



FILE NO: US824398 COMPANY: WPC ENERGY INC
 API NO: 05046208010000 WELL: DIAMOND ELK LLC PA 43-2
 FIELD: PARACHUTE
 COUNTY: GARFIELD STATE: CO

Ver. 3.87 LOCATION: SHL: 2328' FSL, 685' FRL OTHER SERVICES: NONE
 PAD: CV 84-1 BHL: 2270' FSL, 718' FEL
 S2 T7S R9CW
 RIG: MAEDRS 574 SEC: 2 TWP: 7S RGE: 9EW

PERMANENT DATUM: G.L. ELEVATION: 8027 FT ELEVATIONS: KB 8003 FT
 LOG MEASURED FROM: K.B. ABOVE P.D. DF 8003 FT
 DRILL MEAS. FROM: K.B. OL 8027 FT

DATE	26-Apr-2013
RUN	1
SERVICE ORDER	624398
DEPTH DRILLER	8149 FT
DEPTH LOGGER	8180 FT
BOTTOM LOGGED INTERVAL	8157 FT
TOP LOGGED INTERVAL	0 FT
CASING DRILLER	9.625 IN 1448 FT
CASING LOGGER	1443 FT
BIT SIZE	8.75 IN
TYPE OF FLUID IN HOLE	NWB
DENSITY	11.6 LB/G 82 S
PH	9.4 88 C3
SOURCE OF SAMPLE	FLOWLINE
RM AT MEAS. TEMP.	1.32 OHM 70 DEGF
RM AT MEAS. TEMP.	0.88 OHM 70 DEGF
RM AT MEAS. TEMP.	1.85 OHM 70 DEGF
SOURCE OF RMF	CALCULATED
RM AT BHT	1 OHM 181 DEGF
TIME SINCE CIRCULATION	21
MAX. RECORDED TEMP.	181 DEGF
EQUIP. NO.	6670
RECORDED BY	PATTON
WITNESSED BY	FRANK

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

BOREHOLE RECORD

BIT SIZE	FROM	TO
8.75 IN	0 FT	8149 FT

CASING RECORD

SIZE	WEIGHT	GRADE	FROM	TO
9.625 IN	32.30 LB/F		0 FT	1448 FT

REMARKS

RUN 1 TRIP 1: HDIL ZDL CN GR RUN IN COMBINATION
 BVOL CYOL CALCULATED IN CUBIC FEET
 BVOL CYOL CALCULATED USING PROPOSED 4.5" CASING
 CALIPER VERIFIED IN CASING
 REPEAT RECORDED 200' BELOW CASING
 RHO MATRIX: 2.68 G/CC
 RHO FLUID: 1.00 G/CC
 CN MATRIX = SANDSTONE
 HDIL RAN WITH 1.5" STAMPOFF

RIG CREW REMOVED SP FISH AT 3530', REPLACED AT 3400'

THANK YOU FOR CHOOSING BAKER HUGHES WIRELINE SERVICES
CREW: PATTON/HOLLAR/OLSON/KRONBERG
RIG: NABORS 574

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	TDIA	36800A	10120268	FREE
1	1	GR	3518EG	10138670	FREE
1	1	CN	24365A	10137830	DECENTRALIZED
1	1	ZDL	22230A	10080884	PAD DEVICE
1	1	HDL	15300A	10120519	STOOD OFF

MAIN LOG 2"/100FT SCALE

ECLIPS 6.11 Aug 06, 2010
Updates: 1,2 Patches: 3

Fri Apr 26 13:10:14 2013

Perplf /main/62

Cplot

Pdf_Cpp /main/16

Fileview 5.61

PARAMETER AND FILTER SUMMARY REPORT

File: /data/624388/m670a02.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 1326.250 ft BOTTOM DEPTH: 8178.992 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	1in	TOP	BOTTOM
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (mbh°)	USE CALIPER		"	"
BOREHOLE CORR DIAMETER	FIXED DIAMETER (mbh°)	8.750	1in	"	"
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	70.0	degF	"	"
	MUD SAMPLE RES	1.320	ohm.m	"	"
BH MUD RESISTIVITY SOURCE	RMUD SOURCE (HDIL)	TOOL MEASURED		"	"
BOREHOLE TEMP from GRADIENT	Known BH REF TEMP	70.0	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	1in	"	"
	TOOL POSITION	ECCENTRIC		"	"

CURVE DESCRIPTION REPORT

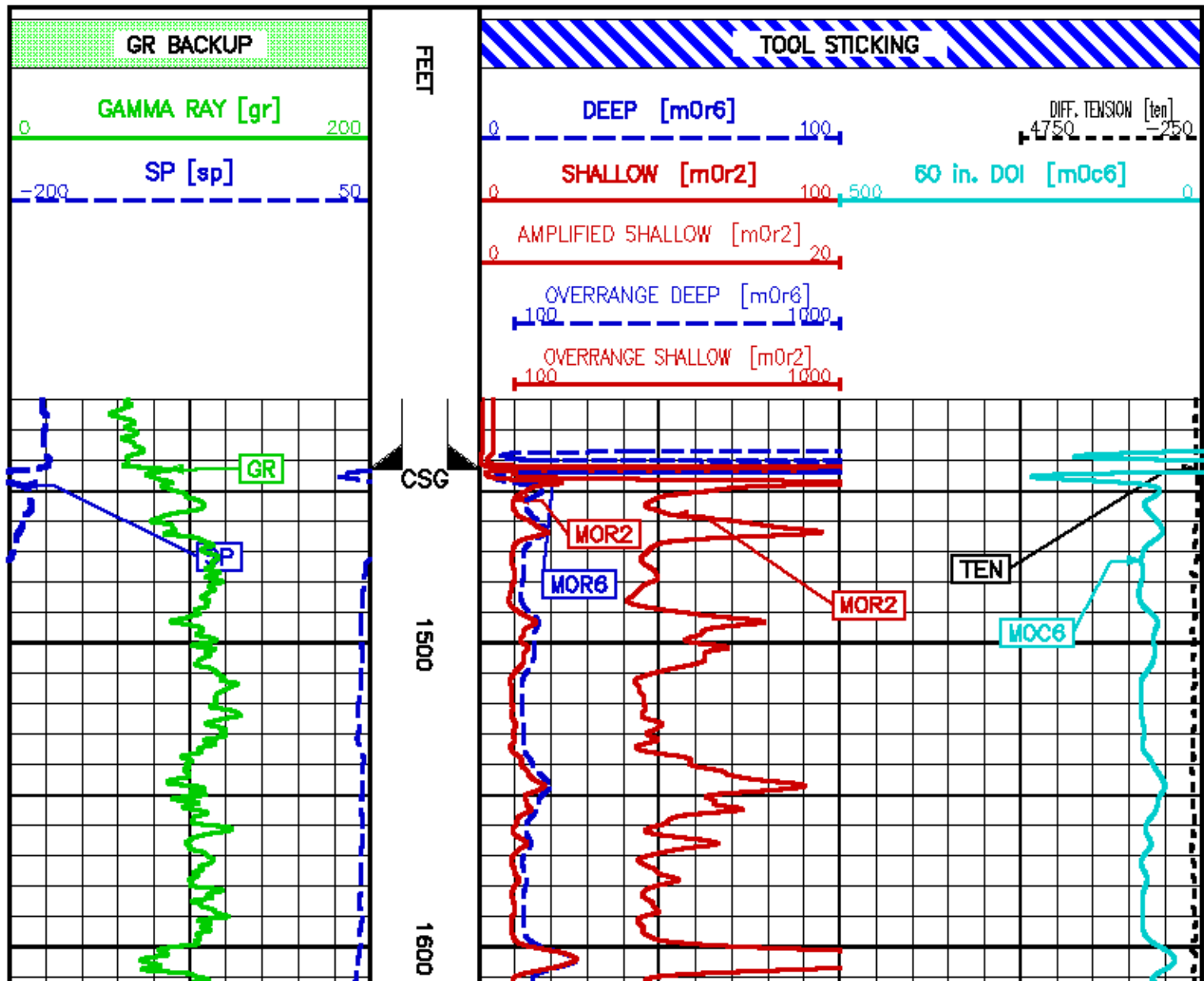
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F1:MOC6	Apr 26 10:46:40 2013	FOCUSED CONDUCTIVITY, 60-INCH DOI
F1:MOR2	Apr 26 10:46:40 2013	TRUE FOCUSED RESISTIVITY FOR HDIL, 20-INCH DOI
F1:MOR6	Apr 26 10:46:40 2013	TRUE FOCUSED RESISTIVITY FOR HDIL, 60-INCH DOI
F1:SP	Apr 26 10:46:40 2013	SPONTANEOUS POTENTIAL
F1:TEN	Apr 26 10:46:40 2013	DIFFERENTIAL TENSION

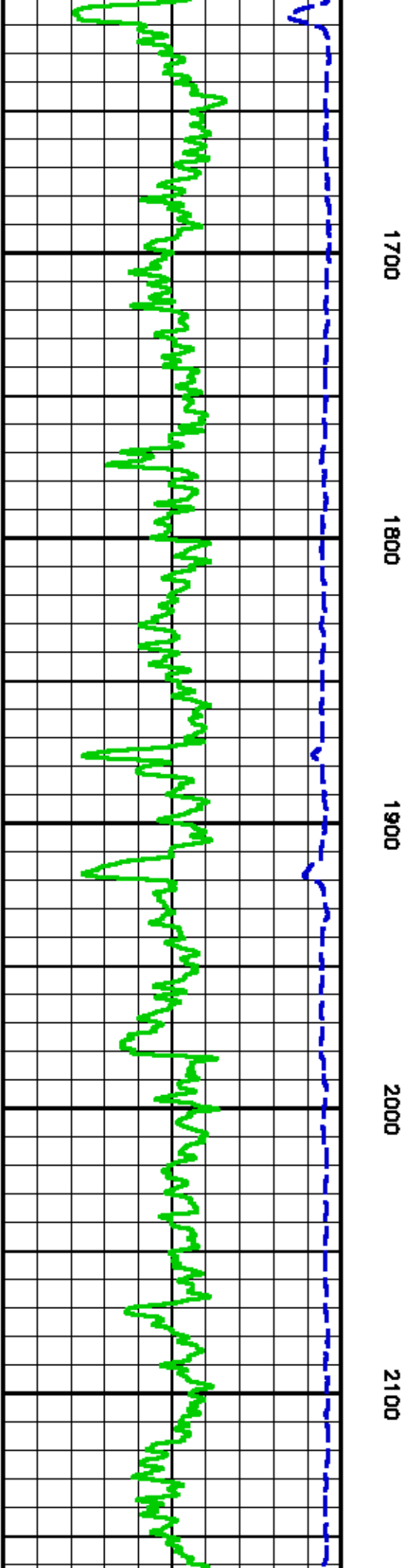
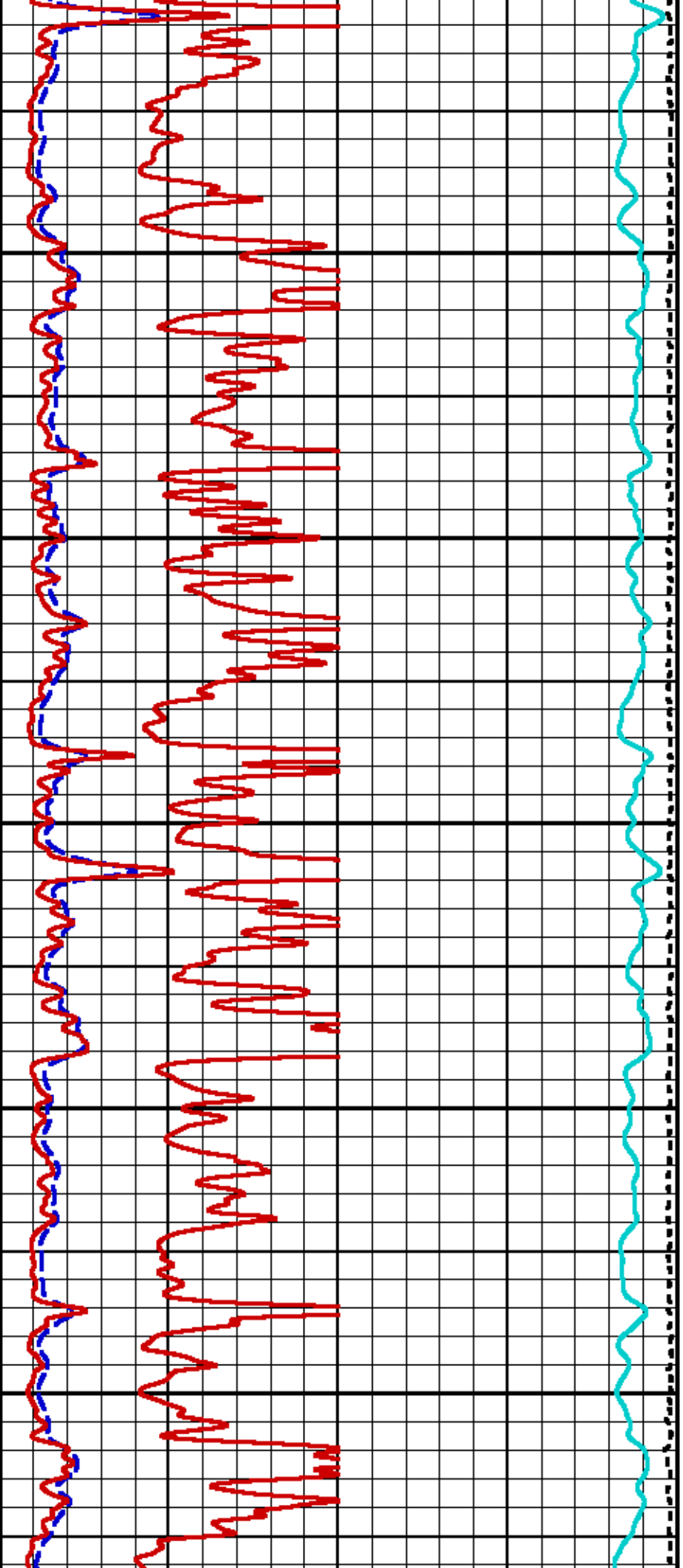
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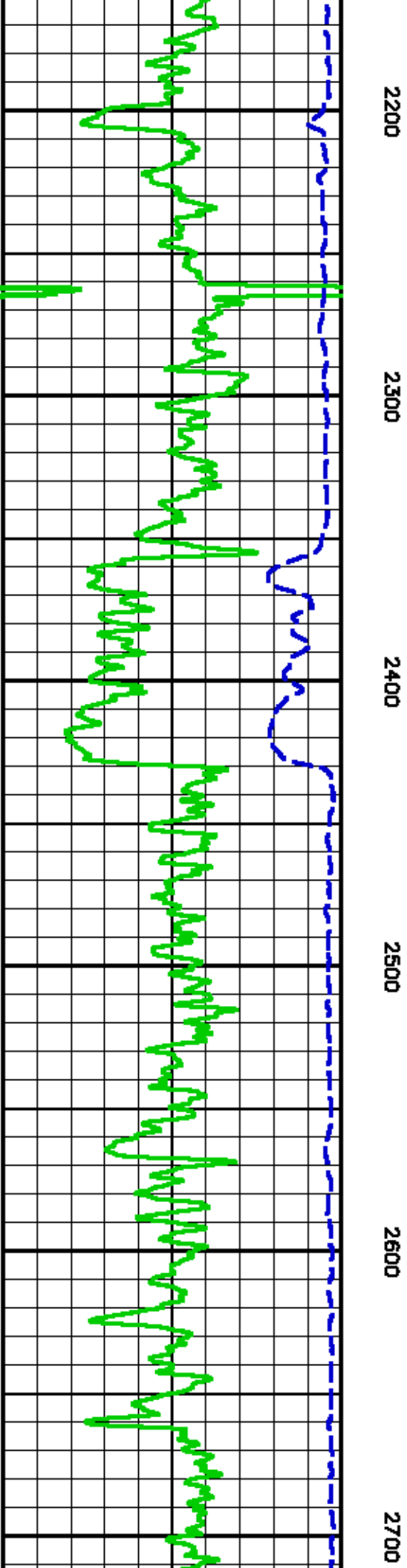
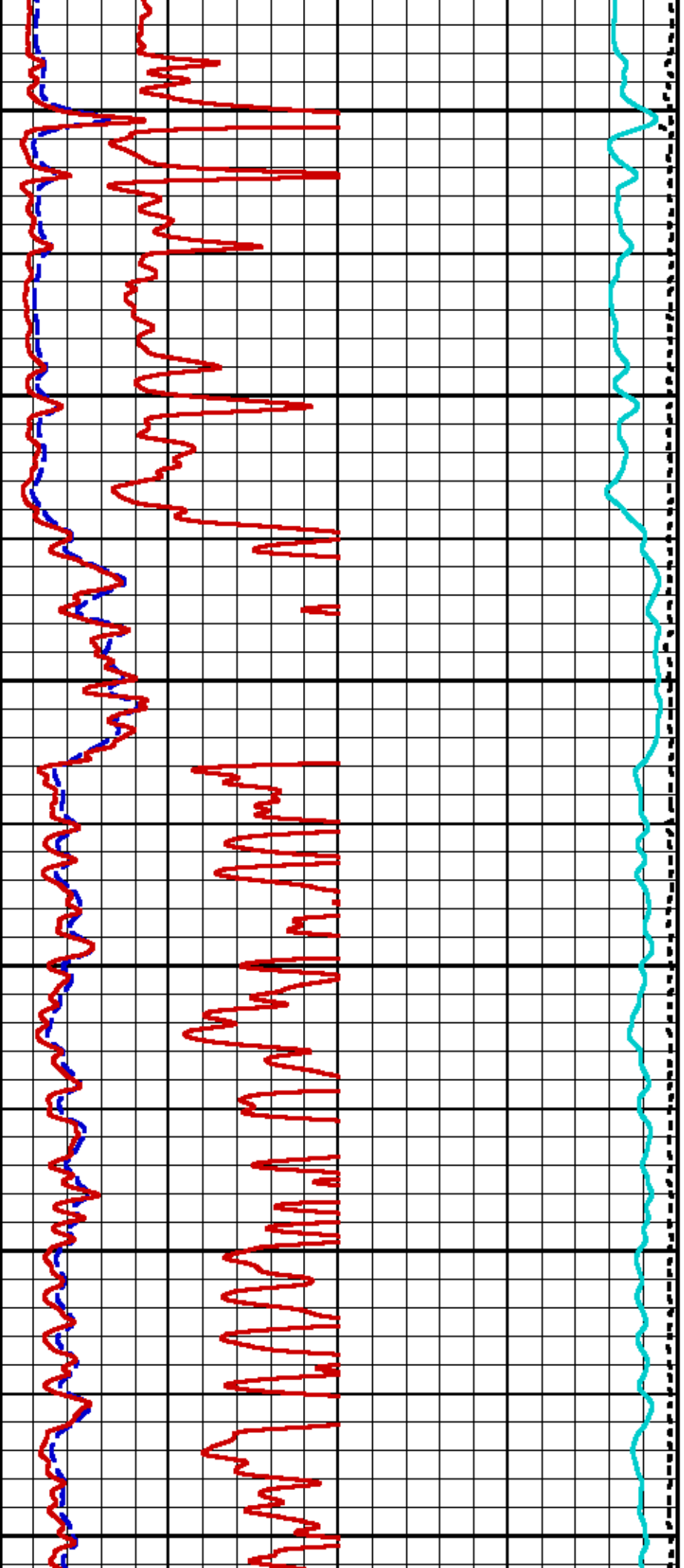
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
GR	35.00	MOR2	2.75	SP	1.25		
MOC6	2.75	MOR6	2.75	TEN	0.00		

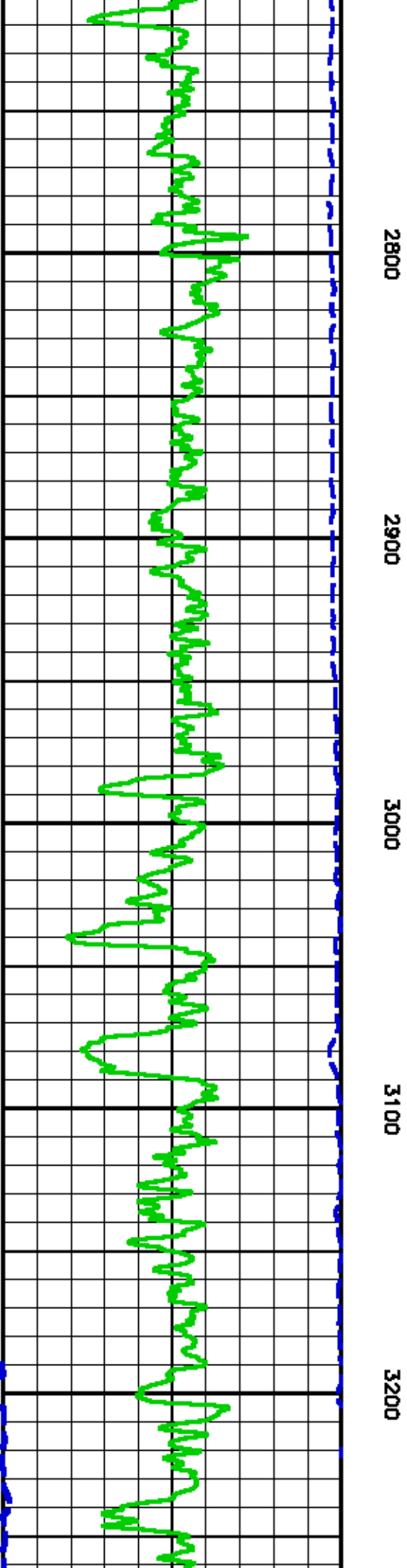
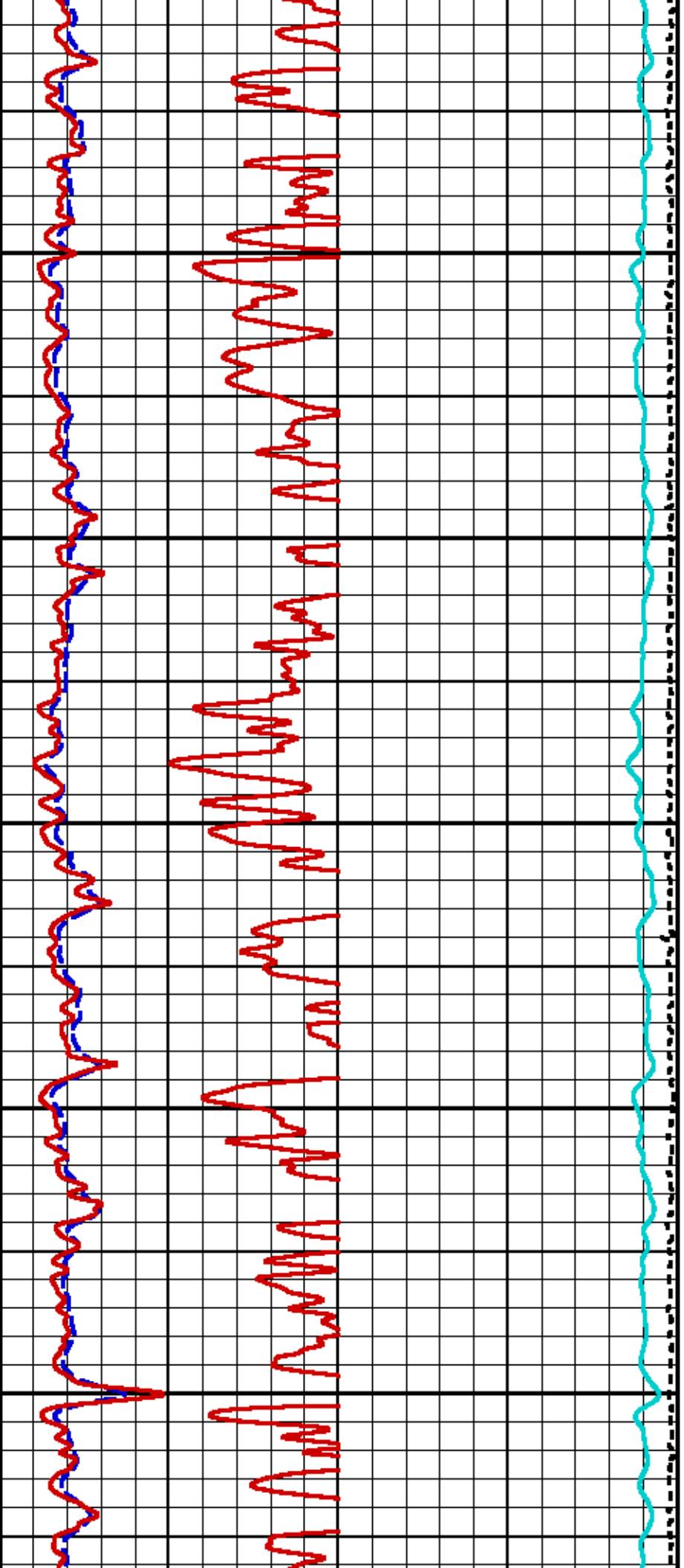
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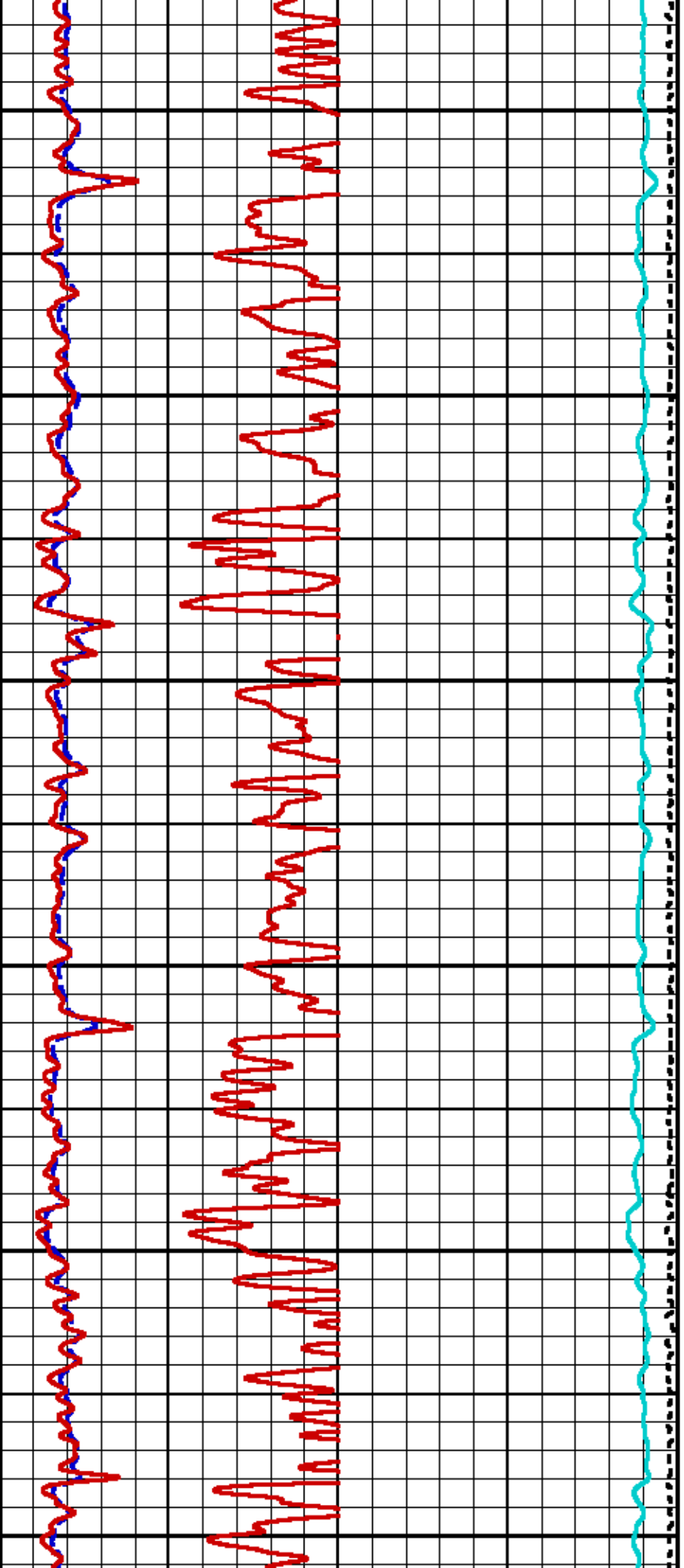
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 Created On : Apr 26 10:46:40 2013
 Company : WPK ENERGY INC
 Well : DIAMOND ELK LLC PA 43-2
 Field : PARACHUTE
 File Interval : 0 - 8184 Feet
 Out : m070a











