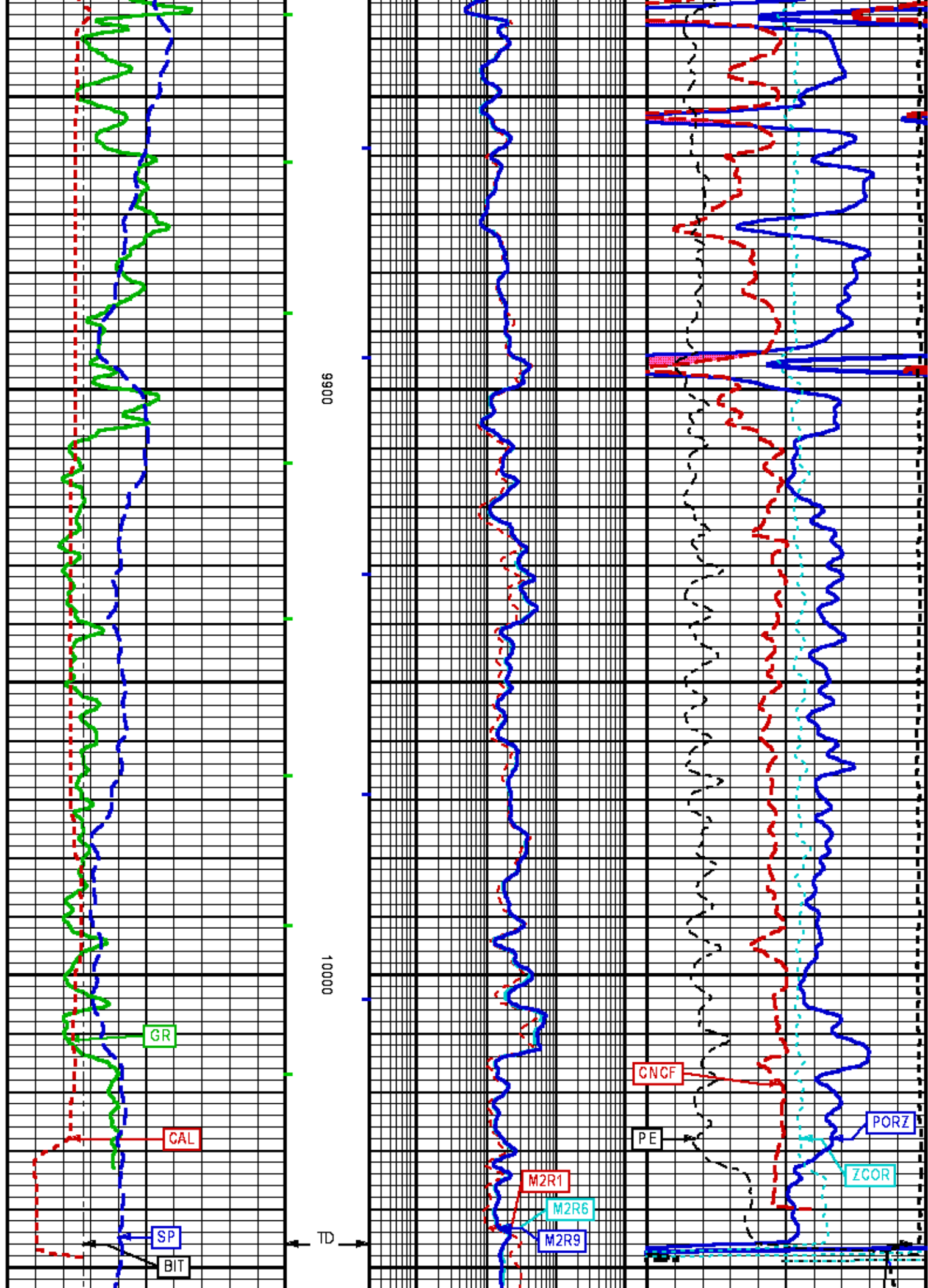




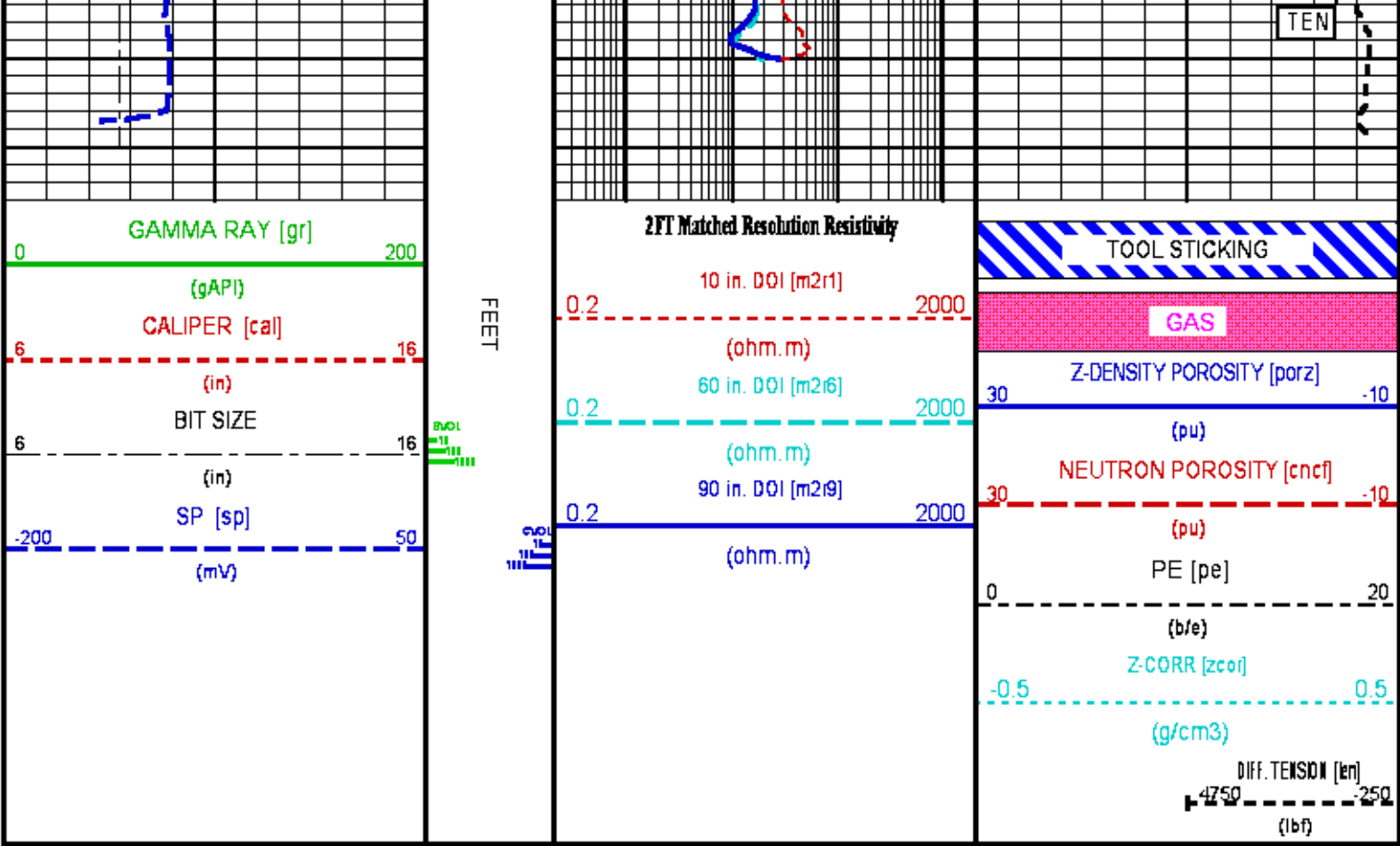












REPEAT LOG 5"/100FT SCALE

ECLIPS 6.2i ECLIPS General Release Rel 6.2i Wed Jun 12 12:21:40 CDT 2013  
Patches: 1

