



FILE NO: 625564
API NO: 05103119500000
COMPANY: WPX ENERGY INC
WELL: FEDERAL BCU 532-36-199
FIELD: BARCUS CREEK UNIT
COUNTY: RIO BLANCO
STATE: CO

Ver. 3.87
S36 T1N R99W
PAD FED BCU 442-36-199
CYCLONE 29
LOCATION: SHL: 1426' FNL 1102' FEL
BHL: 1468' FNL 1986' FEL
SEC 36 TWP 1N RGE 99W
OTHER SERVICES:

PERMANENT DATUM: GL ELEVATION 6868 FT
LOG MEASURED FROM: KB 21 FT ABOVE P.D.
DRILL MEAS. FROM: KB
ELEVATIONS: KB 6889 FT, DF 6889 FT, GL 6868 FT

DATE	23-Jul-2013
RUN	1
TRIP	1
SERVICE ORDER	625564
DEPTH DRILLER	10183 FT
DEPTH LOGGER	10180 FT
BOTTOM LOGGED INTERVAL	10176 FT
TOP LOGGED INTERVAL	0 FT
CASING DRILLER	9.625 IN @ 3175 FT
CASING LOGGER	3156 FT
BIT SIZE	8.75 IN
TYPE OF FLUID IN HOLE	LSND
DENSITY	9.4 LB/G
VISCOSITY	75 CP
PH	10
FLUID LOSS	4.8 CC
SOURCE OF SAMPLE	FLOWLINE
RM AT MEAS. TEMP.	72 CHMM @ 98 DEGF
RMF AT MEAS. TEMP.	54 CHMM @ 93 DEGF
RMC AT MEAS. TEMP.	90 CHMM @ 93 DEGF
SOURCE OF RMF	CALCULATED
RMC	CALCULATED
RM AT BHT	56 CHMM @ 209 DEGF
TIME SINCE CIRCULATION	8 HR
MAX. RECORDED TEMP.	210 DEGF
EQUIP. NO.	6670
LOCATION	GRAND JCT
RECORDED BY	D. SMITH
WITNESSED BY	L. HUBBARD

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	3155 FT	10183 FT

CASING RECORD				
SIZE	WEIGHT	GRADE	FROM	TO
9.625 IN	36 LB/F		0 FT	3155 FT

REMARKS

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

BVOL/CVOL CALCULATED IN CUBIC FEET
BVOL/CVOL CALCULATED USING PROPOSED 4.5 INCH CASING
CALIPER VERIFIED INSIDE CASING

REPEAT SECTION RECORDED FROM 200 FT BELOW SURFACE CASING

CN MATRIX = SANDSTONE

RHO MATRIX = 2.68 GM/CC
RHO FLUID = 1.00

MUD CONTAINED 12% LCM

MOD CONTAINED 1211 EDM

HDIL RAN AT 1.5 INCH STANDOFF

THANK YOU FOR CHOOSING BAKER HUGHES WIRELINE SERVICES
CREW: SMITH/OLSON/HOLLAR
RIG: CYCLONE 29

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	TTRM	3980	10142233	FREE
1	1	TELE/GR	3518EB	10411092	FREE
1	1	CN	2436XA	10124366	DECENTRALIZED
1	1	ZDL	2223XA	10090664	PAD DEVICE
1	1	HDIL	1530	10120519	OFFSET

MAIN LOG 2"/100FT SCALE

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

Plotted: Wed Jul 24 19:48:05 2013

PARAMETER AND FILTER SUMMARY REPORT

File: /dat1a/625564/n970a02.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 4311.500 ft BOTTOM DEPTH: 10178.178 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)		"	"
SP-SPDH	FILTER ()	heavy (3)		"	"

BOREHOLE & 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	98.0	degF	"	"
	MUD SAMPLE RES	0.720	ohm.m	"	"
BH MUD RESISTIVITY SOURCE	RMUD SOURCE (HDIL)	TOOL MEASURED		"	"
BOREHOLE TEMP from GRADIENT	Known BH REF TEMP	77.0	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	"	"
TOOL POSITION	ECCENTERED		"	"
Rmud MULTIPLIER	1.000		"	"

CURVE DESCRIPTION REPORT

CURVE NAME	CREATION DATE	CURVE DESCRIPTION
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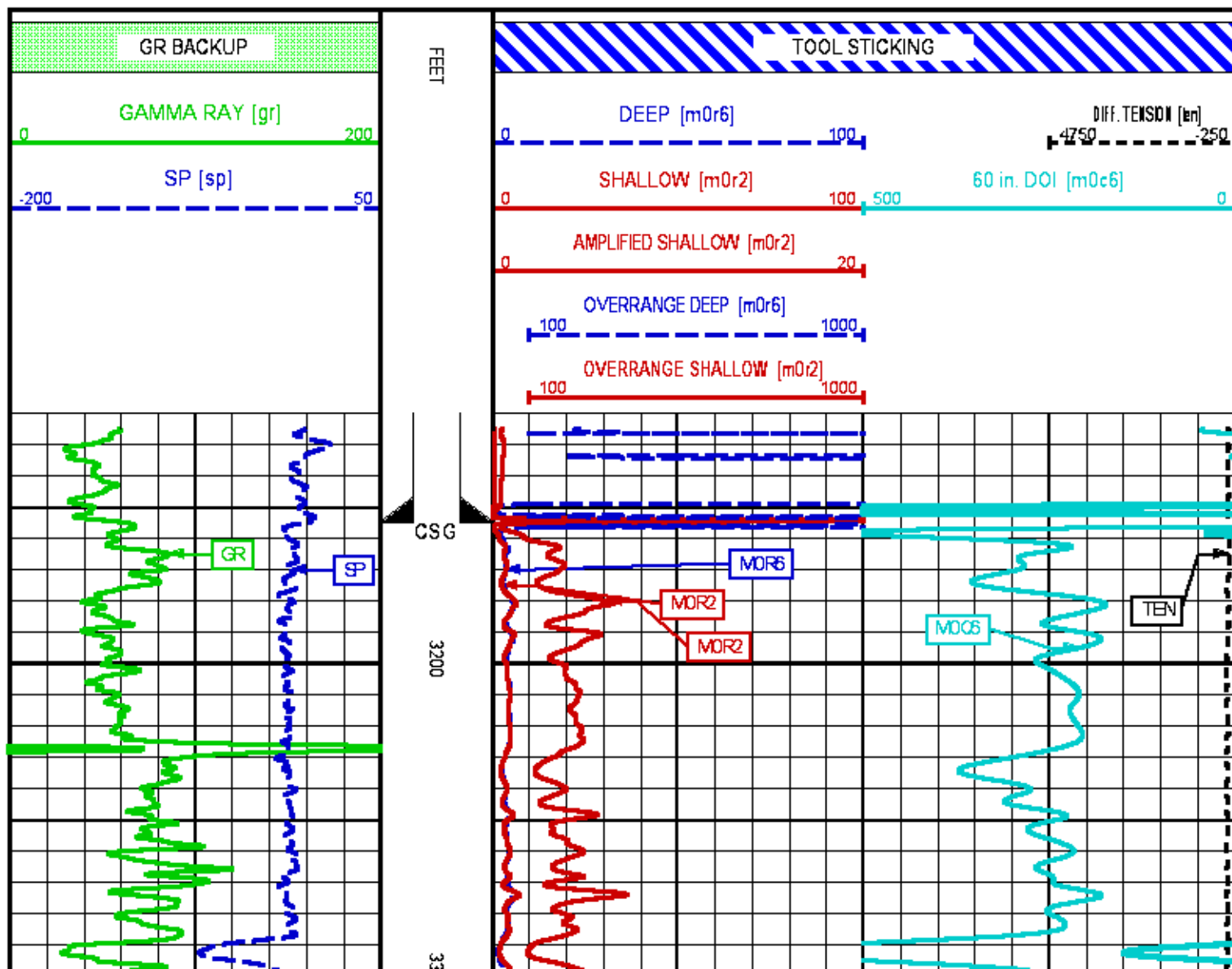
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F1:MOC6	Jul 23 23:06:50 2013	FOCUSED CONDUCTIVITY, 60-INCH DOI
F1:MOR2	Jul 23 23:06:50 2013	TRUE FOCUSED RESISTIVITY FOR HDIL, 20-INCH DOI
F1:MOR6	Jul 23 23:06:50 2013	TRUE FOCUSED RESISTIVITY FOR HDIL, 60-INCH DOI
F1:SP	Jul 23 23:06:50 2013	SPONTANEOUS POTENTIAL
F1:TEN	Jul 23 23:06:50 2013	DIFFERENTIAL TENSION

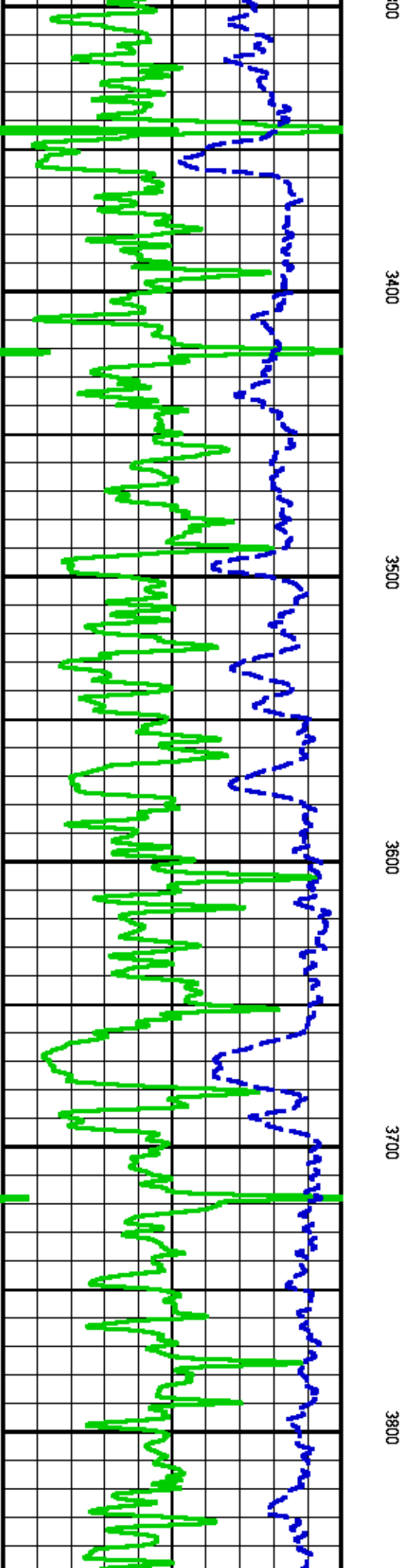
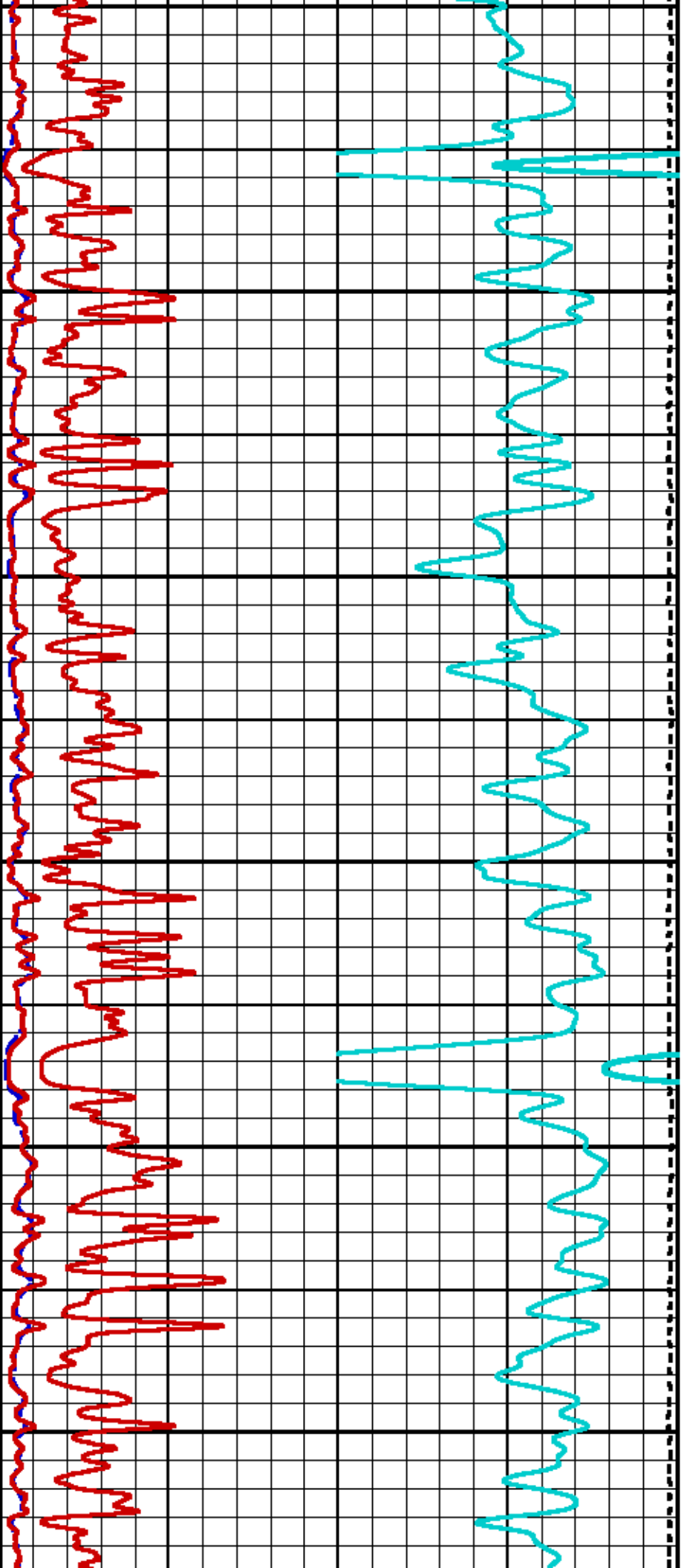
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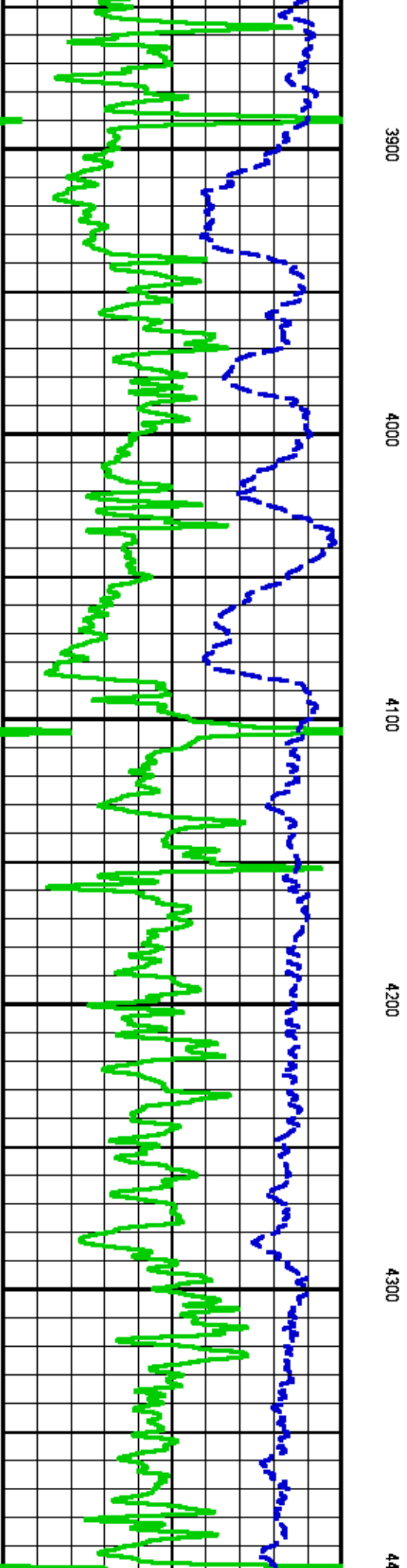
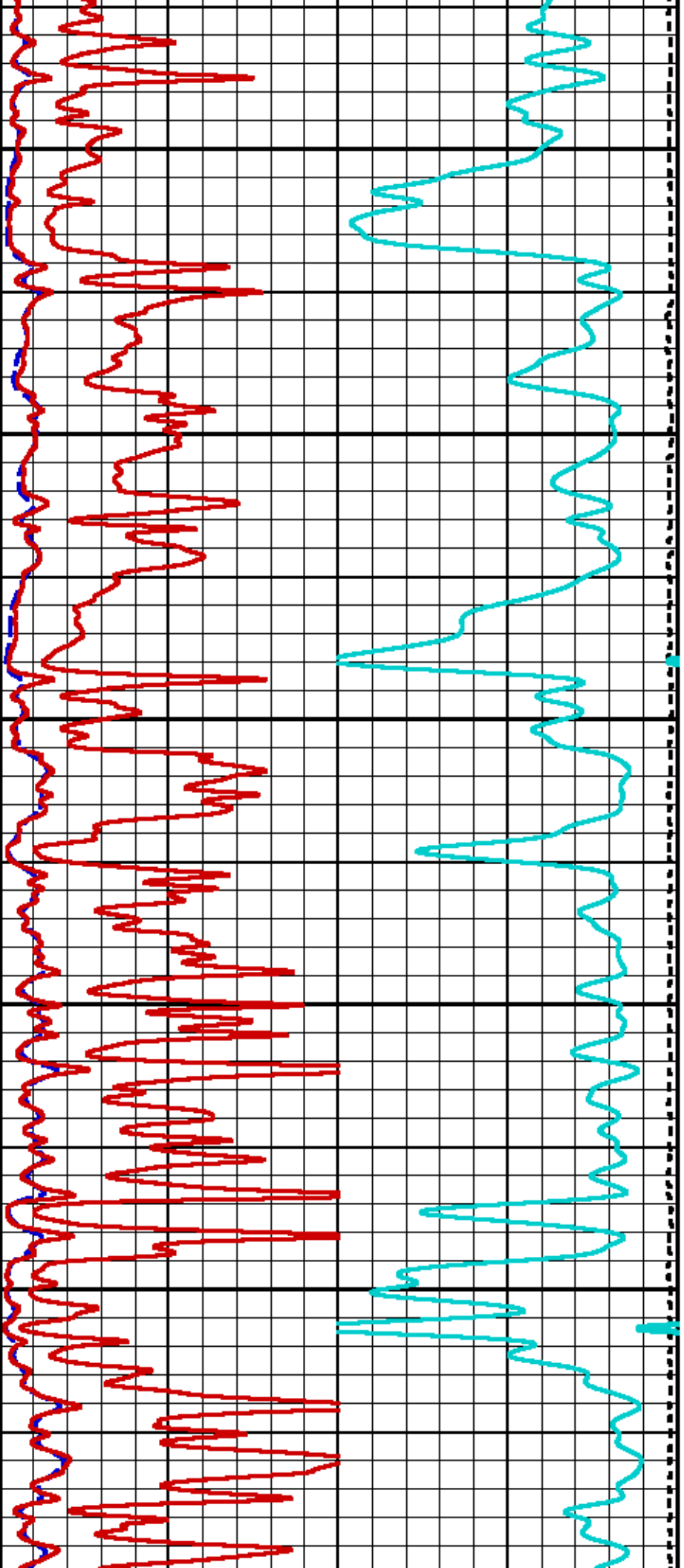
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
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MOC6	2.75	MOR6	2.75	TEN	0.00		

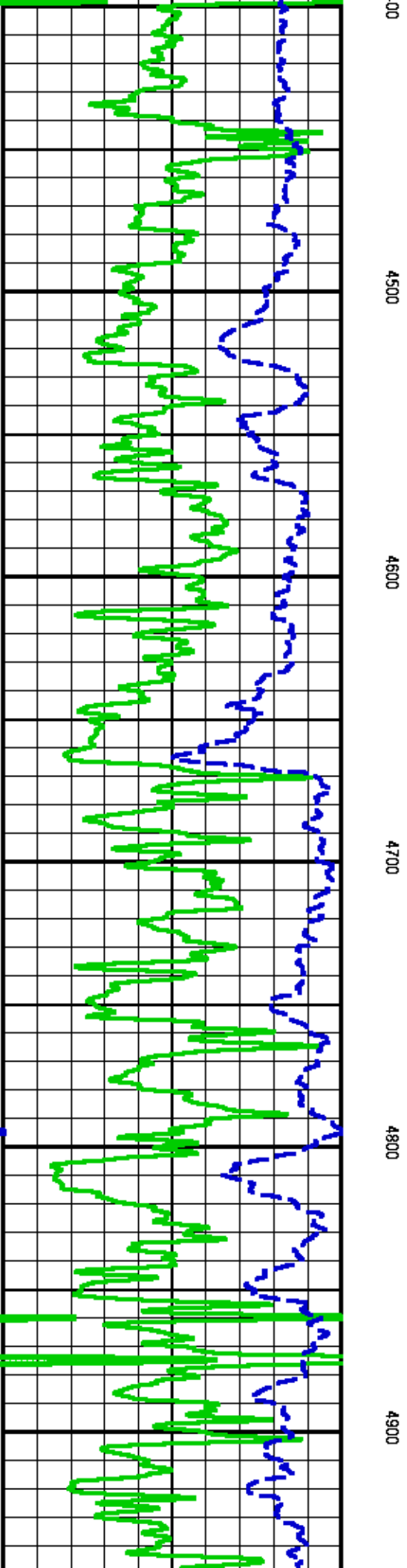
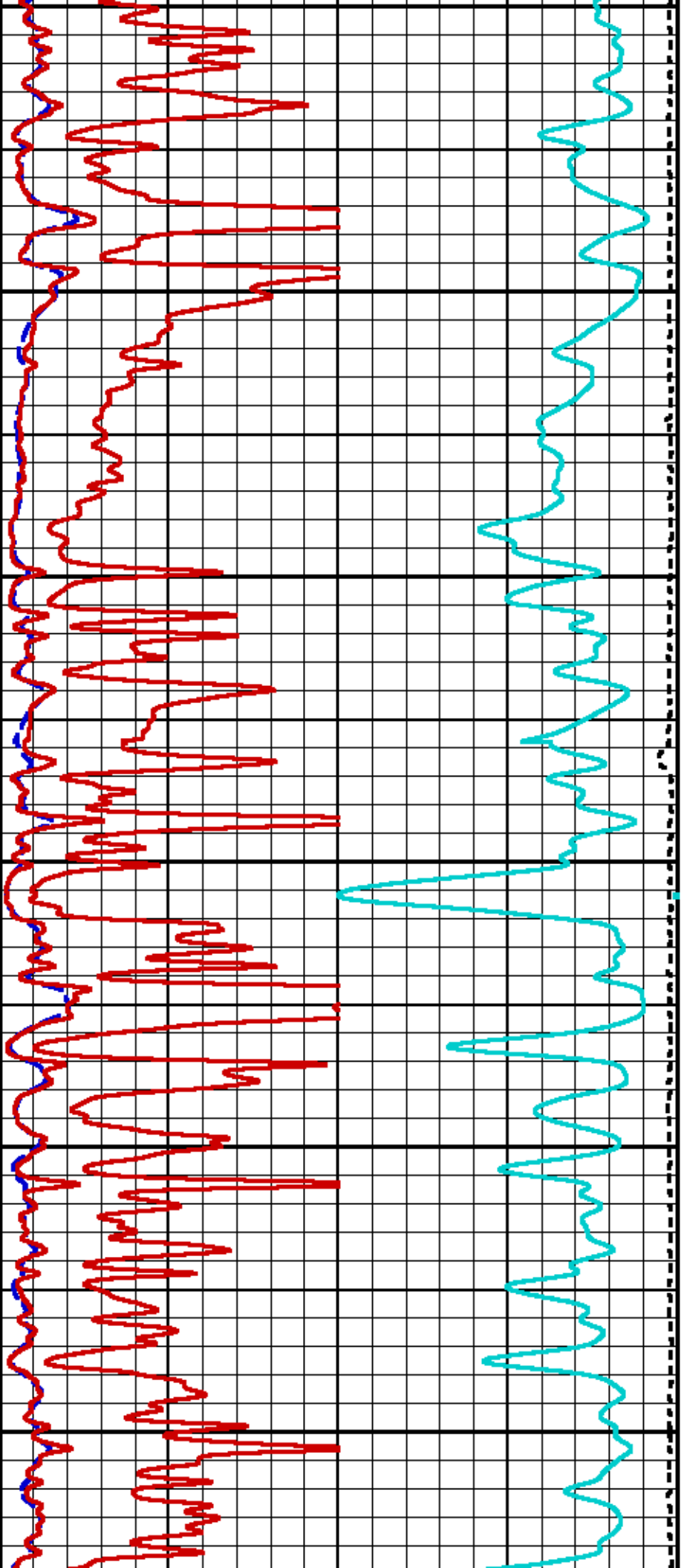
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Plot Interval : 3125 - 10201.8 Feet

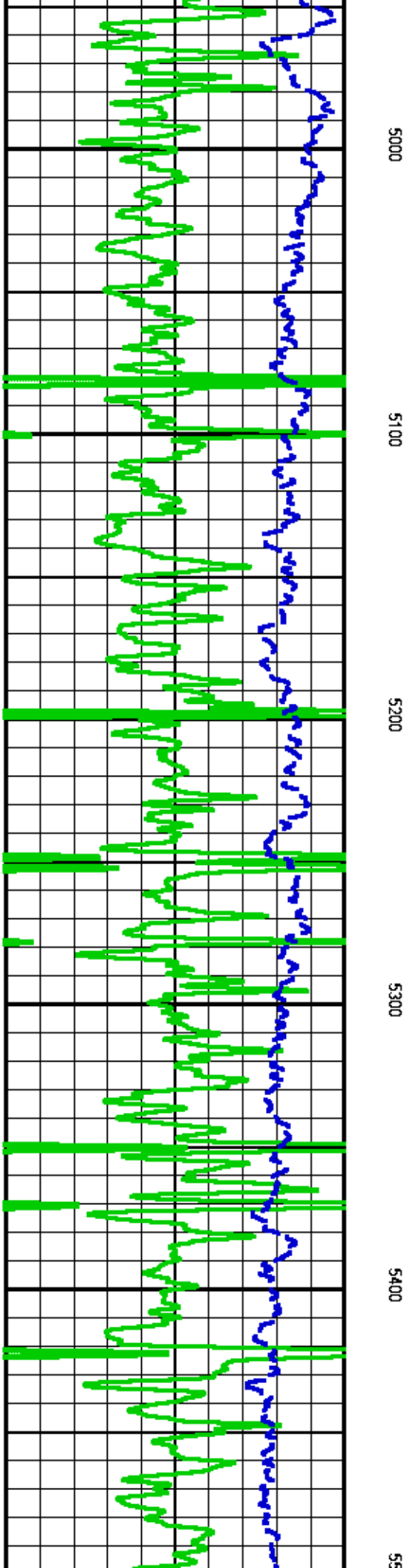
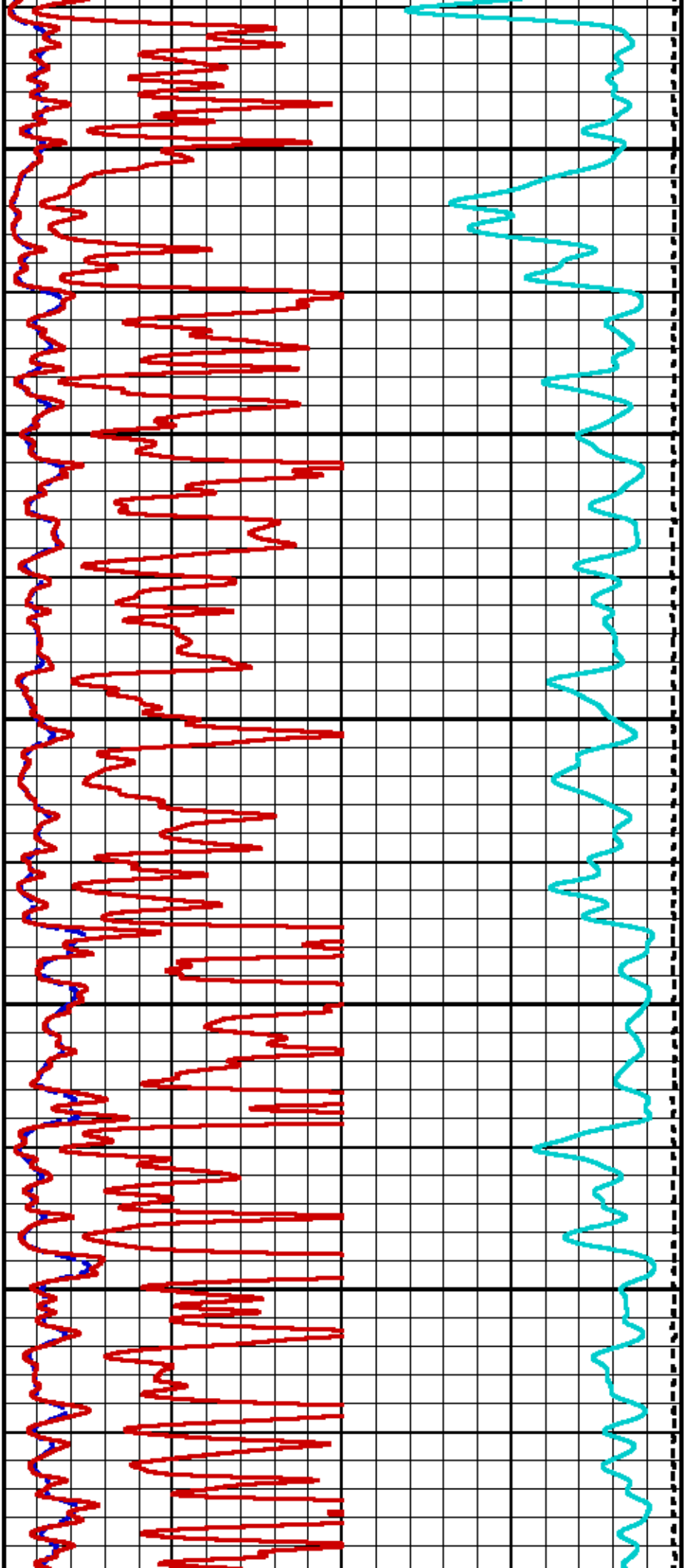
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Created On : Jul 23 23:06:50 2013
Company : WPX ENERGY
Well : FEDERAL BCU 532-36-199
Field : BARCUS CREEK UNIT
File Interval : 40 - 10201.8 Feet
OCT : n970a

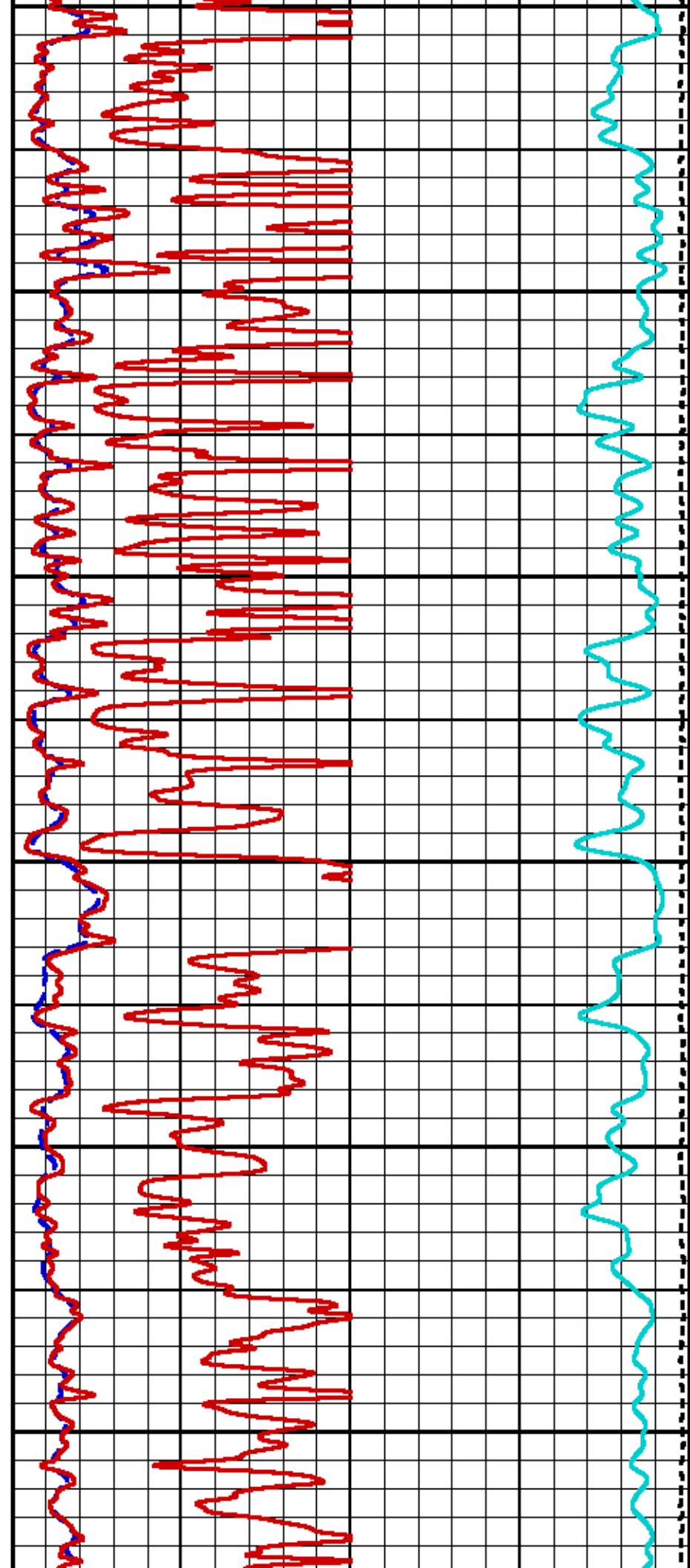
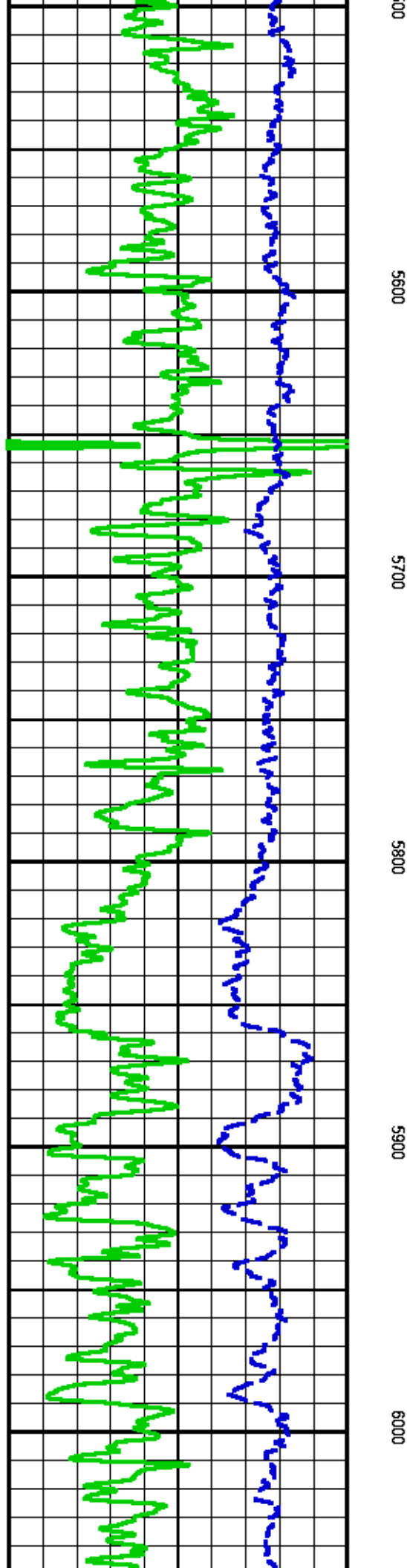


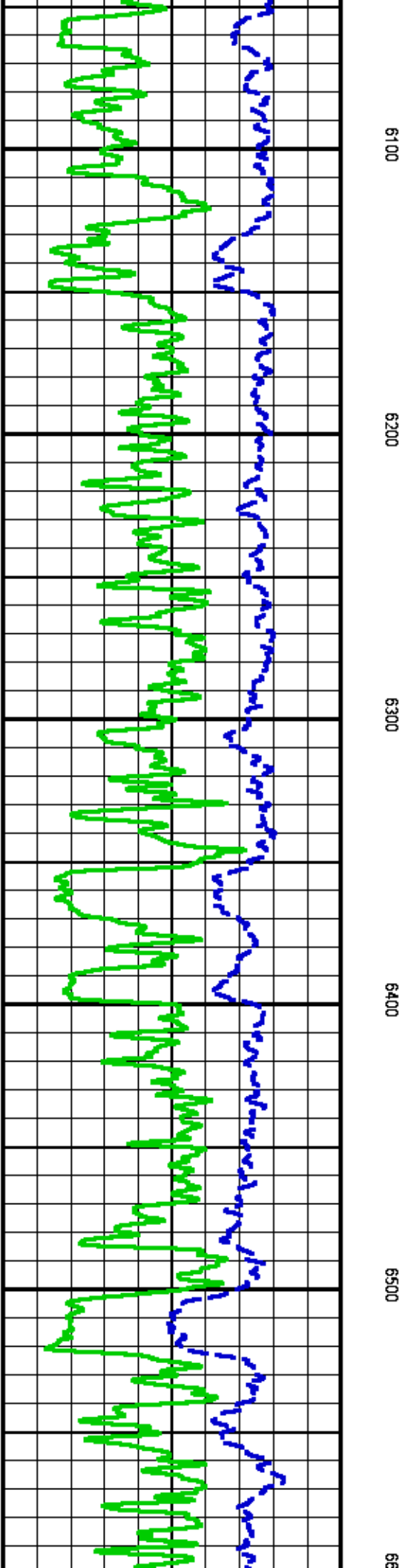
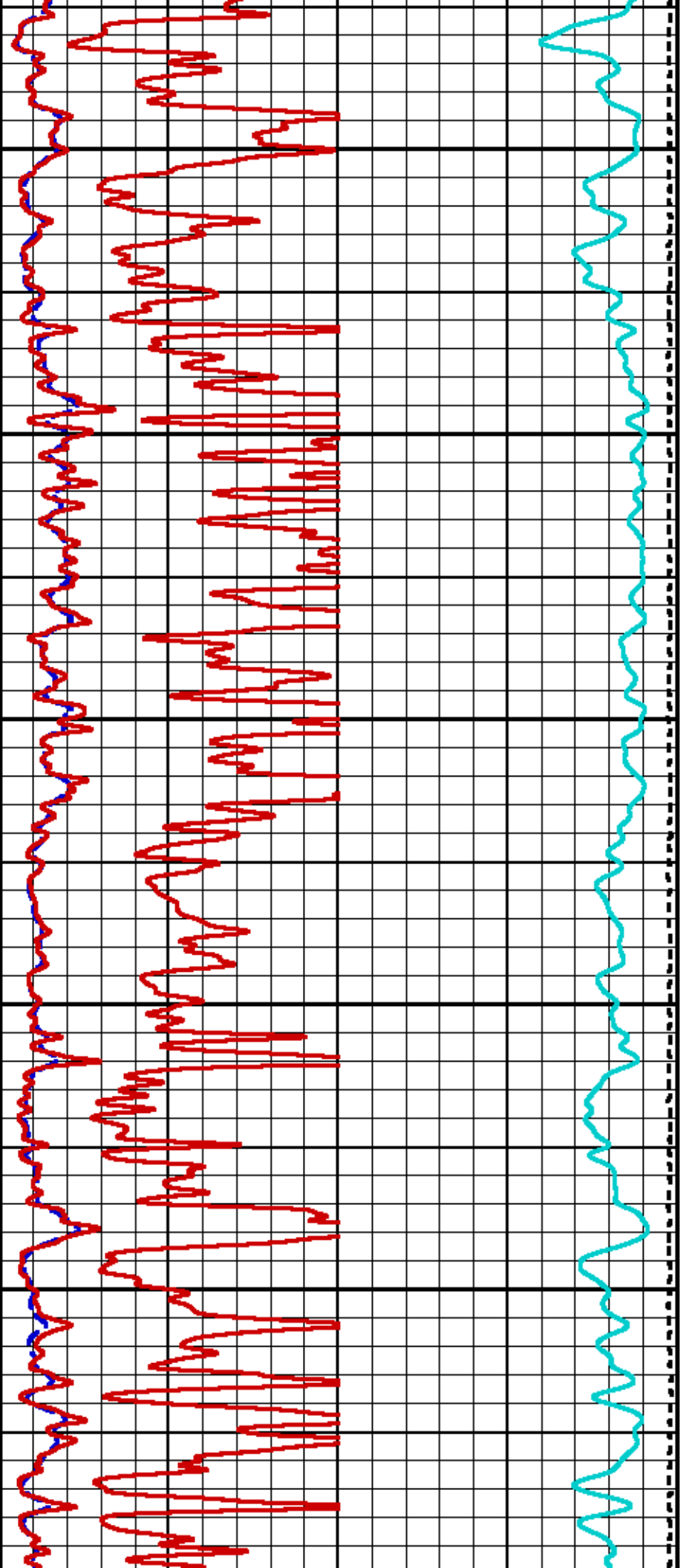