3300

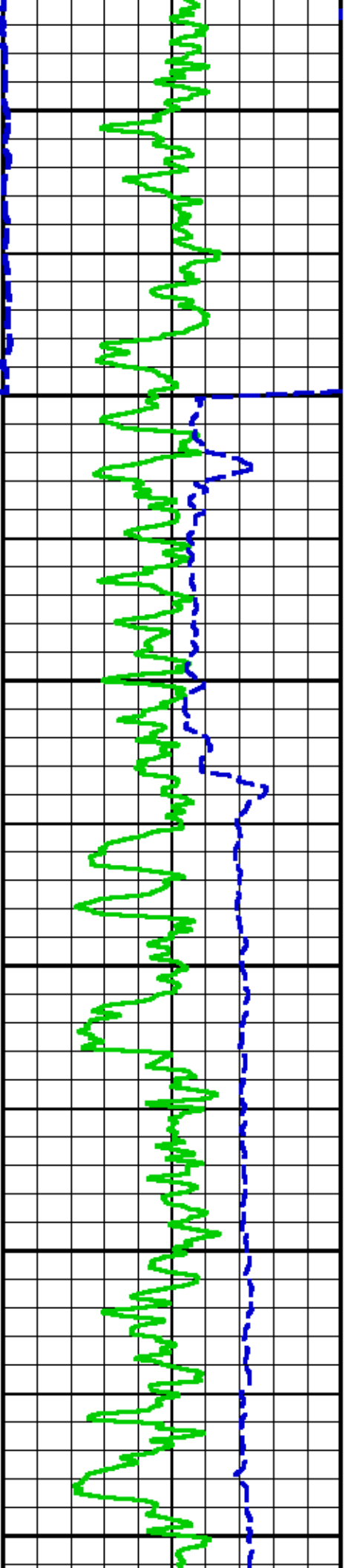
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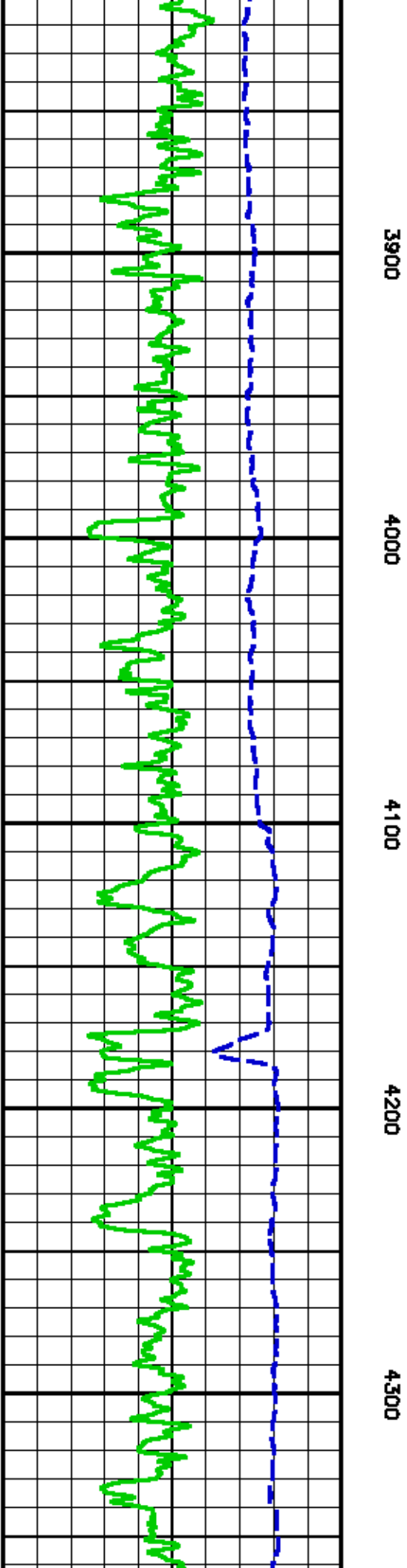
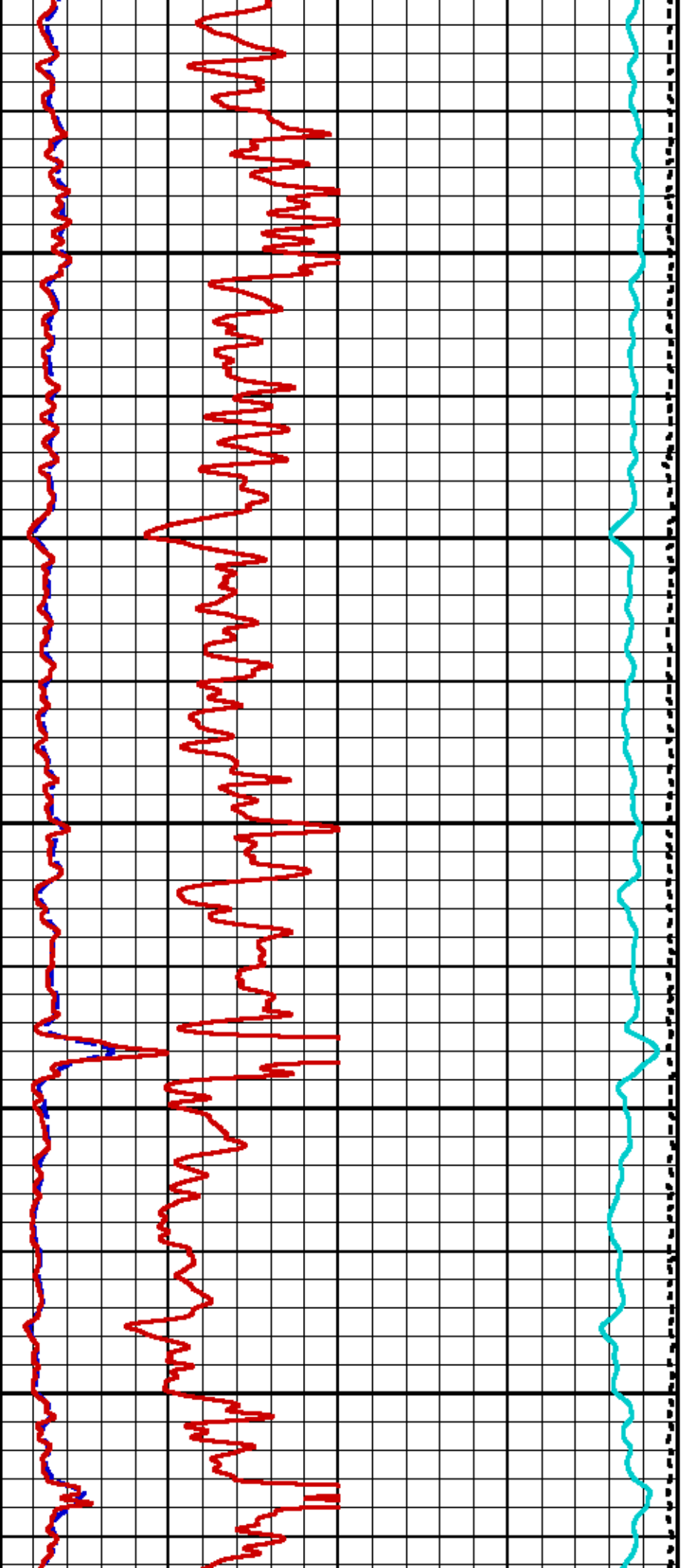
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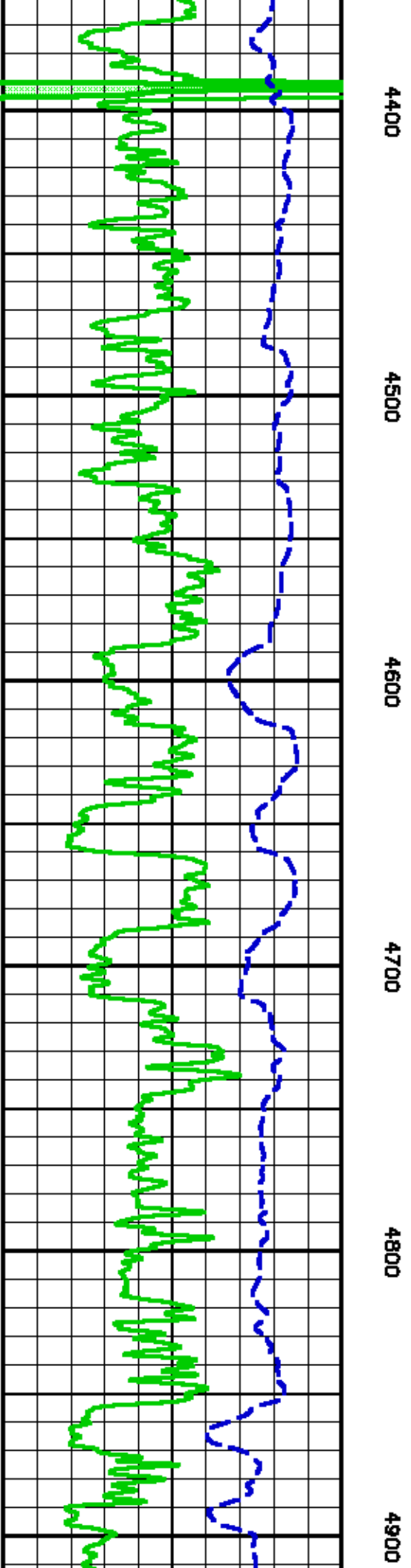
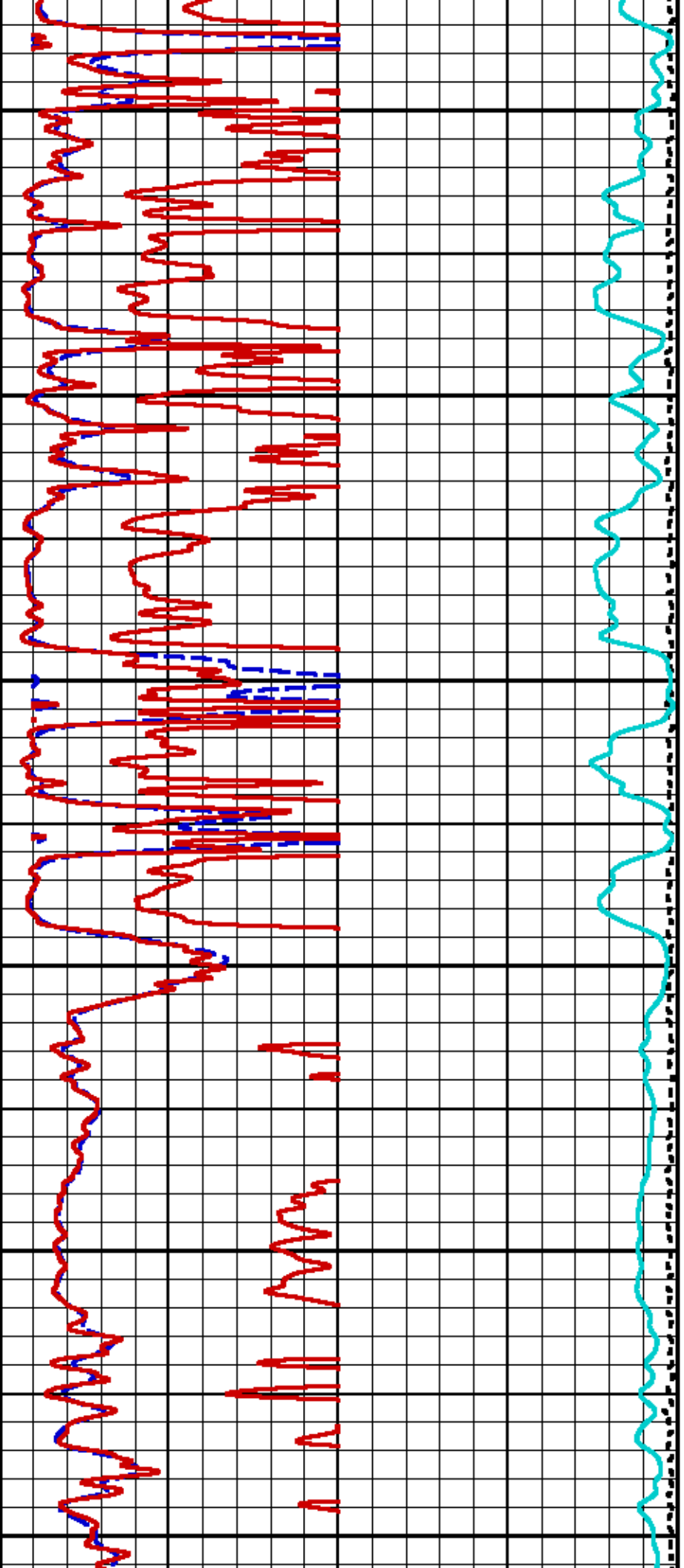
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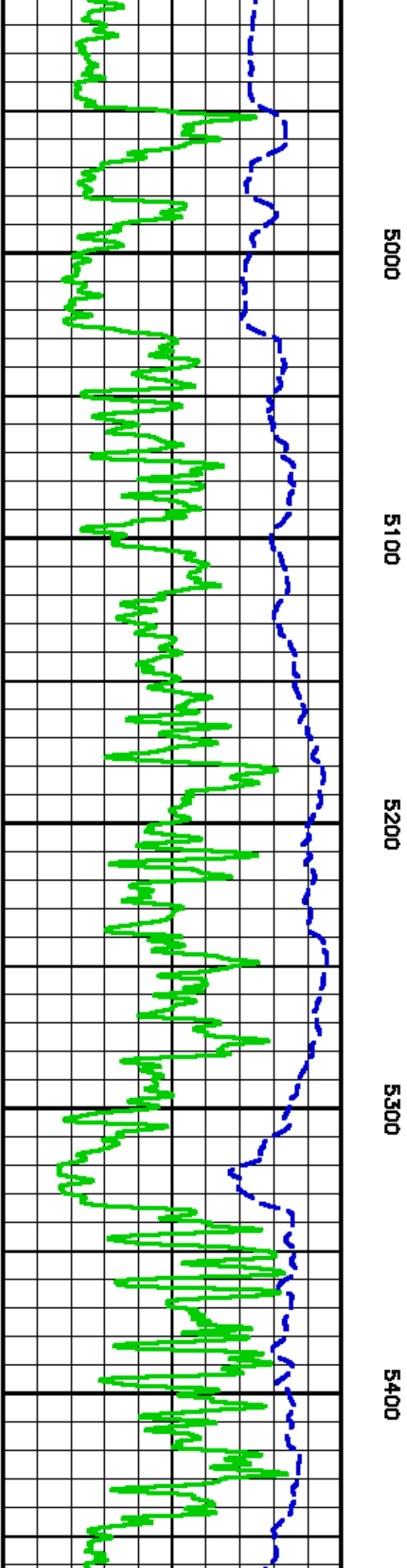
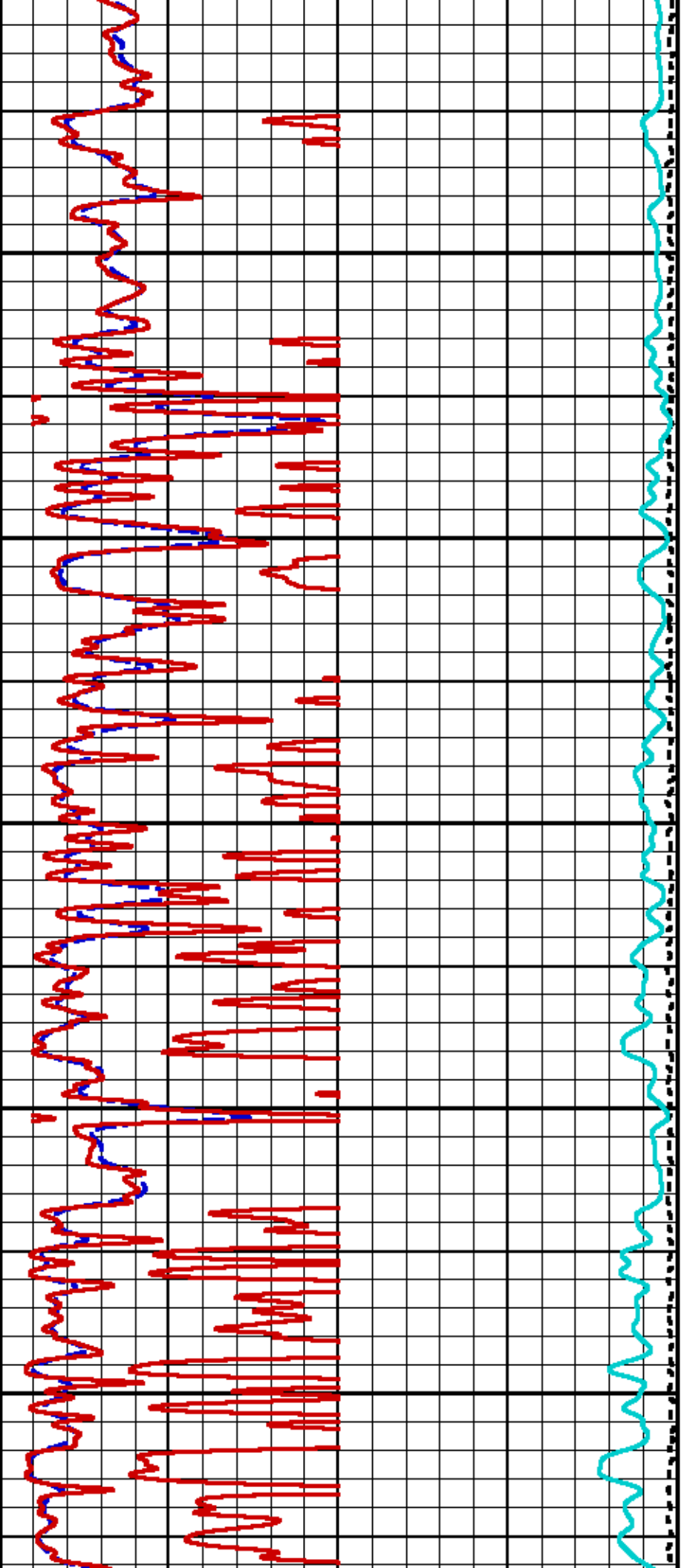
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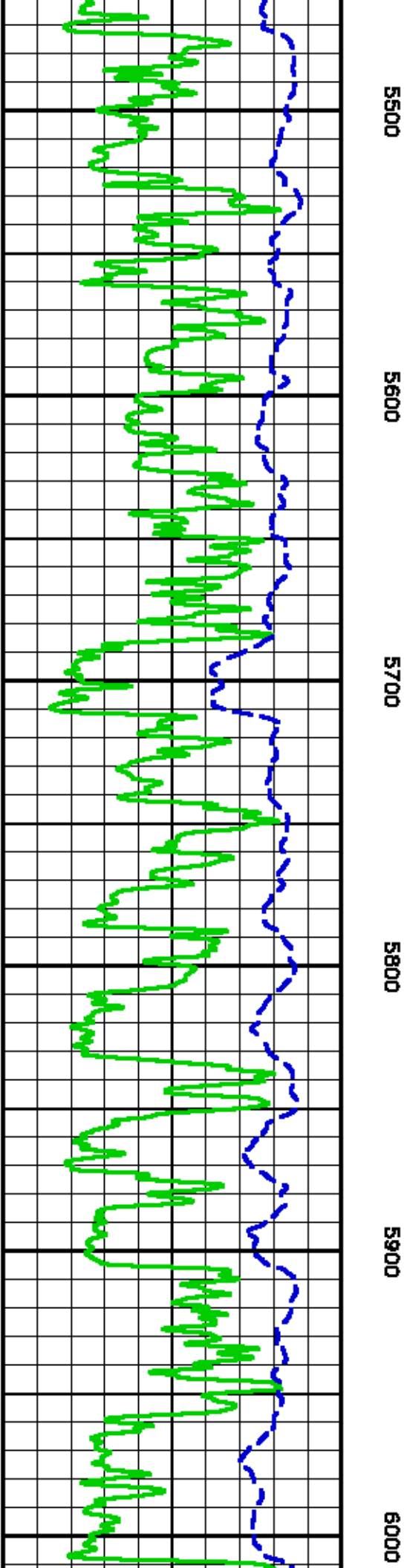
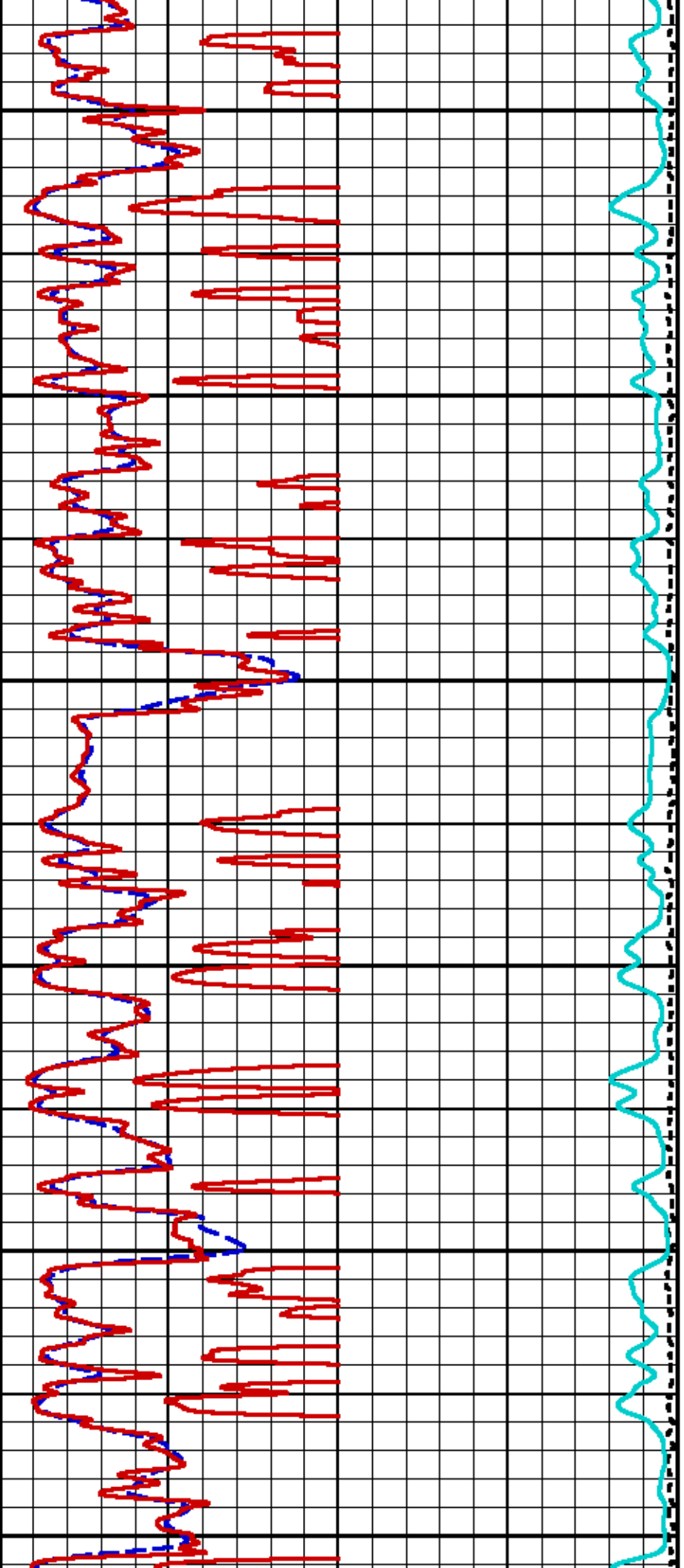
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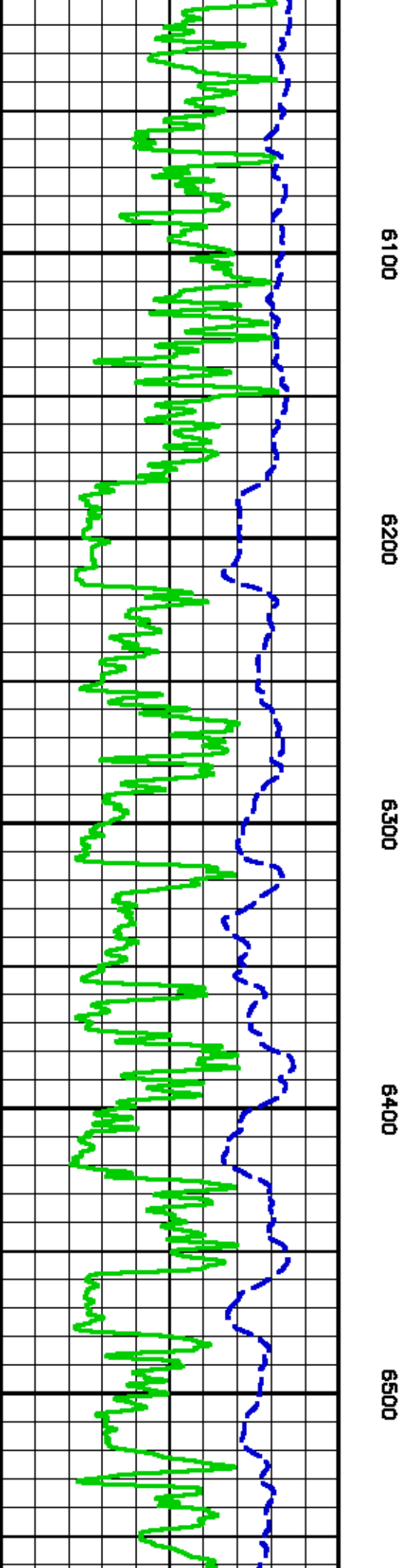
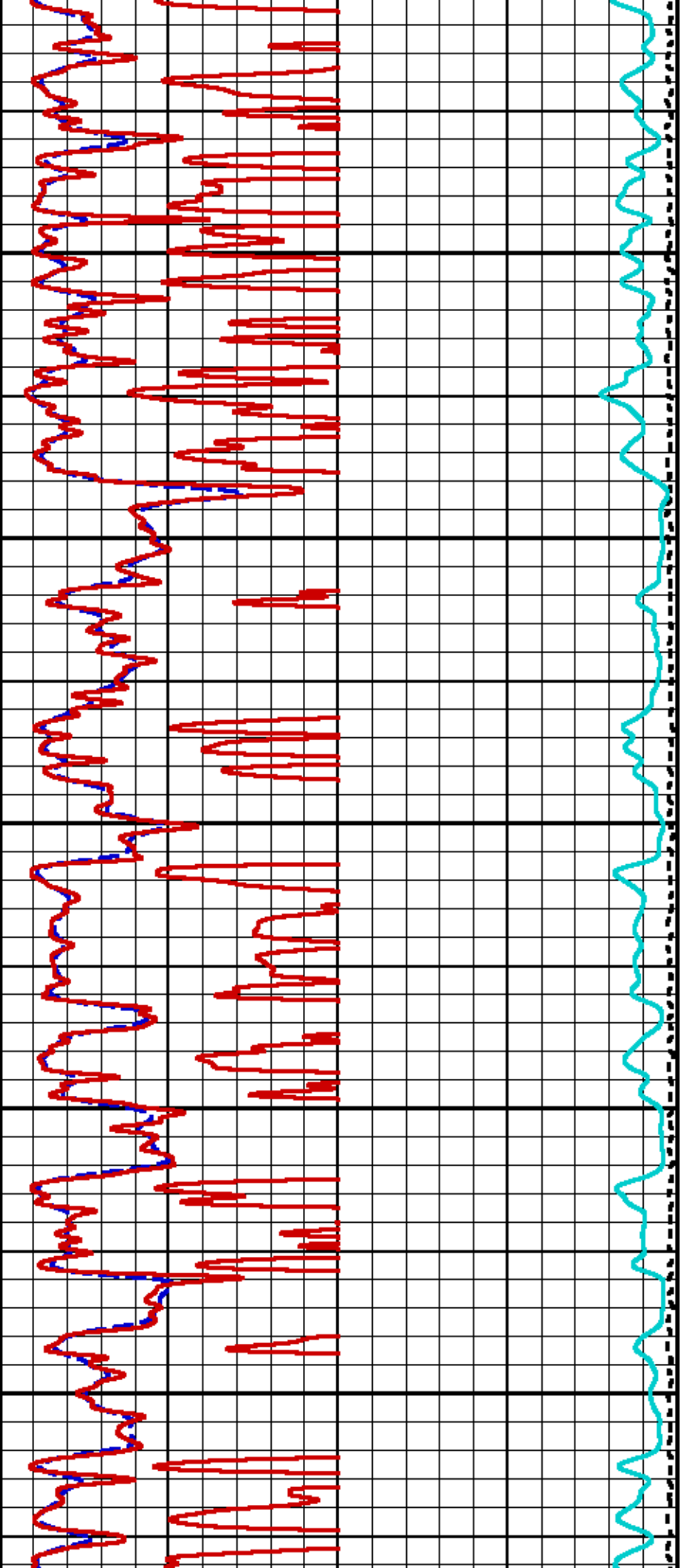


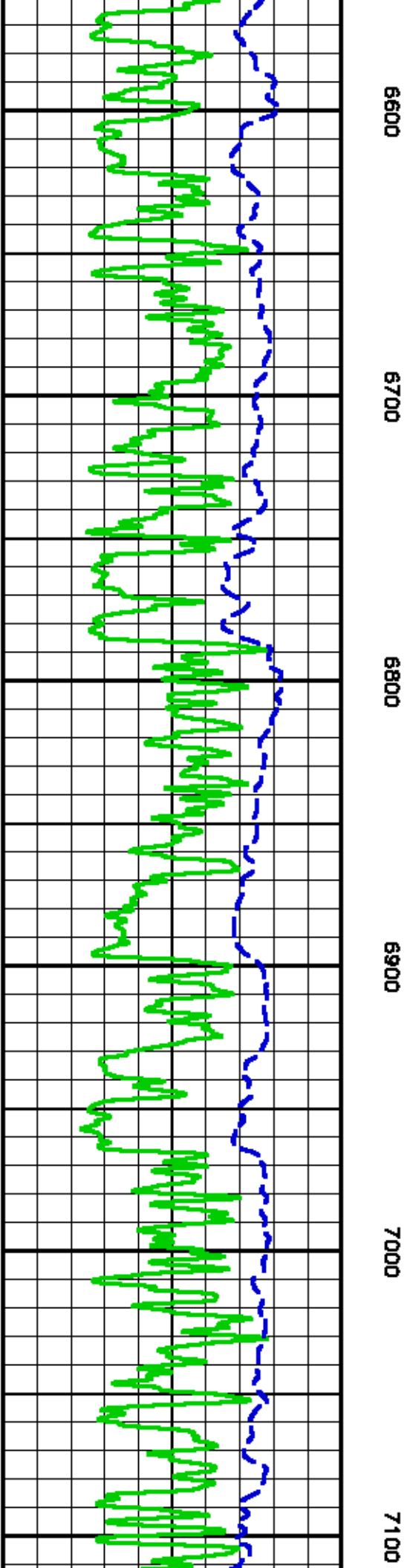
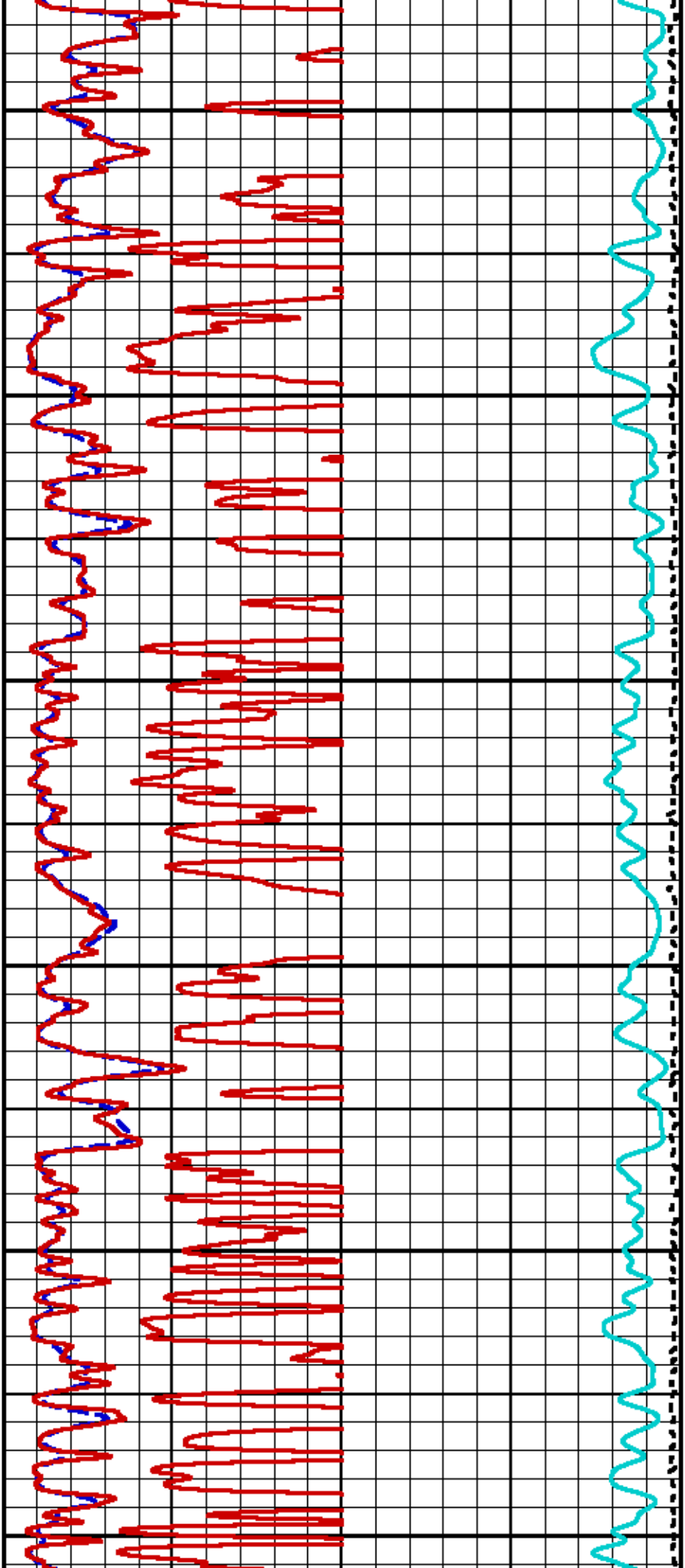


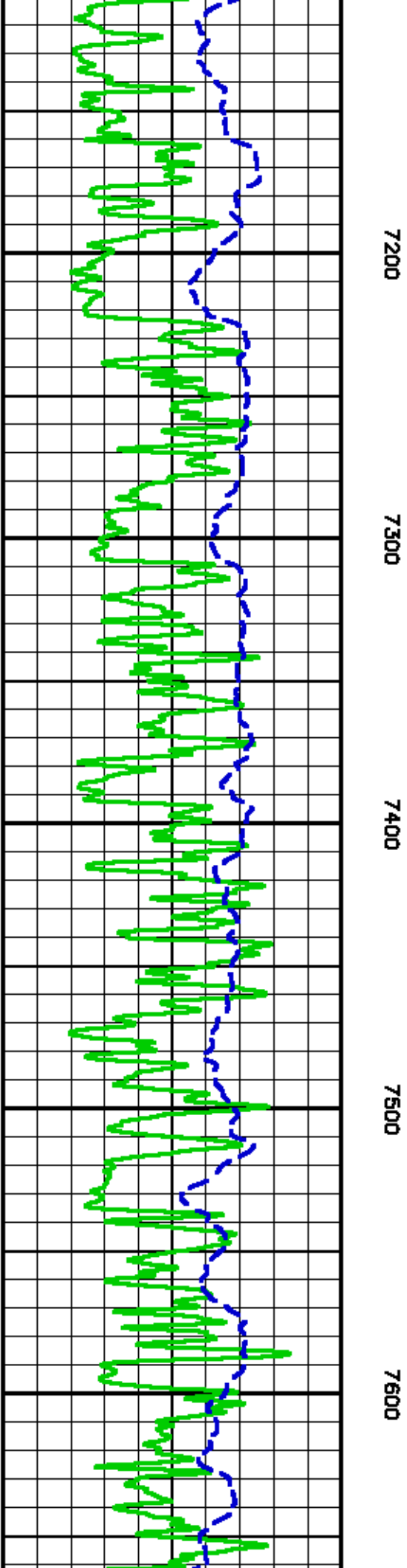
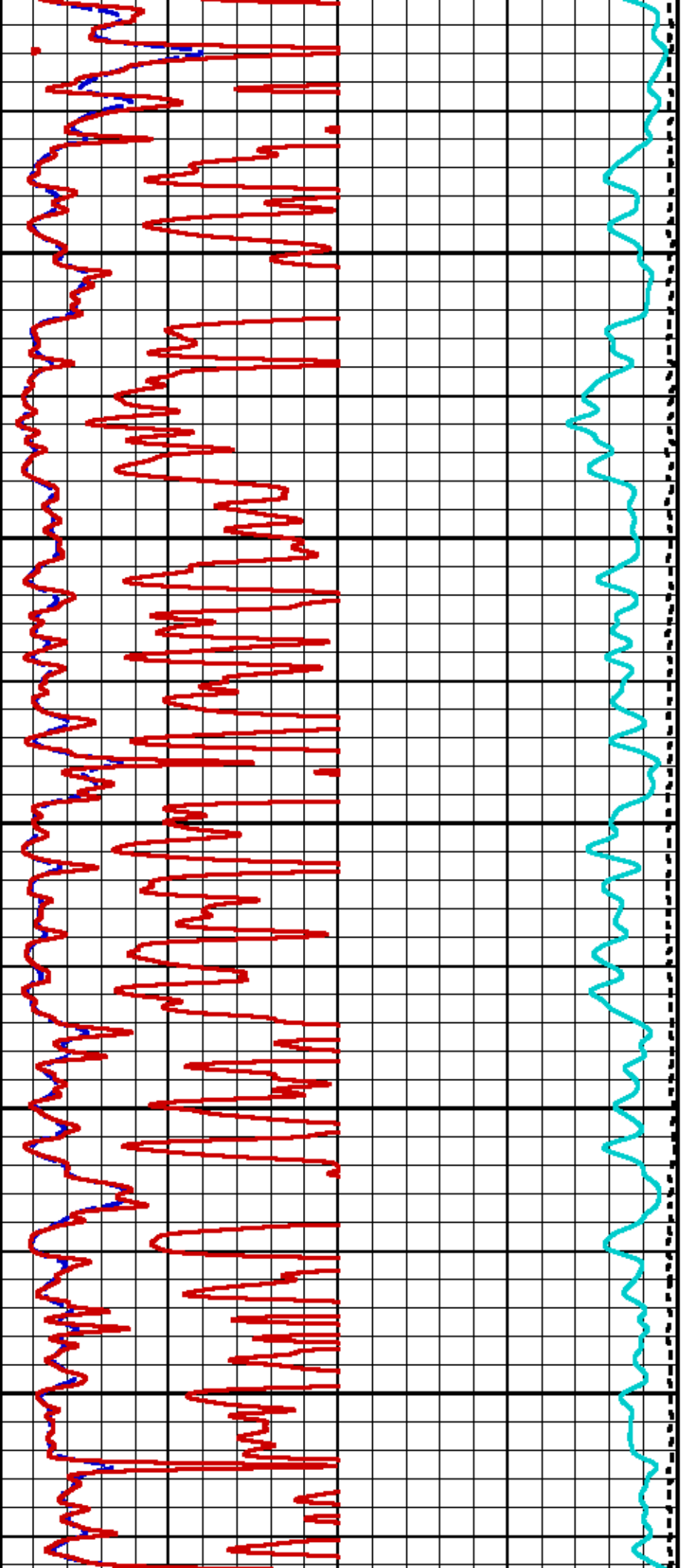