Plotted: Tue Sep 3 08:24:50 2013

PARAMETER AND FILTER SUMMARY REPORT

File: /dat1a/625574/n970a01.prm  
LOGGING MODE: DEPTH DIRECTION: UP  
TOP DEPTH: 972.750 ft BOTTOM DEPTH: 1411.225 ft

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
GR MED RES	FILTER ()	medium (1)		TOP	BOTTOM
CALIPER	FILTER ()	medium (1)		"	"
TENSION	FILTER ()	medium (1)		"	"
CN MED RES	FILTER ()	medium (1)		"	"
ZDL MED RES	FILTER (hrd1*)	medium		"	"
	FILTER (hrd1s*)	medium		"	"
	FILTER (hrd2*)	medium		"	"
	FILTER (hrd2s*)	medium		"	"
	FILTER (soff*)	medium		"	"
SP-SPDH	FILTER ()	heavy (3)		"	"

BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CASING, BOREHOLE & CEMENT VOLUME	CASING O.D.	4.500	in	TOP	BOTTOM

CASING & BOREHOLE CEMENT VOLUME	CASING O.D.	4.350	in	TOP	BOTTOM
	CASING THICKNESS	0.000	in	"	"
BIT SIZE	BIT SIZE	8.750	in	"	"
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (cnbh*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (mbh*)	USE CALIPER		"	"
BOREHOLE CORR DIAMETER	FIXED DIAMETER (cnbh*)	8.750	in	"	"
	FIXED DIAMETER (mbh*)	8.750	in	"	"
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	80.0	degF	"	"
	MUD SAMPLE RES	1.040	ohm.m	"	"
BH MUD RESISTIVITY SOURCE	RMUD SOURCE (HDIL)	TOOL MEASURED		"	"
BOREHOLE TEMP from GRADIENT	Known BH REF TEMP	80.0	degF	"	"
	at BH REF DEPTH	0.0	#	"	"
	with TEMP GRADIENT	1.200	0.01 degF/ft	"	"

ACCELERATION PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
ACCEL CORR SWITCH	ACCEL DEPTH CORR	CORRECTION ON		TOP	BOTTOM

CN PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CN MATRIX	2436 MATRIX	SANDSTONE		TOP	BOTTOM
CN BOREHOLE CORRECTION	SALINITY	1100	ppm	"	"
	BOREHOLE CORRECTION	ON		"	"
CN TOOL STANDOFF	ENABLE STANDOFF CORR	OFF		"	"
	STANDOFF AMOUNT	0.00	in	"	"
CN CASING & CEMENT CORRECTION	CORRECTION	OFF		"	"
	BIT SIZE BEHIND CSNG	8.750	in	"	"

ZDL PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
DENSITY POROSITY	Air Filled Borehole	NO		TOP	BOTTOM
	RHOmatrix	2.680	g/cm3	"	"
	RHOfluid	1.000	g/cm3	"	"

HDIL PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
HDIL TEMPERATURE CORRECTION	TEMP CORRECTION	ON		TOP	BOTTOM
ADAPTIVE BOREHOLE CORRECTION	ABC PROCESSING	ON		"	"
	ABC to CALCULATE	MUD CONDUCTIVITY		"	"
	STANDOFF	1.50	in	"	"
	TOOL POSITION	ECCENTERED		"	"
	Rmud MULTIPLIER	1.000		"	"

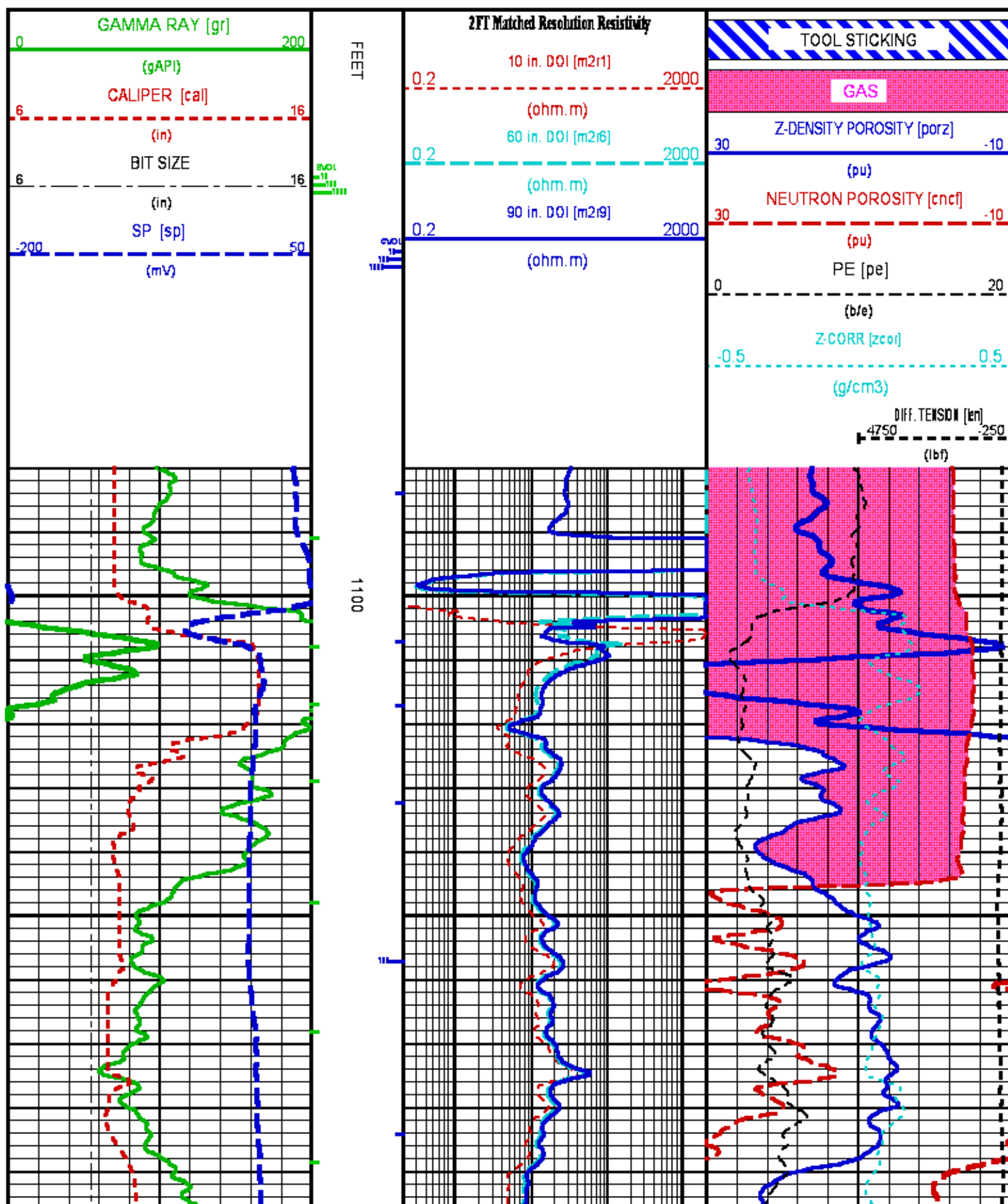
CURVE DESCRIPTION REPORT		
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:BIT	Sep 3 03:51:07 2013	BIT SIZE
F1:BVOL	Sep 3 03:51:07 2013	BOREHOLE VOLUME
F1:CAL	Sep 3 03:51:07 2013	CALIPER
F1:CNCF	Sep 3 03:51:07 2013	FIELD NORMALIZED COMPENSATED NEUTRON POROSITY
F1:CVOL	Sep 3 03:51:07 2013	CEMENT VOLUME
F1:GR	Sep 3 03:51:07 2013	GAMMA RAY
F1:M2R1	Sep 3 03:51:07 2013	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 10-INCH DOI
F1:M2R6	Sep 3 03:51:07 2013	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 60-INCH DOI
F1:M2R9	Sep 3 03:51:07 2013	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 90-INCH DOI
F1:PE	Sep 3 03:51:07 2013	PHOTO ELECTRIC CROSS-SECTION
F1:PORZ	Sep 3 03:51:07 2013	POROSITY FOR SELECTABLE MATRIX
F1:SP	Sep 3 03:51:07 2013	SPONTANEOUS POTENTIAL
F1:TEN	Sep 3 03:51:07 2013	DIFFERENTIAL TENSION
F1:ZCOR	Sep 3 03:51:07 2013	DENSITY CORRECTION