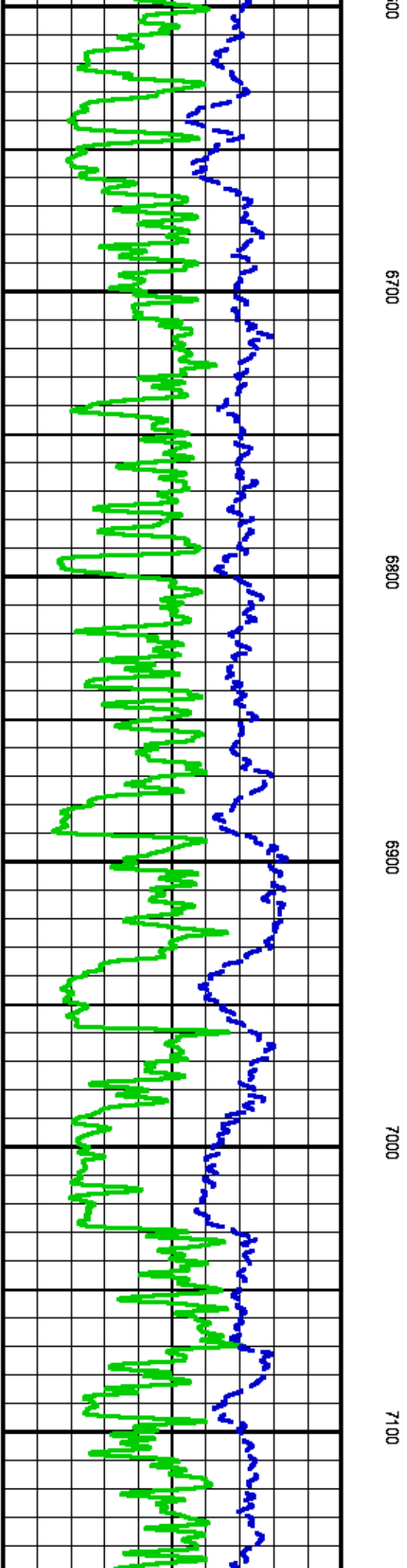
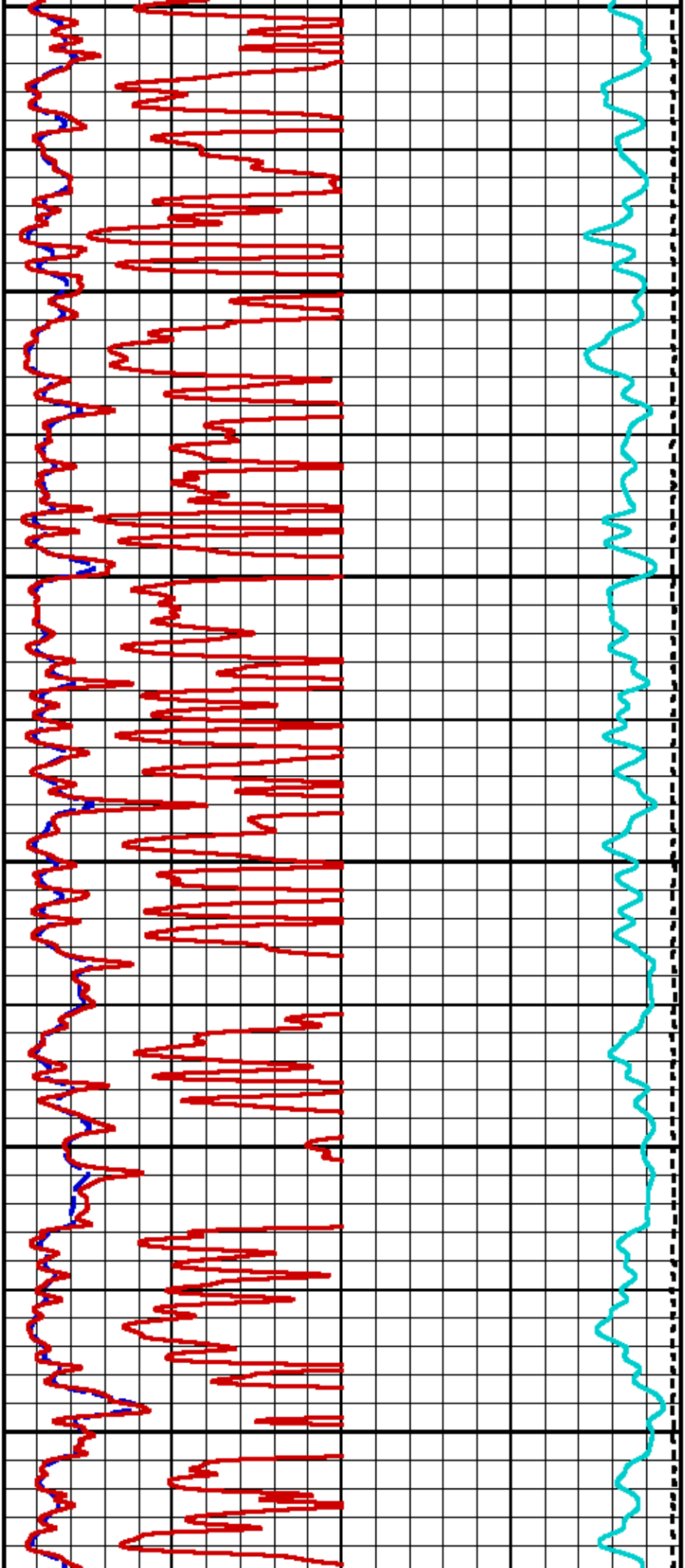


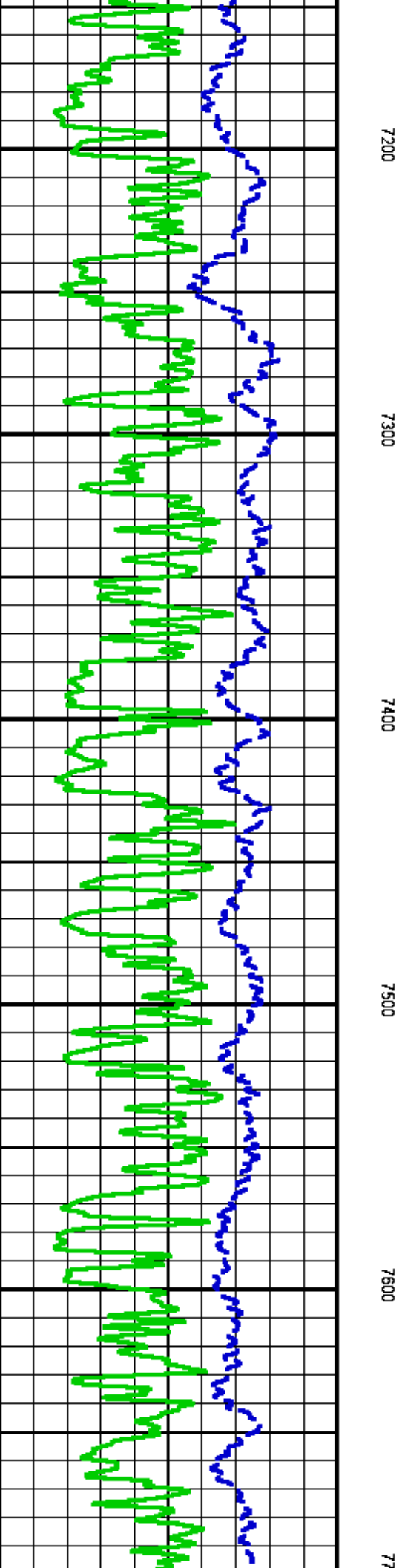
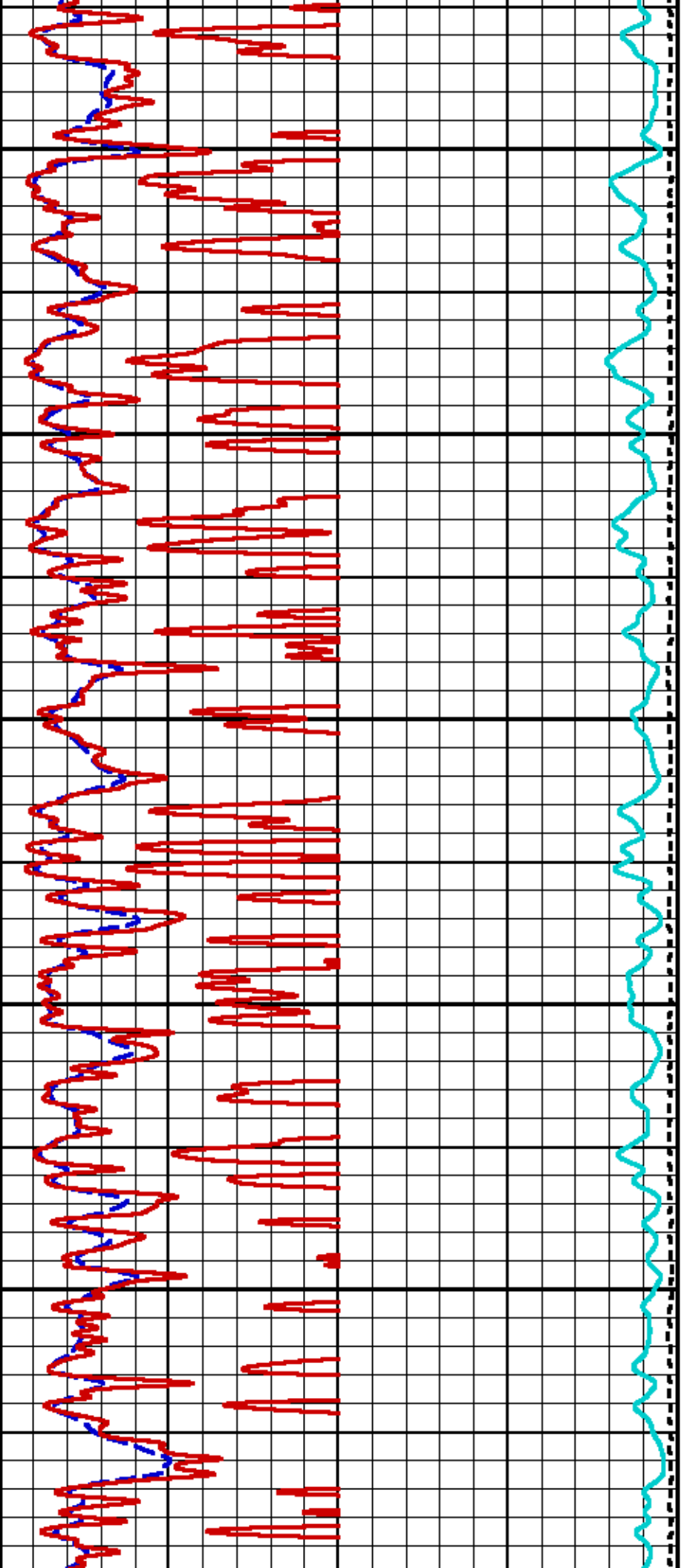


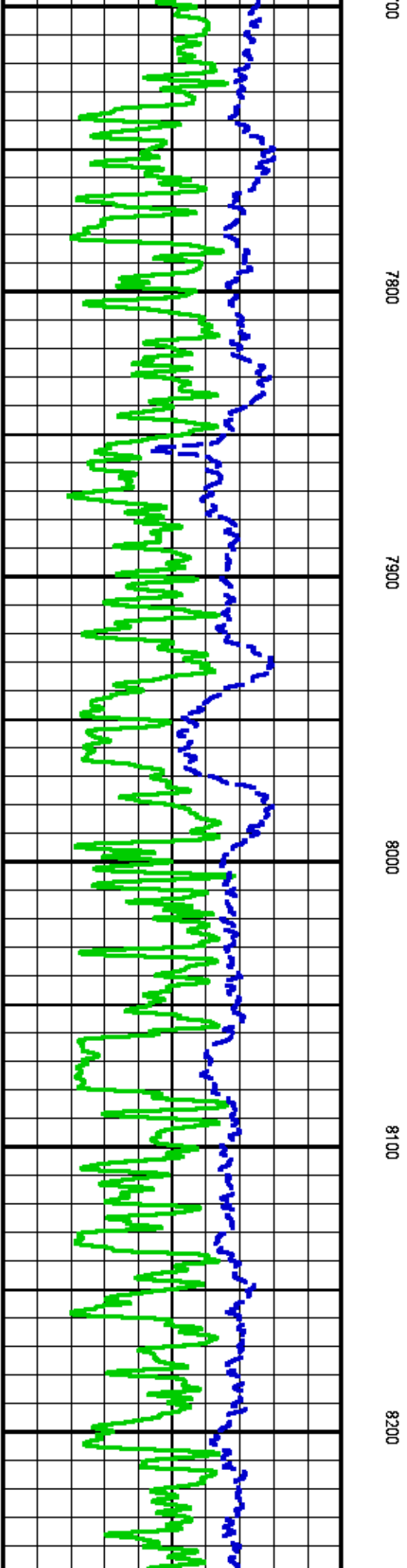
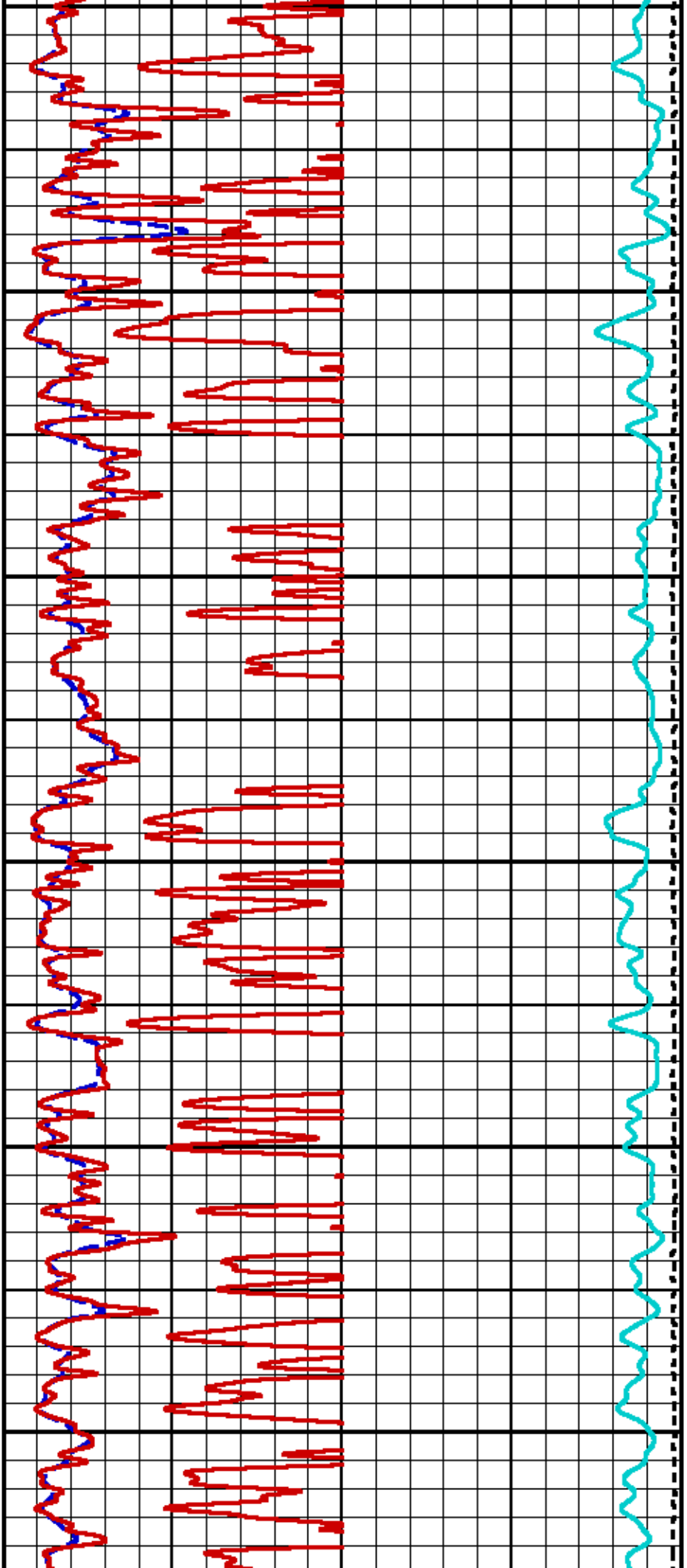


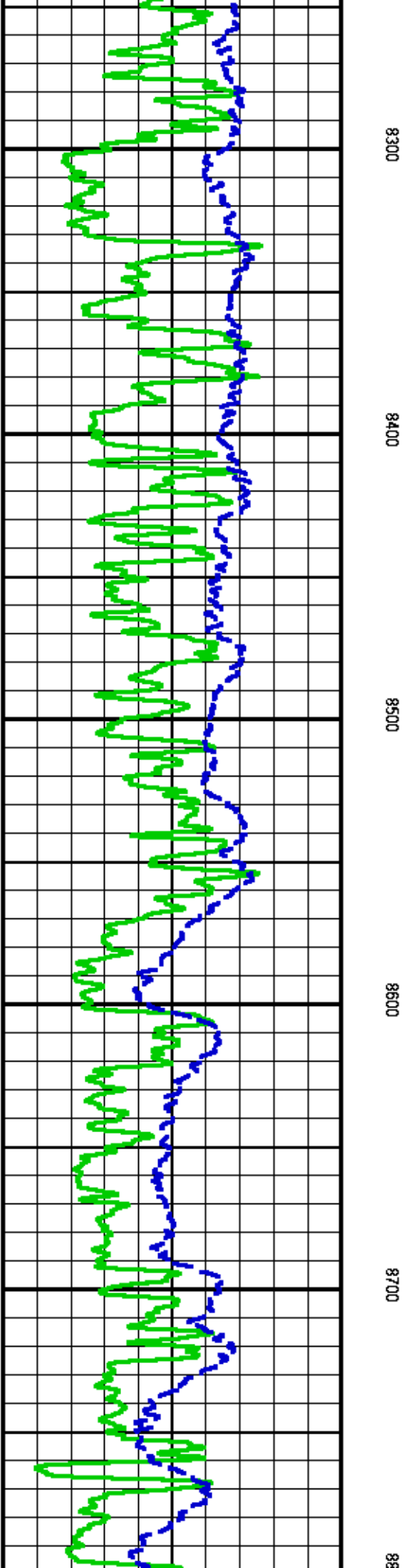
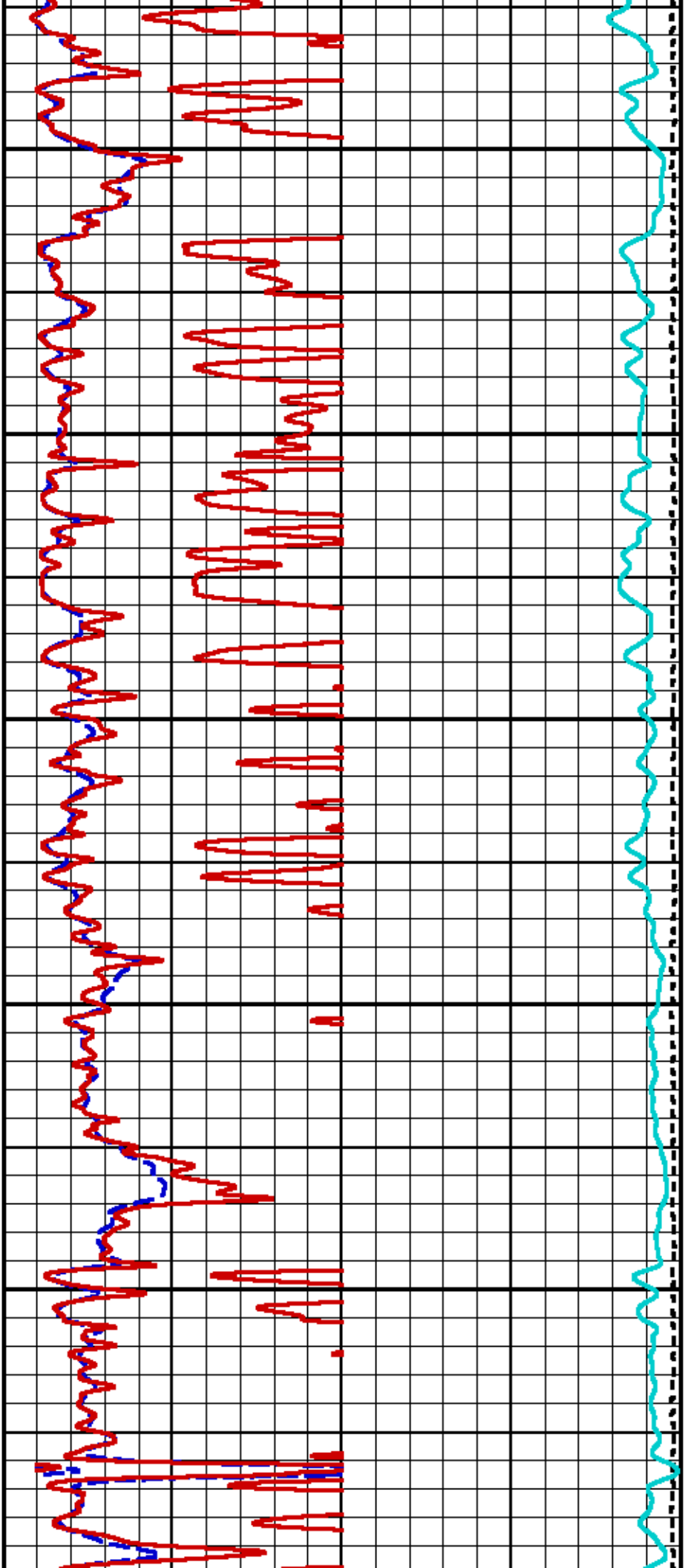


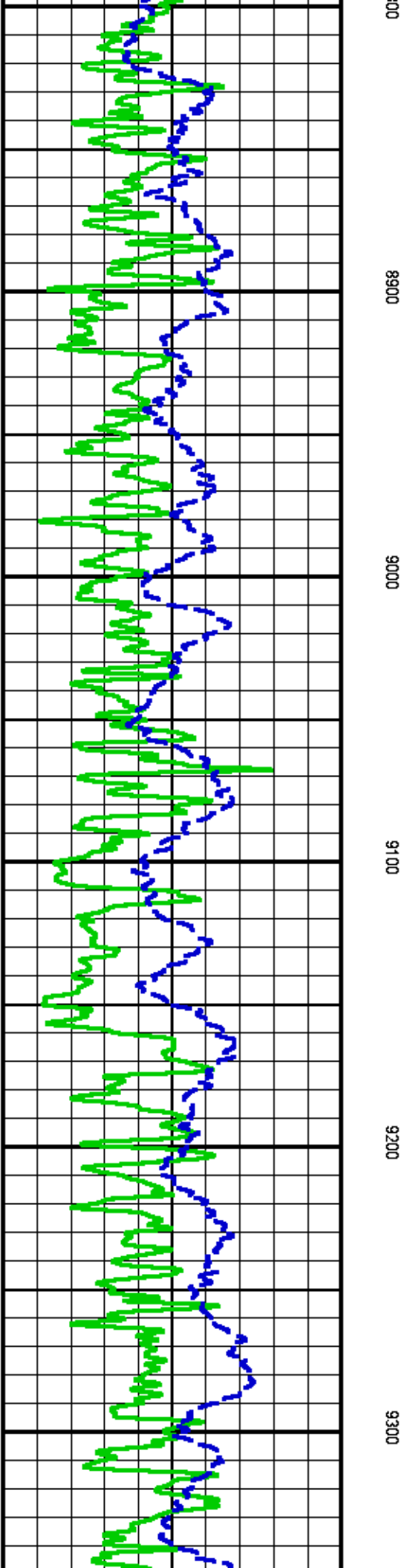
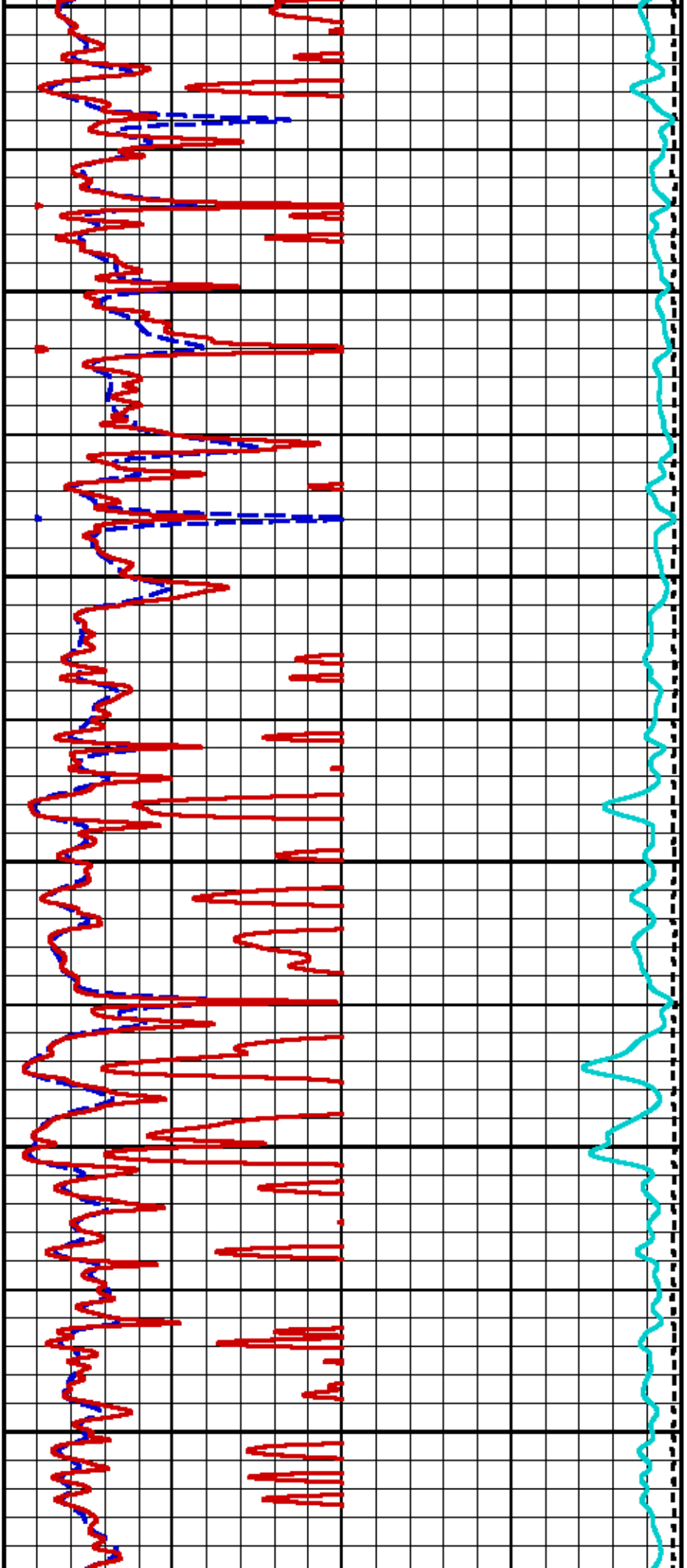


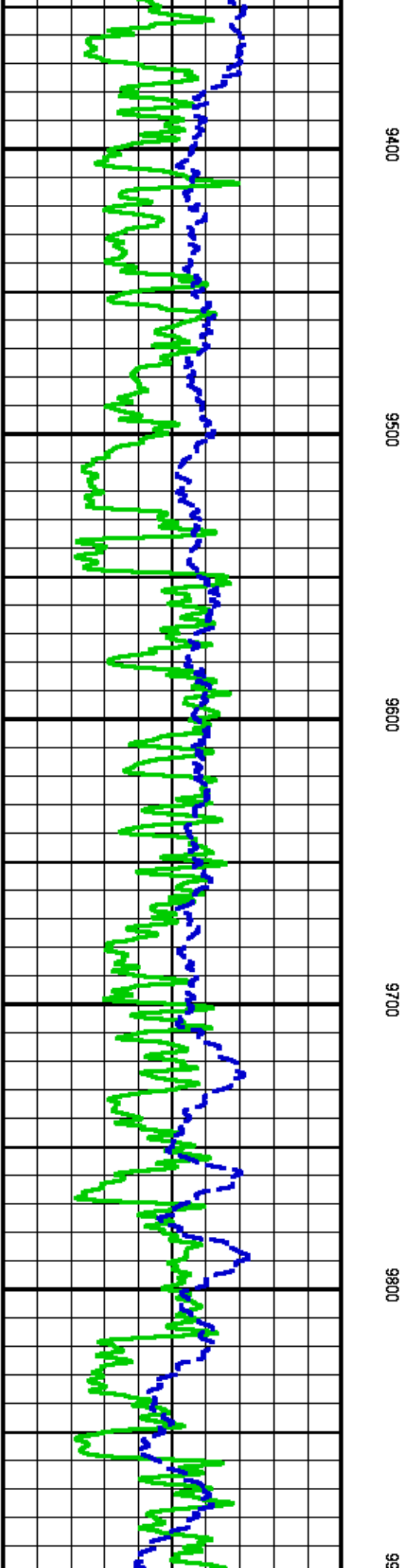
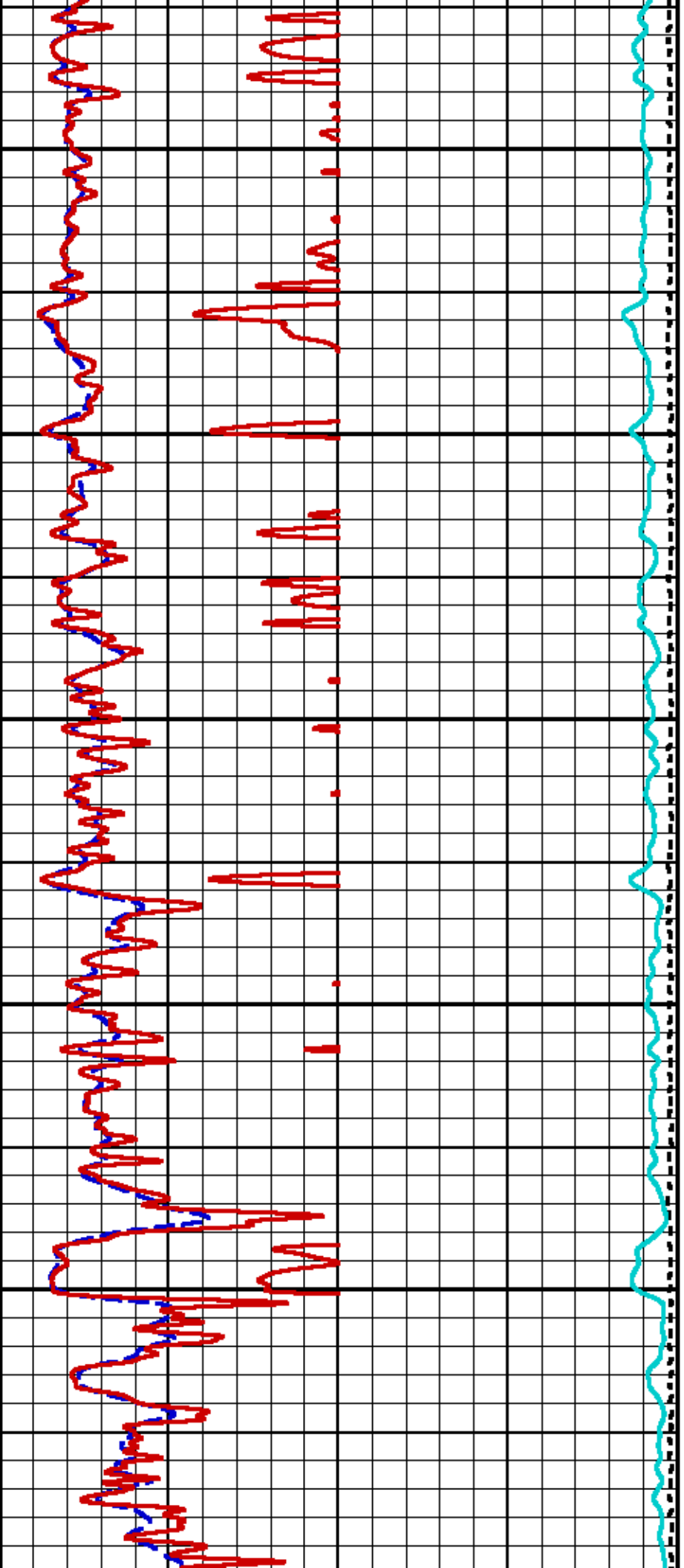


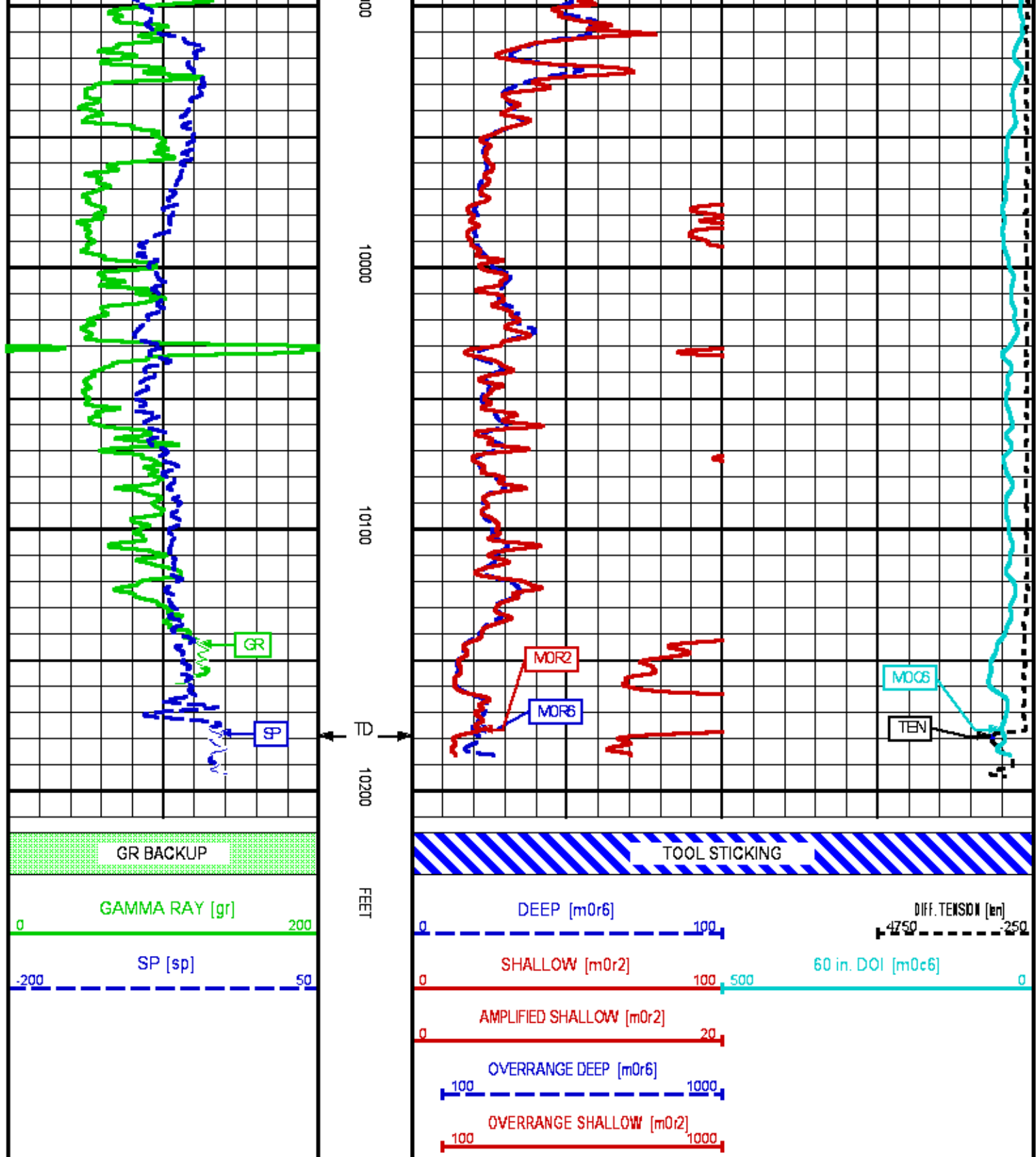












REPEAT LOG

PARAMETER AND FILTER SUMMARY REPORT

File: /dat1a/625564/n970a02.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 4311.500 ft BOTTOM DEPTH: 10178.178 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 (hrd1s*)	medium		"	"
	FILTER (hrd2*)	medium		"	"
	FILTER (hrd2s*)	medium		"	"
	FILTER (soft*)	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	98.0	degF	"	"
	MUD SAMPLE RES	0.720	ohm.m	"	"
BH MUD RESISTIVITY SOURCE	RMUD SOURCE (HDIL)	TOOL MEASURED		"	"
BOREHOLE TEMP from GRADIENT	Known BH REF TEMP	77.0	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	3601	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	9.625	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 MUL TIPLIER	1.000		"	"