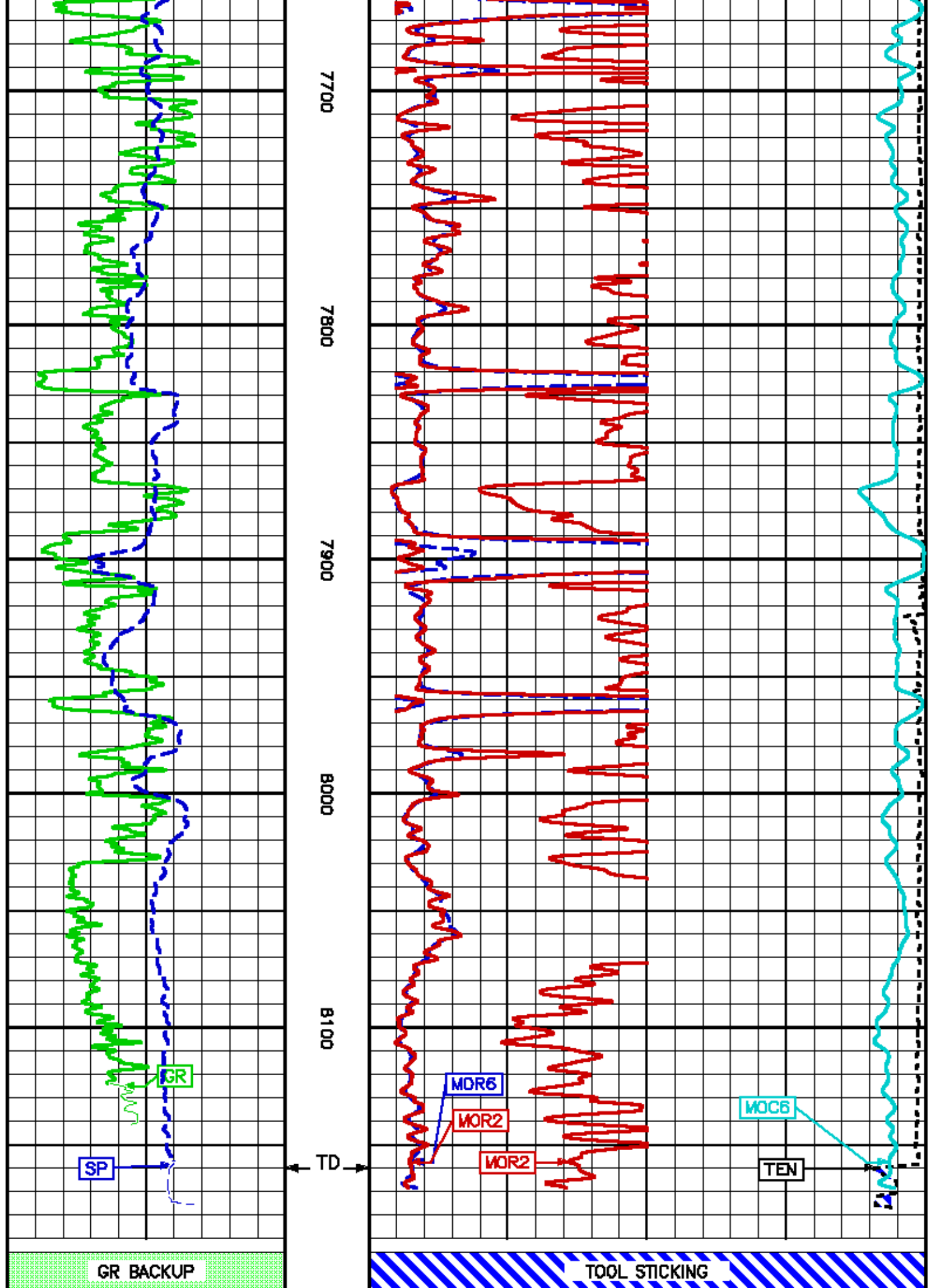


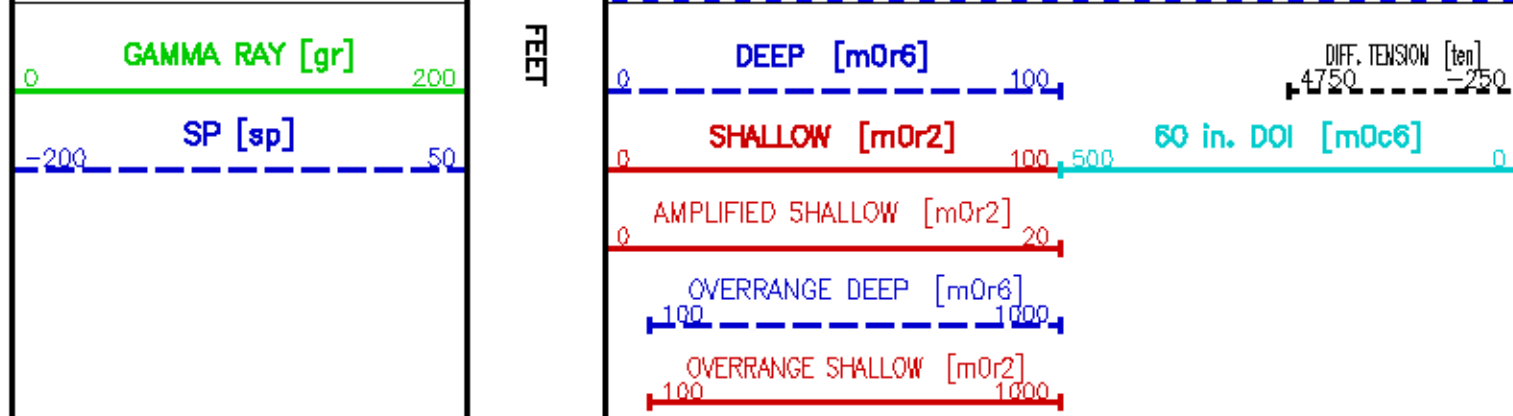












MAIN LOG 5"/100FT SCALE

ECLIPS 6.11 Aug 06, 2010
Updates: 1,2 Patches: 3

Fri Apr 26 14:12:55 2013

Perplt /main/62

Cplot

Pdf_Cpp /main/16

Fileview 5.61

PARAMETER AND FILTER SUMMARY REPORT

File: /data/624388/m670c02.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 1326.250 ft BOTTOM DEPTH: 8178.992 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 (hrd1a*)	medium		"	"
	FILTER (hrd2*)	medium		"	"
	FILTER (hrd2a*)	medium		"	"
	FILTER (soft*)	medium		"	"
SP-SPDH	FILTER ()	heavy (3)		"	"

BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CASING - BOREHOLE & CEMENT VOLUME	CASING O.D.	4.500	1in	TOP	BOTTOM
	CASING THICKNESS	0.000	1in	"	"
BIT SIZE	BIT SIZE	8.750	1in	"	"
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (cnbh*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (mbh*)	USE CALIPER		"	"
BOREHOLE CORR DIAMETER	FIXED DIAMETER (cnbh*)	8.750	1in	"	"
	FIXED DIAMETER (mbh*)	8.750	1in	"	"
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	70.0	degF	"	"
	MUD SAMPLE RES	1.320	ohm.m	"	"
BH MUD RESISTIVITY SOURCE	RMD SOURCE (NDIL)	TOOL MEASURED		"	"
BOREHOLE TEMP from GRADIENT	Known BH REF TEMP	70.0	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

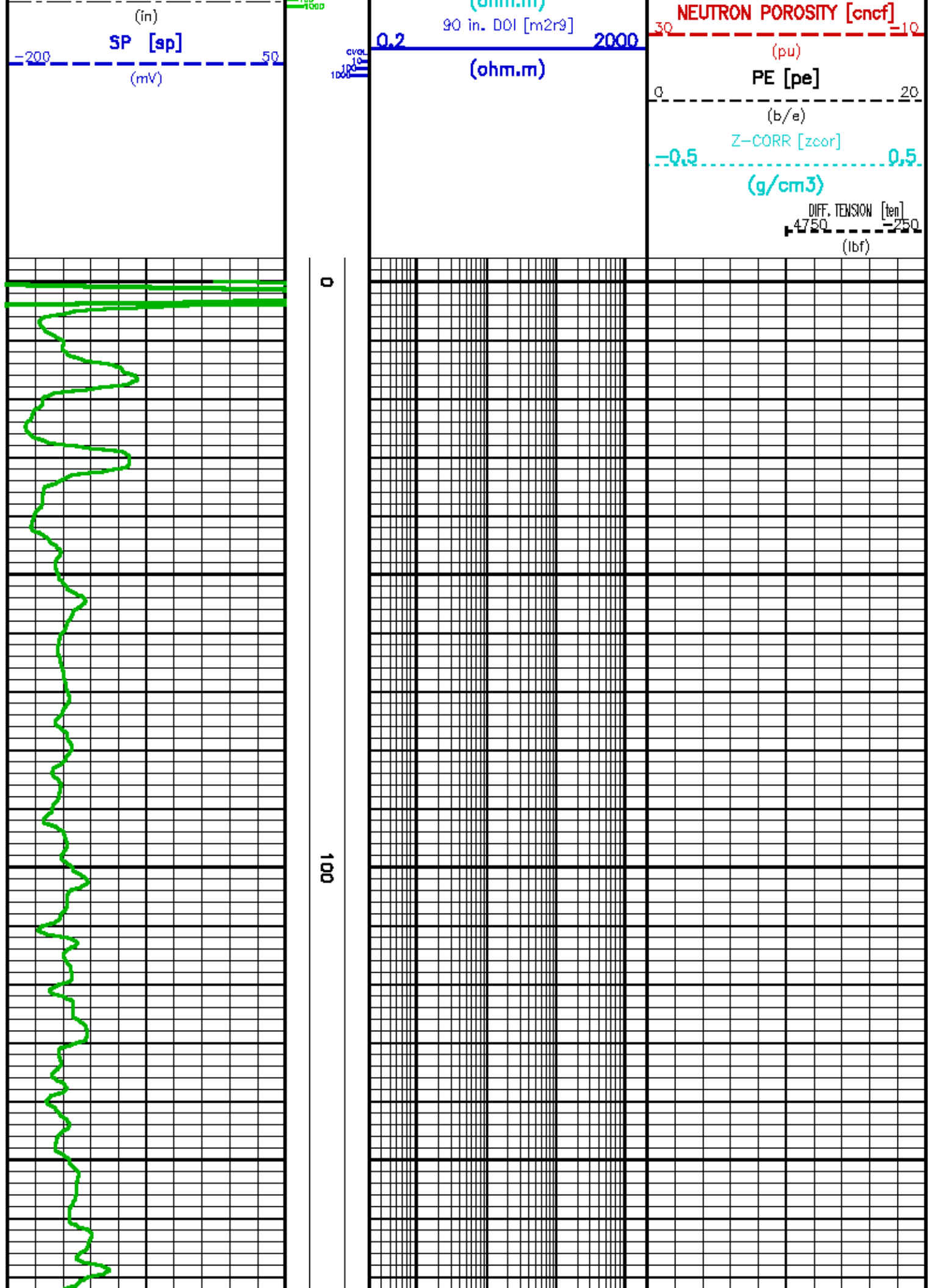
CN PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CN MATRIX	2436 MATRIX	SANDSTONE		TOP	BOTTOM
CN BOREHOLE CORRECTION	SALINITY	850	ppm	"	"
	BOREHOLE CORRECTION	ON		"	"
CN CASING & CEMENT CORRECTION	CORRECTION	OFF		"	"
	BIT SIZE BEHIND CSMB	12.000	1n	"	"
ZDL PROCESSING					
MEASUREMENT 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	1n	"	"
	TOOL POSITION	ECCENTERED		"	"
	Rmud MULTIPLIER	1.000		"	"

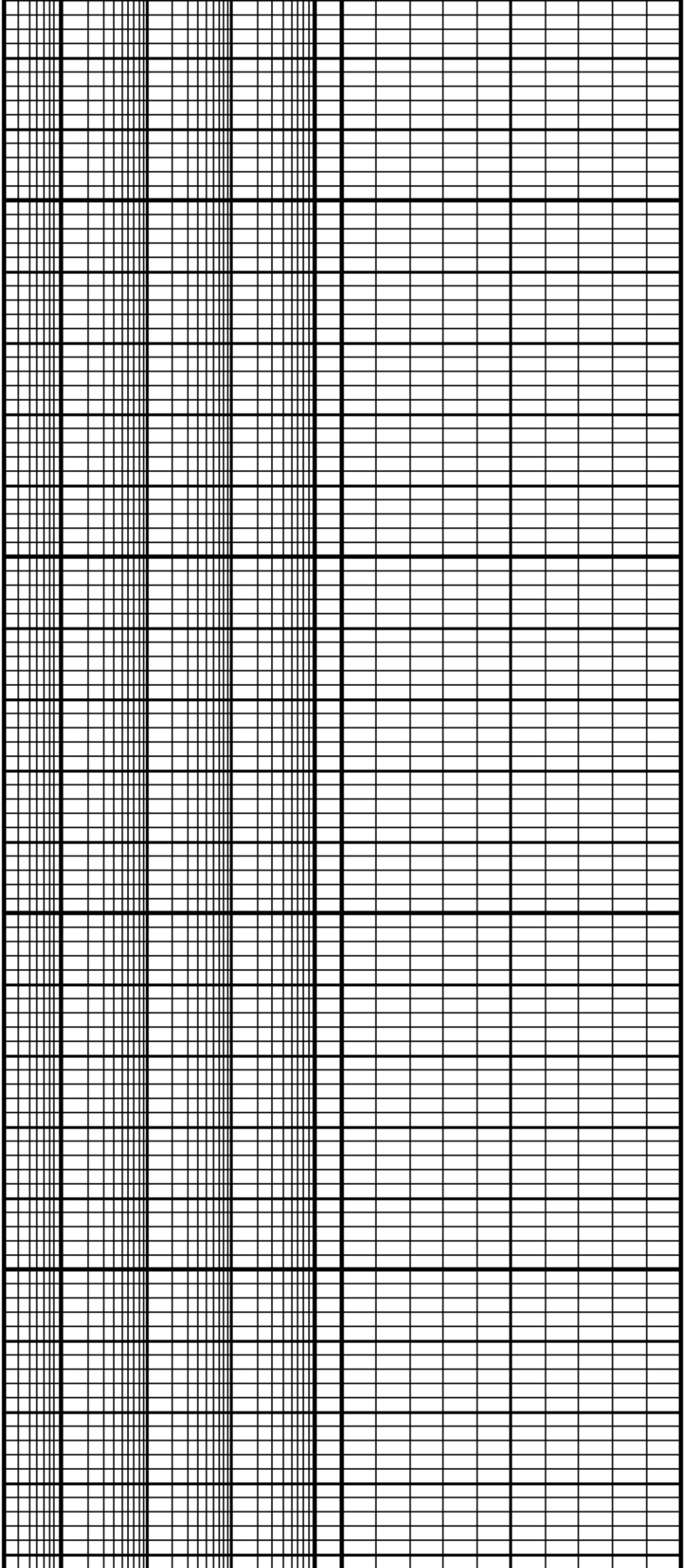
CURVE DESCRIPTION REPORT		
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:BIT	Apr 26 10:46:40 2013	BIT SIZE
F1:BVOL	Apr 26 10:46:40 2013	BOREHOLE VOLUME
F1:CAL	Apr 26 10:46:40 2013	CALIPER
F1:CNCF	Apr 26 10:46:40 2013	FIELD NORMALIZED COMPENSATED NEUTRON POROSITY
F1:CVOL	Apr 26 10:46:40 2013	CEMENT VOLUME
F1:GR	Apr 26 10:46:40 2013	GAMMA RAY
F1:M2R1	Apr 26 10:46:40 2013	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 10-INCH DOI
F1:M2R6	Apr 26 10:46:40 2013	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 60-INCH DOI
F1:M2R9	Apr 26 10:46:40 2013	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 90-INCH DOI
F1:PE	Apr 26 10:46:40 2013	PHOTO ELECTRIC CROSS-SECTION
F1:PORZ	Apr 26 10:46:40 2013	POROSITY FOR SELECTABLE MATRIX
F1:SP	Apr 26 10:46:40 2013	SPONTANEOUS POTENTIAL
F1:TEN	Apr 26 10:46:40 2013	DIFFERENTIAL TENSION
F1:ZCOR	Apr 26 10:46:40 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/624388/WPK_MAIN.pdf [5"/100' Scale]
Plot Interval	: -2.5 - 8184 Feet
Data File 1	: F1 : HL6670:/dat1a/624388/m670a02-MAIN.xdf
Created On	: Apr 26 10:46:40 2013
Company	: WPK ENERGY INC
Well	: DIAMOND ELK LLC PA 43-2
Field	: PARACHUTE
File Interval	: -2.5 - 8184 Feet
Out	: m670a

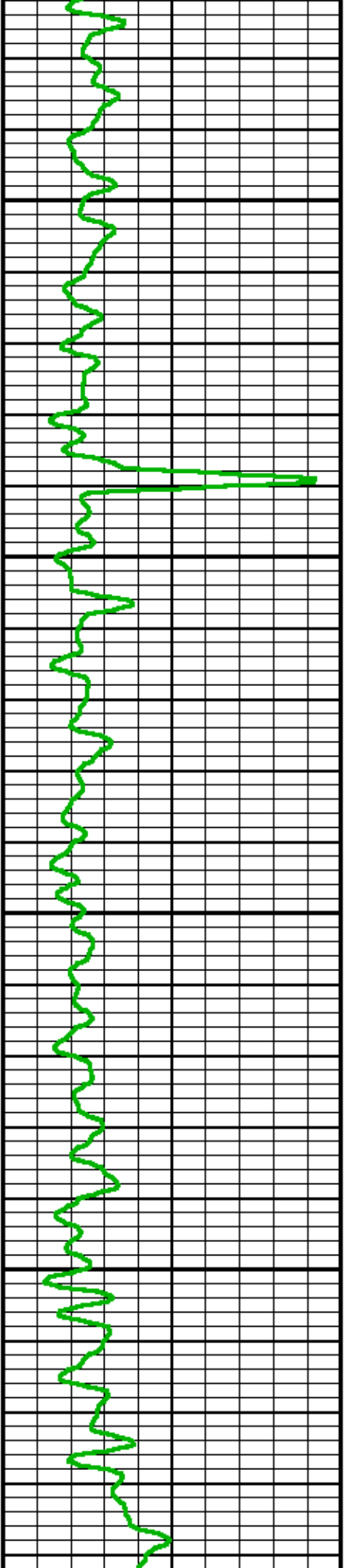
<div> <div>GAMMA RAY [gr]</div> <div>(gAPI)</div> <div>CALIPER [cal]</div> <div>(in)</div> <div>BIT SIZE</div> </div>	FEET	<div>2FT Matched Resolution Resistivity</div> <div>10 in. DOI [m2r1]</div> <div>(ohm.m)</div> <div>60 in. DOI [m2r6]</div> <div>(ohm.m)</div>	<div>TOOL STICKING</div> <div>GAS</div> <div>Z-DENSITY POROSITY [porz]</div> <div>(pu)</div>





200

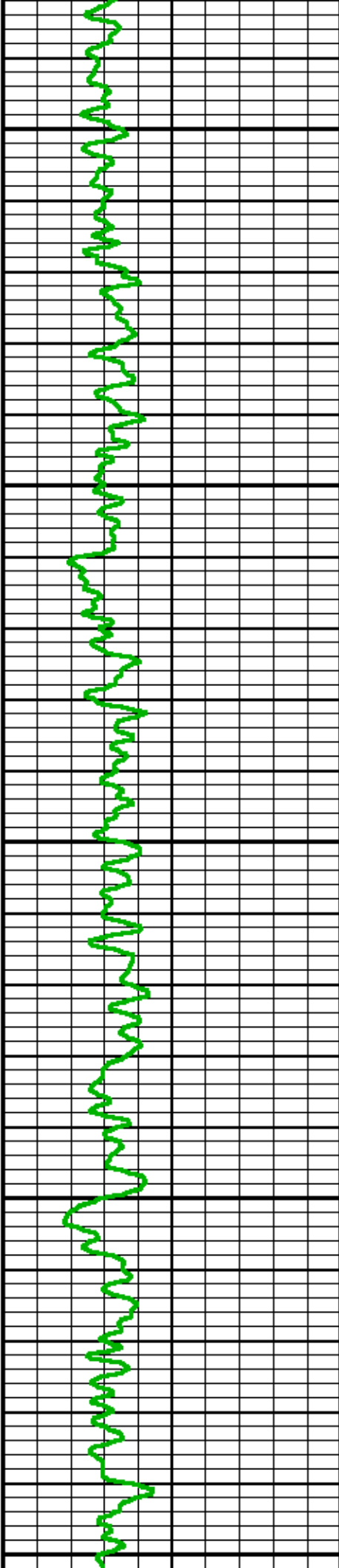
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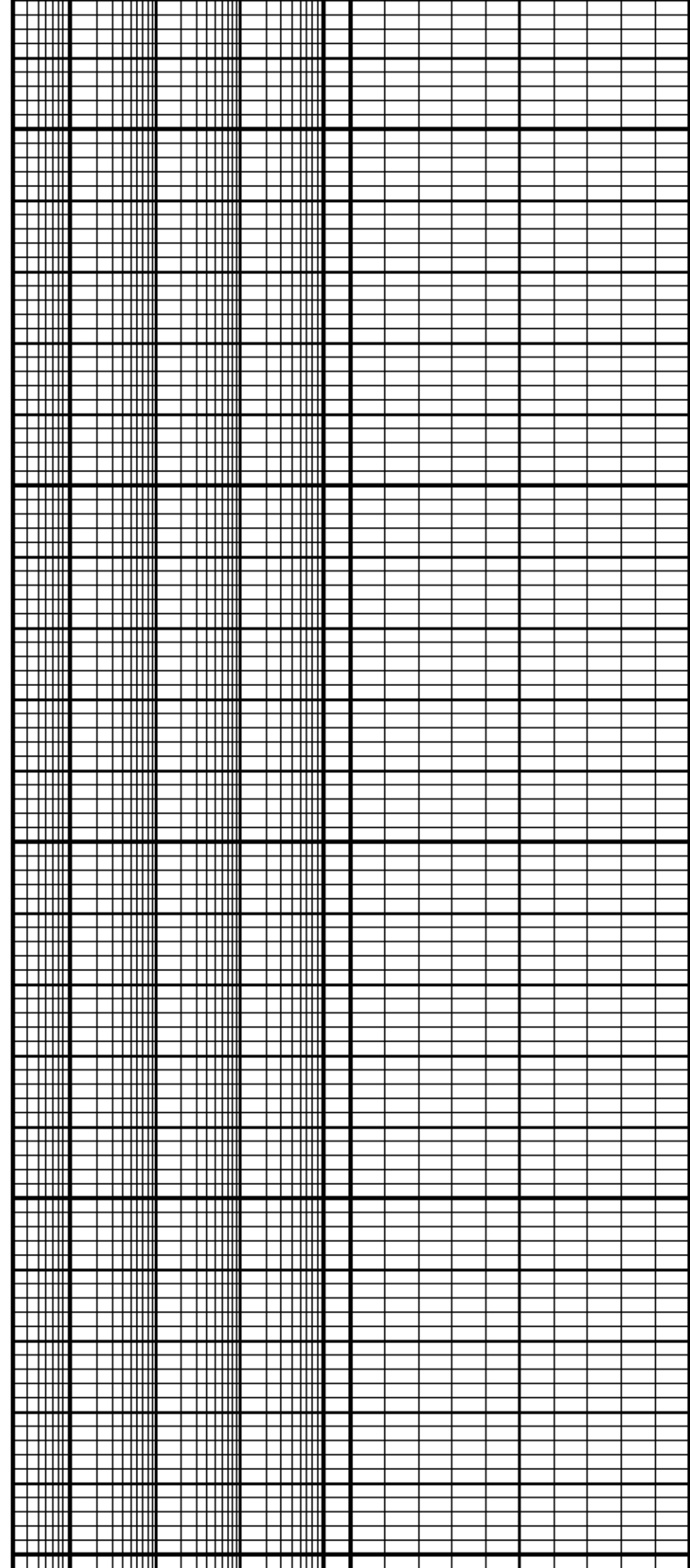
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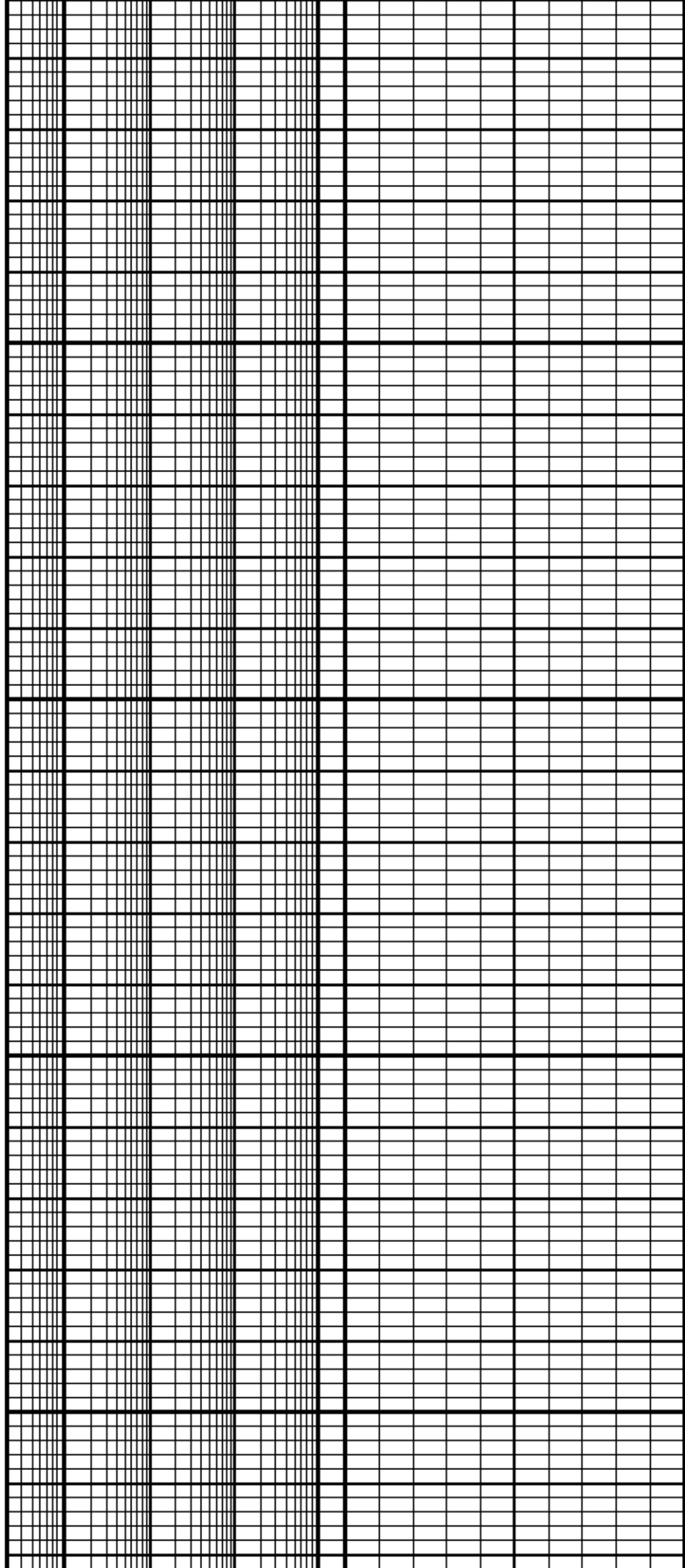




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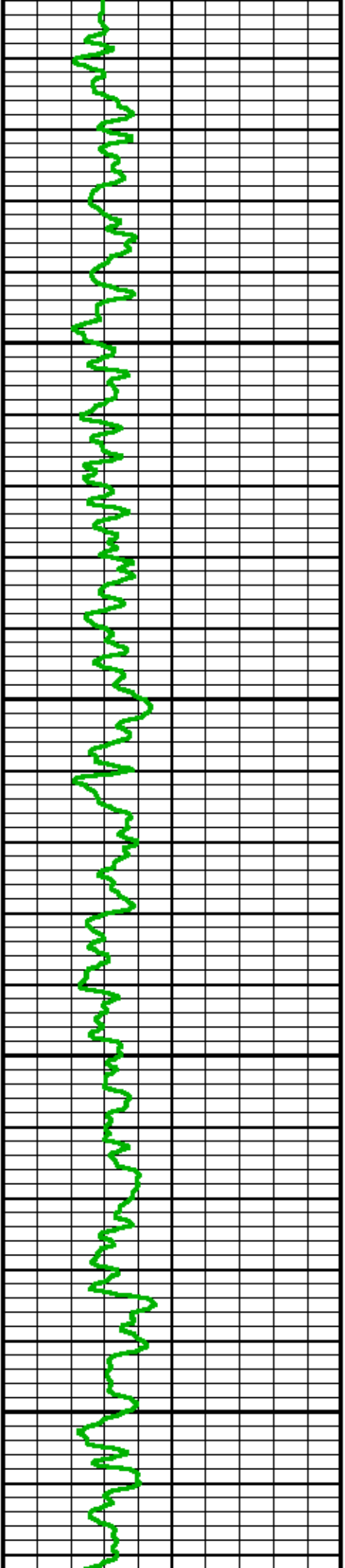
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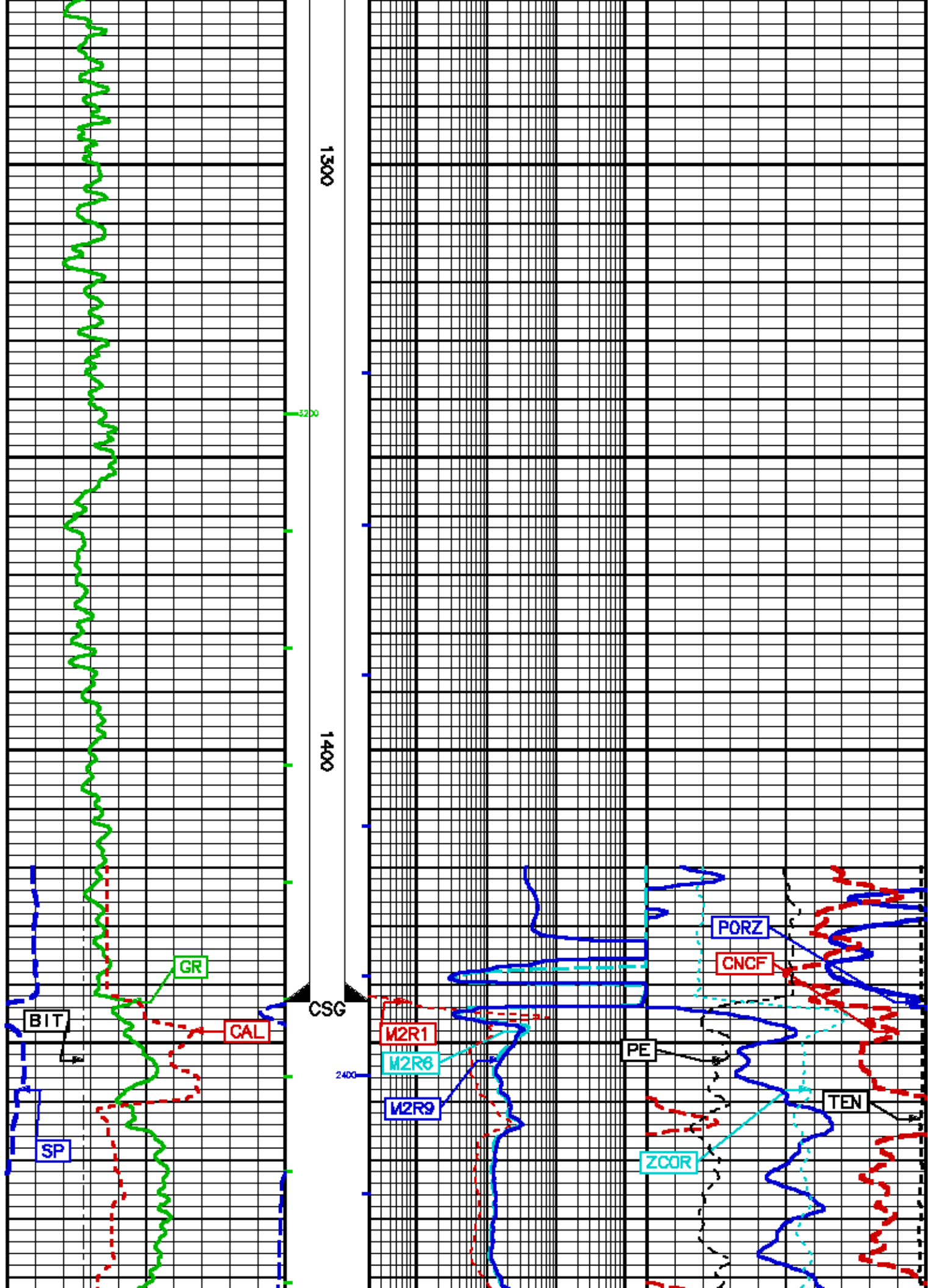