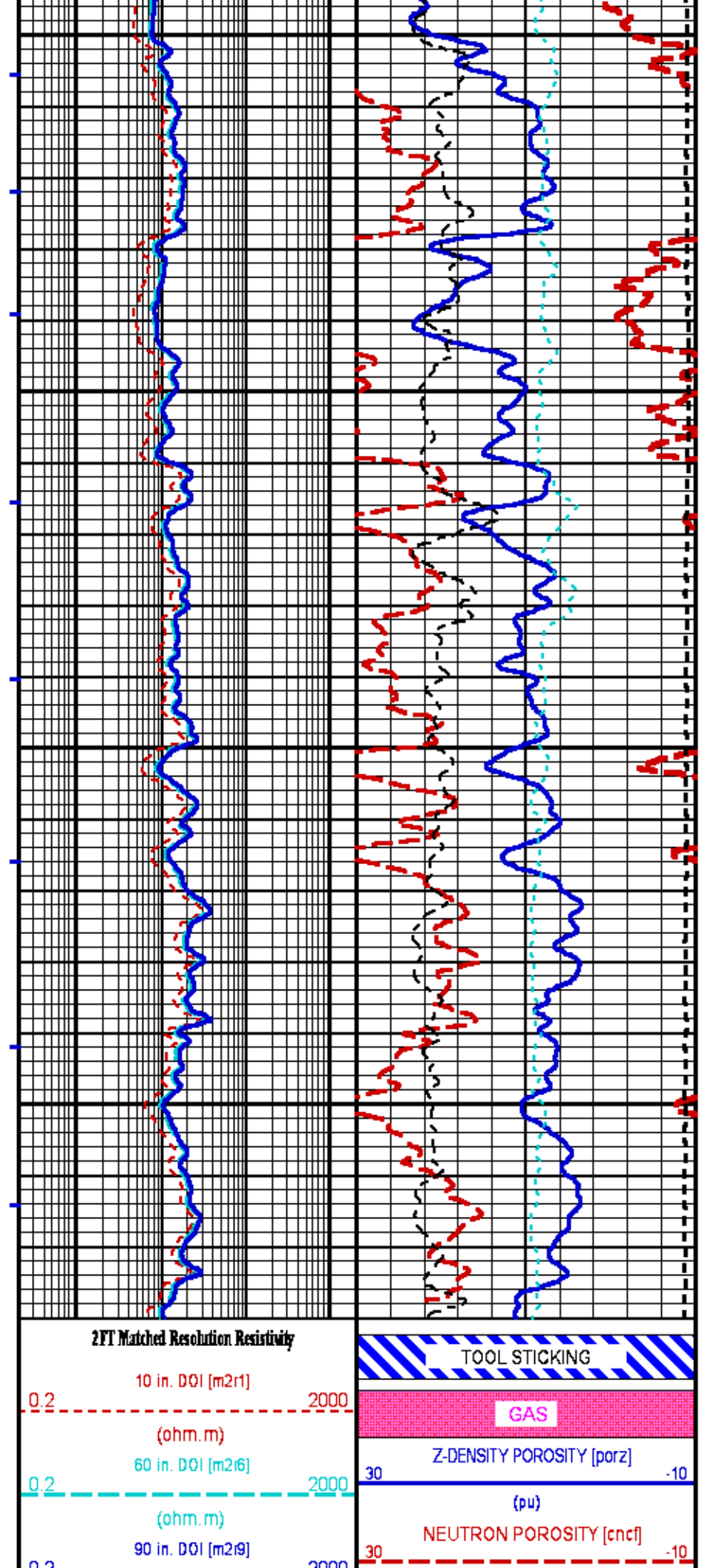
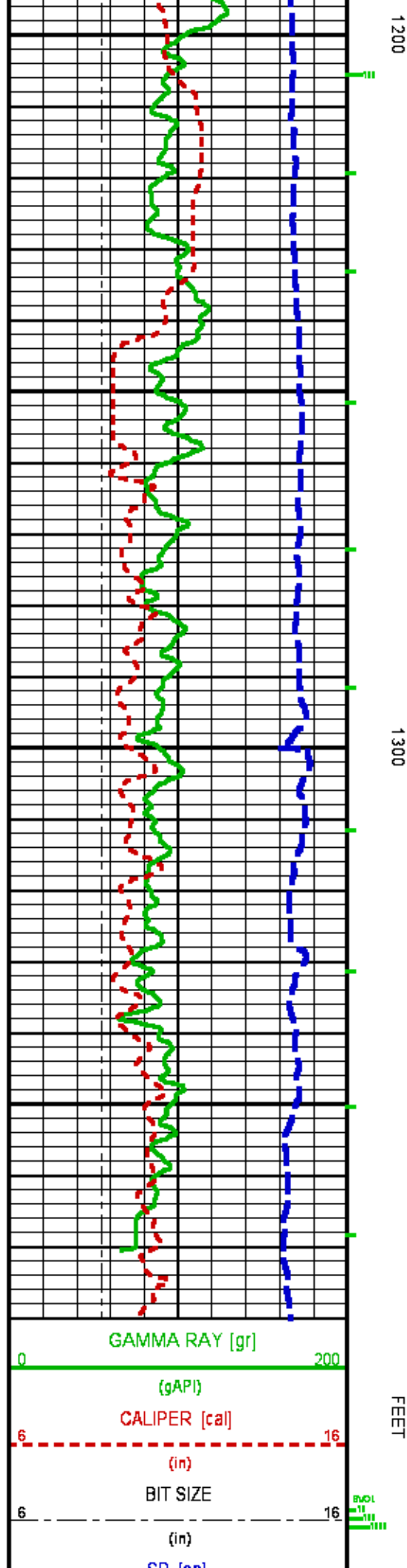
CURVE MEASURE POINT OFFSET							
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
BIT	0.00	GR	35.00	M2R9	2.75	SP	1.25
CAL	18.12	M2R1	2.75	PE	18.00	TEN	0.00
CNCF	27.38	M2R6	2.75	PORZ	18.00	ZCOR	18.00

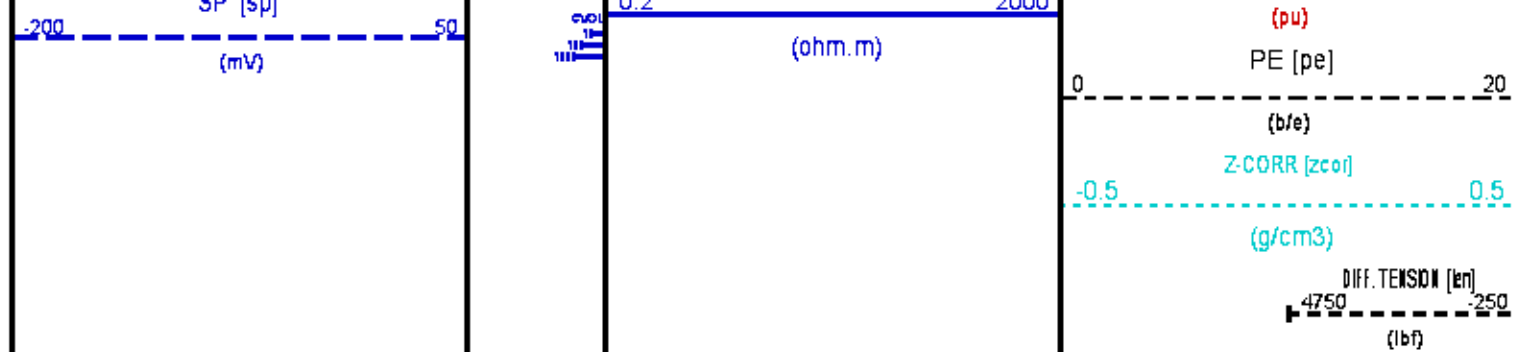


Presentation : HL6670:/dat1a/625574/WPX\_REPEAT.fvpdf [5"/100' Scale]  
Plot Interval : 1080 - 1380 Feet