CURVE DESCRIPTION REPORT

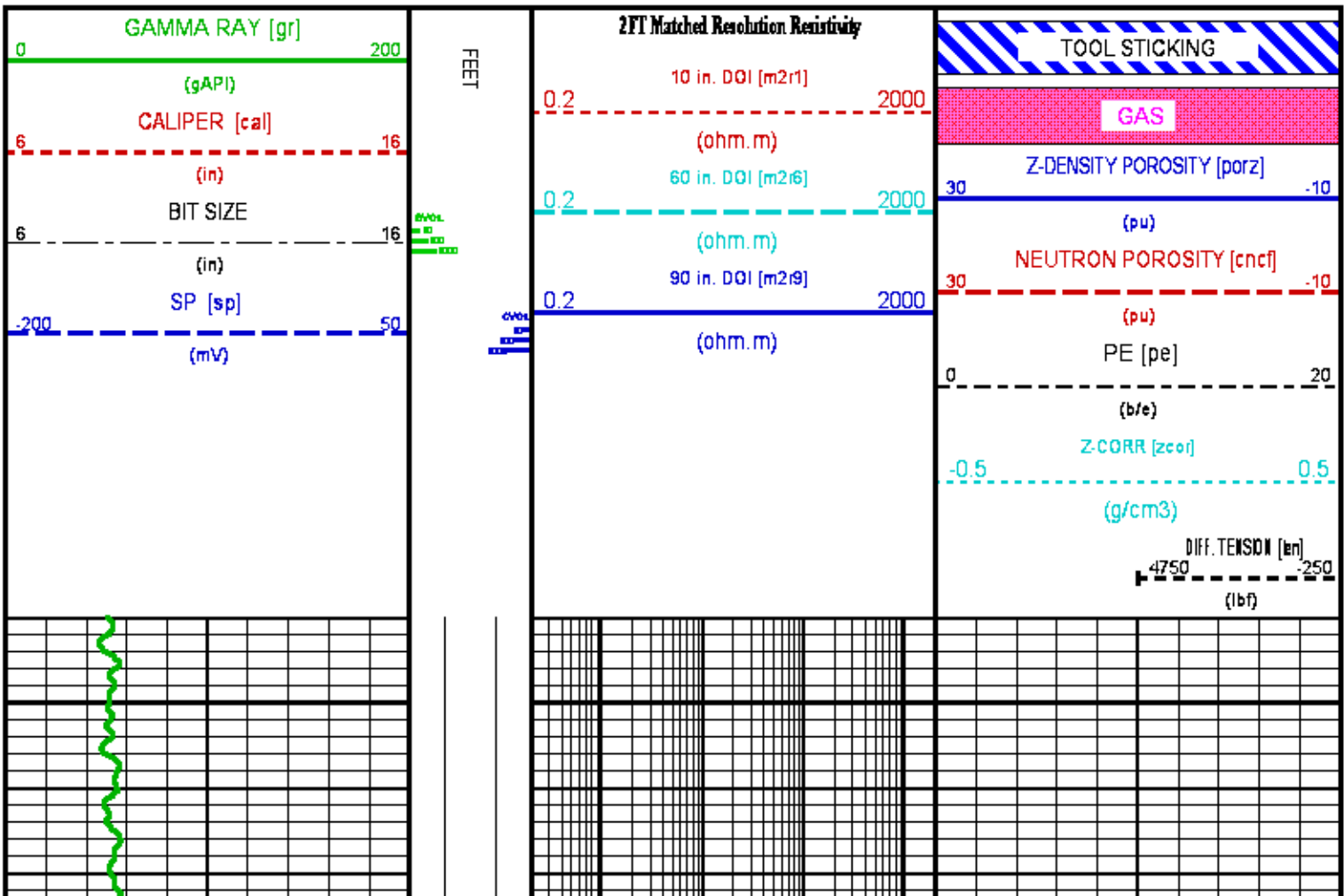
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F1:BVOL	Jul 23 23:06:50 2013	BOREHOLE VOLUME
F1:CAL	Jul 23 23:06:50 2013	CALIPER
F1:CNCf	Jul 23 23:06:50 2013	FIELD NORMALIZED COMPENSATED NEUTRON POROSITY
F1:CVOL	Jul 23 23:06:50 2013	CEMENT VOLUME
F1:GR	Jul 23 23:06:50 2013	GAMMA RAY
F1:M2R1	Jul 23 23:06:50 2013	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 10-INCH DOI
F1:M2R6	Jul 23 23:06:50 2013	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 60-INCH DOI
F1:M2R9	Jul 23 23:06:50 2013	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 90-INCH DOI
F1:PE	Jul 23 23:06:50 2013	PHOTO ELECTRIC CROSS-SECTION
F1:PORZ	Jul 23 23:06:50 2013	POROSITY FOR SELECTABLE MATRIX
F1:SP	Jul 23 23:06:50 2013	SPONTANEOUS POTENTIAL
F1:TEN	Jul 23 23:06:50 2013	DIFFERENTIAL TENSION
F1:ZCOR	Jul 23 23:06:50 2013	DENSITY CORRECTION

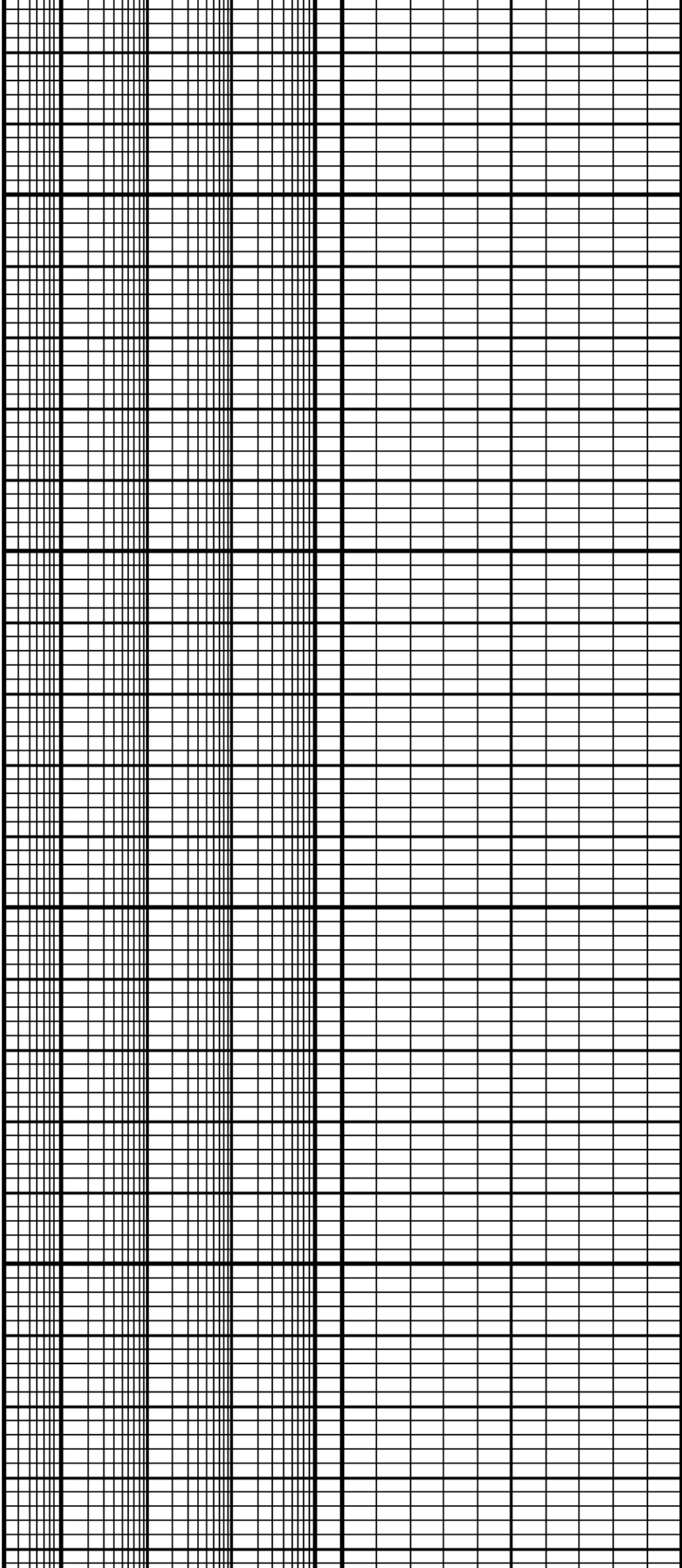
CURVE MEASURE POINT OFFSET

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:WPX MAIN.fvpdf [5"/100' Scale]
Plot Interval : 40 - 10201.8 Feet

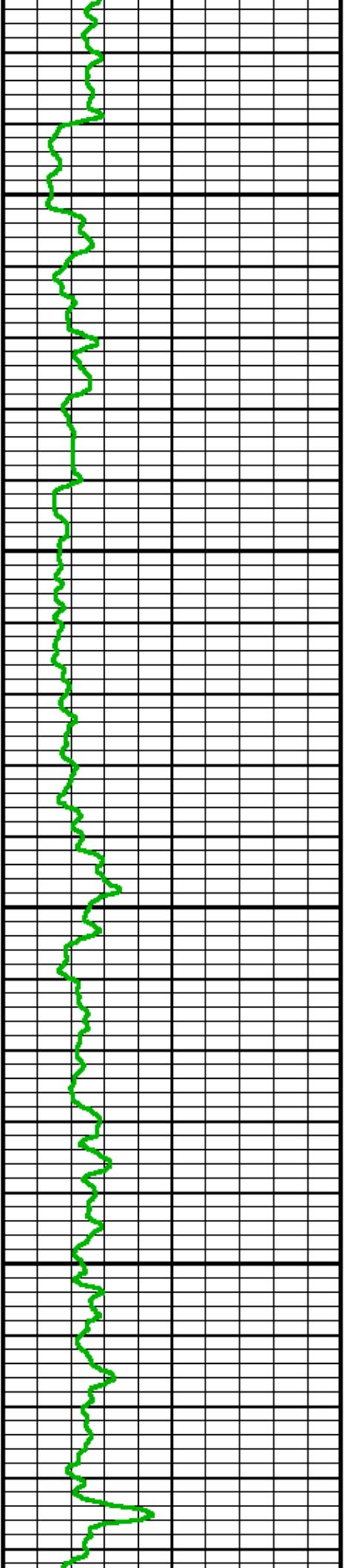
Data File 1 : F1 : HL6670:/dat1a/625564/ddcopy_T.txt
Created On : Jul 23 23:06:50 2013
Company : WPX ENERGY
Well : FEDERAL BCU 532-36-199
Field : BARCUS CREEK UNIT
File Interval : 40 - 10201.8 Feet
OCT : n970a

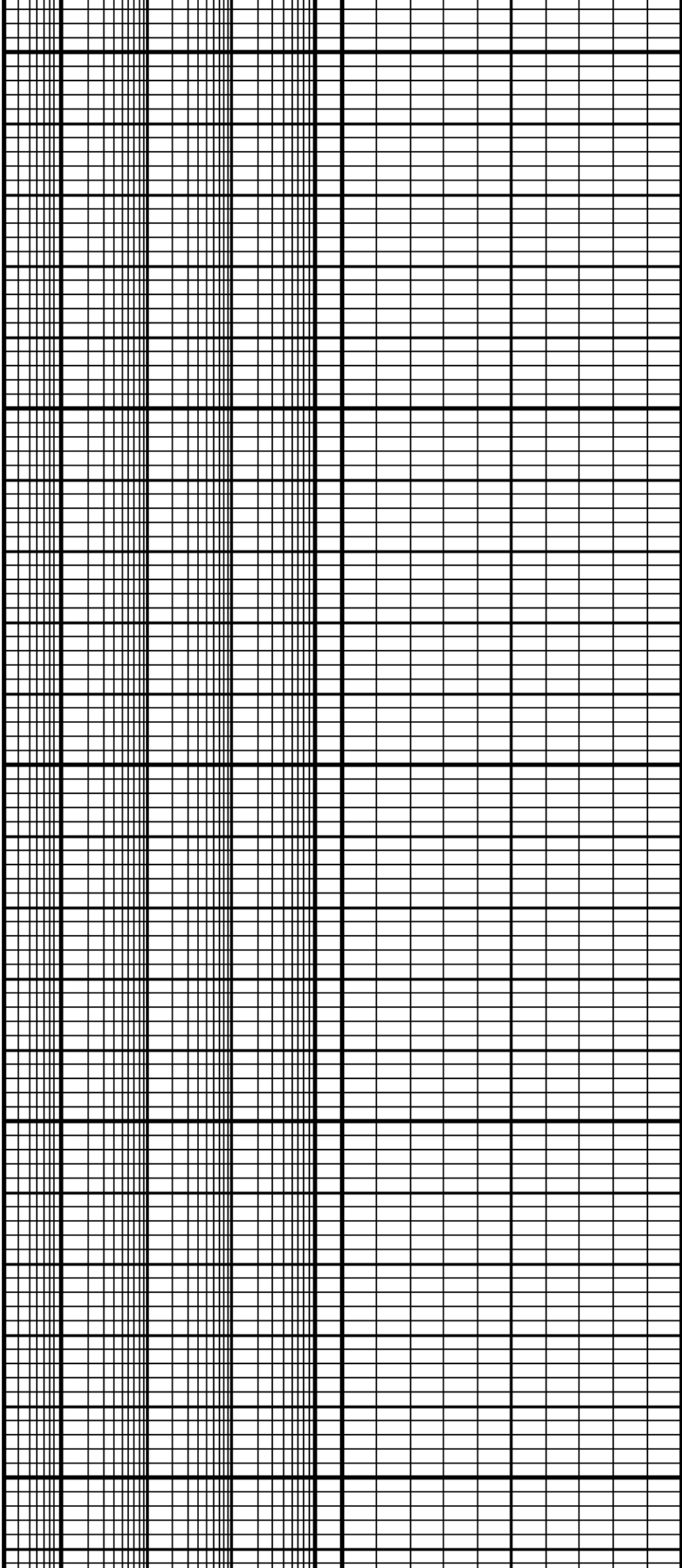




100

200

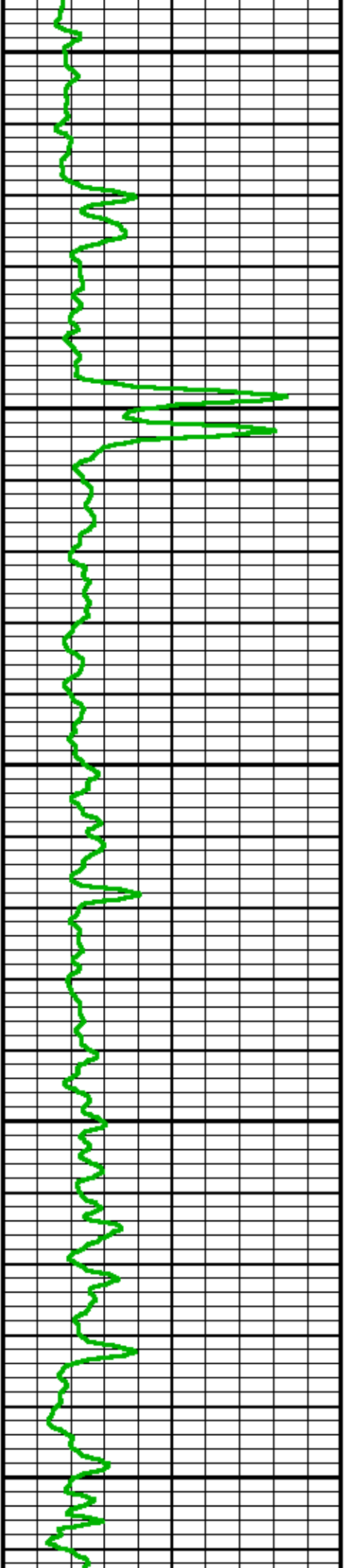


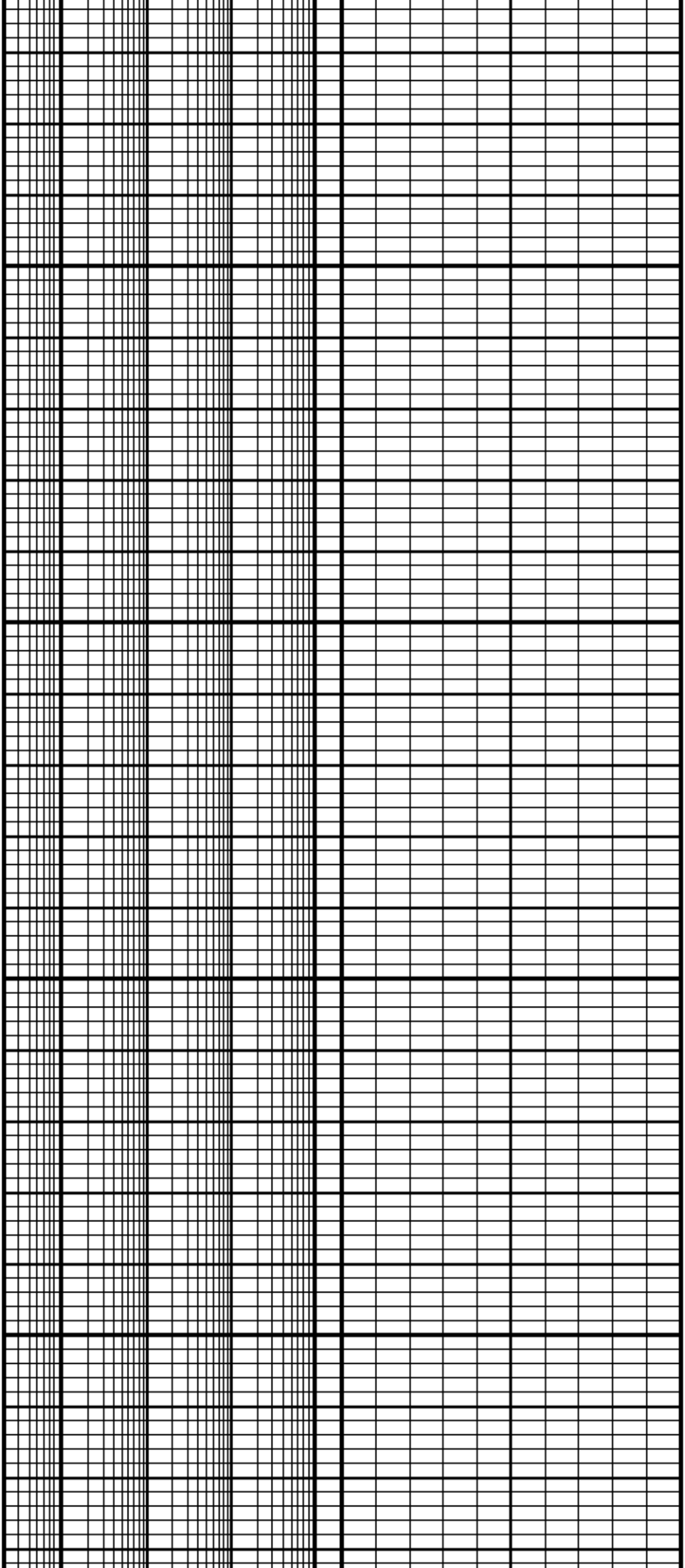


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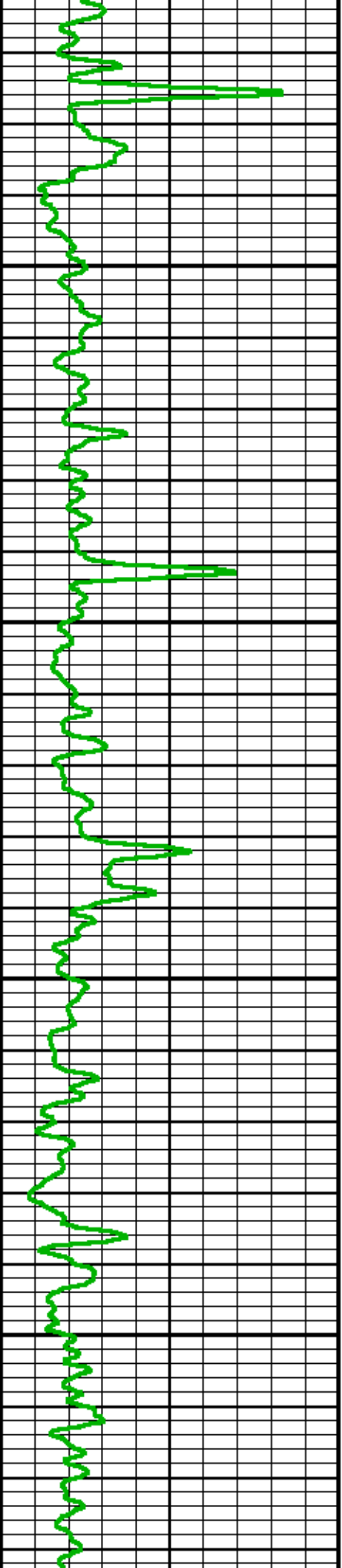
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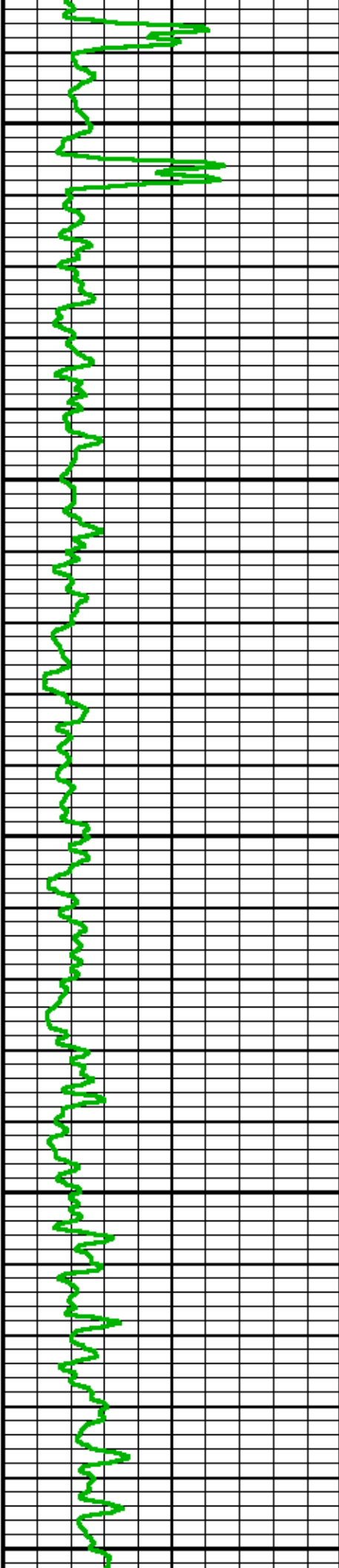




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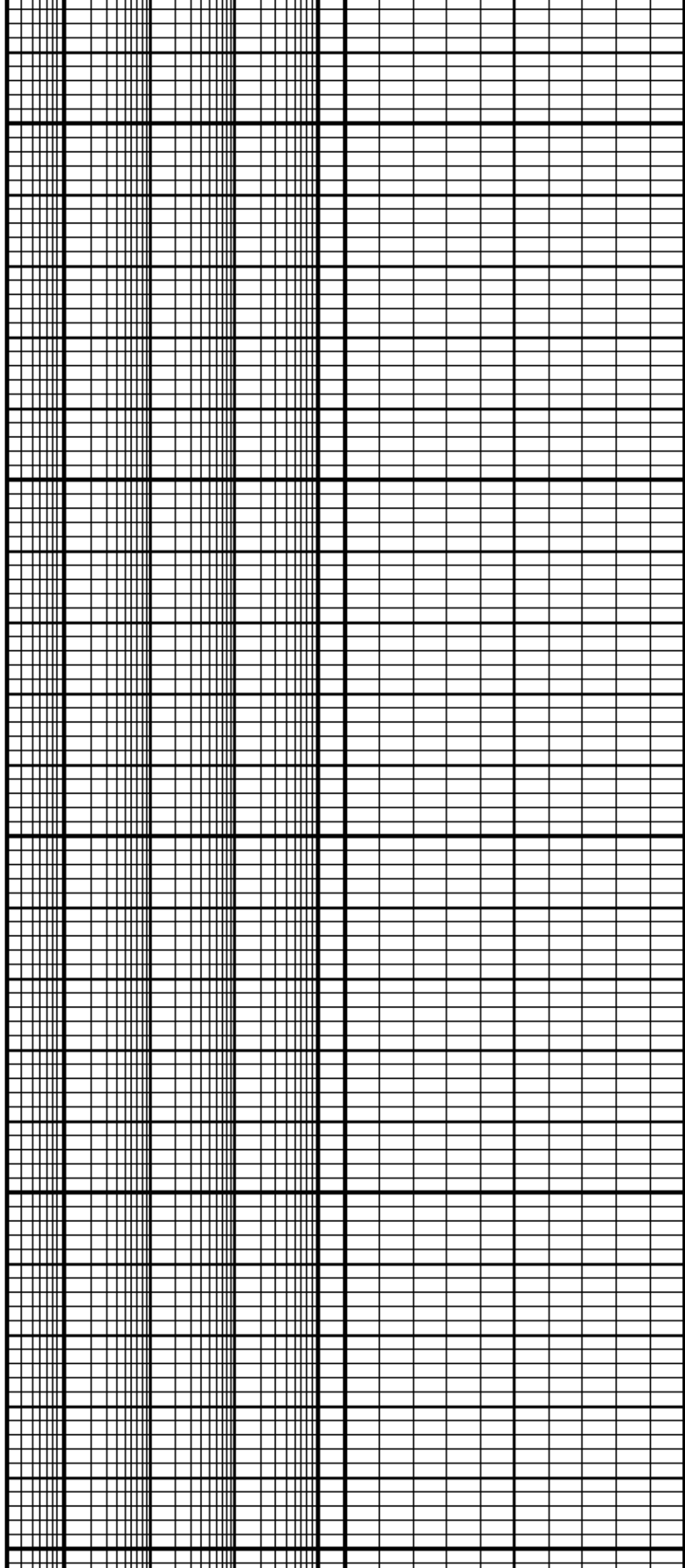
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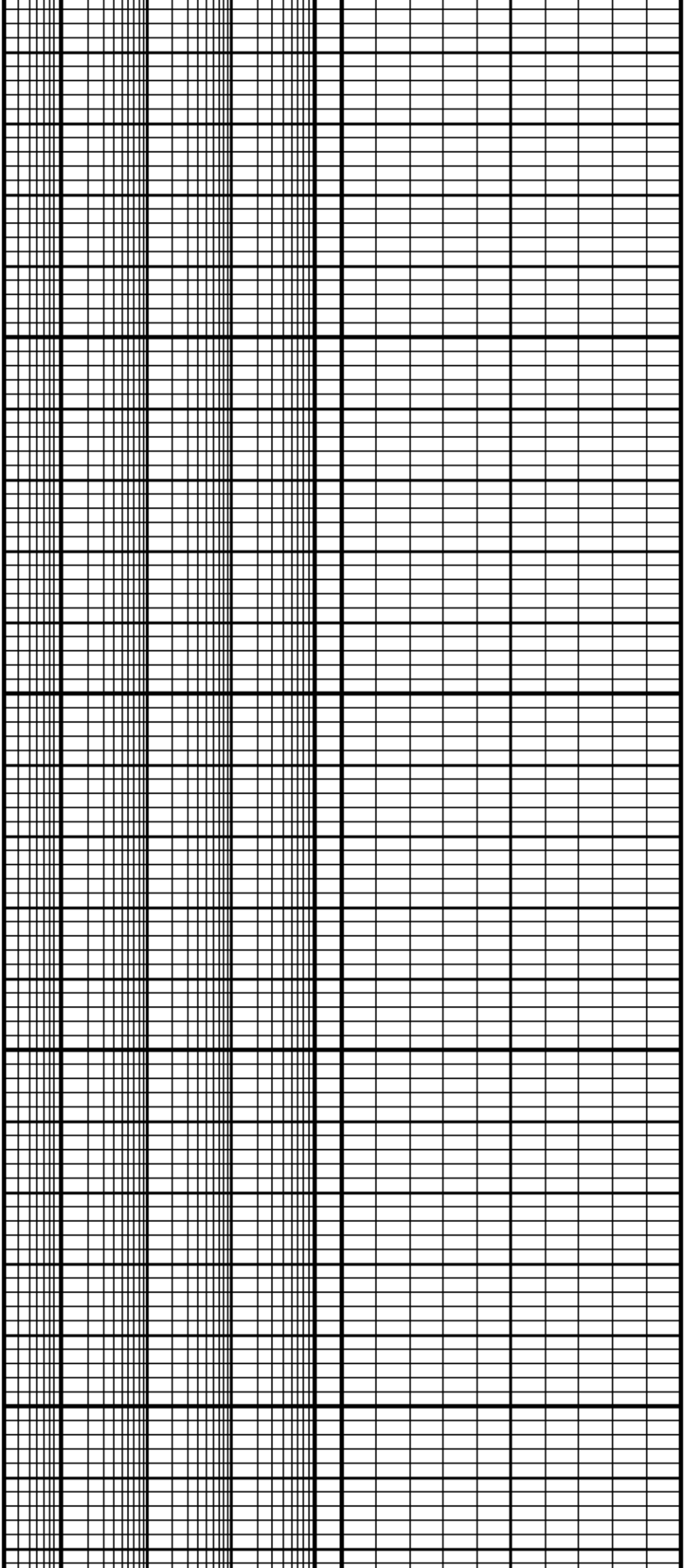




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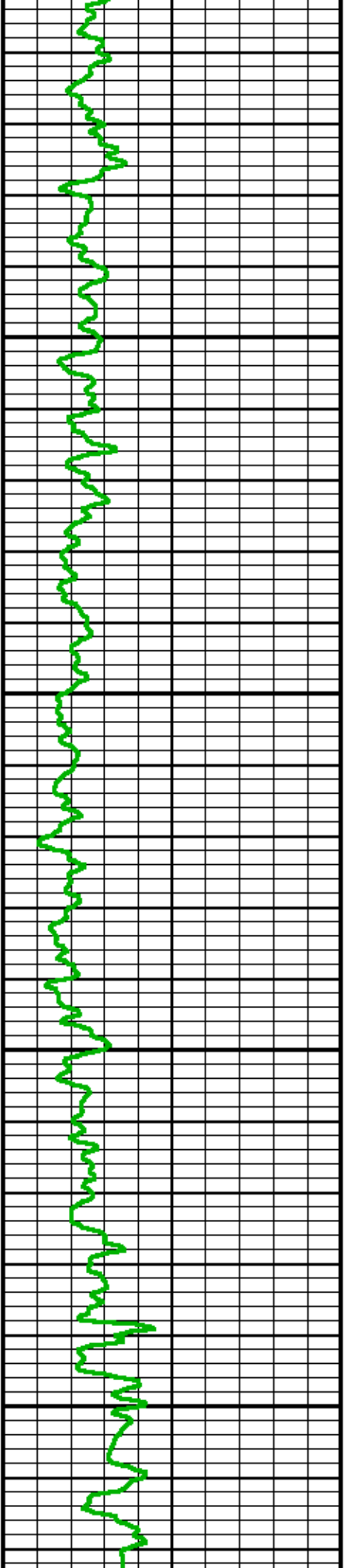
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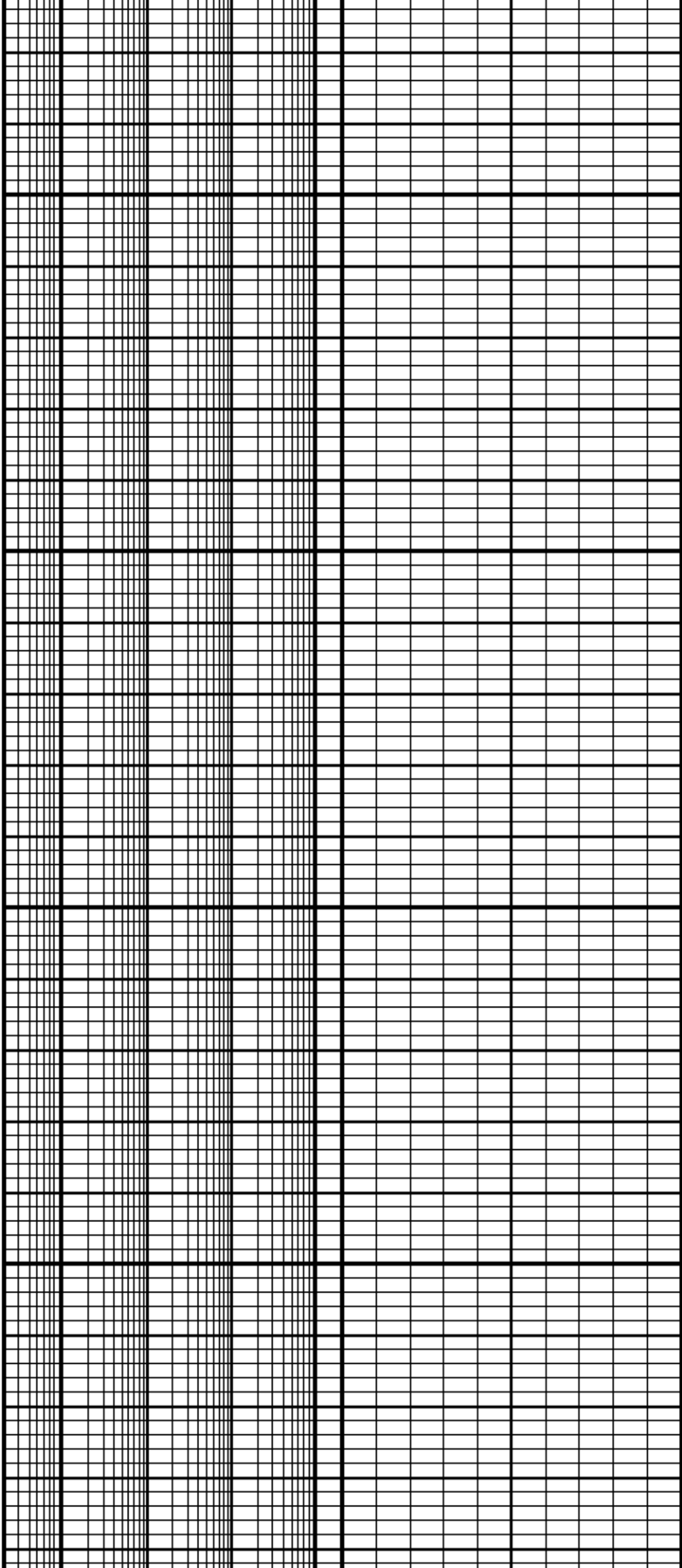




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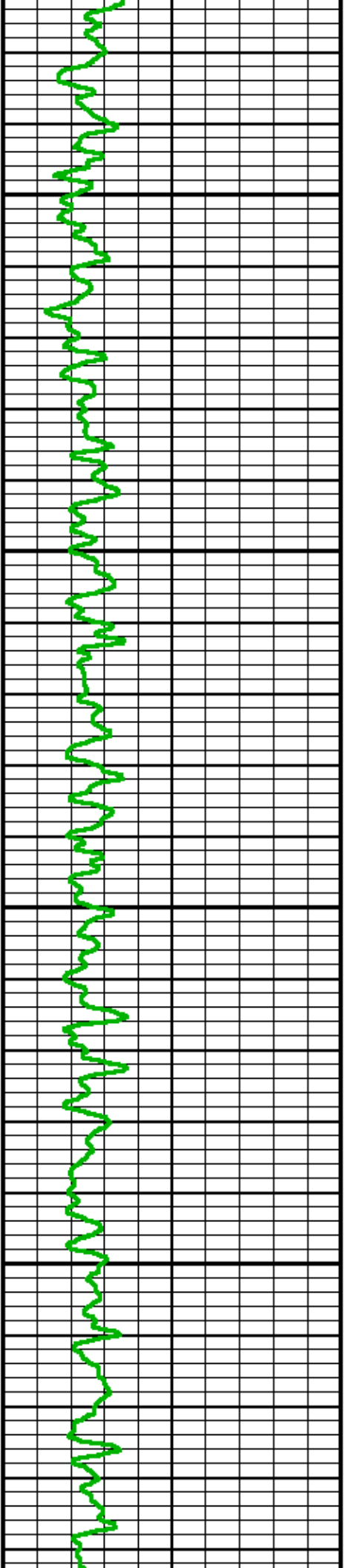
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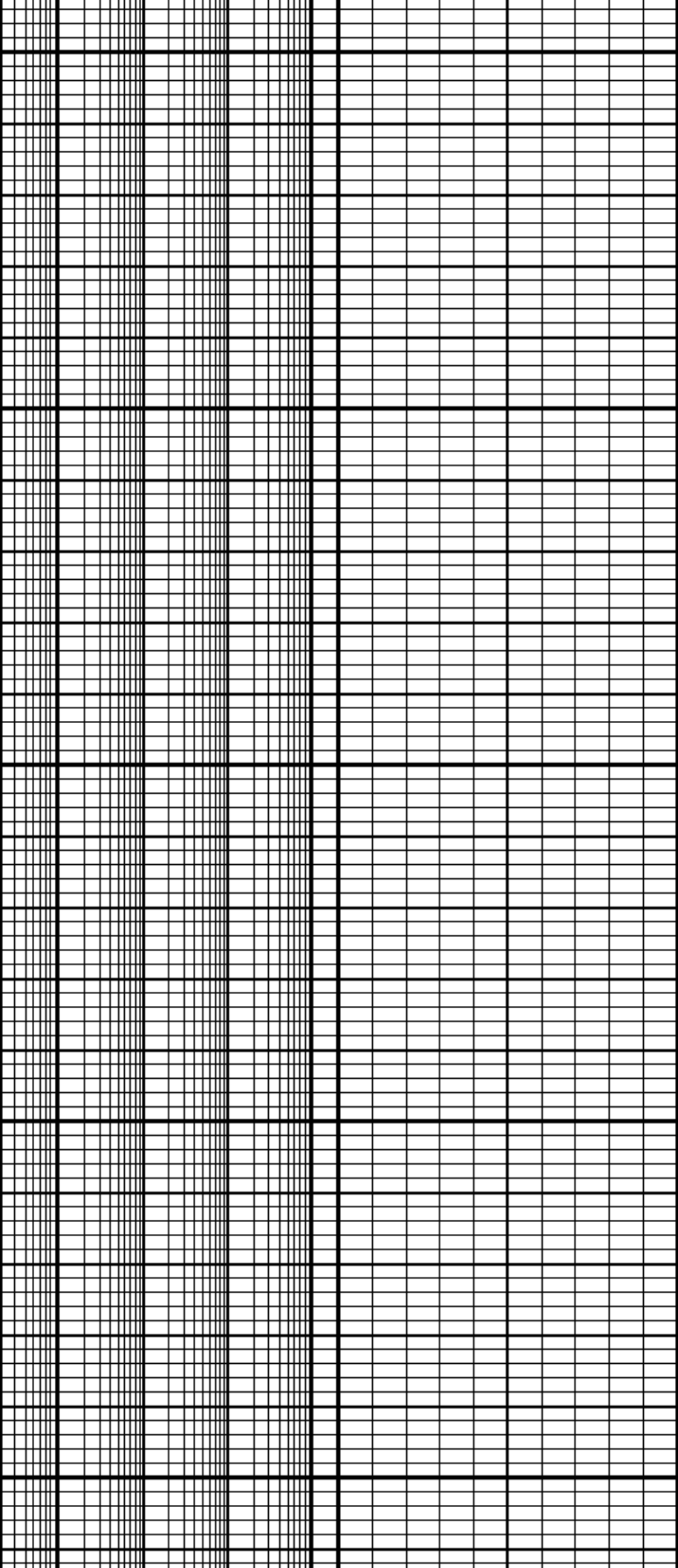