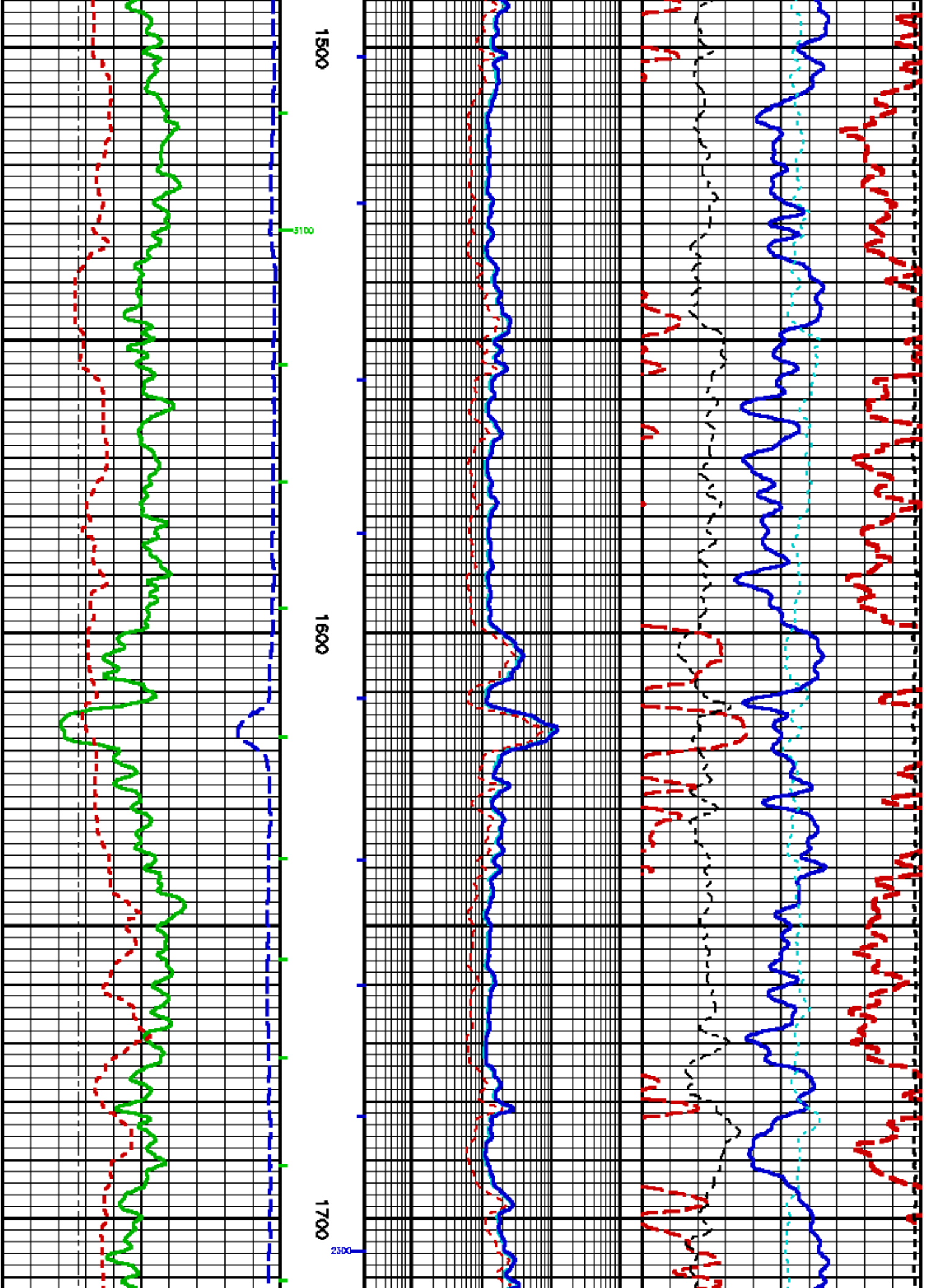


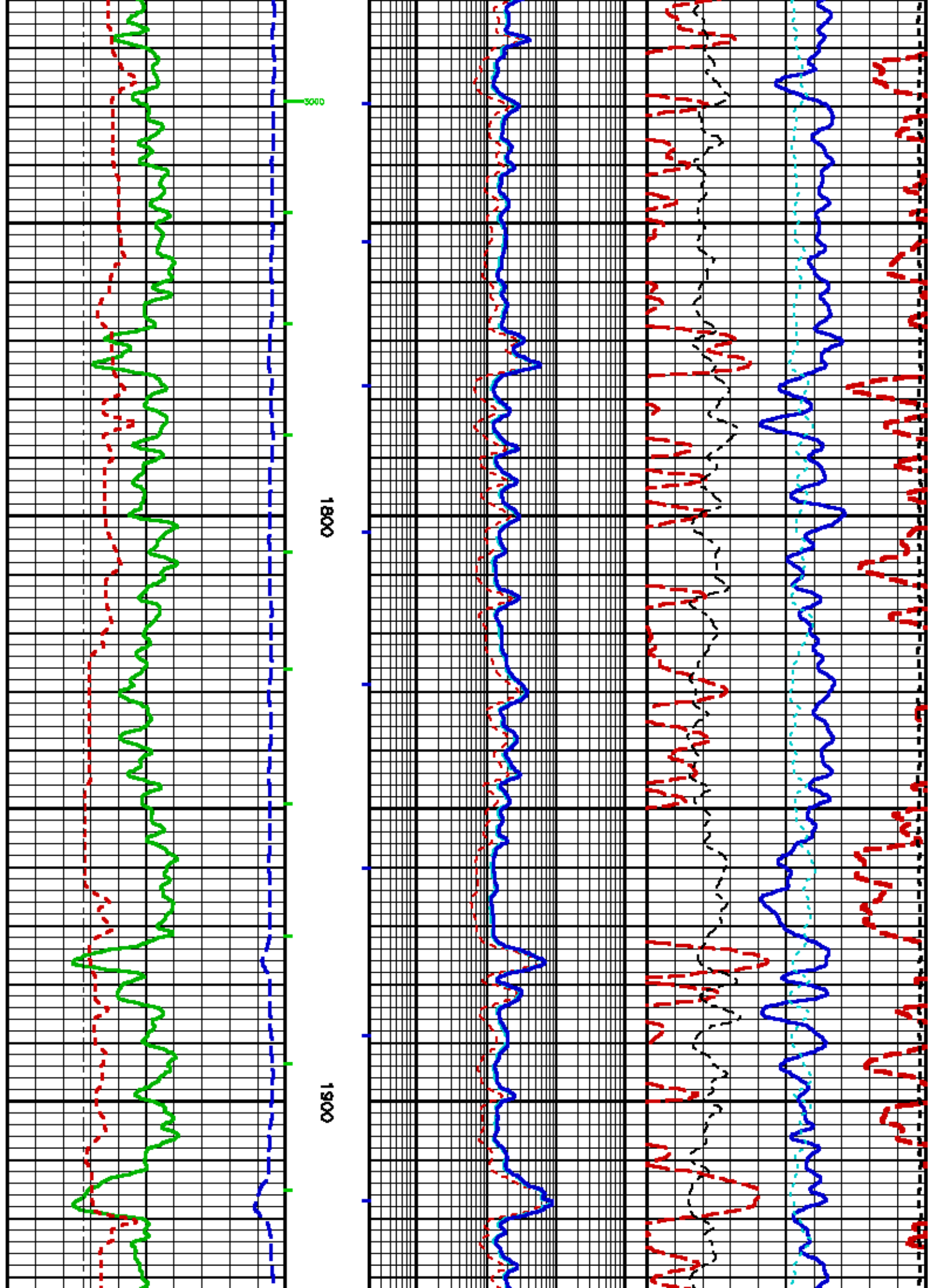
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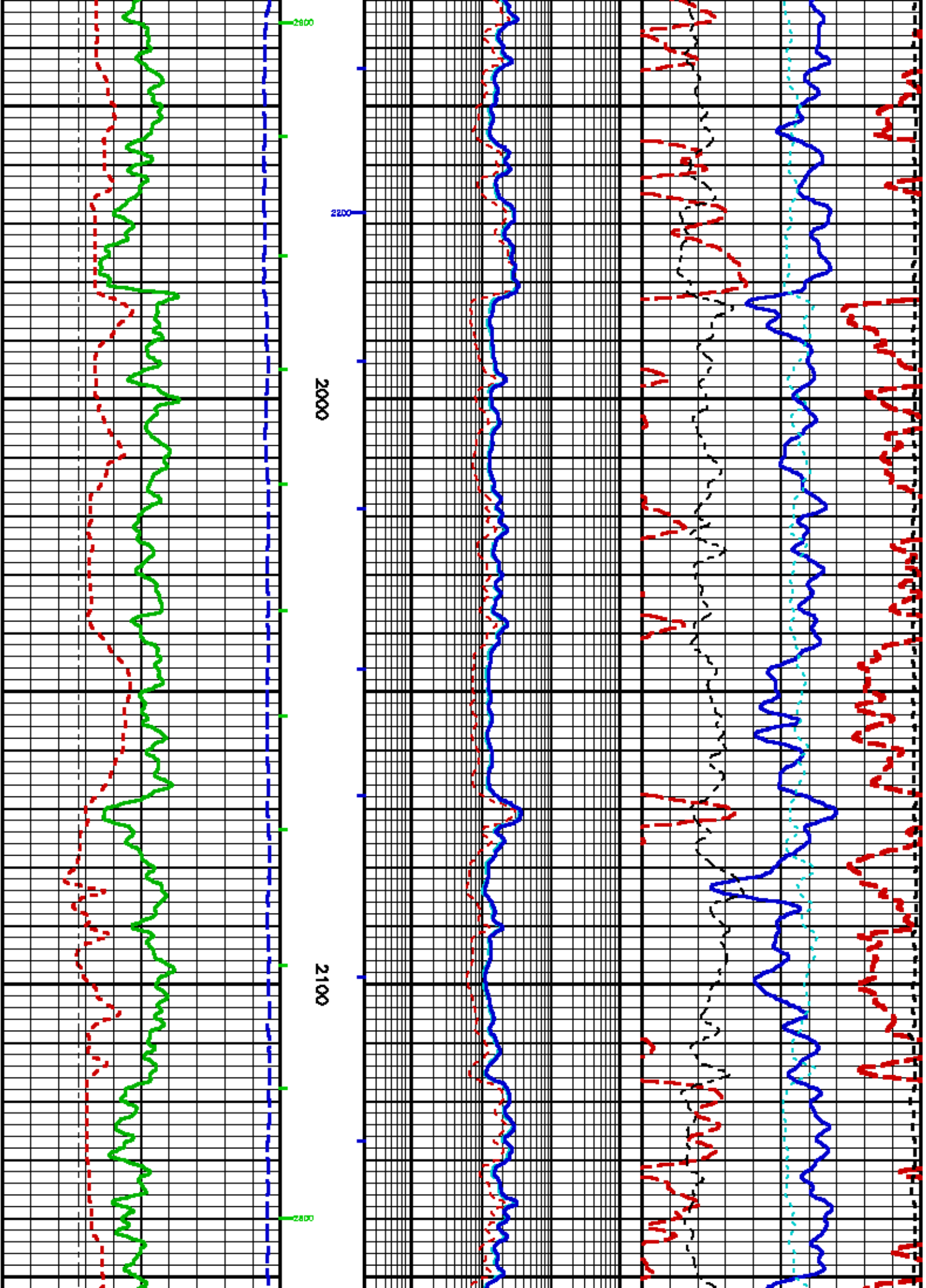
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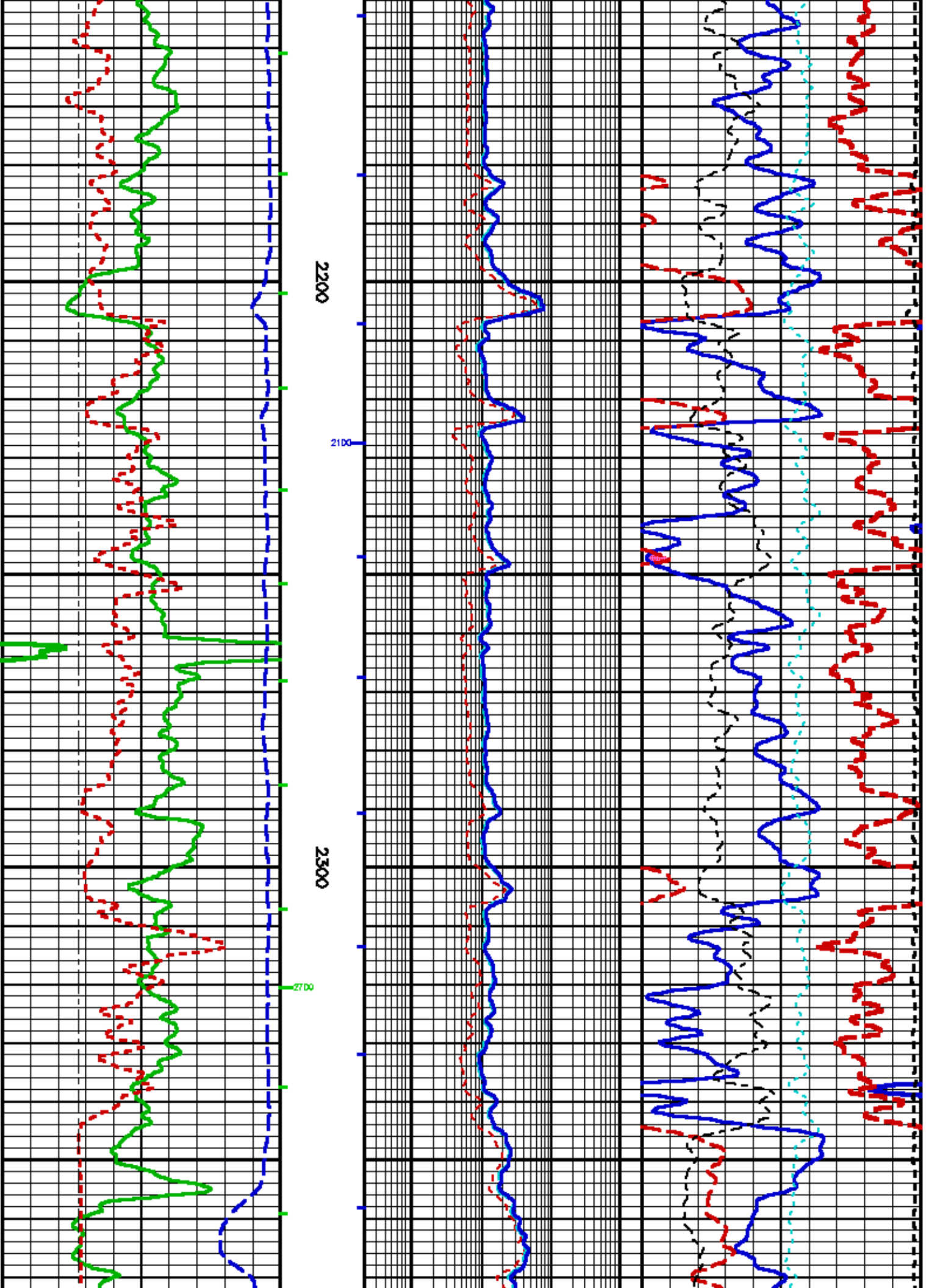