Data File 1 : F1 : HL6670:/dat1a/625574/n970a01-REPEAT.xtf  
Created On : Sep 3 03:51:07 2013  
Company : WPX ENERGY  
Well : FEDERAL RU 322-5  
Field : RULISON  
File Interval : 0 - 1413.5 Feet  
OCT : n970a







Source File: /mnt1s/625574/n970s.ts1

### TTMA PRIMARY CALIBRATION SUMMARY

TOOL #: 3980XA 10120299 DATE/TIME PERFORMED: Wed Jul 31 10:29:42 2013

UNIT #: 3880TA HL6670 ACCEL #: 3980XA 10120299 ACCEL CAL DATE: 14:43 05/21/2004

GAIN OFFSET  
(ohm.m)

Rm K Factors 0.14570 -0.01679

Sig Low Sig High Mult Factor Add Factor Engr Low Engr High  
(ohm) (ohm) (ohm) (ohm)

Rm Measurements 0.25 9.97 1.003059 0.000362 0.25 10.00

### TTMA BEFORE LOG VERIFICATION SUMMARY

TOOL #: 3980XA 10120299 DATE/TIME PERFORMED: Tue Sep 3 03:37:50 2013 DAYS SINCE CAL: 33

UNIT #: 3880TA HL6670

CHT MUD TEMP RES M Q ACCEL Q  
(lb) (degF) (ohm)

CAL 18828 498.33 9.97 997.97

ZERO -23331 -436.02 0.249 997.046

### TTMA AFTER LOG VERIFICATION SUMMARY

TOOL #: 3980XA 10120299 DATE/TIME PERFORMED: Tue Sep 3 07:34:56 2013 DAYS SINCE CAL: 33

UNIT #: 3880TA HL6670

CHT MUD TEMP RES M Q ACCEL Q  
(lb) (degF) (ohm)

CAL 18835 499.28 9.96 997.45

ZERO -23331 -436.02 0.249 996.055

### GR PRIMARY CALIBRATION SUMMARY

Tool #: 3518EG 10139870 DATE/TIME PERFORMED: Tue Aug 20 07:26:44 2013

Unit #: 3880TA HL6670 Jlg Series: 4702NK VD-905

Background Calibrator ON Jlg Value Mult Background Calibrator ON  
(gAPI) (gAPI) (gAPI)

290.64 1048.78 185 0.244 70.99 255.99

### GR BEFORE LOG VERIFICATION SUMMARY

TOOL #: 3518EG 10139870 DATE/TIME PERFORMED: Tue Sep 3 03:35:13 2013 DAYS SINCE CAL: 13

UNIT #: 3880TA HL6670 Jlg: INTRNL N/A

Counts	TEMP (degF)	HV (V)
976.67	69.43	1361.74
929.00 1029.00	599.00	1299.00 1512.00

## GR AFTER LOG VERIFICATION SUMMARY

TOOL #: 3518EG 10139870 DATE/TIME PERFORMED: Tue Sep 3 07:34:03 2013 DAYS SINCE CAL: 14

UNIT #: 3880TA HL6670 Jlg: INTRNL N/A

Counts	TEMP (degF)	HV (V)
976.67	95.72	1364.70
929.00 1029.00	599.00	1299.00 1512.00

## CN PRIMARY CALIBRATION SUMMARY

TOOL #: 2436XA 10362459 DATE/TIME PERFORMED: Tue Aug 20 16:08:13 2013

UNIT #: 3880TA HL6670 CALIBRATOR #: 2437XB 112674 SOURCE #: 4718XA VBA-0897

SSN DT CPS	LSN DT CPS	SSN/LSN	MCF	CNRATIO	CN PU
4586.77	791.86	5.79239	0.99044	5.73700	25.241
			0.95000 1.05000		

## CN BEFORE LOG VERIFICATION SUMMARY

TOOL #: 2436XA 10362459 DATE/TIME PERFORMED: Tue Sep 3 03:36:36 2013 DAYS SINCE CAL: 13

UNIT #: 3880TA HL6670 CALIBRATOR #: INTRNL N/A

SSN DT CPS	LSN DT CPS	SSN/LSN	TEMP (degF)	HV (V)	LV (V)
991.06	993.42	0.99762	53.6	1346.9	4.648
		0.95000 1.05000	250.4	1250.0 1450.0	4.300 5.000

## CN AFTER LOG VERIFICATION SUMMARY

TOOL #: 2436XA 10362459 DATE/TIME PERFORMED: Tue Sep 3 07:34:22 2013 DAYS SINCE CAL: 13

UNIT #: 3880TA HL6670 CALIBRATOR #: INTRNL N/A

SSN DT CPS	LSN DT CPS	SSN/LSN	TEMP (degF)	HV (V)	LV (V)
991.41	993.42	0.99797	60.3	1346.9	4.648
		0.95000 1.05000	250.4	1250.0 1450.0	4.300 5.000

## CAL PRIMARY CALIBRATION SUMMARY

TOOL #: 2223XA 10090664 DATE/TIME PERFORMED: Wed Aug 28 11:28:48 2013

UNIT #: 3880TA HL6670

	SIZE (in)	VALUE	MULTIPLIER	ADD
SMALL RING (Arm)	7.000	1212.0		
LARGE RING (Arm)	11.000	2436.0	0.00327	3.03922
PAD CLOSED		1654.8	0.00250	-4.13700

## CAL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 2223XA 10090664 DATE/TIME PERFORMED: Tue Sep 3 03:44:46 2013 DAYS SINCE CAL: 5

UNIT #: 3880TA HL6670

	VALUE	MULTIPLIER	ADD	SIZE (in)
ARM	1792.0	0.00327	3.03922	8.9
PAD	1876.0	0.00250	-4.13700	0.6

ACTUAL MEASURED  
(in) (in)

DIAMETER (arm+pad)	9.001 (in)	9.0 (in)
		8.8 8.4

### CAL AFTER LOG VERIFICATION SUMMARY

TOOL #: 2223XA 10090664 DATE/TIME PERFORMED: Tue Sep 3 07:33:02 2013 DAYS SINCE CAL: 5

UNIT #: 3880TA HL6670

	VALUE	MULTIPLIER	ADD	SIZE (in)
ARM	1972.0	0.00327	3.03922	9.5
PAD	1956.0	0.00250	-4.13700	0.8

	ACTUAL (in)	MEASURED (in)
DIAMETER (arm+pad)	9.001	9.0
		8.8 8.4

### ZDL PRIMARY CALIBRATION SUMMARY

TOOL: 2223XA 10090664 DATE/TIME PERFORMED: Wed Aug 28 11:19:54 2013

UNIT: 3880TA HL6670 CALB BLKS: 2225XA 094292F CS SRC: 4705XA 16068B PAD TYPE: PADTYP 7.5" PAD

	SS CS PK (Channel)	LS CS PK (Channel)	SS_BKGD (cps)	LS BKGD (cps)		
	224.2	224.2	1275.9	1663.4		
	200.0 250.0	200.0 250.0				

	SS (cps)	LS (cps)	SHR	DEN (g/cm3)	CORR (g/cm3)	PE (b/e)
MG (LO PE)	32529.2	11376.9	0.770	1.679	0.000	1.900
			0.720 0.800			
AL	20190.2	1277.3		2.667	-0.016	
AL + SHIM	26816.6	2196.9		2.558	0.098	
MG + SHIM (HI PE)	16046.9	5449.1	0.302			8.550
			0.200 0.300			
RATIO AL + SHIM/AL	1.33	1.72				
	1.30 1.40	1.60 1.80				
RATIO MG/AL	1.61	8.91				
	1.50 1.70	8.00 9.50				