1 200

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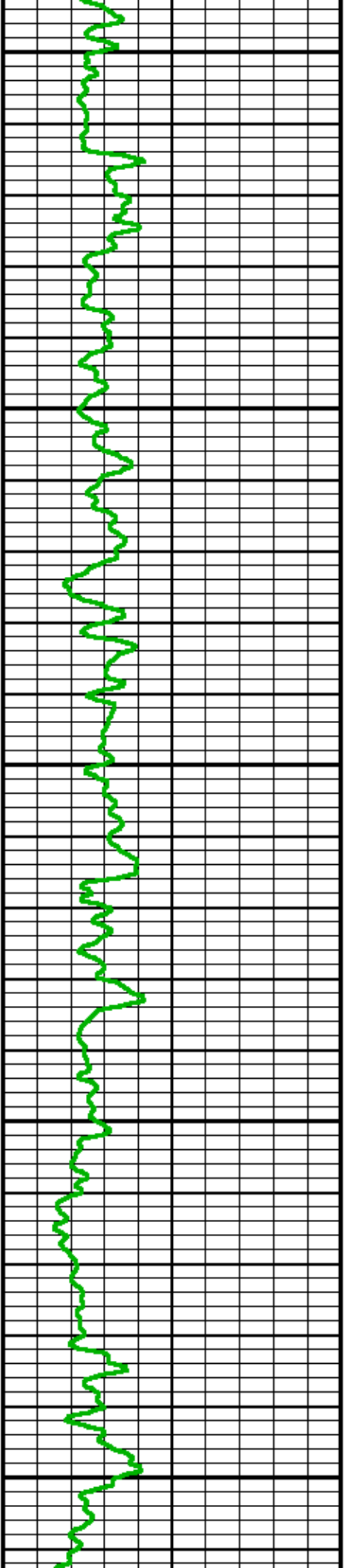


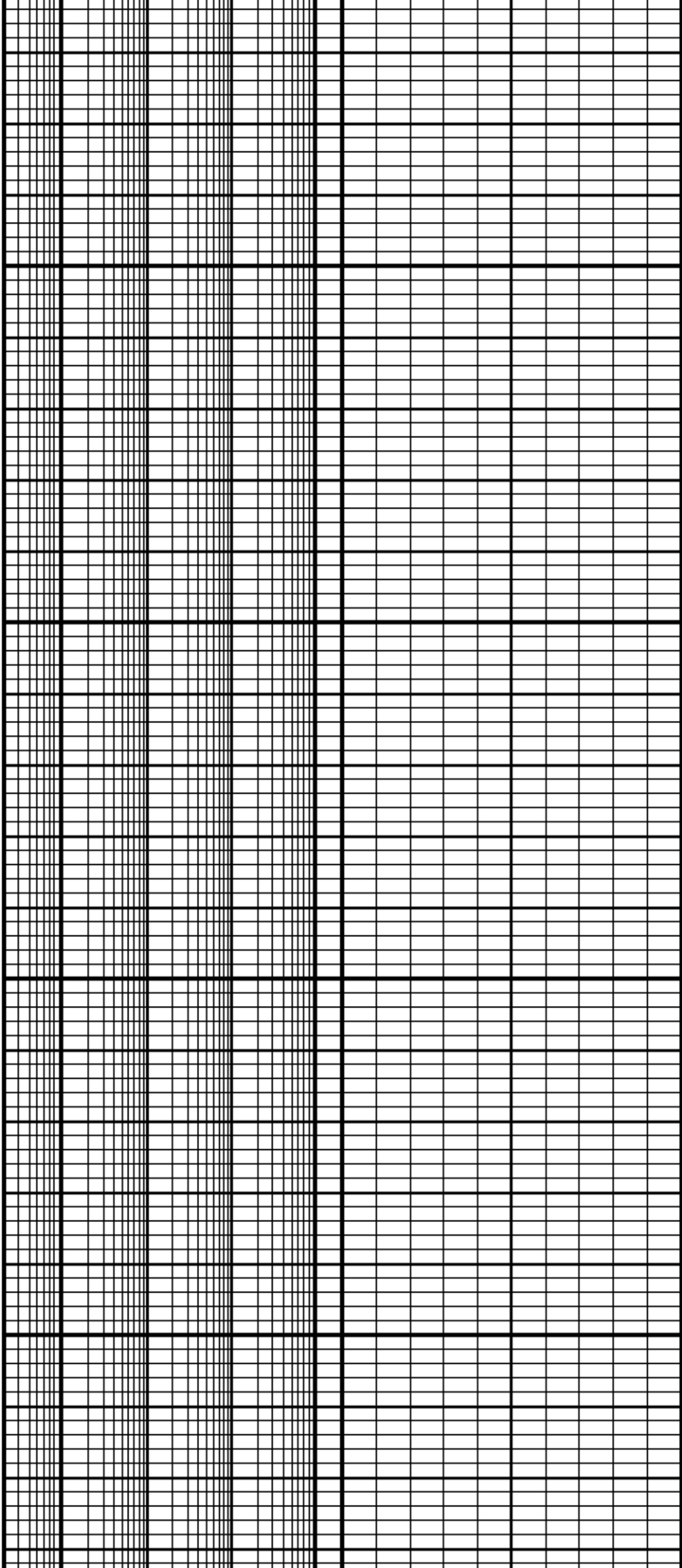


1400

1500

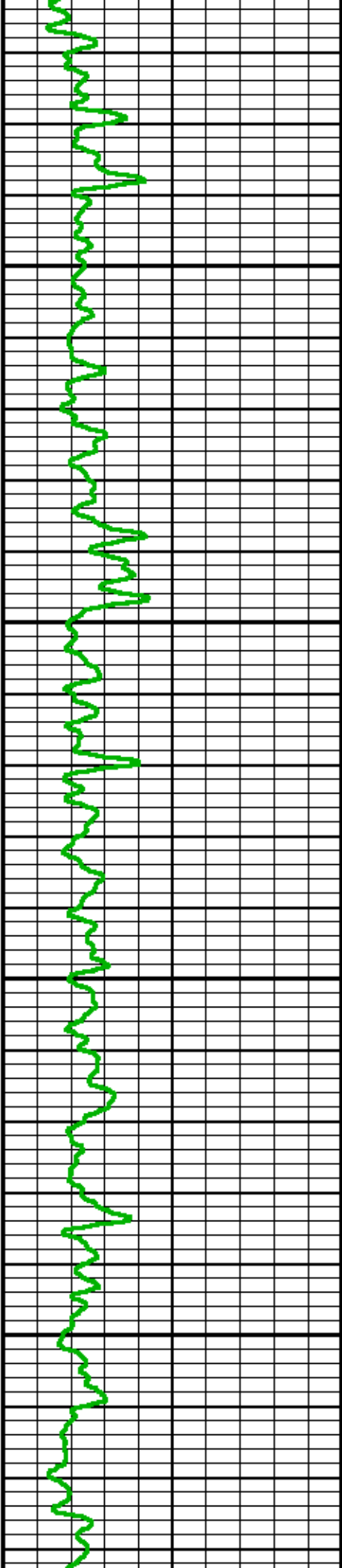
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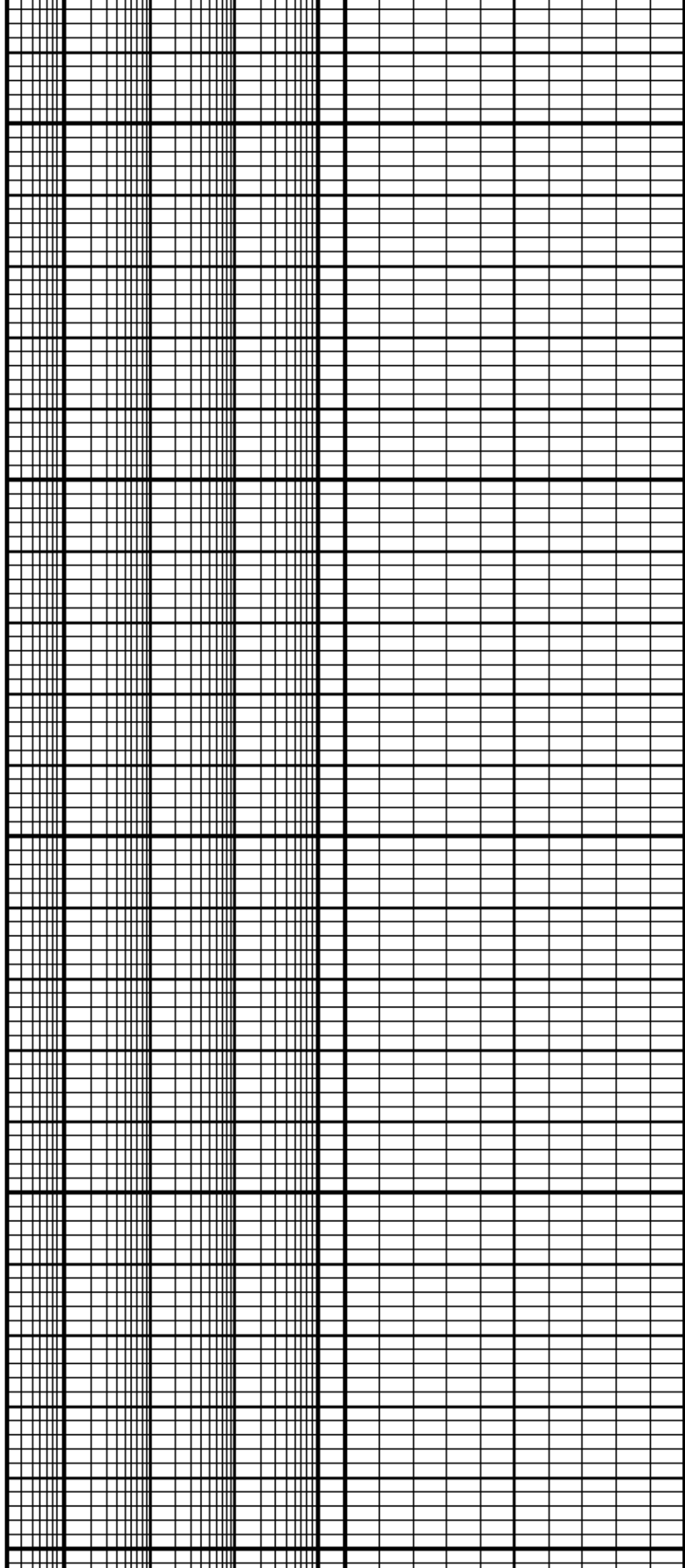




1700

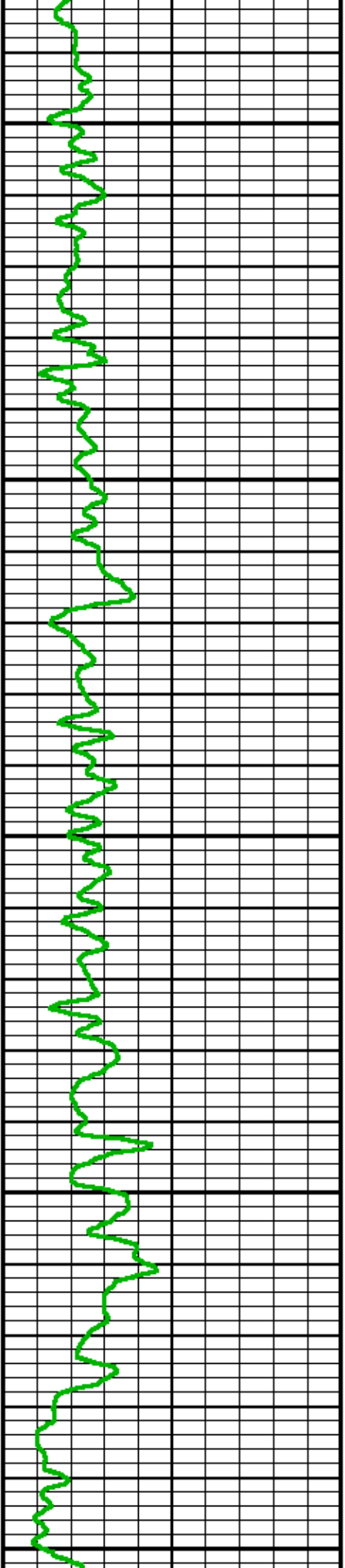
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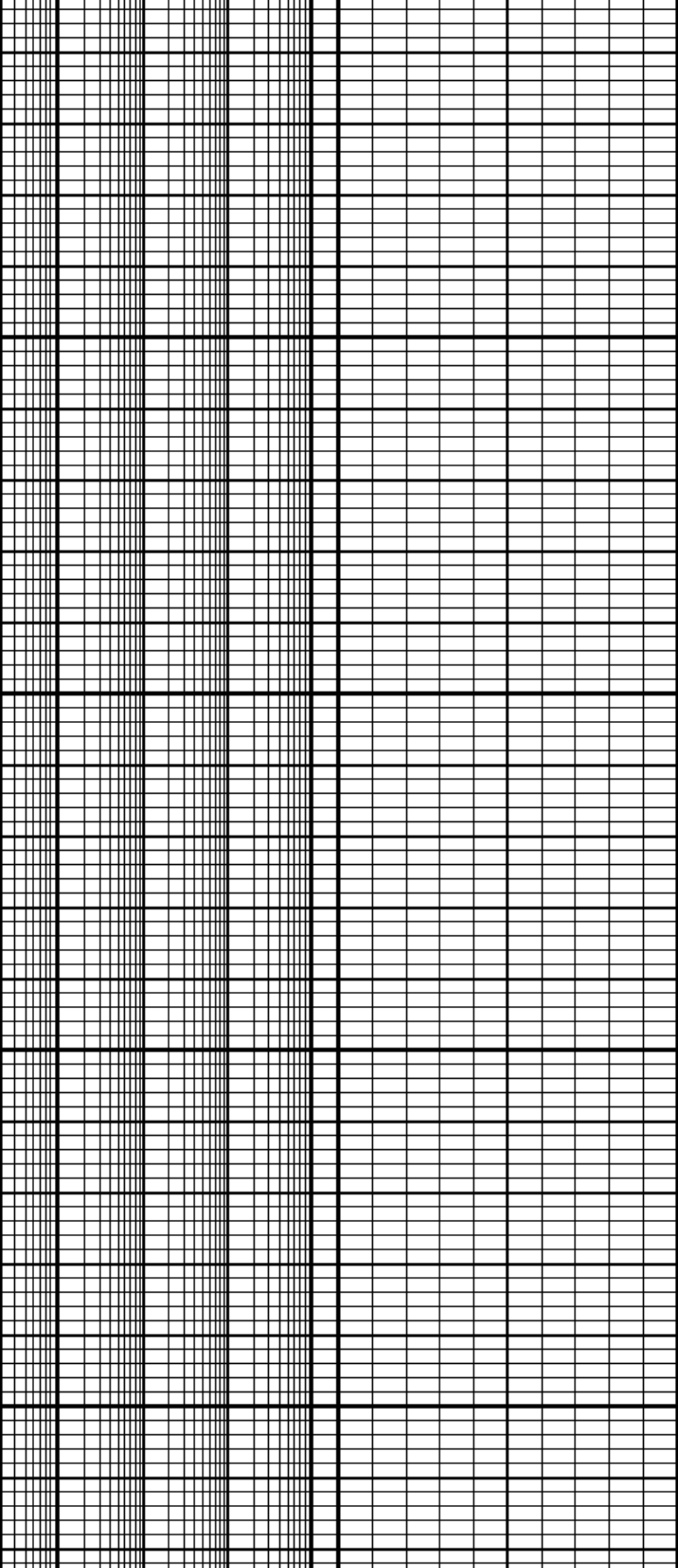




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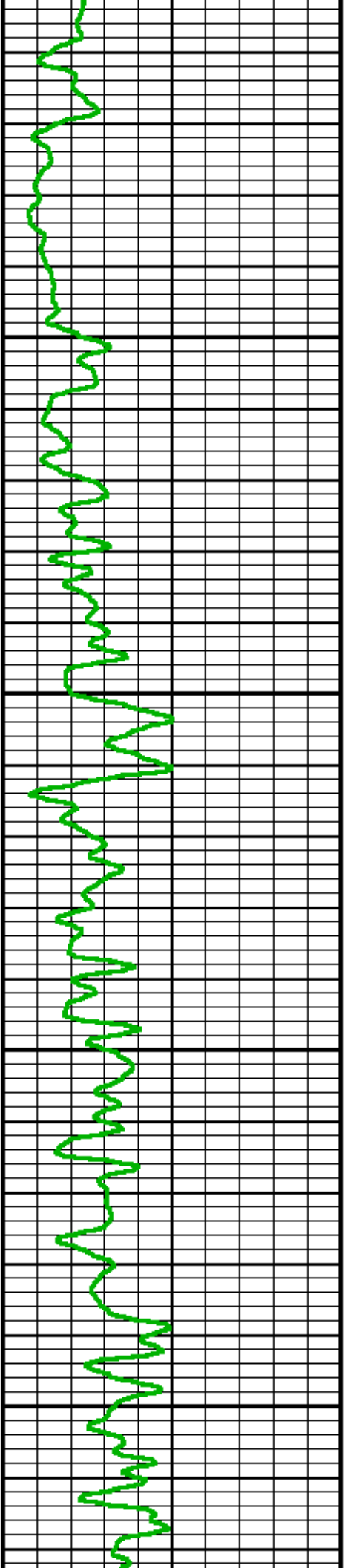
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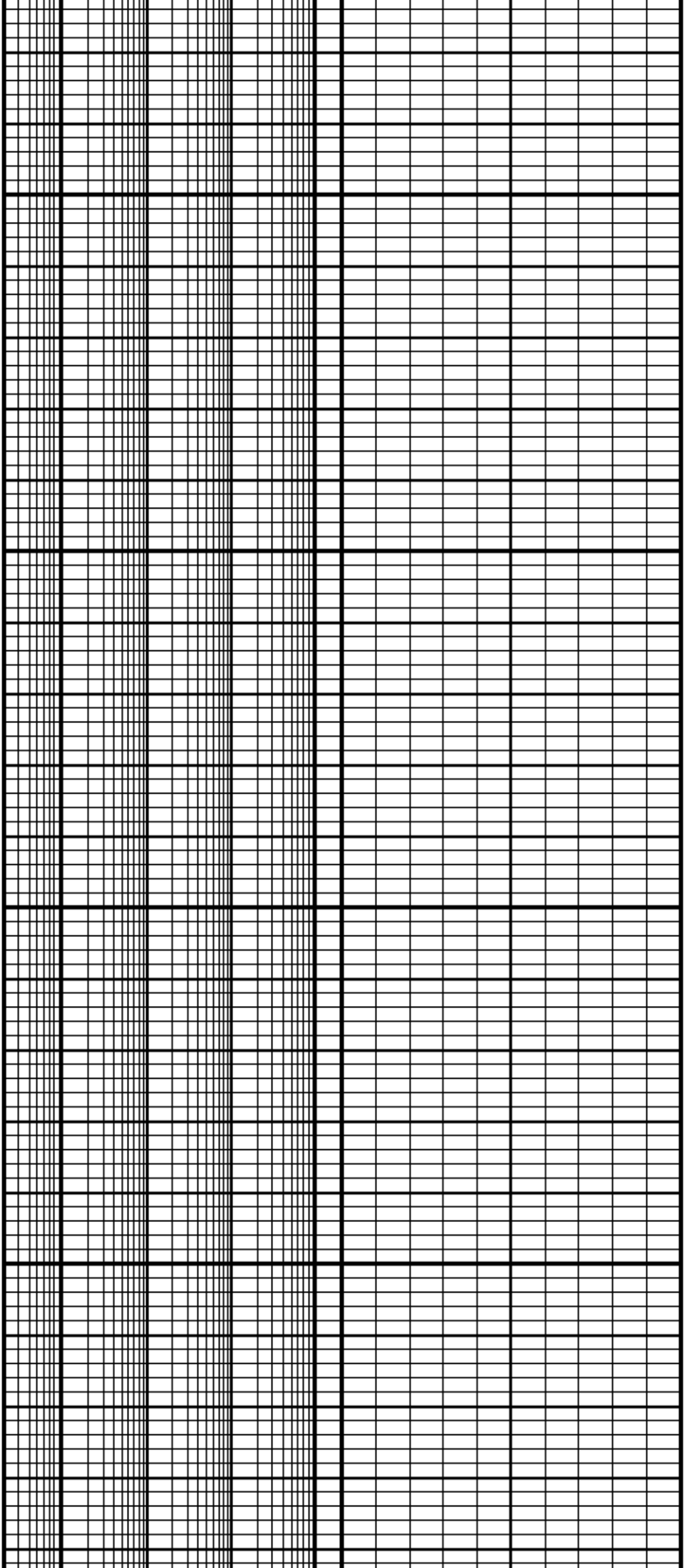




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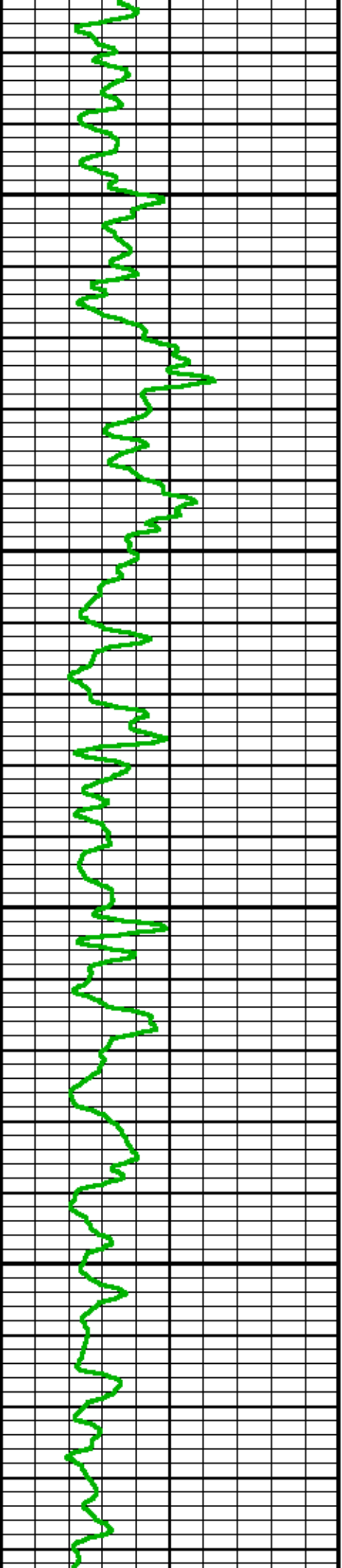
2200