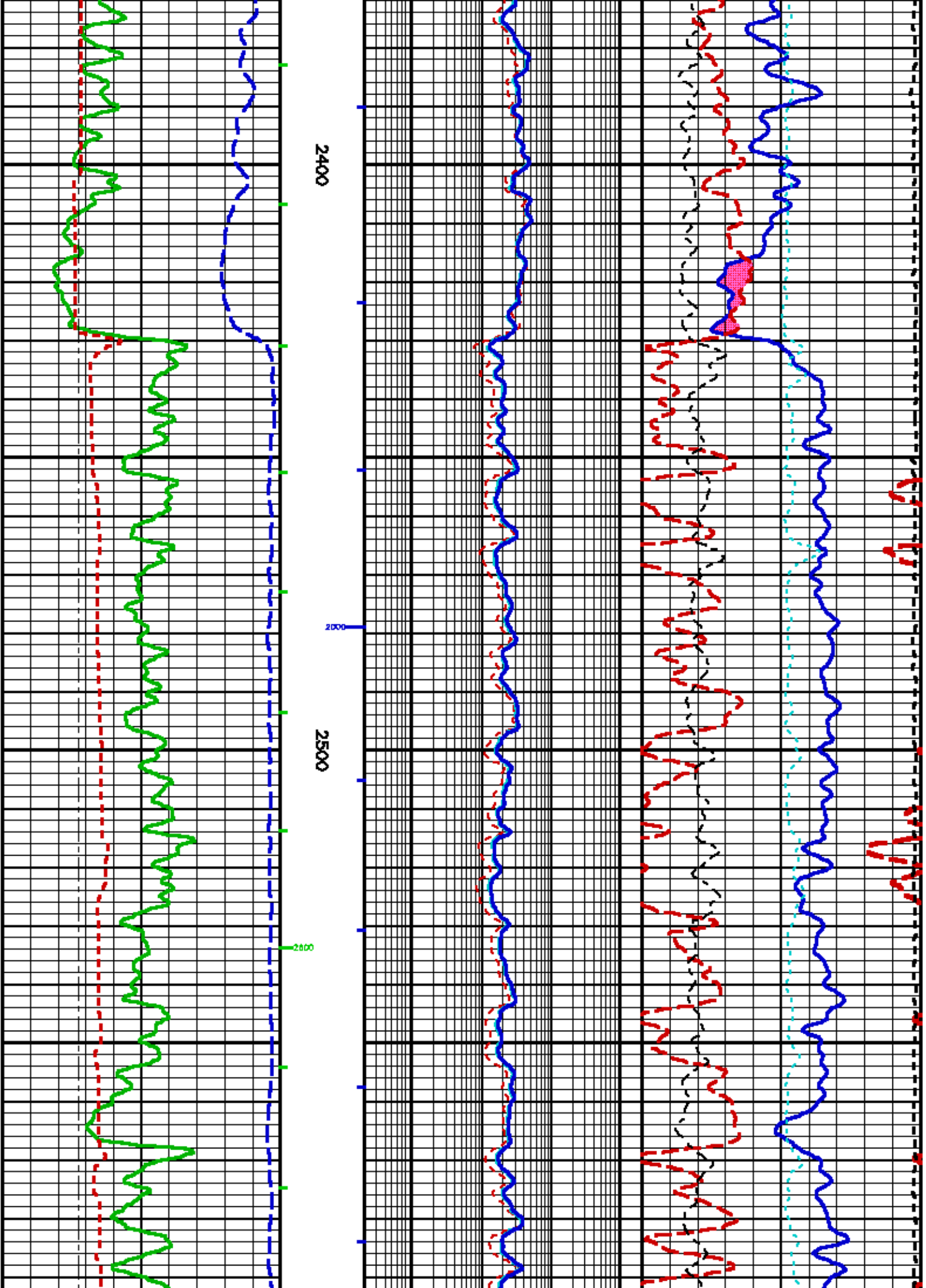


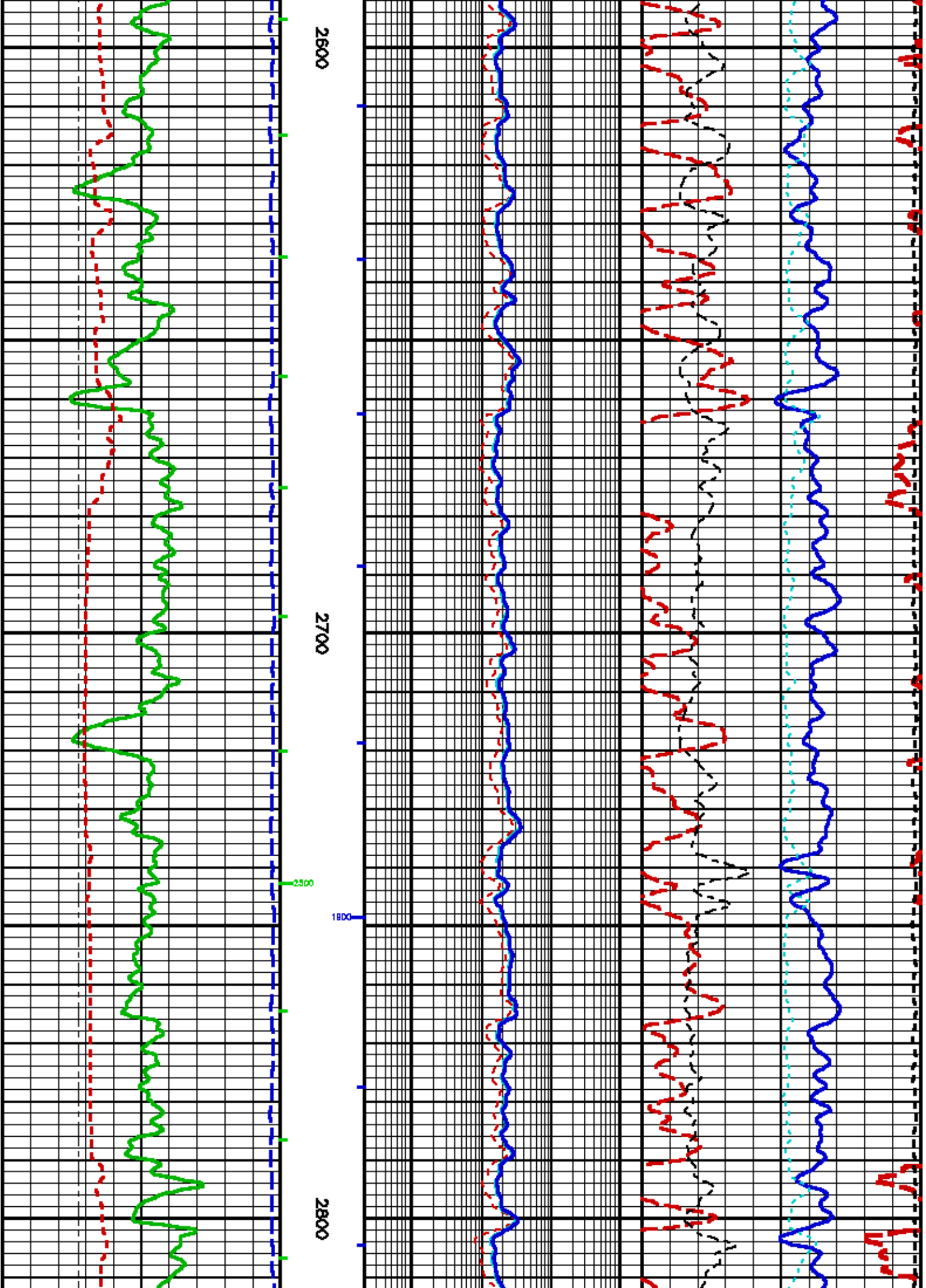


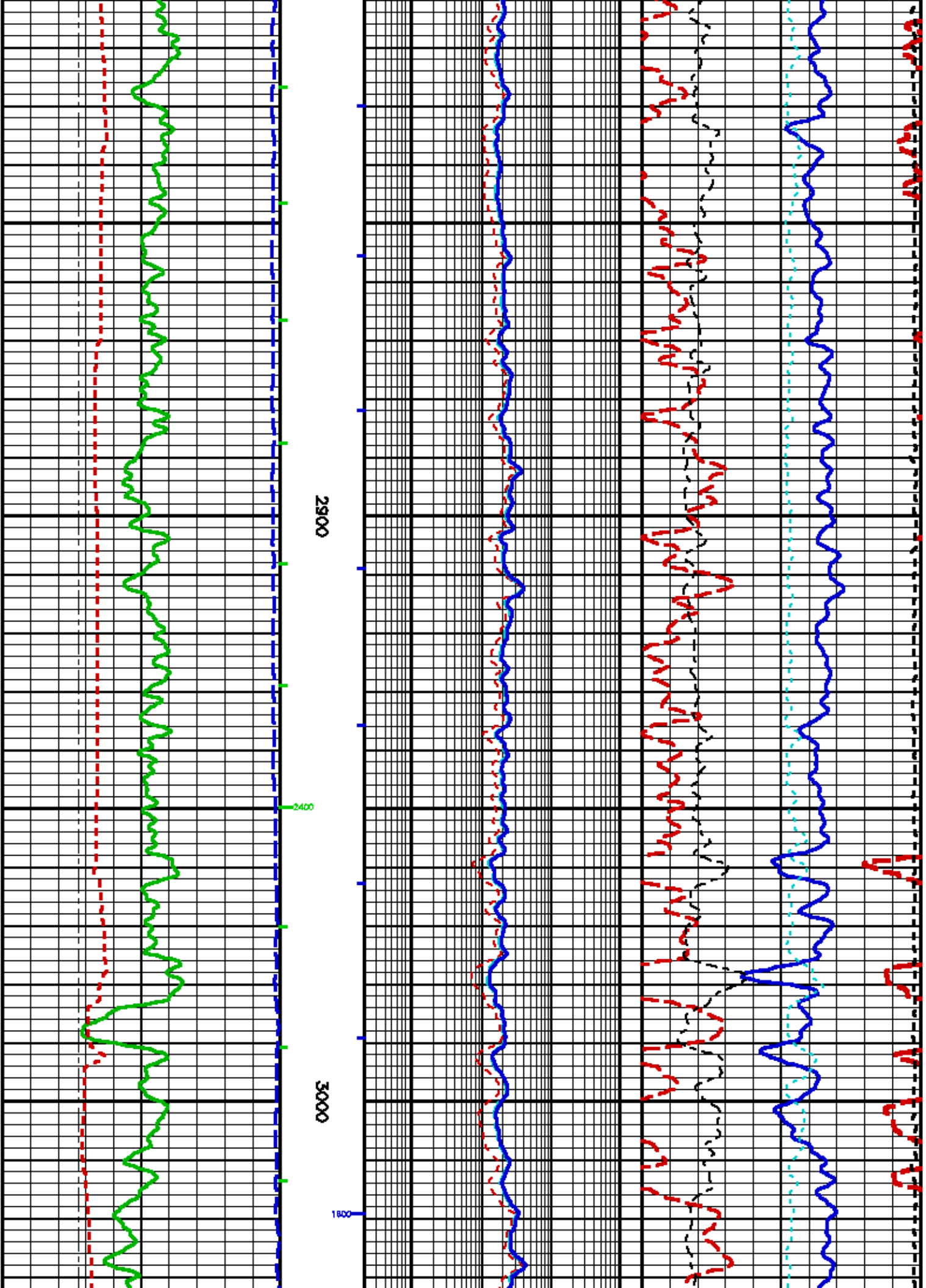


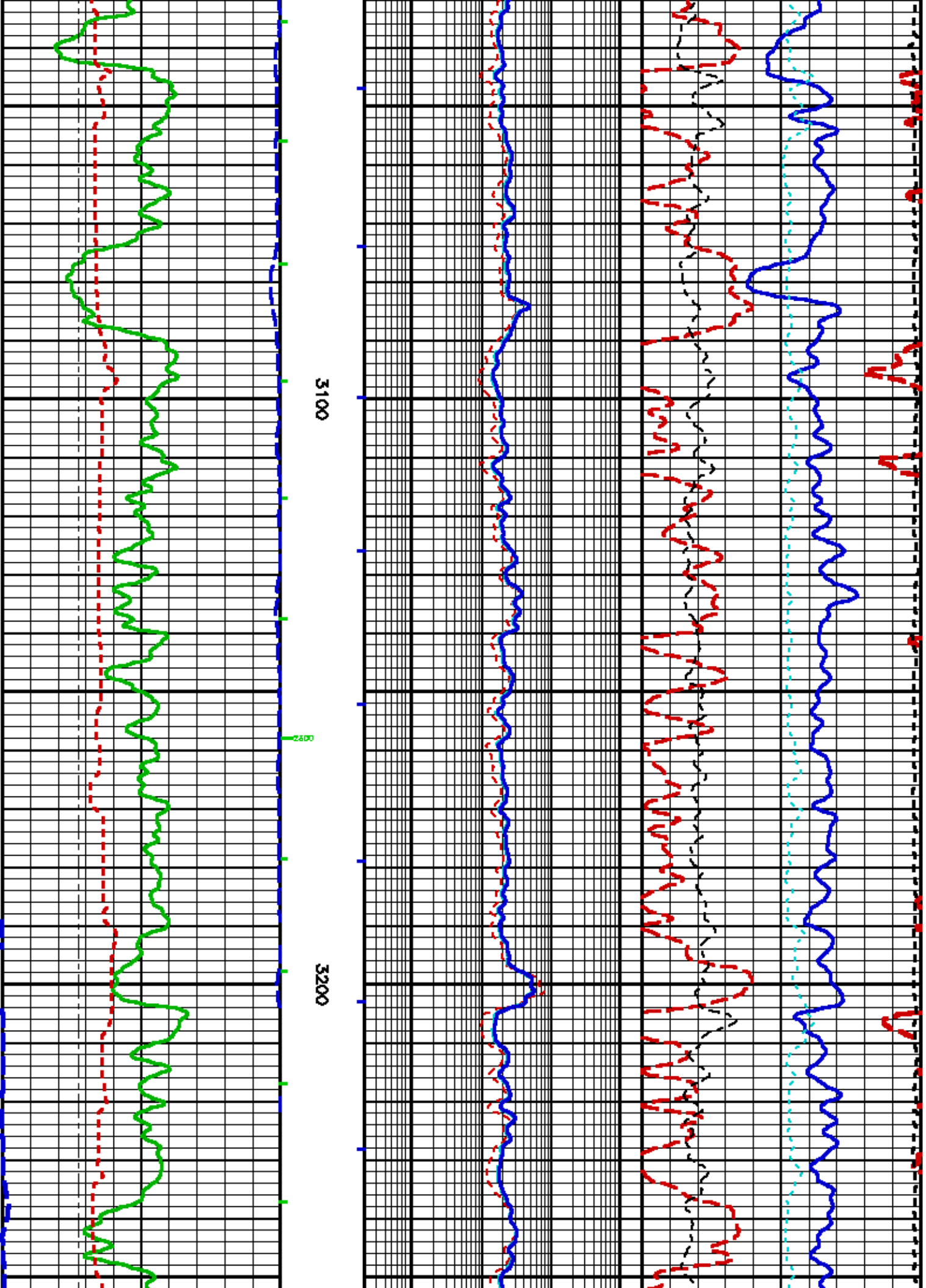


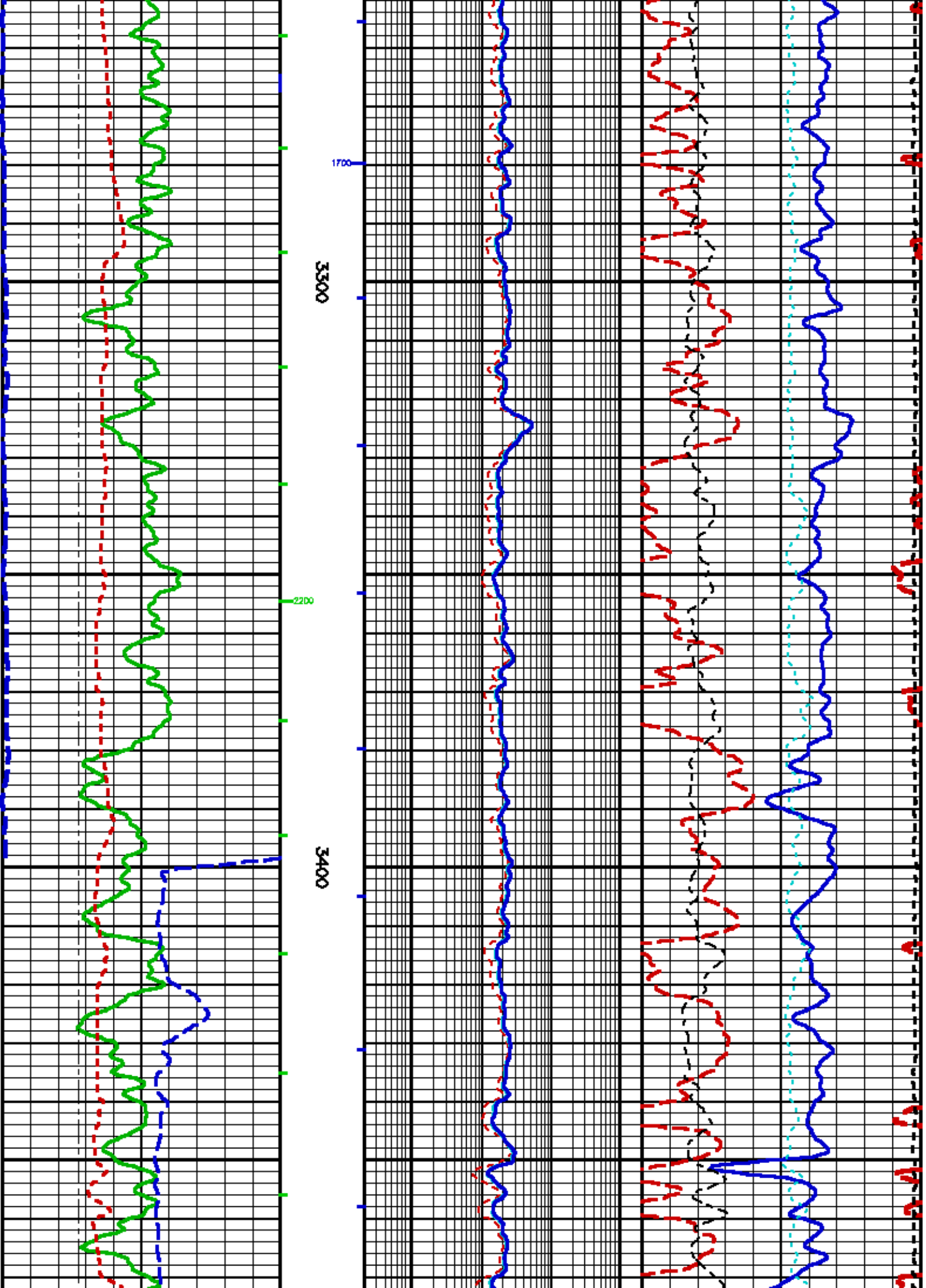


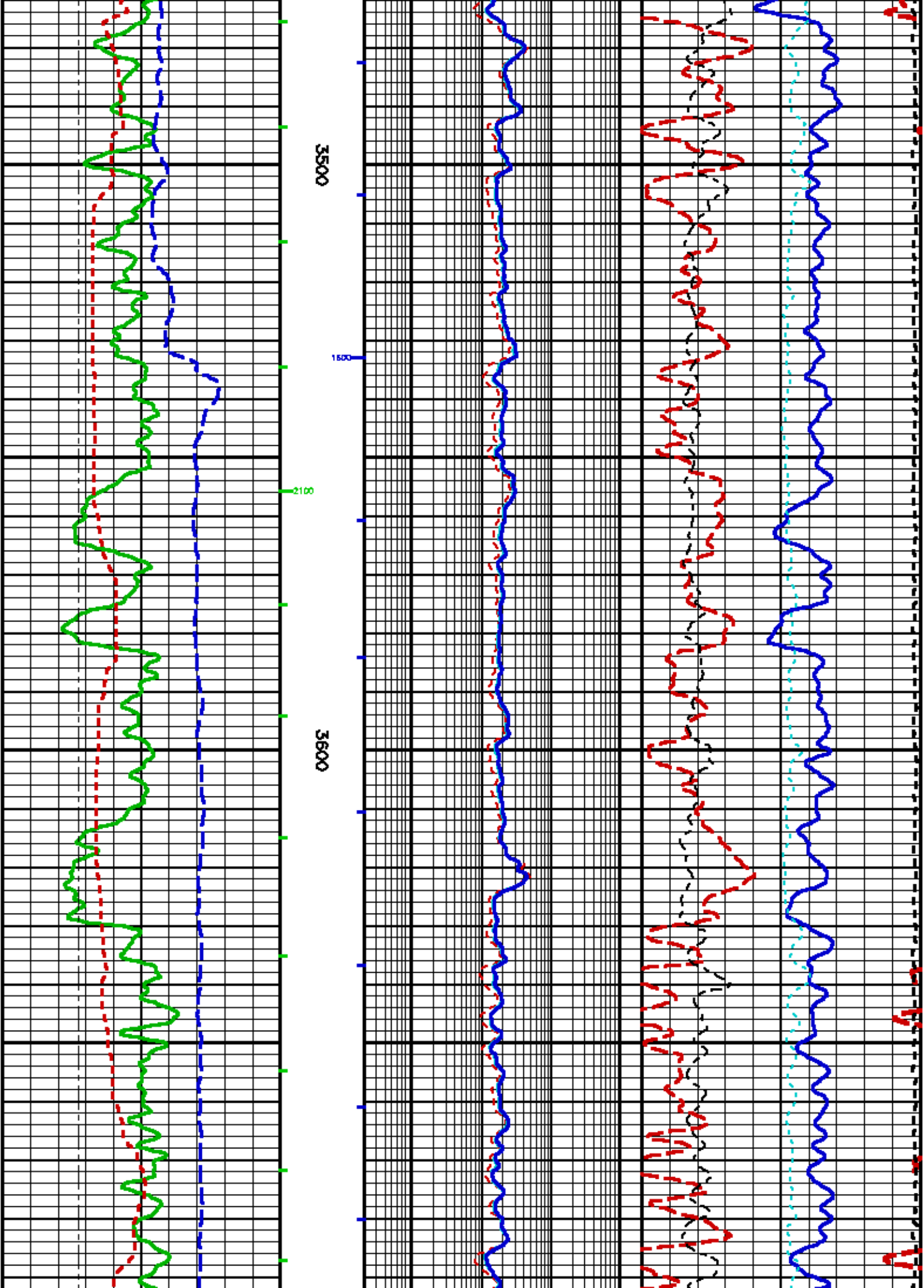


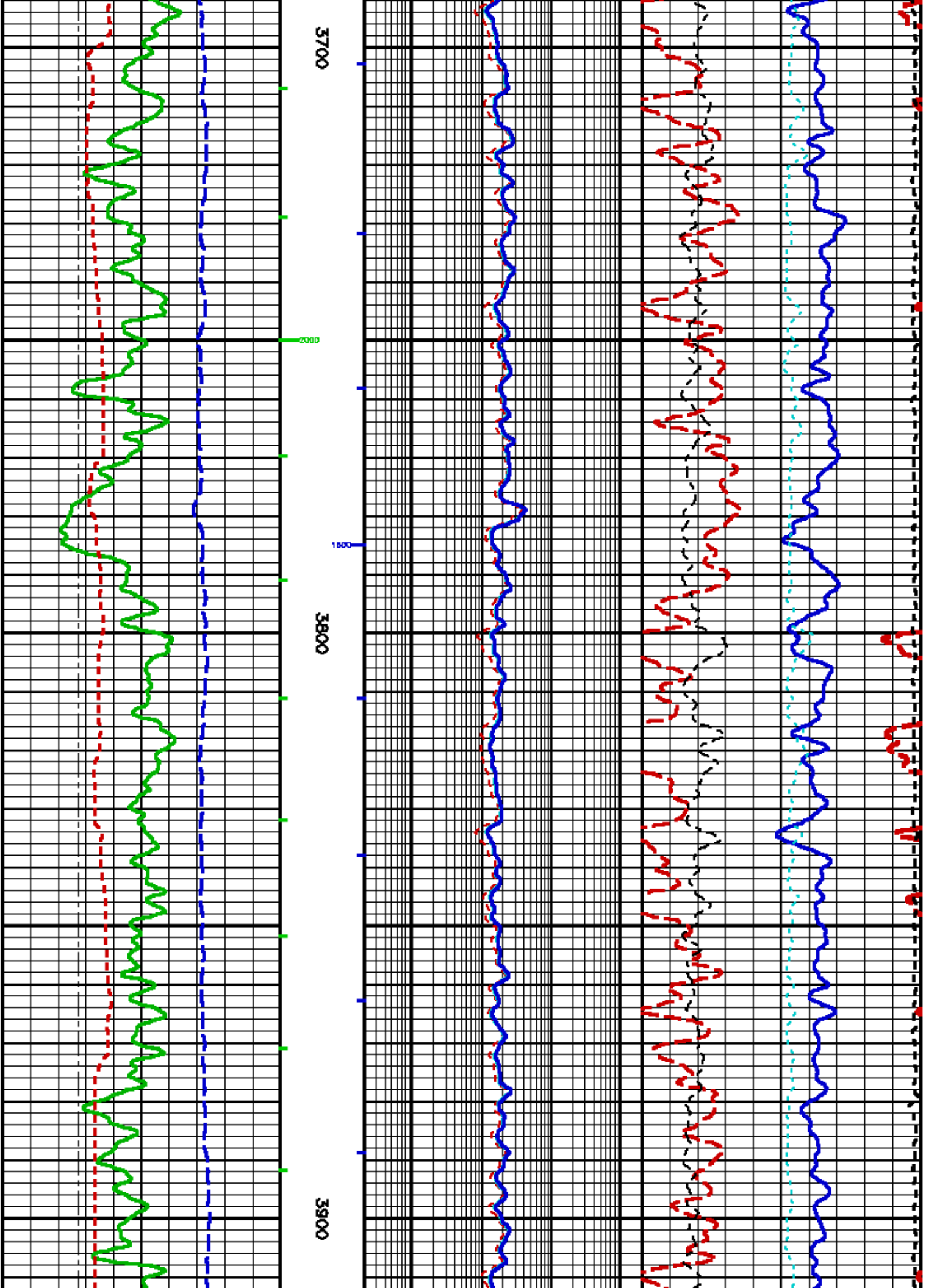


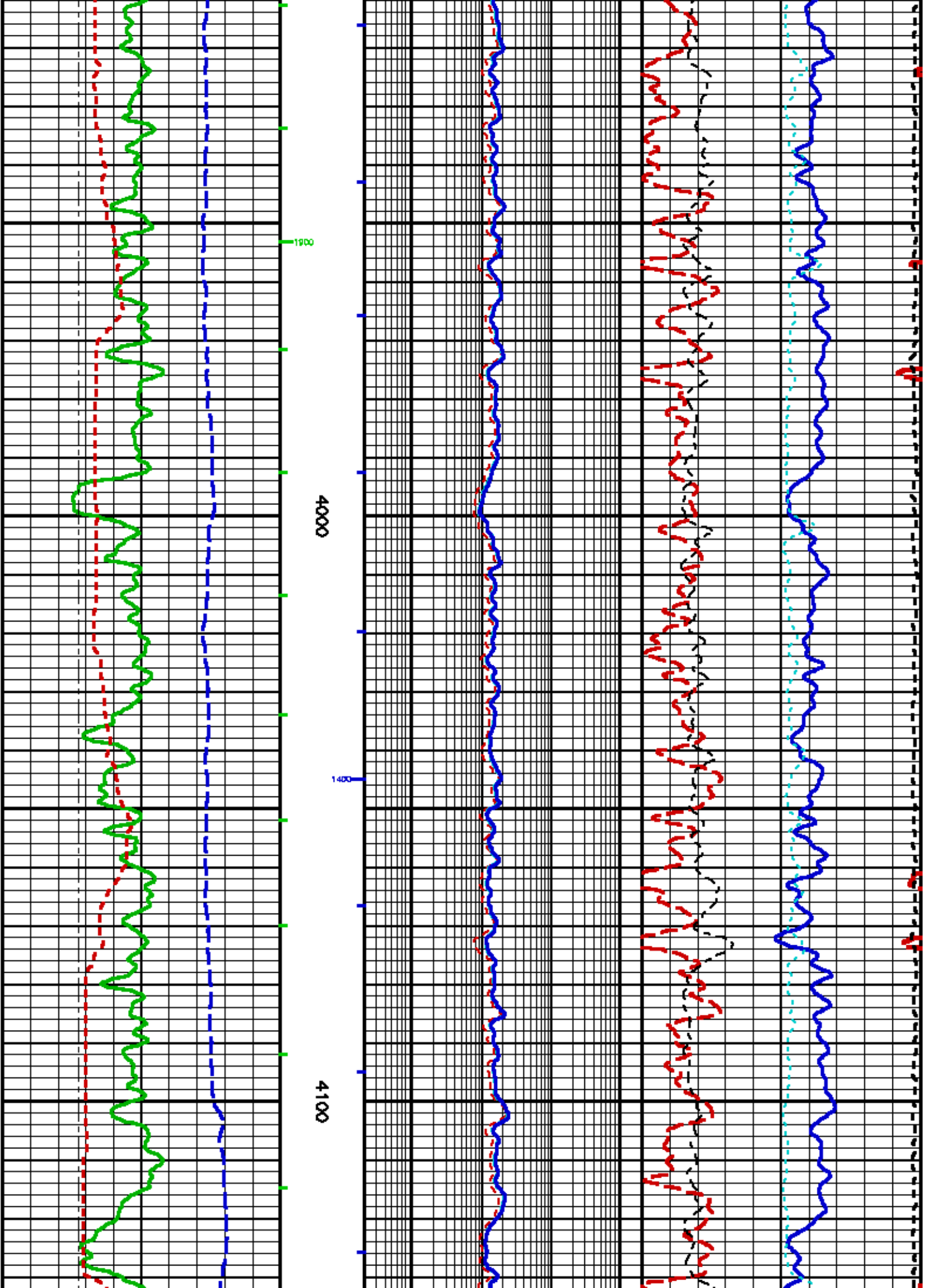


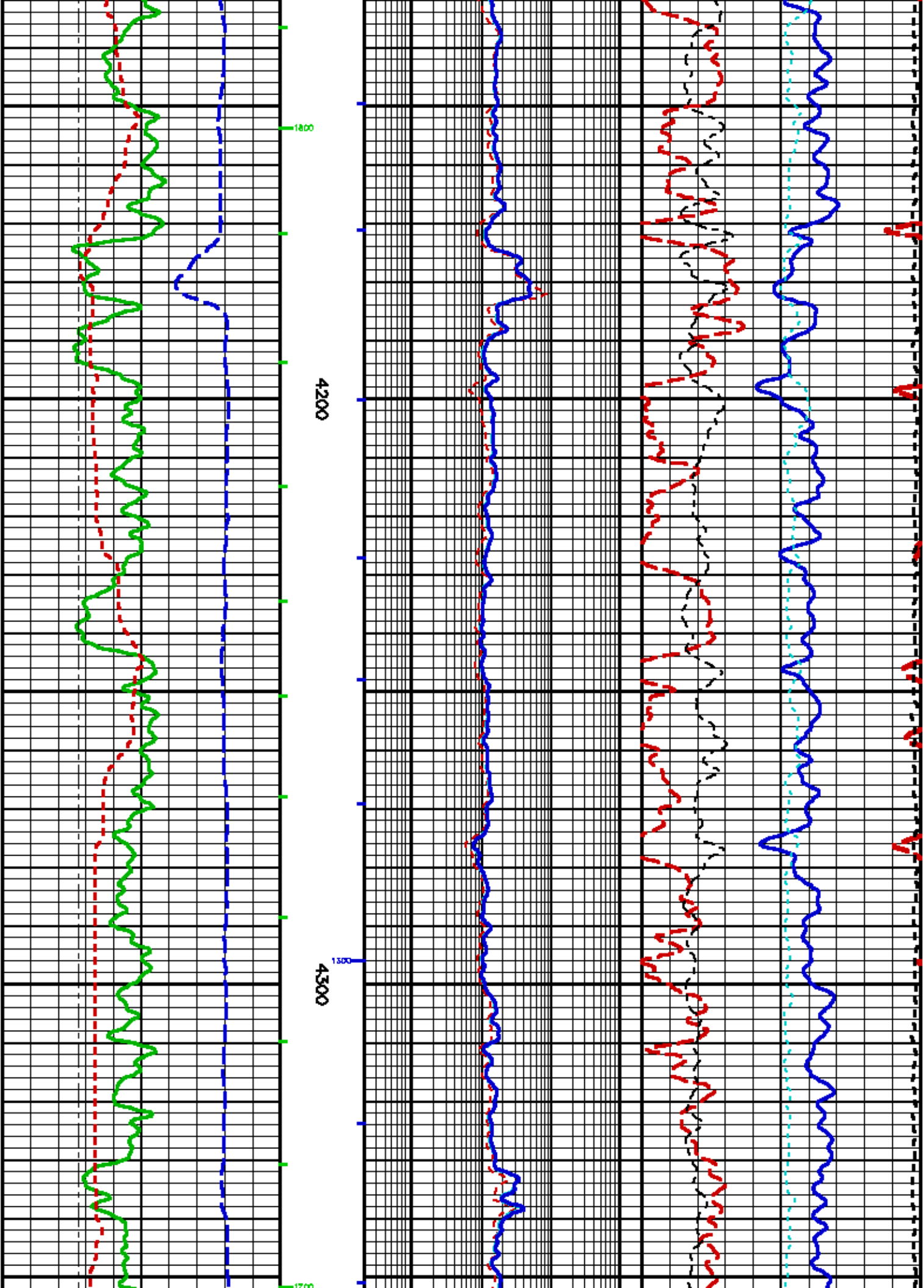


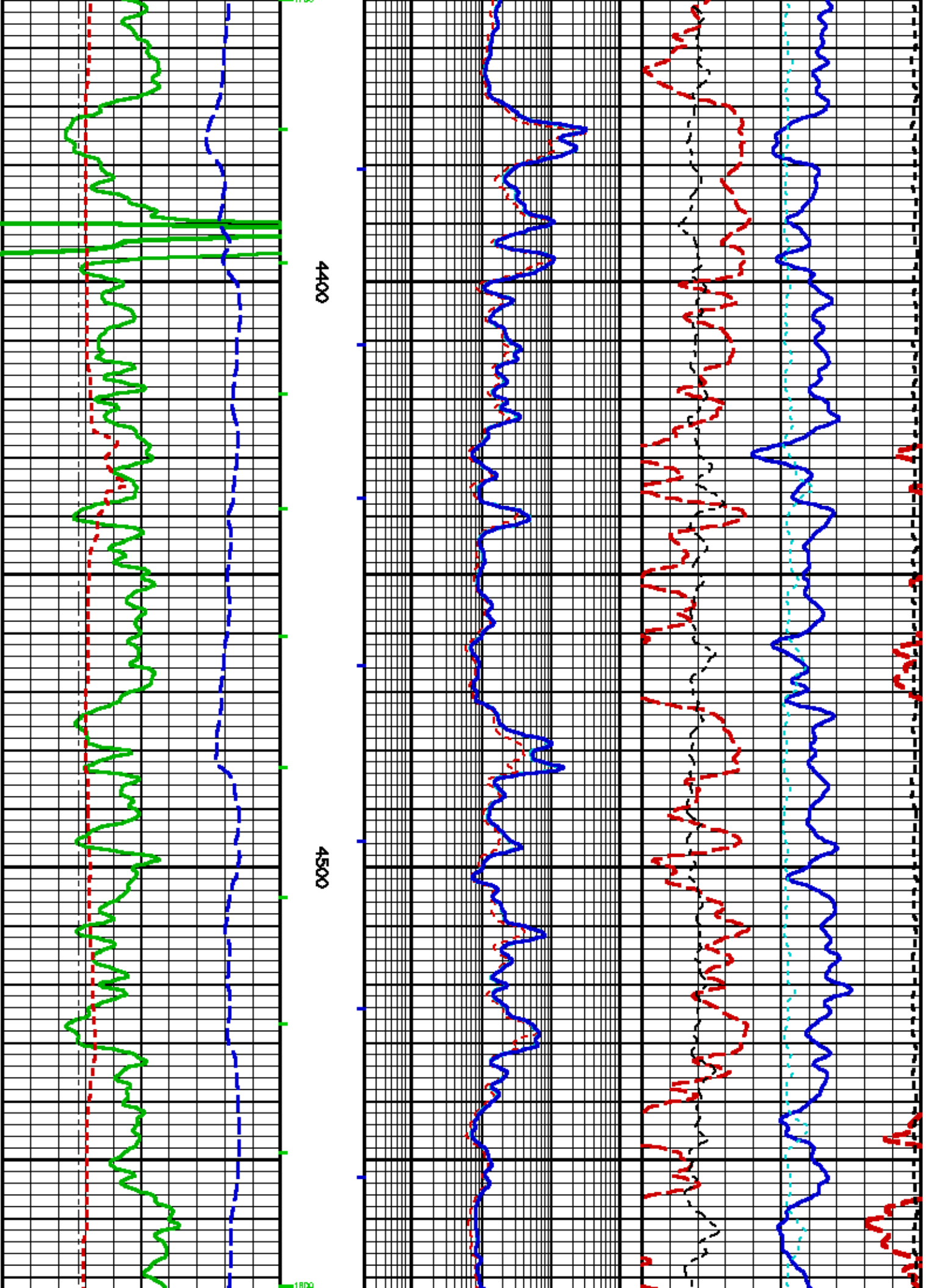


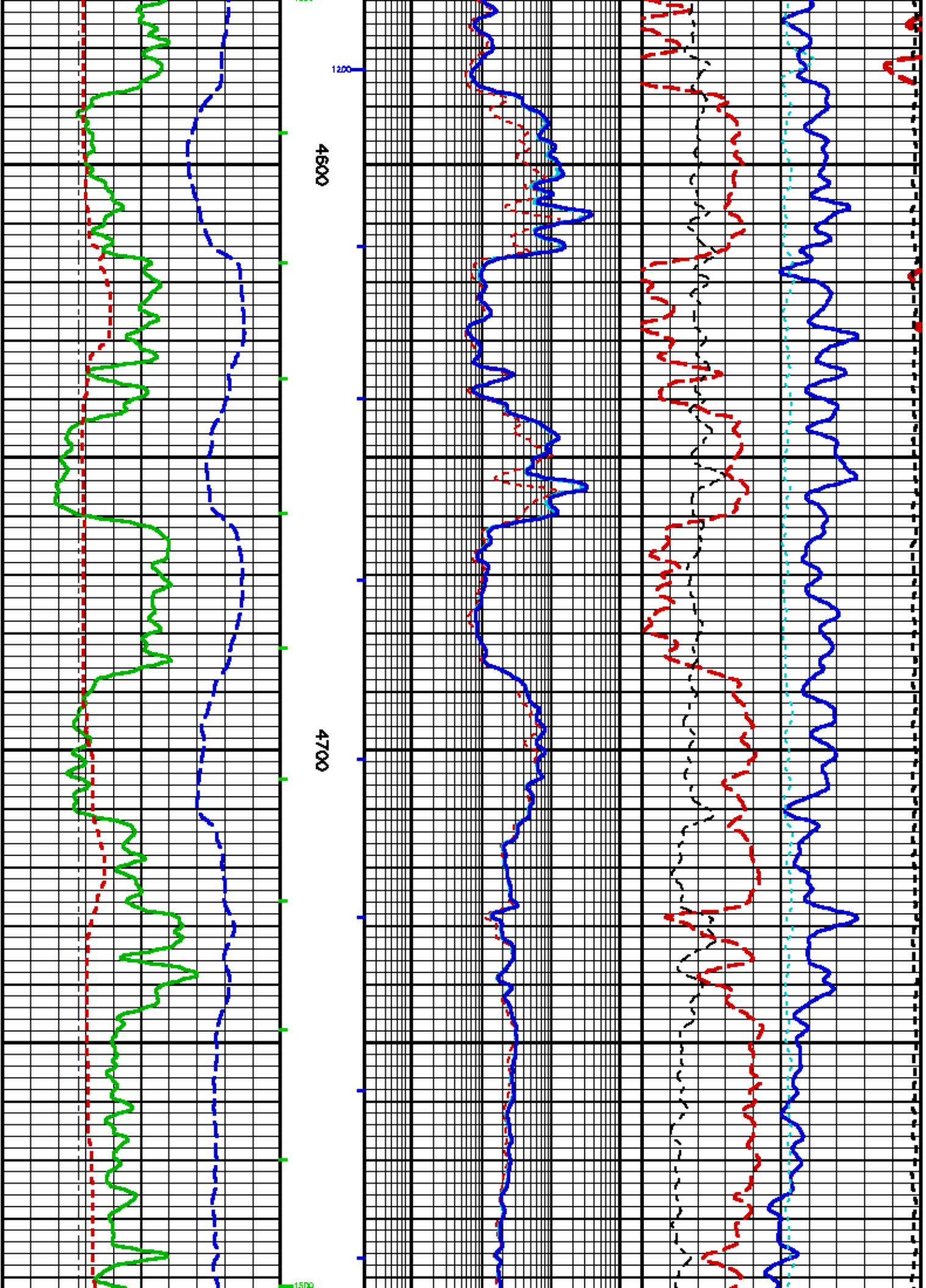


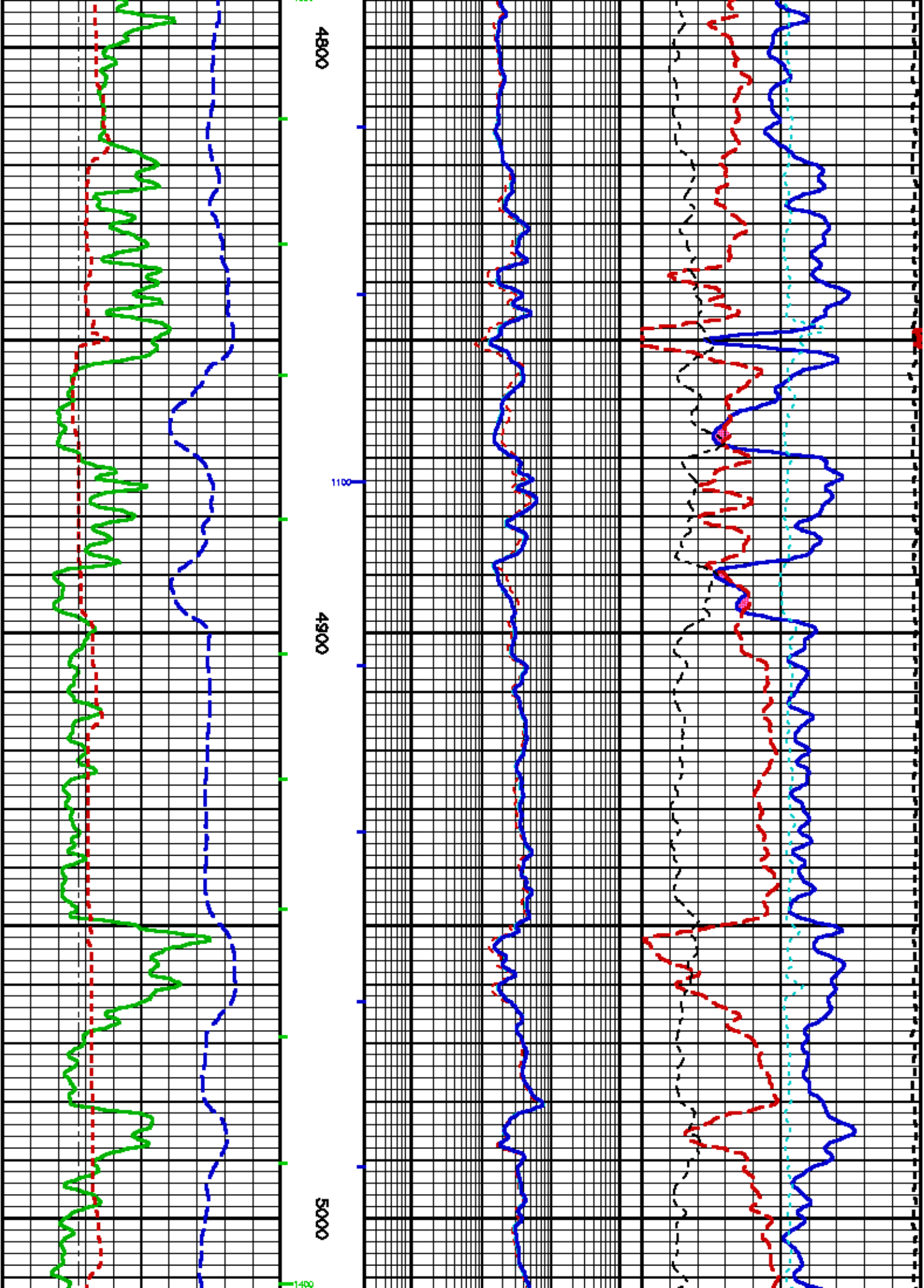


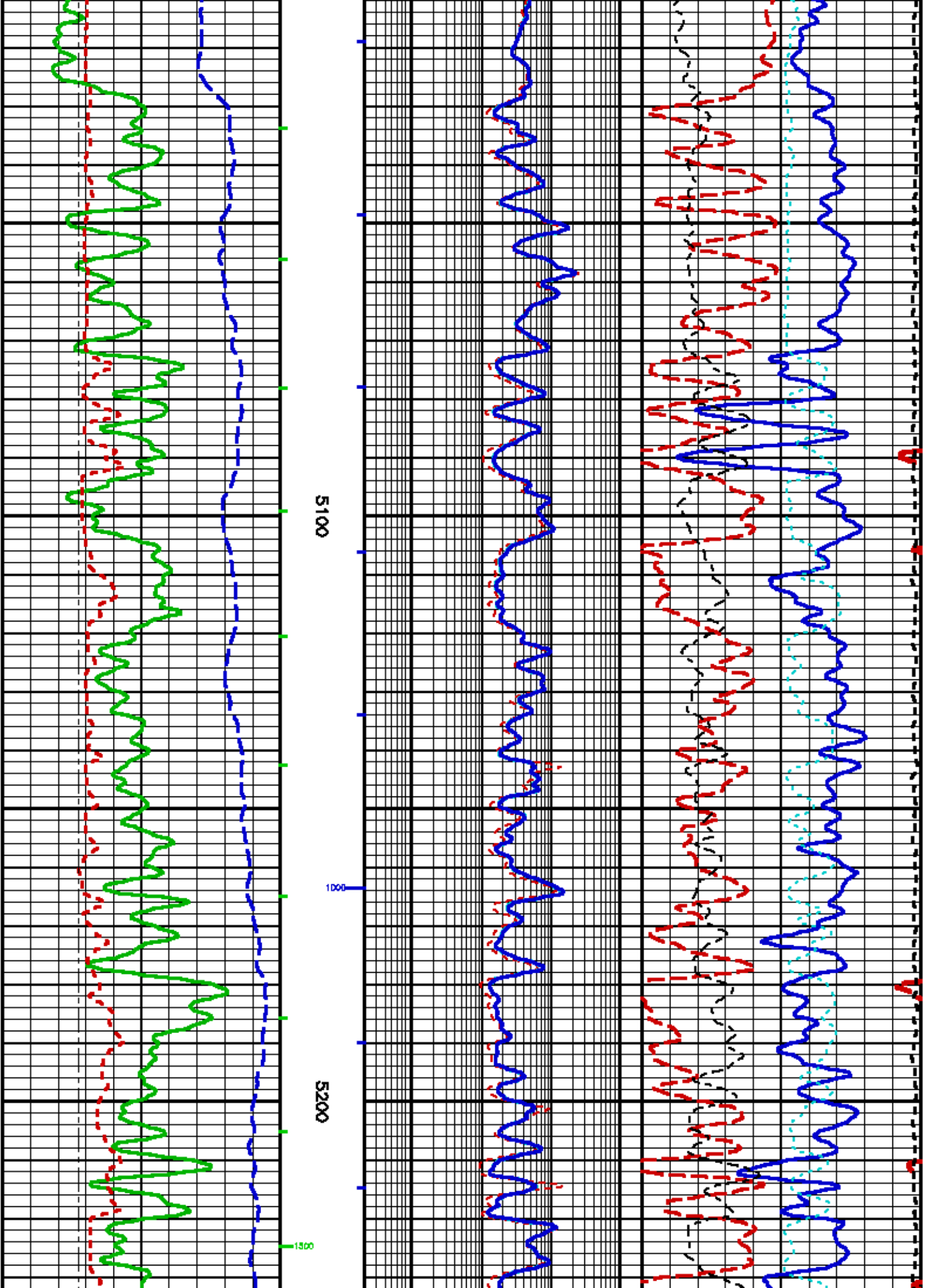


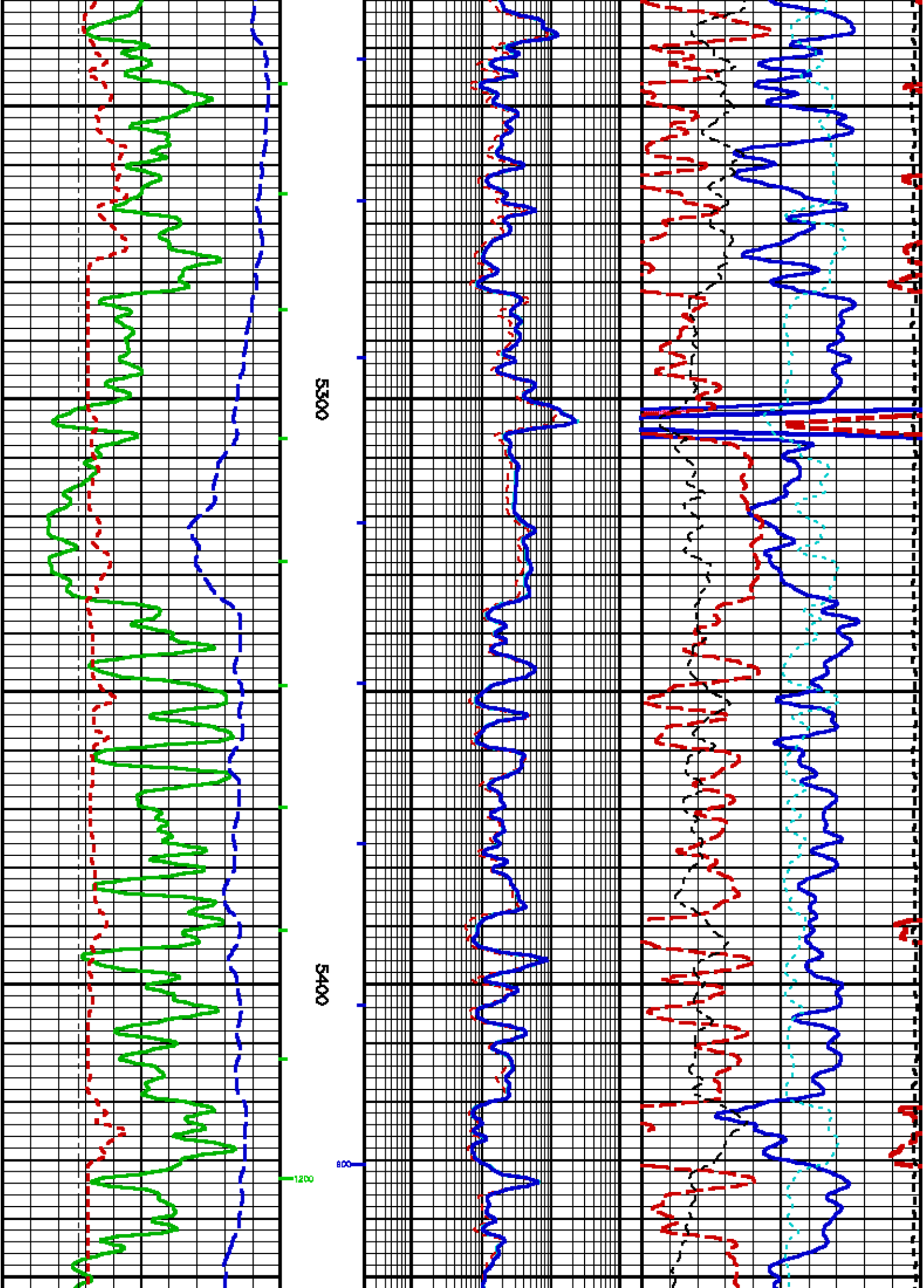


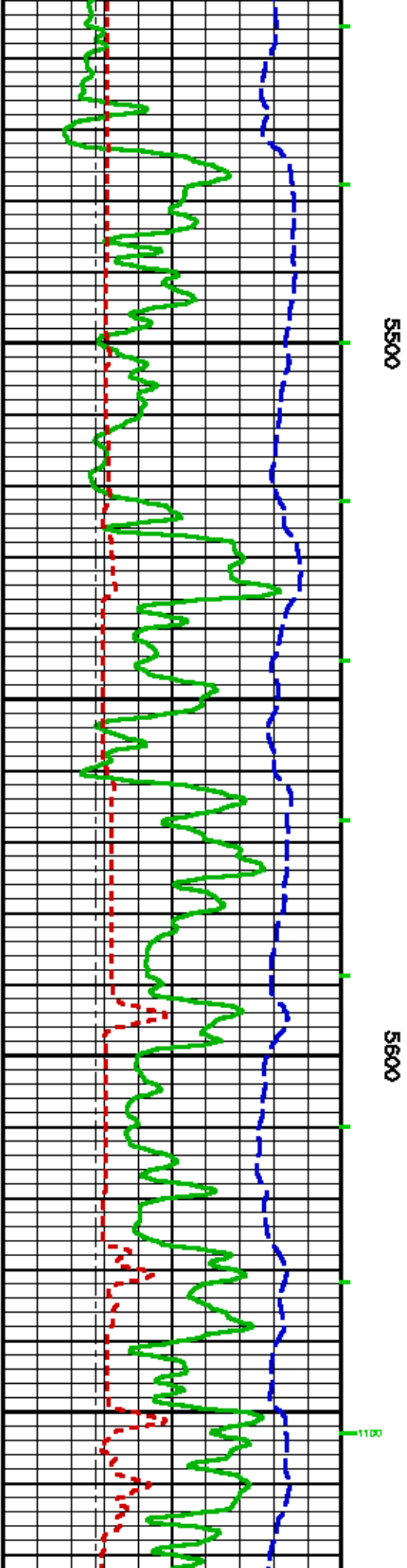
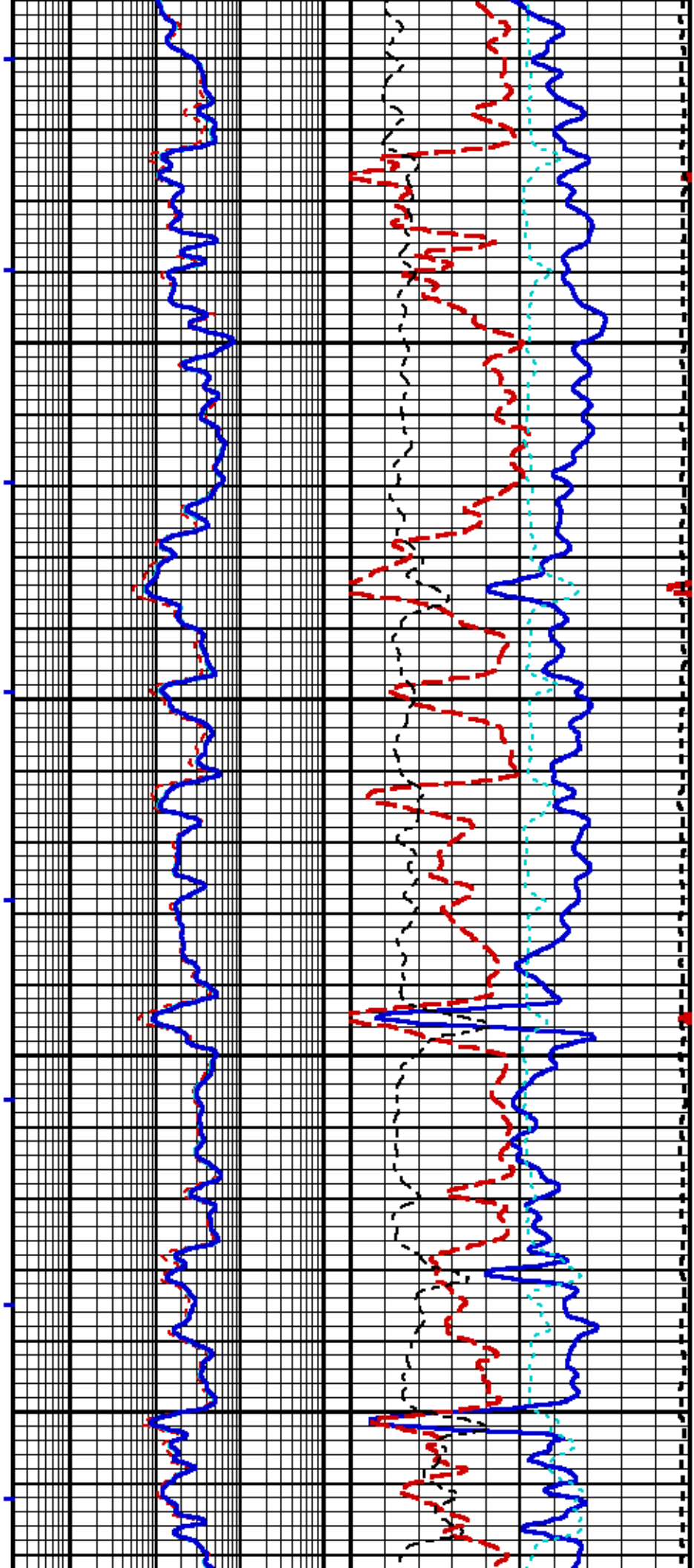