### ZDL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 2223XA 10090664 DATE/TIME PERFORMED: Tue Sep 3 03:40:31 2013 DAYS SINCE CAL: 5

UNIT #: 3880TA HL6670

	TOTAL (cps)	CSPK (Channel)	HV (V)
LS	3342.1	223.6	1410.5
	3332.1 3352.1	200.0 250.0	1200.0 1500.0
SS	22355.0	224.1	1365.2
	22344.8 22365.8	200.0 250.0	1200.0 1500.0

	LV (V)	PAD CURRENT (mA)
	5.0	73.6
	4.8 5.2	50.0 100.0

### ZDL AFTER LOG VERIFICATION SUMMARY

TOOL #: 2223XA 10090664 DATE/TIME PERFORMED: Tue Sep 3 07:34:39 2013 DAYS SINCE CAL: 5

UNIT #: 3880TA HL6670

	TOTAL (cps)	CSPK (Channel)	HV (V)
LS	3342.1	224.2	1407.3
	3332.1 3352.1	200.0 250.0	1200.0 1500.0
SS	22354.8	224.5	1367.7
	22344.8 22365.8	200.0 250.0	1200.0 1500.0

	LV (V)	PAD CURRENT (mA)
	5.0	73.6
	4.8 5.2	50.0 100.0

# HDIL PRIMARY CALIBRATION SUMMARY

TOOL #: 1530XA 10120519

DATE/TIME PERFORMED:

Fri Jul 5 11:37:29 2013

UNIT #: 3880TA HL6670

GRCOND ID & DATE: 30 101801

ZERO DATA(mv)	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Cell 0 R	0.0063 -0.2000 0.2000	-0.0002 -0.1000 0.1000	-0.0008 -0.1000 0.1000	0.0002 -0.1000 0.1000	0.0000 -0.1000 0.1000	0.0001 -0.1000 0.1000	-0.0002 -0.1000 0.1000	-0.0002 -0.1000 0.1000
Cell 0 Q	0.0018 -0.5000 0.5000	-0.0014 -0.2000 0.2000	0.0003 -0.1000 0.1000	0.0005 -0.1000 0.1000	-0.0002 -0.1000 0.1000	0.0006 -0.1000 0.1000	0.0005 -0.1000 0.1000	-0.0003 -0.1000 0.1000
Cell 1 R	0.0172 -0.2000 0.2000	0.0020 -0.1000 0.1000	-0.0012 -0.1000 0.1000	0.0025 -0.1000 0.1000	0.0002 -0.1000 0.1000	-0.0004 -0.1000 0.1000	-0.0003 -0.1000 0.1000	-0.0005 -0.1000 0.1000
Cell 1 Q	0.0084 -0.5000 0.5000	-0.0040 -0.2000 0.2000	0.0006 -0.1000 0.1000	0.0011 -0.1000 0.1000	-0.0007 -0.1000 0.1000	0.0012 -0.1000 0.1000	-0.0002 -0.1000 0.1000	-0.0005 -0.1000 0.1000
Cell 2 R	0.0119 -0.2000 0.2000	0.0016 -0.1000 0.1000	-0.0016 -0.1000 0.1000	0.0007 -0.1000 0.1000	-0.0028 -0.1000 0.1000	-0.0009 -0.1000 0.1000	0.0010 -0.1000 0.1000	0.0005 -0.1000 0.1000
Cell 2 Q	0.0122 -0.5000 0.5000	-0.0003 -0.2000 0.2000	0.0023 -0.1000 0.1000	-0.0001 -0.1000 0.1000	-0.0003 -0.1000 0.1000	-0.0027 -0.1000 0.1000	-0.0002 -0.1000 0.1000	-0.0003 -0.1000 0.1000
Cell 3 R	0.0517 -0.5000 0.5000	-0.0044 -0.1000 0.1000	-0.0019 -0.1000 0.1000	0.0055 -0.1000 0.1000	-0.0017 -0.1000 0.1000	-0.0028 -0.1000 0.1000	0.0016 -0.1000 0.1000	0.0020 -0.1000 0.1000
Cell 3 Q	0.0356 -0.5000 0.5000	-0.0147 -0.2000 0.2000	-0.0002 -0.1000 0.1000	0.0009 -0.1000 0.1000	0.0033 -0.1000 0.1000	0.0008 -0.1000 0.1000	-0.0005 -0.1000 0.1000	0.0003 -0.1000 0.1000
Cell 4 R	0.1383 -0.5000 0.5000	-0.0025 -0.2000 0.2000	-0.0063 -0.2000 0.2000	0.0064 -0.2000 0.2000	-0.0060 -0.2000 0.2000	-0.0019 -0.2000 0.2000	0.0021 -0.2000 0.2000	-0.0001 -0.2000 0.2000
Cell 4 Q	0.0634 -1.0000 1.0000	-0.0354 -0.4000 0.4000	0.0149 -0.2000 0.2000	0.0007 -0.2000 0.2000	-0.0065 -0.2000 0.2000	0.0107 -0.2000 0.2000	0.0038 -0.2000 0.2000	-0.0070 -0.2000 0.2000
Cell 5 R	0.3048 -1.2000 1.2000	0.0114 -0.4000 0.4000	-0.0393 -0.4000 0.4000	0.0226 -0.4000 0.4000	-0.0156 -0.4000 0.4000	-0.0041 -0.4000 0.4000	0.0032 -0.4000 0.4000	-0.0005 -0.4000 0.4000
Cell 5 Q	0.1837 -1.5000 1.5000	-0.0772 -0.8000 0.8000	0.0049 -0.4000 0.4000	-0.0076 -0.4000 0.4000	-0.0079 -0.4000 0.4000	0.0068 -0.4000 0.4000	-0.0067 -0.4000 0.4000	-0.0017 -0.4000 0.4000

ELEC. GAINS	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Cell 0 M	163.01 138.00 188.00	161.55 134.00 184.00	158.64 131.00 181.00	154.30 128.00 178.00	148.62 122.00 170.00	141.64 118.00 161.00	133.46 112.00 150.00	124.09 108.00 138.00
Cell 0 P	7.735 8.000 8.000	25.443 21.000 30.000	42.708 35.000 50.000	59.923 48.000 71.000	77.144 63.000 91.000	94.373 77.000 108.000	111.621 92.000 130.000	128.851 105.000 151.000
Cell 1 M	282.41 228.00 328.00	279.84 225.00 325.00	274.69 220.00 320.00	266.99 225.00 312.00	256.84 218.00 302.00	244.34 208.00 288.00	229.70 188.00 268.00	212.90 184.00 214.00
Cell 1 P	7.793 8.000 8.000	25.646 21.000 30.000	43.061 35.000 51.000	60.434 48.000 71.000	77.806 63.000 92.000	95.182 78.000 112.000	112.541 93.000 130.000	129.846 107.000 151.000
Cell 2 M	560.30 478.00 652.00	555.10 474.00 654.00	544.74 463.00 643.00	529.36 450.00 622.00	509.30 432.00 602.00	484.72 412.00 572.00	456.09 380.00 510.00	423.35 358.00 488.00
Cell 2 P	7.706 8.000 8.000	25.401 21.000 31.000	42.640 35.000 51.000	59.819 48.000 71.000	76.985 63.000 92.000	94.153 78.000 115.000	111.322 92.000 135.000	128.449 105.000 155.000
Cell 3 M	918.18 772.00 1080.00	909.15 764.00 1050.00	891.03 752.00 1030.00	864.23 728.00 1010.00	829.32 700.00 970.00	786.95 665.00 925.00	737.70 628.00 880.00	682.41 588.00 798.00
Cell 3 P	8.004 8.000 10.000	26.204 21.000 30.000	43.959 35.000 51.000	61.648 48.000 72.000	79.292 63.000 93.000	96.908 78.000 114.000	114.475 90.000 138.000	131.947 104.000 158.000
Cell 4 M	1421.1 1210.0 1700.0	1409.0 1205.0 1690.0	1384.5 1180.0 1650.0	1347.5 1140.0 1590.0	1298.9 1120.0 1530.0	1238.6 1070.0 1490.0	1167.0 1000.0 1350.0	1085.1 942.0 1240.0
Cell 4 P	7.777 8.000 10.000	25.610 21.000 31.000	43.008 35.000 52.000	60.385 48.000 73.000	77.776 63.000 93.000	95.199 77.000 114.000	112.639 91.000 135.000	130.098 105.000 155.000
Cell 5 M	2952.6 2480.0 3480.0	2928.6 2420.0 3400.0	2877.3 2410.0 3350.0	2800.6 2280.0 3280.0	2699.2 2250.0 3080.0	2573.1 2150.0 2980.0	2424.6 2020.0 2790.0	2253.2 1870.0 2570.0
Cell 5 P	7.853 8.000 10.000	25.815 20.000 31.000	43.370 35.000 52.000	60.874 48.000 73.000	78.404 63.000 94.000	95.967 78.000 115.000	113.517 93.000 134.000	131.059 108.000 156.000