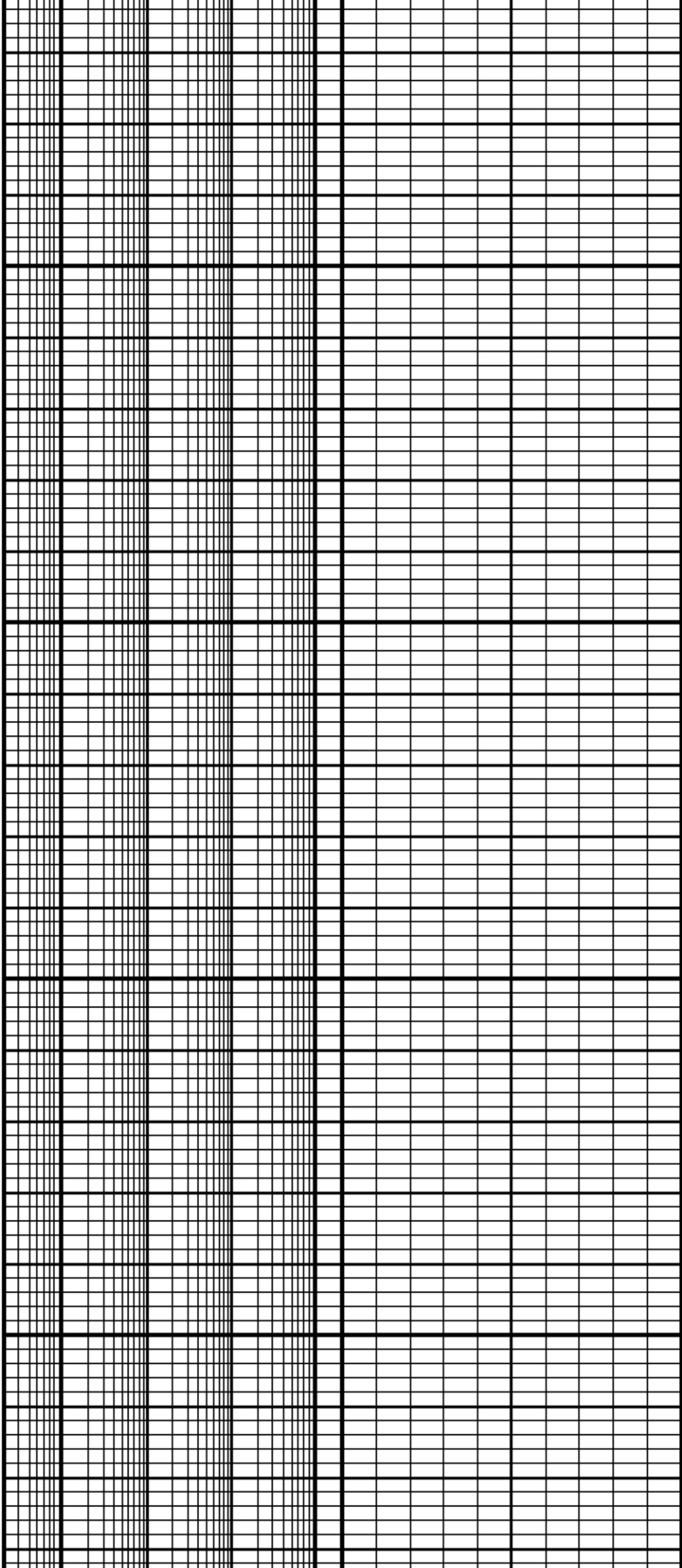




2300

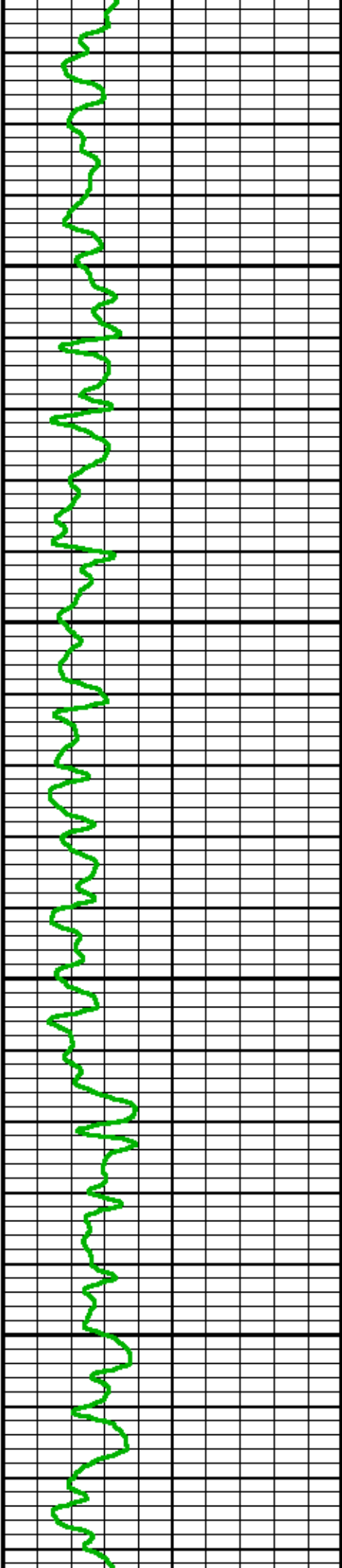
2400

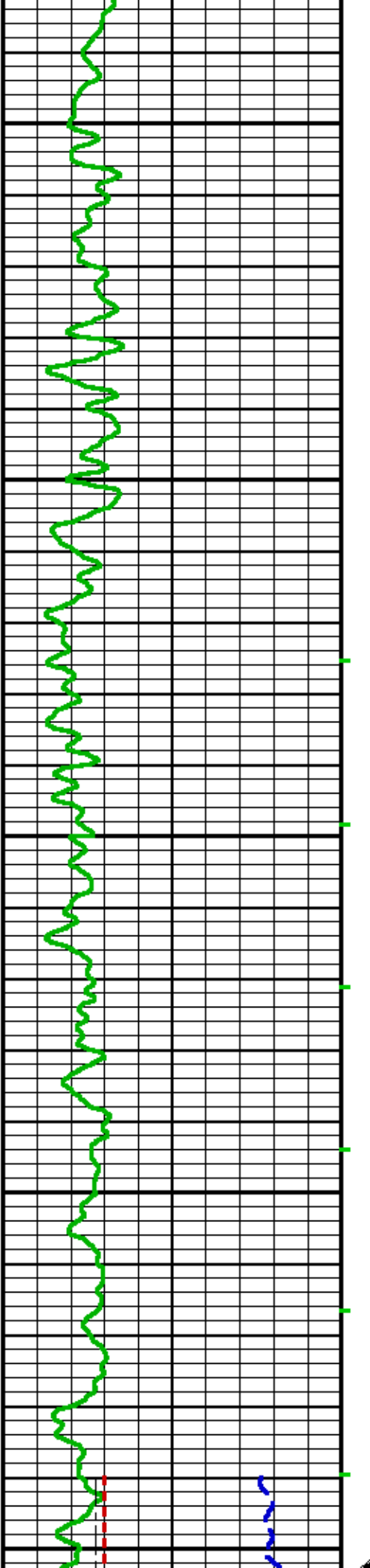




2800

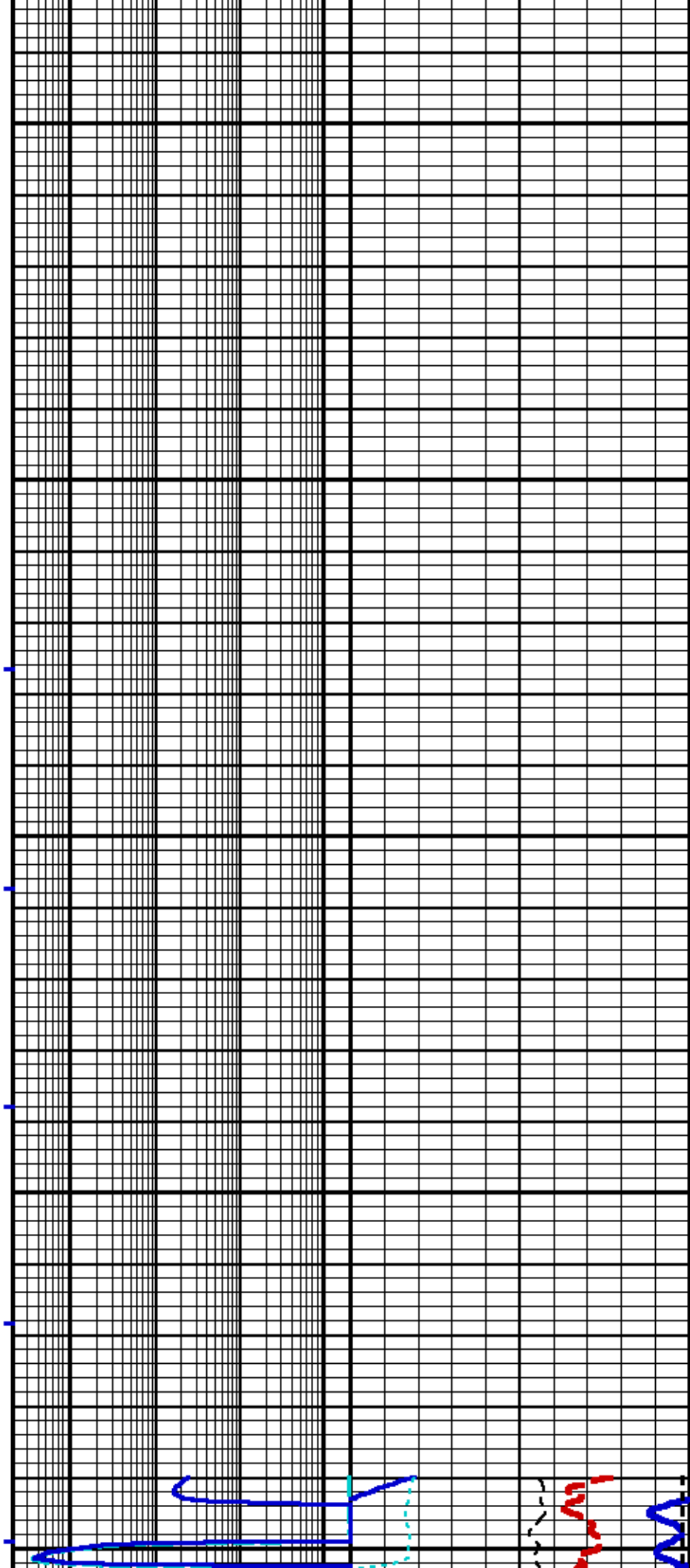
2900

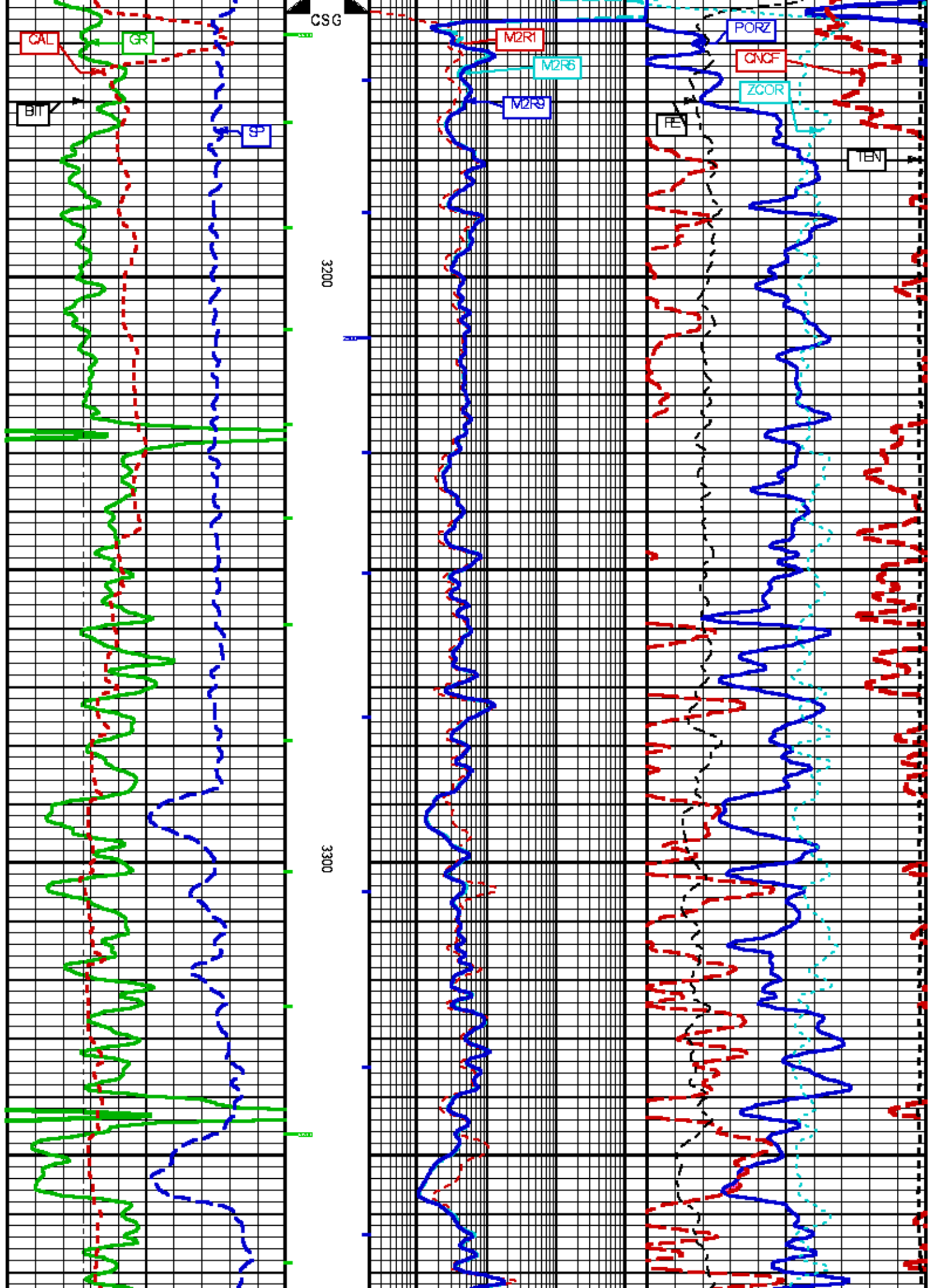


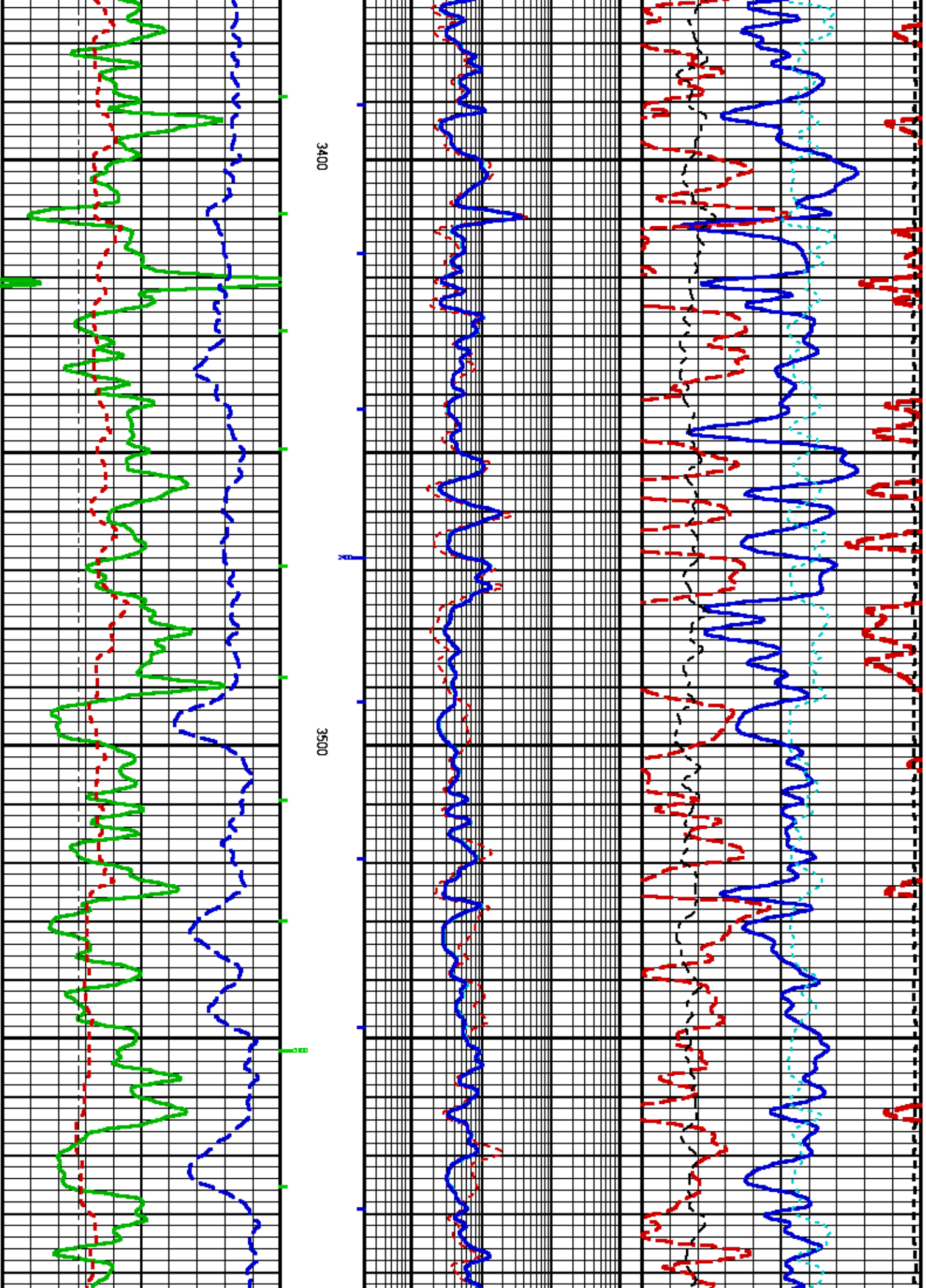


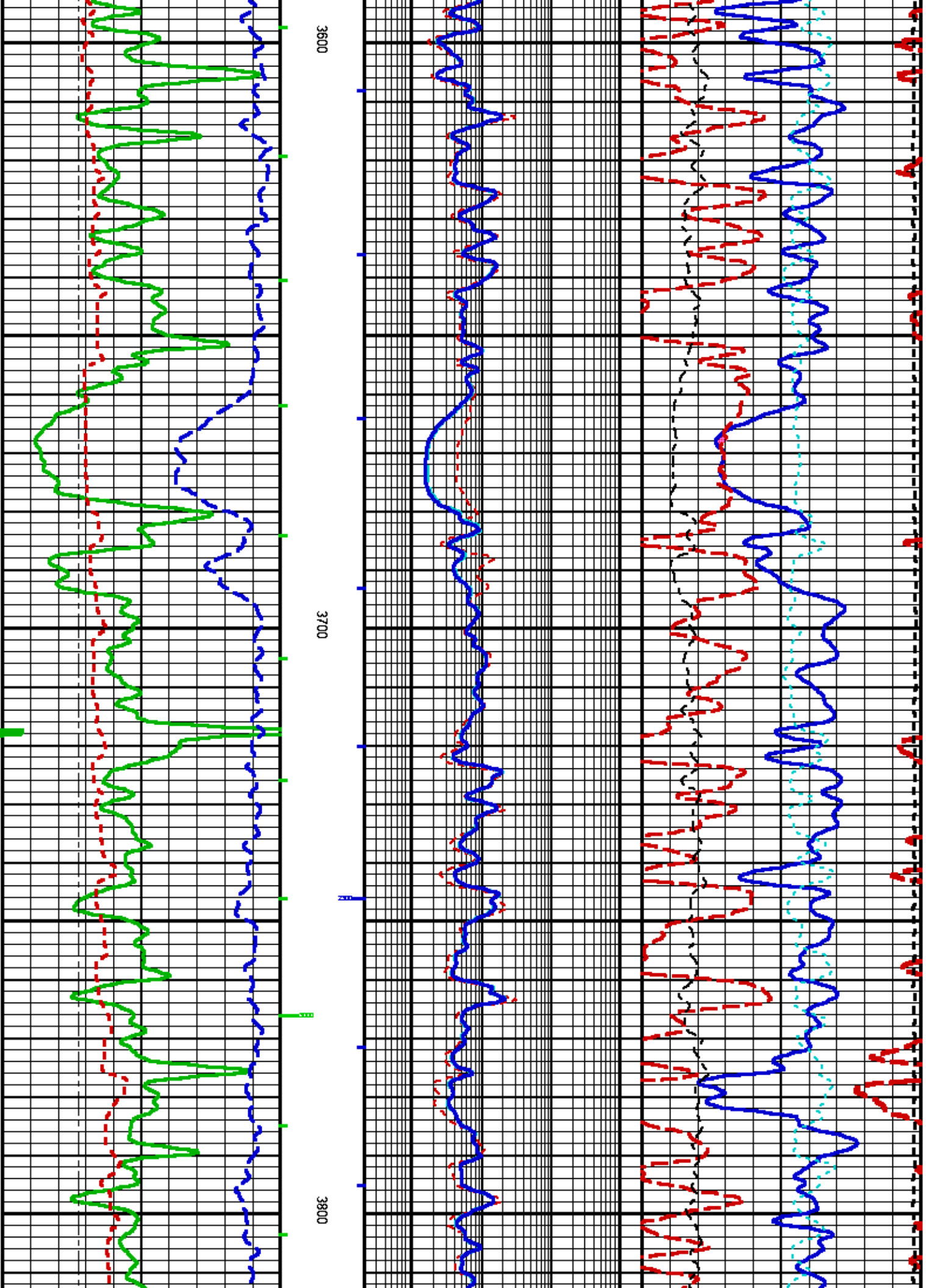
3000

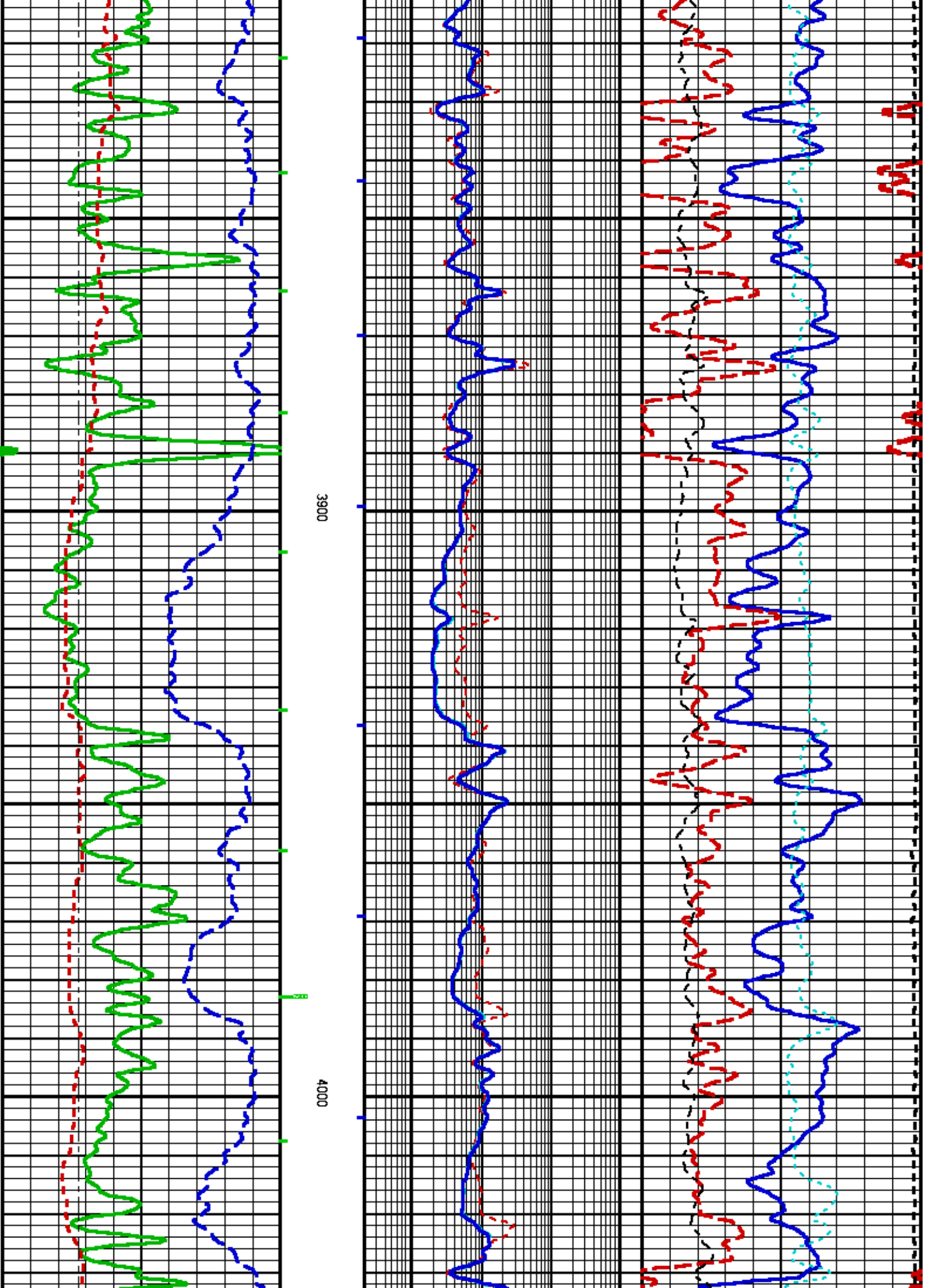
3100

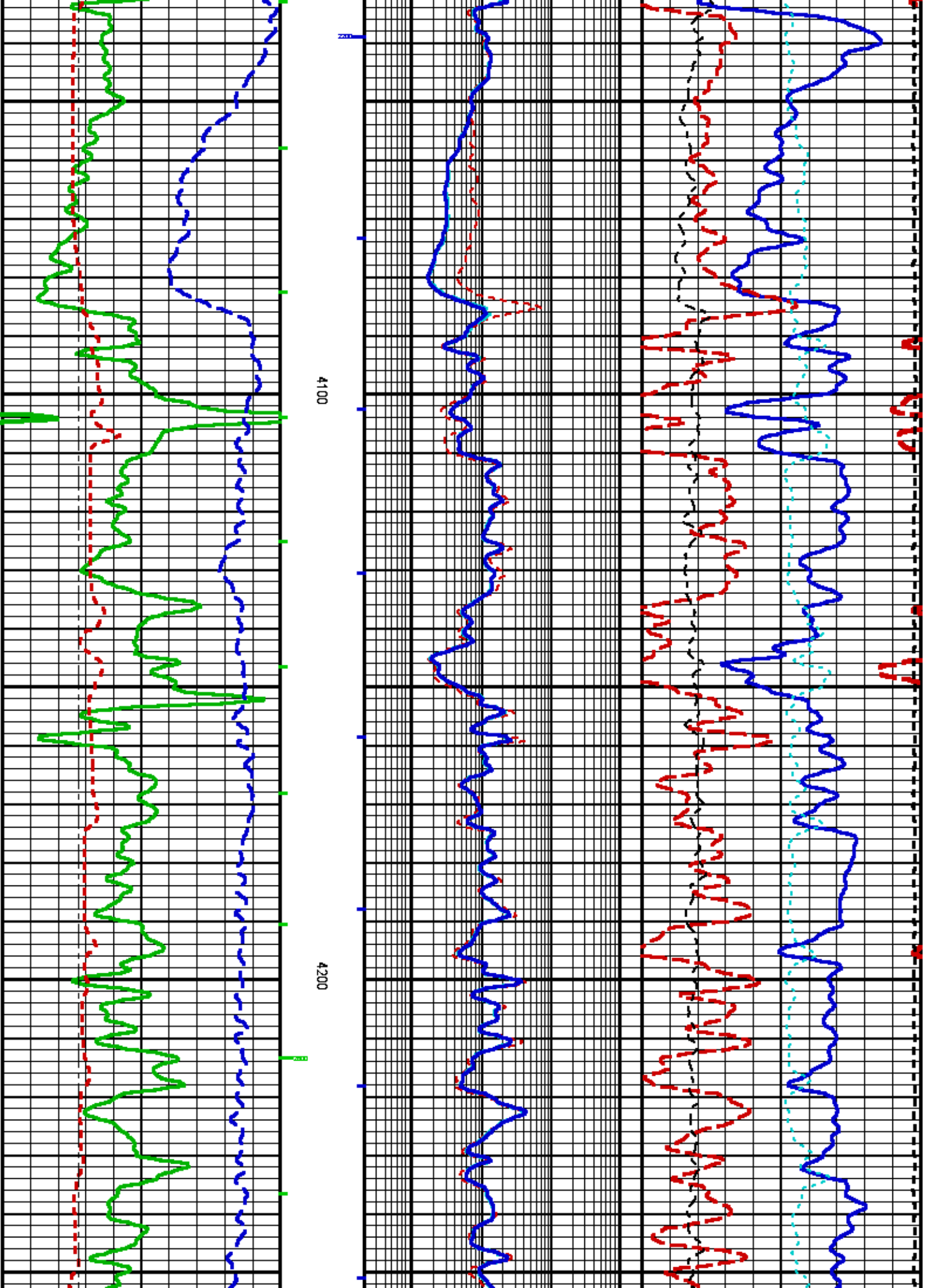


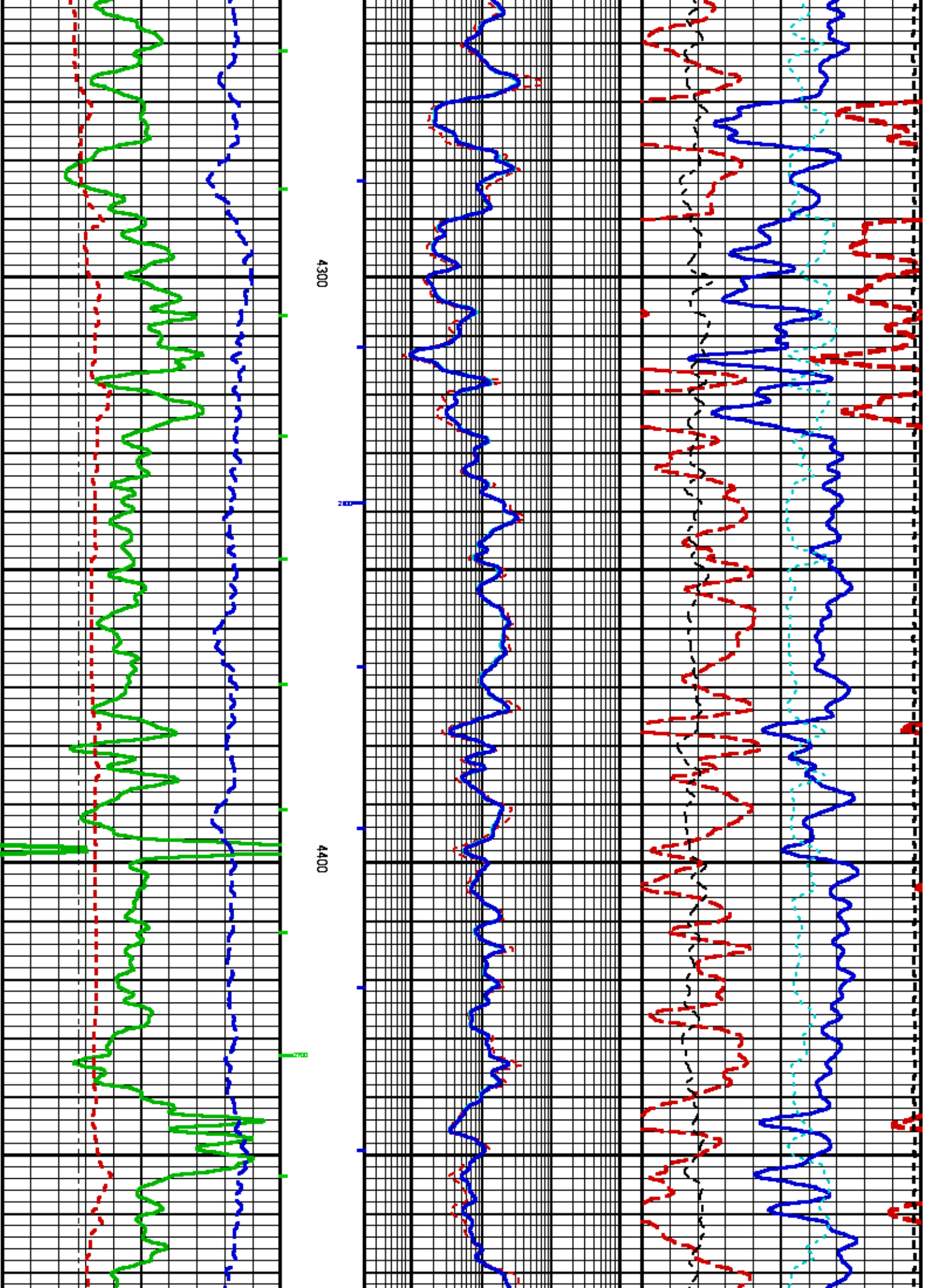


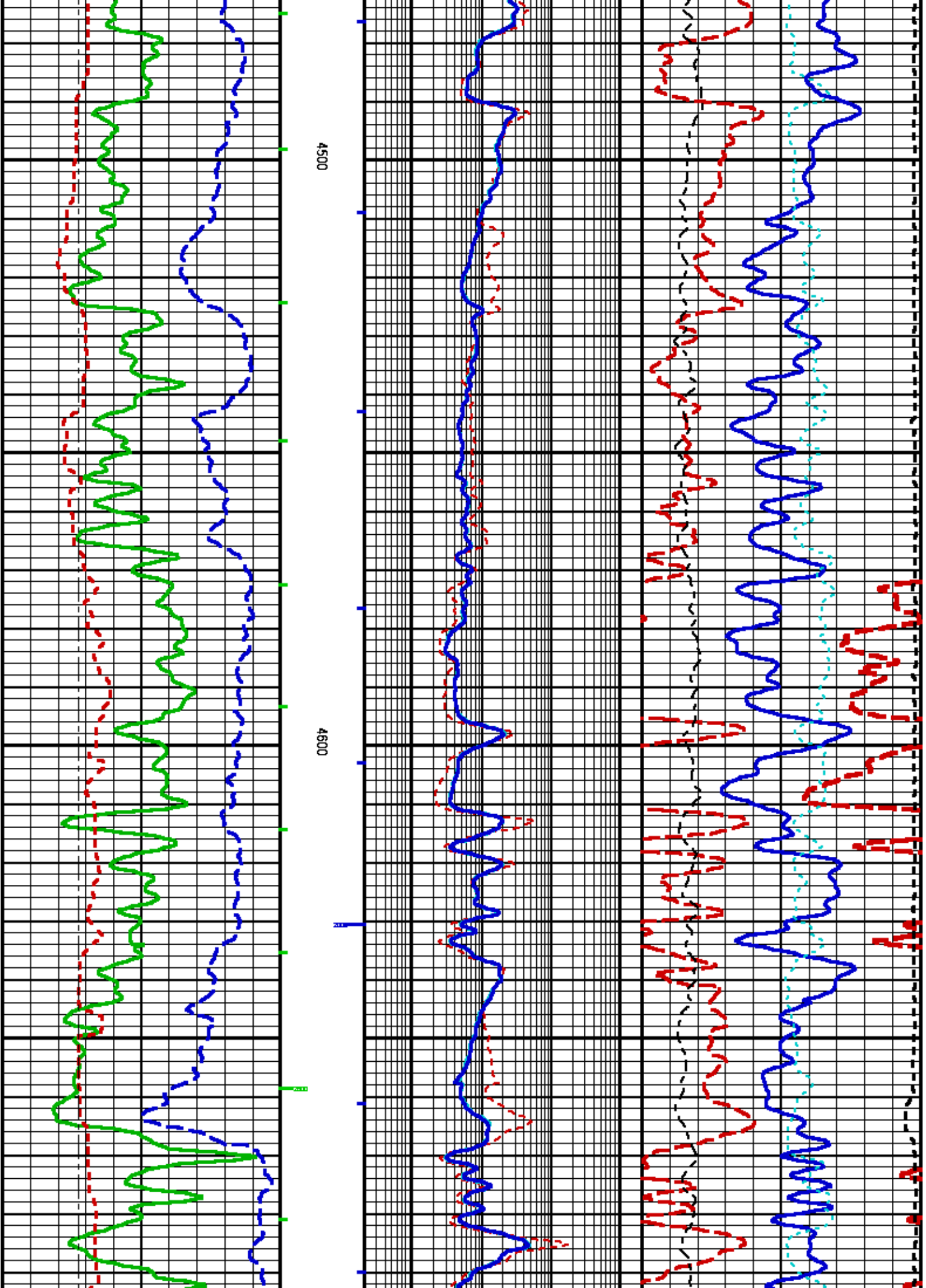


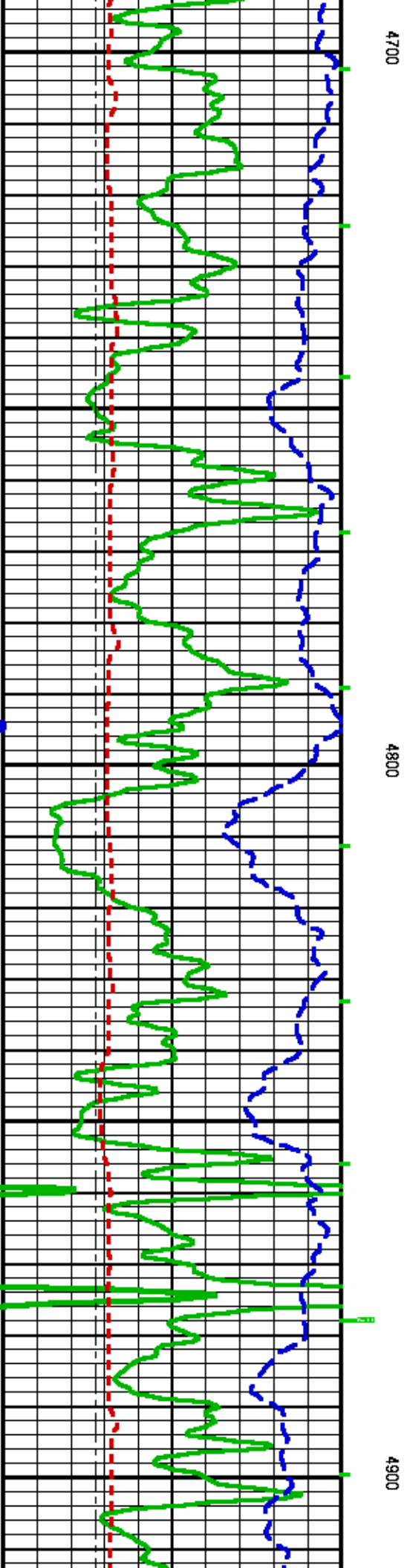
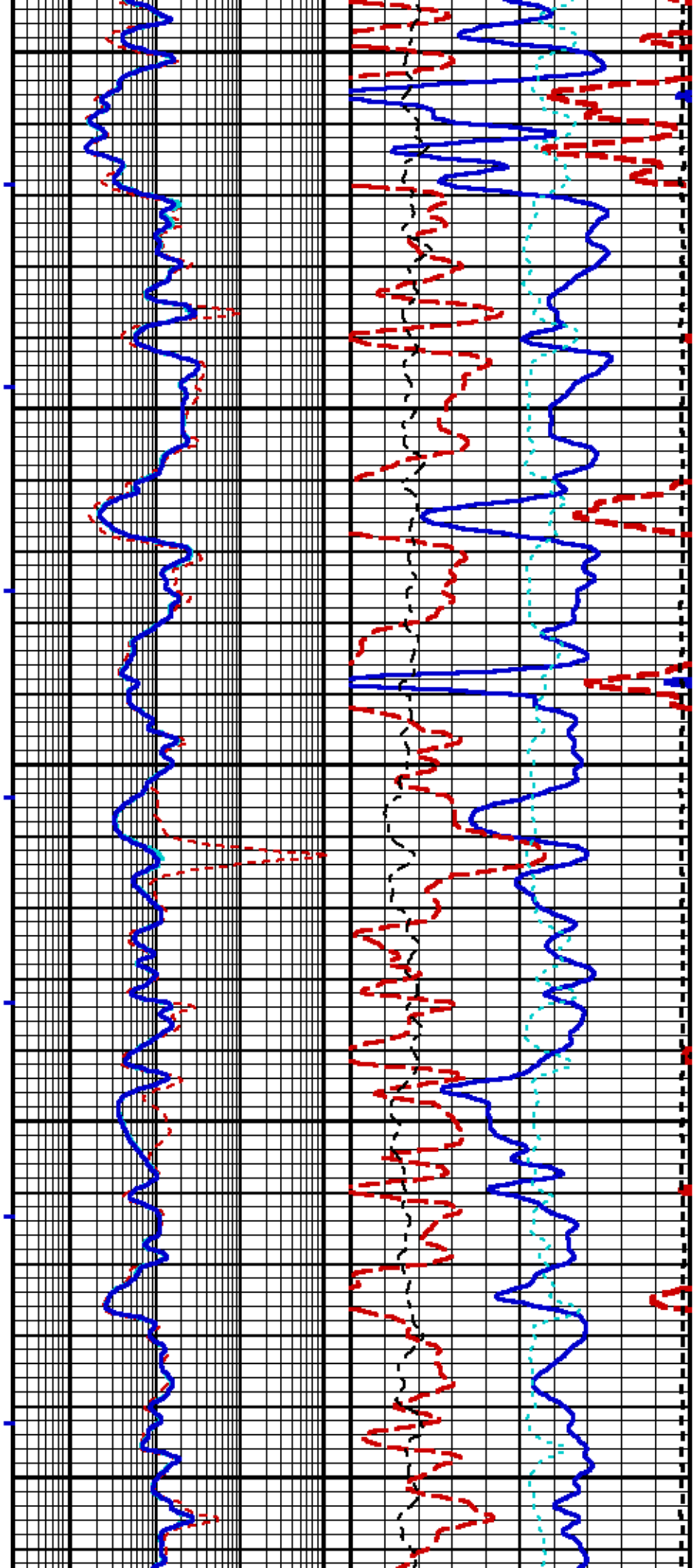