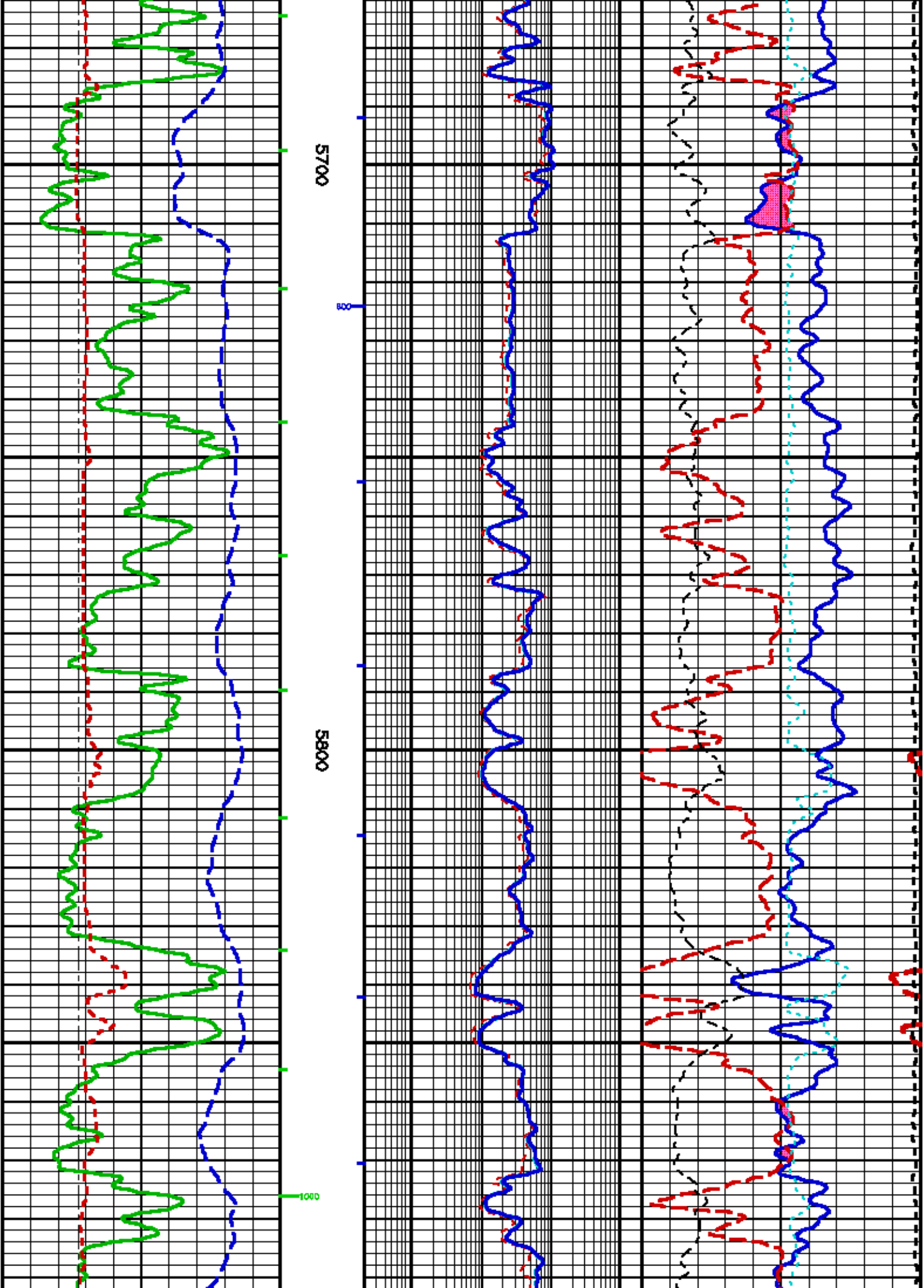


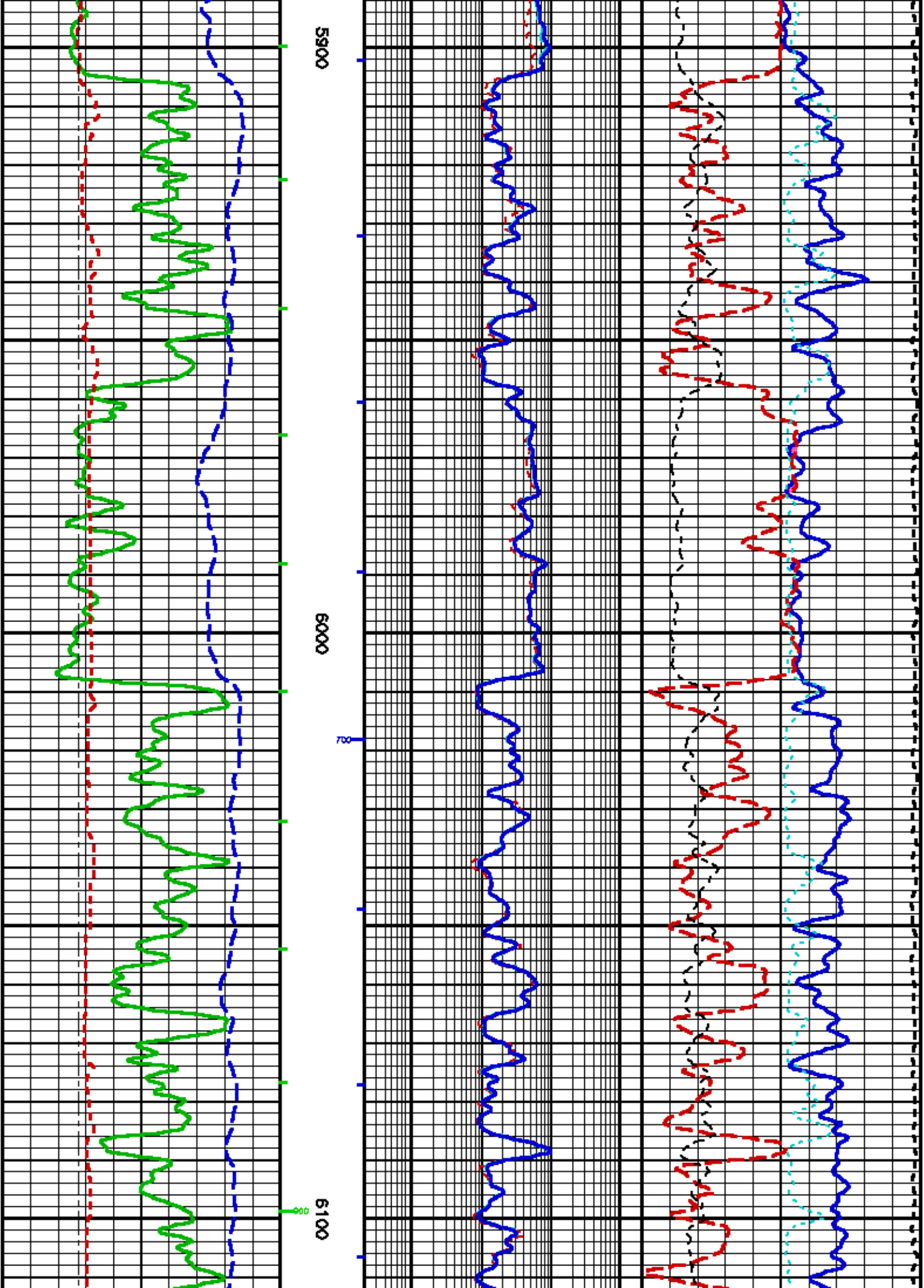


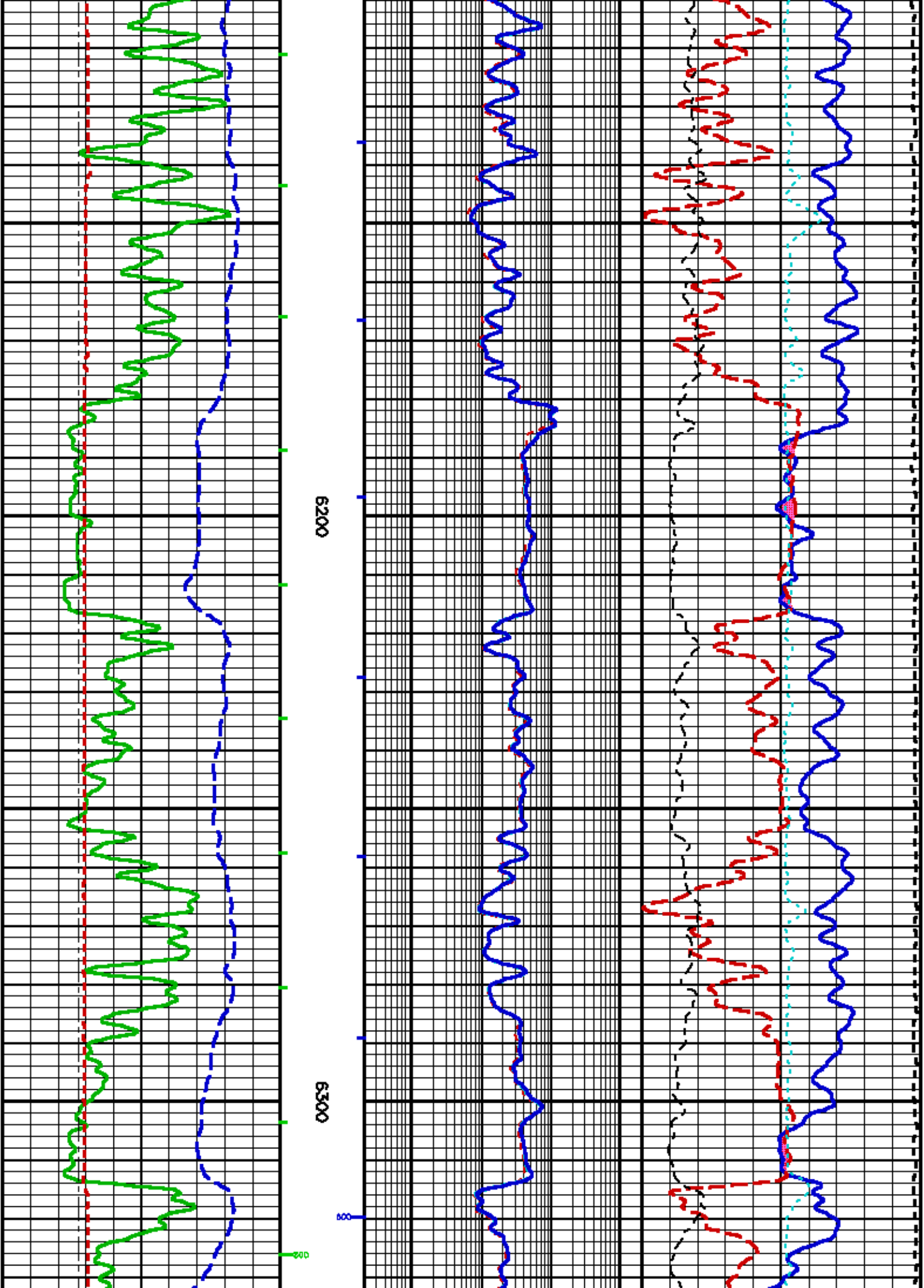


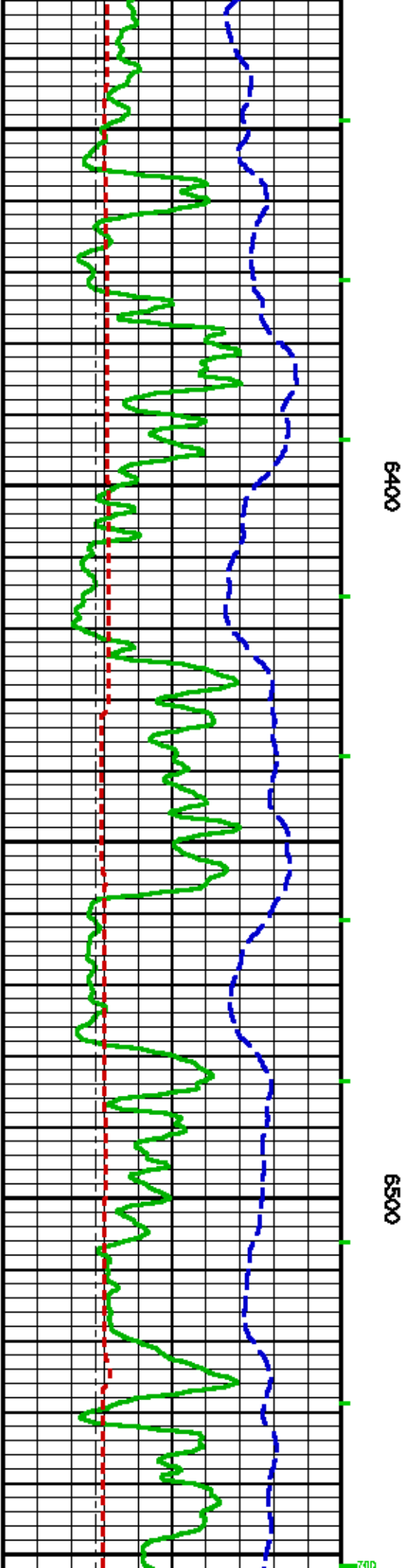
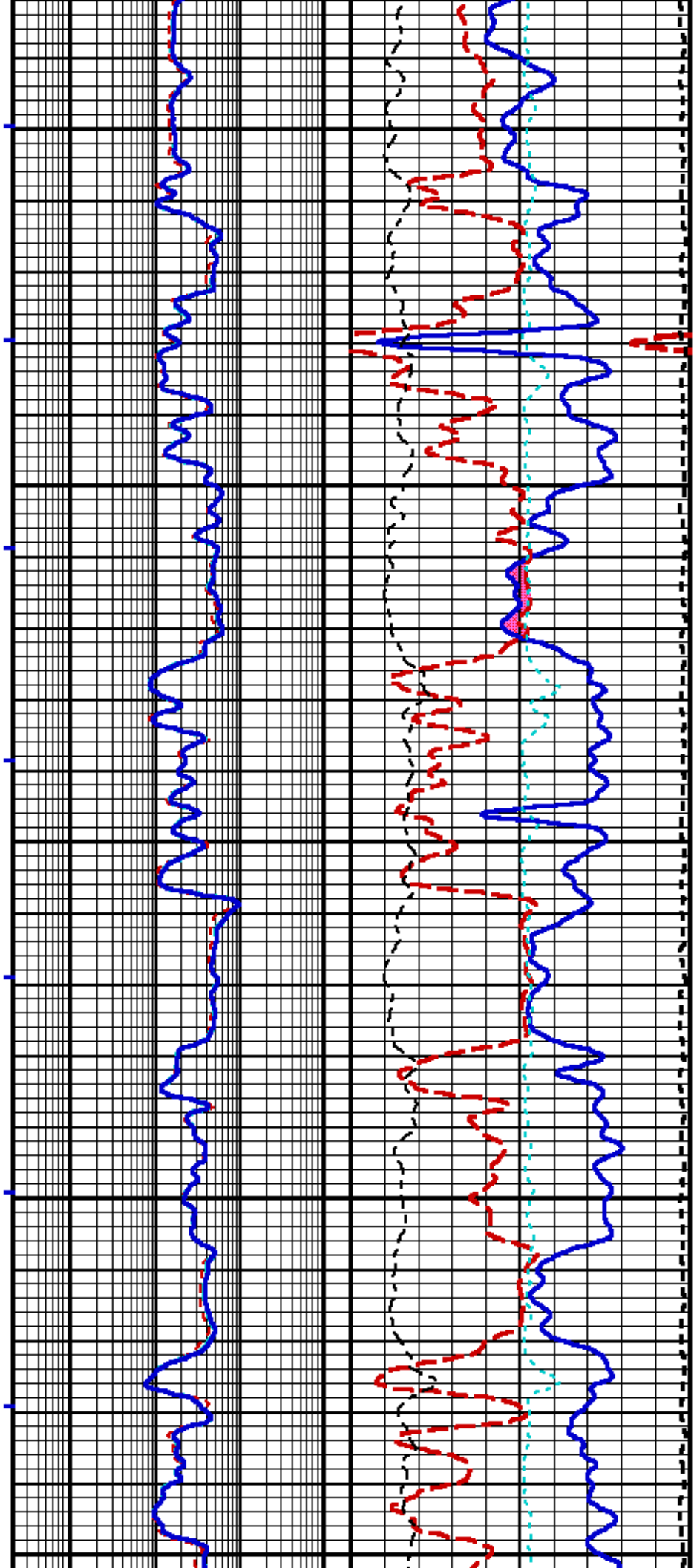


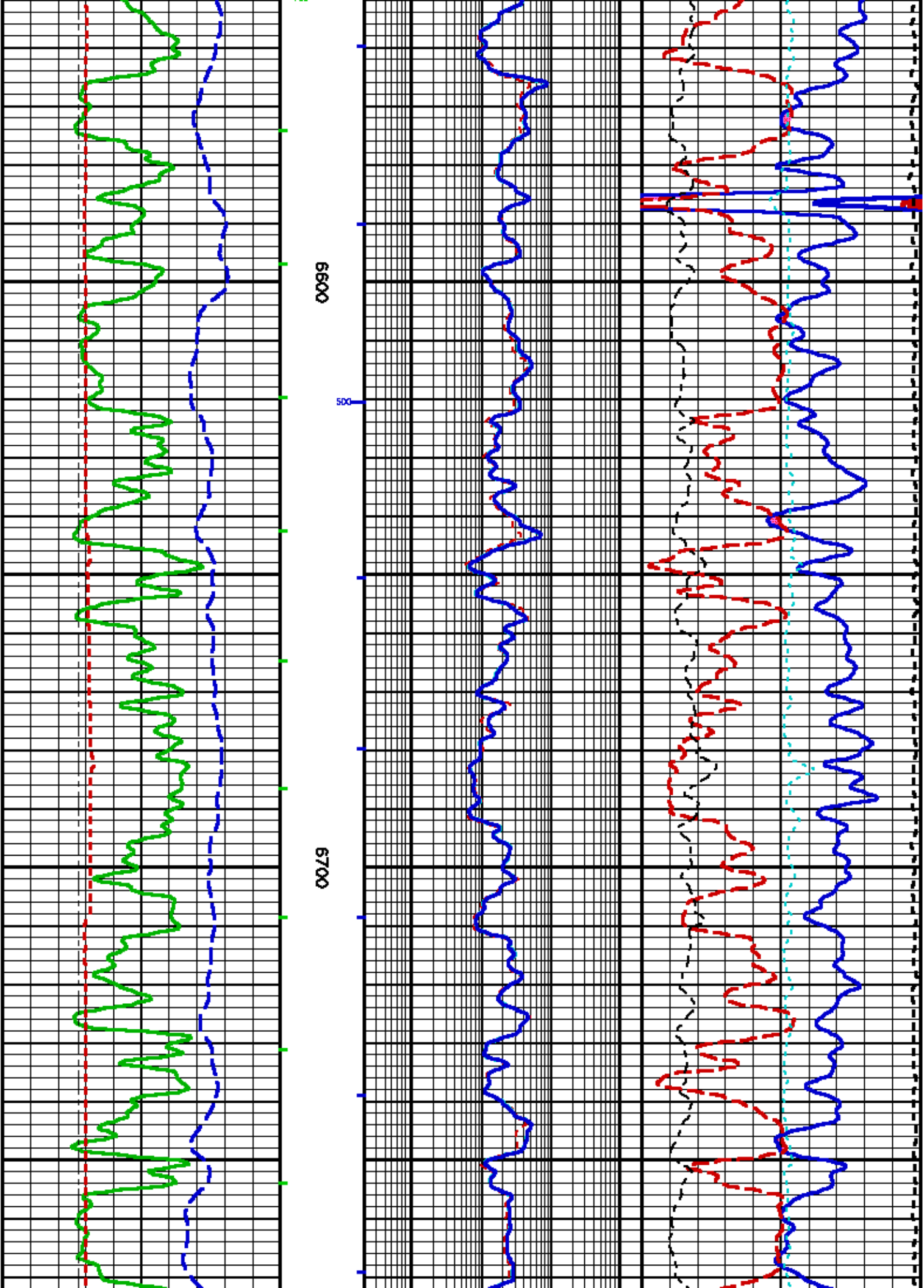


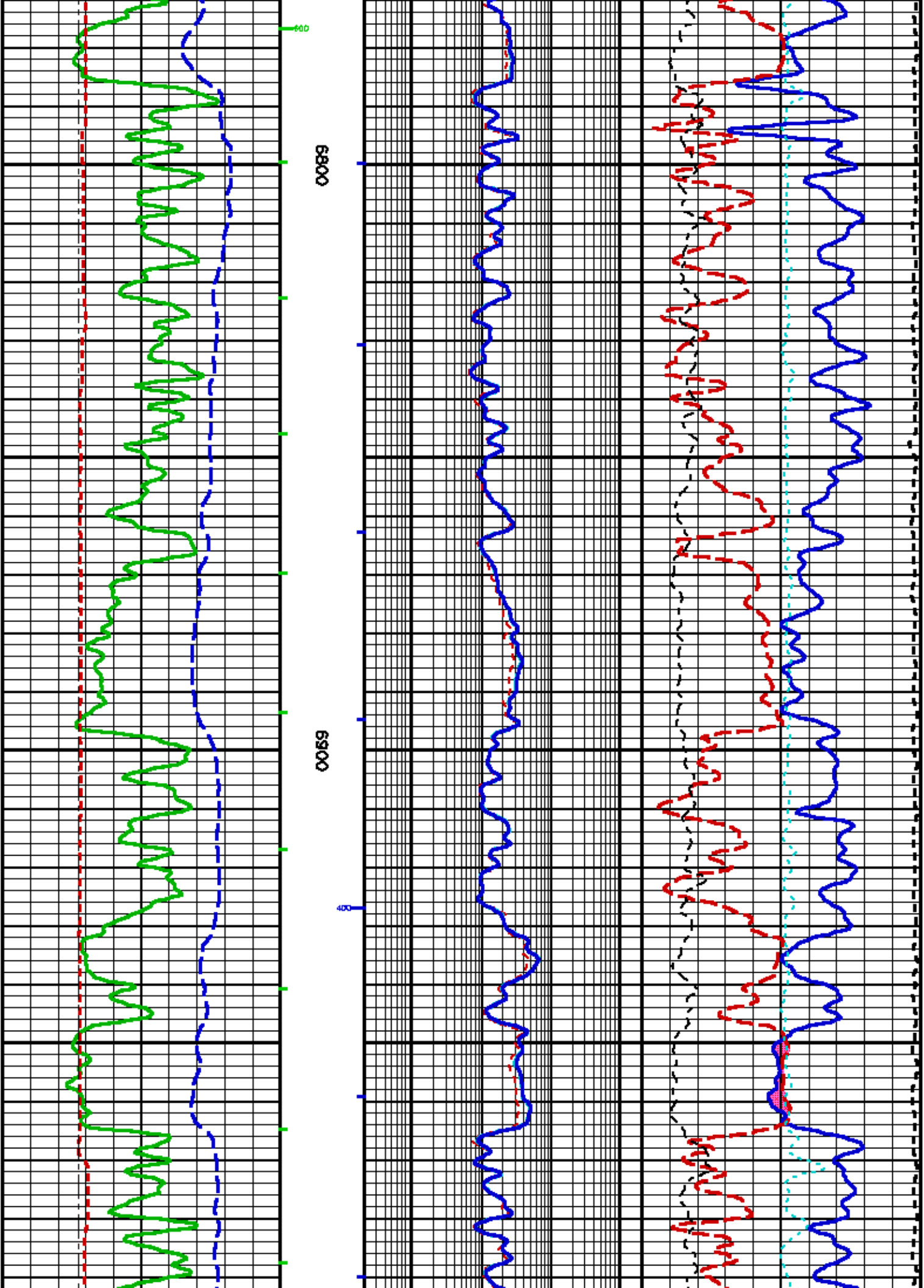


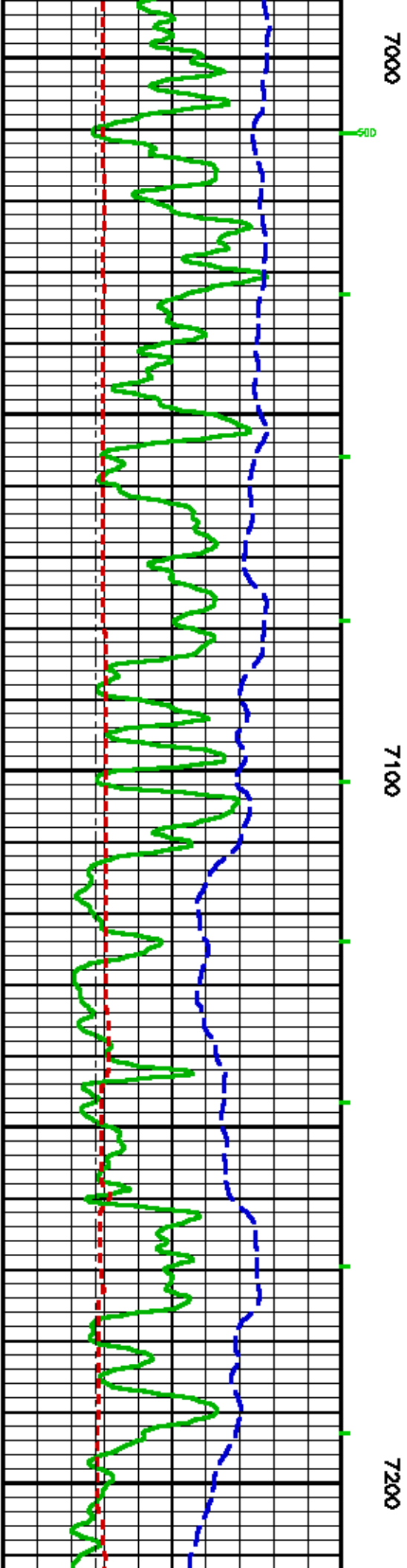
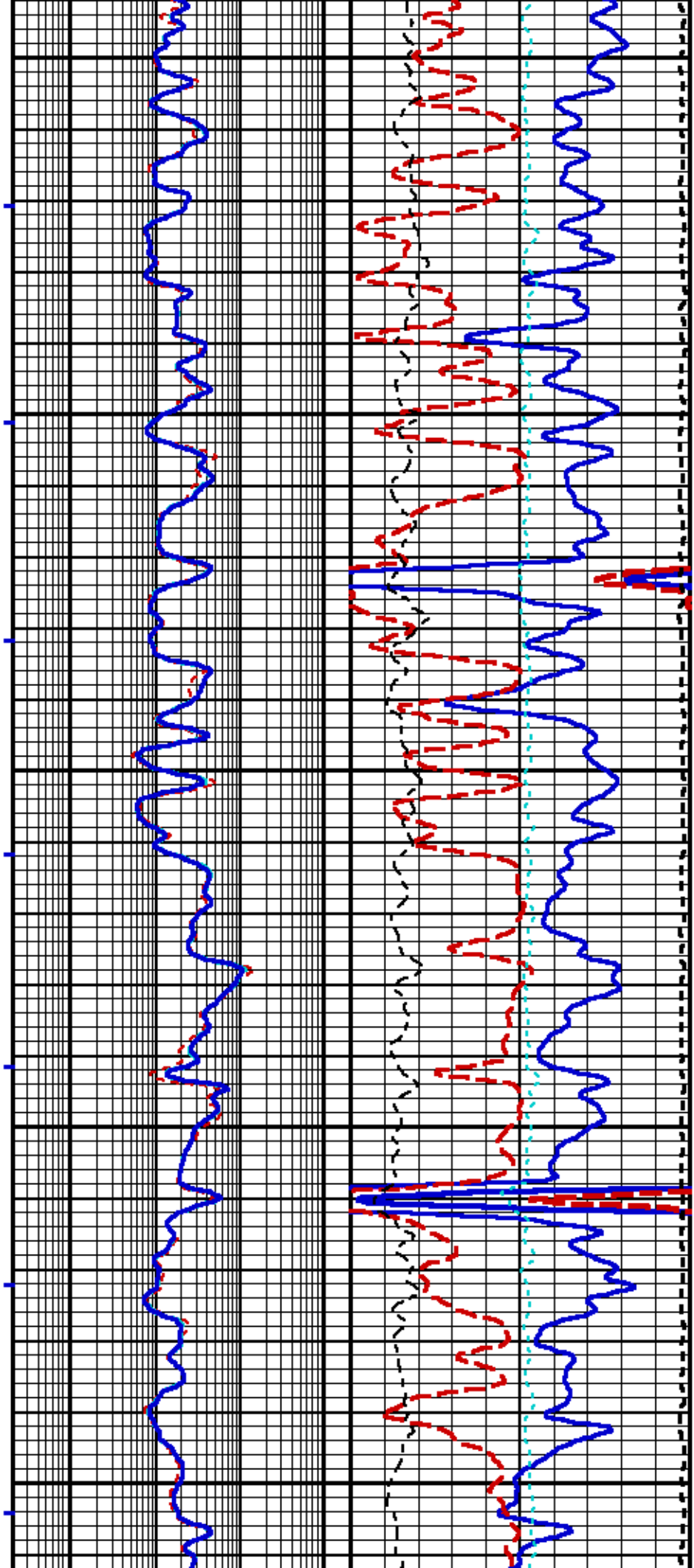