AM Factor	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Cell 0 R	-928 -3200 840	-610 -1400 -80	-492 -420 -150	-424 -780 -180	-377 -880 -130	-343 -800 -120	-316 -580 -110	-295 -520 -82
Cell 0 Q	429 -15000 11000	-143 -2800 3800	-216 -3700 2100	-245 -2700 1400	-261 -3600 1000	-274 -1800 720	-285 -1800 620	-295 -1500 480
Cell 1 R	-114 -750 480	-137 -380 85	-133 -280 8	-126 -250 -10	-119 -280 -28	-111 -180 -35	-105 -180 -48	-99 -150 -48
Cell 1 Q	356 -3300 3300	87 -1100 680	33 -650 550	5 -470 380	-12 -380 280	-23 -380 180	-31 -580 150	-36 -680 120
Cell 2 R	-2.3 -68.0 78.0	-30.6 -84.0 -0.4	-32.8 -87.0 -12.0	-31.5 -81.0 -18.0	-29.1 -88.0 -17.0	-26.7 -82.0 -18.0	-24.8 -88.0 -15.0	-22.8 -87.0 -13.0
Cell 2 Q	143.3 -1500.0 1800.0	48.7 -900.0 810.0	26.9 -580.0 380.0	17.2 -520.0 280.0	12.7 -480.0 180.0	9.7 -440.0 180.0	9.3 -410.0 130.0	9.2 -480.0 120.0
Cell 3 R	-2.2 -25.0 21.0	-9.1 -22.0 1.8	-9.8 -21.0 -1.3	-9.7 -20.0 -1.8	-8.9 -19.0 -2.0	-8.4 -19.0 -1.3	-7.8 -19.0 -0.8	-7.2 -19.0 -0.0
Cell 3 Q	84.0 -540.0 550.0	31.3 -180.0 180.0	21.6 -100.0 110.0	18.9 -71.0 81.0	18.2 -61.0 88.0	18.9 -57.0 88.0	20.3 -58.0 55.0	21.9 -61.0 51.0
Cell 4 R	-0.93 -18.00 13.00	-2.31 -12.00 2.70	-2.11 -11.00 1.50	-2.36 -8.80 0.52	-2.60 -8.80 0.88	-1.54 -10.00 1.50	-1.65 -11.00 2.50	-1.67 -11.00 2.80
Cell 4 Q	27.85 -280.00 280.00	11.03 -78.00 98.00	8.54 -43.00 84.00	7.96 -37.00 51.00	11.51 -18.00 48.00	9.69 -11.00 42.00	11.03 -8.50 42.00	11.69 -1.00 42.00
Cell 5 R	0.41 -58.00 51.00	-0.81 -6.40 3.80	-1.25 -6.80 1.10	-0.89 -6.80 1.20	-4.53 -8.30 2.80	-1.16 -14.00 8.30	-0.44 -18.00 8.80	-0.73 -24.00 13.00
Cell 5 Q	3.44 -68.00 58.00	2.06 -38.00 27.00	2.86 -14.00 22.00	3.88 -7.00 22.00	3.06 -2.50 24.00	6.47 1.10 28.00	7.26 4.10 28.00	8.48 1.10 32.00

MM Factor	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Cell 0 M	0.965 0.880 1.100	0.973 0.880 1.100	0.977 0.890 1.100	0.979 0.880 1.100	0.981 0.880 1.100	0.981 0.880 1.100	0.981 0.880 1.100	0.981 0.880 1.100
Cell 0 P	-0.305 -1.500 1.500	-0.468 -1.500 1.500	-0.374 -1.500 1.500	-0.258 -1.500 1.500	-0.175 -1.500 1.500	-0.121 -1.500 1.500	-0.057 -1.500 1.500	-0.021 -1.500 1.500



Coll 1 M	0.959 0.250 1.100	0.967 0.250 1.100	0.971 0.250 1.100	0.973 0.250 1.100	0.974 0.250 1.100	0.975 0.250 1.100	0.973 0.250 1.100
Coll 1 P	-0.259 -1.500 1.500	-0.449 -1.500 1.500	-0.344 -1.500 1.500	-0.231 -1.500 1.500	-0.141 -1.500 1.500	-0.087 -1.500 1.500	-0.051 -1.500 1.500
Coll 2 M	0.984 0.250 1.100	0.984 0.250 1.100	0.984 0.250 1.100	0.984 0.250 1.100	0.983 0.250 1.100	0.983 0.250 1.100	0.983 0.250 1.100
Coll 2 P	0.059 -1.500 1.500	0.045 -1.500 1.500	0.075 -1.500 1.500	0.099 -1.500 1.500	0.116 -1.500 1.500	0.138 -1.500 1.500	0.157 -1.500 1.500
Coll 3 M	0.989 0.250 1.100	0.990 0.250 1.100	0.990 0.250 1.100	0.989 0.250 1.100	0.989 0.250 1.100	0.989 0.250 1.100	0.988 0.250 1.100
Coll 3 P	0.057 -1.500 1.500	0.075 -1.500 1.500	0.105 -1.500 1.500	0.157 -1.500 1.500	0.185 -1.500 1.500	0.228 -1.500 1.500	0.252 -1.500 1.500
Coll 4 M	0.995 0.250 1.100	0.995 0.250 1.100	0.996 0.250 1.100	0.996 0.250 1.100	0.997 0.250 1.100	0.997 0.250 1.100	0.998 0.250 1.100
Coll 4 P	0.685 -1.500 1.500	0.273 -1.500 1.500	0.238 -1.500 1.500	0.259 -1.500 1.500	0.251 -1.500 1.500	0.340 -1.500 1.500	0.367 -1.500 1.500
Coll 5 M	1.040 0.250 1.100	1.038 0.250 1.100	1.039 0.250 1.100	1.040 0.250 1.100	1.046 0.250 1.100	1.045 0.250 1.100	1.048 0.250 1.100
Coll 5 P	0.097 -1.500 1.500	0.099 -1.500 1.500	0.220 -1.500 1.500	0.288 -1.500 1.500	0.469 -1.500 1.500	0.559 -1.500 1.500	0.620 -1.500 1.500

PARMS TCID 0 TCID 1 Cal Temp (degF) T Factor

ID6 2.733 0.716 85.1 1.00

## HDIL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 1530XA 10120519 DATE/TIME PERFORMED: Tue Sep 3 03:41:47 2013 DAYS SINCE CAL: 59