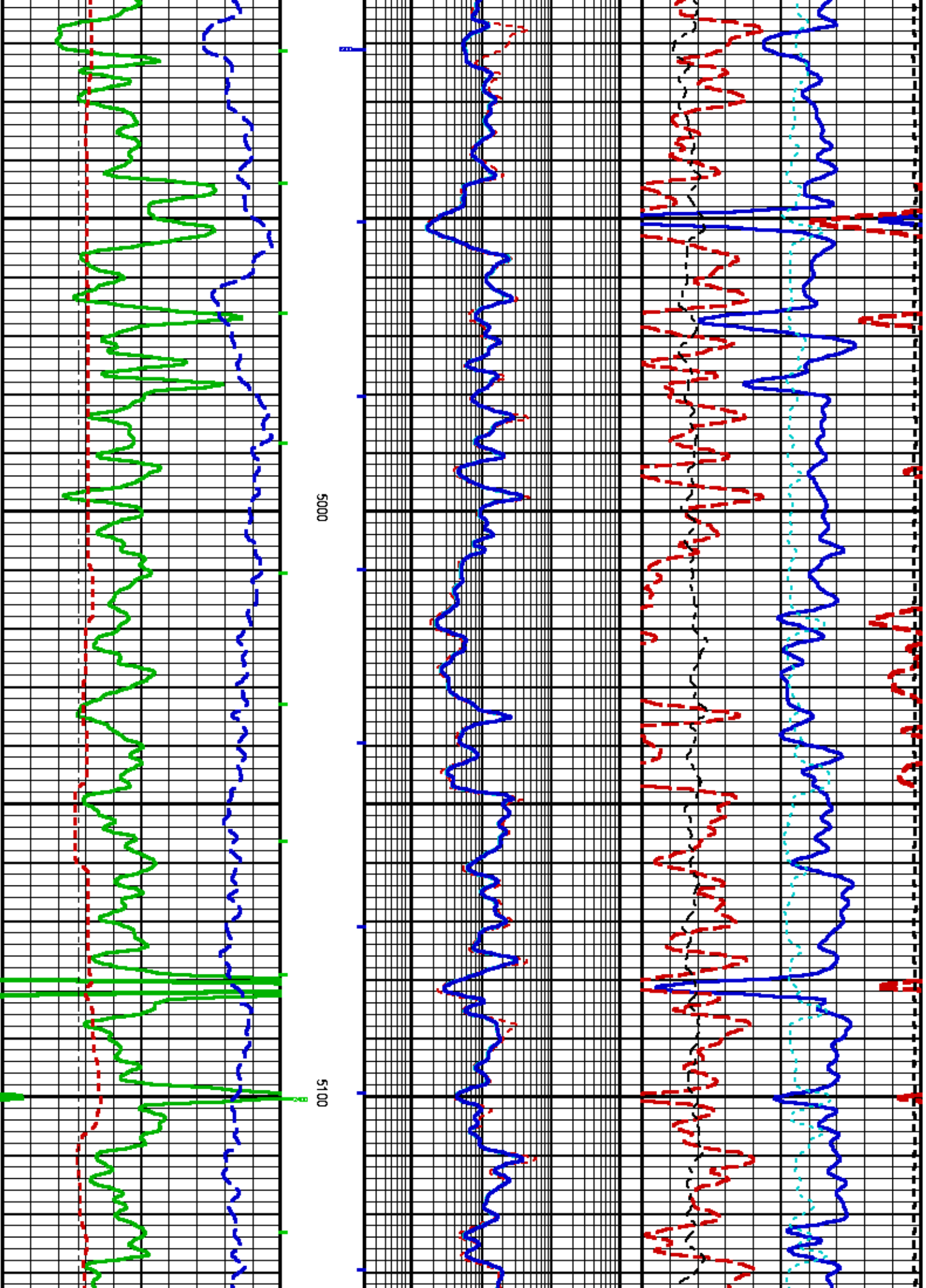


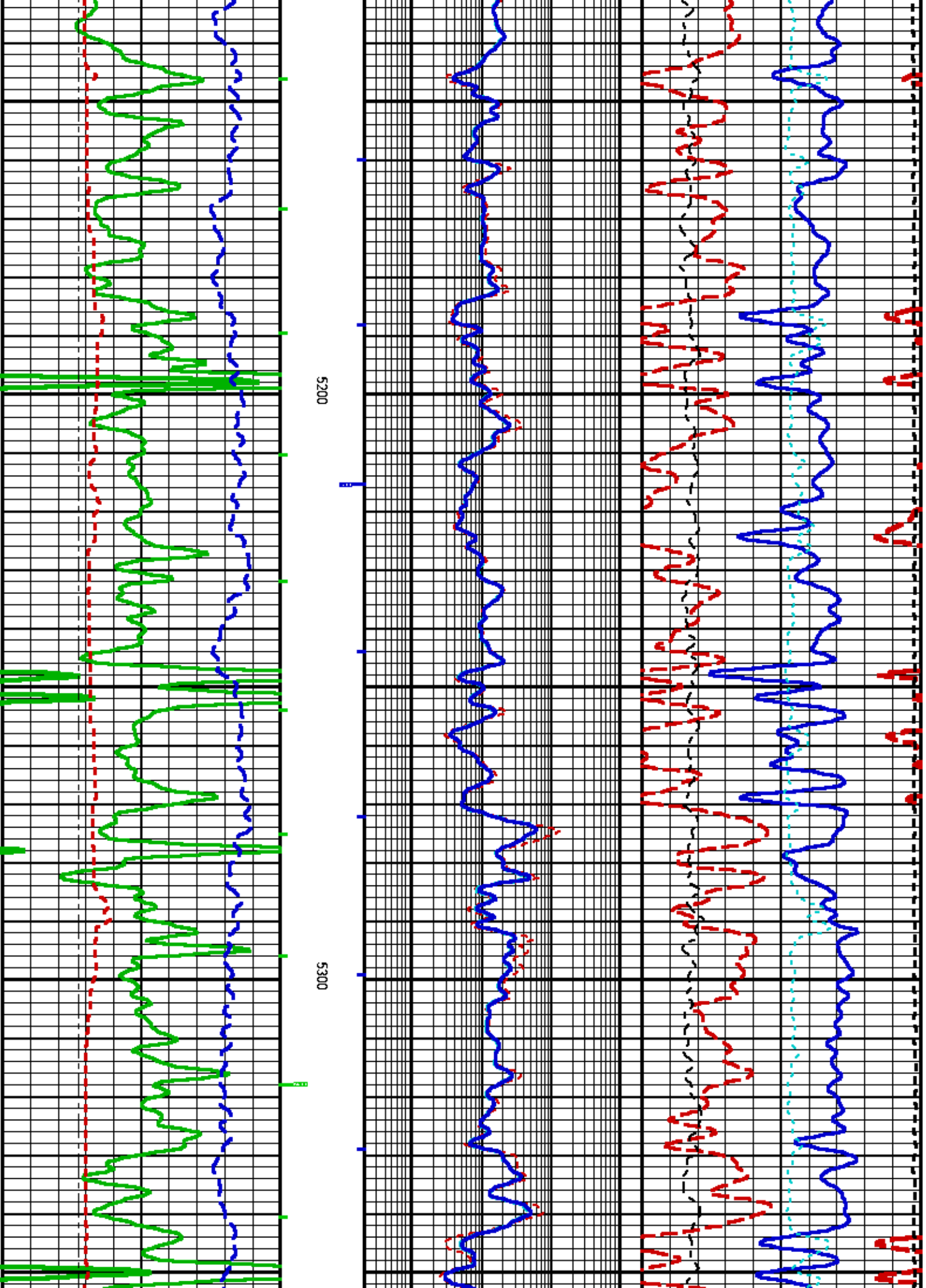


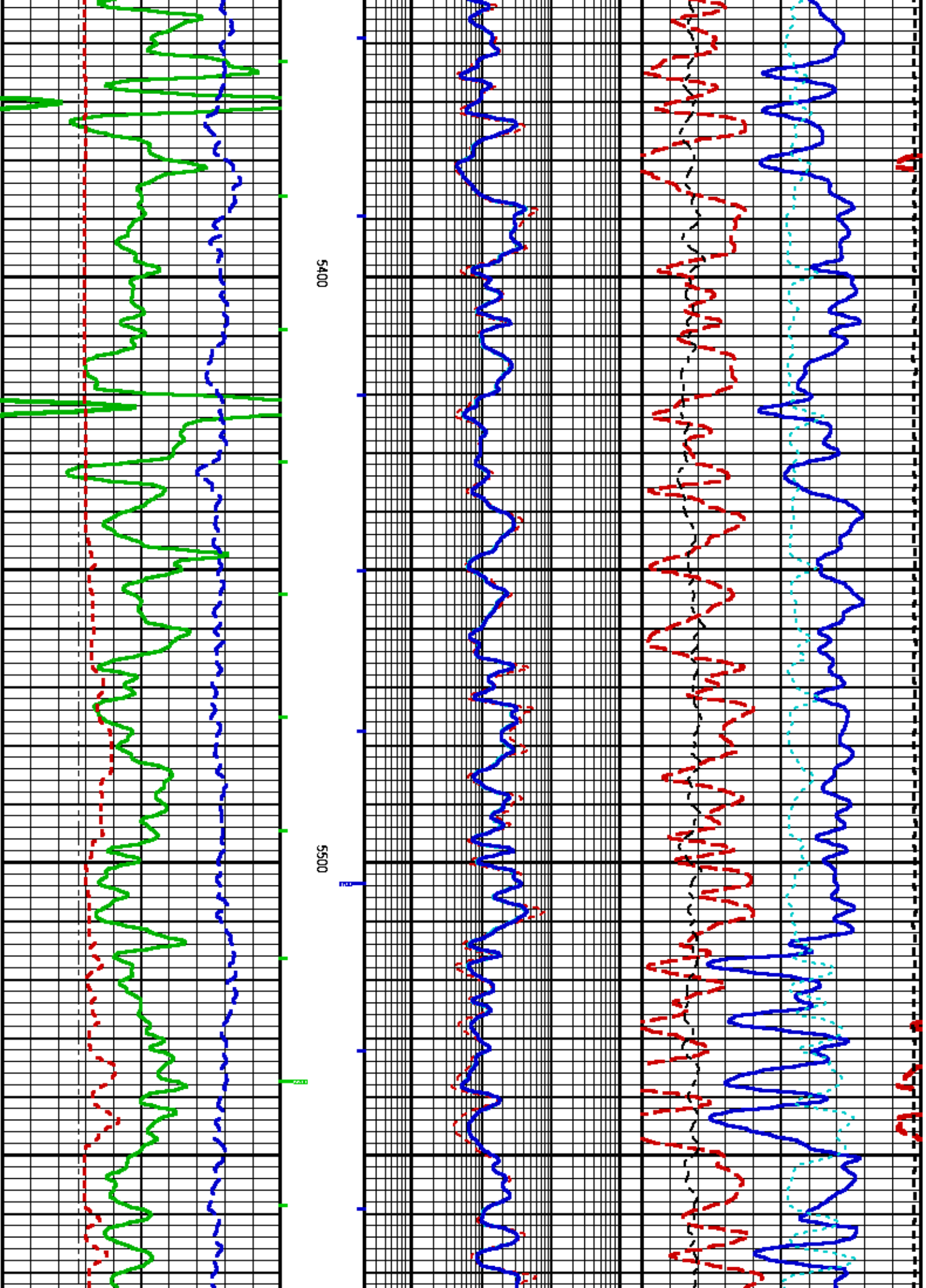


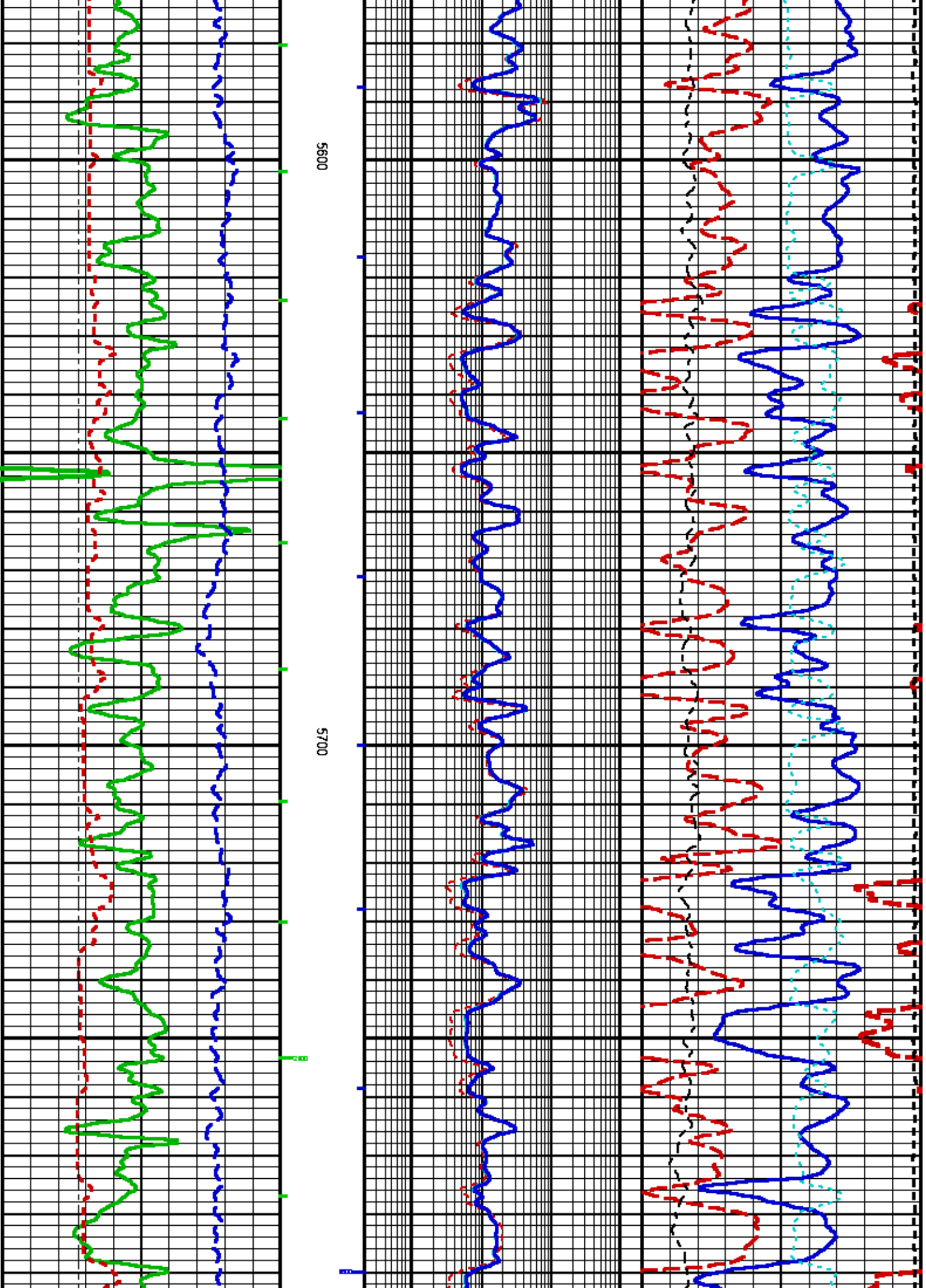


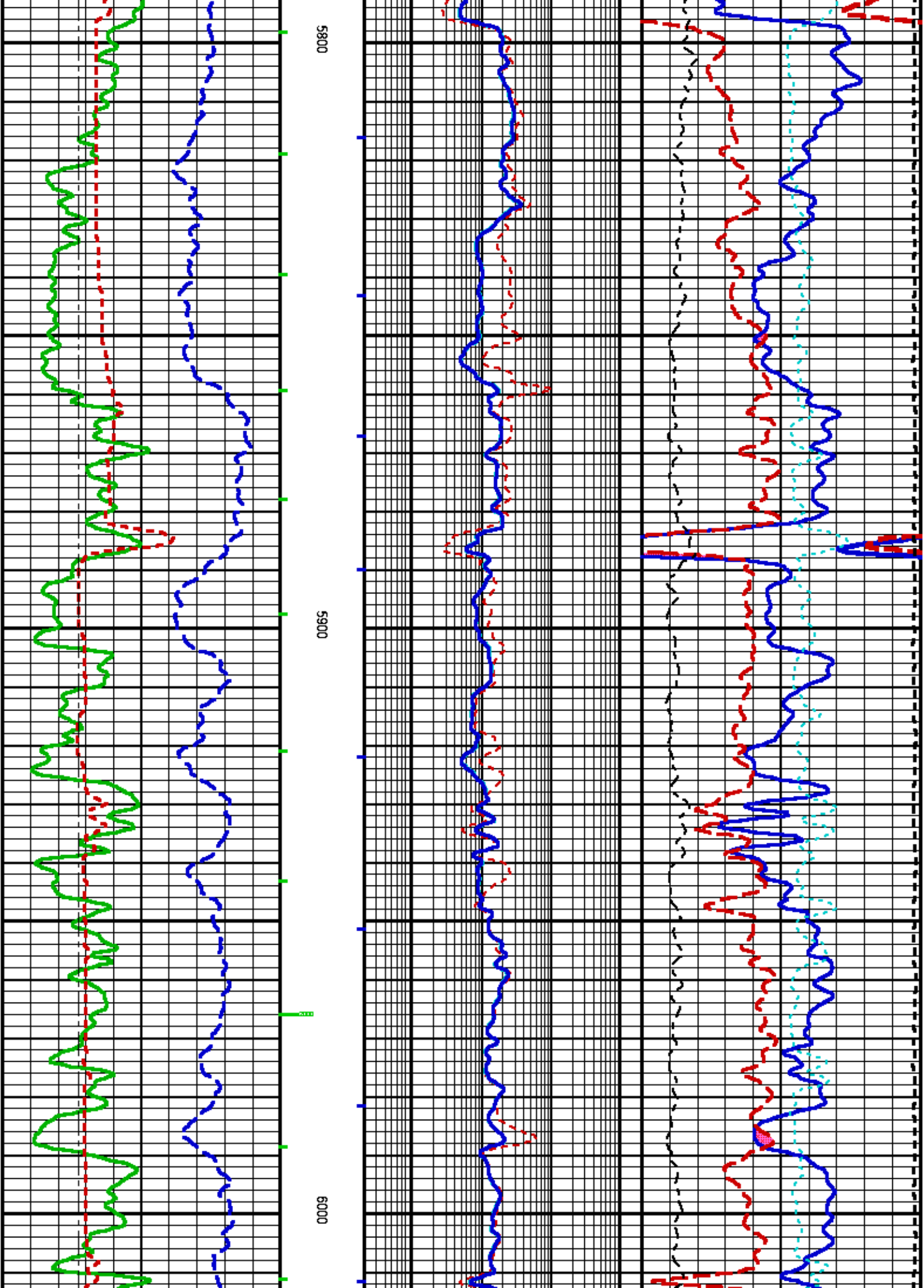


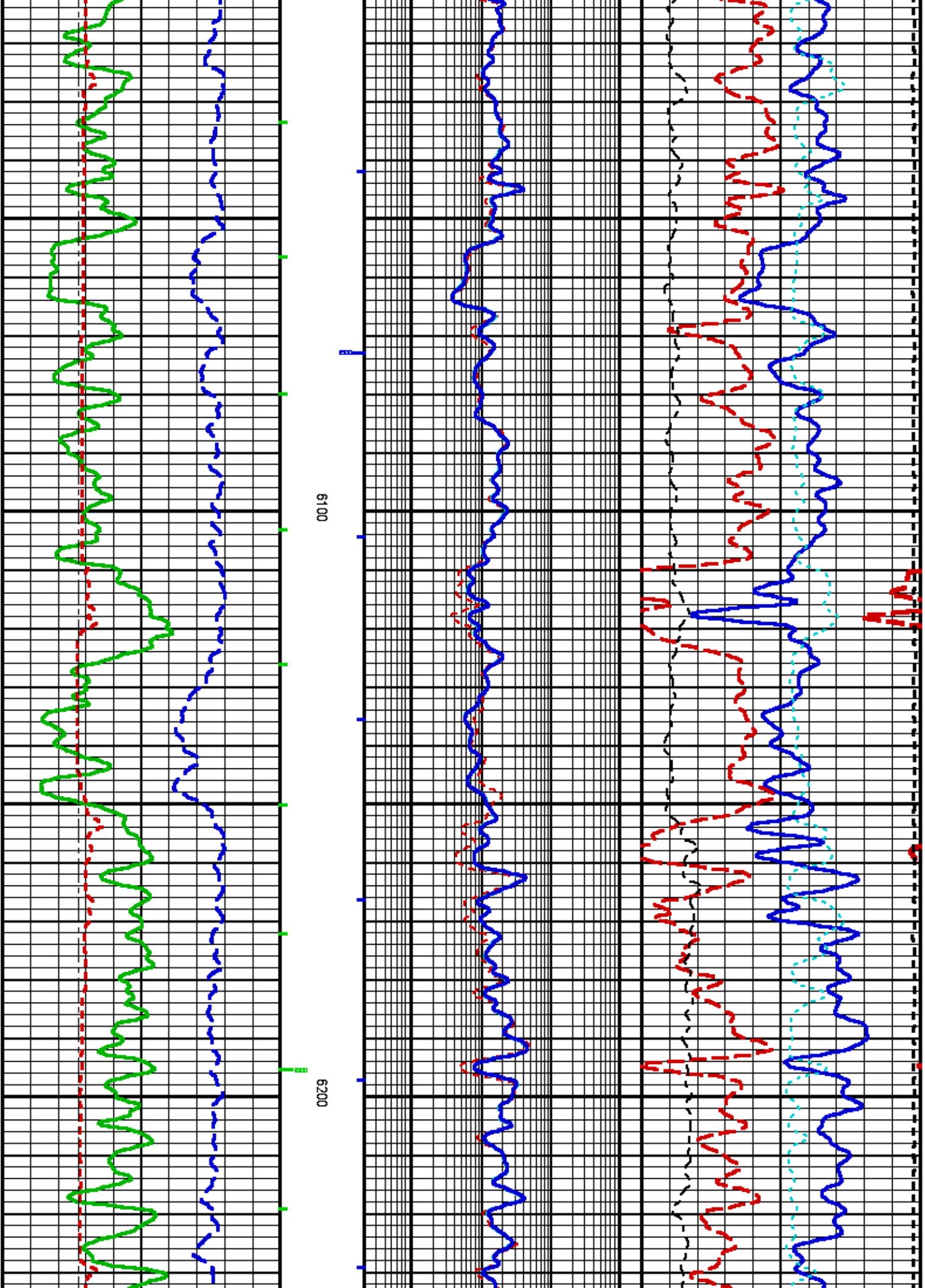


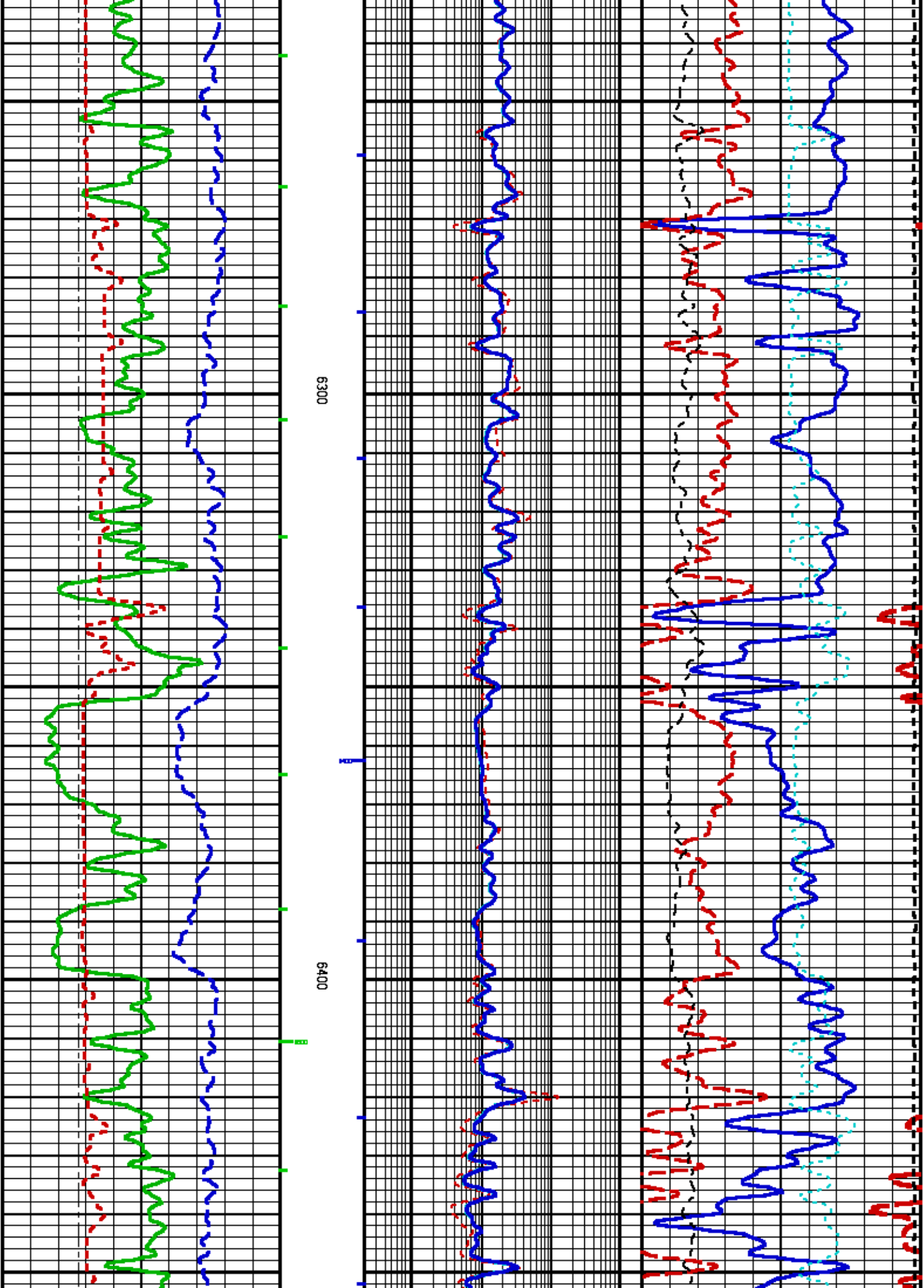


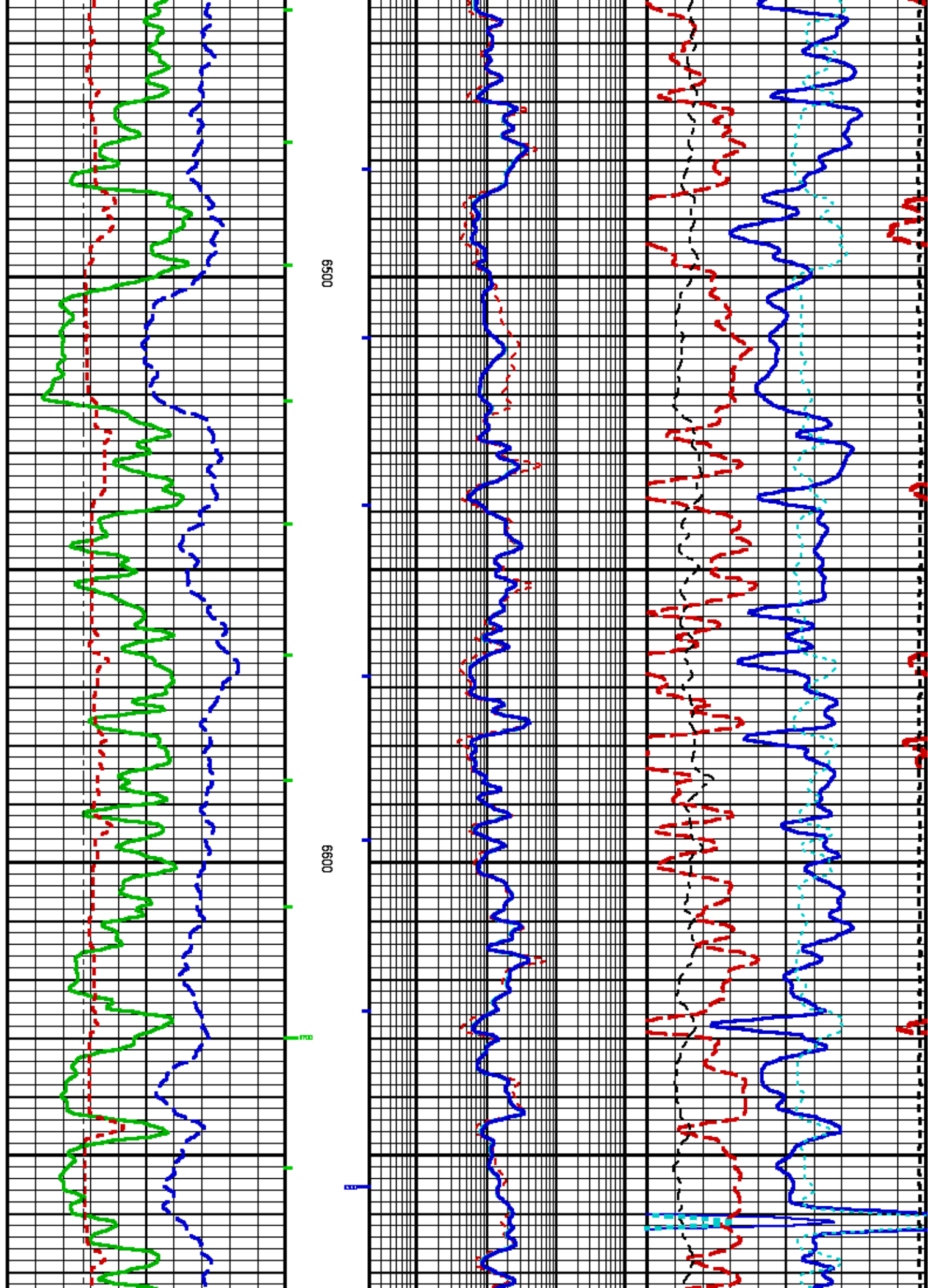


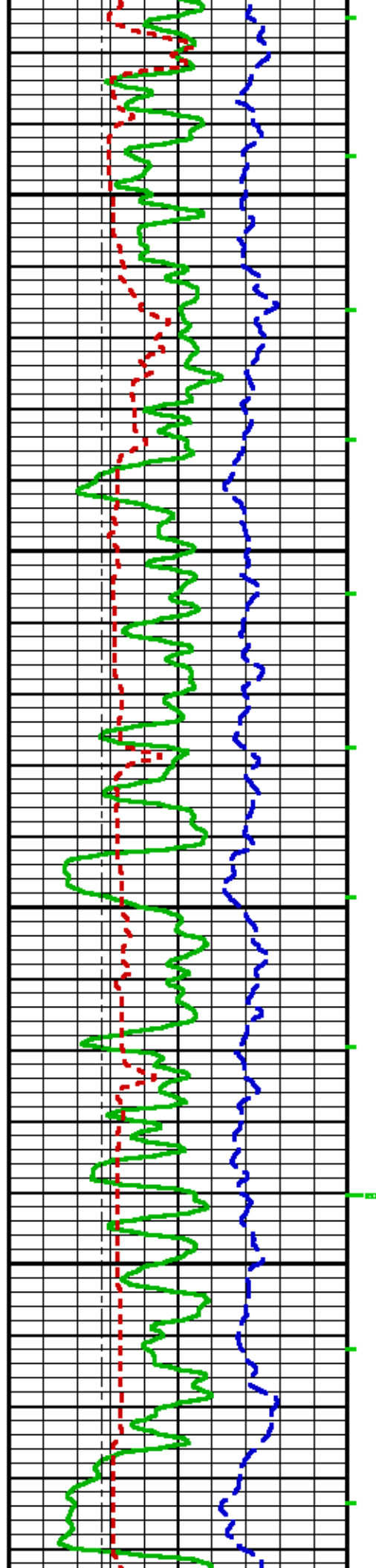






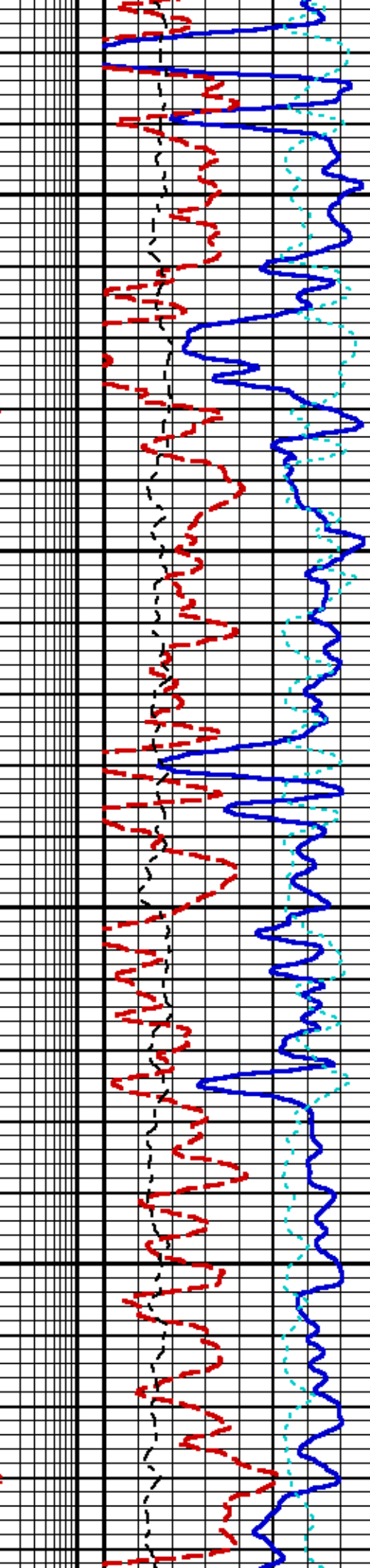
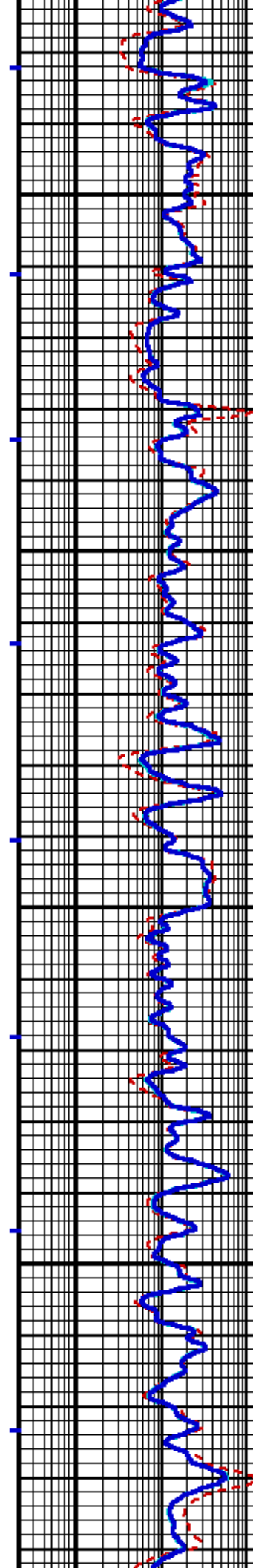