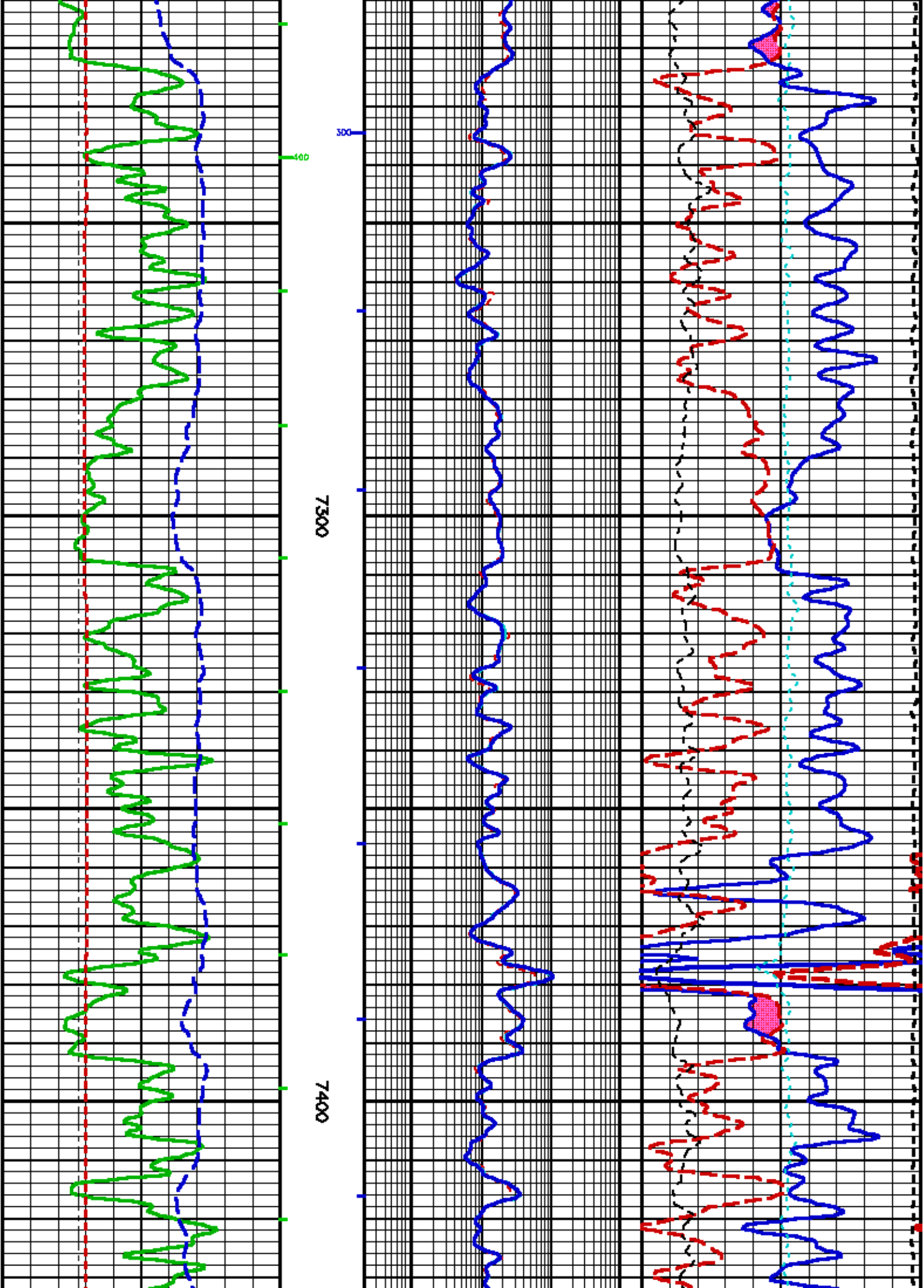


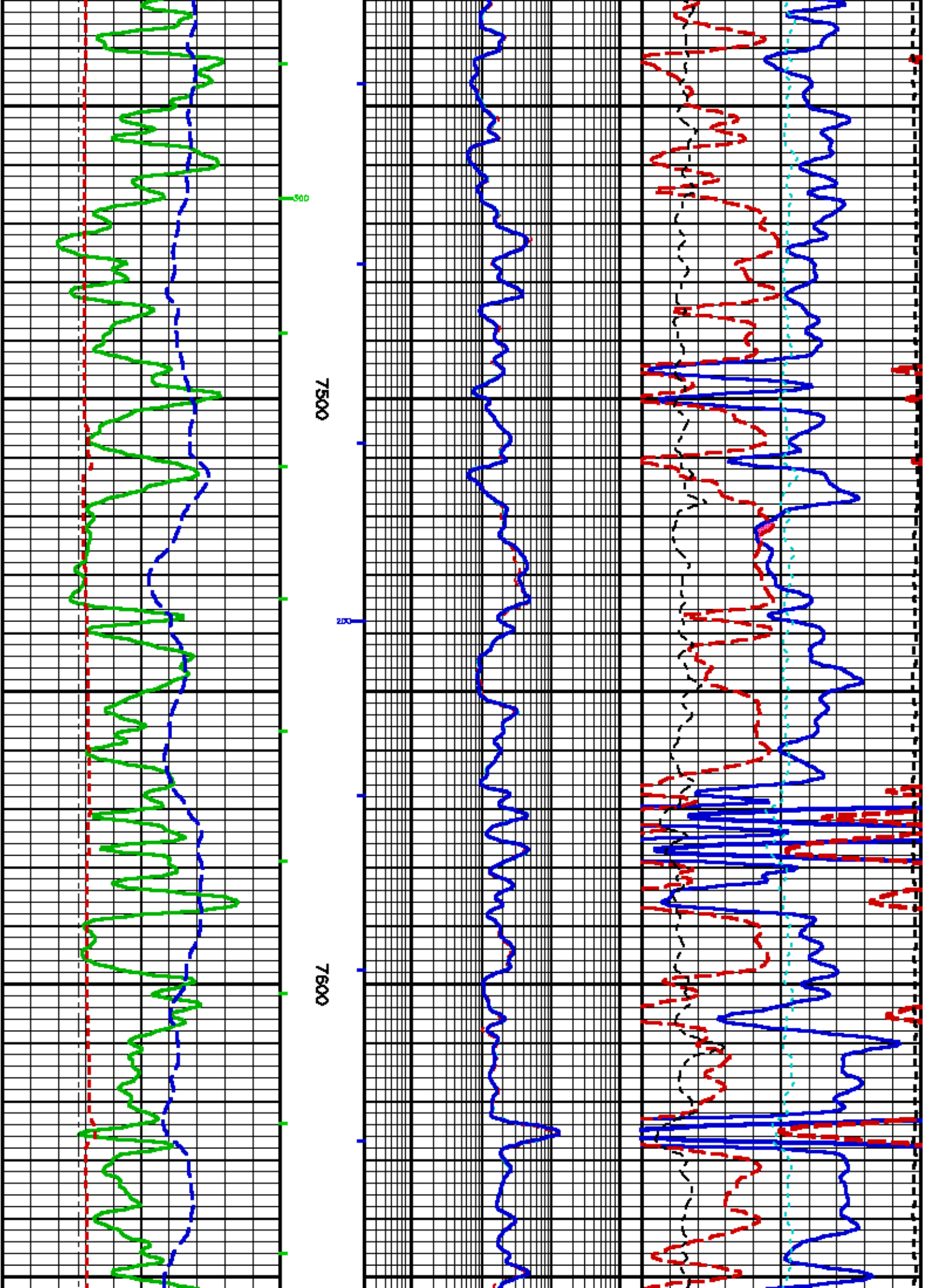


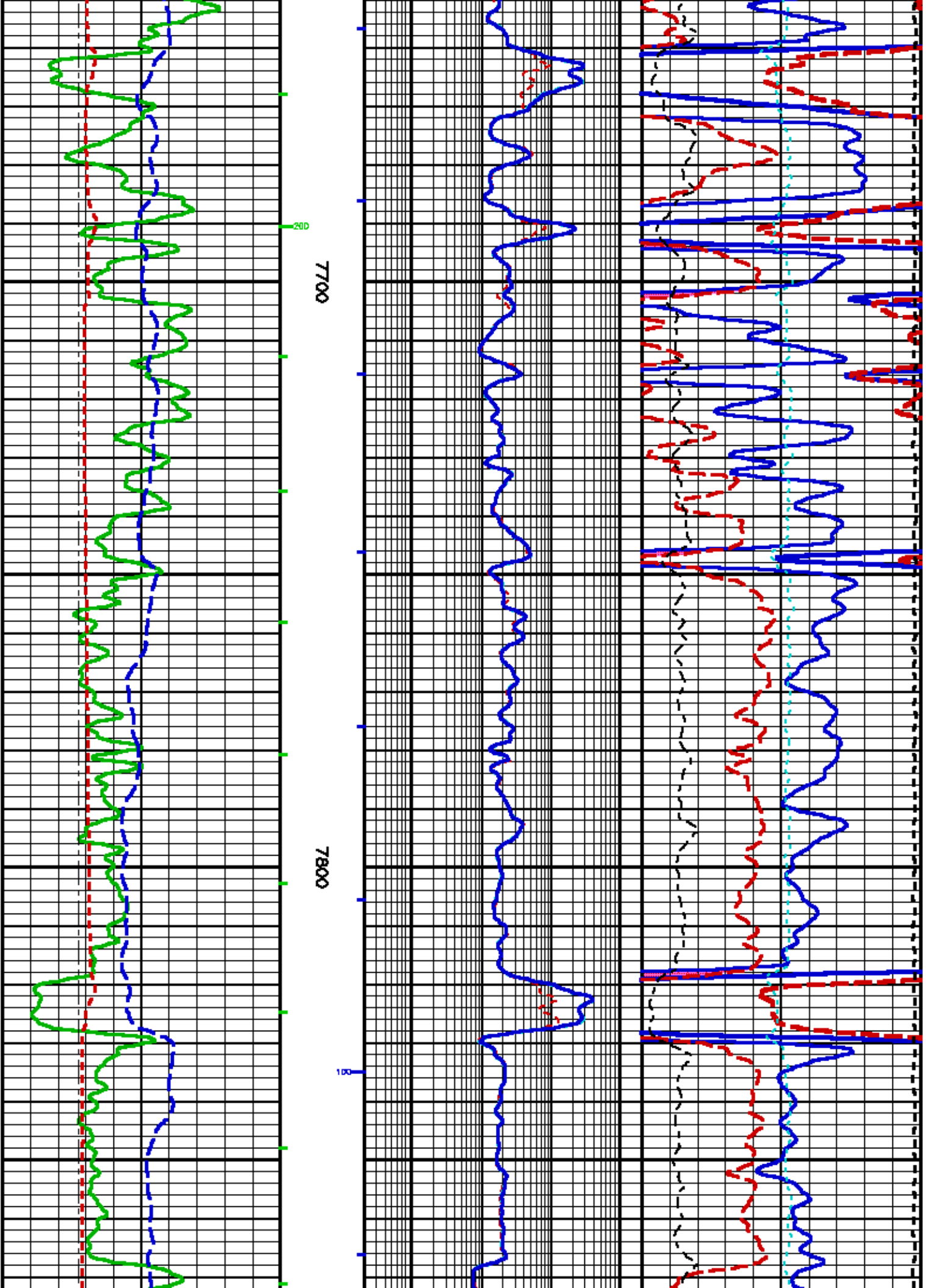


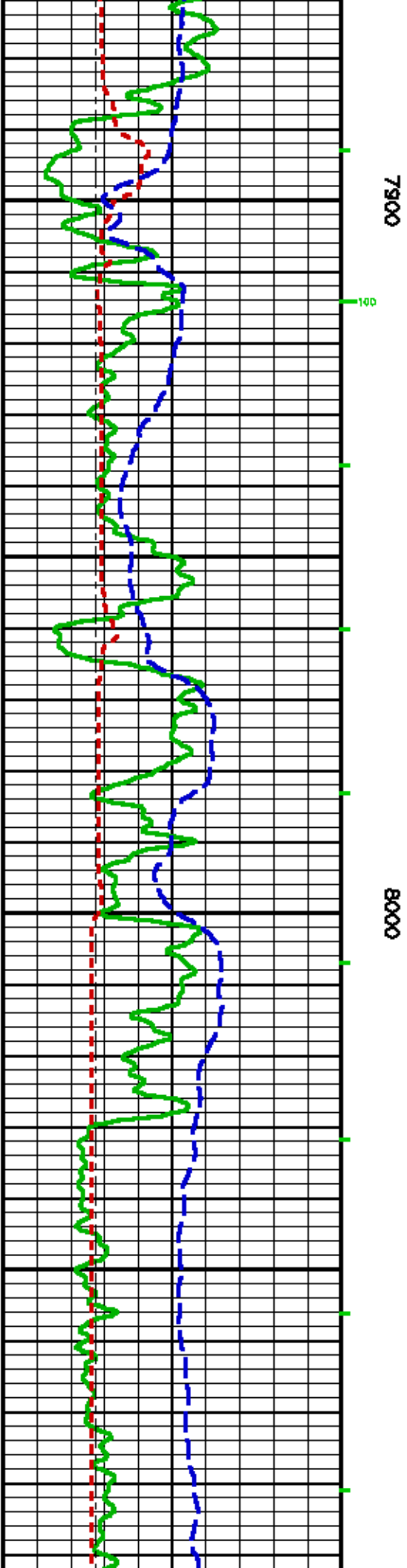
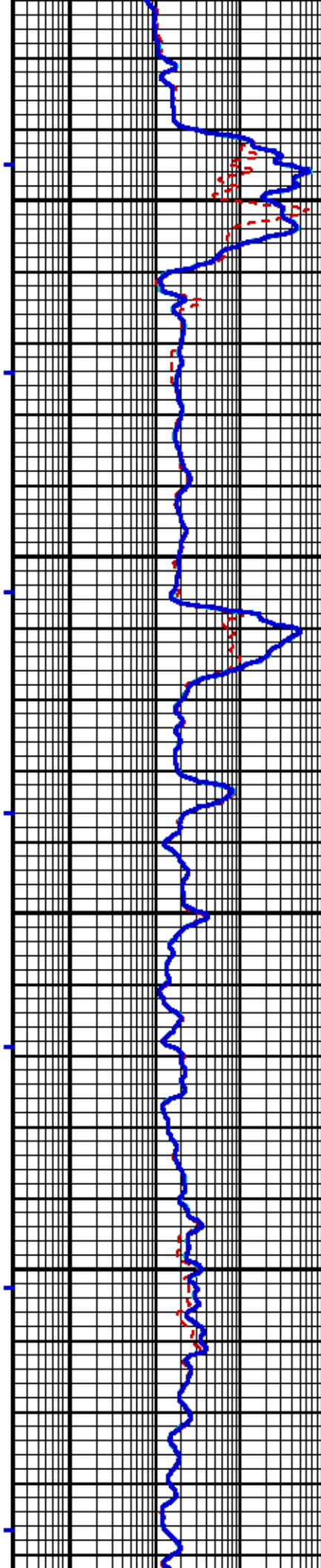
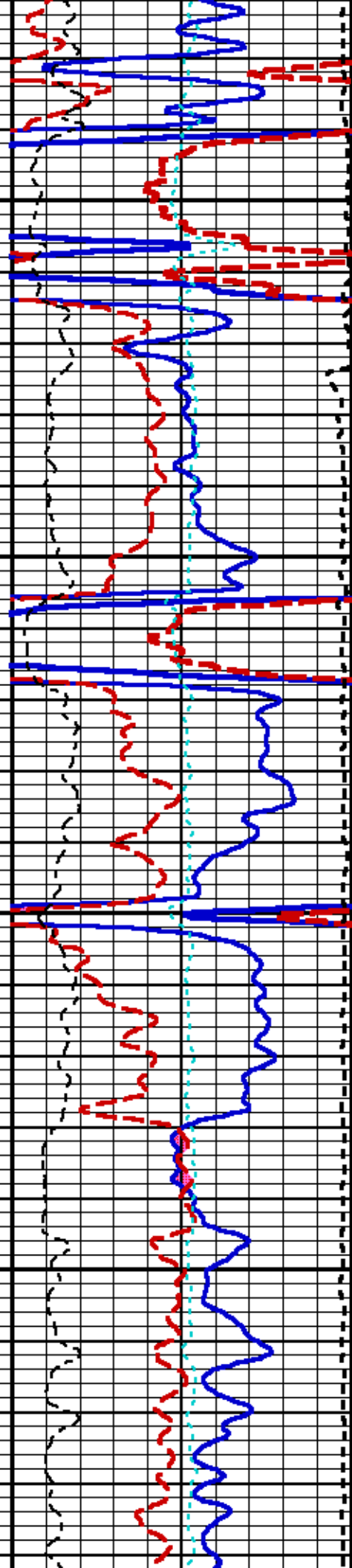


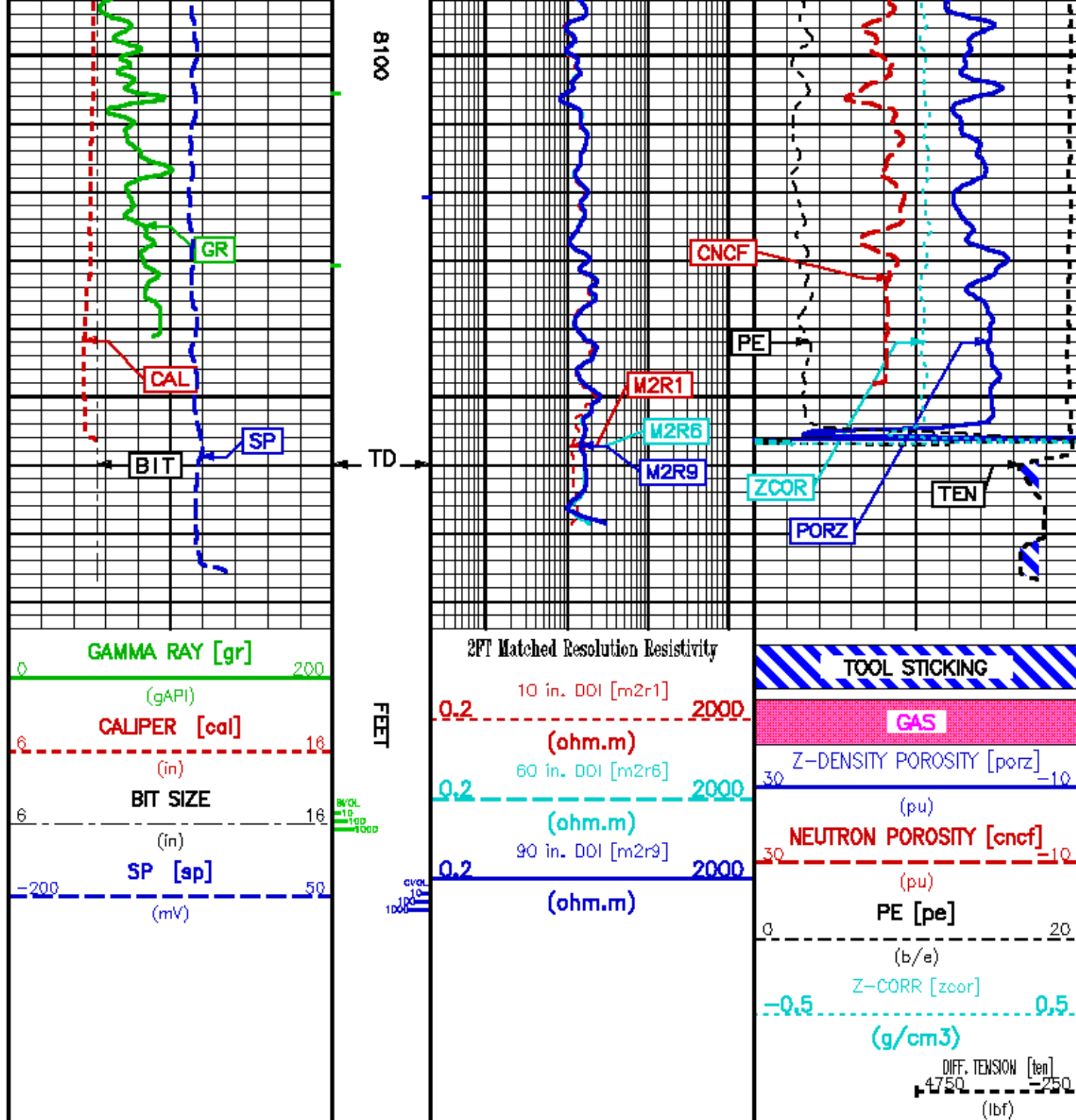












REPEAT LOG 5"/100FT SCALE

File: /data/624368/m870a01.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 1332.000 ft BOTTOM DEPTH: 1691.359 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 (hrd1a*)	medium		''	''
	FILTER (hrd2*)	medium		''	''
	FILTER (hrd2a*)	medium		''	''
	FILTER (soft*)	medium		''	''
SF-SPDH	FILTER ()	heavy (3)		''	''

BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CASINO - BOREHOLE & CEMENT VOLUME	CASINO O.D.	4.500	1n	TOP	BOTTOM
	CASINO THICKNESS	0.000	1n	''	''
BIT SIZE	BIT SIZE	8.750	1n	''	''
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (cnbh*)	USE CALIPER		''	''
	CALIPER/FIXED DIA. (mbh*)	USE CALIPER		''	''
BOREHOLE CORR DIAMETER	FIXED DIAMETER (cnbh*)	8.750	1n	''	''
	FIXED DIAMETER (mbh*)	8.750	1n	''	''
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	70.0	degF	''	''
	MUD SAMPLE RES	1.320	ohm.m	''	''
BH MUD RESISTIVITY SOURCE	RMD SOURCE (HDIL)	TOOL MEASURED		''	''
BOREHOLE TEMP from GRADIENT	Known BH REF TEMP	70.0	degF	TOP	1695.000
		77.0	degF	1695.000	BOTTOM
	at BH REF DEPTH	0.0	ft	TOP	BOTTOM
	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	650	ppm	''	''
	BOREHOLE CORRECTION	ON		''	''
CN CASINO & CEMENT CORRECTION	CORRECTION	OFF		''	''
	BIT SIZE BEHIND CSNO	12.000	1n	''	''

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	1n	''	''
	TOOL POSITION	ECCENTERED		''	''
	Rmud MULTIPLIER	1.000		''	''

CURVE DESCRIPTION REPORT

CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:BIT	Apr 26 10:05:05 2013	BIT SIZE

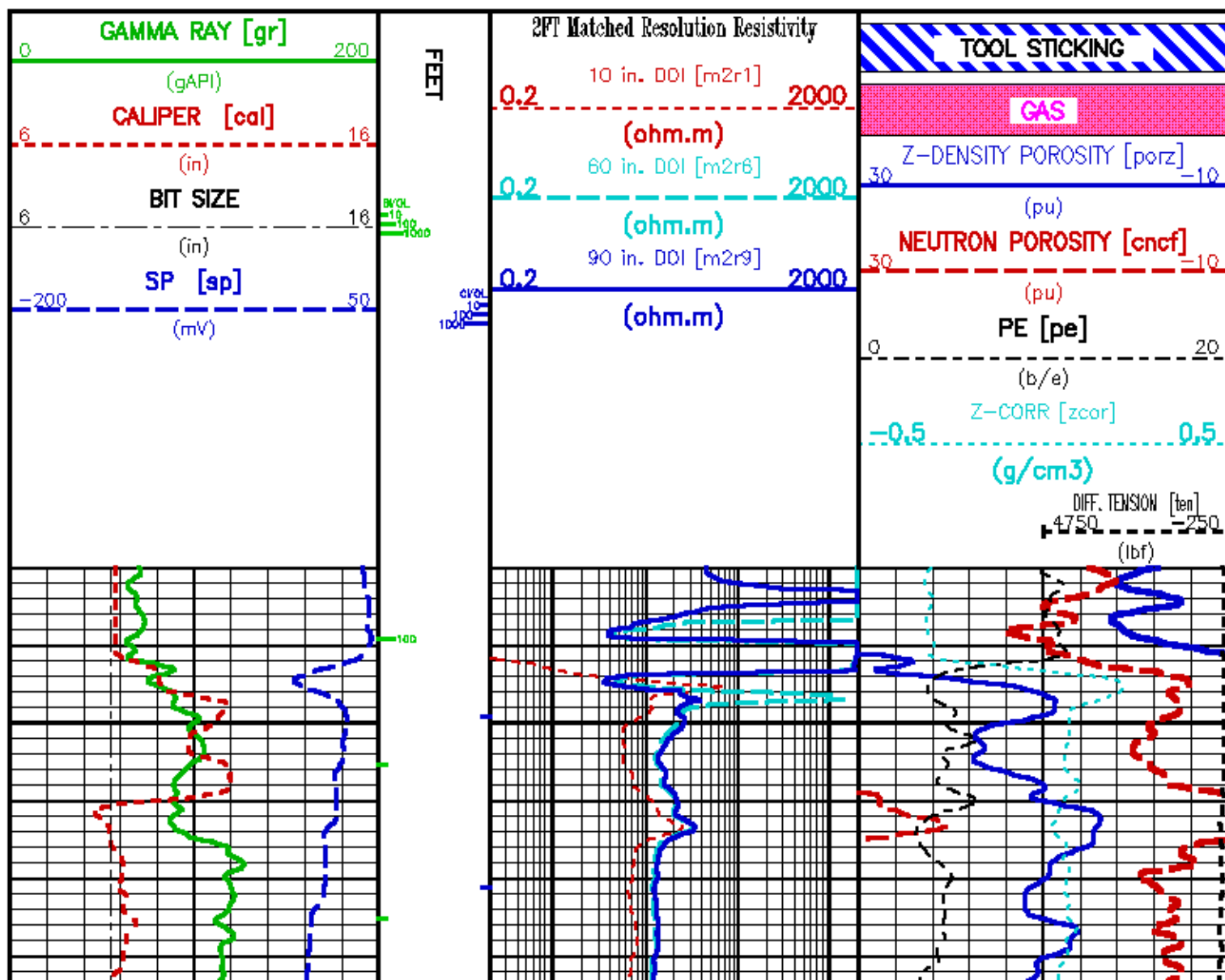
F1:BVOL	Apr 26 10:05:05 2013	BOREHOLE VOLUME
F1:CAL	Apr 26 10:05:05 2013	CALIPER
F1:CNCF	Apr 26 10:05:05 2013	FIELD NORMALIZED COMPENSATED NEUTRON POROSITY
F1:CVOL	Apr 26 10:05:05 2013	CEMENT VOLUME
F1:GR	Apr 26 10:05:05 2013	GAMMA RAY
F1:M2R1	Apr 26 10:05:05 2013	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 10-INCH DOI
F1:M2R6	Apr 26 10:05:05 2013	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 60-INCH DOI
F1:M2R9	Apr 26 10:05:05 2013	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 90-INCH DOI
F1:PE	Apr 26 10:05:05 2013	PHOTO ELECTRIC CROSS-SECTION
F1:PORZ	Apr 26 10:05:05 2013	POROSITY FOR SELECTABLE MATRIX
F1:SP	Apr 26 10:05:05 2013	SPONTANEOUS POTENTIAL
F1:TEN	Apr 26 10:05:05 2013	DIFFERENTIAL TENSION
F1:ZCOR	Apr 26 10:05:05 2013	DENSITY CORRECTION

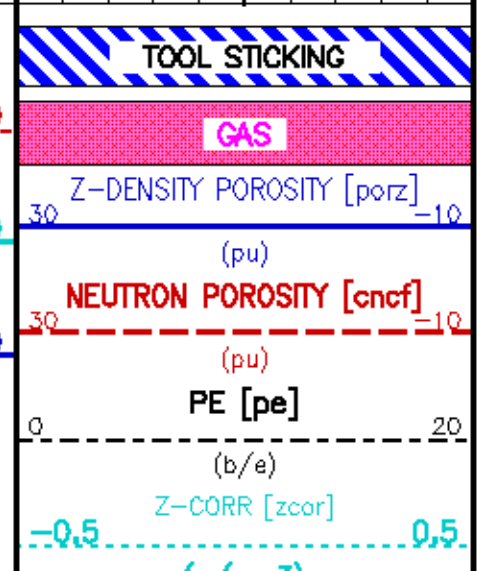
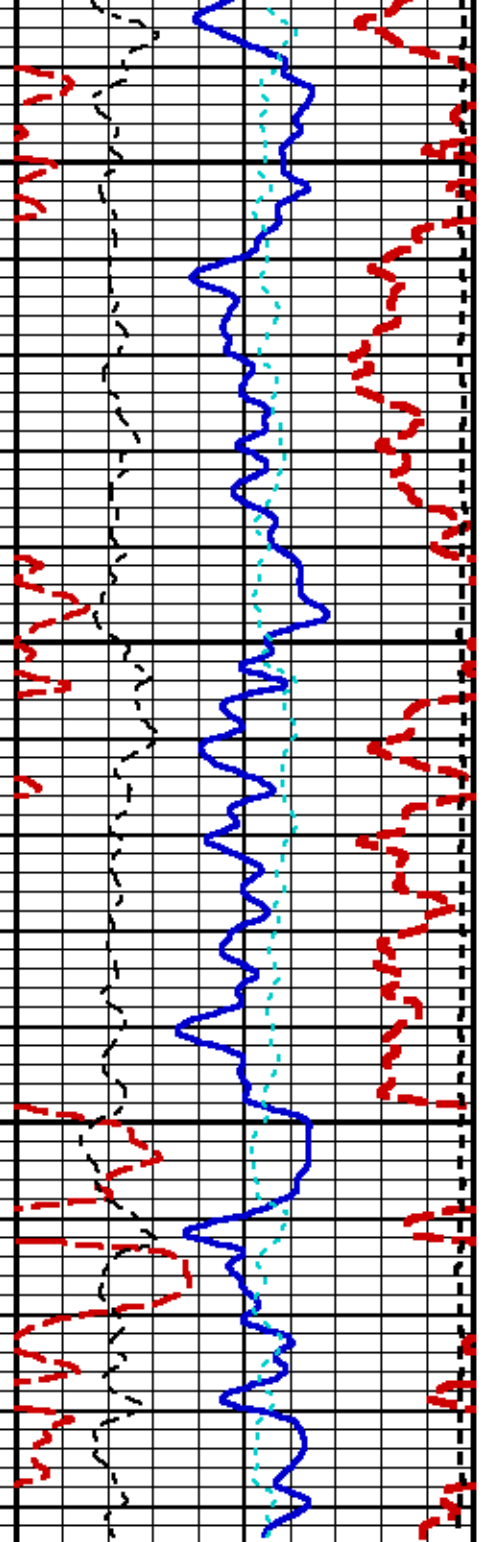
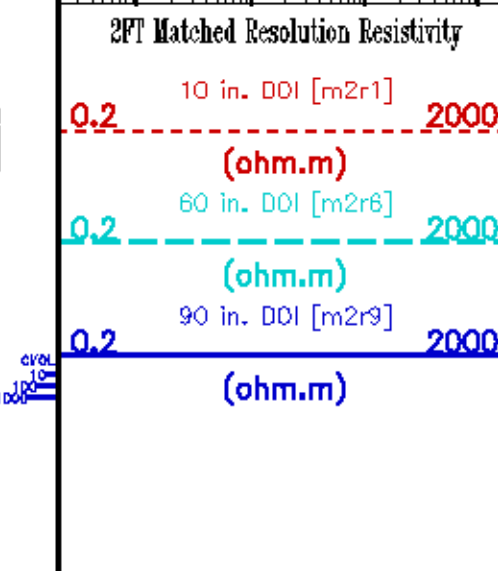
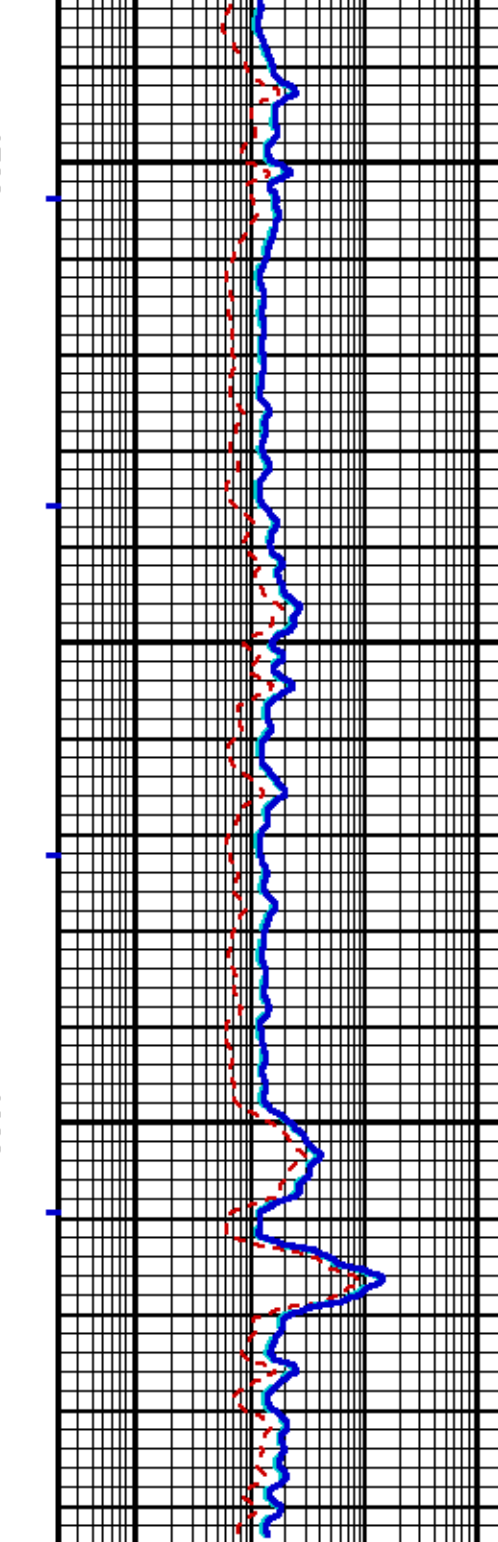
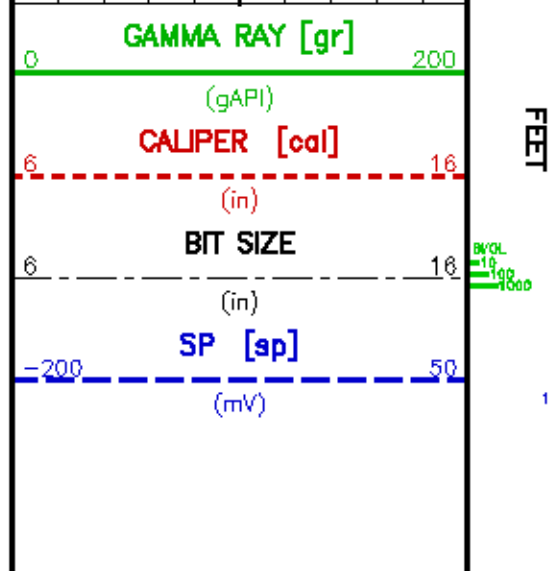
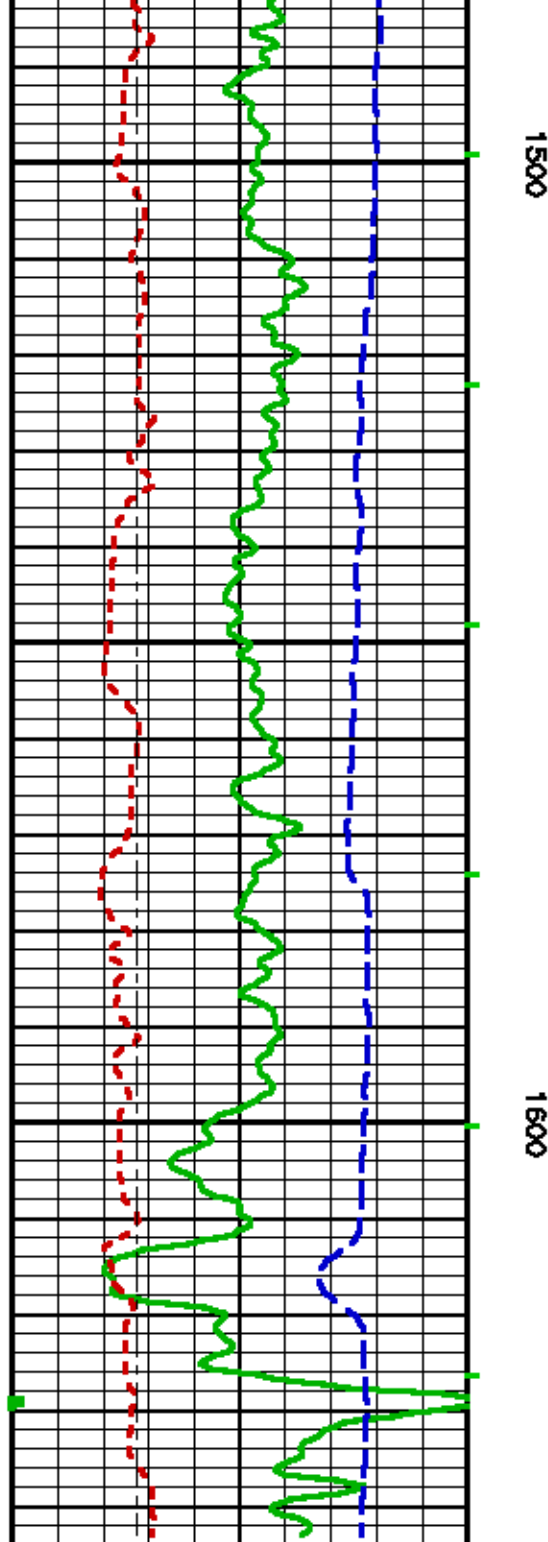
CURVE MEASURE POINT OFFSET