UNIT #: 3880TA HL6670

ZERO DATA(mv)	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coll 0 R	0.004 -0.200 0.200	0.001 -0.100 0.100	-0.000 -0.100 0.100	0.001 -0.100 0.100	0.000 -0.100 0.100	0.000 -0.100 0.100	0.000 -0.100 0.100	-0.000 -0.100 0.100
Coll 0 Q	0.001 -0.500 0.500	-0.001 -0.200 0.200	0.000 -0.100 0.100	0.000 -0.100 0.100	0.000 -0.100 0.100	0.000 -0.100 0.100	-0.000 -0.100 0.100	-0.001 -0.100 0.100
Coll 1 R	0.017 -0.200 0.200	-0.000 -0.100 0.100	-0.002 -0.100 0.100	0.002 -0.100 0.100	-0.000 -0.100 0.100	-0.001 -0.100 0.100	0.000 -0.100 0.100	0.000 -0.100 0.100
Coll 1 Q	0.009 -0.500 0.500	-0.004 -0.200 0.200	0.001 -0.100 0.100	0.001 -0.100 0.100	-0.001 -0.100 0.100	0.001 -0.100 0.100	-0.001 -0.100 0.100	-0.001 -0.100 0.100
Coll 2 R	0.011 -0.200 0.200	0.001 -0.100 0.100	0.000 -0.100 0.100	0.000 -0.100 0.100	0.002 -0.100 0.100	-0.001 -0.100 0.100	-0.003 -0.100 0.100	-0.002 -0.100 0.100
Coll 2 Q	0.012 -0.500 0.500	0.001 -0.200 0.200	-0.000 -0.100 0.100	0.002 -0.100 0.100	-0.001 -0.100 0.100	0.001 -0.100 0.100	0.001 -0.100 0.100	-0.001 -0.100 0.100
Coll 3 R	0.050 -0.500 0.500	-0.003 -0.100 0.100	-0.005 -0.100 0.100	0.001 -0.100 0.100	-0.002 -0.100 0.100	0.001 -0.100 0.100	-0.002 -0.100 0.100	-0.000 -0.100 0.100
Coll 3 Q	0.035 -0.500 0.500	-0.011 -0.200 0.200	0.003 -0.100 0.100	0.004 -0.100 0.100	-0.003 -0.100 0.100	0.001 -0.100 0.100	-0.004 -0.100 0.100	-0.001 -0.100 0.100
Coll 4 R	0.139 -0.500 0.500	-0.001 -0.200 0.200	-0.014 -0.200 0.200	0.005 -0.200 0.200	0.000 -0.200 0.200	0.004 -0.200 0.200	-0.000 -0.200 0.200	-0.001 -0.200 0.200
Coll 4 Q	0.061 -1.000 1.000	-0.032 -0.400 0.400	0.014 -0.200 0.200	-0.002 -0.200 0.200	-0.002 -0.200 0.200	-0.000 -0.200 0.200	-0.005 -0.200 0.200	-0.001 -0.200 0.200
Coll 5 R	0.295 -1.200 1.200	0.011 -0.400 0.400	-0.035 -0.400 0.400	0.025 -0.400 0.400	0.004 -0.400 0.400	-0.003 -0.400 0.400	0.016 -0.400 0.400	-0.003 -0.400 0.400
Coll 5 Q	0.184 -1.500 1.500	-0.063 -0.800 0.800	0.019 -0.400 0.400	-0.010 -0.400 0.400	-0.002 -0.400 0.400	0.009 -0.400 0.400	-0.007 -0.400 0.400	-0.007 -0.400 0.400

ELEC. GAINS	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coll 0 M	163.09 135.00 185.00	161.63 131.00 181.00	158.70 131.00 181.00	154.35 125.00 175.00	148.68 122.00 170.00	141.69 115.00 181.00	133.47 112.00 150.00	124.13 105.00 135.00
Coll 0 P	7.753 -1.000 12.000	25.444 15.000 35.000	42.703 35.000 50.000	59.919 45.000 71.000	77.127 55.000 91.000	94.348 77.000 110.000	111.589 82.000 130.000	128.819 105.000 151.000
Coll 1 M	282.38 229.00 329.00	279.81 225.00 325.00	274.63 220.00 320.00	266.94 225.00 312.00	256.78 215.00 302.00	244.21 205.00 285.00	229.58 185.00 265.00	212.82 164.00 244.00
Coll 1 P	7.807 -1.000 12.000	25.650 15.000 35.000	43.063 35.000 51.000	60.436 45.000 71.000	77.789 55.000 92.000	95.167 77.000 112.000	112.524 82.000 132.000	129.819 105.000 155.000
Coll 2 M	560.50 475.00 655.00	555.30 471.00 651.00	544.89 455.00 615.00	529.47 450.00 625.00	509.35 435.00 605.00	484.83 412.00 592.00	456.07 380.00 540.00	423.29 355.00 490.00
Coll 2 P	7.726 -1.000 12.000	25.406 15.000 31.000	42.643 35.000 51.000	59.822 45.000 71.000	76.979 55.000 92.000	94.139 77.000 111.000	111.296 82.000 135.000	128.437 105.000 155.000
Coll 3 M	918.39 772.00 1050.00	909.34 761.00 1050.00	891.17 752.00 1030.00	864.32 725.00 1010.00	829.37 700.00 970.00	786.86 655.00 925.00	737.76 625.00 850.00	682.33 565.00 795.00
Coll 3 P	8.017 -2.000 13.000	26.209 15.000 31.000	43.965 35.000 52.000	61.651 45.000 72.000	79.287 55.000 95.000	96.902 77.000 111.000	114.449 82.000 135.000	131.928 105.000 155.000
Coll 4 M	1420.6 1210.0 1700.0	1408.6 1205.0 1650.0	1383.9 1180.0 1650.0	1347.0 1140.0 1550.0	1298.4 1120.0 1520.0	1237.8 1070.0 1450.0	1166.4 1000.0 1350.0	1084.5 940.0 1210.0
Coll 4 P	7.789 -2.000 13.000	25.611 15.000 31.000	43.013 35.000 52.000	60.381 45.000 73.000	77.761 55.000 95.000	95.183 75.000 111.000	112.622 82.000 135.000	130.046 105.000 155.000
Coll 5 M	2954.1 2450.0 3450.0	2930.2 2420.0 3400.0	2878.9 2410.0 3350.0	2801.8 2350.0 3300.0	2699.6 2250.0 3000.0	2573.5 2150.0 2950.0	2424.9 2050.0 2750.0	2253.9 1870.0 2570.0
Coll 5 P	7.865 -2.000 13.000	25.820 15.000 31.000	43.367 35.000 52.000	60.875 45.000 73.000	78.395 55.000 91.000	95.947 75.000 111.000	113.505 85.000 135.000	131.036 105.000 155.000