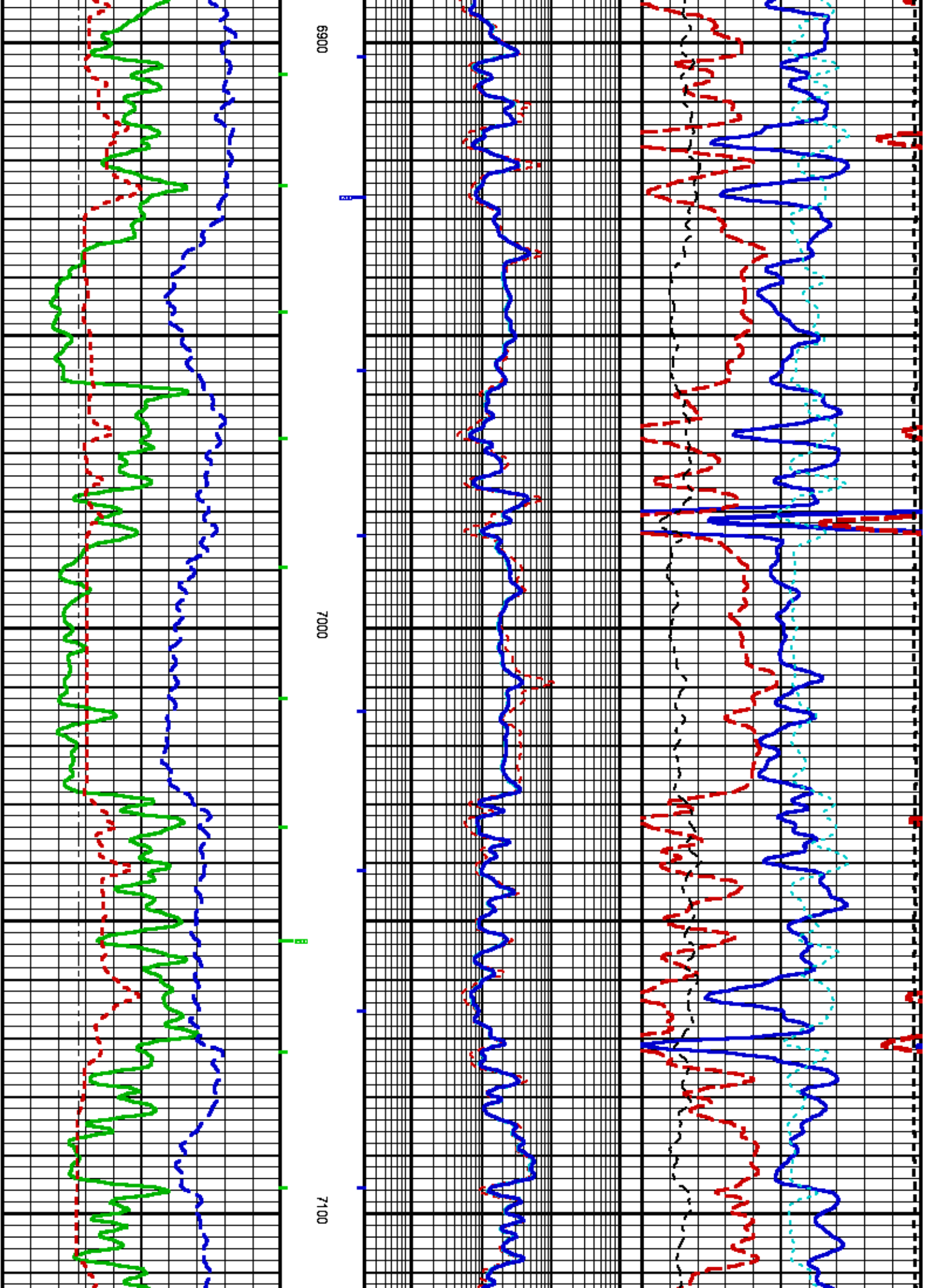


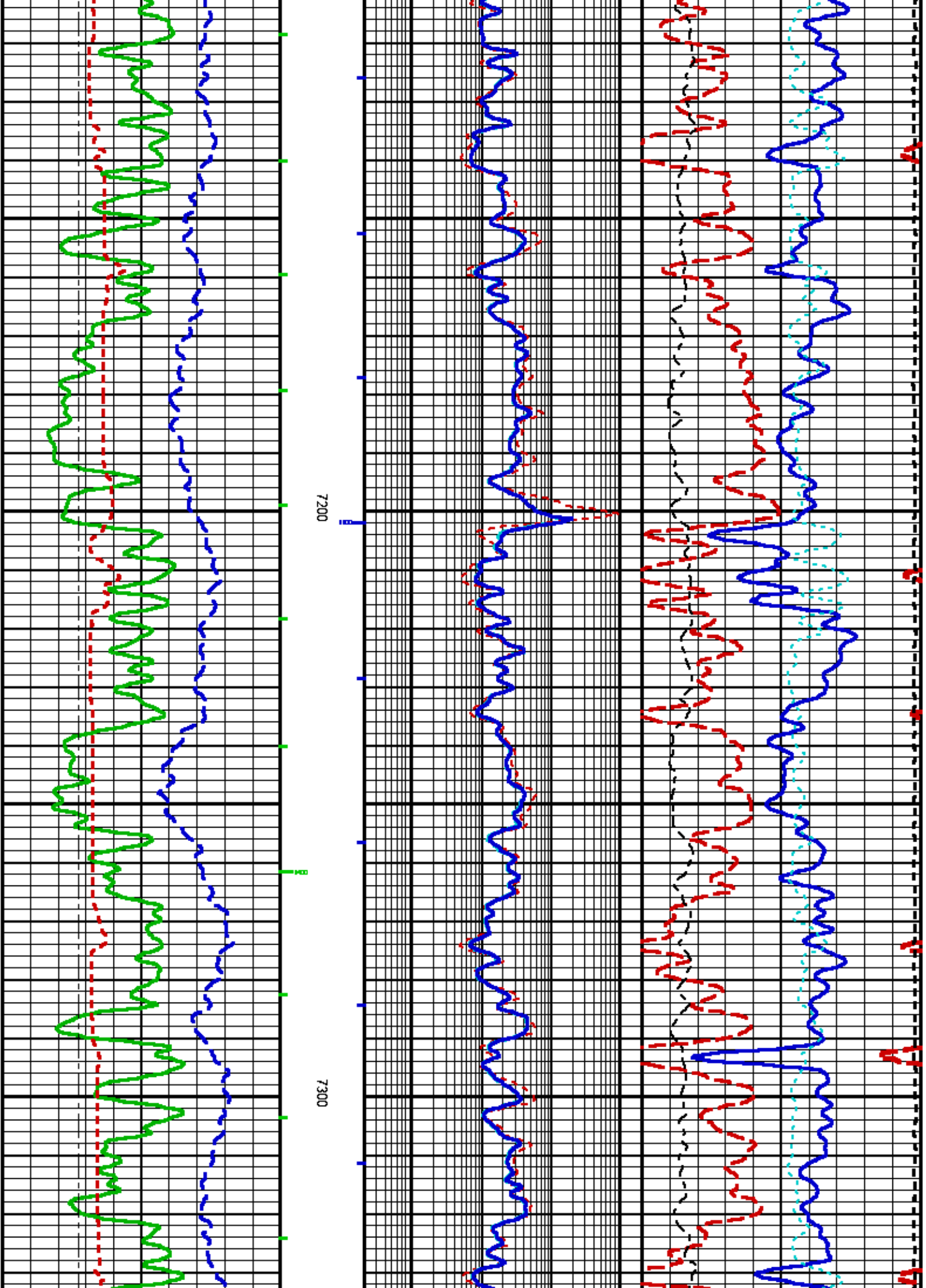


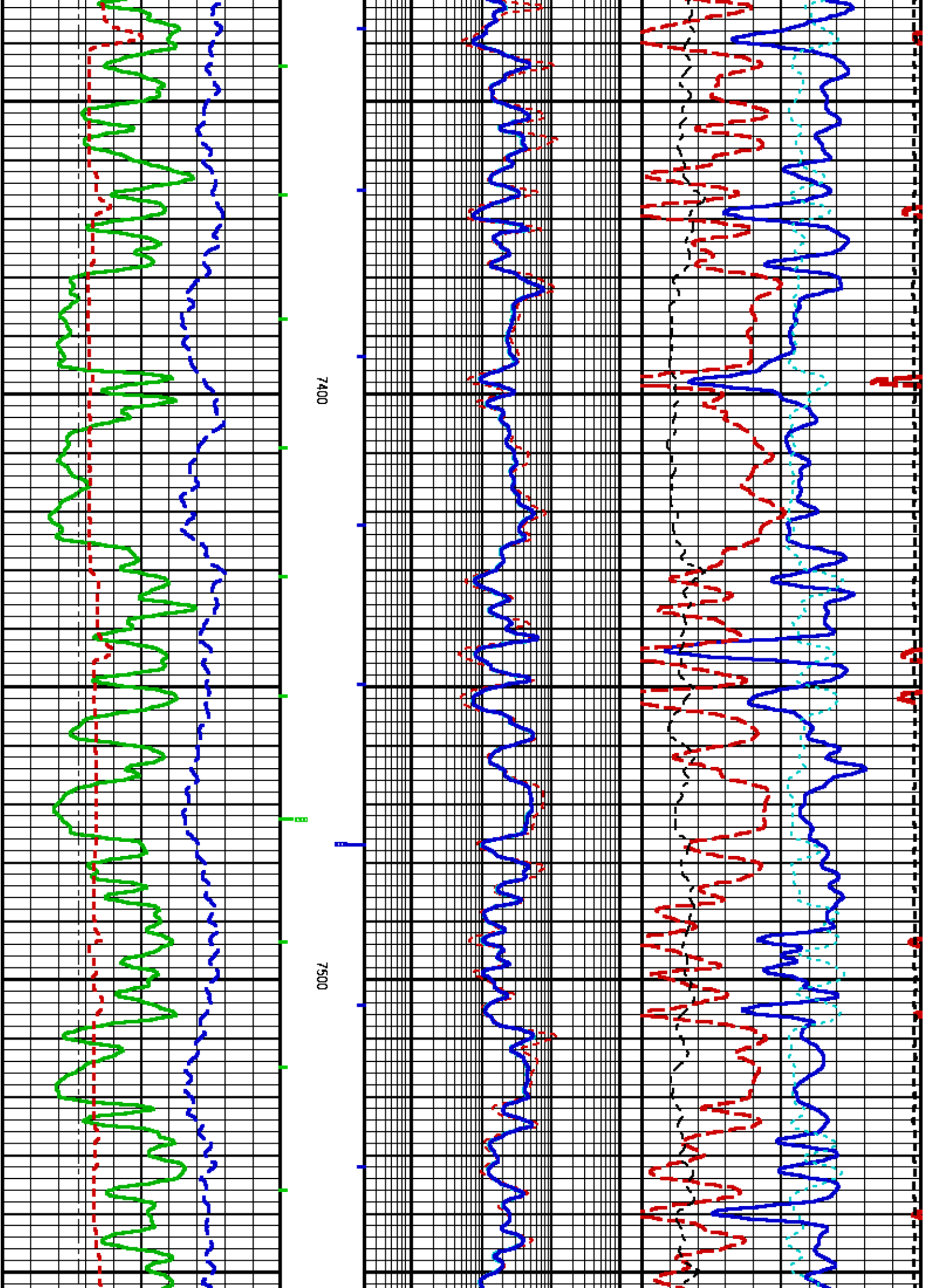
6700

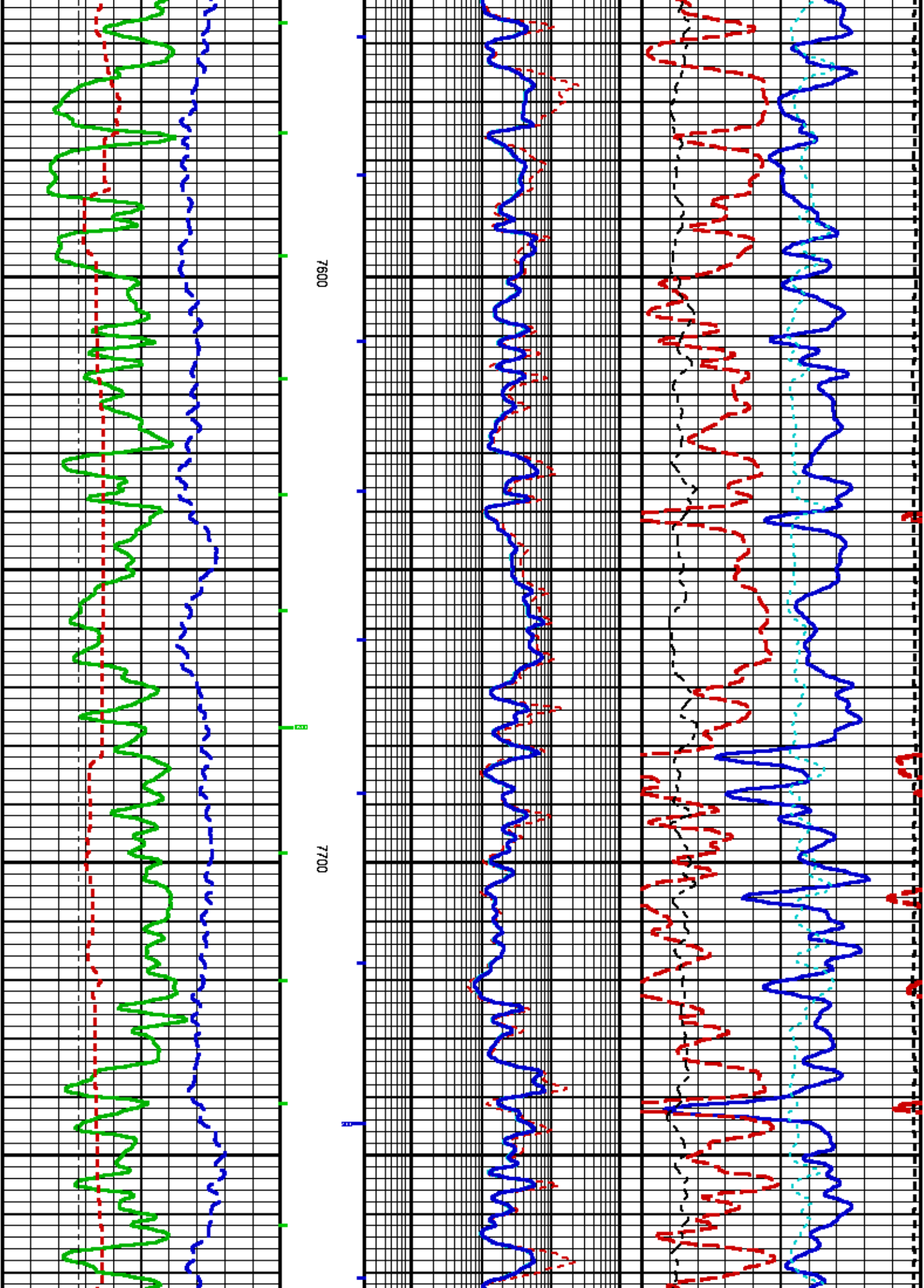
6800

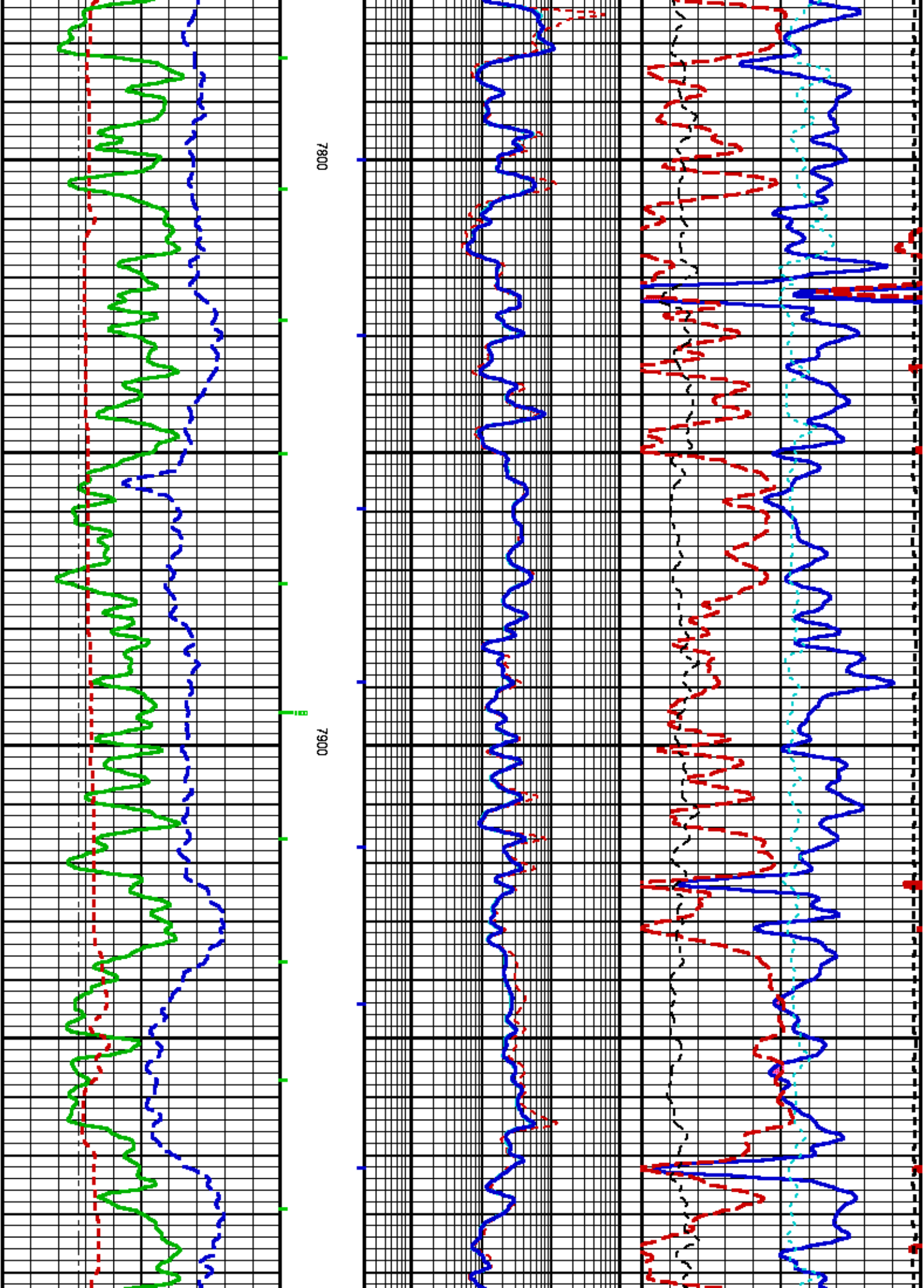


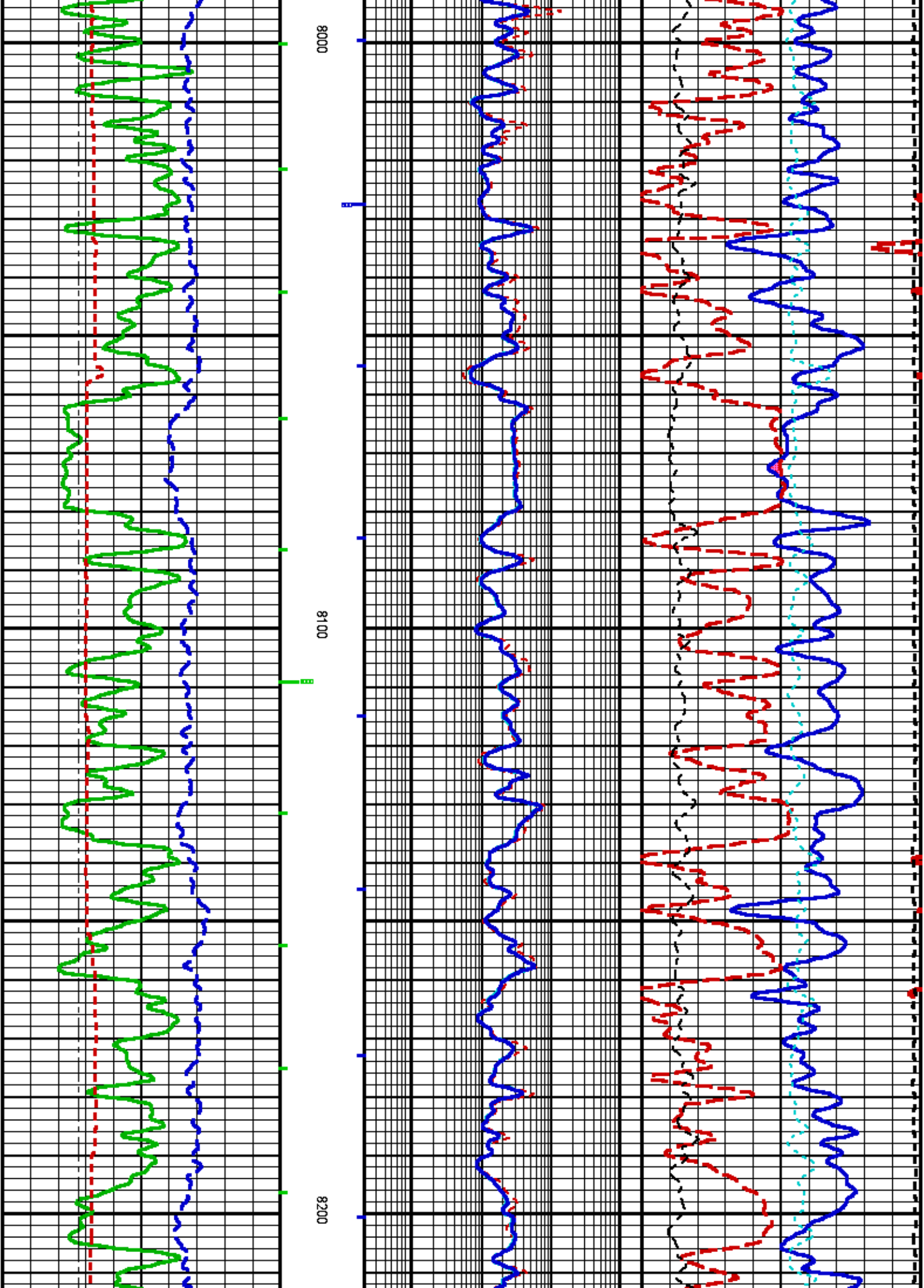


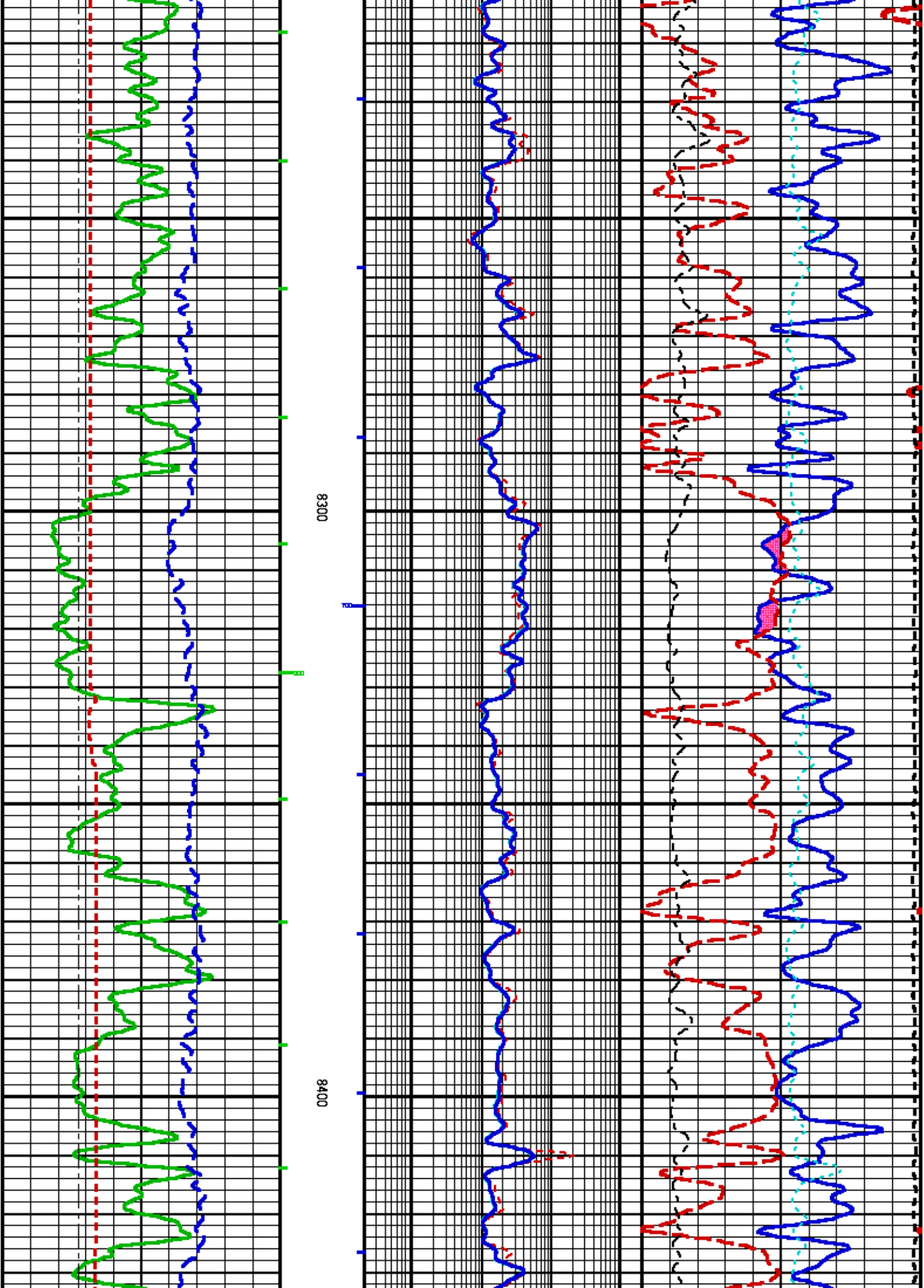


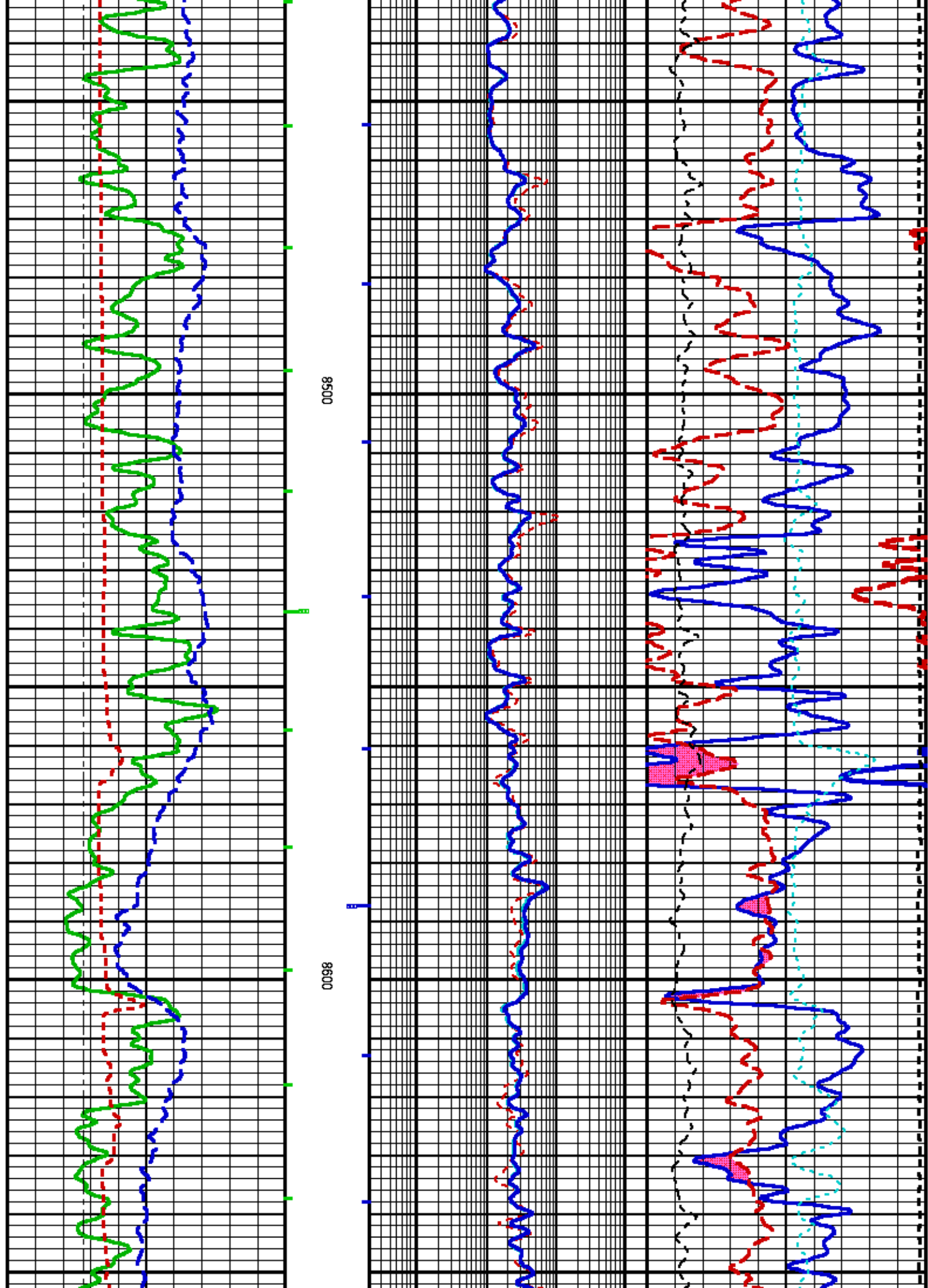


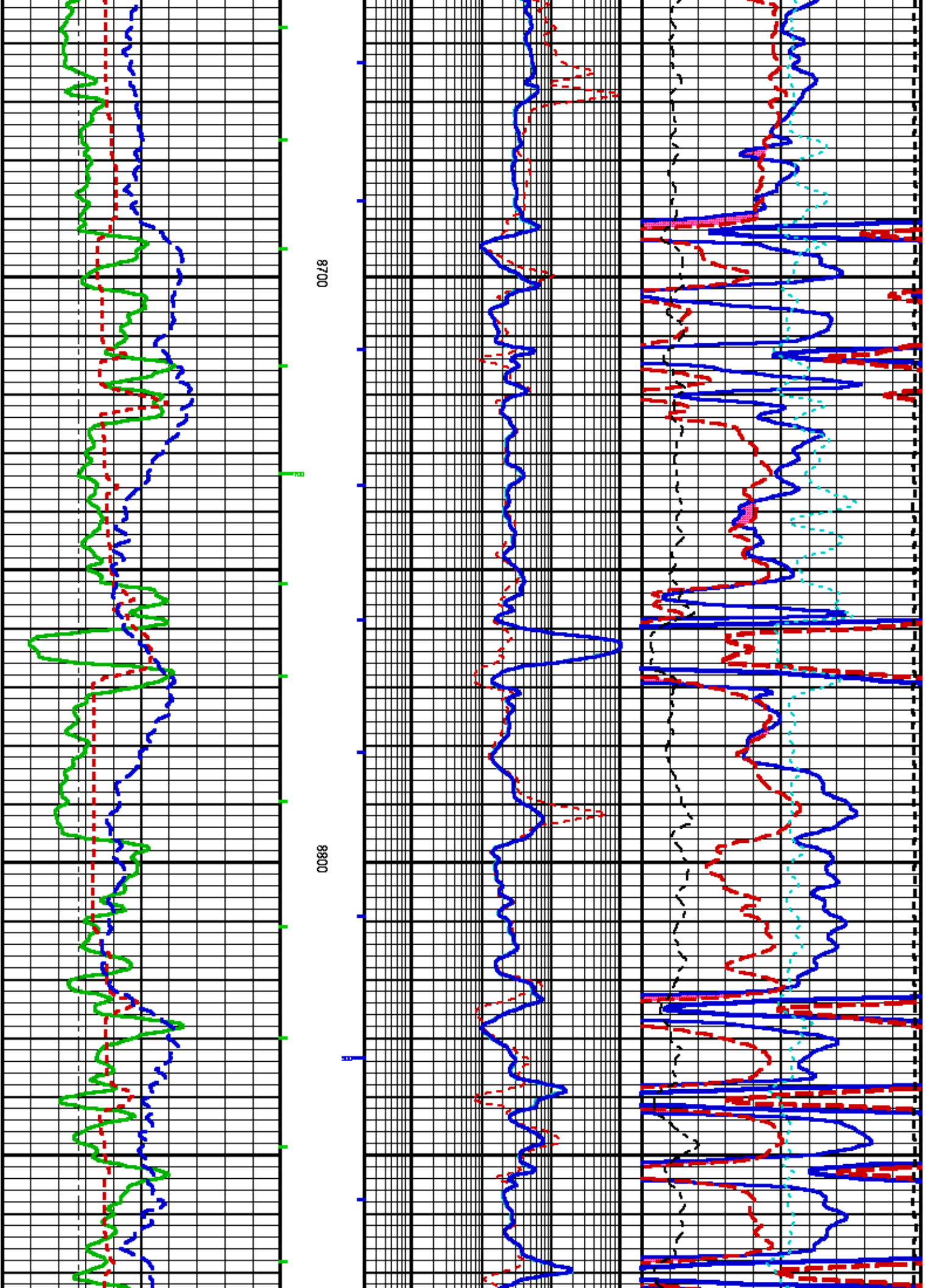


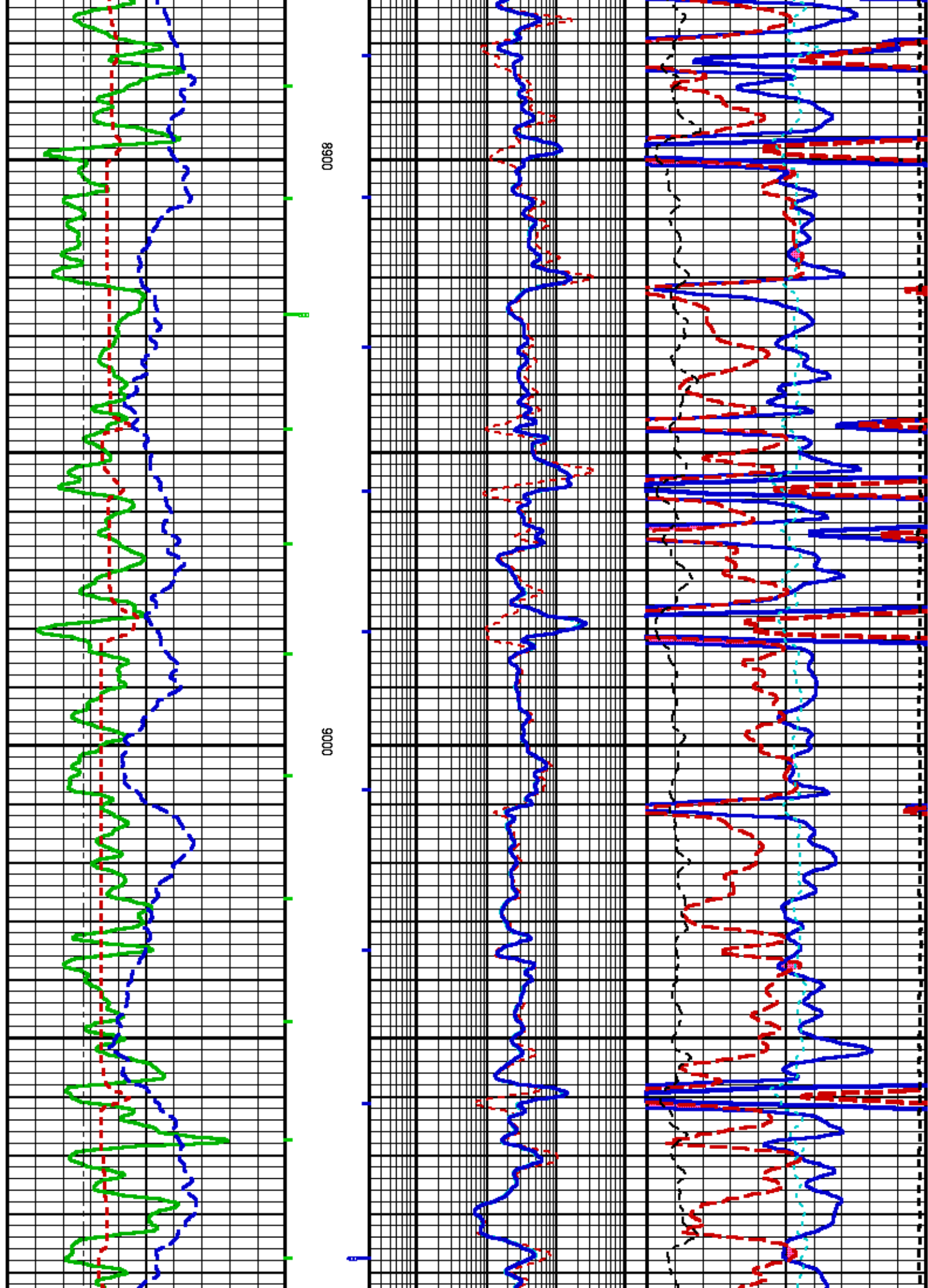


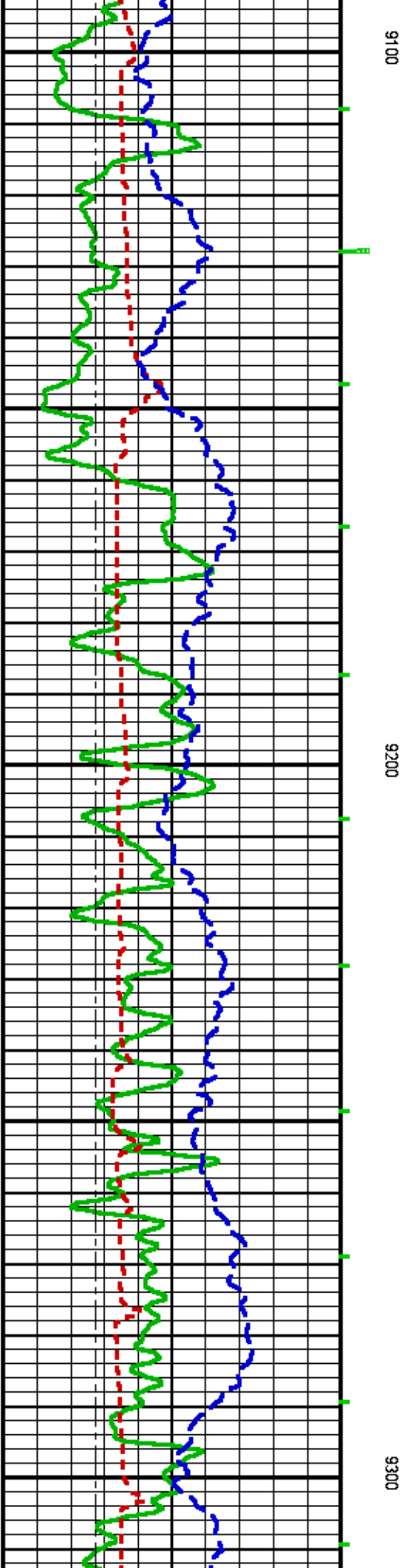
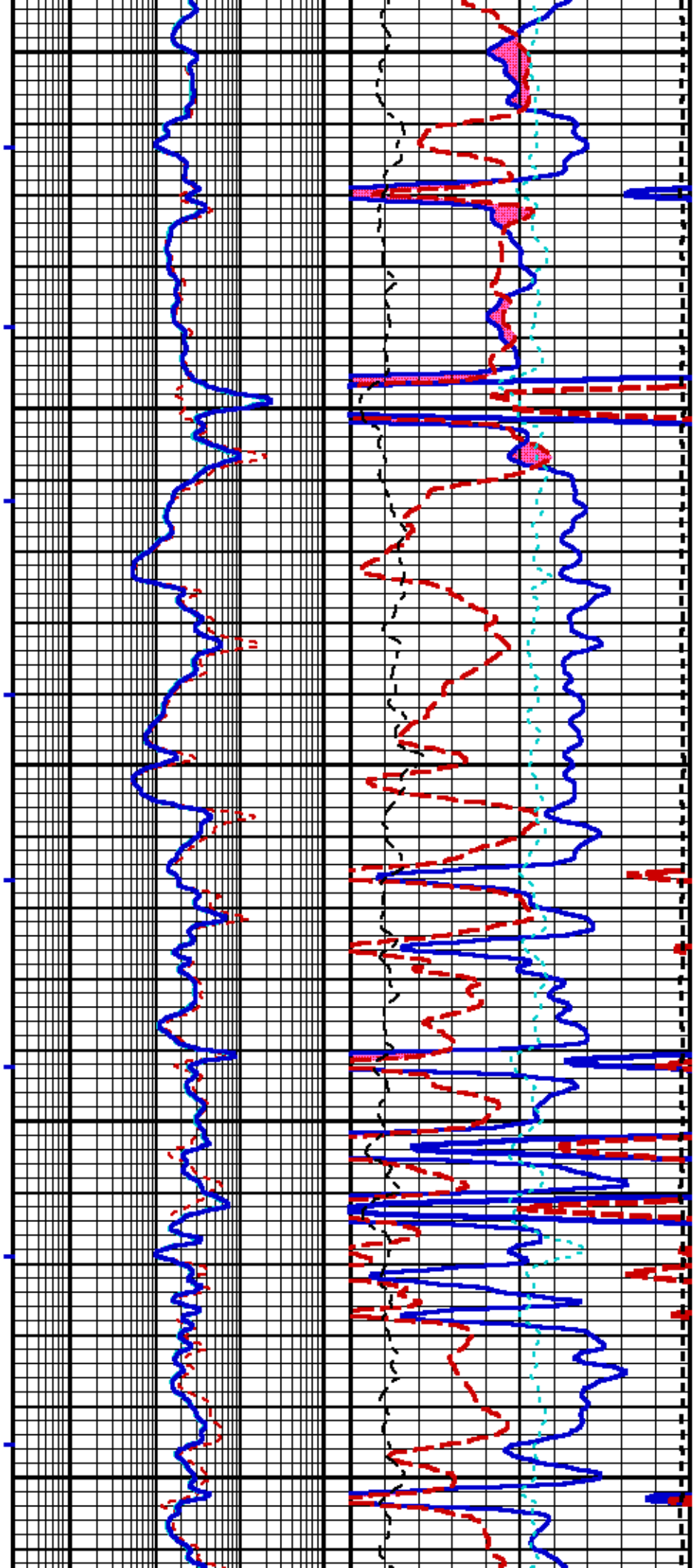


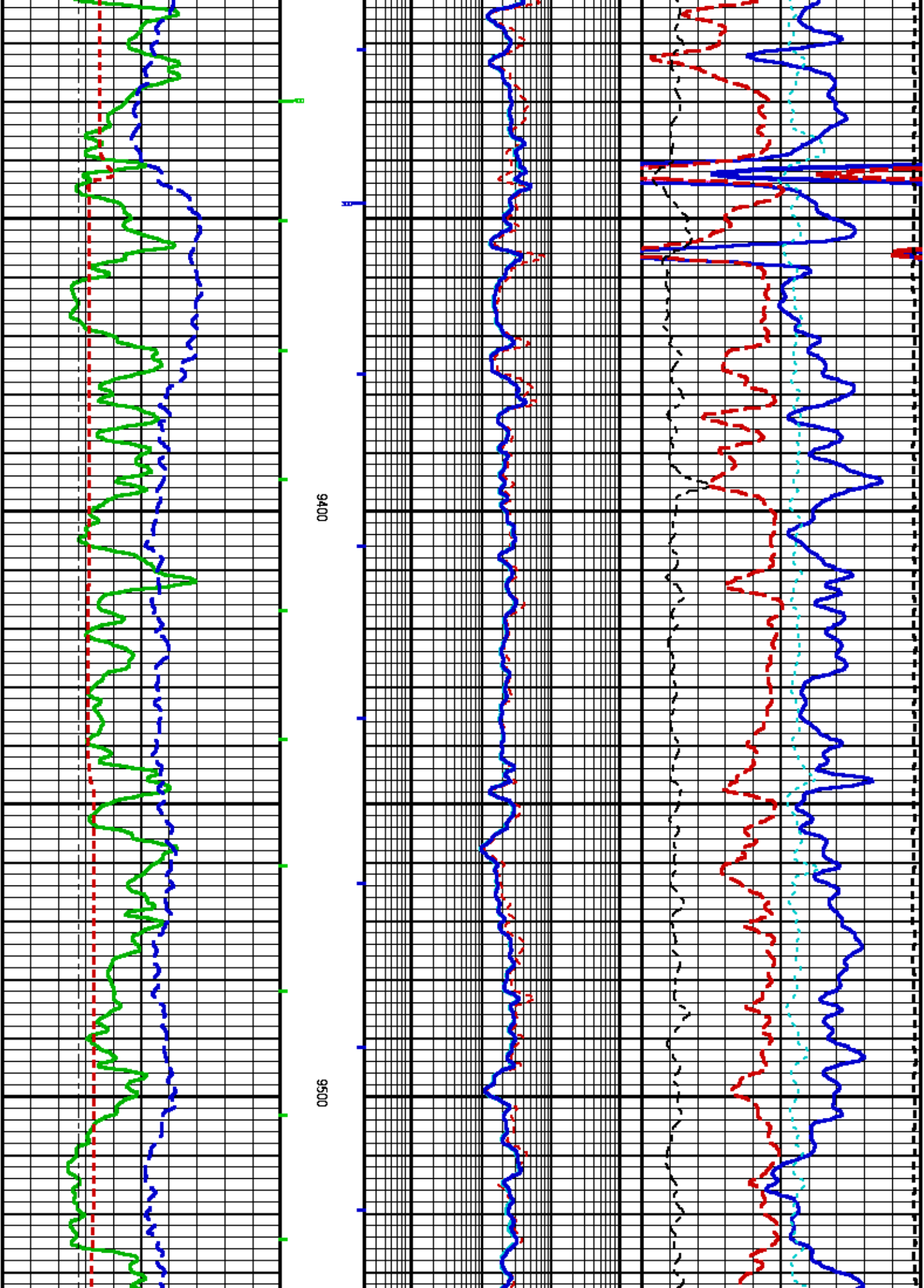


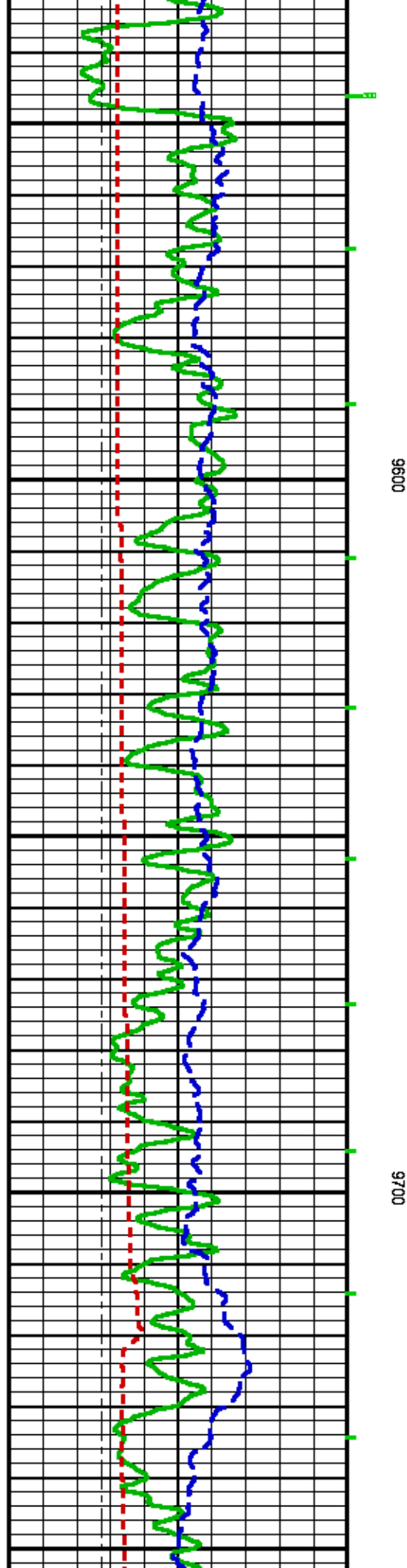
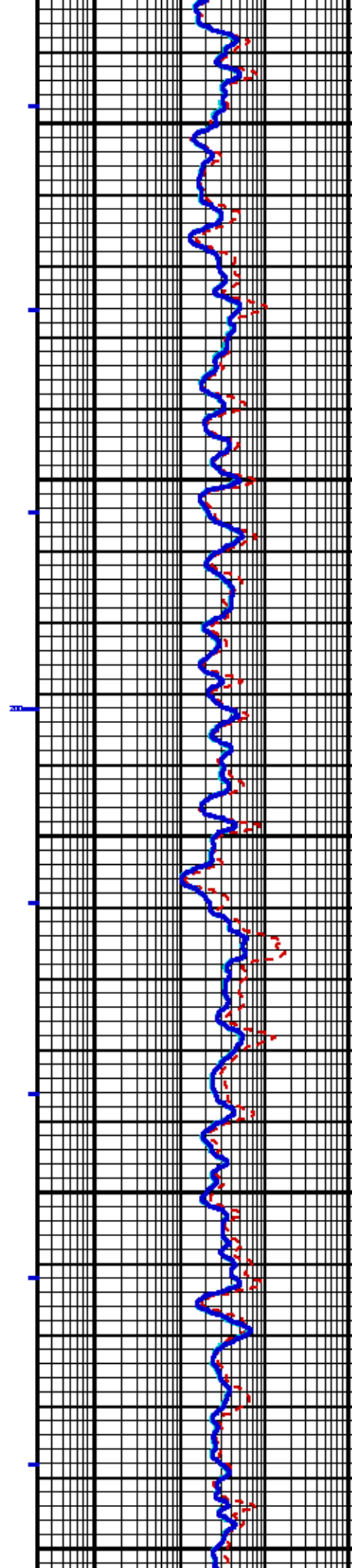
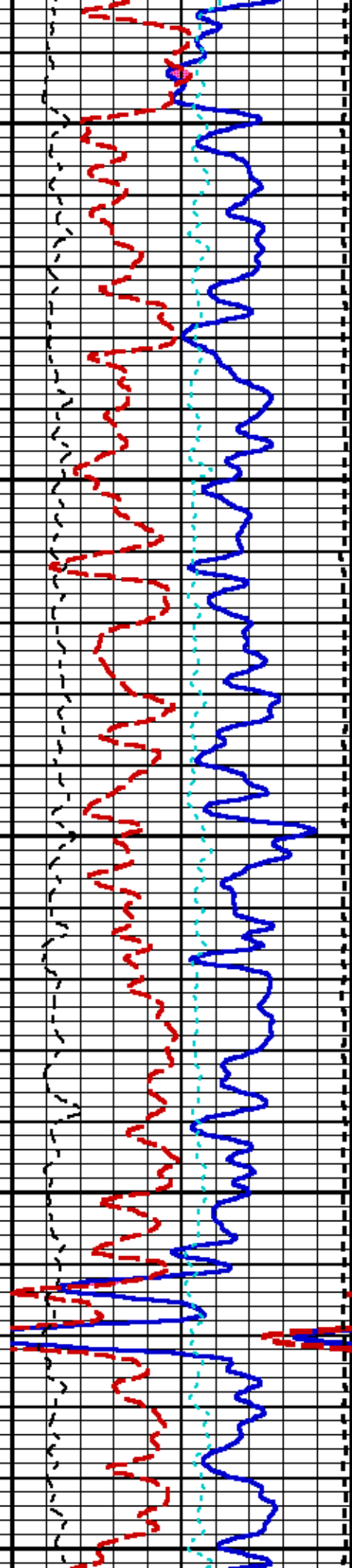