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/624388/WPK_REPEAT.pdf [5"/100' Scale]
 Plot Interval : 1430 - 1643 Feet

Data File 1 : F1 : HL6670:/dat1a/624388/m670a01.aiff
 Created On : Apr 26 10:05:05 2013
 Company : WPK ENERGY INC
 Well : DIAMOND ELK LLC PA 43-2
 Field : PARACHUTE
 File Interval : 1295.5 - 1705 Feet
 Out : m670a





(g/cm³)

DIFF. TENSION [ten]
 4750 - - - - - 750
 (lbf)

CALIBRATION / VERIFICATION SUMMARY

Source File: /cd1a/024300/m070a.e1

TTMA PRIMARY CALIBRATION SUMMARY

TOOL #: 3980XA 10120299 DATE/TIME PERFORMED: Tue Feb 21 22:39:38 2012

UNIT #: 3882TD HLB670 ACCEL #: 3980XA 10120299 ACCEL CAL DATE: 14:43 05/21/2004

GAIN OFFSET
 (ohm-m)
 RM K FACTORS 0.14570 -0.01679

TTMA BEFORE LOG VERIFICATION SUMMARY

TOOL #: 3980XA 10120299 DATE/TIME PERFORMED: Fri Apr 26 09:51:53 2013 DAYS SINCE CAL: 429

UNIT #: 3880TA HLB670

	CHT (lbf)	MUD TEMP (degF)	RES M Q (ohm)	ACCEL Q
CAL	18827	498.40	9.97	998.70
	18030 18830	491.35 505.75	8.00 12.00	980.00 1020.00
ZERO	-23331	-436.02	0.248	998.255
	-24131 -22531	-443.80 -428.80	0.300 0.300	980.000 1020.000

TTMA AFTER LOG VERIFICATION SUMMARY

TOOL #: 3980XA 10120299 DATE/TIME PERFORMED: Fri Apr 26 13:13:08 2013 DAYS SINCE CAL: 429

UNIT #: 3880TA HLB670

	CHT (lbf)	MUD TEMP (degF)	RES M Q (ohm)	ACCEL Q
CAL	18537	499.42	9.98	997.47
	18030 18830	491.35 505.75	8.00 12.00	980.00 1020.00
ZERO	-23331	-436.02	0.248	996.927
	-24131 -22531	-443.80 -428.80	0.300 0.300	980.000 1020.000

GR PRIMARY CALIBRATION SUMMARY

Tool #: 3518EG 10139870 DATE/TIME PERFORMED: Thu Apr 4 08:39:08 2013

Unit #: 3880TA HLB670 Jig Series: 4702NK VBA-90S

Background	Calibrator ON	Jig Value (gAPI)	Mult	Background	Calibrator ON (gAPI)
108.28	858.97	188	0.248	28.69	211.69
			0.250 0.240		

GR BEFORE LOG VERIFICATION SUMMARY

TOOL #: 3518EG 10139870 DATE/TIME PERFORMED: Fri Apr 26 09:45:14 2013 DAYS SINCE CAL: 22

UNIT #: 3880TA HLB670 Jig: INTRNL N/A

Counts	TEMP (degF)	HV (V)
976.67	64.97	1367.85
928.00 1027.00	838.00	1237.00 1812.00

GR AFTER LOG VERIFICATION SUMMARY

TOOL #: 3518EG 10139870 DATE/TIME PERFORMED: Fri Apr 26 13:13:22 2013 DAYS SINCE CAL: 22

UNIT #: 3880TA HLB670 Jig: INTRNL N/A

Counts TEMP HV

(degF) (V)

976.67	110.11	1363.86
999.00	1097.00	1337.00

CN PRIMARY CALIBRATION SUMMARY

TOOL #: 2436XA 10137930

DATE/TIME PERFORMED: Tue Mar 19 10:53:54 2013

UNIT #: 3885TC HL6685

CALIBRATOR #: 2437XB 112674

SOURCE #: 4718XA N-0697

SSN DT CPS	LSN DT CPS	SSN/LSN	MCF	CNRATIO	CN PU
4560.75	801.21	5.71728	1.00345	5.73700	25.241
			0.85000	1.05000	

CN BEFORE LOG VERIFICATION SUMMARY

TOOL #: 2436XA 10137930

DATE/TIME PERFORMED: Fri Apr 26 09:45:26 2013

DAYS SINCE CAL: 37

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	58.8	1355.7	4.612
		0.95000	1.05000	280.4	1250.0
				1450.0	4.300

CN AFTER LOG VERIFICATION SUMMARY

TOOL #: 2436XA 10137930

DATE/TIME PERFORMED: Fri Apr 26 13:13:33 2013

DAYS SINCE CAL: 38

UNIT #: 3880TA HL6670

CALIBRATOR #: INTRNL N/A

SSN DT CPS	LSN DT CPS	SSN/LSN	TEMP (degF)	HV (V)	LV (V)
967.28	969.29	0.99797	104.2	1363.0	4.618
		0.95000	1.05000	280.4	1250.0
				1450.0	4.300

CAL PRIMARY CALIBRATION SUMMARY

TOOL #: 2223XA 10090664

DATE/TIME PERFORMED: Mon Apr 22 14:48:37 2013

UNIT #: 3880TA HL6670

	SIZE (in)	VALUE	MULTIPLIER	ADD
SMALL RING (Arm)	7.000	1220.0		
LARGE RING (Arm)	11.000	2482.8	0.00317	3.13557
PAD CLOSED		1588.0	0.00250	-3.97000

CAL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 2223XA 10090664

DATE/TIME PERFORMED: Fri Apr 26 09:58:25 2013

DAYS SINCE CAL: 3

UNIT #: 3880TA HL6670

	VALUE	MULTIPLIER	ADD	SIZE (in)
ARM	1860.0	0.00317	3.13557	9.0
PAD	2119.2	0.00250	-3.97000	1.3

	ACTUAL (in)	MEASURED (in)
DIAMETER (arm+pad)	9.001	9.1
		8.9

CAL AFTER LOG VERIFICATION SUMMARY

TOOL #: 2223XA 10090664

DATE/TIME PERFORMED: Fri Apr 26 12:50:14 2013

DAYS SINCE CAL: 3

UNIT #: 3880TA HL6670

	VALUE	MULTIPLIER	ADD	SIZE (in)
ARM	1808.0	0.00317	3.13557	9.2

	ACTUAL (ln)	MEASURED (ln)
DIAMETER (arm+pad)	9.001	9.0

TOOL: 2223XA 10090884

DATE/TIME PERFORMED: Mon Apr 22 14:41:33 2013

UNIT: 3880TA HL8870 CALB BLKS: 2225XA 094292F CS SRC: 4705XA 1808BB PAD TYPE: PADTYP 7.5" PAD

	SS CS PK (Channel)	LS CS PK (Channel)	SS_BKGD (cps)	LS_BKGD (cps)
	225.3 220.0 230.0	225.4 220.0 230.0	1298.2	1875.4
MG (LO PE)	32452.5	11612.2	0.774 0.720 0.690	1.679
AL	20352.1	1317.6		-0.016
AL + SHIM	26995.3	2257.2		0.096
MG + SHIM (HI PE)	16054.2	5568.9	0.304 0.280 0.350	
RATIO AL + SHIM/AL	1.33 1.30 1.40	1.71 1.60 1.80		
RATIO MG/AL	1.59 1.50 1.70	8.81 8.50 9.00		

TOOL #: 2223XA 10080664 DATE/TIME PERFORMED: Fri Apr 26 09:52:07 2013 DAYS SINCE CAL: 3

UNIT #: 3880TA HL6670

	TOTAL (cps)	CSPK (Channel)	HV (V)
LS	3342.1	224.8	1414.7
	3338.1	220.0	1390.0
SS	22354.8	224.2	1372.3
	22344.6	220.0	1350.0

LV (V)	PAD CURRENT (mA)
5.0	73.6
4.8	90.0

TOOL #: 2223XA 10090884 DATE/TIME PERFORMED: Fri Apr 26 13:14:00 2013 DAYS SINCE CAL: 3

UNIT #: 3880TA HL6670

	TOTAL (cps)	CSPK (Channel)	HV (V)
LS	3342.1	224.9	1413.3
	3332.1 3352.1	220.0 229.0	1390.0 1436.0
SS	22354.8	224.2	1369.7
	22344.8 22364.8	220.0 229.0	1280.0 1450.0

LV (V)	PAD CURRENT (mA)
5.0	75.2
4.8 5.2	50.0 100.0

TOOL #: 1530XA 10120519

DATE/TIME PERFORMED: Mon Apr 1 14:17:48 2013

UNIT #: 3580TA 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 Q R	0.0059 -0.0000 0.0000	0.0008 -0.0000 0.0000	-0.0004 -0.0000 0.0000	0.0009 -0.0000 0.0000	-0.0010 -0.0000 0.0000	-0.0005 -0.0000 0.0000	0.0002 -0.0000 0.0000	-0.0004 -0.0000 0.0000
Coil Q Q	0.0004 -0.0000 0.0000	-0.0008 -0.0000 0.0000	-0.0002 -0.0000 0.0000	0.0002 -0.0000 0.0000	-0.0004 -0.0000 0.0000	0.0003 -0.0000 0.0000	-0.0007 -0.0000 0.0000	-0.0001 -0.0000 0.0000
Coil 1 R	0.0181 -0.0000 0.0000	0.0002 -0.0000 0.0000	-0.0022 -0.0000 0.0000	0.0027 -0.0000 0.0000	-0.0010 -0.0000 0.0000	-0.0001 -0.0000 0.0000	-0.0007 -0.0000 0.0000	0.0002 -0.0000 0.0000

Coil 1 Q	0.0083 -0.0037 -0.1000 0.1000	-0.0037 0.0016 -0.1000 0.1000	0.0016 -0.0019 -0.1000 0.1000	-0.0019 0.0001 -0.1000 0.1000	-0.0001 0.0006 -0.1000 0.1000	-0.0002 0.0000 -0.1000 0.1000	0.0000 0.0003 -0.1000 0.1000
Coil 2 R	0.0154 -0.0029 -0.1000 0.1000	-0.0029 -0.0032 -0.1000 0.1000	-0.0032 -0.0019 -0.1000 0.1000	-0.0019 0.0001 -0.1000 0.1000	0.0001 -0.0006 -0.1000 0.1000	-0.0006 0.0000 -0.1000 0.1000	0.0000 0.0003 -0.1000 0.1000
Coil 2 Q	0.0074 -0.0013 -0.1000 0.1000	-0.0013 0.0001 -0.1000 0.1000	0.0001 0.0017 -0.1000 0.1000	0.0017 -0.0007 -0.1000 0.1000	-0.0007 0.0020 -0.1000 0.1000	0.0020 0.0013 -0.1000 0.1000	0.0013 0.0004 -0.1000 0.1000
Coil 3 R	0.0530 -0.0041 -0.1000 0.1000	-0.0041 -0.0044 -0.1000 0.1000	-0.0044 0.0007 -0.1000 0.1000	0.0007 -0.0054 -0.1000 0.1000	-0.0054 0.0017 -0.1000 0.1000	0.0017 -0.0007 -0.1000 0.1000	0.0007 0.0029 -0.1000 0.1000
Coil 3 Q	0.0279 -0.0122 -0.1000 0.1000	-0.0122 0.0058 -0.1000 0.1000	0.0058 0.0003 -0.1000 0.1000	0.0003 -0.0045 -0.1000 0.1000	-0.0045 -0.0039 -0.1000 0.1000	-0.0039 0.0032 -0.1000 0.1000	0.0032 -0.0009 -0.1000 0.1000
Coil 4 R	0.1475 -0.0008 -0.1000 0.1000	-0.0008 -0.0080 -0.1000 0.1000	-0.0080 0.0108 -0.1000 0.1000	0.0108 -0.0023 -0.1000 0.1000	-0.0023 -0.0011 -0.1000 0.1000	0.0011 0.0087 -0.1000 0.1000	0.0087 -0.0035 -0.1000 0.1000
Coil 4 Q	0.0589 -0.0353 -0.1000 0.1000	-0.0353 0.0124 -0.1000 0.1000	0.0124 -0.0063 -0.1000 0.1000	-0.0063 -0.0034 -0.1000 0.1000	-0.0034 0.0050 -0.1000 0.1000	0.0050 -0.0037 -0.1000 0.1000	-0.0037 -0.0009 -0.1000 0.1000
Coil 5 R	0.3286 0.0059 -0.1000 0.1000	0.0059 -0.0383 -0.1000 0.1000	-0.0383 0.0225 -0.1000 0.1000	0.0225 -0.0040 -0.1000 0.1000	-0.0040 0.0029 -0.1000 0.1000	0.0029 0.0052 -0.1000 0.1000	0.0052 -0.0012 -0.1000 0.1000
Coil 5 Q	0.1601 -0.0830 -0.1000 0.1000	-0.0830 0.0178 -0.1000 0.1000	0.0178 0.0045 -0.1000 0.1000	0.0045 -0.0157 -0.1000 0.1000	-0.0157 0.0016 -0.1000 0.1000	0.0016 -0.0118 -0.1000 0.1000	-0.0118 0.0048 -0.1000 0.1000

ELEC. GAINS	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 M	182.99 135.00 186.00	181.54 134.00 184.00	158.82 131.00 181.00	154.31 128.00 178.00	148.60 122.00 175.00	141.86 119.00 181.00	133.47 112.00 180.00	124.10 105.00 138.00
Coil 0 P	7.899 6.000 9.000	25.434 21.000 30.000	42.706 38.000 50.000	59.926 48.000 71.000	77.141 68.000 81.000	94.399 77.000 109.000	111.623 92.000 130.000	128.875 105.000 151.000
Coil 1 M	282.53 238.00 328.00	278.96 235.00 325.00	274.82 230.00 320.00	267.13 225.00 312.00	257.00 218.00 308.00	244.48 208.00 308.00	229.85 198.00 268.00	213.08 184.00 244.00
Coil 1 P	7.759 6.000 9.000	25.635 21.000 30.000	43.056 38.000 51.000	60.433 48.000 71.000	77.803 68.000 82.000	95.186 78.000 112.000	112.549 93.000 130.000	129.862 107.000 151.000
Coil 2 M	560.55 478.00 639.00	555.37 474.00 634.00	545.00 463.00 643.00	529.68 450.00 652.00	509.55 438.00 652.00	485.05 412.00 672.00	456.38 380.00 640.00	423.59 358.00 499.00
Coil 2 P	7.885 6.000 9.000	25.383 21.000 31.000	42.631 38.000 51.000	59.814 48.000 71.000	78.981 65.000 82.000	94.154 76.000 118.000	111.311 92.000 135.000	128.470 105.000 155.000
Coil 3 M	918.71 772.00 1080.00	909.86 764.00 1050.00	891.58 762.00 1030.00	864.77 728.00 1010.00	829.95 700.00 970.00	787.45 666.00 928.00	738.42 628.00 888.00	683.09 588.00 798.00
Coil 3 P	7.969 6.000 10.000	26.189 21.000 30.000	43.952 35.000 51.000	61.635 48.000 75.000	78.282 63.000 83.000	96.905 78.000 114.000	114.464 90.000 135.000	131.962 104.000 158.000
Coil 4 M	1422.5 1210.0 1700.0	1410.4 1205.0 1680.0	1385.9 1180.0 1650.0	1349.1 1140.0 1630.0	1300.3 1120.0 1630.0	1239.9 1070.0 1480.0	1168.4 1000.0 1450.0	1086.6 942.0 1290.0
Coil 4 P	7.742 6.000 10.000	25.600 21.000 31.000	43.009 35.000 50.000	60.385 48.000 73.000	77.776 63.000 83.000	95.217 77.000 114.000	112.660 91.000 135.000	130.110 105.000 156.000
Coil 5 M	2953.8 2430.0 3490.0	2930.0 2420.0 3480.0	2878.9 2410.0 3430.0	2802.3 2350.0 3400.0	2700.3 2280.0 3390.0	2574.4 2180.0 3390.0	2425.8 2020.0 3280.0	2255.2 1870.0 3070.0
Coil 5 P	7.819 6.000 10.000	25.801 20.000 31.000	43.360 38.000 52.000	60.869 48.000 75.000	78.406 68.000 84.000	95.980 79.000 113.000	113.510 93.000 134.000	131.066 108.000 158.000

AM Factor	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 R	-916 -390 940	-601 -1400 -80	-486 -830 -150	-419 -760 -160	-373 -660 -130	-340 -600 -190	-314 -550 -110	-293 -520 -90
Coil 0 Q	282 -1500 1500	-169 -5600 3800	-241 -3700 2100	-261 -2700 1400	-273 -2200 1000	-284 -1800 780	-292 -1600 850	-302 -1500 480
Coil 1 R	-111 -750 -480	-136 -380 83	-132 -580 9	-125 -830 -10	-117 -800 -65	-111 -180 -35	-104 -180 -40	-98 -180 -40
Coil 1 Q	329 -3300 3300	79 -1100 890	25 -800 630	2 -370 340	-14 -380 260	-25 -320 180	-33 -280 180	-38 -280 180
Coil 2 R	-0.1 -88.0 76.0	-29.4 -84.0 -0.4	-32.3 -87.0 -12.0	-31.2 -81.0 -16.0	-28.9 -88.0 -17.0	-26.8 -84.0 -16.0	-24.6 -89.0 -15.0	-22.9 -87.0 -13.0
Coil 2 Q	143.9 -1500.0 1800.0	49.3 -305.0 610.0	27.6 -280.0 350.0	17.8 -280.0 460.0	13.0 -180.0 180.0	10.5 -140.0 130.0	9.7 -110.0 130.0	9.7 -98.0 180.0
Coil 3 R	-1.9 -23.0 21.0	-8.7 -22.0 1.6	-9.5 -21.0 -1.3	-9.3 -20.0 -1.8	-8.9 -18.0 -2.0	-8.2 -18.0 -1.3	-7.7 -18.0 -0.8	-7.5 -18.0 -0.5
Coil 3 Q	84.3 -340.0 530.0	31.7 -180.0 180.0	22.8 -100.0 110.0	19.0 -71.0 81.0	18.8 -51.0 66.0	19.1 -37.0 58.0	20.6 -28.0 53.0	21.8 -21.0 51.0
Coil 4 R	-2.50 -19.00 17.00	-2.33 -12.00 2.70	-2.20 -11.00 1.50	-1.90 -9.80 9.80	-3.15 -9.80 9.80	-1.73 -10.00 1.60	-2.07 -11.00 2.30	-1.68 -11.00 2.80
Coil 4 Q	30.50 -280.00 280.00	11.48 -79.00 98.00	8.80 -63.00 84.00	8.80 -57.00 81.00	9.10 -58.00 46.00	9.93 -51.00 42.00	10.44 -46.00 42.00	11.93 -41.00 42.00
Coil 5 R	2.27 -35.00 31.00	-0.99 -8.40 3.40	-0.95 -8.90 1.10	-0.86 -8.90 1.20	-0.38 -9.30 8.30	-0.89 -14.00 8.30	-1.12 -18.00 8.80	-0.71 -24.00 13.00
Coil 5 Q	4.87 -68.00 68.00	2.64 -29.00 27.00	3.06 -14.00 22.00	4.17 -7.00 22.00	4.65 -2.60 24.00	6.30 1.10 28.00	7.89 4.10 28.00	8.67 7.10 24.00

MM Factor	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 M	0.964 0.880 1.100	0.971 0.880 1.100	0.975 0.870 1.100	0.977 0.880 1.100	0.978 0.880 1.100	0.978 0.880 1.100	0.979 0.880 1.100	0.978 0.880 1.100
Coil 0 P	-0.288 -1.600 1.600	-0.417 -1.500 1.500	-0.323 -1.500 1.500	-0.221 -1.600 1.600	-0.149 -1.500 1.500	-0.071 -1.600 1.600	-0.047 -1.600 1.600	0.005 -1.500 1.600
Coil 1 M	0.980 0.880 1.100	0.967 0.880 1.100	0.971 0.870 1.100	0.973 0.880 1.100	0.973 0.880 1.100	0.973 0.880 1.100	0.974 0.880 1.100	0.972 0.880 1.100
Coil 1 P	-0.237 -1.500 1.500	-0.409 -1.500 1.500	-0.298 -1.500 1.500	-0.186 -1.500 1.500	-0.115 -1.500 1.500	-0.048 -1.500 1.500	-0.022 -1.500 1.500	0.007 -1.500 1.500
Coil 2 M	0.985 0.880 1.100	0.965 0.880 1.100	0.985 0.880 1.100	0.985 0.880 1.100	0.984 0.880 1.100	0.984 0.880 1.100	0.984 0.880 1.100	0.983 0.880 1.100
Coil 2 P	0.065 -1.500 1.500	0.049 -1.500 1.500	0.090 -1.500 1.500	0.125 -1.500 1.500	0.144 -1.500 1.500	0.170 -1.500 1.500	0.159 -1.500 1.500	0.176 -1.500 1.500
Coil 3 M	0.991 0.900 1.100	0.991 0.900 1.100	0.991 0.890 1.100	0.990 0.890 1.100	0.990 0.900 1.100	0.989 0.900 1.100	0.989 0.900 1.100	0.987 0.900 1.100
Coil 3 P	0.076 -1.600 1.600	0.086 -1.500 1.600	0.124 -1.600 1.600	0.168 -1.600 1.600	0.204 -1.600 1.600	0.260 -1.600 1.600	0.267 -1.600 1.600	0.300 -1.600 1.600
Coil 4 M	1.000 0.900 1.100	1.001 0.900 1.100	1.001 0.900 1.100	1.001 0.900 1.100	1.003 0.900 1.100	1.002 0.900 1.100	1.003 0.900 1.100	1.004 0.900 1.100
Coil 4 P	0.692 0.600 0.800	0.262 0.600 0.800	0.256 0.600 0.800	0.277 0.600 0.800	0.275 0.600 0.800	0.392 0.600 0.800	0.412 0.600 0.800	0.480 0.600 0.800

Coil 5 M	1.044	1.041	1.042	1.044	1.046	1.048	1.052	1.054
	0.900	0.930	0.900	0.900	0.900	0.900	0.900	0.900
Coil 5 P	0.125	0.124	0.231	0.329	0.569	0.591	0.897	0.814
	-1.600	-1.600	-1.600	-1.600	-1.600	-1.600	-1.600	-1.600

PARMS TCID 0 TCID 1 Cal Temp T Factor
(degF)
IDa 2.733 0.718 78.2 1.00

HDIL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 1530XA 10120519 DATE/TIME PERFORMED: Fri Apr 26 10:41:55 2013 DAYS SINCE CAL: 24

UNIT #: 3880TA HL6670

ZERO DATA(mv)	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 R	0.004	0.000	-0.000	0.000	0.000	-0.000	0.000	-0.000
Coil 0 Q	0.002	-0.001	0.000	0.000	-0.002	0.000	-0.000	-0.000
Coil 1 R	0.020	-0.001	-0.002	0.002	0.000	-0.000	0.000	0.000
Coil 1 Q	0.011	-0.004	0.003	-0.001	-0.002	0.000	0.000	-0.001
Coil 2 R	0.016	0.002	0.000	0.000	-0.002	-0.001	0.001	-0.002
Coil 2 Q	0.010	-0.001	0.000	0.002	-0.002	0.001	0.002	0.003
Coil 3 R	0.056	-0.001	-0.000	0.003	-0.005	-0.000	-0.002	-0.001
Coil 3 Q	0.037	-0.017	0.003	0.000	-0.003	0.003	-0.002	0.000
Coil 4 R	0.139	-0.000	-0.012	0.017	-0.001	-0.002	0.004	-0.009
Coil 4 Q	0.050	-0.038	0.000	-0.001	-0.008	0.005	-0.000	0.003
Coil 5 R	0.310	0.024	-0.006	0.022	0.001	-0.003	0.015	-0.003
Coil 5 Q	0.135	-0.079	0.021	0.018	-0.007	0.010	0.003	-0.013

ELEC. GAINS	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 M	162.28	160.86	157.94	153.67	148.01	141.08	132.88	123.52
Coil 0 P	6.798	26.220	42.684	60.028	77.362	94.896	112.041	129.363
Coil 1 M	282.66	280.17	276.02	267.42	257.33	244.80	230.13	213.30
Coil 1 P	6.866	25.406	43.002	60.487	77.963	95.437	112.879	130.285
Coil 2 M	559.34	554.26	543.96	528.77	508.78	484.42	455.57	422.70
Coil 2 P	6.721	25.137	42.563	59.858	77.125	94.383	111.661	128.865
Coil 3 M	917.38	906.58	890.48	863.95	829.38	787.00	737.98	682.28
Coil 3 P	7.090	25.957	43.884	61.683	79.415	97.101	114.761	132.327
Coil 4 M	1425.7	1414.0	1389.1	1352.7	1304.1	1243.6	1171.7	1089.2
Coil 4 P	6.655	25.374	42.959	60.435	77.937	95.447	112.981	130.531
Coil 5 M	2944.8	2921.4	2870.3	2794.6	2693.9	2568.4	2419.6	2248.8
Coil 5 P	6.959	26.580	43.284	60.913	78.638	96.171	113.841	131.451

HDIL AFTER LOG VERIFICATION SUMMARY

TOOL #: 1530XA 10120519 DATE/TIME PERFORMED: Fri Apr 26 13:14:53 2013 DAYS SINCE CAL: 24

UNIT #: 3880TA HL6670

ZERO DATA(mv)	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 R	0.005	-0.001	-0.001	0.000	0.000	0.000	0.000	0.001
Coil 0 Q	0.001	-0.001	0.000	0.001	-0.001	0.001	-0.000	0.000
Coil 1 R	0.021	0.001	-0.003	0.002	-0.001	-0.001	-0.000	-0.000
Coil 1 Q	0.010	-0.004	0.001	-0.000	-0.001	0.001	-0.001	-0.001
Coil 2 R	0.015	0.000	0.001	-0.001	0.000	0.001	0.002	-0.000
Coil 2 Q	0.013	-0.000	0.000	0.003	0.000	0.001	0.001	-0.001

Coil 3 R	0.053	-0.001	-0.004	0.003	-0.002	-0.001	-0.000	0.002
Coil 3 Q	0.034	-0.011	0.007	-0.002	-0.000	-0.000	-0.001	0.000
Coil 4 R	0.156	0.003	-0.012	0.008	0.000	0.001	-0.000	-0.007
Coil 4 Q	0.070	-0.036	0.013	-0.000	-0.005	0.003	-0.001	-0.001
Coil 5 R	0.347	0.010	-0.029	0.022	-0.006	-0.008	0.009	-0.004
Coil 5 Q	0.150	-0.094	0.018	0.014	-0.007	0.003	-0.004	-0.008

ELEG. GAINS 10 KHz 30 KHz 50 KHz 70 KHz 90 KHz 110 KHz 130 KHz 150 KHz

Coil 0 M	162.56	161.12	158.20	153.90	146.24	141.26	133.03	123.69
Coil 0 P	7.418	25.383	42.723	60.004	77.268	94.546	111.849	129.139
Coil 1 M	262.51	279.96	274.84	267.18	257.03	244.56	229.71	213.04
Coil 1 P	7.490	25.580	43.059	60.484	77.897	95.322	112.743	130.086
Coil 2 M	559.57	554.39	544.08	528.81	508.90	484.27	455.36	422.74
Coil 2 P	7.354	25.317	42.623	59.659	77.070	94.279	111.513	128.709
Coil 3 M	917.39	908.38	890.33	863.74	828.90	786.66	737.23	682.03
Coil 3 P	7.692	26.133	43.948	61.677	79.370	97.017	114.638	132.188
Coil 4 M	1423.3	1411.3	1386.7	1350.0	1301.4	1240.9	1168.6	1088.7
Coil 4 P	7.485	25.546	43.012	60.426	77.871	95.325	112.839	130.333
Coil 5 M	2946.5	2924.6	2873.6	2797.5	2696.4	2569.5	2420.2	2249.9
Coil 5 P	7.575	25.754	43.360	60.912	78.483	96.072	113.685	131.291

INSTRUMENT CONFIGURATION

Source File /data/924399/m970a-4da

FOCUS CABLEHEAD

Diameter : 3.15"
Length : 3.17"
Weight : 0.04318

FOCUS BRIDGE

Diameter : 3.15"
Length : 8.5"
Weight : 0.04318

FOCUS TUB/TUBES/SLIP RING/CONV.

Diameter : 3.15"
Length : 2.21"
Weight : 0.04318
Series : 924399
Material : TITAN

FOCUS TELEMETRY (POWER SECTION)

Diameter : 3.15"
Length : 28.125"
Weight : 28.125
Series : 924399
Material : TITAN

FOCUS SLIP/ON TELEMETRY GRABBER

Diameter : 3.15"
Length : 0.83"
Weight : 0.04318
Series : 924399
Material : ON

FOCUS COMPACTED SECTION

Diameter : 3.15"
Length : 28.125"
Weight : 28.125
Series : 924399
Material : ON

FOCUS 2-CONVILLOS

Diameter : 3.15"
Length : 8.5"
Weight : 0.04318
Series : 924399
Material : 22L

FOCUS KNUCKLE JOINT

Diameter : 3.15"

FOCUS KNUCKLE JOINT

Diameter : 3.15"



35.34'

35.97'

35.95'

22.47'

19.25'

FOCUS HIGH DEFINITION IMAGERION TOOL

Diameter : 3.13"
Length : 15.33"
Weight : 17.8 lbs
Series : 1000A
Material : HSL

FOCUS PINNACLE / CAMERA

Head Finder
Diameter : 2.65"

Tool Length: 25.25"
Total Weight: 20.8 lbs
Max Diameter: 6" O.D. 1.5"

COIL 8 MP : 0.17'
COIL 4 MP : 7.87'
COIL 2 MP : 0.17'
COIL 1 MP : 0.17'
COIL 0.5 MP : 4.87'
2P MP : 3.14'
0.00'



COMPANY WPX ENERGY INC
WELL DIAMOND ELK LLC PA 43-2
FIELD PARACHUTE
COUNTY GARFIELD STATE CO

FILE NO: US624388
API NO: 05045208010000

LOCATION:
SHL: 2326' FSL: 685' FWL
BHL: 2270' FSL: 718' FEL
SEC 2 TWP 7S RGE 95W

ELEVATIONS:
KB 6053 FT
DF 6053 FT
GL 6027 FT
DATE 26-Apr-2013

PAD: GV 84-1
S2 T7S R95W
RIG: HARBORS 574