## HDIL AFTER LOG VERIFICATION SUMMARY

TOOL #: 1530XA 10120519 DATE/TIME PERFORMED: Tue Sep 3 07:34:08 2013 DAYS SINCE CAL: 59

UNIT #: 3880TA HL 6670

ZERO DATA(mv)		10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coll 0 R	0.005	-0.000	-0.001	0.001	0.001	-0.001	0.000	0.001	
	-0.078	0.084	-0.058	0.081	-0.050	0.050	-0.050	0.050	-0.050
Coll 0 Q	0.001	-0.001	-0.000	0.001	-0.001	0.000	0.001	-0.001	
	-0.050	0.041	-0.121	0.118	-0.050	0.050	-0.050	0.050	-0.051
Coll 1 R	0.022	0.001	-0.002	0.002	-0.002	-0.000	0.001	-0.000	
	-0.053	0.059	-0.050	0.050	-0.050	0.050	-0.051	0.050	-0.050
Coll 1 Q	0.009	-0.003	0.002	0.001	-0.002	0.000	-0.000	-0.000	
	-0.361	0.108	-0.104	0.088	-0.088	0.091	-0.091	0.088	-0.091
Coll 2 R	0.015	-0.000	0.001	-0.003	-0.001	-0.001	-0.001	-0.001	
	-0.058	0.081	-0.058	0.051	-0.050	0.050	-0.051	0.050	-0.050
Coll 2 Q	0.011	-0.001	-0.002	0.000	0.000	0.001	0.000	-0.001	
	-0.338	0.352	-0.058	0.101	-0.050	0.050	-0.051	0.051	-0.051
Coll 3 R	0.054	-0.001	-0.002	0.003	-0.005	-0.005	-0.002	-0.000	
	0.010	0.000	-0.043	0.039	-0.042	0.038	-0.038	0.041	-0.040
Coll 3 Q	0.040	-0.013	0.006	0.000	0.000	0.002	-0.000	-0.001	
	-0.188	0.258	-0.081	0.080	-0.059	0.044	-0.043	0.039	-0.041
Coll 4 R	0.155	0.002	-0.011	0.013	-0.005	0.007	0.009	-0.004	
	0.078	0.188	-0.081	0.050	-0.074	0.048	-0.058	0.088	-0.081
Coll 4 Q	0.066	-0.037	0.009	0.003	-0.005	0.006	-0.003	-0.000	
	-0.258	0.381	-0.152	0.088	-0.048	0.058	-0.080	0.080	-0.088
Coll 5 R	0.337	-0.004	-0.039	0.019	-0.003	-0.010	0.005	0.007	
	0.118	0.418	-0.108	0.131	-0.128	0.148	-0.118	0.119	-0.128
Coll 5 Q	0.183	-0.077	0.010	0.004	-0.019	0.017	0.012	-0.005	
	-0.418	0.784	-0.318	0.189	-0.101	0.158	-0.130	0.118	-0.129
ELEC. GAINS		10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coll 0 M	162.72	161.26	158.36	154.00	148.33	141.41	133.17	123.84	
	158.83	188.38	158.40	184.88	158.55	181.87	151.88	159.44	148.70
Coll 0 P	7.623	25.427	42.729	59.986	77.229	94.485	111.755	129.017	
	4.755	10.755	22.444	28.444	38.703	45.703	58.818	62.818	74.127
Coll 1 M	282.43	279.86	274.72	267.02	256.88	244.38	229.66	212.96	
	278.73	288.03	274.21	288.40	268.14	280.13	281.80	272.27	281.81
Coll 1 P	7.687	25.628	43.079	60.481	77.872	95.281	112.656	130.012	
	4.807	10.807	22.880	28.880	40.083	48.083	57.438	65.438	74.788
Coll 2 M	559.70	554.50	544.17	528.75	508.79	484.30	455.37	422.79	
	548.28	571.71	544.18	588.40	554.00	540.08	488.18	518.53	478.13
Coll 2 P	7.576	25.375	42.646	59.863	77.039	94.254	111.429	128.618	
	4.788	10.788	22.408	28.408	38.843	45.843	58.882	62.882	73.878
Coll 3 M	917.52	908.50	890.42	863.58	828.78	786.45	737.25	681.90	
	900.03	928.78	881.15	927.53	873.38	908.88	847.04	881.81	812.78
Coll 3 P	7.897	26.186	43.970	61.683	79.345	96.996	114.565	132.101	
	5.017	11.017	23.288	28.288	40.888	48.888	58.881	64.881	78.287
Coll 4 M	1421.9	1409.9	1385.3	1348.6	1299.6	1239.4	1167.8	1085.5	
	1382.2	1448.0	1388.4	1488.8	1388.3	1448.8	1388.1	1488.4	1292.5
Coll 4 P	7.678	25.593	43.027	60.430	77.838	95.287	112.770	130.216	
	4.788	10.788	22.811	28.811	40.013	48.013	57.381	65.381	74.781
Coll 5 M	2950.1	2926.4	2875.3	2798.4	2696.9	2570.8	2421.2	2250.2	
	2888.1	3013.2	2871.8	3088.8	2881.3	3088.8	2745.8	2958.8	2745.8
Coll 5 P	7.761	25.797	43.379	60.916	78.467	96.055	113.614	131.194	
	4.888	10.888	22.880	28.880	40.387	48.387	57.878	65.878	75.388

## INSTRUMENT CONFIGURATION

Source File: /mnt1/625574/n970\_FOCUS\_MINI.tif

52.34"

### FOCUS CABLEHEAD

Diameter : 3.13"  
Length : 3.17"  
Weight : 15.7 lbs  
Series : CABL318  
Mnemonic : CBLH

### FOCUS SWIVEL

Diameter : 3.13"  
Length : 4.58"  
Weight : 50.1 lbs  
Series : 3850XA  
Mnemonic : SWVL

### FOCUS TEN/TEMP/MUD RES/ACCEL

Diameter : 3.13"  
Length : 4.31"  
Weight : 61.3 lbs  
Series : 3880XA  
Mnemonic : TTMA

### FOCUS TELEMETRY (POWER SECTION)

Diameter : 3.13"  
Length : 3.71"

Weight : 48 lbs  
Series : 351BFB  
Mnemonic : TMCB

#### FOCUS EB/EC TELEMETRY GAMMA RAY

Diameter : 3.13"  
Length : 5.81'  
Weight : 63 lbs  
Series : 351BEC  
Mnemonic : CR  
Measure Point: 4.24': CR MP

#### FOCUS COMPENSATED NEUTRON

Diameter : 3.13"  
Length : 4.81'  
Weight : 65 lbs  
Series : 3336XA  
Mnemonic : CN  
Measure Point: 1.92': LSN MP  
Measure Point: 1.46': SSN MP

#### FOCUS Z-DENSILOC

Diameter : 3.75"  
Length : 9.58'  
Weight : 300 lbs  
Series : 3333XA  
Mnemonic : ZDL  
Measure Point: 4.33': CR1 MP  
Measure Point: 1.69': LSD / CR2 MP  
Measure Point: 1.39': SSD MP

#### FOCUS KNUCKLE JOINT

Diameter : 3.13"  
Length : 1.50'  
Weight : 30 lbs  
Series : 3930XA

#### FOCUS KNUCKLE JOINT

Diameter : 3.13"  
Length : 1.50'  
Weight : 30 lbs  
Series : 3930XA

#### FOCUS HIGH DEFINITION INDUCTION TOOL

Diameter : 3.13"  
Length : 13.33'  
Weight : 115 lbs  
Series : 1530XA  
Mnemonic : HDIL  
Measure Point: 7.17': COIL 5 MP  
Measure Point: 5.67': COIL 4 MP  
Measure Point: 4.17': COIL 3 MP  
Measure Point: 3.67': COIL 2 MP  
Measure Point: 3.17': COIL 1 MP  
Measure Point: 2.67': COIL 0 MP  
Measure Point: 1.14': SP MP

#### FOCUS PINEAPPLE / CABBAGE

##### HOLE FINDER

Diameter : 2.63"  
Length : 1.50'  
Weight : 7 lbs  
Series : HENDIR

TOTAL LENGTH: 53.34'  
TOTAL WEIGHT: 0.205 lbs  
MAX DIAMETER: 0.613"

CR MP : 36.97'

LSN MP : 29.83'

SSN MP : 29.38'

CR1 MP : 22.67'

LSD / CR2 MP : 20.03'

SSD MP : 19.63'

COIL 5 MP : 9.17'

COIL 4 MP : 7.67'

COIL 3 MP : 6.17'


COIL 2 MP : 5.67'

COIL 1 MP : 5.17'

COIL 0 MP : 4.67'

SP MP : 3.14'

0.00'

	COMPANY	WPX ENERGY		FILE NO:	
	WELL	FEDERAL RU 322-5			US625574
	FIELD	RULISON		API NO:	
	COUNTY	GARFIELD	STATE	CO	05045217670000
LOCATION:		ELEVATIONS:		S5 T7S R93W	
SHL: 257' FNL; 2614' FWL		KB 7628 FT		RU23-5	
BHL: 1213' FNL; 1941' FWL		DF		NABORS 576	
SEC 5 TWP 7S RGE 93W		GL 7601.6 FT			
		DATE		03-Sep-2013	