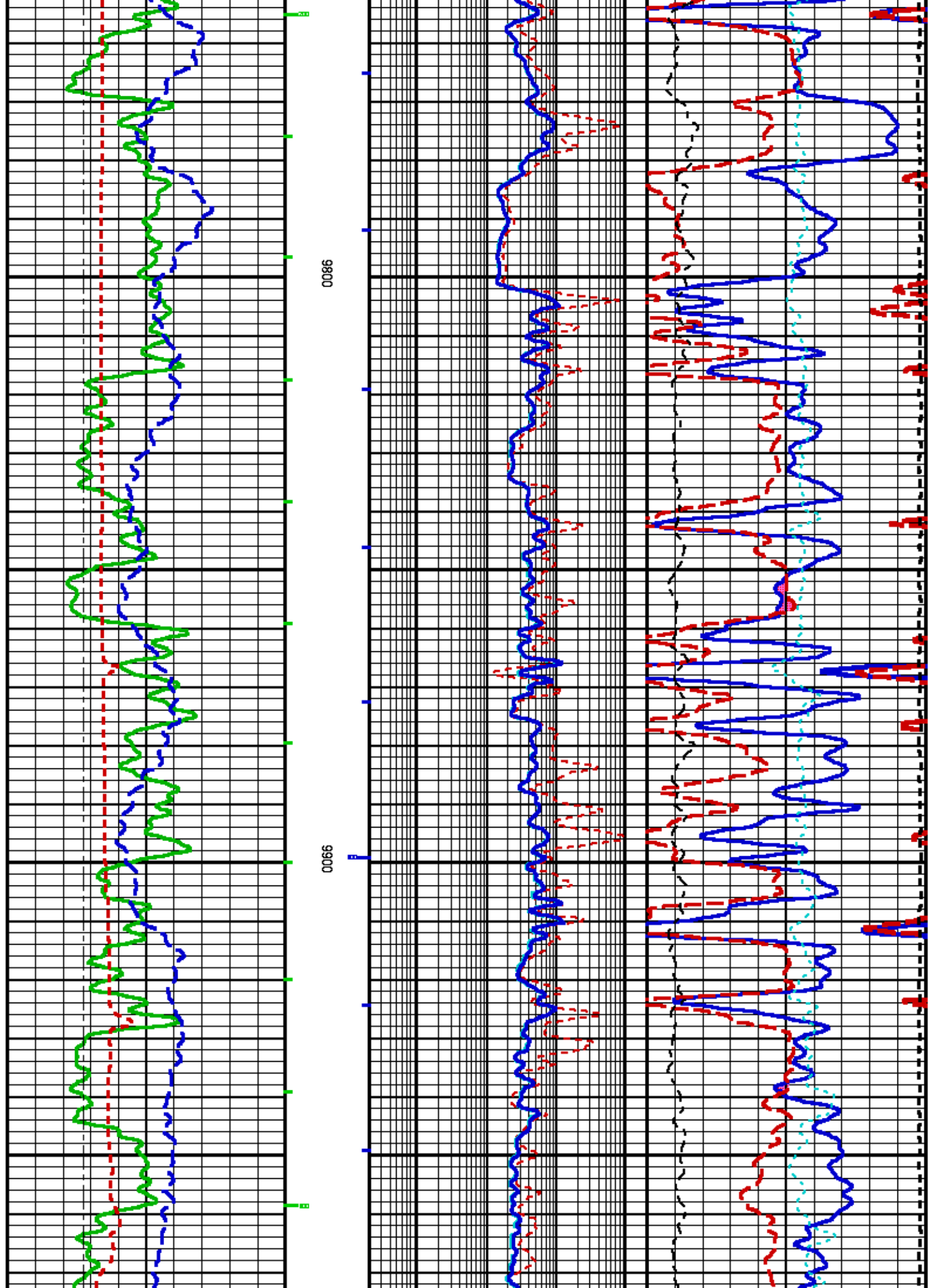


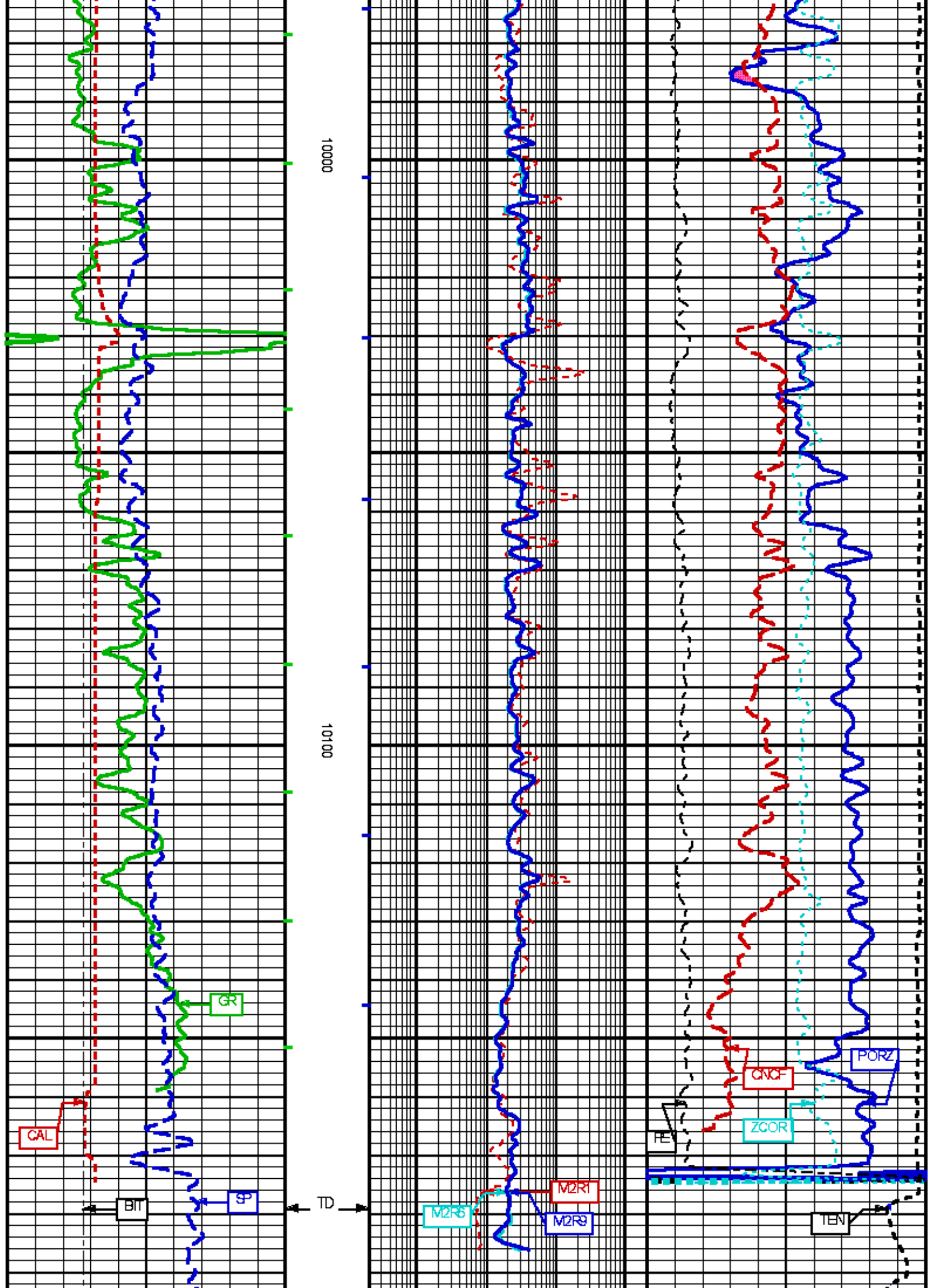


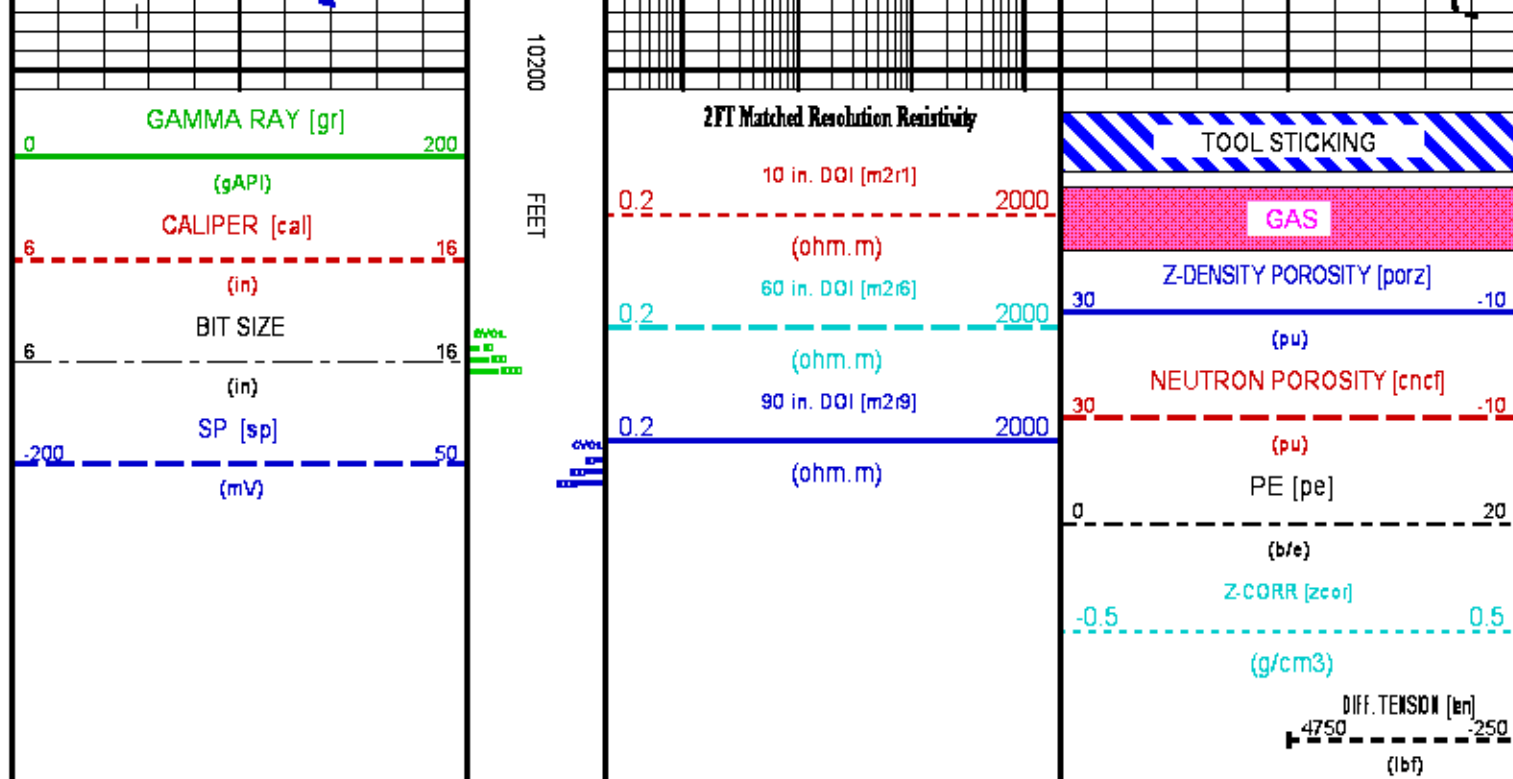












REPEAT LOG

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

Plotted: Wed Jul 24 19:50:19 2013

PARAMETER AND FILTER SUMMARY REPORT

File: /dat1a/625564/n970a01.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 3038.750 ft BOTTOM DEPTH: 3450.793 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) medium (1)		TOP 3125.750	BOTTOM

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		"	"

BOREHOLE CORR DIAMETER	CALIPER/FIXED DIA. (mbh*)	USE CALIPER			
	FIXED DIAMETER (cnbh*)	8.750	in	"	"
MUD SAMPLE RESISTIVITY	FIXED DIAMETER (mbh*)	8.750	in	"	"
	MUD SAMPLE TEMP	98.0	degF	"	"
BH MUD RESISTIVITY SOURCE	MUD SAMPLE RES	0.720	ohm.m	"	"
	RMUD SOURCE (HDIL)	TOOL MEASURED		"	"
BOREHOLE TEMP from GRADIENT	Known BH REF TEMP	77.0	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	3601	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	9.625	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	"	"

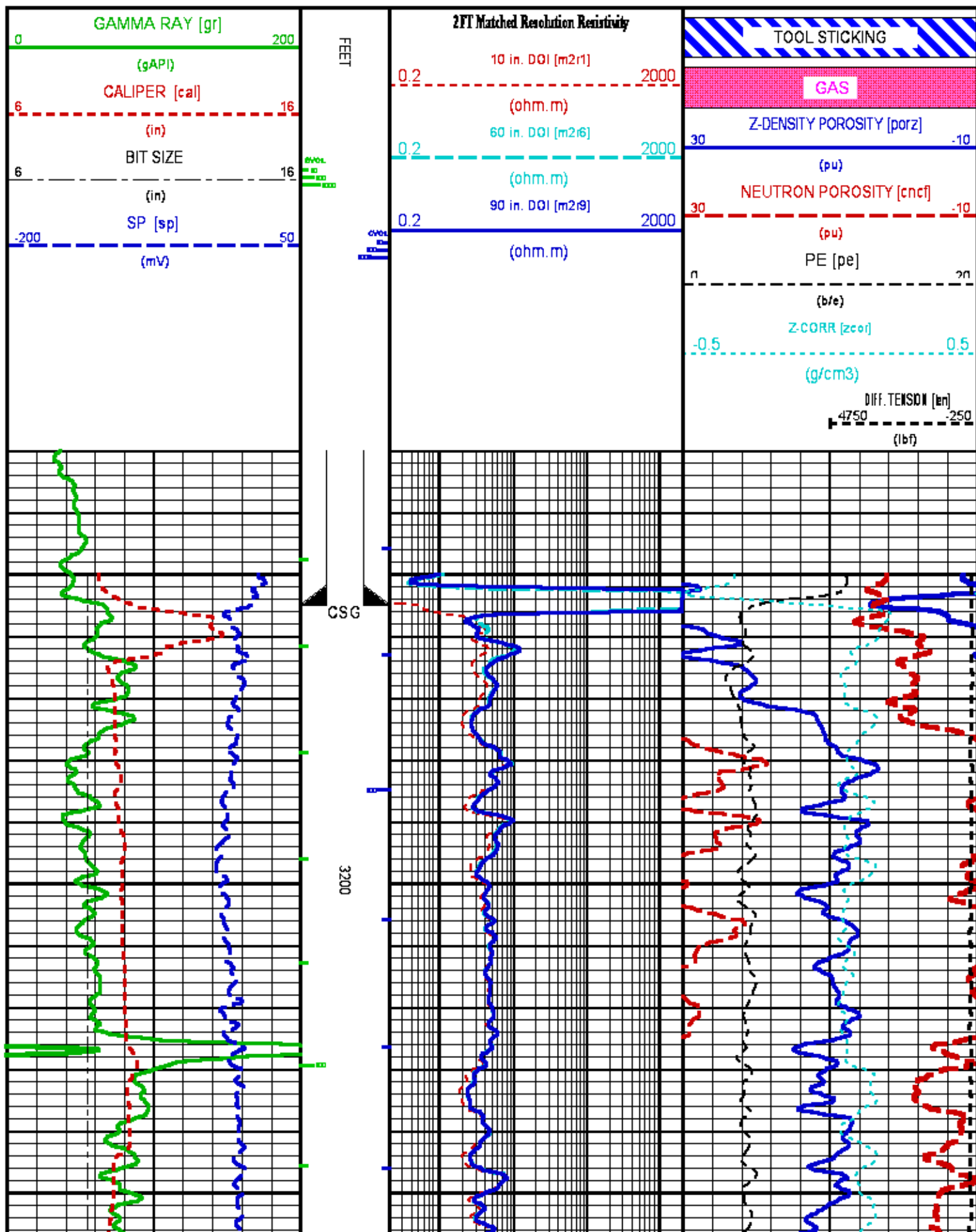
HDIL PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
HDIL TEMPERATURE CORRECTION	TEMP CORRECTION	ON		TOP	BOTTOM
ADAPTIVE BOREHOLE CORRECTION	ABC PROCESSING	ON		"	"
	ABC to CALCULATE	MUD CONDUCTIVITY		"	"
	STANDOFF	1.50	in	"	"
	TOOL POSITION	ECCENTERED		"	"
	Rmud MULTIPLIER	1.000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

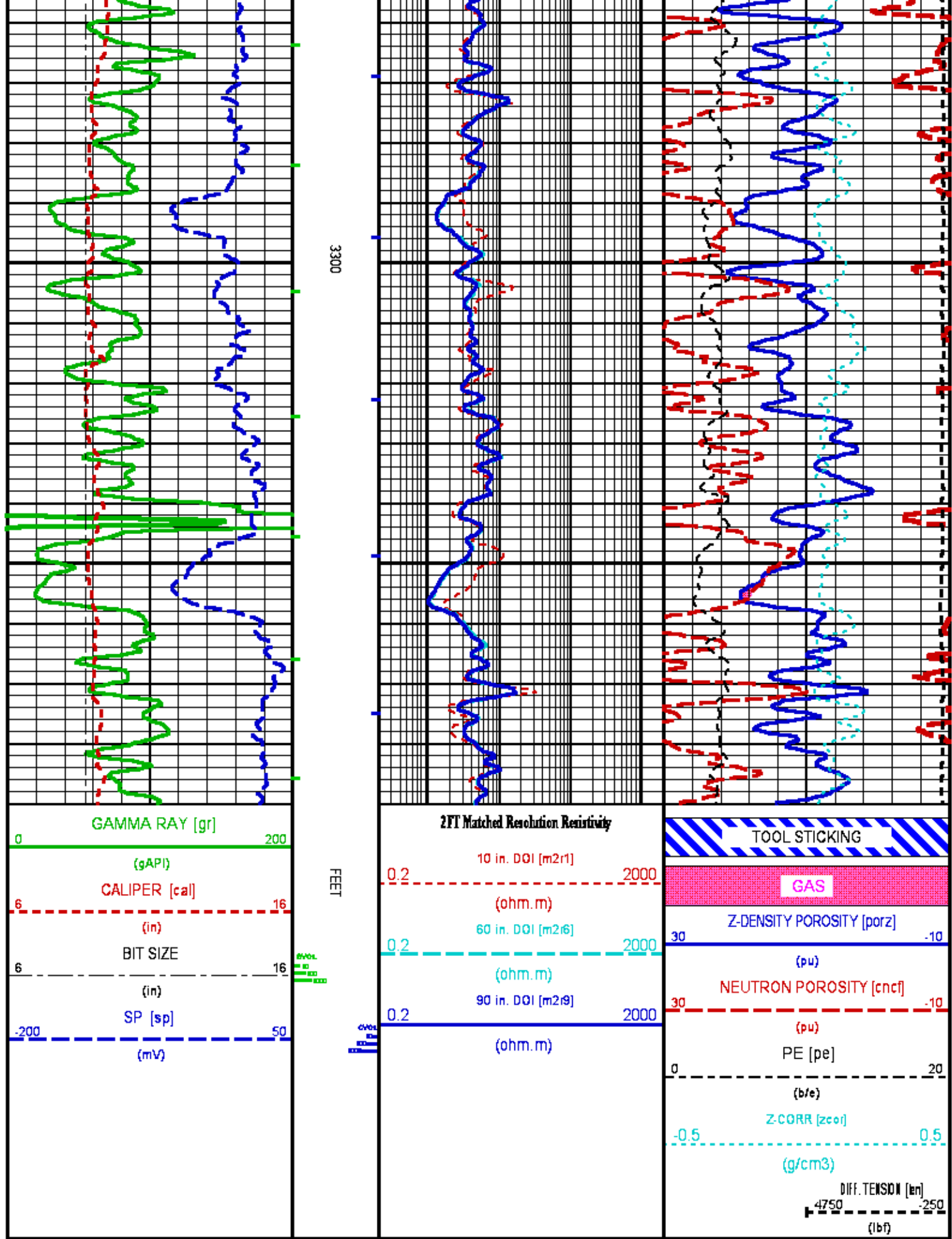
CURVE DESCRIPTION REPORT		
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:BIT	Jul 23 21:59:02 2013	BIT SIZE
F1:BVOL	Jul 23 21:59:02 2013	BOREHOLE VOLUME
F1:CAL	Jul 23 21:59:02 2013	CALIPER
F1:CNCF	Jul 23 21:59:02 2013	FIELD NORMALIZED COMPENSATED NEUTRON POROSITY
F1:CVOL	Jul 23 21:59:02 2013	CEMENT VOLUME
F1:GR	Jul 23 21:59:02 2013	GAMMA RAY
F1:M2R1	Jul 23 21:59:02 2013	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 10-INCH DOI
F1:M2R6	Jul 23 21:59:02 2013	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 60-INCH DOI
F1:M2R9	Jul 23 21:59:02 2013	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 90-INCH DOI
F1:PE	Jul 23 21:59:02 2013	PHOTO ELECTRIC CROSS-SECTION
F1:PORZ	Jul 23 21:59:02 2013	POROSITY FOR SELECTABLE MATRIX
F1:SP	Jul 23 21:59:02 2013	SPONTANEOUS POTENTIAL
F1:TEN	Jul 23 21:59:02 2013	DIFFERENTIAL TENSION
F1:ZCOR	Jul 23 21:59:02 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:WPX_REPEAT.fvpdf [5"/100' Scale]
Plot Interval	: 3130 - 3390 Feet
Data File 1	: F1:HL6670:HL6670:K255641:070-01.rtf

Data File 1 : F:\H8870\data\12625364
Created On : Jul 23 21:59:02 2013
Company : WPX ENERGY
Well : FEDERAL BCU 532-36-199
Field : BARCUS CREEK UNIT
File Interval : 3000.5 - 3452.5 Feet
OCT : n970a





CALIBRATION / VERIFICATION SUMMARY

Source File: /dat1a/625564/CALS.tp1

TTMA PRIMARY CALIBRATION SUMMARY

TOOL #: 3980XA 10133540

DATE/TIME PERFORMED: Fri Jul 12 08:32:29 2013

UNIT #: 3880TA HL6670

ACCEL #: 3980XA 10123540

ACCEL CAL DATE: 09:16 06/15/2011

GAIN
Rm K Factors

0.14570

OFFSET
(ohm.m)

-0.01679

Rm Measurements

Sig Low (ohm)	Sig High (ohm)	Mult Factor	Add Factor	Engr Low (ohm)	Engr High (ohm)
0.25	9.99	1.000847	-0.000584	0.25	10.00

0.20 0.30 8.00 12.00

GR PRIMARY CALIBRATION SUMMARY

Tool #: 3518EG 10411092

DATE/TIME PERFORMED: Fri Jul 12 08:17:58 2013

Unit #: 3880TA HL6670

Jig Series: 4702NK VBA-905

Background

Calibrator ON

Jig Value
(gAPI)

Mult

Background
(gAPI)

Calibrator ON
(gAPI)

179.83

969.83

185

0.234

42.11

227.11

0.230 0.230

GR BEFORE LOG VERIFICATION SUMMARY

TOOL #: 3518EG 10411092

DATE/TIME PERFORMED: Tue Jul 23 21:20:50 2013

DAYS SINCE CAL: 11

UNIT #: 3880TA HL6670

Jig: INTRNL N/A

Counts

TEMP
(degF)

HV
(V)

976.67

100.19

1364.70

509.00 1027.00 536.00 1237.00 1512.00

GR AFTER LOG VERIFICATION SUMMARY

TOOL #: 3518EG 10411092

DATE/TIME PERFORMED: Wed Jul 24 01:30:45 2013

DAYS SINCE CAL: 11

UNIT #: 3880TA HL6670

Jig: INTRNL N/A

Counts

TEMP

HV

(degF)

(V)

976.33

150.04

1375.05

529.00

1027.00

536.00

1237.00

1512.00

CN PRIMARY CALIBRATION SUMMARY

TOOL #: 2436XA 10124366

DATE/TIME PERFORMED: Fri Jun 14 11:00:22 2013

UNIT #: 3880TA HL6670

CALIBRATOR #: 2437XB 112674

SOURCE #: 4718XA N-0897

SSN

LSN

SSN/LSN

MCF

CNRATIO

CN

DT CPS

DT CPS

PU

4673.28

809.30

5.77451

0.99350

5.73700

25.241

0.95000

1.05000

CN BEFORE LOG VERIFICATION SUMMARY

TOOL #: 2436XA 10124366

DATE/TIME PERFORMED: Tue Jul 23 21:36:16 2013

DAYS SINCE CAL: 39

UNIT #: 3880TA HL6670

CALIBRATOR #: INTRNL N/A

SSN

LSN

SSN/LSN

TEMP

HV

LV

DT CPS

DT CPS

(degF)

(V)

(V)

991.06

993.42

0.99762

97.5

1367.4

4.599

0.95000

1.05000

280.4

1250.0

1450.0

4.300

5.000

CN AFTER LOG VERIFICATION SUMMARY

TOOL #: 2436XA 10124366

DATE/TIME PERFORMED: Wed Jul 24 01:30:28 2013

DAYS SINCE CAL: 39

UNIT #: 3880TA HL6670

CALIBRATOR #: INTRNL N/A

SSN

LSN

SSN/LSN

TEMP

HV

LV

DT CPS

DT CPS

(degF)

(V)

(V)

990.73

993.09

0.99762

147.3

1368.8

4.599

0.95000

1.05000

280.4

1250.0

1450.0

4.300

5.000

CAL PRIMARY CALIBRATION SUMMARY

TOOL #: 2223XA 10090664

DATE/TIME PERFORMED: Thu Jun 27 15:14:50 2013

UNIT #: 3880TA HL6670

	SIZE (in)	VALUE	MULTIPLIER	ADD
SMALL RING (Arm)	7.000	1248.0		
LARGE RING (Arm)	11.000	2392.0	0.00350	2.63636
PAD CLOSED		1535.6	0.00250	-3.83900

CAL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 2223XA 10090664 DATE/TIME PERFORMED: Tue Jul 23 21:49:11 2013 DAYS SINCE CAL: 26

UNIT #: 3880TA HL6670

	VALUE	MULTIPLIER	ADD	SIZE (in)
ARM	1760.0	0.00350	2.63636	8.8
PAD	1696.0	0.00250	-3.83900	0.4

	ACTUAL (in)	MEASURED (in)
DIAMETER (arm+pad)	8.921	8.9
		8.5 9.3

ZDL PRIMARY CALIBRATION SUMMARY

TOOL: 2223XA 10090664 DATE/TIME PERFORMED: Thu Jun 27 15:04:26 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)		
	225.1	226.6	1281.5	1683.8		
	230.0 230.0	230.0 230.0				
	SS (cps)	LS (cps)	SHR	DEN (g/cm3)	CORR (g/cm3)	PE (b/e)
MG (LO PE)	32232.2	11335.5	0.771	1.679	0.000	1.900
			0.720 0.890			
AL	20133.9	1289.4		2.667	-0.016	
AL + SHIM	26405.3	2167.5		2.558	0.098	
MG + SHIM (HI PE)	15809.8	5410.3	0.304			8.550
			0.280 0.360			
RATIO AL + SHIM/AL	1.31	1.68				
	1.30 1.40	1.60 1.80				
RATIO MG/AL	1.60	8.79				
	1.50 1.70	8.50 9.00				

1.38	1.70	8.33	9.33
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DAYS SINCE CAL: 26

3880TA HL6670

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
Coil 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
Coil 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

Coil 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	-0.0005 -0.1000 0.1000
Coil 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
Coil 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
Coil 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
Coil 3 R	0.0517 -0.3000 0.3000	-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
Coil 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
Coil 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
Coil 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
Coil 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
Coil 5 Q	0.1837 -1.5000 1.5000	-0.0772 -0.6000 0.6000	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

ELEC. GAINS	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 M	163.01 136.00 186.00	161.55 134.00 184.00	158.64 131.00 181.00	154.30 126.00 176.00	148.62 122.00 170.00	141.64 118.00 161.00	133.46 112.00 150.00	124.09 105.00 139.00
Coil 0 P	7.735 6.000 9.000	25.443 21.000 30.000	42.708 35.000 50.000	59.923 49.000 71.000	77.144 63.000 91.000	94.373 77.000 109.000	111.621 92.000 130.000	128.851 105.000 151.000
Coil 1 M	282.41 239.00 309.00	279.84 235.00 305.00	274.69 230.00 300.00	266.99 225.00 312.00	256.84 218.00 302.00	244.34 209.00 289.00	229.70 195.00 266.00	212.90 184.00 244.00
Coil 1 P	7.793 6.000 9.000	25.646 21.000 30.000	43.061 35.000 51.000	60.434 49.000 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
Coil 2 M	560.30 479.00 669.00	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	456.09 390.00 540.00	423.35 359.00 499.00
Coil 2 P	7.706 6.000 9.000	25.401 21.000 31.000	42.640 35.000 51.000	59.819 49.000 71.000	76.985 63.000 92.000	94.153 76.000 115.000	111.322 92.000 135.000	128.449 105.000 156.000
Coil 3 M	918.18 772.00 1060.00	909.15 764.00 1050.00	891.03 752.00 1030.00	864.23 729.00 1010.00	829.32 700.00 970.00	786.95 665.00 925.00	737.70 629.00 869.00	682.41 599.00 799.00
Coil 3 P	8.004 6.000 10.000	26.204 21.000 30.000	43.959 35.000 51.000	61.648 49.000 72.000	79.292 63.000 93.000	96.908 76.000 114.000	114.475 90.000 135.000	131.947 104.000 156.000
Coil 4 M	1421.1 1210.0 1700.0	1409.0 1205.0 1690.0	1384.5 1180.0 1680.0	1347.5 1140.0 1680.0	1298.9 1120.0 1630.0	1238.6 1070.0 1490.0	1167.0 1000.0 1390.0	1085.1 942.0 1240.0
Coil 4 P	7.777 6.000 10.000	25.610 21.000 31.000	43.008 35.000 52.000	60.385 49.000 73.000	77.776 63.000 93.000	95.199 77.000 114.000	112.639 91.000 135.000	130.098 105.000 156.000
Coil 5 M	2952.6 2450.0 3450.0	2928.6 2420.0 3400.0	2877.3 2410.0 3330.0	2800.6 2390.0 3200.0	2699.2 2290.0 3090.0	2573.1 2150.0 2990.0	2424.6 2030.0 2790.0	2253.2 1870.0 2570.0
Coil 5 P	7.853 6.000 10.000	25.815 20.000 31.000	43.370 35.000 52.000	60.874 49.000 73.000	78.404 63.000 94.000	95.967 79.000 113.000	113.517 93.000 134.000	131.059 105.000 156.000

AM Factor	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 R	-928 -3500 940	-610 -1400 -20	-492 -590 -150	-424 -760 -160	-377 -660 -130	-343 -600 -120	-316 -560 -110	-295 -530 -92
Coil 0 Q	429 -15000 11000	-143 -5900 3900	-216 -3700 2100	-245 -2700 1400	-261 -3200 1000	-274 -1800 790	-285 -1600 620	-295 -1500 480
Coil 1 R	-114 -750 480	-137 -360 83	-133 -280 9	-126 -230 -10	-119 -200 -26	-111 -180 -36	-105 -160 -46	-99 -150 -49
Coil 1 Q	266 -15000 11000	97 -5900 3900	22 -3700 2100	6 -2700 1400	12 -3200 1000	22 -1800 790	21 -1600 620	26 -1500 480

Coil 1 Q	-330.0	330.0	-110.0	98.0	-63.0	53.0	-47.0	36.0	-38.0	28.0	-30.0	19.0	-28.0	19.0	-26.0	12.0
Coil 2 R	-2.3		-30.6		-32.8		-31.5		-29.1		-26.7		-24.8		-22.8	
Coil 2 Q	-85.0	76.0	-64.0	-0.4	-57.0	-12.0	-51.0	-16.0	-46.0	-17.0	-42.0	-16.0	-38.0	-15.0	-37.0	-13.0
Coil 3 R	143.3		48.7		26.9		17.2		12.7		9.7		9.3		9.2	
Coil 3 Q	-1500.0	1500.0	-500.0	610.0	-250.0	350.0	-220.0	260.0	-160.0	190.0	-140.0	160.0	-110.0	130.0	-88.0	120.0
Coil 4 R	-2.2		-9.1		-9.8		-9.7		-8.9		-8.4		-7.8		-7.2	
Coil 4 Q	-23.0	21.0	-22.0	1.6	-21.0	-1.3	-20.0	-1.8	-19.0	-2.0	-19.0	-1.3	-19.0	-0.8	-19.0	-0.0
Coil 5 R	84.0		31.3		21.6		18.9		18.2		18.9		20.3		21.9	
Coil 5 Q	-540.0	530.0	-180.0	180.0	-100.0	110.0	-71.0	81.0	-51.0	66.0	-37.0	58.0	-28.0	53.0	-21.0	51.0
Coil 6 R	-0.93		-2.31		-2.11		-2.36		-2.60		-1.54		-1.65		-1.67	
Coil 6 Q	-18.00	13.00	-12.00	2.70	-11.00	1.50	-9.80	0.52	-9.90	0.96	-10.00	1.50	-11.00	2.30	-11.00	2.60
Coil 7 R	27.85		11.03		8.54		7.96		11.51		9.69		11.03		11.69	
Coil 7 Q	-250.00	280.00	-79.00	98.00	-43.00	64.00	-27.00	51.00	-18.00	46.00	-11.00	42.00	-6.50	42.00	-1.00	42.00
Coil 8 R	0.41		-0.81		-1.25		-0.89		-4.53		-1.16		-0.44		-0.73	
Coil 8 Q	-56.00	51.00	-8.40	3.60	-6.90	1.10	-6.90	1.20	-9.30	2.50	-14.00	6.30	-19.00	9.60	-24.00	13.00
Coil 9 R	3.44		2.06		2.86		3.88		3.06		6.47		7.26		8.48	
Coil 9 Q	-88.00	89.00	-26.00	27.00	-14.00	22.00	-7.00	22.00	-2.50	24.00	1.10	26.00	4.10	29.00	7.10	32.00

MM Factor 10 KHz 30 KHz 50 KHz 70 KHz 90 KHz 110 KHz 130 KHz 150 KHz

Coil 0 M	0.965		0.973		0.977		0.979		0.981		0.981		0.981		0.981	
Coil 0 P	-0.305		-0.468		-0.374		-0.258		-0.175		-0.121		-0.057		-0.021	
Coil 1 M	0.959		0.967		0.971		0.973		0.974		0.974		0.975		0.973	
Coil 1 P	-0.259		-0.449		-0.344		-0.231		-0.141		-0.087		-0.051		-0.012	
Coil 2 M	0.984		0.984		0.984		0.984		0.983		0.983		0.983		0.982	
Coil 2 P	0.059		0.045		0.075		0.099		0.116		0.138		0.157		0.133	
Coil 3 M	0.989		0.990		0.990		0.989		0.989		0.989		0.988		0.987	
Coil 3 P	0.057		0.075		0.105		0.157		0.185		0.228		0.252		0.249	
Coil 4 M	0.995		0.995		0.996		0.996		0.997		0.997		0.997		0.998	
Coil 4 P	0.685		0.273		0.238		0.259		0.251		0.340		0.367		0.467	
Coil 5 M	1.040		1.038		1.039		1.040		1.046		1.045		1.048		1.050	
Coil 5 P	0.097		0.099		0.220		0.288		0.469		0.559		0.620		0.736	

PARMS TCID 0 TCID 1 Cal Temp T Factor

(degF)

IDs

2.733

0.716

85.1

1.00

HDIL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 1530XA 10120519

DATE/TIME PERFORMED:

Tue Jul 23 21:38:02 2013

DAYS SINCE CAL:

18

ZERO DATA(mv)	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 R	0.005 -0.200 0.200	0.000 -0.100 0.100	-0.000 -0.100 0.100	0.001 -0.100 0.100	-0.001 -0.100 0.100	-0.001 -0.100 0.100	0.000 -0.100 0.100	0.000 -0.100 0.100
Coil 0 Q	0.001 -0.500 0.500	-0.002 -0.200 0.200	0.001 -0.100 0.100	0.000 -0.100 0.100	-0.001 -0.100 0.100	0.001 -0.100 0.100	0.000 -0.100 0.100	0.000 -0.100 0.100
Coil 1 R	0.019 -0.200 0.200	-0.000 -0.100 0.100	-0.002 -0.100 0.100	0.002 -0.100 0.100	-0.001 -0.100 0.100	0.000 -0.100 0.100	0.001 -0.100 0.100	-0.000 -0.100 0.100
Coil 1 Q	0.009 -0.500 0.500	-0.003 -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
Coil 2 R	0.018 -0.200 0.200	-0.002 -0.100 0.100	0.002 -0.100 0.100	0.004 -0.100 0.100	0.001 -0.100 0.100	-0.000 -0.100 0.100	0.000 -0.100 0.100	0.001 -0.100 0.100
Coil 2 Q	0.016 -0.500 0.500	0.002 -0.200 0.200	0.000 -0.100 0.100	-0.002 -0.100 0.100	0.000 -0.100 0.100	0.001 -0.100 0.100	0.001 -0.100 0.100	0.000 -0.100 0.100
Coil 3 R	0.049 -0.300 0.300	-0.008 -0.100 0.100	-0.003 -0.100 0.100	0.001 -0.100 0.100	-0.001 -0.100 0.100	0.001 -0.100 0.100	0.003 -0.100 0.100	0.001 -0.100 0.100
Coil 3 Q	0.042 -0.500 0.500	-0.014 -0.200 0.200	0.001 -0.100 0.100	-0.001 -0.100 0.100	-0.006 -0.100 0.100	0.003 -0.100 0.100	0.001 -0.100 0.100	-0.001 -0.100 0.100
Coil 4 R	0.148 -0.500 0.500	0.003 -0.200 0.200	-0.013 -0.200 0.200	0.008 -0.200 0.200	-0.007 -0.200 0.200	-0.001 -0.200 0.200	0.000 -0.200 0.200	0.003 -0.200 0.200
Coil 4 Q	0.059 -1.000 1.000	-0.032 -0.400 0.400	0.001 -0.200 0.200	0.005 -0.200 0.200	-0.008 -0.200 0.200	0.003 -0.200 0.200	-0.004 -0.200 0.200	0.005 -0.200 0.200
Coil 5 R	0.313 -1.200 1.200	0.006 -0.400 0.400	-0.014 -0.400 0.400	0.029 -0.400 0.400	-0.002 -0.400 0.400	-0.014 -0.400 0.400	-0.001 -0.400 0.400	-0.003 -0.400 0.400
Coil 5 Q	0.154 -1.500 1.500	-0.074 -0.800 0.800	0.014 -0.400 0.400	0.013 -0.400 0.400	-0.017 -0.400 0.400	0.011 -0.400 0.400	-0.004 -0.400 0.400	-0.009 -0.400 0.400

ELEC. GAINS	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 M	162.74 136.00 186.00	161.28 134.00 184.00	158.39 131.00 181.00	154.05 126.00 176.00	148.40 122.00 170.00	141.43 118.00 161.00	133.25 112.00 150.00	123.84 106.00 139.00
Coil 0 P	7.533 -1.000 12.000	25.403 19.000 30.000	42.720 35.000 50.000	59.973 49.000 71.000	77.225 63.000 91.000	94.486 77.000 110.000	111.758 92.000 130.000	129.030 105.000 151.000
Coil 1 M	282.53 237.00 327.00	279.98 236.00 326.00	274.85 230.00 320.00	267.17 226.00 312.00	257.05 218.00 302.00	244.56 208.00 289.00	229.82 196.00 266.00	213.02 184.00 244.00
Coil 1 P	7.601 -1.000 12.000	25.601 19.000 30.000	43.059 36.000 51.000	60.461 49.000 71.000	77.860 63.000 92.000	95.265 77.000 112.000	112.652 92.000 132.000	129.988 106.000 153.000
Coil 2 M	560.15 479.00 669.00	554.98 474.00 664.00	544.66 463.00 643.00	529.32 460.00 622.00	509.31 432.00 602.00	484.82 412.00 572.00	456.12 380.00 540.00	423.23 369.00 499.00
Coil 2 P	7.482 -1.000 12.000	25.347 19.000 31.000	42.626 36.000 51.000	59.840 49.000 71.000	77.034 63.000 92.000	94.228 77.000 114.000	111.440 92.000 136.000	128.579 106.000 156.000
Coil 3 M	918.20 772.00 1060.00	909.17 764.00 1060.00	891.18 752.00 1030.00	864.40 728.00 1010.00	829.62 700.00 970.00	787.21 666.00 926.00	738.30 628.00 868.00	682.43 589.00 799.00
Coil 3 P	7.809 -2.000 13.000	26.155 19.000 31.000	43.949 36.000 52.000	61.658 49.000 72.000	79.334 63.000 93.000	96.970 77.000 114.000	114.576 92.000 136.000	132.079 106.000 156.000
Coil 4 M	1423.6 1210.0 1700.0	1411.6 1206.0 1690.0	1387.0 1180.0 1660.0	1350.2 1140.0 1660.0	1301.5 1120.0 1530.0	1241.0 1070.0 1460.0	1169.7 1000.0 1360.0	1086.9 942.0 1240.0
Coil 4 P	7.588 -2.000 13.000	25.568 19.000 31.000	43.013 36.000 52.000	60.419 49.000 73.000	77.834 63.000 93.000	95.286 78.000 114.000	112.750 92.000 136.000	130.203 106.000 156.000
Coil 5 M	2951.2 2460.0 3460.0	2927.3 2420.0 3400.0	2876.6 2410.0 3350.0	2799.8 2360.0 3200.0	2698.6 2280.0 3080.0	2572.1 2160.0 2960.0	2423.2 2030.0 2760.0	2251.8 1870.0 2570.0
Coil 5 P	7.675 -2.000 13.000	25.774 19.000 31.000	43.352 36.000 52.000	60.904 49.000 73.000	78.452 63.000 94.000	96.042 79.000 114.000	113.599 93.000 136.000	131.186 106.000 156.000

HDIL AFTER LOG VERIFICATION SUMMARY

NOT DONE

INSTRUMENT CONFIGURATION

Source File: /dat1a/625564/625564.tdg

FOCUS CABLEHEAD

Diameter : 3.12"
Length : 3.17'
Weight : 15 lbs
Series : CABL318
Mnemonic : CBLH

FOCUS SWIVEL

Diameter : 3.13"
Length : 2.58'
Weight : 50 lbs
Series : 3950XA
Mnemonic : SWVL

FOCUS TEN/TEMP/MUD RES/ACCEL

Diameter : 3.13"
Length : 4.31'
Weight : 61 lbs
Series : 3980XA
Mnemonic : TTMA

FOCUS TELEMETRY (POWER SECTION)

Diameter : 3.13"
Length : 3.71'
Weight : 48 lbs
Series : 3518FB
Mnemonic : TMGR

FOCUS EB/EG TELEMETRY GAMMA RAY

Diameter : 3.12"
Length : 5.83'
Weight : 63 lbs
Series : 3518EG
Mnemonic : GR
Measure Point: 4.24': GR MP

52.34'

GR MP 36.97'

FOCUS COMPENSATED NEUTRON

Diameter : 3.13"
Length : 4.81'
Weight : 65 lbs
Series : 2436XA
Mnemonic : CN
Measure Point: 1.92': LSN MP
Measure Point: 1.46': SSN MP

LSN MP — 29.83'

SSN MP — 29.38'

FOCUS Z-DENSILOG

Diameter : 3.75"
Length : 9.58'
Weight : 200 lbs
Series : 2223XA
Mnemonic : ZDL
Measure Point: 4.33': CR1 MP
Measure Point: 1.69': LSD / CR2 MP
Measure Point: 1.29': SSD MP

CR1 MP — 22.67'

LSD / CR2 MP — 20.02'

SSD MP — 19.63'

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

COIL 5 MP — 9.17'

COIL 4 MP — 7.67'

COIL 3 MP — 6.17'

COIL 2 MP — 5.67'

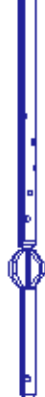
FOCUS PINEAPPLE / CABBAGE

HOLE FINDER

Diameter : 2.62"
Length : 1.50'
Weight : 7 lbs
Series : HFND18

TOTAL LENGTH: 52.34'
TOTAL WEIGHT: 703 lbs
MAX DIAMETER: 0'6.13"

COIL 1 MP 5.17'
COIL 0 MP 4.67'
SP MP 3.14'
0.00'



COMPANY WPX ENERGY INC
WELL FEDERAL BCU 532-36-199
FIELD BARCUS CREEK UNIT
COUNTY RIO BLANCO STATE CO

FILE NO:
625564
API NO:
05103119500000

LOCATION:

ELEVATIONS:

S36 T1N R99W
PAD FFD BCU 442-



SHL: 1426' FNL 1102' FEL
BHL: 1468' FNL 1986' FEL

SEC 36 TWP 1N RGE 99W

RD 6889 FT
DF 6889 FT
GL 6868 FT

36-199
CYCLONE 29

DATE 23-Jul-2013